

**Confidential Business Information**

**Certification Test Report**

**Manufacturer:** Hearth & Home Technologies, Inc.  
**Heater Type:** Pellet-Fired, Freestanding or Insert  
**Model Line:** Mt. Vernon E2-C Series

**Models:** MTV-E2-MBK-C, MTV-E2-PFT-C, MTVI-E2-MBK-C,  
MTV-E2-CSB-C, MTV-E2-PMH-C, MTVI-E2-CSB-C,  
MTV-E2-PBK-C, MTV-E2-PDB-C, MTVI-E2-PMH-C

**Prepared for:** Hearth & Home Technologies, Inc.  
1445 North Highway  
Colville, WA 99114

**Prepared by:** OMNI-Test Laboratories, Inc.  
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**Test Period:** May 19, 2017

**Report Date:** July 7, 2017  
**Revised Report Date:** July 18, 2017

**Report Number:** 0061PS094E

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## AUTHORIZED SIGNATORIES

This report has been reviewed and approved by the following authorized signatories:

**Technician:**



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Aaron Kravitz  
OMNI-Test Laboratories, Inc.

**QA Review:**



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Alex Tiegs, QA Administrator  
OMNI-Test Laboratories, Inc.

**Evaluation Decision:**



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Sebastian Button, Testing Supervisor  
OMNI-Test Laboratories, Inc.

July 18, 2017  

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Issue Date

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# **Section 1**

## **Appliance, Testing, & Results**

- 1.1 - Appliance Description
- 1.2 – Procedures and Results Summary
- 1.3 - Summary Tables

## 1.1 - Appliance Description

**Appliance Manufacturer:** Hearth & Home Technologies, Inc.

**Pellet Stove Model Line:** Mt. Vernon E2-C Series

**Model Numbers:**

Freestanding Models		Insert Models
MTV-E2-MBK-C	MTV-E2-PFT-C	MTVI-E2-MBK-C
MTV-E2-CSB-C	MTV-E2-PMH-C	MTVI-E2-CSB-C
MTV-E2-PBK-C	MTV-E2-PDB-C	MTVI-E2-PMH-C

**Model Similarity:** The sample unit tested is a model MTV-E2-MBK-C; one of the freestanding models of the model line. The fireplace insert models of the E2-C Series are identical to the freestanding versions in all interior parts and configurations. All critical components, air flow pathways, and K List items (aside from overall stove dimensions) are identical between the two versions. Within each version, the different model numbers represent color options for the unit's enamel finish – six for the freestanding and three for the insert. Color does not affect emissions performance.

**Type:** Freestanding and fireplace insert, air-circulating type, pellet-fired room heater.

The Mt. Vernon E2-C Series' principle elements include a fuel hopper, grey cast iron firebox chamber, ductile iron burn pot, and electrical fuel feed, combustion air, and convection air supply systems. The frame of the unit is constructed of mild steel and the outer fascia of cast iron.

The air intake has a cross sectional area of 4.2 in<sup>2</sup>. Drawn through this opening, air is forced by the combustion air blower through an air wash above the door and holes in the firepot. Combustion products are routed out of the firebox chamber via a baffle-type heat exchanger through a 3 inch diameter flue outlet located on the rear of the unit.

Fuel is supplied from the hopper to the burn pot via a screw-type auger. Fuel supply rate is varied by cycling the auger motor as needed.

Ashes fall through the burn pot into a removable ash drawer located at the bottom of the unit. The drawer is accessed through the front firebox door, which also features a 14" x 21" glass panel.

The electrical systems are regulated by a user-operated control board featuring a simple dial which can be adjusted to achieve desired heat output. The unit can also be controlled by an external thermostat system.

More detailed information is shown in the manufacturer's design drawings, Appendix C of this report. This information is considered confidential business information (CBI) by the manufacturer and is not included in the non-CBI version of this report.

**Appliance Photographs**  
**Mt. Vernon E2-C Series**  
**Test Date: 5/29/2017**



**Mt. Vernon E2-C Series Front**



**Mt. Vernon E2-C Series Back**



**Mt. Vernon E2-C Series Left**



**Mt. Vernon E2-C Series Right**

## 1.2 - Procedures and Results Summary

### INTRODUCTION

Hearth & Home Technologies, Inc. retained OMNI-Test Laboratories, Inc. (*OMNI*) to perform U.S. Environmental Protection Agency (EPA) certification testing on the Mt. Vernon E2-C Series. The Mt. Vernon E2-C Series is a freestanding or insert style pellet-burning residential heating appliance.

The testing was performed at *OMNI*'s testing facility in Portland, Oregon. The altitude of the laboratory is 30 feet above sea level. The unit was received in good condition and logged in at the *OMNI*'s testing facility on May 17, 2017. It was assigned and labeled with *OMNI* ID #2188. *OMNI* representative Aaron Kravitz conducted the certification testing and completed all testing by May 29, 2017.

This report is organized in accordance with the EPA-recommended outline and is summarized in the Table of Contents immediately preceding this section. The results in this report are limited to the item(s) submitted.

### SUMMARY OF RESULTS

The average particulate emission rate over the complete, integrated test run was measured to be 0.74 g/hr.

The average particulate emission factor for the complete, integrated test run was measured to be 0.57 g/dry kg of fuel.

The average thermal efficiency for the complete, integrated test run was measured to be 77.9%.

The particulate emission rate calculated from the one-hour filter was 0.58 g/hr.

The proportionality results and sample train agreement for the test run was acceptable. Quality check results for each test run are presented in Section 3 of this report.

## TESTING PROCEDURE

The Mt. Vernon E2-C Series was tested in accordance with the U.S. EPA 40 CFR Part 60, Subpart AAA – Standards of Performance for New Residential Wood Heaters using ASTM E2515 and ASTM E2779. The fuel used for certification testing was Lignetics brand densified wood pellet fuel; this fuel was graded as Premium by the Pellet Fuels Institute and was produced at registered mill # 03208. Particulate emissions were measured using dual sampling trains consisting of two sets of filters (front and back).

The product was tested using a 6” chimney connector and chimney assembly; an adapter was used to attach the connector to the 3” flue outlet.

The results of the integrated test run indicate an average particulate emission rate of 0.74 g/hr. The Mt. Vernon E2-C Series results are within the emission limit of 2.0 g/hr for affected appliances manufactured on or after May 15, 2020, or sold at retail after December 31, 2020.

The model Mt. Vernon E2-C Series was tested for thermal efficiency and carbon monoxide (CO) emissions in accordance with CSA B415.1-10. The heater has a demonstrated an average thermal efficiency of 77.9%. The calculated CO emission rate was 0.15 g/min.

Upon completion of emissions certification testing, the sample unit was sealed and will be stored by the manufacturer in accordance with the requirements of the CFR.



**Mt. Vernon E2-C Series – Sealed Test Unit**



### 1.3 - Summary Tables

**Table 1 – Particulate Emissions**

	<b>One-Hour Filter</b>	<b>Integrated Total</b>
<b>Emission Rate</b> (g/hr)	0.58	0.74
<b>Emission Factor</b> (g/dry kg)	0.22	0.57

**Table 2 – Efficiency and CO**

	<b>Burn Rate Segment</b>			<b>Integrated Total</b>
	<b>Maximum</b>	<b>Medium</b>	<b>Minimum</b>	
<b>Time</b> (minutes)	62	121	180	363
<b>Burn Rate</b> (dry kg/hr)	2.62	1.26	0.85	1.29
<b>Heat Input Rate</b> (BTU/hr, HHV)	50,775	24,391	16,396	24,933
<b>Heat Output Rate</b> (BTU/hr, HHV)	39,428	19,136	12,682	19,419
<b>Efficiency</b> (%, HHV)	77.7%	78.5%	77.3%	77.9%
<b>Efficiency</b> (%, LHV)	83.0%	83.8%	82.6%	83.2%
<b>CO Emission Rate</b> (g/min)	0.06	0.07	0.22	0.15

**Table 3 – Test Facility Conditions**

	<b>Initial</b>	<b>Middle</b>	<b>Final</b>
<b>Room Temperature</b> (°F)	68	72	70
<b>Barometric Pressure</b> (in Hg)	30.19	30.16	30.14
<b>Air Velocity</b> (ft/min)	< 50	< 50	< 50
<b>Induced Draft</b> (in H <sub>2</sub> O)	0	0	0

**Table 4 – Fuel Measurement Summary**

	<b>Pretest</b>	<b>Burn Rate Segment</b>			<b>Integrated Total</b>
		<b>Maximum</b>	<b>Medium</b>	<b>Minimum</b>	
<b>Time</b> (min)	64	62	121	180	363
<b>Burn Rate</b> (dry kg/hr)	2.31	2.62	1.26	0.85	1.29
<b>Consumed Fuel</b> (lbs)	5.8	6.4	6.0	6.0	18.4
<b>Moisture Content</b> (dry basis %)	7.09	7.09	7.09	7.09	7.09

**Table 5 – Dilution Tunnel and Flue Gas Measurements**

	Burn Rate Segment			Integrated Total
	Maximum	Medium	Minimum	
<b>Flue Draft</b> (in H <sub>2</sub> O)	-0.052	-0.036	-0.028	-0.035
<b>Tunnel Velocity</b> (ft/sec)	12.17	11.95	11.71	11.87
<b>Tunnel Flow Rate</b> (dscf/min)	130.9	133.0	131.4	131.7
<b>Tunnel Temperature</b> (°F)	111.7	92.5	87.8	93.4

**Table 6 – Heater Configuration**

	Pretest	Burn Rate Segment		
		Maximum	Medium	Minimum
<b>Dial Setting</b>	5 (max)	5 (max)	2	1 (min)
<b>Trim Pot Setting</b>	+4	+4	+1	+1

## **Section 2**

### **Test Data**

2.1 Test Data by Run

2.2 Sample Analysis & Tares

## **2.1 - Test Data by Run**

### Run 1 Notes & Results

OMNI-Test Laboratories, Inc.

**Pellet Heater Test Results - ASTM E2779 / ASTM E2515**

Manufacturer: Hearth & Home  
 Model: E2  
 Project No.: 0061PS094E  
 Tracking No.: 2188  
 Run: 1  
 Test Date: 05/19/17

Burn Rate (Composite)	<b>1.29 kg/hr dry</b>
Average Tunnel Temperature	93 degrees F
Average Gas Velocity in Dilution Tunnel - vs	11.87 feet/second
Average Gas Flow Rate in Dilution Tunnel - Qsd	7904.1 dscf/hour
Average Delta p	0.054 inches H2O
Average Delta H	1.32 inches H2O
Total Time of Test	363 minutes

<b>Burn Rate (High)</b>	<b>2.62 kg/hr dry</b>
<b>Burn Rate (Med)</b>	<b>1.26 kg/hr dry</b> 48.0% of High
<b>Burn Rate (Low)</b>	<b>0.85 kg/hr dry</b> 32.3% of High

	AMBIENT	SAMPLE TRAIN 1	SAMPLE TRAIN 2	1 <sup>st</sup> HR FILTER (TRAIN 1)
Total Sample Volume - Vm	N/A cubic feet	59.409 cubic feet	59.199 cubic feet	9.694 cubic feet
Average Gas Meter Temperature	72 degrees F	82 degrees F	82 degrees F	75 degrees F
Total Sample Volume (Standard Conditions) - Vmstd	0.000 dscf	57.620 dscf	57.717 dscf	9.518 dscf
Total Particulates - m <sub>T</sub>	0 mg	5.3 mg	5.5 mg	0.7 mg
Particulate Concentration (dry-standard) - C <sub>r</sub> /C <sub>s</sub>	0.000000 grams/dscf	0.00009 grams/dscf	0.00010 grams/dscf	0.00007 grams/dscf
Total Particulate Emissions - E <sub>T</sub>	0.00 grams	4.40 grams	4.56 grams	0.58 grams
Particulate Emission Rate	0.00 grams/hour	0.73 grams/hour	0.75 grams/hour	0.58 grams/hour
Emissions Factor		0.56 g/kg	0.58 g/kg	0.22 g/kg
Difference from Average Total Particulate Emissions		0.08 grams	0.08 grams	

**Dual Train Comparison Results Are Acceptable**

FINAL AVERAGE RESULTS	
<b>Integrated Test Run</b>	
Total Particulate Emissions - E <sub>T</sub>	4.48 grams
Particulate Emission Rate	<b>0.74 grams/hour</b>
Emissions Factor	0.57 grams/kg
<b>First Hour Emissions</b>	
Total Particulate Emissions - E <sub>T</sub>	0.58 grams
Particulate Emission Rate	0.58 grams/hour
Emissions Factor	0.22 grams/kg

QUALITY CHECKS	
Filter Temps < 90 °F	OK
Filter Face Velocity (47 mm)	OK
Leakage Rate	OK
Ambient Temp (55-90°F)	OK
Negative Probe Weight Eval.	OK
Pro-Rate Variation	OK
Medium Burn Rate < 50%	OK

Control No. P-SFDK-0002, Effective date: 5/06/2016

## OMNI-Test Laboratories

**Manufacturer:** Hearth & Home  
**Model:** E2  
**Date:** 05/19/17  
**Run:** 1  
**Control #:** 0061PS094E  
**Test Duration:** 363  
**Output Category:** Integrated

**Technicians:** Aaron Kravitz  
 \_\_\_\_\_  
 \_\_\_\_\_

**Test Results in Accordance with CSA B415.1-09**

	HHV Basis	LHV Basis
<b>Overall Efficiency</b>	77.9%	83.2%
<b>Combustion Efficiency</b>	99.5%	99.5%
<b>Heat Transfer Efficiency</b>	78%	83.6%

<b>Output Rate (kJ/h)</b>	20,471	19,419	<b>(Btu/h)</b>
<b>Burn Rate (kg/h)</b>	1.29	2.84	<b>(lb/h)</b>
<b>Input (kJ/h)</b>	26,284	24,933	<b>(Btu/h)</b>

<b>Test Load Weight (dry kg)</b>	7.80	17.18	<b>dry lb</b>
<b>MC wet (%)</b>	6.62		
<b>MC dry (%)</b>	7.09		
<b>Particulate (g )</b>	4.48		
<b>CO (g)</b>	53.72		
<b>Test Duration (h)</b>	6.05		

<b>Emissions</b>	<b>Particulate</b>	<b>CO</b>
<b>g/MJ Output</b>	0.04	0.43
<b>g/kg Dry Fuel</b>	0.57	6.89
<b>g/min</b>	0.74	0.15
<b>lb/MM Btu Output</b>	0.08	1.01

<b>Air/Fuel Ratio (A/F)</b>	31.51
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## OMNI-Test Laboratories

**Manufacturer:** Hearth & Home  
**Model:** E2  
**Date:** 05/19/17  
**Run:** 1  
**Control #:** 0061PS094E  
**Test Duration:** 62  
**Output Category:** Maximum

**Technicians:** Aaron Kravitz  
 \_\_\_\_\_  
 \_\_\_\_\_

### Test Results in Accordance with CSA B415.1-09

	HHV Basis	LHV Basis
<b>Overall Efficiency</b>	77.7%	83.0%
<b>Combustion Efficiency</b>	99.5%	99.5%
<b>Heat Transfer Efficiency</b>	78%	83.4%

<b>Output Rate (kJ/h)</b>	41,564	39,428	<b>(Btu/h)</b>
<b>Burn Rate (kg/h)</b>	2.62	5.78	<b>(lb/h)</b>
<b>Input (kJ/h)</b>	53,526	50,775	<b>(Btu/h)</b>

<b>Test Load Weight (dry kg)</b>	2.71	5.98	<b>dry lb</b>
<b>MC wet (%)</b>	6.62		
<b>MC dry (%)</b>	7.09		
<b>Particulate (g )</b>	N/A		
<b>CO (g)</b>	3.78		
<b>Test Duration (h)</b>	1.03		

Emissions	Particulate	CO
<b>g/MJ Output</b>	N/A	0.09
<b>g/kg Dry Fuel</b>	N/A	1.39
<b>g/min</b>	N/A	0.06
<b>lb/MM Btu Output</b>	N/A	0.20

<b>Air/Fuel Ratio (A/F)</b>	18.55
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## OMNI-Test Laboratories

**Manufacturer:** Hearth & Home  
**Model:** E2  
**Date:** 05/19/17  
**Run:** 1  
**Control #:** 0061PS094E  
**Test Duration:** 121  
**Output Category:** Medium

**Technicians:** Aaron Kravitz  
 \_\_\_\_\_  
 \_\_\_\_\_

**Test Results in Accordance with CSA B415.1-09**

	HHV Basis	LHV Basis
<b>Overall Efficiency</b>	78.5%	83.8%
<b>Combustion Efficiency</b>	99.5%	99.5%
<b>Heat Transfer Efficiency</b>	79%	84.2%

<b>Output Rate (kJ/h)</b>	20,172	19,136	<b>(Btu/h)</b>
<b>Burn Rate (kg/h)</b>	1.26	2.78	<b>(lb/h)</b>
<b>Input (kJ/h)</b>	25,712	24,391	<b>(Btu/h)</b>

<b>Test Load Weight (dry kg)</b>	2.54	5.60	<b>dry lb</b>
<b>MC wet (%)</b>	6.62		
<b>MC dry (%)</b>	7.09		
<b>Particulate (g )</b>	N/A		
<b>CO (g)</b>	7.91		
<b>Test Duration (h)</b>	2.02		

<b>Emissions</b>	<b>Particulate</b>	<b>CO</b>
<b>g/MJ Output</b>	N/A	0.19
<b>g/kg Dry Fuel</b>	N/A	3.11
<b>g/min</b>	N/A	0.07
<b>lb/MM Btu Output</b>	N/A	0.45

<b>Air/Fuel Ratio (A/F)</b>	30.16
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## OMNI-Test Laboratories

**Manufacturer:** Hearth & Home  
**Model:** E2  
**Date:** 05/19/17  
**Run:** 1  
**Control #:** 0061PS094E  
**Test Duration:** 180  
**Output Category:** Minimum

**Technicians:** Aaron Kravitz  
 \_\_\_\_\_  
 \_\_\_\_\_

**Test Results in Accordance with CSA B415.1-09**

	HHV Basis	LHV Basis
<b>Overall Efficiency</b>	77.3%	82.6%
<b>Combustion Efficiency</b>	99.5%	99.5%
<b>Heat Transfer Efficiency</b>	78%	83.1%

<b>Output Rate (kJ/h)</b>	13,369	12,682	<b>(Btu/h)</b>
<b>Burn Rate (kg/h)</b>	0.85	1.87	<b>(lb/h)</b>
<b>Input (kJ/h)</b>	17,285	16,396	<b>(Btu/h)</b>

<b>Test Load Weight (dry kg)</b>	2.54	5.60	<b>dry lb</b>
<b>MC wet (%)</b>	6.62		
<b>MC dry (%)</b>	7.09		
<b>Particulate (g )</b>	N/A		
<b>CO (g)</b>	39.17		
<b>Test Duration (h)</b>	3.00		

<b>Emissions</b>	<b>Particulate</b>	<b>CO</b>
<b>g/MJ Output</b>	N/A	0.98
<b>g/kg Dry Fuel</b>	N/A	15.41
<b>g/min</b>	N/A	0.22
<b>lb/MM Btu Output</b>	N/A	2.27

<b>Air/Fuel Ratio (A/F)</b>	43.00
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VERSION: N/A (Part of OMNI Std. Form)

OMNI-Test Laboratories, Inc. **ASTM E2779 Pellet Heater Run Sheets**

Client: **Hearth & Home** Project Number: **0061PS094E** Run Number: **1**  
 Model: **E2** Tracking Number: **2188** Date: **5/19/2017**  
 Test Crew: **A. Kravitz**  
 OMNI Equipment ID numbers: 132, 185, 209, 244, 283A, 335, 336, 410, 559, 592, 594

**Pellet Heater Run Notes**

**Air Control Settings**

High Burn Rate Target: 100%  
 Settings: Dial = 5 (maximum)  
Trim Pot = +4

Medium Burn Rate Target: <50% of max  
 Settings: Dial = 2  
Trim Pot = +1

Low Burn Rate Target: Minimum  
 Settings: Dial = 1 (minimum)  
Trim Pot = +1

Additional Settings  
 Notes:

-None-


**Preburn Notes**

Time	Notes
0:00	Started unit on "High" settings
64:00	Ended preburn

**Test Notes**

Time	Notes
00:00	Began Sampling
60:00-61:00	Swapped Filter A
61:00-62:00	Adjusted settings to target medium burn rate
182:00-183:00	Adjusted settings to target minimum burn rate
363:00	Ended Sampling

**Pellet Moisture Content:** See Analysis Sheet

Technician Signature: 

Date: 5/22/2017

OMNI-Test Laboratories, Inc.

### ASTM E2779 Pellet Heater Run Sheets

Client: **Hearth & Home** Project Number: **0061PS094E** Run Number: **1**  
 Model: **E2** Tracking Number: **2188** Date: **5/19/2017**  
 Test Crew: **A. Kravitz**  
 OMNI Equipment ID numbers: 132, 185, 209, 244, 283A, 335, 336, 410, 559, 592, 594

#### Pellet Heater Supplemental Data

Start Time: 09:44 Booth #: E1  
 Stop Time: 15:47 Gas Meter y Factors: A: 0.984 B: 0.990

#### Stack Gas Leak Check:

Initial: 0 Final: 0

#### Sample Train Leak Check:

A: 0.000 @ 8.5 "Hg  
 B: 0.000 @ 8.5 "Hg

**Calibrations:** Span Gas CO<sub>2</sub>: 16.74 CO(%): 4.202 CO(ppm): 901  
 Mid Gas CO<sub>2</sub>: 9.97 CO(%): 2.503 CO(ppm): 501

	Pre Test			Post Test		
	Zero	Span	Mid	Zero	Span	Mid
Time	8:53	8:56	8:58	3:50	3:53	3:56
CO <sub>2</sub>	0.00	16.74	10.00	-0.03	16.54	9.98
CO(%)	0.000	4.201	2.479	0.002	4.227	2.486
CO(ppm)	0	901	494	0	899	491

Air Velocity (ft/min): Initial: <50 Final: <50  
 Scale Audit (lbs): Initial: 10.0 Final: 10.0  
 Pitot Tube Leak Test: Initial: 0 Final: 0  
 Stack Diameter (in): 6  
 Induced Draft: 0  
 % Smoke Capture: 100  
 Flue Pipe Cleaned Prior to First Test in Series:  
 Date: 5/17/2017 Initials: \_\_\_\_\_

	Initial	Middle	Ending
P <sub>b</sub> (in/Hg)	30.19	30.16	30.14
Ambient (°F)	68	72	70
R/H (%)	39.0	34.6	32.6

Tunnel Traverse		
Microtector Reading	dP (in H <sub>2</sub> O)	T(°F)
0.011	0.022	110
0.017	0.034	110
0.019	0.038	110
0.016	0.032	110
0.009	0.018	110
0.018	0.036	110
0.018	0.036	110
0.010	0.020	110
Center:		
N/A	0.055	110
Static:		
N/A	-0.16	110

Background Filter Volume: N/A

Technician Signature: \_\_\_\_\_



Date: 5/22/2017

### Pellet Heater Conditioning Data - ASTM E2779

Manufacturer: \_\_\_\_\_ Hearth & Home  
 Model: \_\_\_\_\_ E2  
 Tracking No.: \_\_\_\_\_ 2188  
 Project No.: \_\_\_\_\_ 0061PS094E  
 Test Date: \_\_\_\_\_  
 Operation Category: \_\_\_\_\_ Medium

Elapsed Time (hours)	Scale Reading (lbs)	Stack (°F)
0	179.3	232
1	176.1	176
2	173.4	162
3	171.4	145
4	169.3	143
5	167.2	144
6	161.0	230
7	157.9	179
8	155.1	169
9	153.1	154
10	151.0	152
11	148.9	154
12	142.9	230
13	139.9	174
14	137.2	164
15	135.1	148
16	133.0	144
17	131.0	142
18	124.8	241
19	121.8	180
20	119.0	167
21	116.9	154
22	114.9	151
23	112.9	149
24	106.9	230
25	103.9	176
26	101.2	158
27	99.2	139
28	97.2	139
29	95.2	138
30	89.1	345
31	83.0	348
32	76.8	346
33	70.7	346
34	64.6	342
35	58.6	341
36	52.5	339
37	47.0	329
38	40.8	382
39	34.7	393
40	31.4	292
41	28.8	274
42	22.3	277
43	18.9	208
44	16.1	186
45	13.9	165
46	11.8	160
47	9.7	156
48	3.3	280
49	0.0	205
50		

### Pellet Heater Preburn Data - ASTM E2779

Manufacturer: Hearth & Home  
 Model: E2  
 Tracking No.: 2188  
 Project No.: 0061PS094E  
 Test Date: 5/19/2017

PB Length: 64 min  
 Recording Interval: 1 min

Averages:			299	68	0	5	0
Elapsed Time (min)	Scale Reading	Weight Change	Stack (F)	Ambient (F)	Draft (H <sub>2</sub> O)	CO <sub>2</sub> (%)	CO (%)
0	5.8	-	199	68	0.00	0.02	0.00
1	5.7	-0.1	209	69	0.00	0.02	0.00
2	5.6	-0.1	224	69	0.00	0.02	0.00
3	5.9	0.3	240	68	-0.04	0.01	0.00
4	5.8	-0.1	252	68	-0.04	0.02	0.00
5	5.7	-0.1	260	68	-0.04	0.01	0.00
6	5.5	-0.2	268	68	-0.04	0.01	0.00
7	5.4	-0.1	275	68	-0.05	0.01	0.00
8	5.3	-0.1	278	68	-0.05	0.02	0.00
9	5.2	-0.1	281	68	-0.05	0.02	0.00
10	5.1	-0.1	284	68	-0.05	0.02	0.00
11	5.0	-0.1	287	68	-0.05	0.00	0.00
12	4.9	-0.1	290	68	-0.05	0.00	0.00
13	4.8	-0.1	292	68	-0.05	0.00	0.00
14	4.7	-0.1	295	68	-0.05	16.55	4.15
15	4.6	-0.1	295	68	-0.05	16.75	4.19
16	4.5	-0.1	297	68	-0.05	15.01	3.67
17	4.4	-0.1	299	68	-0.05	9.69	2.38
18	4.3	-0.1	299	68	-0.05	10.00	2.47
19	4.2	-0.1	303	68	-0.05	1.08	0.09
20	4.1	-0.1	306	68	-0.05	1.00	0.09
21	4.0	-0.1	319	68	-0.05	14.84	0.05
22	3.9	-0.1	328	68	-0.05	8.24	0.03
23	4.7	0.8	304	68	-0.05	0.29	0.00
24	4.5	-0.2	297	68	-0.05	4.92	0.01
25	4.3	-0.2	298	68	-0.05	5.74	0.01
26	4.2	-0.1	297	68	-0.05	5.27	0.01
27	4.1	-0.1	301	68	-0.05	7.66	0.00
28	4.0	-0.1	304	68	-0.05	6.51	0.00
29	3.8	-0.2	306	68	-0.05	7.21	0.00
30	3.7	-0.1	307	68	-0.05	7.37	0.00
31	3.6	-0.1	307	68	-0.05	5.52	0.01
32	3.5	-0.1	307	68	-0.05	6.50	0.00
33	3.4	-0.1	306	67	-0.05	5.92	0.00
34	3.3	-0.1	306	68	-0.05	7.02	0.00
35	3.2	-0.1	307	68	-0.05	6.56	0.01
36	3.0	-0.2	311	68	-0.05	7.66	0.00
37	2.9	-0.1	310	68	-0.05	6.24	0.00
38	2.8	-0.1	311	68	-0.05	5.97	0.01
39	2.7	-0.1	314	68	-0.05	7.44	0.00
40	2.6	-0.1	314	68	-0.05	7.04	0.00
41	2.5	-0.1	315	68	-0.05	7.50	0.00
42	2.4	-0.1	314	68	-0.05	6.36	0.01
43	2.3	-0.1	313	68	-0.05	6.94	0.00
44	2.2	-0.1	313	68	-0.05	0.01	0.00
45	2.1	-0.1	313	68	-0.05	0.01	0.00
46	2.0	-0.1	312	68	-0.05	0.02	0.00
47	1.9	-0.1	314	68	-0.05	0.04	0.00
48	1.7	-0.2	314	68	-0.05	6.62	0.00
49	1.6	-0.1	316	68	-0.05	8.26	0.00
50	1.5	-0.1	317	68	-0.05	7.84	0.00
51	1.4	-0.1	341	68	-0.06	6.48	0.01
52	1.3	-0.1	331	68	-0.05	1.74	0.15
53	1.2	-0.1	314	69	-0.05	5.72	0.00
54	1.1	-0.1	313	69	-0.05	6.59	0.00
55	1.0	-0.1	311	69	-0.05	6.45	0.00
56	0.9	-0.1	309	68	-0.05	6.34	0.00
57	0.8	-0.1	312	69	-0.05	7.86	0.00
58	0.7	-0.1	313	69	-0.05	7.94	0.00
59	0.6	-0.1	312	68	-0.05	7.15	0.00
60	0.5	-0.1	311	68	-0.05	6.09	0.00
61	0.4	-0.1	314	68	-0.05	6.85	0.00
62	0.2	-0.2	315	68	-0.05	7.14	0.00
63	0.1	-0.1	315	69	-0.05	6.25	0.00
64	0.0	-0.1	315	69	-0.05	6.48	0.00



















## **2.2 - Sample Analysis & Tares**

Analysis Worksheets  
Tared Filter, Probe, and O-Ring Data  
Pellet Fuel Label  
Pellet Fuel Analysis Report

OMNI-Test Laboratories, Inc.

**ASTM E2779 Pellet Heater Run Sheets**

Client: **Hearth & Home** Project Number: **0061PS094E** Run Number: **1**  
 Model: **E2** Tracking Number: **2188** Date: **5/19/2017**  
 Test Crew: **A. Kravitz**  
 OMNI Equipment ID numbers: 132, 185, 209, 244, 283A, 335, 336, 410, 559, 592, 594

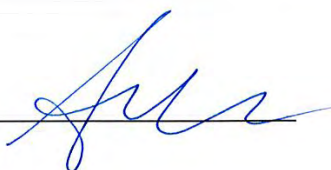
**ASTM E2515 Lab Sheet**

Assembled By:  
                    A. Kravitz                    

Date/Time in Dessicator:  
                    5/19/2017 16:15                    

Weighing #1	Weighing #2	Weighing #3	Weighing #4	Weighing #5
Date: 5/22/17	Date: 5/23/17	Date:	Date:	Date:
Time: 0900	Time: 0815	Time:	Time:	Time:
R/H %: 15.9	R/H %: 17.1	R/H %:	R/H %:	R/H %:
Temp (F): 73.7	Temp (F): 77.1	Temp (F):	Temp (F):	Temp (F):
Audit 1: 500.1	Audit 1: 500.1	Audit 1:	Audit 1:	Audit 1:
Audit 2: 4999.9	Audit 2: 4999.9	Audit 2:	Audit 2:	Audit 2:
Audit 3: 99999.6	Audit 3: 99999.7	Audit 3:	Audit 3:	Audit 3:
Initials: A	Initials: A	Initials:	Initials:	Initials:

Train	Item	ID #	Tare (mg)	Weight (mg)	Weight (mg)	Weight (mg)	Weight (mg)	Weight (mg)
A	Front Filter (60 min)	D142	120.6	121.1	121.3			
A	Front Filter (Remainder)	D143	123.5	126.5	126.6			
A	Rear Filter	D144	122.4	121.9	121.9			
A	Probe	33	113946.8	113947.1	113947.2			
A	O-Ring Set	R461	4143.6	4145.2	4145.2			
B	Front Filter	D145	120.5	124.1	124.2			
B	Rear Filter	D146	123.3	122.7	122.9			
B	Probe	62	117663.9	117664.2	117664.3			
B	O-Ring Set	R462	3292.3	3294.1	3294.1			
BG	Filter	N/A						

Technician Signature: 

Date: 5/23/17



### Pellet Heater Lab Data - ASTM E2779 / ASTM E2515

Manufacturer: Hearth & Home      Equipment Numbers: 131, 244, 283A, 592  
 Model: E2  
 Tracking No.: 2188  
 Project No.: 0061PS094E  
 Run #: 1  
 Date: 5/19/17

#### TRAIN 1 (First Hour emissions)

Sample Component	Reagent	Filter, Probe or Dish #	Weights		
			Final, mg	Tare, mg	Particulate, mg
A. Front filter catch	Filter	D142	121.3	120.6	0.7
B. Rear filter catch	Filter				0.0
C. Probe catch*	Probe				0.0
D. Filter seals catch*	Seals				0.0

Sub-Total 

Total Particulate, mg:	0.7
------------------------	-----

#### TRAIN 1 (Remainder of Test)

Sample Component	Reagent	Filter, Probe or Dish #	Weights		
			Final, mg	Tare, mg	Particulate, mg
A. Front filter catch	Filter	D143	126.6	123.5	3.1
B. Rear filter catch	Filter	D144	121.9	122.4	-0.5
C. Probe catch*	Probe	33	113947.2	113946.8	0.4
D. Filter seals catch*	Seals	R461	4145.2	4143.6	1.6

Sub-Total 

Total Particulate, mg:	4.6
------------------------	-----

Train 1 Aggregate 

Total Particulate, mg:	5.3
------------------------	-----

#### TRAIN 2

Sample Component	Reagent	Filter, Probe or Dish #	Weights		
			Final, mg	Tare, mg	Particulate, mg
A. Front filter catch	Filter	D145	124.2	120.5	3.7
B. Rear filter catch	Filter	D146	122.9	123.3	-0.4
C. Probe catch*	Probe	62	117664.3	117663.9	0.4
D. Filter seals catch*	Seals	R462	3294.1	3292.3	1.8

Total Particulate, mg:	5.5
------------------------	-----

#### AMBIENT

Sample Component	Reagent	Filter # or Probe #	Weights		
			Final, mg	Tare, mg	Particulate, mg
A. Front filter catch*	Filter				0.0

Total Particulate, mg:	0.0
------------------------	-----

\*Particulate catch that results in a negative number, is assumed to be zero for probes and seals, negative numbers for filters are assumed to be part of the seal

Component	Equations:
A. Front filter catch	Final (mg) - Tare (mg) = Particulate, mg
B. Rear filter catch	Final (mg) - Tare (mg) = Particulate, mg
C. Probe catch	Final (mg) - Tare (mg) = Particulate, mg

Tare Sheet: Probes \_\_\_ 47mm Filters  100mm Filters \_\_\_ O-Ring Pair \_\_\_

Date/time Placed in Dessicator: 4/6/2017

Thermohygrometer ID #: 592

Prepared By: S. Button

Analytical Balance ID #: 244

Audit Weight ID #/Mass: 283A / 200 mg

ID #	Date: 4/7/2017 Time: 14:00 RH %: 18.47 T (°F): 68°F Audit: 200.0 mg	Date: 4/10/2017 Time: 8:30 RH %: 5.17 T (°F): 69°F Audit: 200.0 mg	Date: Time: RH %: T (°F): Audit:	Date: Time: RH %: T (°F): Audit:	Date Used	Project Number	Run No.
D141	122.6	122.7					
D142	120.5	120.6			5/19/17	0061PS094E	1
D143	123.6	<del>122.5</del> 123.5			↓	↓	↓
D144	122.4	122.4					
D145	120.6	120.5					
D146	123.4	123.3					
D147	122.5	122.6					
D148	120.5	120.6					
D149	123.2	123.2					
D150	122.8	122.7					
D151	119.9	119.8					
D152	124.1	124.0					
D153	122.4	122.3					
D154	123.8	123.7					
D155	119.6	119.5					
D156	119.8	119.9					
D157	123.6	123.4					
D158	121.7	121.5					
D159	120.4	120.4					
D160	123.8	123.7					
D161	121.4	121.4					
D162	124.4	124.2					
	Initials: <u>SB</u>	Initials: <u>SB</u>	Initials:	Initials:			

Final Technician Signature: [Signature]  
 Control No. P-SFDP-0001.xls, Effective date: 9/9/2015

Date: 4/10/2017

Evaluator signature: [Signature]

Tare Sheet: (check one)  Probes  47mm Filters  100mm Filters  O-Ring Pair   
 Prepared By: A. Krawitz Balance ID #: 244 Thermohygrometer ID #: 592 Audit Weight ID #/Mass: 131 / 500 mg

Placed in Dessicator:	Date: <u>3/14/17</u> Time: <u>11:00</u> RH %: <u>11.1</u> T (°F): <u>69.4</u> Audit: <u>99999.1</u>	Date: <u>3/17/17</u> Time: <u>13:00</u> RH %: <u>12.6</u> T (°F): <u>70.8</u> Audit: <u>99999.3</u>	Date: _____ Time: _____ RH %: _____ T (°F): _____ Audit: _____	Date: _____ Time: _____ RH %: _____ T (°F): _____ Audit: _____	Date Used	Project Number	Run No.	
ID #	Audit: <u>99999.1</u>	Audit: <u>99999.3</u>	Audit: _____	Audit: _____				
<u>14</u>	<u>114552.8</u>	<u>114552.9</u>	-					
<u>16</u>	<u>114270.7</u>	<u>114270.9</u>	-					
<u>17</u>	<u>114564.8</u>	<u>114564.6</u>	-					
<del><u>18</u></del>	<del><u>114407.7</u></del>	<del><u>114404.7</u></del>	<u>A</u>					
<u>21</u>	<u>114397.0</u>	<u>114397.0</u>	-					
<u>22</u>	<u>114351.1</u>	<u>114350.9</u>	-					
<u>27</u>	<u>114281.2</u>	<u>114281.9</u>	-					
<u>29</u>	<u>114282.2</u>	<u>114282.1</u>	-					
<u>30</u>	<u>114336.3</u>	<u>114336.4</u>	-					
<u>33</u>	<u>113947.0</u>	<u>113946.8</u>	-			<u>5/19/17</u>	<u>0061 PS094 E</u>	<u>1</u>
<u>62</u>	<u>117664.0</u>	<u>117663.9</u>	-			<u>↓</u>	<u>↓</u>	<u>↓</u>
<u>66</u>	<u>118461.6</u>	<u>118461.4</u>	-					
Initials: <u>A</u>	Initials: <u>A</u>	Initials: _____	Initials: _____					

Final Technician Signature: [Signature] Date: 3/17/17  
 Control No. P-SFDP-0002.xls, Effective date: 2/1/2017

Evaluator signature: [Signature] 4/24/2017

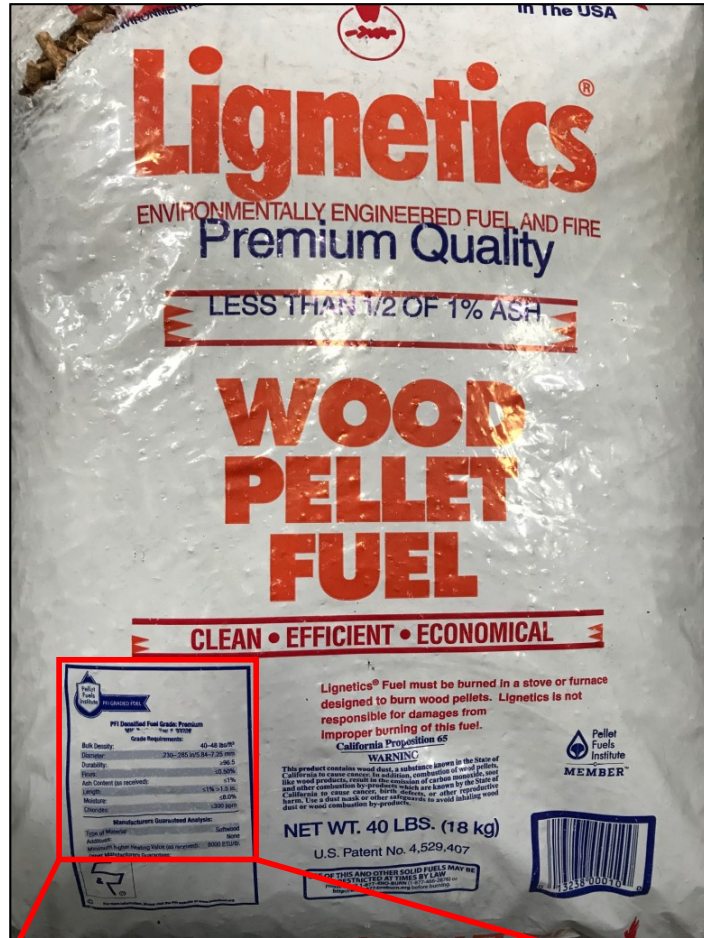
Tare Sheet: (check one) Probes \_\_\_\_\_ 47mm Filters \_\_\_\_\_ 100mm Filters \_\_\_\_\_ O-Ring Pair    
 Prepared By: A. Kravitz Balance ID #: 244 Thermohyrometer ID #: 502 Audit Weight ID #/Mass: 283A 1372 1 505 mg

Placed in Dessicator:	Date: <u>3/14/17</u>	Date: <u>3/17/17</u>	Date: _____	Date: _____	Date Used	Project Number	Run No.
	Time: <u>11:15</u>	Time: <u>1000</u>	Time: _____	Time: _____			
Date: <u>3/9/17</u>	RH %: <u>11.2</u>	RH %: <u>7.6</u>	RH %: _____	RH %: _____	Date Used	Project Number	Run No.
Time: <u>14:00</u>	T (°F): <u>69.8</u>	T (°F): <u>69.9</u>	T (°F): _____	T (°F): _____			
ID #	Audit: <u>4999.9</u>	Audit: <u>4999.9</u>	Audit: _____	Audit: _____			
<u>R447</u>	<u>3330.1</u>	<u>3330.2</u>					
<u>R448</u>	<u>3343.1</u>	<u>3343.2</u>					
<u>R449</u>	<u>3345.0</u>	<u>3345.2</u>					
<u>R450</u>	<u>3306.8</u>	<u>3306.9</u>					
<u>R451</u>	<u>4119.4</u>	<u>4119.6</u>					
<u>R452</u>	<u>4090.6</u>	<u>4090.0</u>					
<u>R453</u>	<u>4906.8</u>	<u>4906.6</u>					
<u>R454</u>	<u>3308.0</u>	<u>3308.1</u>					
<u>R455</u>	<u>3331.6</u>	<u>3331.8</u>					
<u>R456</u>	<u>3316.84</u>	<u>3316.6</u>					
<u>R457</u>	<u>4076.9</u>	<u>4077.0</u>					
<u>R458</u>	<u>4155.9</u>	<u>4155.9</u>					
<u>R459</u>	<u>3306.0</u>	<u>3306.0</u>					
<u>R460</u>	<u>4170.4</u>	<u>4170.4</u>					
<u>R461</u>	<u>4143.5</u>	<u>4143.6</u>			<u>5/19/17</u>	<u>0061PS094E</u>	<u>1</u>
<u>R462</u>	<u>3292.5</u>	<u>3292.3</u>			<u>↓</u>	<u>↓</u>	<u>↓</u>
<u>R463</u>	<u>3382.6</u>	<u>3382.6</u>					
<u>R464</u>	<u>3297.6</u>	<u>3297.6</u>					
<u>R465</u>	<u>3333.5</u>	<u>3333.4</u>					
<u>R466</u>	<u>3372.3</u>	<u>3372.4</u>					
Initials: <u>A</u>	Initials: <u>A</u>	Initials: _____	Initials: _____				

Final Technician Signature: \_\_\_\_\_  
 Control No. P-SFDP-0002.xls, Effective date: 2/1/2017

Date: 3/17/17

Evaluator signature: \_\_\_\_\_ 4/24/2017



PFI Densified Fuel Grade: Premium	
Grade Requirements:	
Bulk Density:	40-48 lbs/ft <sup>3</sup>
Diameter:	.230-.285 in/5.84-7.25 mm
Durability:	≥96.5
Fines:	≤0.50%
Ash Content (as received):	≤1%
Length:	≤1% >1.5 in.
Moisture:	≤8.0%
Chlorides:	≤300 ppm

**Manufacturers Guaranteed Analysis:**

Type of Material:	Softwood
Additives:	None
Minimum Higher Heating Value (as received):	8000 BTU/lb.
Other Manufacturers Guarantees:	

PFI Densified Fuel Grade: Premium	
Grade Requirements:	
Bulk Density:	40-48 lbs/ft <sup>3</sup>
Diameter:	.230-.285 in/5.84-7.25 mm
Durability:	≥96.5
Fines:	≤0.50%
Ash Content (as received):	≤1%
Length:	≤1% >1.5 in.
Moisture:	≤8.0%
Chlorides:	≤300 ppm

**Manufacturers Guaranteed Analysis:**

Type of Material:	Softwood
Additives:	None
Minimum Higher Heating Value (as received):	8000 BTU/lb.
Other Manufacturers Guarantees:	



Twin Ports Testing, Inc.  
 1301 North 3rd Street  
 Superior, WI 54880  
 p: 715-392-7114  
 p: 800-373-2562  
 f: 715-392-7163  
 www.twinportstesting.com

**Report No:** USR:W217-0492-01  
**Issue No:** 1

## Analytical Test Report

**Client:** OMNI-TEST LABORATORIES INC.  
 13327 NE Airport Way  
 Portland, OR 97230  
**Attention:** Sebastian Button  
**PO No:**

**Signed:** *Katy Mickelson*  
 Katy Mickelson  
 Senior Chemist  
**Date of Issue:** 6/6/2017  
THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

**Sample Details**  
**Sample Log No:** W217-0492-01  
**Sample Designation:** HHT - E2  
**Sample Recognized As:** Wood Pellets  
**Sample Date:**  
**Sample Time:**  
**Arrival Date:** 6/1/2017

Test Results				
	METHOD	UNITS	MOISTURE FREE	AS RECEIVED
Moisture Total	ASTM E871	wt. %		6.62
Ash	ASTM D1102	wt. %	0.22	0.21
Volatile Matter	ASTM D3175	wt. %		
Fixed Carbon by Difference	ASTM D3172	wt. %		
Sulfur	ASTM D4239	wt. %	0.004	0.004
SO <sub>2</sub>	Calculated	lb/mmbtu		0.009
Net Cal. Value at Const. Pressure	ISO 1928	GJ/tonne	19.08	17.65
Net Cal. Value at Const. Pressure	ISO 1928	J/g	19079	17655
Gross Cal. Value at Const. Vol.	ASTM E711	J/g	20398	19048
Gross Cal. Value at Const. Vol.	ASTM E711	Btu/lb	8770	8190
Carbon	ASTM D5373	wt. %	51.45	48.05
Hydrogen*	ASTM D5373	wt. %	6.06	5.66
Nitrogen	ASTM D5373	wt. %	< 0.20	< 0.19
Oxygen*	ASTM D3176	wt. %	> 42.05	> 39.27

\*Note: As received values do not include hydrogen and oxygen in the total moisture.

**Chlorine** ASTM D6721 mg/kg  
**Fluorine** ASTM D3761 mg/kg  
**Mercury** ASTM D6722 mg/kg

**Bulk Density** ASTM E873 lbs/ft<sup>3</sup>  
**Fines (Less than 1/8")** TPT CH-P-06 wt. %  
**Durability Index** Kansas State PDI  
**Sample Above 1.50"** TPT CH-P-06 wt. %  
**Maximum Length (Single Pellet)** TPT CH-P-06 inch  
**Diameter, Range** TPT CH-P-05 inch to  
**Diameter, Average** TPT CH-P-05 inch  
**Stated Bag Weight** TPT CH-P-01 lbs  
**Actual Bag Weight** TPT CH-P-01 lbs

**Comments**

## **Section 3**

### **Laboratory Quality Assurance**

- 3.1 - Quality Assurance/Quality Control
- 3.2 - Calibration Data
- 3.3 - Example Calculations

### 3.1 - Quality Assurance/Quality Control

OMNI follows the guidelines of ISO/IEC 17025, “General Requirements for the Competence of Testing and Calibration Laboratories,” and the quality assurance/quality control (QA/QC) procedures found in OMNI’s Quality Assurance Manual.

OMNI’s scope of accreditation includes, but is not limited to, the following:

- ANSI (American National Standards Institute) for certification of product to safety standards.
- To perform product safety testing by the International Accreditation Service, Inc. (formerly ICBO ES) under accreditation as a testing laboratory designated TL-130.
- To perform product safety testing as a “Certification Organization” by the Standards Council of Canada (SCC).
- Serving as a testing laboratory for the certification of wood heaters by the U.S. Environmental Protection Agency.

This report is issued within the scope of OMNI’s accreditation. Accreditation certificates are available upon request.

The manufacturing facilities and quality control system for the production of the E2-C Series at Hearth & Home Technologies, Inc. were evaluated to determine if sufficient to maintain conformance with OMNI’s requirements for product certification. OMNI has concluded that the manufacturing facilities, processes, and quality control system are adequate to produce the appliance congruous with the standards and model codes to which it was evaluated.

