

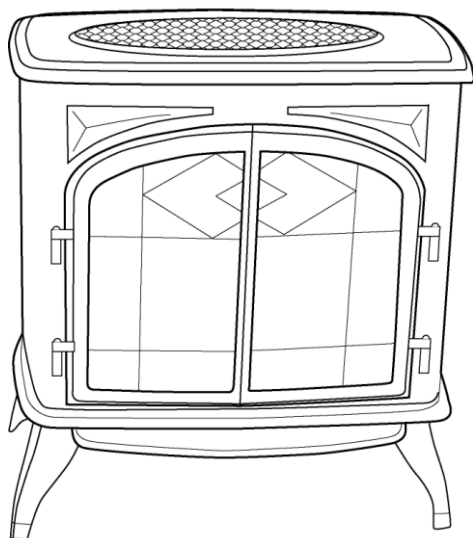
ECHO-MV

DIRECT VENT GAS HEATER

Installation and Operating Instructions



LISTING F21-698



⚠ WARNING:

FIRE OR EXPLOSION HAZARD

Failure to follow safety warnings exactly could result in serious injury, death, or property damage.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- WHAT TO DO IF YOU SMELL GAS
 - Do not try to light any appliance.
 - Do not touch any electrical switch; do not use any phone in your building.
 - Leave the building immediately.
 - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
 - If you cannot reach your gas supplier, call the fire department.
- Installation and service must be performed by a qualified installer, service agency or the gas supplier.

⚠ DANGER



HOT GLASS WILL CAUSE BURNS.
DO NOT TOUCH GLASS UNTIL COOLED.
NEVER ALLOW CHILDREN TO TOUCH GLASS.

A barrier designed to reduce the risk of burns from the hot viewing glass is provided with this appliance and shall be installed for the protection of children and other at-risk individuals.

This appliance may be installed in an aftermarket, permanently located, manufactured home (USA only) or mobile home, where not prohibited by local codes.

This appliance is only for use with the type of gas indicated on the rating plate. This appliance is not convertible for use with other gases, unless a certified kit is used.

Echo-Direct-Vent-Gas-MV-Owners-Manual-TH-REF-SLS-229 2021

INSTALLER: PLEASE LEAVE THIS MANUAL WITH THE CUSTOMER!
CUSTOMER: PLEASE KEEP INSTRUCTIONS FOR FUTURE REFERENCE
PLEASE READ THIS ENTIRE MANUAL BEFORE INSTALLATION.
SAVE THESE INSTRUCTIONS.



SAFETY NOTICES

For Your Safety

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

What to do if You Smell Gas

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

A barrier designed to reduce the risk of burns from the hot viewing glass is provided with this appliance and shall be installed for the protection of children and other at-risk individuals.

If the barrier becomes damaged, the barrier shall be replaced with the manufacturer's barrier for this appliance.

Installation

PLEASE READ INSTRUCTIONS CAREFULLY BEFORE INSTALLING AND OPERATING THE APPLIANCE

- Heater must be properly installed and maintained or a house fire may result.
- For your safety, follow the installation instructions.
- Contact local building officials about restrictions and installation inspection.
- Failure to comply with owner's manual instructions will void warranty.

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

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

MASSACHUSETTS: The gas piping and the final gas connection must be performed by a licensed plumber or gas fitter in the state of Massachusetts.





SAFETY NOTICES

IF THIS APPLIANCE IS NOT PROPERLY INSTALLED, A HOUSE FIRE, OR EXPLOSION MAY RESULT. FOR YOUR SAFETY, FOLLOW THE INSTALLATION DIRECTIONS. CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION REQUIREMENTS IN YOUR AREA. PLEASE READ THIS ENTIRE MANUAL BEFORE YOU INSTALL AND USE YOUR NEW APPLIANCE. FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY OR DEATH. DO NOT OPERATE WITH DOOR OPEN!

Safe installation and operation always require common sense. We are also required by Canadian and ANSI safety standards to point out the following:

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 PERSON. MORE FREQUENT CLEANING MAY BE REQUIRED DUE TO EXCESSIVE LINT FROM CARPETING, BEDDING MATERIAL, ET CETERA. IT IS IMPERATIVE THAT CONTROL COMPARTMENTS, BURNERS AND CIRCULATING AIR PASSAGEWAYS OF THE APPLIANCE BE KEPT CLEAN.

IT IS IMPERATIVE THAT CONTROL COMPARTMENTS, BURNERS AND CIRCULATING AIR PASSAGEWAYS OF THE APPLIANCE ARE KEPT CLEAN.

DUE TO HIGH TEMPERATURES, THE APPLIANCE SHOULD BE LOCATED OUT OF TRAFFIC AND AWAY FROM FURNITURE AND DRAPERIES.

DO NOT USE THIS HEATER IF ANY PART HAS BEEN UNDER WATER. IMMEDIATELY CALL A QUALIFIED SERVICE TECHNICIAN TO INSPECT THE HEATER AND TO REPLACE ANY PART OF THE CONTROL SYSTEM AND ANY GAS CONTROL WHICH HAS BEEN UNDER WATER.

CLOTHING OR OTHER FLAMMABLE MATERIALS SHOULD NOT BE PLACED ON OR NEAR THE APPLIANCE.

“THE FLEXIBLE CORD PROVIDED MUST BE CONNECTED TO A LINE VOLTAGE ELECTRICAL SUPPLY”.

ANY SAFETY SCREEN OR GUARD REMOVED FOR SERVICING A ROOM HEATER MUST BE REPLACED PRIOR TO OPERATING THE APPLIANCE.

NEVER VENT THE APPLIANCE INTO OTHER ROOMS OR BUILDINGS. THE APPLIANCE MUST BE VENTED ONLY TO THE OUTSIDE.

THIS APPLIANCE MUST NOT BE CONNECTED TO A CHIMNEY FLUE SERVING A SEPARATE SOLID-FUEL BURNING APPLIANCE.

CHILDREN AND ADULTS SHOULD BE ALERTED TO THE HAZARDS OF HIGH SURFACE TEMPERATURES AND SHOULD STAY AWAY TO AVOID BURNS OR CLOTHING IGNITION.

YOUNG CHILDREN SHOULD BE CAREFULLY SUPERVISED WHEN THEY ARE IN THE SAME ROOM AS THE APPLIANCE.



INSTALLATION

This appliance is suitable for installation in a bedroom or bed sitting room.

This appliance may be installed in an aftermarket permanently located, manufactured (mobile) home, where not prohibited by local codes. This appliance is only for use with the type of gas indicated on the rating plate. This appliance is not convertible for use with other gases, unless a certified kit is used.

INSTALLATION CHECKLIST

- ☐ Dealer _____
- ☐ Installer _____
- ☐ Phone _____
- ☐ Installation Date _____
- ☐ Serial Number _____

Listing and Codes

The Echo is listed and certified for installation in the U.S.A. under the following standards:

ANSI Z21.88-2019
(Vented Gas Fireplace Heater)

Please contact Thelin Hearth Products, Inc, if you have any questions regarding the certification of this appliance.

High Altitude Installation

When installing this appliance over 2000ft above sea level, the appliance must be properly derated as required by local codes.

This appliance must be installed as required by local codes, in the absence of local codes in accordance with the current National Fuel Gas Code, ANSI Z223.1/ NFPA 54.

Please contact Thelin Hearth Products if you have any questions regarding the certification of this appliance.



SPECIFICATIONS

	Natural Gas (NG)	Propane (LP)
Manifold Pressure	1.7 - 3.5 in. w.c.	3.5 - 10.0 in. w.c.
Min. Supply Pressure for Purpose of Input Adjustment	5.50 in. w.c. (1.2 kPa)	11.0 in. w.c.
Max. Supply Pressure for Purpose of Input Adjustment	7.0 in. w.c.	13.0 in. w.c.
Orifice Size	35# DMS	53# DMS
Nominal Input Rating	31,000 BTU/hr	31,000 BTU/hr
Altitude	0 - 2000ft. (0 - 610 m) US	0 - 2000ft. (0 - 610 m) US
Primary Air Opening	1/8in (Minimum)	1/8in (Minimum)
Vent System	Co - axial (4" x 7")	Co - axial (4" x 7")
Log Set	Ceramic (6 Piece)	Ceramic (6 Piece)

INDEX OF CONTENTS

- Aeration Setting Check, 27
- Air Restrictor (Combustion), 40
- Air Restrictor (Exhaust), 39
- Airflow, 11
- Appendix A, 42, 43
- Bedroom Installation, 13
- Burner and Pilot Checks, 29
- Burner Inspection, 35
- Burner On/Off Switch, 29
- Cleaning, 36
- Clearance to Combustibles, 13
- Co-Linear Flex System, 18
- Control Components, 30
- Delayed Ignition, 39
- Diagrams
 - Air Restrictor, 31
 - Air Restrictor (Combustion), 40
 - Air Restrictor (Exhaust), 39
 - Blower Installation, 41
 - Box/Wall Thimble, 20
 - Clearance to Combustibles, 13
 - Co-Linear Flex System, 18
 - Control Components, 30
 - Correct Pilot Flame, 26
 - Dimensions, 10
 - Fan Housing Installation, 41
 - Flame Characteristics, 26
 - Gas Valve and Pilot Assembly, 32
 - Laboratory Listing Label, 9
 - Log & Ember Placement, 42
 - Log Placement, 43
 - Pilot, Burners, and Air Shutter, 28
 - Pipe Configurations, 21
 - Safety Shut Down, 39
 - Sealing Vent Pipe, 16
 - Securing Door, 38
 - Vent Can Height, 20
 - Vent Termination, 16, 24
 - Vent Termination Locations, 14
 - Venting Chart, 23
 - Venting Requirements, 17, 18, 22
 - Wall Thimble Installation, 19
- Dimensions, 10
- Door and Logs, 12
- Door Gasket, 35
- Door Opening, 38
- DuraVent GS System, 15
- Electrical Grounding Instructions, 12
- Existing Gas Supply, 25
- Fan and Flame Adjustment, 35
- Finishing Materials, 13
- Firebox Inspection, 35
- Flammables, 11
- Floor Protection, 13
- Gas Control Knob, 29
- Gas Data, 12
- Gas Line Installation, 25
- Gas Supply Installation, 26
- Gas Valve, 32
- Glass Replacement, 35
- Hi/Lo Flame Adjust, 29
- Horizontal Wall Vent Termination, 15
- Initial Burn, 35
- Installation, 13
- Installation Checklist, 29
- Introduction and Safety Information, 11
- Lab Accreditation, 12
- Laboratory Listing Label, 9
- Lighting the Pilot, 29
- Listing Criteria, 12
- Location of Controls, 29
- Maintenance, 35
- Manifold Pressure, 12
- Mobile Home Installation, 20
- Operation, 29
- Orifice Size, 12
- Permit, 11
- Pilot Assembly, 32
- Pilot Igniter, 29
- Pilot Inspection, 35

INDEX OF CONTENTS

Pipe Configurations, 21	Troubleshooting, 37
Pressure Testing Supply Line, 26	Vent Installation, 15
Replacement Parts List, 36	Vent Maintenance, 25
Safe Operation, 11	Vent Restriction, 15
Safety Check, 11	Vent Termination, 24
Safety Shut Down, 39	Venting, 13
Securing Door, 38	Venting Requirements, 17, 18
Snorkel, 19	Vertical Installation, 19, 25
Sounds, 35	Vertical Termination, 25
Specifications, 5, 12	Wall Thermostat Control, 33
Start Up Checks, 33	Warranty Information, 44
Supply Line Leaks, 26	Wiring Diagram, 27
Through Roof Framing, 20	

FIGURES

Figure 1 – Diagram of Dimensions.....	10
Figure 2 – Clearance to Combustibles	13
Figure 3 – Vent Termination Locations.....	14
Figure 4 – Sealing Vent Pipe	16
Figure 5 – Vent Termination.....	16
Figure 6 – Diagram of Venting Requirements.....	17
Figure 7 – Diagram of Venting Requirements.....	18
Figure 8 – Co-Linear Flex System.....	18
Figure 9 – Wall Thimble Installation.....	19
Figure 10 – Ceiling Detail.....	19
Figure 11 – Box/Wall Thimble	20
Figure 12 – Vent Can Height	20
Figure 13 – Pipe Configurations	21
Figure 14 – Venting Requirements	22
Figure 15 – Venting Chart	23
Figure 16– Vent Termination.....	24
Figure 17 – Flame Characteristics	26
Figure 18 – Correct Pilot Flame.....	26
Figure 19 - Wiring Diagram	27
Figure 20 – Location of Pilot, Burners, and Air Shutter.....	28
Figure 21 – Diagram of Control Components	30
Figure 22 – Air Restrictor	31
Figure 23 – Gas Valve and Pilot Assembly	32
Figure 24 – Directions for Enabling Door Opening and Securing Door	38
Figure 25 – Delayed Ignition Safety Shut Down & Exhaust Air Restrictor.....	39
Figure 26 – Air Restrictor	40
Figure 27 – Fan Housing Installation.....	41
Appendix A – Echo Stove with Log & Ember Tray Placement	42

LABORATORY LISTING LABEL



Report No. F21-698

DO NOT REMOVE THIS LABEL

CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT
INSTALLATION AND RESTRICTIONS IN YOUR AREA.
VENTED GAS ROOM HEATER FIREPLACETHIS GAS HEATER IS NOT FOR USE WITH AIR FILTERS
TESTED TO: ANSI Z21.88-2019MODEL: ECHO DV GAS MV ☐ EI ☐ Date: Serial Number: THIS UNIT IS EQUIPPED FOR USE WITH: ☐ NATURAL GAS ☐ PROPANE (L.P.)

Input and Orifice Specifications		Minimum Clearance to Combustibles	
	N.G.	L.P.	
Maximum Input Rating (BTU/Hr)	31,000	31,000	Unit to Sidewall 6"
Minimum Input Rating (BTU/Hr)	18,400	22,000	Unit to Backwall 9"
Burner Orifice (DMS)	35	53	Unit to Cornerwall 8"
Manifold Pressure HI Setting (in W.C.)	3.5"	10.0"	Alcove Minimum Width 39"
Manifold Pressure LO Setting (in W.C.)	1.7"	3.5"	Alcove Minimum Depth 36"
Minimum Inlet Pressure (in W.C.)	5.5"	11.0"	Alcove Minimum Height 47"

Blower & Igniter System Electrical Rating: 115 Volts, 2 Amps, 60 Hz.

WARNING: Operation of this heater when not connected to a properly installed and maintained direct venting system can result in injury and possible death. Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to the information in the owner's manual provided with this appliance. For assistance or additional information consult a qualified installer, service agency or the gas supplier.

Risk of Electrical Shock. Disconnect power before servicing unit.

This appliance may be installed in a mobile home and sleeping room provided the wall thermostat options is used.

This appliance is only for use with the type of gas indicated on the rating plate and may be installed in an aftermarket, permanently located, manufactured (mobile) home where not prohibited by local codes. See owner's manual for details.

This appliance is not convertible for use with other gases, unless a certified kit is used.

This heater must be properly connected to a Simpson DuraVent GS Venting System or similar UL Approved System in accordance with the manufacturer's installation instructions. If heater is removed from venting system it must be attached and resealed per vent manufacturer requirements and in accordance with this installation manual.

