

SILHOUETTE 2800 & 2850C

Zero Clearance Wood Fireplace



Silhouette Zero Clearance Fireplace
Models 2800 and 2850C

If your Energy King factory built fireplace 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 inspection requirements in your area. You also need to determine if you are required to obtain a permit from your local governing authority.

The Energy King factory built fireplace must be connected to a listed high temperature (complying with UL 1985) residential type and building heating appliance chimney.

Congratulations on your purchase of an Energy King wood burning appliance. Your fireplace is designed for a lifetime of durable, reliable performance and easy operation.

This manual describes the installation and operation of your Energy King factory built fireplace. Be sure to read your instruction manual and keep it in a safe place for future reference. Before installation, contact your local building or fire officials about restrictions and installation inspection requirements for your area.

The Energy King factory built fireplace is tested to UL127 and UL391 Standards by Intertek Testing Services, Middleton, Wisconsin. Silhouette Model 2850C is tested to EPA Certification for emissions. Silhouette Model 2800 meets the EPA's requirements for Method 28A and is exempt.

Your Energy King factory built fireplace will burn wood only; any other source of fuel is prohibited by the manufacturer, MAY NOT BE SAFE, and will void your warranty.

SAFETY NOTES – IMPORTANT

(For Wood Only)

1. Never use gasoline or similar liquids to start or “freshen” a fire. Keep all such liquids away from your fireplace.
2. Watch your unit closely during operation. If any part starts to glow red or white, it is in an overfire condition (see page 11 of this manual.)
3. Build the fire directly on the firebrick. Do not elevate the fire by using grates or andirons. Burn solid wood only. Do not burn any other source of fuel. Never reload wood when fire is burning high. (See page 12 [Model 2800] or page 16 [Model 2850C] of this manual for refueling.)
4. If processed solid fuel firelogs are used, do not poke or stir logs while they are burning. Use only firelogs that have been evaluated for the application in the fireplace and refer to firelog warnings and caution markings on packaging prior to use.
5. All fuel-burning appliances require proper combustion air to operate and to avoid negative air pressure in your home. Negative air pressure will cause safety and operational problems.
6. Do not let an accumulation of either soot or creosote build up in your chimney or inside the firebox.

7. Check your chimney system carefully before installation. If in doubt about its condition, contact a professional. Have your chimney inspected and cleaned regularly. A High Temperature Listed Chimney is required.
8. Do not connect your solid fuel appliance to a chimney flue already venting another appliance.
9. Dispose of cool ashes with care. Store in a non-combustible or metal container with a lid. Please read and follow all the instructions on page 17 of this manual for proper storage and disposal of ashes.
10. Comply with all minimum clearances to combustibles as they appear in this manual to prevent fire.
11. Comply with chimney manufacturer's required installation and parts.
12. Do not operate your fireplace with damaged firebrick.
13. Only operate your fireplace with the door fully closed.
14. A fire extinguisher should be on hand in case of fire. Be sure all members of your family are familiar with its location and operation. A smoke detector, in good working order, should be installed in the same room as the fireplace. Never leave small children unattended around a fire or hot fireplace.
15. The National Fire Protection Association has information available on factory-built fireplaces meeting UL 127 standards intended for installation with the NFPA standards for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances – NFPA 211. NFPA 90B, Standard for the Installation of Warm Air Heating and Air Conditioning Systems, may also be helpful. The contact information for the NFPA is as follows:

National Fire Protection Association
PO Box 9101
1 Batterymarch Park
Quincy, MA 02269-9101
www.nfpa.org

Components

Model 2850C

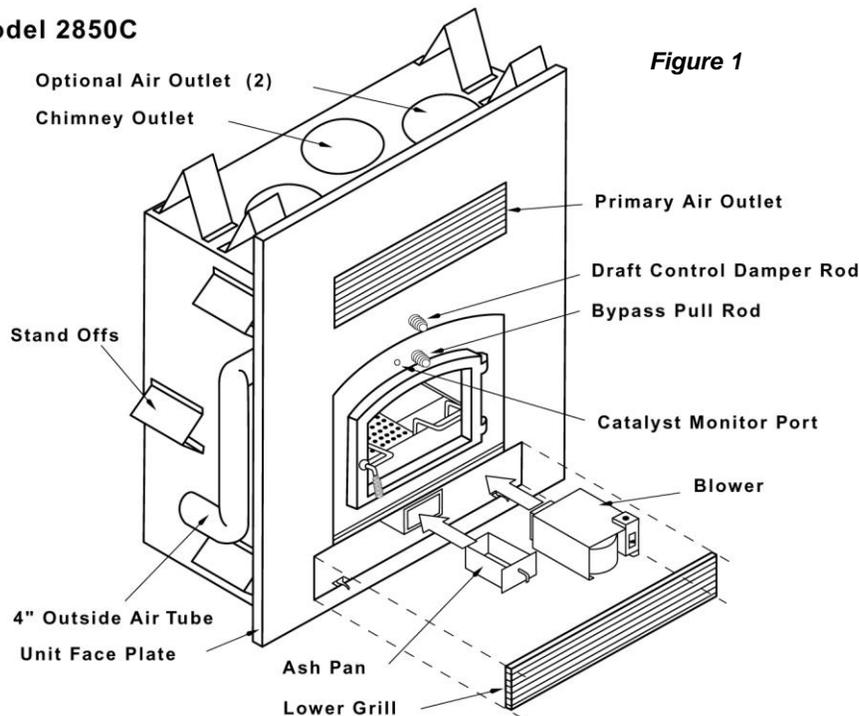


Figure 1

Familiarize yourself with the components of your fireplace before installation and operation. The installation and operation manual has been designed to assist you in installing, operating and maintaining your Energy King fireplace efficiently and safely.

6" Chimney Outlet. The Energy King fireplace must be vented by means of a 6" High Temperature Listed Chimney. In case of chimney offsets or marginal draft, use an 8" High Temperature Listed Chimney.

Primary Air Outlet Grill. Do not cover with brick, stone, or any other material – allows hot air out of the fireplace.

Draft Control Damper Rod. The damper control regulates the intensity of the fire by closing a damper plate in the Fresh Air Intake. Handle in vertical position – the damper is open and in a high burn mode. Handle in horizontal position – the damper is closed and in a low burn mode. You can set the damper to various settings between high and low burn.

Bypass Pull Rod (Model 2850C only). Located above the loading door. The bypass control should be pulled out all the way to allow smoke to bypass the catalytic combustor when first starting a fire and until the unit reaches the 500 degree F. necessary for light off. The catalytic bypass should also be pulled out all the way when loading the stove with fuel.

Catalyst Monitor Port (Model 2850C only). Minimum catalytic light off will not occur until the stove reaches 500 degrees F. The use of a magnetic thermometer, probe thermometer, or various digital readouts available on the market will be of help to you in determining if you have achieved the necessary temperature. The monitor port for the temperature monitor equipment is located above the bypass pull rod.

Blower. The optional three-speed blower has been added to provide you additional heating value. The thermostatically controlled blower has manual and automatic controls (see Figure 6).

Lower Grill. Provides access to blower, draft control, and ash pan. Keep area accessible. This grill also allows cool air to enter the bottom of the air chamber to circulate around the firebox.

Ash Pan. Designed for easy cleanup of fine ash accumulation. Do not operate the fireplace with the ash pan open. Keep it closed except to remove ashes. The ash pan has a gasket for an airtight seal. This gasket should be inspected to ensure that it is in good condition at all times. If this gasket becomes damaged, it must be replaced.

The ash pan is located behind the lower grill. Pull down on the lower grill to expose the ash pan located near the center. Turning the handle to the left will unlatch the ash pan; turning the handle to the right will lock it into place.

Fresh Air Intake – Combustion Air. A 4" flexible tube located on the left side of the fireplace supplies combustion air. DURING INSTALLATION, THIS 4" FLEXIBLE TUBE MUST BE VENTED TO THE OUTSIDE OF THE HOME AT A LEVEL EQUAL TO THE UNIT'S LOWER GRILL. FOR BASEMENT INSTALLATION, THE PROCEDURE OF VENTING AT THE BASE OF THE FIREPLACE MUST BE FOLLOWED BEFORE CONTINUING UP AND OUTSIDE YOUR HOME. COMBUSTION AIR INLET DUCTS MUST NOT TERMINATE IN THE ATTIC.

Standoffs. On the sides and back of the fireplace are sheet metal angles to show the safe clearances to combustible material. Top must remain open to the ceiling.