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### 3.2 - Calibration Data

Equipment for ASTM E2515, ASTM E2779, & EPA Method 28R

<b>ID #</b>	<b>Lab Name/Purpose</b>	<b>Log Name</b>	<b>Attachment Type</b>
131	Audit Weight, 500mg	Weight Standard, 500 mg	Calibration Certificate
132	10 lb Weight	Weight Standard, 10 lb.	Calibration Certificate
185	Platform Scale	Weight Indicator, Model WI-127	Calibration Certificate
209	Barometer	Barometer – Princo	Equipment Record
244	Milligram Balance	Analytical Balance	Calibration Certificate
283A	Audit Weights	Troemner 21pc Msas Set	Calibration Certificate
335	Sample Box / Dry Gas Meter	Apex Automated Emissions Sampling Box	Calibration Log
336	Sample Box / Dry Gas Meter	Apex Automated Emissions Sampling Box	Calibration Log
410	Microtector	Dwyer Microtector	Calibration Certificate
559	Vaneometer	Dwyer Vaneometer	Equipment Record
592	Thermohygrometer	Omega Digital Thermohygrometer	Calibration Log
594	Combustion Gas Analyzer	CAI Gas Analyzer	See Run Sheet

# Certificate of Calibration

Certificate Number: **547339**



**JJ Calibrations, Inc.**

7007 SE Lake Rd  
Portland, OR 97267-2105  
Phone 503.786.3005  
FAX 503.786.2994

**Omni-Test Laboratories**  
13327 NE Airport Way  
Portland, OR 97230

PO: OTL-13-035  
Order Date: **11/19/2013**  
Authorized By: **N/A**



Property #: **OMNI-00131**  
User: **N/A**  
Department: **N/A**  
Make: **Ohaus**  
Model: **500mg**  
Serial #: **27503**  
Description: **Mass**  
Procedure: **DCN 500901**  
Accuracy: **CLASS F ( $\pm 0.72\text{mg}$ )**

Calibrated on: **12/02/2013**  
\*Recommended Due: **12/02/2018**  
Environment: **20 °C 34 % RH**  
As Received: **Within Tolerance**  
As Returned: **Within Tolerance**  
Action Taken: **Calibrated**  
Technician: **34**

Remarks: \* Any number of factors may cause the calibration item to drift out of calibration before the recommended interval has expired  
**Refer to attachment for measurement results.**

### Standards Used

<u>Std ID</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Nomenclature</u>	<u>Due Date</u>	<u>Trace ID</u>
432A	Sartorius	C-44	Microbalance 5.1g	03/11/2014	517747
723A	Rice Lake	1mg-200g (Class O)	Mass Set	09/05/2014	540048

JJ Calibrations, Inc. certifies that this instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual with the stated procedure using standards that are traceable to the National Institute of Standards and Technology (NIST), or other National Measurement Institutes (NMI's), or by using natural physical constants, intrinsic standards or ratio calibration techniques. The quality system and this certificate are in compliance with ANSI/NCSL Z540-1-1994, ISO/IEC 17025-2005, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless otherwise stated, a test accuracy ratio (TAR) of 4:1, if achievable, is maintained. The results reported herein apply only to the calibration of the item described above. This report may not be reproduced, except in full, without prior written consent of JJ Calibrations, Inc.  
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Reviewer

3 Issued 12/06/2013 Rev # 14

Inspector

Certificate: **547339**

Page 1 of 1

OMNI Environmental Services, Inc.  
OMNI-Test Laboratories, Inc.

## SCALE WEIGHT CALIBRATION DATA SHEET

Weight to be calibrated: 10 lb

ID Number: 132

Standard Calibration Weight: 10 lb

ID Number: 255

Scale Used: MTW-150K

ID Number: 353

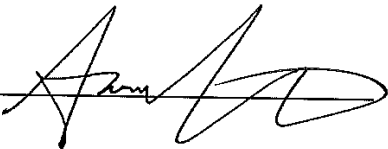
Date: 2/19/13

By: A. Kravitz

Standard Weight (A) (Lb.)	Weight Verified (B) (Lb.)	Difference (A - B)	% Error
10.0	10.0	0.0	∅

\*Acceptable tolerance is 1%.

*This calibration is traceable to NIST using calibrated standard weights.*

Technician signature:  Date: 2/19/13



# QUALITY CONTROL SERVICES

LABORATORY EQUIPMENT • SALES • SERVICE • CALIBRATION • REPAIRS  
 2340 SE 11<sup>TH</sup> Ave. Portland, Oregon 97214 • Box 14831 Portland, Oregon 97293  
 (503) 236-2712 • FAX (503) 235-2535 • www.qc-services.com



OMNI-Test Laboratories, Inc.  
 13327 NE Airport Way  
 Portland, OR 97230

Report Number: OMNE0321676161011

## A2LA ACCREDITED CERTIFICATE OF CALIBRATION WITH DATA

### INSTRUMENT INFORMATION

Item	Make	Model	Serial Number	Customer ID	Location
Scale	Weigh-Tronix	WI-127 1000x0.1lb	21676	185	Lab
Units	Readability	SOP	Cal Date	Last Cal Date	Cal Due Date
lbs	0.1	QC033	10/11/16	10/27/15	10/2017

### FUNCTIONAL CHECKS

SHIFT TEST		LINEARITY		REPEATABILITY		ENVIRONMENTAL CONDITIONS		
Test Wt:	Tol:	Test Wt:	Tol:	Test Wt:	Tol:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
500	0.5	HB44	HB44	200	0.2	Good	Fair	Poor
As-Found:		As-Found:		As-Found:		Temperature: 20.3°C		
Pass: <input checked="" type="checkbox"/>	Fail: <input type="checkbox"/>	Pass: <input checked="" type="checkbox"/>	Fail: <input type="checkbox"/>	Pass: <input checked="" type="checkbox"/>	Fail: <input type="checkbox"/>			
As-Left:		As-Left:		As-Left:				
Pass: <input checked="" type="checkbox"/>	Fail: <input type="checkbox"/>	Pass: <input checked="" type="checkbox"/>	Fail: <input type="checkbox"/>	Pass: <input checked="" type="checkbox"/>	Fail: <input type="checkbox"/>			

### CALIBRATION DATA

Standard	As-Found	As-Left	Expanded Uncertainty
1000	1000.1	1000.1	0.12
700	700.1	700.1	0.12
500	500.0	500.0	0.08
200	200.0	200.0	0.08
100	100.0	100.0	0.05
50	50.0	50.0	0.05

### CALIBRATION STANDARDS

Item	Make	Model	Serial Number	Cal Date	Cal Due Date	NIST ID
Avoirdupois Cast W	Rice Lake	25 and 50lb	PWO990-CA	11/4/15	11/2017	20152112

Permanent Information Concerning this Equipment:

Comments/Information Concerning this Calibration

Report prepared/reviewed by: S. King Date: 10-11-16

Technician: S. King  
 Signature: \_\_\_\_\_

THIS CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF QUALITY CONTROL SERVICES, INC.

The uncertainty is calculated according to the ISO Guide to the Expression of Uncertainty in Measurement and includes the uncertainty of standards used combined with the observed standard deviation of the unit under test. The uncertainty is expanded with a k factor of 2 for an approximate 95% level of confidence. Instruments listed above were calibrated using standards traceable to the National Institute of Standards and Technology (NIST). Calibration data reflect results at the time and location of calibration. Calibration data should be reviewed to insure that the instrument is performing to its required accuracy.

OMNI-Test Laboratories, Inc.  
Beaverton, OR (503) 643-3788

### Equipment Record

**Name:** Fortin Type Mercurial Barometer

**Type of Equipment:** Barometer

**S/N:** 0674 **OMNI ID #:** OMNI-00209

**Manufacturer:** PRINCO Instruments, Inc.

**Is Manufacturer's manual available in the equipment file? : Yes, if not why?** \_\_\_\_\_

**Date Received:** June 2000 **Date Placed in Service:** June 2000

**Condition When Received:** : New 9 Used 9 Reconditioned

**Location:** Lab

**Location of Calibration Procedures:** All PRINCO Fortin mercurial barometers have scales which are set at the time of manufacture to a near zero correction by comparison with a Fortin type mercurial barometer whose scales were calibrated traceable to NIST. If the barometer is not abused an any way , it should never go out of calibration.

**Location of Dates/Results of Calibrations:** If the barometer is not abused an any way , it should never go out of calibration. The barometer currently hangs on the wall and is never moved.

**Location of Maintenance Procedures:** Maintenance is performed on an "as needed" basis.

**Dates / Results of Maintenance:** Regularly scheduled maintenance is not required. Pre-service and post-service maintenance is conducted per QA Manual Section 5.3.5. To date, maintenance has not been required beyond the in-service maintenance prescribed in QA Manual Section 5.3.5.

**Any Planned Maintenance? : No, if yes what:** \_\_\_\_\_

**Equipment History of any damage, malfunction, modification and/or repair (including a statement on the suitability of the equipment for testing):** To date, this instrument has not been damaged, has not malfunctioned, has not been modified, and has not been repaired.

# Certificate of Calibration

Certificate Number: **642192**



**JJ Calibrations, Inc.**  
 7007 SE Lake Rd  
 Portland, OR 97267-2105  
 Phone 503.786.3005  
 FAX 503.786.2994

**Omni-Test Laboratories**  
 13327 NE Airport Way  
 Portland, OR 97230

OnSite

PO: 170117

Order Date: 02/06/2017

Authorized By: N/A



Calibrated on: 02/06/2017

\*Recommended Due: 08/06/2017

Environment: 23 °C 32 % RH

\* As Received: **Within Tolerance**

\* As Returned: **Within Tolerance**

Action Taken: **Calibrated**

Technician: 123

Property #: **Omni-00244**

User: **N/A**

Department: **N/A**

Make: **Sartorius**

Model: **BP 1215**

Serial #: **90709883**

Description: **Balance, Analytical, 120g**

Procedure: **500887**

Accuracy: **±.0005g**

Remarks: \* Many factors may cause the unit to drift out of calibration before the recommended due date. Any reported error is the absolute value between the reference and the unit. Uncertainties include the effects of the unit.

### Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
723A	Rice Lake	1mg-200g (Class 0)	Mass Set	02/03/2018	637125

### Measurement Data

Parameter	Measurement Description	Range Unit	Reference	Min	Max	*Error	UUT	Uncertainty
Before/After Force								Accredited = ✓
		g	0.00100	0.0005	0.0015	0.0000	0.0010 g	4E-02 ✓
		g	0.01000	0.0095	0.0105	0.0001	0.0101 g	4E-02 ✓
		g	0.10000	0.0995	0.1005	0.0000	0.1000 g	4E-02 ✓
		g	0.50000	0.4995	0.5005	0.0000	0.5000 g	4E-02 ✓
		g	2.00000	1.9995	2.0005	0.0000	2.0000 g	4E-02 ✓
		g	23.00000	22.9995	23.0005	0.0002	23.0002 g	4E-02 ✓
		g	48.00000	47.9995	48.0005	0.0004	48.0004 g	4E-02 ✓
		g	72.00000	71.9995	72.0005	0.0003	72.0003 g	4E-02 ✓
		g	95.00000	94.9995	95.0005	0.0005	95.0005 g	4E-02 ✓
		g	120.00000	119.9995	120.0005	0.0005	120.0005 g	4E-02 ✓

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Reviewer

3 Issued 02/10/2017 Rev # 15

Inspector

# Certificate of Calibration

Certificate Number: 543402



**JJ Calibrations, Inc.**  
7007 SE Lake Rd  
Portland, OR 97267-2105  
Phone 503.786.3005  
FAX 503.786.2994

Omni-Test Laboratories  
13327 NE Airport Way  
Portland, OR 97230

PO: OTL-13-031  
Order Date: 09/27/2013  
Authorized By: N/A



Property #: OMNI-00283A  
User: N/A  
Department: N/A  
Make: Troemner Inc  
Model: 1mg-100g (Class F)  
Serial #: 47883  
Description: Mass Set, 21 Pc.  
Procedure: DCN 500901  
Accuracy: Class F

Calibrated on: 10/09/2013  
\*Recommended Due: 10/09/2018  
Environment: 20 °C 41 % RH  
As Received: Other - See Remarks  
As Returned: Within Tolerance  
Action Taken: Calibrated  
Technician: 34

Remarks: \* Any number of factors may cause the calibration item to drift out of calibration before the recommended interval has expired  
Changed set from a Class 4 to a Class F per Jeremy Clark.  
Received missing 1g weight.  
Refer to attachment for measurement results.

### Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
432A	Sartorius	C-44	Microbalance 5.1g	03/11/2014	517747
479A	Sartorius	MC210S	Scale, 210g	02/22/2014	517755
503A	Rice Lake	1mg-200g (Class O)	Mass Set	12/07/2013	517746
723A	Rice Lake	1mg-200g (Class O)	Mass Set	09/05/2014	540048

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Reviewer

3 Issued 10/11/2013

Rev #14

Inspector

Certificate: 543402

Page 1 of 1






OMNI-Test Laboratories, Inc.

## Thermal Metering System Calibration Y Factor

Manufacturer: APEX  
 Model: XC-60-EP  
 Serial Number: 606001  
 OMNI Tracking No.: OMNI-00335  
 Calibrated Orifice:  Yes

<b>Average Gas Meter y Factor</b>
<b>0.984</b>

<b>Orifice Meter dH@</b>
<b>N/A</b>

Calibration Date: 01/03/17  
 Calibrated by: B. Davis  
 Calibration Frequency: Six months  
 Next Calibration Due: 7/3/2017  
 Instrument Range: 1.000 cfm  
 Standard Temp.: 68 oF  
 Standard Press.: 29.92 "Hg  
 Barometric Press., Pb: 30.24 "Hg  
 Signature/Date:  1/6/2017

### Previous Calibration Comparison

Date	<u>7/7/2016</u>	Acceptable Deviation (5%)	Deviation
y Factor	<u>0.999</u>	0.04995	0.015
Acceptance	<b>Acceptable</b>		

### Current Calibration

Acceptable y Deviation	0.020
Maximum y Deviation	0.006
Acceptable dH@ Deviation	N/A
Maximum dH@ Deviation	N/A
Acceptance	<b>Acceptable</b>

### Reference Standard \*

Standard	Model	Standard Test Meter
Calibrator	S/N	<u>OMNI-00001</u>
	Calib. Date	<u>27-Oct-16</u>
	Calib. Value	<u>0.9823</u> y factor (ref)

Calibration Parameters	Run 1	Run 2	Run 3
Reference Meter Pressure ("H2O), Pr	0.00	0.00	0.00
DGM Pressure ("H2O), Pd	2.25	1.25	0.75
Initial Reference Meter	222.4	233.7	238.8
Final Reference Meter	233.608	238.735	244.617
Initial DGM	0	0	0
Final DGM	11.284	5.124	5.938
Temp. Ref. Meter (°F), Tr	67.0	67.0	68.0
Temperature DGM (°F), Td	78.0	78.0	79.0
Time (min)	53.0	32.0	48.0
Net Volume Ref. Meter, Vr	11.208	5.035	5.817
Net Volume DGM, Vd	11.284	5.124	5.938
<b>Gas Meter y Factor =</b>	<b>0.991</b>	<b>0.982</b>	<b>0.981</b>
<b>Gas Meter y Factor Deviation (from avg.)</b>	0.006	0.002	0.004
<b>Orifice dH@</b>	N/A	N/A	N/A
<b>Orifice dH@ Deviation (from avg.)</b>	N/A	N/A	N/A

where:

1. Deviation = |Average value for all runs - current run value|
- \*\* 2.  $y = [Vr \times (y \text{ factor (ref)}) \times (Pb + (Pr / 13.6)) \times (Td + 460)] / [Vd \times (Pb + (Pd / 13.6)) \times (Tr + 460)]$
- \*\* 3.  $dH@ = 0.0317 \times Pd / (Pb (Td + 460)) \times [(Tr + 460) \times \text{time}] / Vr \wedge 2$

\* Reference calibration is traceable to NIST through NIST Test # 40674, Kimble ASTM E1272, or NIST traceable laboratory

\*\* Equations come from EPA Method 5

The uncertainty of measurement is  $\pm 0.14 \text{ ft}^3/\text{min}$ . This is based on the reference standard having a TAR (Test Accuracy Ratio) of at least 4:1.

OMNI-Test Laboratories, Inc.

## DIFFERENTIAL PRESSURE GAUGE CALIBRATION DATA SHEET

Instrument to be calibrated: Pressure Transducer

Maximum Range: 2" W.C. ID Number: OMNI-00335B

Calibration Instrument: Digital Manometer ID Number: OMNI-00633

Date: 1/3/17 By: B. Davis

**This form is to be used only in conjunction with Standard Procedure C-SPC.**

Range of Calibration Point ("WC)	Digital Manometer Input ("WC)	Pressure Gauge Response ("WC)	Difference (Input - Response)	% Error of Full Span*
0-20% Max. Range 0 – 0.4	0.155	0.16	0.005	0.25
20-40% Max. Range 0.4 – 0.8	0.505	0.50	0.005	0.25
40-60% Max. Range 0.8 – 1.2	1.001	1.00	0.001	0.05
60-80% Max. Range 1.2 – 1.6	1.495	1.48	0.015	0.75
80-100% Max. Range 1.6 – 2.0	1.985	1.99	0.005	0.25

\*Acceptable tolerance is 4%.

The uncertainty of measurement is  $\pm 0.4$ " WC. This is based on the reference standard having a TAR (Test Accuracy Ratio) of at least 4:1.

Technician signature:  Date: 1/3/17

Reviewed by:  Date: 1/6/2017

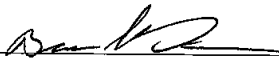
OMNI-Test Laboratories, Inc.

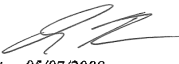
Temperature Calibration EPA Method 28R, ASTM 2515							
BOOTH:		TEMPERATURE MONITOR TYPE:				EQUIPMENT NUMBER:	
E1		National Instruments Logger				00335, 00336	
REFERENCE METER EQUIPMENT NUMBER: 00373				Calibration Due Date: 8/02/17			
CALIBRATION PERFORMED BY:		DATE:		AMBIENT TEMPERATURE:		BAROMETRIC PRESSURE:	
B. Davis		1/4/17		66		30.16	
Input Temperature (F)	Ambient	Meter A	Meter B	Filter A	Filter B	Tunnel	FB Interior
0	0	0	0	0	0	0	0
100	100	100	100	100	100	100	100
300	300	300	300	300	300	300	300
500	500	501	501	500	500	500	500
700	700	701	701	701	701	700	700
1000	1001	1001	1001	1001	1001	1000	1000

Input (F)	FB Top	FB Bottom	FB Back	FB Left	FB Right	Imp A	Imp B	Cat	Stack
0	0	0	0	0	0	0	0	0	0
100	100	100	100	100	100	100	100	100	100
300	300	300	300	300	300	300	300	300	300
500	500	500	500	500	500	500	501	500	500
700	700	700	700	700	700	701	701	701	700
1000	1000	1000	1000	1000	1000	1001	1001	1001	1000

1500  
2000

1501  
2001

Technician signature:  Date: 1/4/17  
 Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_

  
 Control No. C-SFK-0004.doc, Effective date: 05/07/2008

1/6/2017  
Page 1 of 1


OMNI-Test Laboratories, Inc.

## Thermal Metering System Calibration Y Factor

Manufacturer: APEX  
 Model: XC-60-EP  
 Serial Number: 606002  
 OMNI Tracking No.: OMNI-00336  
 Calibrated Orifice:  Yes

<b>Average Gas Meter y Factor</b>
<b>0.990</b>

<b>Orifice Meter dH@</b>
<b>N/A</b>

Calibration Date: 01/03/17  
 Calibrated by: B. Davis  
 Calibration Frequency: Six months  
 Next Calibration Due: 7/3/2017  
 Instrument Range: 1.000 cfm  
 Standard Temp.: 68 oF  
 Standard Press.: 29.92 "Hg  
 Barometric Press., Pb: 30.24 "Hg  
 Signature/Date:  1/6/2017

### Previous Calibration Comparison

Date	<u>7/7/2016</u>	Acceptable Deviation (5%)	Deviation
y Factor	<u>1.005</u>	0.05025	0.015
Acceptance	<b>Acceptable</b>		

### Current Calibration

Acceptable y Deviation	0.020
Maximum y Deviation	0.002
Acceptable dH@ Deviation	N/A
Maximum dH@ Deviation	N/A
Acceptance	<b>Acceptable</b>

### Reference Standard \*

Standard	Model	Standard Test Meter
Calibrator	S/N	<u>OMNI-00001</u>
	Calib. Date	<u>27-Oct-16</u>
	Calib. Value	<u>0.9823</u> y factor (ref)

Calibration Parameters	Run 1	Run 2	Run 3
Reference Meter Pressure ("H2O), Pr	0.00	0.00	0.00
DGM Pressure ("H2O), Pd	1.90	1.00	0.70
Initial Reference Meter	249.7	257	262.227
Final Reference Meter	256.938	262.17	269.982
Initial DGM	0	0	0
Final DGM	7.263	5.214	7.847
Temp. Ref. Meter (°F), Tr	68.0	68.0	68.0
Temperature DGM (°F), Td	76.0	79.0	79.0
Time (min)	34.0	33.0	59.0
Net Volume Ref. Meter, Vr	7.238	5.170	7.755
Net Volume DGM, Vd	7.263	5.214	7.847
<b>Gas Meter y Factor =</b>	<b>0.989</b>	<b>0.992</b>	<b>0.989</b>
<b>Gas Meter y Factor Deviation (from avg.)</b>	0.001	0.002	0.001
<b>Orifice dH@</b>	N/A	N/A	N/A
<b>Orifice dH@ Deviation (from avg.)</b>	N/A	N/A	N/A

where:

1. Deviation = |Average value for all runs - current run value|
- \*\* 2.  $y = [Vr \times (y \text{ factor (ref)}) \times (Pb + (Pr / 13.6)) \times (Td + 460)] / [Vd \times (Pb + (Pd / 13.6)) \times (Tr + 460)]$
- \*\* 3.  $dH@ = 0.0317 \times Pd / (Pb (Td + 460)) \times [(Tr + 460) \times \text{time}] / Vr \wedge 2$

\* Reference calibration is traceable to NIST through NIST Test # 40674, Kimble ASTM E1272, or NIST traceable laboratory

\*\* Equations come from EPA Method 5

The uncertainty of measurement is  $\pm 0.14 \text{ ft}^3/\text{min}$ . This is based on the reference standard having a TAR (Test Accuracy Ratio) of at least 4:1.

OMNI-Test Laboratories, Inc.

### DIFFERENTIAL PRESSURE GAUGE CALIBRATION DATA SHEET

Instrument to be calibrated: Pressure Transducer

Maximum Range: 2" W.C. ID Number: OMNI-00336B

Calibration Instrument: Digital Manometer ID Number: OMNI-00633

Date: 1/3/17 By: B. Davis


**This form is to be used only in conjunction with Standard Procedure C-SPC.**

Range of Calibration Point ("WC)	Digital Manometer Input ("WC)	Pressure Gauge Response ("WC)	Difference (Input - Response)	% Error of Full Span*
0-20% Max. Range 0 – 0.4	0.134	0.140	0.006	0.30
20-40% Max. Range 0.4 – 0.8	0.514	0.52	0.006	0.30
40-60% Max. Range 0.8 – 1.2	0.925	0.93	0.005	0.25
60-80% Max. Range 1.2 – 1.6	1.356	1.35	0.006	0.30
80-100% Max. Range 1.6 – 2.0	1.917	1.91	0.007	0.35

\*Acceptable tolerance is 4%.

The uncertainty of measurement is  $\pm 0.4$ " WC. This is based on the reference standard having a TAR (Test Accuracy Ratio) of at least 4:1.

Technician signature:  Date: 1/3/17

Reviewed by:  Date: 1/6/2017

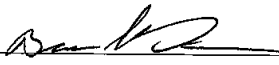
OMNI-Test Laboratories, Inc.

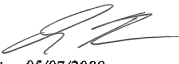
Temperature Calibration EPA Method 28R, ASTM 2515							
BOOTH:		TEMPERATURE MONITOR TYPE:				EQUIPMENT NUMBER:	
E1		National Instruments Logger				00335, 00336	
REFERENCE METER EQUIPMENT NUMBER: 00373				Calibration Due Date: 8/02/17			
CALIBRATION PERFORMED BY:			DATE:		AMBIENT TEMPERATURE:		BAROMETRIC PRESSURE:
B. Davis			1/4/17		66		30.16
Input Temperature (F)	Ambient	Meter A	Meter B	Filter A	Filter B	Tunnel	FB Interior
0	0	0	0	0	0	0	0
100	100	100	100	100	100	100	100
300	300	300	300	300	300	300	300
500	500	501	501	500	500	500	500
700	700	701	701	701	701	700	700
1000	1001	1001	1001	1001	1001	1000	1000

Input (F)	FB Top	FB Bottom	FB Back	FB Left	FB Right	Imp A	Imp B	Cat	Stack
0	0	0	0	0	0	0	0	0	0
100	100	100	100	100	100	100	100	100	100
300	300	300	300	300	300	300	300	300	300
500	500	500	500	500	500	500	501	500	500
700	700	700	700	700	700	701	701	701	700
1000	1000	1000	1000	1000	1000	1001	1001	1001	1000

1500  
2000

1501  
2001

Technician signature:  Date: 1/4/17  
 Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_

  
 Control No. C-SFK-0004.doc, Effective date: 05/07/2008

1/6/2017  
Page 1 of 1

# Certificate of Calibration

Certificate Number: **629694**



**JJ Calibrations, Inc.**  
 7007 SE Lake Rd  
 Portland, OR 97267-2105  
 Phone 503.786.3005  
 FAX 503.786.2994

**Omni-Test Laboratories**  
 13327 NE Airport Way  
 Portland, OR 97230

PO: **160099**  
 Order Date: **08/18/2016**  
 Authorized By: **N/A**



Property #: **OMNI-00410**  
 User: **N/A**  
 Department: **N/A**  
 Make: **Dwyer**  
 Model: **1430**  
 Serial #: **OMNI-00410**  
 Description: **Microtector**  
 Procedure: **500908**  
 Accuracy: **±0.00025" WC**

Calibrated on: **08/29/2016**  
 \*Recommended Due: **08/29/2017**  
 Environment: **19 °C 50 % RH**  
 \* As Received: **Other - See Remarks**  
 \* As Returned: **Limited**  
 Action Taken: **Calibrated**  
 Technician: **34**

Remarks: \* Many factors may cause the unit to drift out of calibration before the recommended due date. Any reported error is the absolute value between the reference and the unit. Uncertainties include the effects of the unit.

Calibrated micrometer head only per Bruce Davis.

Limited Calibration - Calibrated micrometer head only.

### Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
541A	Select	E8FED2	8 Piece Gage Block Set	11/24/2016	607288

### Measurement Data

Parameter	Measurement Description	Range Unit	Reference	Min	Max	*Error	UUT	Uncertainty
Before/After								Accredited = ✓
Length		Inch	0.1300	0.129	0.131	0.000	0.130 Inch	1.1E-03 ✓
		Inch	0.3850	0.384	0.386	0.000	0.385 Inch	1.1E-03 ✓
		Inch	0.6150	0.614	0.616	0.000	0.615 Inch	1.1E-03 ✓
		Inch	0.8700	0.869	0.871	0.001	0.871 Inch	1.1E-03 ✓
		Inch	1.0000	0.999	1.001	0.001	1.001 Inch	1.1E-03 ✓

JJ Calibrations, Inc. certifies that this instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual with the stated procedure using standards that are traceable to the National Institute of Standards and Technology (NIST), or other National Measurement Institutes (NMI's), or by using natural physical constants, intrinsic standards or ratio calibration techniques. The quality system and this certificate are in compliance with ANSI/NCSL Z540-1-1994, ISO/IEC 17025-2005, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless otherwise stated, a test accuracy ratio (TAR) of 4:1, if achievable, is maintained. The results reported herein apply only to the calibration of the item described above. This report may not be reproduced, except in full, without prior written consent of JJ Calibrations, Inc. JJ Calibrations, Inc. quality system has been assessed and accredited to ISO/IEC 17025:2005.

Reviewer

3 Issued 08/31/2016 Rev # 15

Inspector

Certificate: **629694**

Page 1 of 1

OMNI Track #	OMNI-00559		
Equipment Name/Description	Vaneometer, Air Vel. Meter - Dwyer		
Equipment S/N:	T36Z		
Comments	New vane installed		
Status	Active		
Part #	480		
Reference Standard:	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> X	<input type="checkbox"/> NO (Check 'X' for answer)
Location of Equipment:	Cab 1		
Calibration Vendor	OMNI in house		
Type of Calibration	6 month		
Calibration Period (Months)	6		
Date of Last Calibration	11/15/2016		
Date of Next Calibration	5/15/2017		

Do the following:

- 1) Complete Calibration documentation
- 2) Complete top half of this form
- 3) Attach appropriate calibration forms and save in following location  
 \\omni-serv\Test Equipment\Equipment\OMNI-XXXXX - Equipment Name
- 4) Repopulate database with updated information
- 5) Print, laminate and adhere calibration tag to equipment

<b>Six Month          OMNI-00559          Vaneometer</b>  Last Cal Date: 11/15/2016 Due Date of Cal: 5/15/2017
---

<b>Six Month          OMNI-00559          Vaneometer</b>  Last Cal Date: 11/15/2016 Due Date of Cal: 5/15/2017
---



OMNI Environmental, Inc.  
OMNI-Test Laboratories, Inc.

## VWR Temperature Hygrometer Calibration Procedure and Data Sheet

Frequency: Every Two Years

Step 1: Locate NIST traceable standard.

Step 2: Place unit to be calibrated, tracking No. OMNI-00592, inside OMNI desiccator box on the same shelf with the NIST traceable standard.

Step 3: After a period of not less than four hours record the temperature and humidity of both units in the spaces provide below.

Step 4: If the unit to be calibrated matches the NIST standard within  $\pm 4\%$ , it is acceptable. If not, the unit needs to be sent to a repair company or replaced.

### Verification Data:

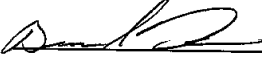
Date: 1/5/17 Technician: B DAVIS

Time in desiccator: 0900 Recording time: 0845 1/6/17

NIST Standard Temperature: 62.5 °F NIST Standard Humidity: 9.5

Test Unit Temperature Reading: 66.9 °F Test Unit Humidity Reading: 6.1

Test unit OMNI- 00592 is X or was not    within acceptable limits.

Technician Signature: 

Comments: Humidity Results of 00592 are within  $\pm 4\%$  of Reference mchq  
BD

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OMNI Track #	OMNI-00594			
Equipment Name/Description	CAI ZRE-4 Gas Analyzer			
Equipment S/N:	N5F0112			
Comments	CO2, O2, and dual range CO gas analyzer.			
Status	Active, calibrate prior to use.			
Part #	ZRE-4			
Reference Standard:	YES	X	NO	(Check 'X' for answer)
Location of Equipment:	Portable gas cart.			
Calibration Vendor	OMNI in house			
Type of Calibration	Calibrate Prior to use.			
Calibration Period (Months)	N/A			
Date of Last Calibration	N/A			
Date of Next Calibration	N/A			

Do the following:

- 1) Complete Calibration documentation
- 2) Complete top half of this form
- 3) Attach appropriate calibration forms and save in following location  
 \\omni-serv\Test Equipment\Equipment\OMNI-XXXXX - Equipment Name
- 4) Repopulate database with updated information
- 5) Print, laminate and adhere calibration tag to equipment

<b>Verify before use</b> <b>OMNI-00594</b> <b>Gas Analyzer</b>
--

<b>Verify before use</b> <b>OMNI-00594</b> <b>Gas Analyzer</b>
--

### **3.3 - Example Calculations**

OMNI-Test Laboratories, Inc.

## Equations and Sample Calculations – ASTM E2779 & E2515

Manufacturer: Hearth & Home  
Model: E2  
Run: 1  
Category: [Integrated]

Equations used to calculate the parameters listed below are described in this appendix. Sample calculations are provided for each equation. The raw data and printout results from a sample run are also provided for comparison to the sample calculations.

$M_{Bdb}$  – Weight of test fuel burned during test run, dry basis, kg

$M_{BSidb}$  – Weight of test fuel burned during test run segment  $i$ , dry basis, kg

BR – Average dry burn rate over full integrated test run, kg/hr

$BR_{Si}$  – Average dry burn rate over test run segment  $i$ , kg/hr

$V_s$  – Average gas velocity Dry burn rate, kg/hr

$Q_{sd}$  – Average gas flow rate Total particulate matter collected, mg

$V_{m(std)}$  – Volume of Gas S Volume of gas sampled corrected to standard conditions, dscf

$m_n$  – Total Particulate Ma Average dilution tunnel gas velocity, ft/sec

$C_s$  - Concentration of part Particulate concentration, g/dscf

$E_T$  – Total Particulate Err Dilution tunnel gas flow rate, dscf/min

PR - Proportional Rate  $V_i$  Particulate emission rate, lbs/hr

$PM_R$  – Average particulat Total particulate emissions, grams

$PM_F$  – Average particulat Average fuel load moisture content, %

OMNI-Test Laboratories, Inc.

**M<sub>Bdb</sub> – Weight of test fuel burned during test run, dry basis, kg**  
ASTM E2779 equation (1)

$$M_{Bdb} = (M_{Swb} - M_{Ewb})(100/(100 + FM))$$

Where,

- FM = average fuel moisture of test fuel, % dry basis
- M<sub>Swb</sub> = weight of test fuel in hopper at start of test run, wet basis, kg
- M<sub>Ewb</sub> = weight of test fuel in hopper at end of test run, wet basis, kg

Sample Calculation:

$$\begin{aligned} & 7.1 \% \\ M_{Swb} &= 32.9 \text{ lbs} \\ M_{Ewb} &= 14.5 \text{ lbs} \\ 0.4536 &= \text{Conversion factor from lbs to kg} \\ \\ M_{Bdb} &= [(32.9 \times 0.4536) - (14.5 \times 0.4536)] (100/(100 + 7.09)) \\ \\ M_{Bdb} &= 7.8 \text{ kg} \end{aligned}$$

OMNI-Test Laboratories, Inc.

**$M_{BSidb}$  – Weight of test fuel burned during test run segment  $i$ , dry basis, kg**  
ASTM E2779 equation (2)

$$M_{BSidb} = (M_{SSiwb} - M_{ESiwb})(100/(100 + FM))$$

Where,

$M_{SSiwb}$  = weight of test fuel in hopper at start of test run segment  $i$ , wet basis, kg

$M_{ESiwb}$  = weight of test fuel in hopper at end of test run segment  $i$ , wet basis, kg

Sample Calculation (from medium burn rate segment):

$$FM = 7.1 \%$$

$$M_{SSiwb} = 26.5 \text{ lbs}$$

$$M_{ESiwb} = 20.5 \text{ lbs}$$

0.4536 = Conversion factor from lbs to kg

$$M_{BSidb} = [(26.5 \times 0.4536) - (20.5 \times 0.4536)] (100/(100 + 7))$$

$$M_{BSidb} = 2.5 \text{ kg}$$

OMNI-Test Laboratories, Inc.

**BR – Average dry burn rate over full integrated test run, kg/hr**

ASTM E2779 equation (3)

$$BR = \frac{60 M_{Bdb}}{\theta}$$

Where,

$\theta$  = Total length of full intergrated test run, min

Sample Calculation:

$$M_{Bdb} = 7.79 \quad \text{kg}$$

$$\theta = 363 \quad \text{min}$$

$$BR = \frac{60 \times 7.79}{363}$$

$$BR = \mathbf{1.29} \quad \text{kg/hr}$$

OMNI-Test Laboratories, Inc.

**BR<sub>Si</sub> – Average dry burn rate over test run segment *i*, kg/hr**  
ASTM E2779 equation (4)

$$BR_{Si} = \frac{60 M_{BSidb}}{\theta_{Si}}$$

Where,

$$\theta_{Si} = \text{Total length of test run segment } i, \text{ min}$$

Sample Calculation (from medium burn rate segment):

$$M_{BSidb} = 2.54 \text{ kg}$$

$$\theta = 121 \text{ min}$$

$$BR = \frac{60 \times 2.54}{121}$$

$$BR = 1.26 \text{ kg/hr}$$



OMNI-Test Laboratories, Inc.

**V<sub>s</sub> – Average gas velocity in the dilution tunnel, ft/sec**

ASTM E2515 equations (9)

$$V_s = F_p \times K_p \times C_p \times (\sqrt{\Delta P})_{avg} \times \sqrt{\frac{T_s}{P_s \times M_s}}$$

Where:

- F<sub>p</sub> = Adjustment factor for center of tunnel pitot tube placement,  $F_p = \frac{V_{strav}}{V_{scent}}$ , ASTM E2515 Equation (1)
- V<sub>scent</sub> = Dilution tunnel velocity calculated after the multi-point pitot traverse at the center, ft/sec
- V<sub>strav</sub> = Dilution tunnel velocity calculated after the multi-point pitot traverse, ft/sec
- k<sub>p</sub> = Pitot tube constant, 85.49
- C<sub>p</sub> = Pitot tube coefficient: 0.99, unitless
- ΔP\* = Velocity pressure in the dilution tunnel, in H<sub>2</sub>O
- T<sub>s</sub> = Absolute average gas temperature in the dilution tunnel, °R; (°R = °F + 460)
- P<sub>s</sub> = Absolute average gas static pressure in dilution tunnel, = P<sub>bar</sub> + P<sub>g</sub>, in Hg
- P<sub>bar</sub> = Barometric pressure at test site, in. Hg
- P<sub>g</sub> = Static pressure of tunnel, in. H<sub>2</sub>O; (in Hg = in H<sub>2</sub>O/13.6)
- M<sub>s</sub> = \*\*The dilution tunnel wet molecular weight; M<sub>s</sub> = 28.78 assuming a dry weight of 29 lb/lb-mole

Sample calculation:

$$F_p = \frac{12.16}{16.08} = 0.756$$

$$V_s = 0.756 \times 85.49 \times 0.99 \times 0.232 \times \left( \left( \frac{93.4 + 460}{30.16 + \frac{-0.16}{13.6}} \right) \times 28.78 \right)^{1/2}$$

$$V_s = 11.87 \text{ ft/s}$$

\*The ASTM test standard mistakenly has the square root of the average delta p instead of the average of the square root of delta p. The current EPA Method 2 is also incorrect. This was verified by Mike Toney at EPA.

\*\*The ASTM test standard mistakenly identifies M<sub>s</sub> as the dry molecular weight. It should be the wet molecular weight as indicated in EPA Method 2.

OMNI-Test Laboratories, Inc.

**Q<sub>sd</sub> – Average gas flow rate in dilution tunnel, dscf/hr**

ASTM E2515 equation (3)

$$Q_{sd} = 3600 \times (1 - B_{ws}) \times v_s \times A \times \frac{T_{std}}{T_s} \times \frac{P_s}{P_{std}}$$

Where:

- 3600 = Conversion from seconds to hours (ASTM method uses 60 to convert in minutes)
- B<sub>ws</sub> = Water vapor in gas stream, proportion by volume; assume 2%
- A = Cross sectional area of dilution tunnel, ft<sup>2</sup>
- T<sub>std</sub> = Standard absolute temperature, 528 °R
- P<sub>s</sub> = Absolute average gas static pressure in dilution tunnel, = P<sub>bar</sub> + P<sub>g</sub>, in Hg
- T<sub>s</sub> = Absolute average gas temperature in the dilution tunnel, °R; (°R = °F + 460)
- P<sub>std</sub> = Standard absolute pressure, 29.92 in Hg

Sample calculation:

$$Q_{sd} = 3600 \times (1 - 0.02) \times 11.87 \times 0.196 \times \frac{528}{93.4 + 460} \times \frac{30.2 + \frac{-0.16}{13.6}}{29.92}$$

Q<sub>sd</sub> = **7904.1** dscf/hr

OMNI-Test Laboratories, Inc.

**$V_{m(std)}$  – Volume of Gas Sampled Corrected to Dry Standard Conditions, dscf**  
 ASTM E2515 equation (6)

$$V_{m(std)} = K_1 \times V_m \times Y \times \frac{P_{bar} + \left( \frac{\Delta H}{13.6} \right)}{T_m}$$

Where:

- $K_1$  = 17.64 °R/in. Hg
- $V_m$  = Volume of gas sample measured at the dry gas meter, dcf
- $Y$  = Dry gas meter calibration factor, dimensionless
- $P_{bar}$  = Barometric pressure at the testing site, in. Hg
- $\Delta H$  = Average pressure differential across the orifice meter, in. H<sub>2</sub>O
- $T_m$  = Absolute average dry gas meter temperature, °R

Sample Calculation:

Using equation for Train 1:

$$V_{m(std)} = 17.64 \times 59.409 \times 0.984 \times \frac{\left( 30.16 + \frac{1.32}{13.6} \right)}{\left( 81.6 + 460 \right)}$$

$$V_{m(std)} = \mathbf{57.620} \text{ dscf}$$

Using equation for Train 2:

$$V_{m(std)} = 17.64 \times 59.199 \times 0.99 \times \frac{\left( 30.16 + \frac{1.09}{13.6} \right)}{\left( 81.7 + 460 \right)}$$

$$V_{m(std)} = \mathbf{57.717} \text{ dscf}$$

Using equation for ambient train:

$$V_{m(std)} = 17.64 \times \text{N/A} \times \text{N/A} \times \frac{\left( \underline{30.16} + \frac{0.00}{13.6} \right)}{\left( 72.2 + 460 \right)}$$

$$V_{m(std)} = \mathbf{0.000} \text{ dscf}$$

OMNI-Test Laboratories, Inc.

**$m_n$  – Total Particulate Matter Collected, mg**

ASTM E2515 Equation (12)

$$m_n = m_p + m_f + m_g$$

Where:

$m_p$  = mass of particulate matter from probe, mg

$m_f$  = mass of particulate matter from filters, mg

$m_g$  = mass of particulate matter from filter seals, mg

Sample Calculation:

Using equation for Train 1 (first hour):

$$m_n = 0.0 + 0.7 + 0.0$$

$$m_n = 0.7 \text{ mg}$$

Using equation for Train 1 (remainder):

$$m_n = 0.4 + 2.6 + 1.6$$

$$m_n = 4.6 \text{ mg}$$

Train 1 Aggregate = **5.3 mg**

Using equation for Train 2:

$$m_n = 0.4 + 3.3 + 1.8$$

$$m_n = \mathbf{5.5 \text{ mg}}$$

OMNI-Test Laboratories, Inc.

**C<sub>s</sub> - Concentration of particulate matter in tunnel gas, dry basis, corrected to standard conditions, g/dsc**  
ASTM E2515 equation (13)

$$C_s = K_2 \times \frac{m_n}{V_{m(\text{std})}}$$

Where:

- K<sub>2</sub> = Constant, 0.001 g/mg  
m<sub>n</sub> = Total mass of particulate matter collected in the sampling train, mg  
V<sub>m(std)</sub> = Volume of gas sampled corrected to dry standard conditions, dscf

Sample calculation:

For Train 1:

$$C_s = 0.001 \times \frac{5.3}{57.62}$$

$$C_s = \mathbf{0.00009} \text{ g/dscf}$$

For Train 2

$$C_s = 0.001 \times \frac{5.5}{57.72}$$

$$C_s = \mathbf{0.00010} \text{ g/dscf}$$

For Ambient Train

$$C_r = 0.001 \times \frac{0.0}{0.00}$$

$$C_r = \mathbf{0.000000} \text{ g/dscf}$$

OMNI-Test Laboratories, Inc.

**E<sub>T</sub> – Total Particulate Emissions, g**

ASTM E2515 equation (15)

$$E_T = (C_s - C_r) \times Q_{std} \times \theta$$

Where:

- C<sub>s</sub> = Concentration of particulate matter in tunnel gas, g/dscf
- C<sub>r</sub> = Concentration particulate matter room air, g/dscf
- Q<sub>std</sub> = Average dilution tunnel gas flow rate, dscf/hr
- θ = Total time of test run, minutes

Sample calculation:

For Train 1

$$E_T = ( \underline{0.000092} - 0.000000 ) \times \underline{7904.1} \times \underline{363} /60$$

$$E_T = \underline{4.40} \text{ g}$$

For Train 2

$$E_T = ( \underline{0.000095} - 0.000000 ) \times \underline{7904.1} \times \underline{363} /60$$

$$E_T = \underline{4.56} \text{ g}$$

Average

$$E = \underline{4.48} \text{ g}$$

Total emission values shall not differ by more than 7.5% from the total average emissions

$$7.5\% \text{ of the average} = \underline{0.34}$$

$$\text{Train 1 difference} = \underline{0.08}$$

$$\text{Train 2 difference} = \underline{0.08}$$

OMNI-Test Laboratories, Inc.

**PR - Proportional Rate Variation**

ASTM E2515 equation (16)

$$PR = \left[ \frac{\theta \times V_{mi} \times V_s \times T_m \times T_{si}}{\theta_i \times V_m \times V_{si} \times T_{mi} \times T_s} \right] \times 100$$

Where:

- $\theta$  = Total sampling time, min
- $\theta_i$  = Length of recording interval, min
- $V_{mi}$  = Volume of gas sample measured by the dry gas meter during the "ith" time interval, dcf
- $V_m$  = Volume of gas sample as measured by dry gas meter, dcf
- $V_{si}$  = Average gas velocity in the dilution tunnel during the "ith" time interval, ft/sec
- $V_s$  = Average gas velocity in the dilution tunnel, ft/sec
- $T_{mi}$  = Absolute average dry gas meter temperature during the "ith" time interval, °R
- $T_m$  = Absolute average dry gas meter temperature, °R
- $T_{si}$  = Absolute average gas temperature in the dilution tunnel during the "ith" time interval, °R
- $T_s$  = Absolute average gas temperature in the dilution tunnel, °R

Sample calculation (for the first 1 minute interval of Train 1):

$$PR = \left( \frac{363 \times 0.145 \times 11.87 \times (111.0 + 460) \times (81.6 + 460)}{1 \times 59.41 \times 12.06 \times (93.4 + 460) \times (72.0 + 460)} \right) \times 100$$

$$PR = \underline{92} \%$$

OMNI-Test Laboratories, Inc.

**PM<sub>R</sub> – Average particulate emissions for full integrated test run, g/hr**  
ASTM E2779 equation (5)

$$PM_R = 60 (E_T/\theta)$$

Where,

E<sub>T</sub> = Total particulate emissions, grams

θ = Total length of full integrated test run, min

Sample Calculation:

$$E_T (\text{Dual train average}) = 4.48 \text{ g}$$

$$\theta = 363 \text{ min}$$

$$PM_R = 60 \times ( 4.48 / 363 )$$

$$PM_R = \mathbf{0.74} \text{ g/hr}$$



OMNI-Test Laboratories, Inc.

**PM<sub>F</sub> – Average particulate emission factor for full integrated test run, g/dry kg of fuel burned**  
ASTM E2779 equation (6)

$$PM_F = E_T / M_{Bdb}$$

Where,

$E_T$  = Total particulate emissions, grams

$M_{Bdb}$  = Weight of test fuel burned during test run, dry basis, kg

Sample Calculation:

$$E_T \text{ (Dual train average)} = 4.48 \text{ g}$$

$$M_{Bdb} = 7.79 \text{ kg}$$


$$PM_F = (4.48 / 7.79)$$

$$PM_F = \mathbf{0.57} \text{ g/kg}$$

# **Appendix A**

## **Labeling & Owner's Manual**

ITEM	PART NUMBER	PART NAME	QTY
1	7080-164	SERIAL LABEL PLATE	1



**Quadra-Fire**  
Mt Vernon E2-C Pellet Stove

Serial No. / N° de série  
**HF**

BARCODE LABEL

**CAUTION: HOT WHILE IN OPERATION DO NOT TOUCH, KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.**

**ATTENTION: CHAUD LORS DE L'OPERATION. NE PAS TOUCHER. GARDEZ LES ENFANTS ET LES VÊTEMENTS LOIN DE L'ESPACE DÉSIGNÉ DE L'INSTALLATION. LE CONTACT PEUT CAUSER DES BRÛLURES À LA PEAU. VOIR L'ÉTIQUETTE ET LES INSTRUCTIONS.**

Listed Solid Fuel Room Heater/Pellet Type. Also suitable for Mobile Home Installation. This appliance has been listed and listed for use in Manufacture Homes in accordance with CAN/ULC E22-R000 through E14-Z-909.

