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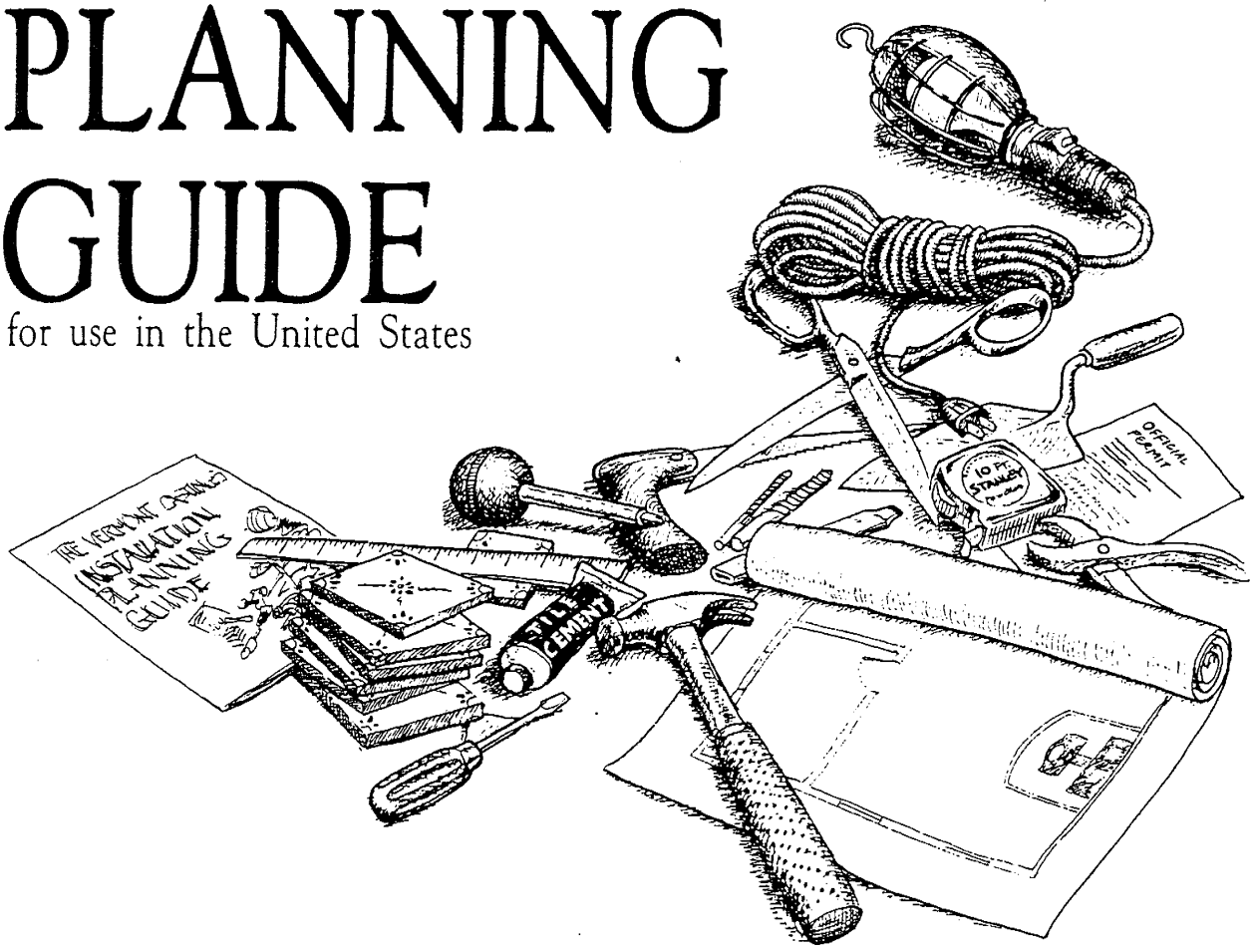
The Vermont Castings®

INSTALLATION PLANNING GUIDE

for use in the United States



Understanding and Planning

The decision you have made to convert from, or to supplement, a central heating system to a radiant heating system expresses a certain character of self-reliance.

It shows your committment to becoming more personally involved in providing for your families' heating needs. We at Vermont Castings not only share this philosophy, we feel a responsibility to provide you with guidelines that encourage well-planned and safe installation practices.

This guide discusses installation factors that influence a stove's performance, addresses methods to reduce clearances between stoves and adjacent combustible materials, and suggests decorative options so your installation can be consistent with the room decor. And further, we've included information to familiarize you with chimney requirements, tested clearances, wall and floor protection, stove dimensions and stove specifications.

Recently there has been an increase in the number of municipalities which have ordinances concerning the correct installation of solid-fuel burning appliances. Since codes often vary, check with local building officials **first** to determine if you need a building permit, an approval of your installation design, or an inspection of the completed installation. Some insurance companies require notification of proposed use of solid-fuel heaters as well, so you may wish to contact your insurance agent.

If you should have any questions during these important planning stages, please contact your local Vermont Castings Authorized Dealer or our trained staff in Randolph, Vermont (802/728-3111).

INDEX

LISTINGS

The Defiant®, Vigilant®, Resolute®, and Intrepid® are listed with the following building official organizations:

- Building Officials and Code Administrators International, Inc. (BOCAI), #82-76
- Southern Building Code Congress International, Inc. (SBCCI) #8347

All Vermont Castings stoves are listed by other national building organizations and municipalities. Please contact your Authorized Vermont Castings Dealer or our Customer Service Department in Randolph, Vermont for further information.

REFERENCES

The following publications will provide you with additional information to help insure the safet of your installation:

- NFPA 211, Chimneys, Fireplace and Vents, National Fire Protection Association, Battery March Park, Quincy, MA 02269.
- Wood Heat Safety, J. Shelton, Garden Way Publishing; see the Vermont Castings Catalog.
- The Book of Heat, Stephen Greene Press; see the Vermont Castings Catalog.

PLACEMENT

Since a radiant stove depends on efficient air circulation to disperse the heat it generates, stove placement is critical to overall performance. While your decision may be influenced by the location of an existing chimney, by clearance requirements, or by aesthetic considerations, your first determination should be what role the stove will play in the overall heating plan of your home.

If the stove is to be a primary heat source providing 75% - 100% of your heat, a central, open location is ideal (FIG. 1). Placement in a small or isolated room will probably not promote good heat circulation throughout the rest of the house without the assistance of floor and wall registers (FIG. 2).

A stove to be used as a secondary heater to supplement the main heating system should be placed in the living area or a room which is otherwise difficult to heat. Basement installations can be made effective by insulating the walls and locating floor registers to assist the circulation of heat.

