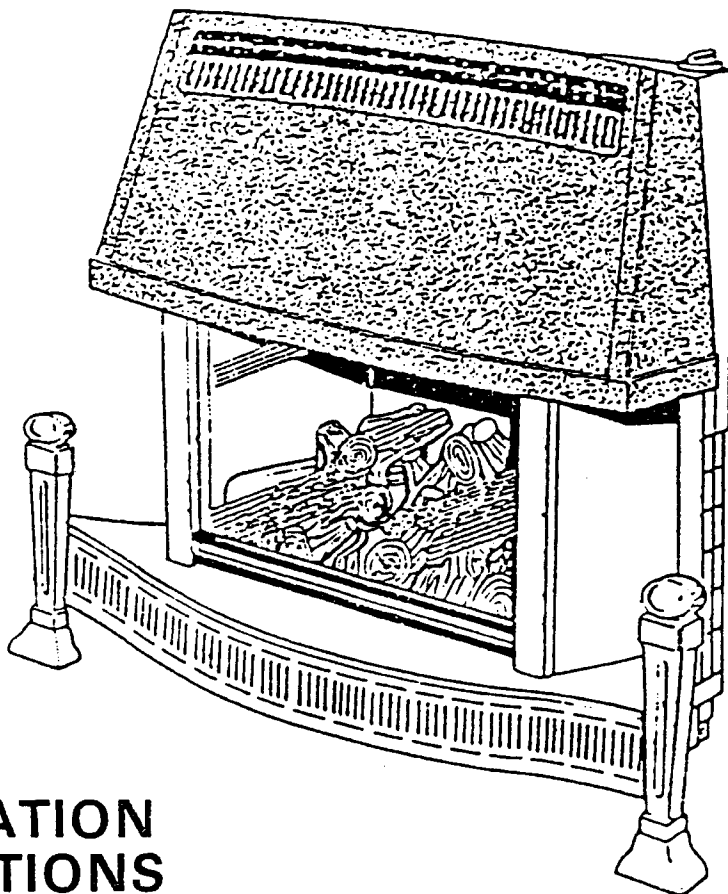




# Valor

## Homeflame

Direct Vent Wall Furnace  
MODEL 479CN  
FOR USE WITH NATURAL GAS



### INSTALLATION INSTRUCTIONS

LEAVE THESE INSTRUCTIONS WITH THE OWNER

#### FOR YOUR SAFETY

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

#### 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.

**Valor HEATING LIMITED**  
ERDINGTON . BIRMINGHAM B24 9QP . ENGLAND

DISTRIBUTED BY

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# 1. INSTALLATION

## 1.1. GENERAL

This furnace is certified by the Canadian Gas Association for installation on an outside wall and for use with natural gas. The installation must conform with local codes. In the absence of local codes, the installation must conform with the current CAN/CGA-B149.1 Installation Code (Natural Gas).

This appliance is not intended for use with a thermostat.

**Only qualified (licensed or trained) personnel should install the furnace.**

## 1.2. LOCATION

The furnace must be located on an outside wall which has a total thickness between 3½ in. minimum and 15½ in. maximum. The vent clearance hole is 7¾ in diameter.

### 1.2.1. INSIDE THE ROOM

Choose a room location against an outside wall which will allow the furnace to be sited as shown in figure 1.

Use the wall plate unit supplied by attaching it to the wall prior to mounting the heater. It is designed to attach over drywall or panelling into framing studs on 16" centers (see fig. 2). The weight of the appliance is carried on the wall plate unit. This arrangement is 0" clearance to combustible walls. Facing materials such as tile or marble up to ¾" thickness may be butted against the wall plate edges to form a decorative surround.

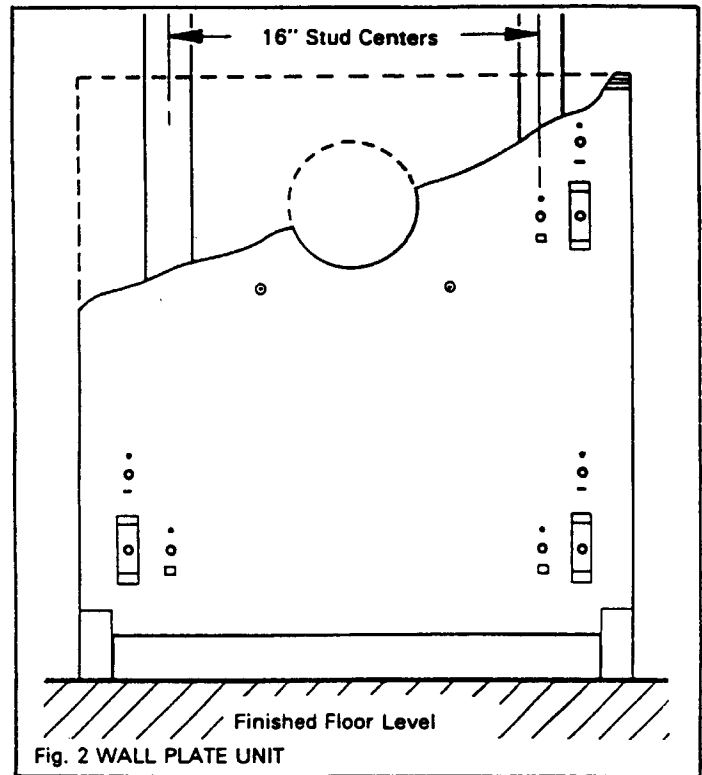


Fig. 2 WALL PLATE UNIT

Additional wall finishes thicker than ¾" (e.g. mantles) must be kept to the required side and top clearances as in Fig. 1.

Install only on hard surfaced materials. It is recommended for aesthetic considerations and ease of maintenance that the appliance be installed on a hearth finished with brick, ceramic tile, marble etc. Raising the hearth slightly will help to minimise dust and lint accumulation under the unit.

