

DOVRE®

SAPPHIRE DV450S

DIRECT VENT ROOM HEATER

OWNER'S MANUAL

AND INSTALLATION INSTRUCTIONS

WARNING!

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

-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.
- 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.

WARNING!

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

FOR YOUR SAFETY

The appliance area must be kept clear and free from combustible materials, gasoline and other flammable vapors and liquids.



Shown here with optional accessories (door trim and warming shelf).

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 fuel indicated on the Rating Plate. This appliance is not convertible for use with other gases, unless a certified Conversion Kit is used.

This manual must be used for installation of the DV450S Direct Vent Heater and retained by the homeowner for operating and maintenance instructions. This heater may be installed with a vertical or horizontal direct vent terminator system.



1445 North Highway
Colville, WA 99114

#29863C

12/2000

Tested and
Listed by
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ahpfireup.com

PLEASE RETAIN THIS MANUAL FOR FUTURE REFERENCE.

Table of Contents

Serial/Rating Label (Listings and Code Approvals)	3	FIREBOX ENTRY	
Listing & Code Approvals	4	Removing Front Face	20
Installer Information	4	Removing Glass	20
Description of Heater	5	Log Placement	20
Heater System Components	5	Creating Coal Bed Look	20
Dimensions	6	Adjustable Flue Restrictor	21
Clearances to Combustibles	6	Reinstallation of Glass	21
Venting Components	7	Door Trim Kit Installation	21
Termination Examples	8	Replacing Front Face	21
INSTALLATION:		Pre-Use Check	21
A. Horizontal Termination	9	Lighting Instructions	22
B. Vertical Termination	12	Air Shutter Adjustment	23
C. Existing Masonry Chimney Installation	14	Seasonal Shutdown	23
D. Existing Class A Metal Chimney	15	Operation & Shutdown During Regular Use	23
Gas Line Installation	16	Maintenance	24
Gas Pressure	16	Trouble Shooting	25
Fuel Conversion	16	Replacement Parts	28
High Altitude Installation	17	Warranty	30
Optional Accessories	18	Owner's Notes	31
Thermostat Wiring Diagram	19		

Safety Precautions

1. PLEASE READ THESE INSTALLATION INSTRUCTIONS COMPLETELY BEFORE BEGINNING INSTALLATION PROCEDURES. FAILURE TO FOLLOW THEM COULD CAUSE AN APPLIANCE MALFUNCTION RESULTING IN SERIOUS INJURY AND/OR PROPERTY DAMAGE.
2. DUE TO HIGH TEMPERATURES THE APPLIANCE SHOULD BE LOCATED OUT OF TRAFFIC AND AWAY FROM FURNITURE AND DRAPERIES.
3. CHILDREN AND ADULTS SHOULD BE ALERTED TO THE HAZARDS OF HIGH SURFACE TEMPERATURES AND SHOULD STAY AWAY TO AVOID BURNS OR CLOTHING IGNITION.
4. YOUNG CHILDREN SHOULD BE CAREFULLY SUPERVISED WHEN THEY ARE IN THE SAME ROOM AS THE APPLIANCE.
5. CLOTHING OR OTHER FLAMMABLE MATERIAL SHOULD NOT BE PLACED ON OR NEAR THE APPLIANCE.
6. ANY SAFETY SCREEN OR GUARD REMOVED FOR SERVICING AN APPLIANCE MUST BE REPLACED PRIOR TO OPERATING THE APPLIANCE.
7. WARNING: DO NOT OPERATE APPLIANCE WITH THE PANEL(S) REMOVED, CRACKED OR BROKEN. REPLACEMENT OF THE PANEL(S) SHOULD BE DONE BY A LICENSED OR QUALIFIED SERVICE PERSON.
8. INSTALLATION AND REPAIR SHOULD BE DONE BY A QUALIFIED SERVICE PERSON. THE APPLIANCE SHOULD BE INSPECTED BEFORE USE AND AT LEAST ANNUALLY BY A QUALIFIED SERVICE PERSON. MORE FREQUENT CLEANING MAY BE REQUIRED DUE TO EXCESSIVE LINT FROM CARPETING, BEDDING MATERIAL, ETC. IT IS IMPERATIVE THAT CONTROL COMPARTMENTS, BURNERS AND CIRCULATING AIR PASSAGEWAYS OF THE APPLIANCE BE KEPT CLEAN.
9. ENSURE THAT THE FLOW OF COMBUSTION AND VENTILATION AIR NOT BE OBSTRUCTED.
10. ENSURE THAT ADEQUATE COMBUSTION AND VENTILATION AIR ARE PROVIDED.

NOTE: Illustrations throughout these instructions reflect typical installations and are for design purposes only. Actual installation may vary slightly due to individual design preferences. However, minimum and maximum clearances must be maintained at all times.

The illustrations and diagrams used throughout these installation instructions are not drawn to scale.

SERIAL/RATING LABEL

[illegible]

LISTING & CODE APPROVALS

U.S. CERTIFICATION

The DV450S Series Room HEater has been tested in accordance with the ANSI standard Z21.88 1998 and UL307B and has been listed by OMNI-Test Labs for installation and operation as described in these installation and operation instructions. All components are A.G.A. or UL safety certified.

Canada Certification

The DV450S Series Room HEater has been tested in accordance with CSA 2.33-M98 and has been listed by OMNI-Test Labs for installation and operation as described in these installation and operating instructions. All components are C.G. A. or C.S.A. safety certified.

Local Codes

This installatin must conform with local codes or, in the absence of local codes, with theNational Fuel Gas Code, ANSI Z223.1-latest edition, in the U.S.A. and the CAN/CGA B149-latest edition, in Canada.

Efficiency

The efficiency rating of the appliance is a product thermal efficiency rating determined under continuous operating conditions and was determined independently of any installed system.

This Heater is approved for installation in bedrooms and mobile homes in the United States and Canada.

Efficiency

The efficiency rating of the appliance is a product thermal efficiency rating determined under continuous operating conditions and was determined independently of any installed system.

INSTALLER INFORMATION

INSTALLATION AND REPAIR SHOULD BE DONE BY A QUALIFIED SERVICE PERSON. THE HEATER SHOULD BE INSPECTED BEFORE USE AND AT LEAST ANNUALLY BY A QUALIFIED SERVICE PERSON. MORE FREQUENT CLEANING MAY BE REQUIRED DUE TO EXCESSIVE LINT FROM CARPETING, BEDDING MATERIAL, ETC. IT IS IMPERATIVE THAT CONTROL COMPARTMENTS, BURNERS AND CIRCULATING AIR PASSAGEWAYS OF THE HEATER BE KEPT CLEAN.

WARNING:

BEFORE STARTING, DO THE FOLLOWING:

1. **WEAR GLOVES AND SAFETY GLASSES FOR PROTECTION.**
2. **KEEP HAND TOOLS IN GOOD CONDITION. SHARPEN CUTTING EDGES AND MAKE SURE TOOL HANDLES ARE SECURE.**
3. **ALWAYS MAINTAIN THE MINIMUM AIR SPACE REQUIRED TO THE ENCLOSURE TO PREVENT FIRE.**

Tools and building supplies normally required for installation:

Saw
Pliers
Phillips Screwdriver
Tape Measure
Plumb Line
Level
Electrical Drill and Bits
Square
High Temperature Sealant Material*

***High Temperature Sealant Material.** Sealants that will withstand high temperatures; General Electric RTV103 (Black), or equivalent. Rutland, Inc. Fireplace Mortar #63, or equivalent; Dow Corning 732 or equivalent.

DESCRIPTION OF THE HEATER SYSTEM

The DV450S is a Direct Vent Room Heater. Combustion air is supplied from outside, not from inside the house as with other types of heaters.

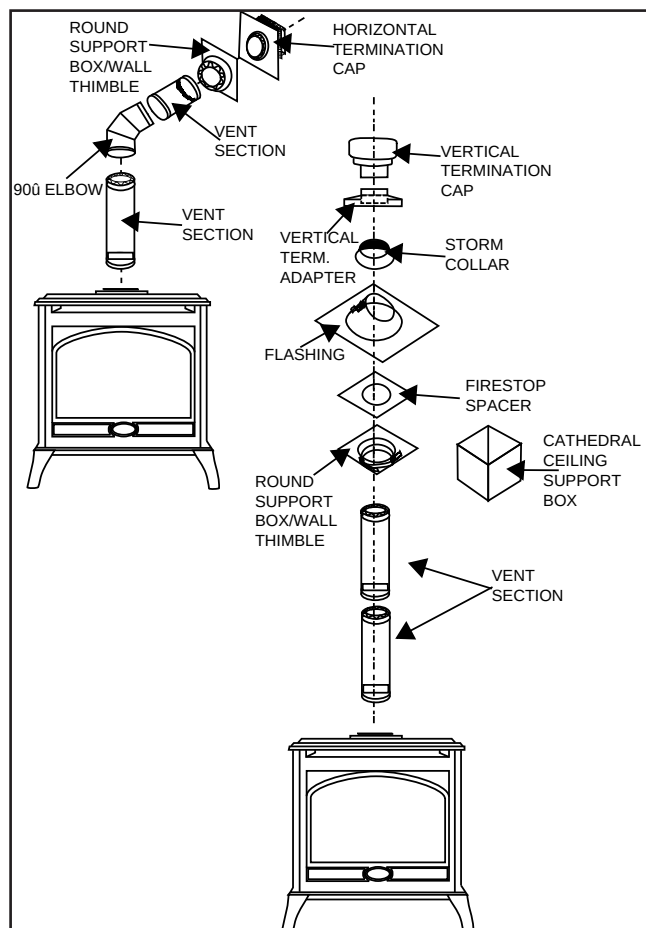
The installation of this DOVRE DV450S system consists of the following:

1. Appliance
2. Venting System
3. Termination

Optional components include:

1. Blower Kit
2. Decorative Glass Accent
3. Warming Shelf
4. Bracket with Mitten Rod
5. Remote Control

NOTE: Operation of a Direct Vent Heater may be sporadic in high wind situations.

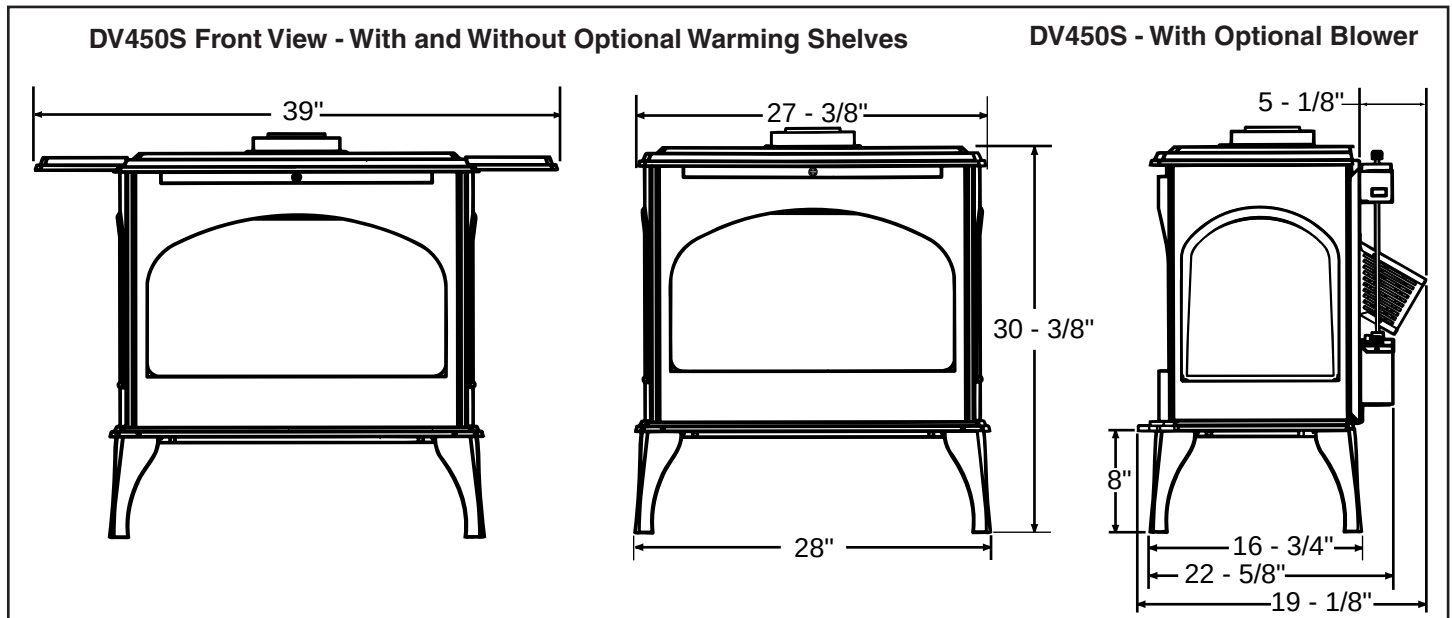


HEATER SYSTEM COMPONENTS

The table below is a list of only those components which may be safely used with this appliance.

