

GENERAL INSTRUCTIONS

CONSOLIDATED DUTCHWEST STOVES & FIREPLACE INSERTS



— Dutchwest Pre 1990 —

SAFETY NOTICE: *IF THIS STOVE IS NOT PROPERLY INSTALLED A HOUSE FIRE MAY RESULT. FOR YOUR SAFETY, FOLLOW THE INSTALLATION DIRECTIONS. CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION REQUIREMENTS IN YOUR AREA. *Be sure to read the "Do's and Don'ts" of safe stove operation at the end of this booklet before operating your stove.*



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COMPREHENSIVE INSTALLATION & OPERATING INSTRUCTIONS

Pertaining to All Current Consolidated Dutchwest Stoves & Fireplace Inserts

Covering the Following Freestanding Models:

FA288CCL, FA264CCL, FA224CCL, FA224ACL

FA211CL, FA209CL, FA207CL, FA267CL

FA264CCL-R, FA455 and Inserts:

7A, 7B, 8A, 8B, 8C, 8A-R, 8B-R, 8C-R, 9B, 9C, 11B

STOVE	HEAT OUTPUT Range (Btu/hr)
FA207CL	6,200 to 28,000
FA209CL	9,000 to 25,600
FA211CL	6,800 to 27,800
FA224ACL	7,200 to 30,000
FA224CCL	7,000 to 30,600
FA264CCL	6,600 to 26,700
FA267CL	8,400 to 40,000
FA288CCL	8,400 to 38,700
FA455	8,700 to 60,300

This manual describes the installation and operation of the Consolidated Dutchwest catalytic equipped wood heaters and fireplace inserts listed above. These units meet the U.S. Environmental Protection Agency emissions limits for wood heaters sold between July 1, 1988 and June 30, 1992. Under specific test conditions these heaters have been shown to deliver heat in the ranges shown in table at the left. Thank you for your purchase of a Consolidated Dutchwest stove or fireplace insert. The information contained in these instructions is intended to:

- (1) make certain you properly install your stove,
- (2) make all features and stove functions clear and comprehensible,
- (3) help you to maximize your stove's performance and efficiency.

Read these instructions carefully before starting. Your stove must be installed in accordance with all local and applicable national building codes. The information that follows assumes you will correctly follow all instructions. The safe installation and operation of your stove is dependent on your following all rules that apply. **YOUR WOOD HEATER CONTAINS A**

CATALYTIC COMBUSTOR, WHICH NEEDS PERIODIC INSPECTION AND REPLACEMENT FOR PROPER OPERATION. IT IS AGAINST THE LAW TO OPERATE THIS WOOD HEATER IN A MANNER INCONSISTENT WITH THE OPERATING INSTRUCTIONS IN THIS MANUAL, OR IF THE CATALYTIC ELEMENT IS DEACTIVATED OR REMOVED. Note that UNIT MUST BE PROPERLY ASSEMBLED AND INSTALLED OR SAFETY LISTING WILL BE VOID. BE SURE TO READ THE "DO'S AND DON'TS OF OPERATING YOUR STOVE" IN THE BACK OF THIS BOOKLET, AS IT CONTAINS MANY ESSENTIAL GUIDELINES TO SAFE STOVE INSTALLATION AND OPERATION. Save these instructions for future reference.

CAUTION: Your Federal Airtight stove is one of the finest, most versatile, efficient, and easy to use heaters available in the world today. It has also been designed to be very safe to operate. **NEVERTHELESS, THIS AND ALL STOVES AND HEATING DEVICES HAVE THE POTENTIAL TO BE DANGEROUS IF NOT OPERATED PROPERLY. THEREFORE, IT IS OF THE UTMOST IMPORTANCE THAT YOU FOLLOW ALL INSTRUCTIONS CAREFULLY. ALL ASSEMBLY, OPERATING AND MAINTENANCE, INSTALLATION, AND FIRE STARTING INSTRUCTIONS MUST BE FOLLOWED TO ENSURE THE SAFEST STOVE OPERATION POSSIBLE.**

The detail in these instructions may seem excessive. Don't let it intimidate you. We have made our instructions detailed because we want you to operate your stove safely. Safe stove operation is extremely important. Follow these installation and stove operation instructions carefully, and your Federal Airtight will provide you with many years of dependable, economical, and comfortable heating.

CAUTION: Unless you have the knowledge of an expert yourself, you should consult a professional chimney installer to advise you or do your installation. While the assembly of your stove is very easy, there are many safety factors involved in its installation and maintenance. We have tried to set out guides to installation and maintenance in as clear a manner as possible, but this is not a substitute for expert knowledge. Remember, a wood and coal stove is not a simple device like a small space heater. Like a furnace, it is a serious heat producer, and as such, it has the potential to be dangerous if not properly installed and operated. Few people with little knowledge of the field would attempt to install an oil or gas furnace or electric heating system in their home without professional assistance, even if given a complete set of instructions on how to do so. You should treat any wood and coal stove with the same respect. The installation instructions should be used as guides for the knowledgeable person, rather than as a course for the beginner. The beginner should always seek professional assistance. *Your safety and well being depend on proper installation and maintenance and your safety is more important than anything else.*

ASSEMBLY INSTRUCTIONS

Included with these general instructions is a separate assembly instruction that applies to your stove or insert. If you are unable to locate these instructions or if they have been misplaced, contact the Consolidated Dutchwest Service Department for a replacement copy.

Your stove must be installed in full accordance with the assembly instructions or the safety listing will be void.

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INSTALLATION INSTRUCTIONS

Most safety problems associated with stoves are caused by either improper installations or creosote build-up in the pipe or chimney. Observe all clearances called for in these instructions. You must not make wishful assumptions as to your proposed installation. Failure to follow these instructions may result in damage to your stove, or possibly result in a serious chimney or house fire. Take due care and you will enjoy many years of safe, effective operation.

We have designed each Consolidated Dutchwest stove to be installed in a variety of ways. This versatility we've built in means you have maximum flexibility in determining how to install your stove now and in the future. All models may be installed in the freestanding mode, or in a corner, and as a fireplace adapter - that is - set in front of a fireplace and vented into an existing chimney. All convection models may also be installed as fireplace inserts.

All of our stoves and inserts can be installed in a zero-clearance fireplace provided (1) there is a direct stovepipe connection between the stove's flue collar and the start of the fireplace's chimney system, and (2) the sealing plates surrounding the insert do not block off any of the fireplace's circulating air vents. Some communities require testing with specific brands of zero-clearance fireplaces, check with local officials for regulations in your area.

INSTRUCTIONS FOR FREESTANDING INSTALLATIONS

For each model we have had Arnold Greene Testing Laboratories of Natick, Massachusetts undertake testing to the U/L Standard to determine the minimum permissible distance that each stove may be located both to combustible back and side walls, as well as protected back and side walls. Through testing we have also established clearances for optional "clearance reduction kits" which mount on the stove back. In this way we have tried to provide a wide variety of safe alternatives for installation. When locating your stove, consider safety, convenience, traffic flow, and the fact that the stove will need a chimney and stovepipe. Your stove should be located away from doors and hallways and in an open area to allow for necessary clearances. Minimum clearances for conventional freestanding installations and corner installations are shown on page 4. Combustibles, protected combustibles, and non-combustibles are defined in the next section under "Establishing Combustibles" see page 3.

ESTABLISHING COMBUSTIBLES

Because there are several sets of clearances whose use depends on the materials in proximity to your intended installation, we have included here a brief section intended to answer the most frequently asked questions about combustibles and non-combustibles. If in doubt, contact your local building inspector for an expert opinion. **Note:** all clearances are measured from stove body to combustible surface.

What's the difference between a combustible, a protected combustible, and a non-combustible?

Combustible: This is a surface that will burn if exposed to the high heat of a stove. Typically such walls are wood or sheetrock over wood studs. Brick over combustible materials such as wood studs also constitutes a combustible wall. Z-brick, wallpaper and plastic clearly fall into this category.