Appareil de chauffage de combustible solide type de bûchettes. Appareil d'installation dans les maisons mobiles. Cet appareil a été listé et enregistré pour l'usage dans les Maisons Mobiles en accord avec: CAN/ULC E22-R000 jusqu'à E14-Z-909.

**PREVENT HOUSE FIRES / PREVENTION DES FEUX DE MAISON**  
Install and use only in accordance with manufacturer's installation and operating instructions. Contact local building or fire officials about restrictions and inspection in your area.

**WARNING - FOR MOBILE HOMES:** Do not install appliance in a sleeping room. An outside combustion air inlet must be provided. The structural integrity of the mobile home floor, ceiling and walls must be maintained. Refer to manufacturer's instructions and local codes for precautions required for passing chimney through a combustible wall or ceiling. Inspect and clean vent system in accordance with manufacturer's instructions. **DO NOT CONNECT THIS UNIT TO A CHIMNEY SERVING ANOTHER APPLIANCE.** Use a 2" or 4" diameter type "L" or "PL" venting system.

Installez et utilisez en accord avec les instructions d'installation et d'opération du fabricant. Contactez le bureau de la construction ou le bureau des incendies au sujet des restrictions et des inspections d'installation dans votre voisinage. Ne pas obstruer l'espèce en dessous de l'appareil.

**AVIS - Pour Les Maisons Mobiles:** Ne pas installer dans une chambre à coucher. Un tuyau extérieur de combustion doit être installé et le dal doit être obstrué lorsque l'appareil est en usage. La structure intégrale du plancher, du plafond et des murs de la maison mobile doit être maintenue intacte. Référez vous aux instructions du fabricant et des codes locaux pour les précautions requises pour passer une cheminée à travers un mur ou un plafond combustibles, et les compensations maximales. Inspectez et nettoyez la cheminée fréquemment. Ne pas connecter cet appareil à une cheminée servant un autre appareil. Utilisez système de ventilation "L" ou "PL" diamètre 16mm ou 102mm


**MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS**  
**ESPACES LIBRES MINIMUM DES MATERIAUX**

A	Back Wall / Mur Arrière	2 in (51 mm)
B	Side Wall / Mur De Côté	6 in (152 mm)
C	"L" or "PL" Pipe to Back Wall / "L" ou "PL" Un Tuyau Mur Arrière	1 in (25 mm)
D	Side Wall / Mur De Côté	2 in (51 mm)

**FLOOR PROTECTION / PROTECTION DU SOL**

Floor protector must be non-combustible material, extending beneath heater and to (51mm) beneath the flue pipe when installed with horizontal venting or under the Top Vent Adapter with vertical installation. **RECOMMENDED IN USA, REQUIRED IN CANADA.**  
\*Un protecteur incombustible de plancher doit s'étendre 2 inches (51mm) sous le conduit de cheminée pour une installation de ventilation horizontale ou sous un adaptateur de ventilation de dessus pour une installation verticale. **RECOMMANDÉ AUX ÉTATS-UNIS; NECESSAIRE AU CANADA.**

Owners Manual      Manufactured by/Fabriqué par      Install Manual



H E A R T H & H O M E  
352 Mountain View Road, Suite 1100  
www.hearthtech.com


This wood heater needs periodic inspection and repair for proper operation. Contact the owner's manual for further information. If it against federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

U.S. ENVIRONMENTAL PROTECTION AGENCY  
Certified to comply with 2020 particulate emission standards at 0.74 GWR EPA CFR subpart AAA, using ASTM E2774-10, ASTM 2515-11 Method- Pellet Appliance sections, CSA B415.1-10

**DO NOT REMOVE THIS LABEL / NE PAS ENLEVER L'ÉTIQUETTE**

2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Made in U.S.A. of US and imported parts.  
Fabriqué aux États-Unis d'Amérique par des pièces d'origine américaine et pièces importées.



- NOTE:**
1. MATERIAL: NON-ANODIZED ALUMINUM 0.020 THICK
  2. USE WITH DRAWING 7080-149 FOR COMPLETE DIMENSION DEFINITION.
  3. BACKGROUND: SILVER
  4. COPY: BLACK / RED
  5. ADHESIVE: N/A
  6. TEMPERATURE RATING: -50°F TO 350°F
  7. STARTING SERIAL NUMBER: ????????????

				UNLESS OTHERWISE SPECIFIED DIMS ARE INCHES[MM] & ; TOLERANCES ARE: (2) PLACE DEC : ± 0.03 (3) PLACE DEC: ± 0.005 ANGLE: ± 2° FRACTION: ± 1/16 ←←← OUTSIDE MATERIAL. ←←← NORMAL DIM & INSIDE MATERIAL. ←←← OUTSIDE APEX ←←← INSIDE APEX ←←← DIMS ENCLOSED BY AN OVAL ARE CRITICAL DIMENSIONS			
							
				PART NAME: LABEL SERIAL MT VERNON E2 PELLETT STOVE			
DRAWN BY: MCW		SCALE: NTS		MATERIAL: SEE NOTE			
THIS PRINT IS CHECKED AND CONTROLLED BY THE ENGINEERING DEPARTMENTS OF HEARTH & HOME TECHNOLOGIES INC.				SHEET: 1 OF 1		PART NUMBER: 7080-164	
REV: 1		NEW SAFETY LABEL		DATE: 06/20/17		BY: TPS	
REVISIONS		ECO #		DATE		BY	

RELEASED

ITEM	PART NUMBER	PART NAME	QTY
1	7082-152	SERIAL LABEL PLATE	1

**CAUTION: HOT WHILE IN OPERATION DO NOT TOUCH, KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.**

**ATTENTION: CHAUD LORS DE L'OPÉRATION. NE PAS TOUCHER. GARDEZ LES ENFANTS ET LES VÊTEMENTS LOIN DE L'ESPACE DESIGNÉ DE L'INSTALLATION. LE CONTACT PEUT CAUSER DES BRÛLURES À LA PEAU. VOIR L'ÉTIQUETTE ET LES INSTRUCTIONS.**

**QUADRA-FIRE**  
Mt Vernon E2-C Pellet Insert

Serial No. / N° de série: HF

Barcode: BARCODE LABEL

Report #: 0061P#04E

Conforms to ASTM Std E1509-12, Certified to UL/C S628-03, Room Heating Pellet Burning Type, (UM) 84-HUD FOR USE ONLY WITH PELLETIZED WOOD FUEL. Do not use any other type of fuel.

Rated Rating: 55,000 Btu/hr. Electrical Rating: 115 VAC, 60 Hz, Start 2.9 Amps, Run 2.45 Amps. Route power cord away from unit. Do not route cord under or in front of appliance. Do not obstruct the space beneath the heater.

**DANGER:** Risk of electrical shock. Disconnect power supply before servicing. Replace glass only with 5mm ceramic. To start, turn dial control to desired setting and set thermostat above room temperature, the stove will light automatically. To shutdown, turn dial control to OFF or set thermostat below room temperature. For further instruction visit to owner's manual. Keep viewing doors tightly closed during operation. Keep viewing and ash removal doors tightly closed during operation.

Conforme à la norme ASTM E1509-12 Std. Certifié à la norme UL/C S628-03, Room Heating Pellet Burning Type, (UM) 84-HUD POUR USAGE AVEC LES BOULETTES DE BOIS. Ne brûlez aucun autre genre de combustible.

Puissance de Rendement: 55,000 Btu/hr. Puissance Échange: 115 VAC, 60 Hz, Début 2.9 Amps, Courant 2.45 Amps. Branchez le fil électrique de l'appareil. Ne pas faire passer le fil électrique au-dessus ou en dessous de l'appareil. Ne pas bloquer l'espace au dessous de l'appareil.

**DANGER:** Il y a risque de décharge électrique. Déconnectez le fil électrique de la prise de contact avant le service. Remplacez la vitre seulement avec une vitre céramique de 5 mm d'épaisseur. Chez votre fournisseur. Pour commencer, tournez la molette de réglage à la température désirée et réglez le thermostat au-dessus de la température ambiante. Le poêle s'allumera automatiquement. Pour éteindre, tournez la molette de réglage sur OFF ou réglez le thermostat dessous de la température ambiante. Pour des instructions supplémentaires, référez vous au manuel du propriétaire. Gardez la porte d'ouverture et la porte des cendres fermées hermétiquement durant l'opération.

**MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS / ESPACES LIBRES MINIMUM DES MATERIAUX COMBUSTIBLES**

**AS A BUILT-IN UNIT / COMME APPAREIL INSÉRÉ**

A Top of Popper / Haut de la trémie	Top/Rear Vent / Des Conduits Du Haut/Ambrières	3 in [76mm]
B Side of Cabinet Sides / Côté de Enveloppe extérieure	Top/Rear Vent / Des Conduits Du Haut/Ambrières	2 in [51mm]
C Vent Pipe to Combustible / Des Conduits de combustible	Top/Rear Vent / Des Conduits Du Haut/Ambrières	3 in [76mm]
D Cast Side to Side Wall / Moulage Side à Wall Side	Top/Rear Vent / Des Conduits Du Haut/Ambrières	6 in [152mm]

**MASONRY OR ZERO CLEARANCE / DÉGAGEMENT DE LA MAÇONNERIE OU DÉGAGEMENT ZÉRO\***

A Cast Side to Side Wall / Moulage Side à Wall Side	6 in [152 mm]
B Insert top to face trim / Insérez le dessus de la garniture de façade	0 in [0 mm]
C Insert side to face trim / Insérez le côté de la garniture de façade	0 in [0 mm]
D Hearth extension from door opening / Prolongement d'aire depuis l'ouverture de la porte devant	6 in [152 mm]
E Hearth extension from side of door opening / Prolongement d'aire depuis le côté de l'ouverture de la porte	6 in [152 mm]

Manufactured by/Fabriqué par: HEARTH & HOME technologies

U.S. ENVIRONMENTAL PROTECTION AGENCY  
Certified to comply with 2000 particulate emission standards at 0.74 GHR EPA CFR, subpart AAA, using ASTM E2779-10, ASTM 2515-11 Method-Pellet Appliance sections, CSA B415.1-10

This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. Il est suggéré de faire inspecter et réparer ce poêle à bois en fonction des instructions de l'opérateur.

DO NOT REMOVE THIS LABEL / NE PAS ENLEVER L'ÉTIQUETTE

2017 2018 2019 JAN FEB MAR APR MAY JUN JUL AUG SEPT OCT NOV DEC

Fabrique aux États-Unis/Amérique par des pièces d'origine américaine et pièces importées.

**NOTE:**

1. MATERIAL: NON-ANODIZED ALUMINUM 0.020 THICK
2. USE WITH DRAWING 7082-149 FOR COMPLETE DIMENSION DEFINITION.
3. BACKGROUND: SILVER
4. COPY: BLACK / RED
5. ADHESIVE: N/A
6. TEMPERATURE RATING: -50°F TO 350°F
7. STARTING SERIAL NUMBER: ??????????

REV	REVISIONS	ECO #	DATE	BY	UNLESS OTHERWISE SPECIFIED DIMS ARE INCHES[MM] & : TOLERANCES ARE: (2) PLACE DEC: ± 0.03 (3) PLACE DEC: ± 0.005 ANGLE: ± 2° FRACTION: ± 1/16 ← OUTSIDE MATERIAL ← NORMAL DIM & INSIDE MATERIAL ← OUTSIDE APEX ← INSIDE APEX - DIMS ENCLOSED BY AN OVAL ARE CRITICAL DIMENSIONS	PART NAME: LABEL SERIAL MT VERNON E2 PELLET INSERT
1	NEW SAFETY LABEL	72343	12/02/13	MCW	HEARTH & HOME technologies	DRAWN BY: MCW SCALE: NTS MATERIAL: SEE NOTE
					CONFIDENTIAL PROPERTY OF HEARTH & HOME TECHNOLOGIES INC.	THIS PRINT IS CHECKED AND CONTROLLED BY THE ENGINEERING DEPARTMENTS OF HEARTH & HOME TECHNOLOGIES INC. SHEET: 1 OF 1 PART NUMBER: 7082-152 REV: 1

# Installation Manual

## Installation & Appliance Set-Up

**INSTALLER:** Leave this manual with party responsible for use and operation.

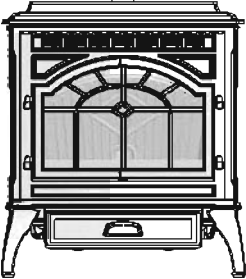
**OWNER:** Retain this manual for future reference.





**NOTICE: DO NOT DISCARD THIS MANUAL**

**QUADRA-FIRE<sup>®</sup>**  
MT. VERNON E2 PELLET APPLIANCE

Model(s):

<i>MTV-E2-CSB-C</i>	<i>MTV-E2-MBK-C</i>
<i>MTV-E2-PFT-C</i>	<i>MTV-E2-PDB-C</i>
<i>MTV-E2-PBK-C</i>	<i>MTV-E2-PMH-C</i>



   Tested and  
Listed by  Portland  
Oregon USA  
OMNI Test Laboratories, Inc.  
061-S-83-2

### CAUTION

Tested and approved for wood pellets only. Burning of any other type of fuel voids your warranty.

### NOTE

To obtain a French translation of this manual, please contact your dealer or visit [www.quadrafire.com](http://www.quadrafire.com)  
Pour obtenir une traduction française de ce manuel, s'il vous plaît contacter votre revendeur ou visitez [www.quadrafire.com](http://www.quadrafire.com)

Installation and service of this appliance should be performed by qualified personnel. Hearth & Home Technologies recommends HHT Factory Trained or NFI certified professionals.

  
**FACTORY TRAINING**  
Fuel Your Fire

 **NATIONAL  
FIREPLACE  
INSTITUTE<sup>®</sup>**  
A CERTIFICATION AGENCY

### WARNING



If the information in these instructions is not followed exactly, a fire could result causing property damage, personal injury, or death.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- Do not over fire - If appliance or chimney connector glows, you are over firing. Over firing will void your warranty.
- Comply with all minimum clearances to combustibles as specified. Failure to comply may cause house fire.

### WARNING



#### **HOT SURFACES!**

Glass and other surfaces are hot during operation AND cool down.

#### **Hot glass will cause burns.**

- Do not touch glass until it is cooled
- NEVER allow children to touch glass
- Keep children away
- CAREFULLY SUPERVISE children in same room as fireplace.
- Alert children and adults to hazards of high temperatures
- **High temperatures may ignite clothing or other flammable materials.**
- Keep clothing, furniture, draperies and other flammable materials away.

### CAUTION

Check building codes prior to installation.

- Installation **MUST** comply with local, regional, state and national codes and regulations.
- Consult local building, fire officials or authorities having jurisdiction about restrictions, installation inspection, and permits.



**Safety Alert Key:**

- **DANGER!** Indicates a hazardous situation which, if not avoided will result in death or serious injury.
- **WARNING!** Indicates a hazardous situation which, if not avoided could result in death or serious injury.
- **CAUTION!** Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE:** Indicates practices which may cause damage to the appliance or to property.

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# 1 Important Safety Information

## A. Appliance Certification

<b>Model</b>	Mt. Vernon Pellet Appliance E2
<b>Laboratory</b>	OMNI Test Laboratories, Inc.
<b>Report No.</b>	061-S-83-2
<b>Type</b>	Solid Fuel Room Appliance, Pellet Fuel Burning Type
<b>Standard</b>	ASTM E1509-12, ULC S627-00 and (UM) 84-HUD, Mobile Home Approved.
<b>FCC</b>	Complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**NOTICE:** This installation must conform with local codes. In the absence of local codes you must comply with the **ASTM E1509-12, ULC S627-00, (UM) 84-HUD and ULC/ORD-C-1482.**

The Quadra-Fire Mt. Vernon E2 Pellet Appliance meets the U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards at 0.74 G/HR EPA CFR subpart AAA, using ASTM E2779-10, ASTM 2515-11 Method-Pellet Appliance sections, CSA B415.1-10. This pellet appliance needs periodic inspection and repair for proper operation. It is against federal regulations to operate this pellet appliance in a manner inconsistent with the operating instructions in the owner's manual.

## B. BTU & Efficiency Specifications

Emissions Report Number:	0061PS094E
EPA Certification #:	
EPA Certified Emissions:	0.74 g/hr
*LHV Tested Efficiency:	83.2%
**HHV Tested Efficiency:	77.9%
***EPA BTU Output:	39,428 / HR
****BTU Input:	50.775 / HR
Vent Size:	3, 4 or 6 inches, "L" or "PL"
Hopper Capacity:	80 lbs.
Fuel	Wood Pellets
* Weighted average LHV efficiency using data collected during EPA emissions test.	
**Weighted average HHV efficiency using data collected during EPA emissions test.	
***A range of BTU outputs based on HHV and the burn rates from the low and high EPA tests.	
****Based on the maximum feed rate per hour multiplied by approximately 8600 BTU's which is the average BTU's from a pound of pellets.	

## C. Glass Specifications

This appliance is equipped with 5mm ceramic glass. Replace glass only with 5mm ceramic glass. Please contact your dealer for replacement glass.

## D. Electrical Rating

115 VAC, 60 Hz, Start 2.9 Amps, Run 2.45 Amps

## E. Mobile Home Approved

- This appliance is approved for mobile home installations when not installed in a sleeping room and when an outside combustion air inlet is provided.
- The structural integrity of the mobile home floor, ceiling, and walls must be maintained.
- The appliance must be properly grounded to the frame of the mobile home and use only Listed pellet vent Class "L" or "PL" connector pipe.
- Outside Air Kit, part OAK-3 must be installed in a mobile home installation.

## F. Non-Combustible Materials

Material which will not ignite and burn, composed of any combination of the following:

- Steel
- Plaster
- Brick
- Iron
- Concrete
- Tile
- Glass
- Slate

Materials reported as passing **ASTM E 136, Standard Test Method for Behavior of Metals, in a Vertical Tube Furnace of 750° C.**

## G. Combustible Materials

Material made of/or surfaced with any of the following materials:

- Wood
- Plant Fibers
- Plywood/OSB
- Compressed Paper
- Plastic
- Sheet Rock (drywall)

Any material that can ignite and burn: flame proofed or not, plastered or non-plastered.

## WARNING



### Fire Risk.

Hearth & Home Technologies disclaims any responsibility for, and the warranty will be voided by, the following actions:

- Installation and use of any damaged appliance.
- Modification of the appliance.
- Installation other than as instructed by Hearth & Home Technologies.
- Installation and/or use of any component part not approved by Hearth & Home Technologies.
- Operating appliance without fully assembling all components.
- Operating appliance without legs attached (if supplied with appliance).
- Do NOT Over fire - If appliance or chimney connector glows, you are over firing.

Any such action that may cause a fire hazard.

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage.

For assistance or additional information, consult a qualified installer, service agency or your dealer.

**NOTE:** Hearth & Home Technologies, manufacturer of this appliance, reserves the right to alter its products, their specifications and/or price without notice.

# Install Guide

## 2 Getting Started

### A. Design, Installation & Location Considerations

#### 1. Appliance Location

**NOTICE:** Check building codes prior to installation.

- Installation MUST comply with local, regional, state and national codes and regulations.
- Consult insurance carrier, local building inspector, fire officials or authorities having jurisdiction over restrictions, installation inspection and permits.

It is a good idea to plan your installation on paper, using exact measurements for clearances and floor protection, before actually beginning the installation. Location of the appliance and chimney will affect performance.

Consideration must be given to:

- Safety, convenience, traffic flow
- Placement of the chimney and chimney connector and to minimize the use of chimney offsets.
- Place the appliance where there will be a clear passage for a Listed chimney through the ceiling and roof (vertical) or through exterior wall (horizontal).
- Installing the required outside air kit will affect the location of the vent termination.

When locating vent and venting termination, the ideal location is to vent above roof line when possible. This minimizes the affects of wind loading.


Since pellet exhaust can contain ash, soot or sparks, you must consider the location of:

- Windows
- Air Intakes
- Air Conditioner
- Overhang, soffits, porch roofs, adjacent walls
- Landscaping, vegetation
- Horizontal or vertical vent termination

#### 2. Floor Support

The supporting floor under the appliance must be able to handle the weight of the appliance, fuel load and the weight of the chimney.

Ensure that your floor will support these weights prior to installation. Add sufficient additional support to meet this weight requirement prior to installation. The weight of the appliance is 426 lbs.

 <b>WARNING</b>
<b>Risk of Fire.</b>
Damaged parts could impair safe operation. Do NOT install damaged, incomplete or substitute components.

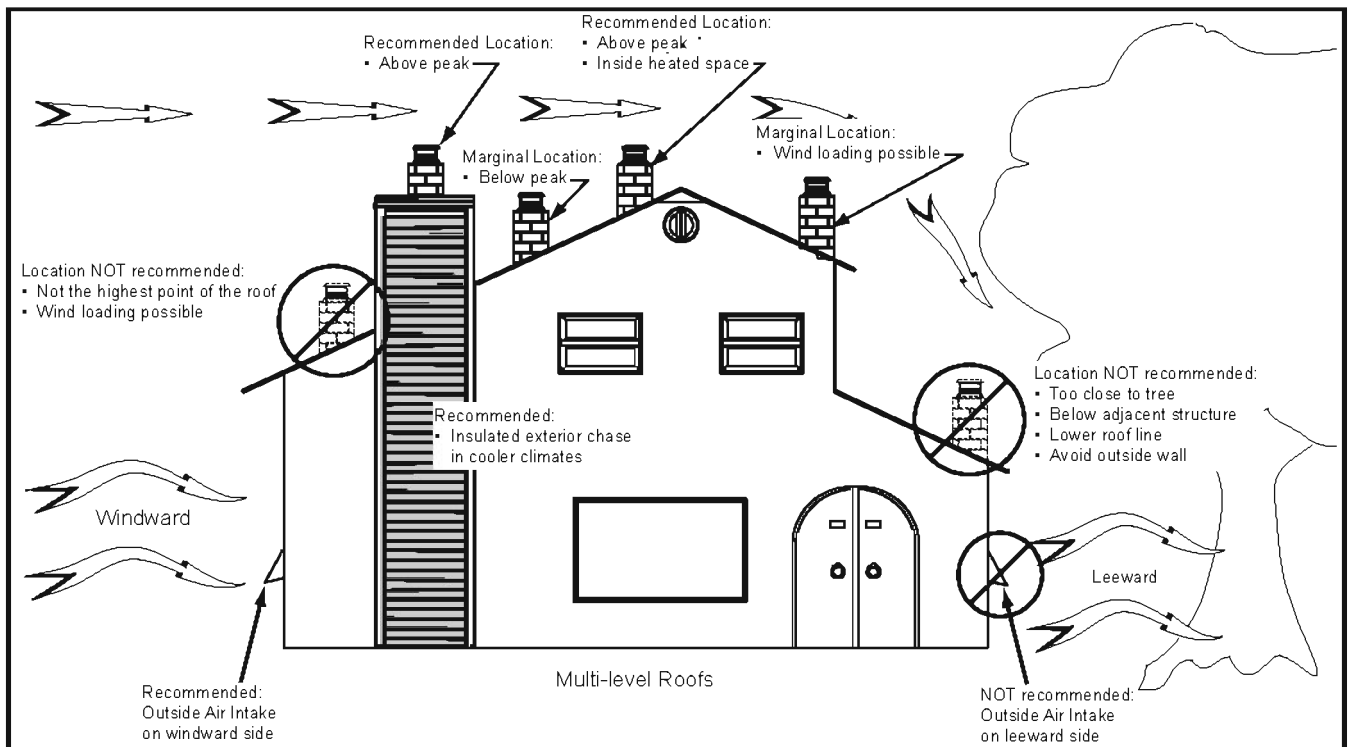


Figure 4.1



**B. Tools And Supplies Needed**

**Tools and building supplies normally required for installation, unless installing into an existing masonry fireplace:**

Reciprocating Saw	Channel Locks
Hammer	Phillips Screwdriver
Tape Measure	Plumb Line
1/4" Self-Tapping Screws	Framing Material
Hi-temp Caulking Material	Gloves
Safety Glasses	Framing Square
Electric Drill & Bits (1/4")	Level

May also need:

Vent Support Straps	Venting Paint
---------------------	---------------

**C. Inspect Appliance and Components**

- Open the appliance and remove all the parts and articles packed inside the Component Pack. Inspect all the parts and glass for shipping damage.
- Report to your dealer any parts damaged in shipment.
- All labels have been removed from the glass door.
- Plated surfaces have been wiped clean with a soft cloth, if applicable.
- **Read all the instructions before starting the installation. Follow these instructions carefully during the installation to ensure maximum safety and benefit.**
- **Follow pipe manufacturer instructions for installation and air clearance requirements.**



**WARNING**



**Risk of Fire!**

Damaged parts could impair safe operation.  
Do NOT install damaged, incomplete or substitute components.



**WARNING**



Hearth & Home Technologies disclaims any responsibility for, and the warranty will be voided by, the following actions:

- Installation and use of any damaged appliance.
- Modification of the appliance.
- Installation other than as instructed by Hearth & Home Technologies.
- Installation and/or use of any component part not approved by Hearth & Home Technologies.
- Operating appliance without fully assembling all components.
- Operating appliance without legs attached (if supplied with appliance).
- Do NOT Over fire

**Or any such action that may cause a fire hazard.**

D. Install Checklist

**ATTENTION INSTALLER:**  
**Follow this Standard Work Checklist**

This standard work checklist is to be used by the installer in conjunction with, not instead of, the instructions contained in this installation manual.

Customer: \_\_\_\_\_  
 Date Installed: \_\_\_\_\_  
 Lot/Address: \_\_\_\_\_  
 Location of Appliance: \_\_\_\_\_  
 Installer: \_\_\_\_\_  
 Dealer/ Distributor Phone #: \_\_\_\_\_  
 Serial #: \_\_\_\_\_  
 Model : \_\_\_\_\_

**WARNING! Risk of Fire or Explosion! Failure to install appliance according to these instructions can lead to a fire or explosion.**

**Appliance Install**

**Verified clearances to combustibles.**

Appliance is leveled and connector is secured to appliance.  
 Hearth extension size/height decided.  
 Outside air kit installed.  
 Floor protection requirements have been met.  
 If appliance is connected to a masonry chimney, it should be cleaned and inspected by a professional. If installed to a factory built metal chimney, the chimney must be installed according to the manufacturer's instructions and clearances.

YES	IF NO, WHY?
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____

**Chimney**

**Chimney configuration complies with diagrams.**

Chimney installed, locked and secured in place with proper clearance.  
 Chimney meets recommended height requirements (14-16 feet).

**Roof flashing installed and sealed.**

Terminations installed and sealed.

<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____

**Clearances**

Combustible materials not installed in non-combustible areas.  
**Verified all clearances meet installation manual requirements.**  
 Mantels and wall projections comply with installation manual requirements.  
 Protective hearth strips and hearth extension installed per manual requirements.

<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____

**Appliance Setup**

All packaging and protective materials removed.  
**Firebrick, baffle and ceramic blanket installed correctly.**  
 All labels have been removed from the door.  
 All packaging materials are removed from inside/under the appliance.  
 Manual bag and all of its contents are removed from inside/under the appliance and given to the party responsible for use and operation.

<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____

**Hearth & Home Technologies recommends the following:**

- **Photographing the installation and copying this checklist for your file.**
- That this checklist remain visible at all times on the appliance until the installation is complete.

Comments: Further description of the issues, who is responsible (Installer/Builder/Other Trades, etc.) and corrective action needed:

Comments communicated to party responsible \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_  
 (Builder/Gen. Contractor) (Installer) (Date)

# 3 Dimensions and Clearances

## A. Appliance Dimensions

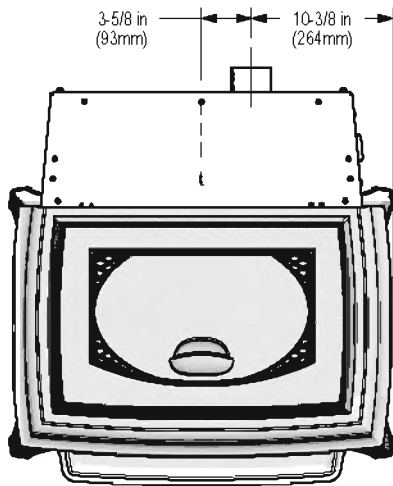


Figure 7.1 - Top View

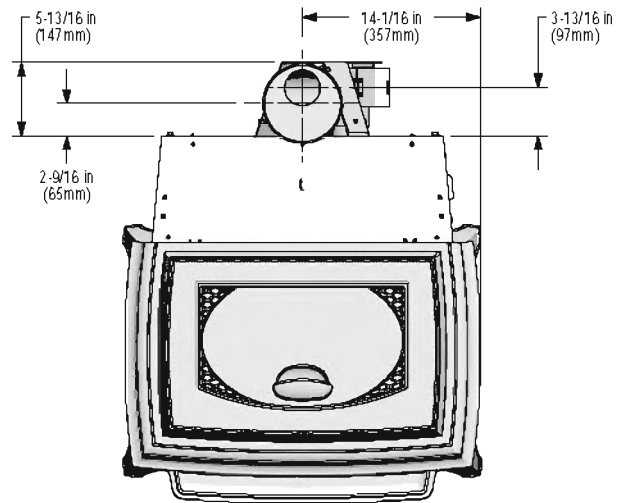


Figure 7.3 - Top View with Top Vent Adapter (TPVNT-3) and Offset Adapter (812-3570).

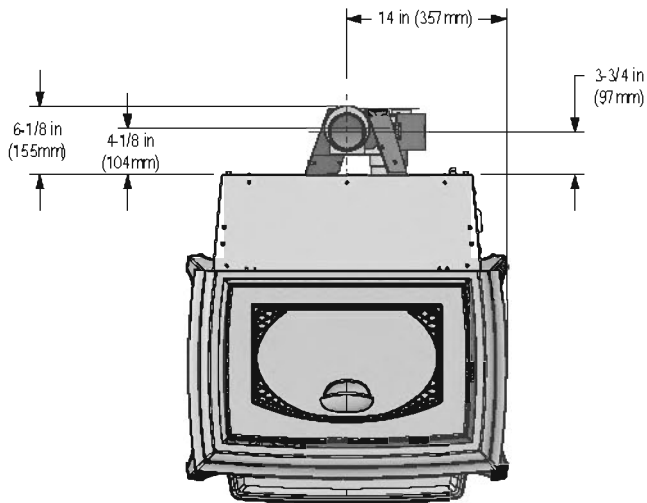


Figure 7.2 - Top View with Top Vent Adapter (TPVNT-3) and Offset Adapter (811-0720).

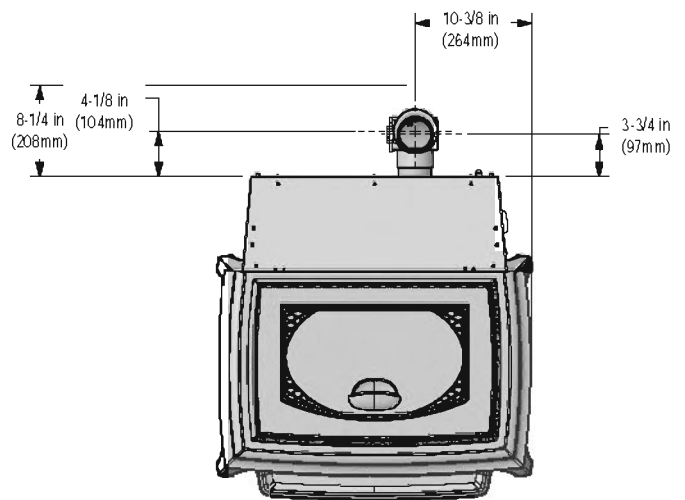


Figure 7.4 - Top View with Top Vent Adapter (TPVNT-6) and Offset Adapter (811-0720).

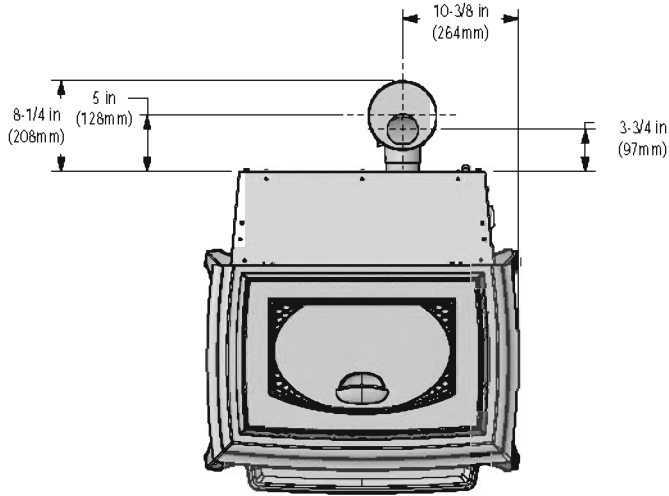


Figure 8.1 - Top View with Top Vent Adapter (TPVNT-6) and Offset Adapter (812-3570).

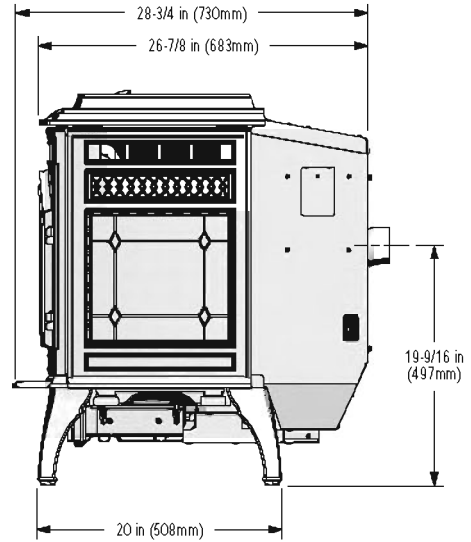


Figure 8.3 -Side View

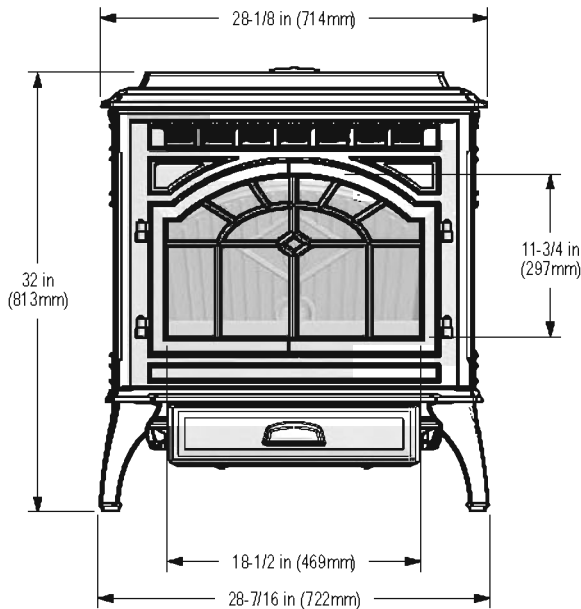


Figure 8.2 - Front View

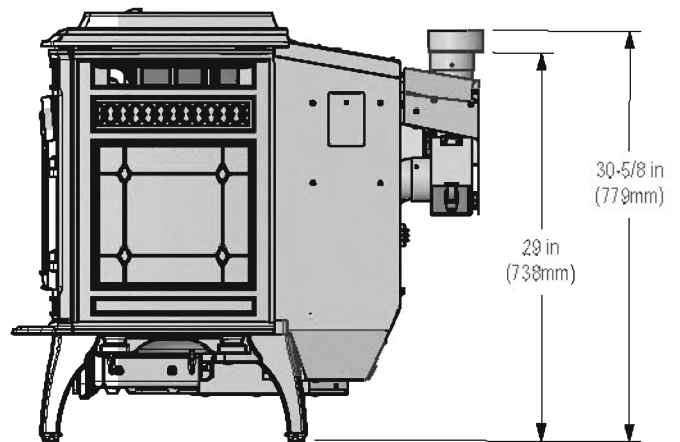


Figure 8.4 - Side View with Top Vent Adapter (TPVNT-3) and Offset Adapter (811-0720).

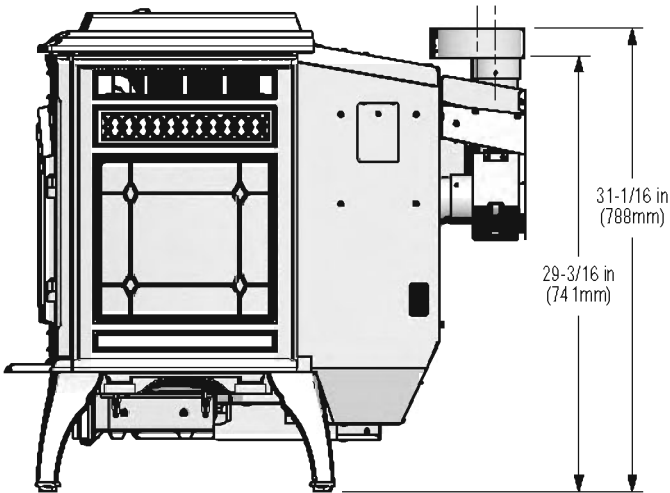


Figure 9.1 - Side View with Top Vent Adapter (TPVNT-3) and Offset Adapter (812-3570).

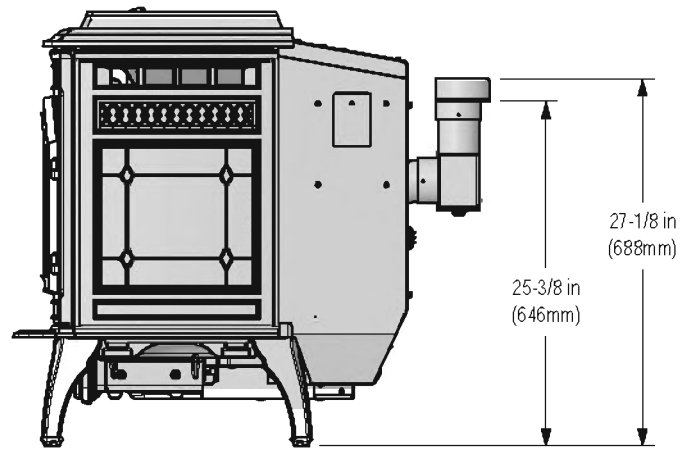


Figure 9.3 - Side View with Top Vent Adapter (TPVNT-6) and Offset Adapter (811-0720).

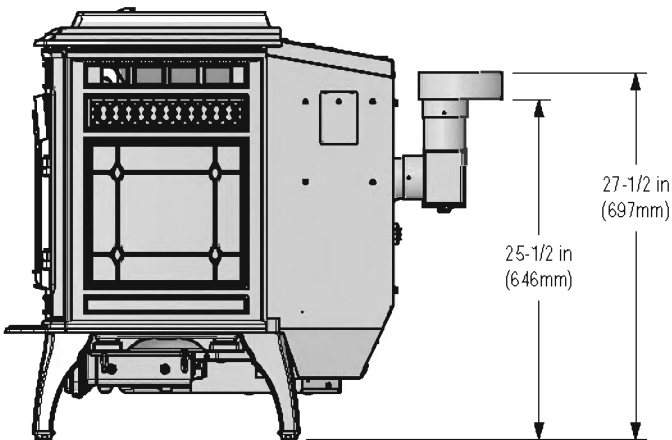
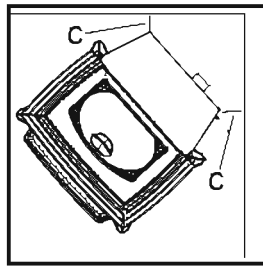
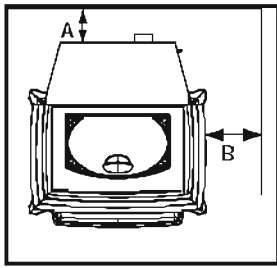


Figure 9.2 - Side View with Top Vent Adapter (TPVNT-6) and Offset Adapter (812-3570).

**B. Clearances to Combustibles (US & Canada)**



Horizontal Through the Wall		Inches	Millimeters
A	Back Wall to Appliance	2	51
B	Side Wall to Appliance	6	152

Corner Installation		Inches	Millimeters
C	Walls to Appliance	2	51

**NOTE:**

- Illustrations reflect typical installations and are FOR DESIGN PURPOSES ONLY.
- Illustrations/diagrams are not drawn to scale.
- Actual installation may vary due to individual design preference.

Alcove Installation	Inches	Millimeters
Minimum Alcove Height	43	1092
Minimum Alcove Side Wall	6	152
Minimum Alcove Width	40	1016
Maximum Alcove Depth	36	914

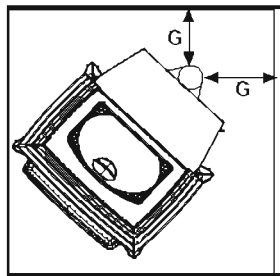
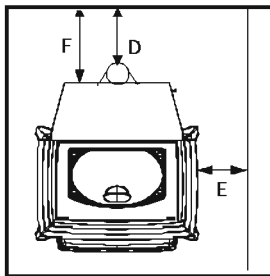
**Installations with:**

TPVNT-3 Top Vent Adapter with Heat Shield and Clean-out

TPVNT-6 Top Vent Adapter with Clean-out

811-0720 (3" to 4") Offset Adapter

812-3570 (3" to 6") Offset Adapter



Vertical Installation		Inches	Millimeters
D	Back Wall to Flue Pipe	3	76
E	Side Wall to Appliance	6	152
F	Back Wall to Appliance	8	203

Corner Installation		Inches	Millimeters
G	Side Wall to Flue Pipe	3	76

**C. Hearth Pad Requirements (UL & ULC)**

Use a non-combustible floor protector, extending beneath appliance and to the front, sides and rear as indicated. Measure front distance "M" from the surface of the glass door.

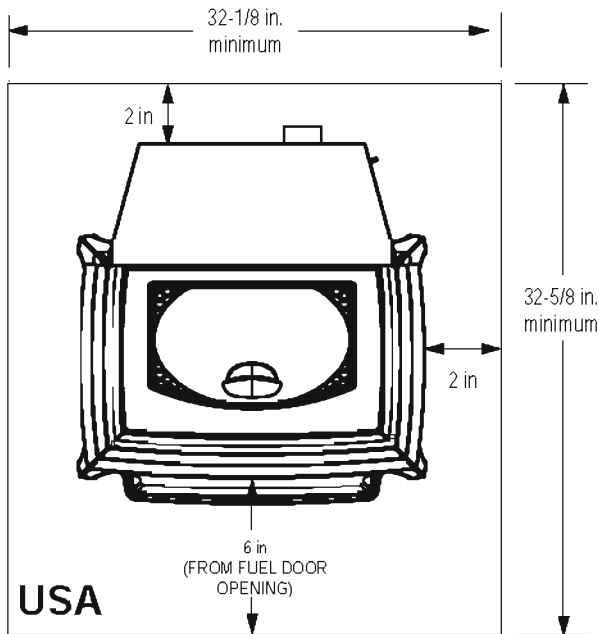


Figure 11.1

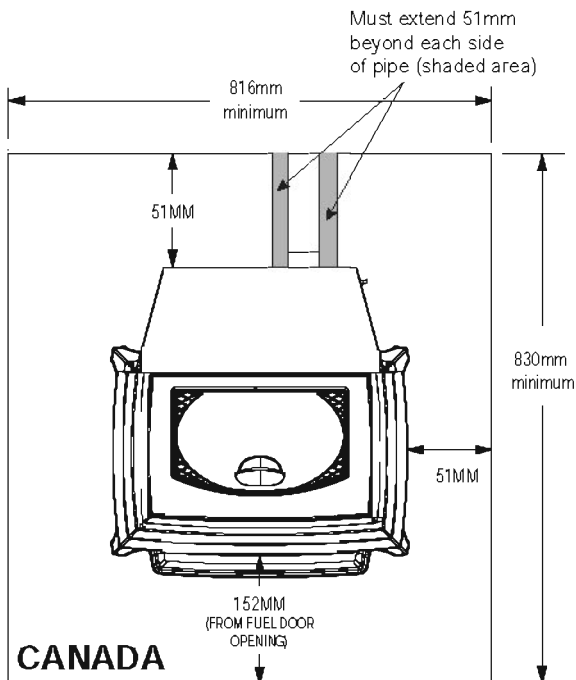


Figure 11.2

**USA INSTALLATIONS:** A non-combustible floor protection is recommended extending beneath the flue pipe when installed with horizontal venting or under the Top Vent Adapter with vertical installation.

**CANADA INSTALLATIONS:** A non-combustible floor protection extending beneath the flue pipe is **required** with horizontal venting or under the Top Vent Adapter with vertical installation.

<b>⚠ WARNING</b>	
	<b>Fire Risk.</b>
	Comply with all minimum clearances to combustibles as specified.
	Failure to comply may cause house fire.

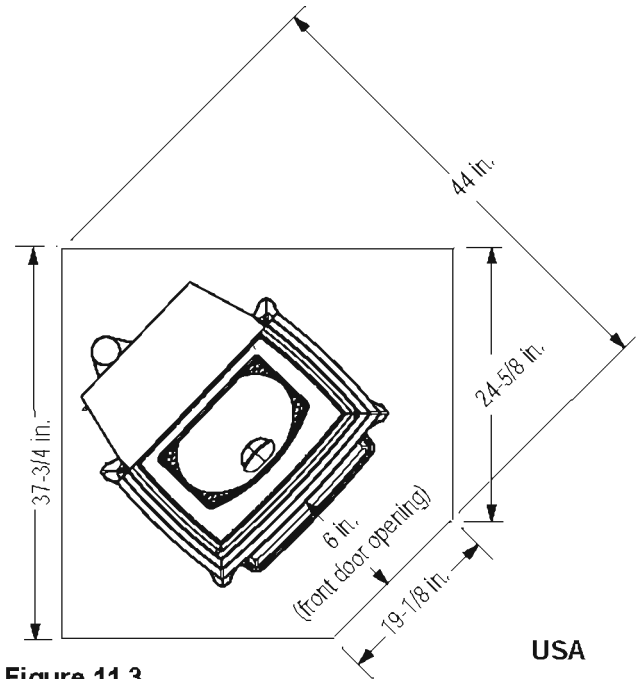


Figure 11.3

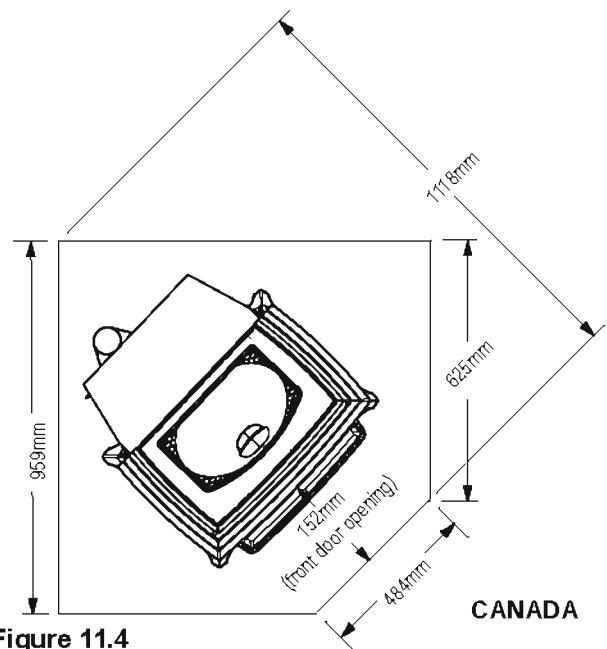


Figure 11.4

D. Alcove

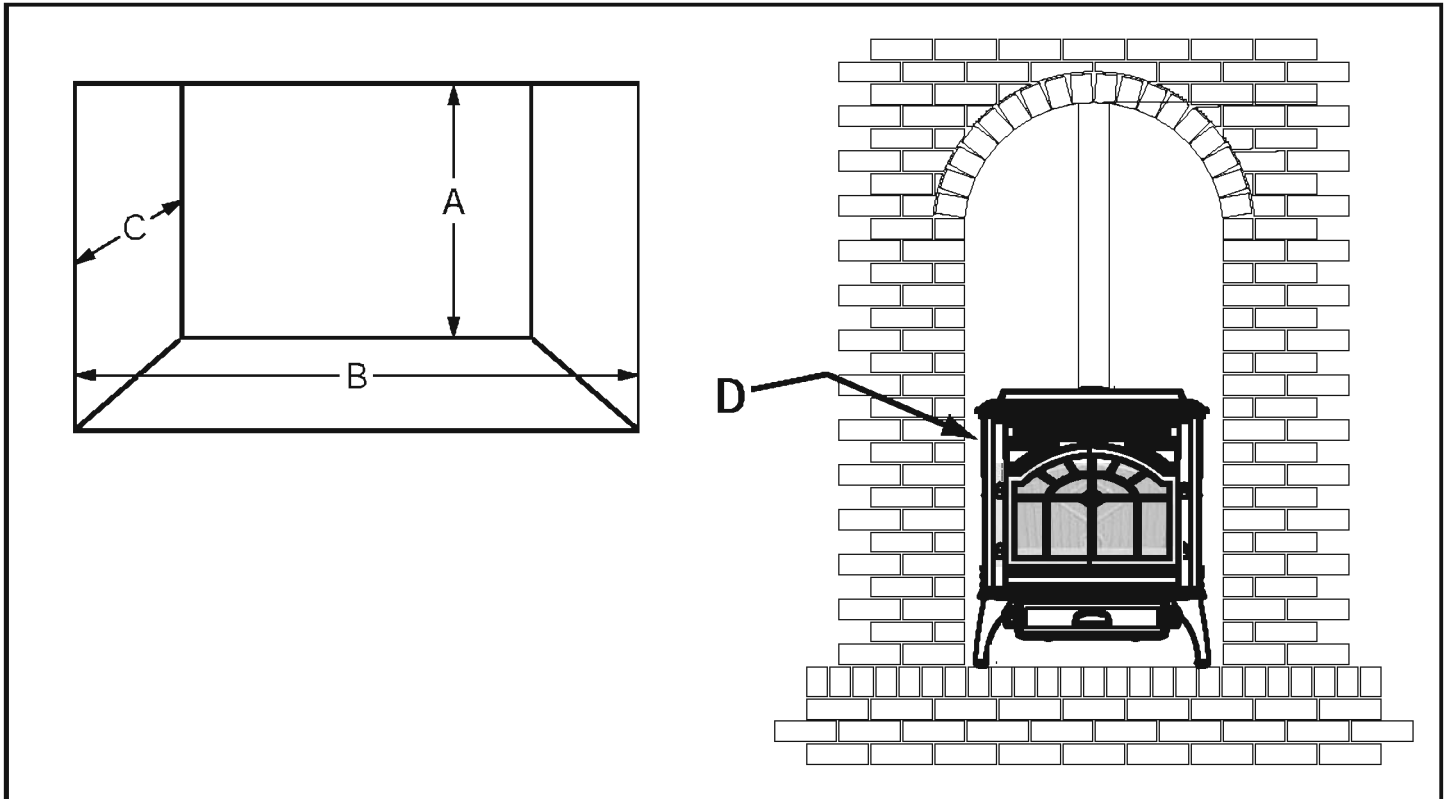


Figure 12.1

		Minimum*		Maximum	
		Inches	Millimeters	Inches	Millimeters
<b>A</b>	Height	43	1092	n/a	n/a
<b>B</b>	Width	40	1016	n/a	n/a
<b>C</b>	Depth	n/a	n/a	36	914
<b>D</b>	To Side Wall	6	152	n/a	n/a

\*All minimums listed are to a combustible surface.

