An Idea America's Warming Up To

Fisher Stoves®

OWNER'S MANUAL

ASSEMBLY / INSTALLATION / OPERATION

MAINTENANCE PROCEDURES

Bear Series: Baby Bear Mama Bear Papa Bear

Fireplace Series: Grandma Bear & Grandpa Bear

A Fisher Stove Authorized Dealer

Fisher Stoves
OF PENNSYLVANIA, INC.
PO. Box 195
Factoryville, Pa. 18419

Phone: 717-945-3021

. . .for purchasing a FISHER STOVE and welcome to the growing family of wood-burning stove owners. Considering the cost of oil, gas and electric heat, it's easy to see why hundreds of thousands of homeowners across North America have recently installed a wood stove.

The FISHER STOVE is not an ordinary wood stove. It has incorporated into its design a unique two-step combustion chamber which re-circulates wood gases back into the flames for almost total combustion. The result is more heat and fewer ashes.

Other outstanding features include a triple-sealed door which helps keep air out—smoke in; firebrick lining to eliminate burn-outs; two cooking surfaces with two temperatures; patented spin draft controls and virtually airtight construction to control the amount of air actually reaching the fire. Its carefully welded mild steel plate construction will allow every FISHER STOVE to deliver years of remarkable heating efficiency.

Besides saving you money on your heating bill, the FISHER STOVE will allow many to rediscover the joys of wood stove cooking.

This OWNER'S MANUAL has been carefully written. The Table of Contents sets out, item by item, General information, Installation Instructions, and Operating and Maintenance Instructions. We urge you to read it carefully before initiating actual installation work.

We wish you many happy years of heating with your new FISHER STOVE.

FISHER STOVES. AN IDEA AMERICA IS WARMING UP TO.

OWNER'S MANUAL

TABLE OF CONTENTS

OWNER'S MANUAL

I. GENERAL INFORMATION

Congratulations! You have made a wise decision. The Fisher Stove is one of the most efficient, versatile and highest quality radiant heaters available. We're confident your Fisher Stove will provide you years of warm comfort and safe heat when installed according to these instructions. There are a few basic DO'S and DON'TS when installing and using wood burning stoves. Please read and follow these basic rules. Remember, most fires are caused by inadequate chimneys and improper clearance from combustibles.
In the event that any of these instructions requires less action than local codes, the local code requirements must be followed.

DO'S

1. Do comply with local codes.
2. Do contact your local building official for installation approval. A building permit may be required when installing your Fisher Stove.
3. Do check with a reputable chimney contractor when using an existing chimney.
4. Do locate your Fisher Stove as close as possible to the center of the area that you intend to heat. The efficiency and radiant heat from the heavy steel and cast iron will generally heat adjacent rooms adequately. (Refer to 'FISHER FACTS' on this page for further explanation.)
5. Do read and follow these instructions completely before installing your stove.

DON'TS

1. Do not install your stove without first checking with local building officials to determine if a building permit is required.
2. Do not locate your stove closer to combustible materials than stipulated by local building officals and codes
3. Do not locate the stove in a bedroom or sleeping area.
4. When installing a new chimney, cut as few structural members as necessary and avoid wiring, plumbing pipes or duct work.
5. Do not use any additional dampers in flue outlet. (Except in fireplace models)

Review of choice of model and size of area to be heated.

Before proceeding with the installation of your Fisher Stove, let's review your choice of model. We want you to be happy and satisfied with your Fisher.

Fisher Facts:

1. The Fisher Stove is an extremely efficient radiant heater. The actual physical size of the stove in relation to the area it will heat might appear deceiving. However, if you have selected a model too large for the actual area to be heated, it will be necessary to operate the stove in a 'choked down' condition. Over a period of time, excessive creosote buildup in the chimney may result. Equally important, is not to select a model too small in relation to the area it is to heat.
2. Because of the large mass and long duration of heat source of the stove, the radiant heat capability will heat adjacent rooms better than most thin-wall steel or cast iron stoves.
3. The following areas are approximate and based on eight foot ceilings with normal insulation in outside walls and ceiling:

SINGLE DOOR RADIANT HEATERS
Approximate Square Footage Heating Capacity

Baby Bear	*Mama Bear*	*Papa Bear*
1,000 sq. ft.	1,500 sq. ft.	2,000 sq. ft.

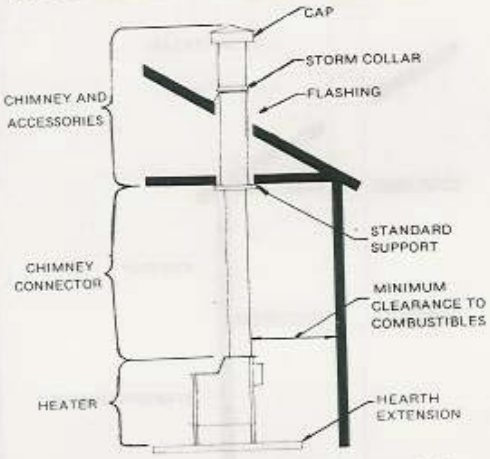
DOUBLE DOOR FIREPLACE/RADIANT HEATER
Approximate Square Footage Heating Capacity

Grandma Bear Fireplace	*Grandpa Bear Fireplace*
1,500 sq. ft.	2,000 sq. ft.

NOTE: IF YOUR MODEL DOES NOT MATCH UP WITH THE ABOVE AREAS, PLEASE CHECK WITH YOUR DEALER FOR A RE-EVALUATION.

II. INSTALLATIONS

Definition of Components



The above drawing reflects the various components of your installation.

Selection of Components

Hearth Extension

Material: Minimum 3/8" asbestos millboard or equivalent. Also an additional layer of brick would be desirable.

Minimum Size:	
Baby Bear	31½" x 55"
Mama Bear	35" x 61"
Papa Bear	36" x 66"
Grandma Bear top exit	41½" x 47"
Grandma Bear rear exit	41½" x 54"
Grandpa Bear top exit	45½" x 49"
Grandpa Bear rear exit	45½" x 56"

The above hearth dimensions were computed to allow that the floor mat should extend 16" in front of the stove as measured from the legs and 8" to each side of the stove, and the distance from the rear legs should be 10" for a top outlet and 17" for a rear outlet.

