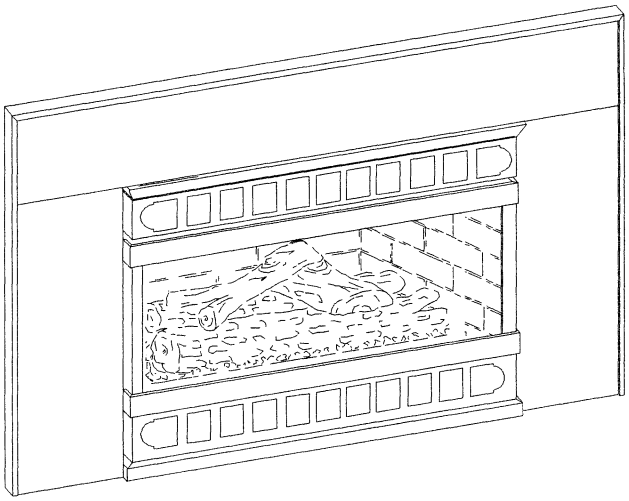
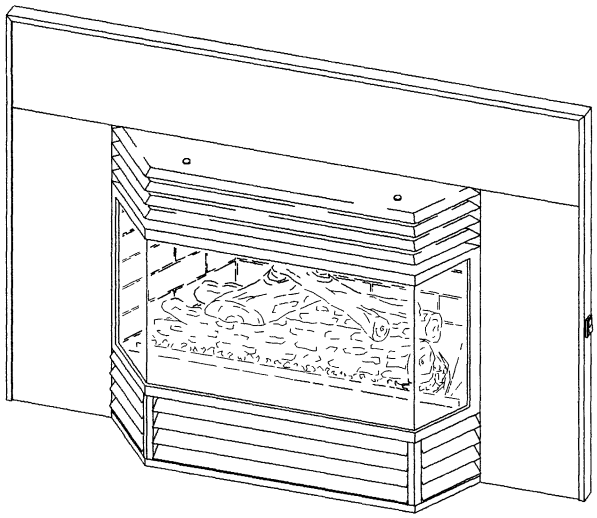
OSBURN

DIRECT VENT INSERT

Installation and Operation Instructions





The Flame of Desire

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 vapours and liquids in the vicinity of this or any other appliance.

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.
- Extinguish any open flame.
- Immediately call your gas supplier from a neighbour's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

WARNING

Improper installation, service, adjustment, alteration, or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information, consult a qualified installer, service agency, or the gas supplier.

Please read this manual before installing or using this appliance. Retain this manual for future reference. Installation and service must be performed by a qualified installer, service agency or the gas supplier.

Warnock Hersey

c ® us

OSBURN™ GAS & WOOD HEARTH SYSTEMS

Patents Pending
Made in Canada
05/25/00 CA1017

CONTENTS

1.0 INTRODUCTION

1.1 SPECIFICATIONS

TABLE 1 SPECIFICATIONS

ITEM	NATURAL GAS (NG)	PROPANE (LPG)
INPUT: High	36,000 Btu/hr (38.0MJ/hr)	30,000 Btu/hr (31.7 MJ/hr)
Low	25,200 Btu/hr (26.6MJ/hr)	22,500 Btu/hr (23.7 MJ/hr)
Flue Loss Efficiency: Fan off	25,900 Btu/hr (27.3MJ/hr)	22,700 Btu/hr (24.0MJ/hr)
MANIFOLD PRESSURE:	3.5" w.c. (0.9 kPa)	10.0" w.c. (2.5 kPa)
GAS INLET SUPPLY PRESSURE:	Minimum: 5.0" w.c. (1.2 kPa)	Minimum: 11.0" w.c. (2.7 kPa)
	Normal: 7.0" w.c. (1.7 kPa)	Normal: 13.3" w.c. (3.3 kPa)
	Maximum: 13.5" w.c. (3.4 kPa)	Maximum: 13.5" w.c. (3.4 kPa)
ORIFICE SIZE:	31 DMS (.120") (3.06mm)	50 DMS (.067") (1.70mm)
CONTROL VALVE:	Sit 820 Nova	
SHIPPING WEIGHT:	110 lb. (50 kg)	
CHIMNEY:	Simpson Duravent Model DV-GS	
FAN:	120V, 60Hz, .5A Variable Speed - 125 CFM	

NOTE: The efficiency rating of the appliance is a product thermal efficiency rating determined under continuous operating conditions and was determined independently of any installed system. AFUE was tested by the Manufacturer.

OPTIONS:

- Gold & color grille assemblies for contemporary versions
- Gold and color faceplates
- Remote Control
- Thermostat
- Top & bottom gold door trim for contemporary versions
- Flush or Bay Traditional Versions
- Flush or Bay Contemporary Versions

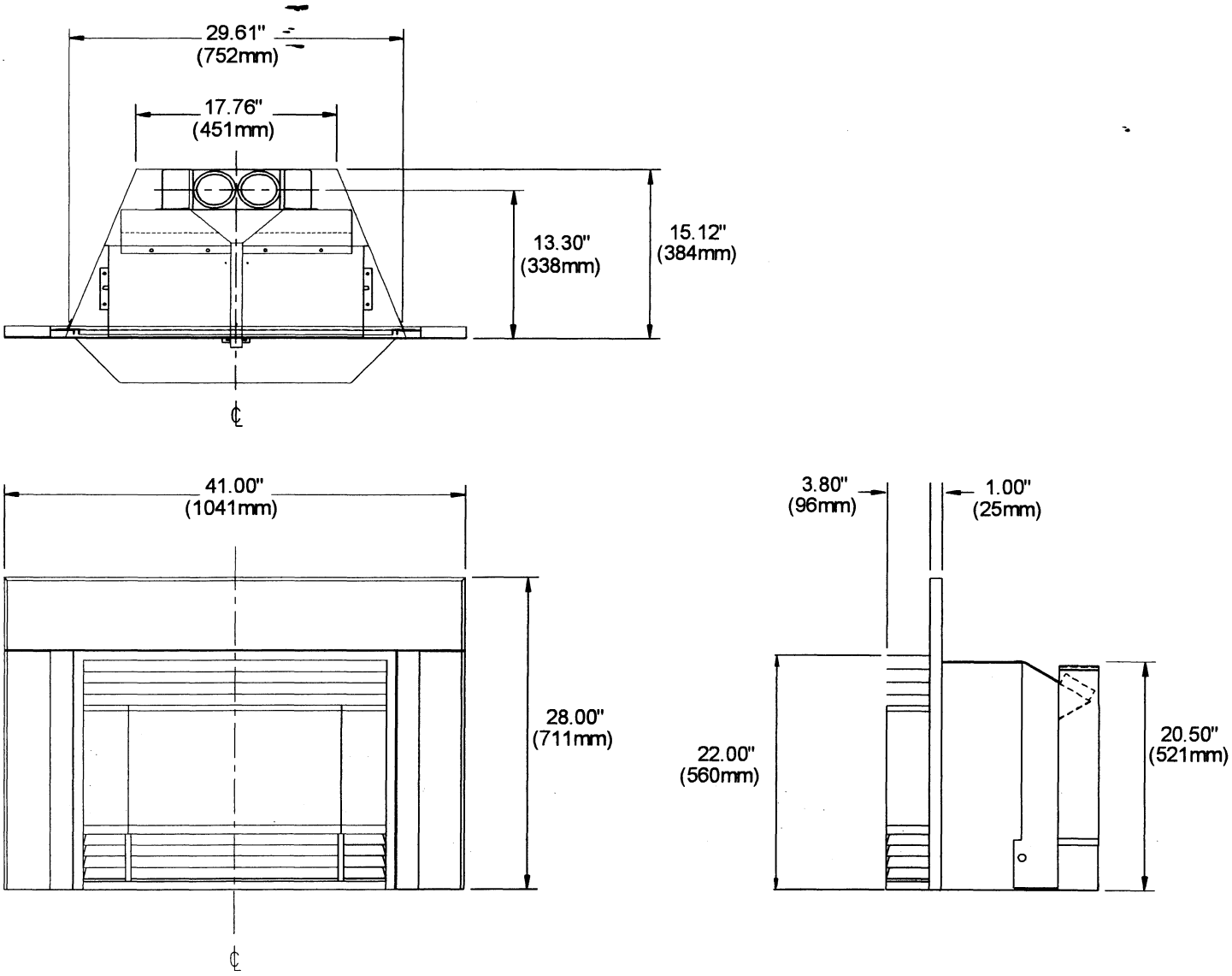


Figure 1

INSTALLATION CODES

Installation must conform to local codes. In the absence of local codes, installation must conform to the current National Fuel Gas Code, ANSI Z233.1 (in the U.S.), or with the current installation code CAN/CGA B149 (in Canada). Any conversions shall be carried out in accordance with the requirements of the provincial authorities having jurisdiction and in accordance with the requirements of the CAN/CGA B149 Installation Code, including marking, instructions, & conversion kit numbers (CZ0096-NG; JD0049-LP). The appliance, when installed, must be electrically grounded in accordance with local codes or, in the absence of local codes, with the current National Electric code ANSI/NFPA No. 70 (in the U.S.) or with the current CAN/CSA C22.1 Canadian Electrical Code (in Canada), or in other countries with the appropriate national code.

1.2 FEATURES

Ignition system:

Standing pilot ignition system with thermopile and thermocouple flame detection and piezo igniter.

Gas control:

Gas control valve type:

Automatic millivolt powered combination gas control valve with variable flame control for convenience and on/off switch. Optional remote on/off wall switch, optional wall thermostat, and/or optional wireless remote control are available. The gas valve does not require electric power from an external source.

Fan control:

Variable Speed Control:

The knob controls fan speed in connection with a heat sensitive switch which turns on when the heater reaches operating temperature. Turning the knob counter-clockwise ← turns it to the "OFF" position.

Safety controls:

A safety switch will shut the system down in the event of loss of pilot flame.

Outside combustion air supply:

The combustion air supply is obtained entirely from outside the heated living space by the intake of outside air through the vent termination and down a 3" aluminum vent.

1.3 INTENDED USE

This appliance is intended to be used as a heater, when installed as an insert for code complying masonry, or listed factory built solid fuel burning fireplaces which meet the minimum requirements as described in detail in the installation instructions. This insert is certified for installation in a bedroom or a bed sitting room where the maximum input is within 50 cubic feet per 1000 Btu/hr, (ie. 1250 cubic feet). All bedroom installations require the use of wall thermostats.

1.4 GENERAL SAFETY

The appliance **must** be properly connected to a venting system in accordance with local codes. This unit must not be connected to a chimney or flue serving any other appliance.

WARNING: Operation of this fireplace when not connected to a properly installed and maintained venting system, may result in carbon monoxide poisoning.

Installation and repair should be done by a qualified service person. The appliance should be inspected before use and at least annually by a professional service technician. Provide adequate clearances around air openings and allow accessibility clearance for servicing and proper operation.

2.0 OPERATION

2.1 OPERATION SAFETY

Inspect the appliance before use. Always keep the appliance area clear and free from combustible materials, gasoline and other flammable vapours and liquids. Never obstruct the flow of ventilation air. Keep the front of the appliance clear of all obstacles and foreign materials. Never obstruct or modify the air inlet/outlet grilles of the fireplace in any manner.

CAUTION: Children and adults should be alerted to the hazards of high surface temperature and should stay away to avoid burns or contact with hot surfaces. Young children should be carefully supervised when they are in the same room as the heater. Clothing or other flammable material should not be placed on or near the unit.

The glass door and louvers must be properly installed prior to operation. **Never** operate the unit with the glass door off or broken since this may cause dangerous indoor air pollution. This unit is **not** for use with solid fuel. **Do not** substitute any parts or materials. **Do not** abuse the glass door.