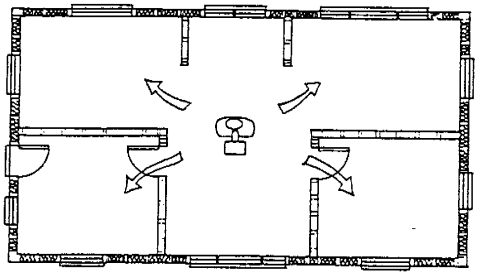


FIGURE 1
A centrally located stove will most effectively utilize existing air circulation to heat all rooms on one floor and possibly upper levels.

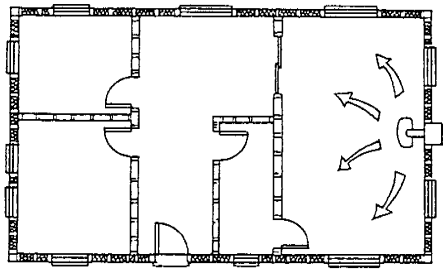


FIGURE 2
Installed at the far end of a house, the stove may over-heat the room in which it is located. Floor and wall registers can assist movement of heat to adjacent rooms and upper levels.

CHIMNEYS

Chimney draft strength is vital to the effectiveness of your stove. A well constructed and maintained chimney will encourage the strong draft that will support efficient fuel combustion under a variety of weather conditions. The unrestricted flow of exhaust gases through the flue, together with proper stove operation, will help minimize creosote or soot accumulation. It is essential that the chimney be constructed to promote durability, ease of maintenance and cleaning, and therefore, overall safety.

You may connect your stove either to an approved masonry chimney with flue liner (Fig. 3) or a factory-built High Temperature (H.T.) chimney which is listed to UL-103-1985 (Fig. 4). If you are building a new chimney, we strongly recommend an interior masonry chimney. Properly built, it will keep flue gases warm resulting in a strong draft and minimal creosote buildup. As a bonus, any heat loss through the masonry will be a heat gain to the house (Fig. 5).

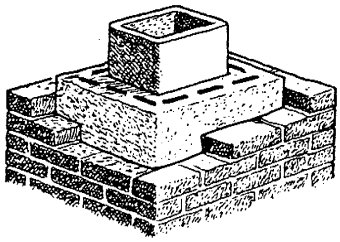


FIGURE 3
Tile-Lined Masonry Chimney

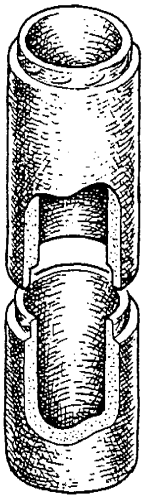


FIGURE 4
High Temperature Double-Wall, Insulated Chimney

Masonry chimneys require a solid foundation, a tile or other suitable lining, and careful construction techniques. There should be an accessible clean-out door at the base. Proper clearances must be maintained between the chimney and combustible walls, ceiling, and framing members. Generally, masonry chimneys are more expensive than prefabricated chimneys, but they can last longer.

Prefabricated chimney systems need no foundation, are relatively easy to install,and require less space than their masonry counterparts. Some metal chimneys are not suitable for use with coal stoves. It is essential that a prefabricated chimney be installed in strict accordance with the manufacturer's instructions and used only as its design is intended. There are several prefabricated chimney designs available. We recommend those which will help maintain high flue gas temperatures and are listed for use with solid fuels, such as the double-wall insulated type. Do not use Class B type chimneys; these are designed to vent gas appliances only.

An existing masonry chimney or fireplace chimney can provide an excellent flue provided it is in sound condition, is the correct size, and meets local building code requirements. The flue into which your parlor stove is installed should be used solely for the stove and not for any other appliance. Prior to installing your stove into an existing chimney, we recommend that the entire structure be thoroughly cleaned and then inspected for defects by a qualified mason. If your chimney is unlined, it should not be used to vent any wood or coal burning stove. There are, however, a number of lining systems which have been specifically designed for solid fuel use and will improve both the safety and the performance of an unlined chimney. These systems have also been successfully installed to correct draft problems associated with oversized chimney flues.

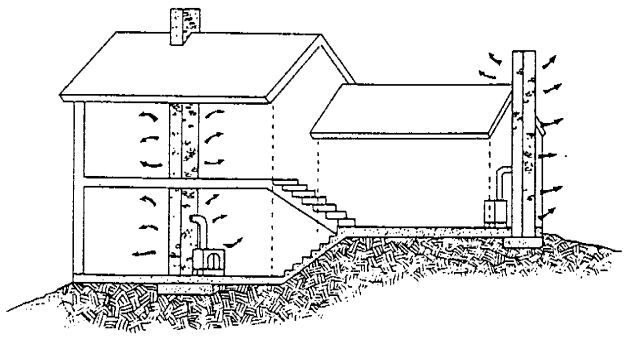


FIGURE 5
An exterior chimney will remain cooler than an interior chimney and, as a result, performance may suffer. Interior chimneys can provide more stable draft and require less maintenance.

FLUE HEIGHT REQUIREMENTS

The chimney must extend 3 feet above the level of roof penetration and a minimum of 2 feet higher than any roof surface within 10 feet. Check your local codes for additional regional guidelines. While a minimum chimney height of 14 feet above the flue collar of the stove is generally recommended, factors affecting stove performance such as local terrain, prevailing winds, and adjacent structures may necessitate use of a taller flue.

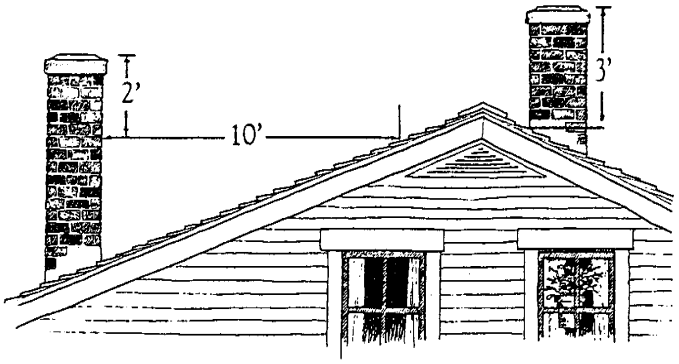


FIGURE 6

IDEAL FLUE SIZES

Vermont Castings stoves are designed to perform most efficiently when vented through flues having the following dimensions:

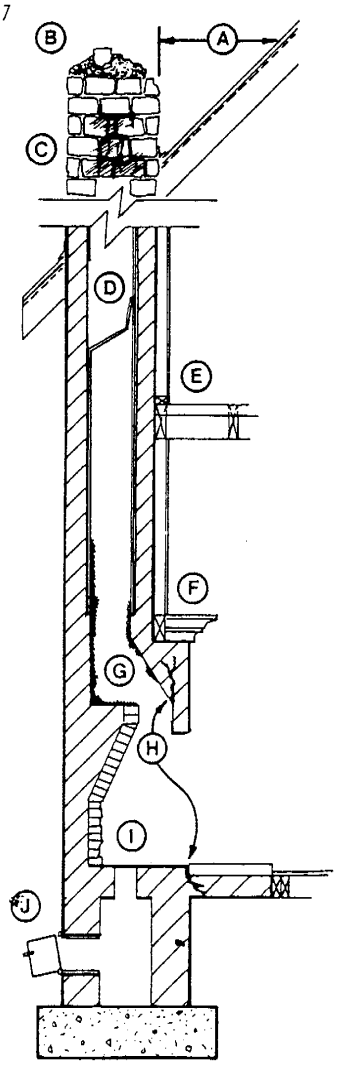
	Liner Size	*Round Liner Diameter*
Defiant/Vigilant	*8"x8" or 8"x12"*	*8" interior diameter*
Resolute/Intrepid	*8"x8" or 8"x12"*	*6" or 8" interior dia.*

Large flues (12"x12", or 12"x20"), although generally effective, can lessen chimney draft and promote cool flue gas temperatures.