**NOTE:**

- Illustrations reflect typical installations and are FOR DESIGN PURPOSES ONLY.
- Illustrations/diagrams are not drawn to scale.
- Actual installation may vary due to individual design preference.



# 4 Vent Information

## A. Venting Termination Minimum Requirements

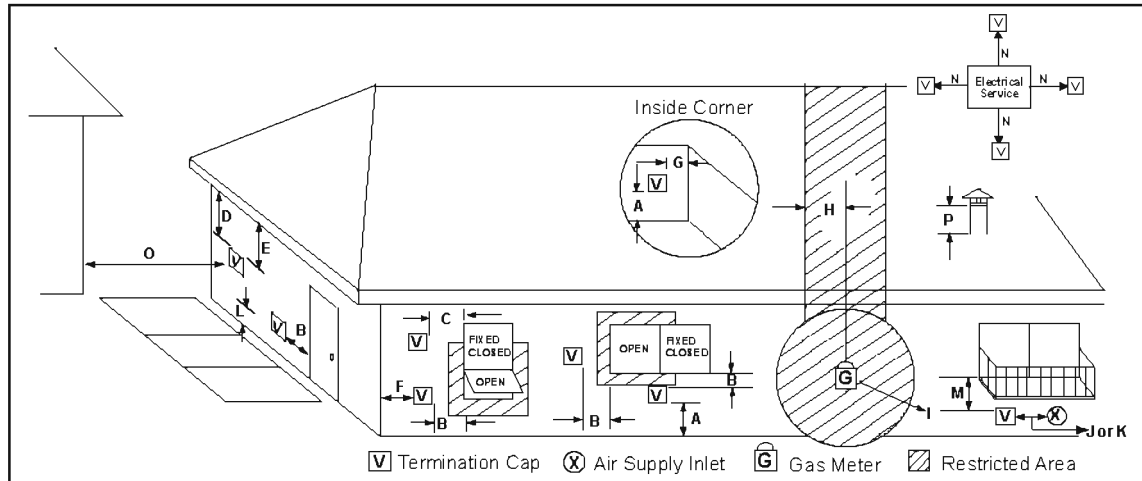


Figure 13.1

All minimum clearances are listed with an Outside Air Kit (OAK) installed, unless otherwise noted in table below.

A	12 in.	Above Finish Grade (the grade surface must be a non-combustible material)
B	12 in. 48 in. no OAK	Open door or window: below or to the side
B	12 in.	Open door or window: above
C	6 in.	Permanently closed window: above, below or to the side
D	18 in. 36 in. no OAK	Vertical clearance to a ventilated soffit located above the terminal within a horizontal distance of 2 ft from the center-line of the terminal
E	12 in.	Clearance to unventilated soffit
F	12 in.	Clearance to outside corner
G	12 in.	Clearance to inside corner
H	36 in.	Above gas meter/regulator measured from horizontal center-line of regulator
I	36 in. USA 72 in. Canada	Clearance to service regulator vent outlet
J	12 in. 48 in. no OAK	Clearance to non-mechanical air supply inlet to the building or the combustions air inlet to any other appliance
K	10 ft horizontal 3 ft vertical	Clearance to mechanical air supply
L	7 ft.	Above paved sidewalk, paved driveway located on <b>public</b> property
M	12 in.	Under an open veranda, porch, deck or balcony
N	See Note below*	Electric service: above, below or to the side (location must not obstruct or interfere with access)
O	24 in.	Adjacent building, fences and protruding parts of the structure
P	12 in.	Clearance above roof line for vertical terminations

24 in.	Above grass, top of plants, wood or any other combustible
12 in. 36 in. no OAK	Clearance from any forced air intake of other appliance
12 in.	Clearance horizontally from combustible wall
15 in.	Vented directly through a wall, minimum length of horizontal pipe
6 in. horizontal 12 in. vertical	Minimum horizontal or vertical terminations must protrude from wall

**NOTICE:**

**Do NOT Terminate Vent:**

- In any location that will allow flue gases or soot from entering or staining the building
- In any location which could create a nuisance or hazard
- In any enclosed or semi-enclosed area such as a carport, garage, attic, crawl space, under a sun deck or porch, narrow walkway
- Closely fenced area, or any location that can build up a concentration of fumes such as a stairwell, covered breezeway, etc.

**NOTICE:**

**Termination must exhaust above air inlet elevation.**

- It is recommended that at least 60 inches (1.52m) of vertical pipe be installed when appliance is vented directly through a wall. This will create a natural draft, which will help prevent the possibility of smoke or odor venting into the home during a power outage.
- It will also keep exhaust from causing a nuisance or hazard by exposing people or shrubs to high temperatures.
- The safest and preferred venting method is to extend the vent vertically through the roof or above the roof.

\*NOTE: Consult local building, fire officials or authorities having jurisdiction. Local codes or regulations may require different clearances.

## B. Avoiding Smoke and Odors

### Negative Pressure, Shut-Down and Electrical Power Failure

To reduce the probability of back-drafting or burn-back in the pellet appliance during power failure or shut down conditions, it must be able to draft naturally without exhaust blower operation.

Negative pressure in the house will resist this natural draft if not accounted for in the pellet appliance installation.

Heat rises in the house and leaks out at upper levels. This air must be replaced with cold air from outdoors which flows into lower levels of the house.

Vents and chimneys into basements and lower levels of the house can become the conduit for air supply and reverse under these conditions.

### Outside Air

An outside air kit (OAK-3) is recommended in all installations and must be ordered separately.

Per national building codes, consideration must be given to combustion air supply to all combustion appliances. Failure to supply adequate combustion air for all appliance demands may lead to back drafting of those and other appliances.

When the appliance is roof vented (strongly recommended):

The air intake is best located on the exterior wall oriented towards the prevailing wind direction during the heating season.

When the appliance is side-wall vented:

The air intake is best located on the same exterior wall as the exhaust vent outlet and located lower on the wall than the exhaust vent outlet.

The outside air supply kit can supply most of the demands of the pellet appliance, but consideration must be given to the total house demand.

House demand may consume the air needed for the appliance. It may be necessary to add additional ventilation to the space in which the pellet appliance is located.

Consult with your local HVAC professional to determine the ventilation demands for your house.

### Vent Configurations

To reduce probability of reverse drafting during shut-down conditions Hearth & Home Technologies strongly recommends:

- Installing the pellet vent with a minimum vertical run of 5 feet (1.52m). Preferably terminating above the roof line.
- Installing the outside air kit at least 4 feet (1.22m) below the vent termination.

To prevent soot damage to exterior walls of the house and to prevent re-entry of soot or ash into the house:

- Maintain specified clearances to windows, doors and air inlets, including air conditioners.
- Vents should not be placed below ventilated soffits. Run the vent above the roof.
- Avoid venting into alcove locations.
- Vents should not terminate under overhangs, decks or onto covered porches.
- Maintain minimum clearance of 12 inches (305mm) from the vent termination to the exterior wall. If you see deposits developing on the wall, you may need to extend this distance to accommodate your installation conditions.



### CAUTION

- DO NOT CONNECT THIS Appliance TO A CHIMNEY FLUE SERVICING ANOTHER APPLIANCE.
- DO NOT CONNECT TO ANY AIR DISTRIBUTION DUCT OR SYSTEM.

## C. Negative Pressure

### WARNING

#### Risk of Asphyxiation!

Negative pressure can cause spillage of combustion fumes and soot.

Negative pressure results from the imbalance of air available for the appliance to operate properly. It can be strongest in lower levels of the house.

Causes include:

- Exhaust fans (kitchen, bath, etc.)
- Range hoods
- Combustion air requirements for furnaces, water appliances and other combustion appliances
- Clothes dryers
- Location of return-air vents to furnace or air conditioning
- Imbalances of the HVAC air handling system
- Upper level air leaks such as:
  - Recessed lighting
  - Attic hatch
  - Duct leaks

To minimize the effects of negative air pressure:

- Install the outside air kit with the intake facing prevailing winds during the heating season
- Ensure adequate outdoor air for all combustion appliances and exhaust equipment
- Ensure furnace and air conditioning return vents are not located in the immediate vicinity of the appliance
- Avoid installing the appliance near doors, walkways or small isolated spaces
- Recessed lighting should be a “sealed can” design
- Attic hatches weather stripped or sealed
- Attic mounted duct work and air handler joints and seams taped or sealed

## D. Draft

Draft is the pressure difference needed to vent an appliance successfully. When an appliance is drafting successfully, all combustion byproducts are exiting the home through the chimney.

Install through the warm airspace enclosed by the building envelope. This helps to produce more draft, especially during lighting and die-down of the fire.

Considerations for successful draft include:

- Preventing negative pressure
- Location of appliance and chimney

**NOTICE:** *Hearth & Home Technologies assumes no responsibility for the improper performance of the chimney system caused by:*

- *Inadequate draft due to environmental conditions*
- *Down drafts*
- *Tight sealing construction of the structure*
- *Mechanical exhausting devices*

## E. Chimney and Exhaust Connection

1. **Chimney & Connector:** Use 3 or 4 inch (76-102mm) diameter type “L” or “PL” venting system. It can be vented vertically or horizontally.

**NOTE:** The appliance exhaust outlet is designed to accommodate 3 inch venting. Use of 4 inch venting requires the use of a 3-to-4 inch exhaust vent increaser in addition to any other venting components needed, sold separately.

2. **Mobile Home:** Approved for all Listed pellet vent. If using the 3 inch (76mm) vertical Top Vent Adapter Kit or the 3 to 6 inch (76-152mm) Top Vent Offset Adapter, use Listed double wall flue connector. A Quadra-Fire Outside Air Kit (OAK-3) must be used with manufactured home installations.
3. **Residential:** The 3 inch (76mm) vertical Top Vent Adapter Kit and the 3 to 6 inch (76-152mm) Top Vent Offset Adapter are tested to use 24 gauge single wall flue connector or Listed double wall flue connector to Class A Listed metal chimneys, or masonry chimneys meeting International Residential Code standards for solid fuel appliances.
4. **INSTALL VENT AT CLEARANCES SPECIFIED BY THE VENT MANUFACTURER.**
5. Secure exhaust venting system to the appliance with at least 3 screws. Also secure all connector pipe joints with at least 3 screws through each joint.
6. **DO NOT INSTALL A FLUE DAMPER IN THE EXHAUST VENTING SYSTEM OF THIS Appliance.**
7. **DO NOT CONNECT THIS Appliance TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.**

**NOTE:** All pipe must be welded seam pipe whenever possible. Seal pipe joints with high temperature silicone (500°F [260°C] minimum rated only).


### WARNING

USE ONLY RECOMMENDED VENTING COMPONENTS; OTHERWISE MAKESHIFT PARTS MAY RESULT IN PROPERTY DAMAGE, PERSONAL INJURY, OR DEATH.

### F. Equivalent Feet of Pipe

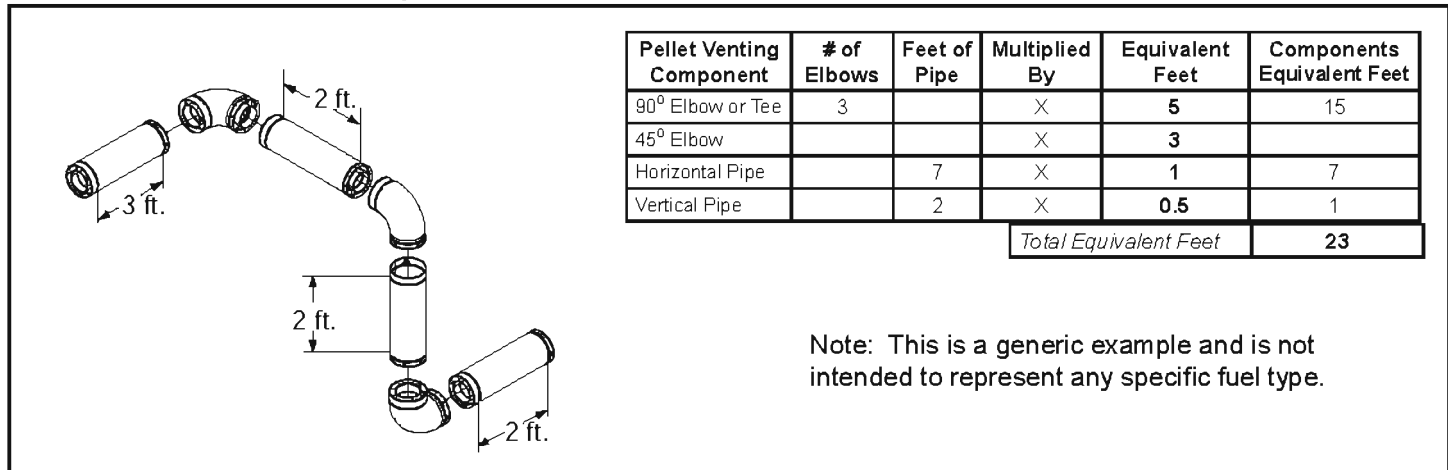
The table below can help you calculate the equivalent feet of pipe which is a method used to determine pellet vent size. **Figure 16.1.**

**⚠ WARNING**



Vent surfaces get **HOT**, can cause burns if touched. Non-combustible shielding or guards may be required.

#### Example of 3 Elbow-Rear Vent Termination Calculation



**Figure 16.1**

### G. Pipe Selection Chart

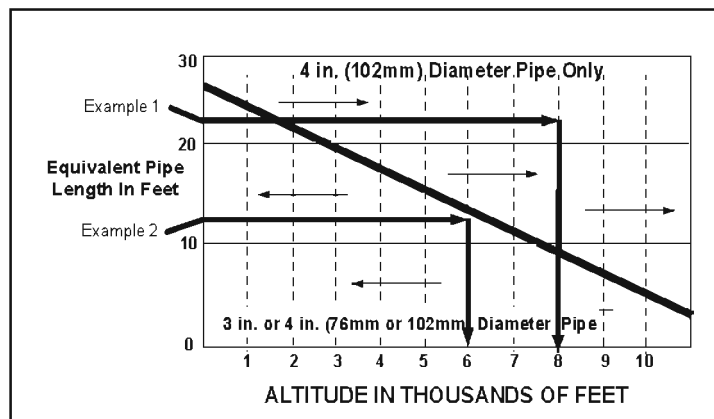
The chart will help you in determining proper venting size according to the equivalent feet of pipe calculated previously and the altitude above sea level of this installation. **Figure 16.2**

**Figure 16.2**

- Locate the calculated equivalent feet of pipe on the vertical left side of the chart.
- Move to the right horizontally on the chart until you reach your altitude above sea level.
- If you fall below the diagonal line, 3 or 4 inch (76 to 102mm) pipe may be used.
- If it is anywhere above the diagonal line, a 4 inch (102mm) diameter pipe is required.

**NOTICE:**

- A 90° elbow is 5 times as restrictive to the flow of exhaust gases under positive pressure as 1 foot (305mm) of horizontal pipe.
- A foot of horizontal pipe is twice as restrictive as a foot of vertical pipe.




**Figure 16.2**

**Example 1:** If the equivalent length of pipe is 23 feet (7m) with altitude of 8,000 feet (2438m) you must use 4 inch (102mm) diameter type “L” or “PL” vent.

**Example 2:** If the equivalent length of pipe is 12 feet (3.7m) with altitude of 6,000 feet (1829m) you may use 3 or 4 inch (76 to 102mm) diameter type “L” or “PL” vent.

**⚠ WARNING**



**Risk of Fire!**

- Only LISTED venting components may be used.
- NO OTHER vent components may be used.
- Substitute or damaged vent components may impair safe operation.

**⚠ WARNING**

**RISK OF INJURY OR PROPERTY DAMAGE!**

- Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage.
- Refer to the owner’s information manual provided with this appliance.
- For assistance or additional information consult a qualified installer, service agency or your dealer.

# 5 Venting Systems

## A. Through The Wall

Horizontal termination cap must be a minimum of 6 inches (152mm) from the wall. Approved for mobile home installations. Must use 3 or 4 inch (76-102mm) "L" or "PL" Listed pellet venting or Listed double wall pipe and a Quadra-Fire Outside Air Kit in mobile homes.

**NOTE:** In Canada, where passage through a wall or partition of combustible construction is desired, the installation shall conform to CAN/CSA-B365

### Straight Out

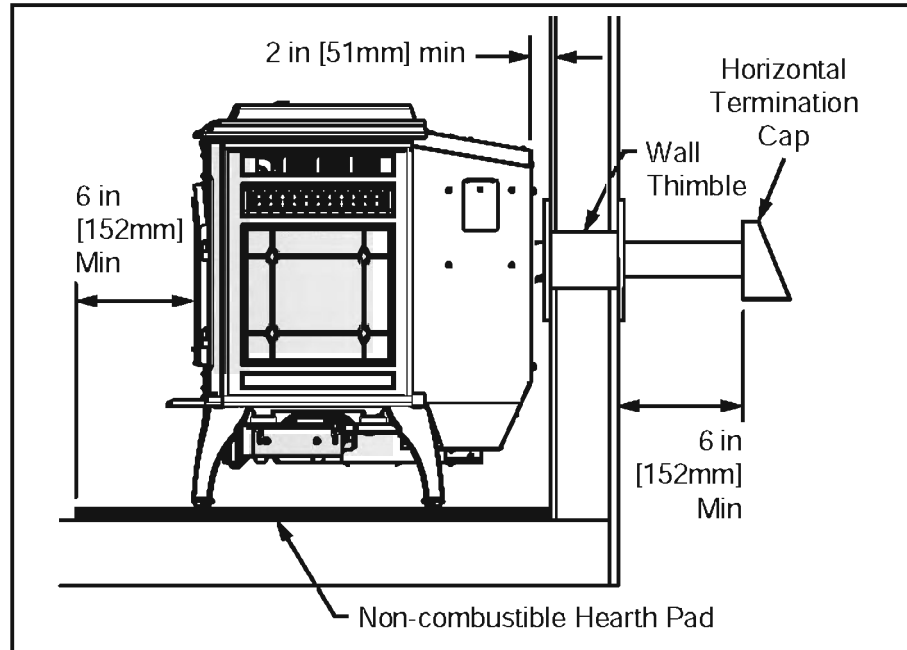


Figure 17.1

### 45 Degree

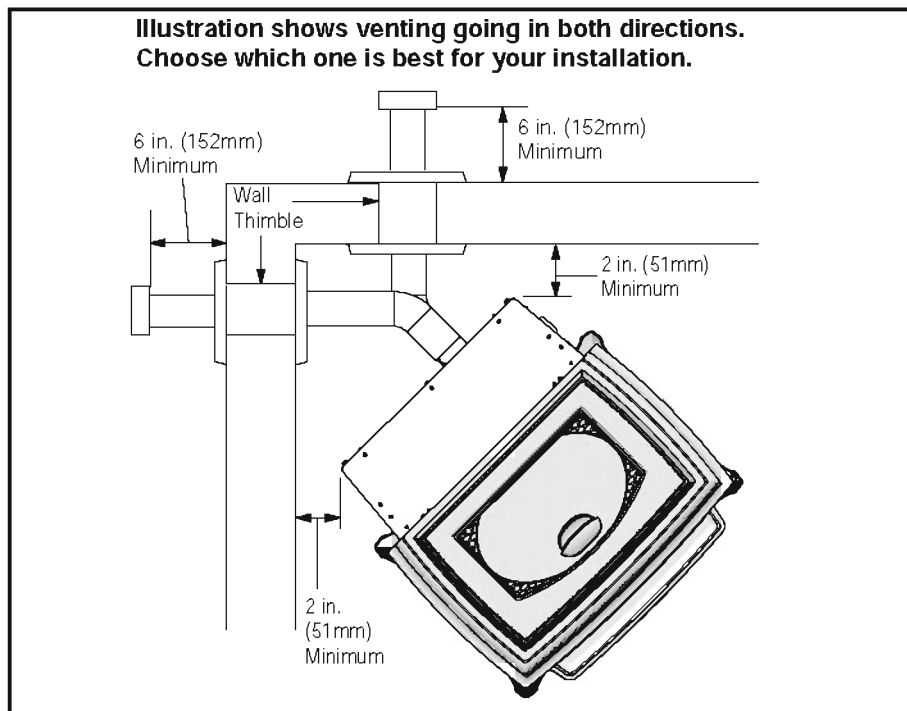
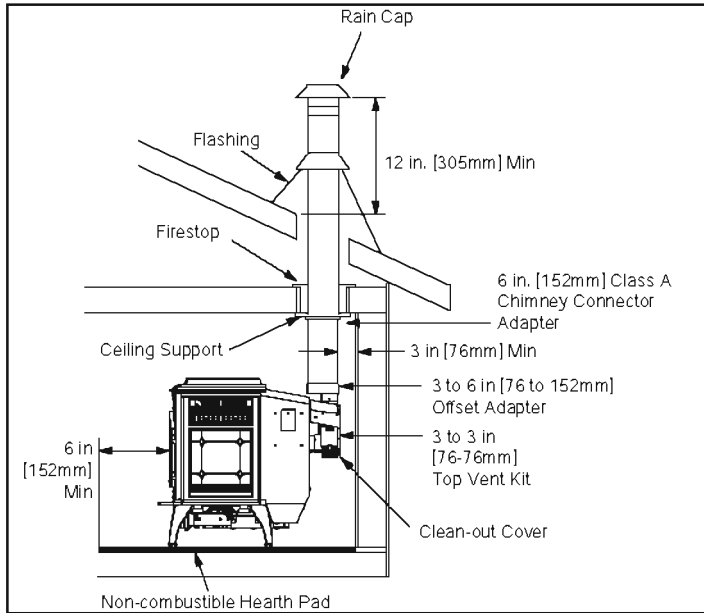


Figure 17.2

**B. Vertical into Existing Class A Chimney**



We recommend a minimum of 60 inches (1524mm) vertical, however above the eave is preferred.

All three installations are approved for mobile home installations. Must use 3 or 4 inch (76 to 102mm) "L" or "PL" Listed pellet venting or Listed double wall pipe and Quadra-Fire Outside Air Kit in mobile homes. Single wall pipe is approved for residential installations only.

\*NOTE: Clearance to combustibles are for standard pellet pipe. If pellet pipe manufacturer allows reduced clearances to their pipe, reduced clearances are allowed.

**NOTE:**

**A chimney connector shall not pass through an attic or roof space, closet or similar concealed space, or a floor or ceiling.**

Figure 18.1

**C. Through The Wall & Vertical - Exterior**

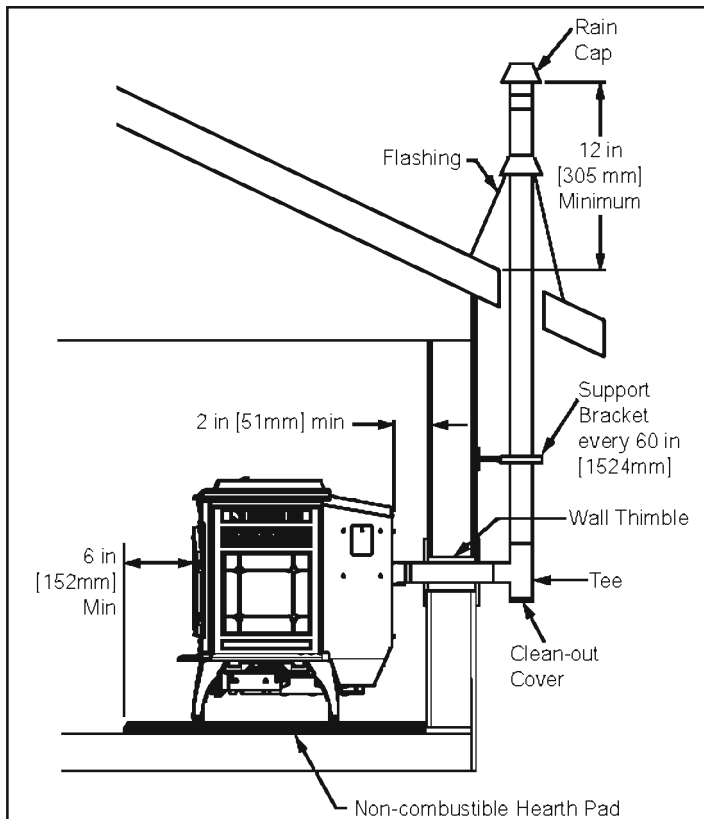


Figure 18.2

**D. Vertical - Interior - Typical Installation**

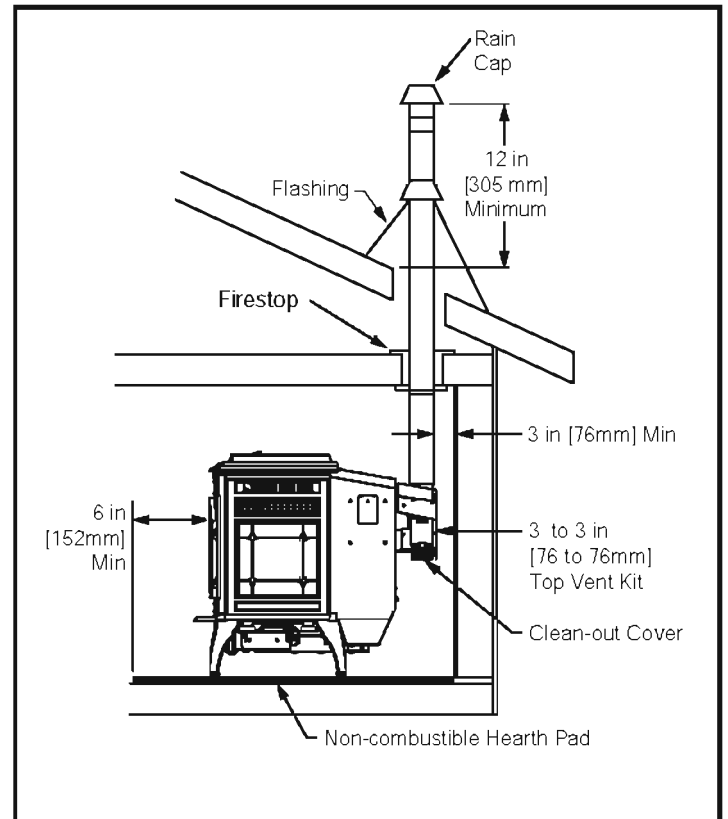


Figure 18.3

E. Masonry

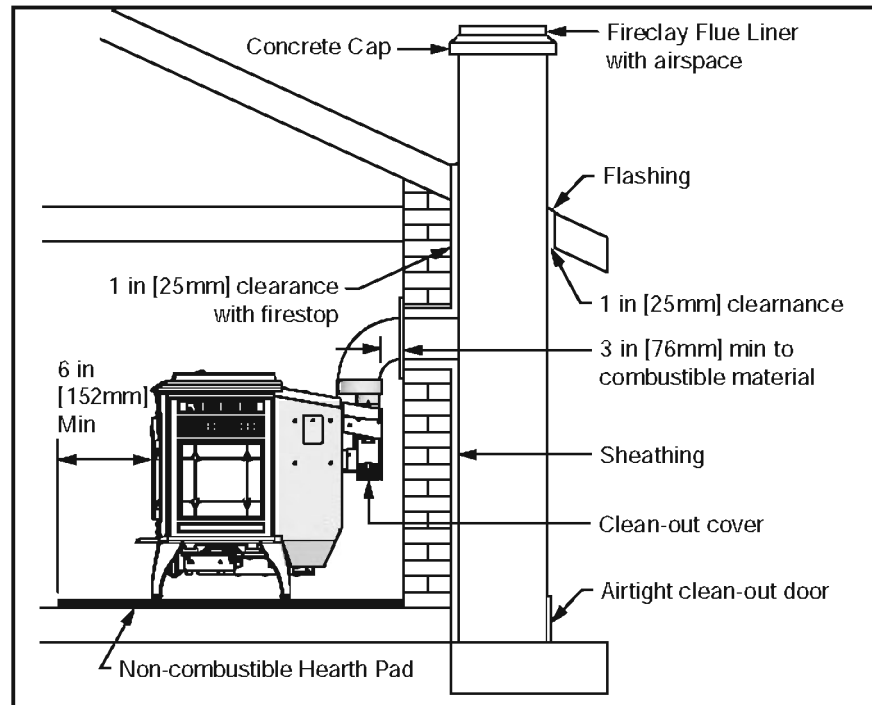


Figure 19.1

F. Alternate Masonry

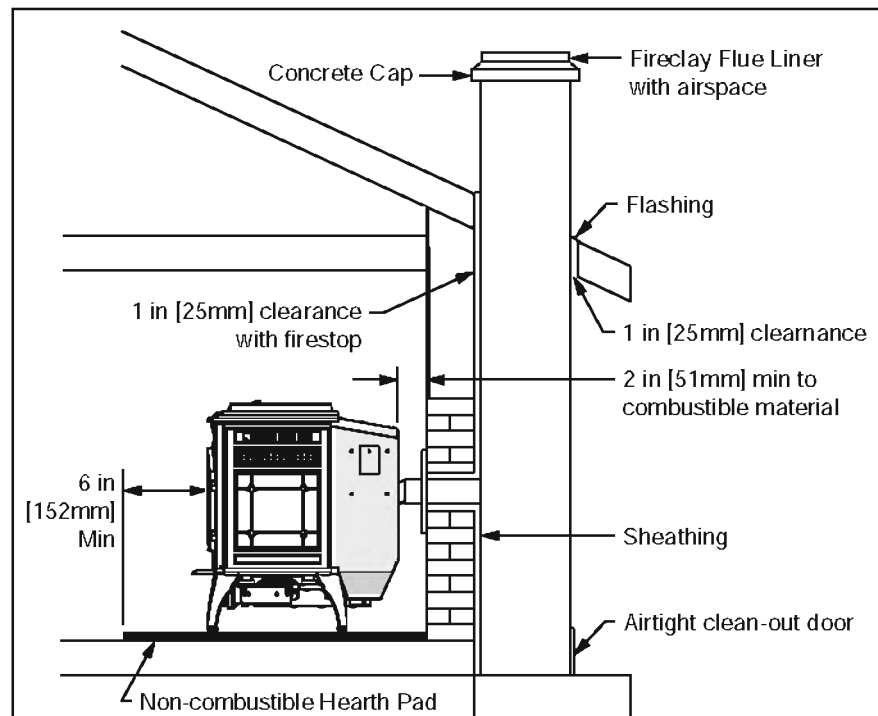


Figure 19.2

<b>WARNING</b>	
	<p><b>Fire Risk.</b>                  Inspection of Chimney:</p> <ul style="list-style-type: none"> <li>• Masonry chimney must be in good condition.</li> <li>• Meets minimum standard of NFPA 211</li> <li>• Factory-built chimney must be a minimum 6 inch (152mm) UL103 HT.</li> </ul>

# 6 Appliance Set-Up

## A. Leg Leveling System

1. Thread Allen bolts through nuts until flush. **Figure 20.1.**  
The Allen bolts and nuts are included in the component pack inside the appliance firebox.
2. Slide assembled nuts and bolts into slots on legs with the nuts on the bottom. **Figure 20.2.** Use a 5/32 in. (3.96mm) Allen wrench to adjust legs up and down to desired level. **Figure 20.3.**

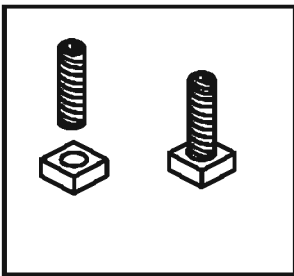


Figure 20.1

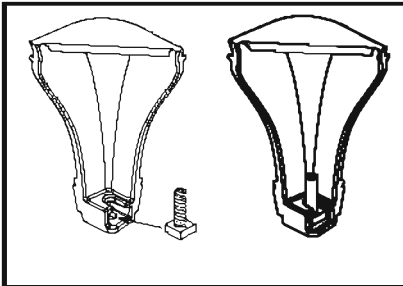


Figure 20.2

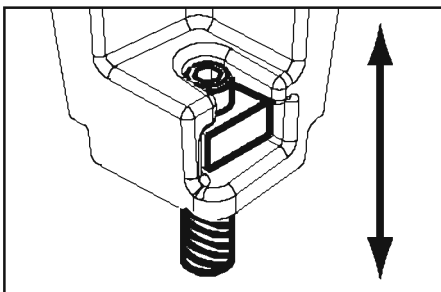


Figure 20.3 - Bolt fully extended

## B. Outside Air Kit Instructions

<b>CAUTION</b>
<p>Never draw outside combustion air from:</p> <ul style="list-style-type: none"> <li>• Wall, floor or ceiling cavity</li> <li>• Enclosed space such as an attic or garage</li> </ul>

**Included in Kit:** 2 wire ties, 1 collar assembly, 1 termination cap assembly, 1 trim ring, fasteners.

**NOTE: 3 INCH ALUMINUM FLEX PIPE NOT INCLUDED.**

**Tools Needed:** Phillips head screw driver; wire cutters hole saw or jig saw.

1. Measure distance from floor to air vent opening in appliance and mark location on wall.  
Use saw to cut opening in wall. Cut a 3-1/2 to 4 inch (89-102mm) opening on inside wall and a 4 to 4-1/2 inch (102-114mm) opening on outside of house.
2. Use wire tie to secure flex pipe to collar assembly.
3. Slide trim ring over flex pipe and run pipe through wall.
4. Attach flex pipe (not supplied) to outside termination cap with second wire tie.
5. Secure termination cap to outside surface.
6. Secure trim ring to interior wall.

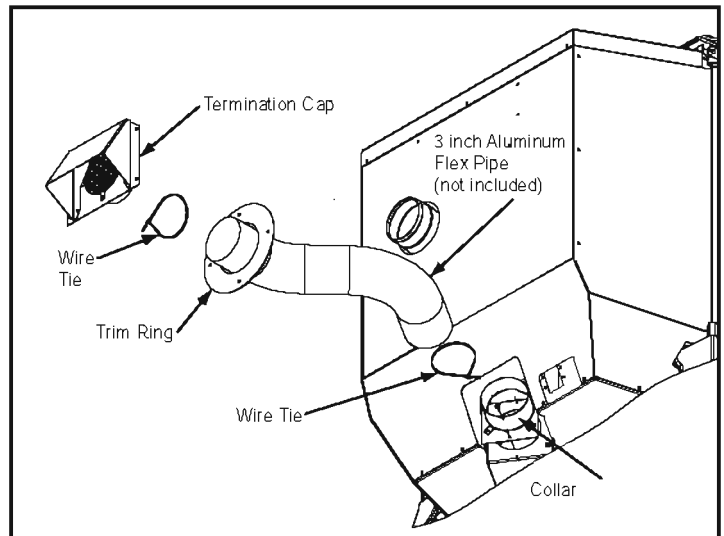


Figure 20.4 - OAK exploded view



### C. Top Vent Adapter Installation

3 to 3 inch (76-76mm) Top Vent Adapter  
 3 to 6 inch (76-152mm) Top Vent Offset Adapter

#### Installing the Top Vent Adapter

1. Put a layer of high temperature silicone on the 3 inch (76mm) exhaust outlet. **Do not put silicone inside of pipe. Figure 21.1.**
2. Slide the top vent adapter onto the rear exhaust outlet and adjust the assembly to a vertical position until the top of the flue outlet is centered and is in a level position. **Figure 21.1.**
3. Align slot on left of adapter with hole in the back of the appliance and secure with screw. You may drill out the hole using #26 drill bit provided but only if needed. **Figure 21.2.**
4. Install the 5 mounting screws, 3 on the left and 2 on the right.
5. Drill 2 holes with #26 drill bit through the rear exhaust outlet using the 2 holes already in the short horizontal pipe in the top vent adapter as a guide. Install the screws.
6. Install the vent pipe into the top vent adapter (be sure to silicone all joints). To use an existing 6 inch (152mm) vent system, install the 3 to 6 in (76-152mm) offset adapter before installing vent pipe.
7. To clean top vent adapter, open clean-out cover and remove any debris build-up. **Figure 21.2.**

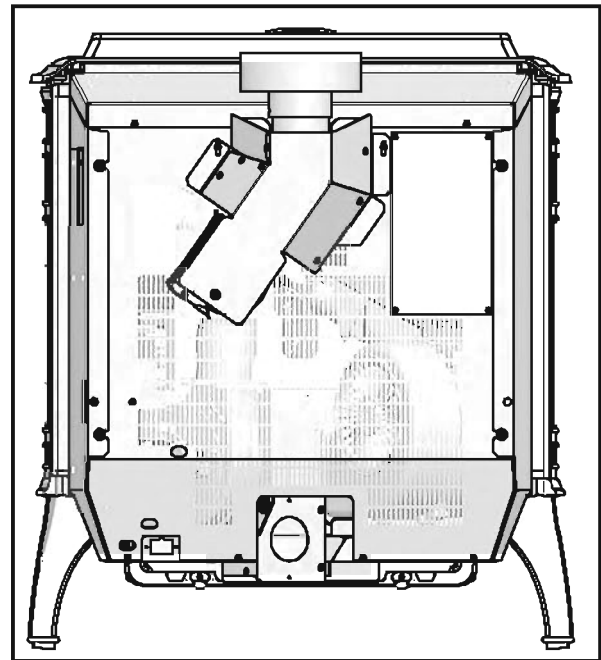


Figure 21.2

### D. Rear Vent & Rear Vent to Top Vent Adapter Installation

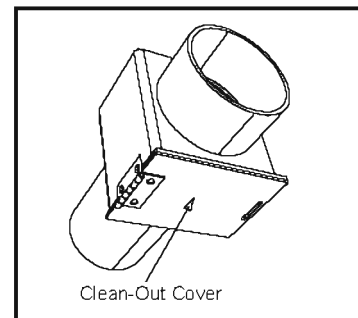


Figure 21.3 - Rear Vent Adapter

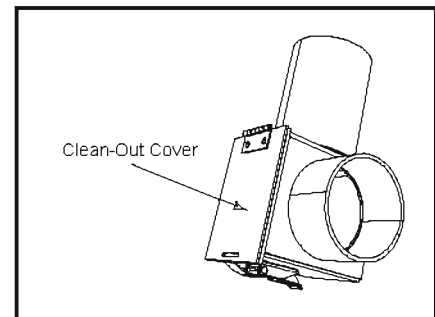


Figure 21.4 - Rear to Top Vent Adapter - 90°

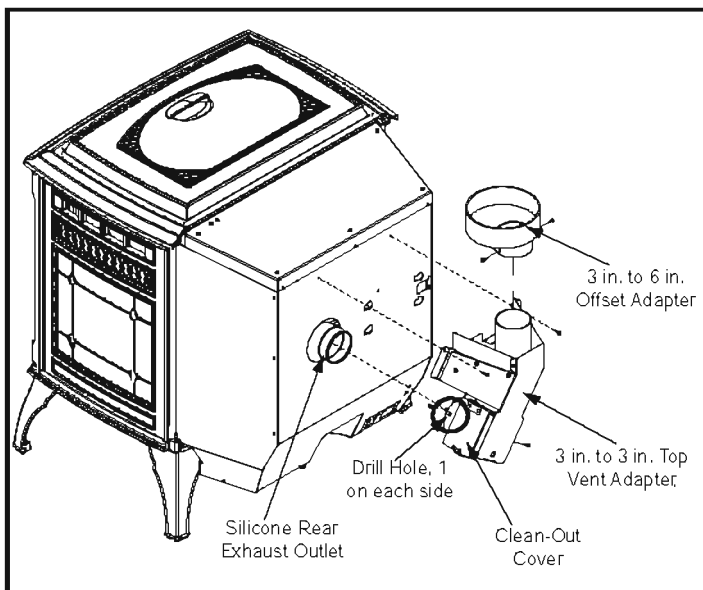


Figure 21.1

1. Put a layer of high temperature silicone on the 3 inch (76mm) exhaust outlet. **Do not put silicone inside of pipe. Figure 21.1.**
2. Slide the adapter onto the rear exhaust outlet and adjust the assembly to the appropriate position.
3. Install the vent pipe into the adapter (be sure to silicone all joints)

### E. Optional Log Set Placement Instructions 2 PIECE LOG SET INSTALLATION

1. Place the left log as shown. There are 2 indentations in the bottom of the log to fit over the screw heads in the firebox. **Figures 22.1 and 22.2.**
2. Place the right log in front of the 2 screw heads in the firebox. **Figures 22.3 and 22.4.**

#### CAUTION

Logs are FRAGILE. Use extreme care when handling or cleaning logs.

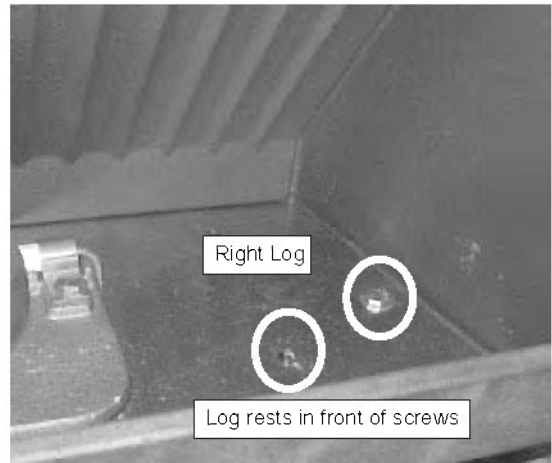


Figure 22.3

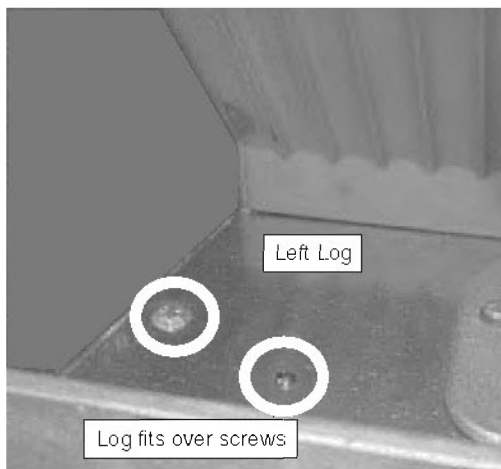


Figure 22.1



Figure 22.4



Figure 22.2

#### NOTICE:

Due to the abrasive nature of a pellet appliance fire, the logs are not covered under warranty. Any placement variation other than shown here can cause excessive heat and shall void the appliance warranty.

## F. Programmable Wall Thermostat Installation

The appliance comes standard with a wall thermostat and 25' of wire. If you need to run more than 25' make sure you use a continuous strand of 18 to 22 gauge thermostat wire. For optimum performance your thermostat should be located on an inside wall approximately 5' up from the floor.

### How to Install Your Programmable Wall Thermostat

1. Separate the body of the thermostat from the mounting plate by gently pulling the two pieces apart
2. Connect your thermostat wire to the W and R terminals (see figure below)
3. Screw the backer plate to the wall using the hardware included
4. Snap the thermostat to the backer plate
5. Connect the wires to the 2 center screws on the terminal block on the back of the product

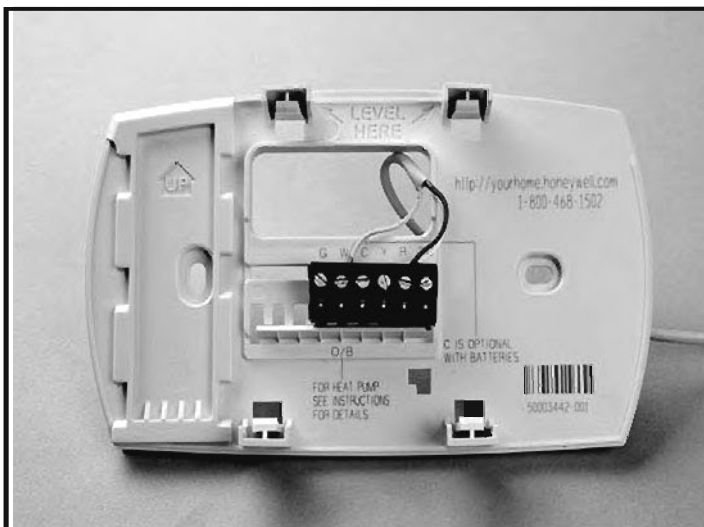


Figure 23.1

There is a 4 screw terminal block located on the back lower left corner of the appliance directly above the power cord inlet. The center 2 screws are for the thermostat wires.

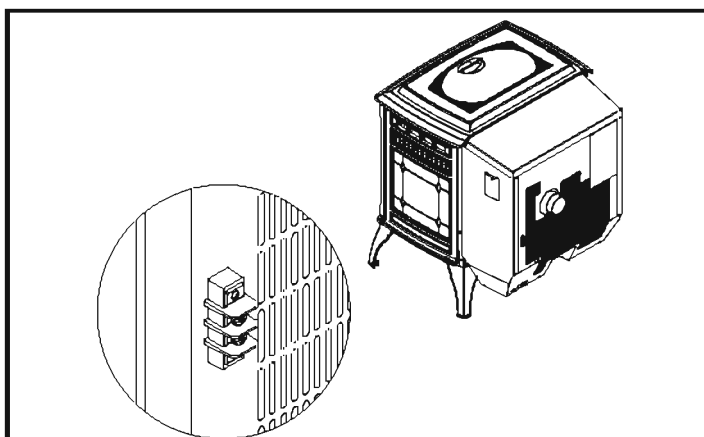


Figure 23.2

### Programming Thermostat

The thermostat maintains a desired room temperature. The 5-2 day programmable function allows one program for week days and a separate program for Saturday/Sunday. (Up to 4 periods per day).

### Thermostat Controls

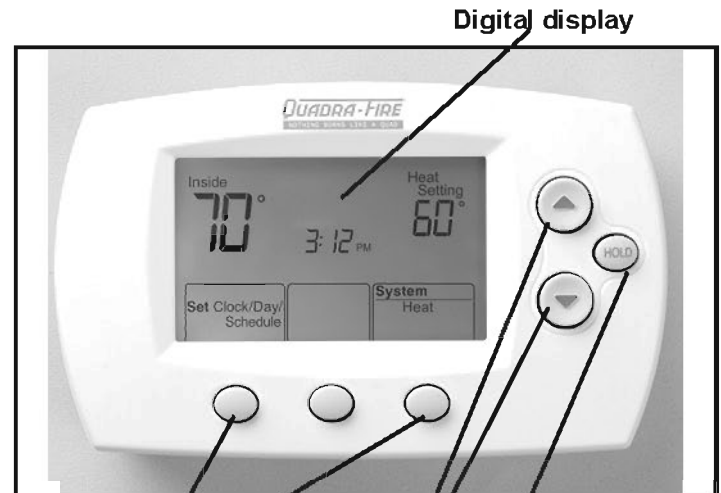


Figure 23.3

#### Function buttons

Press to select the function displayed just above each button. (Functions change depending on the task.)