Chimney Connector (That portion of pipe from the stove to ceiling or wall)

DO'S

1. Do select low carbon, aluminized, or stainless steel.
2. Do select same size pipe as outlet from stove.
3. Do check to be sure pipe extends at least two inches into chimney. (SEE * ON PAGE 12)
4. Do make sure a good seal is made the entire length of the seam if snap lock seam type is used.
5. Do make sure there is a good seal between joints.

DON'TS

1. Do not use galvanized pipe. Zinc fumes are toxic and galvanizing will run when chimney gets excessively hot or overheated.
2. Do not use type "B" pipe which is used for venting gas appliances.
3. Do not use more than one stove per chimney.

Pipe Direction

The crimped or smallest diameter end is called the male end and is inserted into larger diameter size of pipe section.

Male end-up installation:

Pro: This is the way most pipe installations are made and are easy to install.

Con: There may be leakage of creosote or condensation around the connections.

Male end-down installation:

Pro: This directs creosote or condensation back into the stove and is consumed.

Con: This installation may require a special adapter, converting inside diameter to outside diameter, at the stove or at the connection between the chimney connector and the chimney.

Some chimney manufacturers, such as Dura-Vent, make pipe and adapters that connect easily and maintain an internal drip free male connector down configuration.

Chimney

(USED THROUGH WALLS, CEILINGS & OUTSIDE)

It is recommended that an all fuel chimney ceiling support box be extended at least 2" down into the room.

DO'S

1. Do use a UL listed factory built, residential type and building heating appliance chimney as referenced in the UL Gas and Oil Directory.
2. Do follow the manufacturer's instructions carefully, paying particular attention to the minimum clearances to combustibles.

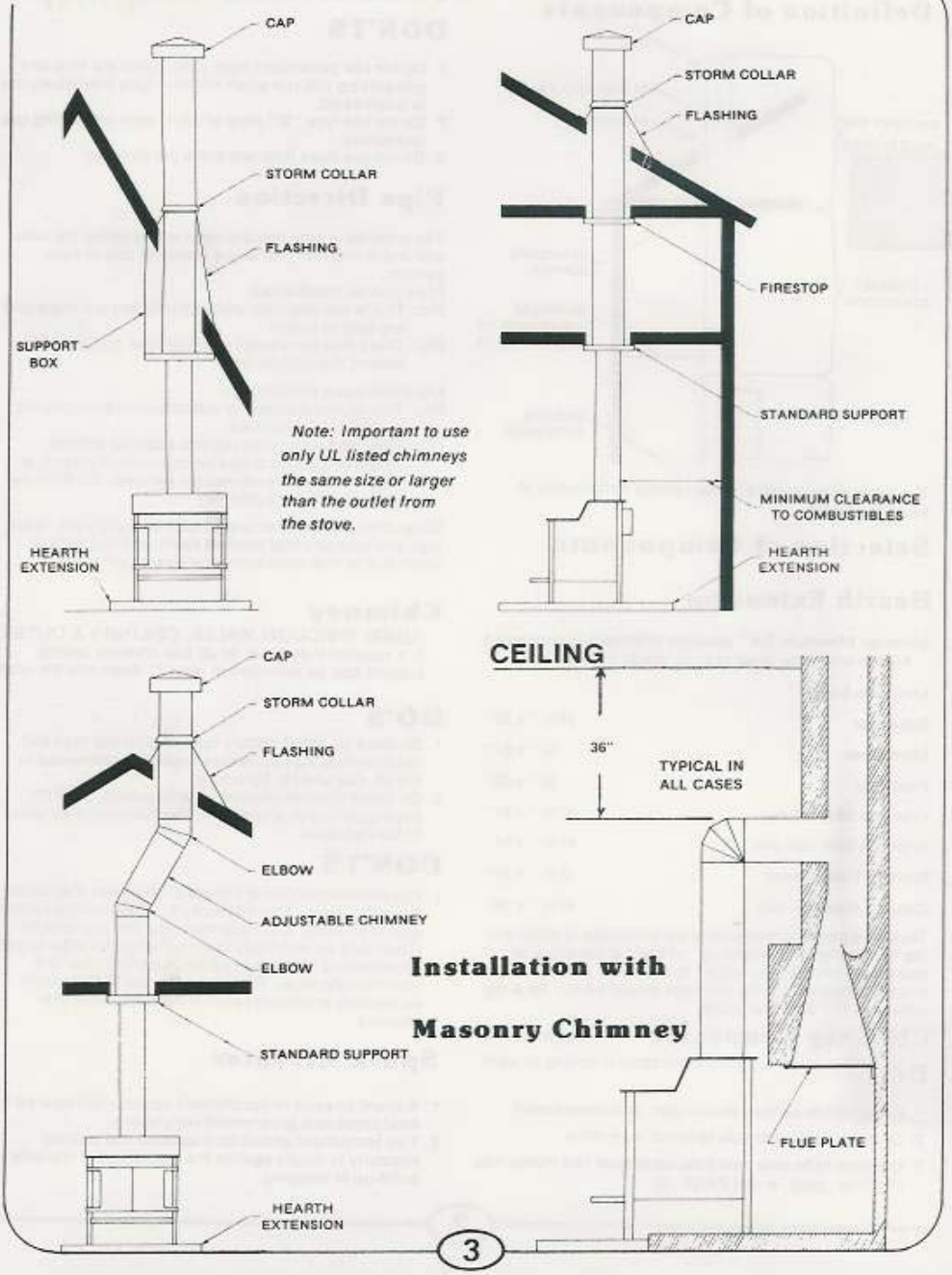
DON'TS

1. We do not recommend the use of chimneys that utilize the principle of "thermal siphon." The thermal siphon type of chimney is a triple-wall pipe that operates by circulating air internally down between the outside and intermediate layer, then up between the inner and intermediate layer. This type cools the flue products excessively and could result in condensations and creosote.

Spark Arrester

1. A spark arrester in the chimney cap may be required by local codes and government regulations.
2. This component should be inspected and cleaned regularly to insure against the occurrence of creosote build-up or clogging.

