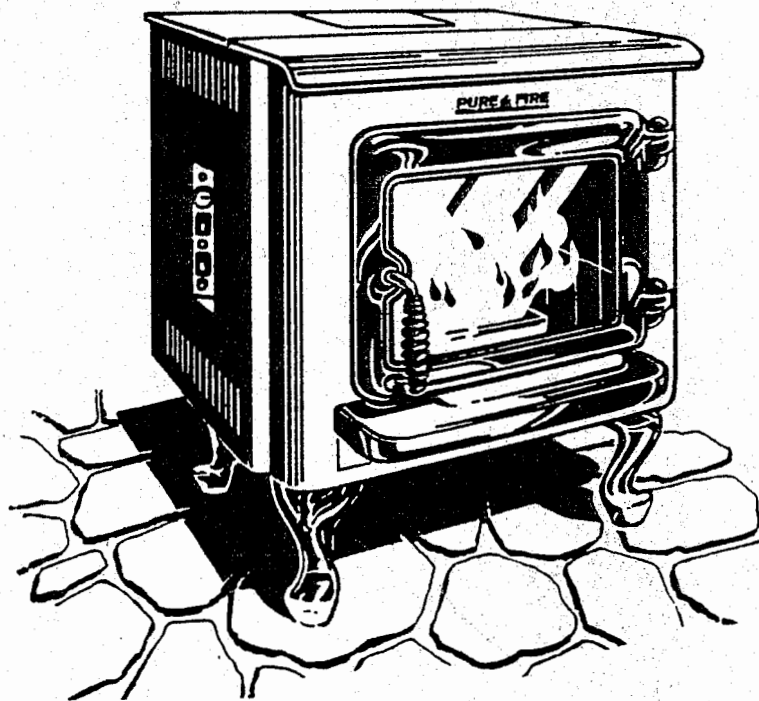


THE Brass Flame™

INSTALLATION AND OPERATION MANUAL



Freestanding and Insert Models: PF70 series

Pellet Fired Appliance

This appliance must be installed by a qualified technician. Read this manual thoroughly before installation. Save this manual for future reference.

IMPORTANT: Read thoroughly before starting installation. Failure to follow these installation instructions may result in a possible fire hazard and will void the warranty. Save this manual for future reference.

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IMPORTANT SAFETY NOTICE
PLEASE READ BEFORE ATTEMPTING TO BURN!

CAUTION: *If this stove is not properly installed, a house fire may result. For your safety, follow the installation directions; contact local building officials about restrictions and installation inspection requirements in your area.*

1. Installation of this stove must comply with local codes. A building or installation permit may be required. Check with your local building official or fire department before installing.
2. If utilizing an existing chimney, have your fireplace flue or chimney system inspected by a qualified person prior to installation of the stove. Make any necessary repairs before installing.
3. Never connect stove flue to chimney being presently used by another appliance.
4. Never block any air intake or air outlet ports. Dangerous overheating can result.
5. Do not install this stove in a sleeping room.
6. Never connect the stove to an air duct system.
7. Never stack or pile combustible materials against the stove or around external vent termination.
8. To avoid burns, children and adults should be alerted to the hazards of high surface temperatures.
9. To provide reasonable fire safety, install a smoke detector and a conveniently located fire extinguisher.
10. In the event of a chimney fire, notify the fire department and unplug the stove.
11. Terminate pellet vent pipe so that contact with humans or possible damage to pipe is avoided.
12. The exhaust vent should be inspected at least once a month and cleaned at least annually.
13. If you overfire the unit, (constant high heat) you will shorten the life of the electrical components.
14. When installed into a mobile home, it must be electrically grounded to the steel chassis of the home and bolted to the floor.
15. Do not burn with insufficient combustion air. Be sure to maintain the structural integrity of the home when passing a vent through walls, ceilings or roofs. A periodic check is recommended to assure proper combustion air is admitted to the combustion chamber.
16. Since the stove's exhaust system works with negative combustion chamber pressure and a slightly positive chimney pressure, it is very important to assure that the exhaust system be sealed and airtight when connecting different chimney lengths. Make sure that the connections are well sealed.
17. This appliance has been designed to burn pelletized wood fuel only. Do not attempt to burn cordwood or pressed logs in the stove, severe damage or fire could result. Burning improper fuel will void warranty.
18. Since there are many manufacturers of wood pellets, it is important to select pellets that are free of dirt or any impurities. The Association Of Pellet Fuel Industries (A.P.F.I.) has established a standard for pellet manufacturing. We recommend that you purchase pellets that meet these standards. Ask your local dealer for a recommended pellet-type.

Fines	1% max. through a 1/8" screen.
Bulk Density	40 lbs. per cu. ft. min.
Size	1/4" to 3/8" dia., 1.5" long max.
Ash Content	1% max.
Moisture Content	8% max.
Heat Content	Approx. 8200 BTU per lb. min.

Testing/Listing

The PF70 pellet fired wood heater conforms with the safety standard UL1482, for residential room heaters with vertical or horizontal connector in the freestanding straight or corner modes and for use in manufactured dwellings and park trailers according to OAR 918-520-010 through 918-520-110. The PF70 also conforms to UL907 and UL127 pertaining to use as an insert into a masonry fireplace or an approved factory-built zero clearance fireplace with direct connect only. Outside combustion air is required for all manufactured home installations and is optional in all other installations. Listing Laboratory (safety): EESPC; Kent, WA 98032. Listing file #92-040.

Based on a tested air to fuel ratio in excess of 35:1, this appliance is not an effected facility under the EPA regulations for wood burning stoves. Listing Laboratory (emissions): EEMC, Kent; WA 98032

INTRODUCTION Read Entire Manual Before Attempting to Burn

Models

PF70 (black legs) or PF70MH (pedestal):
Comes with black door and black hearth (ash lip).

PF70B (black legs) or PF70MHB (pedestal):
Comes with brass door and brass hearth (ash lip).

PF70BL (brass legs):
Comes with brass door, brass hearth (ash lip).

PF70FI (fireplace insert, surround included):
Comes with black door, black hearth (ash lip).

PF70FIB (fireplace insert, surround included):
Comes with brass door and brass hearth (ash lip).

Three Pronged Plug (Grounded)

A grounded electrical cord is supplied with this appliance. The power cord should be connected to a standard 115 volt A.C., 60 hertz electrical outlet (power requirements are 240 watts). Be careful that the electrical cord is not trapped under the appliance. Keep it clear of any hot areas, and sharp edges.

Control Board

The control board is located on the left side panel of the stove. It manages the rate of combustion (combustion fan), heat output (fuel delivery) and heat circulation (room air fan).

Auger

Pellet fuel is fed to the firepot by means of an auger. This auger is driven by a high torque gear motor. The auger is capable of doing serious harm to fingers. Keep pellets in hopper at all times and keep fingers away from auger. The auger can start unexpectedly when the stove is running.

Optional Brass Door/Ash Tray/Legs

The brass should be cleaned thoroughly before the stove is burned. Do not clean brass with an abrasive cleaner. Apply the brass cleaner only when stove is cold and clean and wipe off any excess brass cleaner after use or the brass may discolor. Any oils or fingerprints left on the brass could become permanent blemishes if the stove is burned prior to their removal.

Firepot

The pellet Firepot is where the fuel is burned. (see page 17 for cleaning requirements).

Hopper

The Hopper is where the pellet fuel is loaded and stored before the pellets are fed into the firepot.

Ash Pan

The Ash Pan located under the exterior ash lip is designed to make cleaning easier by containing the ashes in a removable pan. It is accessed by turning the screws counter clockwise on the ash pan door to release the spring latches. Do not operate the stove unless the ash pan door is secured. Replace gasket material as necessary to ensure a tight seal.

* Optional Remote Thermostat

One way to maximize the efficiency and convenience of your stove is to install a remote Thermostat. One recommendation out of many is a Honeywell model T87F, 24 volt thermostat (see page 16).

* Optional Ceramic Log Set

Although the logs are quite durable, they should be handled carefully, as they retain heat for a considerable period of time, and if dropped can break. Place the ceramic log set upright and as far forward on the secondary air tube manifold as possible. Be sure log set does not interfere with flame or cover firepot.

Glass

The Glass is a super heat resistant ceramic that withstands continuous temperatures up to 1390°F. This temperature is well beyond the temperatures in which you operate your stove.

This appliance is designed to provide a flow of air over the inside of the glass, which along with high heat helps keep it clean. When operating the stove on low for extended periods of time, the glass may get dirty. A commercial glass cleaner designed for stove glass is recommended for cleaning.

The glass should be cleaned thoroughly with glass cleaner and a soft cloth BEFORE the stove is burned.

*** Optional Parts are available to enhance your pellet stove. Please see your local dealer for further information.**

INTRODUCTION (Continued)

HOW IT WORKS

The Control Board manages the rate of combustion (draft fan), fuel delivery/heat output (auger gear motor), and heat circulation (room air fan).

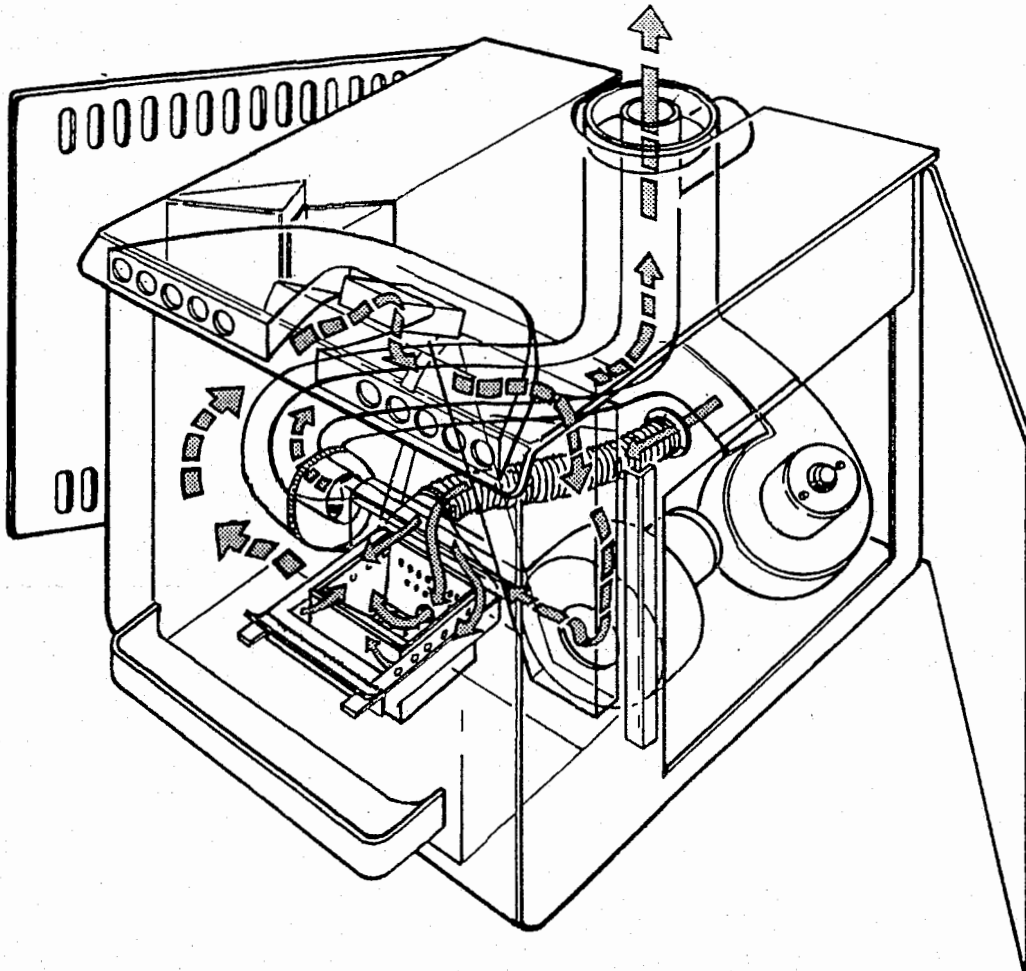
Draft Fan Operation

The draft fan pulls air into the appliance by extracting the exhaust out of the firebox. This creates a negative pressure. It first enters through a flexible hose to a plenum behind the fire chamber, then through a tube to the back of the firepot and through the bottom and sides of the firepot combustor plate out into the fire area. Some air also comes through the secondary air manifold.