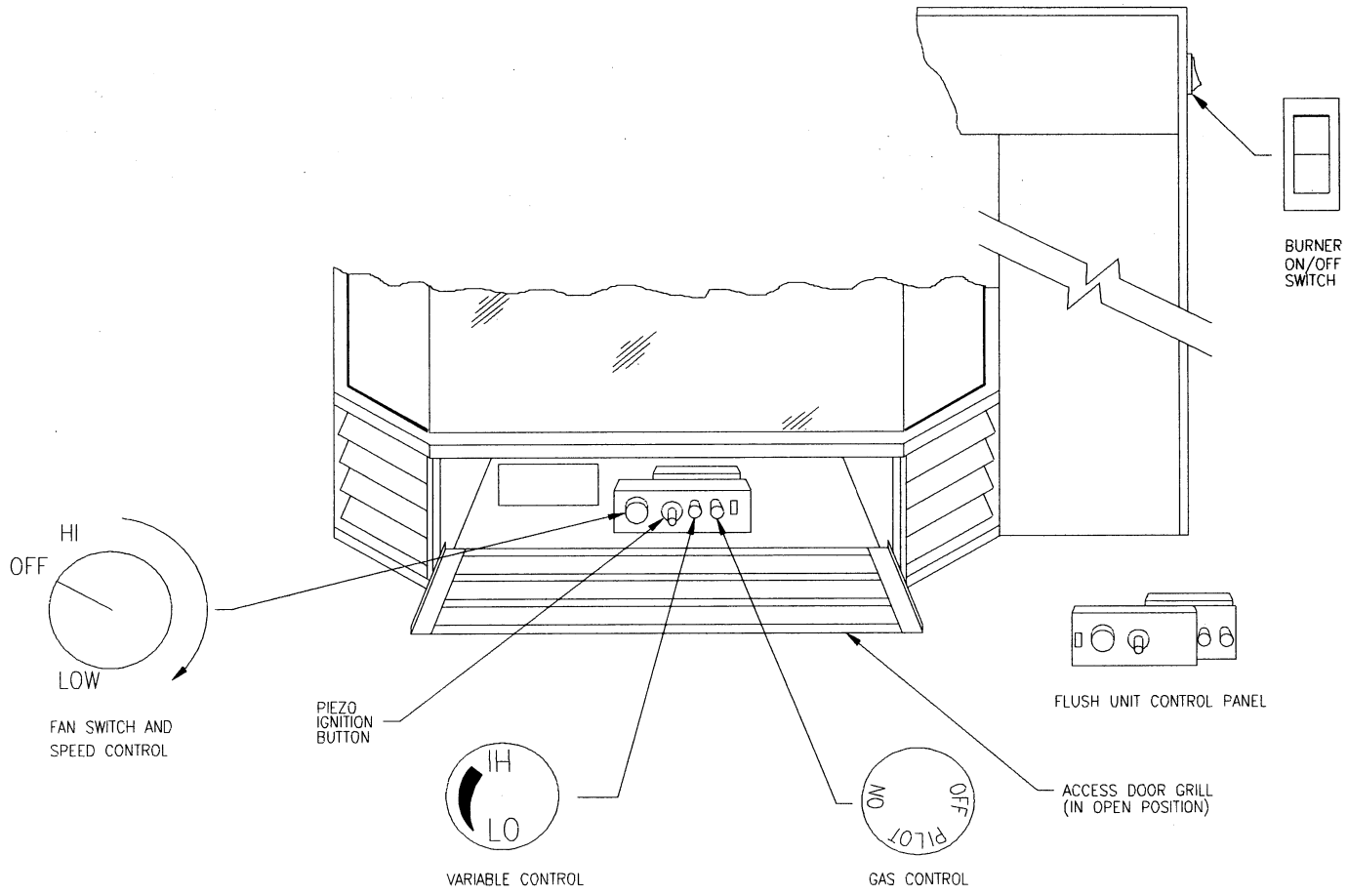


Figure 2

2.2 LIGHTING INSTRUCTIONS

FOR YOUR SAFETY, READ BEFORE LIGHTING

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 is provided with a standing pilot flame. 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 on 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 neighbour's phone. Follow the gas suppliers 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, do not try to force or repair it; call a qualified service technician. Forcing 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 PROCEDURE

1. **"STOP!"** Read the safety information in the previous section.

2. Set the thermostat to the lowest setting.

3. Turn off all electrical power to the appliance.

4. Open the access door grille, hinged to open downward, by pulling the top grille bar toward you.

5. Push in the gas control knob slightly and turn clockwise ➜ to the "OFF" position as shown in Figure 3.

6. Wait a minimum of five minutes to clear out any residual gas. If you then smell gas, **STOP!** Follow "B" in the Lighting Instruction section described on the previous page. If you do not smell gas, go to the next step.

7. Press the gas control knob in and turn counter-clockwise ← to the "PILOT" position.

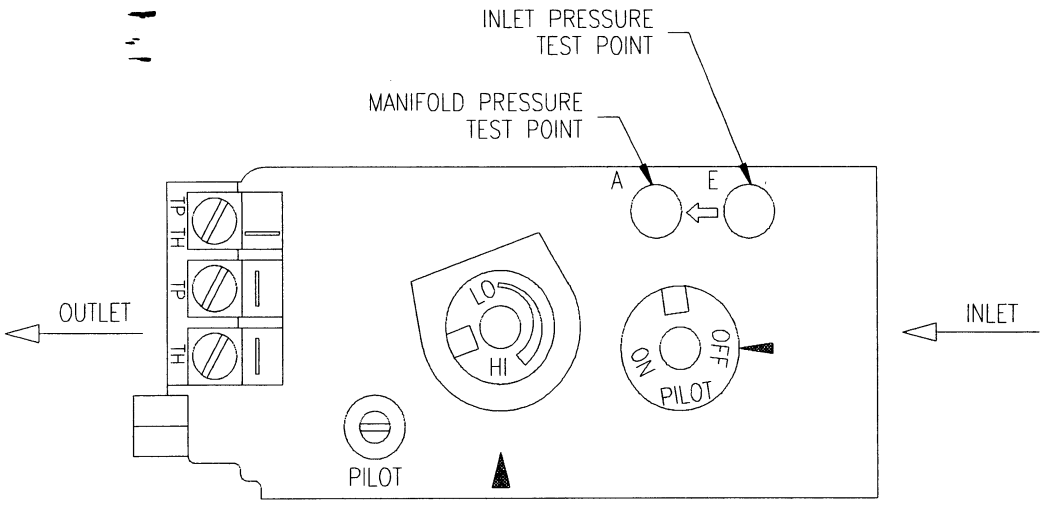


Figure 3 Gas Control Knob In "Off" Position

8. Push the control knob in all the way and hold it in. Immediately push the piezo ignition button (the red button to the left) repeatedly so that it clicks; continue until the pilot ignites. Maintain pressure on the knob for about one minute after ignition. Then release the knob; if the pilot flame goes out repeat step 8; if the pilot flame remains on then turn the knob counter-clockwise ← to the "ON" position.

9. If the pilot lights, but will not stay on after several tries, turn the gas control knob to the "OFF" position and call your service technician or gas supplier. If the control knob does not pop out when released, **STOP** - shut off the gas supply to the control valve, and **IMMEDIATELY** call your service technician or gas supplier.

10. Close the access door grille by lifting it and allow the springs to pull it closed.

11. If equipped with a wall switch, select the "ON" position. If equipped with a thermostat or auxiliary control, set it to the desired setting.

SHUTDOWN PROCEDURE

1. To turn off the main burner only, turn off the wall switch, thermostat, or On/Off switch located at the top right side of the faceplate trim (Figure 2).

2. For complete shutdown of the appliance, depress the gas control knob and turn it clockwise → to the "OFF" position.

2.3 HEAT OUTPUT ADJUSTMENT

The valve supplied with the appliance has a variable HI/LO knob to control the heat output and flame height (see Figures 2 & 3).

2.4 FAN OPERATION

The fan control knob is located on the left side behind the access door grille assembly and may be adjusted to the following settings:

Off:	Turn the control fully counter-clockwise ← until the switch operates.
Variable Speed Setting:	Turn the control to the desired setting. When the knob is turned fully clockwise, → the fan will be set to minimum speed.

2.5 REMOTE CONTROL OPERATION

An optional hand held remote control kit for turning the unit On and Off, is also available. Detailed instructions for the optional Remote Control are included with the kit.

3.0 INSTALLATION

3.1 INSTALLATION & SAFETY NOTES

Read all instructions before beginning and follow them carefully during installation to ensure maximum benefit and safety. Failure to follow these instructions will void your warranty and may present a fire hazard. See the Osburn warranty at the back of this manual for improper installation disclaimers. This fireplace insert and its components are certified and safe when installed in accordance with this manual.

WARNING: Do not connect 120 VAC to the gas control valve or its wiring, as this will damage the valve.

ELECTRICAL GROUNDING NOTE:

This heater fan is equipped with a three-prong (grounding) plug for your protection against shock hazard and should be plugged directly into a properly grounded three-prong receptacle. Do not cut or remove the grounding prong from this plug.

3.2 UNPACKING

The fireplace is shipped with the logs and coals in separate packages inside the firebox. The top louvre and the three grille assemblies are packaged separately. All other parts of the fireplace are in position.

Report to your dealer parts that are missing or may have been damaged in shipment **(specifically check the glass condition).**

The best time to install the internally packaged parts is after installation and connection of the gas line. Using the following instructions, remove the door before installing the coals and logs.

1. Release the top and bottom door latches.
2. Pull the door forward and remove it.
3. Handle the door very carefully and set it **in a safe place,** away from traffic areas.

NOTE: The One Piece Glass is Very Fragile and is Expensive to Replace.

4. Remove the packaging containing the logs and coals.

3.3 INSTALLATION

For satisfactory results it is necessary to plan certain aspects of the installation prior to the appliance's final positioning. These include the vent system, the gas piping, and the blower wiring. Combustible surfaces such as the hearth, mantle and facing must also be planned for.

NOTE: All Installations Require Venting.

3.3.1 Minimum Clearances

This top venting insert is suitable for installation into masonry fireplaces, or into certified factory built fireplaces which include a gas line knockout and proper floor clearances. A masonry fireplace must meet the minimum building code requirements or the equivalent, for a safe installation. Factory built fireplaces and their chimneys must be certified and meet local code requirements. Both must be free from cracks, blockage, creosote deposits, loose mortar, or other types of deterioration.

Inspect the fireplace to ensure the insert will correspond to the measurements (see Figure 4).

Minimum enclosures are as follows:

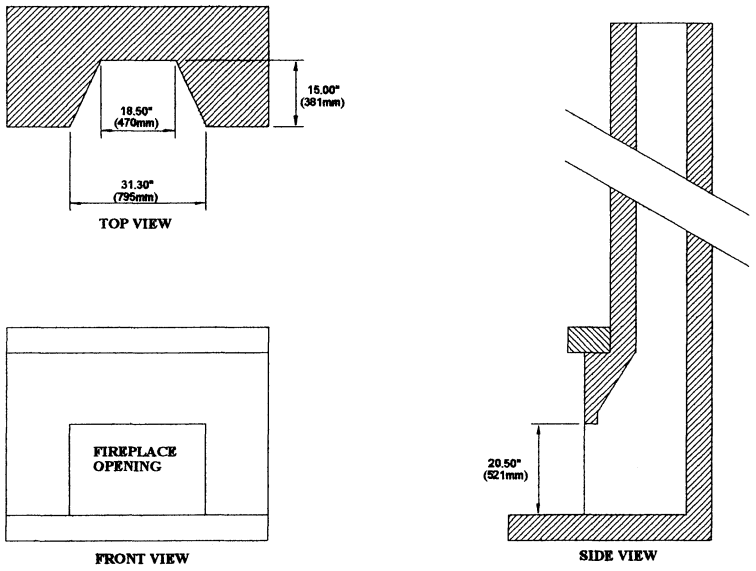


Figure 4

Minimum Clearances To Combustibles

A.	Sidewall	10"	(254mm)	measured from glass
B.	Ceiling	34"	(864mm)	measured from top louvre
C.	Facing sides	1"	(25mm)	measured from standard faceplate
	top	8.5"	(216mm)	measured from standard faceplate
D.	Floor	16"	(406mm)	measured from rear edge of faceplate trim (see Figure 5)
		Note:		The insert can be installed over a combustible floor if the insert is at least 5" (127mm) above the floor (see Figure 6)
E.	Mantle	12.5"	(318mm)	measured from top louvre to 8" (204mm) mantle
		Note:		For more mantle options see Figure 7

Note: When using paint or lacquer to finish the mantle, such paint or lacquer must be heat resistant to prevent discolouration.