Fireplace Assembly

Firebrick Installation – Model 2800

Figure 2 shows how to install the firebrick for Silhouette Model 2800. The "A" bricks on the sides and back are full bricks – 9" x 4½" x 2". They stand vertically in the firebox and are put in first. The bricks on the floor are put in next starting in the left rear. The 2 narrow "C" bricks – 9" x 2" x 2" – are placed on each side in the front. Next place the cast grate in the center back of the firebox, and the "B" brick – 7" x 4½" x 2" – in the front. Keep all bricks tight to the back of the firebox. Next insert the steel wood retainer in the front of the box, with the long legs going in front of the bricks on the floor. This retainer must be in the fireplace at all times when in operation. Without this, damage will occur. Next, insert the "D" brick – 9" x 4½" x 1¼" – in the brick baffle. The bricks are held in place by a slot in the back of the firebox.

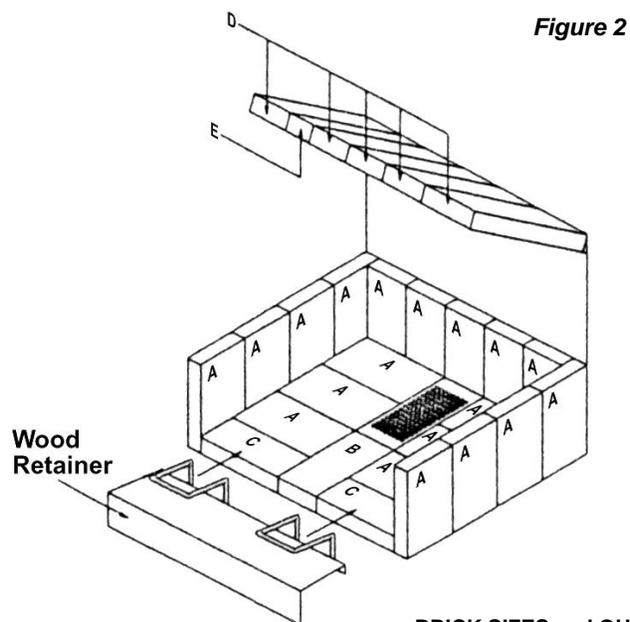


Figure 2

BRICK SIZES and QUANTITY	
A = 9 x 4½ x 2	19
B = 7 x 4½ x 2	1
C = 9 x 2 x 2	2
D = 9 x 4½ x 1¼	5
E = 9 x 4 x 1¼	1

Firebrick Installation – Model 2850C

Figure 3 shows how to install the firebrick for Silhouette Model 2850C. The bricks on the sides and back are full bricks – 9" x 4½" x 2". They stand vertically in the firebox and are put in first. The bricks on the floor are put in next, starting in the front by sliding the first 2 half bricks – 9" x 2" x 2" – under the steel wood retainer. Then place the cast grate over the ash pan opening and place remaining full bricks to cover the floor.

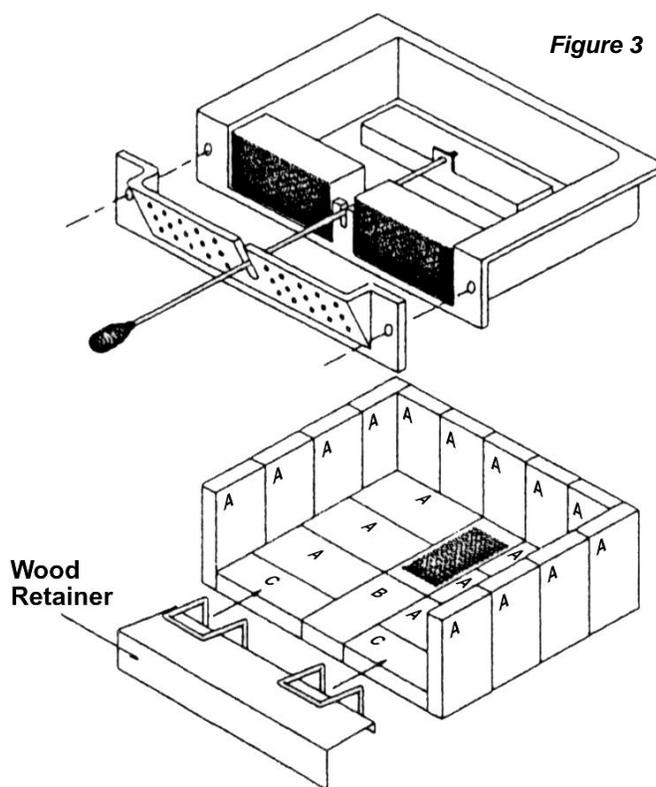


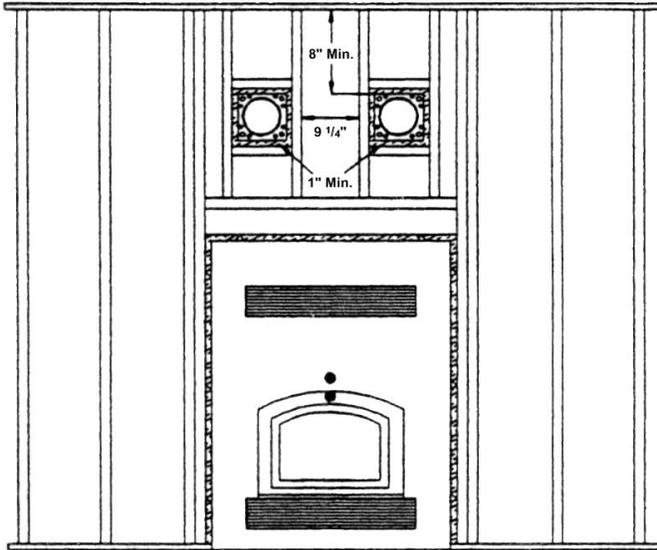
Figure 3

BRICK SIZES and QUANTITY	
A = 9 x 4½ x 2	19
B = 7 x 4½ x 2	1
C = 9 x 2 x 2	2

Optional Outlet Vents

Figure 4

OPTIONAL HEAT VENT INSTALLATION



A minimum of 1" must be maintained between stud and air vent.
A minimum of 8" must be maintained between ceiling and top of air vent.

Two optional heat outlets located on the top of the fireplace cabinet can be ducted to adjacent rooms using 8" B Vent pipe. Figures 4, 10, 12 and 15 show typical installation. Hot air vent kit (boot) supplied by Energy King is required. Grills must be a minimum of 8" from the ceiling. When framing around boot a minimum of 1" spaces from boot to studding is required. The vents CANNOT be installed lower than the top of the fireplace outlet (see Figure 15).

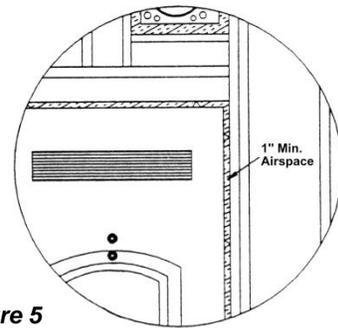


Figure 5

Optional Blower

Your Energy King Fireplace may be equipped with an optional 200CFM Blower. This can be installed by lowering the grill and placing the blower under the firebox on the right side. A tie strap is provided to clamp the blower assembly in place. Make sure the snap disc thermostat is in contact with the angle strap at the bottom of the firebox. The three wires from the fan are then connected to the power line.