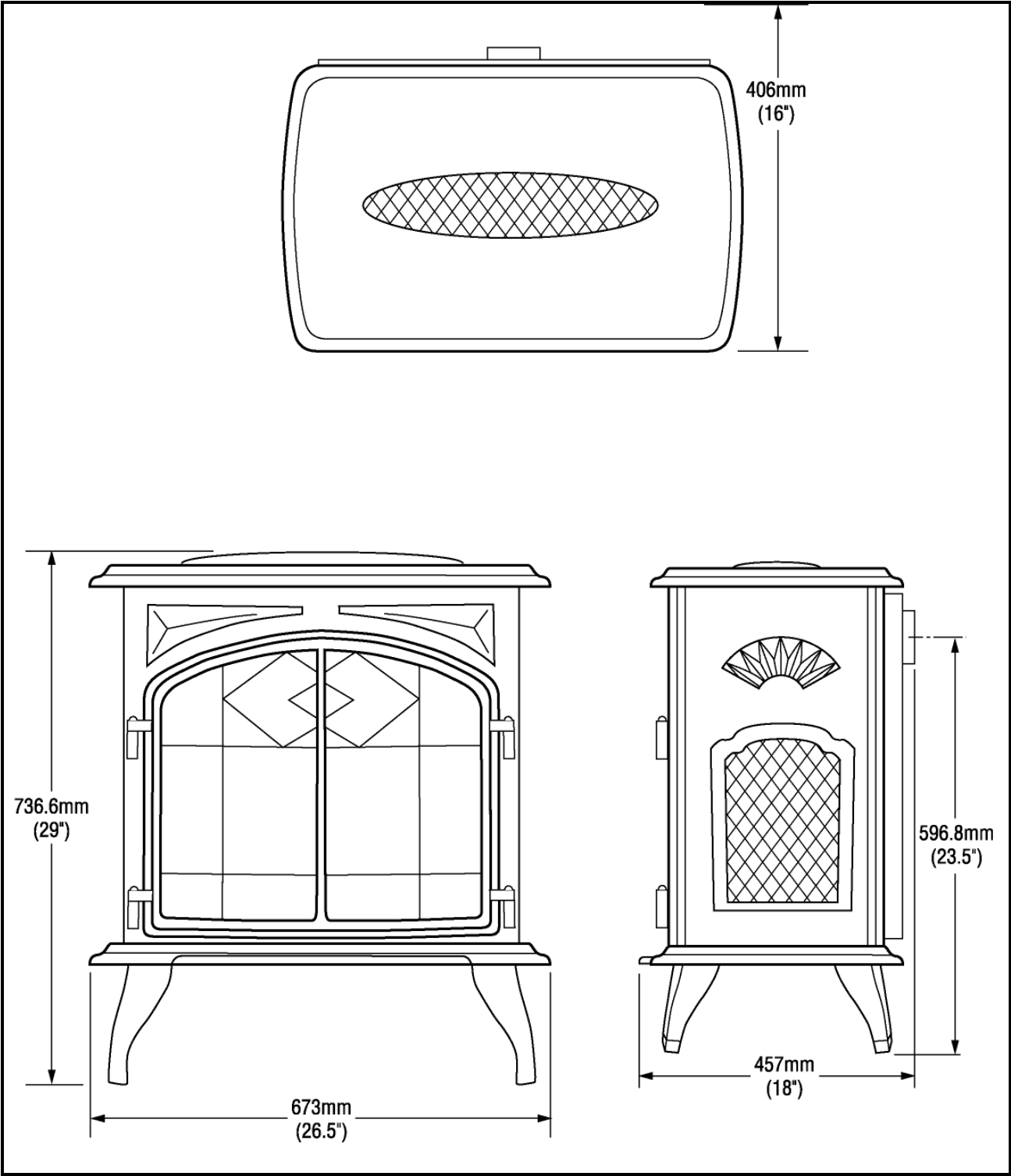
NOTE: For use with glass door certified with this appliance only.

DANGER: RISK OF ELECTRICAL SHOCK. DISCONNECT POWER SERVICING UNIT. DO NOT RUN POWER CORD UNDER APPLIANCE. KEEP BURNER AND CONTROL COMPARTMENT CLEAN. SEE INSTALLATION AND OPERATING INSTRUCTIONS.

Manufactured by: Theelin Hearth Products, Inc., 63 Laxalt Dr. Carson City, NV 89706

P/N 00-0075-0043r2

FIGURE 1 – DIAGRAM OF DIMENSIONS



INTRODUCTION AND SAFETY INFORMATION

Thelin Hearth Products would like to thank you for choosing our Echo Direct Vent Gas appliance. Whether you are hooking up to a natural gas or liquid propane gas, please read the following safety information thoroughly before installing or lighting your new gas heater. Improper installation will void your warranty, but, more importantly, incorrect installation and/or hook-up could result in serious injury and even loss of life. Follow these instructions closely and do not deviate from them without the permission of licensed and trained personnel knowledgeable of the installation and operation of gas appliances.

If You Smell Gas:

- Extinguish any open flame.
- Do not light any appliance.
- Do not plug in or unplug any electrical plug or switch.
- Open windows and vacate building.
- Call gas supplier from a phone outside your house or if unable to reach supplier, call fire department (also from phone outside of your house).

Safety Check Before Installation

This appliance must be installed by a licensed and qualified installer to prevent the possibility of explosion. This instruction manual must be strictly adhered to. Do not use makeshift methods or compromise the installation in any way. Improper installation will void the warranty and safety listing.

This appliance is approved for either natural gas or LP (liquid propane) gas. Burning the incorrect fuel will void the warranty and safety listing and could cause extreme hazard. Make sure you have the proper gas valve for the fuel being used. The gas valve is clearly marked natural gas or LP gas. This marking can be found on the back of the stove above the gas line. (See Figure 21).

Permit

Contact your local building officials and obtain a permit before beginning installation. Notify your insurance company and provide them with the proper inspection documents indicating that the appliance has been installed to code and inspected and also passed inspection.

Flammables

Do not store or use gasoline or other flammable liquids in the vicinity of the heater.

Airflow

Always keep control compartment and optional fan air passageways free of lint and dust and obstructions. Do not place clothing or other flammable items on or near the heater. The heater can be controlled by a thermostat and will come on automatically if the thermostat option is hooked up and utilized. **Educate small children that external portions of the heater are extremely hot! Young children should be supervised if they are in the same room with the heater.**

Adequate air must be provided for combustion.

Safe Operation

Operate this heater in accordance with the instructions in this manual. Light the pilot and burner using built-in piezo lighter. Do not use matches or any other lighting device external to your appliance. If the pilot or main burner do not light correctly, turn off the gas at the gas control valve (see Figure 21), and call your dealer or service person. If the flame becomes sooty, dark orange in color, or extremely tall and lazy, do not operate the heater. Call your dealer. Do not operate the heater if any portion of the heater has been submerged in water or any corrosion occurs. Do not operate if you suspect any improper operation. Call your dealer.

Door and Logs

Always allow the heater to cool before carrying out any maintenance or cleaning. The viewing door should be opened for service only (see Maintenance section). Do not place anything inside the firebox area except authorized Thelin Hearth Products factory log set. If the logs become damaged, replace with factory-authorized logs. Never remove, replace, modify, or substitute any part of this appliance unless given instructions to do so by factory-trained personnel or professionally licensed and certified gas technicians.

Electrical Considerations

WARNING: Electrical Grounding Instructions.

This appliance is equipped with a three-pronged (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. This must be grounded in accordance with local codes, or, in the absence of local codes, with the National Electric Code ANSI/NFPA.

Safety Check Conclusion

Do not throw this Owner's Manual away. This manual contains important hook-up, operation, and maintenance instructions that you may need in the future. Thelin Hearth Products grants no warranty, implied or stated, for the installation and maintenance of your heater and assumes no responsibility of any consequential damages as a result of improper installation or failure to perform routine maintenance.

SPECIFICATIONS

Listing Criteria, Lab Accreditation

See Listing Label (See Important Instructions section) for laboratory listing criteria. When

pressure testing the gas supply at test pressures in excess of 1/2 psig (3.5kPa) you must isolate the heater from the supply line by disconnecting or utilizing the gas shut off valve.

Manifold Pressure

The heater has a manifold pressure tap (1/8 N.P.T. fitting) directly on the manifold, (see Figure 21) to check the manifold pressure downstream of the gas valve. If the manifold pressure does not match the following pressure, check inlet pressure and correct the problem:

Natural gas: High - 3.5" WC, Low - 1.7" WC

Propane: High - 10.0" WC, Low - 3.5" WC

Orifice Size

The orifices are factory installed for altitudes up to 4,500 feet. If installing in a higher altitude check the orifice information (see Laboratory Listing Label).

Gas Data

Input BTU:

Natural gas: 31,000 Btu

Propane: 31,000 Btu

Minimum Inlet Pressure:

Natural gas: 5.5" WC (Water Column)

Propane: 11.0" WC

Suggested Maximum Pressure:

Natural gas: 7" WC

Propane: 13" WC

INSTALLATION

Clearance to Combustibles

Due to high temperatures, the room heater should be located out of traffic and away from furniture and draperies. Children and adults should be alerted to the hazards of high surface temperature and should stay away to avoid burns or clothing ignition.

Floor Protection

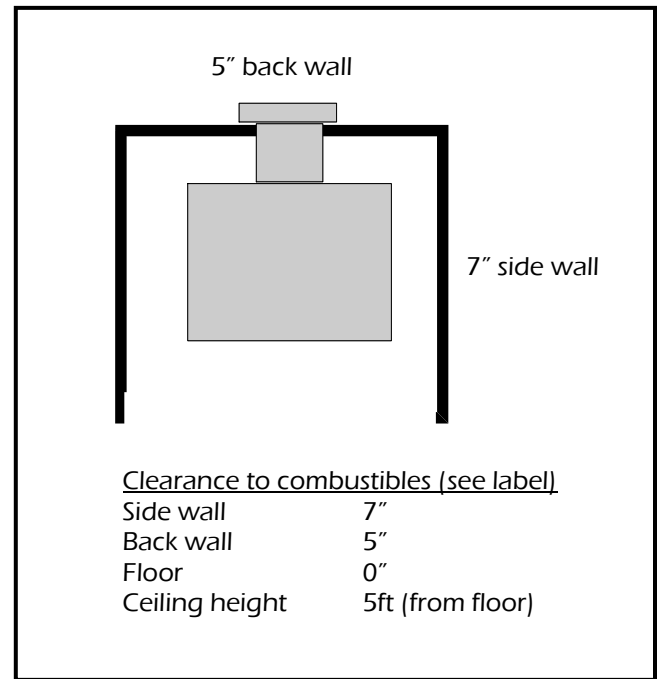
When the appliance is installed directly on carpeting, tile or other combustible material other than wood flooring, the appliance shall be installed on a metal or wood panel extending the full width and depth of the. In addition, the following criteria must be adhered to when installed:

1. Install on level and secure floor.
2. Due to high temperatures, the room heater should be located out of traffic and away from furniture and draperies.
3. When placed in a location where the floor-to-ceiling height is under 7', the installation is considered an alcove and must meet the following criteria: Floor to ceiling of alcove must be a minimum of 47". The depth of the alcove must be at least 36".

Bedroom Installation

This Direct Vent appliance may be installed in a sleeping room provided the wall thermostat option is utilized.

FIGURE 2 – CLEARANCE TO COMBUSTIBLES



Finishing Materials – Definition

Combustible materials: Such as wood, compressed paper, plant fibers, plastics or any material capable of igniting and burning, whether flame proofed or not, plaster or un-plastered.

Non-combustible material: Material such as steel, iron brick, tile, concrete or materials that bear the UL mark for zero (0) fire rating.

VENTING

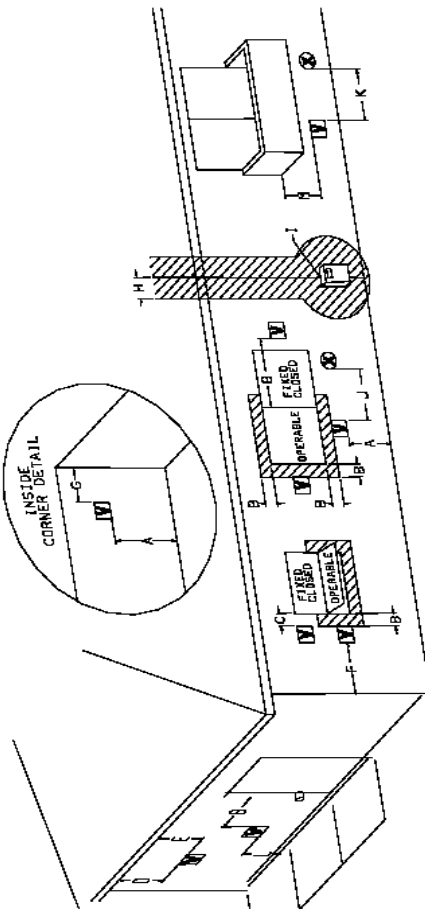
IMPORTANT: This appliances venting system is room sealed, which means that there should be no provision to allow room air to be used in the combustion process.

NOTE: Venting systems listed below may be used with the model Echo: Simpson Duravent DV, Metalbestos DV, Excel DV, Security DV.

WARNING!

Do not cover the grills on this appliance in any way as this may create a fire hazard.

FIGURE 3 – VENT TERMINATION LOCATIONS



VENT TERMINAL **AREA WHERE TERMINAL IS NOT PERMITTED** **AIR SUPPLY INLET**

	Canadian Installations ¹	US Installations ²	Canadian Installations	US Installations ²
A= Clearance above grade, veranda, porch, deck, or balcony	12 inches (30 cm)	12 inches (30 cm)	6 inches (15 cm) for appliances ≤ 10,000 Btuh (3 kW), 12 inches (30 cm) for appliances > 10,000 Btuh (3 kW) and ≤ 50,000 Btuh (15 kW), 36 inches (91 cm) for appliances > 50,000 Btuh (15 kW)	6 inches (15 cm) for appliances ≤ 10,000 Btuh (3 kW), 9 inches (23 cm) for appliances > 10,000 Btuh (3 kW) and ≤ 50,000 Btuh (15 kW), 12 inches (30 cm) for appliances > 50,000 Btuh (15 kW)
B= Clearance to window or door that may be opened	6 inches (15 cm) for appliances ≤ 10,000 Btuh (3 kW), 12 inches (30 cm) for appliances > 10,000 Btuh (3 kW) and ≤ 50,000 Btuh (15 kW), 36 inches (91 cm) for appliances > 50,000 Btuh (15 kW)	6 inches (15 cm) for appliances ≤ 10,000 Btuh (3 kW), 9 inches (23 cm) for appliances > 10,000 Btuh (3 kW) and ≤ 50,000 Btuh (15 kW), 12 inches (30 cm) for appliances > 50,000 Btuh (15 kW)	6 inches (15 cm) for appliances ≤ 10,000 Btuh (3 kW), 12 inches (30 cm) for appliances > 10,000 Btuh (3 kW) and ≤ 50,000 Btuh (15 kW), 36 inches (91 cm) for appliances > 50,000 Btuh (15 kW)	6 inches (15 cm) for appliances ≤ 10,000 Btuh (3 kW), 9 inches (23 cm) for appliances > 10,000 Btuh (3 kW) and ≤ 50,000 Btuh (15 kW), 12 inches (30 cm) for appliances > 50,000 Btuh (15 kW)
C= Clearance to permanently closed window	*	*	6 inches (15 cm) for appliances ≤ 10,000 Btuh (3 kW), 9 inches (23 cm) for appliances > 10,000 Btuh (3 kW) and ≤ 50,000 Btuh (15 kW), 12 inches (30 cm) for appliances > 50,000 Btuh (15 kW)	6 inches (15 cm) for appliances ≤ 10,000 Btuh (3 kW), 9 inches (23 cm) for appliances > 10,000 Btuh (3 kW) and ≤ 50,000 Btuh (15 kW), 12 inches (30 cm) for appliances > 50,000 Btuh (15 kW)
D= Vertical clearance to ventilated soffit located above the terminal within a horizontal distance of 2 feet (61 cm) from the center line of the terminal	*	*	12 inches (30 cm) ‡	12 inches (30 cm) ‡
E= Clearance to unventilated soffit	*	*	12 inches (30 cm) ‡	12 inches (30 cm) ‡
F= Clearance to outside corner	*	*	12 inches (30 cm) ‡	12 inches (30 cm) ‡
G= Clearance to inside corner	*	*	12 inches (30 cm) ‡	12 inches (30 cm) ‡
H= Clearance to each side of center line extended above meter/regulator assembly	3 feet (91 cm) within a height 15 feet (4.5 m) above the meter/regulator assembly	*	3 feet (91 cm) within a height 15 feet (4.5 m) above the meter/regulator assembly	3 feet (91 cm) within a height 15 feet (4.5 m) above the meter/regulator assembly
I= Clearance to service regulator vent outlet	3 feet (91 cm)	*	3 feet (91 cm)	3 feet (91 cm)

¹ In accordance with the current CSA B149.1, Natural Gas and Propane Installation Code
² In accordance with the current ANSI Z223.1/NFPA 54, National Fuel Gas Code
[‡] A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.
[‡] Permitted only if veranda, porch, deck, or balcony is fully open on a minimum of two sides beneath the floor.
^{*} For clearances not specified in ANSI Z223.1/NFPA 54 or CSA B149.1, one of the following shall be indicated:
a) A minimum clearance value determined by testing in accordance with section 2.19.6, or;
b) A reference to the following footnote:
^e Clearance in accordance with local installation codes and the requirements of the gas supplier.^e

Planning Your Vent Installation

This type of direct vent system may terminate in one of two ways: Vertical termination using a vent cap, or Horizontally using a wall termination. There are limitations to the vertical and/or horizontal lengths (see Figure 15 for venting charts).