Vermont Castings stoves are not listed for installation into flues smaller than the sizes recommended above.

If you are planning to a vent a small stove into a large flue, particularly an exterior masonry one, you may find it necessary to insulate the chimney, reline the chimney, or operate the stove to maintain high flue temperatures.

FIGURE 7



CHIMNEY INSPECTION

It is important for safe and satisfactory performance of your Vermont Castings stove that fireplace chimneys are well constructed and meet minimum code requirements. The chimney flue should have a code-approved liner made of masonry or pre-cast refractory tiles, straight or flexible stainless steel pipe, or a poured-in-place liner. An unlined chimney should be professionally re-lined. We recommend a nominal flue size of 8" x 8" or larger. Chimney height should be no lower than 14' above the flue collar of the stove.

Look for and repair these defects:

A Improper chimney height and roof clearance. Check local building codes for proper specifications.

B Chimney cap deterioration; should be rebuilt.

C Creosote stains indicate flue damage; should be rebuilt.

D Blockage within flue; must be removed.

E Improper clearance between chimney and combustible materials. Generally, a clearance of 2 inches is required to all combustible walls and framing members. Check local codes.

F Improper clearance between smoke chamber and adjacent framing members. Check local building codes.

G Creosote accumulation; chimney needs thorough cleaning.

H Structural deterioration of the fireplace; must be repaired before use.

I Loose or broken bricks or mortar; replace and remortar.

J Loose or broken clean-out door; repair or replace.

WALL PROTECTION

It is essential that you locate your stove with safe clearances to combustibles. Generally, the stove should be at least 36" away from all combustible materials unless specified otherwise. Combustible materials include items such as furniture, mantels, bookshelves, and doors. Walls are considered combustible if any materials contained within them can ignite and burn.

Remember, non-combustible materials applied directly to sheetrock or wood studs are not adequate protection. Sheetrock will conduct heat to the combustible materials or framing members behind it.

Clearances can be safely reduced in two ways; by installing Vermont Castings heat shields to the stovepipe and stove, or by protecting the wall with a non-combustible, ventilated shield (FIG.8). Refer to the Clearance Charts for specific distances. Be sure to check both stove and connector clearances prior to designing your installation.

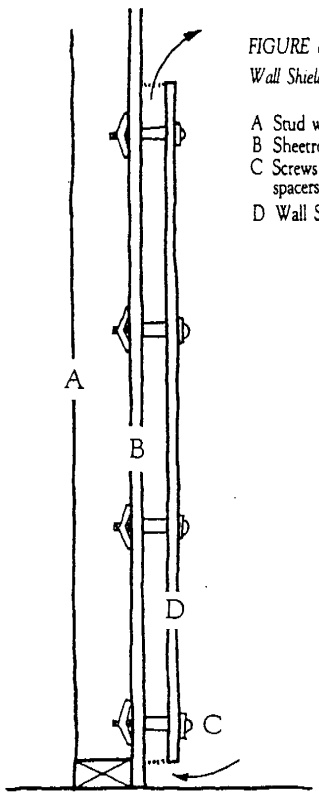
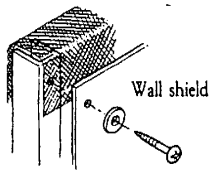


FIGURE 8
Wall Shield Materials - Side View

A Stud wall framing
B Sheetrock
C Screws and non-combustible spacers.
D Wall Shield

Detail of the Screening Assembly



Metal lath or non-combustible spacers.

VERMONT CASTINGS HEAT SHIELDS

If a manufactured wall protection system, which has been tested and listed by an organization such as UL, is used - be sure the shield is sized correctly (see page 4) and installed exactly according to the manufacturer's installation instructions.

We offer stove and stovepipe heat shields as accessories to provide a simple, effective, yet unobtrusive means of reducing clearances between the stove, stovepipe, chimney connector, and combustible walls. Each shield is constructed of 24 gauge sheetmetal and includes the necessary mounting hardware and instruction.

VENTILATED WALL SHIELDS

Ventilated wall shields will protect any combustible wall behind or beside the stove by providing a barrier to radiant heat and allowing a constant current of convected air to cool the wall surface. Use rigid, fire-proof materials, such as mineral board, which will not sag or warp. The shield must be mounted securely, spaced at least 1" from the wall by noncombustible spacers and supported 1" off the floor. A 1" gap should be left at the top to allow air circulation behind the shield. Screening material fastened over the top and bottom openings will prevent objects from falling behind the shield that could reduce the shield's effectiveness. See p. 4 to determine the correct size wall shield for your installation.

The following materials can be used to fabricate ventilated wall protection that is both effective and durable:

- 3" hollow clay tile, mortared.
- 3½" brick (brick placed on edge), mortared.
- ¼" or more of mineral board, or equivalent, approved by your local building inspector.
- ¼" or more of mineral board, or equivalent, approved by your local building inspector, covered by one of the following:
  - 24 gauge sheetmetal, copper or aluminum
  - 1" thick ceramic tile, mortared
  - ½" cement plaster, mortared
  - ½" stucco, or any non-combustible material you like

WALL PASS-THROUGHS

If possible, design your installation so the chimney connector does not pass through a combustible wall. If this is necessary, check with your building inspector for code requirements. The following methods are permitted by some officials:

1. The connector is made of sections of a listed factory-built chimney and installed in accordance with the conditions of the listing and the manufacturer's instructions.
2. All combustible material in the wall or partition is cut away from the connector to provide the clearance shown on page 5 for unshielded stovepipe chimney connectors. Any material used to close up such openings shall be non-combustible material.

REDUCING CLEARANCES

We've stressed throughout our literature the importance of maintaining adequate clearances between stoves, their stovepipe chimney connectors and combustible walls and materials (including furnishings). **Clearance means empty space,** except for the non-combustible wall, stove or stovepipe shielding materials, or where it is specifically stated, as in wall pass- throughs, that the space can be filled. Heat is very effectively dissipated by the air circulating around heat shields or wall shields. Don't restrict the circulation of air by filling any clearance space with insulation.