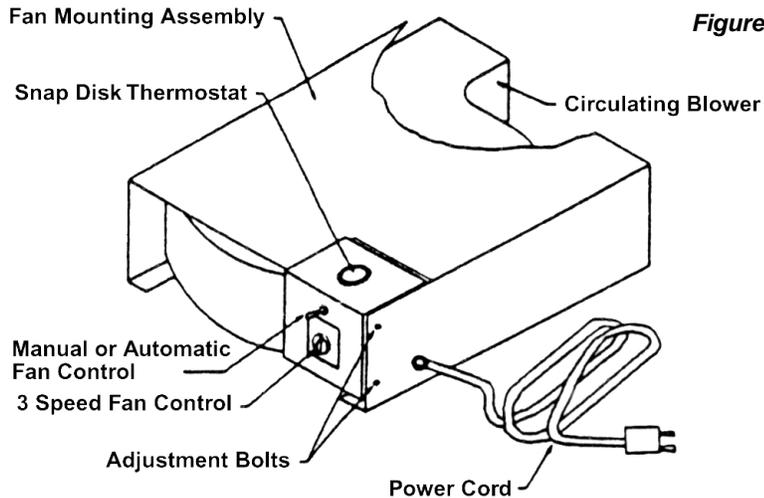


Figure 6

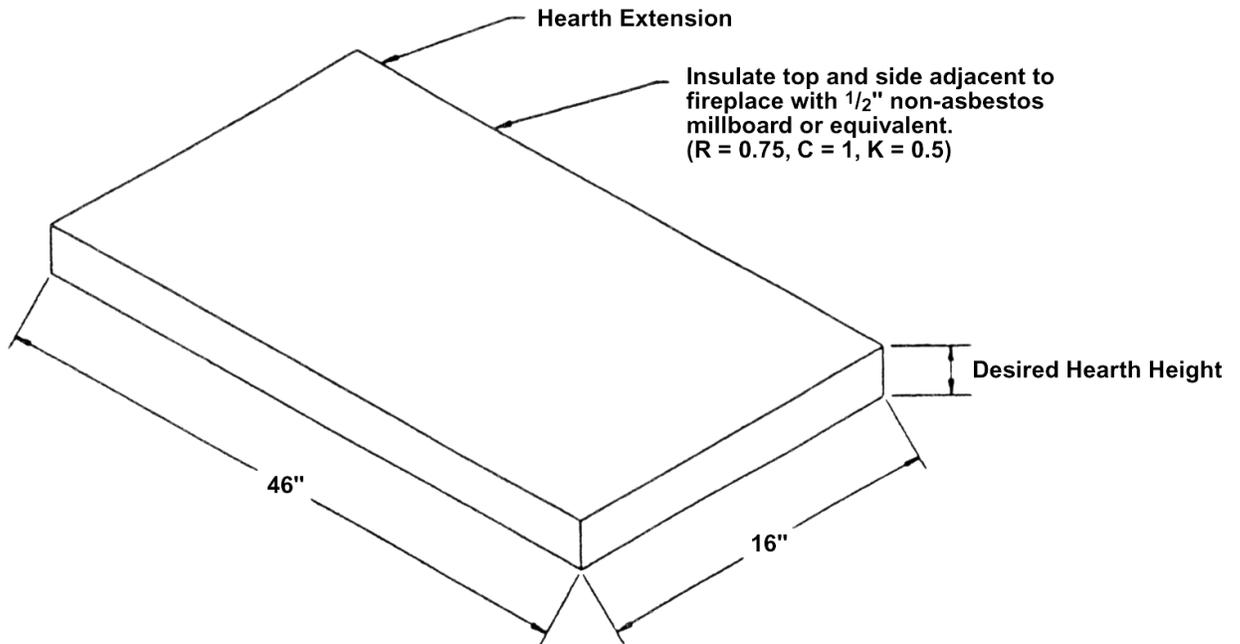
Rating: 120VAC/ 5 AMPS/ 50HZ 1/22 HP Shaded Pole RPM: 1360 - 1200 - 900
Manufacturer ID: Magneter #9471

A 2 x 4 junction box is to be mounted on the right side of the cabinet and supplied with 110 volt AC current. The snap disc thermostat located on the top of the blower assembly must be in contact with the bottom of the firebox. This can be adjusted by loosening the two adjustment bolts on the blower housing. Set snap disc thermostat to touch the bottom of the firebox and tighten the adjustment bolts (see Figure 6).

Hearth Extension

Installing Energy King's factory built fireplace on a combustible floor is approved as long as an area extending 16" in front of, and 8" to each side of the fuel opening is protected. Insulate this area with 1/2" non-asbestos millboard or equivalent (R Factor = 0.75, C = 1, K = 0.5)

Figure 7



Fireplace Installation

Clearances and Specifications

Minimum Clearances to Combustibles		Specifications	
Unit Base	0"	Unit Height	56 1/4"
Unit Sides	0"	Unit Width	48 1/2"
Unit to Backwall	2"	Unit Depth	26 1/4"
Top Front Framing Member on Edge	0"	Rough Opening	
Unit to Sidewall	0"	Width	49"
Air Outlet Vent to Mantel	11"	Height	57"
Outlet Air Grill To Mantel	11"	Depth	27"
Optional Remote Outlet Grills from Ceiling	8"	Flue Size	6" HT Listed Chimney
Faceplate to Sidewall	2"	Log Length	22"
Duct Boots to Framing Side	1"	Firebox Volume	
Wallboard to Faceplate Edge Perimeter	0"	Model 2800	2.8 Cu. Ft.
		Model 2850C	2.2 Cu. Ft.
		Glass Viewing Area	14" x 20"
		Unit Weight	650 lbs.

Figure 9

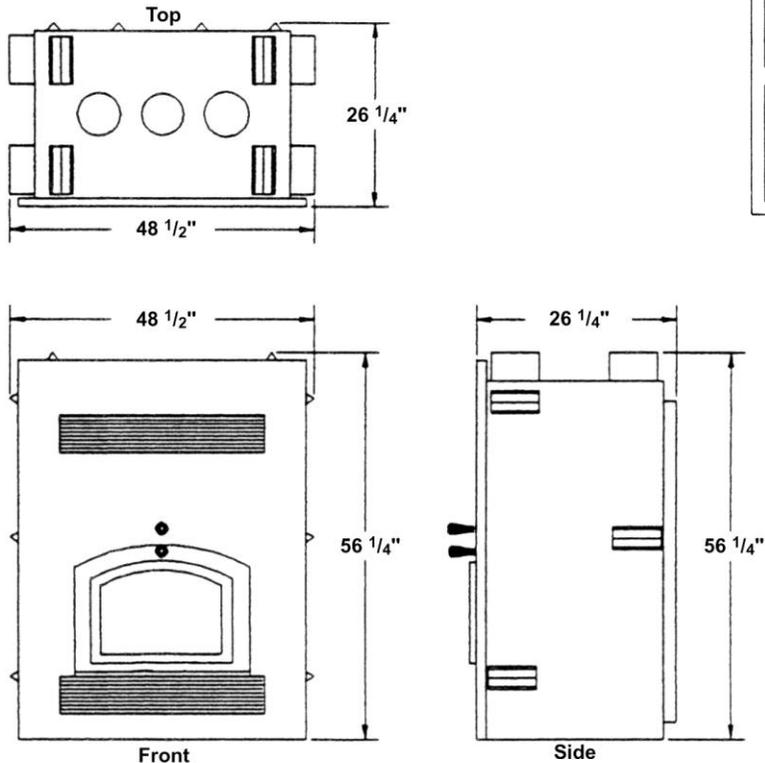
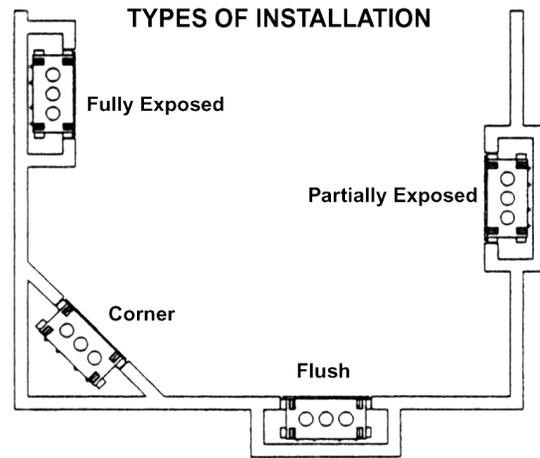


Figure 8



WARNING – DO NOT COVER OR INSULATE REQUIRED AIR SPACES

Installation

Installing an Energy King factory built fireplace is not a do-it-yourself project. Proper framing techniques and chimney installation must be followed. A qualified installer should install the Energy King fireplace and electrical wiring must conform to state and local codes.