When calculating the length of the vent pipe from the outlet of the appliance to termination, allowing for ceiling thickness, the vertical rise in the attic or second story and sufficient vertical height above the roof.

Fire stops are required at each floor level the vent passes through.

When carrying out vertical installations that require 45° elbows add additional pipe to allow for the offset (see Figure 7 for 45° off set table).

Vent Restriction

Due to the extra flow produced by certain venting configurations vent restriction may be required to maintain performance (see Figure 25 and Figure 26).

Direct Vent Pipe System

A 4-6 Approved Direct Vent Pipe System is required for proper installation. An adaptor is attached to the unit to be used to connect the double wall system. Assemble the vent system using the desired combination of sections and fittings required for your particular installation. While assembling the pipe ensure that you bear in mind the best visual appearance, keep seams oriented toward the wall or ceiling where possible.

Make sure you twist the mating section all the way to make a solid connection.

NOTE: As this system is a sealed system RTV sealing compound must be used to seal the metal to metal joint.

The female section of the pipe/fitting has four indentations evenly spaced around the pipe. These indentations are designed to slide over the male section of the pipe and locate into the four entry slots of the male section of pipe, then twist the female section clockwise a quarter turn to fully lock the sections together. Apply a bead of RTV high temperature sealant to both the 4" exhaust and 7" intake section of the male pipe.

Horizontal Wall Vent Termination

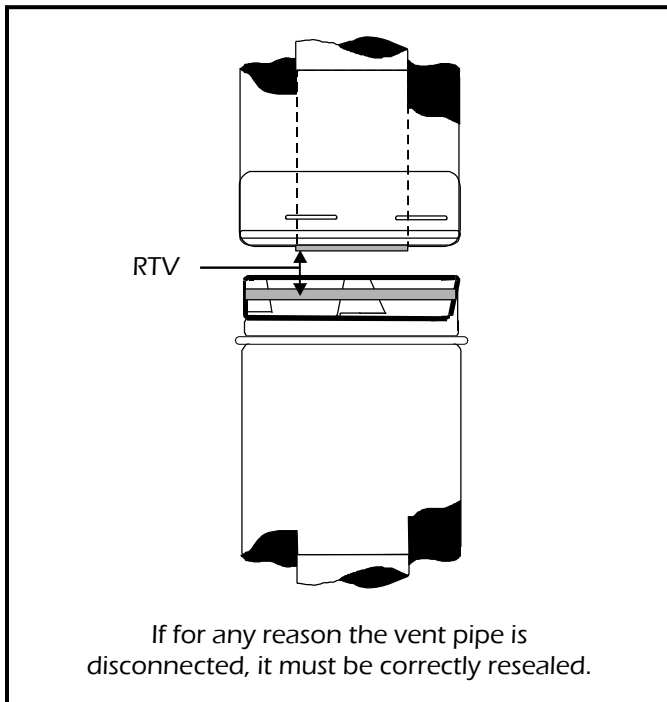
The position of the horizontal vent termination must be positioned in such a way as to meet all local building codes.

Attach the correct length of vertical section pipe and an elbow fitting to the stove.

Mark the center line of the pipe facing the wall (allowing for a 1/4" rise per foot of horizontal, example 10 foot of horizontal would require a rise of 2.5").

NOTE: Allowing the vent pipe to slope down toward the vent termination could cause poor combustion and/or high temperatures that may present a fire hazard.

If heater is removed from venting system it must be attached and resealed per vent manufacturer requirements and in accordance with this installation manual.

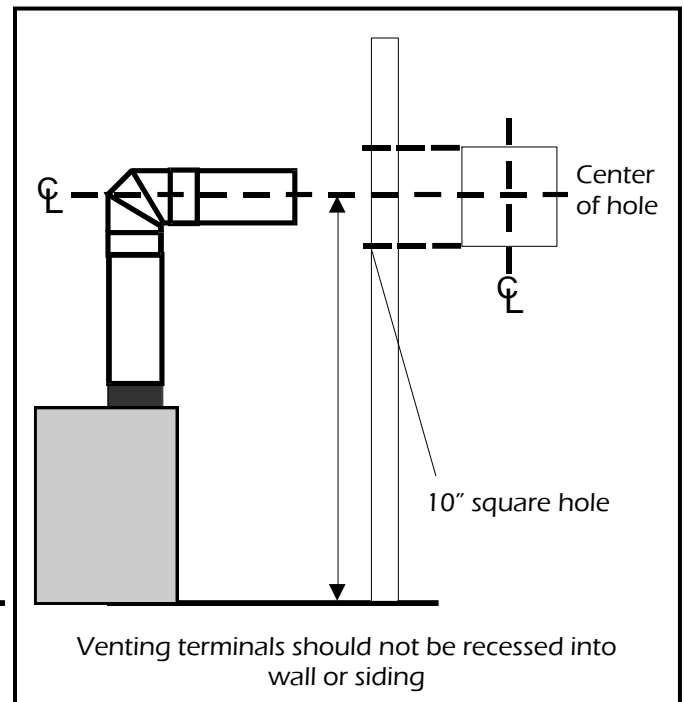
FIGURE 4 – SEALING VENT PIPE

Mark a 10" x 10" square around the center mark (inside dimensions).

Cut and frame the exterior wall to except the Wall Thimble. Install the Wall Thimble shield using wood screws. If the wall being penetrated is constructed of non-combustible material a 7" hole sufficient for the vent pipe is acceptable.

When the termination is to be attached to vinyl siding apply a bead of non-hardening mastic around the outside edge to form a seal between the standoff and the terminal. Attach the terminal to the exterior wall using four wood screws through the holes in the corner of the vent terminal. Complete the terminal installation apply a bead of mastic around the outer edge of the vinyl standoff.

With the termination installed you can now connect the completed vent assembly by sliding the unit back towards the wall and carefully inserting the pipe into the terminal. Before the final connection is made slide on the decorative wall thimble. Secure

**FIGURE 5 – VENT TERMINATION**

the terminal by securing the termination straps to the pipe as close to the exterior wall as possible using sheet metal screws, ensure that the straps are hidden by the wall thimble cover. Apply decorative trim if required.

Before sliding the pipe into the termination ensure that you have slid the decorative wall thimble cover and penetration heat shield over the pipe.

Before sliding the pipe into the termination ensure that you have slid the decorative wall thimble cover and penetration heat shield over the pipe.

Slide the pipe into the vent, making sure that at least 1 1/4" overlap between the pipe and the terminal. Attach the pipe by attaching two sheet metal screws through the terminal straps and into the pipe. Bend back the straps towards the terminal making sure they are hidden by the decorative thimble.

Finally attach the wall penetration heat shield and secure with wood screws.

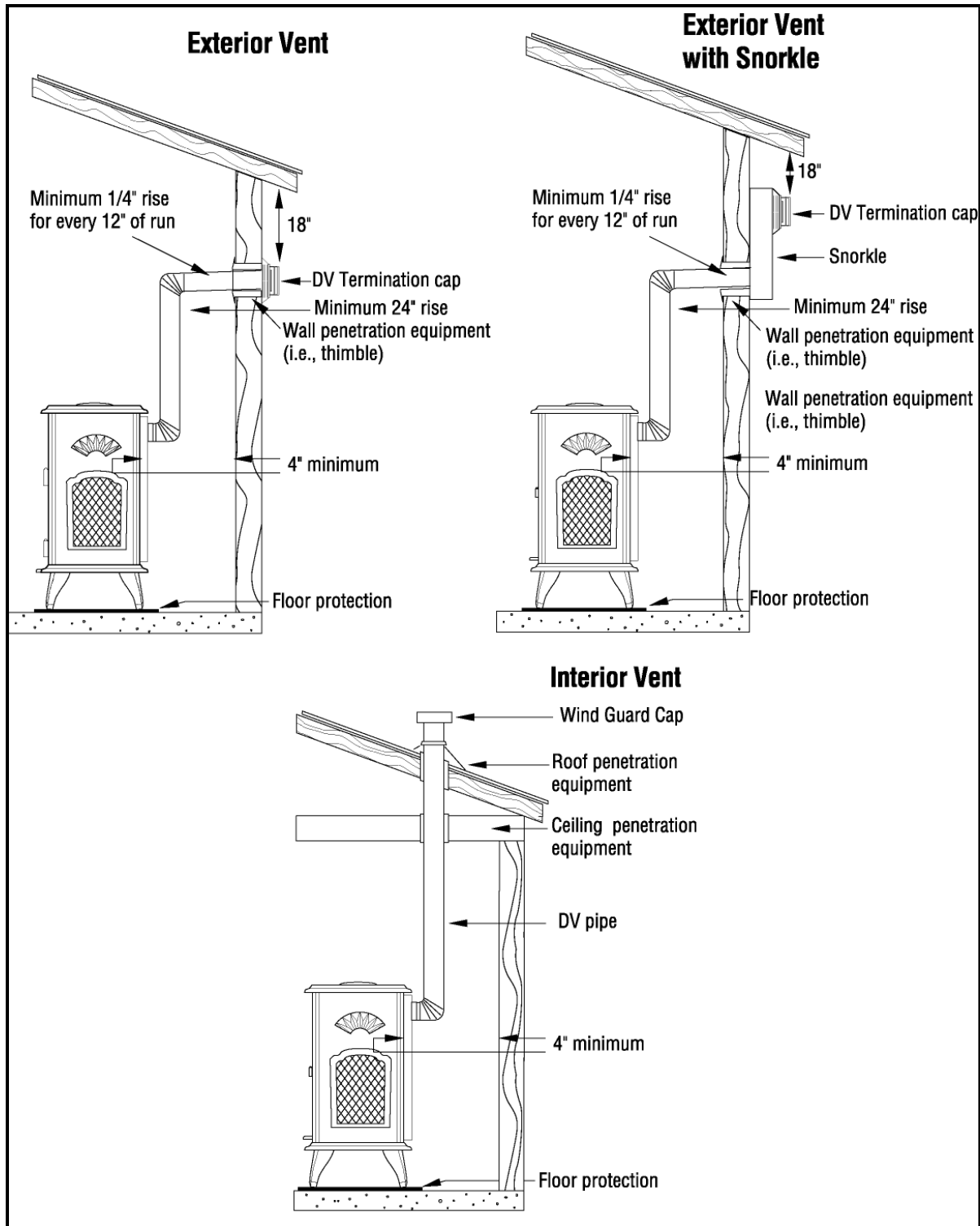
FIGURE 6 – DIAGRAM OF VENTING REQUIREMENTS

FIGURE 7 – DIAGRAM OF VENTING REQUIREMENTS

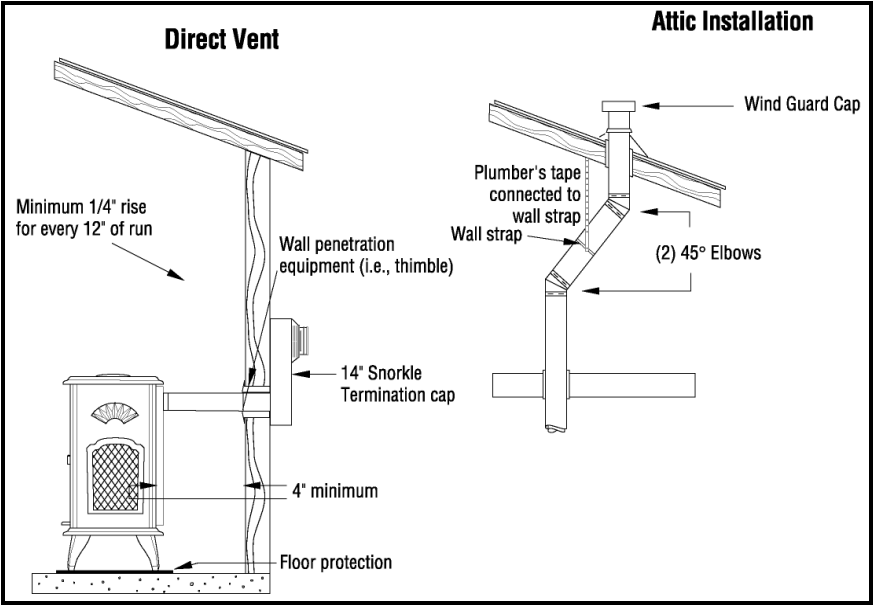
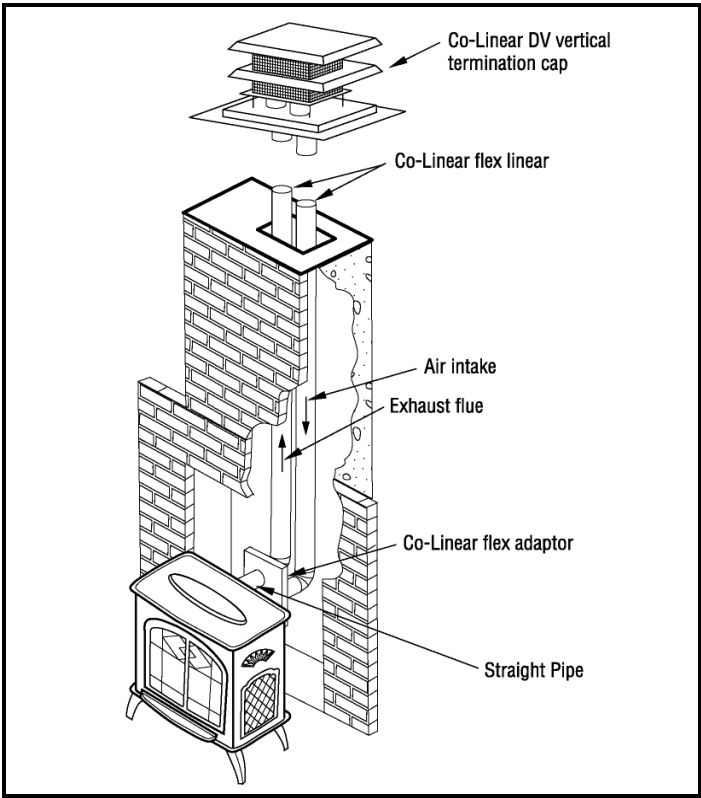
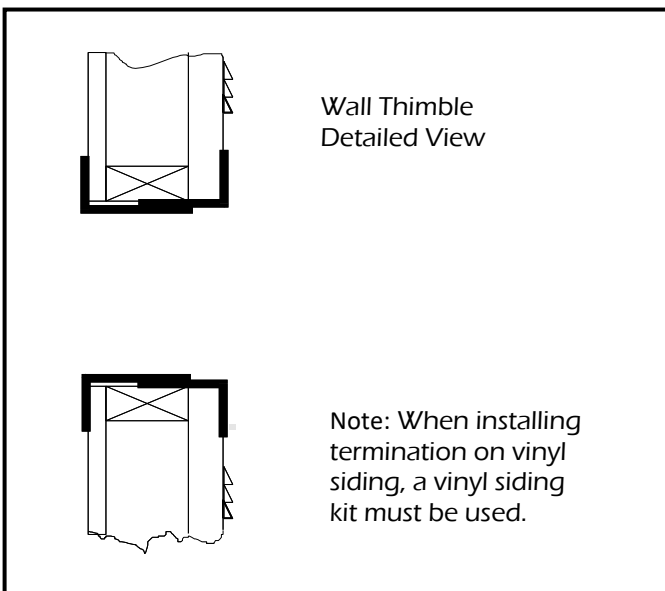


FIGURE 8 – CO-LINEAR FLEX SYSTEM



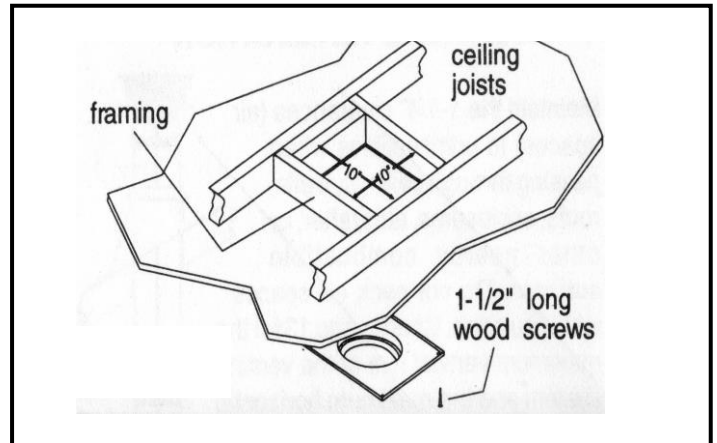
**FIGURE 9 – WALL THIMBLE
INSTALLATION**

To achieve the minimum vertical rise a 14" or 36" snorkel may be used. Where the bottom of the terminal may be blocked by snow etc ensure provision is made for adequate drainage. For proper venting, see Figure 6 and Figure 7.