Catalog #	DESCRIPTION
839-0610	Direct vent Room Heater - matte black - natural gas, standing pilot
839-0630	Direct vent Room Heater - porcelain black - natural gas, standing pilot
839-0650	Direct vent Room Heater - porcelain creme - natural gas, standing pilot
839-0670	Direct vent Room Heater - porcelain green - natural gas, standing pilot
839-0690	Direct vent Room Heater - porcelain blue - natural gas, standing pilot
844-0150	Fan Kit, variable speed, thermostat "ON/OFF"
844-0140	Decorative Glass accent - gold
844-7900	Warming Shelf - matte black (pr.)
844-7910	Warming Shelf - porcelain black (pr.)
844-7930	Warming Shelf - porcelain creme (pr.)
844-7940	Warming Shelf - porcelain green (pr.)
844-7920	Warming Shelf - porcelain blue (pr.)
844-7970	Warming Shelf Bracket - w/mitten rod, black (pr.)
844-7980	Warming Shelf Bracket - w/mitten rod, gold (pr.)
844-9230	LP Conversion Kit
844-8250	NG Conversion Kit

DIMENSIONS



CLEARANCES

The following clearances to combustibles must be maintained:

Minimum clearances to the floor - 0"

Back of unit to wall - 6"

Sides of unit to wall - 9"

Base of the unit to ceiling - 72".

Minimum clearances to Venting are as follows:

Horizontal runs require a 1-1/2" minimum Air Space on the top and an 1/2" minimum Air Space on the sides and bottom of the outer Vent Section. If an Elbow is being used, in an enclosed wall, floor or ceiling, a top Air Space clearance of 3" must be maintained. Vertical rise sections require a 1" minimum Air Space completely around the Vent section. These clearances must be maintained at all times.

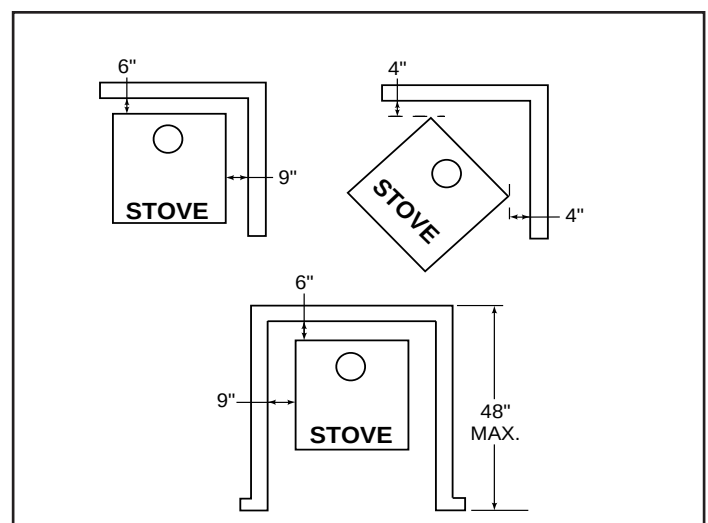
This appliance is certified for installation in a bed/sitting room in the U.S. and Canada.

Mobile Home Installations. Appliances installed in Mobile Homes must be secured to the floor in a minimum of two locations.

Positioning the Appliance.

This appliance may be placed on a combustible or non-combustible continuous, flat surface. 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 appliance. Slide the Heater into position and level the Heater from side-to-side and front-to-back. Shim as necessary.

Figure 1
Minimum Clearances To Combustibles



DURA-VENT VENTING COMPONENTS

Dura-Vent**PART # DESCRIPTION:****Termination Caps & Snorkles:**

991	High Wind Vertical Termination Cap
986	High Wind Horizontal Termination Cap
980	Vertical Termination Cap w/Wind Halo
983	Vertical Termination
984	Horizontal Termination Cap
981	Snorkel Termination (36")
982	Snorkel Termination (14")
950	Vinyl Siding Standoff

Flashing:

941	Cathedral Ceiling Support Box
943	Flashing, 0/12 to 6/12 Roof Pitch
943S	Flashing, 7/12 to 12/12 Roof Pitch
943F	Flashing, Flat Roof

Support Boxes/Thimbles:

940	Round Ceiling Support/ Wall Thimble Cover
941	Cathedral Ceiling Support Box

Pipe:

908	6" Pipe Length, Galv.
908B	6" Pipe Length, Black
907	9" Pipe Length, Galv.
907B	9" Pipe Length, Black
906	12" Pipe Length, Galv.
906B	12" Pipe Length, Black
904	24" Pipe Length, Galv.
904B	24" Pipe Length, Black
903	36" Pipe Length, Galv.
903B	36" Pipe Length, Black
902	48" Pipe Length, Galv.
902B	48" Pipe Length, Black
911	11" - 14 5/8" Pipe, Adj. Glv.
911B	11" - 14 5/8" Pipe, Adj. Blk.
912	12" - 17" Pipe, Adj. Glv.
912B	12" - 17" Pipe, Adj. Blk.
917	17" - 24" Pipe, Adj. Glv.
917B	17" - 24" Pipe, Adj. Blk.
945	45° Elbow, Galv.
945B	45° Elbow, Black

990 90° Elbow, Galv.

990B 90° Elbow, Black

Misc.

953	Storm Collar
963	Ceiling Firestop
988	Wall Strap
9546	Attic Insulation Shield
942	Wall Thimble/Cathedral Ceiling Collar

SDV KITS

970A	Standard Termination Kit includes 1 each of: "990B, 940, & 985 See Note #1 below.
971HW	Standard Termination Kit includes 1 each of: "990B, 940, 985, 904B, 911B
973	Vertical Termination Kit includes 1 each of: "943, 953, 991 (support box NOT included)

Note #1: Straight pipe lengths are needed to complete installation, the black 45° elbow is NOT included in kit.

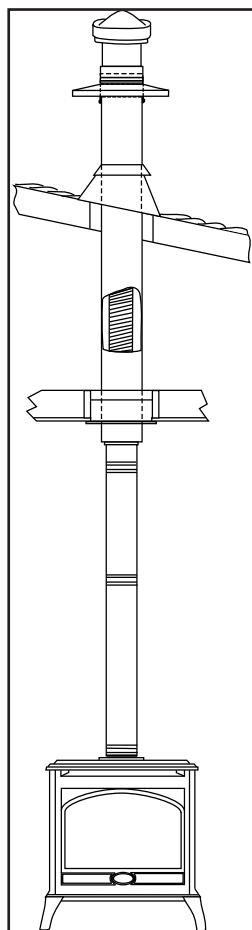
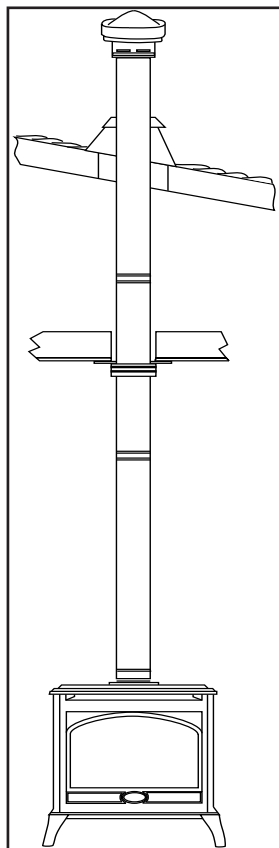
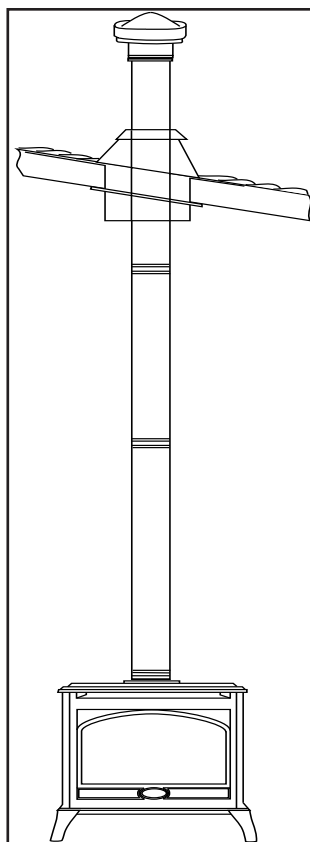
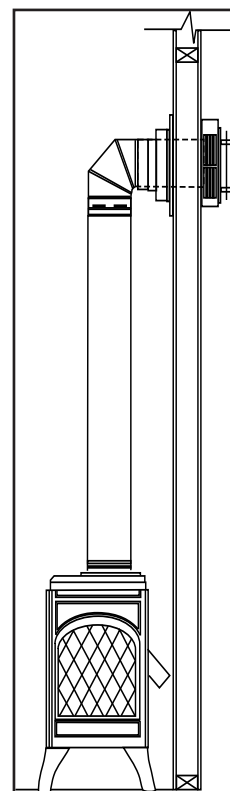
The following venting parts are available from your Dealer:

HHW2	Horizontal High Wind Cap
HHW2K	Horizontal Kit includes 90° Black Elbow, Wall Thimble, 24" Black Pipe, 11" - 14 5/8" Adjustable Vent, HHW2 Termination Cap.

The VTA1, Vertical Termination Adapter Kit, may also be safely used with this Heater. It is composed of a Vertical Termination Cap and Cover Plate for existing vertical chimney.

TERMINATION EXAMPLES

Four types of Termination are possible for this Heater: Horizontal, Vertical, Existing Masonry or Existing Class A

**Class A Metal Chimney****Vertical Flat Ceiling****Cathedral Ceiling****Horizontal Termination**

INSTALLATION

A. Horizontal Termination

Refer to Chart A for horizontal venting recommendations. The minimum vertical rise allowed for horizontal termination is 2' from the top of the heater. The maximum horizontal run allowed for venting is 15' with a minimum 4' rise.

CHART A

		15' MAX. HORIZONTAL RUN													
		2'	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'
VERTICAL RISE	16'	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Thru	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	4'	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	3'	X	X	X	X	X	X	X	X	X					
	2'	X	X	X	X	X	X	X	X	X					

Note: A horizontal run of vent must have a 1/4" rise for every 1 ft. of run towards the termination. Never allow the vent to run downward. This could cause high temperatures and the possibility of a fire.

A single vertical to horizontal elbow is already calculated into the allowable 15' run. Each additional elbow reduces the maximum horizontal distance by three feet. Example: When using three elbows, the maximum horizontal distance has been reduced to 9' ($3 - 1 = 2$ elbows $\times 3' = 6'$; $15' \text{ max.} - 6' \text{ of elbows} = 9'$ of horizontal run). Even with only these three elbows (the equivalent of 6' additional horizontal feet) you now need a minimum of 4' of vertical rise. See Chart A.

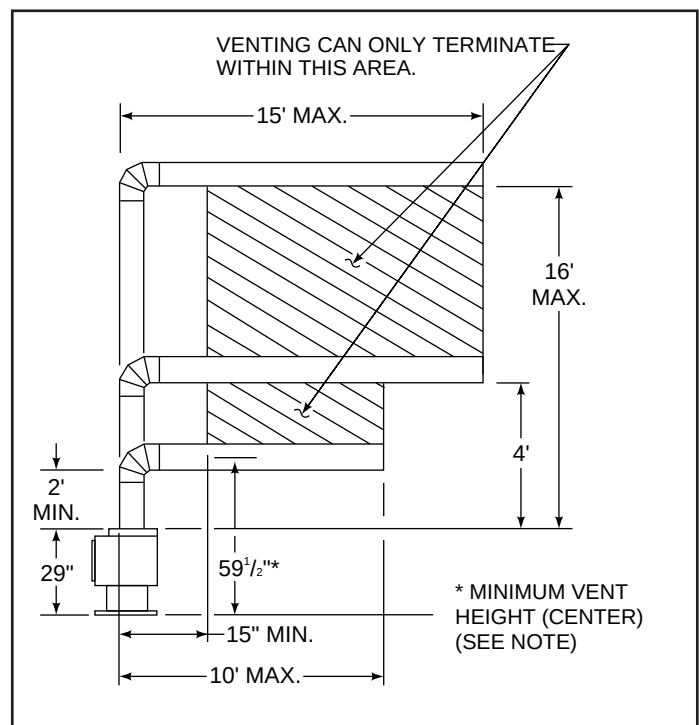
If a vertical-to-horizontal elbow is enclosed within a wall, floor or ceiling, an air space clearance of 3" must be maintained.

Due to the many different combinations that can be used when constructing venting, the number of vent sections required can only be determined by the installer.

Horizontal venting must terminate within the shaded area shown in Fig. 2. Chart A illustrates the figures included in that shaded area. For example, if your vertical rise is the minimum two foot, venting can terminate anywhere between 20 - 1/2" (includes wall thickness and assumes 4", and venting required to termination cap) and 10'.

