LA COSTA

42" Wood Burning Fireplace Models: 42EC Circulating (Louvered) I42EC Circulating (Louvered) Fully Insulated 42E Non-Circulating (Smooth Face) I42E Non-Circulating (Smooth Face) Fully Insulated

INSTALLATION INSTRUCTIONS

SAVE THIS BOOK

This book is valuable. In addition to instructing you on how to install your fireplace, it also contains information that will enable you to obtain replacement parts or optional accessory items when needed. Keep it with your other important papers.

▲ WARNING: ALWAYS LEAVE GLASS DOORS FULLY OPENED OR FULLY CLOSED WHEN OPERATING THIS FIREPLACE.

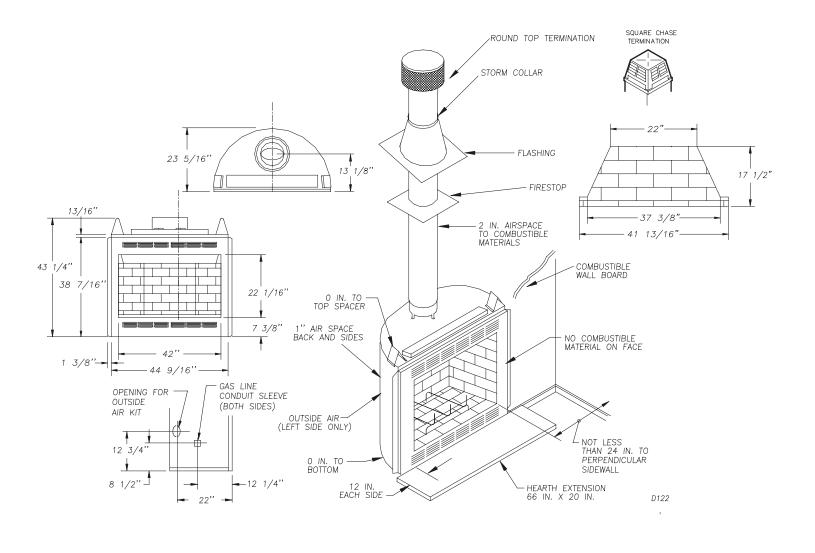
Fireplace

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This Fireplace is approved for use as a Wood Burning Fireplace <u>or</u> for use with a vented gas log approved to ANS Z21.60, Z21.84 or RGA 2-72 Standards <u>or</u> for use with a vent-free gas log heater approved to ANS Z21.11.2 standard. A DESA hood must be installed when using a vent-free gas log set (See accessories on pg. 11).



DESA INTERNATIONAL 2701 INDUSTRIAL DRIVE P.O. BOX 90024 BOWLING GREEN, KY 42102-9004 www.desatech.com



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PN 54139 REV C 3/01

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WARNING: SAFETY INFORMATION

- Do not store or use gasoline or any other flammable vapors or liquids in the vicinity of this or any other appliance.
- Due to high temperatures, the appliance should be located out of traffic and away from furniture and draperies.
- Do not place clothing or other flammable materials on or near the appliance.
- NEVER leave children unattended when a fire is burning in the fireplace.
- Improper installation, adjustment, alteration, services or maintenance can cause injury, property damage, or loss of life. Refer to this manual for assistance or additional information. Consult a qualified installer or local distributor.
- Check local and applicable codes before installing this fireplace.
- This wood burning fireplace complies with the UL 127 standard as a FACTORY BUILT FIREPLACE and is listed and tested by Underwriters Laboratories Inc.
- Do not install a fireplace insert in this firebox unless the manufacturer's instructions with the insert specifically state this firebox has been tested for use with the insert.
- This fireplace is not intended to be used as a substitute for a furnace to heat an entire home. Use for supplementary heating only.
- This model is not for use in manufactured housing (mobile homes).

GLOSSARY:

- a) Flush Installations a type of installation where the front face of the fireplace is even or leveled with the wall.
- b) Chase Installation a type of installation where the chimney is enclosed.
- c) Perpendicular Side Wall applies to the minimum clearance between the sidewall and fireplace opening.
- d) Combustible Material a type of material that is flammable.
- e) Nailing Flange the extended part on both sides of the fireplace face that secures the fireplace.
- f) Termination a cap that is placed at the end of the chimney pipe.