Types of Metal Chimney Installations



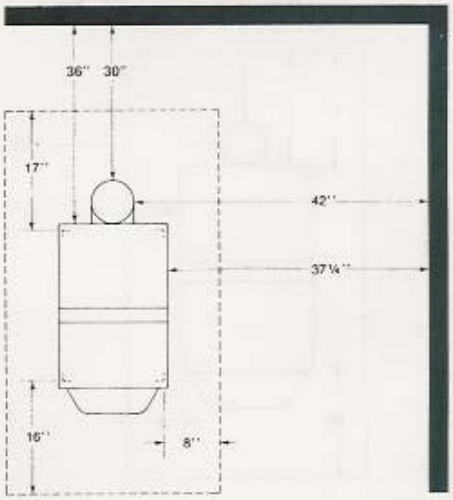
Installation with Masonry Chimney

CONTACT YOUR LOCAL BUILDING OFFICIAL TO DETERMINE ALLOWABLE DISTANCES

CLEARANCE TO COMBUSTIBLES CHARTS: Baby Bear

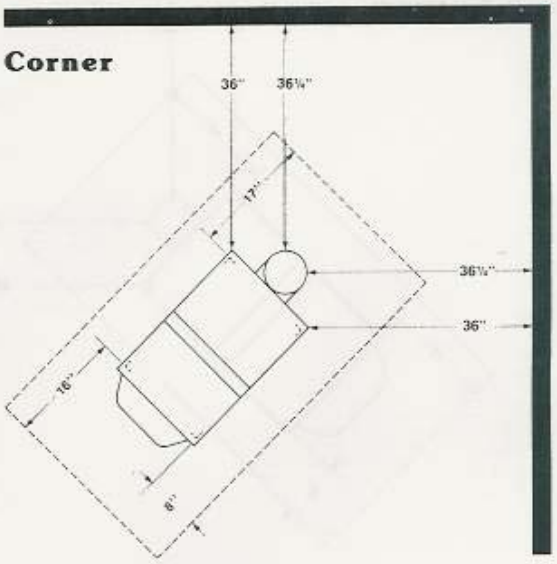
REAR OUTLET

Sidewall, Backwall



CLEARANCE TO COMBUSTIBLE SURFACES
AND HEARTH EXTENSION FLOOR MAT

Corner



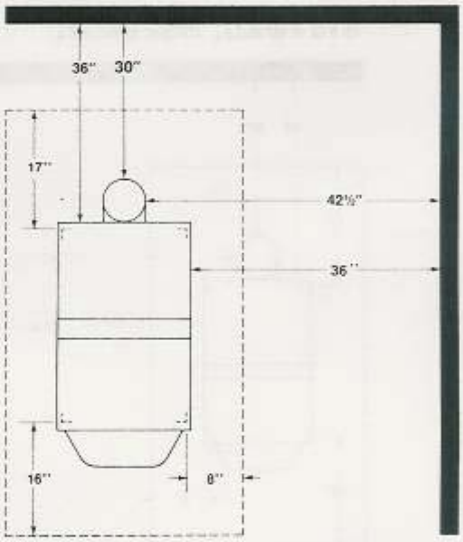
CONTACT YOUR LOCAL BUILDING OFFICIAL TO DETERMINE ALLOWABLE DISTANCES

Mama Bear

REAR OUTLET

CLEARANCE TO COMBUSTIBLE SURFACES AND HEARTH EXTENSION FLOOR MAT

Sidewall, Backwall



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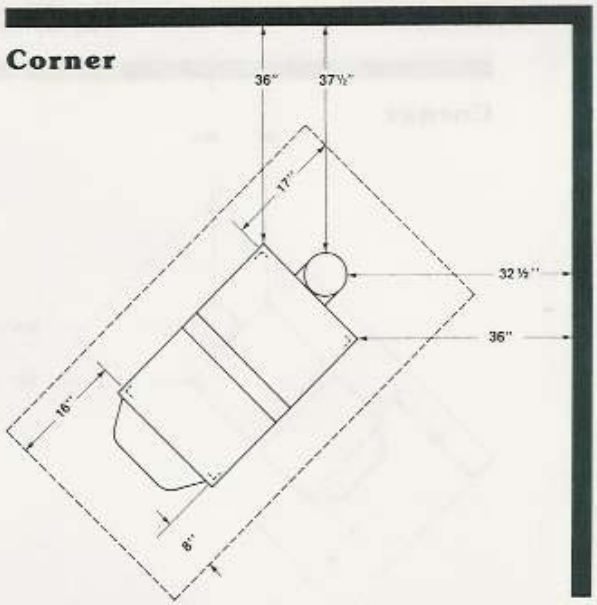