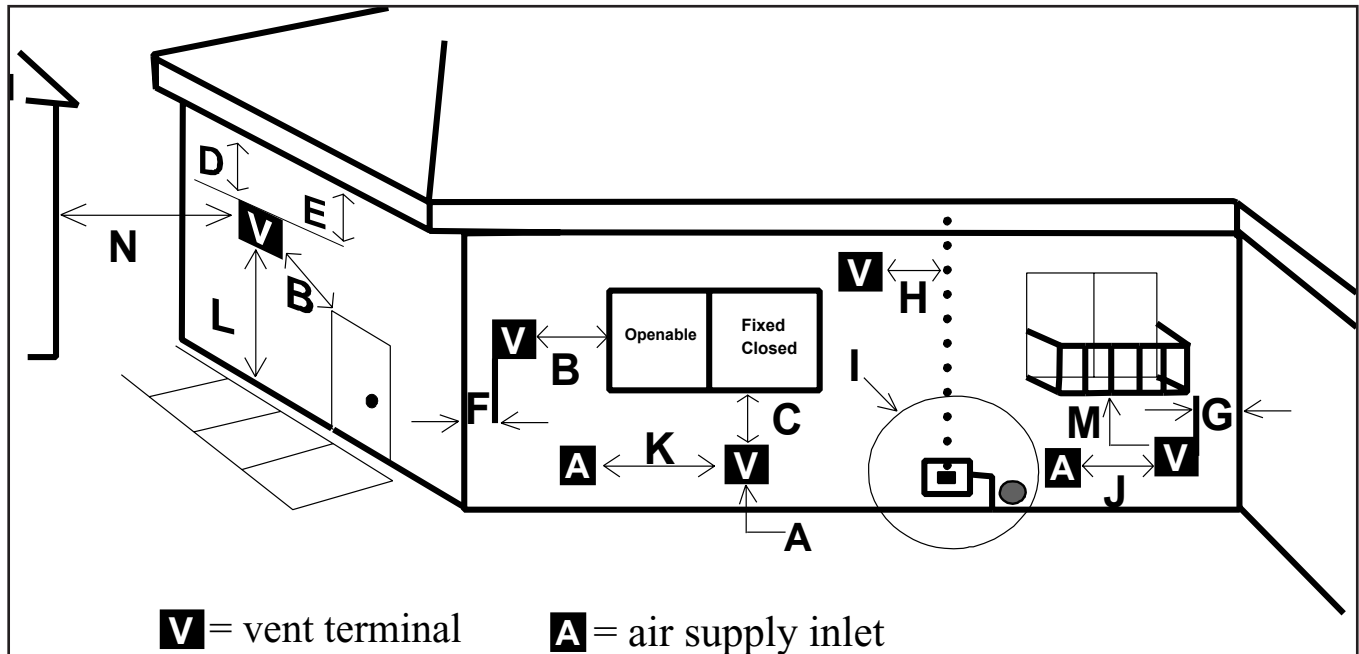
Vent termination must not be recessed into the wall or siding. Fig. 3 illustrates termination cap location and minimum dimensions for each termination application. Or, follow ANSI Z223.1, latest edition.

Fig. 3 - Horizontal Lenth



Note: Horizontal runs will require the use of one vent support for every 3' of vent.

HORIZONTAL TERMINATION CAP LOCATIONS



- A. *12" (30cm) minimum: **Clearance above grade, veranda, porch, deck, or balcony.**
- B. *12" (30cm) minimum: **Clearance to window or door that may be opened.**
- C. 12" (30cm) minimum: **Clearance to permanently closed window** (recommended to prevent condensation on window).
- D. 18" (46cm) minimum: **Vertical clearance to ventilated soffit located above the terminal within a horizontal distance of 2' (60cm) from the centerline of the terminal.**
- E. 12" (30cm) minimum: **Clearance to unventilated soffit.**
- F. 6" (15cm): **Clearance to outside corner.**
- G. 9" (23cm): **Clearance to inside corner.**
- *Not to be installed above a meter/regulator (gas or electrical) assembly within 3' (90cm) horizontally from the centerline of the meter/regulator.**
- H. *6' (1.8m) minimum: **Clearance to service regulator vent outlet.**
- I. *12" (30cm) minimum: **Clearance to nonmechanical air supply inlet to building or the combustion air inlet to any other appliance.**
- J. *6' (1.8m) minimum: **Clearance to a mechanical air supply air inlet.**
- K. *+7' (2.1m) minimum: **Clearance above paved sidewalk or a paved driveway located on public property.**
- L. *#12" (30 cm) minimum: **Clearance under veranda, porch, deck, or balcony.**
- M. 6" (15 cm) minimum: **Clearance to adjacent building or deck.**
- N. 6" (15 cm) minimum: **Clearance to nearby building**

+A vent shall not terminate directly above a sidewalk or paved driveway which is located between two single-family dwellings and serves both dwellings.*

#Only permitted if veranda, porch, deck, or balcony, is fully open on a minimum of two sides beneath the floor.*

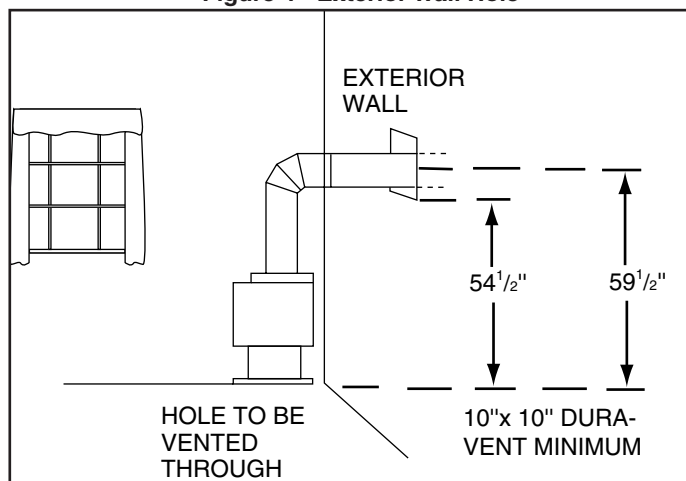
*As specified in *CGA B149 Installation Codes*

Note: Local Codes or regulations may require different clearances.

1. Preparing the Wall for Horizontal Termination. A hole measuring 10" wide and 10" high must be cut and framed in the exterior wall where venting will be terminated.

The height of the hole must be located to meet all local and national codes and not be easily blocked or obstructed. The minimum height to the center of the horizontal vent is 59½" from the base of the unit. This figure will increase by the length of each vertically positioned vent section added to the venting system. See Figure 4.

Figure 4 - Exterior Wall Hole

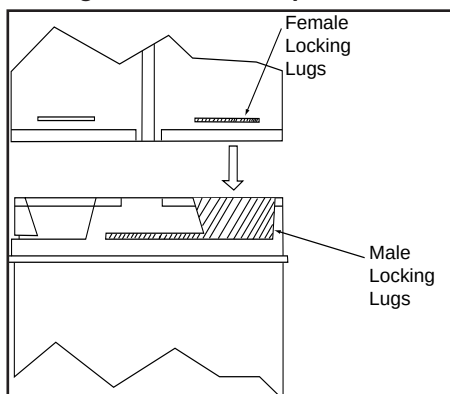


If the wall being penetrated is constructed of non-combustible material (i.e.: masonry block or concrete) a 7 inch diameter hole is acceptable. It is recommended that for masonry walls the vent be wrapped with fiberglass insulation to prevent contact with the masonry as the contact promotes premature deterioration of the vent.

2. Assembling Venting Sections. Use only vent supplied or listed for use with this Heater. To attach a straight section to the top of the Heater, female end down, slide the pipe over the outer Collar on the Heater while the inner flue will slip over the Vent Inner.

MAINTAIN MINIMUM CLEARANCES OR GREATER AROUND THE VENT SYSTEM. Do not pack air spaces with insulation or other material.

Figure 5 - Twist-lock procedure



The Dura-Vent GS is unitized and twist-locks together. For the twist-lock procedure, consult Figure 5 and do the following:

(1) Four indentations, located on the female ends of pipes and fittings, are designed to slide straight onto the male ends of adjacent pipes and fittings, by orienting the four pipe indentations so they match and slide into the four entry slots on the male ends. See Figure 5. Push the pipe sections completely together, then twist-lock one section clockwise approximately one-quarter turn, until the two sections are fully locked. The female locking lugs will not be visible from the outside, on the Black Pipe or fittings. They may be located by examining the inside of the female ends.

(2) Horizontal runs of vent must be supported every three feet. Wall Straps are available for this purpose.

Before connecting the horizontal run of vent pipe to the vent termination, slide the black decorative wall thimble cover over the vent pipe.

When using the adjustable section, maintain a 1" overlap on pipe sections and secure. It is also important that the vent pipe extends a minimum of 1 ½" into vent cap.

3. Termination Cap. Position the horizontal vent termination so that 1 ½" clearance is maintained on top of the vent sections and 1 ½" on sides.

Before attaching the Vent Termination to the exterior wall, run a bead of non-hardening mastic around the outside edges to make a seal between the Cap and the wall.

Attach Cap to exterior wall with four (4) wood screws, making sure that arrow on Cap is pointing up. After Cap is attached, make sure that a 1 ½" is maintained from top of vent to combustibles.

Secure the connection between the vent pipe and the vent cap by attaching the two sheet metal strips extending from the vent cap assembly into the outer wall of the vent pipe. Use the two sheet metal screws provided to connect the strips to the pipe section. Bend any remaining portion of the sheet metal strip back towards the vent cap, so it will be concealed by the decorative wall thimble cover. See Fig.6.

Slide the Decorative Wall Thimble up the wall surface and attach with the screws provided. Apply Decorative Brass or Chrome Trim if desired. See Fig. 7.

4. Vertical Rise on the Exterior. For installations requiring a vertical rise on the exterior of a building, 14" and 36" tall Snorkel Terminations are available. Follow the same installation procedures that are used for the standard horizontal termination found in Step 3.

NOTE: For buildings with vinyl siding, a Vinyl Siding Standoff should be installed between the vent cap and the exterior wall. Attach the Vinyl Siding Standoff to the Horizontal Vent Termination. The Vinyl Siding Standoff prevents excessive heat from possible melting the vinyl siding material. NOTE: The HHW2 cap incorporates it's own vinyl siding standoff. See Fig. 8.

Figure 6 - Insertion of Vent Pipe

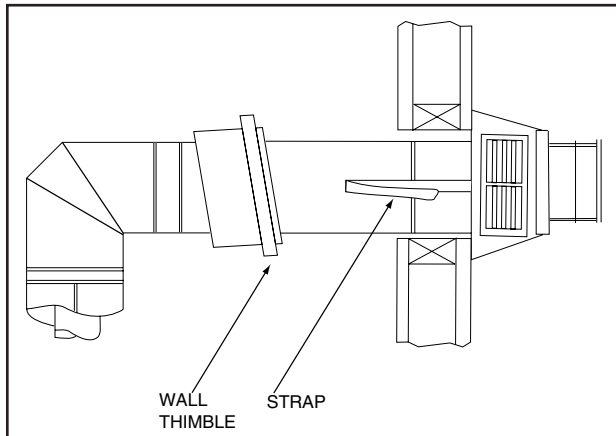


Figure 7 - Decorative Wall Thimble

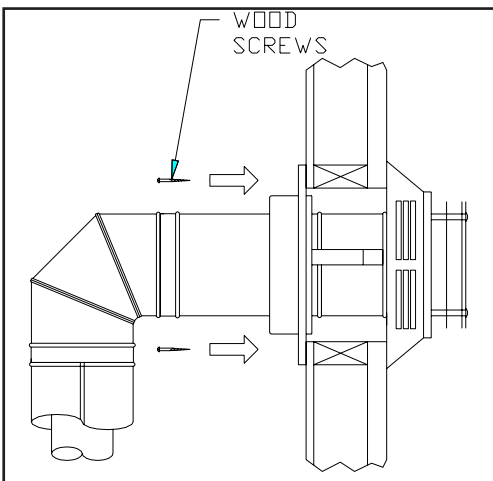
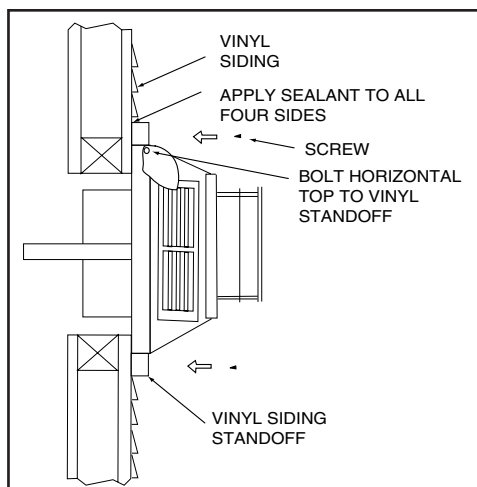


Figure 8 - Vinyl Standing Standoff



B. Vertical Termination.

The following figures are the maximum distances from the top of the unit, as well as the minimum air space clearances that must be maintained: Maximum straight unsupported rise - 25'; Maximum height - 40' from the top of the unit. Maximum horizontal unsupported run - 3'; air space clearances around vertical venting - 1" on all sides; air space clearances around horizontal venting - 1½" on top and ½" on sides and bottom. If an elbow is being used in an enclosed wall, floor, or ceiling a top air space clearance of 3" must be maintained. These clearances must be maintained at all times.