- g) Outside Air Kit a combustion air inlet that allows combustion air to enter the firebox area through a duct.
- h) K-Factor the thermal conductivity value that is given to a particular material.

INTRODUCTION:

This fireplace model is a wood burning fireplace intended and approved for installation in either residential homes or buildings of standard construction. This fireplace system requires the utilization of DESA 8 inch, double-wall, and snap-lock flue pipe system. Optional glass doors in several finishes are available for this fireplace (See Replacement and Accessories parts on page 11).

BEFORE YOU BEGIN:

Before beginning the installation of your fireplace, read these instructions:

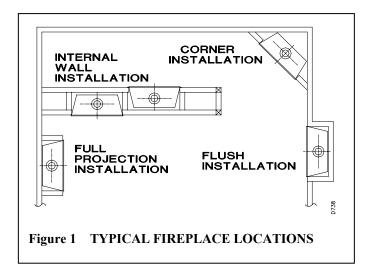
- All DESA components and fireplaces are safe when installed according to this manual. Use of any components that have not been designed and tested for this fireplace system may cause a fire hazard.
- The DESA warranty will be voided by and DESA disclaims any responsibility for the following actions:
 - a) Modification of the fireplace, components, doors, chimney system, fans, air inlet system, damper control, etc.
 - b) Use of any component part not manufactured or approved by DESA in combination with a DESA fireplace system.

PROPER INSTALLATION is the most important step in ensuring safe and continuous operation of this fireplace.

SELECTING LOCATION:

To determine the safest and most efficient location for your fireplace, consider the following guidelines:

- The location must allow for all proper clearances (see page 3).
- The location should be in a place where the fireplace will not be affected by drafts such as air condition ducts, windows or doors.
- A location that avoids the cutting of joists or roof rafters makes installation easier.
- If an outside air kit is to be installed, accessibility to outside combustion air must be considered. In some cases, this can be achieved through a vented crawl space. For more details, see section on outside air kit installation on page 4.
- If a Fan Kit is to be installed, an electrical supply must be accessible.
- If a gas line is to be installed, consider the location of gas supply.



MINIMUM CLEARANCES TO COMBUSTIBLES:

| • | Back and sides of fireplace | 1" | mi | in. |
|---|-------------------------------------------------------|-----|-----|-----|
| | Note: The 1" clearance is not required at the nailing | fla | nge | es |
| | | | | |

- Top spacers 0" min. •
- Perpendicular side wall to opening of unit 24" min.
- Bottom of fireplace to floor
- (see step 2 under installing a fireplace) 0" min.
- Mantel clearances see page 10
- Chimney outer pipe surfaces 2" min.
- Chase inside dimension 16-1/2" min.

WARNING: Do not pack air spaces with insulation or any other material. Do not obstruct fireplace openings (ie. louvers, etc.) with any type of facing material. Combustible material must not be in contact with the back front face of the fireplace.

INSTALLING THE FIREPLACE:

STEP 1: Frame the opening for the fireplace using the dimensions shown in figures 2 & 3.

STEP 2: If the fireplace is to be installed directly on carpeting, tile (other than ceramic), or any combustible material other than wood flooring; the fireplace must be installed upon a metal or wood panel extending the full width and depth of the fireplace.

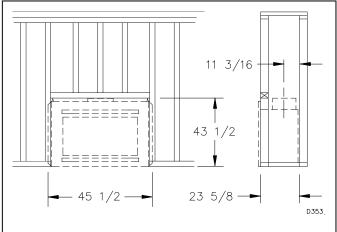
STEP 3: Set the fireplace directly in front of this opening and slide the unit back until the nailing flanges touch the side framing.

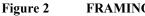
STEP 4: Check the level of the fireplace and shim with sheet metal if necessary.

STEP 5: Before securing fireplace to prepared framing, the ember protector (provided), must be placed between hearth extensions (not supplied), and under the bottom front edge of the fireplace to protect against glowing embers falling through. If the fireplace is to be installed on a raised platform,

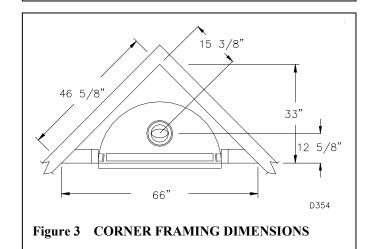
a Z-type ember protector (not supplied) must be fabricated to fit your required platform height. The ember protector should extend under the fireplace a minimum of 1". The ember protector should be made of galvanized sheet metal (28 Ga. minimum) to prevent corrosion (see figure 5).