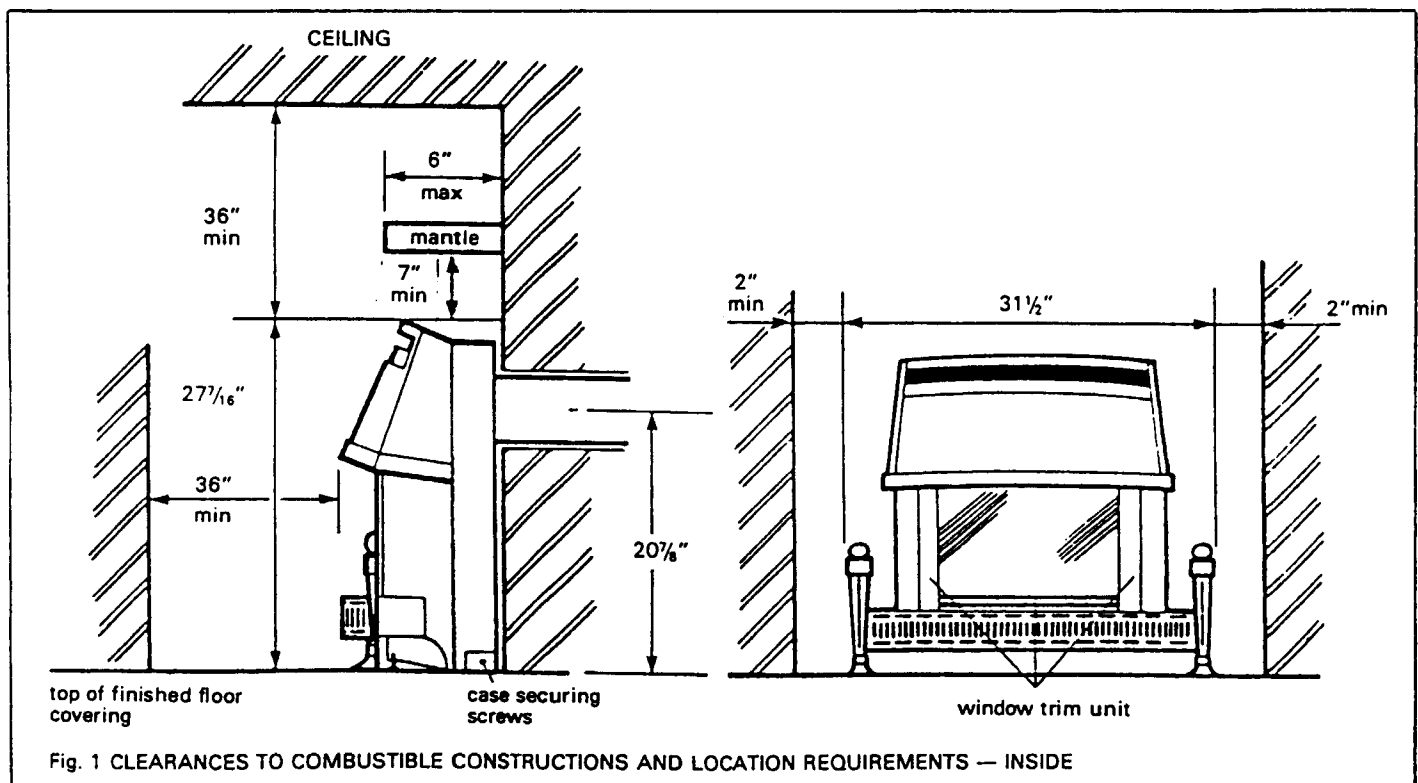


Fig. 1 CLEARANCES TO COMBUSTIBLE CONSTRUCTIONS AND LOCATION REQUIREMENTS — INSIDE

If the furnace is to be installed directly on carpeting, vinyl tile or other combustible material other than wood flooring, the furnace should be installed on a hearth extending the full width and depth of the appliance. Take account of the thickness of this panel when marking the vent opening position.

### 1.2.2. OUTSIDE THE WALL

This direct vent appliance is designed to operate when an undisturbed air flow hits the outside vent terminal from any direction. Minimum clearances from this terminal which could disrupt the air flow or cause a safety hazard are shown in fig. 3 and the table below. These clearances must be maintained.

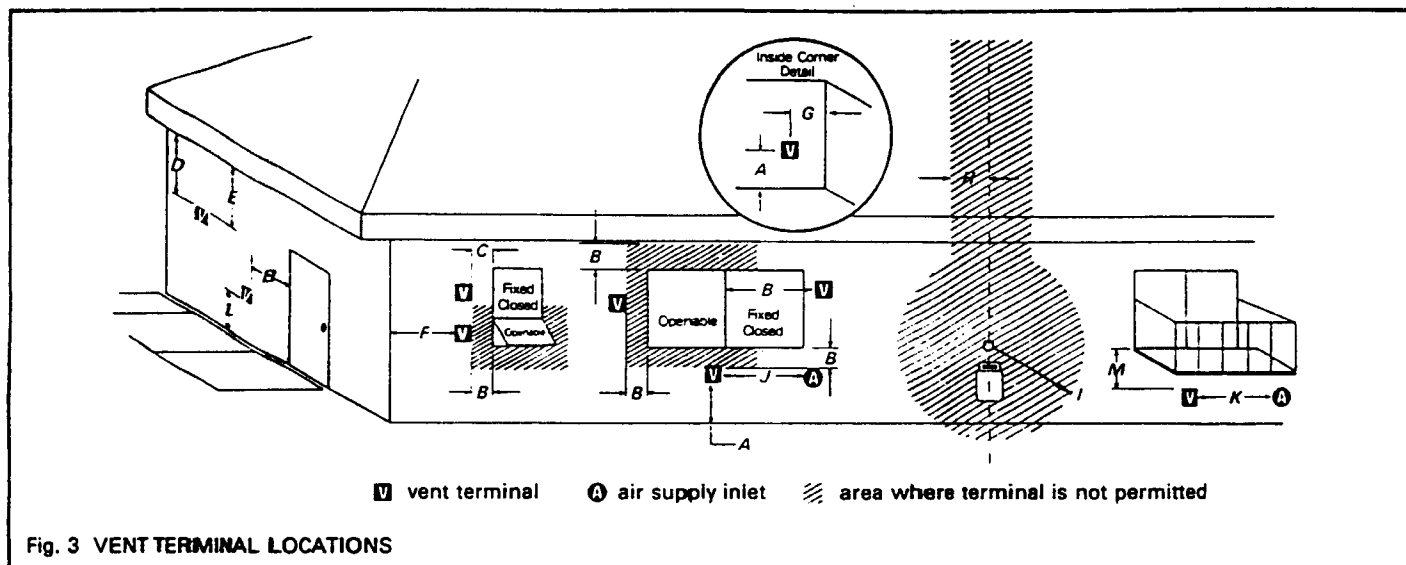


Fig. 3 VENT TERMINAL LOCATIONS

KEY	VENT TERMINAL LOCATIONS - MINIMUM DISTANCES - SEE FIG. 3	MINIMUM CLEARANCE	
		Ins.	Cms.
A	Clearance above grade, veranda, porch, deck or balcony	12	30
B	Clearance to window or door that may be opened	12	30
C	Clearance to permanently closed window (to prevent condensation on window)	12	30
D	Vertical clearance to ventilated soffit located above the terminal within a horizontal distance of 2 feet (60cm) from the center-line of the terminal	18	46
E	Clearance to unventilated soffit	12	30
F	Clearance to outside corner	12	30
G	Clearance to inside corner	12	30
H	Not to be installed above a meter/regulator assembly within this distance horizontally from the center-line of the regulator	36	90
I	Clearance to service regulator vent outlet	72	180
J	Clearance to non-mechanical air supply inlet to building or the combustion air inlet to any other appliance	12	30
K	Clearance to a mechanical air supply inlet	72	180
L	Clearance above paved side-walk or a paved driveway located on public property Note: A vent shall not terminate directly above a side-walk or paved driveway which is located between two single family dwelling and serves both dwellings.	84	210
M	Clearance under veranda, porch, deck or balcony Note: Only permitted if veranda, porch, deck or balcony is fully open on a minimum of two sides beneath the floor	12	30

Note: Local codes or regulations may require different clearances.

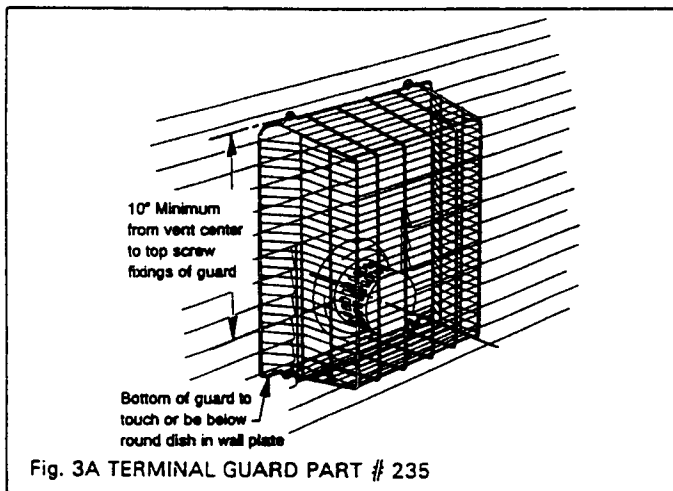
The vent terminal must not be recessed into a wall or siding.