Protected Combustible: This is a combustible surface which has been protected by the addition of a protective shield. Such protective shields are available through Consolidated Dutchwest. A protected combustible may also be created by building a brick wall in front of a combustible wall and allowing at least 1" air space. The air space is crucial, since it keeps the heat conducted through the brick from passing to the adjoining combustible surface. It is also crucial that there be openings at the top and bottom of the shield or top and two sides, so that air can circulate through the shielded space. Otherwise, trapped air in this space can become extremely hot and will transfer heat to the adjacent combustible walls. (See figure 2)

Non-Combustible: This is a non-flammable wall such as cinder block with no combustible material behind it or within the wall. Basement walls frequently meet this standard.

What about regular brick walls? An often asked question is whether a brick wall is a non-combustible or perhaps at least a protected combustible. The answer is usually no. Brick interior walls in houses are usually classified as combustible, unless it is absolutely 100% certain that there's no combustible material behind the brick. While it's true brick won't burn, it conducts heat. Brick walls must be treated as combustible unless the builder has specifically built the walls in question to be noncombustible, or if the homeowner can be completely certain the brick isn't covering or in contact with combustible materials.

How can I safely reduce clearances? If the area where you intend to install your stove is combustible, the best and easiest answer is to add a clearance reduction kit. Such kits are inexpensive and typically permit a reduction of 50% or more of the back wall clearances. If the clearance is still too great, you have the option of protecting the back wall, after which you may further reduce the clearance another 50%. As an example, the normal clearance to a combustible back wall for the FA264CCL is 30½". If a clearance reduction kit is used the clearance then becomes 15". If the back wall is a protected combustible rather than a combustible wall, the clearance without a clearance reduction kit is 18". If you both protect your combustible wall and use a clearance reduction kit, the clearance may be reduced to 7½". Refer to the chart on page 4 for clearances for your stove and read the following sections on the various ways to reduce clearances.

FLOOR PROTECTORS — MINIMUM DIMENSIONS

Each of our stoves requires, for conventional and corner free standing installations, floor protection under it, unless the floor is completely made of cement, concrete, or another form of solid masonry. Such floor protection should be constructed of non-combustible millboard (approved for this application by a listing or certifying organization) or the equivalent. The protector must have a thermal conductivity of K= 0.84 BTU IN/FT² HR °F or less. A few of the names under which material meeting this criteria is sold in board form are as follows: Ceraform Board Type 106-R or Type 126 by Johns-Manville, Fiberfrax Duraboard LD by Carborundum, and MICOR CV230 by U.S. Gypsum. A layer of sheet steel or tile may be used to protect the insulating board. A double thickness of protection should be used for the following models: FA207CL, FA209CL, FA211CL, FA224ACL, & FA267CL. **You should seek the approval of your local building inspector, or authority having jurisdiction, for any floor protection you propose to use.** You may also wish to check with the inspector to see if a layer of brick or stone or other material is an acceptable equivalent under local ordinances. They may allow, as an alternative, a layer of brick or stone over a thin sheet of steel, bordered and fully secured by quarter round wooden molding. Spaces between bricks are filled in with sand. The clearances listed below indicate the number of inches floor protection should extend from each side of your stove and the minimum total floor size required for each model. (Note: Stoves with side loading doors require more floor protection on one side of the stove than on the other. You may feel that having the same amount of floor protection on each side of the stove looks better, in which case you can add to the required width. **Do not reduce any side protection extensions under any circumstances.**

Table 1 FREESTANDING MINIMUM HEARTH PROTECTOR DIMENSIONS

Stove	A	B	C	D	width	depth
FA207CL	16"	8"	8"	8"	38"	40"
FA209CL	16"	12"	12"	8"	38"	45"
FA211CL	16"	16"	16"	8"	52"	45"
FA224ACL	16"	16"	8"	8"	47"	42"
FA224CCL	16"	16"	8"	8"	47"	42"
FA264CCL	16"	16"	8"	8"	50"	44"
FA288CCL	16"	16"	8"	8"	53"	44"
FA267CL	16"	16"	8"	8"	50"	47"
All Inserts (not including right-side loading)	16"	16"	8"	N.A.		
8A-R, 8B-R, 8C-R	16"	8"	16"	N.A.		
FA264CCL-R	16"	8"	16"	8"	50"	44"
FA455	16"	16"	8"	8"	50"	42"

A: Stove Front
B: Stove Left Side
C: Stove Right Side
D: Stove Back

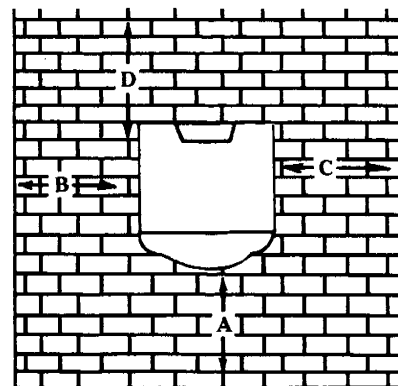


Figure 1

PROTECTING YOUR WALLS

Stoves can be safely placed closer to protected walls than to combustible ones. If you don't have enough space to meet the necessary wall clearances or should you wish to minimize the area utilized by your stove installation, you have three options. They are (1) install a clearance reduction kit, (2) install back wall protection or (3) install both a clearance reduction kit and wall protection. Each option and its corresponding clearances is explained on page 4. Clearance reduction kits are the easiest and least expensive approach. If you intend to meet the normal (unprotected) clearances, or install your stove in front of a noncombustible wall or fireplace, you need not read the sections on clearance reduction kits and wall protectors.

Table 2

FREESTANDING MINIMUM CLEARANCES TO WALLS

Stove Model #	Distance										SW: Side Wall SW/P: Protected Side Wall* BW: Back Wall BW/P: Protected Back Wall* BW/RC: Back Wall Clearance with Reduction Kit BW/P&R: Back Wall Clearance with Reduction Kit & Protected Back Wall* Back Vent/Top Vent ⁶ C: Side Walls for Corner Installation C/P: Protected Side Walls for Corner Installation* C/W: Clearances to unshielded walls w/ clearance reduction kit & wings C/P/W: Clearance w/ both wall protectors & clearance reduction kits w/ wings
	SW	SW/P	BW	BW/P	BW/RC	BW/P&R	C	C/P	C/W	C/P/W	
FA207CL	36"	18"	38"	18"	15"	7½"8"	30"	18"	21"	10½"	
FA209CL	36"	18"	38"	18"	15"	7½"8"	30"	18"	21"	10½"	
FA211CL	34"	18"	39"	18"	20"	10"10"	30"	18"	21"	10½"	
FA224ACL	24"	18"	36"	18"	15"	7½"10"	34"	18"	21"	10½"	
FA224CCL	36"	18"	30½"	18"	15"	7½"10"	36"	18"	21"	10½"	
FA264CCL/R	36"	18"	30½"	18"	15"	7½"10"	36"	18"	21"	10½"	
FA267CL	32"	18"	39"	22"	20"	10"10"	32"	18"	21"	10½"	
FA288CCL	28"	18"	30"	18"	15"	7½"12"	28"	18"	21"	10½"	
FA455	24"	18"	42"	21"	20"	10"14"	42"	21"	16"	10½"	