During combustion the super heated exhaust rises in the fire chamber. It is drawn out at the top of the fire chamber through a penthouse box. It then

moves downward through a channel behind the fire chamber. The hot combustion air is drawn out by the draft fan and is then forced along through the inner pipe of a double duct system and exits through the flue at the top back of the stove. Though not shown, air is also forced across the window (at the top and bottom of the front door opening) to inhibit the buildup of soot. An optional exhaust plate adapter allows the stove to be fitted to an existing 6" stove pipe chimney system, or 3" pellet vent pipe. A 4" outlet is standard.

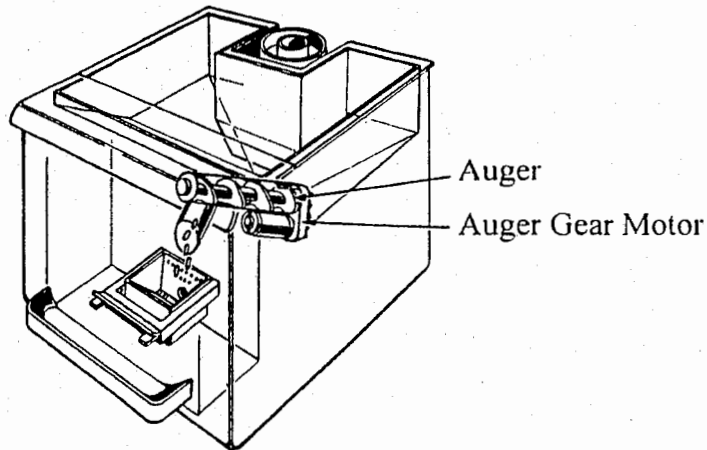
Combustion Air / Exhaust Flow Diagram



INTRODUCTION (Continued)

Auger Gear Motor

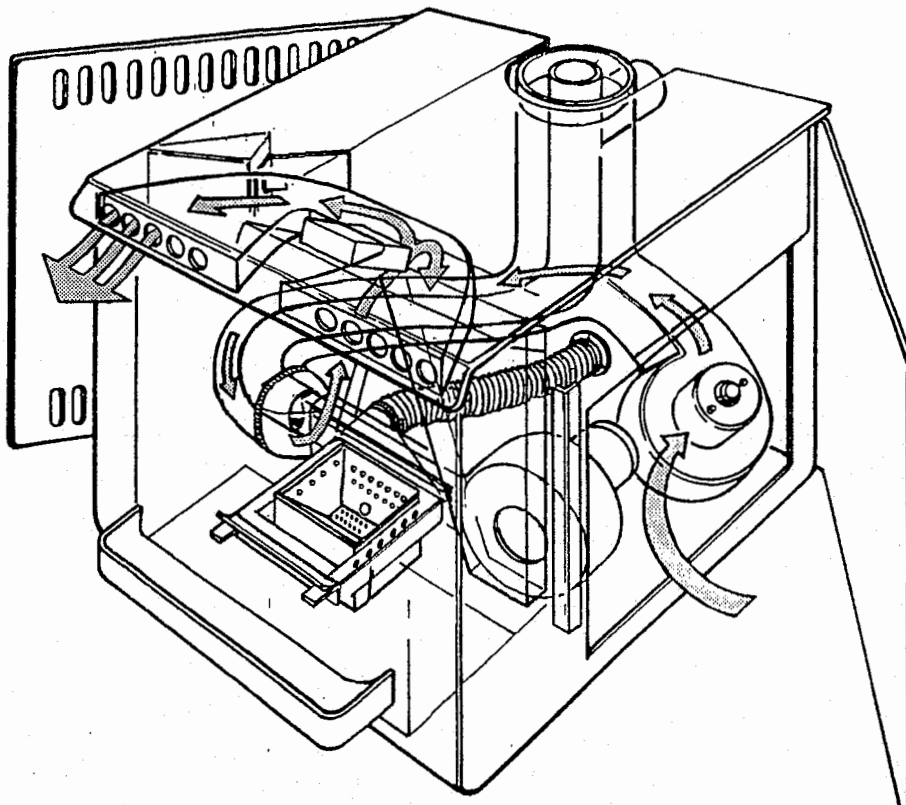
The Auger Gear Motor drives the auger to deliver pellets to the firepot according to the feed rate determined by the fuel rate switch setting.



Room Air Fan Operation

Room air is drawn through the slot openings in each side panel by the room air fan and is forced through the outer pipe of the double duct system. The room air is pushed upwards at the back of the fire chamber through it's own manifold to the top of the stove. The air passes around the super heated penthouse box, picking up more heat as it flows. Then the air is forced out of the front of the stove through 10 holes.

Room Air Fan Flow Diagram



INSTALLATION

Selecting a Location

The design of your home and where you place your stove will determine its value as a source of heat. Practical considerations may be most important in selecting a location:

- Existing Chimneys
- Room Traffic
- Proximity to combustibles
- Aesthetic Considerations
- Electrical Wiring
- Roof Design (rafter locations & roof pitch)
- Do not install stove in a bedroom

Once your options are determined, consult with your local building official regarding any potential problems. If you plan to vent your stove into any existing masonry chimney, have it inspect by a local fire marshal or qualified installer. A stove's performance is heavily influenced by the chimney.

Suggestions: Locate this appliance in a large and open room centrally located in the dwelling to optimize heat circulation.

For optimum performance the manufacturer recommends a Top Vent installation with pellet vent chimney pipe run up through the eave as opposed to a Direct Vent installation. A Direct Vent installation is where the vent terminates on an outside wall directly behind the stove with no vertical pipe. In the event of a loss of power, when installed as a Direct Vent, natural draft is not present and may allow smoke back into the dwelling.

Assembly

The Model PF-70 comes with a pedestal, or four legs or can be installed as an insert. To assemble leg or pedestal based units:

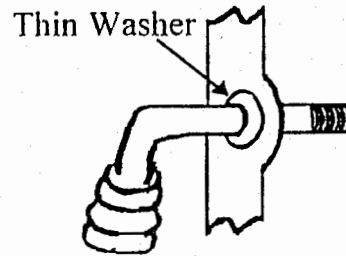
1. Remove metal pedestal (or legs) from the box.
2. Remove the box from the appliance.
3. Place the appliance on top of the pedestal (or support the stove while you attach each leg).
4. Secure the stove and pedestal (or legs) by fastening them to the bottom of the stove using the screws supplied (4) 5/16-18x3/4" for pedestal, or (4) 1/2-13x1 1/4" for legs.

Remove ash lip from box. Install below door opening to the two (2) corresponding threaded holes in the stove front, using the two (2) 5/16-18 x 3/4" socket (allen) head screws provided. This will require the use of a size 1/4" Allen wrench tool, not provided.

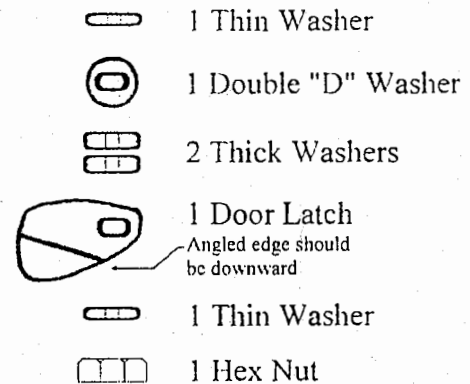
Door Handle Assembly

Assemble handle in the following order:

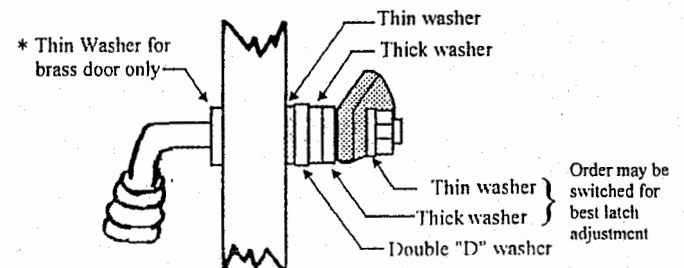
1. Insert handle through door.
 - * On brass door, add a thin washer to handle shaft before inserting handle in door frame.



2. On inside of door place components as shown in completed assembly:



THE COMPLETED ASSEMBLY SHOULD LOOK LIKE THIS:



NOTE: Washer size should follow the order in step 2, however the number of washers may vary depending on fit of door gasket.