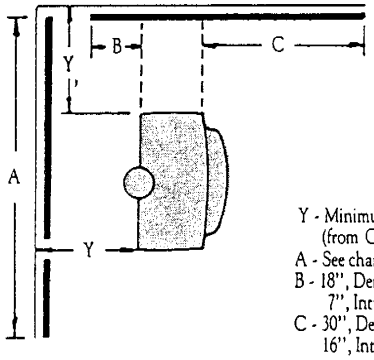
The clearances in the Tables on page 5 are specifically for Vermont Castings stoves. These distances were determined during extensive testing in accordance with Underwriters' Laboratories Standard for Solid Fuel Type Room Heaters, UL 1482, by our own and independent testing laboratories, during high fire tests. This means that if you place your stove at these, or greater, distances from combustible walls or materials, and use the proper stove, stovepipe chimney connector and wall or trim shields as indicated, your installation will meet the standard. Most building inspectors accept clearances which have been tested and are a part of a stove's listing.

Since stoves differ in their heating capacity as well as their heat radiating characteristics clearances will differ from stove to stove. Our stoves are tested individually so each has its' own clearance chart.

WALL SHIELD SIZING		INTREPID	RESOLUTE	VIGILANT	DEFIANT
WIDTH	Rear: centered behind stove (A, FIG. 9)	36"	57"	64"	72"
	Side: (B, C, FIG. 9)	36", extending 16" from the stove front, and 7" from the rear	A shield must extend 18" behind the stove (unless this distance has already been reduced by a rear heat shield or a wall shield), and 30" out beyond the front of the stove.		
	Corner: (A, B, FIG. 10)	48", butt together at the corner	The shields must extend 18" in front of a projection of the stove on the wall, measured from a point perpendicular to the front corner of the top plate; and must extend back to the corner behind the stove.		
	Beside, Behind, or Above Chimney Connector (B, FIG. 12)	28"	28"	34"	34"
		Centered, extending to cover any combustibles along the length of the connector pipe.			
HEIGHT	Top Exiting Stove and Chimney Connector (A, B, FIG. 11 A, FIG. 12)	A shield must be raised 1" off the floor and extend as high as the top of the chimney connector, or as high as necessary to shield all combustible materials adjacent to the stove and connector, but no closer than 1" to the ceiling. The air space at the top and bottom are necessary to allow air circulation behind the shield.[1]			
	Rear Exiting Stove (exiting directly back into chimney) (C, FIG. 12)	35"	44"	48"	48"

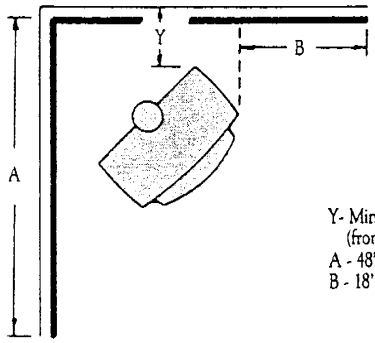
[1]The Defiant shield may be reduced to 48" in height when the wall shield is installed to the side of the stove or when the clearance is 18" or greater in a corner installation.

FIGURE 9 Rear and Side



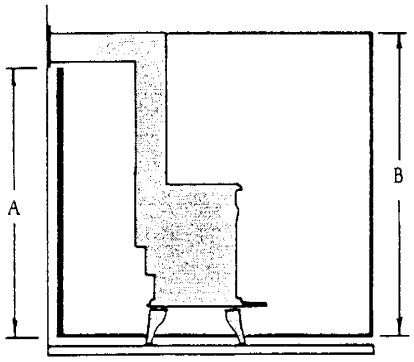
Y - Minimum clearance (from Clearance Tables, pg.5)
A - See chart for dimensions
B - 18", Defiant/Vigilant/Resolute
7", Intrepid
C - 30", Defiant/Vigilant/Resolute
16", Intrepid

FIGURE 10 Corner Installation



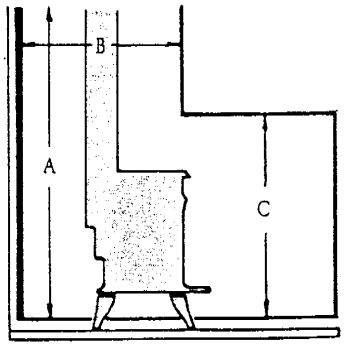
Y- Minimum clearance (from Clearance Tables, pg. 5)
A - 48", Intrepid only
B - 18", Defiant/Vigilant/Resolute

FIGURE 11 Chimney Connection at Rear



A - Rear shield extends to protect combustible materials adjacent to chimney connector
B - Side shield extends to top of chimney connector

FIGURE 12 Chimney Connection at Ceiling



A - Shield extends to 1" below the ceiling.
B - Shield extends to protect combustible materials beside or above the chimney connector. (See chart for width dimensions.)
C - Shield adjacent to stove must extend to at least the same minimum height as for Rear-exit stoves.

Note: For Intrepid installation where connection is made to a prefabricated chimney, see Page 7 under Prefabricated Chimneys.

CLEARANCE TABLES

The first line in each chart shows the minimum clearances required if no shielding is used between the stove and stovepipe chimney connector, and nearby combustible materials. To meet a variety of installation needs, reduced clearances were established using stove and stovepipe heat shield, wall shields, or both.

Distances given in the top third of each chart consider both stove and stovepipe chimney clearance requirements in most common installations.

After planning the position of your stove, you can double-check your chimney connector clearances in the middle section of each chart.

Clearances for the Energy Extenders, the Intrepid and the Resolute Mobile Home stoves are different than those listed below. Please refer to installation guidelines with each of these four products for specific clearance information.

DEFIANT®

		UNPROTECTED WALLS & MATERIALS			PROTECTED WALLS[1] & MATERIALS		
		Side	Rear	Corner	Side	Rear	Corner
STOVE SURFACES Measure from top plate of stove to combustibles	NO HEAT SHIELDS	36"	36"	36"	14"	18"	18"
	Rear Stove Heat Shield	36"	Top Exit 23" / Rear Exit 10"	18"	14"	Top Exit 18" / Rear Exit 6"	10"
	Rear & Stovepipe Heat Shields	36"	10"	18"	14"	6"	10"
STOVEPIPE CHIMNEY CONNECTOR Measure from nearest point on chimney connector to combustibles	NO HEAT SHIELDS	22"			10"		
	STOVEPIPE HEAT SHIELD	10"			7"		
FIREPLACE INSTALLATION Measure from stove top to mantel or trim.		Mantel 36"	Top Trim 36"	Side Trim 18"	Mantel 18"	Top Trim 18"	Side Trim 12"