When planning your installation, it will be necessary to select the proper length of vent pipe installations. For vertical installations, determine the length of vent pipe required by measuring the distance from the appliance flue outlet to the ceiling, the ceiling thickness, the vertical rise in the attic or second story, and allow for sufficient vent height above the roofline. For two-story applications, firestops are required at each floor level. If an offset is needed in the attic, additional pipe and elbows will be required. Venting terminals shall not be recessed into a wall or siding.

Snorkel

For installations requiring a vertical rise on the exterior of a building, a 14" or 36" tall Snorkel Termination may be used. If the Snorkel Termination must be installed below grade (i.e.,

FIGURE 10 – CEILING DETAIL

basement application), proper drainage must be provided to prevent water from entering the Snorkel Termination.

For straight out the back rear vent installations a snorkel must be used. **The maximum horizontal straight out the back, pipe run is 18".**

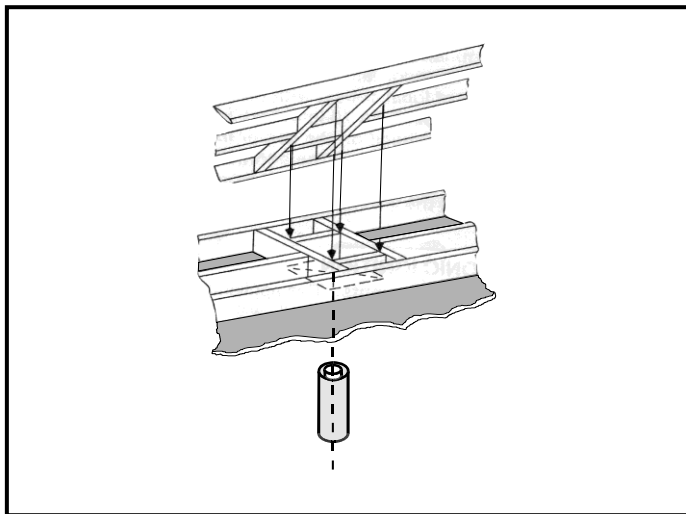
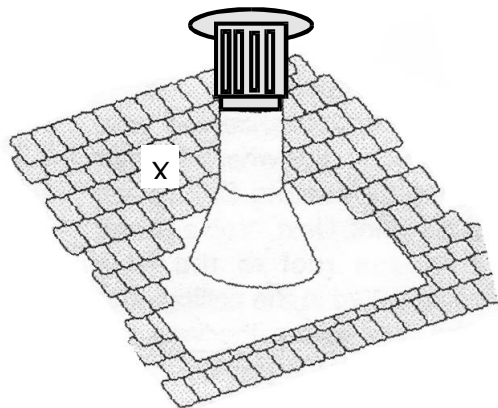
Vertical Installation

Always maintain a 1" clearance around the vent pipe (vertical) and 2" clearance horizontal, when passing through ceilings, walls, roofs, enclosures, attic rafter or any combustible surfaces.

DO NOT PACK AIR SPACES WITH INSULATION.

Refer to the vent chart with Figure 15 for maximum allowable vertical and horizontal allowable installations.

When planning your installation determine if ceiling joists, roof rafters or other framing will obstruct the vent system. You may have to use 45° elbows to navigate around any obstacles. When passing through a flat ceiling install a Box/Wall thimble. Cut a 10" square hole and frame as shown in Figure 10 and Figure 11.

FIGURE 11 – BOX/WALL THIMBLE**FIGURE 12 – VENT CAN HEIGHT**

Consult local codes for minimum vent cap height above the roof (X).

Pitch (Ratio)	X'
0/12 - 2/12	4"
2/12 - 7/12	5 1/2"
7/12 - 12/12	6 3/4"
12/12 - 24/12	7 1/2"
24/12+	12 1/2"

Ensure all pipe section are fully twist locked.

Use a suitable round or square support through the roof. Ensure adequate heat shield protection is provided. See diagram and chart for minimum protection (Figure 12).

NOTE: Always check your local codes before installing venting. Clearances etc, may vary from state to state (province to province).

Through Roof Framing

Maintain 10" opening relative to the pitch of the roof.

To prevent water leaks, install the flashing with upper portion slid under the roofing material and the lower portion over the roofing material.

NOTE: Do not fasten down until the final adjustments to the vent have been made.

MOBILE HOME INSTALLATION

Direct Vent appliances installed in Mobile Homes must be secured to the floor in a minimum of two locations. All four legs have leveling bolts that can be removed and a lag screw can be used to secure the heater to the floor and/or hearth pad.

For proper venting, see Figure 6, Figure 14, and Figure 15.