INSTALLATION

Pre-Installation Procedure

Note: Before unit is installed it is recommended that it be pre-burned to verify the operation. This will also allow it to burn off sub-surface oils that may be present, and to help cure the paint. The "Pre-Installation Procedure" should be done in a well ventilated area as follows:

1. Plug the stove into a grounded outlet (using a circuit tester, verify the electrical outlet for proper ground and polarity where the unit will be installed. failure to do so could result in damage to the electrical components and void the warranty).
2. Switch on power by pressing OFF/ON switch (lower rocker switch) upward to the "ON" position. The LED (light emitting Diode) light will come on and glow red (early production models glow green). The Draft Fan will come on.
3. Look down into the Hopper and make sure nothing is obstructing the auger. Pour 1/4 bag of pellets in the Hopper.
4. Set Feed Rate Control Switch to low or medium-low setting.
5. Press auger Jog/Start switch (upper rocker switch) downward to initiate 12 minute start cycle. The LED lamp will now appear orange during this 12 minute period. This will bypass the low temperature limit disc (snap switch) and allow the auger to feed pellets to firepot at the feed rate setting selected.
6. Apply nonvolatile lighting material to the pellets and light it with a match. Let the fuel burn for five minutes leaving the door slightly ajar.
7. If the stove has not warmed sufficiently after the 12 minutes (LED will revert back to red glow - earlier models glow green) to keep auger dropping pellets (low limit thermostat will not have reached set temperature to close contacts and complete the auger circuit), merely repress rocker switch to restart 12 minute cycle. During this time the feed rate should become automatic.
8. Pressing Auger/Initiate switch upward will manually engage auger. This can occur only after start cycle is started or stove is at operating temperature. This would be used to more quickly get the auger to start pellets dropping when hopper is refilled after running out of pellets.
8. Set Fuel rate switch to desired heat output by turning the knob clockwise. This will increase the burn rate from low to medium-low to medium-high to high.
9. Once running, observe the stove operating for 15-30 minutes.
10. As the stove temperature rises, the Room Air Fan will automatically be engaged.
11. Once the stove is operating properly, complete filling the Hopper and run the unit for 30 minutes.

Paint Cure-In Period

Your stove finish is a high temperature paint that requires time and temperature for the silicon resin in the paint to completely cure. Depending on your use, this may take a few hours or a few days. The paint manufacturer recommends you ventilate the house during the initial burns. Although the emission is primarily Carbon Dioxide, there are other components emitted which make it smell bad and may irritate some people. Do not place anything on the stove surface until the paint is completely cured, as it will become soft during this process. Do not attempt to repaint the stove until the paint is completely cured. If the surface later becomes stained or marred, it may be lightly sanded and touched up with spray paint from the same paint manufacturer. Paint is available at your local dealer.

KEEP YOUR HOUSE WELL VENTILATED DURING THE CURING PROCESS. THE CHEMICAL SMELL AND BLUISH HAZE EMITTED BY THE CURING PAINT CAN BE QUITE NOTICEABLE AND MAY SET OFF A SMOKE DETECTOR.

CLEARANCES Standard Residential or Mobile Home Installation

FREESTANDING MODELS: PF70; PF70MH, PF70B, PF70MHB; PF70BL

Minimum Clearances to Combustibles

Side: 3"/75mm

Back: 2"/50mm

Corner 2"/50mm horizontal from door

Alcove Installation *

This appliance may be installed in an alcove which meets the following requirements:

Alcove height: 60"/1500 mm minimum

Alcove width: 30"/750 mm minimum

Alcove depth: 36"/900mm maximum

Corner Installation

The pellet exhaust vent shown in the installation to the right can penetrate either side wall or use an inside vertical installation.

Pipe Requirements/Clearances

The required type of pipe is Ryder or Dura-Vent (brand) listed pellet vent pipe. Additional Approval: Minimum 24 gauge single wall pipe may be used in mobile home and residential freestanding configurations.

Approved Sizes: 3"/75mm
4"/100mm
6"/150mm

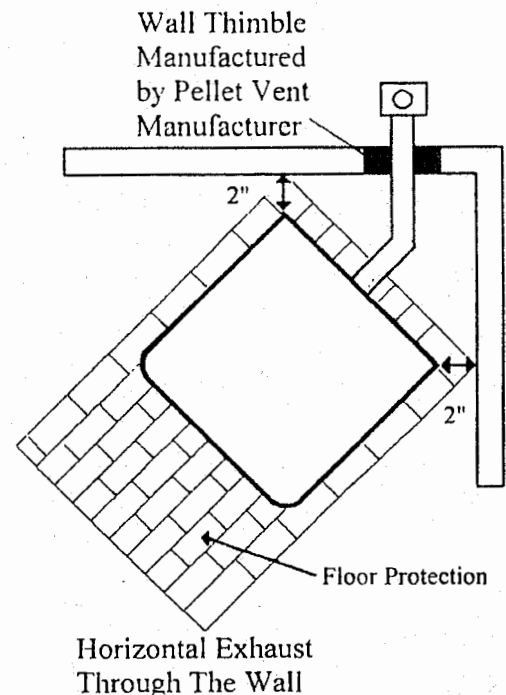
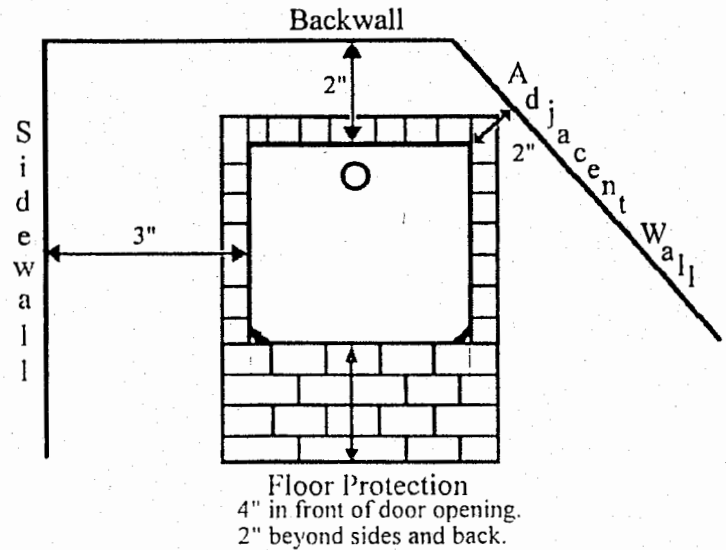
Maximum total horizontal run: 36"/915mm

Offsets allowed: 2 maximum (not to exceed total of 180° in direction change).

Pellet vent pipe requires 3"/75mm clearance from outside of pipe (all diameters: 3", 4", 6").

Floor Protection

Non-combustible floor protection must fully cover the area beneath the appliance and extend 4"/100mm in front of the door opening and 2"/50mm beyond sides and back of appliance.



*** IF INSTALLED TO THE MINIMUM SIDE AND REAR CLEARANCES IN AN ALCOVE, REMOVAL OF THE APPLIANCE MAY BE NECESSARY FOR SERVICING.**

CLEARANCES Installed as Masonry Fireplace Insert

The models PF70FI and PF70FIB are approved for installation into a masonry or listed factory built fireplace. This unit includes a surround face plate.

Clearances to Combustibles

Floor protector	100mm/4" (D)
Side wall to unit	75mm /3" (E)
Mantle to unit	150mm/6" (F)
Top facing to unit	75mm /3" (G)
Side facing to unit	75mm /3: (H)

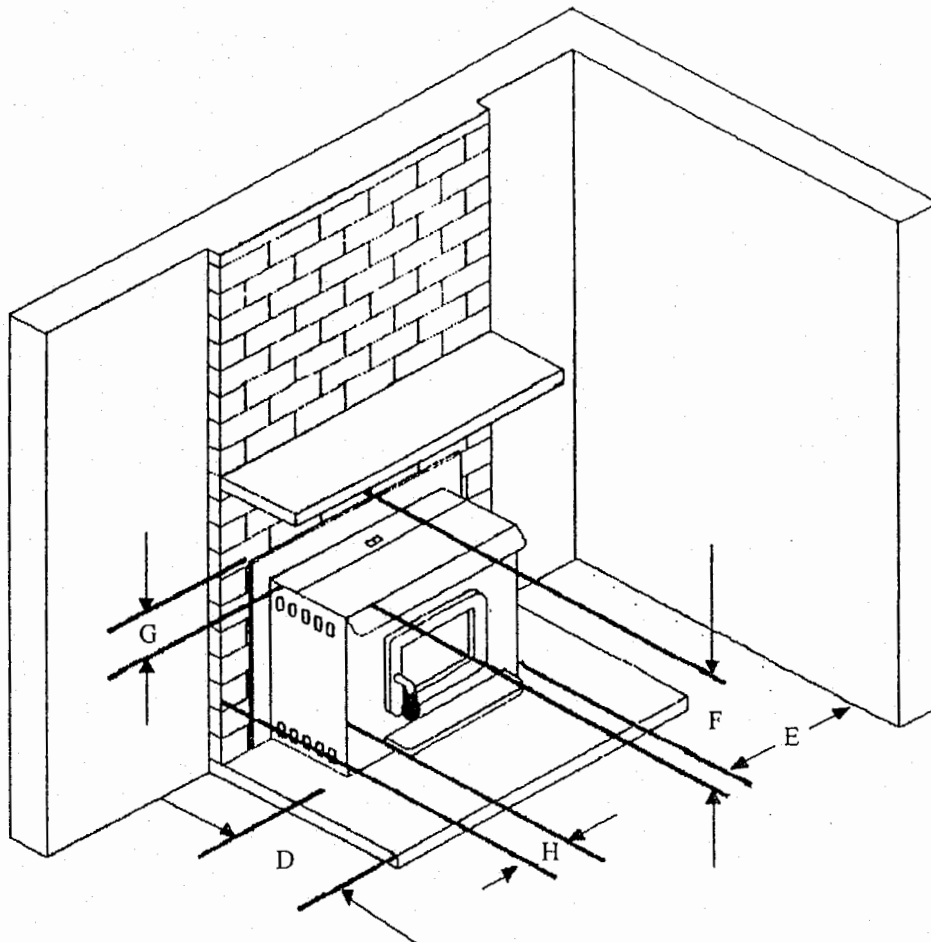
Minimum Fireplace Size

Width	22" / 560mm	minimum
Height	19 1/2"/ 495mm	minimum
Depth	16" / 405mm	minimum

Hearth Protection

In front of heater	4"/100mm
To the side of heater	3"/75mm

The noncombustible hearth and hearth extension do not require a hearth pad.



INSTALLATION

ALL CLEARANCES/INSTRUCTIONS LISTED BY PIPE MANUFACTURER MUST BE FOLLOWED.

Venting Requirements

This appliance is shipped from the factory with a standard 4" flue collar. Optional 3" and 6" flue collars are available through your local dealer.

There are several options for installing and venting of this pellet appliance. Refer to clearances before installing.

The most desirable installations are:

Freestanding: Pellet vent pipe connected to top of the stove and run up through ceiling, then terminating above the roof line. Place the appliance a working distance away from the wall.

Insert: Listed PL type liner from the appliance to termination.

Choose the appliance location with the least amount of interference with the house framing, plumbing, wiring, etc.

Connect only one flue per appliance.

Maintain clearances in accordance with NFPA 211.

The required type of pipe is Ryder or Dura-Vent (brand) listed pellet vent pipe which conforms to UL standard 641. Additional approval: Minimum 24 gauge single wall pipe may be used in mobile home and residential freestanding configurations.

WARNING: DO NOT USE CLASS B VENTING INTENDED FOR GAS APPLIANCES AS A CHIMNEY OR CONNECTOR PIPE ON A PELLET FIRED APPLIANCE.