#### Temperature buttons

Press up or down to set preferred temperature.

#### Hold Button

Press to override programmed temperature control

**Saturday and Sunday can be programmed individually by changing the format from 5-2 to 5-1-1. To change the format :**

1. Press and hold the up button and the center button until the display changes.
2. Press up or down to change system function number to 16.
3. Press **NEXT** to advance to next function.
4. Press up or down to change status number to 1.
5. Press **DONE** to exit and save settings.

**Program Schedule**

Pre-set settings are shown below.

You can program 4 time periods each day, with different settings for weekdays and weekends.

**Wake-** Set to time and temperature you want in the morning until you leave for the day.

**Leave-** Set the time and temperature you want the heat output reduced to during the day.

**Return-** Set the time and temperature to what you want the heat output increased to in the evening.

**Sleep –** Set the time and temperature to what you want for overnight.

Heat	
Wake (6:00 am)	70° F
Leave (8:00 am)	62° F
Return (6:00 pm)	70° F
Sleep (10:00 pm)	62° F

**To Adjust Program Schedules**

1. Press **SET CLOCK/DAY/SCHEDULE**, then **SET SCHEDULE**.
2. Press **▲ / ▼** to set your weekday wake time (Mon-Fri), then press **NEXT**.
3. Press **▲ / ▼** to set the temperature for this time period, then press **NEXT**.
4. Set time and temperature for the next time period (Leave). Repeat steps 2 and 3 for each weekday time period.
5. Press **NEXT** to set weekend time periods (Sat-Sun), then press **DONE** to save & exit.

**NOTE:** You can press **CANCEL PERIOD** to eliminate unwanted time periods (except Wake).

**Program Schedule Override (temporary)**

Press **▲** or **▼** to immediately adjust the temperature. This will temporarily override the temperature setting for the current time period.

The new temperature will be maintained only until the next programmed time period begins. For example, if you want to turn up the heat early in the morning, it will automatically be lowered later, when you leave for the day.

To cancel the temporary setting at any time, press **RUN SCHEDULE**.

**Program Schedule Override (permanent)**

Press **HOLD** to permanently adjust the temperature. This will override the temperature settings for all time periods. The “Hold” feature turns off the program schedule and allows you to adjust the thermostat manually, as needed. Whatever temperature you set will be maintained 24 hours a day, until you manually change it, or press **RUN SCHEDULE** to cancel “Hold” and resume the programmed schedule.

**Battery Installation and Replacement**

**NOTE:** 2 AA batteries are included with the thermostat and must be installed before the appliance can be operated.



Figure 24.1

Install fresh batteries immediately when the **REPLACE BATTERY** warning begins flashing. The warning flashes about two months before the batteries are depleted.

Even if the warning does not appear, you should replace batteries once a year.

If batteries are inserted within two minutes, the time and day will not have to be reset. All other settings are permanently stored in memory.

**G. Power Cord**

1. Prior to installing the power cord, turn the dial control “OFF”.
2. Make sure the wall receptacle has 120vac output. **NOTE:** Using a circuit protector can protect the appliance circuits from power surges.
3. The appliance receptacle is located on its lower, back right hand corner. Install the cord to wall and appliance reception.
4. Refer to owner’s manual for appliance operation.

<b>⚠ CAUTION</b>	
	<p><b>Shock hazard.</b></p> <ul style="list-style-type: none"> <li>• Do NOT remove grounding prong from plug.</li> <li>• Plug directly into properly grounded 3 prong receptacle.</li> <li>• Route cord away from appliance.</li> <li>• Do NOT route cord under or in front of appliance.</li> </ul>

## H. Trim Adjustment (Factory default setting is -2)

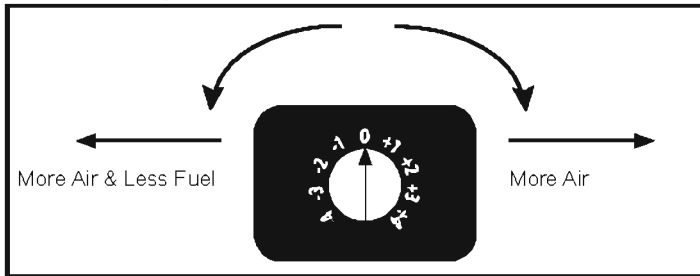


Figure 25.1

The small dial located below the main dial control is used to adjust the amount of fuel and combustion air used for efficient clean burning. Adjusting the trim along with proper cleaning of the fire pot and heat exchanger will help achieve maximum performance of your Mt Vernon E2 Appliance.

Your appliance may need to be adjusted based on any or all of the following:

- Elevation (3000 feet above Sea Level or Higher)
- Venting/Installation Configurations (installations with greater than 4' horizontal or more than two 90 degree elbows)
- Fuel Quality (lower BTU fuels or fuels with high ash content)
- Fuel Type (hardwood, softwood, lower BTU fuels)
- Appliances not properly adjusted will:
- Require more frequent cleanings
- Result in nuisance shut downs and/or missed ignitions
- Waste fuel

Consult your Quadra-Fire Dealer with specific questions regarding proper adjustments for maximum performance.

### Where to Start:

#### If Burning Hardwood Pellet Fuel

QuadraFire recommends setting the appliance at a -4 trim setting as a start. From our testing, hardwood fuels burn well between -4 and -2 settings.

#### If Burning Lower BTU Pellet Fuel, Utility Pellet Fuel, or High Ash Pellet Fuel

QuadraFire recommends setting the appliance and leaving at a -4 trim setting. From our testing, lower BTU fuels result in large clinkers in the bottom of the fire pot during normal operation. Using this type of fuel will increase the recommended fire pot cleaning interval.

#### If Burning Softwood Pellet Fuel

QuadraFire recommends starting at a -2 trim setting and adjusting based on installation configurations. From our testing, softwood fuels burn well at a variety of settings.

#### If Elevation is 3000 feet above Sea Level or Higher

When burning at higher elevations you will need more air for the fire to burn properly. QuadraFire recommends starting with a Trim Setting of -3. From our testing, appliances at higher elevations burn best at settings -4, -3, +3, and +4. Review fuel types and installation configurations for choosing the right setting.

#### If appliance has long horizontal venting sections or more than two 90 degree Elbows

QuadraFire recommends starting at a -4 trim setting and making adjustments based on fuel type and elevation. From our testing, we have found that -4, -3, +3, or +4 have worked well depending on fuels.

Indicators that Trim Adjustment is needed:

1. The flame appears lazy
2. Smoke can be seen in the firebox after start up during normal burn
3. Excessive build up of clinkers taller than a 1/2" in the bottom of the fire pot
4. The fire goes out when in normal operating mode

# 7 Mobile Home Installation

You must use a Quadra-Fire Outside Air Kit for installation in a mobile home.

1. An outside air inlet must be provided for the combustion air and must remain clear of leaves, debris, ice and/or snow. It must be unrestricted while the appliance is in use to prevent room air starvation which causes smoke spillage. Smoke spillage can also set off smoke alarms.
2. The combustion air duct system must be made of metal. It must permit zero clearance to combustible construction and prevent material from dropping into the inlet or into the area beneath the dwelling and contain a rodent screen.
3. The appliance must be secured to the mobile home structure by bolting it to the floor (using lag bolts). Use the same holes that secured the appliance to the shipping pallet.
4. The appliance must be grounded with #8 solid copper grounding wire or equivalent, terminated at each end with an NEC approved grounding device.
5. Refer to Clearances to Combustibles and floor protection requirements on page 8 for listings to combustibles and appropriate chimney systems.
6. Use silicone to create an effective vapor barrier at the location where the chimney or other component penetrates to the exterior of the structure.
7. Follow the chimney manufacturer's instructions when installing the vent system for use in a mobile home.
8. Installation shall be in accordance with the Manufacturers Home & Safety Standard (HUD) CFR 3280, Part 24.

Part Number: OAK-3

<b>CAUTION</b>
Never draw outside combustion air from: <ul style="list-style-type: none"> <li>• Wall, floor or ceiling cavity</li> <li>• Enclosed space such as an attic or garage</li> </ul>

<b>WARNING</b>
<p><b>It is critical to have a working smoke detector installed in the home of appliance operation.</b></p> <ul style="list-style-type: none"> <li>• Smoke alarms that are properly installed and maintained play a vital role in reducing fire deaths and injuries. Having a working smoke alarm reduces the chance of fire related injuries..</li> </ul>

<b>CAUTION</b>
<p>THE STRUCTURAL INTEGRITY OF THE MOBILE HOME FLOOR, WALL AND CEILING/ROOF MUST BE MAINTAINED</p> <p>Do NOT cut through:</p> <ul style="list-style-type: none"> <li>• Floor joist, wall, studs or ceiling trusses.</li> <li>• Any supporting material that would affect the structural integrity.</li> </ul> <p>This appliance is to be connected to a factory-built chimney conforming to CAN/ULC-S629, Standard for 650°C Factory-Built Chimneys.</p> <p>For removal of the chimney for mobile home transportation, contact the proper transportation officials.</p>

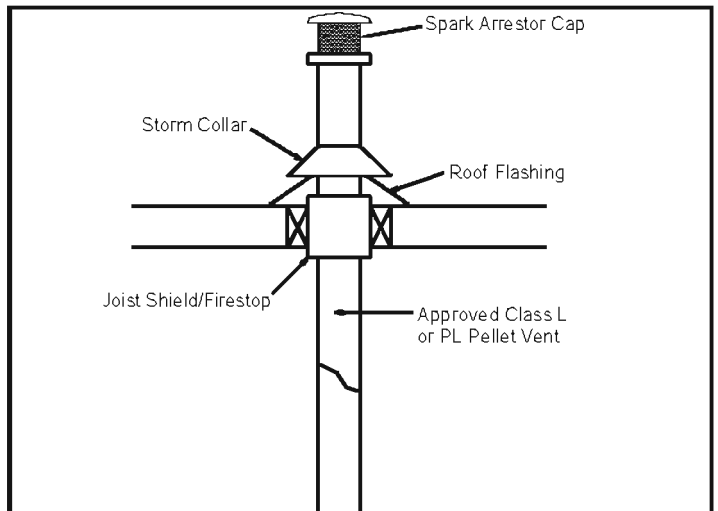


Figure 26.1

<b>WARNING</b>
<p>Products of combustion generate carbon monoxide and different fuels generate different levels. Carbon monoxide</p> <ul style="list-style-type: none"> <li>• Only use approved fuels in this appliance.</li> <li>• Always keep door shut during operation. Operating this appliance with doors open can allow CO to leak into the home.</li> </ul> <p>CO can kill you before you are aware it is in your home. At lower levels of exposure, CO causes mild effects that are often mistaken for the flu. These symptoms include headaches, dizziness, disorientation, nausea and fatigue. The effects of CO exposure can vary greatly from person to person depending on age, overall health and the concentration and length of exposure.</p>

<b>WARNING</b>
NEVER INSTALL IN A SLEEPING ROOM.

# 8 Accessory List

ACCESSORIES				
	Collar, Offset, Top Vent		812-3570	
	Damper, 3 Inch - Tall Vertical Installs Only		PEL-DAMP3	Y
	Damper, 4 Inch - Tall Vertical Installs Only		PEL-DAMP4	
	Firescreen	<b>No Longer Available</b>	SCR-7005	
	Log Set, (Sold as Set only)	2 Pc	LOGS-60-AE-B	
	Outside Air Kit		OAK-3	
	Top Vent Adapter		TPVNT-3	
	Warming Shelves	<b>No Longer Available</b>	844-9780	
		Porcelain Black	WSLG-PBK	
		Porcelain Dark Blue	WSLG-PDB	
		Porcelain Frost	WSLG-PFT	
		<b>No Longer Available</b>	844-9810	
		Sienna Bronze	WSLG-CSB	



**CONTACT INFORMATION**

Hearth & Home Technologies  
352 Mountain House Road  
Halifax, PA 17032  
Division of HNI INDUSTRIES

Please contact your Quadra-Fire dealer with any questions or concerns.  
For the number of your nearest Quadra-Fire dealer  
log onto [www.quadrafire.com](http://www.quadrafire.com)

**CAUTION**



**DO NOT DISCARD THIS MANUAL**

Important operating and maintenance instructions included.

• Read, understand and follow these instructions for safe installation and operation.

• Leave this manual with party responsible for use and operation.



**We recommend that you record the following pertinent information for your heating appliance.**

Date purchased/installed: \_\_\_\_\_

Serial Number: \_\_\_\_\_ Location on appliance: \_\_\_\_\_

Dealership purchased from: \_\_\_\_\_ Dealer phone: 1( ) -

Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

This product may be covered by one or more of the following patents: (United States) 5341794, 5263471, 6688302, 7216645, 7047962 or other U.S. and foreign patents pending.





# Owner's Manual

## Operation & Care

**INSTALLER:** Leave this manual with party responsible for use and operation.

**OWNER:** Retain this manual for future reference.

Contact your dealer with questions regarding installation, operation or service.


**NOTICE: DO NOT DISCARD THIS MANUAL**


# QUADRA-FIRE

MT. VERNON E2 PELLET STOVE

Model(s):


**MTV-E2-CSB-C      MTV-E2-MBK-C**  
**MTV-E2-PFT-C      MTV-E2-PDB-C**  
**MTV-E2-PBK-C      MTV-E2-PMH-C**



 Pellet Fuels Institute

Trade and Licensees in the USA  
OMNI Technologies Inc.  
061-S-83-2


**WARNING**



Please read this entire manual before use of this pellet fuel-burning room heater. Failure to follow these instructions could result in property damage, bodily injury, or death.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- Do NOT burn garbage or flammable fluids such as gasoline, naphtha, or engine oil in room heater.
- Do not over fire - If heater or chimney connector glows, you are over firing. Over firing will void your warranty.
- Comply with all minimum clearances to combustibles as specified. Failure to comply may cause house fire.

**WARNING**



**HOT SURFACES!**  
Glass and other surfaces are hot during operation AND cool down.

**Hot glass will cause burns.**

- Do not touch glass until it is cooled
- NEVER allow children to touch glass
- Keep children away
- CAREFULLY SUPERVISE children in same room as fireplace.
- Alert children and adults to hazards of high temperatures
- **High temperatures may ignite clothing or other flammable materials.**
- Keep clothing, furniture, draperies and other flammable materials away.

**CAUTION**

Tested and approved for wood pellets only. Burning of any other type of fuel voids your warranty.

**NOTE**

To obtain a French translation of this manual, please contact your dealer or visit [www.quadrafire.com](http://www.quadrafire.com)  
Pour obtenir une traduction française de ce manuel, s'il vous plaît contacter votre revendeur ou visitez [www.quadrafire.com](http://www.quadrafire.com)

Installation and service of this appliance should be performed by qualified personnel. Hearth & Home Technologies recommends HHT Factory Trained or NFI certified professionals.

 **hearthED**  
FACTORY TRAINING  
Fuel Your Fire

 **NFI** NATIONAL  
FIREPLACE  
INSTITUTE<sup>®</sup>  
A CERTIFICATION AGENCY

**CAUTION**

Check building codes prior to installation.

- Installation MUST comply with local, regional, state and national codes and regulations.
- Consult local building, fire officials or authorities having jurisdiction about restrictions, installation inspection, and permits.

# Congratulations

and Welcome to the Quadra-Fire Family!

**NOTE: Clearances may only be reduced by means approved by the regulatory authority having jurisdiction**

**A. Sample of Serial Number / Safety Label**

LOCATION: Back of Stove

**Test Lab & Report No.**

**Model Name**

**CAUTION: HOT WHILE IN OPERATION**  
**CHILDREN, CLOTHING AND FURNITURE AWAY.**  
**CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.**

**ATTENTION: CHAUD LORS DE L'OPERATION. NE PAS TOUCHER. GARDEZ LES ENFANTS ET LES VÊTEMENTS LOIN DE L'ESPACE DÉSIGNÉ DE L'INSTALLATION. LE CONTACT PEUT CAUSER DES BRÛLURES À LA PEAU. VOIR L'ÉTIQUETTE ET LES INSTRUCTIONS.**

Report: 061-S83-2

**QUADRA-FIRE**

Mt Vernon E2 Pellet Stove

Serial No. / N° de série

HF

BARCODE LABEL

**Serial No.**

**PREVENT HOUSE FIRES / PRÉVENIR DES FEUX DE MAISON**  
 Install and use only in accordance with manufacturer's installation and operating instructions. Contact local building or fire officials about restrictions and inspection in your area.

**WARNING - FOR MOBILE HOMES:** Do not install appliance in a sleeping room. An outside combustion air inlet must be provided. The structural integrity of the home floor, ceiling and walls must be maintained. Do not install in a combustible wall or ceiling. Inspect and clean vent system regularly in accordance with manufacturer's instructions. DO NOT COVER THIS LABEL WITH SERVING ANOTHER APPLIANCE. Use a 3 or 4 diameter hole for venting system.

Installez et utilisez en accord avec les instructions d'installation et d'opération du fabricant. Contactez le bureau des permis et le bureau des incendies au sujet des restrictions et des inspections dans votre zone.

**ATTENTION - MAISONS MOBILES:** Ne pas installer dans une chambre à coucher. Un apport d'air de combustion extérieur doit être installé et ne doit pas être obstrué lorsque l'appareil est en usage. La structure intégrale du plancher, du plafond et des murs doit être maintenue. Inspectez et nettoyez régulièrement le système de cheminée en fonction des instructions du fabricant. NE PAS COUVRIR CE BOUTON AVEC UN AUTRE APPAREIL. Utilisez un trou de diamètre de 3 ou 4 pour le système de ventilation.

**MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS**  
**ESPACES LIBRES MINIMUM DES MATÉRIEAUX**

A	Back Wall / Mur Arrière	2 in [51 mm]
B	Side Wall / Mur De Côté	6 in [152 mm]
C	"L" or "PL" Pipe to Back Wall / "L" ou "PL" Un Tuyau Mur Arrière	1 in [25 mm]
D	Side Wall / Mur De Côté	2 in [51 mm]

**FLOOR PROTECTION / PROTECTION DU SOL**

USA	Floor protector must be non-combustible material, extending beneath heater and to the front of hearth as indicated. Measure front distance (1) from the surface of the glass door.	*Non-combustible floor protection must extend 2 inches (51mm) beneath the flue pipe when installed with horizontal venting or under the Top Vent Adapter with vertical installation. RECOMMENDED IN USA; REQUIRED IN CANADA.
G	2 in	
H*	2 in	
I	6 in	
CANADA		*Un protecteur incombustible de plancher doit s'étendre 2 inches (51mm) sous le conduit de cheminée pour une installation de ventilation horizontale ou sous un adaptateur de ventilation de dessus pour une installation verticale. RECOMMANDÉ AUX ÉTATS-UNIS; NECESSAIRE AU CANADA.
G	200 mm	
H*	200 mm	
I	450 mm	

**Owner's Manual**

Warranty Manual per

**HEARTHSTONE**

352 Main Street, Hazleton, PA 17802  
 www.hearthstone.com

**Install Manual**

U.S. ENVIRONMENTAL PROTECTION AGENCY  
 Complies with EPA Part 61 2015 particulate matter standards and 61.05 g/d EPA Method 6  
 26 and 5G. Not approved to resale after May 15, 2020  
**DO NOT REMOVE THIS LABEL / NE PAS ENLEVER L'ÉTIQUETTE**

**Mfg. Date**

2017	2018	2019	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Made in U.S.A. of U.S. and imported parts.  
 Fabriqué aux États-Unis d'Amérique, par des pièces d'origine américaine et importées.

7080-133\_R3



**Safety Alert Key:**

- **DANGER!** Indicates a hazardous situation which, if not avoided will result in death or serious injury.
- **WARNING!** Indicates a hazardous situation which, if not avoided could result in death or serious injury.
- **CAUTION!** Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE:** Indicates practices which may cause damage to the appliance or to property.

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B. Warranty Policy

**Hearth & Home Technologies  
LIMITED LIFETIME WARRANTY**

Hearth & Home Technologies, on behalf of its hearth brands (“HHT”), extends the following warranty for HHT gas, wood, pellet, coal and electric hearth appliances that are purchased from an HHT authorized dealer.

**WARRANTY COVERAGE:**

HHT warrants to the original owner of the HHT appliance at the site of installation, and to any transferee taking ownership of the appliance at the site of installation within two years following the date of original purchase, that the HHT appliance will be free from defects in materials and workmanship at the time of manufacture. After installation, if covered components manufactured by HHT are found to be defective in materials or workmanship during the applicable warranty period, HHT will, at its option, repair or replace the covered components. HHT, at its own discretion, may fully discharge all of its obligations under such warranties by replacing the product itself or refunding the verified purchase price of the product itself. The maximum amount recoverable under this warranty is limited to the purchase price of the product. This warranty is subject to conditions, exclusions and limitations as described below.

**WARRANTY PERIOD:**

Warranty coverage begins on the date of original purchase. In the case of new home construction, warranty coverage begins on the date of first occupancy of the dwelling or six months after the sale of the product by an independent, authorized HHT dealer/ distributor, whichever occurs earlier. The warranty shall commence no later than 24 months following the date of product shipment from HHT, regardless of the installation or occupancy date. The warranty period for parts and labor for covered components is produced in the following table.

The term “Limited Lifetime” in the table below is defined as: 20 years from the beginning date of warranty coverage for gas appliances, and 10 years from the beginning date of warranty coverage for wood, pellet, and coal appliances. These time periods reflect the minimum expected useful lives of the designated components under normal operating conditions.

Warranty Period		HHT Manufactured Appliances and Venting							Components Covered
Parts	Labor	Gas	Wood	Pellet	EPA Wood	Coal	Electric	Venting	
1 Year		X	X	X	X	X	X	X	All parts and material except as covered by Conditions, Exclusions, and Limitations listed
2 years				X	X	X			Igniters, electronic components, and glass
		X	X	X	X	X			Factory-installed blowers
		X		X					Molded refractory panels Ignition Modules
3 years				X					Firepots and burnpots
5 years	1 year			X	X				Castings and baffles
7 years	3 years		X	X	X				Manifold tubes, HHT chimney and termination
10 years	1 year	X							Burners, logs and refractory
Limited Lifetime	3 years	X	X	X	X	X			Firebox and heat exchanger
90 Days		X	X	X	X	X	X	X	All replacement parts beyond warranty period

See conditions exclusions and limitations on next page

**WARRANTY CONDITIONS:**

- This warranty only covers HHT appliances that are purchased through an HHT authorized dealer or distributor. A list of HHT authorized dealers is available on the HHT branded websites.
- This warranty is only valid while the HHT appliance remains at the site of original installation.
- This warranty is only valid in the country in which the HHT authorized dealer or distributor that sold the appliance resides.
- Contact your installing dealer for warranty service. If the installing dealer is unable to provide necessary parts, contact the nearest HHT authorized dealer or supplier. Additional service fees may apply if you are seeking warranty service from a dealer other than the dealer from whom you originally purchased the product.
- Check with your dealer in advance for any costs to you when arranging a warranty call. Travel and shipping charges for parts are not covered by this warranty.

**WARRANTY EXCLUSIONS:**

This warranty does not cover the following:

- Changes in surface finishes as a result of normal use. As a heating appliance, some changes in color of interior and exterior surface finishes may occur. This is not a flaw and is not covered under warranty.
- Damage to printed, plated, or enameled surfaces caused by fingerprints, accidents, misuse, scratches, melted items, or other external sources and residues left on the plated surfaces from the use of abrasive cleaners or polishes.
- Repair or replacement of parts that are subject to normal wear and tear during the warranty period. These parts include: paint, wood, pellet and coal gaskets, firebricks, grates, flame guides, batteries and the discoloration of glass.
- Expansion, contraction, or movement of certain parts causing noise. These conditions are normal and complaints related to this noise are not covered by this warranty.
- Damages resulting from: (1) failure to install, operate, or maintain the appliance in accordance with the installation instructions, operating instructions, and listing agent identification label furnished with the appliance; (2) failure to install the appliance in accordance with local building codes; (3) shipping or improper handling; (4) improper operation, abuse, misuse, continued operation with damaged, corroded or failed components, accident, or improperly/incorrectly performed repairs; (5) environmental conditions, inadequate ventilation, negative pressure, or drafting caused by tightly sealed constructions, insufficient make-up air supply, or handling devices such as exhaust fans or forced air furnaces or other such causes; (6) use of fuels other than those specified in the operating instructions; (7) installation or use of components not supplied with the appliance or any other components not expressly authorized and approved by HHT; (8) modification of the appliance not expressly authorized and approved by HHT in writing; and/or (9) interruptions or fluctuations of electrical power supply to the appliance.
- Non-HHT venting components, hearth components or other accessories used in conjunction with the appliance.
- Any part of a pre-existing fireplace system in which an insert or a decorative gas appliance is installed.
- HHT's obligation under this warranty does not extend to the appliance's capability to heat the desired space. Information is provided to assist the consumer and the dealer in selecting the proper appliance for the application. Consideration must be given to appliance location and configuration, environmental conditions, insulation and air tightness of the structure.

**This warranty is void if:**

- The appliance has been over-fired or operated in atmospheres contaminated by chlorine, fluorine, or other damaging chemicals. Over-firing can be identified by, but not limited to, warped plates or tubes, rust colored cast iron, bubbling, cracking and discoloration of steel or enamel finishes.
- The appliance is subjected to prolonged periods of dampness or condensation.
- There is any damage to the appliance or other components due to water or weather damage which is the result of, but not limited to, improper chimney or venting installation.

**LIMITATIONS OF LIABILITY:**

- The owner's exclusive remedy and HHT's sole obligation under this warranty, under any other warranty, express or implied, or in contract, tort or otherwise, shall be limited to replacement, repair, or refund, as specified above. In no event will HHT be liable for any incidental or consequential damages caused by defects in the appliance. Some states do not allow exclusions or limitation of incidental or consequential damages, so these limitations may not apply to you. This warranty gives you specific rights; you may also have other rights, which vary from state to state. EXCEPT TO THE EXTENT PROVIDED BY LAW, HHT MAKES NO EXPRESS WARRANTIES OTHER THAN THE WARRANTY SPECIFIED HEREIN. THE DURATION OF ANY IMPLIED WARRANTY IS LIMITED TO DURATION OF THE EXPRESSED WARRANTY SPECIFIED ABOVE.

## QUICK START GUIDE

\*Before you plug in this appliance, follow these instructions\*

### Set Up

1. Empty Fire box
2. Add pellets and close lid
3. Turn DIAL to OFF
4. Plug in the appliance
  - Exhaust blower will run for about 45 Seconds (*wait for it to stop before priming*)
  - Green light will start flashing
5. Ensure thermostat is connected properly per included instructions.

### Prime

1. After the exhaust blower has stopped; quickly turn the dial from OFF to HI two times



- The LIGHT will turn solid green and pellets will feed. Wait for 2 minutes
- If the LIGHT did not turn solid green:
  - Turn dial back to OFF
  - Unplug appliance, plug it back in and repeat

*Priming is only needed for first fire or starting fire on empty hopper.*

**Note: The prime function is only required during initial set up of the unit, or after the unit has alarmed out due to an empty hopper. Priming while under normal operating conditions will cause the fire pot to overflow.**

### Run

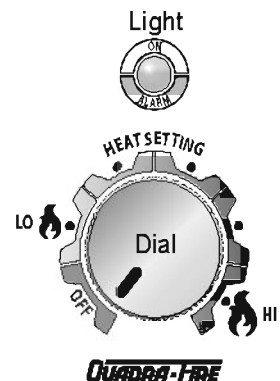
1. Press up arrow on thermostat to desired temperature.  
\*appliance will not turn on unless target temperature is minimum of one degree above room temperature.



2. Choose Setting: LO – HI\*  
Green LIGHT will begin flashing and stove will start

It may take as long as 10 minutes to achieve a fire in the fire pot. Turning the knob or thermostat to off during this time will interrupt the startup process.

\*For first fire, HHT recommends running on HI for first 30 minutes



Control Panel

# 1 Listing and Code Approvals

## A. Appliance Certification

<b>Model</b>	Mt. Vernon Pellet Stove E2
<b>Laboratory</b>	OMNI Test Laboratories, Inc.
<b>Report No.</b>	061-S-83-2
<b>Type</b>	Solid Fuel Room Heater, Pellet Fuel Burning Type
<b>Standard</b>	ASTM E1509-12, ULC S627-00 and (UM) 84-HUD, Mobile Home Approved.
<b>FCC</b>	Complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**NOTICE:** This installation must conform with local codes. In the absence of local codes you must comply with the **ASTM E1059-12, ULC S627-00, (UM) 84-HUD and ULC/ORD-C-1482.**

The Quadra-Fire Mt. Vernon E2 Pellet Appliance meets the U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards at 0.74 G/HR EPA CFR subpart AAA, using ASTM E2779-10, ASTM 2515-11 Method- Pellet Appliance sections, CSA B415.1-10. This pellet appliance needs periodic inspection and repair for proper operation. It is against federal regulations to operate this pellet appliance in a manner inconsistent with the operating instructions in the owner's manual.

## B. BTU & Efficiency Specifications

Emissions Report Number:	0061PS094E
EPA Certification #:	
EPA Certified Emissions:	0.74 g/hr
*LHV Tested Efficiency:	83.2%
**HHV Tested Efficiency:	77.9%
***EPA BTU Output:	39,428 / HR
****BTU Input:	50.775 / HR
Vent Size:	3, 4 or 6 inches, "L" or "PL"
Hopper Capacity:	80 lbs.
Fuel	Wood Pellets
* Weighted average LHV efficiency using data collected during EPA emissions test.	
**Weighted average HHV efficiency using data collected during EPA emissions test.	
***A range of BTU outputs based on HHV and the burn rates from the low and high EPA tests.	
****Based on the maximum feed rate per hour multiplied by approximately 8600 BTU's which is the average BTU's from a pound of pellets.	

## C. Glass Specifications

This stove is equipped with 5mm ceramic glass. Replace glass only with 5mm ceramic glass. Please contact your dealer for replacement glass.

## D. Electrical Rating

115 VAC, 60 Hz, Start 2.9 Amps, Run 2.45 Amps

## E. Mobile Home Approved

- This appliance is approved for mobile home installations when not installed in a sleeping room and when an outside combustion air inlet is provided.
- The structural integrity of the mobile home floor, ceiling, and walls must be maintained.
- The appliance must be properly grounded to the frame of the mobile home and use only Listed pellet vent Class "L" or "PL" connector pipe.
- Outside Air Kit (OAK-3) must be installed in a mobile home installation.

### WARNING



#### Fire Risk.

Hearth & Home Technologies disclaims any responsibility for, and the warranty will be voided by, the following actions:

- Installation and use of any damaged appliance.
- Modification of the appliance.
- Installation other than as instructed by Hearth & Home Technologies.
- Installation and/or use of any component part not approved by Hearth & Home Technologies.
- Operating appliance without fully assembling all components.
- Operating appliance without legs attached (if supplied with unit).
- Do NOT Over fire - If appliance or chimney connector glows, you are over firing.

Any such action that may cause a fire hazard.


Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. For assistance or additional information, consult a qualified installer, service agency or your dealer.

**NOTE:** Hearth & Home Technologies, manufacturer of this appliance, reserves the right to alter its products, their specifications and/or price without notice.

Quadra-Fire is a registered trademark of Hearth & Home Technologies.

# User Guide

## 2 Operating Instructions

 <b>WARNING</b>	
 	<p><b>Fire Risk.</b></p> <ul style="list-style-type: none"> <li>Do not operate appliance before reading and understanding operating instructions.</li> <li>Failure to operate appliance properly may cause a house fire.</li> </ul>

### A. Fire Safety

To provide reasonable fire safety, the following should be given serious consideration:

- Install at least one smoke detector on each floor of your home.
- Install at least one carbon monoxide detector on each floor of your home.
- Locate smoke detector away from the heating appliance and close to the sleeping areas.
- Follow the smoke detector manufacturer's placement and installation instructions and maintain regularly.
- Follow the carbon monoxide manufacturer's placement and installation instructions and maintain regularly.
- Conveniently locate a Class A fire extinguisher to contend with small fires.
- In the event of a hopper fire:
  - Evacuate the house immediately.
  - Notify fire department.

### B. Non-Combustible Materials

Material which will not ignite and burn, composed of any combination of the following:

- |         |           |         |            |
|---------|-----------|---------|------------|
| - Steel | - Plaster | - Glass | - Tile     |
| - Brick | - Iron    | - Slate | - Concrete |

Materials reported as passing **ASTM E 136, Standard Test Method for Behavior of Metals, in a Vertical Tube Furnace of 750° C.**

### C. Combustible Materials

Material made of/ or surfaced with any of the following materials:

- |                        |           |                |
|------------------------|-----------|----------------|
| - Compressed Paper     | - Wood    | - Plywood/OSB  |
| - Sheet Rock (drywall) | - Plastic | - Plant Fibers |

Any material that can ignite and burn: flame proofed or not, plastered or non-plastered.

### D. Fuel Material and Fuel Storage

Pellet fuel quality can greatly fluctuate. We recommend that you buy fuel in multi-ton lots whenever possible. However, we do recommend trying various brands before purchasing multi-ton lots to ensure your satisfaction.

#### Fuel Material

- Made from sawdust or wood by-products
- Depending on the source material it may have a high or low ash content.

#### Higher Ash Content Material

- Hardwoods with a high mineral content
- Fuel that contains bark
- Standard grade pellets or high ash pellets

#### Lower Ash Content Material

- Most softwoods
- Fuels with low mineral content
- Most premium grade pellets

#### Clinkers

Minerals and other non-combustible materials such as sand will turn into a hard, glass-like substance called a clinker when heated in the fire pot.

Trees from different areas will vary in mineral content. That is why some fuels produce more clinkers than others.

#### Moisture

Always burn dry fuel. Burning fuel with high moisture content takes heat from the fuel and tends to cool the appliance, robbing heat from your home. Damp pellet fuel can clog the feed system.

#### Size

- Pellets are either 1/4 inch or 5/16 inch (6-8mm) in diameter
- Length should be no more than 1-1/2 inches (38mm)
- Pellet lengths can vary from lot to lot from the same manufacturer
- Due to length variations, the feed rate may need adjusting occasionally

#### Performance

- Higher ash content requires the fire pot and the ash drawer to be emptied more frequently
- Hardwoods require more air to burn properly
- Premium wood pellets produce the highest heat output
- Burning pellets longer than 1-1/2 inches (38mm) can cause an inconsistent fuel feed rate and/or missed ignitions or feed jams.

#### Storage

- Wood pellets should be left in their original sealed bag until using to prevent moisture absorption
- Do not store any pellet fuel within the clearance requirements or in an area that would hinder routine cleaning and maintenance

### E. Before Your First Fire

1. First, make sure your appliance has been properly



installed and that all safety requirements have been met. Pay particular attention to the fire protection and venting.

2. Double check that the firebox is empty and the fire pot floor is fully closed.
3. Close and latch the door.

### F. Filling the Hopper

Open the hopper lid by lifting the handle. Fill the hopper with fuel. Close the hopper lid. The unit will not feed with the hopper lid open and the fire will go out.

### G. User Dial Control

The appliance has one dial control located on the side of the unit (behind a drop door) used for changing the heat setting and restarting the appliance. There are five heat settings on this dial ranging to include: LOW, MED-LOW, MED, MED-HIGH, and HIGH. **Figure 10.1**

Turn the dial control to the desired heat setting and turn the appliance ON and OFF using the thermostat.

### H. Normal Startup Sequence

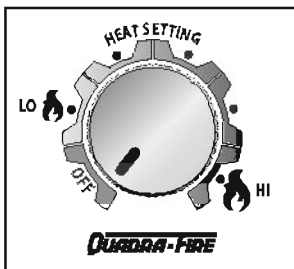


Figure 9.1

The unit will go into the ignition sequence followed by a start up sequence (the green LED will flash rapidly).

The ignition sequence involves the exhaust blower and igniter turning on, and the feed motor running in two stages. The first stage involves the feed motor running continuously for about a minute to start loading pellets into the fire pot. In the second stage, the feed motor will begin cycling on and off.

When the pellets are warming - on the verge of igniting - it is not uncommon for the firebox to fill with smoke.

Once ignition happens, the smoke should quickly disappear. During this stage, as well as any part during the burn process, the front door should not be opened.

This startup cycle continues until the unit senses ignition by a rise in the exhaust temperature or the unit times out. Following the ignition cycle the unit continues to feed pellets to build up the fire.

After warming up, the convection blower will begin to blow warm air into the room. As the appliance increases heat the blower will increase its output.

### I. Fire pot Purge

**Purpose:** To help remove debris from the fire pot and help the unit burn as efficient as possible.

The frequency of the purge cycle is once every 30 minutes while the unit is burning. During the fire pot purge, the feed is reduced to the lowest setting and the exhaust blower ramps up to a very high setting. The purge cycle lasts 99 seconds.

*The purge cycle does not replace daily cleaning.*

### J. Shutdown

To shut the appliance down, turn the dial control to OFF or turn the thermostat to OFF. During the shutdown process, the light will flash amber or green rapidly.

Unlike the fire pot purge, during shutdown existing fuel in the fire pot will continue to burn without the feed motor running; but, the exhaust and convection blowers will remain on until the exhaust has cooled.

NOTE: If maintenance or daily cleaning is going to be conducted immediately following a shutdown, please use caution as components especially those inside the firebox may still be hot.

Due to safety precautions:

- If the dial control is turned to OFF and back on (even if by mistake) the unit will go through the shutdown sequence before restarting.
- Additionally, if the thermostat is turned to "OFF" during operation the appliance will go through a shutdown sequence before restarting.

## CAUTION

**HOT WHILE IN OPERATION. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS.**

**K. Fire Characteristics**

The overall height of the flame will vary throughout the burn for a couple of reasons:

- 1) The flame will vary based on type of fuel or batch of fuel.
- 2) The unit adjusts the burn rate according to the dial setting – the further the dial is rotated clockwise the higher the flame and consequently, heat output.
- 3) General maintenance and cleaning. Infrequent or poor general maintenance will result in poorer performance. Indicators for additional maintenance activities include:
  - lazy flame
  - black-sooted glass
  - pellets not igniting
  - excess pellets falling to the side of the fire pot.
- 4) See trim adjustment section for additional information.

**WARNING**

**HOT SURFACES!**



Glass and other surfaces are hot during operation AND cool down.

**Hot glass will cause burns.**

• **DO NOT** touch glass until it is cooled.

- NEVER allow children to touch glass.
- Keep children away.
- CAREFULLY SUPERVISE children in same room as appliance.
- Alert children and adults to hazards of high temperatures.

**High temperatures may ignite clothing or other flammable materials.**

- Keep clothing, furniture, draperies and other flammable materials away.

**CAUTION**

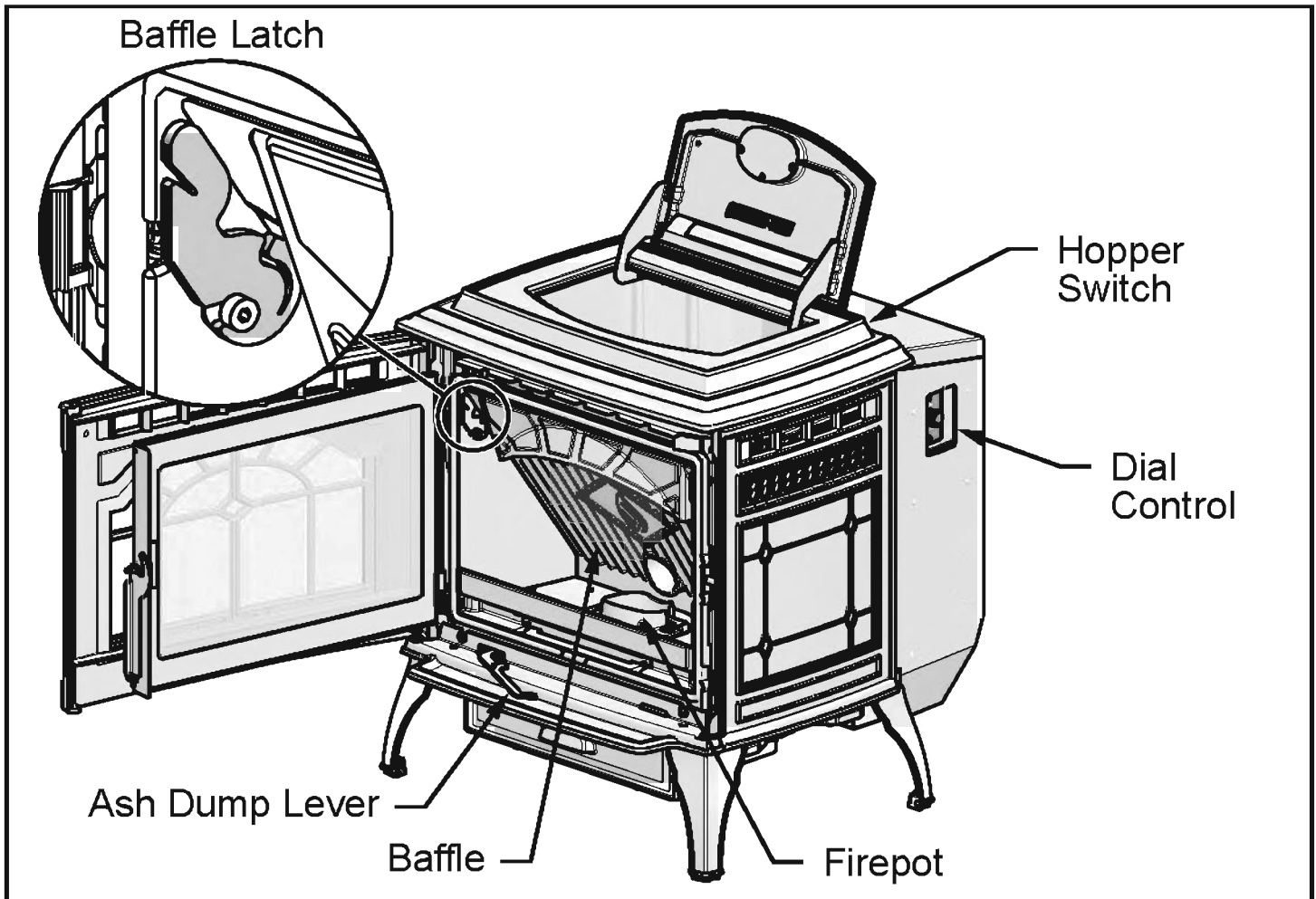
Odors and vapors released during initial operation.

- Curing of high temperature paint.
- Open windows for air circulation.

Odors may be irritating to sensitive individuals.

**NOTICE:** If you expect children to come into contact with this appliance, we recommend a barrier such as a decorative screen. See your retailer for suggestions.


**L. Your Pellet Appliance’s General Operating Parts**




**M. LED Color Coding Chart and Explanation**

The number of flashes between pauses is per one second unless otherwise indicated.

LED Color	No. of Flashes between pauses	Description	Notes
Green	Steady ON while priming feed tube (max time 2 minutes)	Feed Motor is running continuously. (priming the feed tube)	When priming the feed system and filling the fire pot, DO NOT OVERFILL Fire pot FOR IGNITION. The unit will automatically go into start up following the prime function.
Green	1x every 2 seconds	Unit is on standby	To start appliance, follow start up sequence.
Green	Blinks Continuously	Appliance is in the start up/ignition sequence or in shutdown.	During shut down, the blowers will shut off when the exhaust temperature has cooled.
Green	1X	Stage 1: Low heat	BTU Range: 14,620 - 19,694      Average: 19,054
Green	2X	Stage 2: Med-Low heat	BTU Range: 22,102 - 23,506      Average: 22,735
Green	3X	Stage 3: Med heat	BTU Range: 30,778 - 32,680      Average: 31,603
Green	4X	Stage 4: Med-Hi heat	BTU Range: 38,576 - 42,914      Average: 40,665
Green	5X	Stage 5: Hi heat	BTU Range: 49,830 - 52,460      Average: 51,528
Amber	Blinks Continuously	Appliance is in the shut-down sequence.	During shut down, the blowers will shut off when the exhaust temperature has cooled.
Red	1X	Empty Hopper Alarm	This alarm is caused by the fire going out from lack of fuel. Reset by turning to "OFF" then turn dial to desired setting.
Red	2X	Exhaust Probe Alarm	Failed component error. See troubleshooting section for more information.
Red	4X	Missed Ignition	There are a total of 2 tries per ignition sequence. If after 2 tries there is no rise in exhaust temperature this error will occur. See the troubleshooting section for additional information.
Red	6X	Encoder Alarm	Failed Component Error: Exhaust Speed Sensor. See troubleshooting guide for more information
Red	8X	Exhaust Over Temperature Alarm	See troubleshooting guide for more information.

 **WARNING**



**Fire Risk**  
Do NOT operate appliance:

- With appliance door open.
- Fire pot floor open.

Do NOT store fuel:

- Closer than required clearances to combustibles to appliance
- Within space required for loading or ash removal.

## N. Restarting the Appliance

### Restart Process

1. When the unit has run out of fuel and the “empty hopper” error code illuminates, add pellet fuel to the hopper.
2. Dump the ashes and clinkers built up in the fire pot by pulling the ash dump removal handle out several times. Make sure clinkers have dropped into the ash pan then return the handle to fully closed position.
3. Turn the dial control to OFF and then up to high 2X to prime.
4. After seeing pellets drop then turn to desired setting to reset the appliance control system. The appliance will then begin its startup sequence.

### Restarting After a Power Failure

1. For an electrical disruption the appliance will start on its own without need for priming - providing the control system is asking for heat.
2. The appliance will always go through a normal shut-down sequence before restarting.

## O. Clear Space

**NOTICE:** Clearances may only be reduced by means approved by the regulatory authority having jurisdiction.

**Mantel:** Avoid placing candles and other heat-sensitive objects on mantel or hearth. Heat may damage these objects.

## P. Trim Adjustment (Factory default setting is -2)

The small dial located below the main dial control is used to adjust the amount of fuel and combustion air used for efficient clean burning. Adjusting the trim along with proper cleaning of the fire pot and heat exchanger will help achieve maximum performance of your Mt Vernon E2 Appliance.

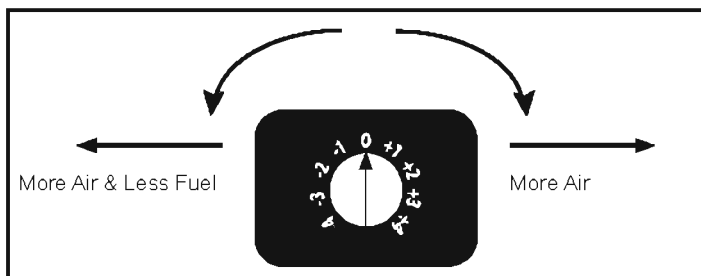


Figure 12.1

ance.

Your appliance may need to be adjusted based on any or all of the following:

- Elevation (3000 feet above Sea Level or Higher)
- Venting/Installation Configurations (installations with greater than 4' horizontal or more than two 90 degree elbows)
- Fuel Quality (lower BTU fuels or fuels with high ash content)
- Fuel Type (hardwood, softwood, lower BTU fuels)
- Appliances not properly adjusted will:
- Require more frequent cleanings
- Result in nuisance shut downs and/or missed ignitions

- Waste fuel

Consult your QuadraFire Dealer with specific questions regarding proper adjustments for maximum performance.

### Where to Start:

#### If Burning Hardwood Pellet Fuel

QuadraFire recommends setting the appliance at a -4 trim setting as a start. From our testing, hardwood fuels burn well between -4 and -2 settings.

#### If Burning Lower BTU Pellet Fuel, Utility Pellet Fuel, or High Ash Pellet Fuel

QuadraFire recommends setting the appliance and leaving at a -4 trim setting. From our testing, lower BTU fuels result in large clinkers in the bottom of the fire pot during normal operation. Using this type of fuel will increase the recommended fire pot cleaning interval.

#### If Burning Softwood Pellet Fuel

QuadraFire recommends starting at a -2 trim setting and adjusting based on installation configurations. From our testing, softwood fuels burn well at a variety of settings.

#### If Elevation is 3000 feet above Sea Level or Higher

When burning at higher elevations you will need more air for the fire to burn properly. QuadraFire recommends starting with a Trim Setting of -3. From our testing, appliances at higher elevations burn best at settings -4, -3, +3, and +4. Review fuel types and installation configurations for choosing the right setting.