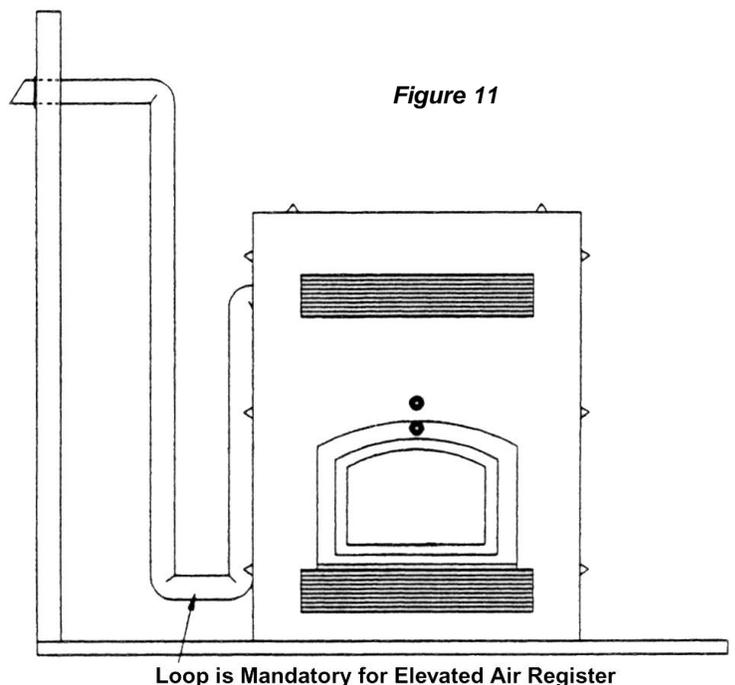
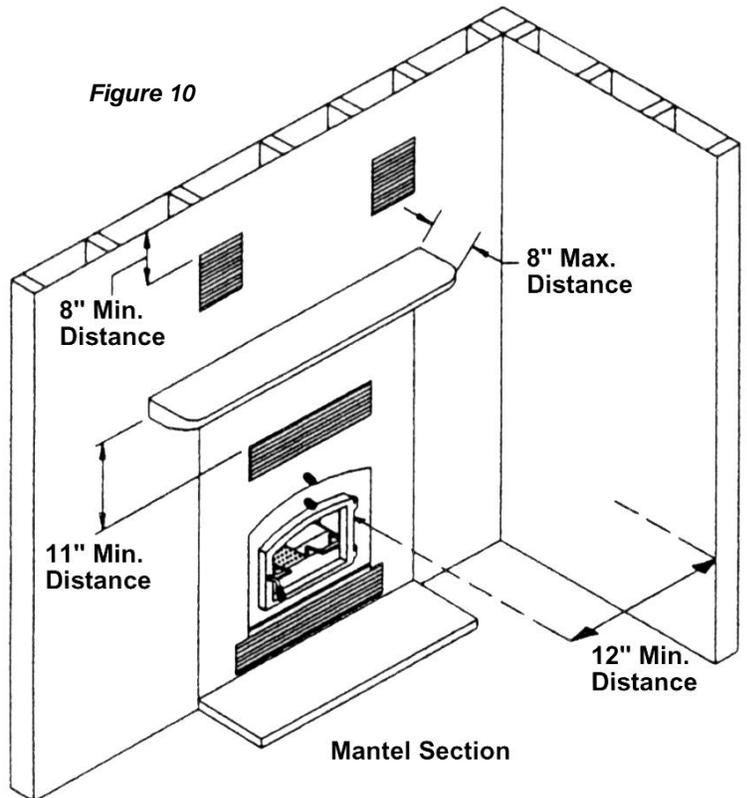
The fireplace can be placed on a wood floor. Do not install the fireplace on carpet or vinyl flooring. The unit can be installed in a variety of locations as it shows in Figure 8. The floor structure must be able to hold the weight of the fireplace (650 lbs.) plus framing, finishing materials and chimney weight.

You should consider the position of the floor joists and rafters when locating your fireplace. Proper clearances from doors, windows and electrical panels must be considered.

Clearances for the fireplace to adjacent walls should not be any closer than 12" (see Figure 10).

Air spaces on the fireplace on both the sides and back are 0" clearance to combustibles from the standoffs, and open from the top of the unit to the ceiling. Do not remove standoffs from the units. Studs and sheeting must be kept 0" from these index points. An opening 49" wide and 27" deep and open to the ceiling must be maintained (see Figures 9 and 15).

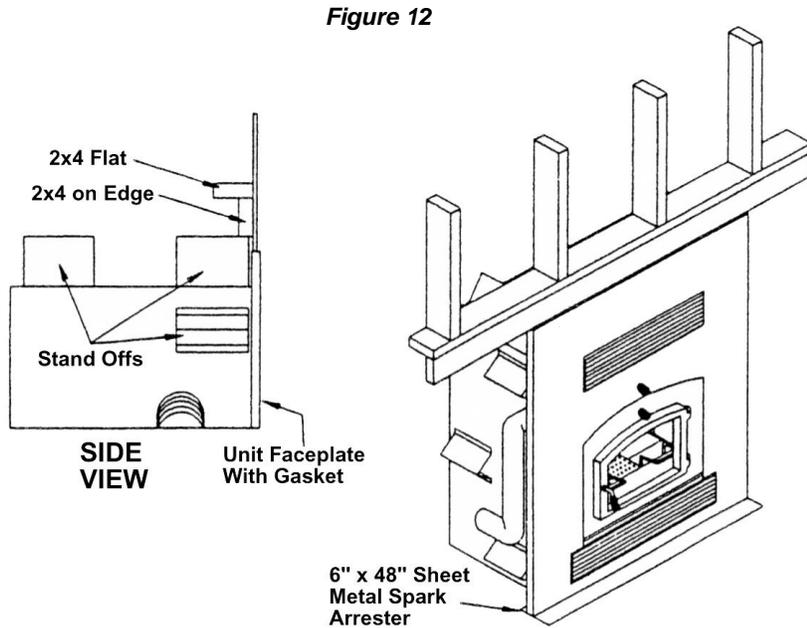
All fuel burning appliances require proper combustion air to operate and to avoid negative air pressure in your home. Negative air pressure will cause safety and operational problems. Outside air is required for your Energy King factory built fireplace and is supplied by a 4" flexible tube located on the left side of the fireplace. During installation, this 4" flexible tube must be vented to the outside of the home at a level equal to the lower grill. For basement installation the procedure of venting at the base of the fireplace must be followed before continuing up and outside. To prevent reduced airflow, do not crease or over bend the flexible pipe. If your fresh air run is over 16', you should use 6" diameter flex tube. Secure all junctions with clamps or screws. All internal runs should be insulated to eliminate condensation.



Framing

All construction materials, 2 x 4's, sheeting and insulation may only touch the sheet metal standoffs. The area between the standoffs CANNOT be filled with insulation (see Figures 4, 12 and 15).

A metal strap is placed in front of the fireplace half way under the faceplate (see Figure 12). This will prevent any hot ash from coming in contact with the flooring. Figure 4 and Figure 15 show an installation using the optional heat vents. Note how the studs only touch the standoffs. *The standoffs are used for identifying safe clearances – not for determining a load bearing point.*

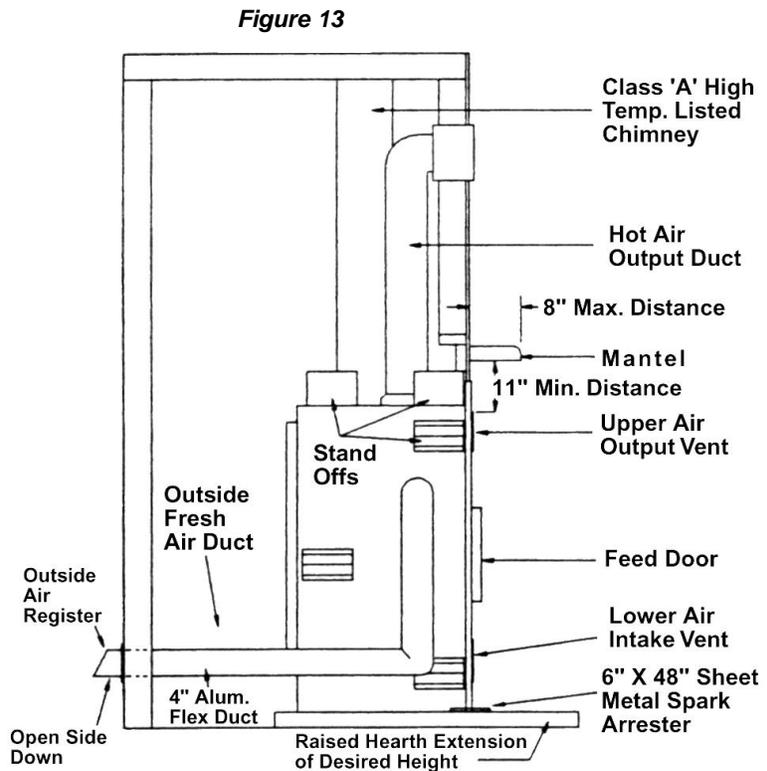


Framing over unit top.

Figure 12 shows proper framing over the top of the unit putting the first 2 x 4 on edge with the second 2 x 4 laying flat. The studs are placed vertically over the header working from the center of the fireplace outward, space first stud 8" from the center. This will give maximum clearances from the 6" HT Chimney. (When using the optional vents, framing is to be done as shown in Figure 4.) The studs on each side of the fireplace may touch the sheet metal standoff brackets. The next studs will be placed a minimum of 12" from the unit faceplate to fasten the durarock or other non-combustible sheeting. When the unit is not face bricked, the only trim that can be used is the optional anodized aluminum available through Energy King.

Mantel

A mantel may be mounted above the fireplace provided a minimum of 11" of clearance above the upper vent is allowed. The mantel may not extend more than 8" from the face of the fireplace.