Follow pipe manufacturers installation instructions for precautions required for passing vent through a combustible wall or ceiling (i.e. use an approved thimble).

A support bracket must be installed every 5 feet of pellet vent pipe on the exterior.

No more than 180° of elbows allowed (i.e. two 90° elbows or two 45°s and one 90°, etc.).

Maximum rise is 33' if vertical only.

Maximum 36" total horizontal length only.

You may connect the pellet vent pipe to the flue collar using three screws to secure it. All pipe joints and collar must be sealed with the compound supplied with the pipe or a RTV silicone with a rating of at least 570° F, or Interam to provide a complete seal.

INSTALLATION

Vent Termination Requirements

Do not terminate vent in an enclosed or semi-enclosed area such as: carports, garage, attic, crawl space, under a sun deck, porch, narrow walkway, closely fenced area, or any location that can build up a concentration of fumes such as a stairwell, covered breezeway, etc.

Vent surfaces can get hot enough to cause burns if touched by children. Non-combustible shielding or guards may be required.

It is recommended that when an appliance is vented directly through a wall, a minimum of five feet of vertical pipe should be installed to create some natural draft. This will prevent the possibility of smoke or odor entering the dwelling during appliance shutdown or loss of power and to keep exhaust from causing a nuisance or hazard and exposing people or shrubs to high temperatures. In any case, the safest and preferred venting method is to extend the vent through the roof.

The termination of the outside chimney of the pellet stove shall be located in accordance with the following:

1. Higher than 3 ft. above any forced air inlet (air conditioner, etc.) located within 10 ft.
2. Not less than 4 ft. below, 4 ft. horizontally from or 1 ft. above any gravity air inlet (door, window, etc.).
3. Not less than 2 ft. from combustible materials such as an adjacent buildings, fences, protruding parts of the structure, roof overhang, plants and shrubs, etc. and not less than 7 ft. above grade when located adjacent to the public sidewalks (access).
4. Not less than 3 ft. below an eave or any construction that projects more than 2" from the plane of the wall.
5. Distance from bottom of termination and grade - 12 inches minimum. This is conditional upon plants and nature of grade surface: The exhaust gases are not hot enough to ignite grass, plants and shrubs located in the vicinity of the termination. The grade surface must not be a lawn.

Connection To A Masonry Chimney Through A Wall

Be sure to verify the construction of a masonry chimney, as many have combustible framing.

The use of single wall flex or rigid 24 gauge galvanized or stainless steel pipe as a liner is approved.

Connection To An Existing Class A Chimney

A chimney adapter can be used to make the connection from 3", 4", or 6" pellet vent pipe to existing UL chimney system. Verify with the pipe manufacturer that your pipe brands will interconnect. The use of single wall flex or rigid 24 gauge galvanized or stainless steel pipe as a liner is approved.

INSTALLATION

Horizontal Exhaust Through Wall

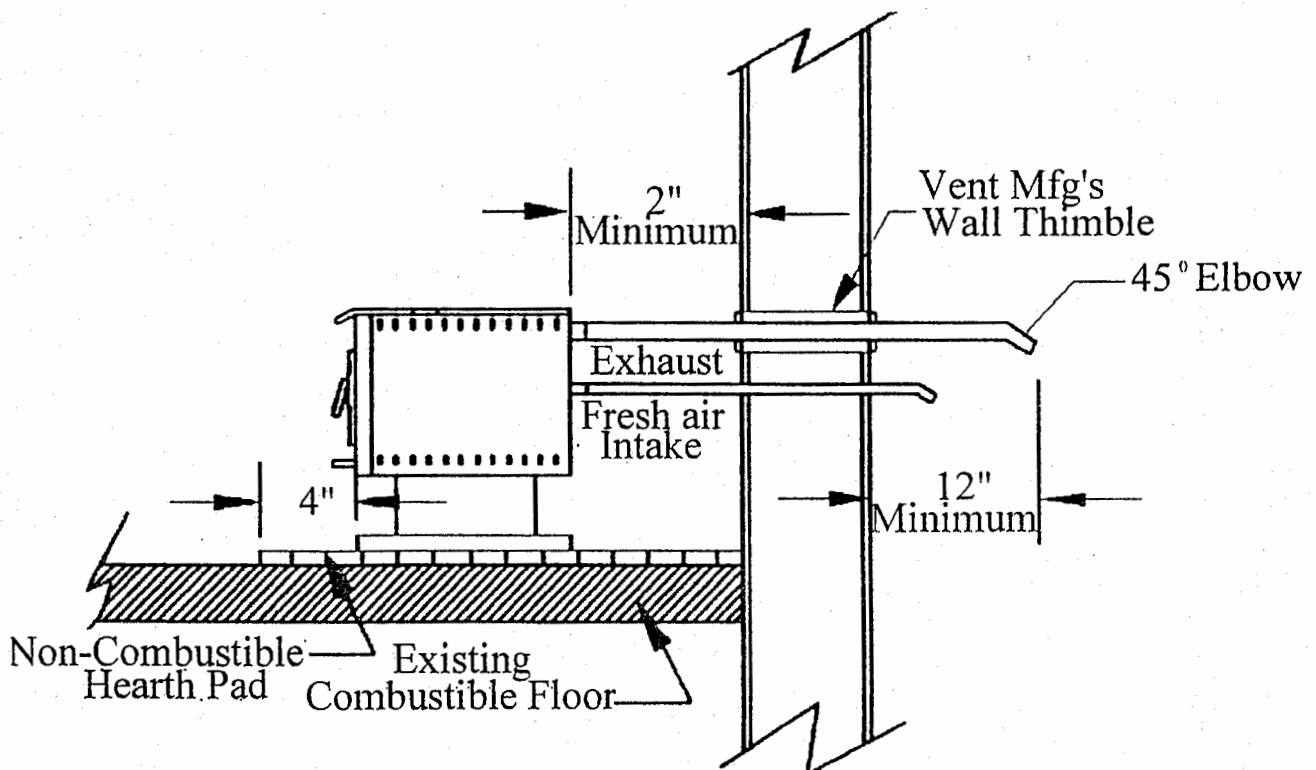
1. Position appliance on noncombustible hearth pad. Locate the center of the exhaust pipe on the appliance. Extend that line to the wall. Once you have located that center point on the wall, use a saw to cut a 7"/175mm diameter hole (for 3"/75mm vent), 8"/200mm (for 4"/100mm vent) or 12"/300mm (for 6"/150mm vent). Now you are ready to install the wall thimble (PL type). Use either Ryder or Dura-Vent pellet vent pipe.
2. (Optional) Locate and cut a hole for combustion air pipe using step one procedure.
3. Install a length of pipe approximately 12"/300mm into the wall thimble and seal pipe joints.
4. Push the unit until the pipe connects to the wall thimble. The pipe should pass easily through the wall thimble.
5. If necessary, bring another pipe length (PL type) to the outside of the home and connect it to the first section. The pipe must extend at least 12"/300mm away from the building.
6. Install vertical pipe or if all requirements for direct venting are met, install vent termination. The stainless steel cap termination supplied by the Pellet-Vent manufacturer is recommended. However, if the vent terminates several feet above

ground level and there are no trees, plants, etc. within several feet, a 45° elbow can be used as a termination. the elbow must be turned down to prevent rain from entering.

Direct Vent

This appliance can be converted to a Direct Vent by transferring the top flue outlet to the rear vent position, then follow the directions listed above (Horizontal Exhaust Through Wall). Although a Direct Vent flue configuration is an approved installation, the manufacturer recommends that as a minimum, the appliance be vented directly through a wall, and at least five feet of vertical pipe installed to create some natural draft. This will prevent the possibility of smoke or odor entering the dwelling during appliance shutdown or loss of power. This will also keep exhaust from causing a nuisance or hazard by exposing people or shrubs to high exhaust temperatures.

THE SAFEST AND PREFERRED VENTING METHOD IS TO INSTALL THE OUTSIDE FLUE WITH A CLEAN-OUT "T", AND RUN PELLET VENT CHIMNEY PIPE UP THROUGH THE EAVE.

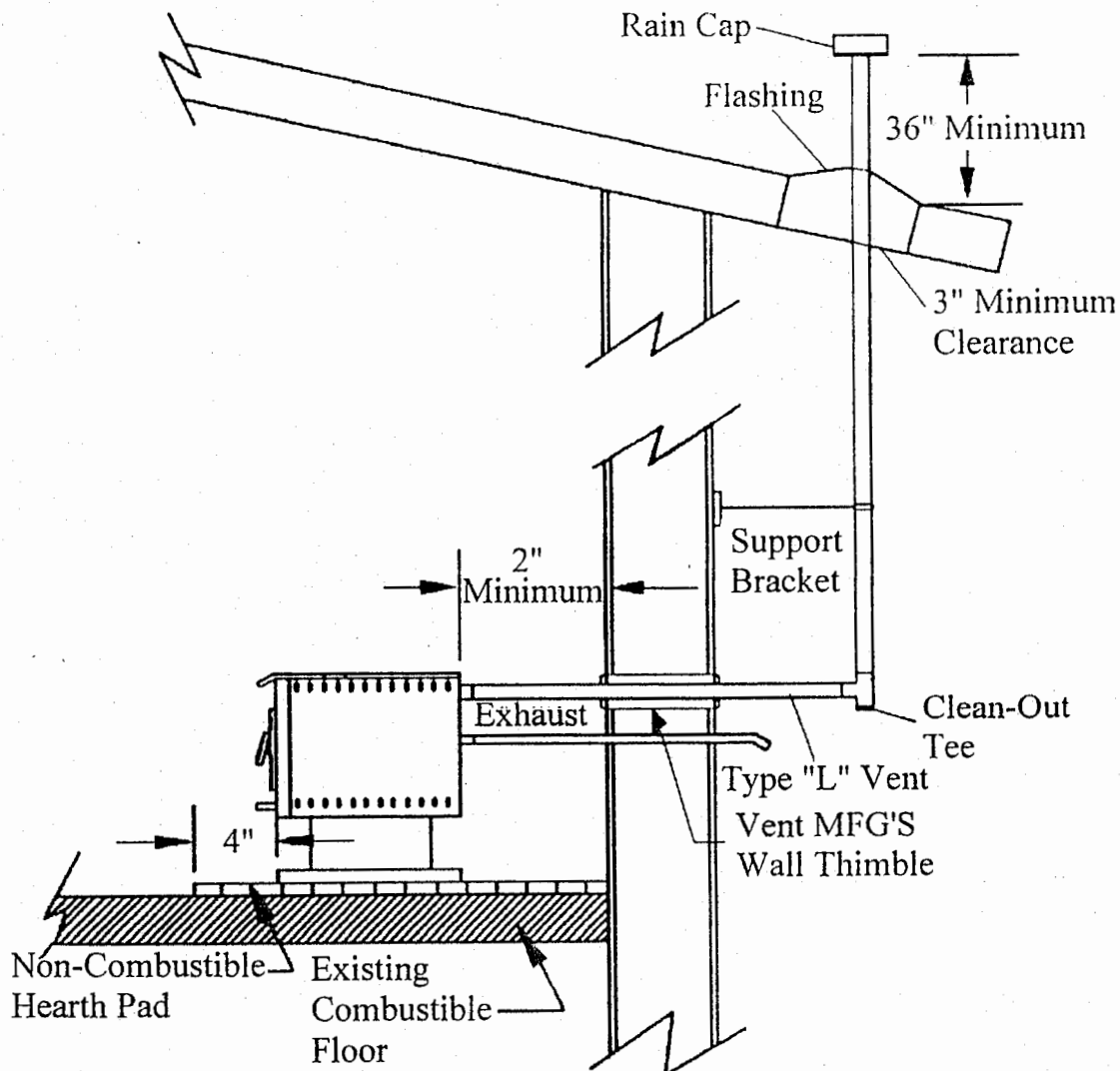


INSTALLATION

Outside Vertical Through the Roof Installation

First follow directions for *Horizontal Exhaust Through Wall* (page 11).