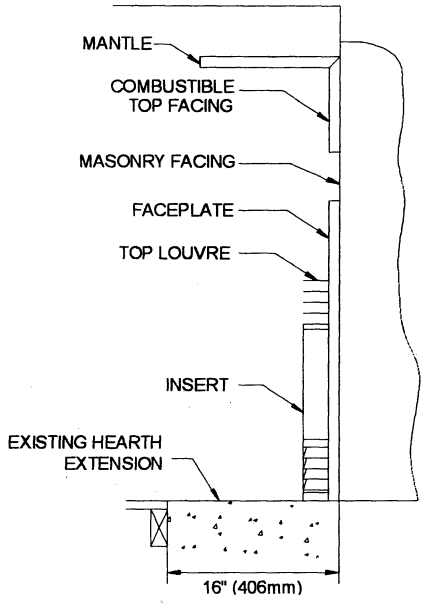


Figure 5

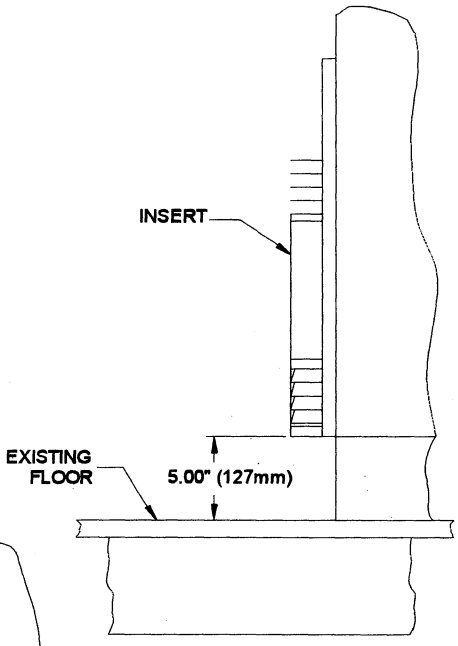


Figure 6

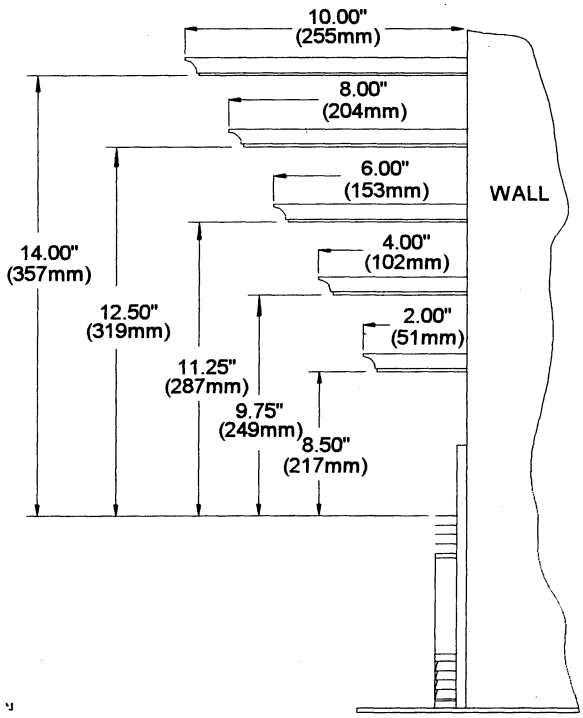


Figure 7

3.3.2 Chimney Liner Installation

The insert must be connected to a pair of three inch diameter listed liners suitable for use with gas. The liners must run within the existing chimney from the vent collars on the insert, to the top of the masonry or factory built chimney (see Figures 8, 9 and 10). An optional four inch diameter air intake collar is available for four inch air intake liner if required.

When installing this appliance into large fireplace cavities, the vents may be connected directly to their attachments with the appliance in place. Smaller cavities may require detaching the flue collar plate so that it can be installed separately prior to the main assembly.

Figures 8 & 9 below show the completed installations in both a masonry and a factory built fireplace.

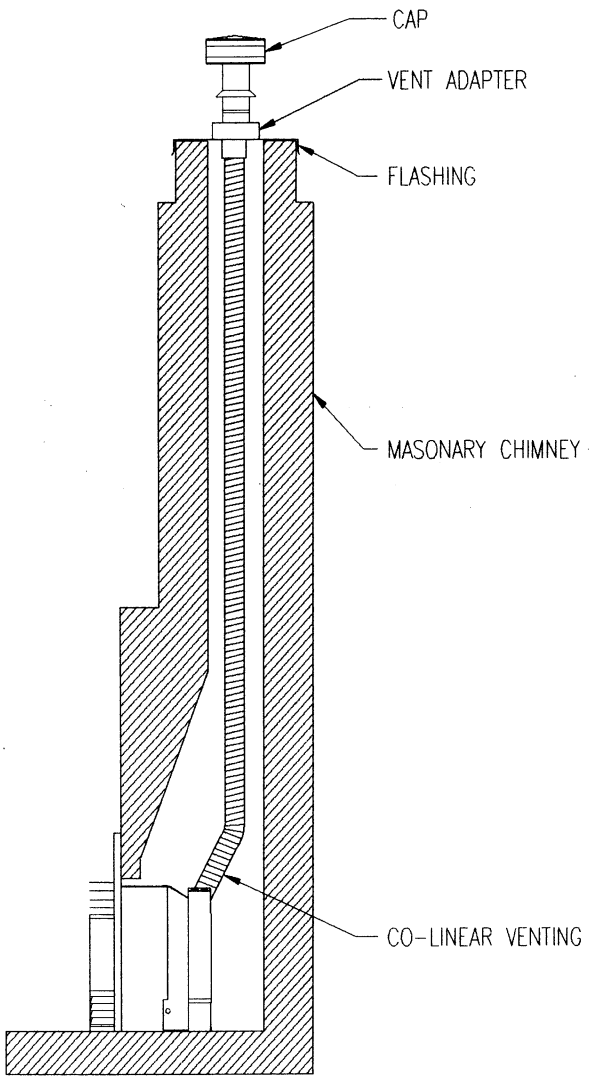


Figure 8

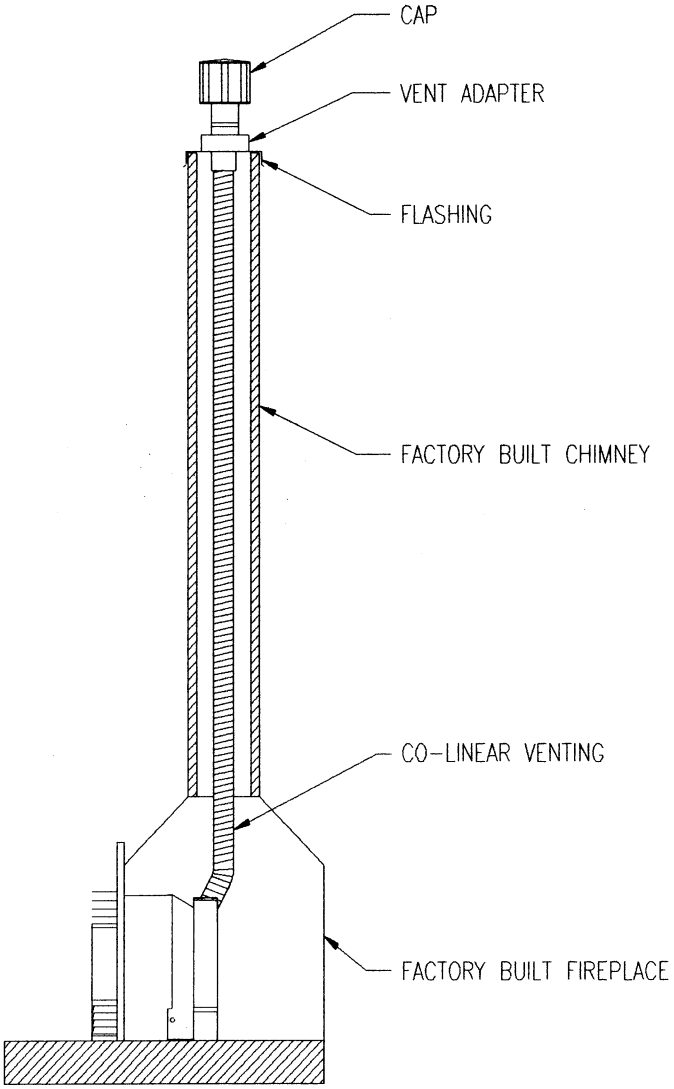


Figure 9

Installation steps are as follows:

1. Position the insert in the fireplace cavity and note the required positions of the vent and gas line.

2. To prevent damage to the insert, remove it until after the gas and vent lines have been positioned.

3 a. Measure and cut two liner lengths just slightly longer than required.
Reminder: Minimum overall vent height is 11' and maximum is 30'.
Joining two lengths of liner can be accomplished using 3" DF Flex Couplings. Join the lengths by liberally applying Mil-Pac Sealant to the end of the liner before inserting it onto the coupling, and once inserted, secure each connection with three screws.

From the top of the chimney:

b. Install the flashing onto the existing chimney.

c. Attach the liners to the two 3" outlets on the Simpson Dura-Vent Chimney Liner Termination Kit (part # 923GK) by first liberally applying Mil-Pac Sealant to the gasketed joint, and then pushing the liner onto the collar. Secure each joint using three screws.

d. **CLEARLY IDENTIFY** the lower end of the liners for intake and exhaust.

e. Feed the liners down the chimney through the flashing.

f. Install the cap onto the Round Adapter.

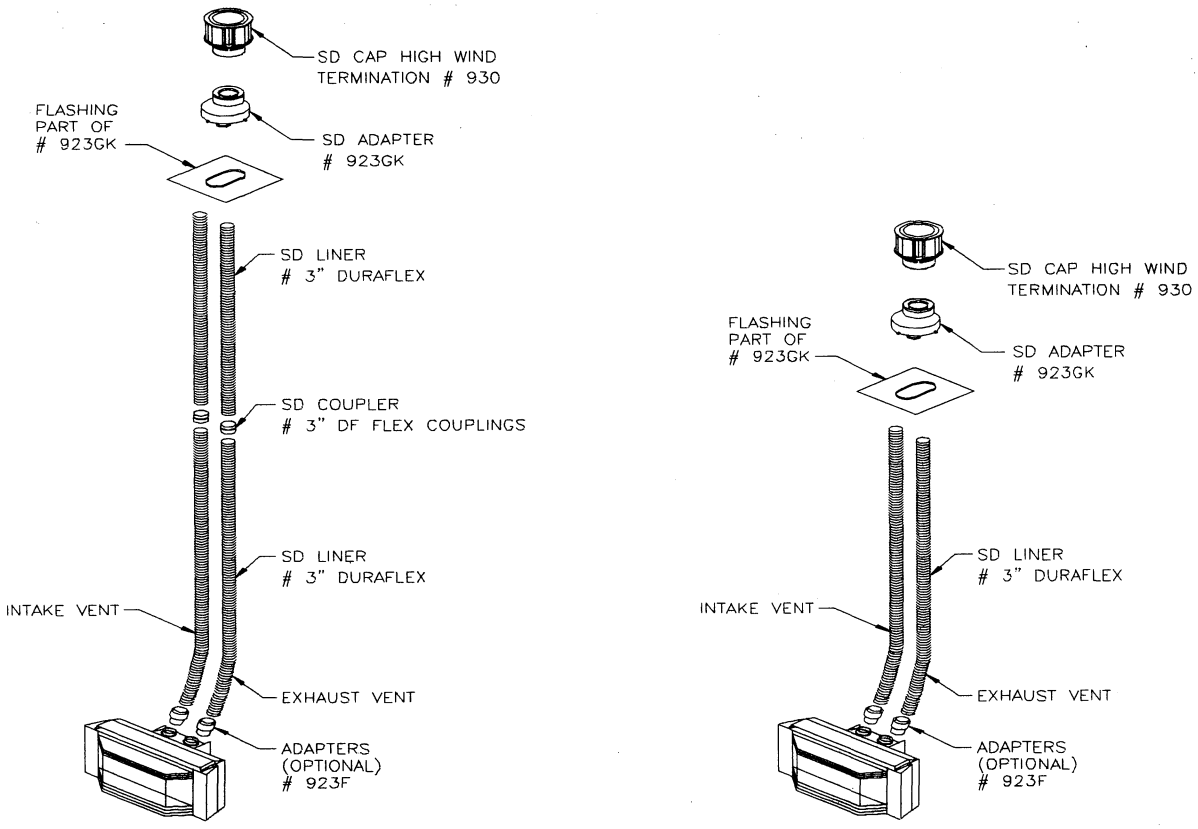


Figure 10

From below:

4. Liberally apply Mil-Pac Sealant to the outsides of the vent collars.

5. For installations that do not require the removal of the vent connector plate:

   a. Push the insert back into the enclosure

   b. Slide the liner onto the appropriate vent collars and secure them with three screws each and/or hose clamps.

Note: Make sure the previously identified exhaust liner is connected to the exhaust collar (see Figures 10 & 11).

