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PELLET STOVE

EF3

Freestanding, Fireplace Insert,
and Built-In Heater

OWNER'S MANUAL



Contact your building or fire officials about restrictions and installation inspection requirements in your area.

PLEASE READ THIS ENTIRE MANUAL BEFORE INSTALLATION AND USE OF THIS PELLET BURNING ROOM HEATER. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN PROPERTY DAMAGE, BODILY INJURY, OR EVEN DEATH.

EF-118

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INTRODUCTION

PELLET QUALITY:

Pellet quality is important, please read the following:

Your enviro pellet stove has been designed to burn wood pellets only. Do not use any other type of fuel, as this will void any warranties stated in this manual.

The performance of your pellet stove is greatly affected by the type and quality of wood pellets being burned. As the heat output of various quality wood pellets differs, so will the performance and heat output of the pellet stove.

CAUTION: It is important to select and use only pellets that are dry and free of dirt or any impurities such as high salt content. Dirty fuel will adversely affect the operation and performance of the unit and will void the warranty. The Pellet Fuel Industries (P.F.I.) has established standards for wood pellet manufacturers. We recommend the use of pellets that meet or exceed these standards. Ask your dealer for a recommended pellet type.

P.F.I. PELLET STANDARDS:

Fines (fine particles).....	1% maximum through a 1/8" screen
Bulk Density.....	40 pound per cubic foot minimum
Size.....	1/4" to 5/16" diameter 1/2 – 1 1/2" long maximum
Ash Content.....	1% maximum (Premium grade)3% maximum (Standard grade)
Moisture Content.....	8% maximum
Heat Content.....	approximately 8200 Btu per pound minimum

ASH: The ash content of the fuel and operation of your stove will directly determine the frequency of cleaning. The use of high ash fuels may result in the stove needing to be cleaned daily. A low ash fuel may allow longer intervals between cleaning.

CLINKERING: [clinkers are silica (sand) or other impurities in the fuel that will form a hard mass during the burning process]. This hard mass will block the air flow through the Burn Pot Liner and affect the performance of the stove. Any fuel, even approved types, may tend to clinker. Check the Burn-Pot Liner daily to ensure that the holes are not blocked with clinkers. If they become blocked, remove the liner (when the unit is cold) and clean/scrape the clinkers out. Clean the holes with a small pointed object if required. Refer to the section Routine Cleaning and Maintenance.

PELLET FEED RATES: Due to different fuel densities and sizes, pellet feed rates may vary. This may require an adjustment to the slider damper setting or to the auger feed trim setting on low.

Since Sherwood Industries Ltd. has no control over the quality of pellets that you use, we assume no liability for your choice in wood pellets.

Store pellets at least 36" (1 m) away from the pellet stove.

RATING LABEL LOCATION:

Freestanding: The rating label is located on the inside of the hopper lid.

Insert: The rating label is located on the hopper cover.

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IMPORTANT SAFETY DATA:

Please read this entire Owner's Manual before installing or operating your ENVIRO Pellet Stove. Failure to follow these instructions may result in property damage, bodily injury or even death. Contact your local building or fire official to obtain a permit and any information on installation restrictions and inspection requirements for your area.

To prevent the possibility of a fire, ensure that the appliance is properly installed by adhering to the installation instructions. An ENVIRO dealer will be happy to assist you in obtaining information with regards to your local building codes and installation restrictions.

Be sure to maintain the structural integrity of the home when passing a vent through walls, ceilings, or roofs.

The stove's exhaust system works with negative combustion chamber pressure and a slightly positive chimney pressure. It is very important to ensure that the exhaust system be sealed and airtight. The ash pan and viewing door must be locked securely for proper and safe operation of the pellet stove.

Do not burn with insufficient combustion air. A periodic check is recommended to ensure proper combustion air is admitted to the combustion chamber. Setting the proper combustion air is achieved by adjusting the slider damper located on the left side of the stove.

When installing the stove in a mobile home, it must be electrically grounded to the steel chassis of the home and bolted to the floor. Make sure that the structural integrity of the home is maintained and all construction meets local building codes.

Minor soot or creosote may accumulate when the stove is operated under incorrect conditions such as an extremely rich burn (black tipped, lazy orange flames).

If you have any questions with regard to your stove or the above-mentioned information, please feel free to contact your local dealer for further clarification and comments.

SAFETY WARNINGS AND RECOMMENDATIONS:

Caution: Do not connect to any air distribution duct or system.

Do not burn garbage or flammable fluids such as gasoline, naphtha or engine oil.

Unit hot while in operation. Keep children, clothing and furniture away. Contact may cause skin burns.

FUEL: This pellet stove is designed and approved to only burn wood pellet fuel with up to 3% ash content. Dirty fuel will adversely affect the operation and performance of the unit and may void the warranty. Check with your dealer for fuel recommendations.

THE USE OF CORDWOOD IS PROHIBITED BY LAW.

SOOT: Operation of the stove with insufficient combustion air will result in the formation of soot which will collect on the glass, the heat exchanger, the exhaust vent system, and may stain the outside of the house. This is a dangerous situation and is inefficient. Frequently check your stove and adjust the slider/damper as needed to ensure proper combustion. **See: "SLIDER/DAMPER SETTING".**

CLEANING: There will be some build up of fly ash and small amounts of creosote in the exhaust. This will vary due to the ash content of the fuel used and the operation of the stove. It is advisable to inspect and clean the exhaust vent semi-annually or every two tons of pellets.

INTRODUCTION

ASHES: Disposed ashes should be placed in a metal container with a tight fitting lid. The closed container of ashes should be on a non-combustible floor on the ground, well away from all combustible materials pending final disposal. If the ashes are disposed of by burial in soil or otherwise locally dispensed, they should be retained in the closed container until all cinders have been thoroughly cooled.

ELECTRICAL: **The use of a surge protected power bar is recommended.** The unit must be grounded. The grounded electrical cord should be connected to a standard 115 volts (4.5 Amps), 60 hertz electrical outlet. Be careful that the electrical cord is not trapped under the appliance and that it is clear of any hot surfaces or sharp edges and also must be accessible. If this power cord should become damaged, a replacement power cord must be purchased from the manufacture or a qualified ENVIRO dealer. The EF3's maximum power requirement is 520 watts.

GLASS: Do not abuse the glass by striking or slamming the door. Do not attempt to operate the stove with broken glass. The stove uses ceramic glass. Replacement glass must be purchased from an ENVIRO dealer. Do not attempt to open the door and clean the glass while the unit is in operation or if glass is hot. To clean the glass, use a soft cotton cloth and mild window cleaner, gas or wood stove glass cleaner, or take a damp paper towel and dip into the fly ash. This is a very mild abrasive and will not damage the glass.

FLAMMABLE LIQUIDS: **Never** use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or "freshen up" a fire in the heater. Keep all such liquids well away from the heater while it is in use.

SMOKE DETECTOR: Smoke detectors should be installed and maintained in the structure when installing and operating a pellet burning appliance.

OPERATION: The ash pan and door must be closed securely for proper and safe operation of the pellet stove. Also ensure all gaskets on the door are checked and replaced when necessary.

KEEP ASH PAN FREE OF RAW FUEL.

DO NOT PLACE UNBURNED OR NEW PELLETS IN ASH PAN. A fire in the ash pan may occur.

INSTALLATION: Be sure to maintain the structural integrity of your home when passing a vent through walls, ceilings, or roofs. It is recommended that the unit be secured into its position in order to avoid any displacement.

DO NOT INSTALL A FLUE DAMPER IN THE EXHAUST VENTING SYSTEM OF THIS UNIT.

DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.

FRESH AIR: Outside Fresh Air connection is optional. Must be connected to all units installed in Mobile and "Air Tight Homes" (R2000) or where required by local codes. Consider all large air moving devices when installing your unit and provide room air accordingly. Limited air for combustion may result in poor performance, smoking and other side effects of poor combustion.

If you have any questions with regards to your stove or the above-mentioned information, please feel free to contact your local dealer for further clarification and comments.

SINCE SHERWOOD INDUSTRIES LTD. HAS NO CONTROL OVER THE INSTALLATION OF YOUR STOVE, SHERWOOD INDUSTRIES LTD. GRANTS NO WARRANTY IMPLIED OR STATED FOR THE INSTALLATION OR MAINTENANCE OF YOUR STOVE. THEREFORE, SHERWOOD INDUSTRIES LTD. ASSUMES NO RESPONSIBILITY FOR ANY CONSEQUENTIAL DAMAGE(S).

SAVE THIS INSTRUCTION MANUAL FOR FUTURE REFERENCE

OPERATING INSTRUCTIONS

AUTOMATIC SAFETY FEATURES:

Your pellet Stove has the following safety features:

- A. The stove will shut off when the fire goes out and the exhaust temperature drops below 120°F (49°C).
- B. The stove has a high temperature safety switch. If the temperature on the hopper reaches 200°F (93°C), the auger will automatically stop and the stove will shut down when the exhaust temperature cools. If this happens, call your local dealer to reset the 200°F (93°C) high limit switch. **ALSO FIND THE REASONS WHY THE UNIT OVERHEATED.**
- C. The unit has a convection fan control over-ride. This function causes the convection fan to reach its full speed when the temperature at the back of the firebox reaches 160°F (71°C). This is a normal safety feature of your unit. To compensate for the fan cycling action that may occur, turn up the blower control proportionately to the heat output.
- D. If the power goes out, the unit will stop running. When the power comes back on, the stove will not restart unless the exhaust temperature is still above 120°F (49 °C).

SLIDER/DAMPER SETTING:

The slider/damper must be set at time of installation. This is used to regulate the airflow through the pellet stove. The slider damper is located behind the left side panel. To open the left side panel, undo the one screw located in the upper front corner of the cabinet side

SPECIAL NOTES:

Pellet quality is a major factor in how the Pellet stove will operate. If the pellets have a high moisture content or ash content the fire will be less efficient and has a higher possibility of the fire building up and creating clinkers (hard ash build-up).

Circuit Board: If the fire should happen to go out and the heat output has been set on the lowest setting, use the auger trim button to increase feed rate or the Slider Damper should be pushed in slightly, decreasing the air in the firebox. Check the firebox vacuum and re-set if necessary.

Timer Control: If the fire should happen to go out and the Dial-A-Fire has been set on the lowest setting, the Slider Damper should be pushed in slightly, decreasing the air in the firebox or the Dial-A-Fire and Auger Trim can be turned up slightly.

If, after long periods of burning, the fire builds up and overflows the burn pot or there is a build up of clinkers, this would be a sign that the pellet quality is poor, this requires more primary air, the slider damper must be pulled out to compensate. Pulling the slider damper out gives the fire more air.

The easiest way to make sure that an efficient flame is achieved is to understand the characteristics of the fire.

- A tall, lazy flame with dark orange tips, requires more air – Open slider (pull out) slightly.
- A short, brisk flame, like a blowtorch, has too much air – Close slider (push in) slightly.
- If the flame is in the middle of these two characteristics with a bright yellow/orange, active flame with no black tips then the air is set for proper operation.

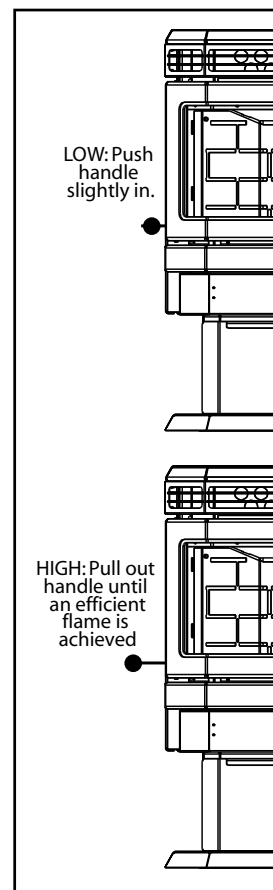


Figure 1: Slider / damper positions.

OPERATING INSTRUCTIONS

STOVE CONTROLS - CIRCUIT BOARD:

- 1. AUGER TRIM:** The Auger Trim Button is used to increase or decrease the feed rate on LOW, ONLY. Push the Auger Trim button until the number 1 and 5 lights appear on the Heat Level Indicator. This will increase the feed rate to 4 seconds ON time Auger pulse. This is done only on LOW to allow the burning of poor quality fuels. Push the button until the number 1 and 4 lights appear, this will reduce the Auger On time to 2 second. This setting is for high-grade fuel only. Push the button until just the number 1 light is on, this is for a three (3) second on time (standard setting).
- 2. CONVECTION BLOWER CONTROL:** Used to turn the convection blower ON/OFF. If the blower is left off, and the sensor located on the air jacket reaches 160 °F (71 °C), the convection blower will automatically come on HI speed to cool the unit. Leave the convection blower ON for peak efficiency

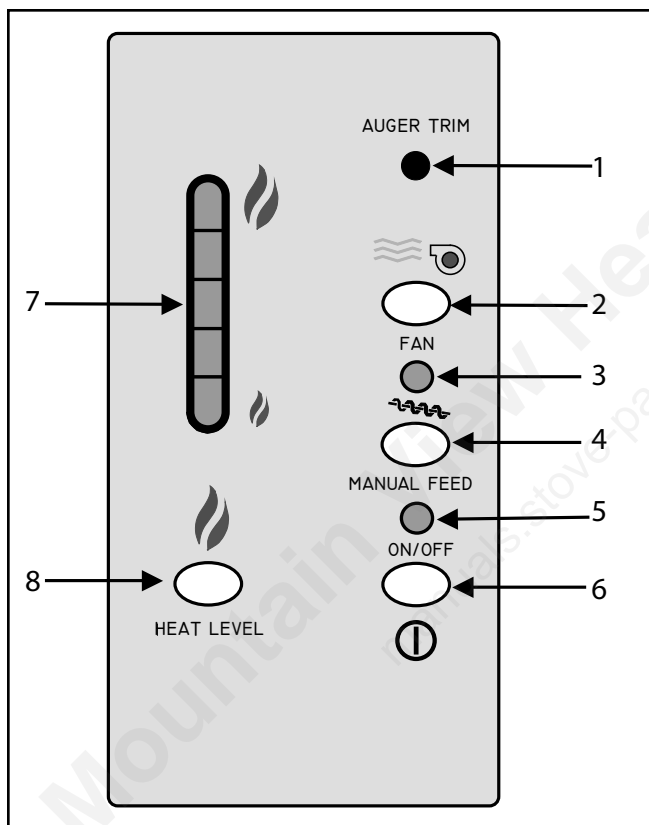


Figure 2: Circuit board control panel.

- 3. AUGER PULSE LIGHT:** This light will flash in conjunction with the auger.
- 4. MANUAL AUGER FEED:** If the unit runs out of fuel, this button can be used to "prime the auger system". This button will turn off after 60 seconds and then must be released and pressed again.
- 5. SYSTEM LIGHT:** Responsible for signaling the state of the control board. When the light is flashing during start-up, the stove is in an automatic start mode. When the light is solid, the Heat Level Setting can be altered.
- 6. ON/OFF BUTTON:** Used to turn the unit ON and OFF.
- 7. HEAT LEVEL INDICATOR:** Shows the present heat output setting.
- 8. HEAT LEVEL ADJUSTMENT:** When pressed, will change the heat setting of the unit from low to high.

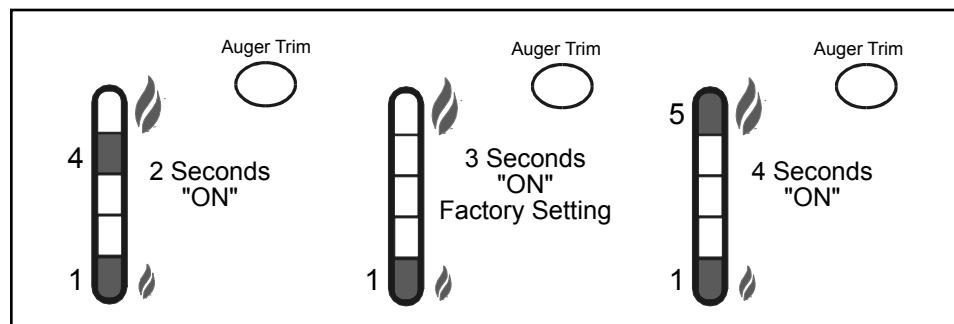


Figure 3: Auger trim and heat level indicator.

OPERATING INSTRUCTIONS

OPERATING YOUR PELLET STOVE - CIRCUIT BOARD:

PRE-BURN INSTRUCTIONS: The burn pot liner holes must be clear and the liner installed properly against the ignitor tube for proper operation. Check the hopper for enough pellets to start the unit.

DO NOT OPERATE THE UNIT WITH THE DOOR OR ASH PAN AJAR

MANUAL MODE:

TO START: Press the ON / OFF button. The stove will turn on. The system light will flash. The Auger Light will flash with each pulse of the auger (the Auger Feed Rate is pre-programmed during start-up). The Heat Level Indicator will show the Heat Level that the stove will run at after start-up.

If this is the first time the unit has been started or the unit has run out of fuel, the auger will need to be primed. Press the Manual Auger Feed button until fuel starts to drop into the Burn Pot Liner (see "OPERATING INSTRUCTIONS; STOVE CONTROLS").

TO OPERATE: When a fire has been established, the System Light will turn solid, the Auger Light will continue to flash to the corresponding Heat Level setting. The Heat Level button can now be pressed to change the desired Heat Level Output setting.

The convection blower (room air blower) will turn on. The speed of this blower is controlled by the setting of the heat level output indicator. The convection blower can be turned OFF by depressing the convection blower control button. When the air jacket reaches 160 °F (71 °C) the convection blower will come ON High, cooling the unit. For the best efficiency and to prevent cycling, the convection blower should be left on at all times.

When operating on LOW HEAT LEVEL, the feed rate can be adjusted, using the auger trim, for different quality fuels. These settings can be used if the fire keeps going out on low (poor quality fuel). Or if the low setting is too hot for the room (see "OPERATING INSTRUCTIONS; STOVE CONTROLS").

THERMOSTAT / SWITCH MODE:

INITIAL START-UP: See above

OPERATION - HI / LOW MODE: When the thermostat contacts are closed the stove settings are adjustable as per Manual Mode (see above). When the thermostat contacts open, the circuit board will take control of the settings. The stove will drop down to a low burn until the thermostat contacts close again. This low burn setting can be adjusted for different fuel qualities (see "OPERATING INSTRUCTIONS; STOVE CONTROLS"). The stove will come back to the previous HEAT LEVEL setting when the thermostat contacts close again.