1. Install clean-out tee on outside of the house.
2. Install PL vent upward from the clean-out tee. Install support brackets every 5' (feet) to keep the vent straight and secure.
3. Attach the flashing as you go through the roof.
4. The rain cap should be approximately 36" (inches) above the roof.

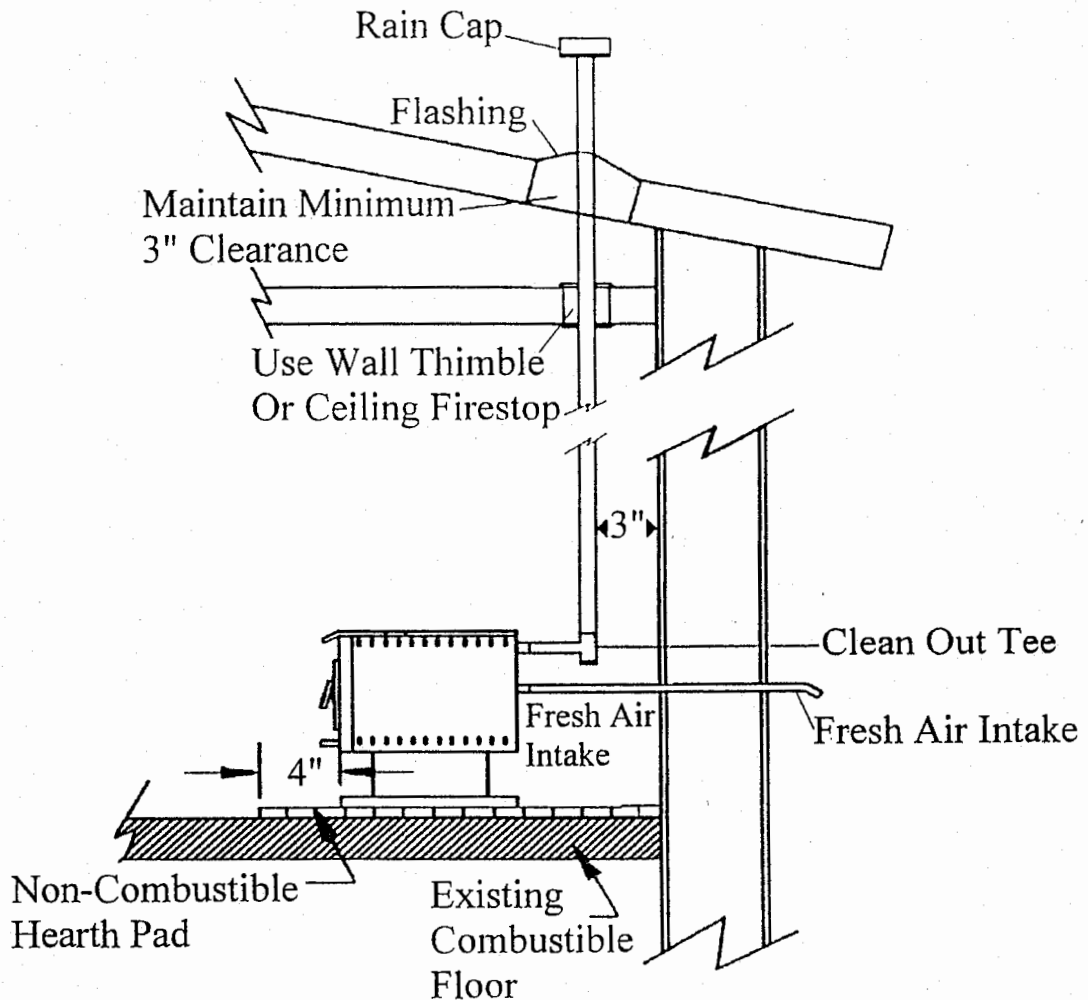


INSTALLATION

Inside Vertical Through the Roof Installation

1. Choose a stove location that is ideal. See section on *Selecting a Location*.
2. Install non-combustible hearth pad.
3. Place appliance on hearth pad (vent pipe must be minimum of 3" away from a combustible wall).
4. (Optional) Locate center of fresh air intake pipe on appliance. Match that center with the same point on the wall and cut a hole approximately 2" in diameter. Install the fresh air intake pipe.
5. Install the clean-out tee.
6. Install pellet-vent pipe vertically. Install vent through ceiling firestop. Maintain a pipe clearance of 3" to combustibles and keep attic insulation away from the pipe.
7. Extend the Pellet-vent through the roof flashing.
8. The rain cap should be approximately 36" above the roof.

STANDARD INSTALLATION (RECOMMENDED)



The most desirable installation is Pellet Vent pipe connected to the top of the appliance and run up through the ceiling, then terminating above the roof line. Be sure to follow all clearances listed by pipe manufacturer.

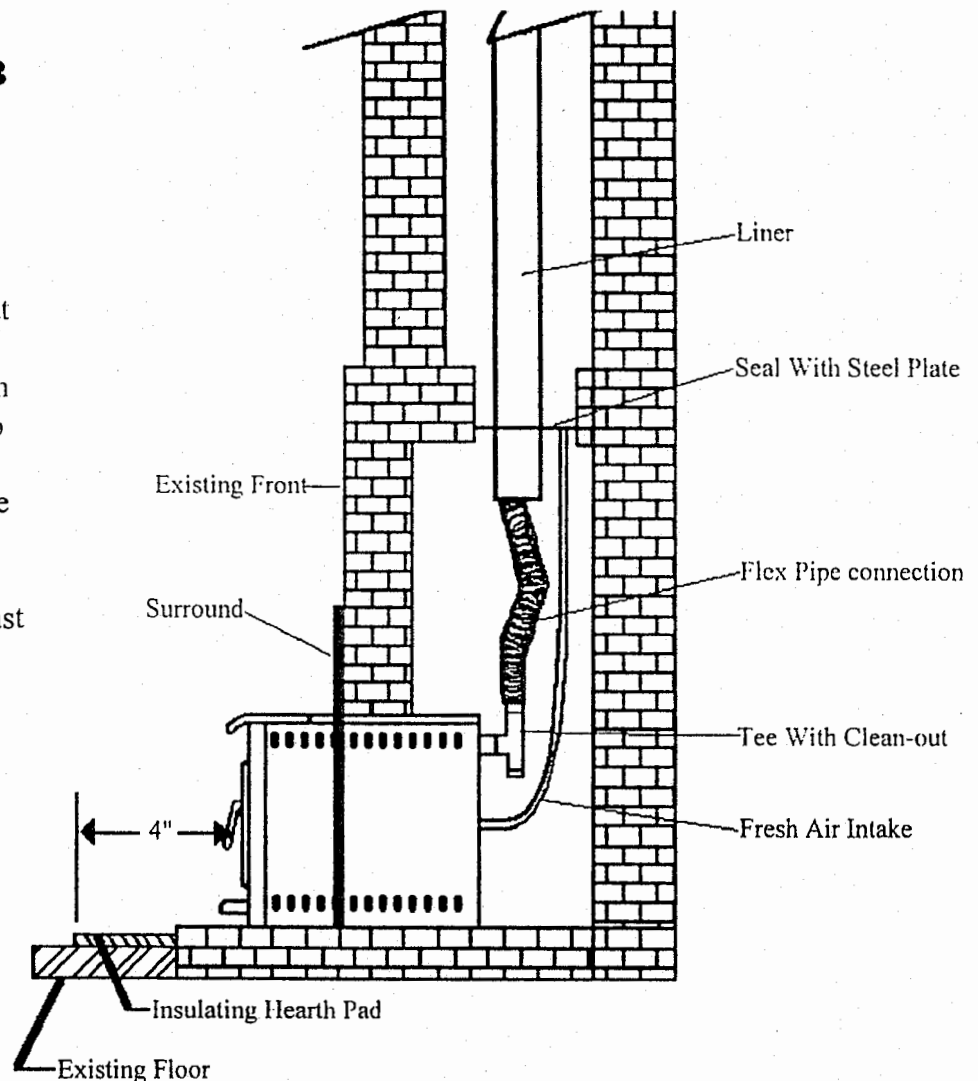
INSTALLATION

The models PF70FI and PF70FIB pellet fired wood heaters are approved for installation into a masonry fireplace or an approved factory-built zero clearance fireplace. Although the minimum venting requires only a starter section that protrudes past the damper assembly and is sealed at that point, the manufacturer recommends that a full 3", 4" or 6" liner (listed PL type) be installed from the appliance to termination.

Installation Into Masonry Fireplace

Models PF70FI & PF70FIB

1. Install the hearth pad (if necessary).
2. Lock fireplace damper in open position.
3. Install positive flue connector at fireplace damper.
4. Connect an exhaust pipe section to the flue collar exit on the top of the stove.
5. Install listed PL type liner to the top of the chimney (minimum requirement is listed PL type starter section that protrudes past the damper assembly and is sealed at that point).



Installation Into Factory Built Fireplace

The factory built fireplace must accept this appliance without modification other than removing bolted or screwed together pieces such as smoke shelf/deflectors, ash lips, screen and door tracks, that may be reinstalled to restore the fireplace to its original operating condition if this appliance is removed and not replaced. Do not remove damper from fireplace. **THE REMOVAL OF ANY PART MUST NOT ALTER THE INTEGRITY OF THE OUTER SHELL OF THE FIREPLACE CABINET IN ANY WAY.** Although the minimum venting requires only a starter section that protrudes past the damper assembly and is sealed at that point, the manufacturer recommends that a full 3", 4" or 6" liner (listed PL type) be installed from the appliance to termination.