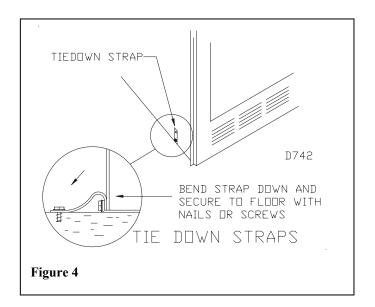
STEP 6: Secure fireplace to floor using tie-down straps (see figure 4) to prevent shifting.





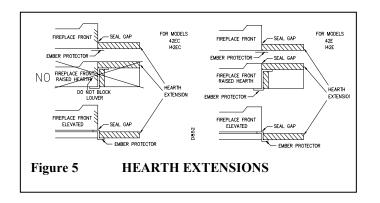






HEARTH EXTENSION:

A hearth extension is required to protect the combustible floor constructed in front of the fireplace. The hearth extension is not included and must be fabricated. The hearth extension must project at least 12 inches beyond each side of the fireplace opening (see drawing on front cover).



The hearth extension must be made of non-combustible, inorganic material having an effective thermal conductivity "K" of 0.84 BTU IN/FT.HR.F (or less) at 1 inch thick.

Thermal conductivity "K" of materials can be obtained from the manufacturer of the non-combustible material. The minimum required thickness for any material could be obtained by the following formula:

 $\frac{\text{K factor at 1 inch}}{0.84} = \text{thickness required}$

For example, if the material selected has a K factor of 0.25, such as a glass fiber, the following formula would apply:

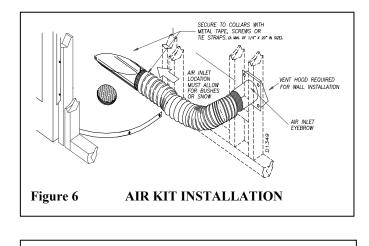
 $\underline{0.25} = 0.30$ thickness required $\overline{0.84}$

If the hearth extension is to be covered, use non-combustible material such as tile, slate, brick, concrete, metal, glass, marble, stone etc. Provide a means to prevent the hearth extension from shifting and seal the gap between the fireplace frame and hearth extension with a non-combustible material (see figure 5).

▲ WARNING: HEARTH EXTENSION IS TO BE INSTALLED ONLY AS DESCRIBED.

OPTIONAL OUTSIDE AIR KIT (MODEL AK4E):

The outside air kit must be installed during the rough framing of the fireplace due to the nature of its location. Outside combustion air can be accessed through an exterior wall. See figure 6 and Accessories on page 11.

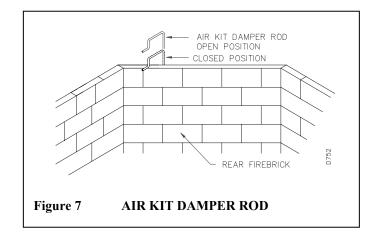


▲ CAUTION: AIR DUCTS MUST NOT TERMINATE IN ATTIC SPACE OR GARAGE.

Avoid installing outside air eyebrow in areas where inlet opening may be blocked by snow, bushes or other obstacles. It should also be located beyond the reach of children. The maximum height of air inlet above platform of fireplace is 3 ft. below the termination flue gas outlet.

For further details on the installation of the outside air kit, please refer to the instructions included with the air kit. For operating instructions please refer to your owner's manual.

The outside air handle is located inside the face opening, above the upper left top of the rear firebrick (see figure 7). Push the rod up to open the air intake and push down to close it. Always open the mechanism when starting a fire to provide adequate outside combustion air. Close the mechanism when not in use to prevent cold air from entering the room.



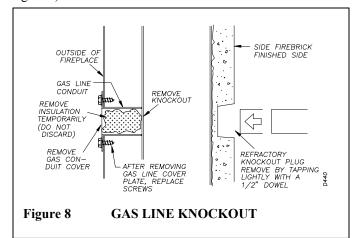
GAS LINE INSTALLATION (OPTIONAL):

Gas line hook up should be done by your supplier or a qualified service person.