OPERATION – ON / OFF MODE: When the thermostat contacts close, the unit will light automatically. Once up to temperature, the stove operates the same as in manual mode (see above). When the thermostat contacts open, the unit automatically begins its shutdown routine. The stove will re-light when the thermostat contacts close again.

TURNING YOUR PELLET STOVE OFF - CIRCUIT BOARD:

- MANUAL and HI / LOW mode: To turn the unit OFF, simply press the ON / OFF button. This will stop the feed of pellets. The blowers will continue to operate and cool the stove down. When cool enough, the stove will turn off.
- ON / OFF mode: To turn the unit OFF, turn the thermostat down or off.

**DO NOT unplug unit while Combustion fan is operating.
This may lead to smoke escaping from the stove.**

OPERATING INSTRUCTIONS

OPERATING YOUR PELLET STOVE - TIMER CONTROL:

1. Check and fill hopper with pellets.
2. Make sure unit is plugged into a working outlet.
3. Switch the power "ON" by pushing the start-up switch once only.
4. Turn knob "B" to the 12 o'clock position. (**Lower grade pellets may need a higher setting on the feed rate**). **NOTE:** Unit will take longer to light if the hopper has been completely emptied or is the first fire up.
5. Wait until the fire is established, then turn "Knob B" to the desired heat output. The stove may not be able to burn in the BLUE ZONE if poor quality wood pellets are being used. Adjust the slider-damper to the appropriate setting (see "SLIDER/DAMPER SETTING" section).
6. If the stove should shut off after fifteen (15) minutes and there is still a fire in the firebox – press the start-up switch once more. If the fire went out, return to step 2 and re-light the stove.

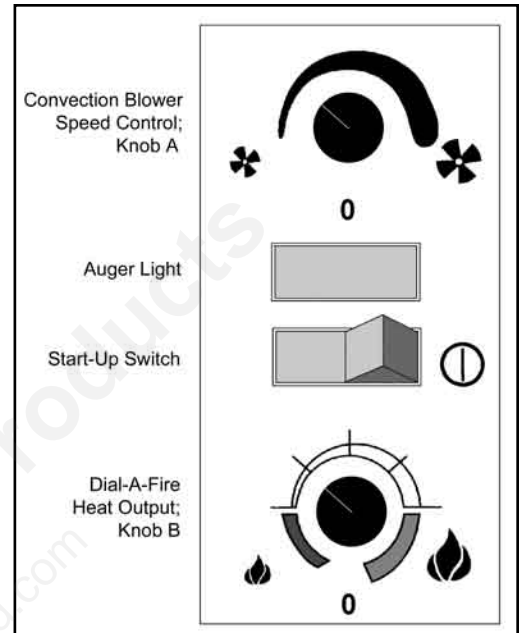


Figure 4: Dial-A-Fire control panel.

KNOB "A": Fan Controller. By adjusting the knob you will vary the rate of airflow into the room by varying the speed of the convection blower. When you first start the stove, it should be placed in the "OFF" position in order to heat the unit as quickly as possible. Once the room has come up to temperature, the control may be set to a comfortable level. ***Note:** The convection blower may cycle to high automatically depending on the setting of knobs "A" and "B". This is a normal safety feature of the unit.

SPECIAL NOTES: The flashing green light corresponds to the auger feed rate.

The scale on the Dial A Fire knob represents a range, not exact times. Wood pellets of differing quality may affect the performance of the stove. If the stove has trouble operating at the ends of its' range, turn the heat output knob back slightly.

KNOB "B": Dial a Fire Heat Output Knob. This knob controls the amount of heat output. The dial has a scale with the **blue zone** representing the coolest setting of the stove, and the **red zone** representing the hottest setting. The scale on knob "B" represents a range, not exact at times or fuel quantities. Wood pellets of differing quality may affect the performance of the stove. If the stove has trouble operating at either end of its range, turn the heat output knob back slightly.

TURNING YOUR PELLET STOVE OFF - TIMER CONTROL:

To turn your stove off, simply turn the HEAT OUTPUT knob ("Knob B") counter-clockwise until the knob clicks to the "OFF" position. This will stop the feed of pellets. The blowers will continue to run and cool the stove. When cool enough, the stove will shut down. **DO NOT unplug unit while combustion fan is operating. This may lead to smoke escaping from the stove.**

ROUTINE CLEANING AND MAINTENANCE

NOTE: Do not use abrasive cleaners to clean the surface or any part of the stove.

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

<u>2-3 Days / Weekly</u>	<u>Bi-Annually or 2 Tons of Fuel</u>
Burn Pot and Liner	Exhaust Vent
Ash Pan	Fresh air Intake Tube
Inside Firebox	Blower Mechanisms
Door Glass	Heat exchanger tubes
Heat exchanger tubes	Behind firebox liners
Ash pan & Door gaskets	All Hinges
Door Latch	Post Season Clean-up

TOOLS REQUIRED TO CLEAN UNIT

- Torx T-20 Screwdriver
- 5/16" Wrench or Socket,
- Brush,
- Soft Cloth
- Vacuum with fine filter bag

The following list of components should be inspected and maintained routinely to ensure that the appliance is operating at its optimum and giving you excellent heat value:

BURN POT AND LINER (2-3 days)

This is the 'pot' where the pellets are burned. The burn pot and liner should be inspected every two to three days, to ensure proper air flow through the liner. **Failure to keep the liner clean may cause a build up of fuel past the burn pot liner and up the drop tube. This will cause the auger to jam and may result in pellets burning in the drop tube and hopper.**

Ensure the unit is cold before cleaning. To remove the burn pot and burn pot liner, open the door using the door handle provided, located on the left-hand side of the stove. Swing the door open. Lift the liner from the burn pot. Lift the burn pot from the firebox by gently lifting the front of the burn pot up first, then sliding the assembly from the air intake tube and the ignitor cartridge. Using a metal scraper, remove material that has accumulated or is clogging the liner's holes. Then dispose of the scrapped ashes from the liner and from inside the burn pot. Place the burn pot back into the stove, making sure that the pipes are properly inserted into the burn pot and the front tabs are placed in the firebox. Place the liner back into the burn-pot making sure that the ignitor hole in the liner is aligned with the ignitor tube. Push the liner up against the ignitor tube.

- If, after long periods of burning, the fire continually builds up and overflows the burn pot or there is a build up of clinkers, this is an indication that the pellet fuel quality is poor or the stove may need cleaning. Check the stove for ash build up (clean if required) and adjust the slider / damper to produce the proper clean combustion.

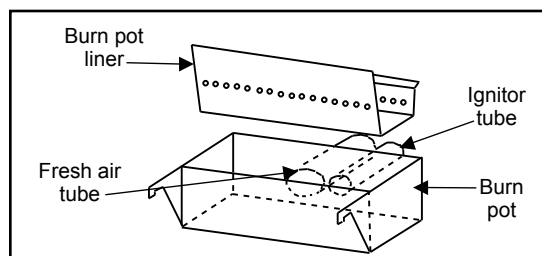


Figure 5: Burn pot with liner.

INSIDE FIREBOX (weekly)

For bi-weekly clean out, ash may be removed from behind the steel plates by rotating the circular cover to allow vacuuming behind the plates.

ASH PAN AND DOOR GASKETS (weekly)

After extended use the gasket may come loose. To repair or replace this, glue the gasket on, using high-temperature fiberglass gasket glue available from your local ENVIRO dealer. This is important to maintain an airtight assembly.

ROUTINE CLEANING AND MAINTENANCE

ASH PAN (2-3 days)

Monitor the ash level every week. Remember that different pellet fuels will have different ash contents. Ash content is a good indication of fuel efficiency and quality. Refer to "Warnings and Recommendations" for disposal of ashes. **DO NOT PLACE UNBURNED OR RAW PELLET FUEL IN ASH PAN.**

Dump the ashes into a metal container stored away from combustibles. Monitor the ash level every week. Remember that different pellet fuels will have different ash contents. Ash content is a good indication of fuel efficiency and quality. Refer to "Warnings and Recommendations" for disposal of ashes.

Vacuum the ash pan and inside the pedestal. CAUTION: BECAUSE THE FLY ASH IS VERY FINE, THE USE OF A FINE FILTER VACUUM BAG WILL BE REQUIRED TO PREVENT ASH FROM BEING BLOWN BACK INTO THE ROOM. Please pay special attention that there are no hot ashes in the firebox or there could be a possibility of a fire hazard inside the vacuum cleaner. Place all hot ashes into a non-combustible container.

FREESTANDING ASH PAN:

The EF3 pellet stove freestanding's ash pan is located under the burner, in the pedestal, and has a latching mechanism to secure it. To remove the ash pan, unlock the latch on the ash pan and then pull the pan out.

INSERT ASH PAN:

The EF3 pellet stove insert's ash pan is located behind the lower grill.

HEAT EXCHANGER TUBES (2-3 days)

The handle for the heat exchanger cleaning rod is pointed out in Figure 4. This handle is to be pulled back and forth a few times (**ONLY WHEN THE UNIT IS COLD**) in order to clean away any fly ash that may have collected on the heat exchanger tubes. As different types of pellets produce different amounts of ash, cleaning of the tubes should be done on a regular basis to enable the unit to run efficiently.

FRESH AIR INTAKE (season)

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

EXHAUST PASSAGES (season)

For bi-weekly clean out, ash may be removed from behind the steel plates by rotating the circular covers located behind the right and left side panels. Loosen the screw on the disks and open, this will allow vacuuming behind the firebox liner's plates.

Removal of the firebox backing for bi-annual cleaning:

- Remove the top baffle.
- Lubricate and then remove the seven (7) screws that hold the brick liner in place. Tilt the top of the brick panel towards the firebox opening and remove from the firebox
- Remove the top rod by first removing the screw that holds it in place, then slide the rod sideways
- Pull the side panels into the center of the firebox, then out
- Pull the center panel out.
- Clean and vacuum all passages thoroughly.

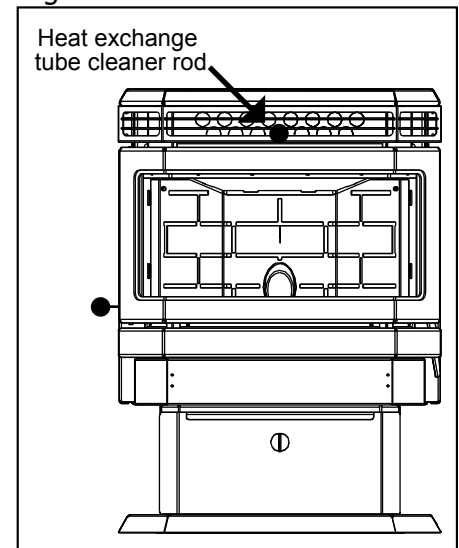


Figure 6: EF3 Heat exchanger rod.

ROUTINE CLEANING AND MAINTENANCE

Installation of firebox backing:

- Install the side panels in place. Insert center panel, hold the panels in place
- Install the top rod by sliding it into one side panel then across into the other panel. Screw rod in place.
- Re-install steel brick liner and screw in place.
- Replace top baffle

EXHAUST VENT (season)

The products of combustion will contain small particles of flyash. The flyash will collect in the exhaust venting system and restrict the flow of the flue gases. Incomplete combustion, such as occurs during startup, shutdown, or incorrect operation of the room heater will lead to some soot formation which will collect in the exhaust venting system. The exhaust venting system should be inspected at least once every year or after two tons of pellets to determine if cleaning is necessary. We recommend contacting your dealer for professional cleaning. To remove dust from the vent pipe, tap lightly on the pipe to dislodge any loose ash. Open the bottom of the "T" to dump the ash, then vacuum as much of the ash out of the vent pipe as possible.

BLOWER MECHANISMS (season)

Unplug the stove then open the right/left side panels to access the two blowers. Vacuum all dust from motors. Only the convection blower motor (on the right side of the stove) will require lubrication. The convection motor has two lubrication holes on it. Use two drops of SAE 20 light oil to lubricate every six months. Excess oil may damage the motor. The exhaust blower's motor has sealed bearings, DO NOT lubricate this motor.

DOOR GLASS (It is recommended that your dealer replace the glass if broken.)

The door glass is made of 5 mm thick, high temperature PYROCERAMIC. To replace the glass, unscrew and remove the four glass retainers. Remove the glass and any broken pieces. High temperature fiberglass tape should be used around the glass. Replace the glass, center the glass assembly in the frame, then screw the glass retainers back to the frame. The use of substitute materials is prohibited use only part EF-062.

POST SEASON CLEAN-UP

Once you are finished using the pellet appliance for the season, unplug the stove for added electrical protection. It is very important that the stove be cleaned and serviced as stated above.

CLEANING PLATED SURFACES

Please clean all fingerprints off of all gold parts, with denatured alcohol on a soft cloth, before firing the unit each time. Fingerprints, etc. can become permanently etched into the gold if not removed before operating the pellet heater.

BRICK PANEL

The paint on the steel brick panel may peel. This is due to extreme conditions applied to the paint and is in no way covered by warranty.

INSTALLATION

DECIDING WHERE TO LOCATE YOUR PELLET APPLIANCE:

1. Check clearances to combustibles.
2. Do not obtain combustion air from an attic, garage or any unventilated space. Combustion air may be obtained from a ventilated crawlspace.
3. Do not install the stove in a bedroom.
4. You can vent the stove through an exterior wall behind the unit or connect it to an existing masonry or metal chimney (must be lined if the chimney is over 6" (15 cm) diameter, or over 28 inches² (180 cm²) cross sectional area). An interior vent can be used with approved pipe passing through the ceiling and roof.
5. Locate the stove in a large and open room that is centrally located in the house. This will optimize heat circulation.
6. The power cord is 8 feet (2.43 m) long and may require a grounded extension cord to reach the nearest electrical outlet.



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We recommend that our pellet hearth products be installed and serviced by professionals who are certified in the U.S. by the National Fireplace Institute® (NFI) as NFI Pellet Specialists or who are certified in Canada by Wood Energy Technical Training (WETT).



REMOVING PELLET STOVE FROM PALLET:

To remove your new stove from its pallet, open the left and right side panels. To open the side panels remove the ash pan cover from the magnets located below the door. Remove the two (2) T-20 screws located at the bottom corners of the left and right side panels. Remove the two (2) T-20 screws located between the hopper side rails and the side panels at the front edge of the side panel. There are two (2) wood screws that are holding the bottom of the stove to the pallet. Remove the screws. Close the side panels. See "PEDESTAL INSTALLATION" to install the pedestal.

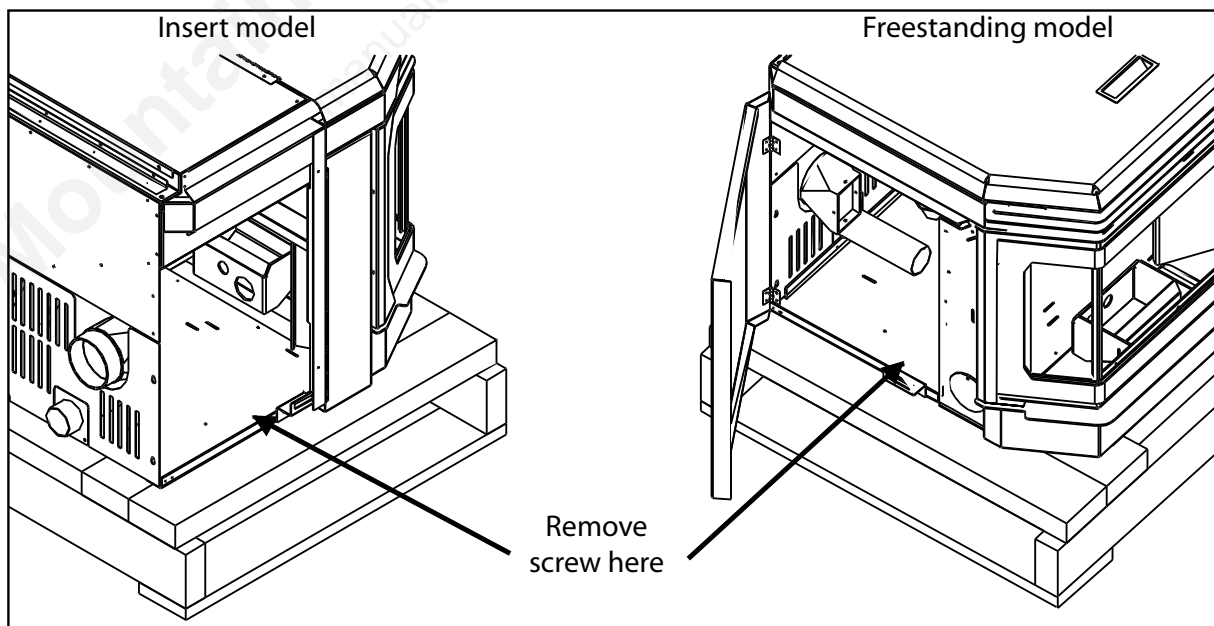


Figure 7: Screws to take out to remove stove from pallet.