1. Position the Heater.

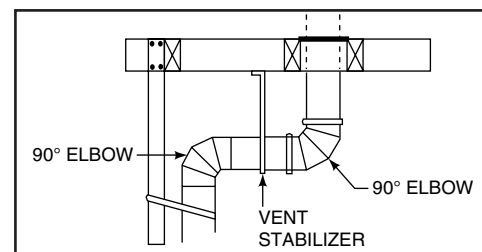
Position the heater in its desired location. Maintain all clearances to combustibles.

2. Preparing the Ceiling.

Drop a plumb bob down from the ceiling to the position of the heater flue exit and mark the location where the vent will penetrate the roof. Drill a small hole at this point. Next drop a plumb bob from the roof to the hole previously drilled in the ceiling and mark the spot where the vent will penetrate the roof. Determine if ceiling joists, roof rafters, or other framing will obstruct the venting system. You may wish to relocate or offset the appliance to avoid cutting load bearing members.

To bypass any overhead obstructions the vent system may be offset using a 45° elbow or a 90° elbow. Vent stabilizers have straps for securing these parts to joists or rafters. lumbers tape may be purchased locally and used in conjunction with vent stabilizers. See Fig. 9

Figure 9 - Elbows with Stabilizer



3. Assembling vent sections. Only use vent supplied and listed for use with this Heater.

To attach a straight section to the top of the Heater, with the female end down, slide that pipe over the outer Collar on the Heater while the Vent Inner slips into the Flue of the Heater. **MAINTAIN MINIMUM 1" CLEARANCES OR GREATER AROUND THE VENT SYSTEM.** Do not pack air spaces with insulation or other material.

The Dura-Vent GS is unitized and twist-locks together. For the twist-lock procedure, consult Figure 5 and do the following:

(1) Four indentations, located on the female ends of pipes and fittings, are designed to slide straight onto the male ends of adjacent pipes and fittings, by orienting the four pipe indentations so they match and slide into the four entry slots on the male ends. (Figure 5.) Push the pipe sections completely together, then twist-lock one section clockwise approximately one-quarter turn, until the two sections are fully locked. The female locking lugs will not be visible from the outside, on the Black Pipe or fittings. They may be located by examining the inside of the female ends.

(2) Horizontal runs of vent must be supported every three feet. Wall Straps are available for this purpose.

Assemble the desired lengths of black pipe and elbows. It is necessary to reach from the Heater up through the round support box. Ensure that all pipe and elbow connections are in their fully twist lock position.

Using the mark from Step 2, drive a nail up through the roof to mark the center. Measure to either side of the nail and mark the opening required. This is measured on the horizontal; actual length may be larger depending on the pitch of the roof. Cut out and frame the opening. See chapter 25 of the Uniform Building Code for Roof Framing details. A one inch minimum air space clearance must be maintained between the vent system and the roof.

Assemble lengths of pipe and elbows necessary to reach from the ceiling support box up through the roof line. Galvanized pipe and elbows may be utilized in the attic, as well as above the roof line. The galvanized finish is desirable above the roof line due to its higher corrosion resistance.

4. Installing the Roof Flashing or Site-Produced Chase Top.

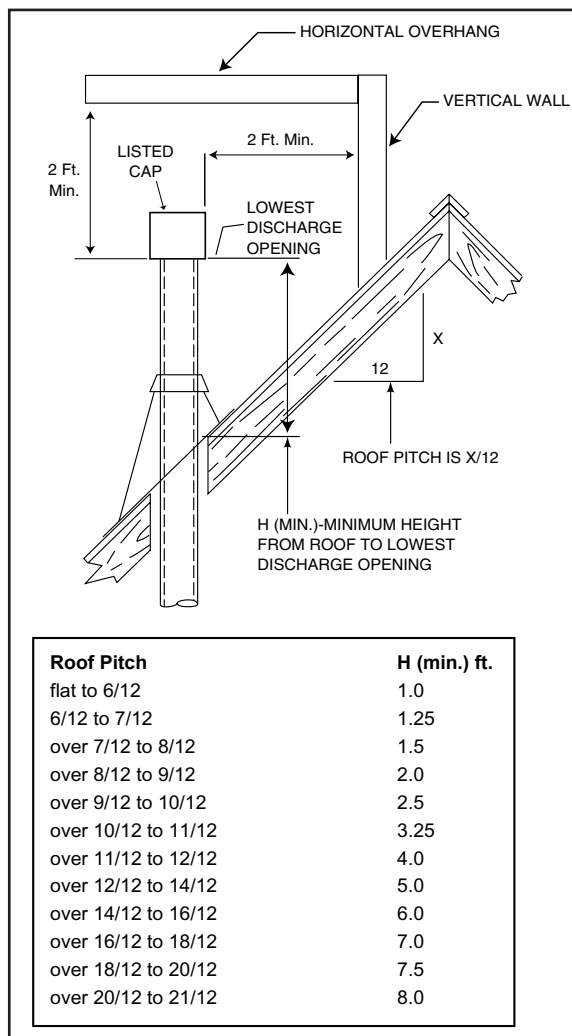
Position a Roof Flashing (or construct a Chase and Chase Top) and secure in place with nails.

Continue to add Vent sections through the Roof Opening, maintaining at least 1" Air Space clearance. Major Building Codes specify a minimum Vent (Chimney) height above the Roof top depending on Roof Pitch. See Figure 10. Add Pipe sections until the height of the Vent Cap meets the minimum Building Code requirements described in Figure 10. Note that for steep roof Pitches, the vent height must be increased.

These Vent System heights are necessary in the interest of safety, however, they do not ensure draft-free operation. Trees, buildings, adjoining Roof lines, adverse wind conditions, etc., may create a need for a taller Vent System should down drafting occur.

5. Termination Cap. Twist lock the Vent Cap.

Figure 10 -Vent (Chimney) Height



WARNING!

THIS APPLIANCE MAY ONLY USE THE APPROVED VENTING SYSTEMS SHOWN IN THESE INSTALLATION INSTRUCTIONS. IT MUST NOT BE CONNECTED TO CHIMNEY FLUE SERVICING A SEPARATE SOLID FUEL OR GAS FUEL BURNING APPLIANCE.

WARNING

WHEN VENT SECTIONS EXCEEDING 3 FEET IN LENGTH ARE INSTALLED BETWEEN AN OFFSET/RETURN, STRUCTURAL SUPPORT MUST BE PROVIDED TO REDUCE OFF-CENTER LOADING AND PREVENT VENT SECTIONS FROM SEPARATING AT THE VENT JOINTS.

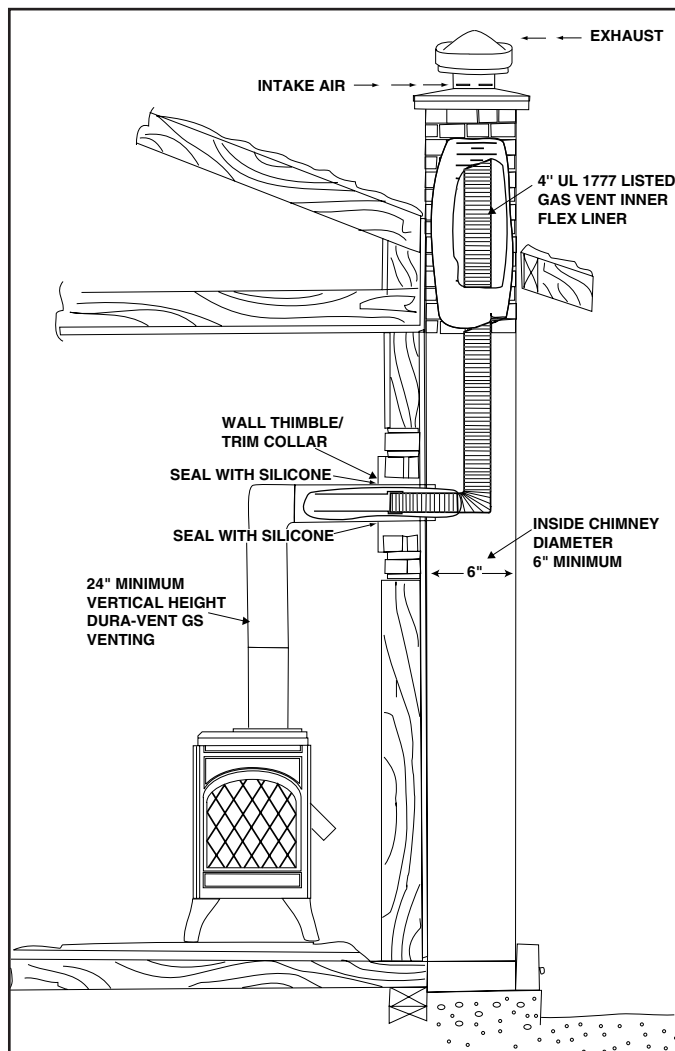


Figure 11
Adaptation to Masonry Chimney

C. Existing Masonry Chimney Installation

This installation is subject to local jurisdiction. Some codes may require the use of another liner for intake air. If so, the 4" aluminum liner should be inside a 6" UL 181 listed liner.

This Heater can be vented through an existing Masonry Chimney but the chimney must be lined with one UL 1777 listed 4" aluminum flexible gas vent liner for exhaust. The existing Flue will be used to supply the air intake to the galvanized steel Flue system. See Figure 11. **Before installing the liner system, the chimney passageway should be cleaned and examined to verify it is unobstructed and in good structural condition.**

Measure and record the chimney dimensions to determine total flexible liner requirements.

Follow the liner manufacturer's instructions for installing the liner in the chimney. Attach a flexible liner puller to the liner and secure a rope to the puller. One person should feed the liner through the chimney, and another person should pull the liner from the bottom, with the rope, guiding the liner down the chimney. After feeding the liner down the chimney, form a 90° angle and bring the liner through the hole in the chimney wall. (If running two liners, run the 6" liner first and then the 4" inside of it.) Extend the liner through the wall of the chimney and attach it to the venting system extending from the top of the Heater.

Construct a metal flashing large enough and strong enough to cover the chimney opening and support the Heater Vertical Termination Cap. The flashing needs to fold down over and around the outside of the masonry chimney so that it can be secured to the chimney by 4 screws. See Figure 12. The flashing will require a hole at least 6 1/2" in diameter. (If using a 6" liner, extend the 6" flexible liner through the flashing and attach it to the VTA (Vertical Termination Adapter) with screws provided.) Secure the VTA to the flashing with the screws provided and seal the VTA/Flashing joint with a silicone sealant to prevent moisture from running down the liner into the chimney.

Attach the 4" gas vent liner to the Vertical Termination Cap with screws provided, then attach the Termination Cap to the VTA with screws provided. See Figure 12.

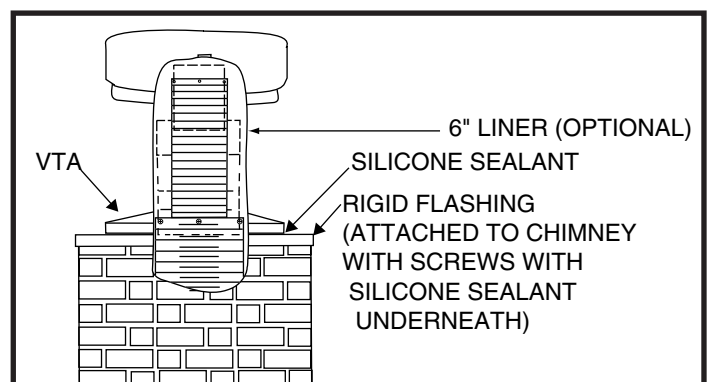


Figure 12
Masonry Termination

D. Existing Class A Metal Chimney Termination

In many cases where a DOVRE DV450S is replacing a wood-stove, much of the existing Class A Metal Chimney can be incorporated into the direct vent system.

The existing chimney must comply with NFPA-211 codes and any local code requirements.

The chimney should be cleaned and examined to verify it is unobstructed and in good structural condition. Any structural weaknesses such as cracks, leaky joints, corroded or warped surfaces can have an adverse effect on the performance of this Heater and should be replaced or repaired.

Whenever an existing Class A Metal Chimney is on an outside wall, removal of the chimney and the use of the minimum horizontal direct vent termination kit may be less expensive.