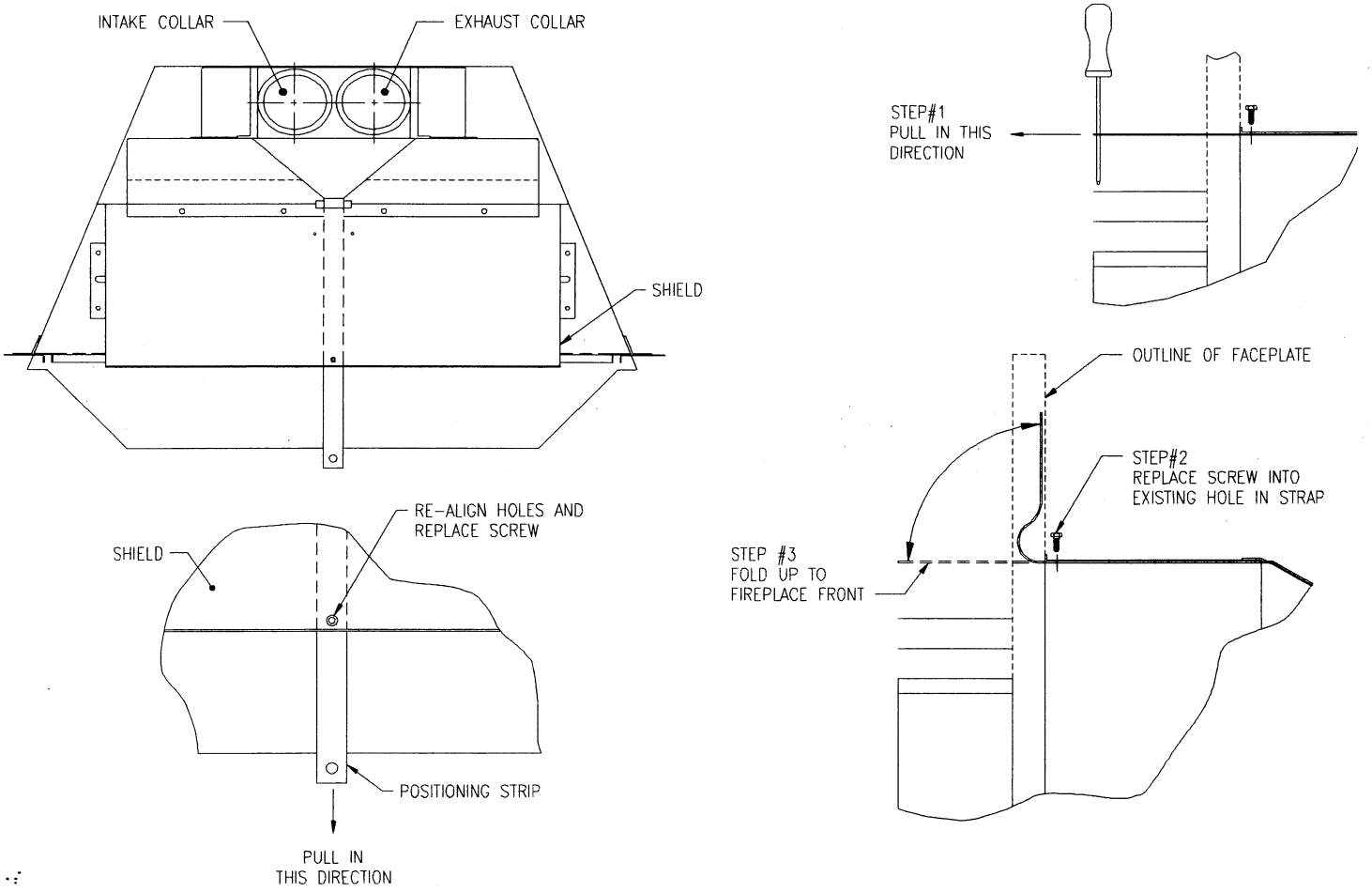


Figure 11

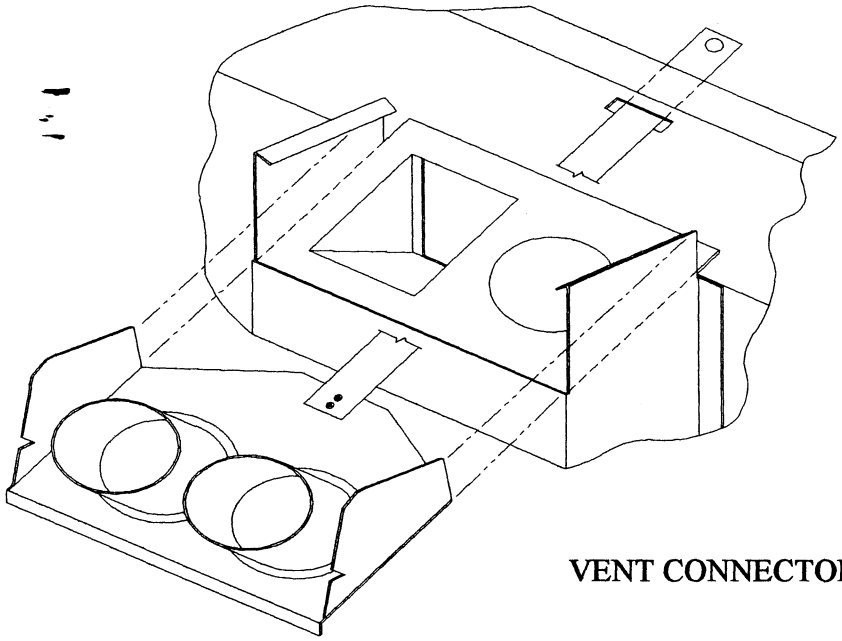


Figure 12

6. For installations that do require the removal of the vent connector plate:

   a. Detach the vent connector plate by removing the screw securing the positioning strip to the top of the air jacket (see Figure 11) and slide the vent connector plate off to the rear (see Figure 12).

   b. Liberally apply Mil-Pac Sealant to the outsides of the vent collars.

   c. Attach the vent connector plate to the appropriate vent liners and secure with three screws each and/or hose clamps. The vent connector plate should be located 16"-20" (406-508mm) above the hearth. (Note: An easier fit will be ensured if the liners are fully stretched out a the end portion that fits over the connector plate collars.)

   d. Push the insert back into the enclosure, feeding the positioning strap through the slot at the top rear of the air jacket. Ensure that the strap passes freely under the air jacket and that it doesn't get caught in parts protruding from the firebox top. Continue to push the insert back as the strap is fed through until the hole on the strap lines up with the corresponding hole on the air jacket. A screwdriver can be used, if required, to help pull the strap forward. Secure the strap in position by replacing and tightening the screw in the top of the air jacket (see Figure 11).

   e. Bend the forward end of the strap back and up against the fireplace front so that the faceplate can be installed (see Figure 11).

Use Of Sealant

Sealant is recommended on vent systems to ensure that the combustion air enters from outdoors, and not through the vent joints. Use the Mil-Pac Black ***vent*** sealant, (not silicone), available from local suppliers or Osburn dealers. A bead of silicone may be used on air intake liner joints after assembly to seal the supply air.

3.3.3 Gas Line Installation

- Install supply line using any piping approved for your installation meeting CAN/CGA 6.10, AGA 3, ANSI Z21.24 or Z21.45. A qualified gas fitter should install the gas line in accordance with all local building codes. If codes permit, coiled copper tubing may be used for gas supply.

- Plugged taps are provided on the gas control for a test gauge connection to measure the manifold and inlet pressures.

- This appliance must be isolated from the gas supply piping system by closing its individual manual shut off valve during any pressure testing of the gas supply piping system at test pressures equal to or less than ½ psig (3.45 kPa).

- The appliance and its individual shut off valve must be disconnected from the gas supply piping system during any pressure testing of the system at test pressures in excess of ½ psig (3.45 kPa).

- Install the gas line as follows:

  1. The gas line connection on the right side of the insert is shown in Figure 13. An AGA and/or CGA approved shut off valve can be installed to the flexline if so desired.

  2. Purge the gas line of air.

  3. Test the gas line for leaks using an electronic gas leak detector or soapy solution.

WARNING: Do not use an open flame to test for gas leaks.

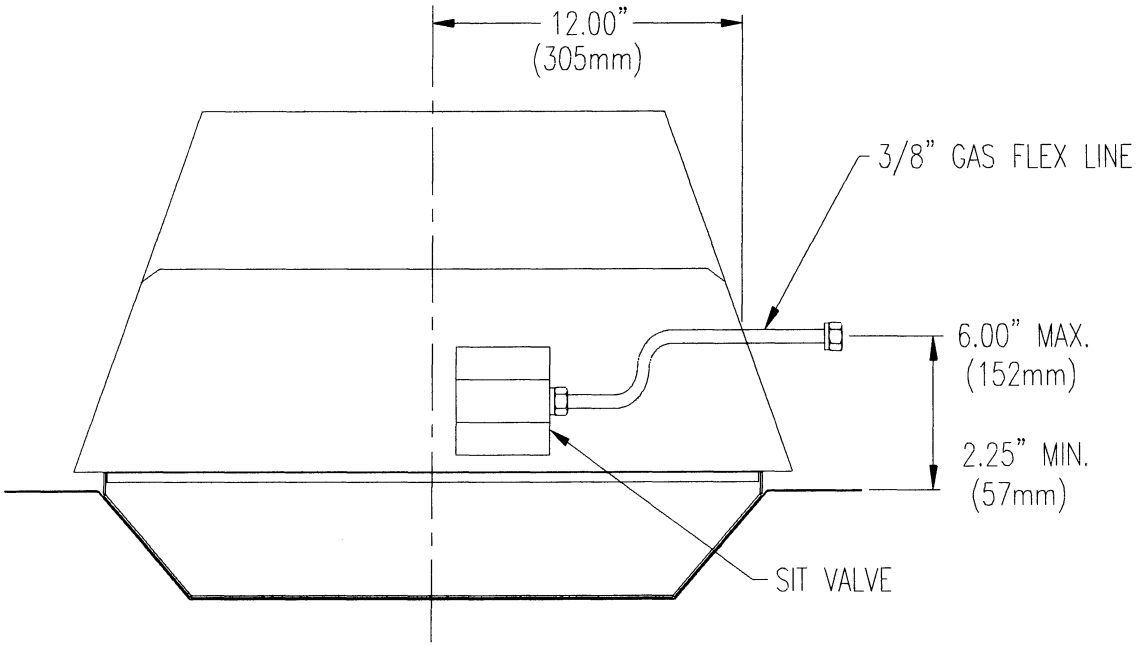


Figure 13

3.3.4 Thermostat, Wall Switch, Or Remote Control Installation

The burner control switch is located on the edge of the right side panel near the top (see Figure 2). For your convenience, the insert can also be operated by a thermostat, a wall switch or remote control. Millivolt thermostats and remote control kits are available from any authorized Osburn dealer.

NOTE: The thermostat or wall switch MUST be rated for millivolt use. Minimize splicing in all millivolt wiring & solder all unavoidable splices.

Remote Control Installation Please refer to instructions included with kit.

Thermostat Or Wall Switch Installation

1. Mount the thermostat or wall switch in the desired location and run ***"two conductor thermostat wire"*** to the heater's lower right hand corner, close to the gas supply line.

   Purchase ***"two conductor thermostat wire,"*** which is not provided, at any local supplier. The gauge of thermostat wire will determine the maximum wire length and distance at which to locate the thermostat or wall switch. See Table 2 below and the information packaged with thermostat. Be aware that as the length of wire increases, the probability of adequate operating voltage decreases.

TABLE 2 THERMOSTAT WIRE INFORMATION

WIRE SIZE		MAX. WIRE LENGTH	
AWG	**mm**	**ft.**	**m**
22	0.6	10	3.0
20	0.8	25	7.6
18	1.0	40	12.2
16	1.3	64	19.5
14	1.6	100	30.5

2 a) After the insert is installed and the gas line connected, solder a female spade connector to each wire and connect them to the male connectors provided on the rear of the burner switch (see Figure 14), or

   b) Solder a fork connector to each wire and connect them to the valve (see Figure 15).

3. Check tests can be performed on the valve by referring to the trouble shooting guide, Section 5.0.

If employing additional switches such as a thermostat, wall switch, or remote control, they may be connected in parallel as shown in Figure 14, or they may be connected in series to the rocker switch as shown in Figure 15.