INSTALLATION

DIMENSIONS - FREESTANDING:

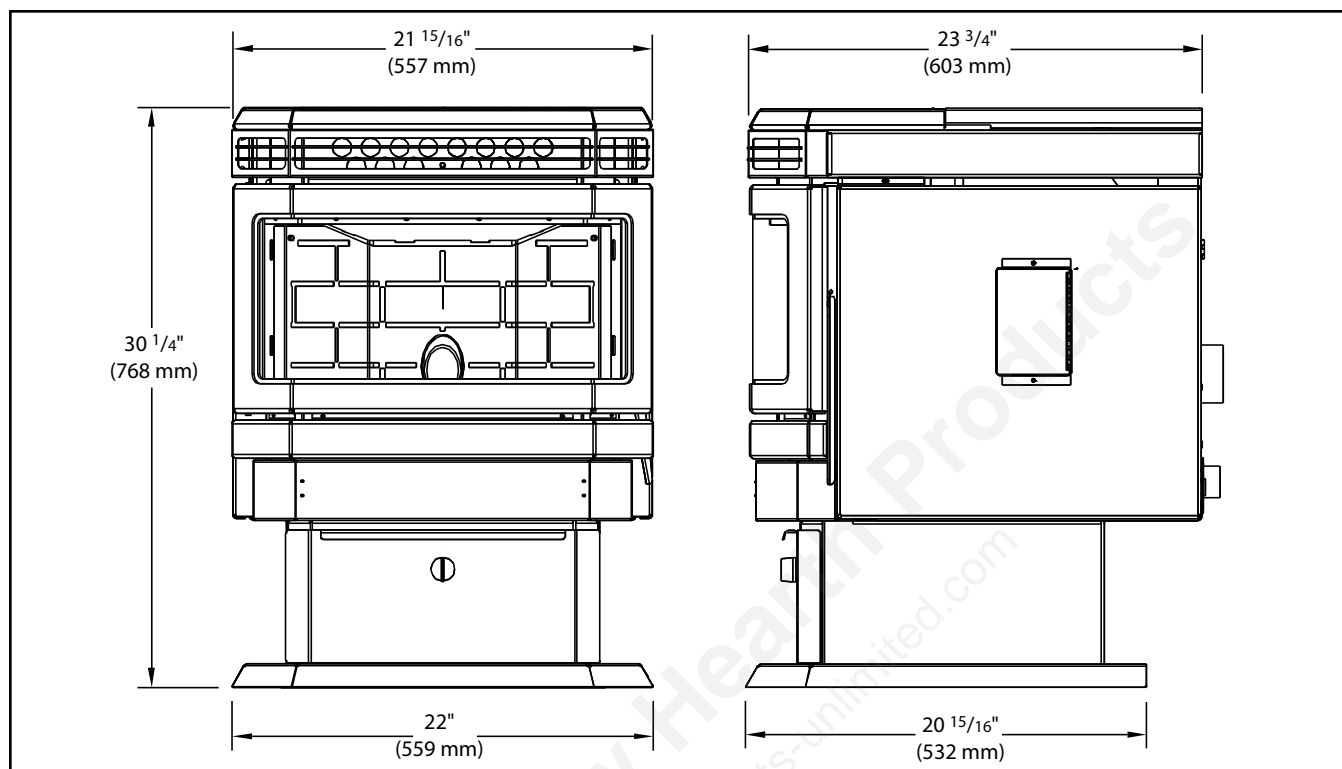


Figure 8: Dimensions of EF3 Freestanding.

DIMENSIONS - FIREPLACE INSERT AND BUILT-IN HEATER:

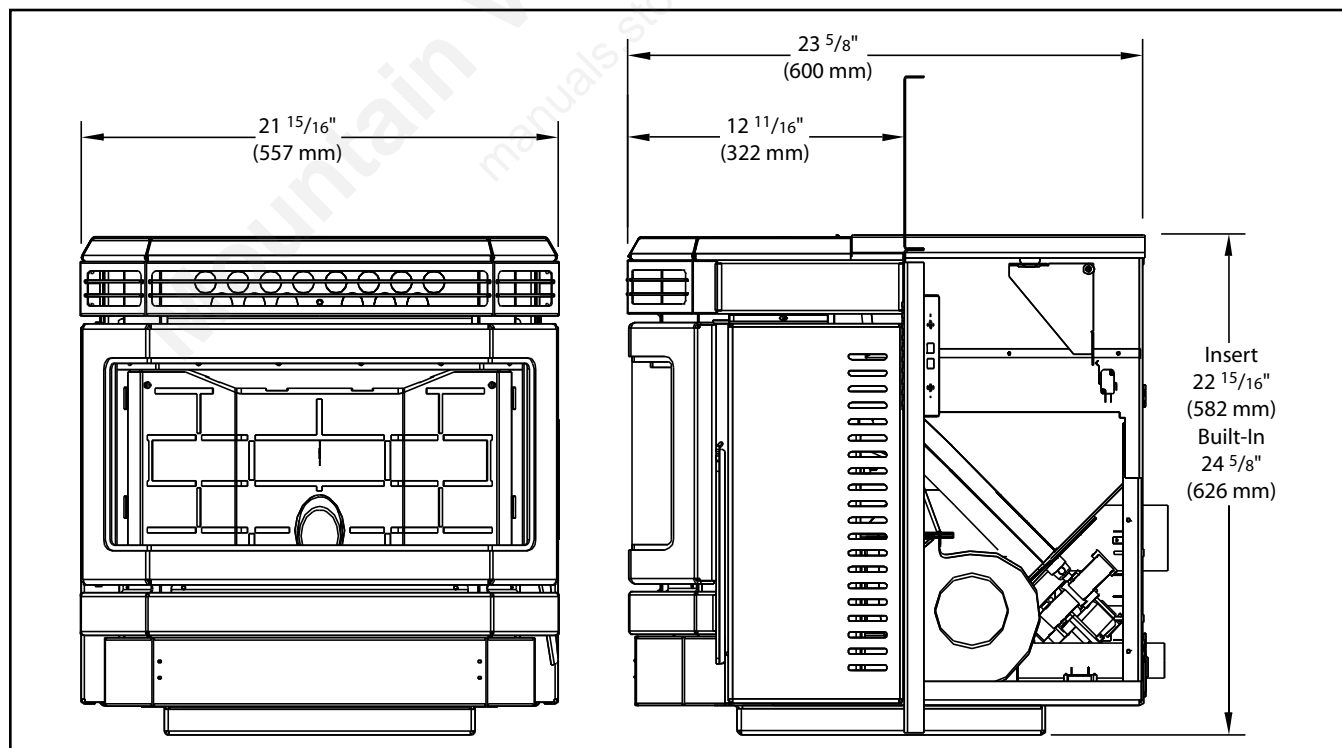


Figure 9: Dimensions of EF3 Fireplace Insert.

INSTALLATION

CLEARANCES TO COMBUSTIBLES - FREESTANDING:

When installing this unit on a combustible floor (for example linoleum, hardwood flooring) a non-combustible hearth pad must be under the unit. The pad must extend at least the width of the appliance [22" (558 mm)] and at least the depth of the appliance plus 6" (153 mm) in front of the appliance [29 3/4" (756 mm)].

- Side wall to unit - 6 inches (15 cm)
- Back wall to unit - 1 inches (2.5 cm)
- Corner to unit - 1 inches (2.5 cm)
- Door front to edge of floor protection - 6 inches (15 cm)

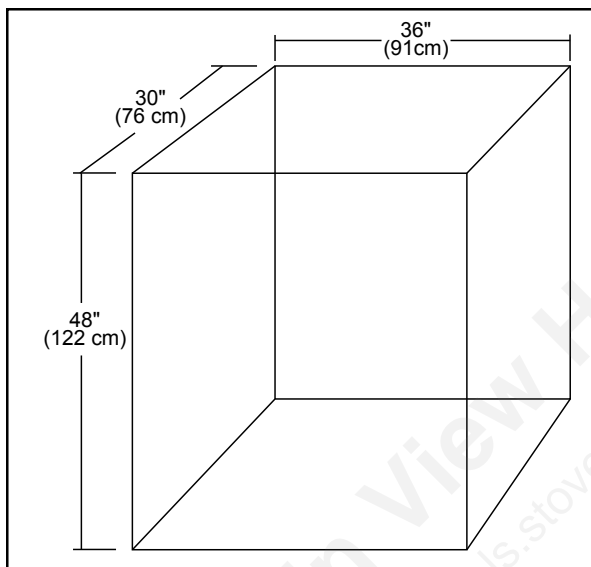


Figure 11: EF3 Freestanding Minimum Alcove Size.

These dimensions are minimum clearances but it is recommended that you ensure sufficient room for servicing, routine cleaning and maintenance.

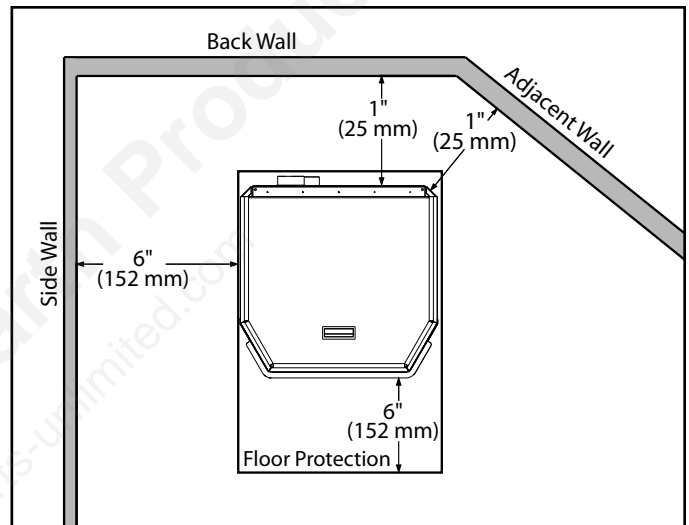


Figure 10: EF3 Freestanding Clearance to Combustibles.

- Minimum Alcove width - 36 inches (91 cm)
- Minimum Alcove height - 48 inches (122 cm)
- Maximum Alcove depth - 30 inches (76 cm)

CLEARANCES TO COMBUSTIBLES - FIREPLACE INSERT:

Refer to Figure 12.

- Side wall to unit - 8 inches (20.3 cm)
- Mantel projection - 10 inches (25.4 cm)
- Mantel to top of unit - 8 inches (20.3 cm)
- Top facing to unit - 8 inches (20.3 cm)
- Side facing to unit - 6 inches (15.2 cm)
- Floor protection - 6 inches (15.2 cm)
on either side and to the front must be protected by non-combustible material.

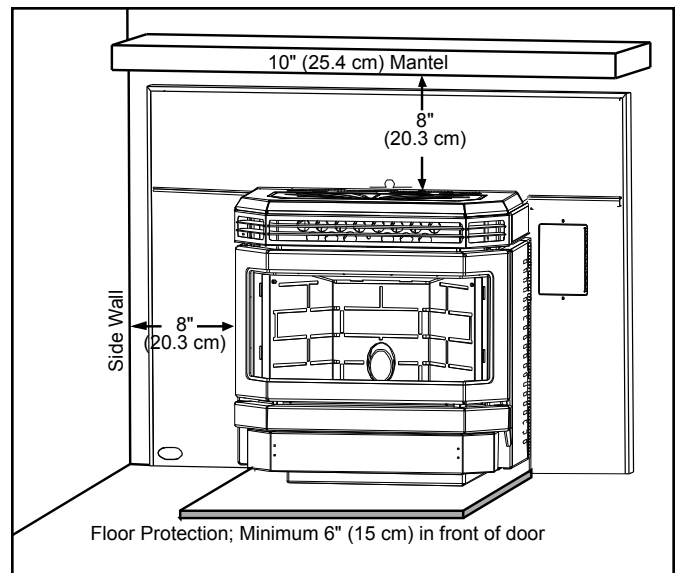


Figure 12: EF3 Fireplace Insert Clearance to Combustibles.

INSTALLATION

CLEARANCES TO COMBUSTIBLES - BUILT-IN HEATER:

Refer to Figures 12 and 13.

Side wall to unit	- 8 inches	(20.3 cm)
Mantel projection	- 10 inches	(25.4 cm)
Mantel to top of unit	- 8 inches	(20.3 cm)
Top facing to unit	- 8 inches	(20.3 cm)
Side facing to unit	- 6 inches	(15.2 cm)
Floor protection	- 6 inches	(15.2 cm)
(on either side and to the front must be protected by non-combustible material)		
Sides and rear walls to standoffs:	- 0 inches	(0 cm)
Recess depth:	- 11 inches	(30 cm)

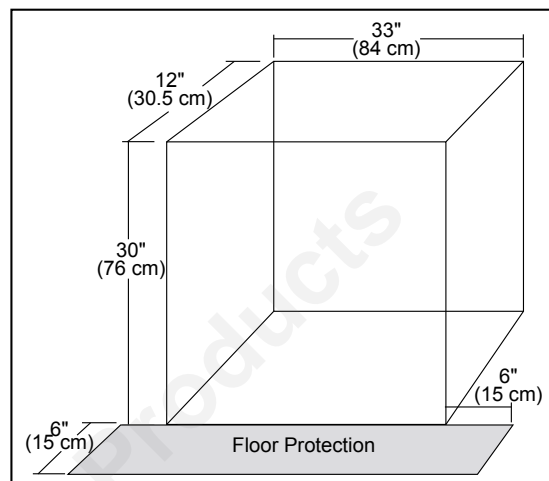


Figure 13: EF3 Built-In Heater recommended framing.

PEDESTAL INSTALLATION:

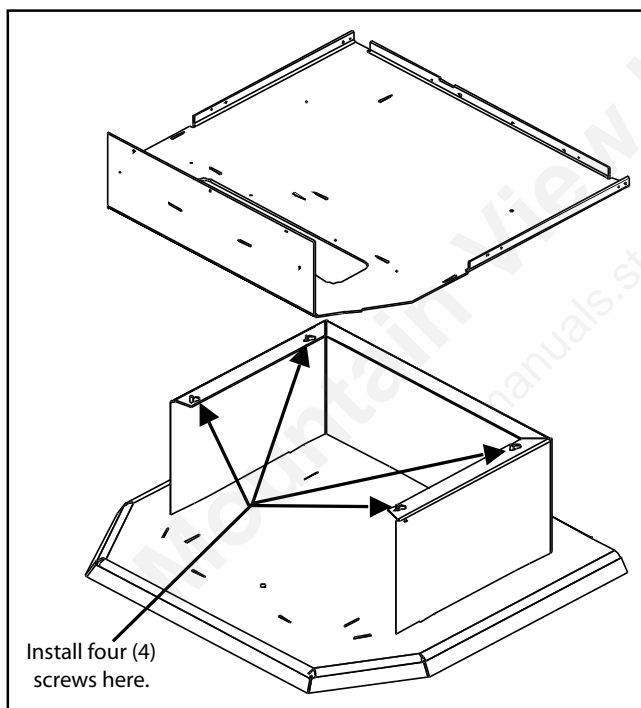


Figure 14: Freestanding Pedestal.

- Place the unit on its back on the pallet.
- Back the four (4) $\frac{5}{16}$ " hex head screws in the base off three (3) to four (4) full turns.
- Align the keyholes in the pedestal with the screws, lock into place.
- Secure the two (2) pieces by tightening the four (4) screws from the inside of the pedestal for the freestanding or from the outside of the pedestal for the FPI or BIH.

The all models comes with a pedestal that has to be attached prior to installation:

- Remove the unit from the box
- Remove the freestanding pedestal from the box. Remove the FPI or BIH pedestal from the hopper

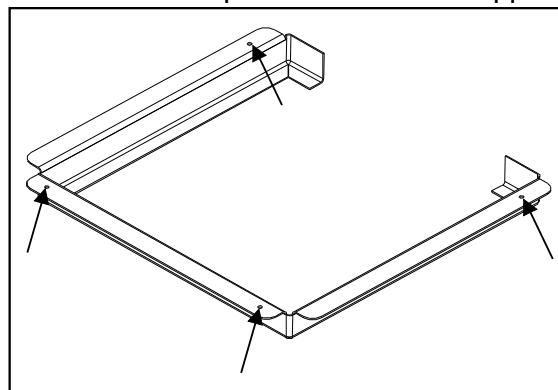


Figure 15: Fireplace Insert Pedestal.

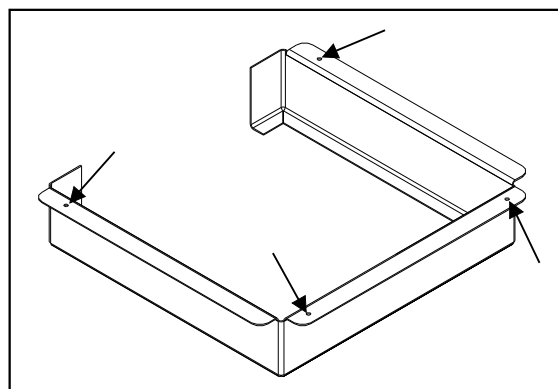


Figure 16: Built-In Heater Pedestal.

INSTALLATION

VENT TERMINATION REQUIREMENTS:

IT IS RECOMMENDED THAT YOUR PELLET STOVE BE INSTALLED BY AN AUTHORIZED DEALER/INSTALLER.

Table 1: Use in conjunction with Figure 17 for allowable exterior vent termination locations.

Letter	Minimum Clearance	Description
A	24 in (61 cm)	Above grass, top of plants, wood, or any other combustible materials.
B	48 in (122 cm)	From beside/below any door or window that may be opened.
C	24 in (61 cm)	From above any door or window that may be opened.
D	24 in (61 cm)	To any adjacent building, fences and protruding parts of the structure.
E	24 in (61 cm)	Below any eave or roof overhang
F	12 in (30 cm)	To outside corner.
G	12 in (30 cm)	To inside corner, combustible wall (vertical and horizontal terminations).
H	3 ft (91 cm) within a height of 15 ft (4.5 m) above the meter/regulator assembly	To each side of center line extended above natural gas or propane meter/regulator assembly or mechanical vent.
I	3 ft (91 cm)	From any forced air intake of other appliance
J	12 in (30 cm)	Clearance to non-mechanical air supply inlet to building, or the combustion air inlet to any appliance.
K	24 in (61 cm)	Clearance above roof line for vertical terminations.
L	7 ft (2.13 m)	Clearance above paved sidewalk or paved driveway located on public property.

1. Do not terminate the vent in any enclosed or semi-enclosed areas such as a carport, garage, attic, crawlspace, narrow walkway, closely fenced area, under a sundeck or porch, or any location that can build up a concentration of fumes such as stairwells, covered breezeway, etc.

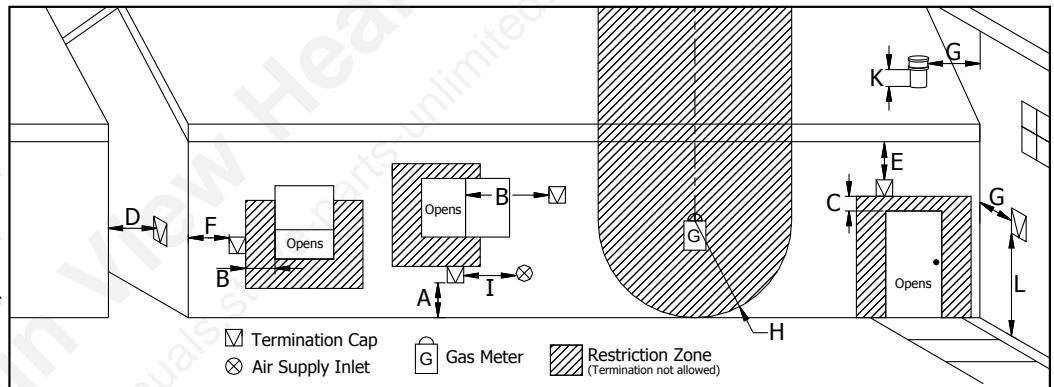


Figure 17: Use in conjunction with Table 1 for allowable exterior vent termination locations.