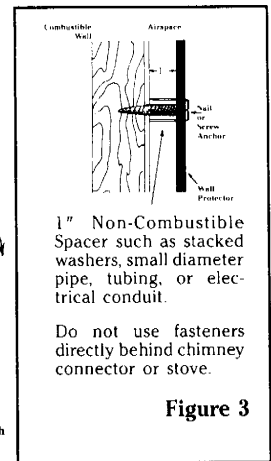
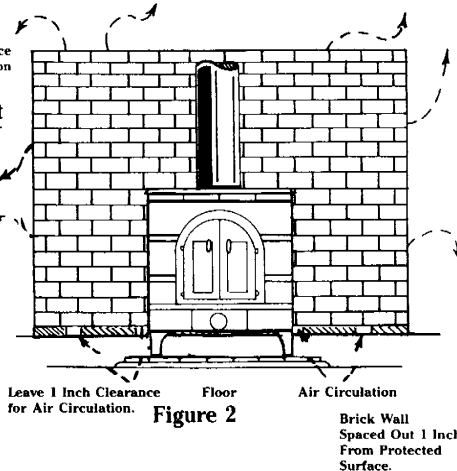
* See the section on "Corner Installations" for determining the appropriate size of back or side wall protection. Wall protectors should be made from an approved non-combustible wall board on 1" spacers. (See "Wall Protectors" below)

WALL PROTECTORS

There are many fine wall protectors commercially available today which have been designed and approved for use with woodstoves. Such wall protectors will allow for reduced clearances to the back wall. You may also construct wall protection by installing ¼" approved non-combustible wall board or its equivalent spaced 1" from the combustible back wall. See Figure 3. Check with local building officials as to what materials constitute a suitable equivalent. Alternatively, a brick wall with a 1" airspace between it and a combustible back wall (figure 2) is frequently acceptable to building code officials. This wall must be at least one inch from the ceiling and 50% of the bottom must be open to allow air passage through the air space. Table 3 contains the standard back wall clearances, the reduced clearances attainable with the use of wall protection, and the dimensions (width and height) for the back wall area to be protected.

Table 3

Stove Model	Regular Clearance	Reduced Clearance	Wall Protection Width	Height
FA207CL	38"	18"	81"	61"
FA209CL	38"	18"	81"	61"
FA211CL	39"	18"	84"	65"
FA224ACL	36"	18"	86"	61"
FA224CCL	30½"	18"	72"	54"
FA264CCL/R	30½"	18"	76"	54"
FA288CCL	30"	18"	76"	56"
FA267CL	39"	22"	92"	63"
FA455	42"	21"	98"	66"



CLEARANCE REDUCTION KITS

Consolidated Dutchwest offers Clearance Reduction Kits which, when installed on the back of a stove, significantly reduce the clearance to combustible back walls. The regular clearance and the reduced clearance possible with the installation of these kits are shown below. Such kits are usually the least expensive method of reducing clearances.

Table 4

Stove	Kit #	Regular Clearance	Reduced Clearance
FA207CL	HS207	38"	15"
FA209CL	HS207	38"	15"
FA211CL	HS211	39"	20"
FA224ACL	HS224A	36"	15"
FA224CCL	HS224C	30½"	15"
FA264CCL/R	HS264	30½"	15"
FA288CCL	HS288	30"	15"
FA267CL	HS267	39"	20"
FA455	HS455	42"	20"

These kits attach to the stove back and can be installed in 15 minutes.

When using a clearance reduction kit and venting straight up (as opposed to venting out the back) black pipe protection is required. You may (1) use black double wall pipe or (2) use pipe guards. All models require pipe protection starting where the pipe is attached to the stove's flue collar.

Table 5 PIPE SHIELDS

Item#	Description
PG1-6	1'-6" diameter pipe guard
PG2-6	2'-6" diameter pipe guard
PG1-8	1'-8" diameter pipe guard
PG2-8	2'-8" diameter pipe guard

COMBINING A CLEARANCE REDUCTION KIT WITH WALL PROTECTION

When a Clearance Reduction Kit is combined with wall protection, both the back wall clearance and the size of the wall protection are reduced. Consolidated Dutchwest offers a line of wall protectors designed for use with the Clearance Reduction Kits. Shown in Table 6 for each stove are the Clearance Reduction Kits and the reduced wall protectors dimensions which apply when a clearance reduction kit is installed. **Do not under any circumstances use the reduced wall protector dimensions without the Clearance Reduction Kit.**

Stove	Regular Clearance	CRK**	Reduced Clearance** w/CRK* & WP†	Wall Protection Width	Depth
FA207CL	38"	HS207	7½" 8"	38"	40"
FA209CL	38"	HS207	7½" 8"	38"	40"
FA211CL	39"	HS211	10" 10"	52"	47"
FA224ACL	36"	HS224A	7½" 10"	47"	42"
FA224CCL	30½"	HS224C	7½" 10"	47"	42"
FA264CCL/R	30½"	HS264	7½" 10"	53"	44"
FA228CCL	30"	HS288	7½" 12"	53"	44"
FA267CL	39"	HS267	10" 10"	54"	47"
FA455	42"	HS455	10" 14"	54"	48"

* Clearance Reduction Kit † Wall Protector **Back vented/Top vented

Note: In the main catalogue Clearance Reduction Kits and Wall Protectors are fully described. Floor and wall protectors are available in a variety of finishes.

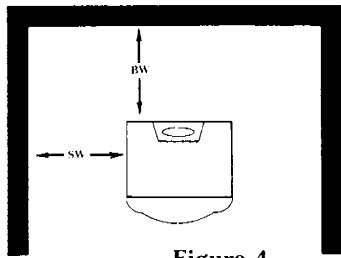


Figure 4

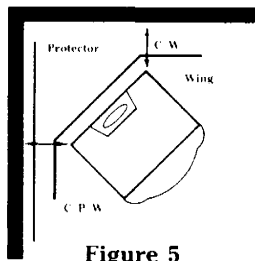


Figure 5

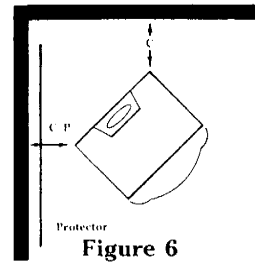


Figure 6

CORNER INSTALLATION

It's not unusual to want to position a stove in a corner. Frequently such positioning can minimize the floor area allocated for a stove. Clearances are indicated as C (to combustibles) and C/P (to protected combustibles) in figure 6. For corner installations, as for free standing installations, walls must be protected to a height of about 60" if the reduced clearances allowed for protected combustibles are used, (see Installation Planner, Table 6, for specific height and width requirements).

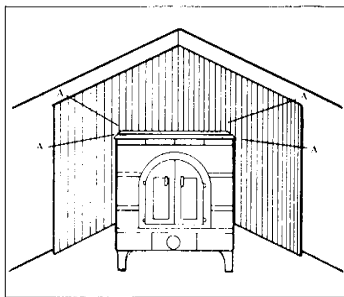


Figure 7

To determine the exact size of wall protector needed, site your stove where you intend to locate it. Using cardboard or other material as a mock shield, determine when this shield is spaced out one inch or more (depending on how you intend to attach it) from the wall, what height and width it must be so that no unshielded portion of the wall is closer to any portion of the stove than unprotected clearances allow. See Figure 7. "A" refers to measurements which must meet normal unprotected clearances from your stove, while measurements to the actual protector need only meet the protected combustible clearances. An intervening window, even if fully non-combustible, probably will not be workable because the heat from the stove can crack the glass. Note that access to the side loading door, if your stove has one, ought not to be restricted by your positioning of the stove in a corner installation. Side loading is an important and attractive feature which should be utilized.

Clearances in corner installations can be minimized by using a clearance reduction kit with a 'wing' set attached (see Figure 5). This combination of shields will cut corner clearances to 21" for an unprotected wall or 10½" for a protected wall. Wing sets are panels that bolt to both sides of the clearance reduction kit and shield the walls in the corners of the room. For stove models FA207CL and FA209CL, use wing set HS207W. For FA211CL, use HS211W. For FA244ACL, use HS224AW. For FA224CCL, use HS224CW. For FA264CCL and FA264CCL-R, use HS264W. For FA267CL, use HS267W. For FA288CCL, use HS288W. For FA455, use HS455W.