VIGILANT®

		UNPROTECTED WALLS & MATERIALS			PROTECTED WALLS[1] & MATERIALS		
		Side	Rear	Corner	Side	Rear	Corner
STOVE SURFACES Measure from top plate of stove to combustibles	NO HEAT SHIELDS	36"	36"	36"	14"	10"	14"
	Rear Stove Heat Shield	36"	Top Exit 25" / Rear Exit 10"	18"	14"	Top Exit 10" / Rear Exit 6"	14"
	Rear & Stovepipe Heat Shields	36"	10"	18"	14"	6"	10"
STOVEPIPE CHIMNEY CONNECTOR Measure from nearest point on chimney connector to combustibles	NO HEAT SHIELDS	22"			7"		
	STOVEPIPE HEAT SHIELD	7"			4"		
FIREPLACE INSTALLATION Measure from stove top to mantel or trim.		Mantel 36"	Top Trim 36"	Side Trim 18"	Mantel 18"	Top Trim 18"	Side Trim 12"

RESOLUTE®

		UNPROTECTED WALLS & MATERIALS			PROTECTED WALLS[1] & MATERIALS		
		Side	Rear	Corner	Side	Rear	Corner
STOVE SURFACES Measure from top plate of stove to combustibles	NO HEAT SHIELDS	24"	30"	30"	8"	10"	12"
	Rear Stove Heat Shield	24"	Top Exit 25" / Rear Exit 10"	18"	8"	Top Exit 8" / Rear Exit 6"	12"
	Rear & Stovepipe Heat Shields	24"	10"	12"	8"	6"	6"
STOVEPIPE CHIMNEY CONNECTOR Measure from nearest point on chimney connector to combustibles	NO HEAT SHIELDS	23"			8"		
	STOVEPIPE HEAT SHIELD	8"			4"		
FIREPLACE INSTALLATION Measure from stove top to mantel or trim.		Mantel 36"	Top Trim 36"	Side Trim 18"	Mantel 18"	Top Trim 18"	Side Trim 8"

INTREPID®

		UNPROTECTED WALLS & MATERIALS			PROTECTED WALLS[1] & MATERIALS		
		Side	Rear	Corner	Side	Rear	Corner
STOVE SURFACES Measure from top plate of stove to combustibles	NO HEAT SHIELDS	24"	30"	20"	12"	16"	10"
	Rear Stove Heat Shield	24"	Top Exit 30" / Rear Exit 13"	20"	12"	Top Exit 16" / Rear Exit 9"	10"
	Rear & Stovepipe Heat Shields	24"	13"	12"	12"	9"	10"
STOVEPIPE CHIMNEY CONNECTOR Measure from nearest point on chimney connector to combustibles	NO HEAT SHIELDS	25"			11"		
	STOVEPIPE HEAT SHIELD	9"[2]			4"[2]		
FIREPLACE INSTALLATION Measure from stove top to mantel or trim.		Mantel 30"	Top Trim 24"	Side Trim 15"	Mantel 14"	Top Trim 14"	Side Trim 10"

1 Protected Wall:
¼" cementboard, millboard, or non-combustible mineral board spaced one inch from combustible wall on non-combustible spacers or equivalent protection approved by local building code officials. Walls are considered combustible if any part of the wall will burn. Non-combustible materials glued to sheetrock or plaster over wood framing are not adequate protection.

2 Stovepipe heat shields may be used to reduce clearances behind the Intrepid when constructed according to the guidelines on page 7 under Connection to Prefabricated Chimneys.

FLOOR PROTECTION

Although temperatures under the stoves are significantly lower than those to the sides, a non-combustible hearth is necessary to protect the floor from radiant heat and from occasional sparks or falling embers.

Your hearth should extend a minimum of 12" beyond the back and sides of the stove and 18" beyond the front and, in the case of the Defiant, the loading door end.

The minimum hearth protection required for use with our stoves using standard legs is two sheets of 1/4" mineral board (or equivalent) approved by your local building inspector. This should then be covered by one sheet of 24 gauge galvanized sheetmetal, left exposed (FIG. 13).

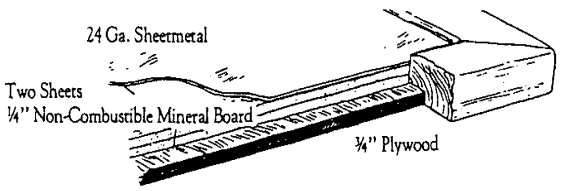


FIGURE 13
Minimum Hearth Construction and Materials for use with the standard legs.

The installation of the optional Vermont Castings Bottom Heat Shield will allow you to use any one of the materials listed below to construct a more decorative hearth cover (FIG. 14).

- 1" of stone, slate, tile, concrete, or any combination of these materials, mortared.
- One layer of common brick, 3 1/2", mortared.
- One layer of 1/4" mineral board, or equivalent - covered with any non-combustible material.

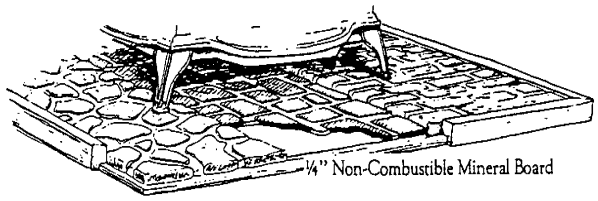


FIGURE 14
Decorative Hearth Coverings for use with Vermont Castings Bottom Heat Shield: Slate, Tile, Brick.

A variety of prefabricated hearth pads, listed for use with radiant stoves, can also provide adequate floor protection if they are the proper size (see Minimum Hearth Pad Dimensions).

Often, when installing the Defiant, Vigilant, or Resolute in front of a low fireplace opening, Vermont Castings' optional Short Legs will be needed. When using short legs, bottom heat shields are needed; *two* with the Defiant and Vigilant, and *one* with the Resolute and Intrepid (see the Vermont Castings Catalog). Hearth and floor protection will have to be constructed according to the guidelines above, using the following materials:

- 1½" of stone, slate, tile concrete, or any combination of these.
- one layer of common brick, 3½", mortared.
- 1 layer of ¼" mineral board, or equivalent covered by 1" of the non-combustible materials listed above or by 1 sheet of 28 gauge galvanized sheetmetal.

Short legs may be used without the bottom heat shields only if the stove is installed on a concrete or masonry floor that contains no combustible supports or framing members.

MINIMUM HEARTH PAD DIMENSIONS:

Defiant	*65" wide × 48" deep*
Vigilant	*53" wide × 48" deep*
Resolute	*52" wide × 46" deep*
Intrepid	*46" wide × 46" deep*

The hearth must also extend under the stovepipe and 2" to either side of the pipe. This means the hearth directly under 8" pipe must be 12" wide; and under 6" pipe must be 10" wide, extending the whole length of the horizontal run.

Existing fireplace hearths not meeting clearance requirements can be modified by adding a bottom heat shield to the stove, building an additional hearth pad over the fireplace hearth, or extending the hearth.