The vent outlet should also be positioned where it will not be covered by any snowdrifts.

### WARNING

If the outside vent terminal is to be located where it will be accessible to any person, a guard must be fitted over the terminal to prevent damage to the vent and to prevent it being touched. The vent terminal becomes very hot in use and could cause burns.

A special guard is available from your supplier — Valor part # 235. (See fig. 3A).



### 1.3. GAS

This furnace must only be used with natural gas with a pressure at the appliance inlet between a maximum of 7in. W.C. and a minimum of 5in. W.C.

### 1.4. FURNACE PACK CONTENTS

The pack contains:-

- 1 Furnace Interior unit fitted with window unit, controls and ceramic log support bed. The bed is held in place inside the window by cardboard packing.
- 1 Wall Plate Unit.
- 1 Window Surround Trim Unit.
- 1 Outer Case.
- 1 Vent Inlet/Outlet Unit.
- 1 Outer Vent Shield Tube.
- 2 Vent Outside Wall Plates.
- 5 Ceramic Logs in styrofoam pack.
- 2 Ceramic Side Cheeks.
- 1 Bag containing Fixing Screws and Plugs.
- 1 Gas Supply Connector.
- 1 Ceramic Fibre Sealing Ring.

Check that all the contents are in the pack and are undamaged.

## 1.5. PREPARE VENT OPENING

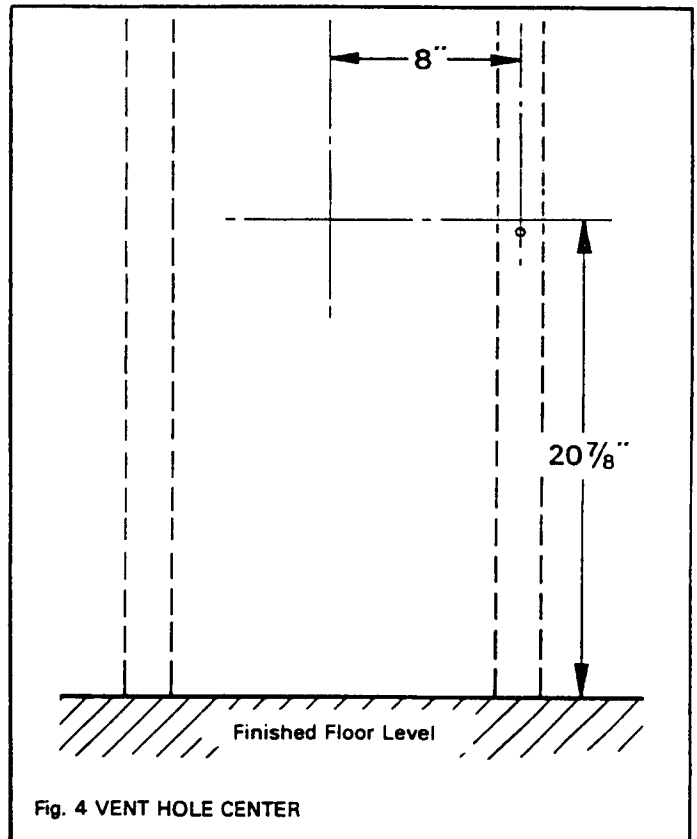
### IMPORTANT

Before cutting the vent opening in the wall, make sure that the finished floor level is known, this floor level must include any loose hearth or panel which will be fitted under the furnace. Once the vent opening in the wall is cut out it will not be possible to alter the position of the furnace without re-cutting the wall.

- (a) Place dust sheets on the floor.
- (b) Locate the right side wall framing stud. Mark the center of the vent hole on the wall 8" to the left of this stud and  $20\frac{7}{8}$ " above the finished floor level (see fig. 4). The height of the vent hole is important. If it is too low, it will be impossible to fit the furnace casing. If it is too high, the fender andirons will be suspended above the floor (the andirons can be adjusted slightly to allow for a small inaccuracy in the height of the vent hole).

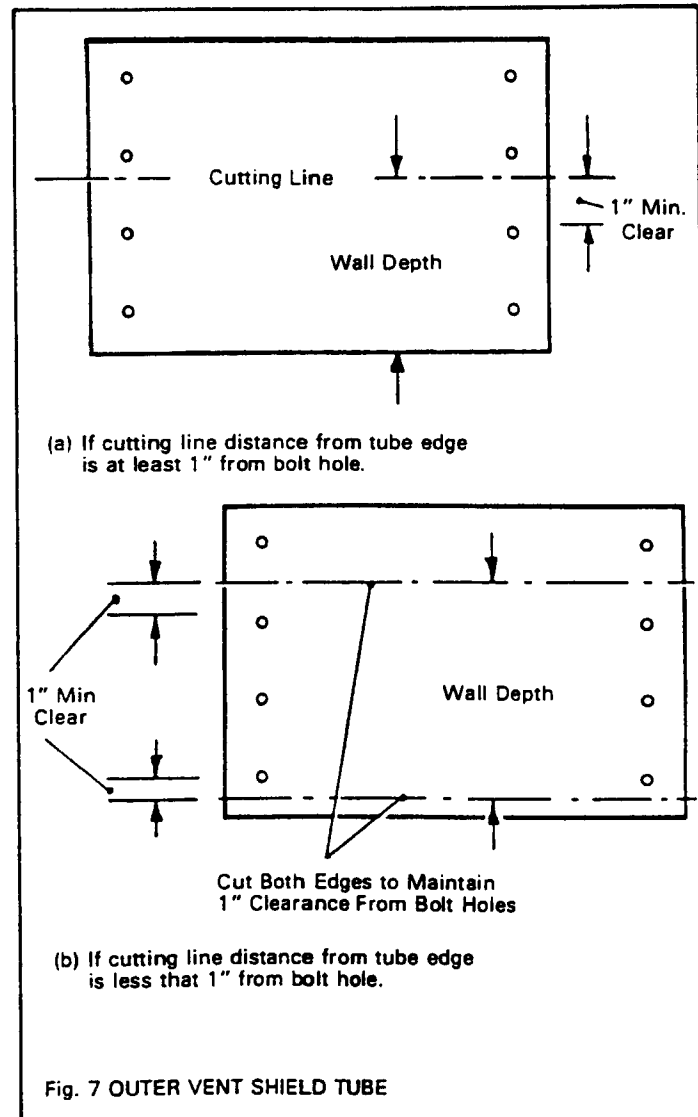
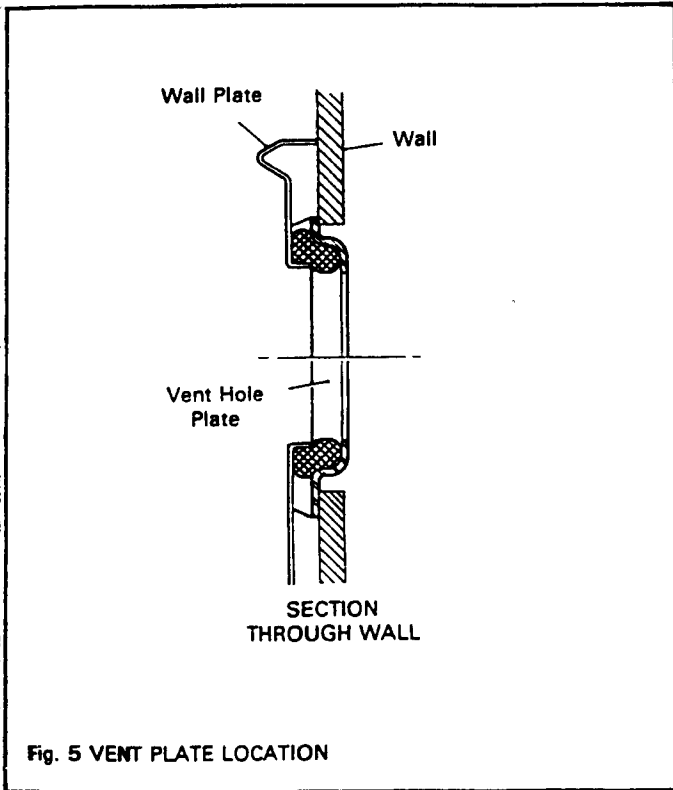
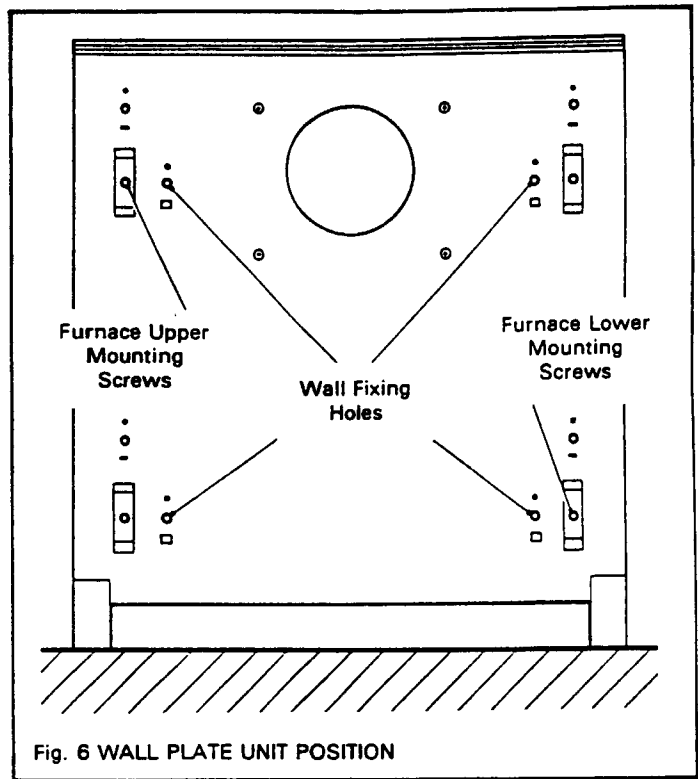
A rough check of the marked position can be made by placing the wall plate unit against the wall and aligning the center of the vent hole in the plate with the marking on the wall.