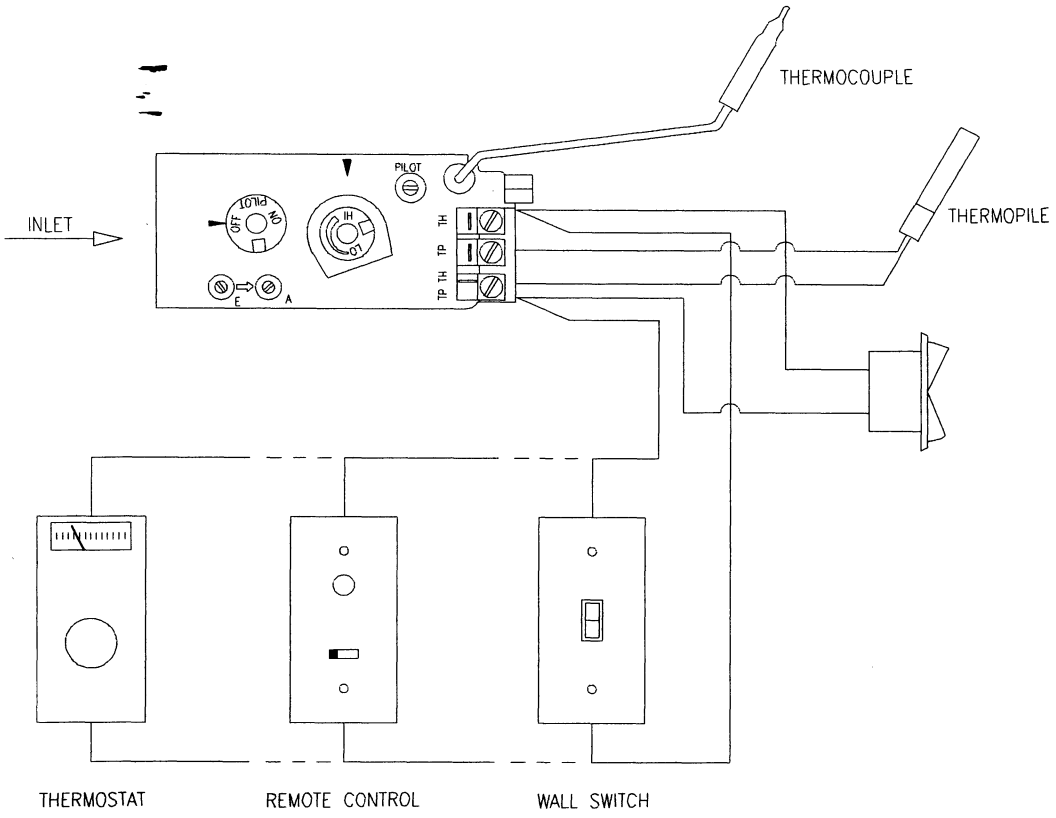


Figure 14

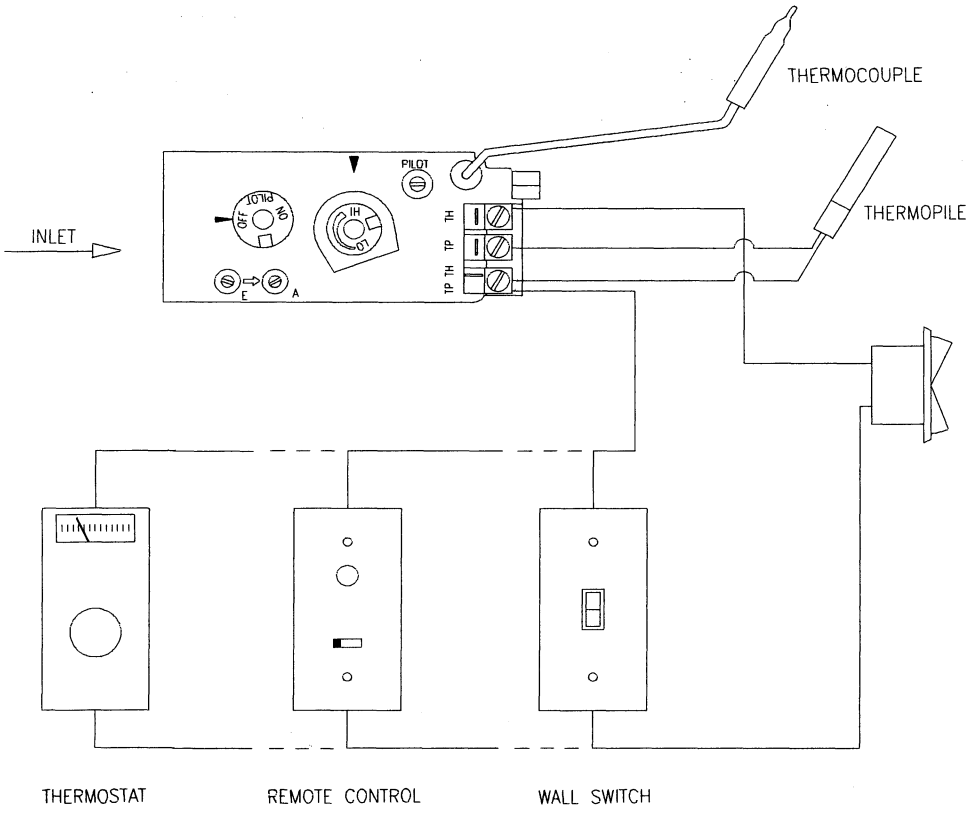


Figure 15

3.3.5 Faceplate Installation

Remove the faceplate panels from the packaging and assemble according to the following instructions:

1. Place the faceplate panels with the finished side down on a flat, soft, nonabrasive surface.

2. Line-up the holes of the side and top panels and install the four bolts loosely (see Figure 16).

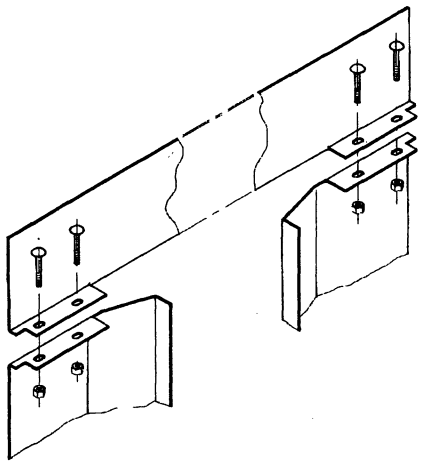


Figure 16 Faceplate Assembly

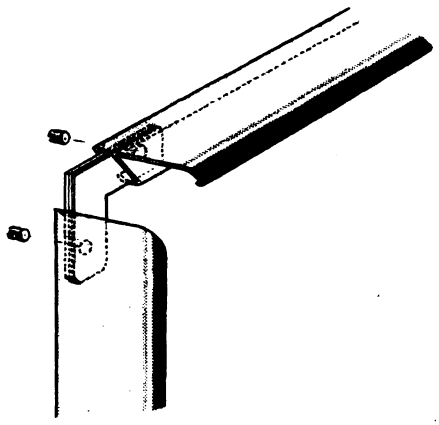


Figure 17 Corner Bracket

3. Space the faceplate sides so that they are exactly 28.68" (717mm) apart, and then tighten all four bolts. (Alternately, to ensure the correct spacing, pre-fit the faceplate onto the insert as per step 7, before the insert is installed in the cavity. Tighten all four bolts once the faceplate is in position, and then remove it to continue the installation.)

4. Attach the left and right brass trim sides to the top trim with the corner brackets supplied (see Figure 17).

5. Slip the assembled trim over the faceplate and push the faceplate trim clips between the trim and the faceplate (two on the top edge and three down each side) (see Figure 18).

6. Push the burner switch through the hole in the right hand faceplate trim and connect the two blue wires to the switch connectors (see Figure 19).

7. Lift the faceplate up to the insert and align the faceplate tabs with the retainer clips; then slide the faceplate assembly down into the clips on the insert front.

8. Push the insert into the fireplace opening until the faceplate trim is sealed against the fireplace facing.

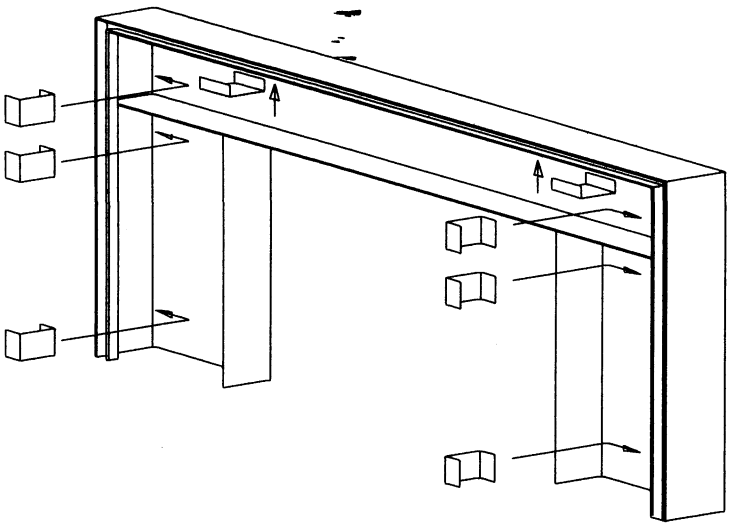


Figure 18 Faceplate Trim Installation

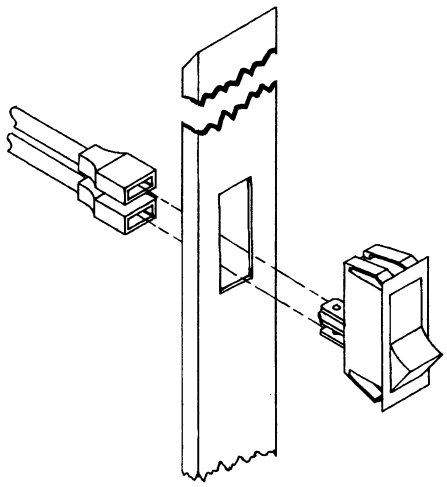


Figure 19 Burner Switch Installation

3.3.6 Firebox Component Installation

Installing Logs

Proper log placement is very important. The logs are designed to be installed in only one position so that flames do not impinge on them.

Place the rear log on the center of the rear log support and forward against the log tabs, see Figure 20.

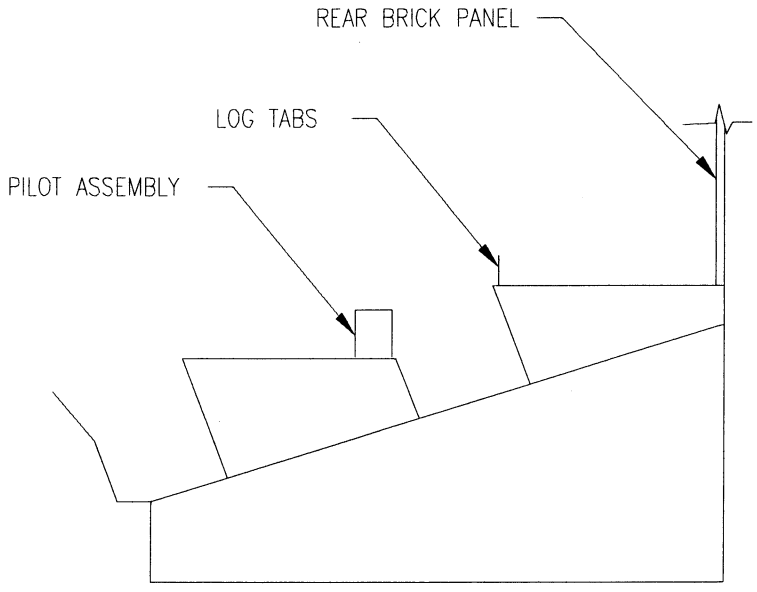


Figure 20

The front log is located by positioning it back against the pilot assembly with the right end of the log even with the right end of the log support, see Figure 21.

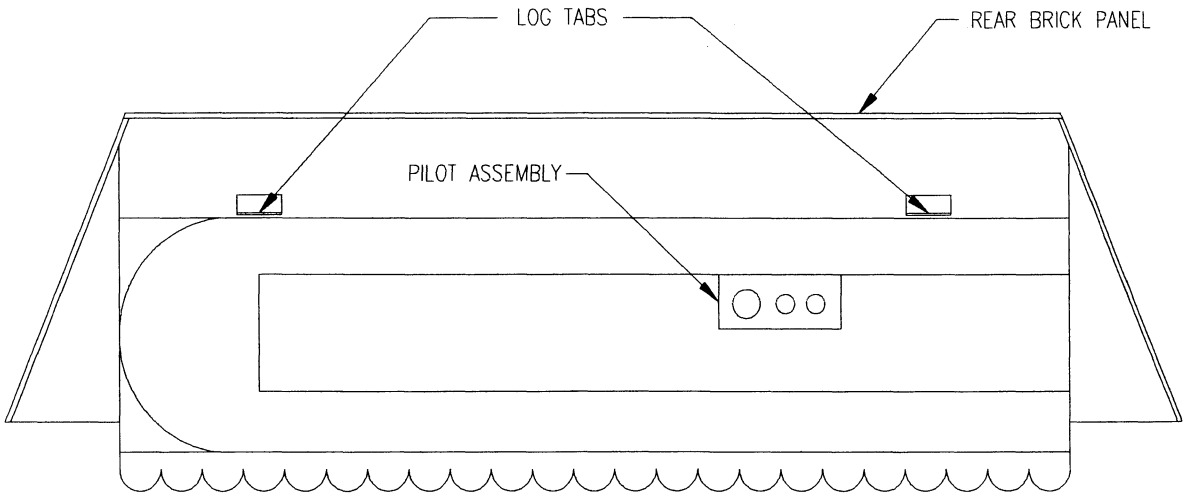


Figure 21

Place the upper right log on top of the lower logs locating it within the notched portions, and with the bark side of the log to the right.

Installing Coals

The coals should be placed along the coal grate on top of the burner, located in front of and below the front log (see Figure 22). The coals extend around the log end.

NOTE: There are two sets of more dense holes on the front burner - these should be covered sparsely, to enhanse the visual appearance of the front flames.

WARNING: Do not add any material to the appliance which will come in contact with the flames other than that supplied by the manufacturer with the appliance.