When using an existing Class A Metal Chimney the following requirements are necessary:

Minimum size diameter is 6 inches.

Minimum height from the base of the stove to the top of termination cap is 9 feet.

The vent from the top of the Heater to the Chimney must be rigid vent sections. A 4" UL 1777 listed gas vent aluminum flexible liner can be used inside the chimney. The flexible liner must be secured to the last rigid section with three (3) sheet metal screws. A minimum 3 inch overlap is required. Remove and discard the existing chimney termination cap.

Determine the length of the 4" UL 1777 listed gas vent flex liner required to meet the vent sections at the top of the Heater.

Follow the liner manufacturer's instructions for installing the liner in the chimney. Attach a flexible liner puller to the liner and secure a rope to the puller. One person should feed the liner through the chimney, and another person should pull the liner from the bottom, with the rope, guiding the liner down the chimney. Extend and run the 4" gas vent liner down the chimney leaving 10" extending from the top of the chimney stack.

Install and secure the VTA (Vertical Termination Adapter) onto the chimney with the brackets provided.

Place and secure the Termination Cap on the VTA with the screws provided. See Figure 13.

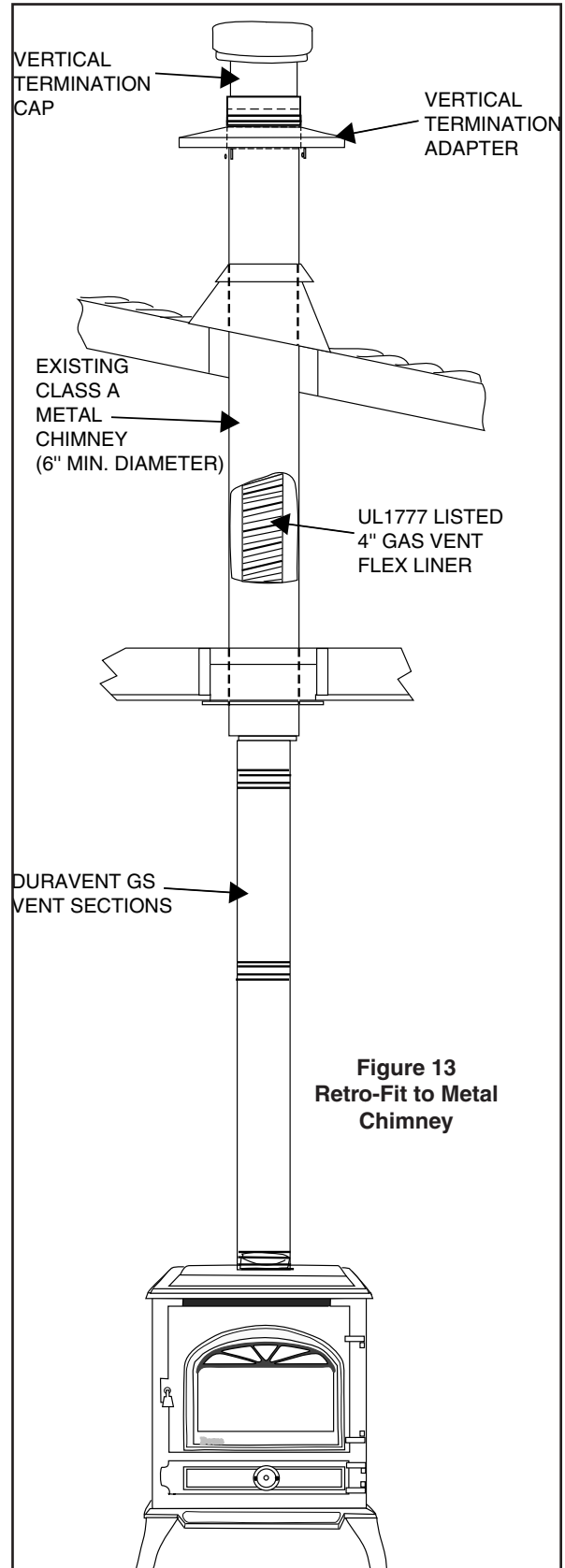


Figure 13
Retro-Fit to Metal
Chimney

GAS LINE INSTALLATION

The Valve is located near the lower Right Rear Corner of the appliance. Install the Gas Supply Line to the backside of the unit to ease installation of the unit to the Supply Line, a flexible connector and Manual Shut - Off Valve are supplied. The Manual Shut - Off Valve should be installed onto the Supply Line, ahead of the flex. All connections must be checked for leaks with a soap and water solution or Gas Sniffer.

GAS PRESSURE

For natural gas, the minimum inlet gas supply pressure is 4.5 inches water column, and the maximum inlet gas pressure is 7.0 inches water column, for the purpose of input adjustment. Input rate is 40,000 Btu/hr. For propane gas, the inlet gas supply pressure must be at least 11.0 inches water column and a maximum 14.0 inches water column. Input rate is 38,000 Btu/hr.

Manifold pressure for this Heater is 1.6 - 3.5 inches water column for natural gas and 6.3 - 10.0 inches water column for propane gas. This Heater has a variable adjust manifold. Pressure taps are located on the front of the valve for both inlet and outlet pressure.

FUEL CONVERSION

For conversion of the DV450S unit, use Kit # 844-9230 to convert from Natural Gas to LP.

A. Gas and Power Supply.

1. Shut off the Gas Supply to the unit.
2. Unplug the Blower Cord from the Power Supply.
3. Carefully remove the Logs and Burner from the Firebox. See Figure A for burner removal.

B. Burner Orifice.

Adjust Air Shutter Adjustment Screw as necessary to slide the Air Shutter off the Burner Orifice.

1. Loosen and remove the Retaining Nut on the Burner Orifice with a 5/8" wrench. See Figure B.
2. Replace the Burner Orifice with the .073 LP Main Burner Orifice supplied in kit. Reposition the Air Shutter onto the Burner Orifice. Refer to Section IX., on the following page, for High Altitude Installation.

C. Pilot Orifice.

1. Remove top of pilot hood. See Figure C.
2. Use an Allen Wrench to remove the pilot injector orifice. See Figure D.
3. Replace the pilot hood ensuring that it is seated and aligned.
5. Replace burner into the unit.



Figure A



Figure B



Figure C

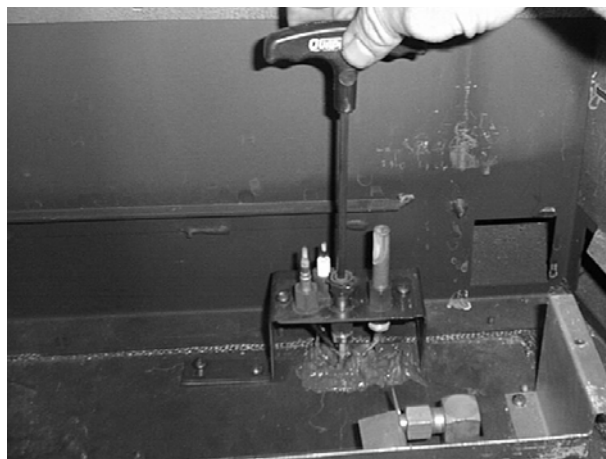


Figure D

D. Valve - Adjustable Regulator.

1. Gain access to the Valve Regulator Head by lifting up on the Valve Cover and removing the Tabs from the Slots on the Back Shield.
2. Follow Steps 1 - 3 in the Instructions included with the Regulator. Save the Label included in the Kit for later attachment to the unit.
3. Replace the Valve Cover after the Valve has been checked for leaks.

E. Leak Check.

1. Turn on the Gas Supply to the unit to check for gas leaks with soap and water.
2. Turn the Gas Control Knob to the "Pilot" position.

Push the Knob in all the way and hold. At the same time, push in the Red Ignitor button repeatedly until the Pilot lights. Never hold the Gas Control Knob for more than [10] seconds if the Pilot does not light. Once the Pilot lights, continue to hold the Control Knob in for 15 seconds. Release the Gas Control Knob and it will pop back out. Test for leaks at the Pilot Assembly using a soap and water solution or a Gas Sniffer. Turn the Gas Control Knob to the "ON" position and turn the Switch On. Check for leaks around the Valve and the Burner Orifice

WARNING!
**THE INSTALLATION OF THIS
CONVERSION KIT MUST ONLY
BE UNDERTAKEN BY A QUAL-
IFIED AND CERTIFIED GAS
APPLIANCE INSTALLER.**

HIGH ALTITUDE INSTALLATION

For U.S. installation, units are tested and approved for elevations from 0-2000 feet.

When installing this unit at an elevation above 2000 feet, it may be necessary to decrease the input rating by changing the existing Burner Orifice to a smaller size. Input should be reduced 4 percent for each 1000 feet above sea level. Check with the local gas utility for proper Orifice size identification. This unit is shipped with a .125 in./3.18 mm. Main Burner Orifice size for Natural Gas.

For Canadian installation, units are certified for elevations from 0-4500 feet. When installing this unit at an elevation between 0-4500 feet in Canada, the input rating does not need to be reduced.

When installing this unit at an elevation above 4500 feet in Canada, check with local authorities.

Consult your local gas company for assistance in determining the proper Orifice for your location or refer to ANSI Z223.1-latest edition, Appendix F.

NOTE: This Heater DOES NOT require a 110VAC supply for operation.

NOTE: This Heater must be electrically wired and grounded in accordance with Local Codes or, in the absence of Local Codes, with the National Electric Code ANSI/NFPA 70-latest edition, or the Canadian Electrical Code, CSA C22.1.

NOTE: This 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 psi (3.5kPa). 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 levels equal or less than 1/2 psi (3.5 kPa).

WARNING !

This conversion kit shall be installed by a qualified service agency in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction. If the information in these instructions is not followed exactly, a fire, explosion or production of carbon monoxide may result causing property damage, personal injury or loss of life. The qualified service agency is responsible for the proper installation of this kit. The installation is not proper and complete until the operation of the converted appliance is checked as specified in the manufacturer's instructions supplied with the kit.

OPTIONAL ACCESSORIES

Optional accessories may be added now or at a later date.

A. Optional Fan

The Optional Fan Kit (844-0150) requires a 110VAC supply.

Blower Installation:

1. Remove the Knockout Plate from the Backshield of the DV450S by prying out on the plate and clip or break the tabs that hold it in place. See Figure 1 below.
2. Remove the tape from the back of the strip of Gasket Material included with the blower kit, and position the Gasket over the edge of the opening of the Backshield. See Figure 2 below. (This will eliminate vibration.)
3. Install the Blower into the Backshield by hooking the bottom of the Blower Housing into the opening and rock the top of the Blower forward. Fasten the blower in place with the screws included in the Fastener Pack. See Figure 3 on this page.
4. Attach the Switch Control Box on the Backshield with the screws provided. See Figure 4, this page.
5. Plug the Connector on the wiring assembly into the Receptacle on the top of the Blower Housing. See Figure 5, this page.



Figure 3

Fan Installation on Back Shield



Figure 4

Attach Switch Control Box



Figure 1

Removal of Knockout Plate



Figure 2

Placing Blower Gasket on Back Shield

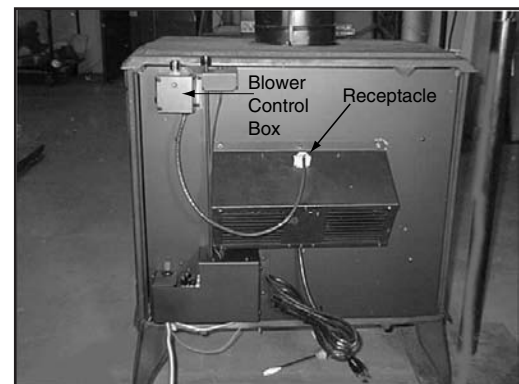
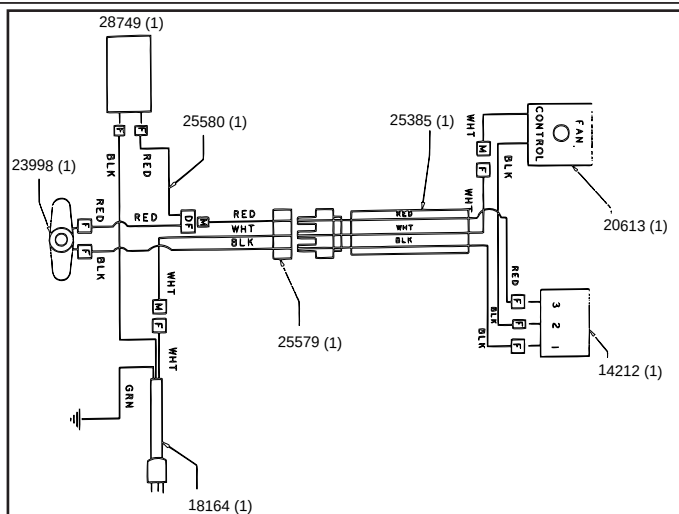


Figure 5

Receptacle

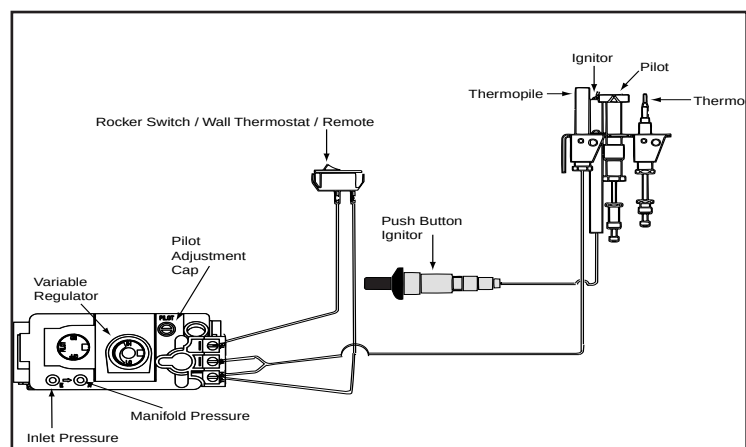
WARNING!**Electrical Grounding Instructions**

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

**Blower Wiring Diagram****B. Optional Wall Thermostat**

The use of a millivolt Thermostat is allowed. It must be located within 20 feet of the appliance. **In order for the Thermostat to work, the "ON/OFF" Switch must be in the "ON" position.**

Figure 12 shows how to connect a millivolt Thermostat without the "ON/OFF" Switch in the Circuit. Disconnect the "ON/OFF" Switch from the Valve and wire the millivolt Thermostat as indicated.