- (c) Cut  $7\frac{3}{8}$ " diameter vent hole through the wall making sure it is straight and level.



## 1.6. ATTACH WALL PLATE UNIT AND OUTER VENT SHIELD TUBE

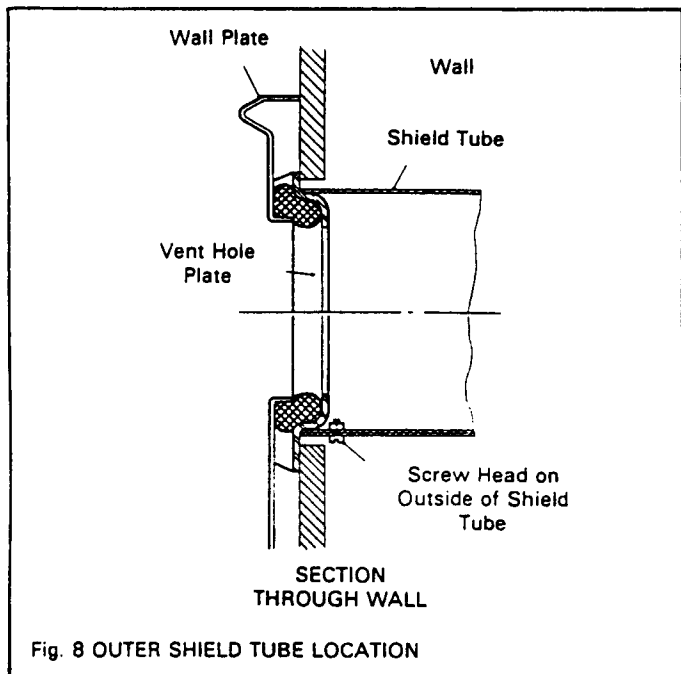
- Place the wall plate unit against the wall with the vent plate located inside the hole in the wall (see fig. 5).
- Mark the wall with the positions for fixing the wall plate unit. The unit is fixed to the wall through the brackets which are attached to the rear of face of the wall plate (see fig. 6).
- Drill the fixing holes at the marked positions on the wall and insert wall plugs or anchors where required. The appliance is supplied with # 12 x 2" wood screws and wall plugs.
- Replace the wall plate unit. Fit a washer under the head of each of the four wood screws and fasten the wall plate unit securely to the wall using the woodscrews.



- (e) Prepare the Outer Vent Shield Tube as follows:-
- Measure the total wall depth from its outside surface to the indoor face of the finish wall.
  - The outer vent shield tube is supplied coiled around the vent unit. Flatten it and cut exactly to the total wall depth. Make sure that the cutting line is at least 1 inch away from the nearest bolt hole (see fig. 7).
  - Form the shield into a tube with the holes aligned. Fasten using the # 10 bolts and nuts provided, with the bolt heads outside.
  - Insert the shield tube into the wall from the outside wall. Push the tube firmly in so that it locates fully over the dished diameter of the inside vent plate (see fig. 8). Trim the tube if necessary. If required, the outside end of the tube can be temporarily held straight by inserting cardboard/wood etc. wedges round the wall hole to prevent it tilting.

## 1.7 PREPARE THE VENT UNIT

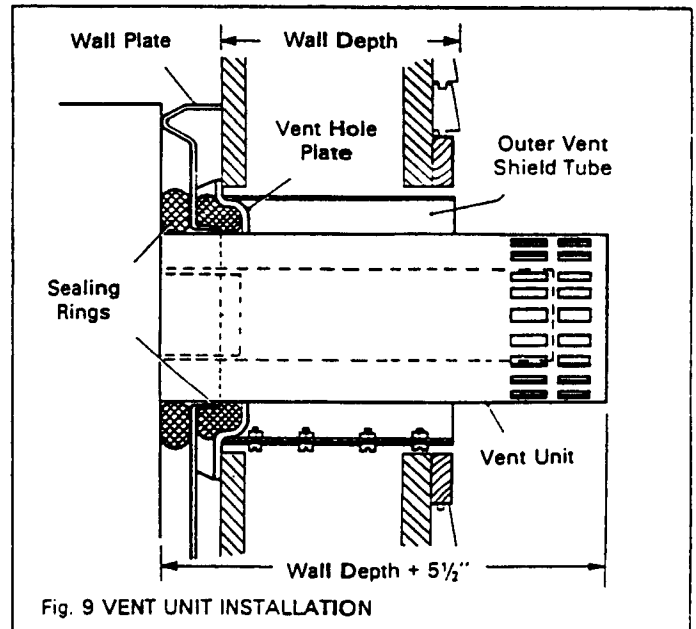
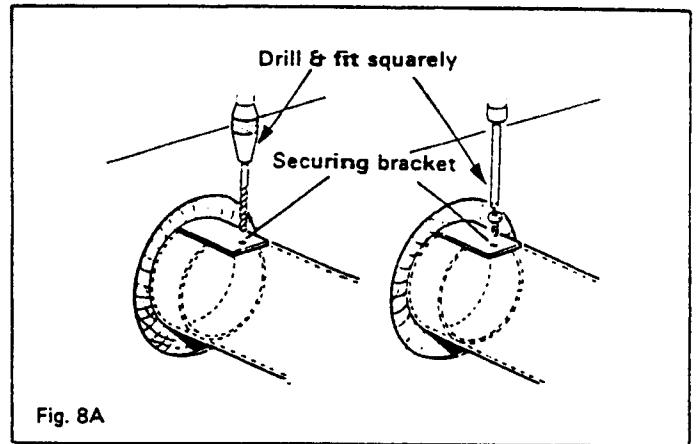
- (a) Mark the vent inlet/outlet tube unit at a length of the total wall depth plus 5 1/2 in. measured from the outside end of the vent cap. Insert the styrofoam support and cut off the vent tubes squarely at the marked position.