NOTE: Before you proceed, make sure your gas supply is turned off.

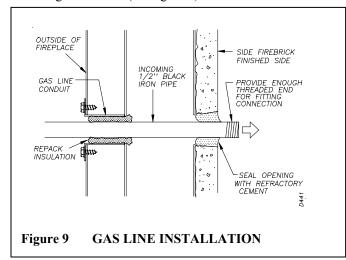
A gas line may be installed for the purpose of installing a vented or vent-free gas appliance available through your local distributor. Use a $\frac{1}{2}$ " black iron pipe and appropriate fittings. When installing a gas line, a shut-off valve designed for installation outside the appliance is recommended.

STEP 1: To install, remove the knockout indentation on the firebrick wall located approximately 2 inches above the refractory hearth floor on the required side. The knockout indentation must be firmly tapped with any solid object until it is released. Remove fragmented portions of refractory (see figure 8).



STEP 2: Remove gas line cover plate on rear of fireplace and pull out insulation from gas line conduit sleeve. Save insulation for reuse.

STEP 3: Run a $\frac{1}{2}$ " (I.D.) black iron gas line into the fireplace through the gas line conduit sleeve (if using a raised platform, add height). Provide sufficient gas line into fireplace chamber for fitting connection (see figure 9).



NOTE: Secure incoming gas line to wood framing to provide rigidity for threaded end.

STEP 4: Repack insulation around gas line and into sleeve opening. Seal any gaps between gas line and refractory knockout hole with refractory cement or commercial furnace cement. Install the decorative gas appliance or cap-off gas line if desired. Follow the manufacturer's installation instructions provided with the gas appliance.

▲ CAUTION: All gas piping and connections must be tested for leaks after the installation is completed. After ensuring that the gas valve is on, apply a soap and water solution to all connections and joints. Bubbles forming show a leak. Correct all leaks at once. DO NOT USE AN OPEN FLAME FOR LEAK TESTING AND DO NOT OPERATE ANY APPLIANCE IF A LEAK IS DETECTED.

VENT-FREE GAS LOG INSTALLATION:

If you wish to install an unvented gas log set, only unvented gas log sets, which have been found to comply with the standard for unvented room heaters, ANS Z21.11.2, are to be installed in this fireplace.

NOTE: A DESA hood must be installed when using an unvented gas log set (see accessories on page 11).

▲ WARNING: Do not operate an unvented gas log set in this fireplace with the chimney removed.

VENTED GAS LOG INSTALLATION:

If you install a decorative gas appliance (vented gas log), the decorative gas appliance must comply with the Standard for Decorative Gas Appliance for Installation in solid fuel burning fireplace, ANS Z21.60-1996, Z21.84 or RGA 2-72, and shall also be installed in accordance with the National Fuel Gas Code, ANS Z223.1-1996.

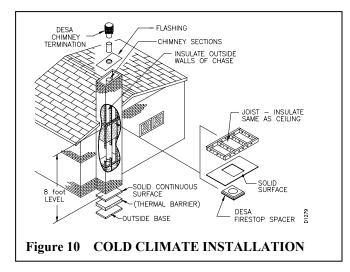
▲ **WARNING:** When using a decorative gas appliance, the damper must be removed or permanently locked in the fully opened position.

COLD CLIMATE INSTALLATIONS:

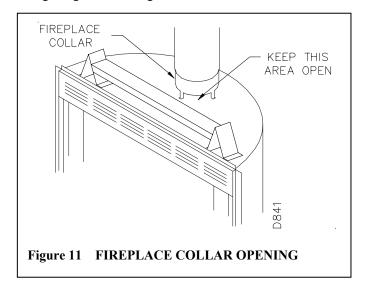
The following installation procedures are recommended when installing a fireplace system in a cold climate area. Following these steps will aid in reducing cold air infiltration from the fireplace enclosure into living space.

- 1. The fireplace must be placed on a solid continuous surface. You should insulate under the fireplace in all cold climate areas.
- 2. In the case of a raised platform or cantilevered chase, you should insulate under the structure to reduce air infiltration.
- 3. Insulate the walls of the chase, both on the outer and interior partitioning wall (see figure 10). Clearances from pipe to insulating materials must be maintained.
- 4. Using a firestop spacer in the chase at the ceiling level is recommended for safety and reducing cold air movement (see accessories on page 11).