CONFIGURING YOUR PIPE PROPERLY

In planning your installation there are several rules about pipe which must be observed. Black pipe is subject to its own set of clearances or those set by the pipe manufacturer's instructions (generally 18" for single wall and 6" for double wall). When venting straight up it's usually easy to maintain the required clearances but if you vent out the back or vent up and then over you need to remember that clearances to walls, ceiling and floor must be observed. When a Clearance Reduction Kit is used it is necessary to either shield the black pipe with pipe shields or substitute double wall black pipe.

Remember: Your pipe should always be rising. Over a brief distance (2 feet or less) your pipe may be flat, but in the main, it should be rising to assure proper draft. It must never dip.

In this literature we differentiate between pipe and chimney. Pipe is usually single wall and black, and connects the stove to the chimney. Chimney is defined as a fully insulated stack which, on a free standing installation, usually begins at the ceiling and continues up through as many floors as you have, through the attic and out through the roof a minimum of three (3) feet. Black pipe is used only to make the initial connection from the stove to the chimney.

STOVEPIPE ASSEMBLY

The stovepipe must be the same or greater nominal diameter as the flue collar provided with the stove model, and no less than 24 gauge cold rolled black steel. Do not use aluminum pipe. It cannot properly withstand the extreme temperatures of a wood fire. Do not use stovepipe as a chimney. It is important for stovepipe to be assembled so that any condensation which may occur within it remain in the pipe and not drip from the joints. This is done by inserting the first pipe section into the flue collar or the oval-to-round adapter. Each successive link should be inserted the same way. In other words, each pipe should go into the piece below it. (See Figure 8) The smoke will follow the path of least resistance and travel up the center of the pipe. All joints should be secured with three sheet metal screws. Otherwise, in the event of a creosote fire, the stovepipe may vibrate apart.

If you are attaching stovepipe to a flue collar or an oval-to-round adapter which has a flue damper in it, you will need to cut slots in the pipe so that it will slide past the damper axle for a proper fit. (See Figure 9)

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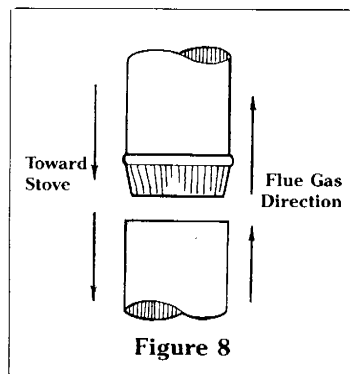


Figure 8

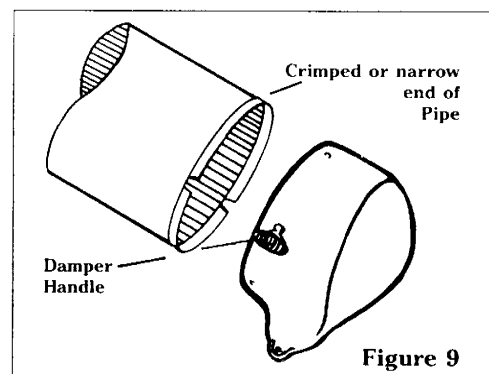


Figure 9

STOVEPIPE ASSEMBLY (Cont.)

There are four ways to vent a free standing stove (clockwise from upper left):

- (1) off the top and through a side wall; (see Figure 10)
- (2) out the back and through the wall; (see Figure 11)
- (3) off the top and through the roof; (see Figure 12)
- (4) out the back and through the roof; (see Figure 13)

Some of the advantages of each are as follows:

Venting from the top. Having no piping behind the stove, it will be possible to place the stove closer to the a back wall, taking less space (it is, however, still necessary to observe all clearances). You will also get a bit more heat from the stove, since the pipe radiates heat too.

Venting through an outside wall. This will make the pipe less visible if you prefer not to see it, and a bit easier to install than going through the roof.

Venting through the roof. By venting through the roof (and therefore running your chimney pipe inside the house) you will increase the stove's heating output as the pipe will be radiating additional heat. It will also reduce the likelihood of creosote formation and draft problems, and therefore, we recommend this type of installation.

Venting from the back. If you don't particularly like a stovepipe's appearance, it will be less noticeable in this type of installation.

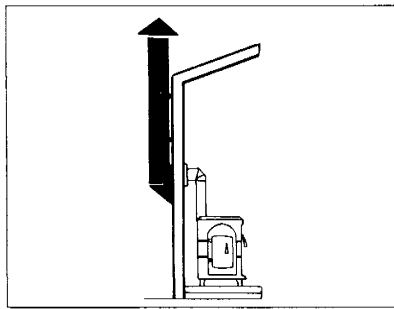


Figure 10

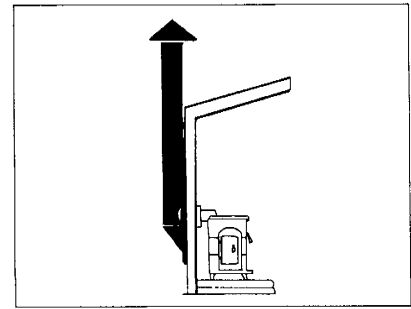


Figure 11

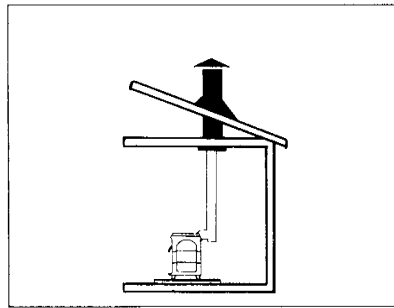


Figure 13

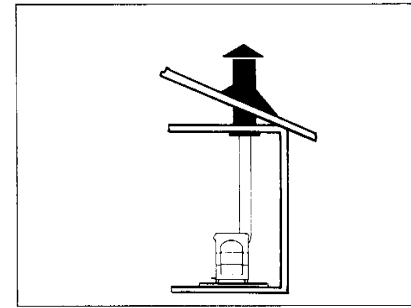


Figure 12

CONNECTION TO A METAL PREFABRICATED CHIMNEY

When a metal prefabricated chimney is used, the manufacturer's installation instructions must be followed precisely. You must also purchase (from the same manufacturer) and install the ceiling support package or wall pass through and "T" section package, firestops (when needed), insulation shield, roof flashing, chimney cap, etc. Be sure to check local codes before proceeding with your installation. These items both individually and in kit form are available from Consolidated Dutchwest. Maintain the proper clearance to the structure as recommended by the manufacturer. This clearance is usually a minimum of 2 inches, although it may vary by manufacturer or for certain components.

There are basically two methods of metal chimney installation. One method is to install the chimney inside the residence through the ceiling and the roof (Figures 14 and 15). The other method is to install an exterior chimney that runs up the outside of the residence (Figures 16 and 17). The components illustrated may not look exactly like the system you purchase, but they demonstrate the basic components you will need for a proper and safe installation.

The chimney must be the required height above the roof or other obstruction for safety and for proper draft operation. The requirement is that the chimney must be at least 3 feet higher than the highest point where it passes through the roof and at least 2 feet higher than the highest part of the roof or structure that is within 10 feet of the chimney, measured horizontally (Figure 21).

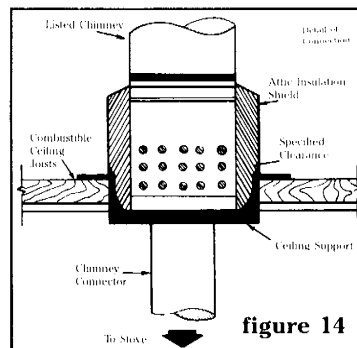
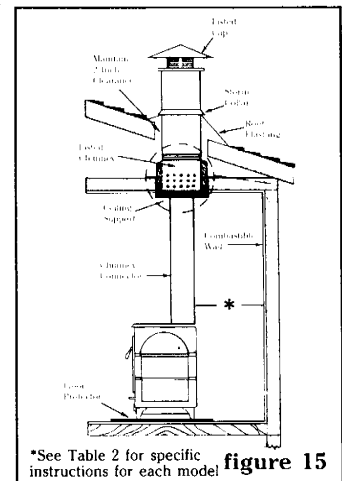


figure 14

Install an attic insulation shield to maintain the specified clearance to insulation. Insulation in this air space will cause a heat buildup which may ignite the ceiling joist.