### IMPORTANT

MAKE SURE ALL STYROFOAM IS REMOVED FROM THE VENT UNIT AFTER CUTTING.

- (b) Fit the vent inlet/outlet unit on to the furnace outlet collars, pushing on firmly. **Make sure that the seam on the outer tube is not at the bottom.** A # 6 x 3/8" tapping screw is supplied to help secure the vent unit to the furnace outlet. Insert a 3/32" drill through the hole in the vent securing bracket situated above the outer collar. (See fig. 8A). Drill into the vent outer tube and secure with the screw. Fit the soft ceramic sealing ring supplied over the vent inlet/outlet unit.



## 1.8. FASTEN FURNACE TO WALL

- (a) Fit the furnace upper mounting screws to the threaded bushes in the two top brackets on the front surface of the wall plate (see fig. 6). Slacken the screws to allow the furnace to be hung. Place the furnace unit (with vent unit attached) onto the wall plate unit hooking the keyholes at back of the furnace over the screws.

(b) Insert the lower fastening screws and tighten all four screws. The top right screw is accessible through the cover plate situated below the control knob. Slacken the cover plate screw and swing the plate to the side of the access hole. Replace the cover and tighten the screw after fastening the furnace to the wall.

(c) Fit a wall plate over the outside wall end of the vent unit with the dished projection to the inside. Push the plate up to the wall so that the dished projection locates inside the vent shield tube. (Remove any temporary securing wedges).

If possible, while still maintaining a sound connection to the appliance collars, slope the vent unit down slightly away from the outside wall so that any rain will run away from the furnace. The vent unit must never slope upwards from the appliance to the outside. This could cause rain water to accumulate in the appliance. Mark the wall plate fixing holes on to the wall. Remove the plate.

(d) Drill the fixing holes in the wall and insert plugs if necessary.

(e) Replace the wall plate locating it firmly inside the shield tube.

(f) Fit a sealing ring over the vent unit and push in to the wall plate.

(g) Fit the remaining wall plate over the vent unit with the dished projection pointing outwards. Line up the screw holes and start the mounting screws. Apply a clear silicone rubber sealant under the edges of the wall plate and tighten the screws. Apply a bead of silicone sealant around the vent tube where it exits the wall plate (See Fig. 10).

## 1.9. CONNECT THE GAS SUPPLY

Gas connection is  $\frac{3}{8}$ " NPT and is at the right side. We recommend using only new black iron or steel pipes. Copper tubing may be acceptable — CHECK LOCAL CODES.

The gas supply line must be sized and so installed to provide a supply of gas sufficient to meet the maximum demand of the furnace without undue loss of pressure.

Sealants should be applied lightly to male threads to ensure excess sealant does not enter lines.

The supply system should include a manual shut off valve and union in the line so that the furnace can be disconnected for servicing. Unions in gas lines should be of ground joint type.

A plugged  $\frac{1}{8}$ " NPT tapping must be installed in the line. The tapping should be accessible for test gauge connections upstream of the gas supply connection to the furnace.

All gas piping and connections must be tested for leaks after installation or servicing. All leaks must be corrected immediately.

When testing for leaks:-

(a) Make sure that the control of the furnace is at the OFF position.

(b) Open the manual shut off valve.

(c) Test for leaks by applying a liquid detergent to all joints.

Bubbles forming indicate a gas leak.

NEVER USE AN OPEN FLAME TO CHECK FOR LEAKS.

(d) Correct any leak detected immediately.

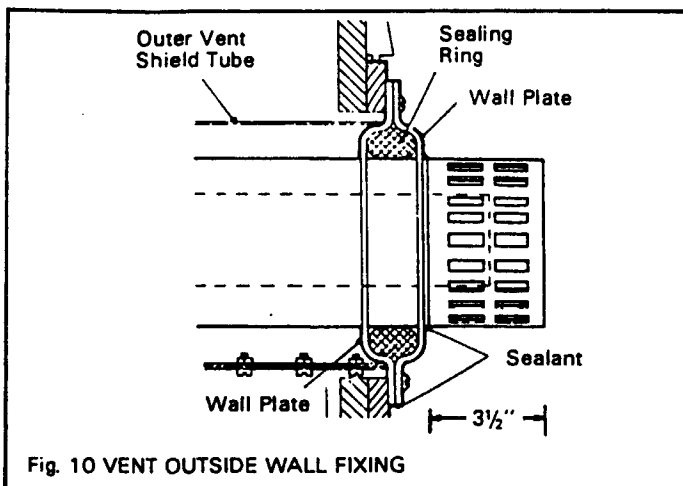


Fig. 10 VENT OUTSIDE WALL FIXING

## 1.10. ASSEMBLE THE LOGS

- (a) Remove the window unit by unscrewing the twelve wing nuts. Put the window and nuts in a safe place.
- (b) Remove the cardboard packing which holds the ceramic log support bed in position during transit. Check that the support bed is correctly located with its front edge under the front lip of the fire box.
- (c) Take the ceramic side cheeks from the pack and place in position. The cheeks are left and right handed. (See Fig. 11).

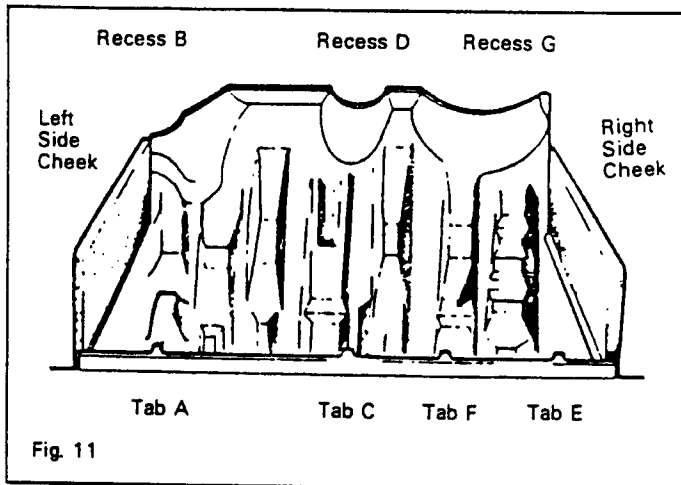


Fig. 11

- (d) Place the logs in position as follows.

In order to obtain the correct performance, the logs must be positioned as in these instructions. A poor flame pattern will result if the logs are positioned other than as described below. Take care to duplicate the positioning as shown in each illustration. Each log has a number stamped on it which corresponds with the number referred to in these instructions. **WHEN IN POSITION THE NUMBERS ON THE LOGS FACE DOWN.**

- (i) (Refer to Figs 11 & 12). Place the log No. 1 at the left side of the log support bed. Locate the hole at the front edge of the log onto tab 'A' on the front log support rail and locate the projection underneath the log into recess 'B' in the ceramic support bed.
- (ii) Place log No. 2 to the right side of log No. 1 and locate the hole at its front edge onto tab 'C' on the front support rail. Locate the rear of the log into recess 'D' in the support bed.
- (iii) Place log No. 3 at the right side of the support bed. Locate the hole at the

front edge onto tab 'E' on the front support rail. Locate the underside of the log into the recess 'G' in the support bed.