5. Do not insulate on top of the firebox. The opening in the collar around the chimney at the top of the fireplace must not be obstructed (see figure 11).



6. Before finishing the fireplace enclosure, inspect all joints of the outer firebox. Seal any gaps of the outer firebox with a non-combustible material. Caulk any gaps between the nailing flange and framing.



CHIMNEY SYSTEM:

CHIMNEY HEIGHT

Minimum chimney height measured from bottom of fireplace to flue gas outlet-end of the termination is:

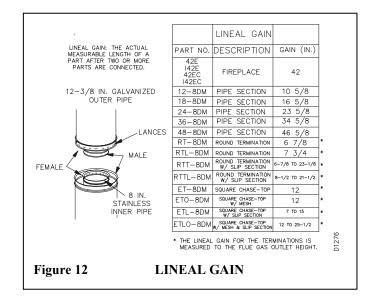
| Straight run | 16 feet |
|-------------------------|---------|
| Run with one elbow set | 16 feet |
| Run with two elbow sets | 30 feet |

An elbow set is consist of one starter elbow and one return elbow. Uncommon circumstances such as neighboring hills, tall trees, or strong wind areas can cause downdrafts in the chimney system. In such cases, going beyond the minimum recommended height would be preferable to provide a better draw.

Maximum height approved for any chimney run with this fireplace system is 60 feet as measured from the bottom of the fireplace to the flue outlet-end of the termination.

ASSEMBLING AND INSTALLING THE DOUBLE WALL CHIMNEY SYSTEM

The DESA chimney system consists of 12, 18, 24, 36 and 48inch, snap-lock double-wall pipe segments, planned for maximum adaptability to individual site requirements. Actual lengths gained (lineal gain) after fitting overlaps must be taken into consideration (see figure 12).

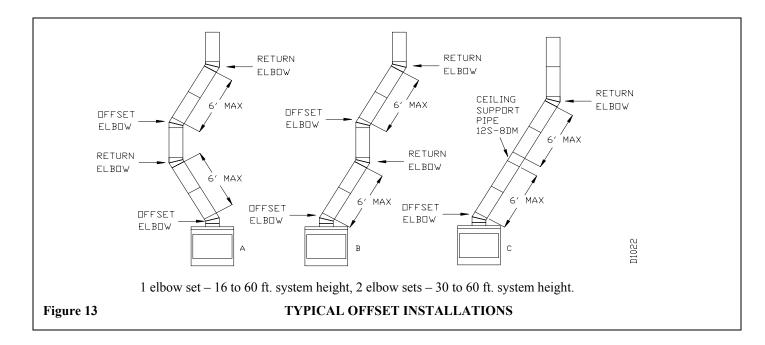


Each double wall chimney section consists of a galvanized outer pipe, a stainless steel inner flue pipe and a wire spacer. The pipe sections must be assembled independently as the chimney is installed. When attaching the chimney directly to the fireplace, the inner flue pipe section must be installed first with the female side up (see figure 12). The outer pipe section can then be installed over the flue pipe section with the male end up.

Press down on each pipe section until the lances securely engage the hem on the fireplace starter. The wire will assure the proper spacing between the inner and outer pipe sections (see figure 12).

Continue to assemble chimney sections as outlined above, making sure that both the inner and outer pipe sections are locked together.

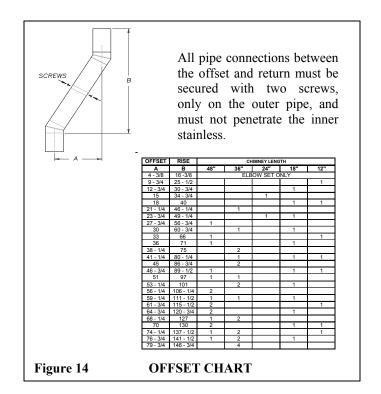
When installing double wall "snap-lock" chimney together, it is important to insure that the joint between the chimney sections is locked. Check by pulling chimney upward after locking. The chimney will not come apart if properly locked. It is not necessary to add screws to keep the chimney together. However, if desired, use screws per directions provided on page 7, figure 14.