**Figure 12 - Wiring Diagram****C. Remote Control**

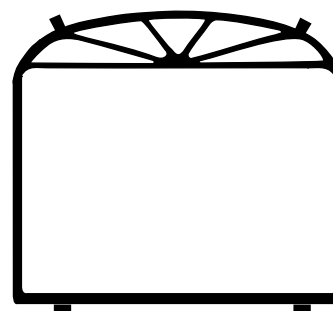
A remote control thermostat may be installed on this stove. Contact your dealer for the correct model.

D. Warming Shelves/Brackets

Please see the Installation Instructions included with the Shelves. Refer to page 5, Heater System Components, for ordering purposes.

**Warming Shelf and Bracket****E. Door Trim**

Part # 844-0140. Please the Installation Instructions included with the Door Trim.

**Decorative Glass Accent**

Firebox Entry

A. Removing the Front Face.

1. Loosen the Thumb Screw from the bottom of the unit that holds the Front Face in position. See Figure 20.
2. Carefully lift the Front Face up and pull the bottom forward. Place in a safe place.



Figure 20 - Bottom Thumb Screw

B. Removing the Glass.

3. Remove the Glass Frame Assembly by pulling the Latch Releases forward and upward. See Figure 21. Lift the Glass Frame Assembly up, sliding the [3] tabs at the bottom out of the slots.



Figure 21 - Removal of Sealed Glass

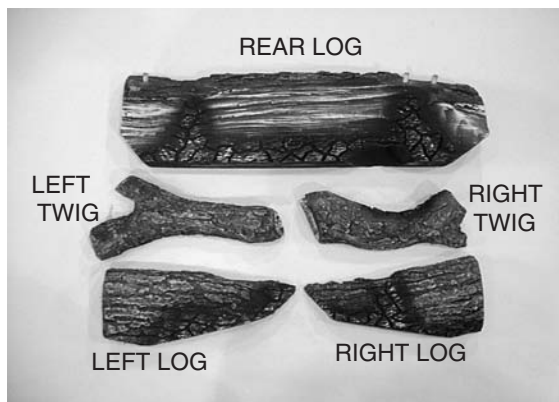


Figure 22 - Log Identification

C. Log Placement.

The logs are shipped in separate packaging. Refer to Fig. 22 for identification for the installation process.

1. Place rear log over two white pins on the firebox floor at the back of firebox. See Fig. 23.
2. Set left log over two pins on left side of firebox floor. Fig. 24.
3. Set right log over two pins on right side of firebox floor.
4. Set left twig over one pin on top left of rear log and into groove on front left log.
5. Set right twig over two pins on top right of rear log and into groove on front right log.



Figure 23
Rear Log
Placement



Figure 24
Left and Right
Log Placement

D. Creating the Coal Bed Look.

Ember Chunks.

Randomly place the Ember Chunks on the Burner Pan between and in line with the two front logs, creating a small wall of embers. Do not allow the Chunks to cover the burner ports or air holes in the Burner Pan as this may restrict air and/or gas flow, creating a less than satisfactory performance. Too much restriction can cause improper combustion and sooting (especially with an appliance using propane gas). It is not necessary to use all of the Chunks supplied with the unit.

Once the Burner Pan has been correctly covered with Ember Chunks, place a single row of ember Chunks on the ember tray located at the front of the Log Assembly.

Once the Ember Chunks are in place, a thin layer of Mineral Wool may be bridged over the Chunks for greater enhancement.

Lava Rock.

Distribute the lava rock over the surface of the hearth pan next to the glass being careful not get lava rock down into the air inlet slots or onto the surface of the Burner Pan. The lava rock does not change the flame and does not have to be used. A different look to the front of the unit is to add a row of ember Chunks.

E. Adjustable Flue Restrictor

The DV450 has an adjustable flue restrictor for maximum performance for vertical installations. The unit is shipped with the restrictor in the open position and should be left open with any horizontal installations.

The adjustment screw can be accessed by reaching through the center air outlet slot at the top of the front face. See Figure 25. The slot of the screw head indicates the position of the restrictor. See Figure 25. Turn the screw with a straight blade screwdriver to close the restrictor as necessary.

The amount to close the restrictor will depend on the vent height. If the vertical height is 20 feet or more, the restrictor can be closed all the way. Anything less will require some setting less than closed. The setting will vary depending on the installation.

Any offsets in a vertical installation will restrict the system and the flue restrictor will not need to be closed as much.

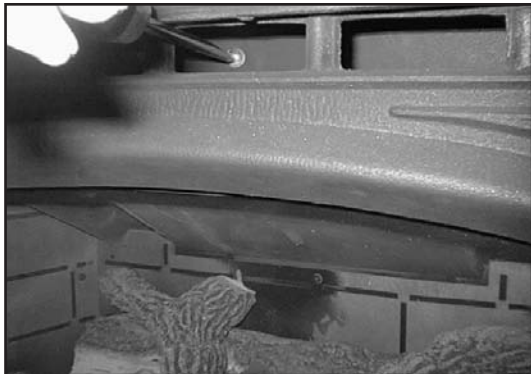


Figure 25 - Adjustable Flue Restrictor

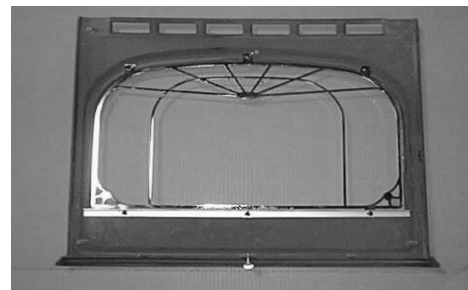


Figure 26 - Door Trim Installation

Step 11 - Clean the Glass

To clean the glass, use a non-abrasive, mild cleaning solution. (For example, a glass cleaner or for stubborn film, an oven cleaner.) Apply an adequate amount to the glass and wipe off with a damp cloth. Be sure all cleaner is thoroughly rinsed from the glass.

Step 12 - Install the Glass

After cleaning the glass, carefully place the Glass Frame Assembly onto the unit by positioning the tabs at the bottom of the frame into the slots. Pull the latch releases forward and hook over the glass frame.

Step 13 - Optional Door Trim Kit Installation

The decorative trim can be installed at this time.

1. Lay the front face on a flat surface being careful not to damage it.
2. Remove the lower shield by removing the (3) screws.
3. Lay the door trim onto the front face and put the shield back in position and attach with the screws provided and those removed earlier.

The screws are thread cutters and a power screwdriver is necessary to drive the screws into position. See Figure 26.

Step 14 - Replacing the Front Face

Carefully lift the front face into position and replace the thumb screw to hold it in position.

WARNING!

NEVER OPERATE THIS APPLIANCE WITH THE DOOR AND/OR GLASS REMOVED OR NOT SEALED.

WARNING!

DO NOT OPERATE APPLIANCE WITH THE PANEL(S) REMOVED, CRACKED OR BROKEN. REPLACEMENT OF THE PANEL(S) SHOULD BE DONE BY A LICENSED OR QUALIFIED SERVICE PERSON.

Pre-Use Check List

Before operating this heater, please review the safety precautions given on page 2 as well as the items listed below:

1. Check to make sure the logs are securely in place and the rock wool, lava rock and Chunks have all been placed correctly. (Refer to Steps 8 and 9.)
2. Check to see that all wiring is correct and enclosed to prevent possible shock.
3. Check to ensure there are no gas leaks. This may be done with a soap and water solution.
4. Make sure the glass is sealed and in its proper position. Never operate this heater with the face removed or glass removed or not sealed.
5. Verify that all venting and caps are unobstructed. Exhaust gases are extremely hot. Check for obstructions from trees, bushes, snow drifts, etc.
6. Read and understand these Instructions thoroughly before attempting to operate this heater.

LIGHTING INSTRUCTIONS

FOR YOUR SAFETY READ BEFORE LIGHTING

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

A. This gas appliance has a manual ignition device that lights the pilot. When lighting the pilot, follow these instructions exactly.

B. STOP! BEFORE READING FURTHER, smell around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle to the floor.

WHAT TO DO IF YOU SMELL GAS:

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

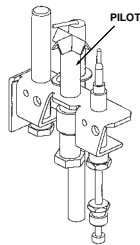
C. IF THE PILOT LIGHT AND BURNER WENT OUT DURING USE, YOU MUST TAKE THE GLASS OFF THE APPLIANCE AND WAIT TO CLEAR OUT ANY GAS. FOLLOW THE LIGHTING INSTRUCTIONS BELOW.

D. Use only your hand to push in or turn the gas control knob to light the pilot. Never use tools. If the knob will not push in or turn by hand, do not try to repair it; call a qualified service technician. Using a tool or attempting repairs may result in a fire or explosion.

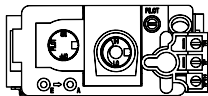
E. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control that has been under water.

LIGHTING INSTRUCTIONS

1. STOP! Read the safety information above.
2. Turn off all electric power to the appliance. If your appliance has a thermostat, set to lowest setting.
3. Open control access panel.
4. Find the pilot. The pilot is inside the combustion chamber next to the main burner.



5. If the gas control knob is at the "OFF" position, go to step 7. If the gas control knob is at the "ON" position, go to step 6.



6. If the pilot light went out during normal use with the gas control knob at the "ON" position, turn the gas control knob to the "OFF" position. REMOVE THE FIXED GLASS PANEL. Wait ten (10) minutes to clear out any gas.
9. Turn gas control knob counterclockwise to the "PILOT"

7. Smell for gas, including near the floor. If you don't smell gas, go to the next step. If you smell gas, wait another five (5) minutes or until the gas odor is no longer present before continuing. If the odor of gas does not disappear after fifteen (15) minutes, STOP! Follow "B" in the safety information above.
8. Replace glass panel if it has been removed.
9. Turn gas control knob counterclockwise to the "PILOT" position.
10. Push the gas control knob in all the way and hold. At the same time, push in red ignition button repeatedly until the pilot lights. Never hold the gas control knob in for more than ten (10) seconds if the pilot does not light. Once the pilot lights, continue to hold the gas control knob in for 15 seconds. Release the gas control knob and it will pop back up. If pilot does not remain lit, repeat steps 6 through 9.

*If gas control knob does not pop back up when released, turn the knob to "OFF" and call your service technician or gas supplier.

*If the pilot will not stay on after two attempts, turn the gas control knob to "OFF" and call your service technician or gas supplier.

11. Turn gas control knob counterclockwise to the "ON" position. The knob can be turned to the "ON" position only if it is popped out.
12. Close the access panel.
13. Turn on electrical power to the appliance. If equipped with a thermostat, set to the desired setting.

TO TURN OFF GAS TO APPLIANCE

1. Turn rocker switch to OFF or the wall thermostat to lowest setting if your unit is so equipped.
2. Turn off all electric power to the appliance if service is to be performed.
3. Open control access panel.
4. Turn gas control clockwise to "OFF".
5. Close control access panel.

Upon completing the gas line connection, a small amount of air will be in the lines. When first lighting the pilot light, it will take a few minutes for the lines to purge themselves of this air. Once the purging is complete, the pilot and burner will light and operate.