- Vent surfaces can become hot enough to cause burns if touched by children. Non-combustible shielding or guards may be required.
- Termination must exhaust above the inlet elevation. It is recommended that at least five feet of vertical pipe be installed outside when the appliance is vented directly through a wall, to create some natural draft to prevent the possibility of smoke or odor during appliance shut down or power failure. This will keep exhaust from causing a nuisance or hazard from exposing people or shrubs to high temperatures. In any case, the safest and preferred venting method is to extend the vent through the roof vertically.
- Distance from the bottom of the termination and grade is 12" (30 cm) minimum. This is conditional upon the plants and nature of grade surface. The exhaust gases are hot enough to ignite grass, plants and shrubs located in the vicinity of termination. The grade surface must not be lawn.
- If the unit is incorrectly vented or the air to fuel mixture is out of balance, a slight discoloration of the exterior of the house might occur. Since these factors are beyond the control of Sherwood Industries Ltd, we grant no guarantee against such incidents.
- When installing an FPI the chimney must be fully lined. Unless the chimney's inside diameter is less than 6" (15 cm) around or has a cross section area of 28 inches² (180.6 cm²), we strongly recommend lining all masonry chimneys.

NOTE: Venting terminals shall not be recessed into walls or siding.

INSTALLATION

OUTSIDE FRESH-AIR CONNECTION:

Outside fresh air is mandatory when installing this unit in airtight homes and mobile homes.

When connecting to an outside fresh air source, do not use plastic or combustible pipe. A 1 5/8" minimum (42 mm) ID (inside diameter) steel, aluminum or copper pipe should be used. It is recommended, when you are installing a fresh air system, to keep the number of bends in the pipe to a minimum.

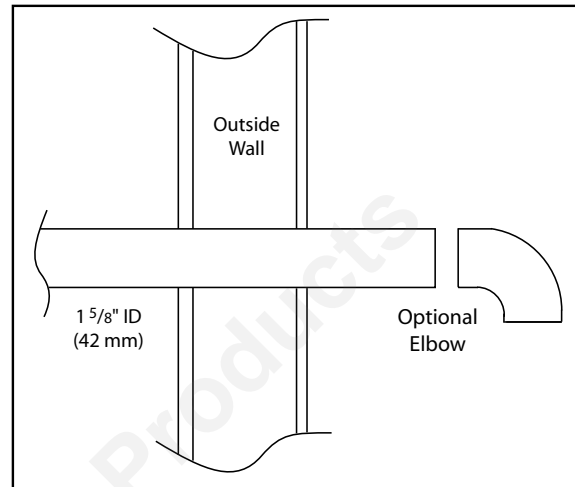


Figure 18: Outside Air Connection.

EXHAUST AND FRESH AIR INTAKE LOCATIONS:

EXHAUST

	Freestanding	Fireplace Insert	Built-In Heater
Base of unit to center of flue	16 3/8" (41.5 cm)	9" (22.8 cm)	10 3/4" (27.3 cm)
Side of unit to center of flue	5 3/16" (13.2 cm)	5 3/16" (13.2 cm)	5 3/16" (13.2 cm)
Center of unit to center of flue	5 3/4" (14.6 cm)	5 3/4" (14.6 cm)	5 3/4" (14.6 cm)

FRESH AIR INTAKE.

	Freestanding	Fireplace Insert	Built-In Heater
Base of unit to center of intake	10 3/4" (27.3 cm)	3 3/8" (7.4 cm)	5 1/8" (8.6 cm)
Side of unit to center of intake	12" (30.4 cm)	12" (30.4 cm)	12" (30.4 cm)
Center of unit to center of intake	1" (2.5 cm)	1" (2.5 cm)	1" (2.5 cm)

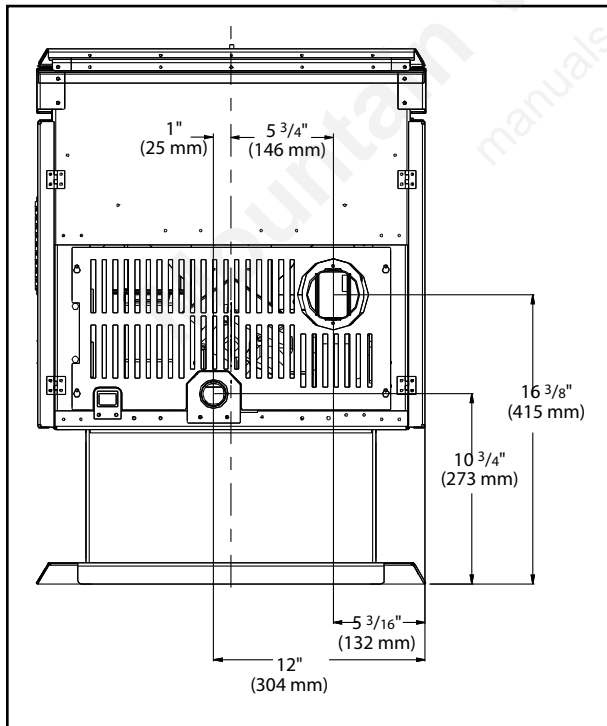


Figure 19: EF3 Freestanding Inlet and Outlet Location.

INSTALL VENT AT CLEARANCES SPECIFIED BY THE VENTING MANUFACTURER

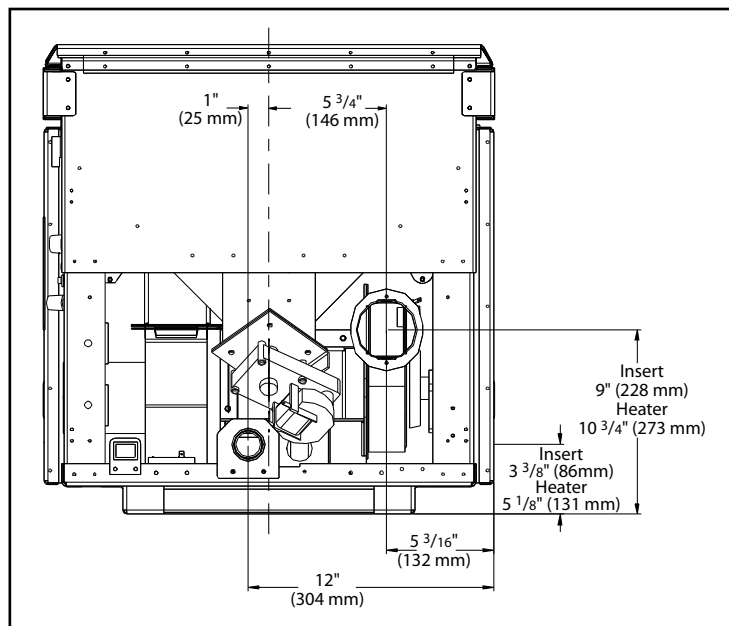


Figure 20: EF3 Fireplace Insert Inlet and Outlet Location.

INSTALLATION

MOBILE HOME INSTALLATION - FREESTANDING:

- Secure the heater to the floor using the two (2) holes in the pedestal.
- Ensure the unit is electrically grounded to the chassis of your home (permanently).
- Do not install in a room people sleep in.
- Outside fresh air is mandatory. Secure outside air connections directly to fresh air intake pipe and secure with three (3) screws evenly spaced.

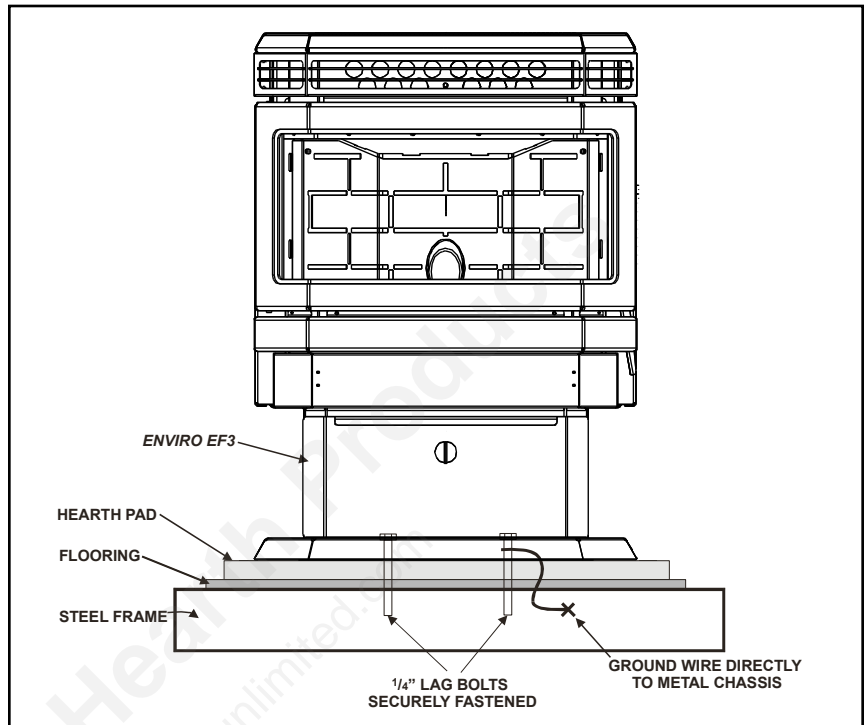


Figure 21: Mobile home installation.

CAUTION: THE STRUCTURAL INTEGRITY OF THE MANUFACTURED HOME FLOOR, WALL AND CEILING/ROOF MUST BE MAINTAINED.

CORNER THROUGH WALL INSTALLATION - FREESTANDING:

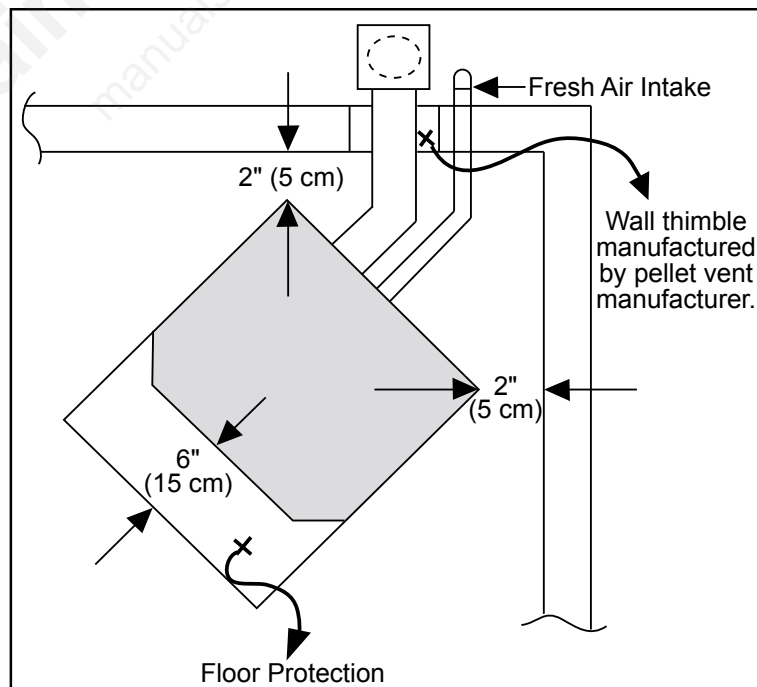


Figure 22: Corner Installation.

INSTALLATION

HORIZONTAL EXHAUST THROUGH WALL INSTALLATION - FREESTANDING:

Vent installation: install vent at clearances specified by the vent manufacturer.

A chimney connector shall not pass through an attic or roof space, closet or similar concealed spaces, or a floor, or ceiling. Where passage through a wall or partition of combustible construction is desired, the installation shall conform to CAN/CSA-B365 Installation Code for Solid-Fuel-Burning Appliances and Equipment. Only use venting of L or PL type with an inside diameter of 3 or 4 inches (7.6 or 10.1 cm).

1. Choose a location for your stove that meets the requirements stated in this manual and allows installation with the least amount of interference to house framing, plumbing, wiring, etc.
2. Install a non-combustible hearth pad (where necessary).

3. Place the appliance 15" (37.5 cm) away from the wall. If the stove is to be set on a hearth pad, set the unit on it.

4. Locate the center of the exhaust pipe on the stove. Extend that line to the wall. Once you have located the center point on the wall, refer to pellet vent manufacturer installation instructions for correct hole size and clearance to combustibles.

5. Install the wall thimble as per the instructions written on the thimble. Maintain an effective vapour barrier in accordance with local building codes.

6. Install a length of 3" (76 mm) or 4" (101 mm) vent pipe into the wall thimble. The pipe should install easily into the thimble.

7. Install the fresh air intake (see OUTSIDE FRESH AIR CONNECTION).

8. Connect the exhaust vent pipe to the exhaust pipe on the stove. Seal the connection with high temperature silicone.

9. Push the stove straight back, leaving a minimum of 2" (5 cm) clearance from the back of the stove to the wall. Seal the vent pipe to the thimble with high temperature silicone.

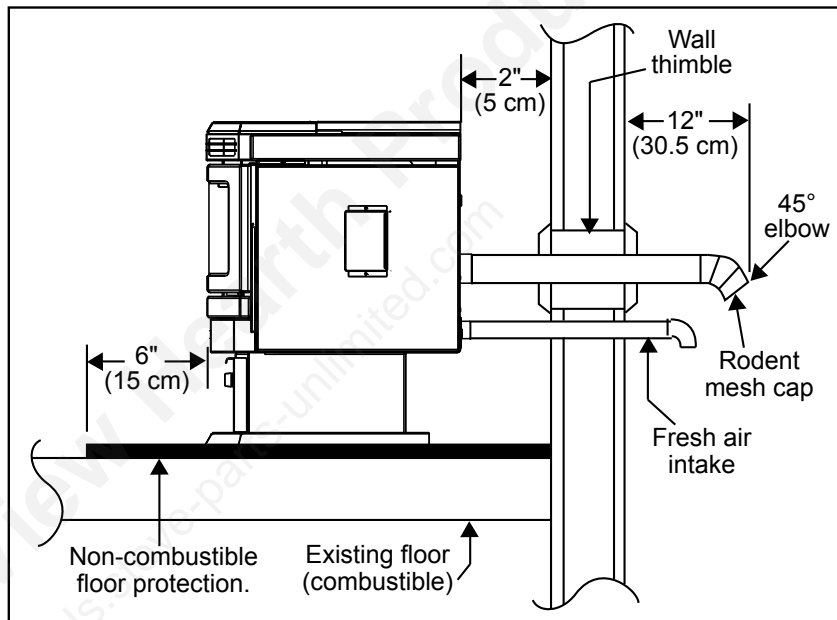


Figure 23: Straight through wall Installation.

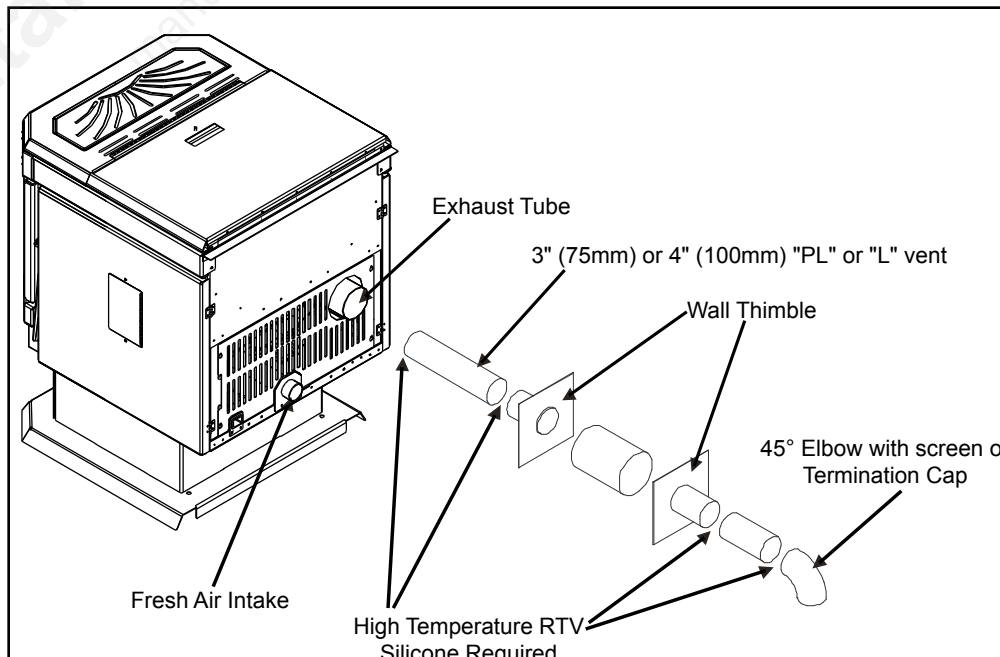


Figure 24: Venting to use with straight through wall Installation.

INSTALLATION

10. The pipe must extend at least 12" (30 cm) away from the building. If necessary, bring another length of pipe (PL type) to the outside of the home to connect to the first section. Do not forget to place high temperature silicone around the pipe that passes through the thimble.
11. Install a vertical pipe, or if all requirements for direct venting are met, install vent termination. The stainless steel cap termination manufactured by the vent manufacturer is recommended. However, when 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 termination. The elbow must be turned down to prevent rain from entering.

NOTE:

- Some horizontal through wall installations may require a "T" and 3 to 5 feet (91 to 152 cm) of vertical pipe outside the building to help naturally draft in the unit.
- This may be required if a proper burn cannot be maintained, after the stove has been tested and the airflow set.
- This is due to the back pressure in the exhaust caused by airflow around the structure.
- All sections of pipe must have three (3) screws evenly spaced and all horizontal and vertical vent sections located within the house must have a bead of high temperature silicone installed on the male end of the pipe before installation to create a gas tight seal.

THROUGH WALL WITH VERTICAL RISE AND HORIZONTAL TERMINATION INSTALLATION - FREESTANDING:

A 45° elbow with a rodent screen may be used in place of the termination cap (or stainless steel termination hood).

Figure 25 is the recommended installation set up.

Figure 26 is the installation to use if there is a concrete or retaining wall in line with exhaust vent on a pellet stove. The termination must be 12" (30 cm) from the outside wall and 12" (30 cm) above the ground.