INSTALLATION

Mobile Home Installation Requirements

Installation of this appliance into manufactured housing must follow the instructions for residential installation, with the following supplemental requirements per OAR 918-520-010 through 918-520-110:

1. Secure the appliance to the floor.
2. Do not disturb the structural integrity of the home. The chimney must provide for a section joint so that any parts extending above 13' 6" from ground level can be removed for transportation of the mobile structure.
3. The stove must be grounded to the mobile home trailer frame with a No. 8 (minimum) solid conductor.
4. The combustion air must communicate to the outside air.
5. Floor protection beneath the unit is required, 4" in front, 0" on sides and back.
6. Structural members such as roof trusses or floor joists cannot be cut or modified while making the installation.

Outside Air Provision

Although this section applies to a mobile home installation, it may also be required by local codes in standard residential installations.

When connecting to an outside fresh air source, be sure that the material is not PVC or plastic pipe. Only 2" inside diameter flexible metal ducting or flexible high-temperature material should be used. Steel, aluminum or copper pipe could be substituted.

To provide sufficient combustion air, keep the number of bends in the pipe to a minimum. If there is to be several bends in the fresh air pipe or if it is to be an extended length, then 2 1/4" or larger ducting is recommended.

OPERATION

Control Panel Functions

A. Off/On Power Switch

The main power switch has two positions:

- up - OFF
- down - ON

B. Auger / Initiate Switch

Pressing the rocker switch upward will cause the auger motor to run as long as you hold the switch in this position. This will shorten the time needed to get pellets to drop into the firepot, particularly after filling the hopper when it was entirely out of pellets. Pressing this switch downward starts a 12 minute cycle which bypasses the snap discs. The L.E.D. lamp will change to a light orange color for this duration.

C. L.E.D. (light emitting diode) Lamp

When this light is on, it indicates that the stove is operating in the following mode.

- Green: Power ON
- Red: Cool Down
- Orange: Start Mode (12 minute cycle)

D. Fuel Rate Switch

This rotary switch has four burn rate positions; clockwise for higher feed rates, counter-clockwise for lower feed rates.

Fuel Delivery

Fuel Rate Setting	* lb.'s per hour fuel delivery
1. Low	1.00 lb./hr.
2. Medium Low	2.25 lb./hr.
3. Medium High	3.75 lb./hr.
4. High	5.00 lb./hr.

* feed rates are approximations only. Actual feed rate will vary depending on size and length of fuel used and variations in line voltage.

The Room Air Blower increases in speed as fuel rate increases. The following approximate voltages are delivered to the blower on each fuel rate:

Room Air Blower

Fuel Rate Setting	Voltage
Low	89V
Medium Low	97V
Medium High	105V
High	114V

The draft fan speed increases only slightly as the feed rate is increased from low to high.

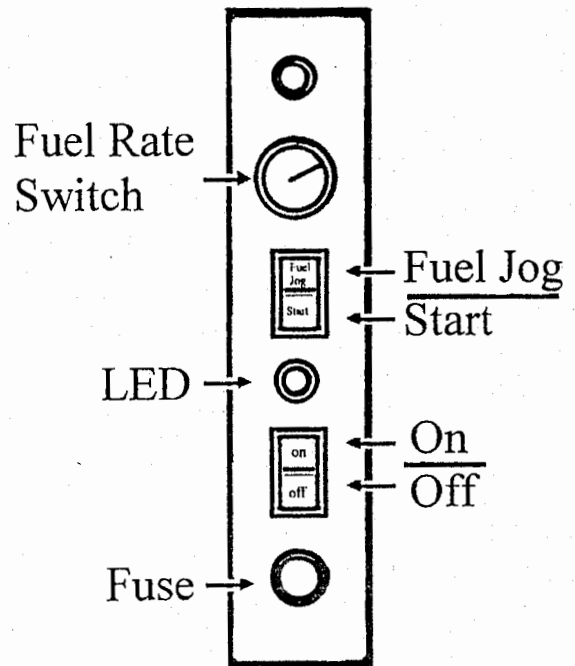
Draft Fan Speeds

Fuel Rate Setting	Voltage
Low	104V
Medium Low	107V
Medium High	111V
High	114V

E. Optional Wall Thermostat

One way to maximize the efficiency and convenience of your stove is to install a remote thermostat. A Honeywell, model T87F 24 volt thermostat is one of the many units available that is recommended.

Follow the manufacturer's installation instructions using 18/2 stat wire. Install wire to appliance by cutting the transparent jumper wire leads on the control board, then connect leads to wall thermostat. Once you have installed the thermostat, the fuel rate will automatically be on low when there is no heat demand. When the stove is calling for heat, it will come on at the setting you have selected with the fuel rate switch.



MAINTENANCE

ROUTINE INSPECTION REQUIREMENTS

DISCONNECT POWER BEFORE DOING ANY MAJOR MAINTENANCE ON THIS STOVE

The following areas should be inspected periodically to ensure that the appliance is operating at its optimum and giving you excellent heat value:

Firepot / Burner Plate

Inspect the Firepot and Burner Plate periodically to verify the holes are not blocked with impurities. If necessary, clean by removing the burner plate from the firepot and scrape the surfaces until the holes are clear. Inspect inner holes of Firepot that they are free of obstructions (buildup). Remove Firepot and empty when buildup occurs. The cleaning frequency will be dictated by the quality and quantity of the fuel burned. The following is the suggested schedule to establish a minimum: Between 2 days and 2 weeks, depending on the ash content in the fuel burned. Ash content can vary from .25% to 1%. Using dirty fuel affects the cleanliness of the burn and maintenance frequency. Remove clinkers or carbon build up as necessary. Clinkers are a byproduct of the fuel. Silica (or dirt) in the fuel, along with other impurities can fuse under heat and cause clinkering. Clinkering is a function of the fuel, not the stove.

Ash Pan Gasket and Door Gasket

CAUTION: MAINTAIN GASKETS IN GOOD CONDITION. DO NOT LEAVE STOVE BURNING WITH DOOR OR ASH PAN DOOR OPEN OR AJAR. It is important to maintain gaskets for an air tight seal. If the Ash Pan Gasket or Door Gasket become loose over time, glue it back into position using high temperature (RTV) silicone sealer as an adhesive. If the gaskets should become frayed or damaged they should be replaced. Gasket material can be purchased from your dealer or some hardware stores. Use same size and type as original.

Door Gasket: 3/4" rope, medium density.

Ash Drawer: 3/8" rope, medium or light density.

Ash Pan

This is located under the exterior ash lip (below door) and is locked with two spring latches (with slot heads). Loosen the two slot heads on the ash pan with a straight blade screw driver by turning both screw heads counterclockwise. This will release the spring latches.

Ash Removal and Disposal

CAUTION: BE SURE THE FIRE IS OUT AND STOVE IS COLD BEFORE REMOVING ASHES! NEVER BURN STOVE WITH ASH PAN DOOR OPEN.

Ashes can hold live embers for several days, and must be disposed of with care. Be certain the fire is out and stove is cold before removing Ash Pan.

1. Brush ashes into Ash Pan.
2. Remove ash pan and dump ashes into a metal container with tight fitting lid. Store container away from appliance.
3. Clean and replace Ash Pan and tighten the spring loaded screws.

The closed container holding ashes should be stored on a noncombustible surface, away from combustible materials. Keep ashes in the container until you are certain all the cinders have completely cooled. NEVER place ashes in a cardboard box or any other combustible receptacle. Store pellet fuel at least 36" away from appliance.

MAINTENANCE

Refractory Logs (Optional)

To ensure the longevity of your logs, never attempt to handle them while they are hot.

Exhaust Vent

This vent should be checked every month or two and cleaned when needed.

Fresh air intake

Inspect periodically to be sure that it is not clogged with any foreign materials.

Draft Fan and Room Air Blower

These blowers are equipped with special sealed lubricated bearings that do not need additional lubrication. For this reason, it is recommended that you do not try to add any drops of oil to them: Excess oil can ruin the motors. Disconnect power prior to opening the side panels.

Appliance Glass

The appliance glass is of high temperature pyroceram 9" x 13" with a small curved notch. To replace the glass unscrew and remove the glass retainers. Remove the glass and any broken pieces. Then replace it with a new piece of glass and screw the retainers back on the door casting. High temperature fiberglass tape should be installed on edge of glass.

Cleaning Procedure

1. Remove the *Burner Plate* from the *Firepot*.
2. Remove the *Firepot*. It lifts out of the notches in the *secondary air ring*.
3. Remove the side *firebricks* (one on each side).
4. Remove the back *firebrick* (one on each side).
5. Remove the *secondary air ring*. It lifts up at the front and out of the stove.
6. Remove the *draft fan access plate* located in right rear corner of the *firebox*.

7. Remove the *baffle plate* located in the top of the *firebox*. Remove the *ash pan*.
8. Use a shop vacuum and clean all fly ash and combustion byproducts from the *flue passage* located in the top of the *firebox* (where you removed the *baffle plate*).
9. Turn the blades on the *draft fan* while brushing, then vacuum ash and byproducts from the blades.
10. Vacuum all fly ash and combustion byproducts from the *firebox*, including all access ports (air holes), *auger tube*, and *primary combustion air inlet*.
11. Empty the fly ash and combustion byproducts from the *firepot* by brushing and vacuuming.
12. Empty and vacuum the ash from the *secondary air ring*.
13. Vacuum the 4 *firebricks*, the *baffle plate*, the *ash pan*, and the *draft fan access plate* of all fly ash and combustion byproducts.
14. Reassemble all of the removed parts in order as follows:
 - a. *Baffle Plate*.
 - b. *Ash Pan*.
 - c. *Combustion Access Plate* (The gasket side goes in the right corner of the *firebox*).
 - d. *Secondary Air Ring*.
 - e. *Back Firebrick*.
 - f. *Side Firebrick*.
 - g. *Firepot* (Make sure it sits in the *Secondary Air Ring* notches).
 - h. *Burner Plate*.

MAINTENANCE

Maintenance Related Problems/Solutions

As with all appliances, periodic maintenance is required to keep them operating at optimum efficiency. We recommend an annual maintenance service by a qualified technician.

Maintenance Related Problems

Recommended Maintenance Points

Problem: Decrease in heat output or incomplete combustion.

Solution: See maintenance points A, B, C, D & E.

Problem: Decrease in Room Air Blower velocity.

Solution: See maintenance point D.

Problem: Smoke or odor in home.

Solution: See maintenance points A, B, C, & G.

Problem: Flames appear to burn lazily.

Solution: See maintenance points A, B, C, & E.

Problem: Noticeable change in Room Air Blower noise.

Solution: See maintenance point D.

Problem: Pellets stick to inside surface of hopper (additives in fuel bonding to paint).

Solution: See maintenance point H.

A. Once for every 1/2 ton of fuel burned, use a brush and remove all dust and fly ash from Firebox and Baffle areas.

B. Remove and clean the Firepot and Burner Plate. Keep inner air holes free from buildup. Remove ashes from the Firebox as often as fuel dictates.