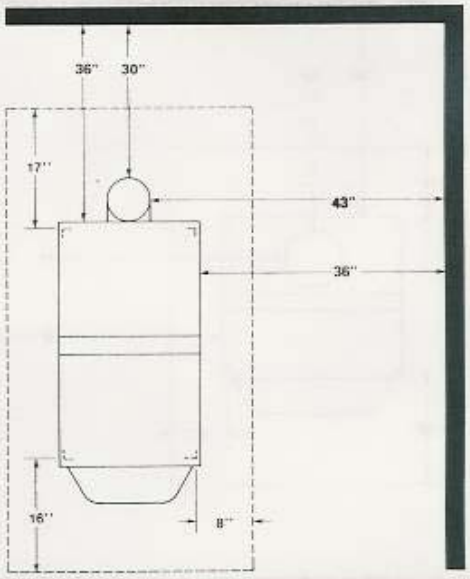
CONTACT YOUR LOCAL BUILDING OFFICIAL TO DETERMINE ALLOWABLE DISTANCES

Papa Bear

REAR OUTLET

CLEARANCE TO COMBUSTIBLE SURFACES AND HEARTH EXTENSION FLOOR MAT

Sidewall, Backwall



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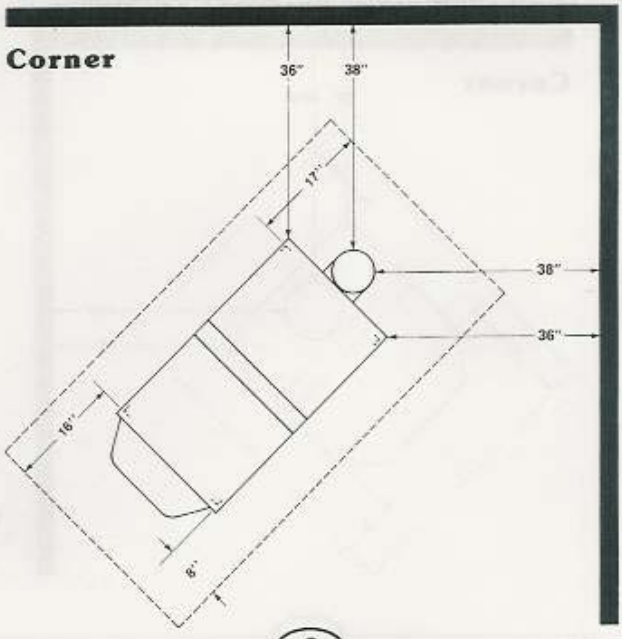


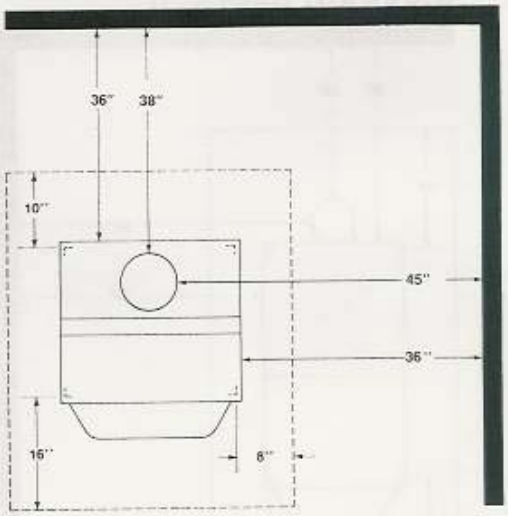
CONTACT YOUR LOCAL BUILDING OFFICIAL TO DETERMINE ALLOWABLE DISTANCES

Grandma Bear Fireplace

TOP OUTLET

CLEARANCE TO COMBUSTIBLE SURFACES AND HEARTH EXTENSION FLOOR MAT

Sidewall, Backwall



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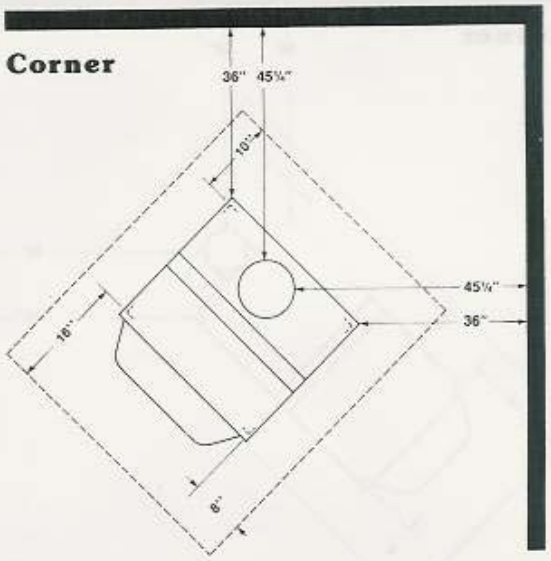


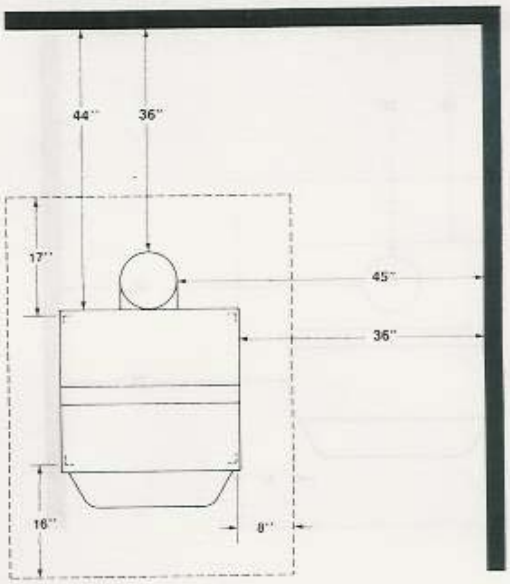
CONTACT YOUR LOCAL BUILDING OFFICIAL TO DETERMINE ALLOWABLE DISTANCES

Grandma Bear Fireplace

REAR OUTLET

CLEARANCE TO COMBUSTIBLE SURFACES
AND HEARTH EXTENSION FLOOR MAT

Sidewall, Backwall



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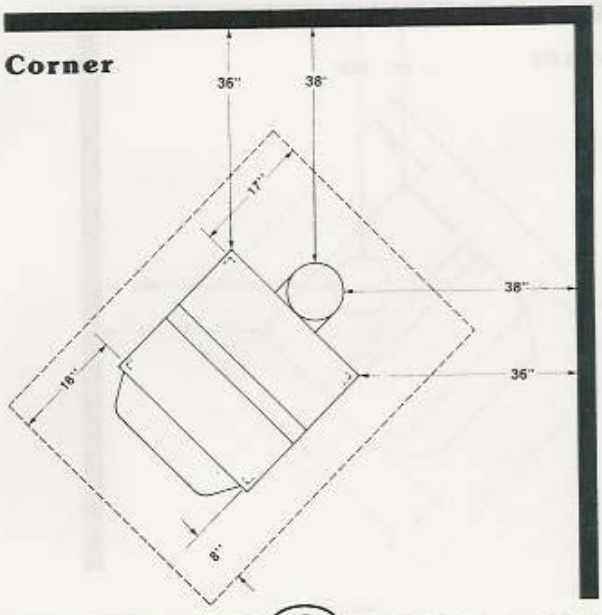