The logs should now be as shown in Fig. 12.

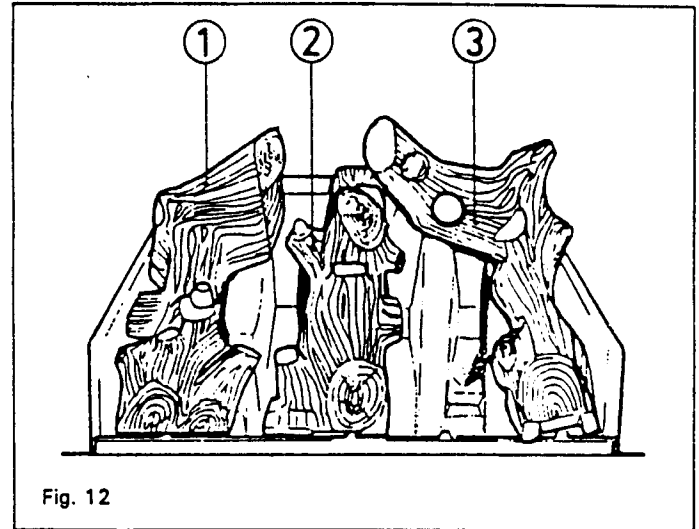


Fig. 12

- (iv) (Refer to Fig. 13). Place log No. 4 between logs 2 and 3. Locate the groove (situated under the front edge of the log) onto tab 'F' on the front support rail. Locate the projection 'H' (situated under the rear of the log) into the hole in log No. 3.

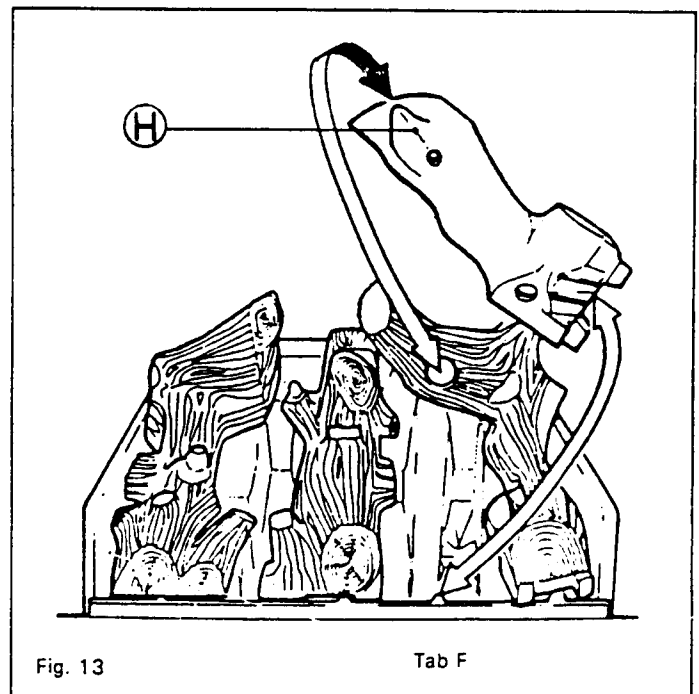


Fig. 13

Tab F

- (v) (Refer to Fig. 14).

Place log No. 5 between logs 1 and 2 so that hole 'N' (underneath the left branch of log 5) locates over the projection 'O' in the middle of log No. 1.



Locate the depression 'L' (underneath the long branch of log No. 5) onto the projection 'M' at the top left side of log No. 2. Place the bottom right end 'J' of log No. 5 onto the lower left side of log No. 2 position 'K'.

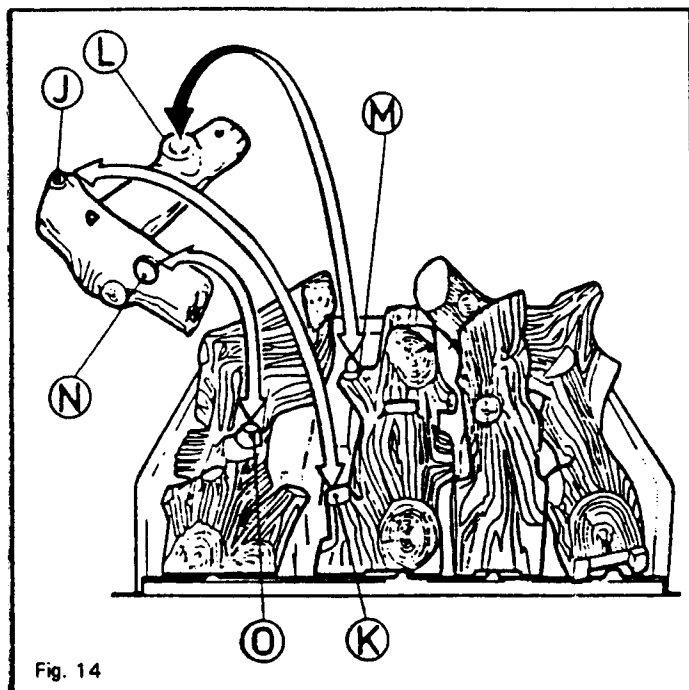


Fig. 14

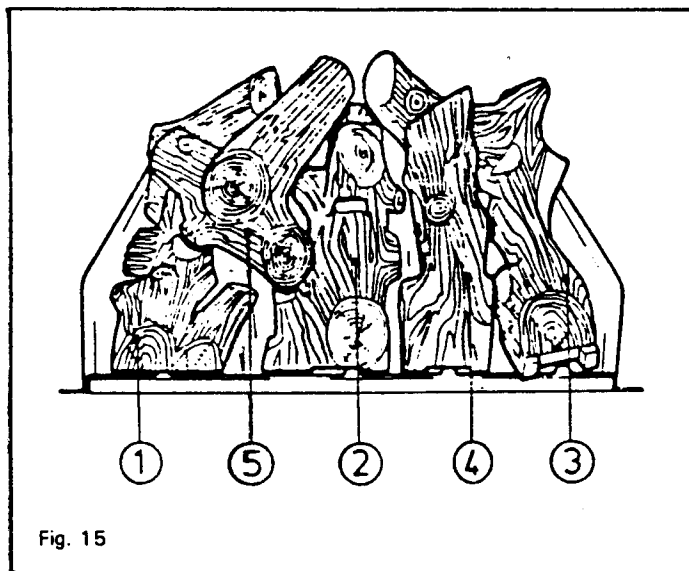


Fig. 15

The completed log assembly should be as shown in Fig. 15.

(e) Replace the window unit and tighten the 12 wing nuts.

### 1.11. CHECK PRESSURE RELIEF UNIT

This appliance is fitted with a pressure relief unit as shown in Fig. 16. The purpose of this unit is to allow a safe relief of pressure in the unlikely event of a build up of gas in the burner compartment before ignition takes place.

Relief is attained by the pressure pushing the burner access panel forward against the springs and so allowing some gas to escape safely round the cover. The cover will then return to its original position.

Test the action of the unit by pulling the access panel forward against the springs and allowing it to snap back into position. Make sure that the panel is free to move and that it resets to the original position.