FIGURE 13 – PIPE CONFIGURATIONS

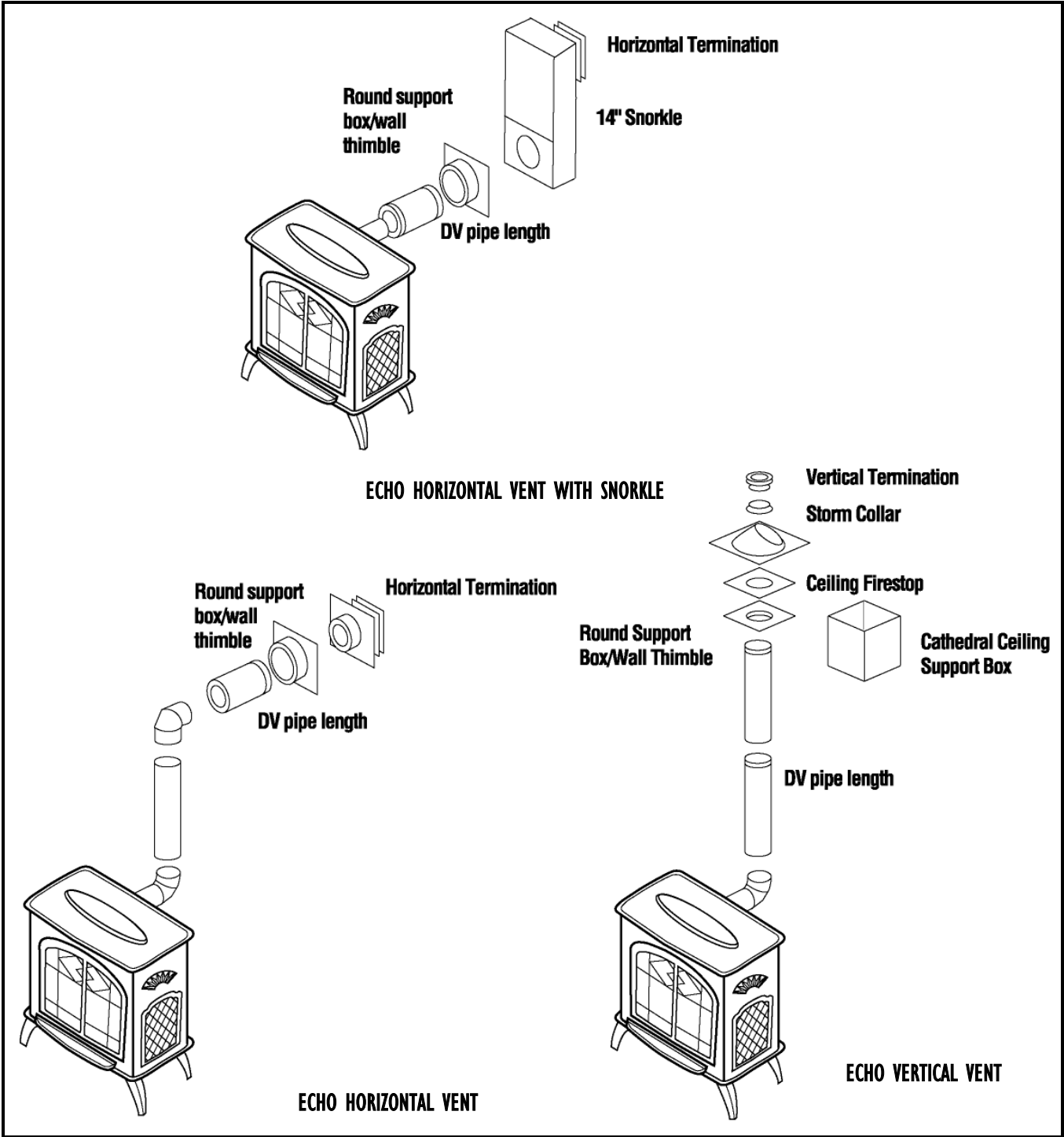


FIGURE 14 – VENTING REQUIREMENTS

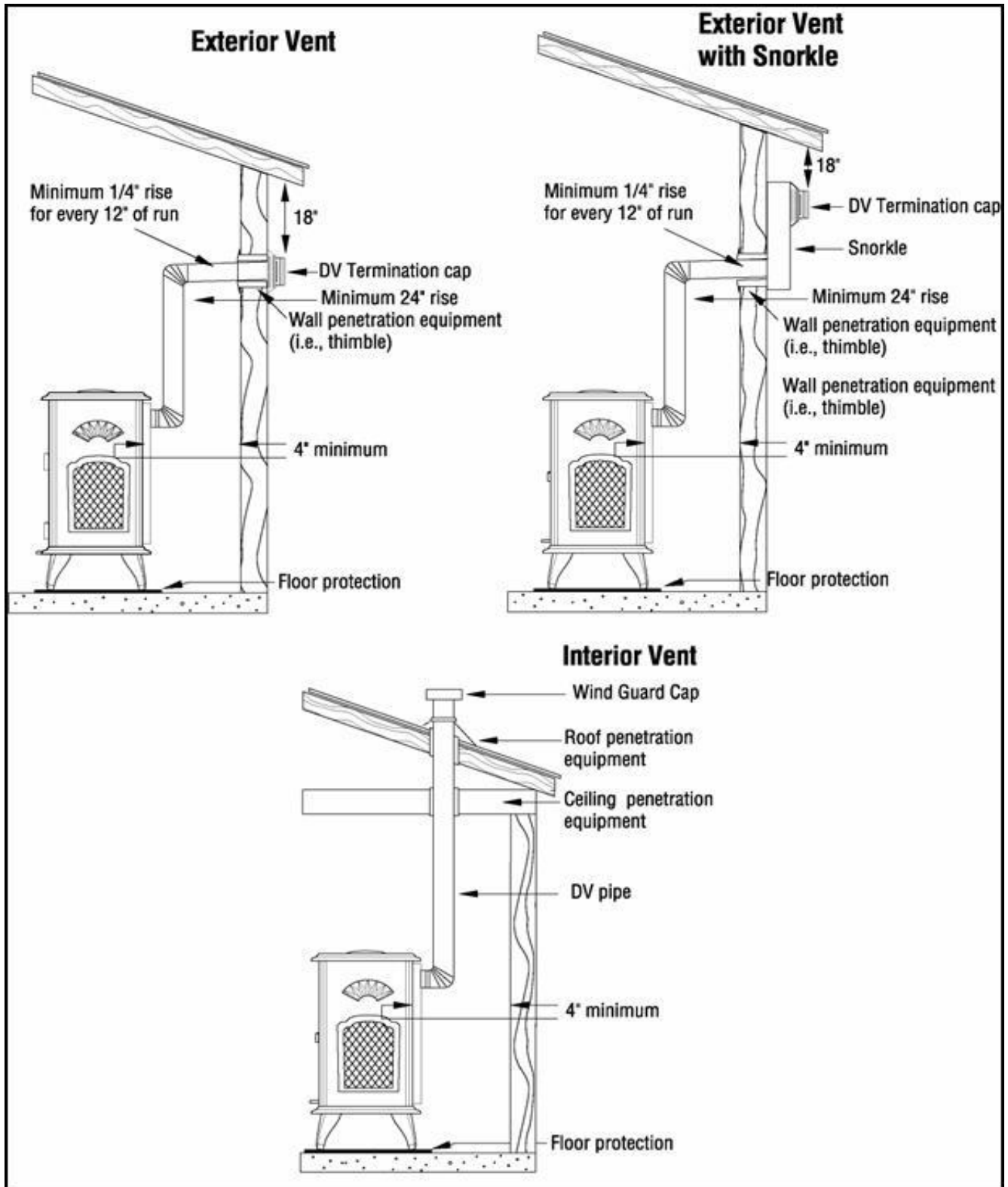


FIGURE 15 – VENTING CHART

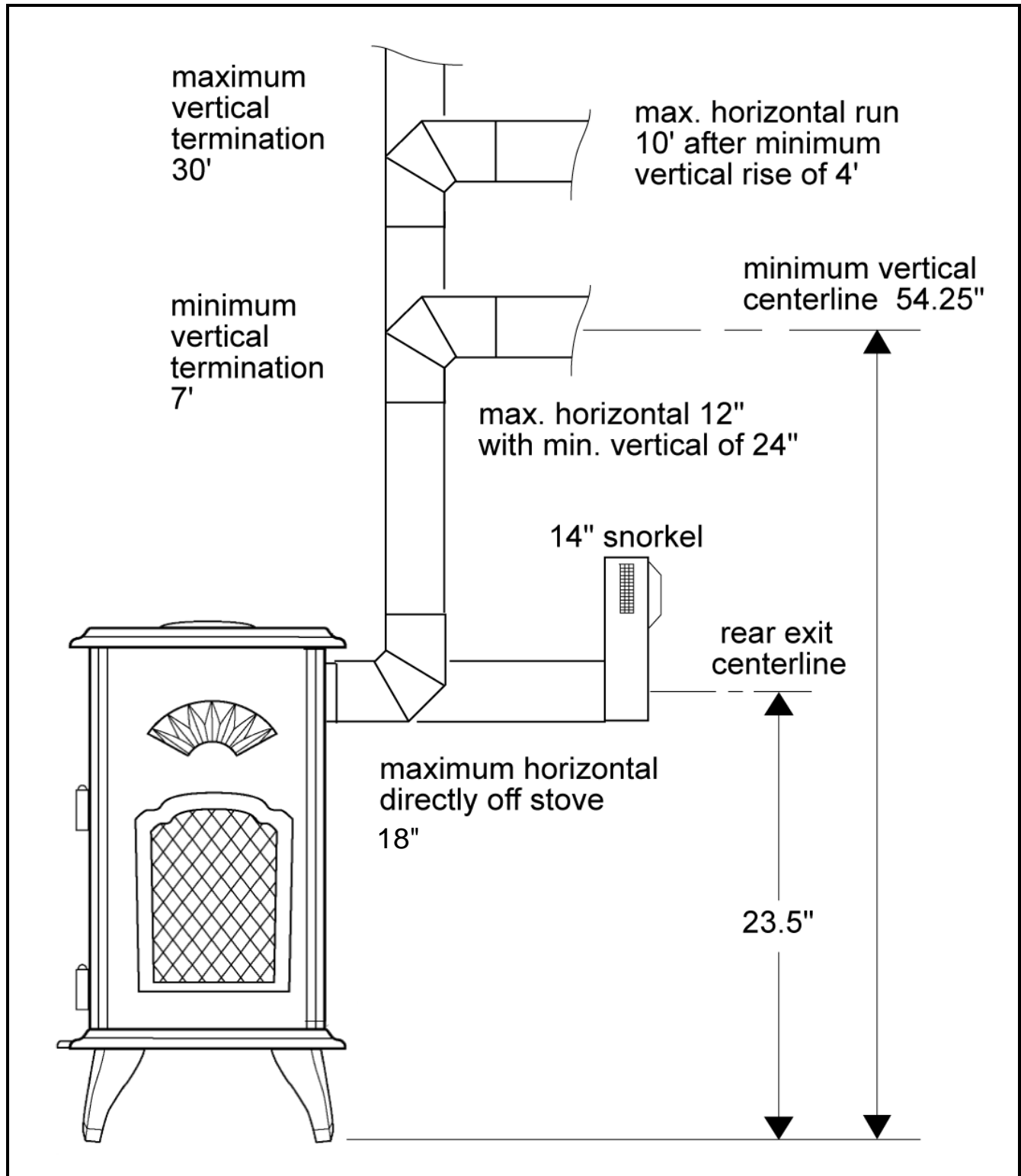
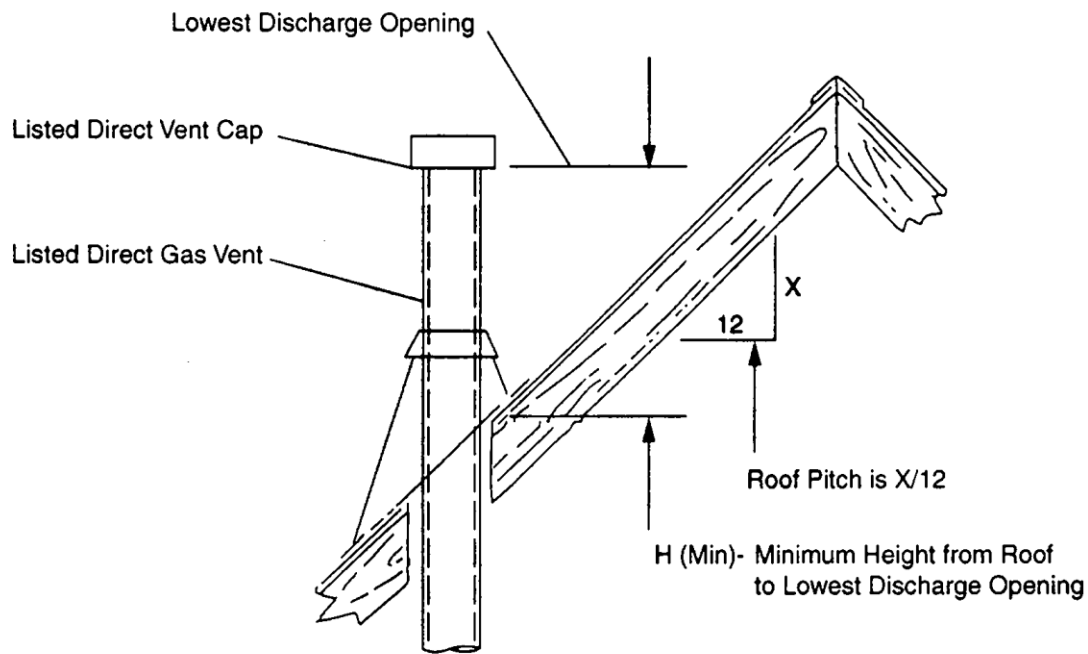


FIGURE 16– VENT TERMINATION

Wind flow over roof structures can often cause localized pressure disturbances. Vent termination must take into account these disturbances and minimize them by using the following table to maintain the correct legal height of the vent.

NOTE: If your installation involves a roof with a slope greater than 6/12 or if a wall or other vertical obstruction is within 8' of the vent termination, the vent termination will have to be taller in accordance with the following table.



Roof Pitch	H (Min.) Ft.
Flat to 6/12	1.0
Over 6/12 to 7/12	1.25
Over 7/12 to 8/12	1.5
Over 8/12 to 9/12	2.0
Over 9/12 to 10/12	2.5
Over 10/12 to 11/12	3.25
Over 11/12 to 12/12	4.0
Over 12/12 to 14/12	5.0
Over 14/12 to 16/12	6.0
Over 16/12 to 18/12	7.0
Over 18/12 to 20/12	7.5
Over 20/12 to 21/12	8.0

Vertical Installation

The maximum vertical distance allowed with this appliance is 30 feet from the top of the stove to free atmosphere. Two 45-degree elbows to offset the vertical rise are permitted. Clearances to combustibles when passing through ceilings, walls, roofs, enclosures, attic rafters, or other close **combustible surfaces are as follows: 1" to pipe from any combustible surfaces. Vertical rises in excess of 12' may require an air restriction** (See Figure 21).

Notes

1. If an offset is necessary in the attic to avoid obstructions, it is mandatory to support the vent pipe every 3 feet, to avoid excess stress on the elbows (see Figure 6). Vertical installations that require offsets must use 45-degree elbows. The 45-degree elbows offer less restriction to the flow of flue gasses and intake air.
2. For multi-story vertical installations, a ceiling firestop is required at the second floor, and any subsequent floors.
3. **Any occupied areas above the first floor, including closets and storage spaces that the vertical vent passes through must be closed.** The enclosure may be framed and sheet rocked with standard construction materials. Maintain the clearance to combustibles inside the enclosure as per the Listing Label. Do not fill any of the air spaces with insulation.

GENERAL VENTING MAINTENANCE

Conduct an inspection of the venting system semi-annually. Recommended areas to inspect are as follows:

1. Check all areas of the venting system exposed to the elements for corrosion. Corrosion will appear as rust spots, streaks, and in extreme cases, holes. Any components with these symptoms must be replaced.

2. Remove the termination cap and shine a flashlight down the vent pipe. Remove any bird nests or other foreign material.
3. Check for evidence of excessive condensation such as water droplets forming on the inner liner or dripping from the pipe vent joints. Continuous condensation can cause corrosion of caps, pipe, and fittings. It may be caused by having excessive lateral runs, too many elbows, and exterior portions of the system being exposed to cold weather.
4. Inspect joints to ensure that no pipe sections or fittings have been disturbed or loosened. Check mechanical supports such as wall straps, plumbers tape, etc., for strength, fastening, and rigidity.

Gas Line Installation

Only persons licensed to work with gas piping may make the necessary gas connection to this appliance. You are now ready to hook up the gas supply. Be sure gas plumbing instructions and all provincial and local codes are carefully followed. Use approved flexible gas connections or rigid piping, depending on provincial and local codes, to attach burner to gas supply. Be sure to use proper size gas supply line. Carefully check all connections for gas leaks with soap and water solution.

Each installation must conform to all local and national codes. Refer to the national fuel gas code, local zoning, and code authorities for details on installation requirements.

Existing Gas Supply

Before interrupting the existing gas supply, it is recommended that the following be checked.

Shut down all gas appliances and carry out a pressure test to insure there are no existing leaks on the system.

Before connecting the appliance to the gas supply line, double check that the appliance you have

purchased is designed for the gas type you are using. The gas type markings are located on the certification label and also on the appliance's gas valve.

Check the gas pressure to insure you will be able to supply the minimum inlet pressure for the appliance.

Check your pipe sizing to insure sufficient volume will be supplied to the appliance.

Gas Supply Installation

Provide adequate clearance for proper installation and checking of the gas connections.

Have your gas supplier or a qualified gas fitter run a gas supply line into the gas fireplace. The line must be properly sized and fitted according to the installation codes. Upstream of the appliance supply connection, the fitter shall provide an easily accessible manual shut-off valve.

The gas supply pipe should enter the appliance case through the opening at the rear left side. The supply pipe should be connected to the appliance gas inlet pipe situated at the left side of the control unit. Supply line connection to the inlet pipe is 3/8 NPT.

Use only new black iron or steel pipes or copper tubing if acceptable—check local codes. Note that in USA copper tubing must be internally tinned for protection against sulfur compounds.

Unions in gas lines should be of ground joint type. Sealant used must be resistant to the action of all gas constituents including LP gas. Sealant should be applied lightly to male threads to ensure excess sealant does not enter gas lines.

FIGURE 17 – FLAME CHARACTERISTICS

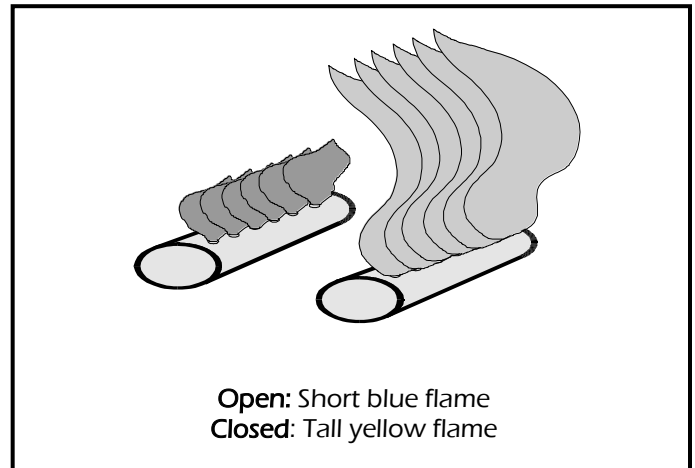
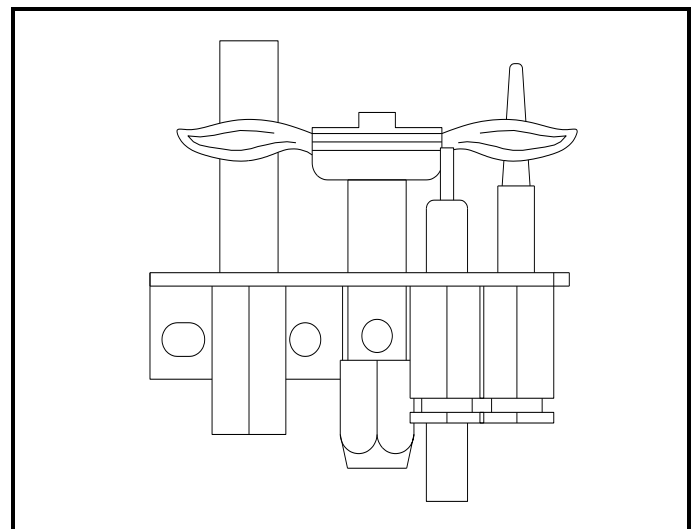


FIGURE 18 – CORRECT PILOT FLAME



Pressure Testing the Supply Line for Leaks

The appliance and its individual shut-off valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.5 kPa). The 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 1/2 psig (3.5 kPa). Failure to do so will damage the appliance's gas valve. Such damage is not covered by the manufacturer's warranty.

When testing for leaks:

- Make sure that the appliance is turned off.
- Open the manual shut-off valve.
- Test for leaks by applying a liquid detergent or soap solution to all joints. Bubbles forming indicate a gas leak.
- Never use an open flame to check for leaks.
- Correct any leak detected immediately.

The pressure test tapping locations are built-in to the non-adjustable regulator.

The correct pressure range is shown in the table in of this manual. The pressure check should be made with the burner lit. See lighting instruction section for full operating details. Be sure to tighten the pressure tap set-screw after checking the pressure. Check all gas connections for gas leaks.

Aeration Setting Check

Aeration is factory set at a gap that will give optimum performance for the vast majority of installations.

However, in a few unusual installations performance may be improved by adjusting the aeration. The need for adjustment should be determined by operating the appliance with the ceramic fuel effects and window installed.

Adjust the aeration by slackening the aeration set screw on the burner and rotating the air shutter.

Be sure to tighten the pressure tap set-screw after checking the pressure. Check all gas connections for gas leaks.

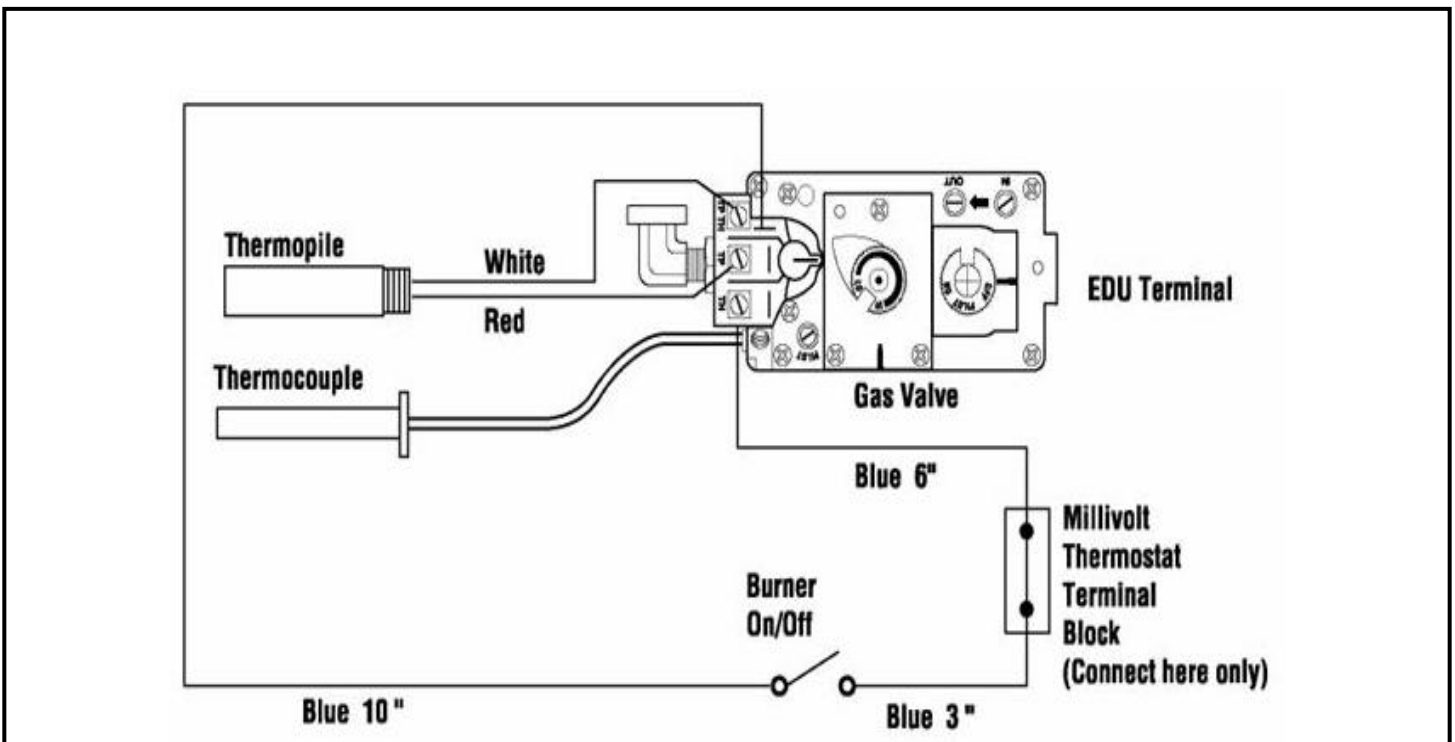
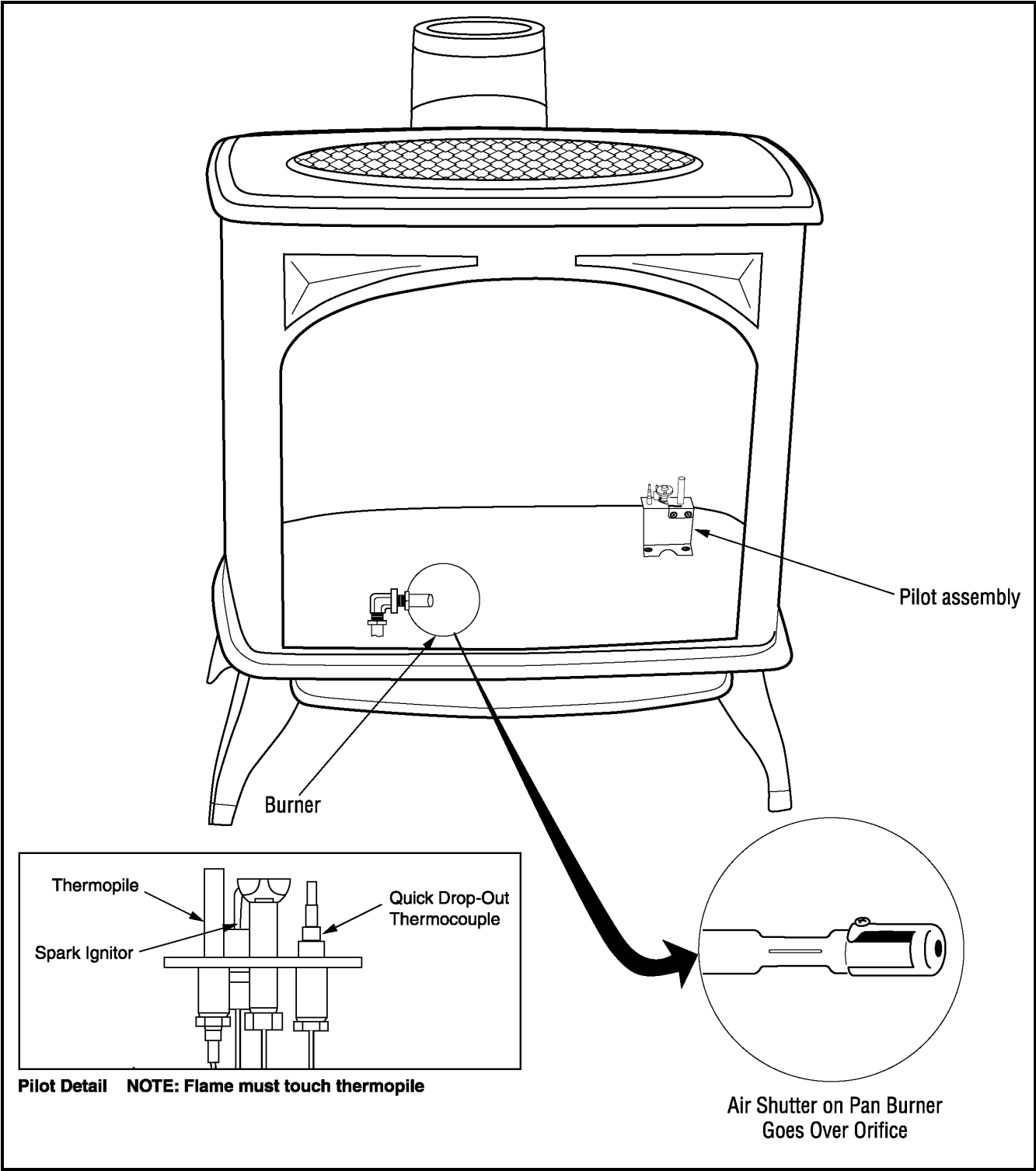