This method of installation requires at minimum a ceiling support package, an insulation shield, and roof flashing.



*See Table 2 for specific instructions for each model figure 15

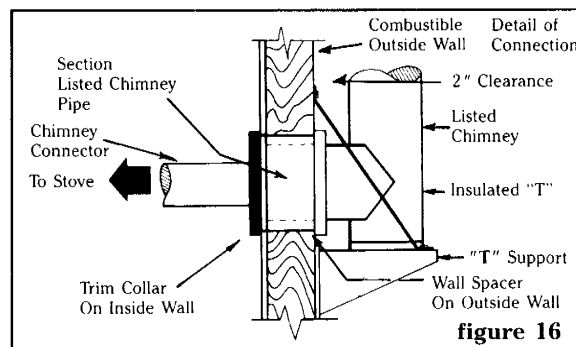
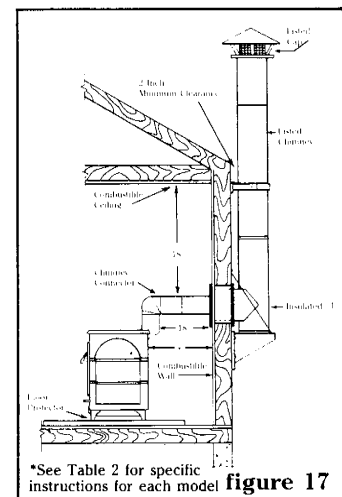


figure 16

This method of installation requires at minimum a wall pass through device, a "T" support package and insulated "T" section.



*See Table 2 for specific instructions for each model figure 17

REMEMBER: Follow the manufacturer's installation instructions and maintain the manufacturer's specified clearance distances.

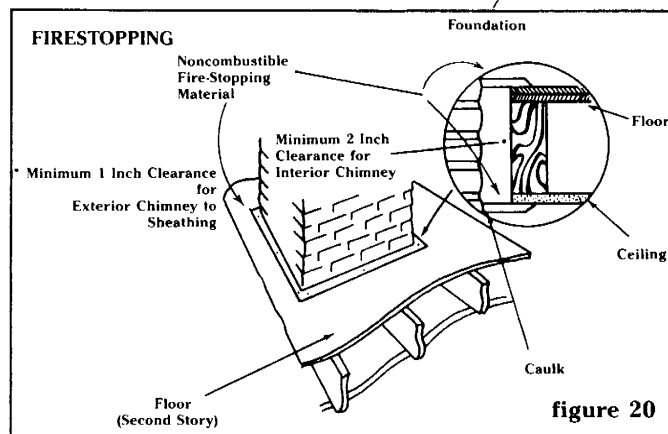
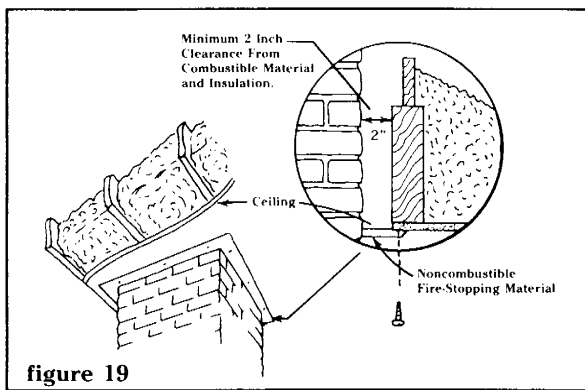
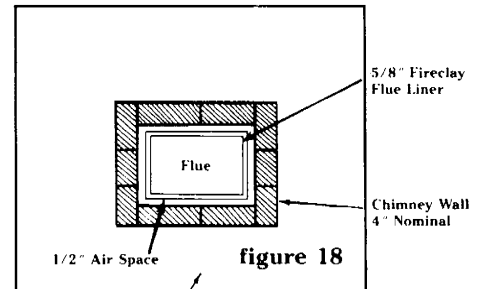
CONNECTION TO A MASONRY CHIMNEY

Your stove may be connected to a lined masonry chimney or a listed high temperature prefabricated residential type building heating appliance chimney. **Do not** connect it to a chimney serving another appliance. To do so will affect the safe operation of both appliances.

Chimney

Should the stove be connected to a masonry chimney, the chimney should be examined for cracks, loose mortar, other signs of deterioration, and blockage. The stove should not be installed until it is determined that the chimney is safe for use. Since an oversized flue contributes to the accumulation of creosote, the size of the flue should be checked to determine that it is not too large for the stove. As a rule, chimney volumes up to twice or 2½ times that of the flue outlet will perform satisfactorily. For all Federal Airtights, except the Extra-Large Convection Heater (model FA288CCL) and Sequoia (model FA455), the stove can vent into an 8" by 8" masonry flue or an 8" round chimney flue. For the FA288CCL and FA455, the stove can vent into an 8" by 12" masonry or 10" round chimney flue. If your masonry chimney is larger than twice to 2½ times the flue outlet, we recommend installing a metal or other type of liner which reduces the chimney volume, thereby improving stove performance. The chimney should also be checked to ensure it meets the minimum standards of the National Fire Protection Association (NFPA) Standard 211. Copies of this standard can be obtained thru your local building inspector or state government. Following is a list of the more critical minimum requirements for a properly constructed chimney

- The masonry wall of the chimney, if brick or modular block, must be a minimum of 4 inches nominal thickness. A mountain or rubble stone wall must be at least 12 inches thick.
- The chimney must have a fire clay flue liner (or equivalent) with a minimum thickness of 5/8 of an inch and must be installed with refractory mortar. There must be at least a ½-inch air space between the flue liner and the chimney wall (Figure 18). An equivalent liner must be a listed chimney liner system or other approved material.
- A chimney inside the house must have at least 2 inches of clearance to the combustible structure. A chimney outside the house must have at least one inch clearance to the combustible structure. Fire stops must be installed in the spaces where the chimney passes through the floors and/or ceiling (Figure 20).

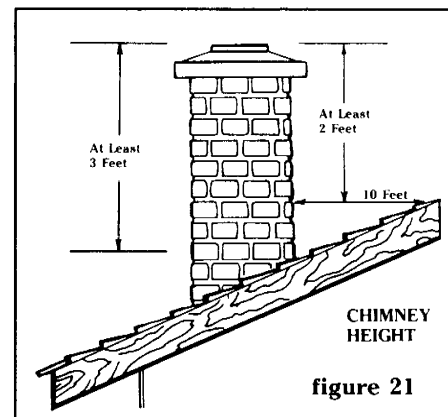


Remember that insulation must not contact the chimney. There must be air space around the chimney. Insulation must be 2 inches or more from the chimney (Figure 19).

A chimney must be the required height above the roof or other obstruction for safety and for proper draft operation. The requirement is that the chimney must be at least three feet higher than the highest point where it passes through the roof and at least 2 feet higher than the highest part of the roof or structure that is within 10 feet of the chimney, measured horizontally (Figure 21).

Thimble

A thimble must be used when the connection from the stove is made through a combustible wall to a masonry chimney. There are several methods to use for connection through a combustible wall, two of which are illustrated in this manual. Local building authorities should be consulted or NFPA 211, which covers additional methods of chimney connection. You should also contact the chimney connector manufacturer for any specific requirements regarding wall or ceiling pass-throughs.