Subsequent lightings of the appliance will not require such purging. When lit for the first time, the appliance will emit a slight odor for an hour or two. This is due to paint and lubricants used in the manufacturing process. Additionally, for the first few minutes after each lighting, vapor may condense and fog the glass and the flames may be blue. After a few minutes, this moisture will disappear and within 15-30 minutes the flames should become yellow.

CAUTION: During the initial purging and subsequent lightings, NEVER allow the gas valve control knob to remain depressed in the “pilot” position without pushing the red ignitor button at least once every second.

ON/OFF SWITCH FOR THE BURNER

The on/off switch for the burner is located at the rear of the unit.

The knob beside the switch controls the flame setting. Turning clockwise increases the flame and counter-clockwise turns the flame to low. See Figure 27.

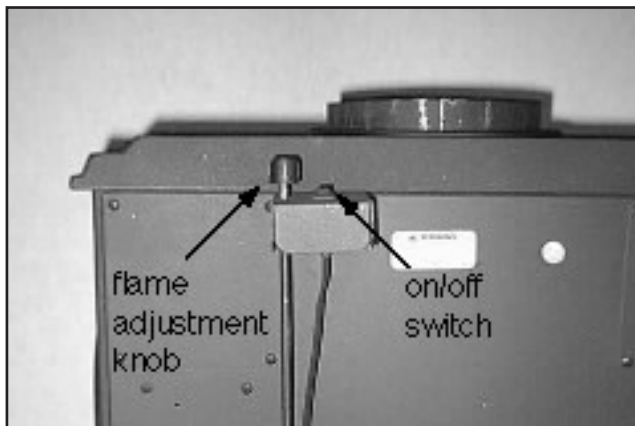


Figure 27 Flame Adjustment

AIR SHUTTER ADJUSTMENT

The air shutter adjusts the amount of air that mixes with the gas as it enters the Burner Pan. It is used to fine tune the flame as necessary for differences in altitude and vent configuration. The shutter is shipped in the open position.

It can be adjusted by removing the front face and turning the adjustment screw. See Figure 28.

Turning the screw in will close the shutter; turning the screw out will open the shutter.

The shutter can be adjusted while the unit is in operation.

However, the unit should be shut off and allowed to cool **before** removing the front face.

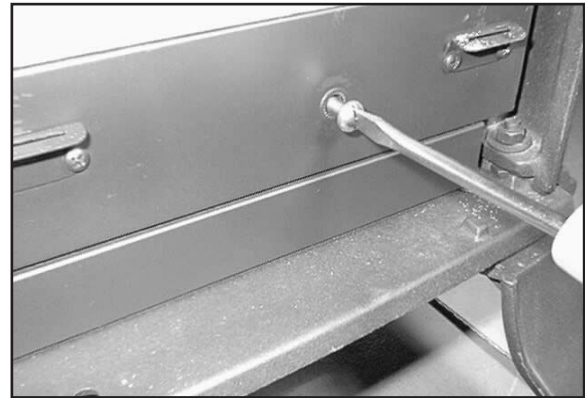


Figure 28

Air Shutter Adjustment

Note:

Allow the unit to cool before replacing the front face.

Allow the unit to operate about 15-20 minutes. This will give the flame time to reach its height and color before making adjustments to the air shutter. As the shutter is closed, the flame should get taller and darker.

The appliance may produce a noise, caused from metal expansion and contraction as it heats up and cools down. This noise is similar to one that a furnace or heat duct may produce and does not affect the operation or longevity of the the unit.

Keep the control compartment, logs, and burner area surrounding the logs clean by vacuuming or brushing at least twice a year.

CAUTION: The Logs can get very hot - handle only when cool.

SEASONAL SHUTDOWN

Turning the valve to off at the end of the season will prevent gas from running to the appliance while not in use in the off season. However, leaving the pilot on does not consume a large amount of gas and the pilot will help keep the moisture and insects out of the system.

OPERATION PROCEDURE DURING REGULAR USE

Simply turn the switch/thermostat to the ON position. This will ignite the main burner.

SHUTDOWN DURING REGULAR USE

Simply turn the switch/thermostat to OFF. This will disengage the burner and the flames will extinguish.

MAINTENANCE INSTRUCTIONS

Cleaning the burner and control compartment

Keep the burner compartment clean. Brush this area with a clean, dry paint brush and vacuum at least once a year. Always turn off the gas valve and ON/OFF switch before cleaning.

Checking flame patterns

Visually check the flame of the burner periodically, making sure the flames are steady; not lifting or floating. The flame color should be blue with yellow tips. The thermopile tip should be covered with flame. See Figure 20.

NOTE: If the air shutter is open all the way and the flames remain sooty, shut off gas to the appliance and contact a qualified gas service technician.

If the vent configuration is installed incorrectly, the vent may cause the flames inside the appliance to lift or "ghost" - a dangerous situation. Inspect the flames after installation to ensure proper performance. If the vent configuration is correct, yet the flames are lifting or ghosting, shut off gas to the appliance and contact the dealer for information on remedying the problem.

Venting system inspection

The heater and venting system should be inspected before use each season, and at least annually, by a qualified field service person, to ensure that the flow of combustion and ventilation air is not obstructed.

Cleaning the glass

It is recommended to wear gloves while handling or removing the glass. **DO NOT REMOVE THE GLASS WHEN HOT.**

Note: When cleaning the glass, **NEVER** use abrasive materials. **NEVER** clean glass when hot.

To clean the glass, use a non-abrasive, mild cleaning solution. (For example, a glass cleaner for stubborn film, or an oven cleaner.) Apply an adequate amount to the glass and wipe off with a damp cloth. Be sure all cleaner is thoroughly rinsed from the glass.

Never operate this heater without the glass properly secured in place or if the glass is broken.

In the event of glass breakage, follow door removal instructions. This will allow the removal of all glass fragments and sheet metal edge protection strips. Vacuum all remaining glass pieces with a shop vac. (DO NOT VACUUM IF PIECES ARE HOT.) Replace glass ordered direct or through your local distributor. Never use substitute material. Only ceramic glass may be used on this heater.

Log cleaning

Carbon build-up can be removed with a vacuum cleaner.

WARNING!

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.

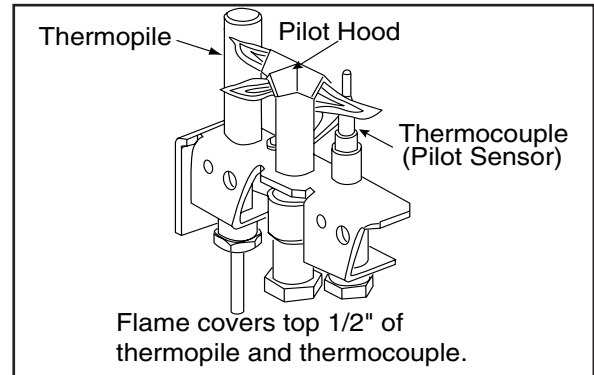


Figure 20 - Standing Pilot

Note: Operation of a Direct Vent Heater may be sporadic in high wind situations.

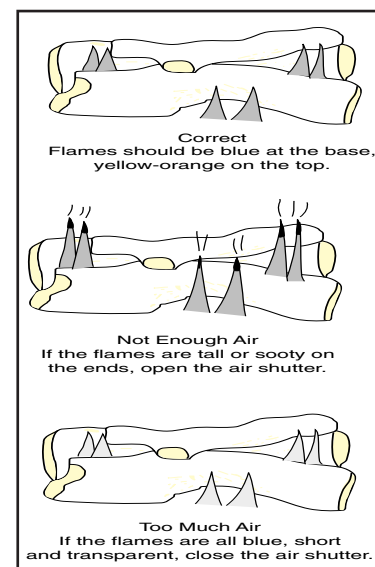


Figure 21 - Flame Patterns

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

TROUBLE SHOOTING

Problem:	Possible Cause:	Solutions:
Pilot will not light.	Air in Gas Lines.	Bleed air from Gas Line.
	Wrong Inlet Pressure.	Check Gas Line pressure (7" Nat., 11" L.P.).
	Defective Spark Electrode.	Replace Electrode if the Insulator is cracked or the Tip is corroded. Verify that the Spark Gap between the Pilot and the Electrodes correct.
	Defective Piezo Wire.	Replace Piezo Wire if Insulation is damaged, broken, or corroded.
	Safety Interlock Function engaged.	Allow Thermocouple to cool until the mV drops below the hold - in requirements of the Safety Magnet (30 seconds or less). Relight Pilot.
Pilot will not hold.	Wrong Inlet Pressure.	Check Gas Line pressure (7" Nat., 11" L.P.).
	Pilot Adjustment Screw not adjusted properly.	After the Pilot has been lit for approximately [3] min., and only the Thermo-generator wires connected to the Main Operator Head, measure the voltage across TPTH and TP. This Open Circuit voltage should be between 500mV and 750mV. Tune the Pilot Adjustment Screw until the mV reading falls within these parameters. Counter-clockwise increases the mV reading, Clockwise decreases it. Turn with a Wrench.
	Thermocouple or Thermo-generator has Film build-up on Tip.	With the Thermocouple and Thermo-generator Tips cool, clean the upper 3/8" with a very fine Emery cloth.
	Electrical Resistance too high.	Using a very fine Emery cloth, clean the Thermo-generator and Thermocouple connections at the Valve. Tighten Thermocouple into Valve, hand tight, adding a 1/4 turn with a wrench.
	Defective Thermocouple. (mV Plus System)	Verify that the Thermocouple is not kinked or damaged. Check Open-Circuit voltage of Thermocouple. Voltage should be between 18mv and 28mv. If voltage is less than 14mv, replace the Thermocouple.
	Defective Thermo-generator. (millivolt System)	After the Pilot has been lit for approximately [3] min., and only the Thermo-generator wires connected to the Main Operator Head, measure the voltage across TPTH and TP. This Open Circuit voltage should be between 500mV and 750mV. Tune the Pilot Adjustment Screw until the mV reading falls within these parameters. Counter-Clockwise increases mV reading, Clockwise decreases it.
	Defective Safety Magnet (mV Plus Systems).	Verify operation of Safety Magnet in the following manner: (A) Depress and hold the Pilot Button. (B) Verify Open-Circuit Thermocouple voltage as described in previous Step. (C) Reconnect Thermocouple to the Valve. (D) Measure the millivoltage between the Solder Button on

TROUBLE SHOOTING (continued)

Problem:	Possible Cause:	Solutions:
Pilot will not Hold (Cont.).	Defective Magnet (mV Plus systems).	If the mV reading is above 6mV and the Safety Magnet does not hold, replace the Valve. (E) If Closed-Circuit mV reading is the same as the Open-Circuit reading, the Coil is electrically "Open". Replace the Valve.
	Defective Savety Magnet	Verify operation of Safety Magnet in the following manner: (A) Remove all Wires from the terminals of the Main Operator. (B) Measure the electrical voltage between the Terminals TPTH and TP. If the voltage is above 110mV and the Safety Magnet does not hold, replace the Valve.
Pilot Drops Out.	Pilot Orifice blocked.	Replace Orifice with a new Orifice of the exact size and type.
	Wrong Pilot Orifice.	Replace the Orifice with a new Orifice supplied specifically for the appliance and gas in question.
No gas to Main Burner.	Low gas pressure to appliance.	Check Gas Pressure (7" N.G./11" L.P.)
	Pilot not lit.	Light Pilot and wait for Thermo-generator to heat up sufficiently to power the Main Operator. If Pilot fails to light, hold, refer to the above sections.
	Control Knob in the "ON" position.	Rotate "OFF/PILOT/ON" Control Knob to the "ON" position.
Thermostat/ Wall Switch will not cycle the Main Burner.	Thermostat not in the "ON" position.	Turn Thermostat "ON" and then adjust Temperature Control to call for heat.
	Thermo-generator output voltage not within design parameters. Defective Thermostat or Thermostat Wiring.	Refer to Item #7 in the Set-up Guide. If unable to meet minimum requirements, replace the Thermo-generator. (A) With the Pilot adjusted properly, place a Jumper Wire between TPTH and TH. Take a mV reading across the TPTH and TH Terminals of the Valve. This Closed Circuit voltage should not fall below 300mV. Record reading. (B) Remove Jumper Wire from the TPTH and TH connections and connect the Thermostat Wires to the same Terminals. Closed Circuit voltage as described in the previous Step. If the mV reading drops below 150mV, excessive resistance exists in the Thermostat Circuit and must be isolated and eliminated.
	Defective Wall Switch.	Repeat the above troubleshooting items covered under "Defective Thermostat or Thermostat Wiring" except,

TROUBLE SHOOTING (continued)