FIGURE 19 – MILLIVOLT WIRE DIAGRAM

Caution: Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.

FIGURE 20 – LOCATION OF PILOT, BURNERS, AND AIR SHUTTER



INSTALLATION CHECKLIST

Check off the following list before proceeding to light the heater.

- ☐ There are no combustibles placed within 36" of heater or vent pipe or any combustibles that can swing within 36" of heater such as door drapes, etc.
- ☐ The location of the main shut off valve is known by everyone in the house (it is usually next to the gas meter or propane tank). EVERYONE must know where this valve is located.
- ☐ All necessary permits and installation information have been obtained and the final inspection has been performed by the local building inspector.
- ☐ The operation instructions located on the gas valve panel door have been read and understood. A copy of these instructions can be found in the "Operations" section of this manual.
- ☐ The operator and pilot igniter have read this manual thoroughly and understand it.

Burner and Pilot Checks

A periodic check of the pilot and burner flames should be made. Check after the fire has been on for at least 30 minutes. The pilot flame must cover the tip of the thermocouple and thermopile probes, if the pilot flame does not sufficiently cover the probes it can be adjusted using the pilot adjustment screw found on the front of the gas valve. The main burner flame pattern will vary from appliance to appliance depending on the type of installation and climatic conditions.

OPERATION

Location of Controls

See Figure 21 for location of controls. Control functions are outlined below.

Gas Control Knob

This knob is used for starting the pilot and has three (3) positions: On, Off, and Pilot. The pointer directly above the knob indicates the position the knob is in.

Hi/Lo Flame Adjust

This knob controls the burn, either high or low. It is operated manually by turning the knob. Once in position, the wall thermostat will turn on the burner to the position which this knob is set.

Pilot Igniter

This button is used to ignite the pilot. It is pushed in while the gas control knob is in the Pilot position. When pressed, it creates a spark at the pilot, igniting it.

Burner On/Off Switch

This switch turns the burner on after the pilot is lit. When the wall thermostat is hooked up, this switch will remain in the "On" position after the pilot is lit. The wall thermostat will then turn the heater on automatically when indicated.

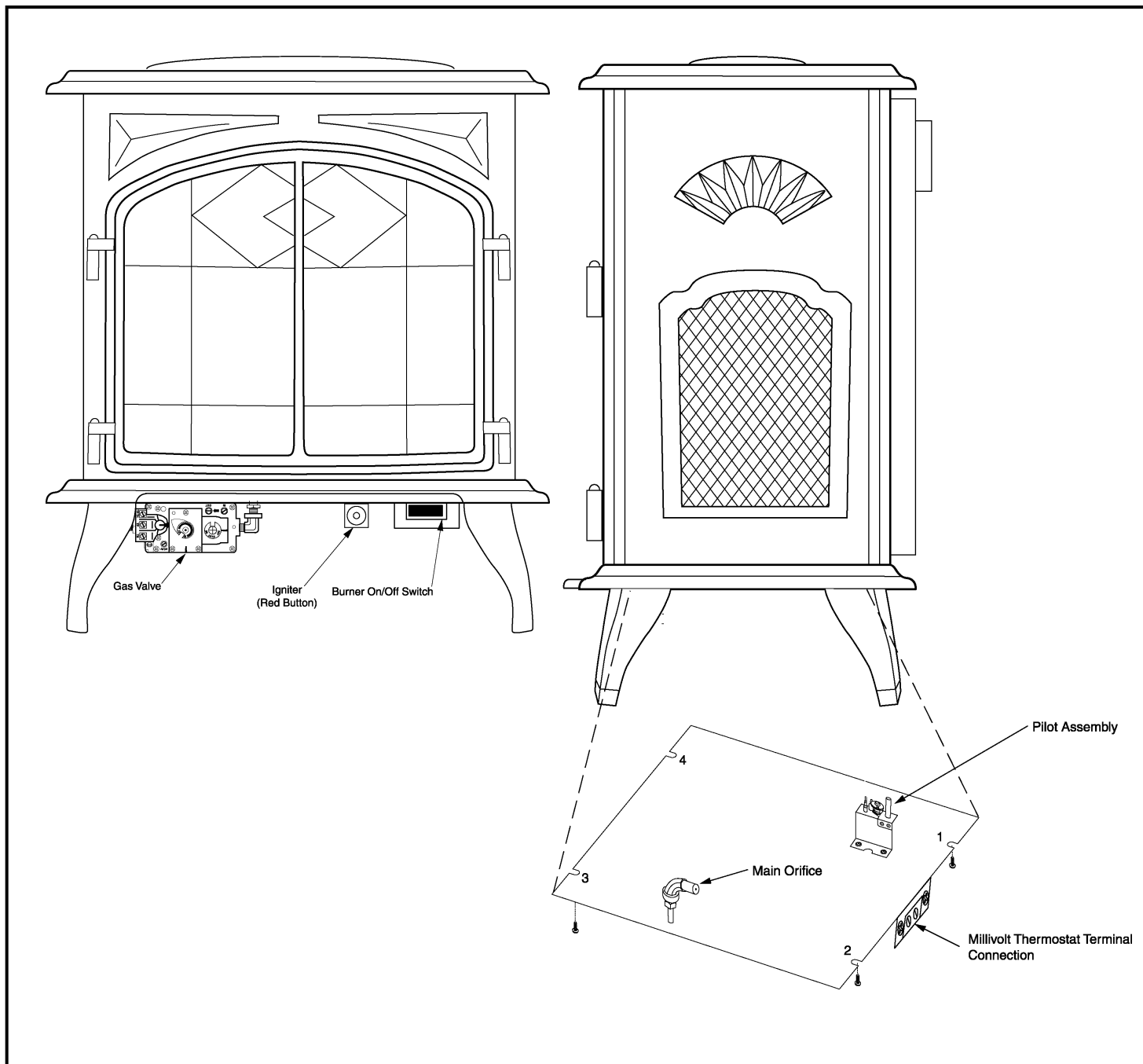
FIGURE 21 – DIAGRAM OF CONTROL COMPONENTS

FIGURE 22 – AIR RESTRICTOR

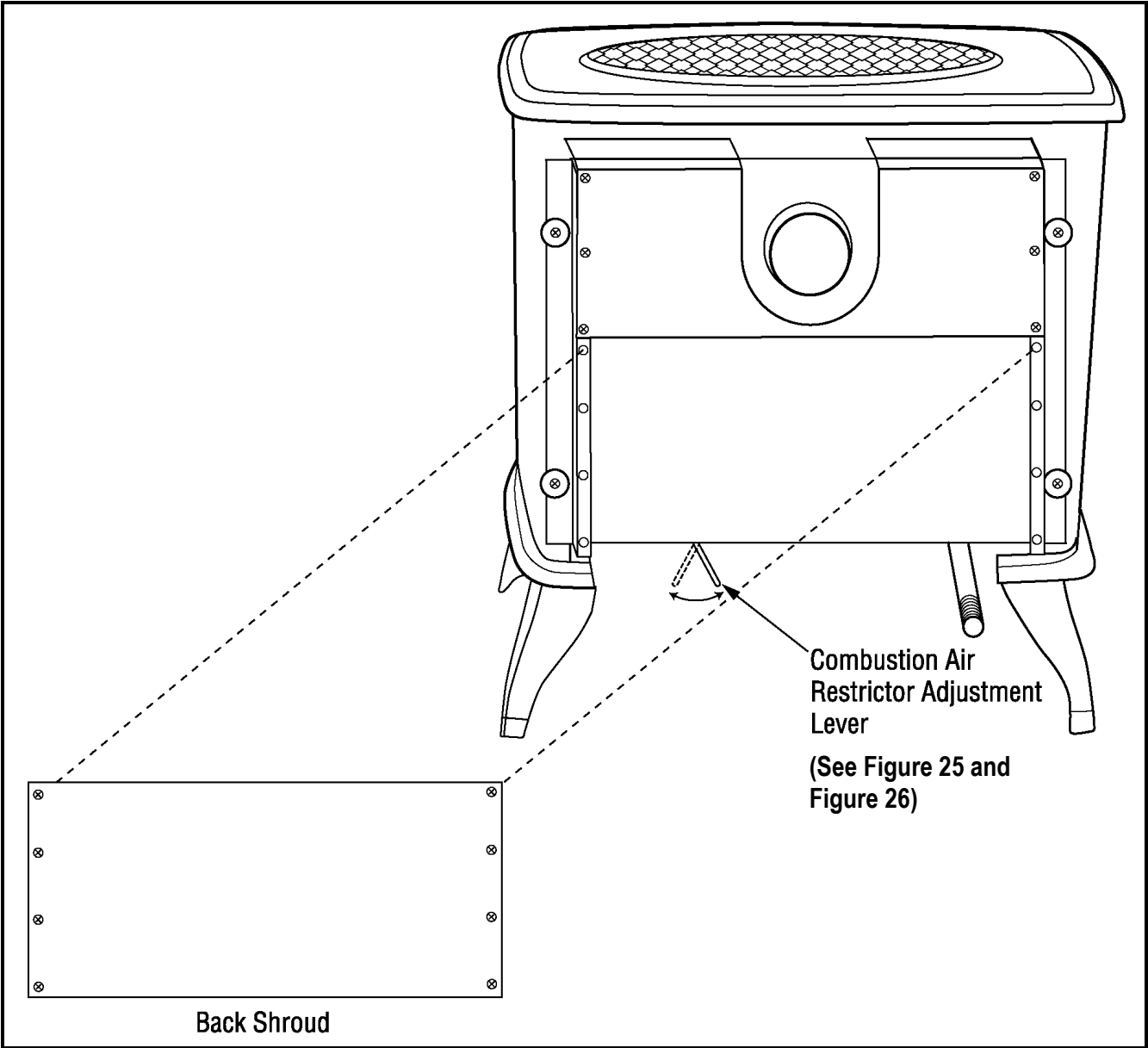
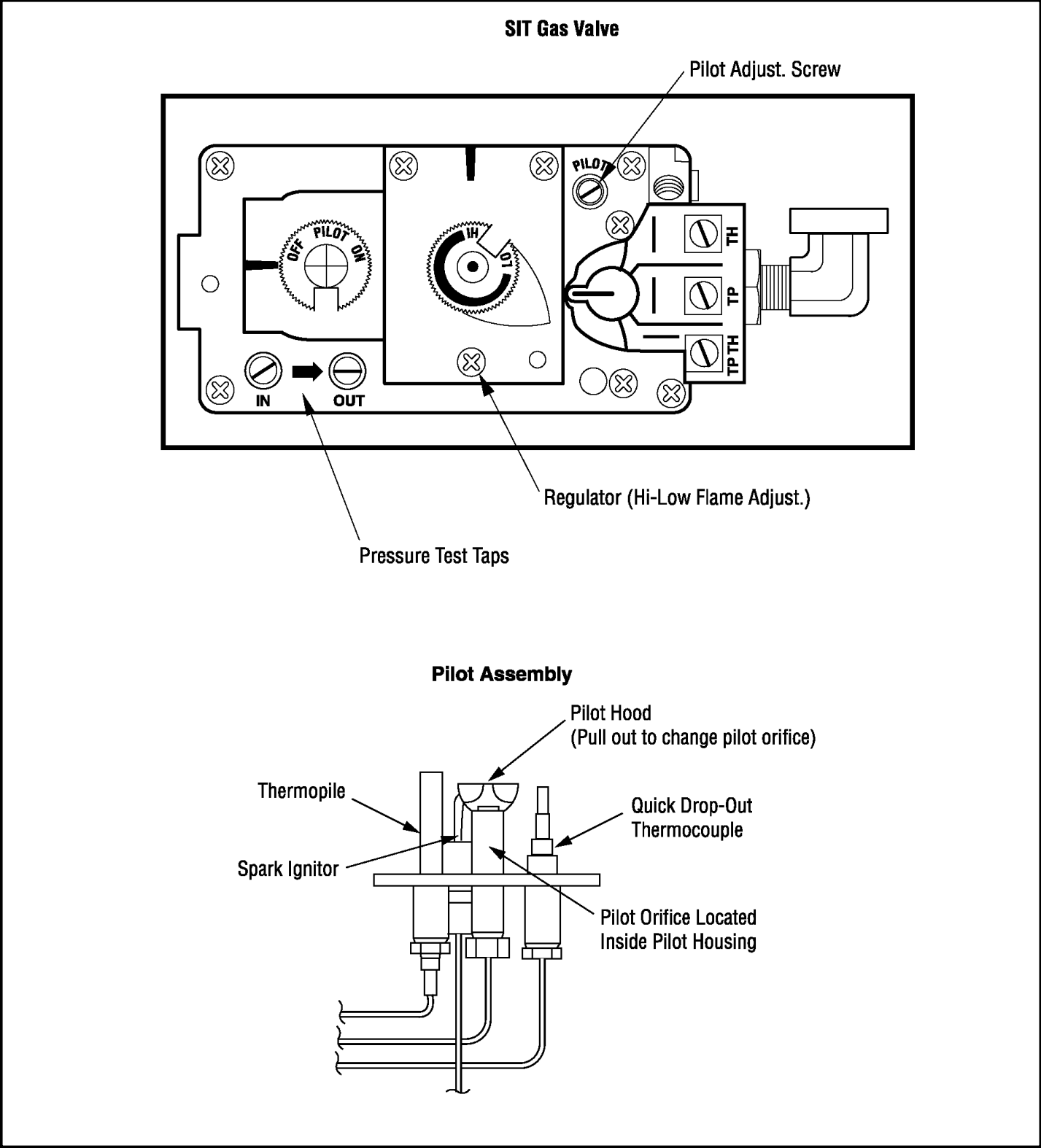


FIGURE 23 – GAS VALVE AND PILOT ASSEMBLY



PRE-START UP CHECKS

- ☐ **DO NOT** use tools to operate controls. Only use your hand to push in and turn the controls.
- ☐ **DO NOT** abuse glass doors by striking or slamming shut.
- ☐ **DO NOT** try to repair the appliances. Call a qualified service technician.
- ☐ **DO NOT** clean the appliance when hot.
- ☐ **DO NOT** use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and replace any part of the gas control system which has been under water.
- ☐ **DO NOT** use this appliance if you smell gas.