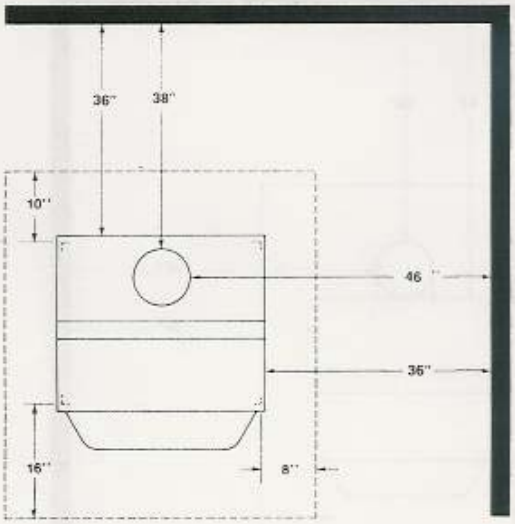
CONTACT YOUR LOCAL BUILDING OFFICIAL TO DETERMINE ALLOWABLE DISTANCES

Grandpa Bear Fireplace

TOP OUTLET

CLEARANCE TO COMBUSTIBLE SURFACES
AND HEARTH EXTENSION FLOOR MAT

Sidewall, Backwall



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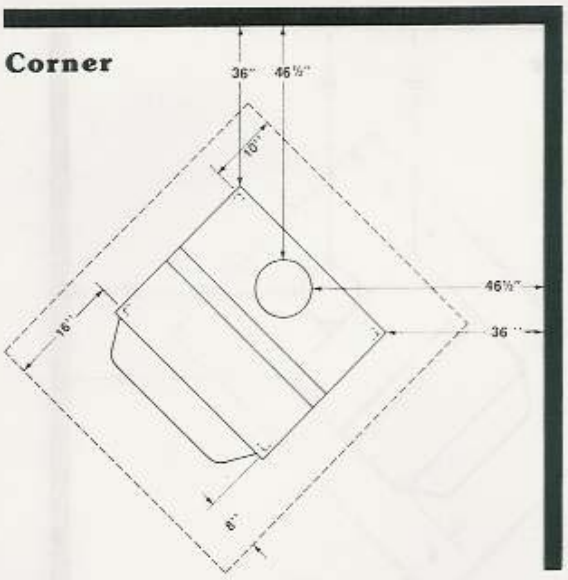


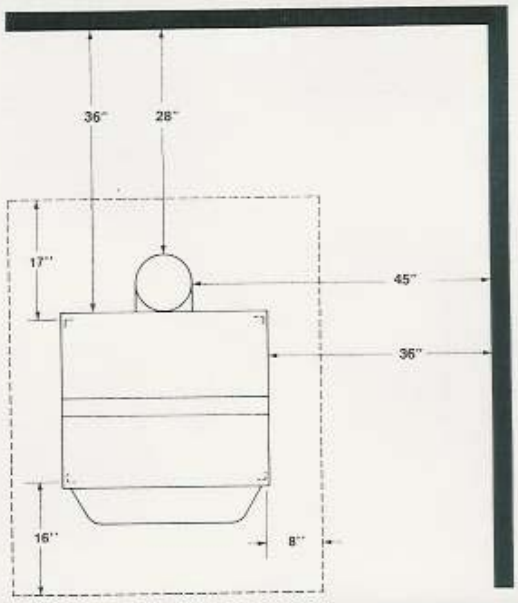
CONTACT YOUR LOCAL BUILDING OFFICIAL TO DETERMINE ALLOWABLE DISTANCES

Grandpa Bear Fireplace

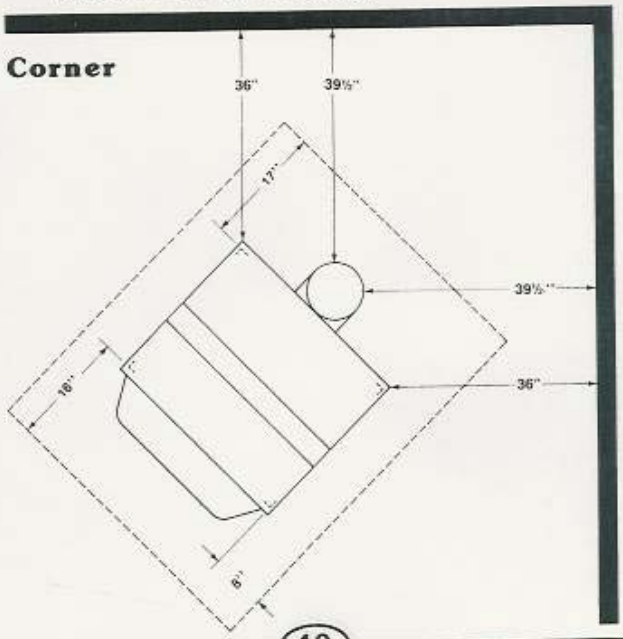
REAR OUTLET

CLEARANCE TO COMBUSTIBLE SURFACES AND HEARTH EXTENSION FLOOR MAT

Sidewall, Backwall



Corner



Reduced clearance from combustibles

There are specified forms of protection that would allow installation closer to surfaces than those shown in the diagrams. However, for any reduced clearance installation the specified form of protection must be submitted to the local building official for his approval.

Sidewall, Backwall Installation Check-list

☐ 1. After selecting the location for your Fisher Stove, set the unit in place. Check minimum clearance chart for your particular model.

☐ 2. Using a "plumb bob", mark a point on the ceiling indicating the center of the chimney. When suspended from the ceiling, the tip of the "plumb bob" should be in the exact center of the flue on the unit. This will insure perfect vertical alignment.

☐ 3. After determining that the area above the ceiling is clear for cutting, again check that the clearance from the unit to combustible materials are within the prescribed limits.

☐ 4. Install chimney following the instructions provided by the chimney manufacturer.

CAUTION: The chimney must be the same size as the flue outlet on the stove. The chimney must be Underwriters Laboratories listed as a factory built, residential type and building heating appliance chimney. For other types of chimneys, check with your local officials. DO NOT confuse a chimney with a Type "B" venting system used for gas appliances.

☐ 5. Using the "plumb bob", check that the flue outlet of your Fisher Stove is centered exactly under the center of the chimney.

☐ 6. Mark around each leg of the heater leaving a mark on the floor. Then move the radiant heater aside and outline location of floor mat.

☐ 7. From the legs, the floor mat or hearth extension should be at least 16" in front of the stove, 8" to each side and 10" to rear of top exit or 17" from rear exit.