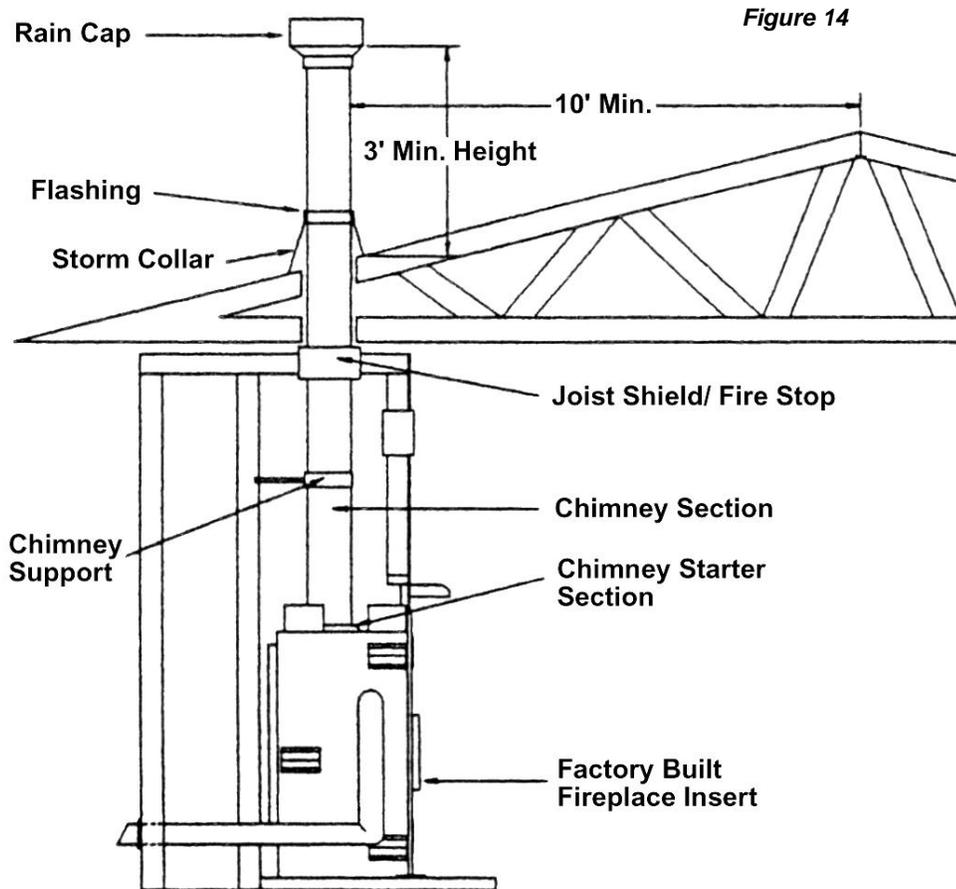


Venting System

Energy King's factory built fireplace is designed to operate on a variety of 6" HT tested chimneys. Figure 14 shows a typical installation. When installing the HT chimney, follow the chimney manufacturer's installation instructions. All chimney sections must be secured. The anchor plate, which is supplied by the chimney manufacturer, must be sealed and fastened to the unit top with 4 screws and sealed with high temperature silicone sealer.

The chimney must be a minimum of 12' overall height with a minimum of 3' above the roofline and 2' above any obstructions within 10' (see Figure 14 below). The minimum draft of the fireplace is .06" of water column.

A straight chimney is best. Up to two 30-degree elbows can be used for offsets.



All chimney installations must be installed in accordance with chimney manufacturer's requirements.

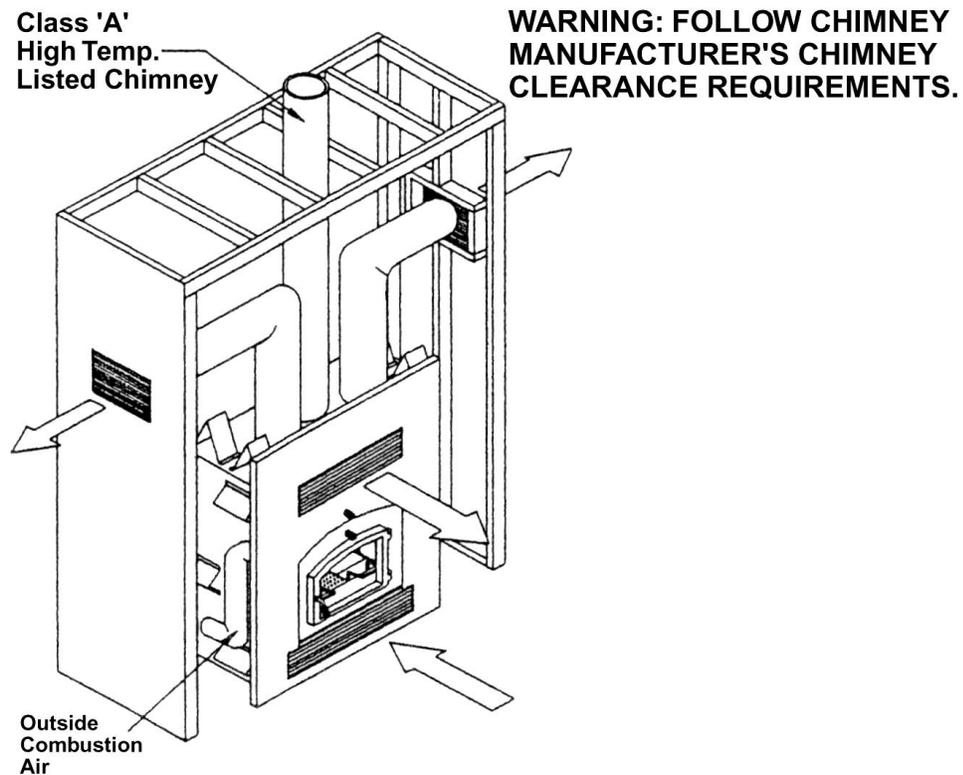
Chimney

Use only listed type HT chimney for this fireplace. Do not vent any other appliances through this chimney system. Follow the chimney manufacturer's instructions for proper installation of the chimney. Be sure the chimney system has an anchor plate available for the fireplace. See Figure 14 above for chimney height requirements. In case of chimney offsets or marginal draft, use an 8" High Temperature Listed Chimney.

Firestop

Be sure all firestops are in the proper location.

Figure 15



Types of Wood

Wood is our nation's primary renewable fuel source. There are two basic types of wood available. Choosing the kind of firewood to burn in your stove depends on what is available to you.

Softwoods, such as pine and fir, are easily ignited and burn rapidly with hot flames. But, since they burn so easily and quickly, you will have to spend more time loading your stove. With softwoods, it will be much more difficult to achieve an overnight burn.

Hardwoods – such as ash, beech, birch, maple and oak – are denser and provide a longer lasting fire.

Season your wood. Allow wood to dry out (reducing water content in wood) for at least one year. Purchase or cut wood, stack under a cover, but allow air circulation for drying wood. Store wood at least three feet away from the fireplace.

If processed solid fuel firelogs are used, do not poke or stir the logs while they are burning. Use only firelogs that have been evaluated for the application in the fireplace and refer to firelog warnings and caution markings on packaging prior to use.

Do not burn wood that has been chemically treated or altered from its natural state.

NEVER OPERATE THE FIREPLACE WITH THE FUEL DOOR OR ASH PAN OPEN.

Warnings

This heater is designed to burn natural wood only. Higher efficiencies and lower emissions generally result when burning air dried, seasoned hardwood, as compared to softwood or green or freshly cut hardwoods.

DO NOT BURN

Treated wood
Colored paper
Garbage
Cardboard
Solvents
Coal
Trash

Burning treated wood, garbage, solvents, colored paper or trash may result in release of toxic fumes and may poison or render ineffective the catalytic combustor.

Burning coal, cardboard, or loose paper can produce soot, or large flakes of char or fly ash that can coat the combustor, causing smoke spillage into the room, and rendering the combustor ineffective.

Backpuffing – Smoke from closed fuel door

If smoke enters the room when the fireplace door is closed, check for the following causes:

1. Proper draft has not had time to establish.
Open draft control.
2. Blockage in the fireplace, stovepipe or chimney.
3. Leaks in the chimney.
4. Cold outside chimney.
5. Chimney is too short.
6. Chimney is too close to trees or a nearby high roof.

Overfire

Never operate the unit with fuel door or ash pan open.

Do not overfire. Using flammable liquids, too much wood, or burning trash in the fireplace, may result in overfiring. If the chimney connector or fireplace glows red or even worse, white, the stove is overfired. This condition may ignite creosote in the chimney, possibly causing a house fire.