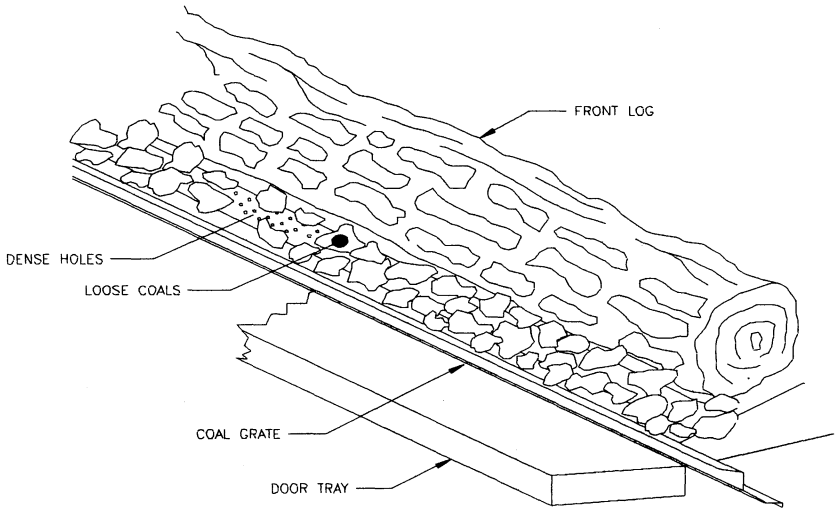


Figure 22

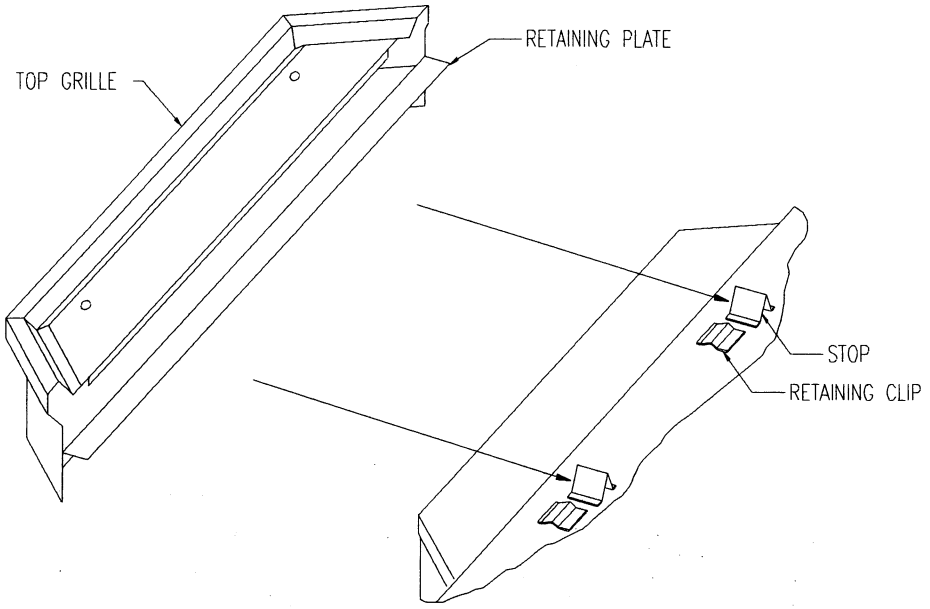
Installing The Door And Top Grille or Louvre Assembly

1. Install the door by holding it in position while securing the 4 draw latches around the door.

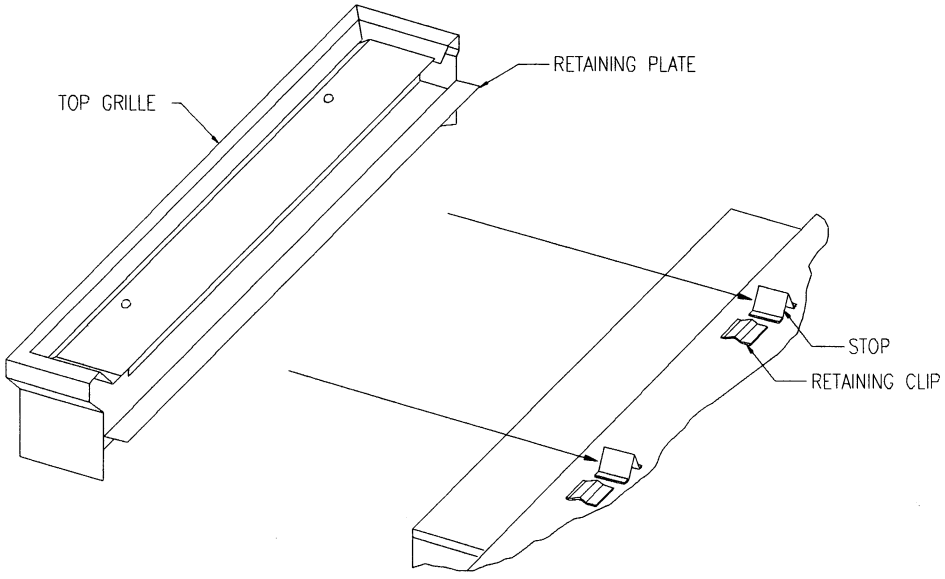
2. Place the top grille or louvre assembly above the door.

3. Push the grille or louvre retaining plate into the clips and against the stops on top of the unit (see Figure 23).

NOTE: Improper installation of the top grille assembly may cause tarnishing of the brass.



BAY (CONTEMPORARY STYLE)



FLUSH (CONTEMPORARY STYLE)
Figure 23

Installing Grille Assemblies

Handle the grilles with care as they may scratch easily. Follow the instructions included with the grille packaging.

3.3.7 Damper Adjustment

The insert has an internal damper to compensate for taller chimney installations. The damper is set at the factory for installations with up to 13' of vent (see Figure 24).

To adjust damper:

1. Remove the right side grille.
2. Remove the mesh panel.
3. Loosen, but do not remove, actuator lock screw.
4. Pull the actuator forward to the required setting for your vent length (see Table 3).
5. Tighten actuator lock screw.
6. Replace the mesh and grille.

TABLE 4DAMPER SETTINGS

CHIMNEY HEIGHT	ACTUATOR POSITION
11'	A
18'	C
24'	E
30'	K

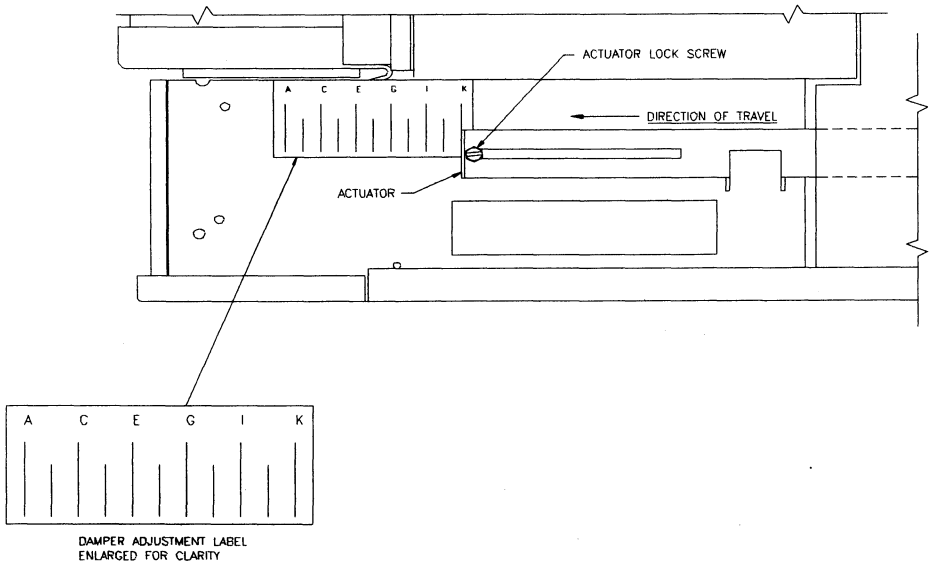


Figure 24

3.3.8 Initial Firing

When lit for the first few times, the appliance may emit an odour resulting from evaporation of paint and lubricants used in the manufacturing process. Open a door or window for ventilation. Anyone with a respiratory condition may need to leave the room during the initial firings.

NOTE: It is normal for the appliance to expand and contract while it heats up or cools down whether this is from a cold start or an equilibrium operating condition where the fan has come on or off. Under these circumstances, it is possible that the expansion/contraction of the metal parts may produce a ticking sound.

Occasionally, after a cold start, vapour may condense and fog the glass, and the flames may be partially blue. After a few minutes the moisture will disappear and the flames will become yellow. Visually check the maximum flame height after warmup as shown in Figure 25.

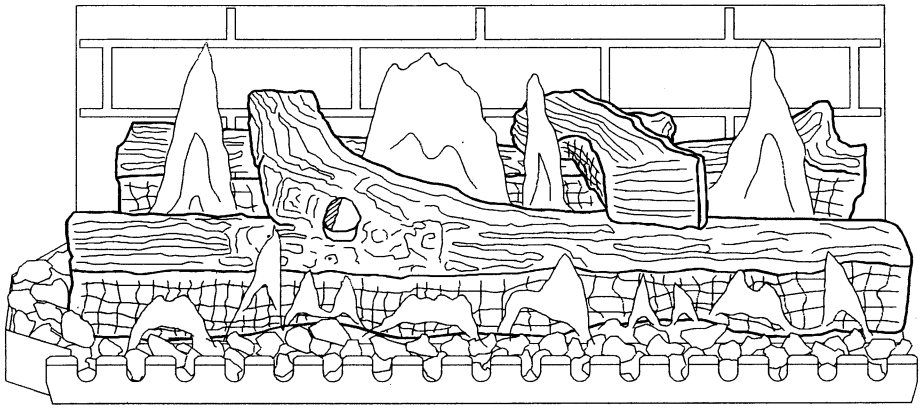


Figure 25

3.3.8.1 Manifold Pressure Regulator Adjustment

The manifold pressure regulator controls gas input and flame height, and is preadjusted at the factory. No further adjustment is required. Manifold pressure can be verified only.

3.3.8.2 Pilot Flame Adjustment

For proper operation, the pilot and main burner flames must be steady and not lifting off or floating. The top 3/8" - ½" (10-13mm) of the thermopile should be engulfed by the pilot flame. The pilot flame adjustment should be performed by a qualified service person only. To adjust the pilot flame, turn the pilot adjustment screw counter-clockwise ← to increase, and clockwise → to decrease the flame. Ensure that the pilot flame completely engulfs the thermopile (see Figure 26).

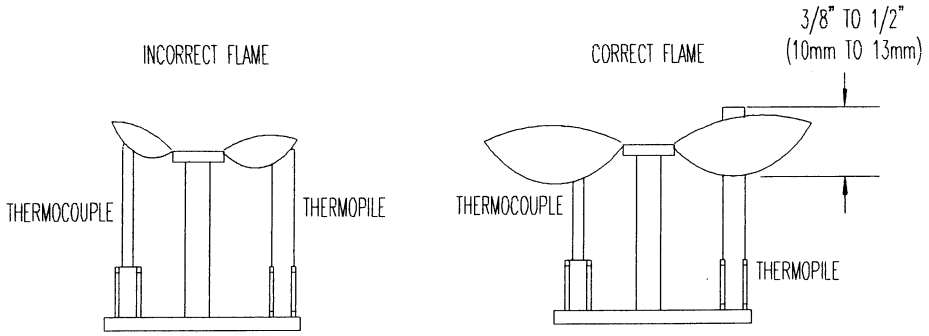


Figure 26

3.3.8.3 Altitude Adjustment

All valves have been preset and certified for installation at elevations from 0 - 4500 feet (0-1372m) above sea level. When installing this insert at higher elevations, it is necessary to decrease the input rating, by changing the existing burner orifice to a smaller size, consult local codes. Input should be reduced 4% for each additional 1000 feet above sea level. Use Tables 5A & 5B or check with the local gas authorities for proper orifice size identification. For the USA, derate the heater from sea level according to the gas installation code.

TABLE 5A ALTITUDE ADJUSTMENT BY CHANGING ORIFICE (NATURAL GAS ONLY)

ALTITUDE up to (ft)	REDUCTION (%)	ORIFICE SIZE (DMS)	TARGET INPUT (BTU/hr)	MANIFOLD PRESSURE (in. wc)
4500	-	31	36,000	3.5
5500	4	32	34,560	3.5
6500	8	33	33,120	3.5
7500	12	34	31,680	3.5
8500	16	35	30,240	3.5
9500	20	35	28,800	3.5
10500	24	36	27,360	3.5
11500	28	37	25,920	3.5

TABLE 5B ALTITUDE ADJUSTMENT BY CHANGING ORIFICE (PROPANE/LP GAS ONLY)

ALTITUDE up to (ft)	REDUCTION (%)	ORIFICE SIZE (DMS)	TARGET INPUT (BTU/hr)	MANIFOLD PRESSURE (in. wc)
4500	-	51	30,000	10.5
5500	4	52	28,800	10.5
6500	8	52	27,600	10.5
7500	12	53	26,400	10.5
8500	16	53	25,200	10.5
9500	20	54	24,000	10.5
10500	24	54	22,800	10.5
11500	28	54	21,600	10.5

3.4 MANUFACTURED (MOBILE) HOME INSTALLATION

This heater may be installed in manufactured (mobile) homes after the first sale. See and comply with the Installation Codes noted on page 2. This Direct Vent System Appliance must be installed in accordance with these instructions and the Manufactured Home Construction and Safety Standard Title 24 CFR, Part 3280, or the current Standard for Fire Safety Criteria for Manufactured Home Installations, Sites, and Communities ANSI/NFPA 501A, and with CAN/CSA Z240 MH Mobile Home Standard in Canada.