Also, listed prefabricated metal thimbles can be bought for use with wood stoves. The manufacturer's installation instructions must be strictly followed to insure the safety of the system. Be sure to maintain the designated clearance to combustible materials.

a. Brick chimney thimble assembly

Construction of the brick thimble assembly requires 12 inches of brick around a fire clay liner. It will be necessary to cut wall studs and install a header and sill frame to maintain proper dimensions and to hold the weight of the brick (figure 22). Be sure the point of penetration allows an 18 inch clearance from the connector to the ceiling. For all Federal Airtights, except the Extra-Large Convection Heater (model FA288CCL), an opening of 30 inches (for a 6-inch stovepipe) must be cut in the wall to maintain the required 12 inches of brick separation from combustibles. For the FA288CCL (and The Sequoia, model FA455 if reducer is not used), a wall opening of 32 inches is required.

CONNECTION TO A MASONRY CHIMNEY (Cont.)

a. Brick chimney thimble assembly (Cont.)

Minimum 3½-inch (4-inch nominal) thick solid bricks are to be used. The fireclay liner (ASTM C35 or equivalent), minimum 5/8-inch wall thickness, must not penetrate into the chimney beyond the inner surface of the chimney flue liner and must be firmly cemented in place. After the assembly is complete, insert the chimney connector in the fireclay liner. Do not push it beyond the inside edge of the chimney liner because this will affect the draw of the chimney.

b. Solid pack chimney with metal supports as a thimble

For the method of installation to a masonry chimney shown in Figures 24 and 25, it will be necessary to purchase an 8 or 10-inch inside diameter 12-inch long section of prefabricated solid pack chimney listed specifically for use as a wall pass through (if using 6-inch stovepipe, an 8-inch inside diameter chimney section is needed, a 10-inch inside diameter chimney section is required for use with 8-inch stovepipe) to use a thimble. Purchase a wall spacer, trim collar and wall band that are manufactured to fit the chimney section you purchase.

The safety features of this system are: the 2-inch air space between the chimney section and combustible wall, and the 1-inch air space around the chimney connector as it passes through the chimney section to the chimney.

The location of the opening through the wall to the chimney must leave a minimum 18-inch vertical clearance between the stovepipe and the ceiling to prevent the ceiling from catching fire.

Cut out at least a 14-inch square opening in the wall (a 16-inch square opening should be cut out for the Extra-Large Convection Heater model FA288CCL and Sequoia model FA455 if reducer is not used). It may be necessary to cut wall studs and install a header and sill frame to maintain the wall support. The hole in the chimney must have at least a 6-inch (8-inch for the Extra-Large Convection Heater model FA288CCL and Sequoia model FA455 if reducer is not used) diameter fire clay liner or equivalent secured with refractory mortar. If it is necessary to cut a hole in the chimney liner, use extreme care to keep it from shattering.

First, make the frame for the thimble, making certain it is no smaller than 14 inches square (16 inches square for the Extra-Large Convection Heater model FA288CCL and Sequoia model FA455 if reducer is not used), to maintain a 2-inch air space around the chimney section. Attach the wall spacer to the chimney side of the frame. Then insert the frame into the opening, toenailing it to the wall studs. Install the wall band in the framing to secure the chimney section in place. Insert a single section of stovepipe into the chimney through the wall band, making certain it does not protrude into the chimney beyond the edge of the chimney

flue lining. Apply high temperature furnace cement to the end of the chimney section and install it over the stovepipe, through the wall band, and through the wall

spacer. Tighten the wall band to hold the chimney section firmly in place and against the chimney. Install the trim collar on the outside of the opening. Check to assure there is a 1-inch airspace between the stovepipe and the chimney section. Also, during installation always check to assure that a 2-inch airspace is being maintained to the wood framing. Do not fill this space with insulation. Insulation in this airspace will cause a heat buildup which may ignite the wood framing.

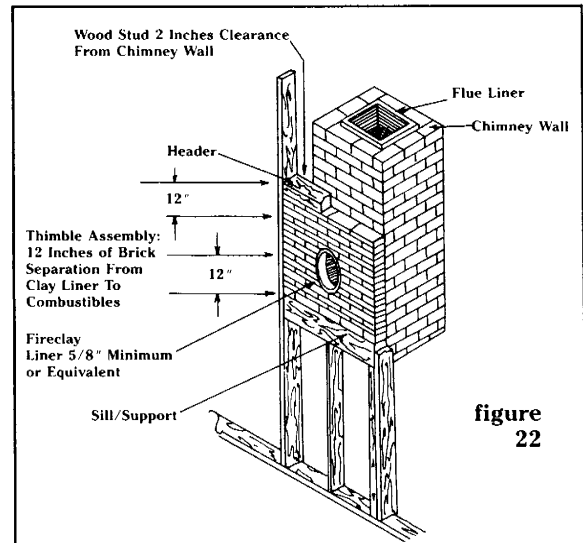


figure 22

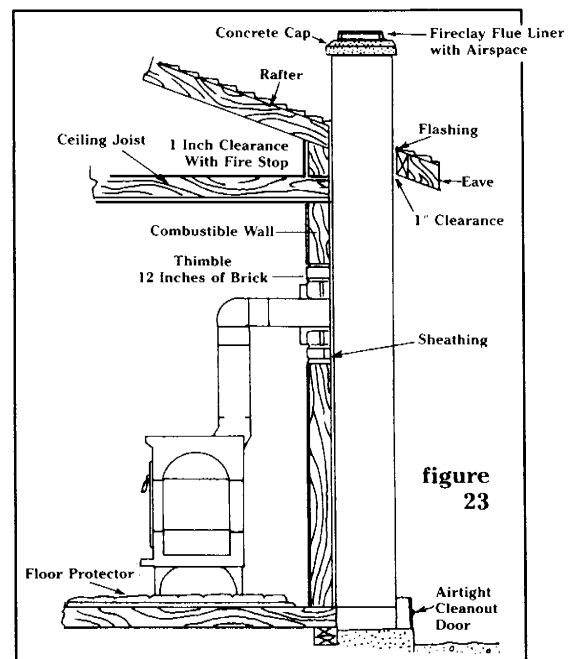


figure 23

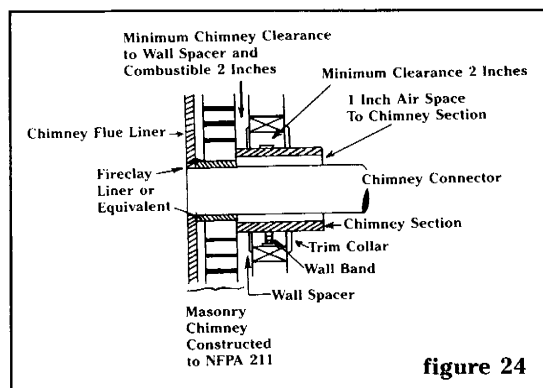


figure 24

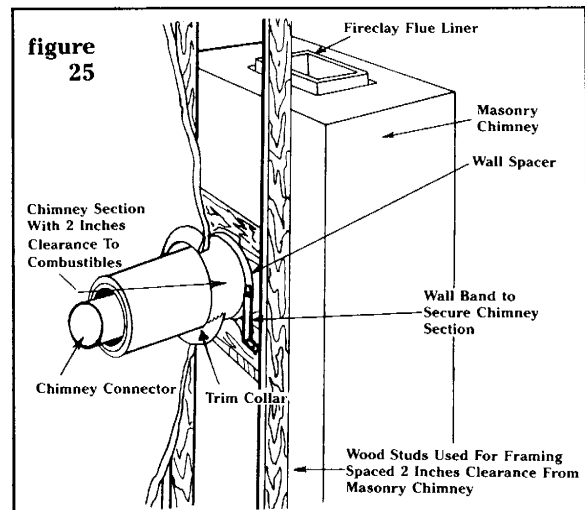


figure 25

CONNECTION TO A MASONRY CHIMNEY (Cont.)