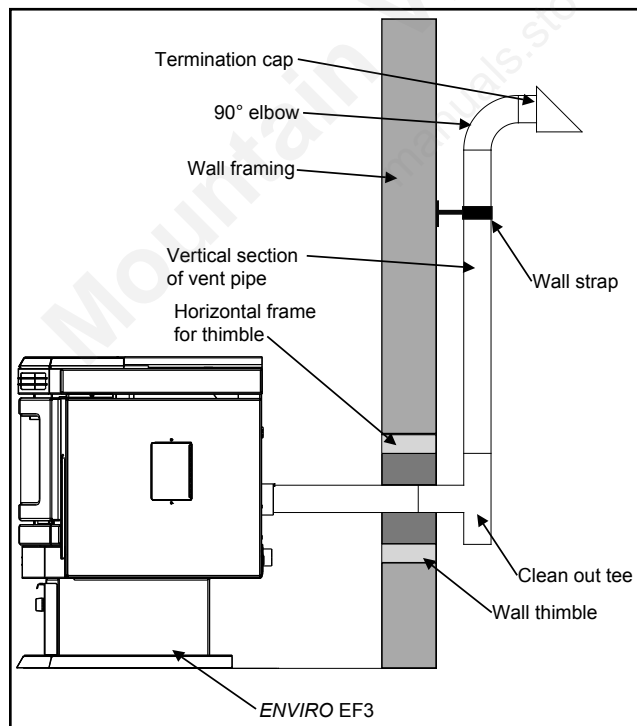


Figure 25: Venting horizontally with rise.

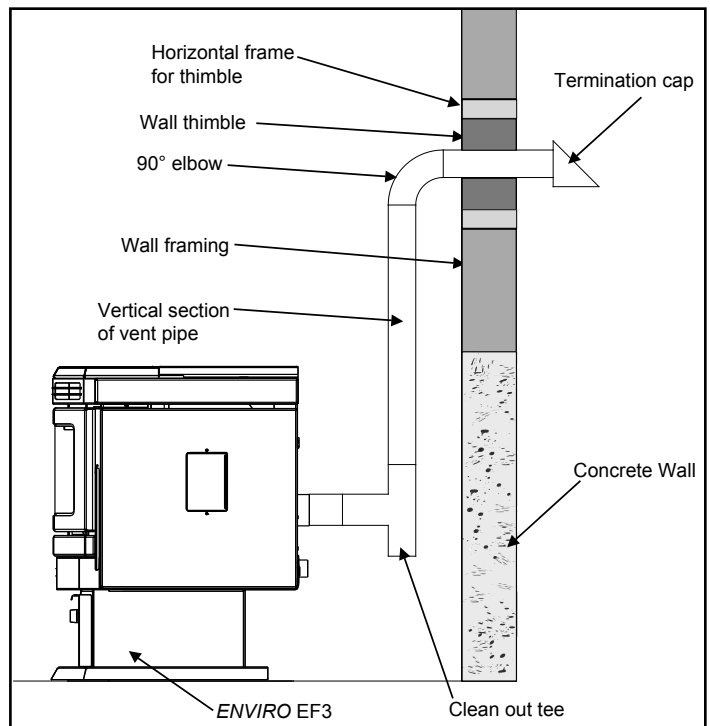


Figure 26: Venting with concrete wall behind unit .

INSTALLATION

INSIDE VERTICAL INSTALLATIONS - FREESTANDING:

1. Choose a stove location that is ideal. See the section "DECIDING WHERE TO LOCATE YOUR PELLET APPLIANCE."
2. Place a non-combustible hearth pad where necessary.
3. Place the unit on the hearth pad (if installed on a carpeted surface) and space the unit in a manner so when the pellet vent is installed vertically, it will be 3" (7.6 cm) away from a combustible wall.
4. Locate the center of the fresh air intake pipe on the unit. Match that center with the same point on the wall and cut a hole about 1 5/8" (41 mm) in diameter.
5. Install the fresh air intake pipe.
6. Install the tee with clean out.
7. Install the pellet vent upward from there. When you reach the ceiling, make sure that the vent goes through the ceiling fire stop. Maintain a 3" (7.6 cm) distance to combustibles and keep attic insulation away from the vent pipe. Maintain an effective vapor barrier.
8. Finally, extend the pellet vent to go through the roof flashing.
9. Ensure that the rain cap is approximately 36" (900 mm) above the roof.

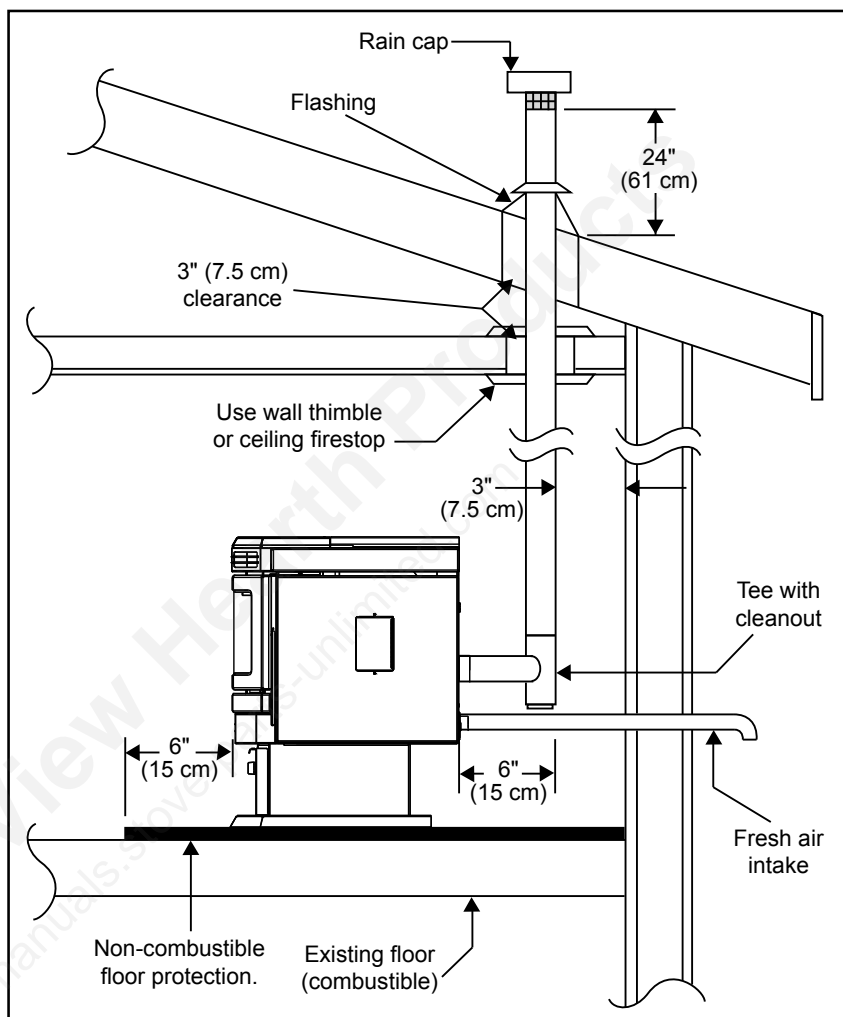


Figure 27: Inside Vertical Installation.

OUTSIDE VERTICAL INSTALLATIONS - FREESTANDING:

To accomplish a outside vertical pipe installation, follow steps 1 through 5 in the "INSIDE VERTICAL INSTALLATIONS - FREESTANDING" section and then finish it by performing the following (refer to Figure 28).

1. Install a tee with clean out on the outside of the house.
2. Install PL vent upward from the tee. Make sure that you install support brackets to keep the vent straight and secure.
3. Install ceiling thimble and secure the flashing as you go through the roof.
4. Ensure that the rain cap is approximately 36" (91.5 cm) above the roof.

INSTALLATION

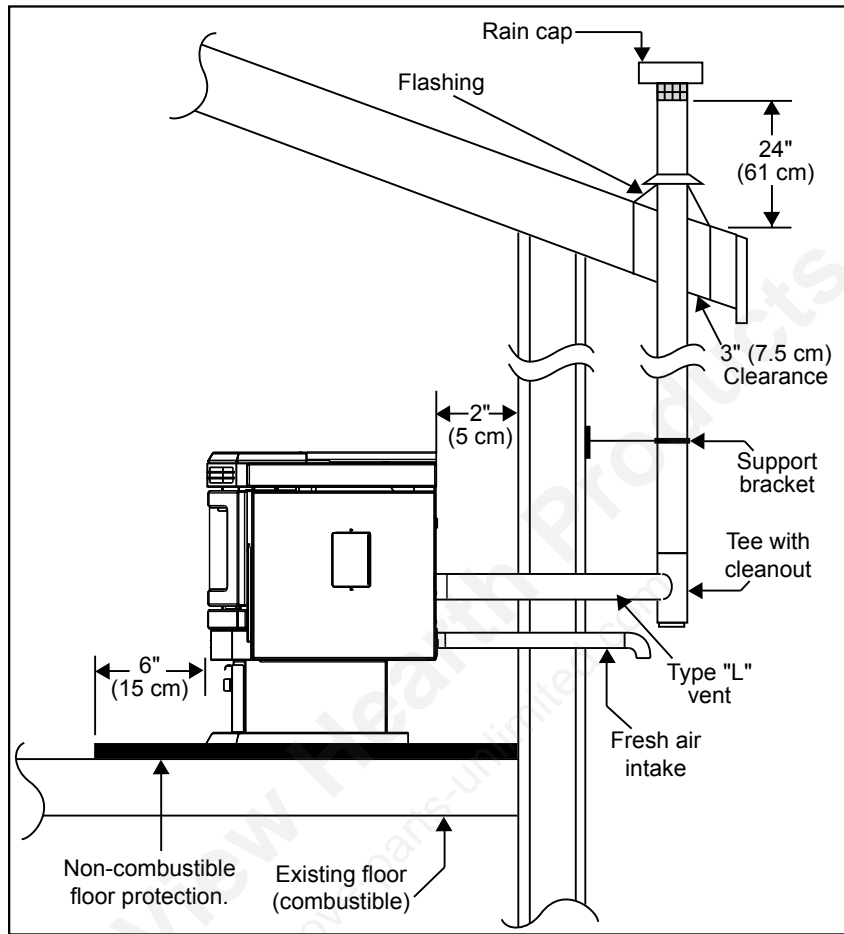


Figure 28: Outside Vertical Installation.

HEARTH MOUNT INSTALLATION - FREESTANDING:

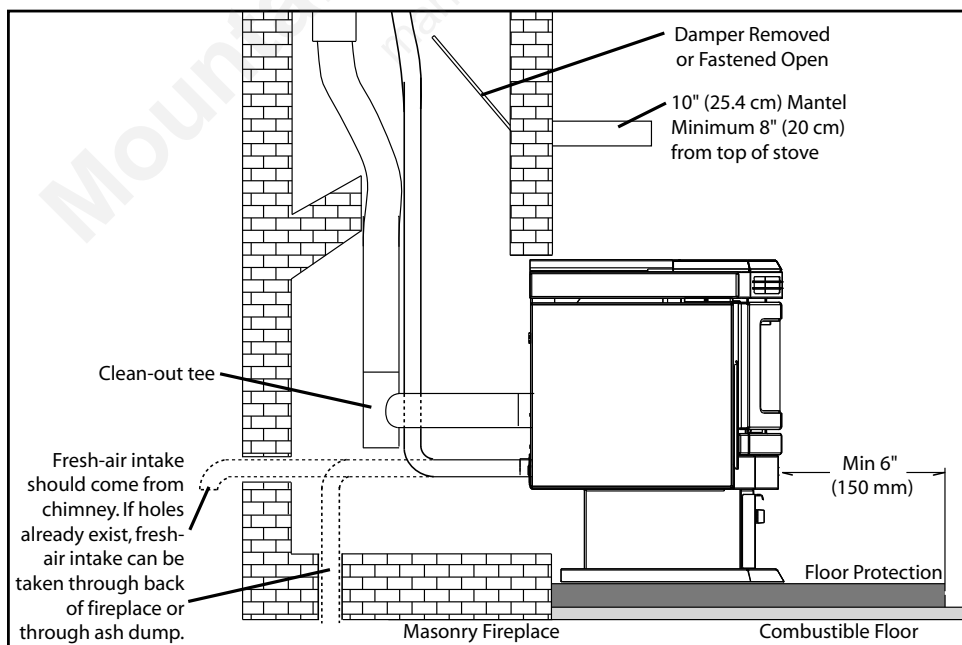


Figure 29: Freestanding hearth mount installation.

Refer to Figures 29 and 30.

1. Install the hearth pad.
2. Lock fireplace damper in the open position.
3. Install a positive flue connector at the fireplace dampers.
4. Connect a tee or a 90° elbow to the exhaust pipe.
5. Install flexible stainless steel liner or listed pellet vent to the top of the chimney.

INSTALLATION

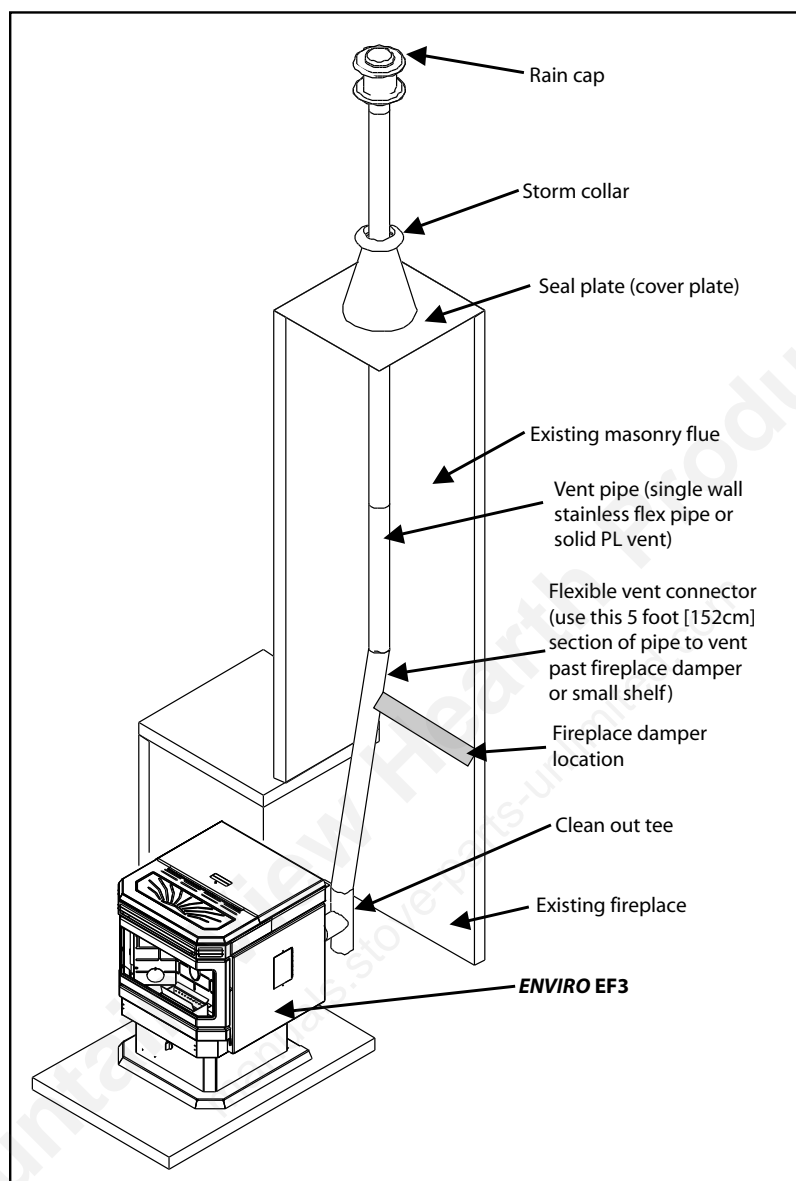


Figure 30: Freestanding hearth mount installation overview.

MASONRY FIREPLACE INSTALLATION - FIREPLACE INSERT:

The fireplace insert model requires a surround panel and a pedestal. When installing this unit, ensure that the pedestal is removed from the inside of the hopper and installed on the bottom of the unit (see "PEDESTAL INSTALLATION").

Assemble surround panel (see "ASSEMBLING THE SURROUND PANEL - FIREPLACE INSERT") before starting installation.

A non-combustible hearth pad must cover combustible flooring underneath, as well as 6" (150 mm) in front of the heater and 6" (150 mm) to the side of the heater.

1. Install the hearth pad.
2. Lock the fireplace damper in the open position.
3. Install a positive flue connector at the fireplace damper.

INSTALLATION

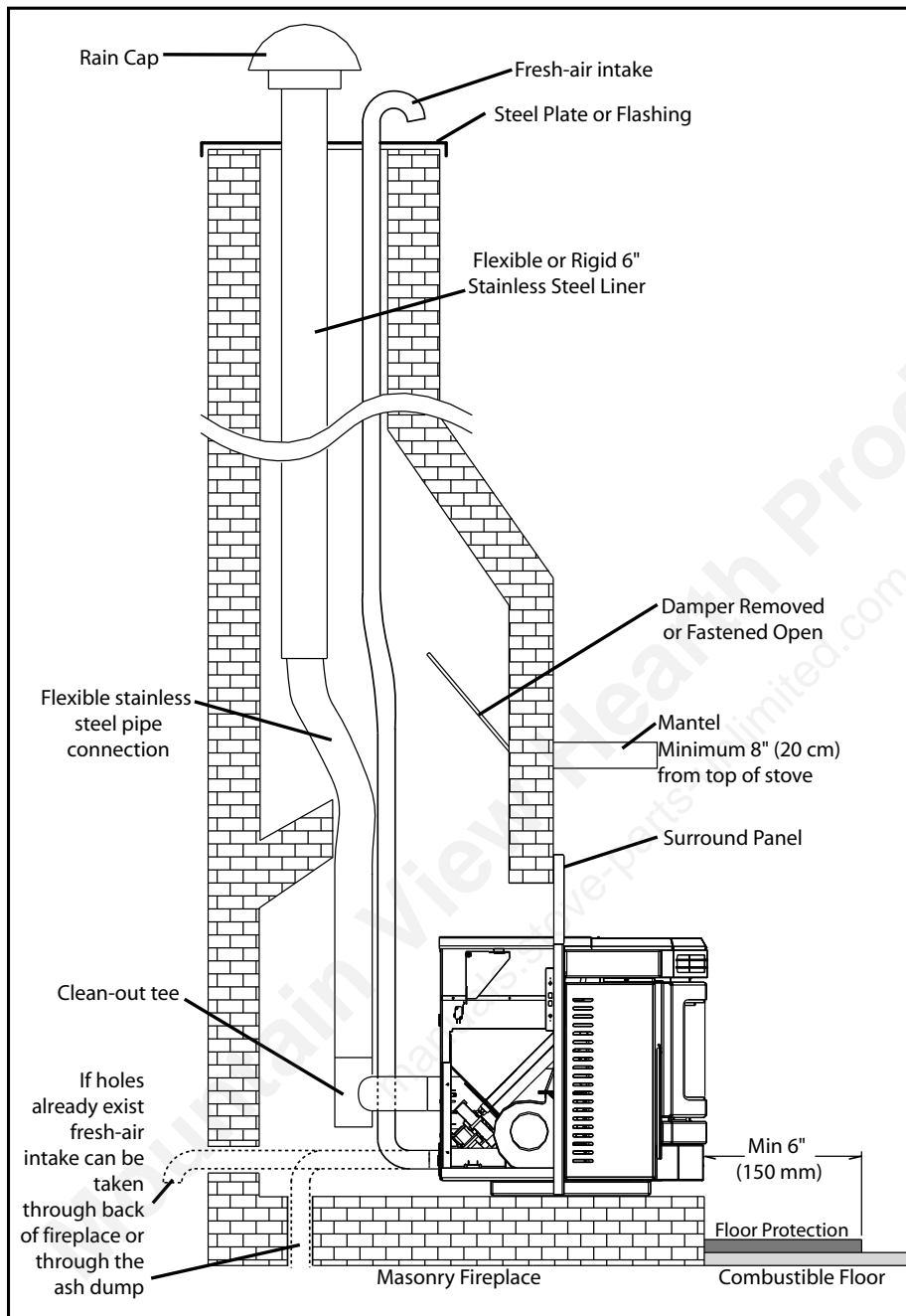


Figure 31: Masonry fireplace installation.