The materials you choose and the design of your floor covering can compliment your installation as well as fulfill safety requirements. The hearth should be durable so it can withstand constant use during each heating season. Construction begins with a rigid foundation that will not flex beneath the stove, such as ¾" plywood. Next, fasten the non-combustible materials to the foundation and end with the decorative layer on top. You can add a frame to contain all the materials, protect the edges of the hearth, and give a finished appearance to the installation.

CHIMNEY CONNECTOR

The series of stovepipe sections used to connect the stove to the chimney is called the chimney connector (FIG. 15). The primary functions of the chimney connector are to direct the flow of exhaust gases into the chimney flue, and to provide a safe connection between the stove and the chimney.

CONSTRUCTION GUIDELINES

- Stovepipe and chimney thimble diameters must not be less than 8" for the Defiant and Vigilant or 6" for the Resolute and Intrepid. Use 24 gauge or heavier sheetmetal stovepipe, (do not use galvanized).
- The chimney connector should be as short and direct as possible. Use of more than two elbows may reduce chimney draft and encourage creosote formation in the flue.
- Single wall stovepipe should not be used as a chimney and must never pass through a combustible ceiling. When unavoidable, wall pass-throughs should be designed according to local building codes. Keep in mind that the entire chimney connection must be exposed and readily accessible for periodic inspection and cleaning.
- Safe clearances must be maintained between the stovepipe and combustible materials. (See Clearance Chart).
- Assemble the stovepipe with the crimped end of each section pointing downward or toward the stove. Secure the first section to the stove flue collar and each joint thereafter with 3 sheetmetal screws to prevent separation during use.

Stovepipe dampers and heat reclaimers are not generally recommended for use with our stoves. These devices present an unnecessary restriction within the flue and can promote rapid creosote accumulation.

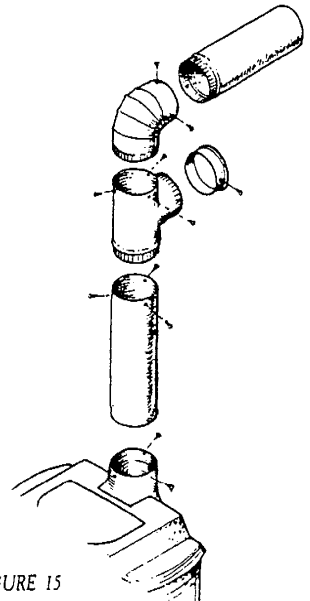


FIGURE 15
Chimney Connector
Cleanout Tee incorporated into the connector in either the horizontal or vertical run to make easier access for inspection.

CONNECTION TO A MASONRY CHIMNEY

The chimney connector should be inserted into a metal or ceramic chimney thimble until it is flush with the flue lining of the chimney (FIG. 16). The thimble should be at the same height as or above the level of the stove. The connector should fit snugly; any leaks surrounding the connector or thimble can be sealed with furnace cement or non-combustible gasketing.

A clean-out door in the base of the chimney must be accessible for cleaning and inspection, and must fit tightly when closed.

Consult your local building inspector regarding approved methods for passing stovepipe through a combustible wall. See p. 3.

A Tile Liner
B Steel or clay thimble
C Stovepipe should not extend into flue
D Adequate clearance to unprotected combustible materials
E 2" minimum clearance between chimney and combustible materials
F Horizontal pipe rise of ¼" per foot
G All joints secured with 3 sheetmetal screws
H Stove and stovepipe heat shields allow reduced clearance to combustible wall
I Bottom heat shield
J Clean-out access with tight door

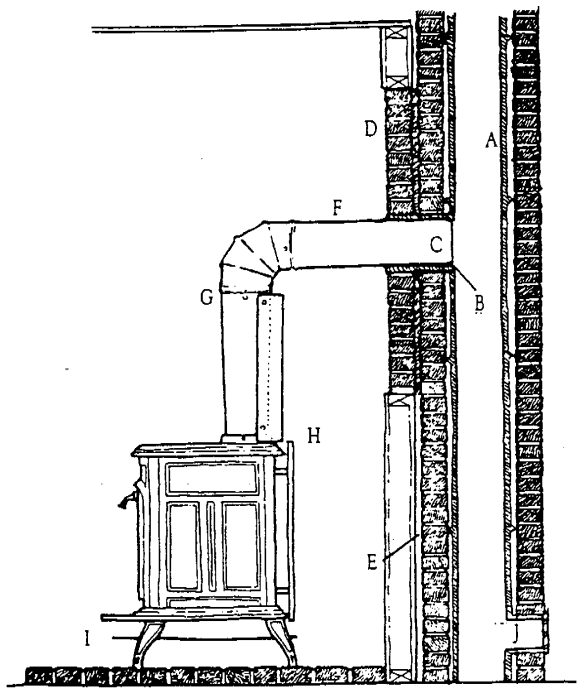


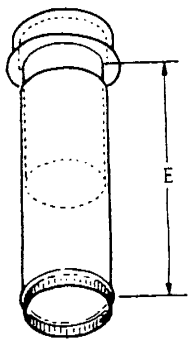
FIGURE 16
Installation into a Masonry Chimney through a Combustible Wall.

CONNECTION TO A PREFABRICATED CHIMNEY

If you plan an installation into a prefabricated, factory-built chimney, it must be a chimney listed and approved for use with solid fuel appliances by a nationally recognized testing laboratory. It is important that you install the chimney in accordance with the manufacturer's installation instructions and clearance specifications (see p. 5). Class B gas vent chimneys must *not* be used with any wood or coal stoves.

The Vermont Castings Connector Pipe for Prefabricated Chimney is designed to provide a simple, effective connection between the stovepipe chimney connector and a double-wall, insulated, prefrabricated chimney. The telescoping action formed by the connector pipe and a section of standard stovepipe allows you to lift the chimney connector up from the flue collar of the stove for cleaning without having to disconnect individual pipe sections.

A Ceiling Support Package sold by the manufacturer of the double-wall chimney.
B Vermont Castings Connector Pipe for prefabricated chimneys.
C Stovepipe section.
D Inspection Tee allows easy inspection and cleaning access.
E Slip distance: 17"



Detail of Conector Pipe.