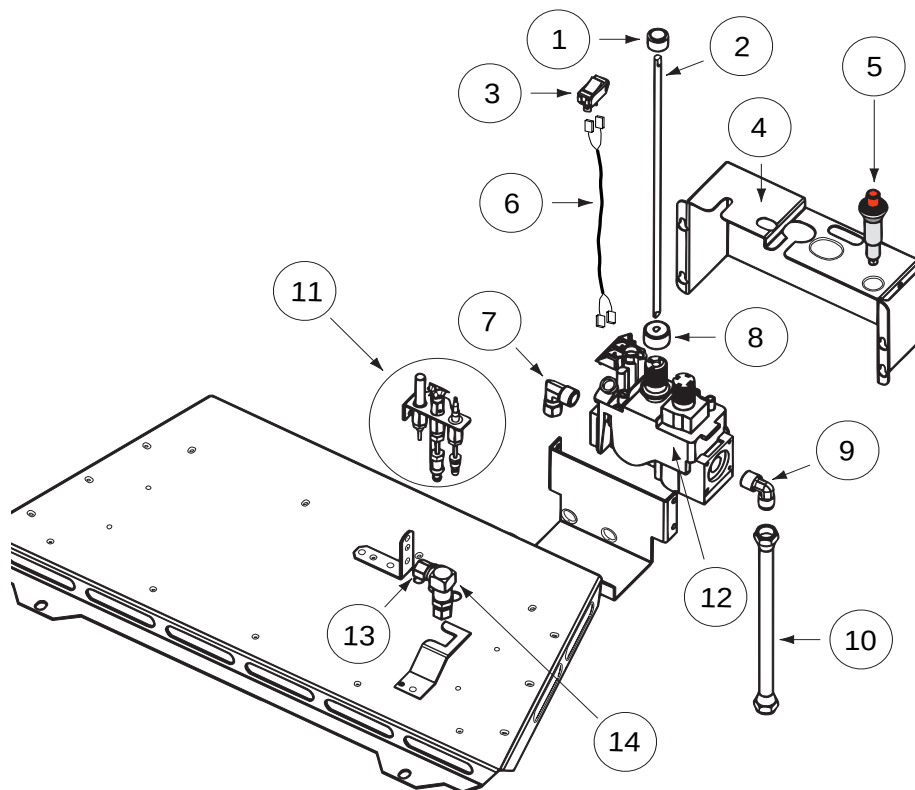
Problem:	Possible Cause:	Solutions:
Thermostat/ Wall Switch will not cycle the Main Burner (Cont.)	Excessive Wire Resistance.	Make sure that all mV connections are made using wire of the proper size. Reference Table 2.
	Valve Wired the Incorrectly.	The Thermo-generator leads must be connected to TPTH and TP connections of the Main Operator. Thermostat Wires must be connected to the TPTH and TP Terminals of the Valve.
Main Burner lights while in the Pilot position.	Main Operator Coil is defective.	Verify electrical resistance of the Main Operator the following manner: (A) Remove ALL WIRES! from the Operator Head. (B) With an Ohm meter, measure electric resistance between the TP and TH Terminals. If the resistance does not fall within specification, replace the Valve. See Table 1.
	Debris on Seat of Main Valve.	Replace Valve.
	Main Seat blown out as a result of exposing an LPG Gas Valve to an unregulated line pressure in excess	Replace Valve.

REPLACEMENT PARTS

Replacement parts are available from your distributor/dealer.

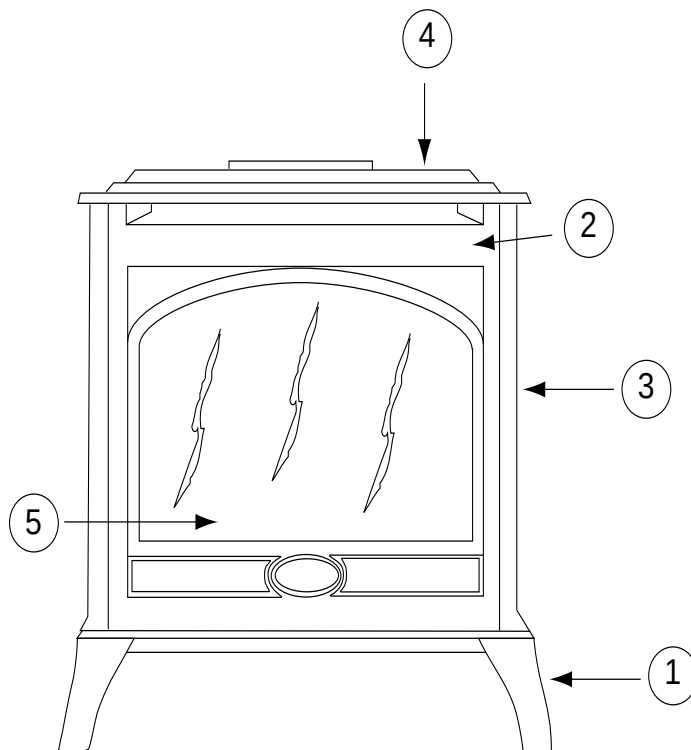
If necessary, a Conversion Kit is available from your distributor/dealer.

ITEM	PART#	DESCRIPTION
	844-6120	Burner Assembly
1	844-2640	Knob
2	29866	Control Rod
3	844-1260	"ON/OFF" Rocker Switch
4	844-9120	Valve Cover Assembly
5	844-1240	Push Button Ignitor
6	29180	Rocker Switch Wire Assembly
7	844-5820	Brass Elbow
8	844-2640	Control Rod Knob
9	844-1980	Brass Elbow
10	844-5810	Flex Tube
11	844-1410	Pilot Assembly - Natural Gas
	844-2520	Pilot Orifice - Natural Gas
	844-2530	Pilot Assembly - Propane
	844-2170	Pilot Orifice - Propane
12	844-0490	Valve Assembly - Natural Gas
	844-1230	Valve Assembly - Propane
13	844-5840	Burner Orifice - Natural Gas
	844-5850	Burner Orifice - Propane
14	844-2550	Bulkhead

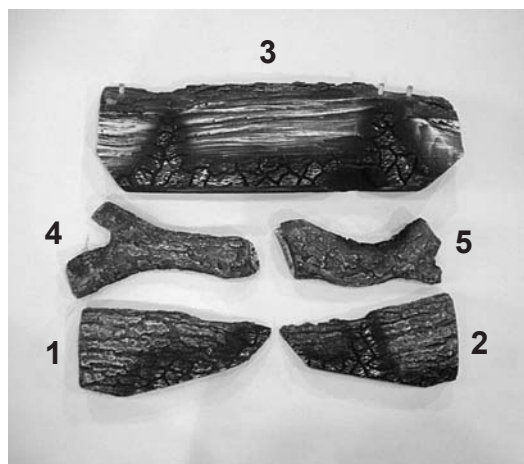


** If any of the original wiring as supplied with the heater must be replaced, it must be replaced with Type 18 ga., 105C wire, or its equivalent.

ITEM	PART#	DESCRIPTION
1	844-2680	Leg-Matte Black
	844-2690	Leg-Porcelain Black
	844-2700	Leg-Porcelain Blue
	844-2710	Leg-Porcelain Creme
	844-2720	Leg-Porcelain Green
2	844-6130	Front Face-Matte Black
	844-6140	Front Face-Porcelain Black
	844-6150	Front Face-Porcelain Blue
	844-6160	Front Face-Porcelain Creme
	844-6170	Front Face-Porcelain Green
3	844-6180	Side Plate-Matte Black
	844-5970	Side Plate-Porcelain Black
	844-5980	Side Plate-Porcelain Blue
	844-5990	Side Plate-Porcelain Creme
	844-6000	Side Plate-Porcelain Green
4	844-6010	DV450 Top Plate-Matte Black
	844-6020	DV450 Top Plate-Porcelain Black
	844-6030	DV450 Top Plate-Porcelain Blue
	844-4060	DV450 Top Plate-Porcelain Creme
	844-6040	DV450 Top Plate-Porcelain Green
	27873	Bottom Plate (not shown)
	27587	Side Refractory (not shown)
	27545	Back Refractory (not shown)
	844-2980	Shutter (not shown)
	844-2990	Shutter Screw (not shown)
	844-7790	Ceramic Glass Assembly
	844-3010	DV450 Glass Gasket (not shown)
	844-3930	Switch Bracket (not shown)
	844-3030	Latch Arm Assembly (not shown)
	844-6060	DV450 Back Shield (not shown)
	844-5070	Wing Bolt for Front Face (not shown)
5	844-6070	Glass Panel
	844-6090	Door Frame (not shown)
	844-6080	Door Frame Assembly (not shown)
	844-6100	Damper (not shown)
	844-6110	Back Shield (not shown)
	844-6120	Burner Assembly (not shown)



DV450S Replacement Parts



DV450S Gas Log Assembly

ITEM	PART#	DESCRIPTION
	844-5880	Gas Log Assembly
1	844-5890	Front Log - Left
2	844-5900	Front Log - Right
3	844-5910	Back Log
4	844-5920	Top Log - Left
5	844-5930	Top Log - Right
6	844-5940	Embers (not shown)
7	844-5950	Lava Rock (not shown)
8	884-1060	Mineral Wool (not shown)

LIFETIME WARRANTY

LIFETIME WARRANTY

The Aladdin Hearth Products limited Lifetime Warranty guarantees that the following components will work as designed for the lifetime of the stove or Aladdin Hearth Products will repair or replace them. These items include but are not limited to steel and cast iron components, flame plate, firebox reflector, combustion chambers, heat exchanger systems, stainless steel firebox components, burners, gas logs, gold plating, doors, glass damaged by thermal breakage, steel baffles and manifold tubes.

THREE YEAR WARRANTY

Our EZ Clean and ceramic firepots are both covered under Aladdin's three-year warranty program.

ONE YEAR WARRANTY

All electrical components such as but not limited to blowers, wiring vacuum switches, speed controls, control boxes, thermodisc switches, pilot assembly, ignitors and gas valves are covered under Aladdin's one-year warranty program. Carburetors are covered under Aladdin's one-year warranty. Labor to repair or replace these parts is covered for one year, reimbursed per our warranty service fee schedule.

CONDITIONS

This warranty is non-transferable and is made to the original retail price purchaser only, provided that the purchase was made through an authorized dealer of Aladdin Hearth Products. This Aladdin product must be installed by a competent, authorized service contractor. It must be installed and operated at all times in accordance with the Installation and Operating Instructions furnished with this product, as well as any applicable local and national codes. Any alteration, willful abuse, accident, or misuse of the product shall nullify this warranty.

Labor to repair or replace items covered under the limited Lifetime Warranty will be covered for the first five years per our warranty service fee reimbursement schedule. Parts covered under the limited Lifetime Warranty will be covered for the lifetime of the appliance up to a maximum of five years after Aladdin Hearth Products discontinues the model. Adjustments, regular maintenance and cleaning, and temporary repairs do not qualify for a service call fee and will not be covered. The replacement of consumer replaceable items and installation of upgraded component parts do not qualify for a service call fee, and will not be covered.

This limited Lifetime Warranty does not extend to or include surface finish of the stove, door gasketing, glass gasketing, thermocouple covers, firebrick, kaowool or other ceramic insulating materials. It does not cover installation or operational-related such as overfiring, use of corrosive driftwood, downdrafts or spillage caused by environmental conditions, nearby trees, building, hilltops, mountains, inadequate venting or ventilation, excessive offsets, or negative air pressures caused by mechanical systems such as furnaces, fans, clothes dryers, etc.

Any installation, construction, transportation or other related costs or expenses arising from defective part(s), repair, replacement, etc., will not be covered by this warranty, nor will Aladdin Hearth Products assume responsibility for them. Further, Aladdin Hearth Products will not be responsible for any incidental, indirect, or consequential damages, except as provided by law. Aladdin Hearth Products will not be responsible for any alteration to the unit which causes sooting that results in damage to the interior or exterior of the building in which this appliance is installed. This limited Lifetime Warranty does not apply to venting components, hearth components or other accessories used in conjunction with the installation of this product not manufactured by Aladdin Hearth Products.

This warranty is void if the stove has been operated in atmospheres contaminated by chlorine, fluorine, or there is any damage to the stove or other components due to water or weather damage which is the result of, but not limited to, improper chimney or venting installation. Aladdin Hearth Products may, at its discretion, fully discharge all obligations with respect to this warranty by either repairing or replacing the unit, or refunding the wholesale price of the defective part(s).

This limited Lifetime Warranty is effective on all Dovre and Arrow stoves sold at point of purchase after July 1, 1998, and all Quadra-Fire stoves sold after September 1, 1996, and supersedes any and all warranties currently in existence.

OWNER'S NOTES:

Important!
Complete now for future reference.

MODELNAME

DOVRE DV450S

Serial Number

Located on the Ratings Label on back of unit.

Date Purchased

Dealership Where Purchased

Dealer Phone

Additional Information:

After completing your warranty card, attach your sales receipt and warranty stub here for future reference.

Attention

INSTALLER

***Please return these
Operating & Installation
Instructions to the
Consumer***