4. Connect a tee or 90° degree elbow to the exhaust pipe.
5. This fireplace insert must be installed with a continuous chimney liner of 3" or 4" diameter extending from the fireplace insert to the top of the chimney. The liner must conform to type 3 requirements of CAN/ULC S635.
6. (Recommended) Install fresh air intake either through the back of the fireplace or through the positive flue connector.

When installing the insert into a masonry fireplace, **DO NOT** remove any bricks or masonry, with the following exception: masonry or steel, including the damper plate, may be removed from the smoke shelf and adjacent damper frame, if necessary, to accommodate a chimney liner. Do this only if their removal will not weaken the structure of the fireplace and chimney, and will not reduce protection for combustible materials to less than that required by the national building code.

When installing the fireplace insert into a zero clearance fireplace, **DO NOT** cut or modify any factory firebox parts. If the fireplace insert does not fit into a zero clearance fireplace, we recommend you use an ENVIRO freestanding model and install as a hearth mounted unit. Install a 3" (76 mm) flex pipe from the stove to the top of the chimney (see "HEARTH MOUNT INSTALLATION - FREESTANDING:").

INSTALLATION

INSTALLATION FOR A BUILT-IN HEATER:

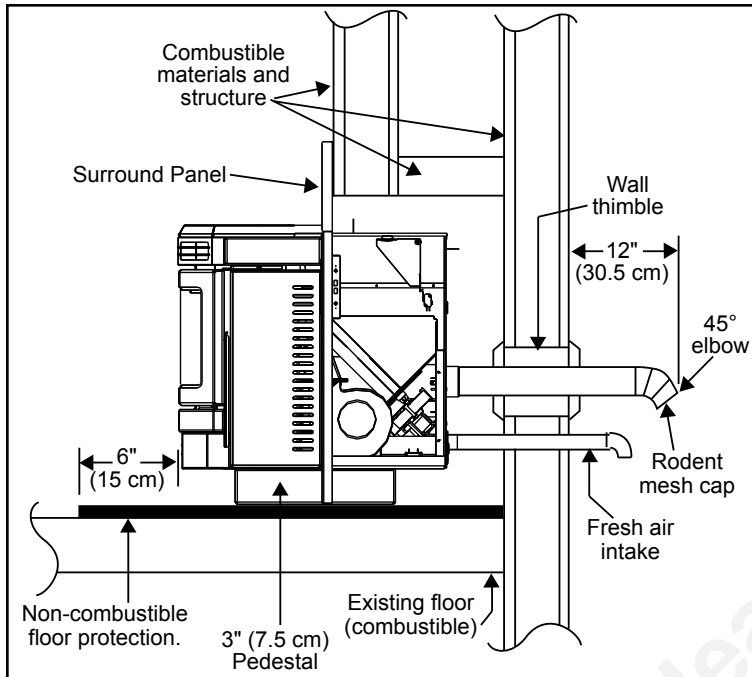


Figure 32: Built-in heater installation.

This unit includes a 3" (75 mm) pedestal and surrounding faceplates. The part of the unit behind the faceplate can be enclosed with combustible material. It has 1" (25 mm) standoffs to establish clearances to combustibles to the back, top and sides.

Refer to "CLEARANCES TO COMBUSTIBLES - BUILT-IN HEATER" and Figure 12 and 13 for the size and placement of the alcove to be built for the unit.

For the venting refer to "HORIZONTAL EXHAUST THROUGH WALL INSTALLATION - FREESTANDING".

INSTALLATION OF CONTROL PANEL INTO SURROUND PANEL - FPI AND BIH:

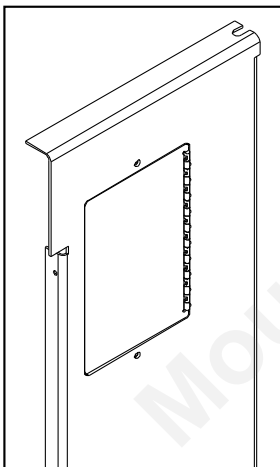


Figure 33: Control Panel Cover.

When installing the control panel into the surround panel, the surround does not need to be assembled. The control board will be found in behind the firebox.

Place the control panel on the backside of the right surround panel so the hinge is on the outside and the top and bottom holes on the control panel line up with those on the surround. Attach using two (2) T-20 screws through the front of the surround into the circuit board control panel.

After the surround has been assembled and is ready to be installed on the unit, plug the wiring harness into the control panel (see Figure 32).

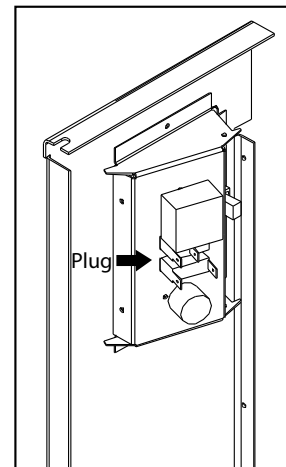


Figure 34: Control Panel Back.

THE TUBE SCRAPER ROD:

Put the stainless steel rod through the hole in the heat exchanger located behind the top louvers. Thread the rod into the scraper plate, which is visible from inside the firebox by removing the top baffle.

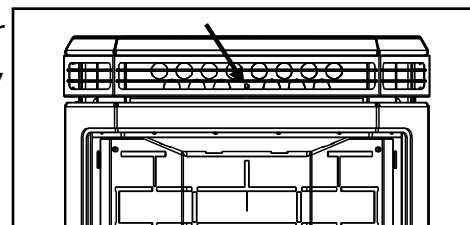


Figure 35: Tube scraper rod placement.

INSTALLATION

INSTALLATION AND REMOVAL OF THE SURROUND PANELS - FPI AND BIH:

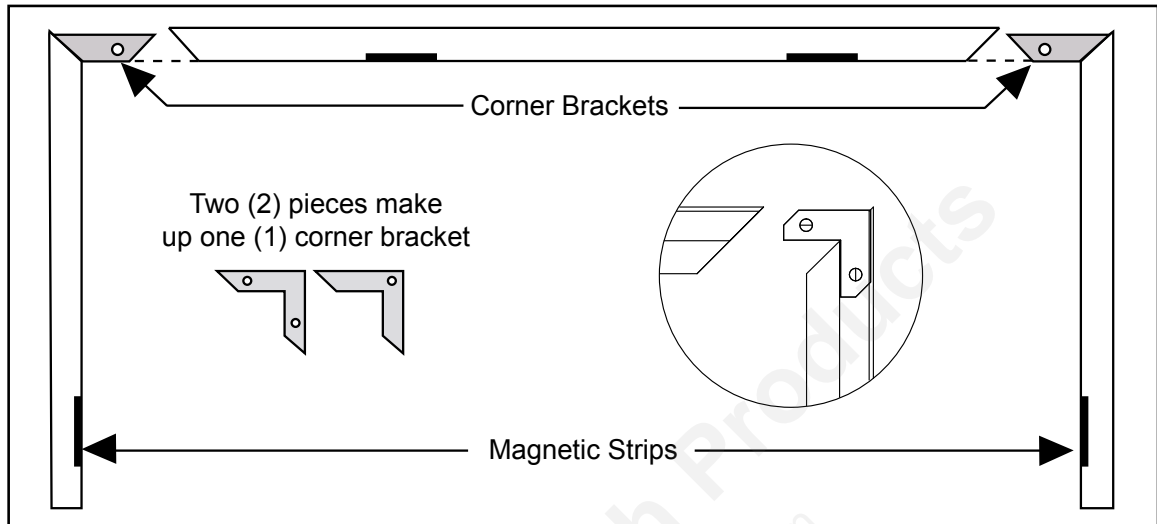


Figure 36: Assembling Trim for Surround Panel.

1. Assemble the trim set using the corner hardware and screws supplied in the surround panel packaging. Install corner hardware into the side trim pieces, then push them into the top trim. Do not over-tighten the corners or the side trim cannot be removed during servicing. See Figure 36.
2. Using three (3) T-20 screws on each side attach the hinges on the side surround panels to the unit's side panels (refer to Figure 37).
3. Plug the wiring harness into the control panel (see Figure 34).
4. Loosen the front hopper lid screws and center the top surround panel under the hopper lid, tighten screws.
5. Insert each side panel anchor bolt through the top panel into the corresponding side panel holes and tighten using a $\frac{7}{16}$ " wench or socket (refer to Figure 38).
6. Place assembled trim over the surround assembly.

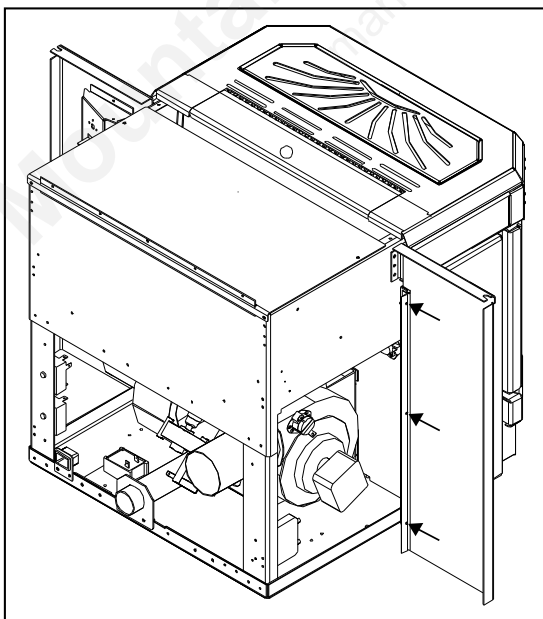


Figure 37: Panel placed on unit.

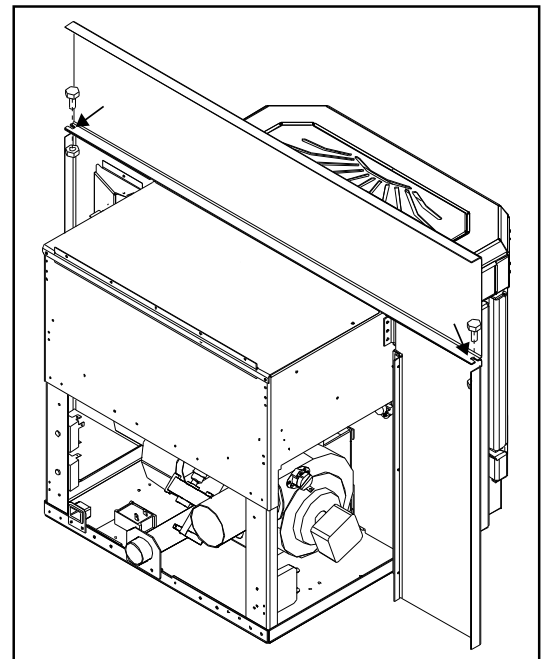


Figure 38: Assembling the Surround Panel, back view.

INSTALLATION

REMOVAL:

When maintenance is required on the unit the surround must be removed. Follow steps 3 through 6 in reverse order.

The side panel can remain attached because they swing forward for easy access (refer to Figure 37).

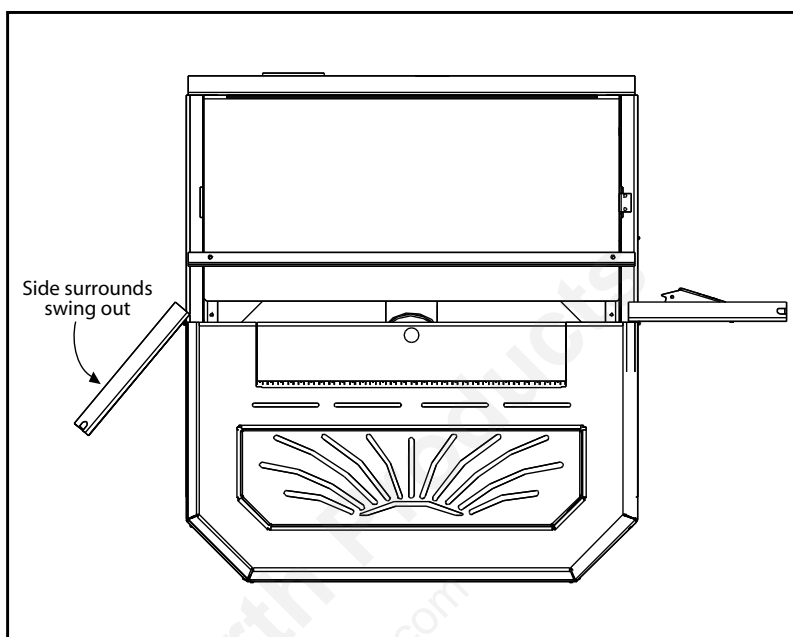


Figure 39: Side surround panel swings forward.

SLIDER/DAMPER INSTALLATION:

This is used to regulate the airflow through the pellet stove.

1. Remove the slider rod (short rod with knob and nuts) from their package and open the left side panel.
2. Remove the knob and outer nut from the knob. Push the rod through the hole in the slider. Place the lock nut on the rod and tighten, leaving a $\frac{1}{32}$ " (1 mm) gap between the slider and the other nut.
3. Make sure the slider moves freely. Close the side panel and tighten screws after placing the rod through the panel. Screw the knob onto the slider.

A Qualified Service Technician or Installer must set the Slider Damper. Taking a reading of vacuum pressure inside the firebox with a magnehelic gauge can be used to set the slider for best combustion. The slider damper should be set only on a hot stove (operating for 30 minutes or more) by placing a Magnehelic Pressure Gauge in the firebox (test port is located in the center of the stove just below the door opening). **The best settings are a reading of 0.12 to 0.13 inches of water column (30 Pa) on the high fire setting.** Some fuels may require higher or lower settings. The reading can be taken from the $\frac{1}{8}$ " (3 mm) hole located on the front of the unit below the door and behind the magnetic ash lip.

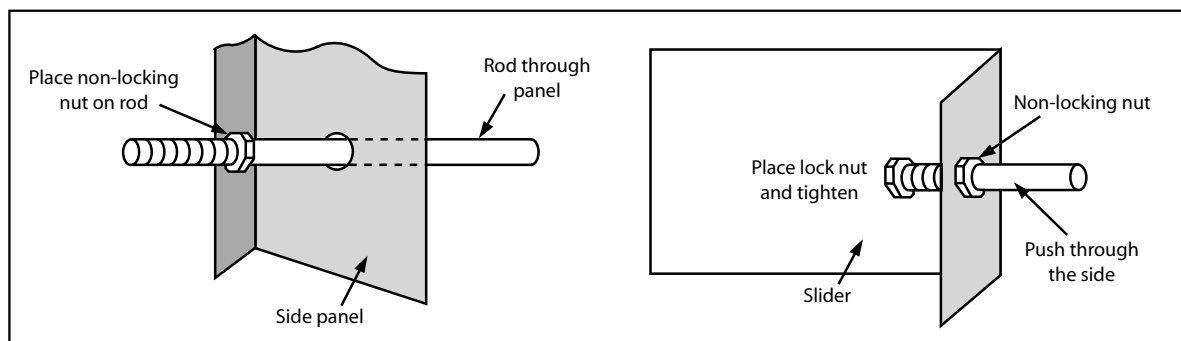


Figure 40: Slider / damper assembly.

TROUBLESHOOTING

This troubleshooting is for both Timer Control and Circuit Board style EF3. It will be stated if the troubleshooting relates only to one model.

DO NOT:

- Hold the ON / OFF BUTTON down for circuit board model or hold the start-up switch down for timer control. This is a momentary contact switch and can be damaged if held down too long.
- Service the stove with wet hands. The stove is an electrical appliance, which may pose a shock hazard if handled improperly. Only qualified technicians should deal with possible internal electrical failures.
- Remove any screws in the firebox without first lubricating them with penetrating oil.

WHAT TO DO IF:

1. The stove will not start.
2. The stove will not operate when hot.
3. The exhaust blower will not function normally.
4. The convection blower will not function normally.
5. Ignitor - Everything else in the stove operates but the ignitor will not light the pellets.
6. The auger motor does not function normally.
7. Control settings (heat level) have no effect on fire (Circuit Board Only).
8. The Dial-A-Fire has no effect on the fire (Timer Control).
9. The 200°F (93°C) high limit temperature sensor has tripped.
10. The stove will not shut off.
11. The stove keeps going out.
12. Light # 2 on Heat output bar flashing (Circuit Board Only).

***NOTE: All troubleshooting procedures should be carried out by qualified technicians or installers.**

1. The stove will not start.

General:

- Make sure the stove is plugged in and the wall outlet is supplying power.
- With the stove unplugged, examine all connections. Make sure they are firmly connected and that there are no exposed wires touching the stove (except the chassis ground wire).
- Check the continuity and placement of connections against the Wiring Diagrams in this manual.
- If the unit still does not start after trying the below, contact your local dealer for service.

Circuit Board:

- If the Control Board has been placed in the ON /OFF thermostat mode, then turn the thermostat up to call for heat.
- Check the Heat Level Indicator. - If the # 2 light is flashing (see the # 2 light is flashing)
- Check the fuses on the circuit board (see "Troubleshooting - Fuses").