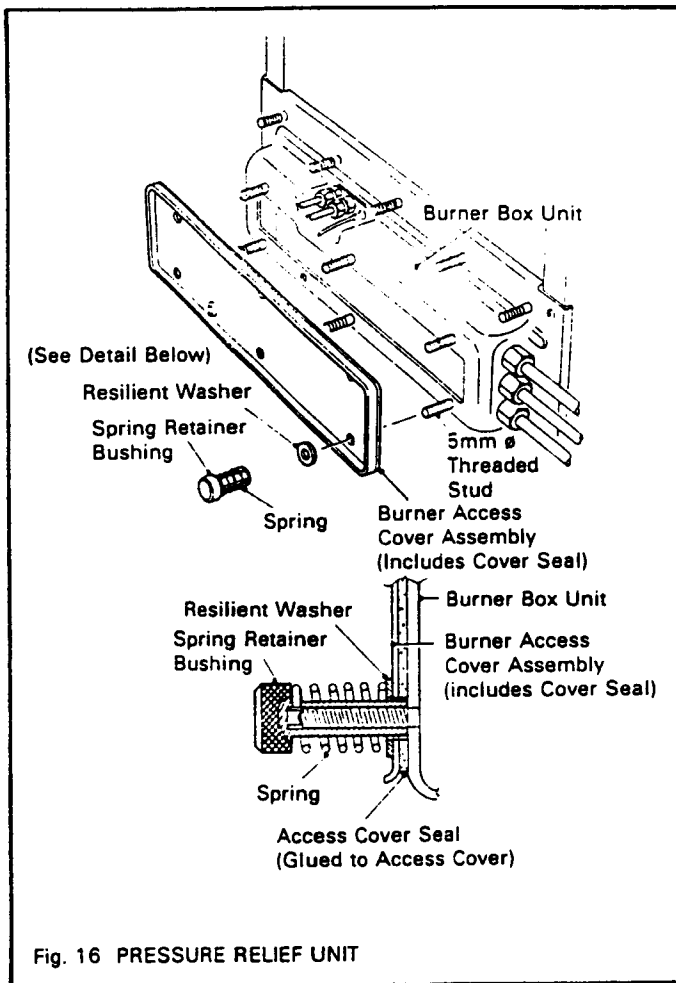


Fig. 16 PRESSURE RELIEF UNIT

### 1.12. CHECK OPERATION OF CONTROLS

**NOTE:** The small hole in the bracket at left of the igniter button should be used as a pointer for the control knob setting until the outer case is attached.

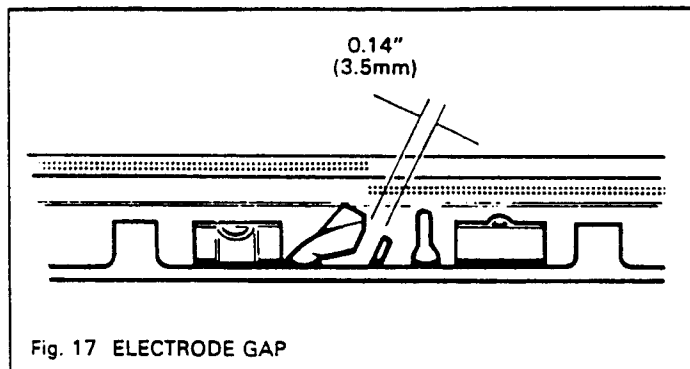
#### 1.12.1. CHECK PILOT IGNITION

**NOTE:** If the furnace has previously been operated wait 5 minutes after shutting off before relighting.

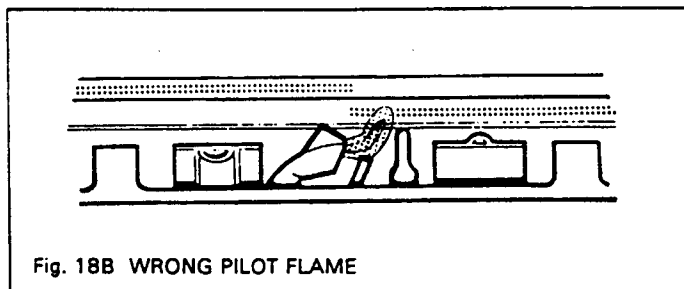
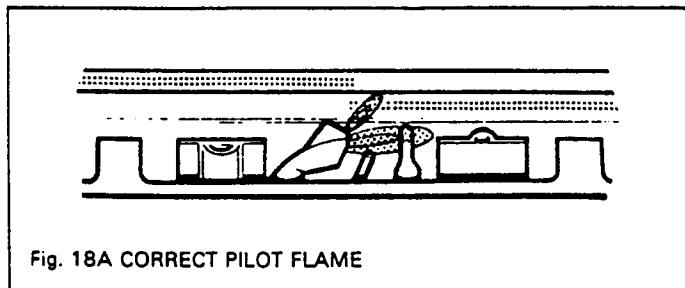
Pilot ignition is initiated by a piezo-electric spark produced by depressing the igniter push button situated next to the control knob on top of the furnace.

To ignite the pilot gas:

- (a) Push in the control knob and turn counter-clockwise to the 1/IGN position.
- (b) Hold the knob down as far as it will go for a few seconds to allow the gas to flow to the pilot.
- (c) While still holding down the control knob, press the igniter button several times until the pilot lights. If the pilot does not ignite (after ensuring that all air has been purged), check that the electrode gap is set as shown in Fig 17.



- (d) Hold the control knob down for a further 10 seconds to prevent the flame failure detector from shutting off the gas while its thermocouple probe is warming up. The pilot should then remain lit.
- (e) Check the pilot flame (See Figs 18A 18B).



### 1.12.2. CHECK ALL CONTROL SETTINGS

Press the control knob down slightly. Turn progressively counter-clockwise and check for the correct flame pattern at each position. (See Figs 19 & 20). The control settings are:

Control Position	Main Burner	Decorative Flame Burner
1/IGN	OFF (Pilot Ignition Position)	
2	Low (Center Area only on)	Off
3	Low (Center area only on)	Center Area only On
4	High (All areas on)	All areas on

TURN OFF by depressing the knob slightly and turning clockwise to 'OFF'. Release the knob. If any resistance is experienced at the 1/IGN position, release the knob before turning to OFF.

### 1.13. CHECK THE SYSTEM PRESSURE

Maximum heat input is 19,000 B.t.u.

The furnace is pre-set to give the correct heat input with Natural Gas. For input adjustment, the gas supply pressure to the furnace inlet must be a minimum of 5" w.c. The maximum inlet gas supply pressure is 7" w.c.

The burner pressure is controlled by a built-in sealed non-adjustable regulator. The manifold pressure must be 4" w.c. and should be checked at the pressure test point which is located immediately downstream of the regulator. The pressure check should be made with the unit burning and the control set at position 4.

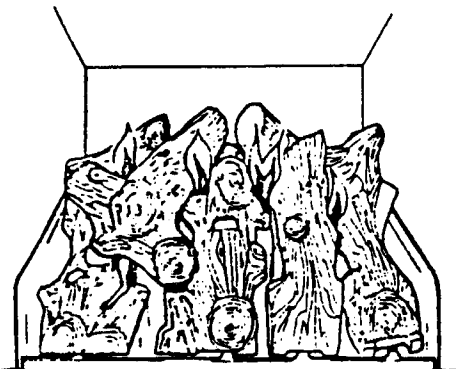


Fig. 19A CORRECT DECORATIVE FLAME



Fig. 19B WRONG DECORATIVE FLAME

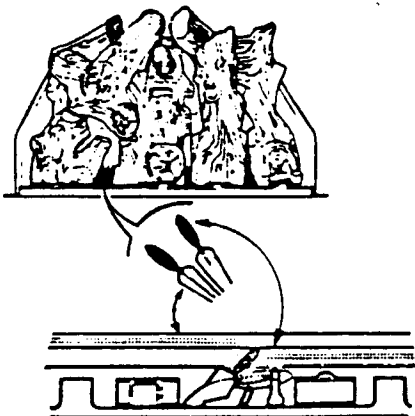


Fig. 20 MAIN BURNER FLAME

#### 1.14. DECORATIVE FLAME ADJUSTMENT

The air supply to the decorative flame burner may need adjusting to suit the local supply gas. To adjust the air supply:-

- (a) Remove the spring retainer bushings and washers from the burner access panel. (See fig. 16). Take off the access panel. Store the parts in a safe place.
- (b) Light the appliance and turn the control to setting # 4.