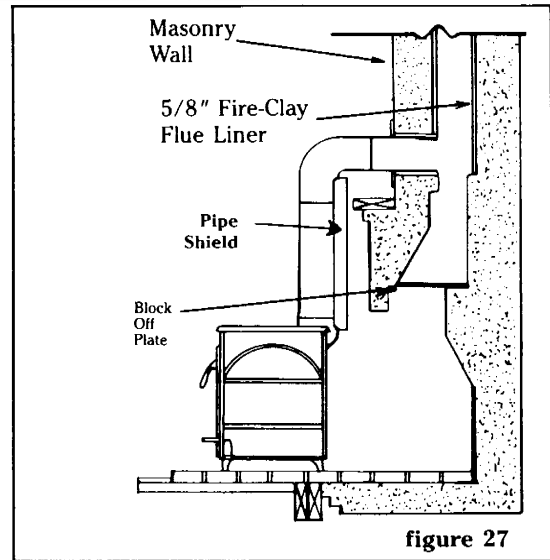
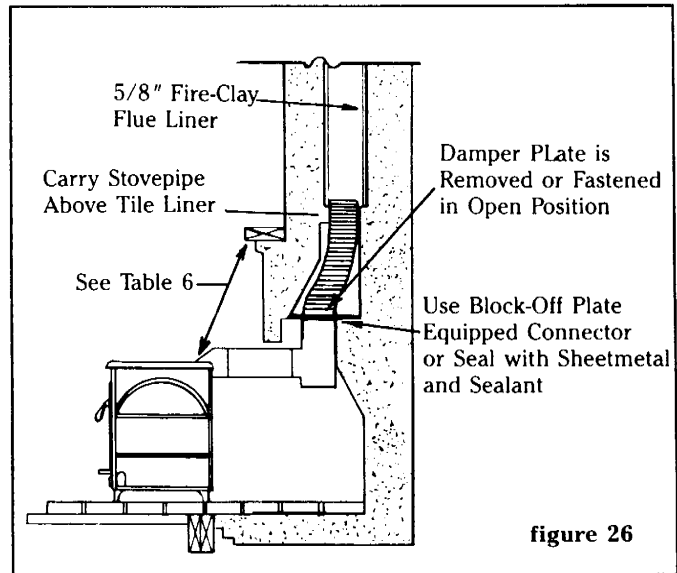
Fireplace Adapter Installation

Because 'Fireplace Adapter' installation is a technical term, let's start by defining it. It means a free standing installation without a shroud, in a fireplace. It is increasingly common to install stoves in existing fireplaces. This can make sense because frequently it is easier and less expensive than installing a new chimney. As well, fireplaces are often sited in appropriate locations for stoves. Each Consolidated Dutchwest stove has been tested for installation in fireplaces. You must, however, proceed with caution.

All fireplaces are not equally safe. Older fireplaces, which predate building codes, particularly may be unsafe. They are not necessarily unsafe but they should always be inspected by a competent person (1st choice - your building inspector, 2nd choice - a chimney sweep) to confirm their safety. They may recommend changes or repair work. This must be done before you install your stove. On newer fireplaces, such concerns are lessened but not eliminated. An inspection should be made and the condition of the chimney should be confirmed as being acceptable. Safety always comes first.

There are two common fireplace adapter installations. The most common is to position the stove on the hearth and vent out the back with the pipe first entering the fireplace opening, then turning up 90 degrees into the chimney and making a positive connection with a block-off plate to seal the chimney. The second type has the stove also sitting on the hearth but with the pipe venting straight up in front of the fireplace and then turning a full 90 degrees and entering the chimney 2-4 feet above the fireplace opening. Venting from the back will usually make for a neater installation, but the latter installation will produce a bit more heat since the pipe will radiate some. **In either case a chimney must be sealed to eliminate the loss of heat and draft pressure.**

In planning a fireplace adapter installation there are several dimensions to take into account. They are: distance from the sides of your stove to right and left side walls; distance from sides of your stove to decorative side trim extending from the face of your fireplace; and the distance from the top of your stove to your mantel. In all cases we have established minimum distances both to combustible surfaces and protected surfaces.



FIREPLACE ADAPTER MINIMUM CLEARANCES TO WALLS

Table 7

Adjusting the height of your stove. Your stove has been tested with the legs provided. However you may wish to raise or lower your stove by using different height legs which are available from Consolidated Dutchwest. Frequently, people will lower the height of their stoves so that the flue outlet in the fireplace adapter installation will be able to clear beneath the top of a low fireplace opening. In using taller legs there are no restrictions.

Stove	A	A/P	M	M/P	T
FA207CL	34"	18"	24"	12"	18"
FA209CL	34"	18"	24"	12"	18"
FA211CL	34"	18"	24"	12"	18"
FA224ACL	36"	18"	30"	18"	24"
FA267CL	32"	18"	30"	18"	18"
FA264CCL/R	28"	18"	28"	16"	22"
FA224CCL	28"	18"	28"	16"	16"
FA288CCL	28"	18"	30"	18"	22"
FA455	24"	18"	24"	12"	24"

Minimum clearances from:

- A:** Side Wall and Ceiling
- A/P:** Protected Side Wall and Ceiling
- M:** Mantel
- M/P:** Protected Mantel
- T:** Unprotected Decorative Side Trim (extending more than 2 inches from fireplace)

However, in using lower legs, the reduction in leg height may not exceed that amount by which your hearth is raised above the main floor immediately around your fireplace. The raised hearth must also be totally noncombustible. Hence, if your hearth is raised 5" you may reduce your leg height by up to 5". The reason for this requirement is to assure that lowering the stove height does not bring the heater body too close to underlying combustibles. If your hearth is level with the floor you may not use shorter legs, unless your floor is completely non-combustible (no wooden supports under the masonry). Inserts can only be used on a totally noncombustible hearth.

Protecting your mantel. Often a mantel may be positioned too low and may present a hazard. One choice is to remove your mantel. This, however, may have aesthetic implications and may be unsatisfactory. A second alternative is to have a piece of sheet metal custom sized and fitted which can be secured to the underside of your mantel and suspended 1" below it. This can be painted to match the color of your mantel and often is unnoticeable. Commercially available shields are a third possibility. Shields must be at least 47" L x 11" W. Consolidated Dutchwest offers the MP-1 mantel protector. Non-combustible mantels need not be shielded.

Is your chimney lined? Most new homes and many older homes have a chimney liner. What is a chimney liner? Chimneys are made of brick. As the chimney is built, a clay liner is fitted into the chimney passageway. It provides a sealed route through

FIREPLACE ADAPTER MINIMUM CLEARANCES TO WALL (Cont.)

which the exhaust will pass. It can be difficult looking into your chimney to see the liner. Usually it begins well above the fireplace opening at the point where the stack narrows. Chimney liner is typically clay (orange) colored. **We do not recommend installing our stove or any stove in an unlined chimney. This can be dangerous because creosote can travel through the cracked joints between bricks or stones and cause a structural fire.** If your chimney is not lined, several types of stainless steel lining are available from Consolidated Dutchwest.

Making a positive connection. When installing a stove into a masonry chimney, it is essential that the pipe and the chimney be properly connected and fully sealed. In most fireplace adapter installations the stove is vented from the back into the fireplace opening with a 90 degree elbow carrying the exhaust up into the stack. A block-off plate is fitted in place of the fireplace damper or, if the damper is not readily removable, just under it. The plate should have a circular hole which corresponds to the size of the stove pipe, so the pipe may pass through that hole and seal it as it does. All seams between the block-off plate and the chimney and between the block-off plate and the stove pipe should be sealed with furnace cement, silicone caulk, or other appropriate sealant. Block-off plates, positive connection kits, and sealant are available from Consolidated Dutchwest.