If you overfire, immediately close the fireplace damper and doors to reduce the air supply to the fire. Call the Fire Department immediately. **DO NOT OPERATE THE STOVE AGAIN UNTIL IT IS DETERMINED THAT THE CHIMNEY AND ITS LINING HAVE NOT BEEN DAMAGED AND ARE SAFE.**

Initial Fire – Curing the Paint

You will need to cure painted surfaces on your Energy King fireplace. For the first few fires, adjust the damper control to medium fire position after ignition. This will allow the paint to cure in an even manner. You may notice small amounts of paint fumes on initial fires. Only operate the fireplace with the door fully closed.

Starting a Fire – Model 2800

NEVER START A FIRE WITH A FLAMMABLE LIQUID.

Start by placing loosely crumpled paper on the firebox floor and cover with dry kindling. Open the draft control completely, and light the fire. (Draft control is located above the glass door.) After a fire is established, add more dry wood and close the draft control partially to adjust the burn rate.

Adding wood should be done moderately as the fire progresses. To prevent smoke spillage when refueling, turn the draft control (located above the glass door) to the left to open completely. Handle will be in a full vertical position. Wait for a minute, and proceed to reload your fireplace with wood. Close fuel door and turn the draft control handle to the right to achieve a desired burn rate.

Operating Your Silhouette Model 2850C

What is a Catalytic Woodstove?

A catalytic combustor is an element which, when used properly in a woodburning appliance, will “burn” smoke, carbon monoxide and particulate which are not burned by the fire. Think of it as an “after burner” which, because of a “catalyst,” chemically breaks down smoke, carbon monoxide and particulate into substances that are burned at a low temperature.

Using Your Catalytic Woodstove

The most important thing to remember when operating a catalytic combustor equipped stove or insert is to make sure you have achieved catalytic light off before you place the unit into the catalytic operational mode. Light off simply means that you have achieved enough temperature within your unit to start the catalytic combustor operating.

Catalytic burning, like all types of burning, requires three essential elements: fuel, oxygen and temperature. The “smoke” is the fuel. The temperature needed to begin catalytic activity is generally 500 to 700 degrees F. This is a temperature that is easily achieved when you build a fresh fire or when you reload your existing fire.

The use of a magnetic thermometer, a probe thermometer, or various digital readouts available on the market today will be of help to you in determining if you have achieved the necessary temperature. The monitor port for the temperature monitor equipment is located 2” to the left of the bypass pull rod.

Your Energy King stove is equipped with a bypass mechanism, located above the door. The bypass allows you to “bypass” the smoke around the combustor when you do not have the necessary 500 degrees to start catalytic activity or when you are reloading your stove. To aid in catalytic light off, coals should be moved aside at

the front of the door opening and a tunnel made under the fuel.

The other important thing to remember when operating a catalytic combustor equipped device (or any wood burning device) is to burn seasoned, dry wood only and not to use your wood burning stove or insert as a “garbage incinerator.” A “catalyst” is an element that causes something to happen under conditions by which they would not normally happen, without being consumed or used up by the reaction. In a wood burning appliance, this simply means that the catalyst is allowing the smoke to be burned at 500 to 700 degrees F. rather than the normal 1,100 to 1,200 degrees F. that it would take to burn all elements.

There are elements in garbage, other than dried, seasoned wood that the catalyst will not react with. Some of these elements are lead, sulfur, etc., and as they come in contact with the catalyst, they stick to it, covering it up, so that the elements in wood smoke such as hydrocarbons, particulate and carbon monoxide cannot contact the catalyst and are not burned. This process is referred to as “poisoning”, and after a period, the catalyst is covered and your catalytic combustor will no longer work. How long this process will take to completely cover all the catalyst depends on what you burn in our stove.

Troubleshooting Your Catalytic Combustor

Problem: Creosote accumulation or dirty smoke from the chimney

Possible causes	Solution(s)
You are not getting light off in the combustor.	Make sure you have achieved 500 degrees F. (necessary for light off) before engaging the combustor.
You are burning wet wood or improper fuels.	Burn only dry, seasoned wood.
Your bypass mechanism is not fully closing, allowing the smoke to go around the combustor rather than through the combustor.	When the stove is not burning, make sure that the bypass mechanism is closing fully and that there are no obstructions Replace your catalytic combustor.

Problem: Plugged combustor

Possible causes	Solution(s)
You did not achieve light off temperature prior to closing your bypass mechanism and engaging your combustor.	Make sure you have at least 500 degrees F. (necessary for light off) before you engage the combustor.
You are burning materials that are coating the catalyst, such as heavy papers, wet wood, garbage, etc.	Burn only dry, seasoned wood. Lightly brush the face of the combustor with a soft bristle brush, such as a paintbrush, to remove the accumulation. Then build a hot fire in your stove, engage the combustor half way, then two-thirds, then fully to burn the accumulation off the combustor.
Your catalytic combustor is no longer functioning and needs to be replaced.	Replace your catalytic combustor.

How do I know my catalytic combustor is working?

Ask yourself the following questions. If your answers are yes, your catalytic combustor is working properly.

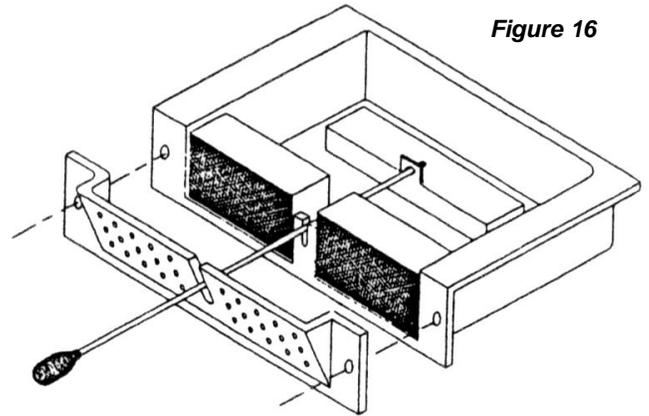
1. Am I burning less wood to get the same amount of heat?
2. Does my combustor glow red for a short amount of the time (approximately 1-1/2 hours) during my wood load?
3. Is there substantially less creosote in my chimney?
4. Is the smoke exiting my chimney white in color and usually odorless?
5. Does a visual inspection of the combustor show it to be clean of any fly ash, creosote or soot?

If the answer to any of the above questions is no, the solutions outlined previously may help you to activate your combustor again.

Replacing Your Catalytic Combustor

Visually inspect the catalytic combustor at least three times during the heating season to determine if physical deterioration has occurred. Only replace the combustor if it is damaged or no longer operating and use only Applied Ceramics Combustors. (See Applied Ceramics Warranty for information on replacement.)

The Energy King fireplace has two catalytic combustors. To replace combustors, look up inside the stove and locate the catalytic combustor retainer plate with holes across its surface. Remove the bolts on each side of the plate and remove the plate. Next, remove the catalytic combustors. Position the replacement catalytic combustors snugly and replace the retainer plate, tightly bolting the plate on both sides.



Starting a Fire – Model 2850C

1. Before building a fire, open the bypass, located above the door, to the open position by pulling it all the way out.
2. Open the air control, located above the door, by turning it all the way to the left.
3. Start your fire with paper and kindling on the firebrick refractory hearth. Do not elevate the fire with grates or andirons.
4. Once the fire establishes coals, move the coals aside at the front of the door opening and form a tunnel under the fuel. This will help light off to occur.
5. Add wood to the fire.
6. Continue to burn your fire with the air control fully open for 20 to 45 minutes. This ensures that the stove, catalyst, and fuel are all stabilized to proper operating temperature. Even though it is possible to have gas temperatures reach 600 degrees F. within two or three minutes after a fire is started, if the fire is allowed to die down immediately, it may go out or the combustor may stop working. Once the combustor starts working, heat generated in it by burning the smoke will keep it working.
7. Close the bypass when the fuel load is burning.
8. Close the air control half way for maximum fuel efficiency and burn time.
9. When fueling your Energy King, open the bypass and air control all the way and wait a short time before opening the door. This will eliminate the risk of flame and smoke spillage.
10. Once the stove is fueled, reset the bypass to the closed position, and the air control to medium.
11. During the refueling and rekindling of a cool fire, or a fire that has burned down to the charcoal phase, operate the stove at a medium to high fire rate for about ten minutes to ensure that the catalyst reaches approximately 600 degrees F.

Maintaining Your Silhouette Fireplace (All Models)

At the end of each heating season, clean the chimney. Vacuum out any ash accumulation. Replace any worn gaskets or broken firebrick.

Disposal of Ashes

Ashes should be placed in a metal container with a tight-fitting lid. The closed container of ashes should be placed on a non-combustible floor or on the ground, well away from all combustible materials. If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders are thoroughly cool.

Creosote – Formation and Need for Removal

When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cool chimney flue of a newly started fire or from a slow burning fire. Therefore, creosote residue accumulates on the flue lining. When ignited, this creosote makes an extremely hot fire that may damage the chimney or even destroy the house.