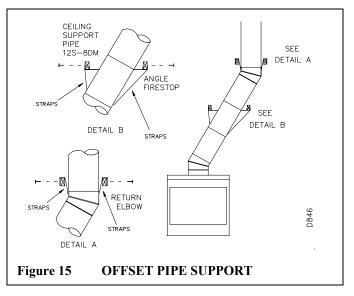


INSTRUCTIONS WHEN OFFSET OF CHIMNEY IS NEEDED

Installing offset and return elbow (30E-8DM)

- 1. To achieve desired offset, you may install combination of 12", 18", 24", 36" and 48" length of double wall pipe (see figures 13 and 14).
- 2. The chimney weight above the offset rest on return elbow. Straps must be securely fastened to rafters or joists (see figure 15, details A & B).
- 3. Maximum length of pipe between supports (return elbow or chimney support V12S-8DM) is 6' of angled run. Maximum of two (2) 6' angled run sections per chimney system.



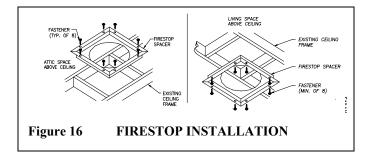


FIRESTOP SPACERS: (FS-8DM)

Firestop spacers are required at each point where the chimney penetrates a floor or ceiling joist space. Their purpose is to establish and maintain the required clearance between the chimney and the combustible materials.

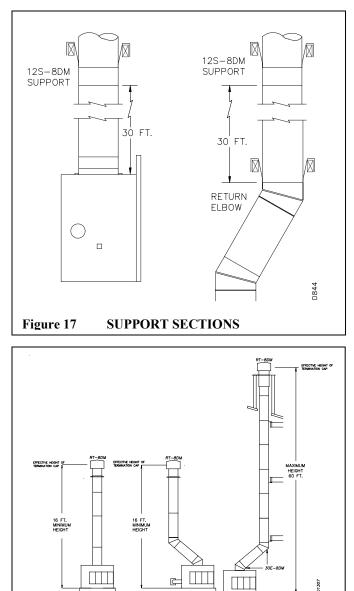
They also provide complete separation from one floor space to another floor or attic space as required by most codes. When the double wall pipe passes through a framed opening into an attic space, the firestop must be place into the attic floor as in figure 16.

When the pipe passes through a framed opening into a living space above, the firestop must be placed onto the ceiling from below as shown in figure 16.



SUPPORT SECTIONS: (12S-8DM)

The chimney support section is a 4-strap 12" length of pipe. A chimney support is required at the 30-foot level above the fireplace after a straight chimney run (see figure 17). This support is designed to relieve the extra weight load on the fireplace and elbows when high chimneys are installed.



TYPICAL INSTALLATION

Figure 18

PENETRATING THE ROOF:

To maintain a 2-inch clearance to the pipe on the roof with a pitch, a rectangular opening must be cut.

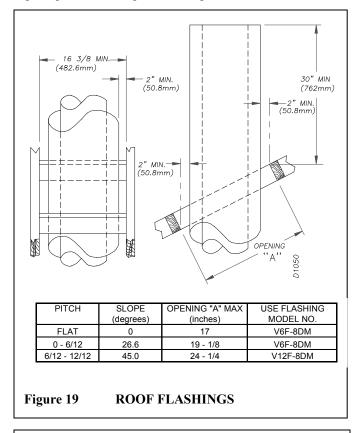
STEP 1: Determine the center point through which the pipe will penetrate the roof.

STEP 2: Determine the pitch of the roof. Pitch is the distance the roof drops over a given span, usually 12 inches. A 6/12 pitch means that the roof drops 6 inches for each 12 inches one measures horizontally down the roof.

STEP 3: Use the roof-opening chart (see figure 19) to determine the correct opening length and flashing required.

STEP 4: Remove the shingles around the opening measured and cut out this section.

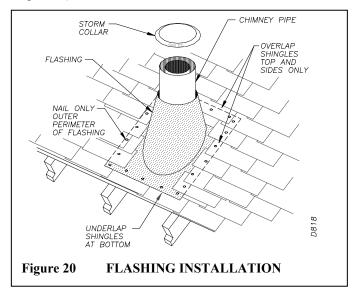
STEP 5: Add the next sections of the pipe until the end penetrates the roofline. Check to see that the proper clearances are maintained. Extend chimney by adding sections of double wall pipe until pipe is a minimum of 30 inches above the highest point of the roof cutout. Termination and chimney must extend a minimum of 36 inches above the highest point where it passes through roof.