C. Clean chimney, cap and exhaust passage way annually or as needed. Inspect monthly.

D. Vacuum air intakes and squirrel cage on Room Air Fan annually.

E. Clean squirrel cage on Draft Fan annually.

F. If remote Thermostat is used, remove cover and clean contacts annually.

G. Replace Door Gasket and Ash Pan Door Gasket as needed.

H. Clean inside surface of hopper with a good window cleaning solution, then apply a non-stick spray (i.e. Teflon Spray). Do not use vegetable or oil based sprays.

If solutions fail to cure problem, see *Troubleshooting*.

TROUBLESHOOTING

Disconnect 115 VAC power cord before opening panels. Electrical problems should be referred to a qualified service technician.

Problem /Remedy:

1. Fire goes out.

- a. The *Hopper* is empty.
Check hopper for fuel and refill if necessary.
- b. *High Heat Limit Switch* (on *Hopper*) has been activated.
Wait until unit cools down and then restart stove.
- c. *Auger Gear Motor* is not functioning.
Open the right side panel. Check to see that all wires are firmly inserted into the terminal strip. Reconnect any loose wires. Check to see if the ON/Off power switch is on. Take note if the LED lamp is lit. If the LED lamp is on, check for loose connections to the *Auger Gear Motor* (yellow leads). Check for loose connections on the wires at the vacuum sensor (located behind right side panel). If all connections are secure and *Auger Gear Motor* still does not respond, or if one or both of the fan motors are not functioning, contact your local dealer.
- d. *Auger Gear Motor* is jammed.
Open the left side panel. Locate the *Auger Gear Motor*. Hold it with both hands and rock it back and forth in order to release the auger.
- e. Main power has been off for an extended time period.
Remove any excessive pellets and re-light the stove.

2. Pellets not feeding.

- a. The *Hopper* is empty.
Check the *Hopper* for fuel and refill if necessary.
- b. *Auger Gear Motor* is not functioning or is jammed.
Follow procedure 1c and 1d.
- c. *Vacuum sensor relay* has lost its vacuum, causing the *auger gear motor* to lose power.
The loss of vacuum may be caused by a blockage of the exhaust pipe, failure of the combustion gear motor or *Vacuum Sensor Relay*. Connecting a jumper wire across the common terminal ('C') to the normally open terminal on the vacuum sensor relay will indicate if this is the source of the failure. The auger will then start operating normally. Replace the vacuum relay.

3. Stove does not go to low burn.

- a. *Wall Thermostat* (optional) contacts have stuck closed.
Rotate the thermostat dial to a low temperature, then tap gently on the thermostat. If the thermostat goes to low burn, replace the thermostat. If the unit continues to operate at high burn, remove one of the wires from the thermostat. If the problem persists go to stop 3.b
- b. *Control Board* failure.
Disconnect power from stove. If there is a dead short, contact your local dealer.

TROUBLESHOOTING

4. Stove will not go to high burn.

- a. *Wall thermostat* has failed.

Using an OHM meter, measure across the contacts on the thermostat. Rotate the dial to activate the thermostat. Activation is indicated by a contact closure "zero Ohms". If the contact does not close replace the thermostat. A preliminary test is to place a jumper across the leads (this should cause the stove to go into a higher burn mode).

- b. Wiring from the *Wall Thermostat* is open.

Check the wiring from the *Wall Thermostat* to the *Control Board* for continuity. Replace or reconnect wiring if required.

- c. *Control Board* failure.

If the above tests do not resolve the problem, replace the *Control Board*.

5. Draft Fan and Room Air Blower will not shut off after the switch has been turned off and the stove has cooled down. Approximate cooling time is 70 minutes.

- a. *Fan/Cool Down Thermal Disc* has been shorted closed.

Disconnect the main power cord. Locate the *Fan/Cool Down Thermal Disc* (orange wire leads and inner most sensor) and remove the leads. Using an OHM meter, test across leads for an open condition. Replace the *Fan/Cool Down Thermal Disc* and reconnect the leads and main power.

6. Draft Fan will not operate when switch is turned on.

- a. Main power cord has not been plugged into wall outlet.

Plug unit into wall plug.

- b. Overheat sensor has been activated.

Follow procedure 1.c

- c. *Control Board* failure.

If 115 VAC is present and the stove is still not operating normally, contact your local dealer. If your stove shuts down due to flame out, you may require a delay of up to one minute with the power switch off before the controller will reset.

7. Room Air Blower runs at full speed at all times.

- a. The *Room Air Blower* runs at a speed directly related to the setting on the fuel rate dial. First attempt to adjust the *Room Air Blower* speed with the fuel rate dial. If the problem still persists, contact your local dealer.

8. Black smoke is seen while at low burn.

- a. Loss of vacuum due to loose or leaky ash pan door.

Check that the ash pan has been properly replaced and that the spring latches (slotted head) at the front of the ash pan have been totally tightened. If the problem persists, check that the sealing gasket is making contact with the face of the stove.

Your pellet stove has the following automatic safety feature. If the stove overheats, a high temperature limit switch will be activated and the unit will shut down. The blower will remain on to cool the unit down.

SPECIFICATIONS

Models PF70, PF70MH, PF70B, PF70MHB, PF70BL, PF70FFI & PF70FIB

Approx. Sq. Ft Heat Capacity	Up to ~1500 Sq. Ft.
Flue Size	4" (optional 3" & 6") Top/Rear
Width overall	24"
Depth overall	◆ 24"
Stove projection onto hearth	8" (not including ash lip)
Height overall	
W/Legs	27 3/8"
W/pedestal	29 3/8"
insert	19 3/8"
Floor to Rear Flue Center	
W/Legs	24 3/4"
W/pedestal	26 3/4"
Fireplace minimum opening size	
Height	19 1/2"
Width	22"
Depth	16"
Outside Air Provision	Yes
Floor Protection Requirements	➤ Yes
Fuse	3 amp
Hopper Capacity	55 LB's
Heat Input (Max.)	40,000 BTU/hr
Ship Weight	350 Lbs.
Room Air Fan	140 CFM, .90 amp
Auger Gear Motor	Approx. 1 rpm, .34 amp
Draft Fan	Approx. 3000 rpm, 1.10 amp

* Viewed from behind unit, facing forward.

➤ Floor Protection Requirements:

Legs or Pedestal: Non-combustible floor protection must fully cover the area beneath the appliance and extend 4" in front of the door opening and 2" beyond the sides and back of the appliance.

Insert: The non-combustible hearth and hearth extension do not require a hearth pad. The hearth must cover combustibles 4" in front and 3" to side of heater.

~ Square feet heating capacities are approximations only. They will vary depending upon the level of insulation, climate, house design, ceiling height, ambient outside temperatures and how the stove is operated.

◆ As insert: 16" into fireplace, 8" on hearth.

OPTIONAL PARTS:

Brass Leg set (p/n #920)	Flue collar 6" (p/n #7017A)
Brass Ash Lip (p/n #1022)	Flue collar 3" (p/n #7020A)
Brass Door (p/n #1025)	Log Set (p/n #PF70-12)
Surround Assembly, 32" x 42" (p/n #707)	Remote thermostat (p/n #CTR140)

GLOSSARY OF TERMS

AIR WASH - To inhibit the buildup of soot on the door glass, heated air is delivered to the glass through two air washes located at the top of the door opening and at the bottom through the secondary air ring.

AUGER - The Auger pushes pellets up the auger tube and then down the drop tube into the firepot.

AUGER GEAR MOTOR - The Auger Gear Motor drives the Auger to deliver pellets to the Firepot.

ROOM AIR FAN - This fan is a 140 CFM fan that runs at 1500 RPM for quieter operation. As heated gases and exhaust pass through the exhaust pipe on the way to the flue exit, the room air fan scavenges heat from the exhaust by directing a counter air flow over the 60 linear inches of heat chamber length. This is accomplished by enveloping the steel exhaust inner pipe with a 4" aluminum flex outer duct system. The fan forced heat exchange is maximized by the lengthy contact with the heat chamber surfaces.

DRAFT FAN - The Draft Fan operates at 3000 RPM and has a dual impeller to deliver more air to the firepot combustor plate. It pulls air into the firepot by creating a negative pressure. This is done by extracting the exhaust gases out of the firebox and pushing the exhaust downstream to the flue exit.

FIREPOT / BURNER PLATE The Firepot is where combustion occurs. The stainless steel removable burner plate in the firepot contains air holes at the bottom and up the sides to assist in getting a clean burn even as the bottom holes may become clogged with ash.

HOPPER The Hopper is where the pellets are stored.

MAIN POWER SWITCH - The Main Power Switch is the main switch allowing electricity to flow through the Primary Control Board to the components.

CONTROL BOARD - The Control Board is located on the left side panel of the stove. It manages the rate of combustion (Draft Fan), fuel delivery/heat output (Auger Gear Motor) and heat circulation (Room Air Fan).

SNAP DISCS - Each snap disc is made of top quality stainless steel and ceramic material. Snap disc A is located on the hopper. Snap Discs B, C, & D are located inside the right stove panel on a plate. This plate holding these three discs can be removed by removing one screw.

A. HIGH TEMPERATURE SAFETY LIMIT

N/C - If the temperature at the hopper reaches 250° F., this disc will stop the flow of electricity to the Auger Gear Motor.

B. FAN COOL DOWN N/O -

When the stove is switched off, this disc continues power to the Room Air Fan and Draft Fan to combust the remaining pellets in the firepot and cool down the unit. During shutdown it discontinues power to the blowers once the stove temperature has cooled down to a certain point.