#### If appliance has long horizontal venting sections or more than two 90 degree Elbows

QuadraFire recommends starting at a -4 trim setting and making adjustments based on fuel type and elevation. From our testing, we have found that -4, -3, +3, or +4 have worked well depending on fuels.

Indicators that Trim Adjustment is needed:

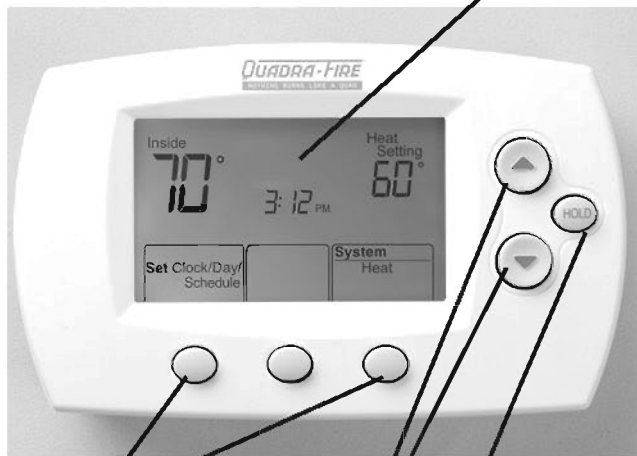
1. The flame appears lazy
2. Smoke can be seen in the firebox after start up during normal burn
3. Excessive build up of clinkers taller than a 1/2" in the bottom of the fire pot

The fire goes out when in normal operating mode

## Q. Programming Thermostat

The thermostat maintains a desired room temperature. The 5-2 day programmable function allows one program for week days and a separate program for Saturday/Sunday. (Up to 4 periods per day).

### Thermostat Controls



**Function buttons**  
Press to select the function displayed just above each button. (Functions change depending on the task.)

**Temperature buttons**  
Press up or down to set preferred temperature.

**Digital display**

**Hold Button**  
Press to override programmed temperature control

### Program Schedule

Pre-set settings are shown below.

You can program 4 time periods each day, with different settings for weekdays and weekends.

**Wake-** Set to time and temperature you want in the morning until you leave for the day.

**Leave-** Set the time and temperature you want the heat output reduced to during the day.

**Return-** Set the time and temperature to what you want the heat output increased to in the evening.

**Sleep -** Set the time and temperature to what you want for overnight.

	Heat
Wake (6:00 am)	70° F
Leave (8:00 am)	62° F
Return (6:00 pm)	70° F
Sleep (10:00 pm)	62° F

### To Adjust Program Schedules

1. Press **SET CLOCK/DAY/SCHEDULE**, then **SET SCHEDULE**.
2. Press **▲ / ▼** to set your weekday wake time (Mon-Fri), then press **NEXT**.
3. Press **▲ / ▼** to set the temperature for this time period, then press **NEXT**.
4. Set time and temperature for the next time period (Leave). Repeat steps 2 and 3 for each weekday time period.
5. Press **NEXT** to set weekend time periods (Sat-Sun), then press **DONE** to save & exit.

**NOTE:** You can press **CANCEL PERIOD** to eliminate unwanted time periods (except Wake).

**Saturday and Sunday can be programmed individually by changing the format from 5-2 to 5-1-1. To change the format :**

1. Press and hold the up button and the center button until the display changes.
2. Press up or down to change system function number to 16.
3. Press **NEXT** to advance to next function.
4. Press up or down to change status number to 1.
5. Press **DONE** to exit and save settings.

### Program Schedule Override (temporary)

Press **▲** or **▼** to immediately adjust the temperature. This will temporarily override the temperature setting for the current time period.

The new temperature will be maintained only until the next programmed time period begins. For example, if you want to turn up the heat early in the morning, it will automatically be lowered later, when you leave for the day.

To cancel the temporary setting at any time, press **RUN SCHEDULE**.

### Program Schedule Override (permanent)

Press **HOLD** to permanently adjust the temperature. This will override the temperature settings for all time periods. The "Hold" feature turns off the program schedule and allows you to adjust the thermostat manually, as needed.

Whatever temperature you set will be maintained 24 hours a day, until you manually change it, or press **RUN SCHEDULE** to cancel "Hold" and resume the programmed schedule.

## R. Frequently Asked Questions

### **What causes my glass to become dirty?**

If the glass has white ash build up it is normal and the glass should be cleaned. If it is a black soot build up airflow through the unit may be restricted. The most often cause is overdue maintenance and cleaning. See “Maintaining and Servicing Appliance” and/or make adjustments to the trim control.

### **How can I get more heat out of the appliance?**

The most often cause of diminished heat output is overdue maintenance and cleaning. See “Maintaining and Servicing Appliance”.

### **What should I do if I smell smoke or there is ash/soot coming from the appliance?**

While there will always be some smoke smell from wood burning appliances (including pellet) you should investigate all venting to make sure it is sealed properly. Most venting requires silicone to seal the seams.

In addition most homes are built very tight today and with exhaust systems can create negative pressure in the home. See “Negative Pressure” under “Getting Started” in the owner’s manual if you have checked the venting but still have smoke coming from the appliance. For ash or soot check the above and the exhaust blower housing and seals.

### **Why would my appliance run fine last winter but not start this fall?**

It is possible that the stove was not properly prepared for the Non-burn season (see troubleshooting section).

### **Is there a place to lubricate the blowers to quiet them down?**

No. The most often cause of noisy blowers is from the impellers becoming dirty over time. See maintenance and service section for maintaining and servicing.

### **What is the metal object with the bend in it that came inside the plastic bag?**

It is a clean-out tool used to help clean the fire pot and remove any jams in the rare event they occur in the feed tube.

### **Why is there a black residue building up on the outside of my home?**

Wind can cause this to happen. If the appliance is operating correctly very little soot should ever exit the termination cap. Check to be sure the venting is installed per the owner’s manual and local codes.

### **Do I need an outside air kit?**

Outside air is required for mobile home installs and in some jurisdictions. Refer to “Listing & Code Approvals”, “Mobile Home Installation” and “Appliance Set-up”. Also refer to local building codes.

### **I am seeing sparks coming out of my pipe (termination cap) outside is this safe?**

This is normal. As long as clearances to combustibles were followed this is safe.

### **I have no power to anything. Does this unit have a circuit breaker or fuse or a reset button?**

This unit has one fuse on the control board and a resettable snap disc mounted to the feed tube. If the appliance overheats then the snap disc can be reset; if the fuse is blown the control board must be replaced.

### **Can I burn corn in my unit?**

No, this appliance is not approved to burn corn type fuel.

### **Where is the serial # located on my unit?**

**Freestanding** - the serial number is located on the back of the stove.

### **No pellets are dropping in my fire pot.**

See troubleshooting guide.

**Contact your dealer** for additional information regarding operation and troubleshooting.

Visit [www.quadrafire.com](http://www.quadrafire.com) to locate a dealer.

# 3 Maintenance and Service

When properly maintained, your appliance will give you many years of trouble-free service. **Contact your dealer** to answer questions regarding proper operation, troubleshooting and service for your appliance. Visit [www.quadrafire.com](http://www.quadrafire.com) to locate a dealer. We recommend annual service by a qualified dealer.

## A. Proper Shutdown Procedure

Turn dial control to OFF, let appliance completely cool and exhaust blower must be off. After cooling unplug appliance before servicing.


This pellet heater has a manufacturer-set minimum low burn rate that must not be altered. It is against federal regulations to alter this setting or otherwise operate this pellet heater in a manner inconsistent with operating instructions in this manual.

## B. Quick Reference Maintenance Chart

Cleaning or Inspection	Frequency		Daily	Weekly	Monthly	Yearly
Fire pot	As needed	OR	X			
Ash Removal from Firebox	About 5 bags of fuel depending on ash build-up	OR		X		
Glass	When clear view of fire pot becomes obscure	OR		X		
Hopper	Every ton of fuel (50 bags)	OR			X	
Exhaust Path, Drop Tube and Behind Baffles	Every ton of fuel (50 bags) or more frequently	OR			X	
Door Handle & Gasket Inspection	Prior to heating season	OR			X	
Blower, Convection	Every ton of fuel or more frequently depending on performance	OR			X	
Blower, Exhaust	Every ton of fuel or more frequently depending on performance	OR				X
Firebox - Prepare for Non-Burn Season	At end of heating season	OR				X
Venting System	Every 3 tons of fuel or more frequently depending on performance	OR				X

**NOTICE:** These are recommendations. When burning high ash content pellet fuel or a/pellet mix you may need to clean the fire pot several times a day. Clean the stove and fire pot more frequently if you encounter heavy build-up of ash at the recommended interval or you see soot coming from the vent. Not properly cleaning your appliance on a regular basis will void your warranty.

**⚠ CAUTION**



**Shock and Smoke Hazard**

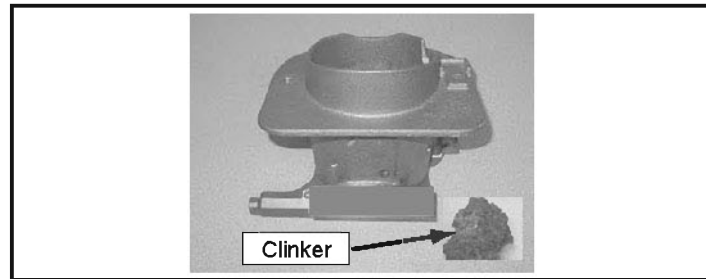
- Smoke spillage into room can occur if appliance is not cool before unplugging.
- Risk of shock if appliance not unplugged before servicing appliance.

*Follow the detailed instructions found in this section for each step listed as referenced in the chart below.*

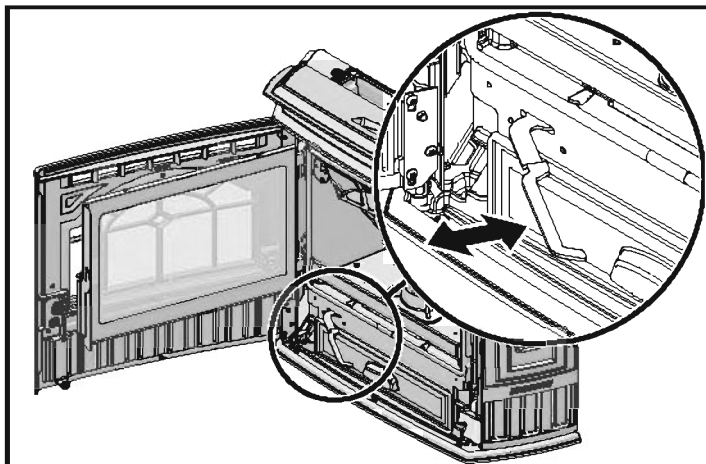
**C. General Maintenance and Cleaning**

**1. Cleaning Fire pot using Lever**

- **Frequency:** Daily or as needed\*
- **By:** Homeowner
- a. Be sure the appliance is allowed to cool.
- b. Open cast face of appliance
- c. Pull fire pot floor cleaning lever two times until the ash falls into the ash pan below. **Figure 16.2**
- d. It may be necessary to use your fire pot clean-out tool to chip away material that has built up on the sides of the fire pot and to push out any clinkers. **Figure 16.1**
- e. Larger clinkers may have to be removed from the top of the fire pot.
- f. If the clinker adheres to the sides of the fire pot, you will need to manually clean the fire pot. The fire pot floor plate must be closed when finished.



**Figure 16.1 - Fire pot with large clinker**



**Figure 16.2**

**2. Cleaning Ash Pan**

- **Frequency:** Weekly or every 3-5 bags
- **By:** Homeowner
- a. Locate the ash pan underneath the fire pot.
- b. Slide the ash pan straight out.
- c. Empty into a non-combustible container and re-install ash pan.
- d. When replacing ash pan push it back until it catches on the 2 side latches.

Clinkers filling the ash pan will have to be cleaned out more often than ash.



Ash Disposal:

Ashes should be placed in a steel container with a tight-fitting lid. The container of ashes should be moved outdoors immediately and placed on a non-combustible floor or on the ground, well away from combustible materials, pending final disposal.

If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled. Other waste shall not be placed in this container.

**3. Ash Removal from Firebox**

- **Frequency:** Weekly or more frequently depending on ash build-up
- **By:** Homeowner
- a. Be sure the appliance is allowed to cool.
- b. There must not be any hot ashes in the firebox during cleaning.
- c. Frequent cleaning of the ash in the firebox with a vacuum cleaner will help slow down the build-up of ash in the exhaust blower and vent system.

 <b>WARNING</b>	
	<b>RISK OF FIRE</b>
	<p>Keep combustible materials, gasoline and other flammable vapors and liquids clear of appliance.</p> <ul style="list-style-type: none"> <li>• Do NOT store flammable materials in the appliance's vicinity.</li> <li>• Do NOT use gasoline, lantern fuel, kerosene, charcoal lighter fluid or similar liquids to start or "freshen up" a fire in this heater.</li> </ul> <p>Keep all such liquids well away from the heater while it is in use as combustible materials may ignite.</p>

**4. Cleaning Heat Exchanger & Drop Tube**

- **Frequency:** Monthly or every ton of fuel (50 bags).
- **By:** Homeowner

NOTE: Heavy duty vacuum cleaners may be obtained, specifically designed for solid fuel appliance cleaning.



Cleaning Heat Exchanger & Drop Tube (cont.)

**Tools Needed:** A Shop Vacuum and generic micro cleaning kit; flat head screwdriver; bottle brush, 1/2" ID hose.

- a. It is necessary to remove the baffle to gain access to the heat exchanger (figure 17.2). Follow instructions for baffle removal on page 20, figure 20.2.
- b. Vacuum the ash from the heat exchanger with an upholstery brush to remove the majority of the ash. Be sure to vacuum the back of the baffle also. Inspect the drop tube and remove any residue build-up in the drop tube. **Figure 17.3**
- c. Assemble the crevice tool from the micro cleaning kit to attach to a Shop Vac. **Figure 17.4**
- d. Use the crevice tool to finish cleaning the heat exchanger fins. It is critical that the 2 exhaust exits at the back of the firebox floor (left and right) be thoroughly cleaned. **Figure 17.2** There are several ways this can be done:
  1. Use the crevice tool.
  2. Attach a hose 1/2 inch (12.7mm) inside diameter and approximately 2 feet (607mm) in length to your vacuum hose.
  3. Use a bottle brush and push the ash down to the bottom. Remove the combustion (exhaust) blower and then vacuum out the ash.



Shop Vacuum and Micro Cleaning Kit examples - items that can be purchased at local hardware stores.

\* Can be purchased at your local hardware store.



Figure 17.2 - Example of a dirty heat exchanger



Figure 17.3

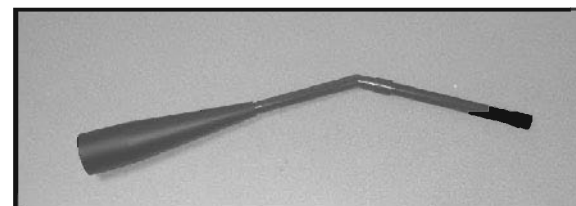


Figure 17.4

**⚠ WARNING**

**Hopper Fire Risk!**

For trouble free use of your pellet appliance you must perform cleaning as called for in these instructions. Not doing so will result in:

- Poor operating performance
- Smoke spillage into the home
- Overheating of components

Not properly cleaning your appliance on a regular basis will void your warranty.

Exhaust exits must be thoroughly cleaned. Each exit is approximately 4 inches wide, 1 inch across, and 3 inches deep

Figure 17.1

**5. Ash Removal System Inspection & Cleaning**

- **Frequency:** Monthly or after burning 50 bags
  - **By:** Homeowner
- a. Be sure the appliance is allowed to cool.
  - b. Open the front cast door and cycle the ash removal handle - these should be inspected for functionality
  - c. Inspect for any degradation or deformation.
    - As the springs heat up and cool down they can lose tension
    - If there is a gap showing above the fire pot bottom, approximately 1/16 inch (1.59mm) or more, it means the springs have lost their tension
    - Lost tension cannot keep the floor in the proper position causing ignition problems and fuel falling into the ash pan. If noted, call your dealer to replace the springs.

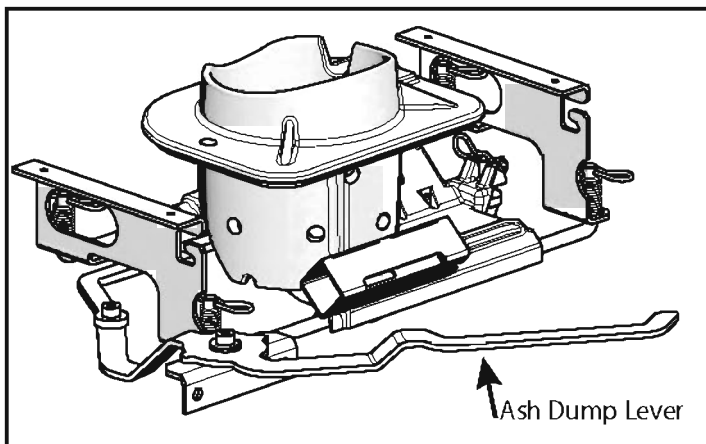


Figure 18.1

<b style="font-size: 1.2em;">WARNING</b>
<p><b>Risk of fire!</b></p> <p>Do NOT store fuel:</p> <ul style="list-style-type: none"> <li>• Closer than required clearances to combustibles to appliance.</li> <li>• Within space required for loading or ash removal</li> </ul>

**6. Cleaning the Hopper**

- **Frequency:** See chart on page 16
  - **By:** Homeowner
- a. Be sure the appliance is allowed to cool.
  - b. After burning approximately 1 ton of fuel you will need to clean the hopper to prevent sawdust and/or fines build-up.
  - c. A combination of sawdust/fines and pellets on the auger reduces the amount of fuel supply to the fire pot.
  - d. This can result in nuisance shut downs and mis-starts
    - Empty the hopper of any remaining pellets.
    - Vacuum the hopper and feed tube.

**7. Cleaning the Glass**

- **Frequency:** See chart on page 16
  - **By:** Homeowner
- a. Be sure the appliance is allowed to cool.
  - b. Clean glass with a non-abrasive commercially available cleaner. Wipe down with dry towel.

<b>CAUTION</b>	
	<p>Handle glass assembly with care.</p> <p><b>When cleaning glass door:</b></p> <ul style="list-style-type: none"> <li>• Avoid striking, scratching or slamming glass.</li> <li>• Do NOT clean glass when hot.</li> <li>• Do NOT use abrasive cleaners.</li> <li>• Use a hard water deposit glass cleaner on white film.</li> </ul> <p>Refer to maintenance instructions.</p>

<b>WARNING</b>	
	<p>Handle glass doors with care.</p> <ul style="list-style-type: none"> <li>• Inspect the gasket to ensure it is undamaged.</li> <li>• Do NOT strike, slam or scratch glass.</li> <li>• Do NOT operate appliance with glass door removed, cracked, broken or scratched.</li> </ul>

**8. Door Latch & Gasket Inspection**

- **Frequency:** See chart on page 16
- **By:** Homeowner

The door latch is non-adjustable but the gasket between the glass and firebox should be inspected periodically to make sure there is a good seal. If the gasket is frayed or damaged, replace with a new one.

**9. Cleaning Exhaust System** (Requires No Lubrication)

- **Frequency:** See chart on page 16
  - **By:** Homeowner
- a. Be sure the appliance is allowed to cool.
  - b. Remove blower per replacement section instructions.
  - c. Use a soft brush and vacuum to clean the impeller.
  - d. Vacuum out exhaust path and housing. Figure 20.1
  - e. Replace fan (make sure elect connections are fully assembled)

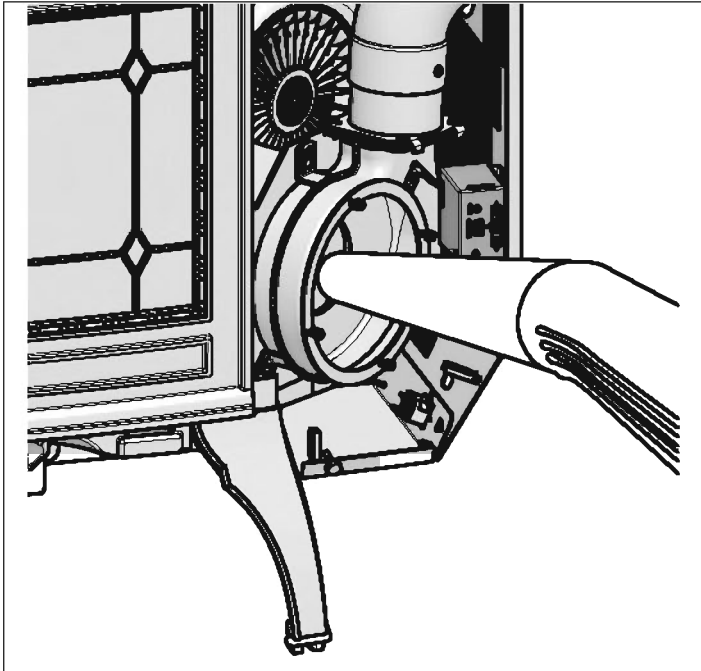


Figure 19.1

**10. Cleaning Convection Blower** Requires No Lubrication

- **Frequency:** See chart on page 16
  - **By:** Homeowner
- a. Be sure the appliance is allowed to cool.
  - b. Remove blower per replacement section instructions.
  - c. Use a soft brush and vacuum to clean the blower wheel.

**11. Cleaning the Top Vent Adapter** (if installed)

- **Frequency:** As needed
  - **By:** Homeowner
- a. Be sure the appliance is allowed to cool.
  - b. Open the clean out cover.
  - c. Sweep out any ash build-up.

**12. Soot and Fly-ash: Formation & Need for Removal in Exhaust Venting System.**

- **Frequency:** See chart on page 16
  - **By:** Qualified Service Technician and/or Homeowner
- a. The products of combustion will contain small particles of fly-ash. The fly-ash will collect in the exhaust venting system and restrict the flow of the flue gases. Incomplete combustion, such as occurs during startup, shut-down, or incorrect operation of the room heater will lead to some soot formation which will collect in the exhaust venting system.

Note: Ash will build up more quickly in the horizontal venting sections.

**13. Preparing Firebox for Non-Burn Season**

- **Frequency:** See chart on page 16
  - **By:** Homeowner
- a. The appliance must be in complete shutdown and allow the appliance to completely cool down.
  - b. Remove all ash from firebox and vacuum thoroughly.
  - c. To minimize corrosion, paint all exposed steel, including cast-iron. Use the Touch-Up paint supplied with the appliance or purchase paint from your local dealer. You must use a high-temperature paint made specifically for heating appliances.
  - d. Cleaning the flue at the end of the burn season will prevent corrosives to build-up and damage the flue.

**D. Soot or Creosote Fire Awareness**

The chimney should be inspected periodically during the heating season to determine if a creosote build-up has occurred. If a significant layer of creosote has accumulated (1/8 inch [3mm] or more) it should be removed to reduce the risk of chimney fire.

Check daily for creosote build-up until experience shows how often you need to clean to be safe. Be aware that the hotter the fire the less creosote is deposited, and weekly cleaning may be necessary in the mild weather even though monthly cleaning may be enough in the coldest months. Contact your local municipal or provincial fire authority for information on how to handle a chimney fire.

**In the event of a soot or creosote fire, close the firebox door, exit the building immediately and contact the proper fire authorities.**

**DO NOT under any circumstances re-enter the building.**

**NOTE**

- This unit is required to be cleaned frequently because soot creosote and ash may accumulate.

### E. High Ash Fuel Content Maintenance

- **Frequency:** Daily
- **By:** Homeowner

If the ash build-up exceeds the half way point in the fire pot or if clinkers are adhering to the sides of the fire pot, the fire pot floor is not being cycled enough.

**⚠ WARNING**

**Risk of Fire and Smoke!**

- High ash fuels or lack of maintenance can cause fire pot to overflow. Follow proper shutdown procedure if ash buildup exceeds half way point in fire pot.
- Failure to do so could result in smoking, sooting and possible hopper fires.

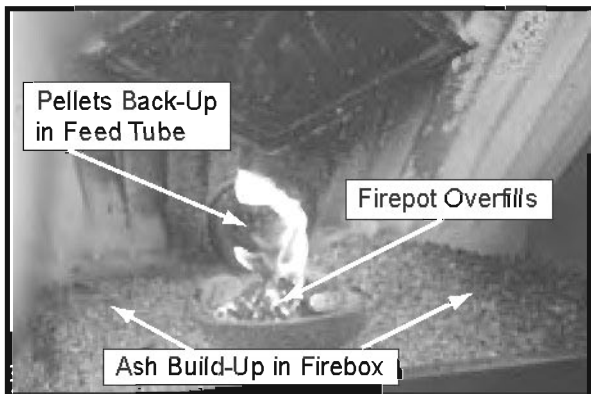


Figure 21.1

### F. Baffle Removal

1. The appliance must be in complete shutdown, completely cool and the exhaust blower off.
  2. Open door.
  3. The baffle is located at the top inside of firebox.
  4. Remove baffle by placing a flat head screw driver into the slot of the latches located in the upper corners and rotate down. The bottom of the latch will fall forward off of the post. Lift the baffle up and then out toward you.
- Figure 20.2**
5. To replace the baffle, place the 2 locating ears behind the bottom edge and tilt the baffle up and into place.
  6. The baffle must be centered in the firebox before latching it in place. If it is not centered the latch will slip between the baffle and side of the firebox instead of latching properly.
  7. The bottom of the latches will fit over the posts. Using a screwdriver, rotate the top of the latch up to lock latch into place.

**⚠ WARNING**

**Cast iron is a very heavy material.** The baffle is made of cast iron and therefore is heavy and awkward at times to maneuver. Clear and prepare your work area before you begin.

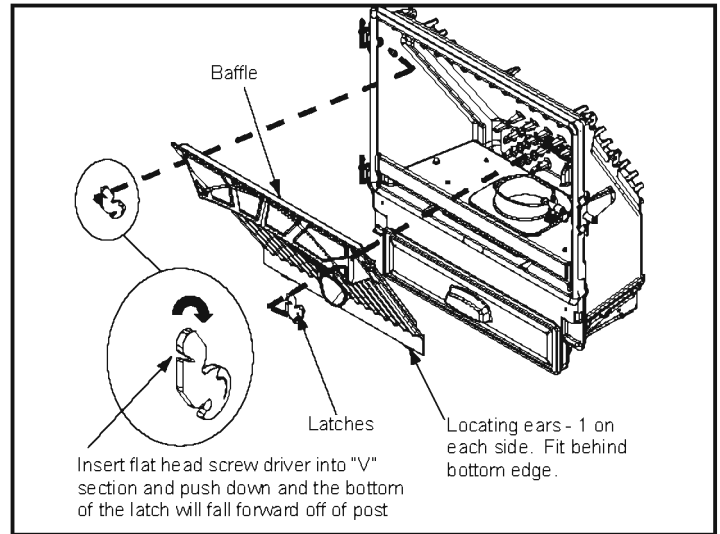


Figure 21.2

### G. Glass Replacement

1. Swing open the face and remove the door from the appliance by lifting the door off of the hinge pins and lay on a flat surface face down.
2. Using a Phillips head screw driver, remove 4 screws, 2 on the top and 2 on the bottom. Remove metal bracket and then remove the glass. **Figure 20.3**
3. Replace with new glass with gasket.
4. Re-attach metal bracket with 4 screws.
5. Re-install door over hinge pins and close face.

**⚠ WARNING**

**✋**

- Glass is 5mm thick high temperature heat-resistant ceramic glass.
- **DO NOT REPLACE** with any other material.
- Alternate material may shatter and cause injury.

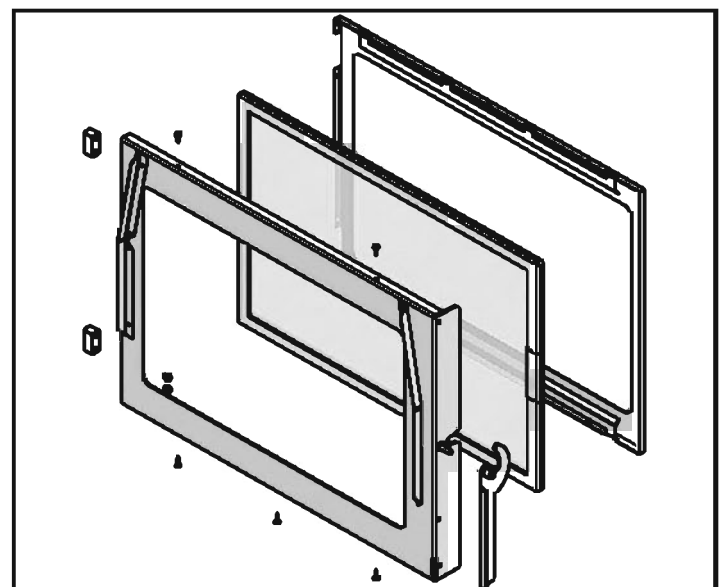


Figure 20.3

## H. Convection Blower Replacement

1. Follow the proper shut down procedures.
2. Remove the left side panel by loosening the 2 screws using a Phillips head screw driver or wrench. **Figure 21.1**
3. Remove two lower sheet metal screws from the back panel to allow more clearance.
4. Disconnect the wire terminals.
5. Reach behind the blower and release the latch by pushing the top of the latch towards the blower. **Figure 21.1**
6. Rock the top of the blower slightly and lift up. The blower will pass out the left side of the appliance.

Note: You may need to loosen the surround to move it out of the way.

7. Install replacement blower by placing the bottom flange into the opening first then rotate blower up into position.
8. When the blower is properly positioned the latch will engage the notch to hold the blower in place. **Figure 21.1**
9. Re-connect wire terminals to the new blower.
10. Reposition and Re-secure the back panel.

Note: Make sure wires are connected prior to restarting the appliance. Failure to do so will result in the (side-mounted) safety thermal snap disc tripping resulting in cutting power to the appliance feed system.

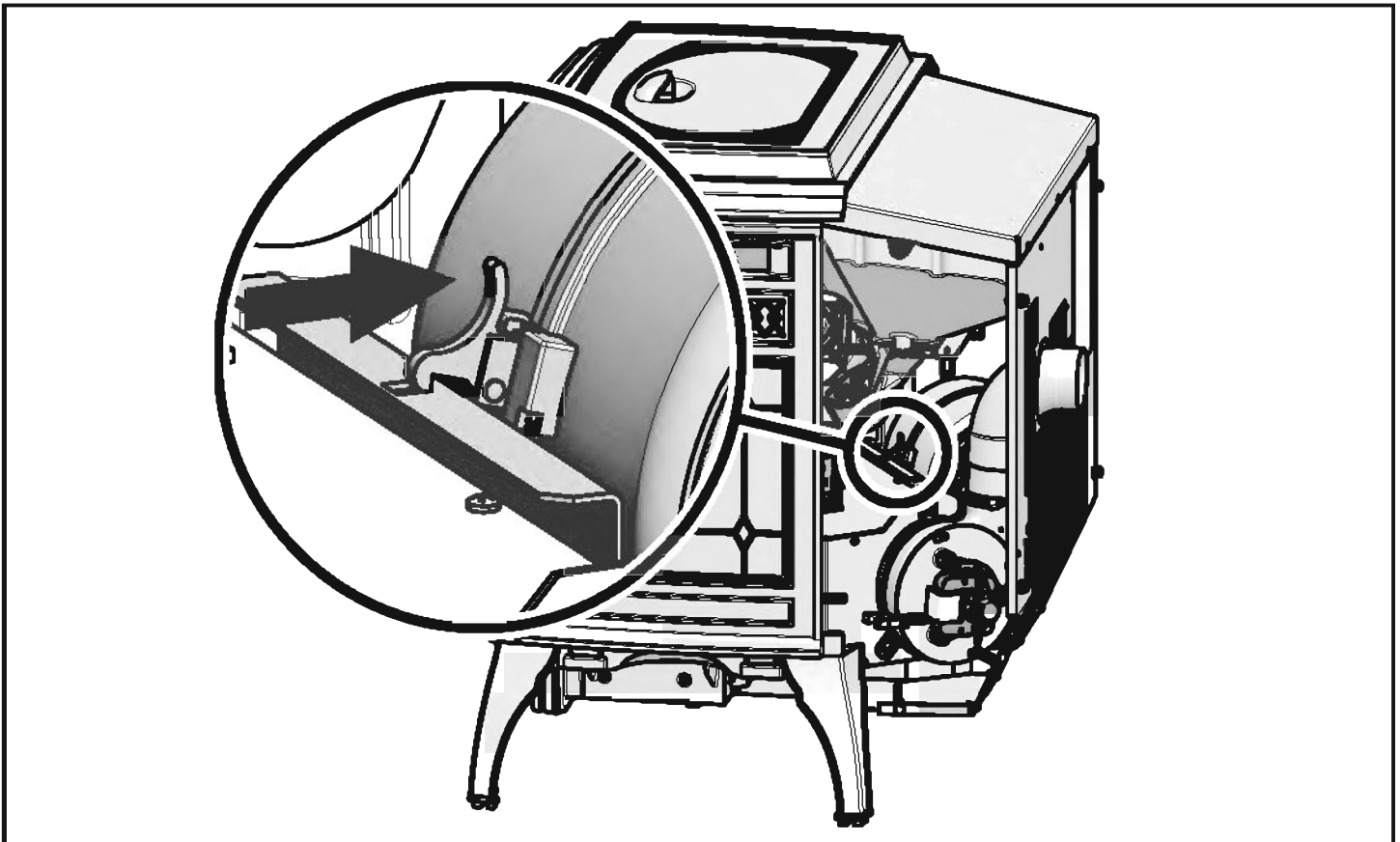


Figure 21.1

## I. Combustion/Exhaust Blower Replacement

1. Follow the proper shut down procedures.
2. Remove the right side panel by loosening the 2 screws using a Phillips head screw driver or wrench. **Figure 22.1.**
3. It is not necessary or recommended to remove the housing to replace or service the combustion blower. You only need to remove the motor and impeller.
4. Disconnect the wire from the control board connection and hall effect switch/housing.
5. Using an 7mm socket wrench or nut driver, loosen the nuts securing the motor and impeller to the housing.
6. Holding the motor, rotate the mounting plate counter-clockwise and remove motor and impeller.
7. If the gasket between housing and motor is damaged it will have to be replaced. A gasket is included with the replacement blower.
8. Re-install in reverse order.

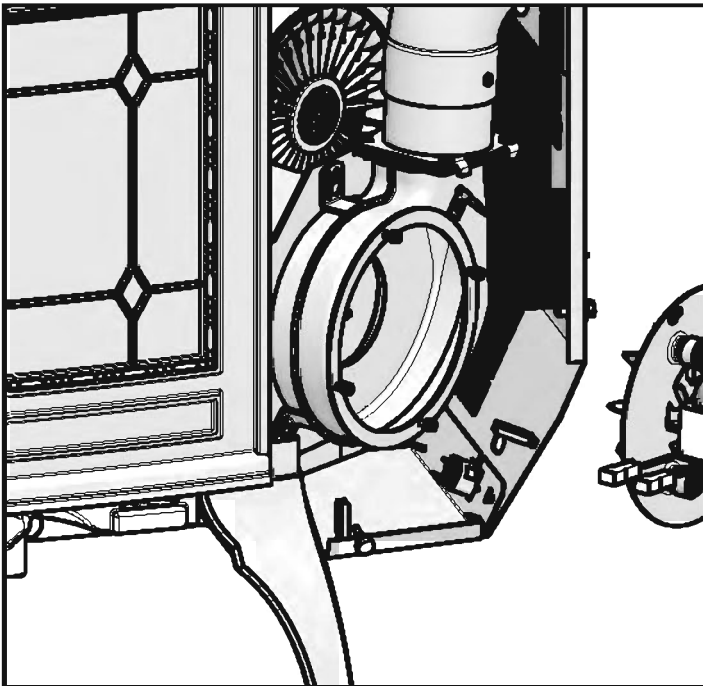


Figure 22.1

# 4 Troubleshooting Guide

With proper installation, operation, and maintenance your appliance will provide years of trouble-free service. If you do experience a problem, this troubleshooting guide will assist a qualified service person in the diagnosis of a problem and the corrective action to be taken. This troubleshooting guide can only be used by a qualified service technician.

Symptom	Possible Cause	Corrective Action
Plug in appliance - No response.	No Power to outlet.	Check circuit breaker at service panel.
	5 amp fuse blown	Replace control board - don't replace fuse
	Snap disc tripped or defective.	Reset or replace snap disc.
Unit will not light	No Fuel	Check hopper; load with wood pellets
	Vacuum switch not closing; no vacuum	Check vacuum switch wires are installed Check vacuum hose is connected to switch and feed tube port and is in good condition Make sure venting system is clean Make sure front door is closed Check vacuum tube for blockage or restrictions/kink
	Hopper lid open	Close hopper lid
	Defective hopper switch.	Check hopper switch operation Check hopper switch wires for integrity
	Safety snap disc is tripped	Check to make sure convection blower wires are connected and reset snap disc (located on RH side of appliance) Clean & inspect convection blower and convection air path.
	Feed System is jammed	Inspect and un-jam the feed assembly
	Feed motor not plugged in	Reconnect feed motor
	Igniter not plugged in	Connect the igniter wires
	Defective igniter	Replace igniter
	Fire pot plugged-up / dirty	Clean fire pot and movable floor Remove ash from the ash pan
Fire starts but goes out	Dial control is set to "OFF"	Turn dial control (on the appliance) to a setting other than OFF
	Dirty fire pot, exhaust path, and/or venting plugged	Clean fire pot and movable floor Inspect and clean exhaust path and venting Clean firebox, exhaust path, and venting (including behind baffle)
	Exhaust sensor cannot read temperature or is loose	Secure the exhaust probe to exhaust blower housing – keeping its wire away from hot surfaces
	Exhaust plenum is dirty	Clean exhaust path to plenum
	Exhaust probe is defective (error code may result)	Check for probe wire integrity and/or replace defective exhaust probe securing the exhaust probe to exhaust blower housing – keeping its wire away from hot surfaces

Symptom	Possible Cause	Corrective Action
Appliance starts and stops frequently when operating in the mode	Area where the thermostat is placed affects temperature.	Check thermostat proximity to doors and windows
	Thermostat located in tight spaces effecting the on/off cycling of the appliance.	Inspect thermostat location and make sure it is not close to a surface that heats and cools quickly.
Slow or smoky start-up and/or lazy flame	Dirty fire pot, exhaust path, and/or venting system.	Clean entire appliance including: fire pot, ash build up in firebox, fire pot area, behind baffle, firebox, exhaust blower, venting, and ash pan.
	Not enough combustion air	Adjust the trim (see trim adjustment section)
	Misaligned igniter	Center the igniter in the chamber
	Wet fuel or poor quality fuel	Replace wood pellet fuel
Convection blower fails to start	Convection Blower is jammed	Clean and remove jammed object from the blower
	Not electrically connected	Connect the blower wires to its respective power wires
	Blower is defective	Replace blower
	Exhaust probe not sensing correct temperature	Secure the exhaust probe to exhaust blower housing – keeping its wire away from hot surfaces
	Control board is defective.	Replace control board
Convection Blower fails to shut off	Wire short between blower and ground - Control board is defective	Repair wire and replace control board
Exhaust blower fails to start and/or red flashes 6X – indicating a exhaust encoder alarm.	Exhaust blower is jammed	Clean, and remove jammed object from the blower
	Not electrically connected	Connect the blower wires to its respective power wires
	Blower is defective	Replace blower
	Control board or dial control is defective.	Unplug dial control, if exhaust blower runs, dial control is defective. If exhaust blower <i>does not</i> run with dial control unplugged, replace control board.
Exhaust Blower fails to shut off	Wire short between blower and ground - Control board is defective	Repair wire and replace control board
Feed Motor fails to shut off	Wire short between ground and: feed motor, vacuum switch, hopper switch, or safety snap disc	Repair wire(s) and replace control board
	Control board is defective	Replace control board
Convection Blower makes noise	Convection blower is dirty causing an out-of-balance condition	Clean blower impellers
Igniter does not turn off	Wire short between igniter and ground – Control board is defective	Repair wire and replace control board



Symptom	Possible Cause	Corrective Action
Large, lazy flame (orange color) with black ash / soot buildup on glass	Dirty appliance or venting	Clean unit including the fire pot, exhaust path, and venting system
	Poor fuel quality, high ash content.	Purge old fuel and use higher quality / or brand of fuel
	Incorrect air-fuel adjustment	Adjust the trim (see trim adjustment section)
	Excessive feeding	Adjust trim per trim dial instructions
	Feed Motor locked on	Follow corrective action for feed motor not turning off
Excessive fuel spilling over the fire pot and/or excessive flame	Dirty Appliance	Clean unit including the fire pot, exhaust path, and venting system
	Feed Motor locked on	Follow corrective action for feed motor not turning off
Black soot on the side of the house	Dirty Appliance	Clean unit including the fire pot, exhaust path, and venting system
	Exhaust termination cap too close to the structure	Extend the termination further from the structure
	Excessive feeding (incorrect air-fuel ratio)	Adjust the trim (see trim adjustment section)
Unit rumbles consistently during burns	Too much fuel	Turn trim dial counterclockwise one notch at a time
	Too much air	Turn trim dial towards the zero setting one notch at a time
	Note: Refer to trim setting section for more information, page 12.	

*Following correction of any Alarm, turn the dial control to the OFF position, wait 10 seconds and turn back to desired setting OR unplug the unit, wait 10 seconds then restore power.*

Alarm (LED Flashing RED)	Possible Cause	Corrective Action
1 Red Flash: Empty Hopper Alarm	Hopper empty	Fill the hopper
	Auger jam	Inspect the feed tube for jams
	Vacuum switch not closing	Make sure firebox door is shut, vacuum hose is connected to switch and drop tube, wire connectors are connected to vacuum switch, control board, hopper switch, and safety snap disc.
	Hopper lid open	Close the hopper lid
	Exhaust probe does not sense temperature	Secure the exhaust probe keeping its wire away from hot surfaces and clean the exhaust plenum
	Snap disc tripped	Reset snap disc
	Exhaust probe not attached to exhaust blower properly	Secure exhaust probe to exhaust blower housing – keeping its wire away from hot surfaces
	Exhaust path is dirty	Clean unit including the fire pot, exhaust path, and venting system
2 Red Flashes: Exhaust Probe Fail	Not connected to the control board	Connect terminal end to control board
	Failed component	Replace exhaust probe – securing it to exhaust blower housing – keeping wire away from hot surfaces
4 Red Flashes: Missed Ignition	Hopper empty	Fill the hopper
	Feed motor doesn't turn	Inspect feed motor circuit (hopper lid must be closed, vacuum switch must be closed, snap disc closed, and feed motor must be plugged in) Clear jam in feed tube
	Dirty appliance	Clean unit including the fire pot, exhaust path, and venting system
	Igniter has no power or is defective	Check igniter lead connections or replace igniter
	Exhaust probe not properly installed	Secure exhaust probe to exhaust blower housing – keeping its wire away from hot surfaces
	Igniter chamber plugged with debris	Clean igniter chamber
6 Red Flashes: Exhaust Blower Alarm	Wire from exhaust blower or encoder is disconnected or shorted	Make sure wire is not damaged / melted and ends are fully connected to the encoder and control board.
	Defective exhaust blower	Replace exhaust blower
	Defective encoder (on end of exhaust blower)	Replace exhaust blower
8 Red Flashes: Exhaust Over-Temp	Feed Motor Locked On	Repair wire(s) and replace control board
	Non-approved fuel used	Only use wood pellet fuel. Do not enhance its performance with any other combustible substance.
	Convection blower dirty	Clean impellers

# 5 Reference Materials

## A. Component Functions



When describing the location of a component, it is always AS YOU FACE THE FRONT OF THE APPLIANCE.

### 1. Exhaust Blower

The combustion (exhaust) blower is mounted in the bottom right rear of appliance. The blower is designed to pull the exhaust from the appliance and push it out through the venting system.

### 2. Control Board

The control board is located on the right side of appliance. It controls the functioning of the appliance and communicates with the dial control. The control board can only be replaced by an authorized dealer.

### 3. Convection Blower

The convection blower is mounted at the bottom left of the appliance. The convection blower pushes heated air through the heat exchange system into the room.

### 4. Feed System

The feed system is located on the right side of the appliance and can be removed as an entire assembly. The hollow feed spring (auger) pulls pellets up the feed tube from the hopper area and drops them down the feed chute into the fire pot. Reference the parts list for individual parts in feed assembly .

### 5. Fire pot

The fire pot is made of high quality ductile iron. The floor of the fire pot opens for cleaning and is manually operated by the homeowner. The floor needs to return to a completely closed position or the appliance will not operate properly.

### 6. Fuse

The control board fuse will blow should a short occur. The control board will need to be replaced. DO NOT REPLACE THE FUSE. If the control board fuse blows its TRIAC, that portion of the circuit, will remain closed causing the motor on that leg to run continuously at high speed.

### 7. Heat Exchanger

The heat exchanger is located behind the baffle and transfers heat from the exhaust system into the convection air chamber. Remove the cast iron baffle to access the heat exchanger.

### 8. Hopper Lid Switch

The hopper lid switch is located on the right side, inside the hopper. It switches the feed motor off if the hopper lid is open.

### 9. Igniter (Heating Element)

The igniter is mounted on the base of the fire pot. Combustion air travels over the red hot igniter creating super heated air that ignites the pellets.

### 10. Power Receptacle

The power receptacle is located below the control box on right side. Install the power cord (supplied in the appliance component pack) to the appliance receptacle. Prior to installing, check the wall receptacle for 120 volt, 60 Hz (standard current). Make sure the outlet is grounded and has the correct polarity. A good quality surge protector is highly recommended to protect the appliance electronics.

### 11. Overheat Snap Discs

There are two overheat snap discs located within the electro-mechanical cavity of the appliance. One is mounted on the back of the drop tube in the center of the appliance; the other is mounted in the RH side between the firebox and cast side panel. Both snap discs have a reset button. If the fire tries to

burn back into the feed system, the drop tube snap disc will shut the appliance down. If there is not enough circulation from the convection blower the second snap disc will shut the feed system off. Either sensor must be manually re-set if tripped. Disconnect power before resetting.

### 12. Exhaust Probe - Exhaust Blower

The exhaust probe is a temperature-sensing device attached to the exhaust blower housing via screw and clamp. It provides sympathetic exhaust temperature feedback to the control board. In turn, the control board uses this information to adjust its heat-output systems for best performance.

### 13. Vacuum Switch

The vacuum switch is located on the right side of the appliance under the feed motor, behind right side panel. Its vacuum hose connects to the drop tube. This switch turns the feed system on when vacuum is present in the firebox. The vacuum switch is a safety device to shut off the feed motor if the exhaust or the heat exchanger system is dirty, plugged, or if the firebox door is open.