Why is it important to make such a secure, positive seal? There are three reasons. A poorly sealed chimney installation will cause (1) substantial heat loss, (2) a significant reduction from the stove's draft pressure, and (3) possible leakage of combustion gasses in an improperly drawing chimney. Since the primary goal of most stove installations is to provide heat, you will be invariably more satisfied with your stove's heating output if the chimney is properly sealed. A reduction in chimney draft, due to a poorly sealed chimney connection, is not always apparent. Frequently a stove in such a circumstance will burn wood readily with excellent output and appear to be operating perfectly. However, when coal burning is attempted, the draft will often be too weak to sustain a prolonged, hot fire. Proper sealing of all pipe and chimney connections will usually remedy this problem.

HEARTH EXTENSIONS FOR FIREPLACE ADAPTER INSTALLATION

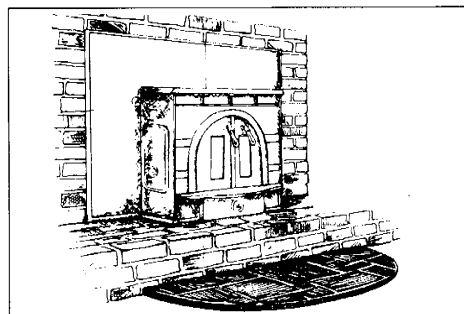
Normally a hearth will be wide enough to accommodate the minimum protected floor dimensions required for an adapter stove installation. However, the depth may be insufficient to fully protect the area in front of your stove. If such is your case, you may make up the shortfall by adding a prefabricated hearth extension which has a thermal conductivity of $K=0.84 \text{ BTU IN/FT}^2 \text{ HR } ^\circ\text{F}$ or less to the front of your fireplace or increasing the size of the hearth itself. Hearth extensions are available in a range of sizes and shapes and in a variety of colors. As an alternative, you may position your stove further into the fireplace in order to give you more clear hearth in front of the stove. This can be an acceptable solution. However, remember that the further a stove is into the room, generally the more heat it will provide. Hearth rugs, while attractive, do not meet the code requirements as hearth extensions, so these may not be used in place of a non-combustible hearth. Hearth rugs are used to protect the floor from ashes and to give a richer, finished appearance to the stove setting. Both hearth rugs and hearth extensions are available through Consolidated Dutchwest.

FIREPLACE ADAPTER MINIMUM HEARTH EXTENSIONS

Table 8
Stove

	A	B	C
FA207CL	16"	8"	8"
FA209CL	16"	12"	12"
FA211CL	16"	16"	16"
FA224ACL	16"	16"	8"
FA224CCL	16"	16"	8"
FA264CCL	16"	16"	8"
FA288CCL	16"	16"	8"
FA267CL	16"	16"	8"
FA264CCL-R	16"	8"	16"
FA455	16"	16"	8"

Minimum Hearth Protector
Extensions from:
A: front of stove
B: left side of stove
C: right side of stove



If you plan to mount a fan on the back of your convection heater, it is especially important to clean the fireplace of any ashes or soot, to keep the fan from blowing these into your living space. **Do not mount a fan on the back of a fireplace insert (except FA455).** It is also imperative to make a tightly-sealed positive connection to carry smoke from the stove up into the chimney, so that the fan can't push the smoke out into the living space.

FIREPLACE INSERTS

Our fireplace inserts have been designed to take maximum advantage of your fireplace. A fireplace is almost always a major focal point and our inserts have been designed to belong at the center of attention. A fireplace insert, to be most effective, should be substantially situated on the hearth, rather than embedded in the fireplace. The farther a fireplace insert is set into the fireplace the more difficult it becomes to get heat from the insert out into the room. Each of our fireplace inserts sits only about 2-3" into the fireplace. Most of the insert is on the noncombustible hearth where it can heat best and provide a cooking surface. For details on fireplace insert installation, see the guidelines provided in the "Fireplace Adapter" section.

Here are some frequently asked questions about fireplace insert installations:

Can I seal the shroud on the fireplace front rather than make a positive connection between the fireplace insert's pipe and the chimney? No. Current NFPA and many local codes now require a positive connection. Consult your building code inspector for regulations concerning positive connections which apply in your area.

Can I install my Federal Convection insert in a zero-clearance fireplace? Yes. We have had our fireplace inserts tested for installation in zero-clearance fireplaces. You **must** make a positive connection from the stove using stovepipe to the chimney

Here are some frequently asked questions about fireplace insert installations: (continued)

outlet at the fireplace's firebox. Sealing the shroud along the face of a zero-clearance fireplace does not constitute a safe or approved form of installation. Next, you must be certain that the plates surrounding the insert do not block off the circulating air openings on the zero-clearance fireplace. Since these air openings help cool the fireplace, blocking them off can lead to dangerous overheating. Do not install any insert in a zero-clearance fireplace if it obstructs these air vents. It is also necessary that your fireplace be vented through a chimney meeting building code requirements for venting a stove.

How can I tell if my fireplace is a zero-clearance? Such fireplaces are normally only found in newer homes. They (and their chimneys) are made primarily of metal and carry somewhere on the interior of the firebox a safety listing label which will identify them as a zero-clearance fireplace. Usually they are built directly into a combustible wall with no clearances observed (hence the name). If in doubt, a building inspector or chimney sweep should be able to immediately identify your type of fireplace.

FIREPLACE INSERT CLEARANCES

A fireplace insert installation has clearances to be observed just as free standing and fireplace adapter installations do. Crucial clearances for fireplace inserts are (1) distance to side walls, (2) distance to mantel, and (3) distance to decorative side trim extending from the face of the fireplace.

Note about decorative side trim: Rounded molding normally found on the face of a fireplace which extends 2" or less from the fireplace front usually does not present an issue. Trim which extends more than 2" however is subject to trim clearances. Such trim may be shielded if necessary.

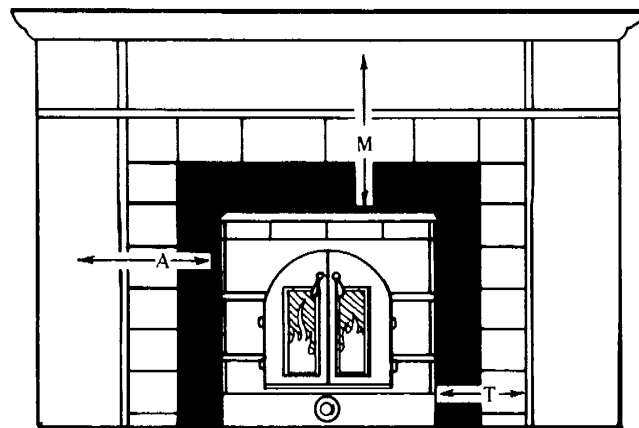
Table 9 Clearances

Insert #	A	A/P	M	M/P	T
7 (A,B)	28"	18"	28"	16"	22"
8 (A,B,C)*	28"	18"	28"	16"	22"
9 (B,C)	28"	18"	30"	18"	22"
11B	24"	18"	24"	12"	24"

*includes 8A-R, 8B-R, 8C-R

Minimum clearance from:

- A: Side Wall
- A/P: Protected Side Wall
- M: Mantel
- M/P: Protected Mantel
- T: Unprotected Decorative side trim



Floor Protector Minimum Extensions

Stove	A	B	C
All Inserts (except right-side loader)	16"	16"	8"
Right Side Loaders	16"	8"	16"

Minimum Hearth Protector Extensions from:

- A: Stove Front
- B: Stove Left Side
- C: Stove Right Side

Protecting your mantel. Often a mantel may be positioned too low and may present a hazard. One choice is to remove your mantel. This, however, may have aesthetic implications and may be unsatisfactory. A second alternative is to have a piece of sheet metal custom sized and fitted which can be secured to the underside of your mantel and suspended 1" below it. This can be painted to match the color of your mantel and often is unnoticeable. Commercially available shields are a third possibility. Shields must be at least 47" L x 11" W. Consolidated Dutchwest offers the MP-1 mantel protector. Non-combustible mantels need not be shielded.