C. LOW TEMP. AUGER N/O -

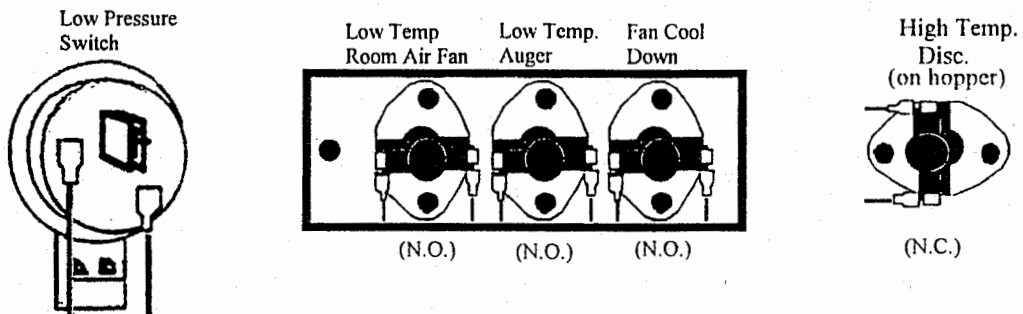
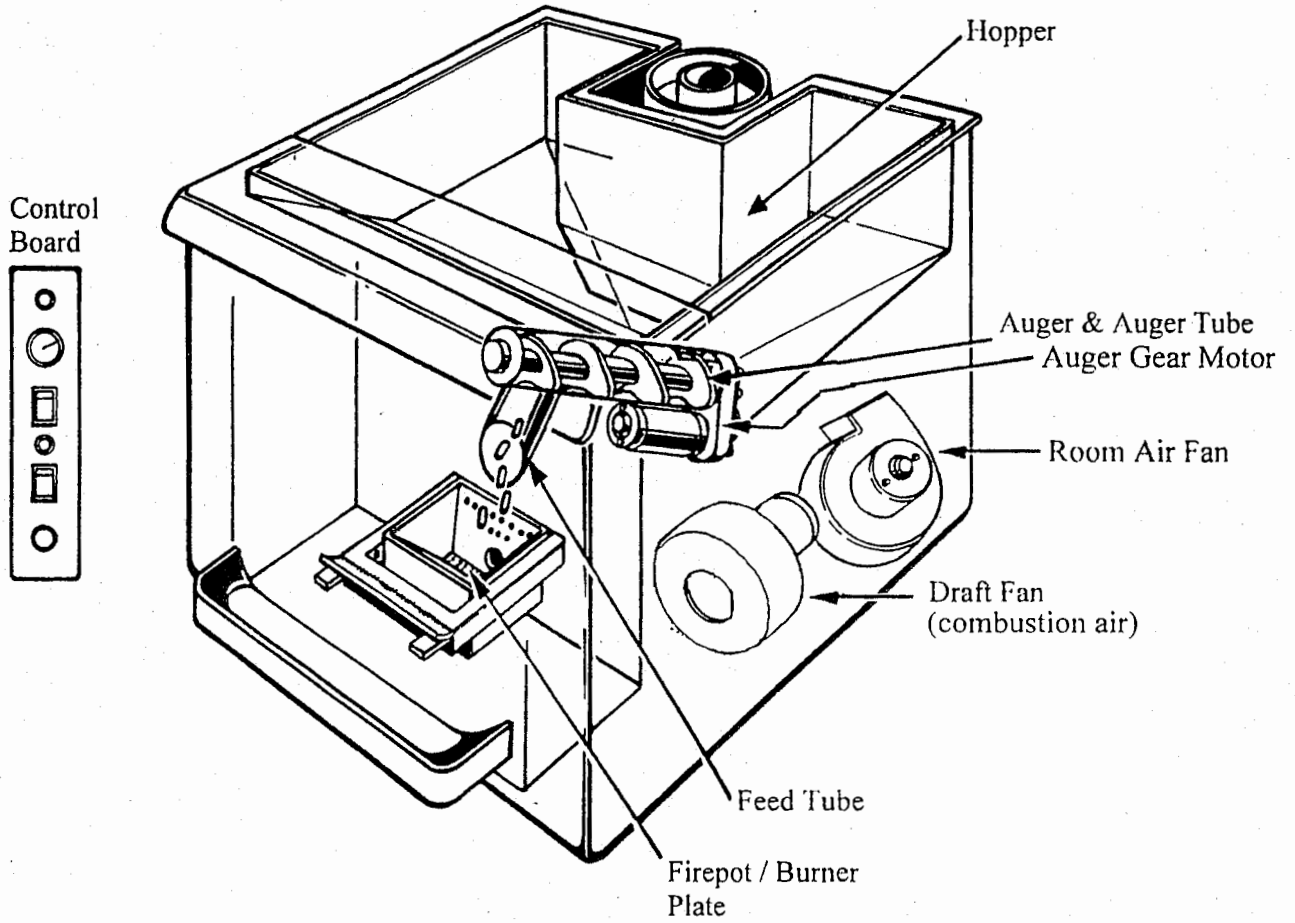
At stove temperatures above 135° this disc closes contacts and allows power flow to the Auger Gear Motor. If the fire should go out and the stove cools, this disc opens at 105° F. and discontinues power to the Auger Gear Motor.

D. LOW TEMP. ROOM AIR FAN N/O -

At stove temperatures above 135° this disc closes contacts and allows power flow to the Room Air Fan.

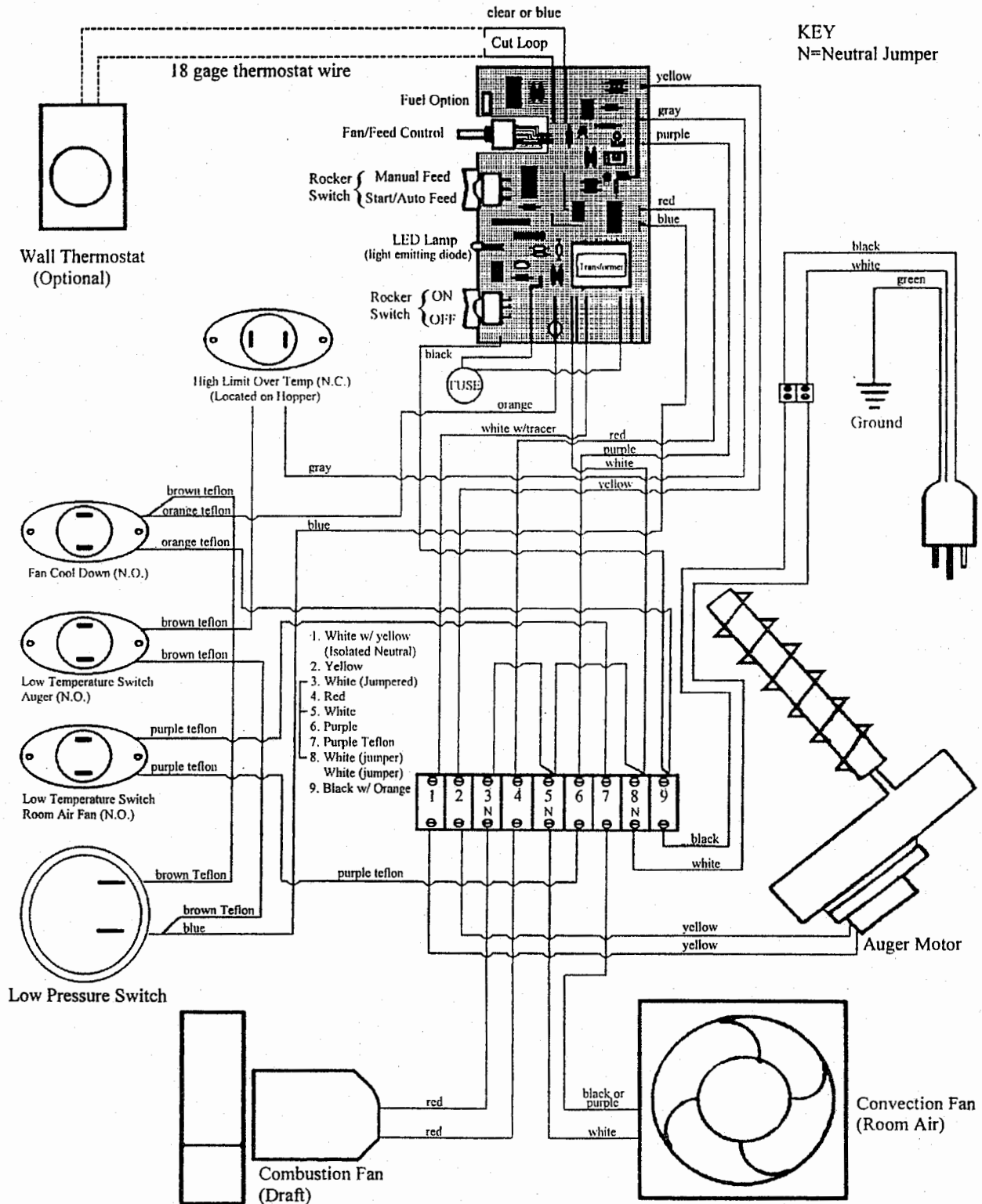
LOW PRESSURE SWITCH - This switch is a safety device used to shut off the auger if the vent becomes blocked or if the Draft Fan shuts off.

COMPONENT DIAGRAM



The low pressure switch and thermal discs can be located behind the right side panel. The high temperature disc, which is located on the hopper, is accessed by way of the left side panel.

WIRING DIAGRAM





**Model: PF70
Limited Warranty**

WHO IS COVERED: The original purchaser.

WHAT IS COVERED: Parts to be free of defects in materials and workmanship (except glass and optional parts)

FOR HOW LONG: One year from date of purchase. Glass has a 30 day warranty. Optional parts have a 90 day warranty.

ADDITIONAL COVERAGE: Electrical parts are covered 100% for two years from date of purchase.

The stove body, and door frame, are covered year two through five at the current retail price at time of repair or replacement, according to the schedule below:

- | | |
|-----------------------|-----------------------|
| Year 2 - 80% coverage | Year 4 - 40% coverage |
| Year 3 - 60% coverage | Year 5 - 20% coverage |

Year two through five coverage excludes: Gaskets/Rope Baffles Paint Logs Firepot Firebrick Brass Parts

WHAT IS NOT COVERED:

- * The cost of inspection
- * Adjustments to the stove
- * Removal and reinstallation costs, shipping costs to and from factory and or authorized service center.
- * Shipping damage, improper handling, improper operation, misuse, abuse, neglect, accident, damage from improper installation, alteration, or unauthorized service.

ALL THE ABOVE MUST BE BORNE BY THE PURCHASER.

WHAT YOU MUST DO TO OBTAIN WARRANTY SERVICE:

Contact your selling dealer. Provide the following information to the dealer; Model number, Serial number, Date of Purchase, and Place of Purchase (if different).

(OR)

Prior to repair or replacement, send the defective part (Freight Prepaid) with the above information to: Brass Flame; c/oThe Earth Stove, Inc.; 10595 SW Manhasset St.; Tualatin, OR 97062.

IMPORTANT: THIS WARRANTY IS NOT VALID UNLESS:

The warranty registration card has been properly completed and returned within 30 days of purchase. The defective stove or part(s) are promptly delivered, with ALL FREIGHT AND HANDLING CHARGES PREPAID, to: Brass Flame; c/oThe Earth Stove, Inc.; 10595 SW Manhasset St.; Tualatin, OR 97062. or our authorized dealer from which the stove was purchased. When returning parts for warranty, do not cut wires, alter or disassemble part(s). The appliance must be installed by a Qualified Technician.

We shall not be liable for incidental or consequential damages or commercial loss, nor for any loss or damage except as set forth in this warranty.

This warranty gives you specific legal rights and you may have other rights which vary from state to state. Some states may not allow the limitations or exclusions set forth so the limitations or exclusions may not apply to you. No person is authorized to extend or enlarge any liability or obligation which we may have in connection with the sale of the stove.

RETAIN THIS FOR YOUR RECORDS:

Model _____

Serial Number _____

Dealer _____

Date of Purchase _____

POWER FLOW DIAGRAM