☐ 8. When the hearth extension is complete, set the radiant heater in place with the flue outlet directly under the chimney.

☐ 9. Install the chimney connector. The chimney connector must be a painted low carbon steel or aluminized steel material. The chimney connector must extend up into the chimney at least two inches. For appearance, place the seams to the rear. *CAUTION: DO NOT USE GALVANIZED PIPE.*

☐10. Secure adjacent sections of chimney connector to each other using three sheetmetal screws equally spaced around the pipe at each joint.

☐11. Carefully read "Operating Instructions," "Use with Coal Instructions," and "Maintenance Instructions."

Your Fisher Stove is now ready for use.

Corner Installation

Refer to the instructions covering the Sidewall-Backwall Installation. The same steps will apply except the heater will now be positioned in a corner facing at an angle of 45 degrees to the two sidewalls.

Check the minimum clearance chart for your particular model.

Installation to existing fireplaces and masonry chimneys

Since there are many ways to install your Fisher Stove, contacting your local building official for approval is very important.

The 1976 edition of the Uniform Mechanical Code, Section 915, paragraph E [Entering Masonry Chimney] states:

* *"A connector entering a masonry chimney shall extend through the wall to the inner face of the liner, but not beyond, and shall be firmly cemented to masonry. A thimble may be used to facilitate removal of the connector for cleaning, in which case the thimble shall be permanently cemented in place with high temperature cement. The chimney connector shall enter the chimney not less than six inches from the bottom of the chimney. The chimney shall be provided with a cleanout. If six inches are not available, a cleanout shall be provided by installing a capped tee in the connector next to the chimney."*

Paragraph I [Fireplace Connection] also states:

"A chimney connectory shall not be connected to a chimney flue serving a fireplace unless the fireplace opening is sealed or the chimney flue which vents the fireplace is permanently sealed below the connection."

Specified types of installation and chimney condition should be approved BEFORE attempting to use existing fireplace and masonry chimney.

III. OPERATING INSTRUCTIONS

Paint Odor During Start-Up

When first using your Fisher Stove, the high temperature paint that is used will smoke and give off a temporary odor for several hours. Although this is a temporary condition, windows and/or doors should be open enough to give adequate ventilation.

IMPORTANT: All fuel burning appliances require air for combustion. Therefore, it is important that some fresh air be supplied to the space where the heater is located. This may be done by opening a window slightly. If a fireplace is also in your house and is operating, make sure a downdraft is not being created in your Fisher Stove.

To Light a Fire

1. Using paper and small pieces of dry wood, start the fire on the bottom of the firebox. The fire should be started near the front of the firebox.
2. Open the draft caps fully and close the door(s).
3. Once the fire has started, slowly add larger pieces of wood until a bed of coals has been established. Some smoking may occur just after the fire is ignited but this will stop once the chimney has warmed. The fire and bed of coals should be maintained at least four inches back from the front opening.
4. Once the fire is well established, the burning rate may be controlled by adjusting the draft caps. (Turning the draft caps to their open position will cause the fire to burn more intensely and consume more fuel, whereby turning them the opposite way will cause the fire to burn more slowly and consume less fuel.)
5. Highest smoke densities occur during low smoldering burns, particularly when small pieces of wood are added to a hot bed of coals while the draft caps are closed too tightly.
6. After fuel is added, let the fire start burning good before closing down the draft caps to their normal operating position.
7. After an overnight burn, open the draft caps and let the fire burn pretty hot for 5-10 minutes.
8. At least weekly, open the caps wide open and let the fire burn for approximately 10 minutes.
9. If your particular model heats your area too hot and you have to operate the stove in a "choked" setting most of the time, a smaller model Fisher Stove may be necessary.

If you have been burning your stove with the draft closed and you need to check the fire, first open the door a crack, hesitate, then open the rest of the way. This keeps the open door from overpowering the chimney draw.

To Check Existing Fire

Ashes

The Fisher Stove gives best performance when you consistently maintain a good bed of coals. When you clean out the ashes remember a wood fire burns better with approximately one inch of ashes.

CAUTION: IF THE BODY OF THE HEATER OR THE CHIMNEY CONNECTOR STARTS TO GLOW, YOU ARE OVERFIRING. YOU SHOULD STOP ADDING FUEL IMMEDIATELY AND CLOSE THE DRAFT CONTROLS COMPLETELY UNTIL THE GLOWING IS ELIMINATED.

The Baby Bear, Mama Bear and Papa Bear Series of radiant heaters are intended to be operated only with the door in the closed position. Do no operate these radiant heaters in any other manner.

The Grandma Bear and Grandpa Bear Fireplace radiant heaters may be operated with the doors in either the open or closed position. However, when operated with the doors in the opened position, the spark screen (supplied with each unit) must be in place.

Wet or green fuel loads are not recommended. However, if adding fuel which is wet or green, the draft caps should be opened fully to intensify the fire and drive off the moisture which will go up the flue. Once the fire is well underway and the moisture driven off, the draft caps may be closed to maintain the fire as desired.

For additional information on wood and wood types, see section on "Wood."

Coal — not recommended • now under test

Trouble Shooting

Creosote

Creosote is an undesirable result of every wood burning appliance. It can cause chimney fires if allowed to build up excessively. While we can't cure the creosote problem, there are things we can do to minimize the build up.

Let's look at the causes and solutions. Creosote is basically the residue of wood smoke and moisture when it is condensed. Therefore, we will consider the following factors: (1) smoke density; (2) moisture, (3) temperature of surface (chimney) where it can condense; (4) faulty masonry; (5) dripping; (6) spark arresters; and (7) chimney fires.

1. Smoke Density - Heat Control

Problem 1. Highest smoke densities occur during low smoldering burns, particularly when small pieces of wood are added to a hot bed of coals while the draft caps are closed too tightly.
Solution 1a. After fuel is added, let the fire start burning good before closing down the draft caps to their normal operating position.
Solution 1b. After an overnight burn, open the draft caps and let the fire burn pretty hot for 5-10 minutes.
Solution 1c. At least weekly, open the caps wide open and let the fire burn for approximately 10 minutes.
Solution 1d. If your particular model heats your area too hot and you have to operate the stove in a "choked" setting most of the time, a smaller model Fisher Stove may be necessary.