1. Venting must be installed in the building interior or in an enclosed chase.

2. Use a maximum of two offsets, for example: four 45° angles, or two 90° angles. Slope horizontal pipe at least 1/4" (6.4mm) rise per foot of run. Horizontal runs should not exceed the vertical rise.

3. The vent shall extend at least 3ft. (914mm) above the point where it passes through the roof and at least 2 ft. (610mm) above any wall, roof, or adjacent building within 10 ft. (3.1 meters) of it.

4. Do not fill the 1" (25mm) air space around the vent with insulation or any other material. Insulation placed in this area could cause adjacent combustibles to overheat.

5. Do not compromise the structural integrity of the manufactured home wall, floor, or ceiling.

6. The appliance must be grounded to the steel chassis of the home with 8 ga. copper wire using a serrated or star washer to penetrate paint or protective coating and ensure grounding. Secure the wire to the zero clearance casing.

7. See section 3.3.2 Chimney Liner Installation for the required vent components and configurations.

3.5 FIELD CONVERSIONS

Turn off the gas to the main burner and allow the heater to cool for up to 30 minutes before servicing.

Service and repair should be done by a qualified service person. Local building codes and installation codes listed in this instruction manual must be adhered to.

1. Ensure that the supplied valve subassembly has the complete valve, burner orifice, pilot orifice, gasket, and plumbing components. Note: The valve subassembly should be complete, no singular valve or orifice components need to be installed or replaced

2. Follow the instructions in section 4.7 to remove the firebox components and valve assembly.

3. Install the new valve sub-assembly under the firebox, and complete the replacement according to section 4.7.

4. Fill out the conversion label and install it near the "Caution: Hot while in operation" label inside the access door grille.

4.0 MAINTENANCE

4.1 MAINTENANCE SAFETY

Turn off the gas to the main burner and allow the heater to cool for up to 30 minutes before servicing. Service and repair should be done by a qualified service person. The appliance should be inspected before use and at least annually by a professional service technician. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, etc. It is important that the access door compartment, burner, and circulating air passage-ways be kept clean to provide for adequate combustion and ventilation air flow. Do not substitute materials or use components other than factory supplied.

4.2 RECOMMENDED SERVICE

1. Examine the venting system periodically.
2. Visually check the burner and pilot flame occasionally. Visually check height and colour of flame.
3. Clean the glass as needed. See section 4.3 for instructions on glass cleaning.
4. Have the appliance inspected annually by a professional service technician.
5. Clean the appliance regularly.

4.3 GLASS CLEANING

The inside of the glass may require periodic cleaning to remove deposits left from impurities in the gas and combustion air. For best results, use a ceramic glass cleaner or polish. A suitable cleaner is available from your dealer. Avoid the use of amonia based cleaners such as Windex™. Do not clean while hot. Do not use abrasive cleaners.

4.4 CLEANING OF GOLD AND BRASS PLATED SURFACES

Take special care and **DO NOT** use chemical or abrasive cleaners. Special care must also be taken to avoid damage to the high temperature coating applied to each brass piece. **DO NOT** touch or attempt to clean the gold or brass when the surfaces are warm. Wipe lightly only when cool with a soft damp *cotton* cloth to maintain original brilliance. Paper towels and other such abrasive materials may scratch the surface.
CAUTION: Vigorous wiping may damage the gold finish. Some cleaning agents may contain chemicals that could harm the high temperature brass coating.

4.5 BURNER & PILOT CLEANING

Periodic cleaning is necessary for proper operation.

1. Refer to section 4.7, remove the burner, and check to make sure that the burner orifice is clean.

2. Visually inspect the pilot. Brush or blow away any dust, lint or foreign debris. If the pilot orifice is plugged, disassembly may be required to remove any foreign material from the orifice or tubing. When the appliance is back in service, check the burner flame pattern with the Pilot Flame Figures in section 3.3.8.2. For relighting, refer to the lighting instructions in section 2.2.

4.6 FAN REPLACEMENT & ELECTRICAL SCHEMATIC

Fan Service

1. **Turn off all electrical power to the fireplace.** Unplug the fan or turn the circuit breaker off.
2. Remove the top louvre or grille assembly and door.
3. Remove the four screws which locate the lower grill assembly, and remove the assembly.
4. Remove the electrical shield screw and the electrical shield (see Figure 27).
5. Remove the two fan bracket to fan base securing screws (see Figure 28).

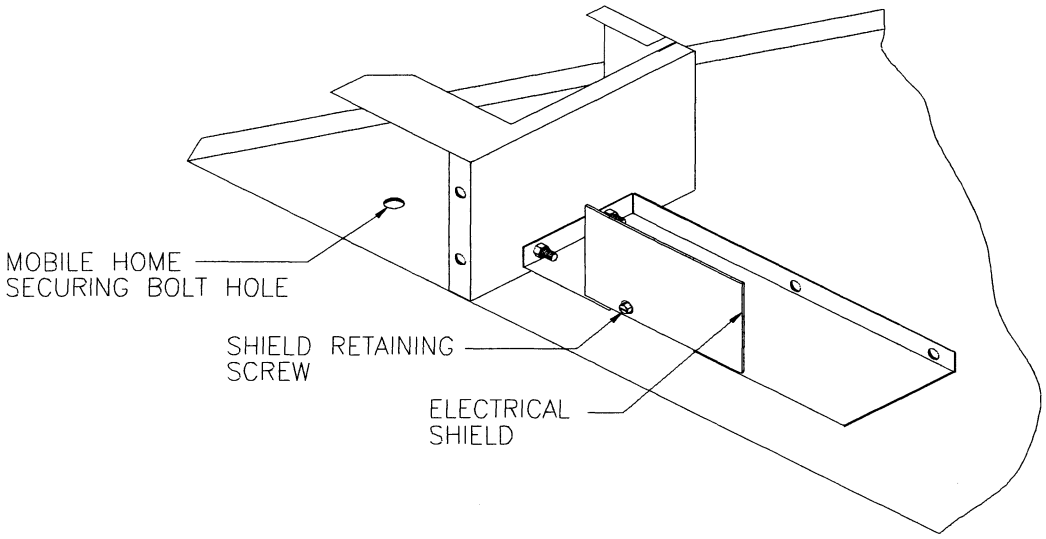


Figure 27

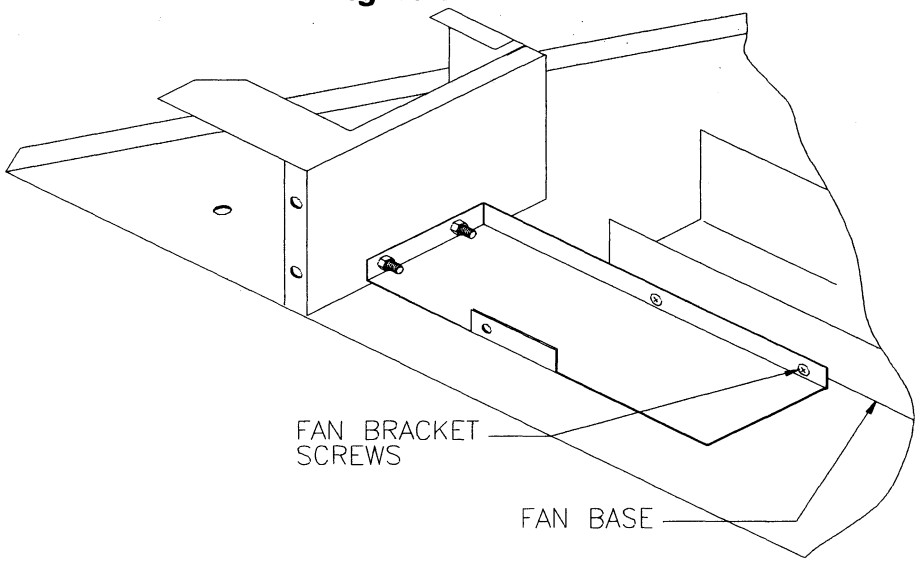


Figure 28

6. Remove the two fan bracket retaining nuts and the fan bracket (see Figure 29).
7. Disconnect the two fan wires from the thermal switch while being careful not to bend the aluminum bracket (see Figure 30).
8. Disconnect the remaining fan wire at the inline connector.
9. Remove the fan and bracket assembly by sliding it forward and out.

10. Reassemble in reverse order.
11. See Figure 31 for fan electrical schematic.

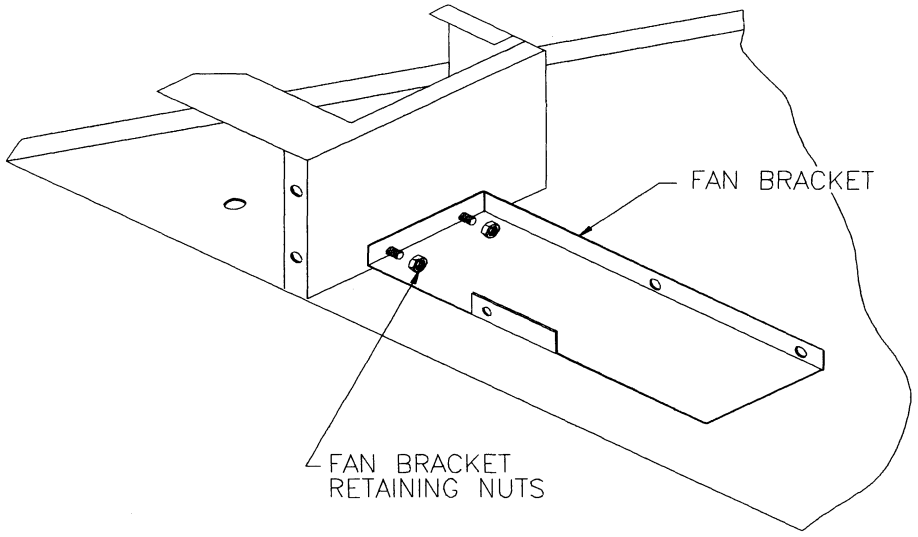


Figure 29

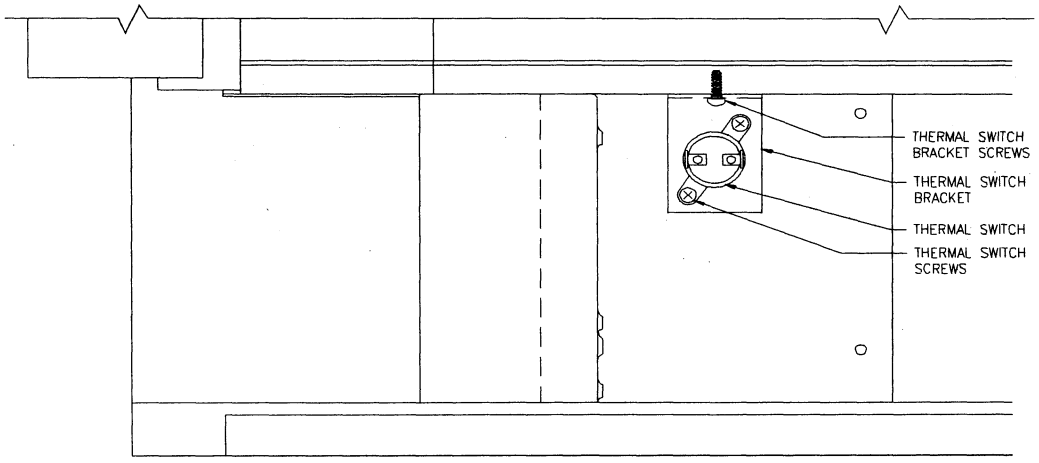


Figure 30

If necessary, the Fan Thermal Switch may be replaced as follows:

1. Turn off all electrical power to the insert; unplug power cord or turn circuit breaker off.
2. Remove the louvre assembly and door.
3. Remove the shield by removing two screws (see Figure 27).
4. Remove the fan thermal switch mount bracket by removing two screws (see Figure 30).
5. Disconnect the two wires from the switch.
6. Remove the two screws securing the switch.
7. Reassemble in reverse order.