▲ **IMPORTANT:** If an exposed portion of chimney is greater than four feet above the roofline, use support wires to keep the chimney secured. The support wires may be attached to the outer pipe of the chimney with screws provided the screws do not penetrate the inner flue pipe.

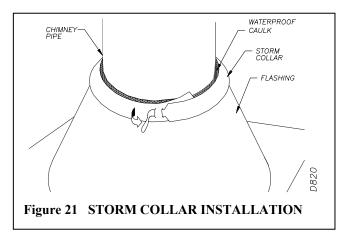
FLASHING INSTALLATION: (V6F-8DM or V6F-8DM)

Determine the flashing to be used with the roof-opening chart. Slide flashing over pipe until base is flat against roof. Replace as many shingles as needed to cover exposed area and flashing base. Secure in position by nailing through shingles (see figure 20). DO NOT NAIL THROUGH FLASHING CONE.



STORM COLLAR INSTALLATION: (VSC1-8DM)

Place storm collar over pipe and slide down until it is snug against the open edge of the flashing (see figure 21).



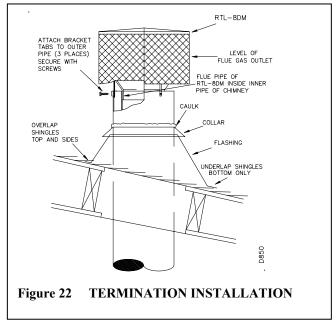
Apply waterproof caulking to all seams and notches around storm collar and also at base around shingles.

TERMINATIONS:

STANDARD INSTALLATIONS:

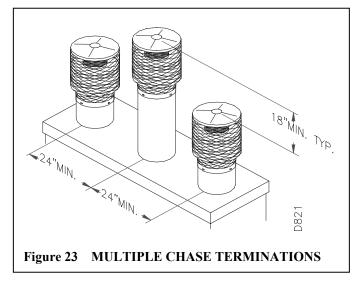
The fireplace system must be terminated with the listed round top or square chase terminations. The terminations approved for this fireplace are RTL-8DM, which can be used for flashing or chase and ETL-8DM for chase style termination only. Figure 21 shows an RTL-8DM round top termination.

FOLLOW THE INSTALLATION INSTRUCTIONS PROVIDED WITH THE TERMINATION BEING USED.



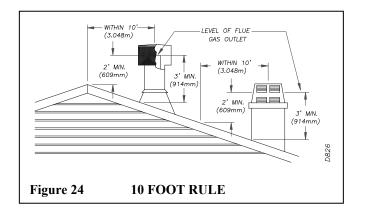
CHASE INSTALLATIONS:

Instructions for chase installations are included with the chase style termination chosen. In a multiple chase installation, be sure to provide adequate distance between terminations to prevent smoke spillage from one termination to another. It is recommended that terminations be separated at least 24 inches, center-to-center, and stacked at vertical height difference of 18 inches or more (see figure 23).



10-FOOT RULE:

All flue gas outlets of chimney terminations must extend a minimum of three feet in height above the highest point where it passes through the roof and must be at least two feet above the highest point of the roof that is within a horizontal distance of ten feet (see figure 24).



FINISHING THE FIREPLACE:

Combustible materials, such as wallboard, gypsum board, sheet rock, drywall, plywood, etc. may directly contact the sides and top front edge at nailing flanges of the fireplace face (see figure 4). It is important that combustible materials do not overlap the face itself. Brick, glass, tile or other non-combustible materials may overlap the front face provided they do not obstruct louvered slots or any other opening. When overlapping with a non-combustible facing material, only use a non-combustible mortar or adhesive appropriate for the particular installation.

GLASS DOORS:

If optional glass doors are installed, all doors must be in either the fully opened or fully closed position whenever the fireplace is in use, otherwise, a fire hazard may be created (see literature included with glass doors).

GRATE:

The grate is designed to prove maximum solid-fuel capacity. Do not attempt to overfill. Doing so may cause smoke spillage and create a fire hazard. Do not overload the grate or obstruct the required air space beneath it. Always keep ashes from building up under the grate.