Smoke Density - Wood

Problem 2. Some types of wood have more pitch in them than others and cause creosote.
Solution 2. Avoid or minimize the use of this type of wood. Hardwoods have the least amount of creosote causing materials.

2. Moisture

Problem 3. Water vapor in smoke condenses on cooler surfaces.
Solution 3a. Minimize the water vapor by using dry, seasoned wood.
Solution 3b. Avoid green wood during periods of slow burning conditions.

3. Temperature of Chimney

Problem 4. Creosote will condense on a cool surface.
Solution 4a. Avoid thermal-siphon type chimneys as they are too cool and will cause creosote to condense.
Solution 4b. Chimneys which rise in the house's interior will not cool as rapidly as chimneys installed on the outside of the house.
Solution 4c. Avoid use of un-insulated or single-wall pipe on the outside of the house.

4. Faulty Masonry

Problem 6. Faulty or porous masonry will cause creosote.
Solution 6. Install a liner or seal the masonry chimney.

5. Creosote Dripping

Problem 7. When the crimped end of the chimney connector is pointed up, creosote may seep out between crimped connections.
Solution 7. Reverse the direction of the pipe so the crimped end points down. This may require a special adaptor, converting inside diameter to outside diameter at the stove or at the connection between the chimney connector and the chimney. [*Reference, "Chimney Connector Pipe Direction."*]

6. Spark Arresters

Problem 8. Spark arresters in the chimney cap may get clogged with creosote.
Solution 8. Check frequently and clean if necessary.

7. Chimney Fires

Problem 9. Excessive buildup of creosote may ignite during a very hot fire and cause a chimney fire.
Solution 9a. Close the draft caps immediately, and if necessary throw water into the stove and close the door. Stand far enough back to not get scalded when throwing water into the stove. The resulting steam should limit intensity of the flue fire. Clean the chimney before further operation.
Solution 9b. Avoid the creosote buildup before a fire is caused by cleaning the chimney at least periodically or after no greater than two cords of wood are burned.

Smoking or Back Puffing

The Fisher Stove is designed and tested so as to not smoke with a normal flue installation. If the stove smokes after the chimney is warm, it is due to insufficient draft of the flue system and flue should be checked for the following:

1. obstructions in chimney system
2. excessive creosote buildup
3. clogged spark arrester
4. down draft caused by (a) obstacles blocking the normal chimney outlet or (b) chimney installed on leeward side of obstruction.
5. too many turns in the flue system
6. insufficient height of chimney
7. single-wall pipe on outside of house cools too rapidly and does not draw adequately.
8. masonry chimneys which are porous or do not have proper liner.

IV. MAINTENANCE

The chimney and chimney connector must be cleaned periodically depending upon the soot or creosote buildup. The frequency of cleaning will depend upon a number of factors, but mainly upon the type of fuel being burned.

The buildup of soot or creosote can usually but not always be determined by tapping the outside of the chimney connector with a metallic object. If there is a sharp sound, the interior is probably clean; if there is a dull thudding sound, the chimney and chimney connector interiors should be checked further. If the chimney cap is easily accessible, this may be done by removing the cap and looking down from the top using a bright flashlight. If the chimney cap is not easily accessible, then the chimney connector must be removed so that interior surfaces may be examined.

IMPORTANT: If it is necessary to remove the chimney connector or any portion, first protect all carpeting, furniture, etc. in the vicinity. Some soot and dirt will be knocked loose when the chimney connector sections are broken loose. If the chimney is tall, a length of large chain 2-3 feet long or a set of tire chains tied to a rope may be moved up or down within the chimney. In both of these instances, the soot and dirt will fall downward towards the heater and will have to be cleaned out through the door opening. Be sure door[s] and draft caps of the heater are closed during this cleaning operation.

If the chimney cap is inaccessible, then the chimney connector will have to be removed and the cleaning done from the bottom by using a long stick with rags attached to one end. Again be sure carpeting, furniture, etc. are protected. Close door(s) and draft caps of heater while cleaning.

When cleaning from the bottom, be sure to protect your face with a shield or by wearing goggles.

V. SAFETY GUIDELINES

DO NOT BURN LARGE QUANTITIES OF LOOSE PAPER IN THE HEATER AS THE FLASH MAY BLOCK THE SPARK ARRESTER.

NEVER USE KEROSENE, GASOLINE, OR SIMILAR PRODUCTS FOR STARTING THE FIRE.

DO NOT PERMIT SOOT OR CREOSOTE TO ACCUMULATE EXCESSIVELY ON THE INTERIOR SURFACES OF THE CHIMNEY AND THE CHIMNEY CONNECTOR.

DO NOT OVERFIRE THE HEATER. IF THE HEATER OR CHIMNEY CONNECTOR STARTS TO GLOW, IT IS BEING OVERFIRED.

THIS IS A HEAT PRODUCING APPLIANCE. WARN CHILDREN OF THE POSSIBILITIES OF BEING BURNED IF THEY TOUCH THE HEATER. SERIOUS BURNS MAY RESULT IF THE HEATER IS TOUCHED DURING FIRING.

THIS HEATER CONSUMES AIR WHEN IT IS BURNING. IT IS IMPORTANT THAT A WINDOW IN THE VICINITY BE OPENED SLIGHTLY WHILE IT IS BURNING.

VI. WOOD

Wood is America's renewable resource. Thank you for selecting this form of energy. Let's look at a few facts that may help in your choice.

The Fisher Stove's very high efficiency (more than 70% in tests) is based on an air starvation, secondary combustion system which results in very little ash and generates long, consistent heat. However, with any virtually air tight system which has a smoldering type fire there can be a buildup of creosote in the chimney system. The type and moisture content of wood plays a major part in creosote formation. Our objective in this discussion will be to suggest facts that will reduce creosote and increase the efficiency and comfort of your system.

Fuelwood in General

The two most important considerations for fuelwood are dryness and density.