WHAT TO DO IF YOU SMELL GAS

- Open windows.
- Do not touch any electrical switch.
- Do not use the phone in your building.
- Extinguish any open flame.
- Immediately call your gas supplier from a neighbor's phone and follow the gas supplier's instructions
- If you cannot reach our gas supplier, call the fire department.

NOTE: The copy in manual is for reference only. In the event of a discrepancy, the label on the unit is to be taken as the latest version.

Wall Thermostat Control (Millivolt Thermostat Mandatory)

Hook thermostat wire (2) to the terminals as indicated in Figure 21, if you choose the wall thermostat option. Keep in mind the heater will run until the thermostat signals it is too hot in the room. It will then turn the heater to pilot only. Location of the wall thermostat is crucial. If it is too close to the

heater, the unit will shut down frequently. If it is too far away, the heater will run longer than may be necessary. Place the wall thermostat approximately twelve (12) feet from the heater.

NOTE: Remove small wire shunt before hooking up wires.

1. Push the gas control knob in slightly and turn clockwise to the "Off" position. **NOTE:** The knob will not turn from "On" to "Off" unless the knob is depressed. Do not force!
2. Wait five (5) minutes to clear out any gas, then again smell for gas, including near the floor. If you smell gas, **STOP** and follow the instructions outlined at the beginning of this manual.

If you do not smell gas, proceed as follows:

1. Set the thermostat to the lowest setting (if applicable).
2. Turn off all electrical power to the appliance (i.e., unplug the room fan cord).
3. If you do not smell gas, turn the gas control knob counter-clockwise to the "Pilot" position.

WARNING:

FOR YOUR SAFETY, READ BEFORE LIGHTING

If you do not follow these instructions exactly, a fire or explosion may result causing property and/or personal injury.

Do not operate appliance with the glass front removed, cracked, or broken. Replacement of the glass should be done by a licensed or qualified service person.

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 has a pilot which is lit with a push-button piezo lighter. When lighting the pilot, follow these instructions exactly.

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.

B. WHAT TO DO IF YOU SMELL GAS:

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

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

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

LIGHTING INSTRUCTIONS

1. STOP! Read the safety information above.
2. Set the thermostat to the lowest setting.
3. Controls are located at the bottom right side of the unit.
4. Turn the manual burner switch to the "OFF" position.
5. Push in gas control knob slightly and turn clockwise \curvearrowright to "OFF".

Note: Knob cannot be turned from "PILOT" to "OFF" unless knob is pushed in slightly. Do not force.

6. Wait five minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, STOP! Follow "B" in the safety information above on this label. If you don't smell gas, go to the next step.
 7. Find pilot – follow metal tube from the gas control. The pilot is located in the front right of the firebox.
 8. Turn control knob counterclockwise \curvearrowleft to "PILOT" position.
 9. Depress control knob and push in Piezo ignitor button. Once pilot ignites, continue to hold the control knob in for about one (1) minute after the pilot is lit. Release knob and it will pop back up. Pilot should remain lit. If it goes out, repeat steps 4 through 7.
- If knob does not pop up when released, stop and immediately call your service technician or gas supplier.
- If the pilot will not stay lit after several tries, turn the gas control knob to "OFF" and call your service technician or gas supplier.
8. Turn gas control knob counter clockwise \curvearrowleft to "ON". Set thermostat to desired setting or turn stove switch to "ON" position.

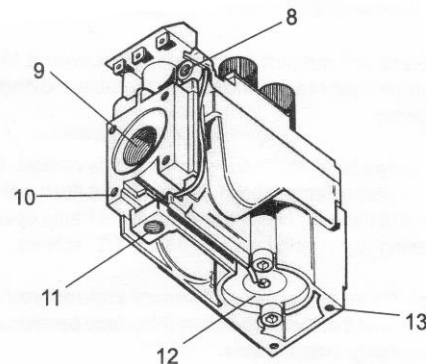
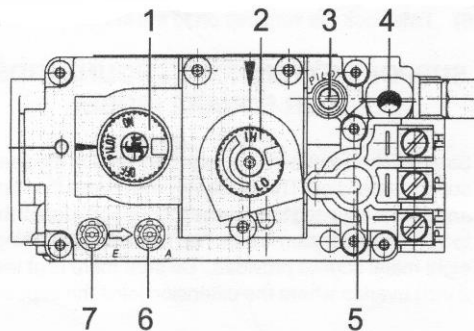
TO TURN OFF GAS TO APPLIANCE:

1. Set the thermostat to the lowest setting.
2. Turn off all electric power to the appliance if service is to be performed.
3. Push in gas control knob slightly and turn clockwise \curvearrowright to "OFF". Do not force.

Note: The valve is equipped with a safety lock out, once in the off position you must wait until the thermopile has cooled down before attempting to light pilot. (Approximately 3 minutes)

SIT VALVE DESCRIPTION

1. Control Knob
2. High Low Knob
3. Pilot Adjuster
4. Thermocouple Tap
5. Main Operator
6. Manifold Pressure Tap
7. Supply Pressure Tap
8. Pilot Tap
9. Manifold Tap
10. Flange securing Screws
11. Thermoelectric Unit
12. Additional Valve Mounting Hole



FDM 1002

4. Press the knob in and hold it in while repeatedly pushing the red igniter button until the pilot lights. This may take up to one (1) minute. You must keep the gas control depressed for 30 seconds once the pilot is lit.
5. Release the gas control knob. If the pilot goes out, repeat Step 6.
6. Turn the gas control knob counter-clockwise to "On."
7. Set the thermostat to the desired setting (if applicable) and turn the burner switch to "On." The main burner will then ignite.

Initial Burn, Fan, and Flame

The first time you use your heater, you will smell paint. This odor is from the paint curing on the outside of the heater. This is normal. The initial flame will at first be blue. It will become more yellow and "fire like." You can adjust the flame height using the Hi/Lo flame adjust (see Figure 21).

Normal Sounds

On start-up you might hear a whisper sound from the pilot, a clicking in the gas control valve, and a whirring sound as the fan turns on. These sounds are all normal.

WARNING

Do not burn heater if glass is cracked or broken. Replacement of glass should be done by a licensed or qualified service person. See "Maintenance" for replacing glass.

Failure to inspect and maintain your heater may lead to improper burning inside the heater and could create a dangerous situation.

MAINTENANCE

Make sure that there is adequate clearance for accessibility to service and operate the heater. Always verify proper operation after servicing. Every year you should inspect your fire box, burner, and glass gasket to make sure they are clean and functioning properly.

Burner, Firebox, and Pilot Inspection

The firebox should be inspected for any soot or dust build-up that might occur during operation. To inspect these components, open the door by unscrewing the handle until the door comes open. Remove the logs gently and inspect the holes in the burner plate to make sure that they are not clogged. Inspect the metal for signs of deterioration. There should be no soot in the firebox except where the flame might brush against the logs. If you find soot you may need an adjustment by your dealer or service technician. Visually inspect the pilot for soot build-up, proper flame height, and any obstruction (See Figure 17 and Figure 18). This inspection should be done periodically to ensure proper performance. See Figure 20 for location of pilot.

Door Gasket

Make sure the door gasket is sealed and creates a tight seal around the door.

Glass Replacement

Glass replacement can be done by lifting the door off the stove and removing the face plate. The glass and gasket must be replaced as complete assembly furnished by Thelin Hearth Products. Do not substitute materials or try to cut glass that is not furnished by Thelin Hearth Products.

Do not abuse glass by slamming door or striking foreign object against glass.

Cleaning

To clean the stove, make sure the appliance is off and cold. Then remove the logs and embers and use a vacuum to clean burner and air openings in the bottom and back of the appliance. Replace the logs and embers.

It will be necessary to clean the glass periodically. During startup, condensation, which is normal, forms on the inside of the glass and causes dust, lint etc. to cling to the glass surface. Initially paint, while curing, may deposit a slight film on the glass. We, therefore, recommend that, during the first few weeks of use, the glass is cleaned two or three times with non-abrasive common household cleaners and warm water. Ammonia based cleaners should not be used. Subsequently the glass should be cleaned two or three times a season depending on the circumstances. Do not clean the glass while it is hot. Always close the window securely before lighting. See Figure 24 for door removal, to clean inside of glass. **Do not clean glass with abrasive cleanser or when hot.**

Venting

The venting system should be periodically inspected by a qualified agency. If the vent pipe is disassembled for inspection or repair you must twist lock each piece in place on re-assembly. In addition the pipe adaptor (piece that connects to stove) must be sealed with high temperature (red) silicone. The flow of combustion and ventilation air must not be obstructed.

Appliance Area

Keep area around appliance free of combustible materials, gasoline, and other flammable vapors and liquids.

REPLACEMENT PARTS LIST

Replacement parts are available at your dealer. Contact Thelin Hearth Products for information on the closest dealer. The parts listed below are the only parts that the consumer may replace. All other parts must be replaced by a qualified gas service person.

PART

DESCRIPTION

Door Gasket	White 3/8" dia. fiberglass rope 51" long
Glass Gasket	Tape Knit Hytex 301B Channel
Door Glass	5 mm Pyroceram 12" x 17"
Pilot Assembly	Thermopile, thermocouple, pilot housing
Piezo Lighter	Igniter button
Log Set	Front and back logs
Owner's Manual	This document

TROUBLESHOOTING

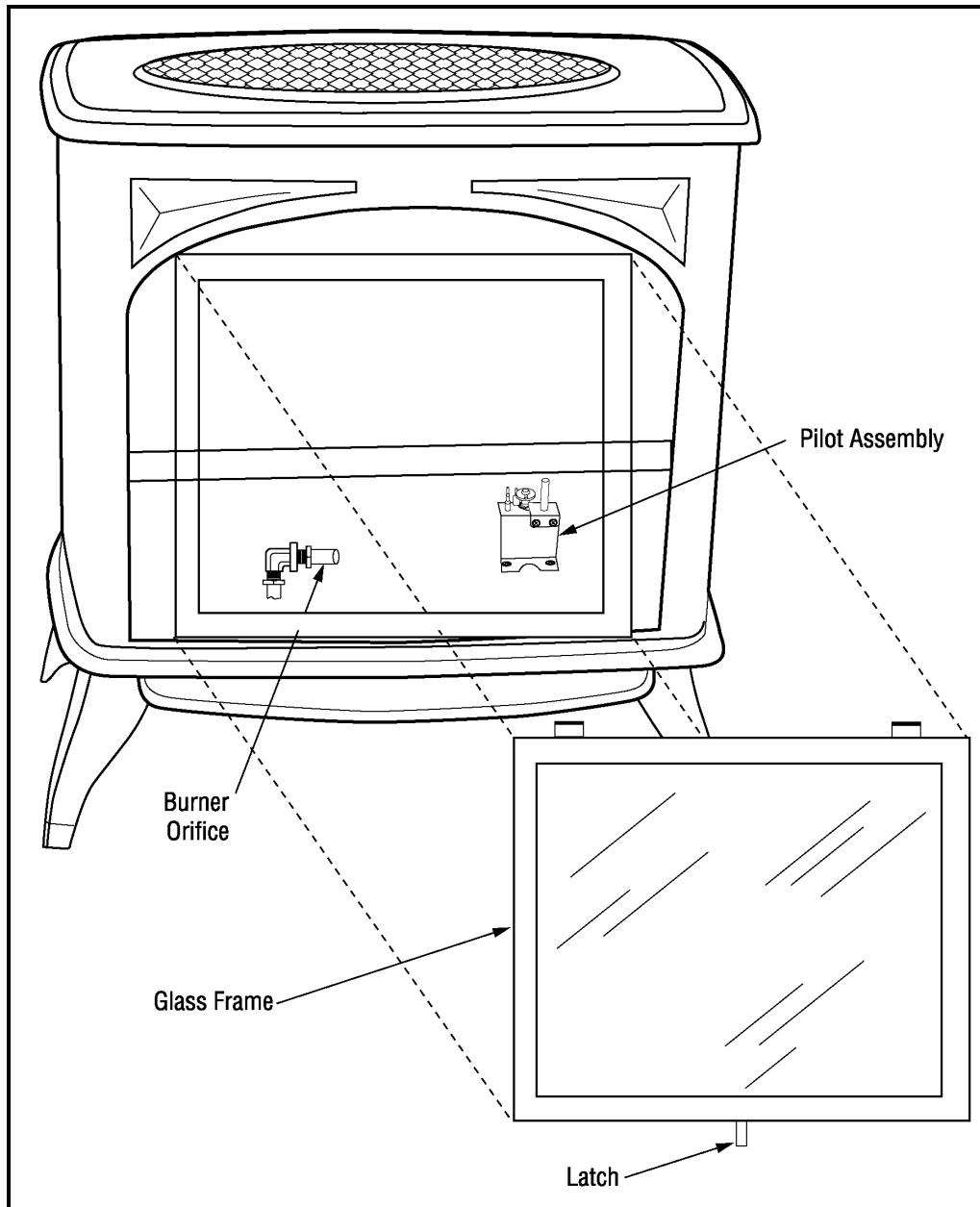
WARNING: All servicing and troubleshooting of gas controls and high voltage circuits should be done by a qualified service technician.

As a guide to help you understand the functioning and potential problem areas in your heater, use the following chart. When in doubt, do not hesitate to call your service representative or the gas supplier who furnishes you with natural gas or propane.