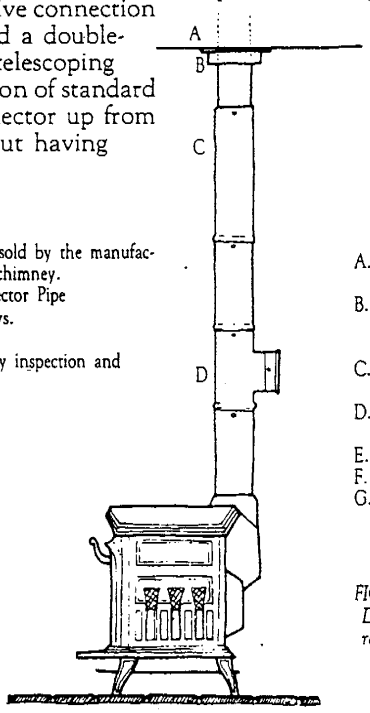
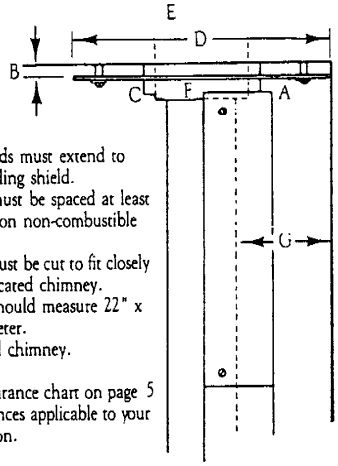


FIGURE 17

Special note for Intrepid installations in which stovepipe heat shields are used to reduce clearances. Stovepipe chimney connector shields must not extend directly upward to the ceiling when venting into a prefabricated chimney unless a ventilated shield, as shown in Fig. 18, is used around the prefabricated chimney at the ceiling. As an alternative, extend the prefabricated pipe 22" down from the ceiling and make the transition to single-wall pipe at that point. Extend stovepipe heat shields to 1" below the prefabricated pipe.



A. Stovepipe heat shields must extend to within 1" of the ceiling shield.
B. The ceiling shield must be spaced at least 1" from the ceiling on non-combustible spacers.
C. The ceiling shield must be cut to fit closely around the prefabricated chimney.
D. The ceiling shield should measure 22" x 22" or 22" in diameter.
E. Listed, prefabricated chimney.
F. Trim Collar.
G. See the Intrepid clearance chart on page 5 for minimum clearances applicable to your individual installation.

FIGURE 18
Detail of Intrepid installation into prefabricated chimney with reduced clearance to combustible wall.

FIREPLACE INSTALLATIONS

There are two installation methods we recommend to vent your stove into a fireplace chimney; installing a thimble into the chimney above the fireplace opening (Fig. 19), or connecting to the chimney through the fireplace damper with the Vermont Castings Stove-to-Fireplace Connector and Sealing Package (Fig. 20). A custom-fabricated adaptor (Fig. 21) may also be used.

Regardless of which method you choose, a safe installation must incorporate the following features:

Flue Lining -
The chimney must contain either a ceramic tile or other suitable code-approved liner in good condition. Consult your mason, chimney sweep, or stove dealer regarding flue liner retro-fit systems available in your area.

Inspection & Cleaning Access -
The installation must be designed to allow access for inspection and periodic cleaning.

Secure Connection to Flue -
Air leaks around the chimney connector or chimney thimble must be sealed. All stovepipe sections should be secured using 3 sheetmetal screws at each joint.

Fireplace Must Be Made Inoperable -
The existing damper must be effectively sealed open or removed (FIG. 20 & 21), or sealed closed (FIG.19)

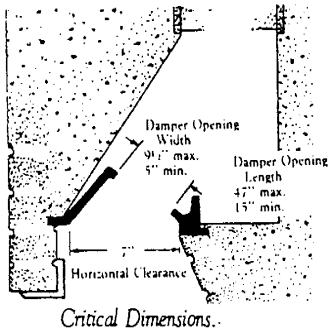
Adequate Hearth Protection -
Although composed of non-combustible materials, the existing hearth often requires enlargement or additional protection. (See Floor Protection.)

Adequate Clearance to Combustibles -
Refer to the Clearance Tables on Page 5 to determine the appropriate clearance that must be maintained between your stove and any combustible mantel or fireplace trim. Clearance reductions, as indicated in the tables, can be made with use of ventilated metal or mineral board shields, spaced 1" away on non-combustible spacers (see A, FIG. 20). Side trim shields must protect the entire length of the trim. Mantel and top trim shields must be 50" for the Defiant, 36" for the Vigilant, Resolute, and Intrepid (or longer) and be centered over the stove.

The Vermont Castings Stove-to-Fireplace Connector is ideally suited to adapt to a variety of fireplaces. The corrugated, stainless steel connector is oval in shape and is designed to pass through most dampers with an opening 5" or more. It can be flexed to bypass angles within the smoke chamber above the damper and into, or just below, the first chimney tile. The chimney connector from the stove is secured to the attachment collar with three sheetmetal screws.

The Vermont Castings Sealing Package, or your custom made sealing system, will fit securely around the connector at the damper opening to prevent room air from escaping up the chimney.

We do not recommend stove installations into factory-built (zero-clearance) fireplaces. These appliances and their chimneys are specifically designed for use as fireplaces; it may void their listing or be hazardous to adapt them for any other use.



Critical Dimensions.

A Custom fabricated trim shield permits reduced clearance between stovetop and combustible mantel
B Bottom heat shield protects unknown combustible hearth construction (floor joists, etc. . .)
C Vermont Castings Oval-to-Round Adaptor for use with Defiant and Vigilant stoves.

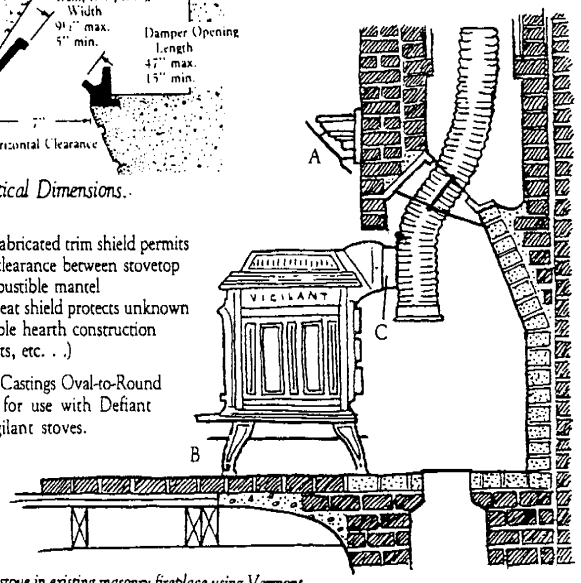


FIGURE 20
Installation of stove in existing masonry fireplace using Vermont Castings Stove-to-Fireplace Connector

A Tile-lined masonry chimney
B Steel or clay timble
C Stovepipe should not project into flue
D Horizontal pipe shield allows reduced clearance to combustible ceiling
E Vertical pipe heat shield allows reduced clearance to mantel
F Damper closed and sealed