The chimney connector and chimney should be inspected at least twice a year during the heating season to determine if a creosote buildup has occurred. If creosote has accumulated, it should be removed to reduce the risk of a chimney fire.

Care of Glass

Your Energy King is equipped with a super heat resistant glass, available through your Energy King retailer. The glass can only be broken by impact or misuse. Never slam the door or impact the glass. When loading fuel, be sure logs don't touch the glass.

In case of breakage, glass must be replaced with a high temperature glass such as Robax. Tempered or ordinary glass will not withstand the high temperatures of the Energy King fireplace. Do not operate the unit with cracked or broken glass. Replacement glass should be purchased

from your Energy King retailer or **[MANUFACTURER NAME]**. To remove the broken or damaged glass panel, remove the glass retaining clips and carefully remove the glass panel. Insert the replacement glass and attach the glass retaining clips.

The glass should be cleaned with a non-abrasive glass cleaner. Abrasive cleaners may scratch and cause the glass to crack. Do not clean the glass when it is hot.

Care of Gold

Gold must be cleaned with a window cleaning solution before the initial burn. Fingerprints and other oils will permanently bake into the finish. Do not use an abrasive cleaner.

Care of Blower

CAUTION: MOVING PARTS MAY CAUSE INJURY. DO NOT OPERATE UNIT WITH COVER PLATE REMOVED.

The blower assembly can be easily removed by following these procedures: Disconnect power, remove the clamping bolt located under the blower assembly, and pull out approximately 4". Remove the wire nuts that connect the power cord. (Black, white and green wire.) On the ends of the motor shaft are oil slots – oil using only 3 or 4 drops of oil. **EXCESS OIL WILL DAMAGE THE MOTOR.** Place unit back into the opening, connect wires (black-to-black, white-to-white, green-to-mechanical ground). Place unit in the rest of the way to the back fan stop. Check to be sure wires are not cut or connections have not become loose. Place clamp bar over bolt and tighten down. Connect power cord. Unit should now be ready to operate.

Gasket Replacement

Door and glass gaskets need to be replaced on an annual basis to ensure that the stove remains airtight. Failure of the door or glass gaskets will allow additional air to enter the stove and drastically decrease the burn time of your fuel.

To check for gasket failure, start a fire in the stove. Once you have a well established fire, damper the stove down. Next take a lit match and direct it along the edge of the door and stove. Do the same along the inside edge of the door and glass. If you notice the flame from the match being drawn to the gap, there is an air leak in the gasket and it needs to be replaced.

Door Gasket. To replace the door gasket, simply remove the door and lay it face down on a clean soft surface, such as a towel. Find the ends of the gasket and pull it off. Take a screwdriver and remove excess gasket glue from the channel. Take new stove gasket cement (available at your local woodstove retailer or

hardware store) and lay a medium to heavy bead around the gasket channel. Take the new door gasket (also available at your local woodstove retailer or hardware store) and lay it in the channel. Cut off any excess gasket rope. Reattach door and seal. Leave the door closed until the gasket cement dries.

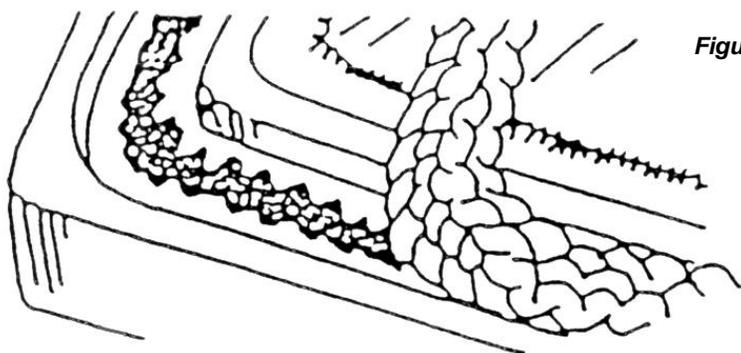


Figure 17

Glass Gasket. To replace the glass gasket, remove the glass retaining clips along the inside of the stove door. Remove the glass. Remove the old gasket by pulling it off. Take the new

gasket (available at your local woodstove dealer) and peel off the protective paper. Place the new gasket around the edge of the glass. Trim off any excess gasket. Replace glass and clips.

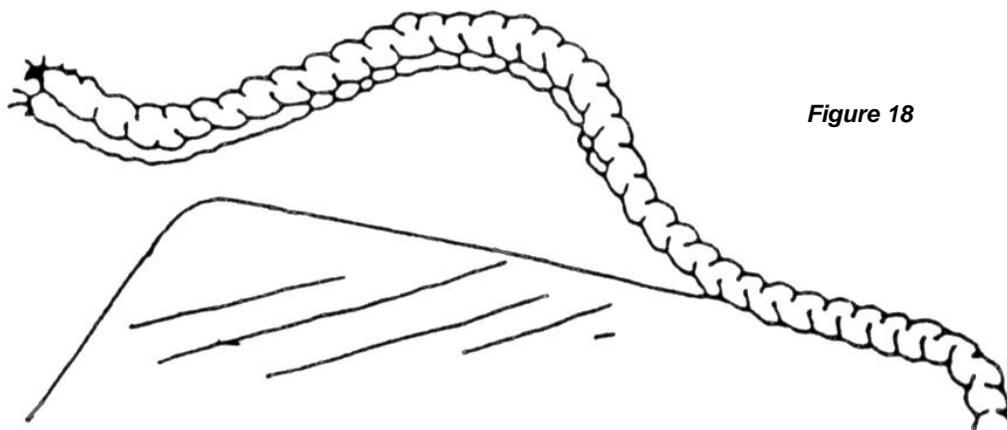


Figure 18

Troubleshooting Guide

Unit does not burn properly

1. Check the wood; it must be dry. If moisture is sizzling out the end, the wood is too wet.
2. Test the draft. It should be .05/.06 (inches of water column).
3. Check to make sure the flue is not obstructed. Also check the baffle area in the unit for excessive ash buildup.
4. Check the airflow in the room. If it is too airtight, the unit cannot get enough combustion air to burn properly. You may need to bring outside air to the furnace or stove.
5. Check the chimney and stovepipe. They need to be airtight to make the unit draft properly.
6. Check that only one appliance is hooked to the chimney.
7. Check the chimney for a downdraft. A cold chimney will keep flue gases from rising up the chimney. Proper insulation of chimney and/or installing a stainless steel liner sized for the unit may remedy the problem.
8. Check your chimney for downdraft caused by taller surrounding trees or buildings. The chimney may have to be extended or a chimney vent cap installed.
9. Check all gaskets for leaks: Door gaskets, glass gaskets, ash drawer or door gaskets (where applicable).

Unit does not give off enough heat

Is the unit installed correctly?

1. Check to see if the unit has an adequate cold air return or inadequate hot air outlet.
2. Room may be too airtight, inadequate combustion air or return air.
3. Flue draft may be inadequate or too strong - .05/.06 (inches of water column) recommended.
4. Door gaskets may be leaking. In addition, glass gaskets, ash drawers or door gasket should be checked for leakage.
5. Check flue. Make sure it is not obstructed.
6. Check ductwork for leaks – cold and hot air ducts.

Unit is making noise/distribution blower is vibrating

With electrical power disconnected, check the following:

1. Check for loose parts.
2. Is the blower wheel contacting the housing? If so, realign or replace as required.
3. Is foreign material inside the housing?
4. Is there a leak in the ductwork or is there loose ductwork?
5. Does the blower wheel/motor need to be cleaned or serviced?
6. Is the blower wheel set screw loose? If so, secure it properly.

Maintenance of blower assembly: *After disconnecting the power source* –

- a) Remove dirt from blower wheel and housing.
- b) Check tightness of wheel set screw.
- c) Check the wiring to see if it is secure and well insulated.
- d) Lubricate the motor according to the manufacturer's instructions. Remove any excess lubricants.

Blower is not working

1. Check for blown fuse or open circuit breaker.
 2. Insufficient air flow
 - a) Motor speed is too low (multi-speed units only).
 - b) Leaks in ductwork.
 - c) Dampers and/or registers closed.
 - d) Obstruction in system
 - e) Clogged filters.
 3. Too much air flow
 - a) Filters not in place (where applicable).
 - b) Motor speed too fast (multi-speed units only).
 - c) Registers or grills not installed.
 - d) Insufficient static pressure (SP). Check your static pressure (SP) calculations and correct system accordingly.
 4. Motor overloaded – System static pressure too low. Check and correct system.
-
5. Thermostat is not opening damper (or turning on forced draft fan).
 - a) Check wall thermostat.
 - b) Check the thermostat wires (possible short or broken wire).
 - c) Check wire connections.
 - d) Make sure heated area is calling for heat.
 - e) Check damper assembly so that all parts move freely.
 - f) Damper motor or forced draft fan improperly wired – compare wiring on the unit to the schematic in the manual.
 6. Excessive creosote
 - a) Make sure the units smoke pipe is vented into its own proper chimney.
 - b) Check length of flue pipe and all connections. Offsets in flue pipe will slow flue gases down causing buildup.
 - c) Slow fires with excessive amounts of fuel can cause creosote buildup in smoke pipe and chimney.