- (c) Slide the aeration sleeve on the decorative flame burner either way to give the correct flame pattern (see fig. 21). There should be no appreciable deposits of carbon on the logs.
- (d) Replace the burner access panel, washers and bushings. Make sure that the access panel operates satisfactorily as described in section 1.11.

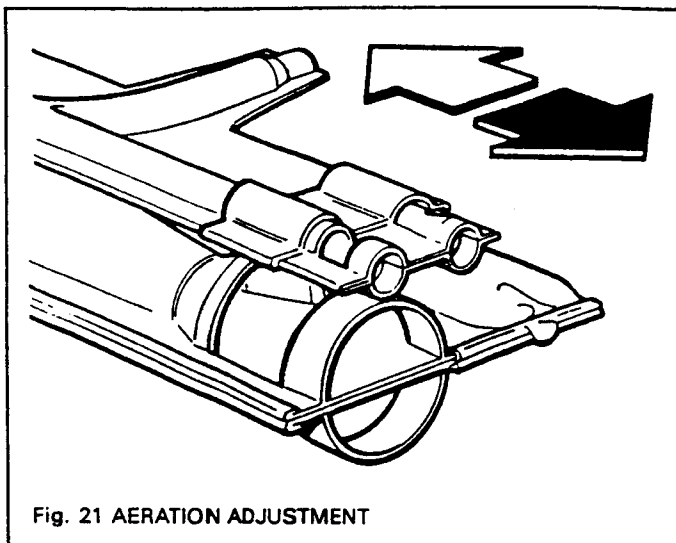


Fig. 21 AERATION ADJUSTMENT

#### 1.15. FIT THE OUTER CASE

- (a) Locate the outer casing assembly over the furnace. Attach with a knurled screw each side at bottom rear of the case. **Make sure** that the casing sides are located **outside** of the back panel. Fig. 22.
- (b) Adjust the brass andirons at the front of the casing by slackening the cross-recess screws behind each one and ensuring that the foot of each andiron rests on the floor. Retighten the screws.
- (c) Fit the window surround trim unit making sure that the vertical trims slide over the location clips on the window unit (see fig. 23).

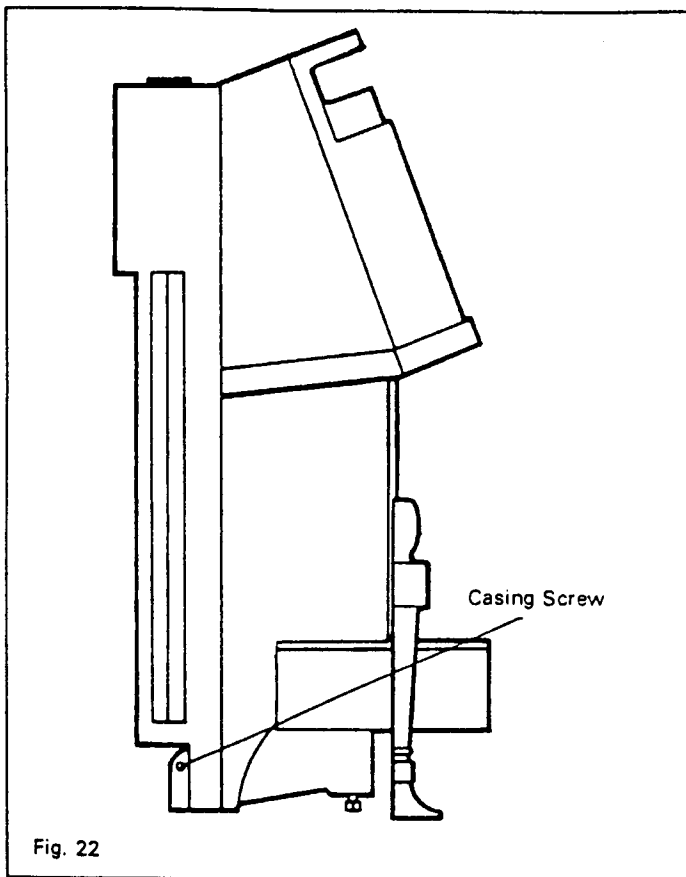


Fig. 22

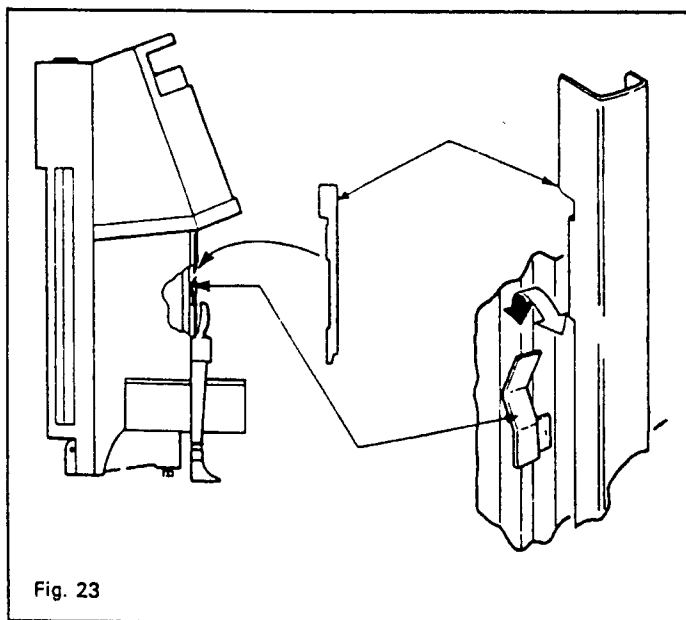


Fig. 23

### 1.16. FINAL CHECK

Re-check the ignition and check operation at all control settings.

Instruct the owner mentioning the following points:-

- (a) How to operate the furnace mentioning that the control knob must be pressed in before turning counter-clockwise and that the knob must be turned to 1/IGN and the ignitor button depressed to light.

- (b) Warn that if the ceramic window is damaged the furnace **must be turned off immediately and not used until the window is replaced.**
- (c) If necessary the outer case and window may be removed to re-set the logs when the furnace is shut off and cold but must be replaced securely before operating the furnace.
- (d) Advise on the purpose of the pressure relief unit. Stress that it **must be refitted correctly** if dismantled.
- (e) The furnace may smell slightly for a short period due to its newness.
- (f) It is recommended that the furnace is serviced at least once a year.
- (g) Point out the location of the supply piping shut off valve and its operation.
- (h) Point out the location of the vent terminal. Advise that, for safe and efficient operation, no objects should be placed within 2 feet (60cm) of the vent terminal.

**HAND OVER THE INSTRUCTION BOOKLETS TO THE OWNER.**

## 2. SERVICING

### 2.1. GENERAL

- (a) Repair and replacement work should only be done by a qualified service person.
- (b) Always shut off the gas supply and make sure the appliance is cool before commencing any servicing operation.
- (c) Always check for leaks after servicing.
- (d) Always check that the appliance area is clear and free from combustible materials, gasoline and other flammable vapors and liquids.
- (e) Always check that the vent terminal outdoors is clear from obstructions.

### 2.2. PERIODIC CHECKS

- (a) Examine the vent system periodically. Check that the tubes and cap on the outside wall are not obstructed.
- (b) Check the flame patterns periodically (See figs 18 through 20 in installation section).