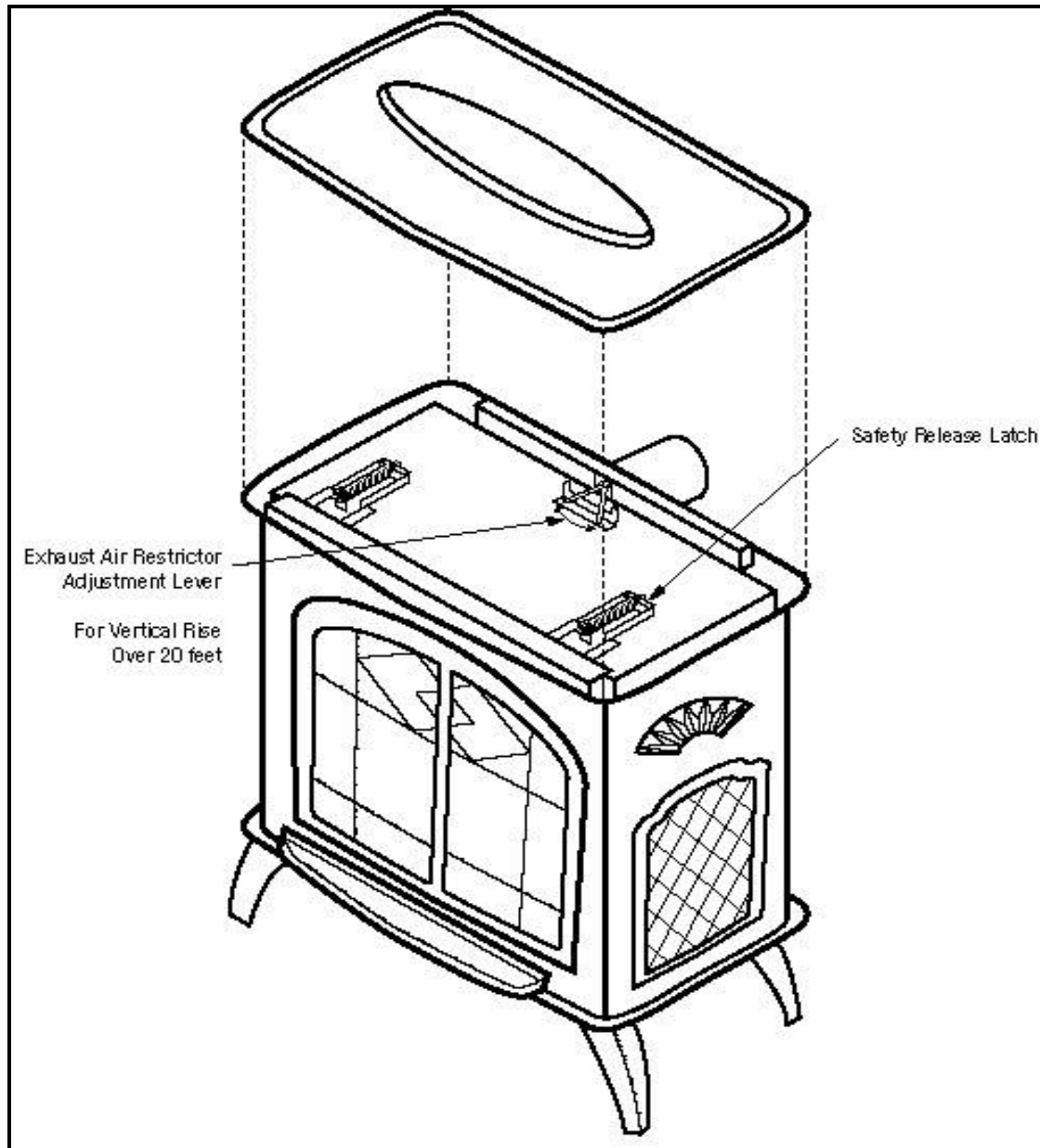
PROBLEM	POSSIBLE CAUSE
Pilot will not light	<ul style="list-style-type: none">▪ A gas shut-off valve is turned off▪ The gas control valve is turned to pilot▪ The gas control valve wasn't pushed in and/or the igniter wasn't pushed repeatedly
Main burner does not come on	<ul style="list-style-type: none">▪ The pilot has gone out▪ The burner on/off switch is turned off▪ The thermostat is disconnected or set too high
Thermostat does not work	<ul style="list-style-type: none">▪ Pilot has gone out▪ On/Off switch is turned to Off▪ Thermostat is set too high
Flame is dirty and orange, and glass is sooty	<ul style="list-style-type: none">▪ Logs are not placed properly or something may be obstructing burn▪ Air adjustment may be required by a service technician
Flames are too short	<ul style="list-style-type: none">▪ Hi/Lo flame adjust knob is turned too low (see diagram #23)

CAUTION

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

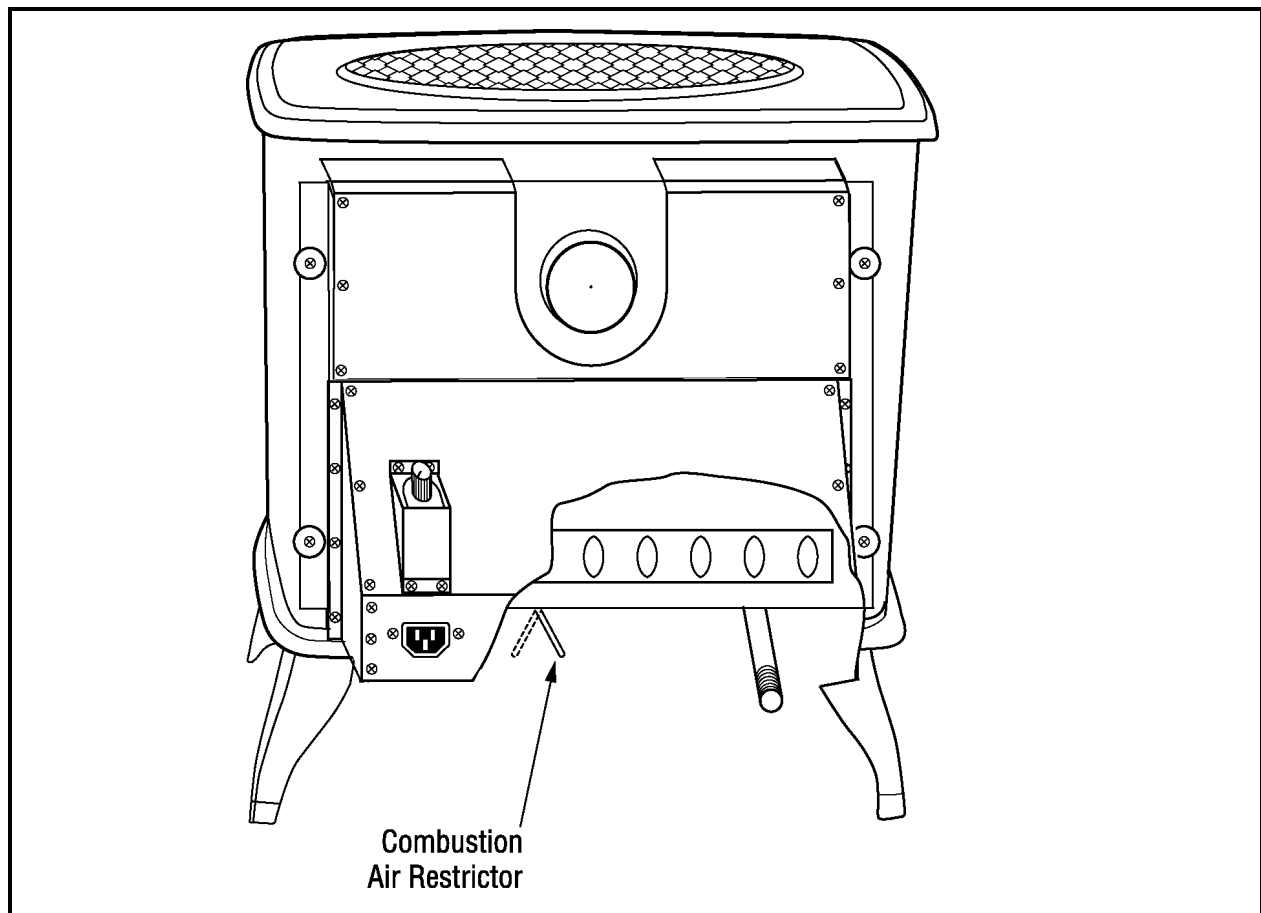
FIGURE 24 – DIRECTIONS FOR ENABLING DOOR OPENING AND SECURING DOOR

1. Remove stove top to access glass door (Figure 25).
2. Unhook latch at bottom of door.
3. Lift door up and out.

FIGURE 25 – DELAYED IGNITION SAFETY SHUT DOWN & EXHAUST AIR RESTRICTOR

Exhaust Restriction Adjustment

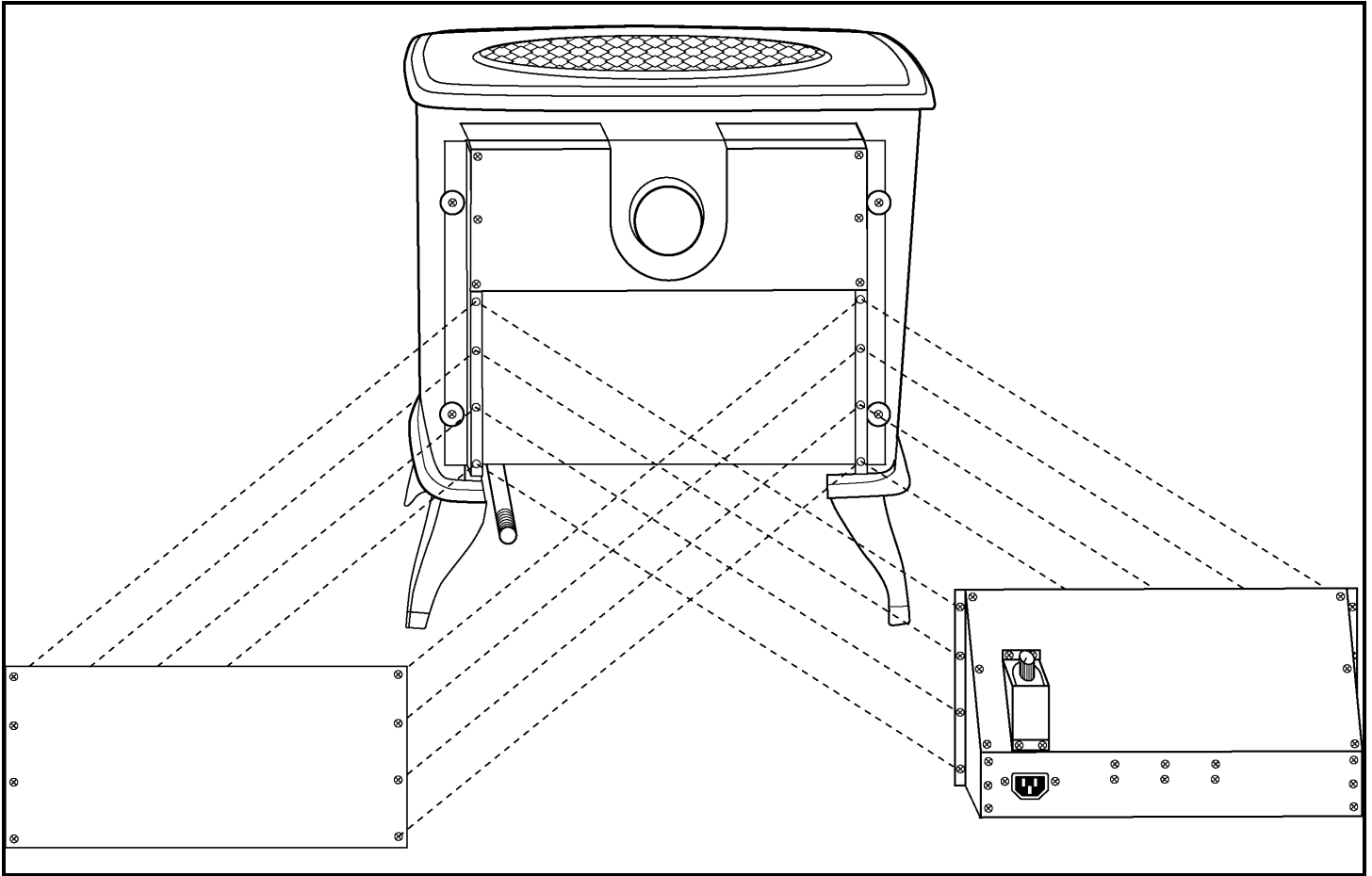
On high vertical pipe runs the Echo may require adjustment to restrict the flow of exhaust gases in order to prevent the flame from lifting off the burner. On high vertical pipe runs (usually in excess of 18 to 20 feet) move the adjustment lever to the left side as you face the front of the stove. This will slow down the exhaust gases and prevent the burner from going out. This adjustment should be made by a qualified service technician or by a factory technician via phone.

FIGURE 26 – AIR RESTRICTOR

Air Restrictor

The Echo Gas Stove has combustion air restriction capabilities. A lever is located on the rear of the stove (middle, bottom) and this lever allows you to control the incoming combustion air (see Figure 22). This adjustment may be needed to overcome air turbulence on some applications, i.e., pipe venting that is different from recommended installation, high vertical runs, and/or installations with elbows. Move lever to left to restrict combustion air.

This adjustment should be made by a qualified service technician or by factory technical personnel via phone.

FIGURE 27 – FAN HOUSING INSTALLATION

Installation of Fan Housing and Blower

1. Remove lower back cover as per drawing (8 screws)
2. Install new fan housing with blower mounted onto back in same position (as per drawing). Install sensor using pre-drilled holes.
3. Install line cord into wall receptacle and into fan housing.

The stove fan will come on automatically when heater gets hot (15/20 minutes) and then you can use the speed control to adjust the fan air speed.

APPENDIX A – ECHO STOVE WITH LOG & EMBER TRAY PLACEMENT

Following is a step-by-step procedure for installing the Echo log set:

1. Remove top lid and top from stove. Unhook glass door latch (at bottom of stove) and lift out glass door.



2. Install Log #1 as per picture below.



3. Install Log #2 as per picture below.



4. Install Log #3 as per picture below.



5. Install Log #4 as per picture below.



6. Install Log #5 as per picture below.



APPENDIX A – ECHO STOVE WITH LOG PLACEMENT (CONTINUED)

7. Make sure all logs are secure and not impinging on the burner. Re-install glass door, top, and lid. You are ready to light your Echo!



THELIN HEARTH PRODUCTS LIMITED WARRANTY

Thelin Hearth Products warrants the Echo Direct Vent Gas Heater against defects in material and workmanship for a period of five (5) years from the date of purchase with the exception of the electrical components, gaskets, logs, moving parts, gas valve and control, and burner which are warranted for a period of one (1) year from date of purchase. Glass, gasketing, gold plating, and paint are not covered by the warranty. This warranty does not include service call cost or any other additional charges. Check with dealer from whom the heater was purchased for all costs when arranging a warranty call.

Exclusions to this limited warranty include: Injury due to malfunction of the product, loss, damage, defect, failure to function, due to an accident, negligence, misuse, improper installation, alteration or adjustment of the manufacturer's settings, lack of proper and regular maintenance, damage incurred while in transit, or an act of God.

Only the original purchaser of this heater is covered by this limited warranty. If the unit is used for commercial purposes, it is excluded from this warranty. The warranty is automatically voided if the unit's serial number has been removed or altered in any way or the wrong fuel has been used.

No dealer, distributor, or similar person has the authority to represent or warrant Thelin Hearth Products beyond the terms contained in this limited warranty. Thelin Hearth Products assumes no liability for such representations or warranties.

THIS LIMITED WARRANTY IS THE ONLY WARRANTY SUPPLIED BY THELIN HEARTH PRODUCTS (UNLESS AN EXTENDED WARRANTY HAS BEEN PURCHASED) THE MANUFACTURER OF THE UNITS. ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, ARE HEREBY EXPRESSLY DISCLAIMED AND PURCHASER'S RECOURSE IS EXPRESSLY LIMITED TO THE WARRANTIES SET FORTH WITHIN.

HOW TO USE THIS WARRANTY: If you find this unit to be defective in material and/or workmanship within a period of five (5) years from the date of purchase, contact your local dealer from whom you purchased the heater. All warranty work must be authorized by the factory in advance of repair and an authorization number assigned. A warranty repair claim form must be signed by both the dealer and the customer. In the event your dealer is no longer in business or you cannot locate a dealer, you may do the following: Call or write factory, giving proof of purchase information and a narrative description of the defect together with your name and address. Only the factory can authorize a heater or part return. Upon authorization by factory, return defective heater or part, freight prepaid to Thelin Hearth Products, Warranty Division, 12400 Loma Rica Drive, Grass Valley, CA 95945. Returned part or product will be repaired or replaced at Thelin Hearth Products' option and will be returned to you, freight prepaid, as soon as practical, but not later than 30 days after receipt.

To register your Thelin Hearth Products warranty, complete and sign the enclosed warranty card and mail it within ten (10) days from date of purchase.

OTHER RIGHTS: This warranty provides you with certain legal rights. You may have additional rights, which vary from state to state in regard to this warranty.

COMPLETE AND SAVE FOR YOUR RECORDS

Date Purchased: _____ Serial Number: _____

Dealer/Retailer where Purchased: _____

Thelin Hearth Products reserves the right to change, without notice, product features or specifications described.



Theelin Hearth Products, Inc.
63 Laxalt Dr.
Carson City, NV 89706

www.thelinco.com

775-241-2586