### 14. Wiring Schematic for Control Board (below)

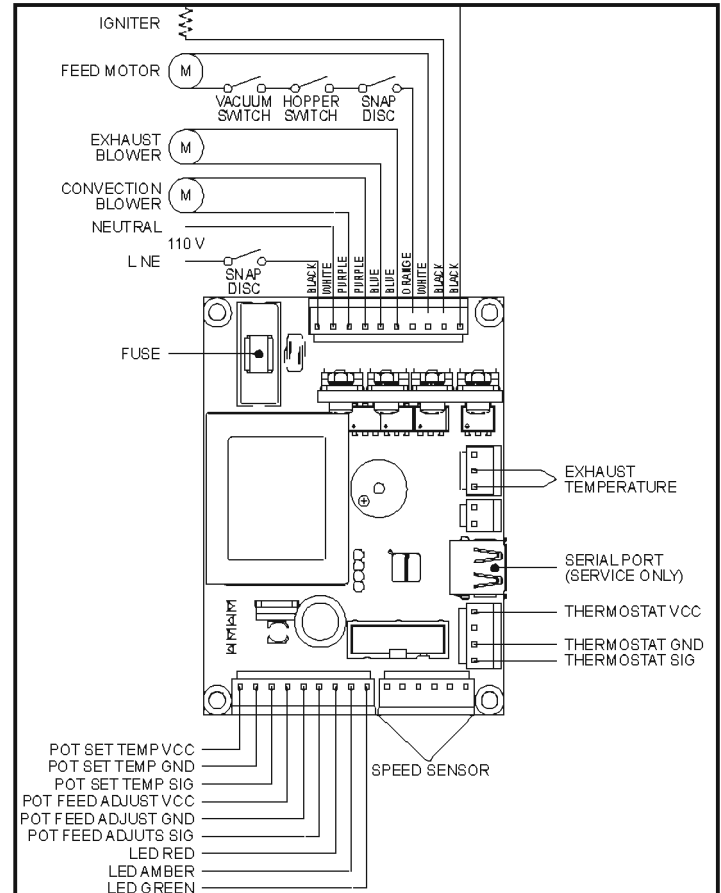


Figure 27.1 - Control Board Schematic





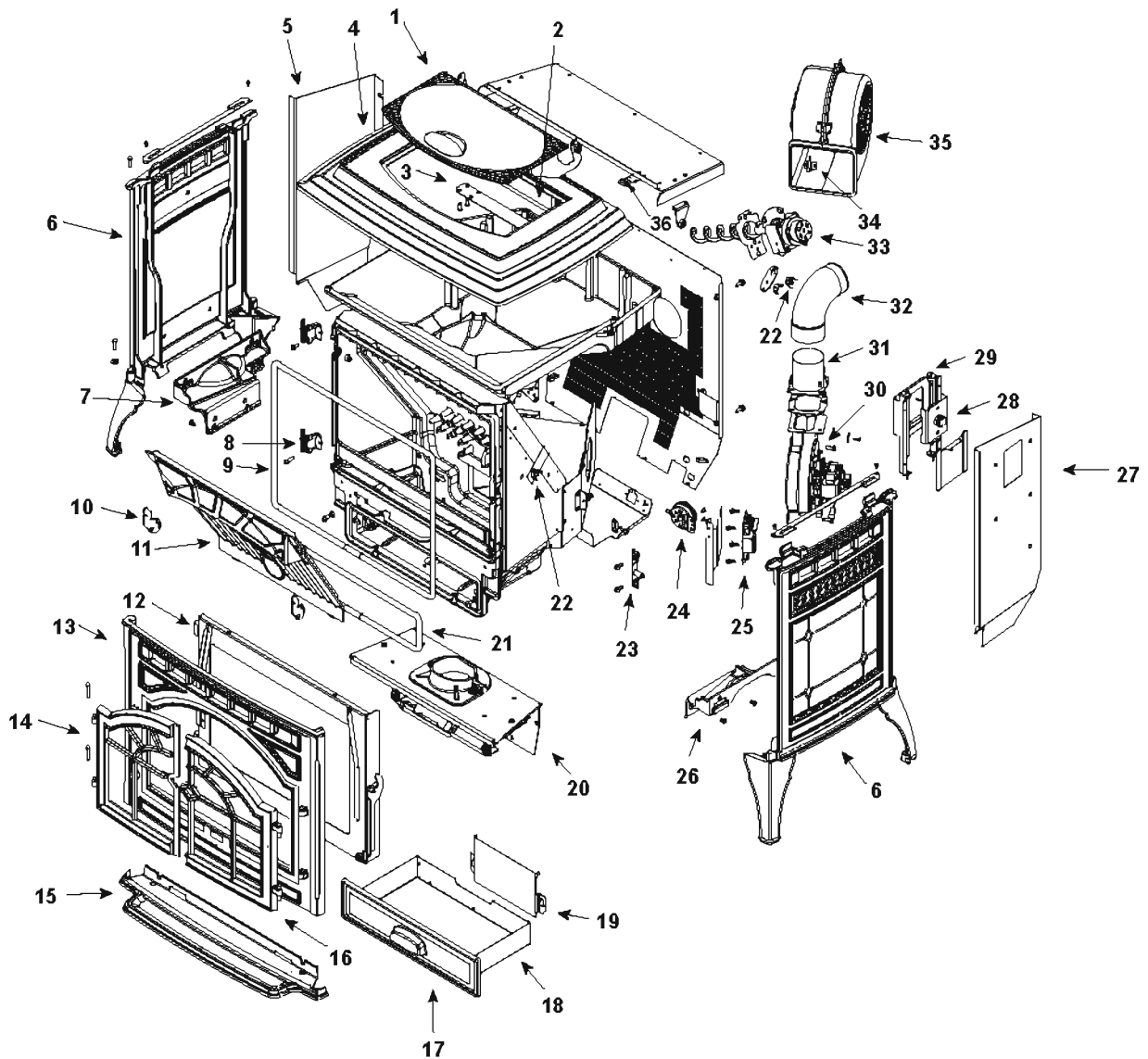
C. Exploded Drawings



MT VERNON E2

Beginning Manufacturing Date: Feb 2014  
Ending Manufacturing Date: Active

MTV-E2-CSB, MTV-E2-MBK, MTV-E2-PBK, MTV-E2-PDB, MTV-E2-PFT, MTV-E2-PMH



Part number list on following page.

04/17

D. Parts List



MT VERNON E2

Beginning Manufacturing Date: Feb 2014  
Ending Manufacturing Date: Active

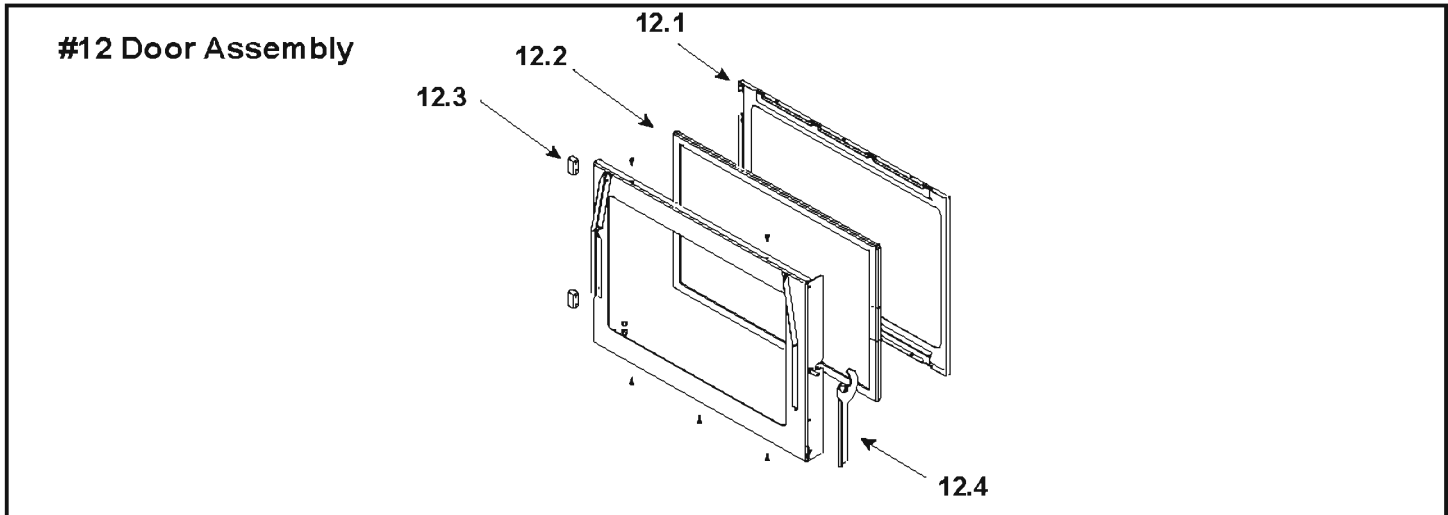
IMPORTANT: THIS IS DATED INFORMATION. Parts must be ordered from a dealer or distributor. **Hearth and Home Technologies does not sell directly to consumers.** Provide model number and serial number when requesting service parts from your dealer or distributor.



Stocked at Depot

ITEM	DESCRIPTION	COMMENTS	PART NUMBER	
1	Hopper Lid	Matte Black	7034-157MBK	
		Porcelain Black	7034-157PBK	
		Porcelain Dark Blue	7034-157PDB	
		Porcelain Frost	7034-157PFT	
		Porcelain Mahogany	7034-157PMH	
		Sienna Bronze	7034-157CSB	
	Gasket, Hopper Lid	10 FT	7000-320/10	
2	Hinge Pin		SRV7034-159	
3	Hinge Retainer		SRV7034-163	
4	Top	Matte Black	7034-155MBK	
		Porcelain Black	7034-155PBK	
		Porcelain Dark Blue	7034-155PDB	
		Porcelain Frost	7034-155PFT	
		Porcelain Mahogany	7034-155PMH	
		Sienna Bronze	7034-155CSB	
5	Shroud Left		SRV7080-123	
6	Side (Interchangeable)	Matte Black	7005-107MBK	
		Porcelain Black	7005-107PBK	
		Porcelain Dark Blue	7005-107PDB	
		Porcelain Frost	7005-107PFT	
		Porcelain Mahogany	7005-107PMH	
		Sienna Bronze	7005-107CSB	
7	Side Mount Left		7034-128	
8	Hinge Male		SRV7034-138	
9	Gasket, Door Rope		SRV7034-177	Y
10	Latch, Baffle		SRV7034-149	
11	Baffle		SRV7034-263	Y

Additional service part numbers appear on following page.



IMPORTANT: THIS IS DATED INFORMATION. Parts must be ordered from a dealer or distributor. **Hearth and Home Technologies does not sell directly to consumers.** Provide model number and serial number when requesting service parts from your dealer or distributor.



Stocked at Depot

ITEM	DESCRIPTION	COMMENTS	PART NUMBER	
12	Door Assembly		SRV7080-015	
12.1	Glass Retainer		7034-136	Y
12.2	Glass Assembly w/Gasket		7034-007	Y
	Gasket, Channel 1/8 x 1-1/4 x 10		7000-377/10	
12.3	Hinge Female		SRV450-2910	
12.4	Door Latch Assembly		413-5200	
13	Front, Face	Matte Black	7005-108MBK	
		Porcelain Black	7005-108PBK	
		Porcelain Dark Blue	7005-108PDB	
		Porcelain Frost	7005-108PFT	
		Porcelain Mahogany	7005-108PMH	
		Sienna Bronze	7005-108CSB	
	Rivet, Button Head	Pkg of 25	25272/25	Y
14	Door Left	Matte Black	7005-110MBK	
		Porcelain Black	7005-110PBK	
		Porcelain Dark Blue	7005-110PDB	
		Porcelain Frost	7005-110PFT	
		Porcelain Mahogany	7005-110PMH	
		Sienna Bronze	7005-110CSB	
15	Ash Lip	Matte Black	7080-140MBK	
		Porcelain Black	7080-140PBK	
		Porcelain Dark Blue	7080-140PDB	
		Porcelain Frost	7080-140PFT	
		Porcelain Mahogany	7080-140PMH	
		Sienna Bronze	7080-140CSB	

Additional service part numbers appear on following page.



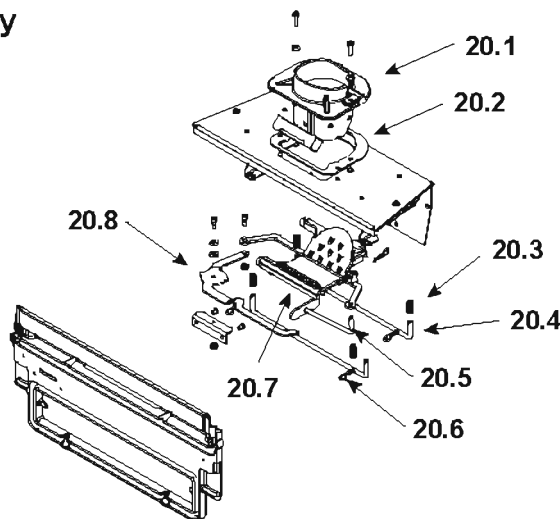
IMPORTANT: THIS IS DATED INFORMATION. Parts must be ordered from a dealer or distributor. **Hearth and Home Technologies does not sell directly to consumers.** Provide model number and serial number when requesting service parts from your dealer or distributor.



Stocked at Depot

ITEM	DESCRIPTION	COMMENTS	PART NUMBER	
16	Door Right	Matte Black	7005-109MBK	
		Porcelain Black	7005-109PBK	
		Porcelain Dark Blue	7005-109PDB	
		Porcelain Frost	7005-109PFT	
		Porcelain Mahogany	7005-109PMH	
		Sienna Bronze	7005-109CSB	
17	Ash Pan Door		7034-133	
18	Ash Pan Assembly		SRV7034-069	
	Twin Ball Catch		SRV7000-532	Y
19	Intake Shield		7034-224	Y

**#20 Firepot Riser Assembly**



20	Firepot Riser Assembly		SRV7080-002	
20.1	Firepot Assembly		SRV7034-072B	Y
20.2	Gasket, Firepot		SRV7034-190	Y
20.3	Spring	Pkg of 4	7000-513/4	Y
20.4	Rail, Auto-clean		SRV7034-152	Y
20.5	Plow Weldment, Auto-clean		SRV7034-024	Y
20.6	Hitch Pin Clip, 3/32	Pkg of 10	7000-374/10	Y
20.7	Firepot Bottom		SRV7034-153	Y
20.8	Firepot Floor Lever Assembly		SRV7080-018	
21	Gasket, Rope, Ash Door		SRV7034-178	Y
22	Snap Disc, L250F Manual Reset		SRV230-1290	Y
23	Latch Bracket Assembly		SRV7034-049	Y

Additional service part numbers appear on following page.

IMPORTANT: THIS IS DATED INFORMATION. Parts must be ordered from a dealer or distributor. **Hearth and Home Technologies does not sell directly to consumers.** Provide model number and serial number when requesting service parts from your dealer or distributor.



**Stocked  
at Depot**

ITEM	DESCRIPTION	COMMENTS	PART NUMBER	
24	Vacuum Switch		SRV7000-531	Y
	Vacuum Hose	3 Ft cut to fit	SRV7000-373	Y
25	Control Board		SRV7080-050	Y
	Wire Harness		SRV7080-129	Y
26	Side Mount, Right		7034-126	
27	Shroud Right	Pre 7/2015	SRV7080-122	Y
		Post 7/2015	SRV7080-153	Y
28	Dial Control w/Wire Harness		SRV7080-036	
29	Dial Control Panel Door Assembly		SRV7080-037	
30	Combustion Blower		SRV7080-106	Y
	Combustion Blower Gasket, Between Housing and Stove		SRV7080-117	Y
	Combustion Blower Motor Gasket, Between Motor and Housing		SRV7080-107	Y
31	Flue Collar Assembly		SRV7080-013	
32	Exhaust Transition Assembly		SRV7034-139	
	Gasket, Exhaust		SRV7034-109	
33	Feed Assembly		SRV7080-010	Y
	Feed Spring Assembly (Only)		SRV7001-046	Y
	Gasket, Feed Motor		SRV7034-144	
	Feed Motor		812-4421	Y
34	Elbow Catch		7000-393	
35	Convection Blower		SRV7080-105	Y
36	Magnetic Switch		SRV7000-375	Y
	Thermostat, Programmable		WALL-STAT-P	

Additional service part numbers appear on following page.

IMPORTANT: THIS IS DATED INFORMATION. Parts must be ordered from a dealer or distributor. **Hearth and Home Technologies does not sell directly to consumers.** Provide model number and serial number when requesting service parts from your dealer or distributor.



Stocked  
at Depot

ITEM	DESCRIPTION	COMMENTS	PART NUMBER	
	Component Pack Assembly	Matte Black	SRV7080-040	
		Porcelain Black	SRV7080-043	
		Porcelain Dark Blue	SRV7080-044	
		Porcelain Frost	SRV7080-045	
		Porcelain Mahogany	SRV7080-042	
		Sienna Bronze	SRV7080-041	
	Cleanout Tool		414-1140	Y
	Leveling Assembly		7000-000	
	Paint Touch-Up	Matte Black	812-0910	
		Porcelain Black	1-00-0022	
		Porcelain Dark Blue	1-00-0020	
		Porcelain Frost	1-00-0021	
		Porcelain Mahogany	855-1450	
		Sienna Bronze	TOUCHUP-CSB	
	Power Cord		812-1180	Y
	Exhaust Probe		SRV7000-669	
	Heating Element Assembly 18", 120 VAC, 300 Watt, (Wood Pellet Fuel Only)		SRV7000-647	Y
		Pkg of 10	SRV7000-647/10	Y
	Wing Thumb Screw 8-32 X 1/2	Pkg of 24	7000-223/24	Y
	Wire Clip	Pkg of 10	7000-400/10	Y
<b>ACCESSORIES</b>				
	Collar, Offset, Top Vent		812-3570	
	Damper, 3 Inch - Tall Vertical Installs Only		PEL-DAMP3	Y
	Damper, 4 Inch - Tall Vertical Installs Only		PEL-DAMP4	
	Firescreen	<b>No Longer Available</b>	SCR-7005	
	Log Set, (Sold as Set only)	2 Pc	LOGS-60-AE-B	
	Outside Air Kit		OAK-3	
	Top Vent Adapter		TPVNT-3	
	Warming Shelves	<b>No Longer Available</b>	844-9780	
		Porcelain Black	WSLG-PBK	
		Porcelain Dark Blue	WSLG-PDB	
		Porcelain Frost	WSLG-PFT	
		<b>No Longer Available</b>	844-9810	
		Sienna Bronze	WSLG-CSB	



**CONTACT INFORMATION**

Hearth & Home Technologies  
352 Mountain House Road  
Halifax, PA 17032  
Division of HNI INDUSTRIES

Please contact your Quadra-Fire dealer with any questions or concerns.  
For the number of your nearest Quadra-Fire dealer  
log onto [www.quadrafire.com](http://www.quadrafire.com)

**CAUTION**



**DO NOT DISCARD THIS MANUAL**

Important operating and maintenance instructions included.

• Read, understand and follow these instructions for safe installation and operation.

• Leave this manual with party responsible for use and operation.



**We recommend that you record the following pertinent information for your heating appliance.**

Date purchased/installed: \_\_\_\_\_

Serial Number: \_\_\_\_\_ Location on appliance: \_\_\_\_\_

Dealership purchased from: \_\_\_\_\_ Dealer phone: 1( ) - \_\_\_\_\_

Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

This product may be covered by one or more of the following patents: (United States) 5341794, 5263471, 6688302, 7216645, 7047962 or other U.S. and foreign patents pending.



# Installation Manual

## Installation & Appliance Set-Up

**INSTALLER:** Leave this manual with party responsible for use and operation.

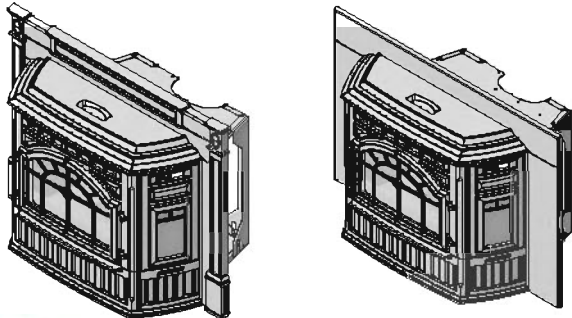
**OWNER:** Retain this manual for future reference.


**NOTICE: DO NOT DISCARD THIS MANUAL**


# QUADRA-FIRE<sup>®</sup>

## MT. VERNON E2 INSERT PELLET APPLIANCE


Model(s):  
**MTVI-E2-MBK-C      MTVI-E2-CSB-C**  
**MTVI-E2-PMH-C**



 Pellet Fuels Institute

To view and license by:  Portland Oregon USA  
C # 1177 US  
OMNI Test Laboratories, Inc.  
061-S-84-2


### WARNING



If the information in these instructions is not followed exactly, a fire could result causing property damage, personal injury, or death.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- Do not over fire - If appliance or chimney connector glows, you are over firing. Over firing will void your warranty.
- Comply with all minimum clearances to combustibles as specified. Failure to comply may cause house fire.

### WARNING



#### HOT SURFACES!

Glass and other surfaces are hot during operation AND cool down.

**Hot glass will cause burns.**

- Do not touch glass until it is cooled
- NEVER allow children to touch glass
- Keep children away
- CAREFULLY SUPERVISE children in same room as fireplace.
- Alert children and adults to hazards of high temperatures
- **High temperatures may ignite clothing or other flammable materials.**
- Keep clothing, furniture, draperies and other flammable materials away.

### CAUTION

Tested and approved for wood pellets only. Burning of any other type of fuel voids your warranty.

### NOTE

To obtain a French translation of this manual, please contact your dealer or visit [www.quadrafire.com](http://www.quadrafire.com)  
Pour obtenir une traduction française de ce manuel, s'il vous plaît contacter votre revendeur ou visitez [www.quadrafire.com](http://www.quadrafire.com)

Installation and service of this appliance should be performed by qualified personnel. Hearth & Home Technologies recommends HHT Factory Trained or NFI certified professionals.



### CAUTION

Check building codes prior to installation.

- Installation MUST comply with local, regional, state and national codes and regulations.
- Consult local building, fire officials or authorities having jurisdiction about restrictions, installation inspection, and permits.



**Safety Alert Key:**

- **DANGER!** Indicates a hazardous situation which, if not avoided will result in death or serious injury.
- **WARNING!** Indicates a hazardous situation which, if not avoided could result in death or serious injury.
- **CAUTION!** Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE:** Indicates practices which may cause damage to the appliance or to property.

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Quadra-Fire is a registered trademark of Hearth & Home Technologies.

# 1 Important Safety Information

## A. Appliance Certification

<b>Model</b>	Mt. Vernon Insert Pellet Appliance E2
<b>Laboratory</b>	OMNI Test Laboratories, Inc.
<b>Report No.</b>	061-S-84-2
<b>Type</b>	Solid Fuel Room Appliance, Pellet Fuel Burning Type
<b>Standard</b>	ASTM E1509-12, ULC-S628-93 and (UM) 84-HUD, Mobile Home Approved.
<b>FCC</b>	Complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**NOTICE:** This installation must conform with local codes. In the absence of local codes you must comply with the **ASTM E1509-12, ULC S628-93, (UM) 84-HUD and ULC/ORD-C-1482.**

The Quadra-Fire Mt. Vernon E2 Pellet Insert Appliance meets the U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards at 0.74 G/HR EPA CFR subpart AAA, using ASTM E2779-10, ASTM 2515-11 Method-Pellet Appliance sections, CSA B415.1-10. This pellet appliance needs periodic inspection and repair for proper operation. It is against federal regulations to operate this pellet appliance in a manner inconsistent with the operating instructions in the owner's manual.

## B. BTU & Efficiency Specifications

Emissions Report Number:	0061PS094E
EPA Certification #:	
EPA Certified Emissions:	0.74 g/hr
*LHV Tested Efficiency:	83.2%
**HHV Tested Efficiency:	77.9%
***EPA BTU Output:	39,428 / HR
****BTU Input:	50.775 / HR
Vent Size:	3, 4 or 6 inches, "L" or "PL"
Hopper Capacity:	80 lbs.
Fuel	Wood Pellets
* Weighted average LHV efficiency using data collected during EPA emissions test.	
**Weighted average HHV efficiency using data collected during EPA emissions test.	
***A range of BTU outputs based on HHV and the burn rates from the low and high EPA tests.	
****Based on the maximum feed rate per hour multiplied by approximately 8600 BTU's which is the average BTU's from a pound of pellets.	

## C. Glass Specifications

This appliance is equipped with 5mm ceramic glass. Replace glass only with 5mm ceramic glass. Please contact your dealer for replacement glass.

## D. Electrical Rating

115 VAC, 60 Hz, Start 2.9 Amps, Run 2.45 Amps

## E. Mobile Home Approved

- This appliance is approved for mobile home installations when not installed in a sleeping room and when an outside combustion air inlet is provided.
- The structural integrity of the mobile home floor, ceiling, and walls must be maintained.
- The appliance must be properly grounded to the frame of the mobile home and use only Listed pellet vent Class "L" or "PL" connector pipe.
- Outside Air Kit (OAK-3) must be installed in a mobile home installation.

## F. Non-Combustible Materials

Material which will not ignite and burn, composed of any combination of the following:

- Steel
- Brick
- Concrete
- Glass
- Plaster
- Iron
- Tile
- Slate

Materials reported as passing **ASTM E 136, Standard Test Method for Behavior of Metals, in a Vertical Tube Furnace of 750° C.**

## G. Combustible Materials

Material made of/ or surfaced with any of the following materials:

- Wood
- Plant Fibers
- Plywood/OSB
- Compressed Paper
- Plastic
- Sheet Rock (drywall)

Any material that can ignite and burn: flame proofed or not, plastered or non-plastered.

## WARNING



### Fire Risk.

Hearth & Home Technologies disclaims any responsibility for, and the warranty will be voided by, the following actions:

- Installation and use of any damaged appliance.
- Modification of the appliance.
- Installation other than as instructed by Hearth & Home Technologies.
- Installation and/or use of any component part not approved by Hearth & Home Technologies.
- Operating appliance without fully assembling all components.
- Operating appliance without legs attached (if supplied with appliance).
- Do NOT Over fire - If appliance or chimney connector glows, you are over firing.

**Any such action that may cause a fire hazard.**

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage.

For assistance or additional information, consult a qualified installer, service agency or your dealer.

**NOTE:** Hearth & Home Technologies, manufacturer of this appliance, reserves the right to alter its products, their specifications and/or price without notice.

# Install Guide

## 2 Getting Started

### A. Design, Installation & Location Considerations

#### 1. Appliance Location

**NOTICE:** Check building codes prior to installation.

- Installation MUST comply with local, regional, state and national codes and regulations.
- Consult insurance carrier, local building inspector, fire officials or authorities having jurisdiction over restrictions, installation inspection and permits.

It is a good idea to plan your installation on paper, using exact measurements for clearances and floor protection, before actually beginning the installation. Location of the appliance and chimney will affect performance.

Consideration must be given to:

- Safety, convenience, traffic flow
- Placement of the chimney and chimney connector and to minimize the use of chimney offsets.
- Place the appliance where there will be a clear passage for a Listed chimney through the ceiling and roof (vertical) or through exterior wall (horizontal).
- Installing the required outside air kit will affect the location of the vent termination.

When locating vent and venting termination, the ideal location is to vent above roof line when possible. This minimizes the affects of wind loading.

Since pellet exhaust can contain ash, soot or sparks, you must consider the location of:

- Windows
- Air Intakes
- Air Conditioner
- Overhang, soffits, porch roofs, adjacent walls
- Landscaping, vegetation
- Horizontal or vertical vent termination

#### 2. Floor Support

The supporting floor under the appliance must be able to handle the weight of the appliance, fuel load and the weight of the chimney.

Ensure that your floor will support these weights prior to installation. Add sufficient additional support to meet this weight requirement prior to installation. The weight of the appliance is 510 lbs. with a full load of fuel the max weight is 557 lbs.

**⚠ WARNING**

**Risk of Fire!** Damaged parts could impair safe operation. Do NOT install damaged, incomplete or substitute components.

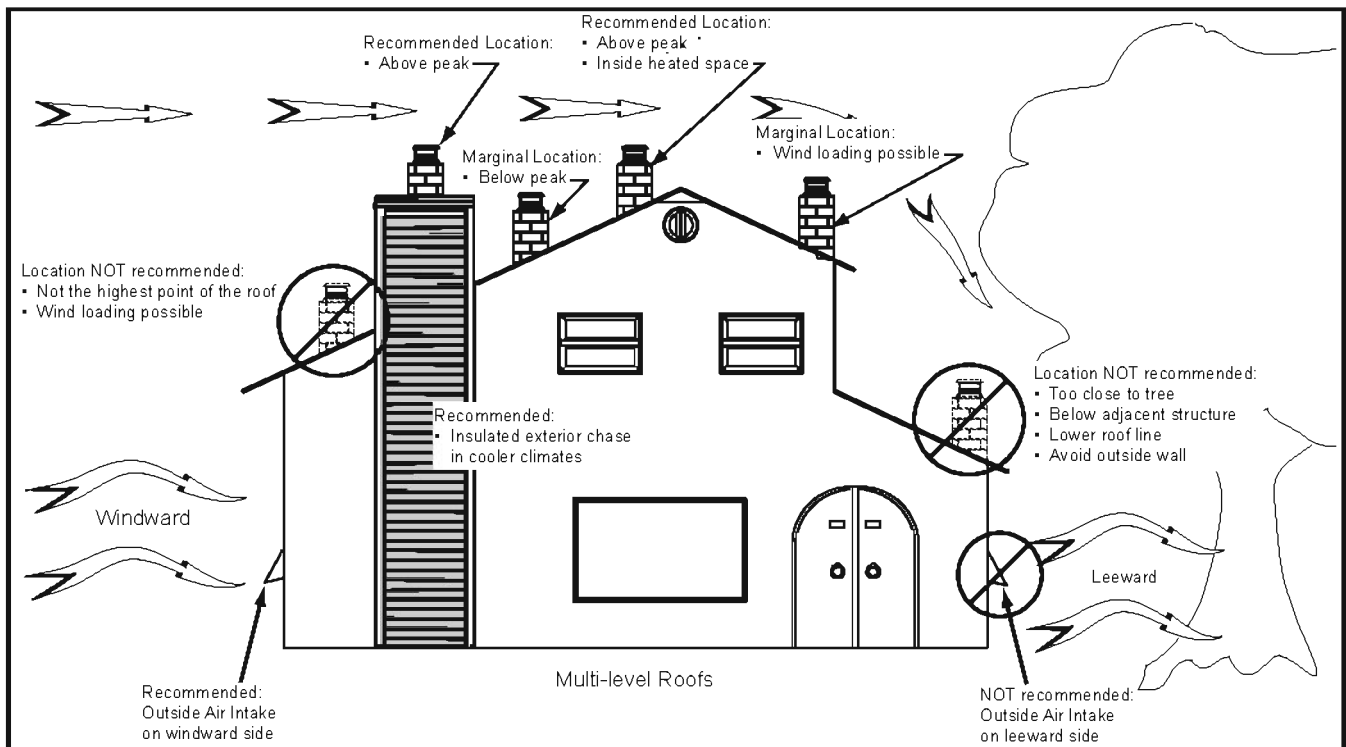


Figure 4.1



**B. Tools And Supplies Needed**

**Tools and building supplies normally required for installation, unless installing into an existing masonry fireplace:**

Reciprocating Saw	Channel Locks
Hammer	Phillips Screwdriver
Tape Measure	Plumb Line
1/4" Self-Tapping Screws	Framing Material
Hi-temp Caulking Material	Gloves
Safety Glasses	Framing Square
Electric Drill & Bits (1/4")	Level

May also need:

Vent Support Straps	Venting Paint
---------------------	---------------

**C. Inspect Appliance and Components**

- Open the appliance and remove all the parts and articles packed inside the Component Pack. Inspect all the parts and glass for shipping damage.
- Report to your dealer any parts damaged in shipment.
- All labels have been removed from the glass door.
- Plated surfaces have been wiped clean with a soft cloth, if applicable.
- **Read all the instructions before starting the installation. Follow these instructions carefully during the installation to ensure maximum safety and benefit.**
- **Follow pipe manufacturer instructions for installation and air clearance requirements.**

 **WARNING**



**Risk of Fire!**

Damaged parts could impair safe operation.  
Do NOT install damaged, incomplete or substitute components.

 **WARNING**



Hearth & Home Technologies disclaims any responsibility for, and the warranty will be voided by, the following actions:

- Installation and use of any damaged appliance.
- Modification of the appliance.
- Installation other than as instructed by Hearth & Home Technologies.
- Installation and/or use of any component part not approved by Hearth & Home Technologies.
- Operating appliance without fully assembling all components.
- Do NOT Over fire

**Or any such action that may cause a fire hazard.**

**NOTE:** Upon removing the appliance from the fireplace a tag shall be permanently attached to the fireplace indicating it has been altered and should be inspected by a qualified person prior to re-use as a convectional fireplace (tag included in component pack).

D. Install Checklist

**ATTENTION INSTALLER:  
Follow this Standard Work Checklist**

This standard work checklist is to be used by the installer in conjunction with, not instead of, the instructions contained in this installation manual.

Customer: \_\_\_\_\_  
 Date Installed: \_\_\_\_\_  
 Lot/Address: \_\_\_\_\_  
 Location of Appliance: \_\_\_\_\_  
 Installer: \_\_\_\_\_  
 Dealer/ Distributor Phone #: \_\_\_\_\_  
 Serial #: \_\_\_\_\_  
 Model : \_\_\_\_\_

**WARNING! Risk of Fire or Explosion! Failure to install appliance according to these instructions can lead to a fire or explosion.**

**Appliance Install**

**Verified clearances to combustibles.**

- Appliance is leveled and connector is secured to appliance.
- Hearth extension size/height decided.
- Outside air kit installed.
- Floor protection requirements have been met.
- If appliance is connected to a masonry chimney, it should be cleaned and inspected by a professional. If installed to a factory built metal chimney, the chimney must be installed according to the manufacturer's instructions and clearances.

YES	IF NO, WHY?
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____

**Chimney**

**Chimney configuration complies with diagrams.**

- Chimney installed, locked and secured in place with proper clearance.
- Chimney meets recommended height requirements (14-16 feet).

**Roof flashing installed and sealed.**

- Terminations installed and sealed.

<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____

**Clearances**

- Combustible materials not installed in non-combustible areas.
- Verified all clearances meet installation manual requirements.**
- Mantels and wall projections comply with installation manual requirements.
- Protective hearth strips and hearth extension installed per manual requirements.

<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____

**Appliance Setup**

- All packaging and protective materials removed.
- Firebrick, baffle and ceramic blanket installed correctly.**
- All labels have been removed from the door.
- All packaging materials are removed from inside/under the appliance.
- Manual bag and all of its contents are removed from inside/under the appliance and given to the party responsible for use and operation.

<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____

**Hearth & Home Technologies recommends the following:**

- **Photographing the installation and copying this checklist for your file.**
- That this checklist remain visible at all times on the appliance until the installation is complete.

**Comments:** Further description of the issues, who is responsible (Installer/Builder/Other Trades, etc.) and corrective action needed:

Comments communicated to party responsible \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_  
 (Builder/Gen. Contractor) (Installer) (Date)

# 3 Dimensions and Clearances

## A. Appliance Dimensions

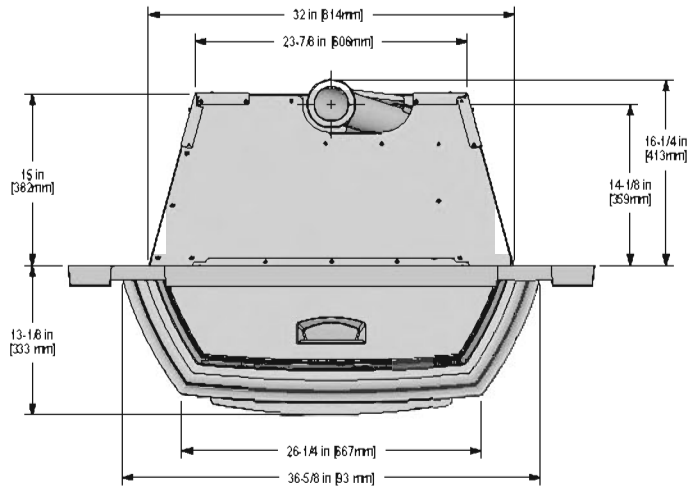


Figure 7.1 - Top View with Cast Panel Set

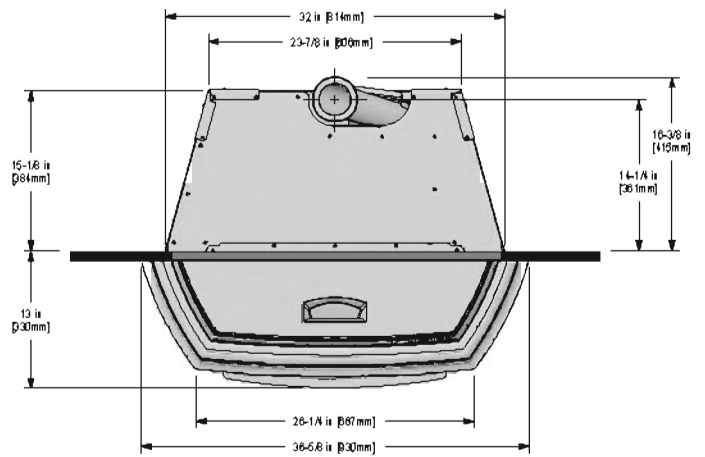


Figure 7.4 - Top View with Basic Surround Panel Set

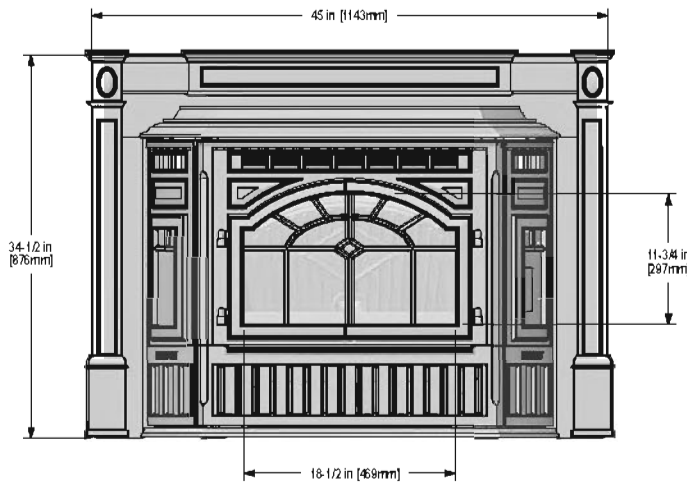


Figure 7.2 - Front View with Cast Panel Set

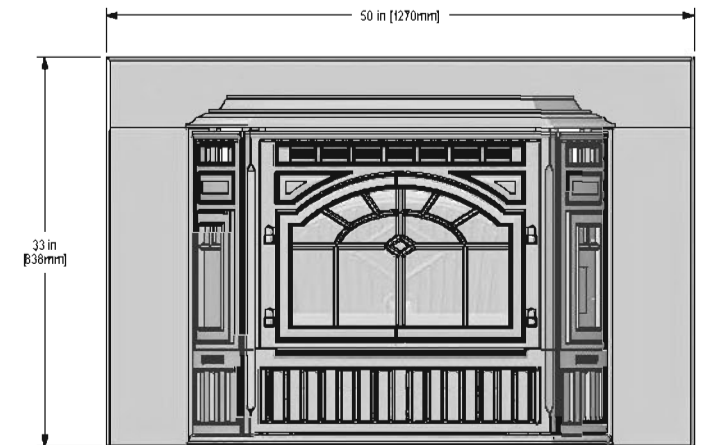


Figure 7.5 - Front View with Basic Surround Panel Set

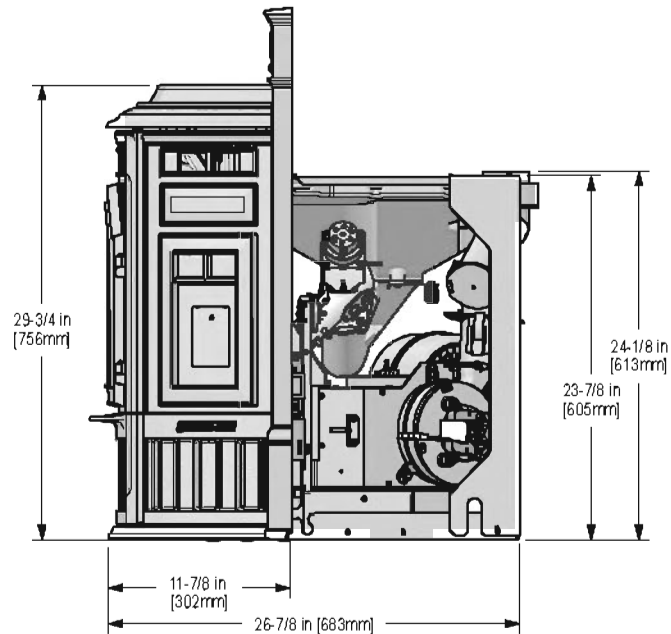


Figure 7.3 - Side View with Cast Panel Set

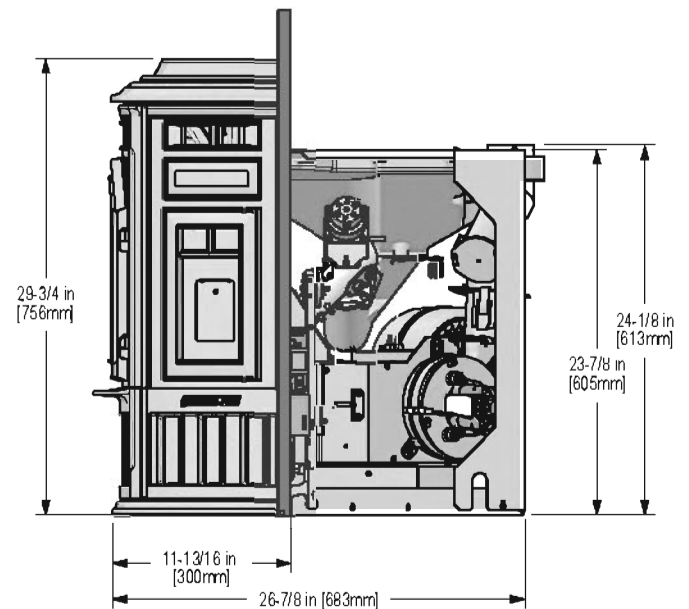


Figure 7.6 - Side View with Basic Surround Set

B. Clearance To Combustibles, US & Canada

Built-in Appliance - Rear Vent

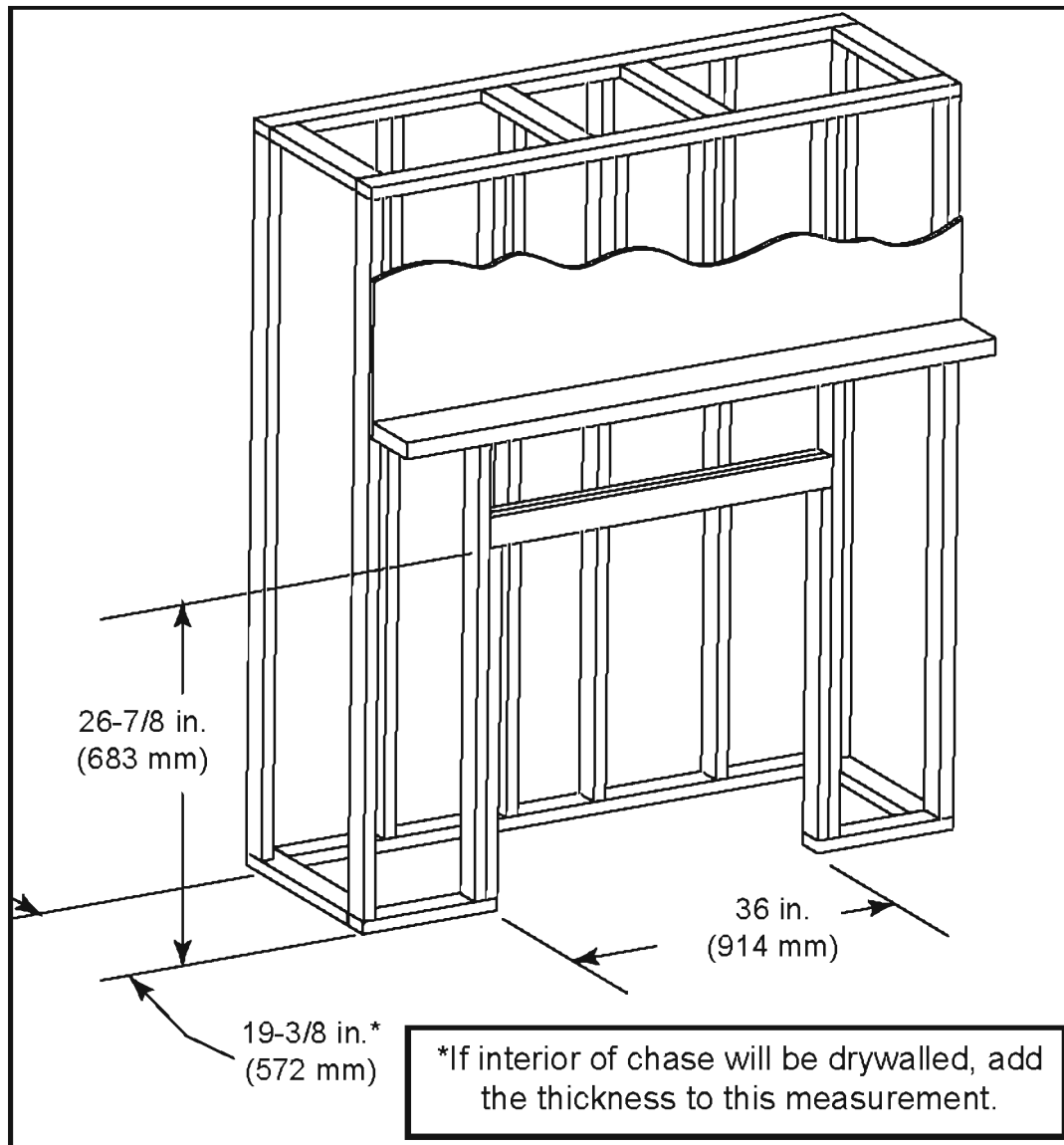




Figure 8.1

 **WARNING**

 Fire Risk.  
Comply with all minimum clearances to combustibles as specified.  
Failure to comply may cause house fire.

**NOTE:**

- Illustrations reflect typical installations and are FOR DESIGN PURPOSES ONLY.
- Illustrations/diagrams are not drawn to scale.
- Actual installation may vary due to individual design preference.

C. Minimum Opening for Masonry & Zero Clearance Fireplaces

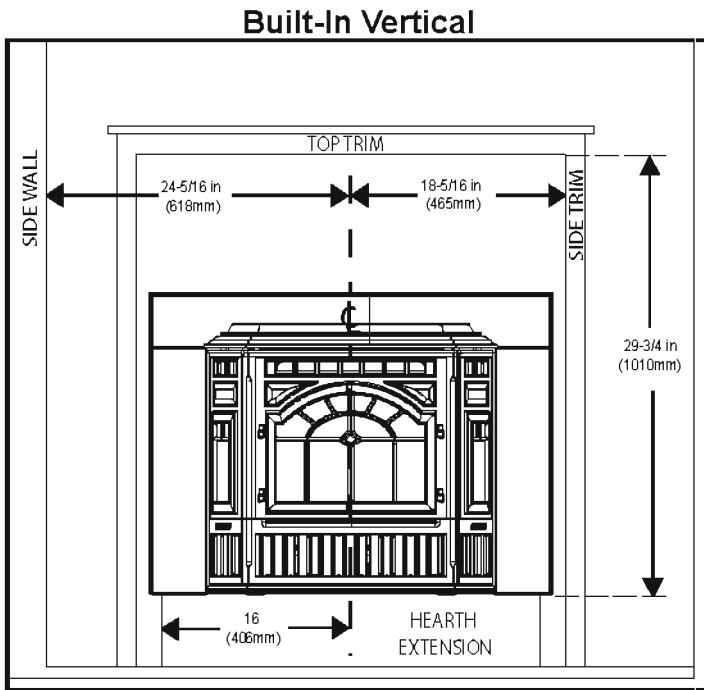


Figure 9.1

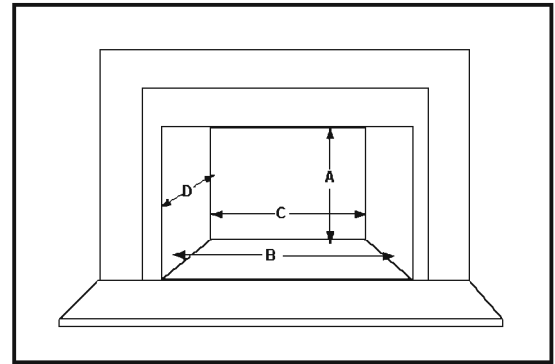


Figure 9.3

Minimum Opening Dimensions		Inches	Millimeters
A	Height	24-3/8	619
B	Front Width (Steel Panel Set)	32-1/4	819
	Front Width (Cast Panel Set)	32-1/4	819
C	Back Width	24-1/8	613
D	Depth (Steel Panel Set)	16-5/8	422
	Depth (Cast Panel Set)	16-1/4	413

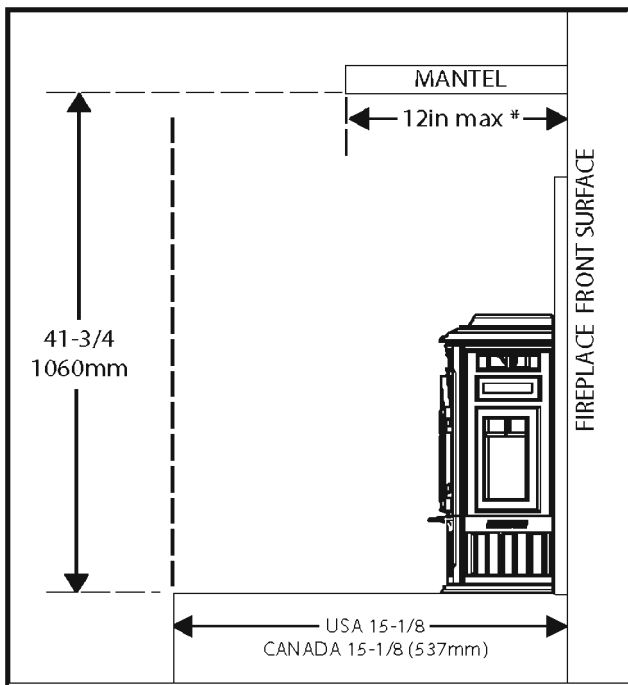


Figure 9.2

**HEARTH EXTENSION**  
 No thermal protection required  
 Ember protection only!

\*If mantel depth is 10 inches or less, than the height from the hearth to the bottom of the mantel is 39-3/4 inches.