Timer Control:

- ◇ Push the Start-up switch. If the stove fails to start, unplug the unit and open the hinged side panels (held tight with two screws).
- ◇ Ensure that the connections to the fifteen (15) minute start-up timer are correct.
- ◇ Attempt to bypass the switch by inserting a jumper wire between the red and white wires that attach to the switch. Plug the stove back in. If the stove starts, replace the switch.
- ◇ If this fails, replace the fifteen (15) minute start-up timer.

TROUBLESHOOTING

Caution: Installation of a new start-up timer without checking the ignitor resistance may cause another failure to the new start-up timer due to a short in the ignitor. The proper resistance through the ignitor should be 30Ω to $50\Omega \pm 3\Omega$.

2. The stove will not operate when hot.

General:

- Check the hopper for fuel.
- Incorrect air damper setting - Excessive air may consume the fire too quickly before the next drop of fuel, leaving completely unburned fuel in the burn pot liner. Insufficient air will cause build up, further restricting the air flow through the Burn Pot Liner. This in turn will cause the fuel to burn cold and very slowly. Fuel may build up and smother the fire. **(NOTE: Unit may require a change to the vent system or installation of fresh air to correct Air to Fuel ratio problems).**
- Combustion Blower failure - The Combustion Blower is not turning fast enough to generate the proper vacuum in the fire box. Visual Check – is the blower motor turning?
- Check Vacuum levels in the exhaust channel by bypassing the Vacuum Switch, then remove the Vacuum hose from Vacuum Switch. Check exhaust vacuum readings by placing the open end of the Vacuum Hose on a Magnehelic Gauge (readings must be above 0.10" W.C. on low fire).
Note: If the motor fails to reach a 0.10" W.C. reading, then replace the Combustion Blower.
- Poor Quality Fuel – Insufficient energy in the fuel to produce enough heat to keep the stove burning or operational.
- Exhaust Temperature Sensor failure – Bypass sensor located on Exhaust Blower. If stove now operates properly, the unit may require cleaning or a new sensor. Contact your local dealer for service.
- The unit may require cleaning. Contact your local dealer for service.
- Unplug the stove, open the left side panel. Jump the two (2) brown leads that are attached to the 140°F (60°C) temperature sensor. If the stove operates replace the 140°F (60°C) sensor.

Circuit Board:

- Check the Heat Level Indicator if a fire is not detected, or if the fire has gone out **the #3 light will flash** because the Exhaust Temperature Sensor's contacts have opened.
- Check the Exhaust Blower voltage across the blower wires ($\geq 114V$ on #5 setting and $\geq 52V$ on #1 setting). – Replace the Circuit Board if the Voltage reading is less than 82 V. with a line voltage >115 VAC.
- Check the fuses on the circuit board (see "Troubleshooting - Fuses").

3. The exhaust motor will not function normally.

General:

- Open the left side access panel; check all connections against the wiring diagram.
- If all the connections are verified and the exhaust blower does not function at all, tap lightly on the exhaust blower's motor end cap, this may loosen a tight motor.
- Apply 115 V AC directly to the exhaust blower. If the motor does not run, replace the blower.
- If the motor runs, have your dealer check the harness.
- See "2. The stove will not operate when hot." section.
- Contact your local dealer for service.

4. The convection blower will not function normally.

General:

- Clean all grill openings at the back and below unit.

TROUBLESHOOTING

- Check all the connections between the controller, switch, and the convection blower against the wiring diagram.
- If the convection motor will not run, apply 115 V AC to the motor directly. If the motor runs, replace the fan controller. If the motor does not run, the convection blower has failed. Replace the blower.
- If the convection blower runs on high at all times (no control with the fan controller), check the connections from the 160°F (71°C) sensor (located on the upper left side of the firewall) and convection fan controller to the blower. Disconnect one of the wires from the sensor; if control of the convection blower returns to the fan controller, replace the sensor.
- If the motor is still on high, re-connect the sensor and replace the convection fan controller.

Circuit Board:

- Press the fan button. Does the fan come on? Press again to verify that the blower turns on. If no, contact your local dealer for service.

5. Ignitor - Everything else in the stove operates but the ignitor will not light the pellets.

General:

- Check the burn pot liner placement. Make sure the burn pot liner is up tight and square to the ignitor tube (by pushing the burn pot back against the ignitor tube).
- Check all the electrical connections on the 120°F (49°C) temperature sensor located on the exhaust channel.
- Place a jumper wire between the two leads on the 120°F (49°C) temperature sensor. If the ignitor works, replace the sensor.
- Check to see if the exhaust blower is operating. If not, contact your local dealer for service.
- If the ignitor does not work, replace it.

NOTE: The ignitor should be bright orange in color. If not, replace the ignitor.

Circuit Board:

- Check the fuses on the circuit board (see "Troubleshooting - Fuses").

6. The auger motor will not function normally.

General:

- If the Auger gear box does not turn but the motor's armature does try to spin then the auger is jammed. – Try to break apart jam by poking at the jam through the drop tube. If this fails then empty the hopper and remove the Auger Cover ****Remember to re-seal the cover after installation****.
- Make sure the exhaust blower is operating.
- Check the condition of the vacuum hose (located on the left side of the stove). It should not be cracked or torn and should be installed on the top air inlet tube on the vacuum sensor.
- Check the manual reset button on the 200°F (93°C) temperature sensor. If this sensor has been tripped, check for the cause of the over-heating before pushing the red button in. Check auger for movement.
- If the auger still does not work, then apply 115 V AC directly to the auger motor. If the auger motor does not work, replace it.
- By pass the 200°F (93°C) temperature sensor with a jumper wire; check the auger. If the auger works, replace the sensor.
- Check the vacuum sensor by placing a jumper wire between the blue wire and the black wire that are attached to the sensor. If the auger works, test to see if the exhaust blower is producing enough vacuum.

TROUBLESHOOTING

- To test the exhaust vacuum, place a magnehelic gauge in the sensor end of the vacuum tube. It should read 0.5" W.C. If the reading is good, replace the vacuum sensor.
- If none of the below work contact your local dealer for service.

Circuit Board

- Check the fuses on the circuit board (see "Troubleshooting - Fuses").

Timer Control:

- ◇ Make sure the dial-a-fire is turned on.
- ◇ Unplug the stove and open the side and back panels. Check all the connections to the auger motor, auger dial-a-fire, vacuum sensor, 200°F (93°C) temperature sensor and the timing control module against the wiring diagram in this manual.
- ◇ Check the voltage across the load pins of the timing module. It should be around 1 V to 2 V, cycling to line voltage during an auger pulse. If not, replace the timing control module.
- ◇ If the auger motor still does not work, then attempt to by-pass the auger dial-a-fire control by removing the leads from the timing control module's second delay pins and placing a jumper across the pins. If the auger now cycles very quickly, test the dial-a-fire potentiometer. If the auger did not cycle, replace the timing control module.
- ◇ To test the dial-a-fire potentiometer, the potentiometer should have a range of 68KΩ to approximately 850 KΩ (± 10%). If the range is not close, replace the potentiometer.

7. Control settings (Heat Level) have no effect on the fire (Circuit Board Only).

- If the system light is flashing, the Control Board has complete control of the unit. When the unit's system light becomes solid, then control of the unit is given back to the operator.
- If there is no control of the Heat Level button, make sure the thermostat is calling for heat.
- Call your local dealer for service.

8. The dial-a-fire has no effect on the fire (Timer Control Only).

- ◇ Make sure all connections to the timer control module are secure.
- ◇ Perform a resistance test to the dial-a-fire potentiometer by placing the two (2) test leads from a multimeter into the leads of the potentiometer. The potentiometer should have a range of 68KΩ to approximately 850 KΩ (± 10%).

Potentiometer Readings:

Full counter-clockwise (switched off) = open circuit, overload or infinite resistance

Low fire800 KΩ to 900 KΩ

High fire68 KΩ to 82 KΩ

If the range is not close or does not vary then replace the potentiometer.

9. The 200°F (93°C) high limit temperature sensor has tripped.

General:

- Reset the sensor and determine the cause - was it convection blower or 160°F (71°C) temperature sensor failure? Bypass the 160°F (71°C) sensor. Does the convection blower come on high? If no, replace the blower.

TROUBLESHOOTING

10. The stove will not shut off.

General:

- If the unit will not shut off, ensure that the thermostat (if equipped) is turned down below the room temperature (thermostat mode in the ON / OFF position).
- Disconnect one of the brown wires from the exhaust temperature sensor. If the unit continues to operate, contact your local dealer for service.

Circuit Board:

- If the unit is in the HI/LOW mode the unit will not shut off but will go to an idle setting (LOW). Press the ON/OFF button to turn the unit off.

Timer Control:

- ◇ Check the connections to the 140°F (60°C) temperature sensor, start-up switch and the start-up timer against the wiring diagram.
- ◇ Check the 140°F (60°C) temperature sensor by removing one of the brown wires from the sensor. The unit should shut down right away as long as the start button was not pressed within 15 minutes of this test. If the stove shuts down within fifteen (15) minutes, replace the 140°F (60°C) sensor. If the stove does not shut down within fifteen (15) minutes, test the switch.
- ◇ To test the switch, the stove must be cold. Pull the plug, then plug the stove back in. If it fails to start, replace the switch.

11. The stove keeps going out

If the stove goes out and leaves fresh unburned pellets or cigarette-like ashes in the burn pot liner, the fire is going out before the stove shuts off.

General:

- Check to see that the Slider / Damper is in the correct position.

Circuit Board

- Turn the Heat Level up slightly (poor quality pellets will require slightly higher settings).
- Set the auger trim till the #1 and #5 lights are illuminated.

Timer Control:

- ◇ Turn the Dial-a-Fire up slightly (poor quality pellets will require slightly higher settings).

If the stove goes out and there are partially burned pellets left in the burn pot liner, the stove has shut down due to a lack of air, exhaust temperature, or power failure.

General:

- Adjust the Slider / Damper.
- Check to see if the stove needs a more complete cleaning.
- Did the power go out?
- Contact your local Dealer for service.

Circuit Board:

- Turn the Heat Level up slightly (poor quality pellets will require slightly higher settings).

Timer Control:

- ◇ Turn the Dial-a-Fire up slightly (poor quality pellets will require slightly higher settings).

TROUBLESHOOTING

If the stove goes out and there are no pellets in the liner, the auger is stopping.

General:

- See "The auger motor will not function normally" and "The exhaust blower will not function normally."

12. Light # 2 on Heat output bar flashing (Circuit Board Only).

(The Vacuum Switch contacts have opened for more than 15 sec.)

- Pinch, break or blockage in Vacuum Hose - Check hose for pinch points or damage, replace or re-route as required. Blow out Vacuum Hose
- Blocked Hose Barb on Exhaust Channel - Use a paper clip to clean out Hose Barb or remove the Vacuum Hose from the Vacuum Switch and blow into the hose to remove blockage.
- Blocked exhaust / venting system - Have stove and venting cleaned and inspected.
- Severe negative pressure in area where unit is installed - Check the operation by opening a window, does this solve the problem? If it does, install fresh air intake to unit or room. Venting system may require vertical section to move termination into a low pressure zone.
- Vacuum Switch failure - Bypass the vacuum switch, if this corrects the problem check for above problems before replacing the Vacuum Switch.
- Damage to gray wires between Circuit Board and Vacuum Switch - Inspect wires and connectors
- Combustion Blower failure - The Combustion Blower is not turning fast enough to generate the proper vacuum in the Exhaust Channel. Visual Check; is the blower motor turning? Check the Exhaust Blower voltage across the blower wires ($\geq 114V$ on #5 setting and $\geq 82V$ on #1 setting). – Replace the Circuit Board if the Voltage reading is less than 82 V. with a line voltage $>115V$ AC.
- Check Vacuum levels in the exhaust channel by bypassing the vacuum switch, then remove the Vacuum hose from Vacuum Switch. Check exhaust vacuum readings by placing the open end of the Vacuum Hose on a Magnehelic Gauge. (readings must be above .10" W.C. on low fire).

If the motor fails to reach a 0.10" W.C. readings, then replace the Combustion Blower

To reset Circuit Board after a trouble code - push the ON/OFF button

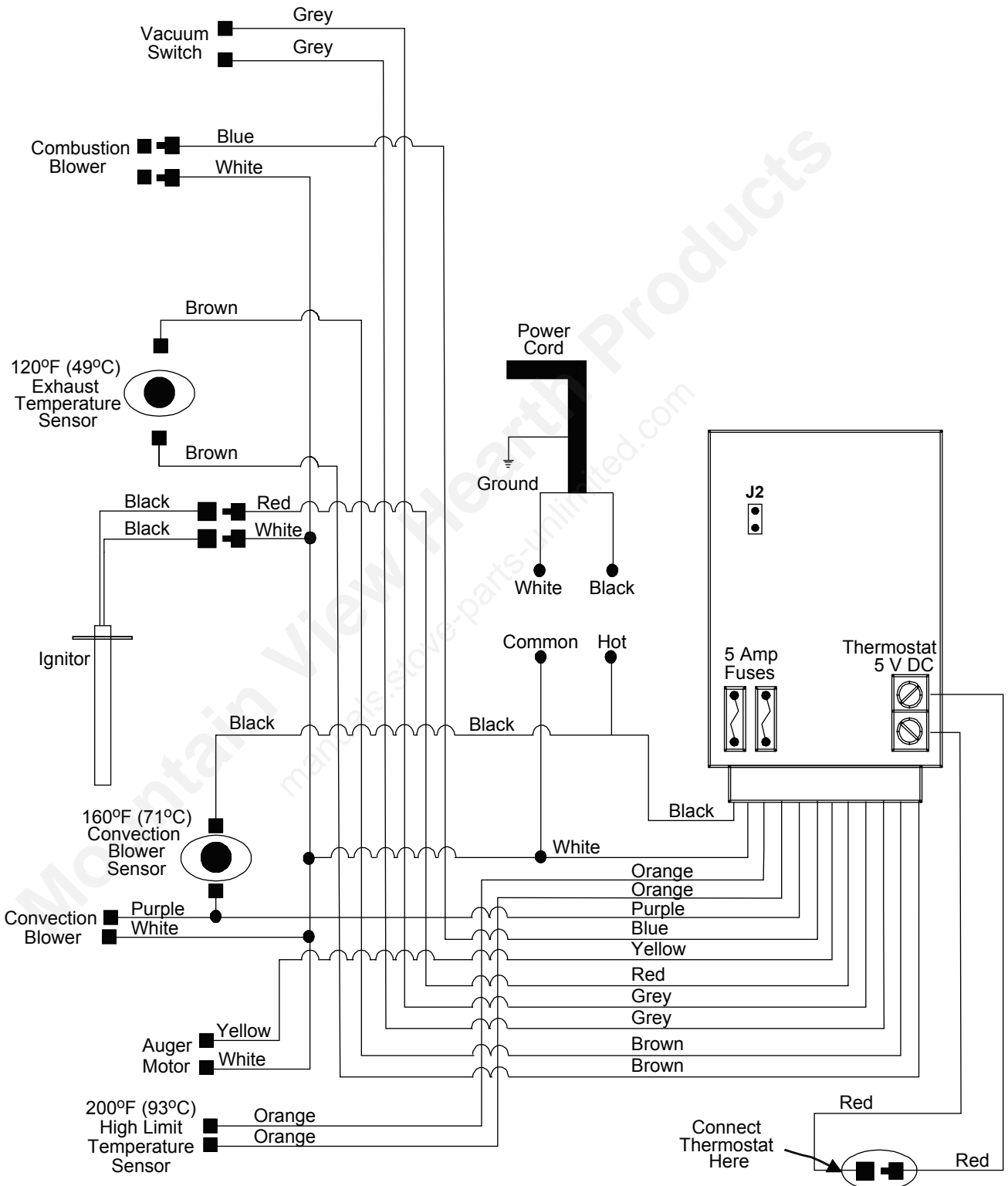
FUSES:

F1 is the fuse to the inside of the circuit board controls. If F1 has blown there may have been an input power overload or a short in the convection fan.

F2 fuse closest fuse to the outside edge of the circuit board controls. If fuse F2 has blown then there was a electrical overload problem with one of the following parts: ignitor, auger motor, high limit switch, or exhaust blower.