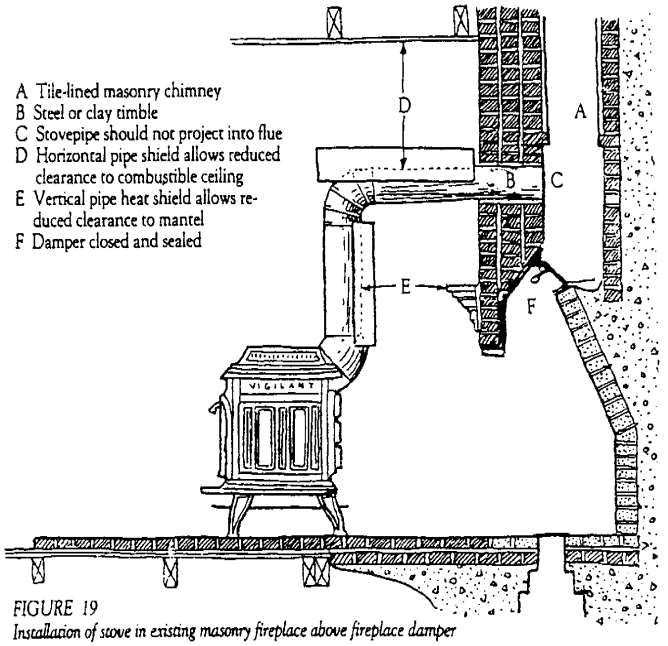


FIGURE 19
Installation of stove in existing masonry fireplace above fireplace damper

The fireplace damper must be sealed tightly to prevent room air from being drawn into the chimney. The fireplace thus becomes inoperable while the stove is in use, but the sealed damper may be opened for chimney cleaning.

A Pipe should extend above damper frame 6" - 12"
B Pipe end is cut at angle to allow free smoke flow
C 24 gauge sheetmetal plate is secured to the damper frame.
D Short legs and double bottom heat shields

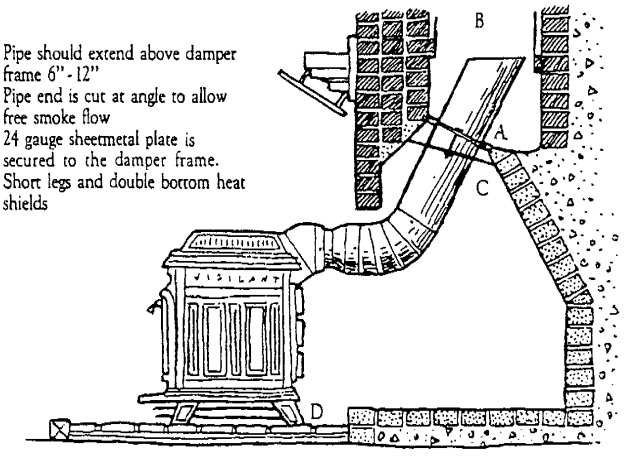


FIGURE 21 *Installation of stove through damper of existing masonry fireplace*
You or a local sheetmetal shop can fabricate your own fireplace adaptor using 24 gauge or heavier sheetmetal fashioned from the damper frame or cut to fit below the damper. The plate should be secured with masonry inserts and brackets. The area around the plate and around the connector can then be sealed with refractory cement.

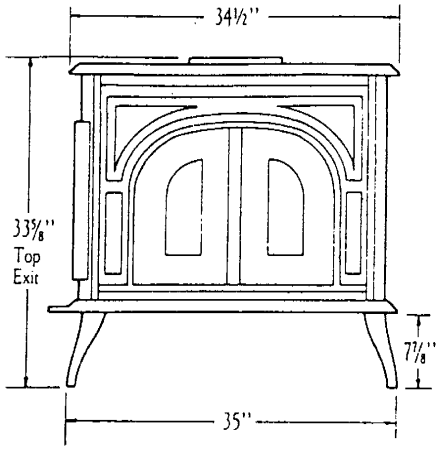
STOVE DIMENSIONS

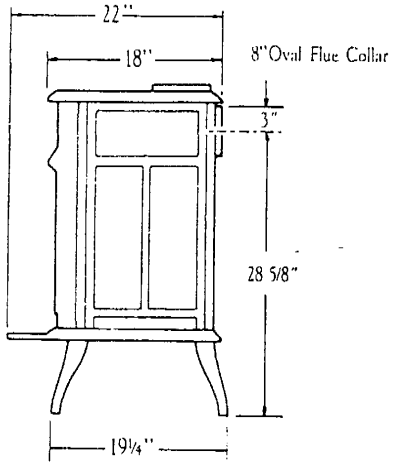
The following elevations indicate dimensions which will enable you to plan your installation as accurately as possible. Variables inherent in the manufacturing process can result in differences of up to 3/8" between these dimensions and those of your stove. Be careful to plan stove placement so as not to restrict the side loading access to the Defiant or the top loading access to the Vigilant, Resolute, and Intrepid.

Some installations, such as into a low fireplace, will require a reduction in the height of the stove. By substituting short legs for the standard length legs, the height of each stove can be reduced as indicated.

Defiant®

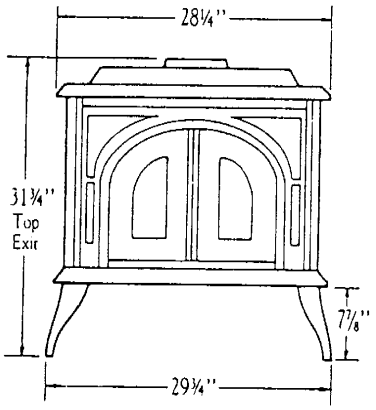
Short legs reduce the height of the Defiant by 4¼".

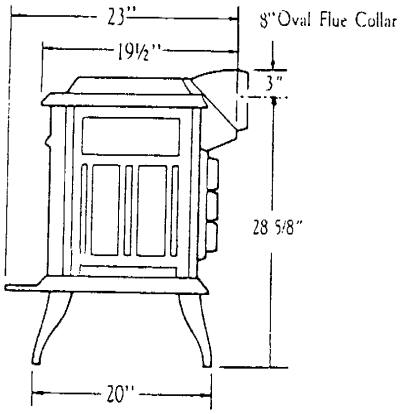




Vigilant®

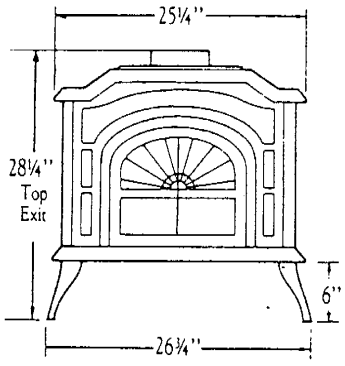
Short legs reduce the height of the Vigilant by 4¼".

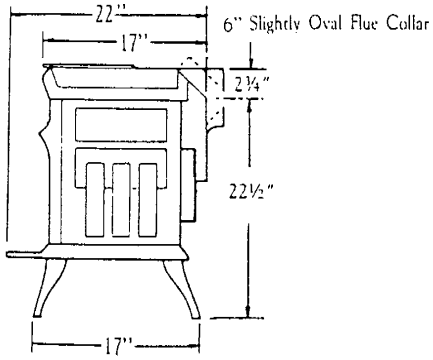




Resolute®

Short legs reduce the height of the Resolute by 3".





Intrepid®

Short legs reduce the height of the Intrepid by 4".