Moisture Content Facts:

1. When wood is dry, all woods, regardless of kind, have approximately the same energy content: 8600 BTU/lb. This is to say that one pound of dry oak has the same energy as one pound of pine. Oak and pine have different densities (lbs. per cubic foot) which we will discuss later.
2. Wet wood whether seasoned or green has less heat value because energy is wasted in drying the wet wood in order for it to burn.
3. Wet wood will cause more creosote because creosote is formed by the water vapor in the smoke which condenses in the chimney.
4. Wet wood is difficult to ignite and to keep burning.
5. Green wood generally has a high moisture content.

Summary:

Wet or green wood should be avoided to minimize the formation of creosote as well as being less efficient. (8600 BTU/lb. for dry wood = 6000 BTU/lb. for wet wood)

Green Wood Facts:

1. Because green wood has a high moisture content, it is usually heavier, more troublesome to ignite and contains less energy.
2. The heartwood of trees is generally drier than the sapwood. Thus, if green wood must be burned, select the heartwood.
3. Green wood does burn more slowly because of the moisture content and causes the fire to last long. However, dry dense woods also burn longer and cause less creosote. We would recommend using dry, dense seasoned woods rather than green wood.

Seasoned Wood Facts:

Green wood can be seasoned or dried adequately within six months to two years if the proper techniques are used.

Techniques and facts:

1. Keep the woodpile at least one foot off the ground.
2. Place the wood so that air can circulate freely throughout the woodpile. This can be achieved by crisscrossing the stacking of the wood.
3. Direct exposure to sunlight will speed the drying process.
4. The smaller the pieces, the faster the drying process. Therefore split the logs into the smallest size preferred.
5. Cover the top part of the pile with plastic, but avoid completely covering to the ground. Otherwise, air circulation is impeded and ground moisture will become "trapped".
6. Store wood in a heated space such as a garage or basement if available and convenient.

Summary:

Dry seasoned wood is preferable for good efficiency and easy burning. Green wood purchased in the "off season" (six months before heating season) may also be less expensive.

Density:

Density is defined as weight per volume or, for example, pounds per cubic foot. All dry wood has the same BTU's per pound (8600); therefore, one pound of oak has the same energy potential as one pound of pine. However, since oak is a denser wood, it takes less space or volume than pine. Wood is usually sold by the cord (4' x 4' x 8' equals 128 cubic feet) which is a fixed volume. One cord of oak (dense wood) has more potential energy value than one cord of pine. Dense wood usually burns longer and creates less creosote. A cord of a denser wood may be a better bargain in the final analysis.

	RELATIVE DENSITY
SPRUCE	.4
REDWOOD	.4
CEDAR	.4
PINE	.5
WALNUT	.55
MAPLE	.55
ASH	.58
BIRCH	.62
OAK	.65
HICKORY	.7

Hardwood vs Soft Wood:

When we think of hardwood, we usually think of dense heavy wood. This is generally but not always true. However, let's review and compare the characteristics, qualities, and difference in the two types.

Summary

Softwood is generally low in energy content but may be good for kindling and quick heat.

Softwood with high resin or pitch content should be avoided to minimize creosote.

Hardwoods generally have higher energy content and less creosote buildup and should be used for long sustained heating.

Please review the next chart for specific comparisons.

Conclusion

Kindling: Use dry softwood split in small pieces.

Fuel: Use best dense wood available that is dry and seasoned.

Avoid green wood and wet wood for long sustained periods.

	SOFTWOOD	HARDWOOD
DENSITY: (ENERGY CONTENT)	LOW	HIGH
LEAVES:	NEEDLES EVERGREEN (Except Tamarack, Larch and Cypress)	BROAD LEAF DECIDUOUS
PITCH OR RESIN CONTENT:	MAY BE HIGH AND CAUSE CREOSOTE	LOW
BURNING QUALITIES:	FAST AND HOT GOOD FOR KINDLING	LONGER LASTING GOOD COALS
IGNITION:	QUICK	SLOW

Relative Characteristics of Common Firewoods

TYPE	APPROXIMATE DENSITY	ENERGY COMPARISON WT/CUBIC FT	BTU'S (MIL) PER CORD AVE. ASSUME ACTUAL 80 CUBIC FT/CORD	MOISTURE CONTENT	SMOKE CONTENT	SPLITS	USE	COMMENTS
HARDWOODS:								
HICKORY	.7	43.6	30.0	MEDIUM	LITTLE	VERY WELL	FUEL	BEST FUEL
OAK	.65	40.5	27.9	WET	LITTLE	FAIR	FUEL	
BIRCH	.62	38.6	26.5	MEDIUM	SOME	HARD		AROMATIC
ASH	.58	36.0	24.8	DRY	LITTLE	WELL		GOOD FUEL
MAPLE	.55	34.3	23.6	MEDIUM	SOME	FAIR	FUEL	
WALNUT	.55	34.3	23.6	WET	LITTLE	FAIR		
CHERRY	.5	31.2	21.5	DRY	LITTLE	FAIR		
ELM	.5	31.2	21.5	WET	LOTS	DOESN'T		POOR FUEL
ALDER	.41	25.5	17.5	WET	LOTS	FAIR		POOR ENERGY CONTENT
SOFTWOODS:								
PINE	.5	31.2	21.5	DRY	LOTS	VERY WELL	KINDLING	PITCHY WOOD CREOSOTE
FIR	.5	31.2	21.5	DRY	SOME	EASY	KINDLING	
CEDAR	.4	24.9	17.1	DRY	SOME	VERY WELL		NOISE & SPARKS
REDWOOD	.4	24.9	17.1	DRY	MEDIUM	FAIR		

These Figures are approximate and will vary somewhat for different species.

NOTES

Thank You. . .

. . .for reading this OWNER'S MANUAL. It has been written in such a way as to be easy to read and understand. It was our desire to provide as much data as needed to allow you to install and operate your FISHER STOVE in the safest manner possible.

There are a number of excellent resources on wood heating which you might like to purchase for your home library. These include "The Woodburning Encyclopedia" by Jay W. Shelton; "Wood Heat" by John Vivian; and "The Complete Book of Heating With Wood" by Larry Gay.

If you have any questions regarding your FISHER STOVE which were not covered in this Manual, please feel free to contact your dealer. We welcome your comments and invite you to share with us any unusual applications of your stove and/or pictures showing actual installation.

Good heating!