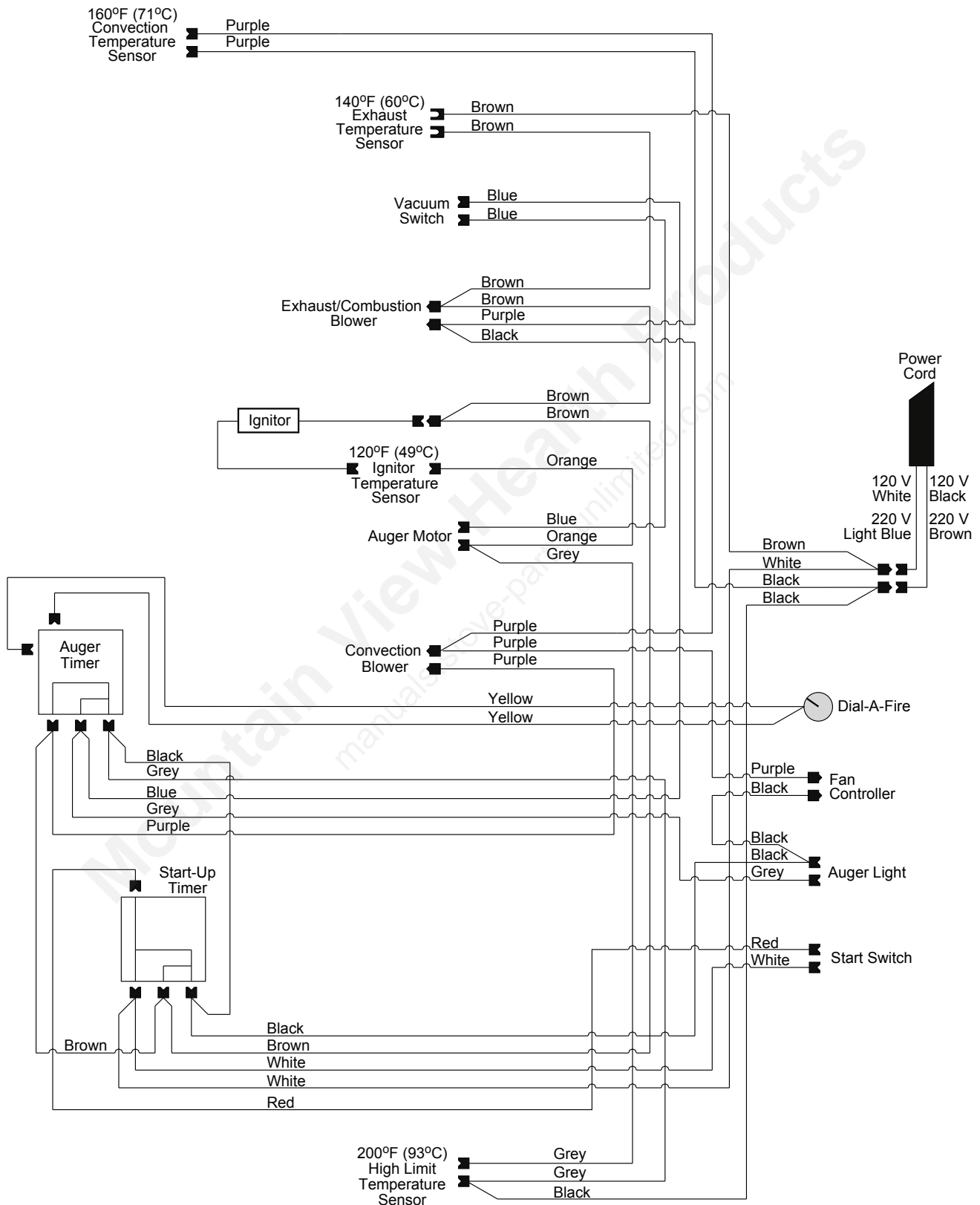
WIRING DIAGRAM

CIRCUIT BOARD:



WIRING DIAGRAM

TIMER CONTROL:



PARTS LIST

Reference Number	Description	Part Number
1	Exhaust Temperature Sensor 120°F (60°C) [Circuit Board]	EC-001
1	Exhaust Temperature Sensor 140°F (60°C) Ceramic [Timer Control]	EF-010
	Freestanding Fan Controller Knob	EC-040
	Power Cord - 115V	EC-042
2	Auger Motor - 115V	EF-001
3	Convection Blower - 115V	EF-002
	Convection Blower Impeller	EF-004
	Convection Blower Insulator (Gasket)	EF-006
	Combustion Main Impeller	EF-008
	Combustion Cooling Impeller	EF-009
	Combustion Blower Mounting Gasket	EF-011
	Combustion Blower Housing Gasket	EF-012
4	Fan Temperature Sensor 160°F (71°C)	EF-013
5	Ignition Temperature Sensor 120°F (49°C) Ceramic	EF-015
6	High Limit Temperature Sensor 200°F (93°C) Manual Reset	EF-016
7	Vacuum Switch - 115V	EF-017
	Silicone Hose	EF-018
	Aluminum Hose Barb	EF-019
8	Ignition Burn Pot	EF-021
9	Auger	EF-025
10	Auger Brass Bushing & Plate	EF-026
11	Door Handle Complete	EF-028
	Door Handle Hardware Only	EF-029
12	Auger Timer Control (3 second) - 115V [Timer Control]	EF-036
13	Power Up Timer Control - 115V [Timer Control]	EF-037
14	Green Light -115V [Timer Control]	EF-041
15	Start Up Switch [Timer Control]	EF-043
16	Dial-a-Fire - 115V [Timer Control]	EF-044
17	Fan Controller With Knob - 115V [Timer Control]	EF-045
18	Firebox Liner With Insulation	EF-047
	Slider Damper Rod With Knob	EF-050
	Heat Exchanger Rod With Knob	EF-051
	5/8" Door Gasket 7' (2.1 m)	EF-056
	Window Channel Tape 60" (1.5 m)	EF-058
19	FPI & BIH Hopper Lid Knob & Stud Only	EF-059
20	FPI & BIH Ash Pan Latch	EF-060
	Glass Set With Tape	EF-062
	Slider Damper Plate	EF-064
21	Auger Brass Bushings (Set of 2)	EF-065

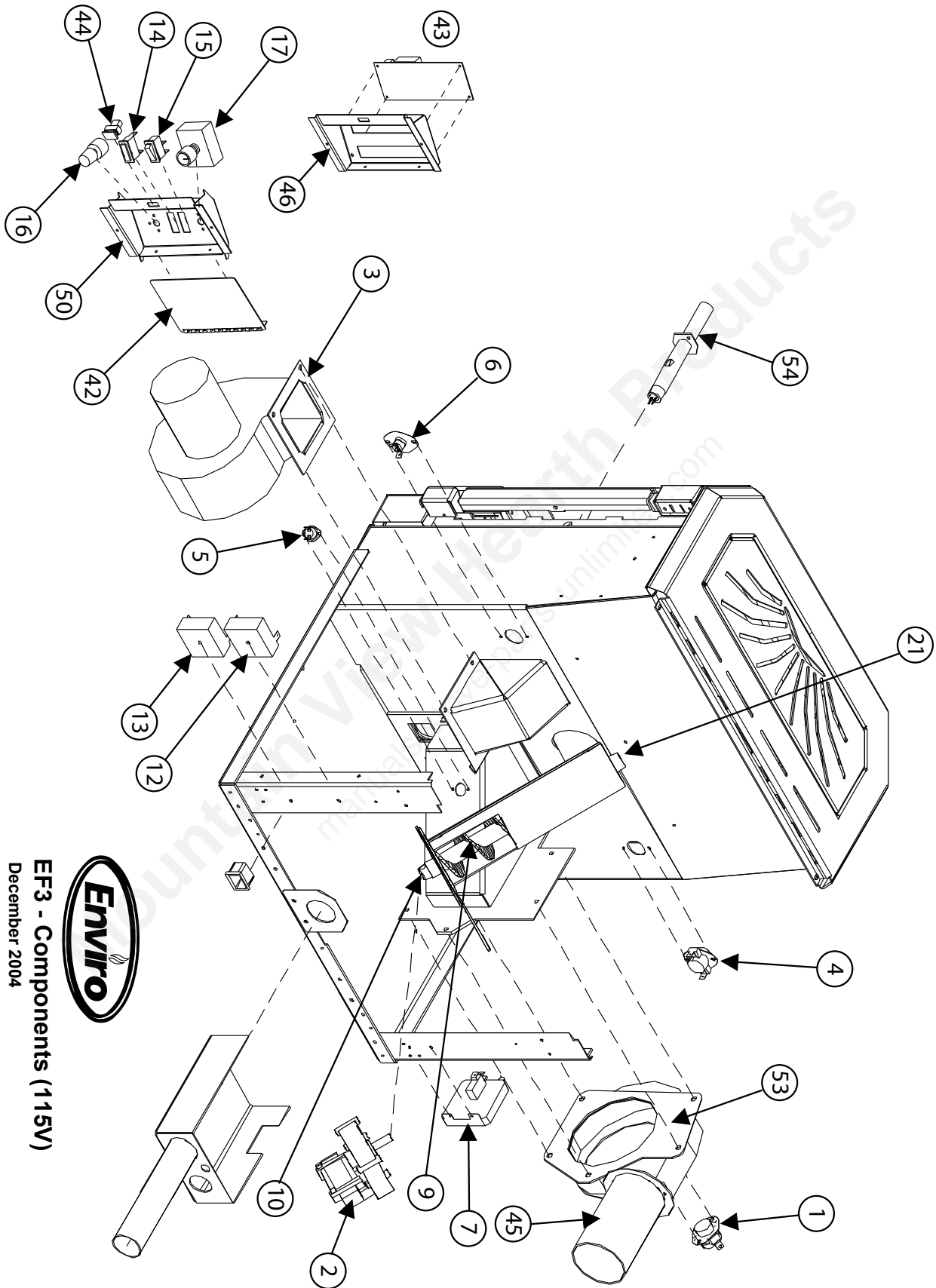
PARTS LIST

Reference Number	Description	Part Number
	Firebox Liner Top Plate	EF-066
	Dial-a-Fire Knob [Timer Control]	EF-067
	$\frac{3}{4}$ " ID Auger Collar with Set Screw	EF-069
	Knob 1 Inch Round	EF-070
	Wiring Harness [Timer Control]	EF-071
	Fireplace Insert Pedestal Complete	EF-074
	Built-In Heater Pedestal	EF-074A
22	Freestanding Back Grill	EF-097
	Freestanding Ash Pan Cover	EF-099
	Built-In Heater Kit	EF-102
23	Freestanding Hopper Lid With Handle	EF-104
24	Fireplace Insert Ash Pan Drawer With Latch	EF-105
25	Freestanding Stove Top	EF-111
26	Fireplace Insert Stove Top	EF-114
	EF3 Domestic Owner's Manual	EF-118
27	Ash Sill	EF-121
28	FPI & BIH Hopper Cover	EF-122
29	Front Grill	EF-123
	Shoulder Bolt, Hardened Bush & Nut (Set of 2)	EF-124
	Firebox Ceramic Wool Insulation	EF-126
30	Steel Brick Lining	EF-129
31	Freestanding Right Cabinet Side	EF-133
32	Freestanding Left Cabinet Side	EF-134
33	Freestanding Pedestal Complete	EF-139
	Ignitor Tube Only	EF-140
34	Freestanding Hopper Lid Hinge	EF-141
35	Freestanding Hopper Side Rail (Left & Right)	EF-143
36	FPI & BIH Hopper Side Rail (Left & Right)	EF-145
	Pellet Stove Cleaning Brush	EF-156
37	Freestanding Ash Drawer	EF-160
38	Freestanding Ash Pan Latch	EF-178
39	FPI & BIH Ash Pan Cover Magnet Set	EF-188
40	Firebox Cleaning Port Covers	EF-194A
41	FPI & BIH Hopper Lid With Knob, Stud, and Hinge	EF-202
	Pedestal & Ash Pan Gasket 10' (3 m)	EF-208
42	Control Panel Door	20-040
	Built-In Heater Standoffs (Set of 2)	50-160
	Enviro Logo Gel Decal	50-322
43	Circuit Board - 115V [Circuit Board]	50-178
	Circuit Board 5 Amp Fuse - 115V (Set of 2) [Circuit Board]	50-833

PARTS LIST

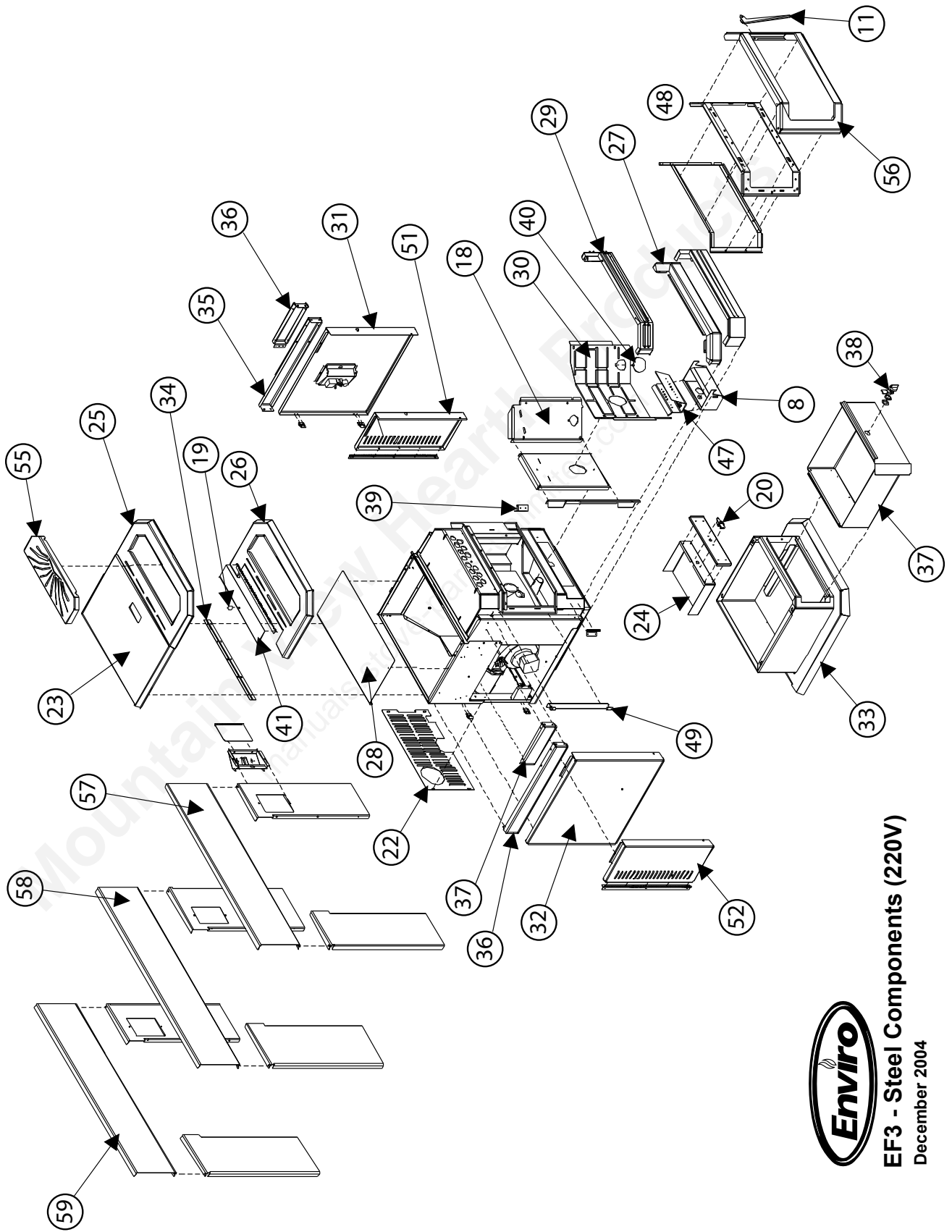
Reference Number	Description	Part Number
	Circuit Board Decal [Circuit Board]	50-179
44	Control Panel Touch Latch	50-323
45	Combustion Blower Exhaust Tube	50-327
46	Circuit Board Control Panel [Circuit Board]	50-330
47	Stainless Steel Burn Pot Liner - Domestic	50-474
47	Stainless Steel Burn Pot Liner - High Ash	50-587
	Convection Blower Mount	50-524
	Firebox Liner Top Rod	50-591
48	Door Assembly	50-602
49	Door Hinge Bracket	50-604
50	Freestanding Phase Control Panel Complete - 115V [Timer Control]	50-678
50	FPI & BIH Phase Control Panel Complete - 115V [Timer Control]	50-679
51	Fireplace Insert Cabinet Side Right	50-751
52	Fireplace Insert Cabinet Side Left	50-752
	Glass Extrusions (Set of 2)	50-767
53	Exhaust Blower Assembly - 115V	50-901
54	Ignitor 300W - 115V	50-1067
-----	Options	-----
	Log Set	20-036
55	Decorative Trivet - Painted	EF-150
55	Decorative Trivet - Gold	EF-151
	Louvre Trim - Brass	50-340
	Louvre Trim - Nickel	50-342
56	Door Cover (No Louvre Trim) - Gold	50-469
56	Door Cover With Louvre Trim - Nickel	50-470
56	Door Cover (No Louvre Trim) - Painted	50-600
57	Regular Surround Panel - Black Trim	50-100
	Regular Trim Only - Black	50-117
	Regular Trim Only - Brass	EF-091
	Regular Trim Only - Nickel	50-129
58	Oversized Surround Panel - Black Trim	50-101
	Oversized Trim Only - Black	50-119
	Oversized Trim Only - Brass	EC-052
	Oversized Trim Only - Nickel	50-131
59	Built-In Heater Surround Panel - Black Trim	EF-077A
	Built-In Heater Trim Only - Black	50-118
	Built-In Heater Trim Only - Brass	EF-153
	Built-In Heater Trim Only - Nickel	50-130
	Tapped Corner Bracket	EC-053

PARTS DIAGRAM - COMPONENTS



EF3 - Components (115V)
December 2004

PARTS DIAGRAM - STEEL



EF3 - Steel Components (220V)

December 2004

WARRANTY

Sherwood Industries Ltd. gives a five year limited warranty on all steel manufactured parts. A one-year warranty is provided on all electrical components. The above limited warranties are extended only to the original purchaser.

There is no warranty on the following parts:

- Glass window
- Fiberglass rope gaskets
- refractory material
- burn pot liner
- paint
- enamel finish or gold plating where it applies

****NOTE:** The paint on the brick firebox lining may peel. This is due to the extreme conditions applied to the paint and is in no way covered under warranty.

WHEN FILING A WARRANTY CLAIM PLEASE COMPLETE THE FOLLOWING INFORMATION ON AN OFFICIAL WARRANTY CLAIM FORM:

TO THE DEALER:

- Name and address of dealer,
- Date of purchase
- Name, address and telephone number of purchaser
- Name, address and telephone number of installer
- Date of installation, and
- Serial number of the appliance

Ensure that you specify the nature of the complaint, defect, periodical malfunction, etc.

TO THE DISTRIBUTOR:

- Sign and verify that work and information are correct.
- Description and part # of any parts replaced.

The limited warranty covers defects in materials and workmanship as long as the products has been installed according to the manual's instruction. If the product is damaged or broken as a result of mishandling or misuse, the warranty does not apply. Removal and re-installation costs are not covered under this warranty.

It is the manufacturer's option whether to repair or replace the appliance. The shipping cost to and from the factory is to be paid by the consumer. All warranties by the manufacturer are set forth herein and no claim shall be made against the manufacturer on any oral warranty or representation.

The manufacturer assumes no responsibility for damage caused by household power fluctuations or power surges.

Under Warranty

For the do-it-yourself Individual

The consumer should be aware that the pellet appliance needs setting using tools that he/she might not have. It is recommended that you have a qualified installer install your pellet appliance

Sherwood Industries Ltd. reserves the right to make changes without any notice.

INSTALLATION DATA SHEET

The following information must be recorded by the installer for warranty purposes and future reference.

NAME OF OWNER: _____

ADDRESS: _____

PHONE: _____

NAME OF DEALER: _____

ADDRESS: _____

PHONE: _____

MODEL: _____

SERIAL NUMBER: _____

DATE OF PURCHASE: _____ (dd/mm/yyyy)

DATE OF INSTALLATION: _____ (dd/mm/yyyy)

MAGNEHELIC AT INSTALL: _____

INSTALLER'S SIGNATURE: _____

NAME OF INSTALLER: _____

ADDRESS: _____

PHONE: _____

MANUFACTURED BY:
SHERWOOD INDUSTRIES LTD.
6782 OLDFIELD RD. SAANICHTON, BC, CANADA V8M 2A3
www.envirofire.biz
December 22, 2004
C-10790