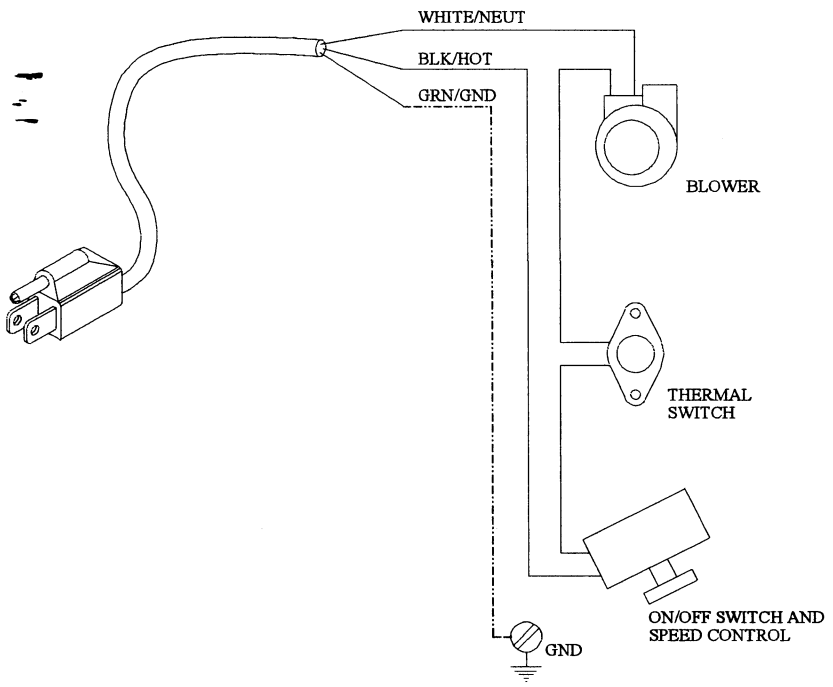


Figure 31

4.7 FIREBOX DISASSEMBLY & REASSEMBLY

The following procedure is to be performed by qualified service personnel ONLY.

Turn off the gas supply and allow the heater to cool before proceeding.

Remove the valve as follows:

1. Remove the louvres.
2. Remove the door.
3. Remove the logs and coals.
4. Remove the burner tray assembly as a unit by lifting it up and out.
5. Undo the gas flexline connection at the gas valve. These fittings are flared and do not require sealant.
6. Remove the screw securing the pilot assembly to the pilot bracket.
7. Remove the three screws securing the pilot cover plate and remove the plate.
8. Remove the nut securing the orifice to the firebox bottom.
9. Remove the four screws holding the valve bracket to the firebox bottom.
10. Remove the blue wires to the valve. Once the fasteners are removed, the valve/pilot assembly can be lowered down and rotated out through the front of the appliance as a complete unit.
11. Reassemble the components in reverse order.

5.0 TROUBLE SHOOTING

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
I. Pilot will not light after repeated triggering of the red piezo ignition button	*A. No spark at electrode (weak or no heat source for pilot ignition)*	
	1. Improper ignition	1. Align the electrode with 1/8" gap to pilot hood
	2. Poor connections at starter and ignition electrode	2. Reconnect if loose
	3. Broken ceramic cover on ignition electrode	3. Replace pilot assembly
	4. Defective piezo igniter	4. Replace piezo igniter
	5. Poor grounding of piezo igniter	5. Tighten mounting nut and/or igniter screws
	B. No gas or low gas pressure	
	1. Gas line shut off(s) may not be turned on	1. Turn on shut-off valves
	2. No gas supply (LPG)	2. Check propane tank; you may be out of fuel
	3. Air in gas lines	3. Purge gas lines
	4. Gas lines may not be connected	4. Connect all gas lines
	5. Low pressure may be caused by bent line	5. Check for a kinked line
	6. Valve control knob not fully depressed in "PILOT" position	6. Fully depress control knob
II Pilot will not stay lit after following the lighting instructions	*Thermocouple/Thermopile/Valve*	
	1. Weak or improperly located pilot flame	1. Adjust and clean pilot. The flame must impinge on or engulf the thermocouple, as shown in Figure 26.
	2. Defective thermocouple	2. Replace thermocouple.
	3. Overheated thermopile	3. Remove any foreign objects that are in the way
	4. Thermocouple not installed properly	4. Make sure all wire connections at the gas valve terminals are tight and the thermocouple is fully inserted into the mounting bracket.
	5. Open wire connection in pilot circuit	5. Check wire continuity and connections in the pilot circuit.

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
II Pilot will not stay lit after following the lighting instructions (continued)	***Thermocouple/valve (continued)***	
	6. Defective valve	6a. Connect the millivolt meter probes to the thermopile terminals on the gas valve. Turn the valve to the "PILOT" position, depress and light. If the meter reading is greater than 250 millivolts after 30 seconds, the thermopile is good. If the pilot does not stay lit, the valve is defective. Check section "B" below, before replacing valve.
		6b. Alternatively, remove the thermocouple and all wires from the valve. Check the pilot solenoid by setting the meter to the 'Ohm' scale. A good reading is .015 - .021 Ohms. See Figure 32.
	B. Defective safety Circuit	
	1. Improperly wired	1. Rewire correctly.
	2. Loose or defective connections	2. Check continuity, tighten wiring or connections and repair.
	3. Defective electromagnet power unit (EPU)	3. Check and replace if required.
III. Main burner will not light	1. Valve control off	1. Turn to "ON" position.
	2. Blockage at the burner (line, orifice, or ports)	2. Check and clean.
	3. Defective wall switch or thermostat	3. Conduct a continuity test or jumper wire test and replace if defective.
	4. Defective wiring or connections	4. Conduct a test with a jumper wire and repair as required.
	5. Excessive length of thermostat wire from valve to wall switch or thermostat	5. Reduce wire length to less than 100 feet, or increase wire size.
	6. Wall switch or thermostat incorrectly wired	6. Wire correctly.
	7. Defective remote control	7. Check batteries and replace if required
	8. Mismatched remote control frequencies	8. Match frequencies
	9. Defective valve	9a. Turn valve and "ON/OFF" switch to the "ON" position. Check with millivolt metre at terminals TP-TH. Millivolt metre should read greater than 100 millivolts. If the reading is OK and the burner does not come on, replace the gas valve.
		9b. Alternatively, remove the thermocouple and all wires from the valve. Check the pilot solenoid by setting the meter to the 'Ohm' scale. A good reading is 2.2 - 2.3 Ohms. See Figure 33.

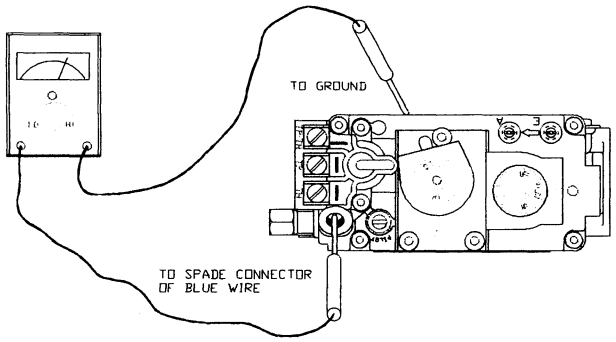


Figure 32

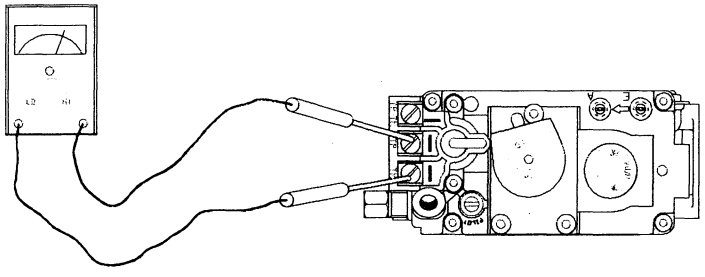


Figure 33

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
III. Main burner will not light (continued)	10. Thermopile may not be generating sufficient voltage - 325 mV.	10. Recheck using the millivolt meter. The pilot flame may not be high enough for the flame to properly engulf the thermopile. If so, adjust and reset. If voltage is still insufficient, replace thermopile.
	11. Wall switch, thermostat, remote control, or wires are defective.	11. Follow previous corrective action, check switch and wiring. Replace where defective.
IV. Soot deposits on glass	1. Flame impingement on logs	1. Adjust the log set to avoid direct flame impingement. Follow log placement instructions.
	2. Improper venturi setting	2. Ensure the air shutter is properly set to NG = .39" and LP = .30".
	3. Foreign material impeding burner	3. Ensure that no foreign material blocks burner flame ports.
	4. Air inlet blocked or restricted	4. Clean air inlets.
	5. Vent system is restricted or inadequate	5. Correct flue as required.
V. Flame burns blue and lifts off burner	1. Insufficient combustion air being supplied	1. Ensure that no foreign material blocks air inlets and that the burner shutter is correctly adjusted. Ensure the vent is adequate.
	2. Manifold pressure set too high	2. Check manifold pressure.
	3. Vent system restricted	3. Check vent system
VI. Frequent pilot outage problem	See V	
VII. Flames impinge on firebox top	1. Vent system is restricted or inadequate	1. Correct flue as required.
	2. Manifold pressure too high	2. Check manifold pressure as required.

6.0 REPLACEMENT PARTS

When requesting service or replacement parts for your insert, please provide model number and serial number. All parts listed below may be ordered from an authorized dealer.

DIRECT VENT GAS INSERT REPLACEMENT PARTS LIST

COMMON PARTS (CA & CB)	
PART No.	**DESCRIPTION**
JD006	Fan Speed Control
JD007	Blower Assembly
10000	Valve Assembly, NG
10001	Valve Assembly, LP
CA1023	Burner NG & LP
CZ0097	Burner Orifice Jam Nut
JD0049	Burner Orifice LP
CZ0096	Burner Orifice NG
HE23	Burner Switch On/Off
HB06	Firebox Door Gasket
JD0069	Front Log
JD0070	Log Rear
JD0071	Log Top
JD030	Log Set
CZ037	Coals
HM22	Grille Springs (2/unit)

COMMON PARTS (CA & CB)	
PART No.	**DESCRIPTION**
HE57	Fan Thermal Switch
HG55	Flex Gas Line With Fittings
HG38	Ignitor Cable
BN022	On/Off wires (2/unit)
HG58	Piezo Ignitor
HG36	Pilot Assembly LP With Ignitor
HG35	Pilot Assembly NG With Ignitor
JD0063	Pilot Gas Line
HG51	Pilot Orifice LP
HG52	Pilot Orifice NG
HG37	Thermocouple
HG25	Thermopile
CA1026	Left Hand Side Brick Panel
CA1027	Right Hand Side Brick Panel
CA1031	Rear Brick Panel
10002	Brick Panel Set

BAY STYLE COMMON PARTS (CA)	
PART No.	**DESCRIPTION**
CA109	Door Assembly
HB33	Gasket, Bay Glass (Tadpole)
BC0088	Bay Door Glass
HG43	Extension Knob, On/Off, 3"
HG44	Extension Knob, High/Low, 3"

FLUSH STYLE COMMON PARTS (CB)	
PART No.	**DESCRIPTION**
JF116	Door Assembly
HB33	Gasket Glass Tadpole
JF1005	Flush Door Glass
HG60	Extension Knob, On/Off, 1.5"
HG61	Extension Knob, High/Low, 1.5"

DIRECT VENT GAS INSERT
REPLACEMENT PARTS LIST

TRADITIONAL BAY PARTS (CA)	
PART No.	**DESCRIPTION**
JD064	Access Door Assembly
JD0080	Door Trim Lower Brass
JD0074	Door Trim Upper Brass
JD036	Upper Grille Assembly
JD065	Lower Grille Assembly
JD0028	Louvre Brass Top

TRADITIONAL FLUSH PARTS (CB)	
PART No.	**DESCRIPTION**
JF107	Access Door Assembly
JF1008	Door Trim Lower Brass
JF1007	Door Trim Upper Brass
JF119	Upper Grille Assembly
JF110	Lower Grille Assembly
JF1025	Louvre Brass Top

CONTEMPORARY BAY PARTS (CA)	
PART No.	**DESCRIPTION**
JG115	Side Grille Assembly, Black
JG116	Access Door Assembly, Black
JG1008	Louvre, Top Gold
10003	Louvre, Black
JG131	Side Grille Assembly, Gold
JG130	Access Door Assembly, Gold
JG1023	Door Trim Lower Gold
JG1022	Door Trim Upper Gold
JG1018	Door Trim Lower Black
10004	Door Trim Upper Black
JG118	Lower Grille Assembly,Black
JG132	Lower Grille Assembly,Gold
JG120	Upper Grille Assembly, Gold
JG122	Upper Grille Assembly, Black
JH1017	Gold Truss Screw
10006	Black Truss Screw

CONTEMPORARY FLUSH PARTS (CB)	
PART No.	**DESCRIPTION**
JH107	Access Door Assembly, Black
JH113	Access Door Assembly, Gold
JH1011	Louvre, Top Gold
10005	Louvre, Black
JH1017	Gold Truss Screw
10006	Black Truss Screw
JH1009	Door Trim Lower Gold
JH1010	Door Trim Upper Gold
JH1012	Door Trim Lower Black
10007	Door Trim Upper Black
JH109	Lower Grille Assembly, Black
JH114	Lower Grille Assembly,Gold
JH110	Upper Grille Assembly, Gold
JH112	Upper Grille Assembly, Black