▲ WARNING: RISK OF FIRE. REPLACE GRATE WITH MODEL 42E GR GRATE ONLY!

MANTEL CLEARANCES:

Woodwork such as wood trims, mantels, and other combustible materials must be placed at least 9 inches above the opening of the fireplace (see figure 25).

Combustible materials above 9 inches and projecting more than $1-\frac{1}{2}$ " inches from the front face of the fireplace must be place at least 12 inches above the fireplace opening (Ref: NFPA std. 7-3.3.3).

Mantels or any other combustible material may butt up to the side of the black metal face of the fireplace. The clearances from the side of the fireplace to any combustible material and wall should fall within the limits shown in figure 26.

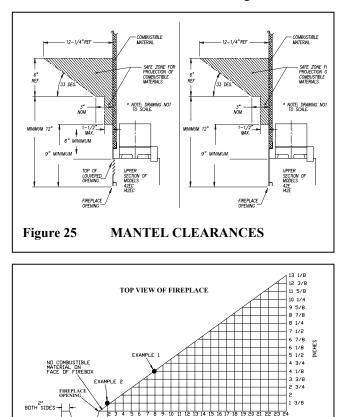


Figure 26 MINIMUM SIDE CLEARANCES

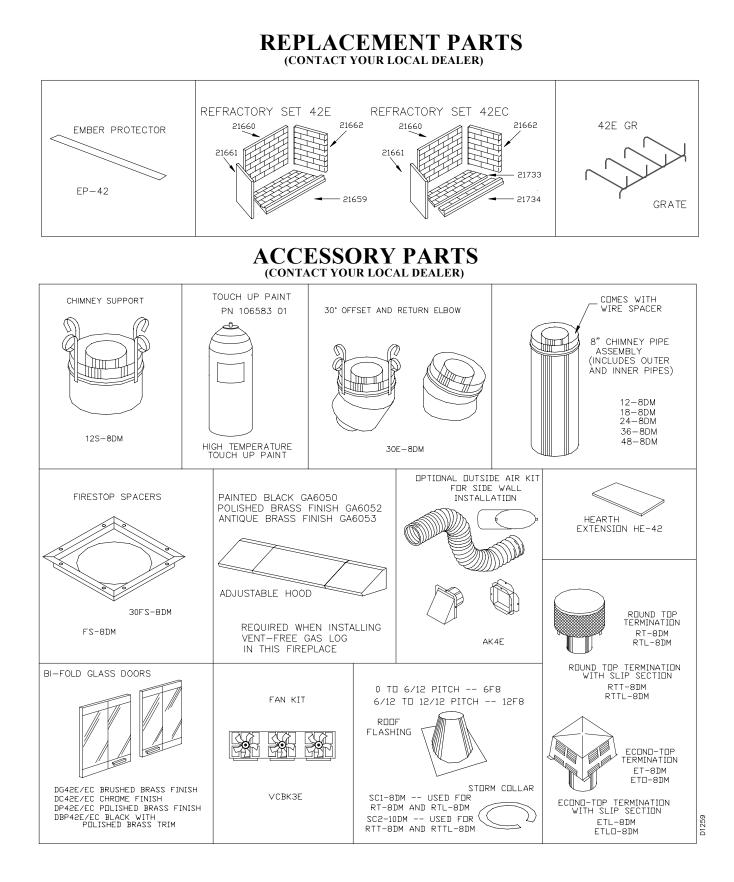
MINIMUM 24 INCHES FROM PERPENDICULAR SIDE WALL

Example 1: The face of a mantel, bookshelf, etc. is made of combustible material and protrudes 4 1/8" from the wall the fireplace is installed. This combustible material must be a minimum of 8" from the side of the fireplace opening.

Example 2: The face of a mantel, bookshelf, etc. is made of combustible material and protrudes 1 3/8" from the wall the fireplace is installed. This combustible material can butt up against the side of the fireplace (i.e. 2" from the fireplace opening).

TECHNICAL SERVICE:

You may have further questions about installation, operations, or troubleshooting. If so, contact Desa International's Technical Service Department at <u>www.desatech.com</u>. When contacting Desa International, have the model number of your fireplace ready.



Desa International 2701 Industrial Drive, P.O. Box 90024, Bowling Green, KY 42102-9004 www.desatech.com, (800) 323-5190