Use and Maintenance of a Catalyst

1. Do not “Hot Fire” the stove. For many years, retailers and installers have advised customers to build an extra hot fire to burn the creosote deposits in the flue system. This advice may be acceptable for non-cat stoves, but can be death to a catalyst. Why? Because the catalyst is reducing the particulate, or creosote buildup, therefore, the need to Hot Fire is eliminated. Also, see point #2.
2. Direct Flame contact is death to a catalyst. A catalyst burns the byproducts in the smoke. The gases such as CO, HC, and O₂ ignite with each other in the presence of the catalyst, (while passing through the honeycomb configuration). This is a chemical reaction. Direct flame inhibits this reaction by changing the chemical makeup of the catalyst. The flame also breaks down the substrate or ceramic. This problem is called flame impingement. Today’s modern stoves are designed so that flame impingement is unlikely. However, a strong, fast draft can pull the flame into the catalyst. Or a “hot fire,” with all the air controls and/or the ash door open, can literally torch the catalyst. Controlling the draft also can reduce fly ash problems.
3. The “Glow” misconception: A catalyst can glow during certain stages of combustion. The determination that a catalyst is not working simply because it does not “glow” is inaccurate. During the low burn cycle, when the catalyst is doing the bulk of its work, it usually does not glow. Also extremely dry wood (oak, ash, etc.) can burn clean enough not to produce a glow in the converter.
4. Light off Temperature: CO conversion in the Applied Ceramics catalyst begins at a very low temperature. Usually a normal startup to produce a coal bed will produce more than sufficient temperatures to begin catalytic combustion.
5. The catalyst is not consumed or “used up”. The nature of a catalytic reaction is defined as follows, by The American Heritage Dictionary, Second College Edition:

Cat.a.lyst n. 1. Chem. A substance, usually present in small amounts relative to reactants, that modifies and especially increases the rate of a chemical reaction without being consumed in the process.

6. Why does a catalyst stop working? Most catalysts that are returned either are destroyed by flame impingement, broken due to accidents or mishandling, or have nothing wrong with them but fly ash buildup.

A catalyst can be “saturated” with byproducts of wood burning such as potassium. This is chemical saturation. The prohibitive chemical will fill in the chemical “holes” that the gases normally use for reaction. This process of “saturation” can be slowed by regular maintenance of the catalyst. “Saturation” can take several years. Burning garbage, painted woods, or large amounts of colored paper can poison your unit. Poisoning however is very difficult to do. Burning colored paper causes more of a fly ash problem than a risk of poisoning. **NEVER BURN RUBBER OR PLASTIC.**

When a catalyst has ceased to be effective, you will notice increased fuel usage and your chimney sweep will notice increased creosote in your system. Before you replace the unit, review this sheet. If you find that your catalyst should be replaced, follow the instructions for warranty replacement that were provided when your unit was purchased.

Cleaning the catalyst with plain water can reduce buildup of the catalyst – retarding chemicals. Nothing but a soft brush, low-pressured air or plain water should be used to clean a catalyst. The ceramic unit is fragile in comparison to the rest of the stove – so it should be handled with care. A soak in warm or hot (not boiling water) for 20 minutes is ideal. Then allow the unit to cool at room temperature and rinse under medium pressure under a faucet. Allow the unit to thoroughly dry before reinstalling it or you will damage it. Then reinstall the unit according to the stove maker’s or retrofit manufacturer’s instructions. A cleaning once every year is sufficient for most users. Clean it when you have your flue system cleaned.

Frequently asked questions

- Q. "How can I tell if I am operating my woodstove properly?"
- R. Check the exhaust coming out of your woodstove chimney. The smoke is your operational barometer. If your fire is burning properly, you should only see the white transparent steam of evaporating water, darker and opaque smoke will only be slightly visible. The darker the color of the exhaust, the less efficiently you are operating the appliance. It may be necessary to adjust the operation of your woodstove to decrease the opacity of the exhaust (that is, the density of the smoke).
- Q. "Once I have preheated my chimney, how should I operate the stove?"
- R. Although all woodstoves require preheating during startup and reloading, their operation afterwards vary somewhat. Woodstoves that use catalytic combustors require the monitoring of temperatures and air supply to ensure that the catalyst engages at appropriate times in the combustion cycle. Generally, catalytic stoves require lower combustion temperatures in the firebox to burn cleanly. At 500-1000 degrees F., the catalyst ignites, burning the volatile gases and particulate. Noncatalytic stoves attain much higher temperatures in the combustion path before the gases and particulate burn. Always refer to your woodstove manufacturer's operation manual and follow the instructions for your particular make and model.
- Q. Do I operate my stove differently in cold vs. warm weather conditions?"
- R. Yes, during the warmer seasons of spring and fall, control the total heat output by limiting the amount of fuel (wood) rather than by closing down the air supply. Make shorter, hot fires using more finely split wood. The actual air supply setting will vary according to your stove instructions, but the fuel loadings will be consistently smaller. Let the fire burn out rather than smolder at low air supply settings. When your home requires more heat, restart the fire with kindling as always, but add smaller fuel loads. This allows your stove to operate at maximum efficiency and with minimum emissions. Avoid the temptation of building a big fire and then starving it for air.

- Q. "Is it important to have my stove and chimney cleaned?"
- R. Smoke rising through your chimney may condense and build up on the cooler inside walls forming a substance known as creosote. This volatile substance can ignite and burn in the chimney. Many chimneys and installations are unable to withstand these dangerous creosote fires; the results can be tragic.
- Q. "How often should I have my chimney inspected and cleaned?"
- R. A professional, certified chimney sweep should inspect and clean your flue system regularly. Frequent stove use may require monthly chimney inspection and cleaning while even minimal use will require annual servicing.
- Woodstove connectors (stovepipes) should be checked as often as every 2-4 weeks. Your chimney sweep can show you the proper methods for these more frequent inspections.
- Q. "Does it matter what kind of wood I use?"
- R. Your fuel supply should consist of a mixture of hardwoods, like maple or oak, and softwoods, such as fir and pine. When first starting your fire, use softwoods. They ignite easily and burn rapidly with a hot flame. Hardwoods provide a longer lasting fire and are best used after pre-heating the chimney. If hardwoods are unavailable, you can control your fire's burn rate by using larger pieces of wood.
- Q. "Is it important to season wood before burning it?"
- R. The seasoning, or drying, process allows most of the natural moisture found in wood to evaporate, making it easier to burn. A properly seasoned log will have 20%-30% moisture content.

Wood only dries from the surface inward; unsplit pieces dry very slowly. To properly season wood, split the logs as soon as possible and stack them in a dry spot for 6-18 months. Pile the wood loosely, allowing air to circulate through the split logs. Hardwoods take longer to dry than softwoods. Humidity and temperature levels also will impact drying time.

- Q. "What's the best way to load wood into my stove?"
- R. Avoid placing pieces of wood in parallel directions, where they may stack too closely. Vary the position of the wood in the firebox to maximize the exposed surface area of each piece of wood. Only use wood properly sized for your stove's fire chamber. Complete wood combustion requires wood (fuel), temperature (heat), and oxygen (air) to burn completely and cleanly.
- Q. "Is there anything I shouldn't burn?"
- R. Never burn garbage, plastic, foil, or any kind of chemically treated or painted wood. They all produce noxious fumes that are dangerous and highly polluting. Additionally, if you have a catalytic stove, the residue from burning plastics may clog the catalytic combustor.

- Q. "When installing a woodstove, what's the first thing I should consider?"
- R. The woodstove and chimney work as a system. It is important that the stove's chimney system be sized properly, according to the manufacturer's instructions. Whether venting into a masonry or metal system, make sure the diameter of the chimney matches closely, but never smaller than, the size of the stove's flue outlet. Doing anything else adversely impacts emissions and safety.
- Q. "Can I install my own stove, or should I have the installation done professionally?"
- R. Preferably, a certified professional should install your stove. More than likely, this technician is familiar with your model and has installed many others like it. This experience can save you time, money and frustration in the long run. Plus, it gives you the confidence that your stove is installed properly and safely.

For owners who choose to install their own woodstoves, follow the manufacturer's instructions explicitly. **NEVER** proceed without professional advice if you have a question.