If employing a hearth extension, any parts or materials used in construction must be non-combustible.

**D. Installation into a Factory-Built Fireplace**

The following modifications are permissible:

- Removal of damper or locked in open position
- Removal of smoke shelf or baffle
- Removal of ember catches
- Removal of fire grate
- Removal of view screen/curtain
- Removal of doors
- Removal of factory-built fireplace floor
- External trim pieces which do not affect the operation of the fireplace may be removed providing they can be stored on or within the fireplace for reassembly if the insert is removed.
- The permanent metal warning label provided must be attached to the back of the fireplace, with screws or nails, stating that the fireplace may have been altered to accommodate the insert, and must be returned to original condition for use as a conventional fireplace. **Figure 10.1**

**WARNING**

THIS FIREPLACE MAY HAVE BEEN ALTERED TO ACCOMMODATE AN INSERT. IT MUST BE RETURNED TO ITS ORIGINAL CONDITION BEFORE USE AS A SOLID FUEL BURNING FIREPLACE.

250-2061

**Figure 10.1**

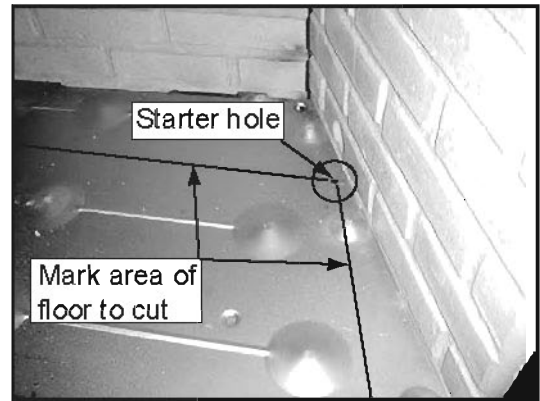
- If the hearth extension is lower than the fireplace opening, the portion of the insert extending onto the hearth must be supported.
- Manufacturer designed adjustable support kit can be ordered from your dealer.

**NOTE: Refer to chimney liner manufacturer for recommendations on supporting the liner. Installation into fireplaces without a permit will void the listing.**

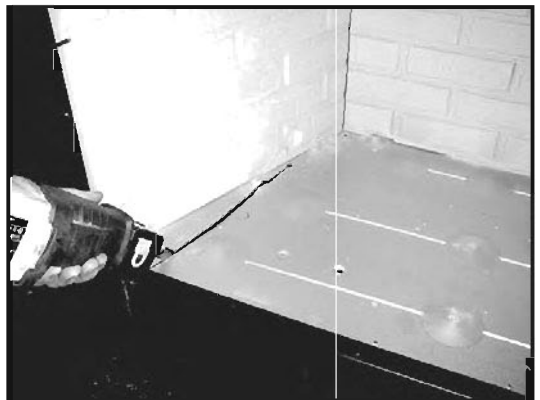
- The firebrick (refractory), glass doors, screen rails, screen mesh and log grates can be removed from a factory-built firebox in order to gain minimum insert opening requirements.
- Any smoke shelves, shields and baffles may be removed from a factory-built firebox if attached with mechanical fasteners.
- The metal floor of the factory-built firebox may be removed to facilitate the installation of the insert only when a 1 inch (25mm) airspace is provided between the insert and the floor of outer wrap.

The following is only one example as there are many different models of factory-built fireplaces.

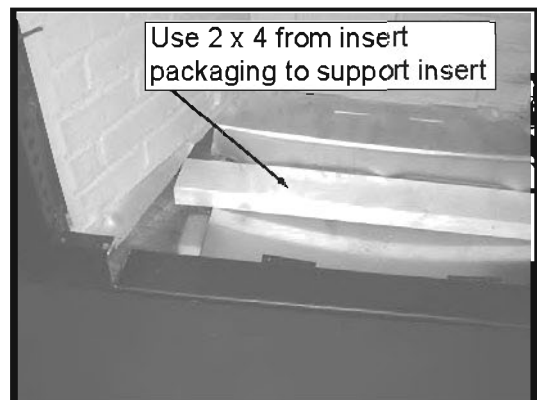
**NOTE: This example is for reference only. Any modifications must not compromise the structural integrity or reduce the protection for combustible materials.**



**Figure 10.2.** Measure and mark the metal floor for cutting. With a drill, make a starter hole in each corner.

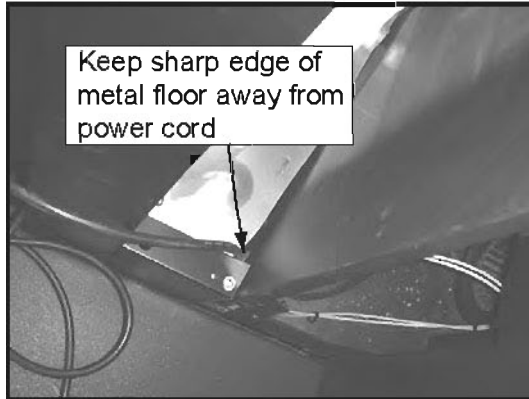


**Figure 10.3.** Using a saws-all, cut out the floor.



**Figure 10.4.** If the floor is made of thin metal, we recommend using the 2 x 4 from the insert packaging to support the insert. The 2 x 4 may need to be cut to the appropriate size.

**Example Removal of Factory-Built Fireplace Cont.**



**Figure 11.1.** Place the insert into the factory-built firebox. Ensure that the power cord can not be damaged by the sharp metal edge. You may need to cut out a notch to accommodate the cord.



**Figure 11.2.** Ensure that the leveling leg is positioned over the 2 x 4 before leveling the insert. Minimum 1" clearance.

**F. Prefabricated Metal Chimney**

The chimney can be new or existing, masonry or prefabricated and must meet the following minimum requirements:

- Must be minimum 6 inch (152mm) inside diameter of high temperature chimney listed to UL 103 HT (2100°F) or ULC-S628.
- Must use components required by the manufacturer for installation.
- Must maintain clearances required by the manufacturer for installation.
- Refer to manufacturers instructions for installation
- This insert is listed to ASTM E 1509-12 Standard and is approved for installation into listed factory-built zero clearance fireplaces listed to UL 127 conforming to the following specifications and instructions:
  - The original factory-built clearance fireplace chimney cap must be re-installed after installing the approved chimney liner meeting type UL 103 HT requirements (2100°F) per UL 1777.
  - If the chimney is not listed as meeting HT requirements, or if the factory built fireplace was tested prior to 1998, a full height listed chimney liner must be installed from the appliance flue collar to the chimney top.
  - The liner must be securely attached to the insert flue collar and the chimney top.
  - The air flow of the factory-built zero-clearance fireplace system must not be altered. The flue liner top support attachment must not reduce the air flow for the existing air-cooled chimney system.
- No dilution air is allowed to enter the chimney.
  1. Secure the fireplace damper in the open position. If this cannot be accomplished, it will be necessary to remove the damper
  2. Seal damper area of chimney around chimney connector with a high temperature sealant or seal insert against the face of the fireplace.
  3. Both methods must be removable and replaceable for cleaning and re-installation.

**E. Installation into a Masonry Fireplace**

All modifications that can be made to a Factory Built Fireplace can be made to a Masonry Fireplace.

In addition **DO NOT** remove any brick or mortar from the existing fireplace.

<b>WARNING</b>
<ul style="list-style-type: none"> <li>• Removing floor of fireplace must not weaken structure of firebox or reduce protection for combustible materials.</li> <li>• Final approval of this installation type is contingent upon the appropriate local authority having jurisdiction.</li> </ul>

<b>WARNING</b>
<div style="display: flex; align-items: center;"> <div> <p><b>Risk of Fire!</b></p> <p>Follow venting manufacturer's clearances and instructions when installing venting system.</p> </div> </div>

<p><b>NOTICE:</b> In Canada when using a factory-built chimney it must be safety listed, <b>Type UL103 HT (2100°F) [1149°C] CLASS "A"</b> or conforming to <b>CAN/ULC-S629M, STANDARD FOR 650°C FACTORY-BUILT CHIMNEYS.</b></p>
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# 4 Vent Information

## A. Venting Termination Minimum Requirements

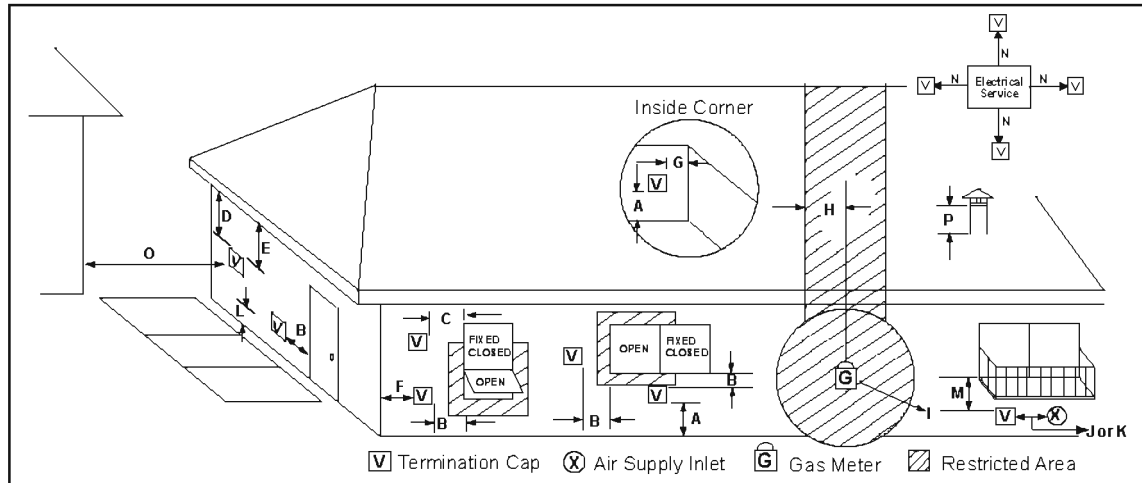


Figure 12.1

All minimum clearances are listed with an Outside Air Kit (OAK) installed, unless otherwise noted in table below.

A	12 in.	Above Finish Grade (the grade surface must be a non-combustible material)
B	12 in. 48 in. no OAK	Open door or window: below or to the side
B	12 in.	Open door or window: above
C	6 in.	Permanently closed window: above, below or to the side
D	18 in. 36 in. no OAK	Vertical clearance to a ventilated soffit located above the terminal within a horizontal distance of 2 ft from the center-line of the terminal
E	12 in.	Clearance to unventilated soffit
F	12 in.	Clearance to outside corner
G	12 in.	Clearance to inside corner
H	36 in.	Above gas meter/regulator measured from horizontal center-line of regulator
I	36 in. USA 72 in. Canada	Clearance to service regulator vent outlet
J	12 in. 48 in. no OAK	Clearance to non-mechanical air supply inlet to the building or the combustions air inlet to any other appliance
K	10 ft horizontal 3 ft vertical	Clearance to mechanical air supply
L	7 ft.	Above paved sidewalk, paved driveway located on <b>public</b> property
M	12 in.	Under an open veranda, porch, deck or balcony
N	See Note below*	Electric service: above, below or to the side (location must not obstruct or interfere with access)
O	24 in.	Adjacent building, fences and protruding parts of the structure
P	12 in.	Clearance above roof line for vertical terminations

24 in.	Above grass, top of plants, wood or any other combustible
12 in. 36 in. no OAK	Clearance from any forced air intake of other appliance
12 in.	Clearance horizontally from combustible wall
15 in.	Vented directly through a wall, minimum length of horizontal pipe
6 in. horizontal 12 in. vertical	Minimum horizontal or vertical terminations must protrude from wall

**NOTICE:**

**Do NOT Terminate Vent:**

- In any location that will allow flue gases or soot from entering or staining the building
- In any location which could create a nuisance or hazard
- In any enclosed or semi-enclosed area such as a carport, garage, attic, crawl space, under a sun deck or porch, narrow walkway
- Closely fenced area, or any location that can build up a concentration of fumes such as a stairwell, covered breezeway, etc.

**NOTICE:**

**Termination must exhaust above air inlet elevation.**

- It is recommended that at least 60 inches (1.52m) of vertical pipe be installed when appliance is vented directly through a wall. This will create a natural draft, which will help prevent the possibility of smoke or odor venting into the home during a power outage.
- It will also keep exhaust from causing a nuisance or hazard by exposing people or shrubs to high temperatures.
- The safest and preferred venting method is to extend the vent vertically through the roof or above the roof.

\*NOTE: Consult local building, fire officials or authorities having jurisdiction. Local codes or regulations may require different clearances.



**B. Avoiding Smoke and Odors**

**Negative Pressure, Shut-Down and Electrical Power Failure**

To reduce the probability of back-drafting or burn-back in the pellet appliance during power failure or shut down conditions, it must be able to draft naturally without exhaust blower operation.

Negative pressure in the house will resist this natural draft if not accounted for in the pellet appliance installation.

Heat rises in the house and leaks out at upper levels. This air must be replaced with cold air from outdoors which flows into lower levels of the house.

Vents and chimneys into basements and lower levels of the house can become the conduit for air supply and reverse under these conditions.

**Outside Air**

An outside air kit is recommended in all installations and must be ordered separately.

Per national building codes, consideration must be given to combustion air supply to all combustion appliances. Failure to supply adequate combustion air for all appliance demands may lead to back drafting of those and other appliances.

When the appliance is roof vented (strongly recommended):

The air intake is best located on the exterior wall oriented towards the prevailing wind direction during the heating season.

When the appliance is side-wall vented:

The air intake is best located on the same exterior wall as the exhaust vent outlet and located lower on the wall than the exhaust vent outlet.

The outside air supply kit can supply most of the demands of the pellet appliance, but consideration must be given to the total house demand.

House demand may consume the air needed for the appliance. It may be necessary to add additional ventilation to the space in which the pellet appliance is located.

Consult with your local HVAC professional to determine the ventilation demands for your house.

**Vent Configurations**

To reduce probability of reverse drafting during shut-down conditions Hearth & Home Technologies strongly recommends:


- Installing the pellet vent with a minimum vertical run of 5 feet (1.52m). Preferably terminating above the roof line.
- Installing the outside air kit at least 4 feet (1.22m) below the vent termination.

To prevent soot damage to exterior walls of the house and to prevent re-entry of soot or ash into the house:

- Maintain specified clearances to windows, doors and air inlets, including air conditioners.
- Vents should not be placed below ventilated soffits. Run the vent above the roof.
- Avoid venting into alcove locations.
- Vents should not terminate under overhangs, decks or onto covered porches.
- Maintain minimum clearance of 12 inches (305mm) from the vent termination to the exterior wall. If you see deposits developing on the wall, you may need to extend this distance to accommodate your installation conditions.

 <b>CAUTION</b>
<ul style="list-style-type: none"> <li>• DO NOT CONNECT THIS Appliance TO A CHIMNEY FLUE SERVICING ANOTHER APPLIANCE.</li> <li>• DO NOT CONNECT TO ANY AIR DISTRIBUTION DUCT OR SYSTEM.</li> </ul>

**C. Negative Pressure**

 <b>WARNING</b>
<b>Risk of Asphyxiation!</b> Negative pressure can cause spillage of combustion fumes and soot.

Negative pressure results from the imbalance of air available for the appliance to operate properly. It can be strongest in lower levels of the house.

Causes include:

- Exhaust fans (kitchen, bath, etc.)
- Range hoods
- Combustion air requirements for furnaces, water appliances and other combustion appliances
- Clothes dryers
- Location of return-air vents to furnace or air conditioning
- Imbalances of the HVAC air handling system
- Upper level air leaks such as:
  - Recessed lighting
  - Attic hatch
  - Duct leaks

To minimize the effects of negative air pressure:

- Install the outside air kit with the intake facing prevailing winds during the heating season
- Ensure adequate outdoor air for all combustion appliances and exhaust equipment
- Ensure furnace and air conditioning return vents are not located in the immediate vicinity of the appliance
- Avoid installing the appliance near doors, walkways or small isolated spaces
- Recessed lighting should be a “sealed can” design
- Attic hatches weather stripped or sealed
- Attic mounted duct work and air handler joints and seams taped or sealed

**D. Draft**

Draft is the pressure difference needed to vent an appliance successfully. When an appliance is drafting successfully, all combustion byproducts are exiting the home through the chimney.

Install through the warm airspace enclosed by the building envelope. This helps to produce more draft, especially during lighting and die-down of the fire.

Considerations for successful draft include:

- Preventing negative pressure
- Location of appliance and chimney

**NOTICE:** *Hearth & Home Technologies assumes no responsibility for the improper performance of the chimney system caused by:*

- *Inadequate draft due to environmental conditions*
- *Down drafts*
- *Tight sealing construction of the structure*
- *Mechanical exhausting devices*

**E. Chimney and Exhaust Connection**

1. **Chimney & Connector:** Use 3 or 4 inch (76-102mm) diameter type “L” or “PL” venting system. It can be vented vertically or horizontally.

<p><b>NOTE:</b> The appliance exhaust outlet is designed to accommodate 3 inch venting. Use of 4 inch venting requires the use of a 3-to-4 inch exhaust vent increaser in addition to any other venting components needed, sold separately.</p>
---

2. **Mobile Home:** Approved for all Listed pellet vent. If using the 3 to 6 inch (76-152mm) Top Vent Offset Adapter, use Listed double wall flue connector. A Quadra-Fire Outside Air Kit (OAK-3) must be used with manufactured home installations.
3. **Residential:** The 3 inch (76mm) vertical Top Vent Adapter Kit and the 3 to 6 inch (76-152mm) Top Vent Offset Adapter are tested to use 24 gauge single wall flue connector or Listed double wall flue connector to Class A Listed metal chimneys, or masonry chimneys meeting International Residential Code standards for solid fuel appliances.

**4. INSTALL VENT AT CLEARANCES SPECIFIED BY THE VENT MANUFACTURER.**

5. Vent Assembly to Insert Instructions:

These instructions are for connecting the vent pipe to the vent assembly prior to installing the appliance in the fireplace.

- a. Unlatch the vent assembly for the exhaust blower and attach to the vent pipe end using high temperature silicone and at least three screws.
  - b. Slide the appliance into place and line up the bent assembly with the exhaust blower.
  - c. Make sure the high-temperature gasket is in place.
  - d. Latch the top vent assembly to the exhaust blower.
6. DO NOT INSTALL A FLUE DAMPER IN THE EXHAUST VENTING SYSTEM OF THIS Appliance.
  7. DO NOT CONNECT THIS Appliance TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.
  8. Disconnect the vent pipe from the appliance to allow removal of the fireplace insert for the purpose of inspecting the fireplace insert and the fireplace.

**NOTE:** All pipe must be welded seam pipe whenever possible. Seal pipe joints with high temperature silicone (500°F [260°C] minimum rated only).

 <b>WARNING</b>
USE ONLY RECOMMENDED VENTING COMPONENTS; OTHERWISE MAKESHIFT PARTS MAY RESULT IN PROPERTY DAMAGE, PERSONAL INJURY, OR DEATH.

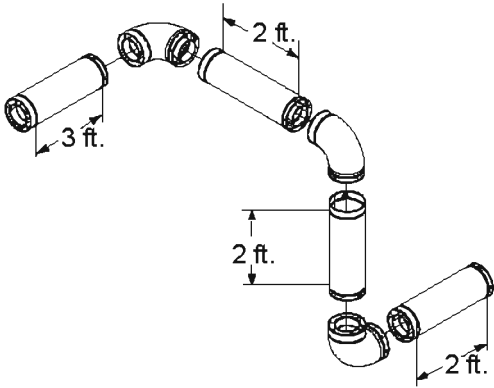
### F. Equivalent Feet of Pipe

The table below can help you calculate the equivalent feet of pipe which is a method used to determine pellet vent size. **Figure 15.1.**

**⚠ WARNING**


 Vent surfaces get **HOT**, can cause burns if touched. Non-combustible shielding or guards may be required.

#### Example of 3 Elbow-Rear Vent Termination Calculation



Pellet Venting Component	# of Elbows	Feet of Pipe	Multiplied By	Equivalent Feet	Components Equivalent Feet
90° Elbow or Tee	3		X	<b>5</b>	15
45° Elbow			X	<b>3</b>	
Horizontal Pipe		7	X	<b>1</b>	7
Vertical Pipe		2	X	<b>0.5</b>	1
<i>Total Equivalent Feet</i>					<b>23</b>

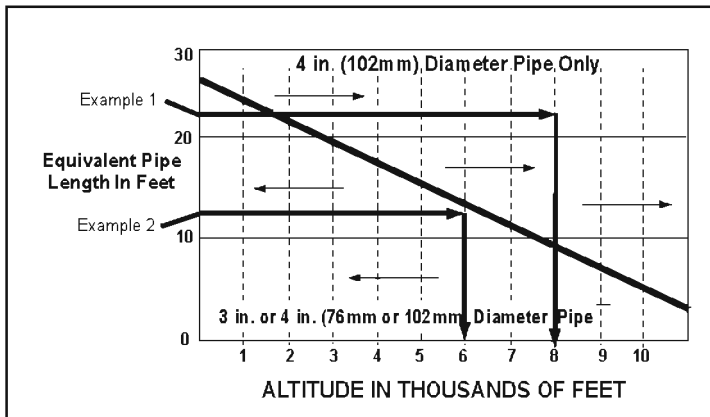
Note: This is a generic example and is not intended to represent any specific fuel type.

**Figure 15.1**

### G. Pipe Selection Chart

The chart will help you in determining proper venting size according to the equivalent feet of pipe calculated previously and the altitude above sea level of this installation. **Figure 15.2**

- Locate the calculated equivalent feet of pipe on the vertical left side of the chart.
- Move to the right horizontally on the chart until you reach your altitude above sea level.
- If you fall below the diagonal line, 3 or 4 inch (76 to 102mm) pipe may be used.
- If it is anywhere above the diagonal line, a 4 inch (102mm) diameter pipe is required.



**Figure 15.2**

**Example 1:** If the equivalent length of pipe is 23 feet (7m) with altitude of 8,000 feet (2438m) you must use 4 inch (102mm) diameter type “L” or “PL” vent.

**Example 2:** If the equivalent length of pipe is 12 feet (3.7m) with altitude of 6,000 feet (1829m) you may use 3 or 4 inch (76 to 102mm) diameter type “L” or “PL” vent.

**NOTICE:**

- A 90° elbow is 5 times as restrictive to the flow of exhaust gases under positive pressure as 1 foot (305mm) of horizontal pipe.
- A foot of horizontal pipe is twice as restrictive as a foot of vertical pipe.

**⚠ WARNING**

**Risk of Fire!**

- Only LISTED venting components may be used.
- NO OTHER vent components may be used.
- Substitute or damaged vent components may impair safe operation.

**⚠ WARNING**

**RISK OF INJURY OR PROPERTY DAMAGE!**

- Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage.
- Refer to the owner’s information manual provided with this appliance.
- For assistance or additional information consult a qualified installer, service agency or your dealer.

# 5 Venting Systems

## A. Full Reline With Outside Air - Horizontal

### CAUTION

- Never draw outside combustion air from:
- Wall, floor or ceiling cavity
  - Enclosed space such as an attic or garage



### WARNING



#### Fire Risk.

Inspection of Chimney:

- Masonry chimney must be in good condition.
- Meets minimum standard of NFPA 211
- Factory-built chimney must be a minimum 6 inch (152mm) UL103 HT.

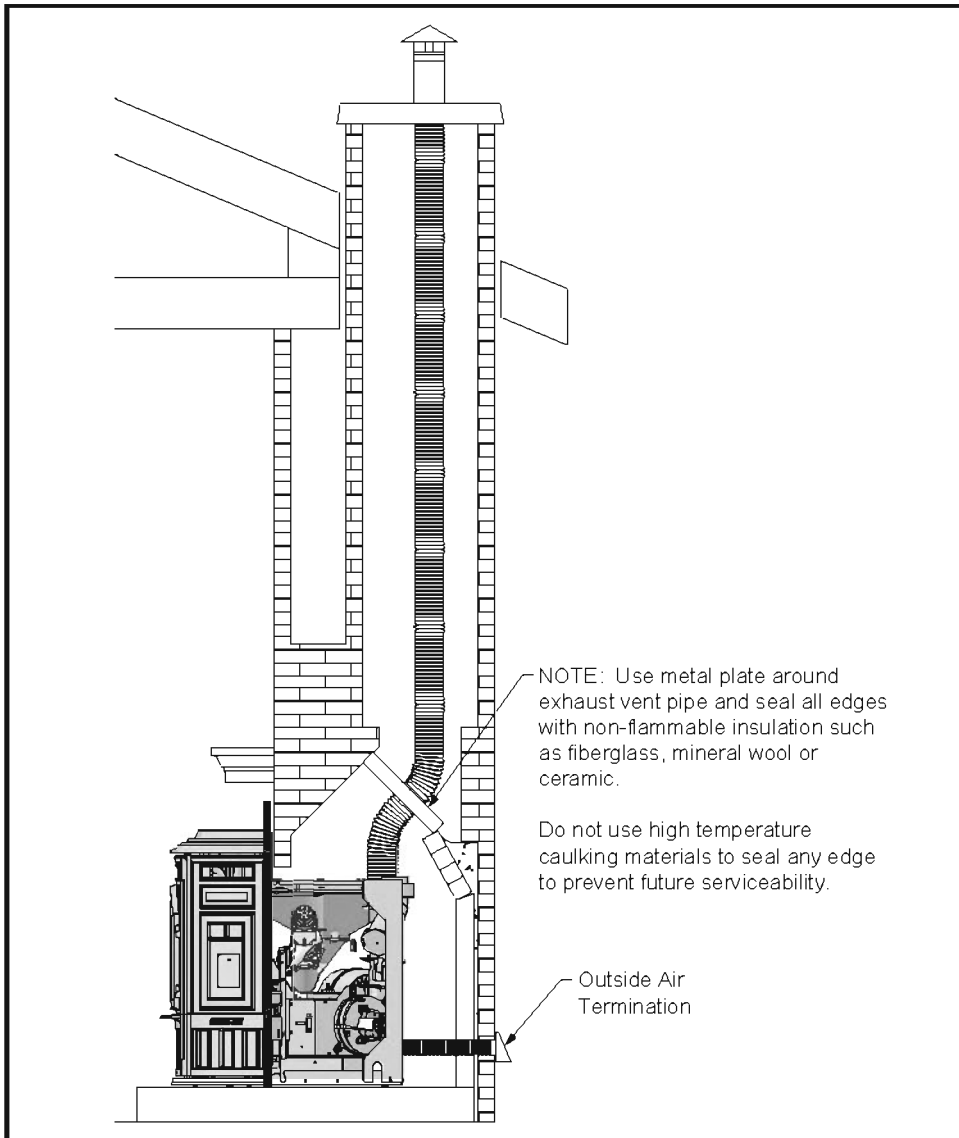


Figure 16.1

#### NOTE:

In Canada, where passage through a wall or partition of combustible construction is desired, the installation shall conform to CAN/CSA-B365.

#### NOTE:

- Illustrations reflect typical installations and are FOR DESIGN PURPOSES ONLY.
- Illustrations/diagrams are not drawn to scale.
- Actual installation may vary due to individual design preference.

**B. Full Reline With Outside Air - Vertical**

**NOTE:** Check clearances carefully for this type of installation to ensure adequate room for outside air venting.

**NOTE:** In Canada only a full reline is allowed per ULC S628, ORD ULC C1482-M1990.

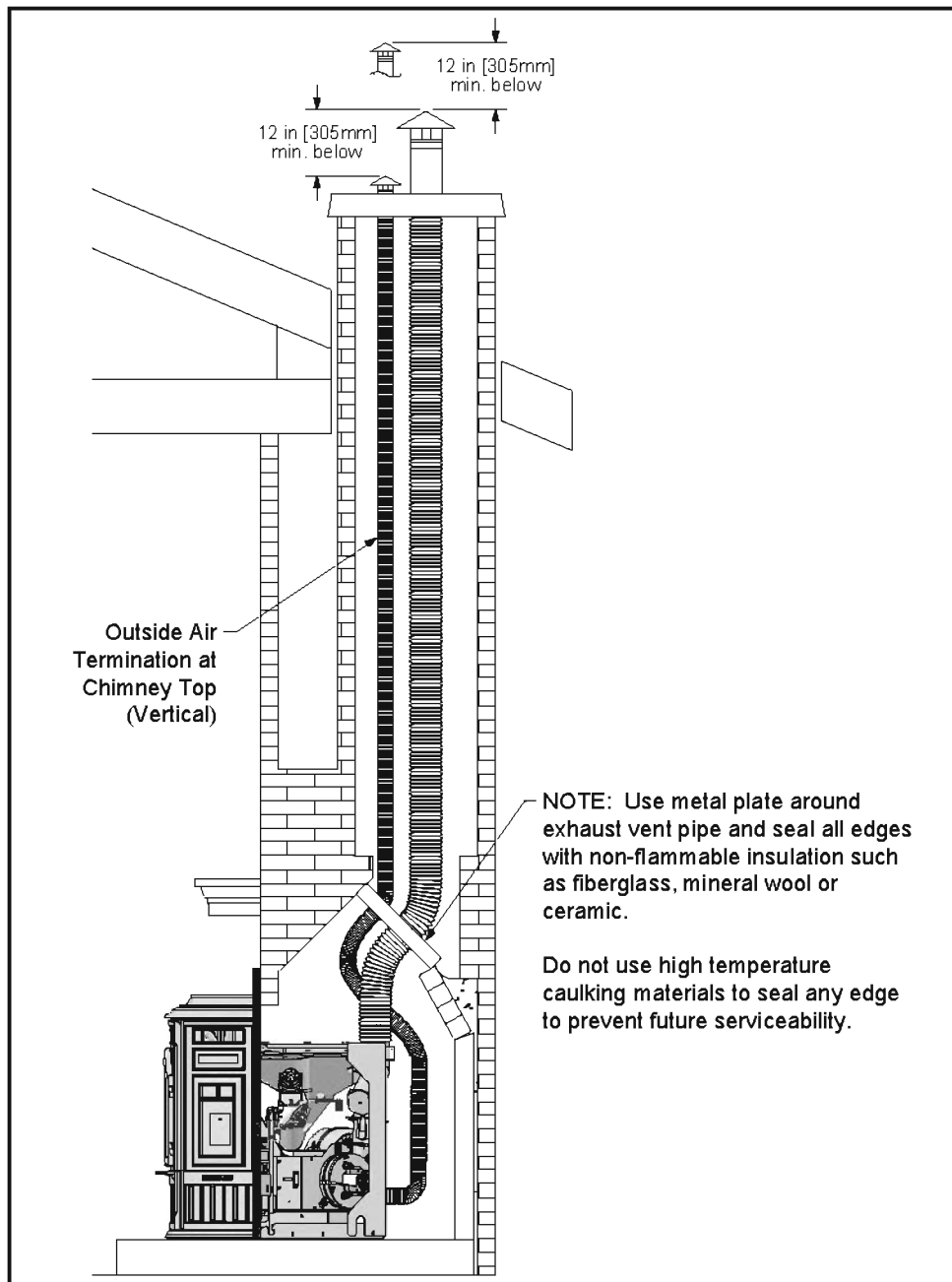


Figure 17.1

**NOTE:** In Canada this fireplace insert must be installed with a continuous chimney liner extending from the fireplace insert to the top of the chimney. The chimney liner must conform to the Class 3 requirements of CAN/ULC-S635, Standard for Lining Systems for Existing Masonry or Factory-Built Chimneys and Vents, or CAN/ULC-S640, Standard for Lining Systems for New Masonry Chimneys.

**CAUTION**

- Check building codes prior to installation.
- Installation MUST comply with local, regional, state and national codes and regulations.
- Consult local building, fire officials or authorities having jurisdiction about restrictions, installation inspection, and permits.

# 6 Appliance Set-Up

## A. Leveling System

The leveling bolts are located on the sides of the appliance, front and rear. To access the bolts, remove the front access panels. Reach in and turn the bolt to the desired height to level the appliance. **Figure 18.1**

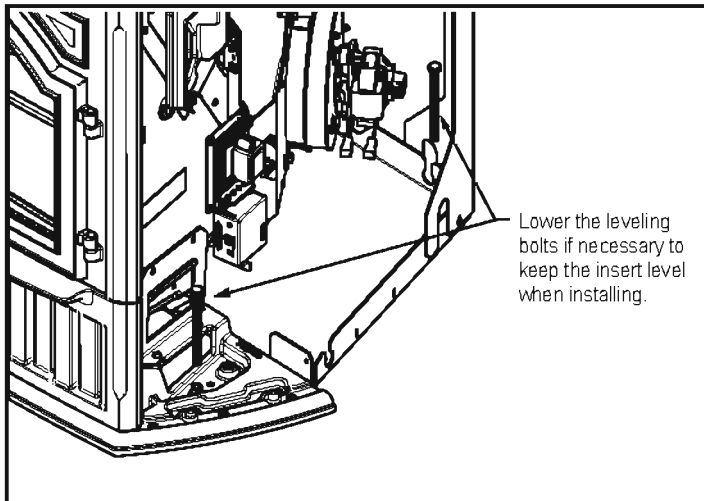


Figure 18.1

## B. Outside Air Kit Instructions

**Included in Kit:** 2 wire ties, 1 collar assembly, 1 termination cap assembly, 1 trim ring, fasteners.

**3 INCH (76mm) ALUMINUM FLEX PIPE NOT INCLUDED**

**Tools Needed:** Phillips head screw driver; wire cutters; hole saw or jig saw.

1. Measure distance from floor to air vent opening in appliance and mark location on wall.
2. Use saw to cut opening in wall. Cut a 3-1/2 to 4 inch (89-102mm) opening on inside wall and a 4 to 4-1/2 inch (102-114mm) opening on outside of house.
3. Use wire ties to secure flex pipe to collar assembly.
4. Slide trim ring over flex pipe and run pipe through wall.
5. Attach flex pipe (not included) to outside termination cap with second wire tie.
6. Secure termination cap to outside surface.
7. Secure trim ring to interior wall.

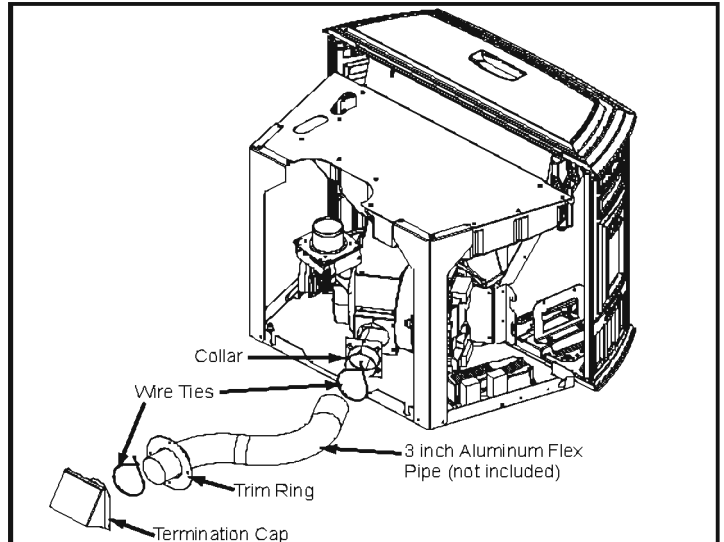


Figure 18.2 - OAK Exploded View

## C. Hearth Support

**Included in Kit:** (1) bottom, (1) trim front, (2) trim sides, (2) trim extensions

**Tools Needed:** Phillips head screw driver, measuring tape, gloves

1. Remove contents from box and lay on protective surface to avoid scratching the paint.
2. Lay front and sides face down. Bend the tabs down toward the inside. **Figure 18.3**
3. The side pieces are shipped flat. It must be easier to flex the sides into a bowed position before installing.
4. Lay the cast bottom face up. Attach the 2 sides FIRST and then the front piece. **Figure 19.1 on pg. 19**
5. Turn the cast bottom right side up and attach the panel extensions. Note the alignment hole.
6. Attach the appropriate footers depending on the panels & trim set you are installing. The footers come in 2 sizes, 3 and 5 inches. Discard the footers not used.
7. Place the assembled hearth support under the insert. Lower the leveling bolts if necessary to keep the insert level.
8. Open the door and attach the hearth support to the insert. There are 9 attachment holes. **Figure 19.2 on pg. 19**

<b>CAUTION</b>
<p>Never draw outside combustion air from:</p> <ul style="list-style-type: none"> <li>• Wall, floor or ceiling cavity</li> <li>• Enclosed space such as an attic or garage</li> </ul>

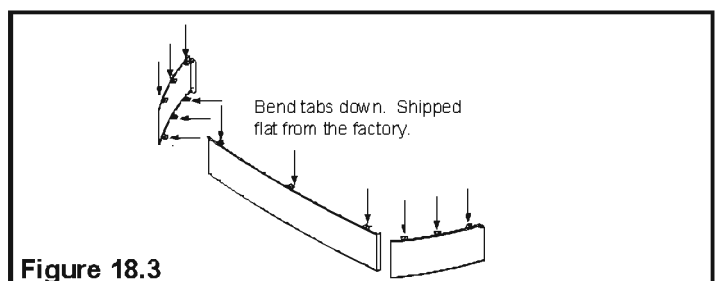


Figure 18.3

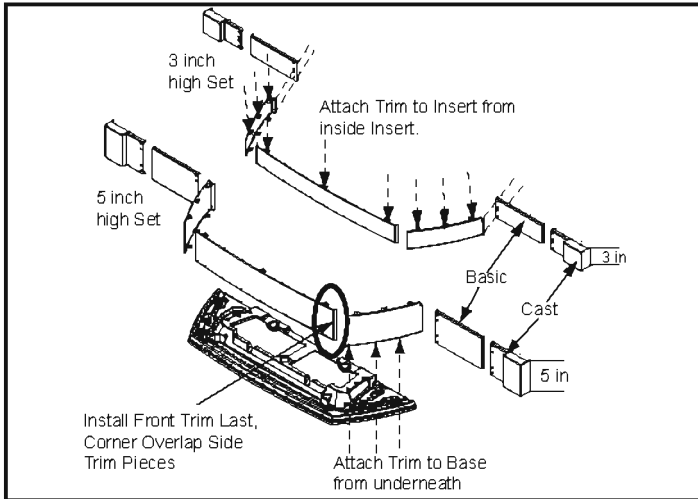


Figure 19.1

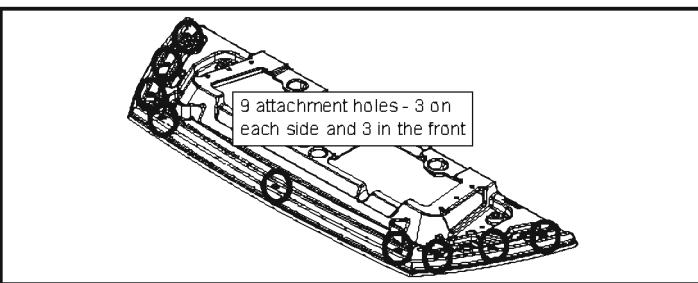


Figure 19.2

### D. Removal of Cast Sides

Remove the right side panel by releasing the upper, spring-loaded latch. Access the latch through the upper panel vent holes. The cast panel should fall forward. Lift it out of its lower nest and set the panel aside. You may need to disconnect the dial control wire harness.

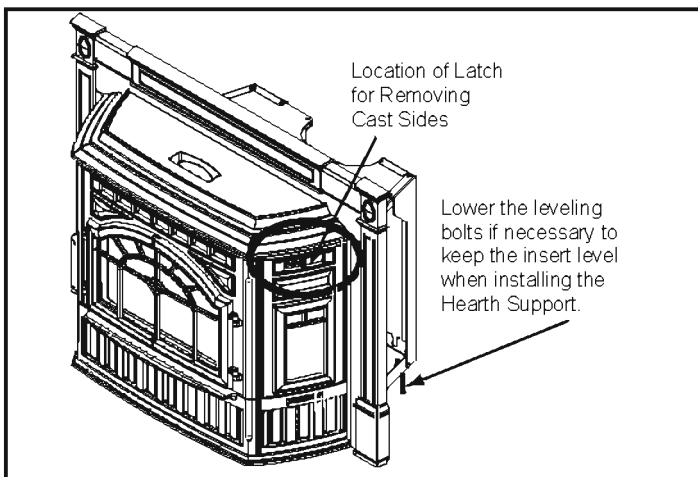


Figure 19.3 - Shown with Cast Panel Set

### E. Surround and Trim Set - Cast

**Included in Surround Kit:** (2) side panels, left and right; (1) panel top; (1) fastener package.

**Included in Cast Trim Kit:** (2) cast trim legs, left and right; (1) cast trim header; (2) cast trim footers, left and right; (1) fastener package.

**Tools Needed:** Powered Phillips head screw driver

1. Remove contents from box being careful not to scratch or damage the cast trim pieces.
2. Lay the surround set face down on protective covering to prevent scratching the painted surface.
3. Secure the surround legs to top panel with the screws provided.
4. Now bend the tabs down toward the backside of the panel set, 5 on top and 2 on each leg. Leave the panel set face down. **Figure 19.4**
5. Place the corresponding cast trim pieces ( 2 cast trim legs and 1 cast trim header) underneath the panel set, also face down.
6. Place washer provided over tab and secure the trim and panel together with screw. Continue for all tabs.
7. Secure cast footers with screws.
8. Remove both left and right cast sides from insert. **See Figure 19.3.**
9. Carefully slide surround and trim over the top of the insert into place matching the mounting holes on the panel with the mounting holes on the insert. Secure with screws provided.

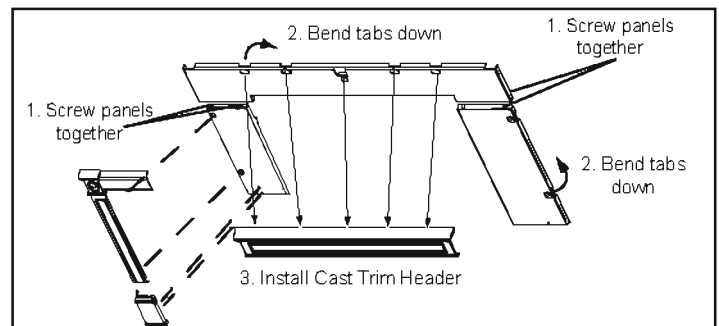


Figure 19.4

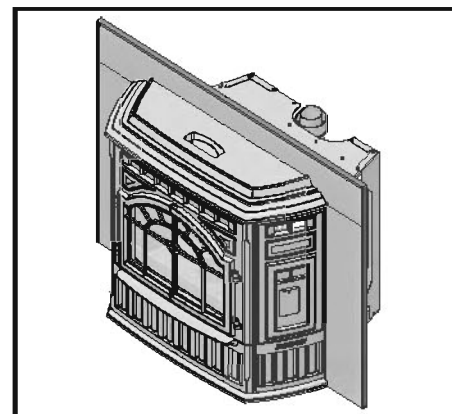


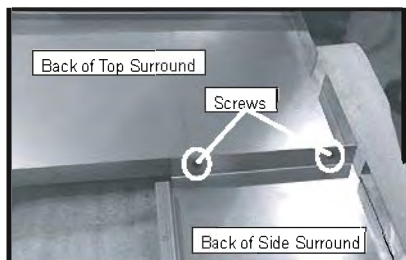
Figure 19.5- Completed View

**F. Surround & Trim Set, Basic**

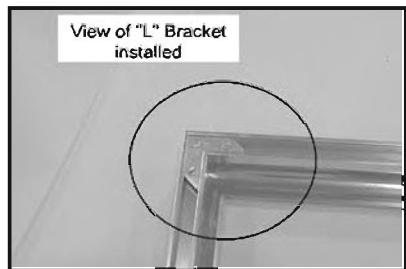
Included in Surround & Trim Kit: (2) corner brackets and set screws; (1) trim set, 3 piece; (2) side panels; (1) top panel; (4) screws.

**Tools Needed:** Powered Phillips head screw driver

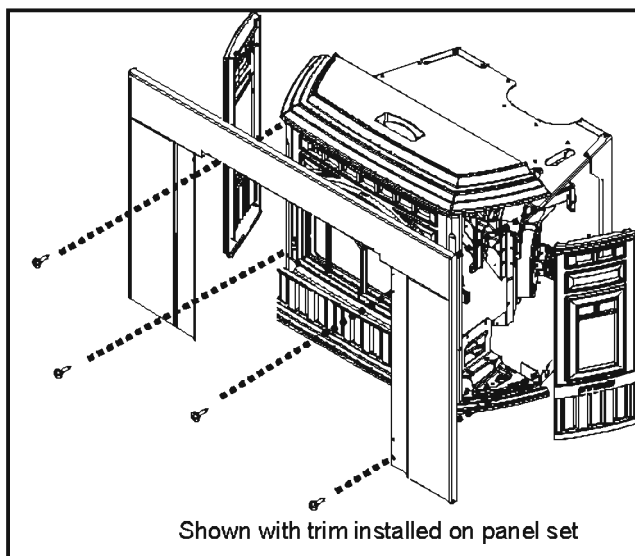
1. Secure the top panel to the surround sides with the screws provided. **Figure 20.1**
2. Assemble the trim with the (2) corner brackets provided. **Figure 20.2**
3. Remove the 2 cast sides and slide the assembled trim over the assembled surround set. **Figure 19.3 on pg 19**
4. Carefully slide surround and trim over the top of the insert into place matching the mounting holes on the panel with the mounting holes on the insert. Secure with screws provided. **Figure 20.3**



**Figure 20.1**



**Figure 20.2**



**Figure 20.3**

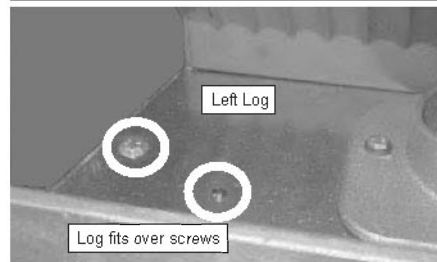
**G. Optional Log Set Placement Instructions**  
**2 PIECE LOG SET INSTALLATION**

1. Place the left log as shown. There are 2 indentations in the bottom of the log to fit over the screw heads in the firebox. **Figures 20.4 & 20.5**
2. Place the right log in front of the 2 screw heads in the firebox. **Figures 20.6 & 20.7**

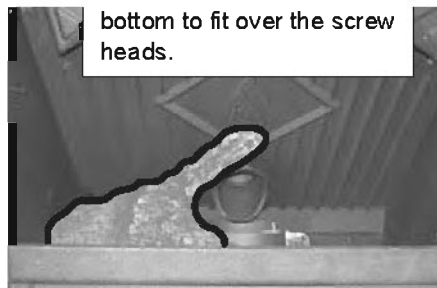
**CAUTION**

Logs are FRAGILE. Use extreme care when handling or cleaning logs.

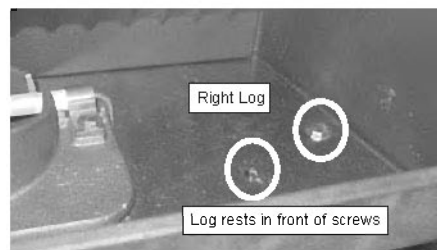
**NOTICE:**  
Due to the abrasive nature of a pellet appliance fire, the logs are not covered under warranty. Any placement variation other than shown here can cause excessive heat and shall void the appliance warranty.



**Figure 20.4**



**Figure 20.5**



**Figure 20.6**



**Figure 20.7**



## H. Programmable Wall Thermostat Installation

The appliance comes standard with a wall thermostat and 25' of wire. If you need to run more than 25' make sure you use a continuous strand of 18 to 22 gauge thermostat wire. For optimum performance your thermostat should be located on an inside wall approximately 5' up from the floor.

### How to Install Your Programmable Wall Thermostat

1. Separate the body of the thermostat from the mounting plate by gently pulling the two pieces apart
2. Connect your thermostat wire to the W and R terminals (see figure below)
3. Screw the backer plate to the wall using the hardware included
4. Snap the thermostat to the backer plate
5. Connect the wires to the 2 center screws on the terminal block on the back of the product

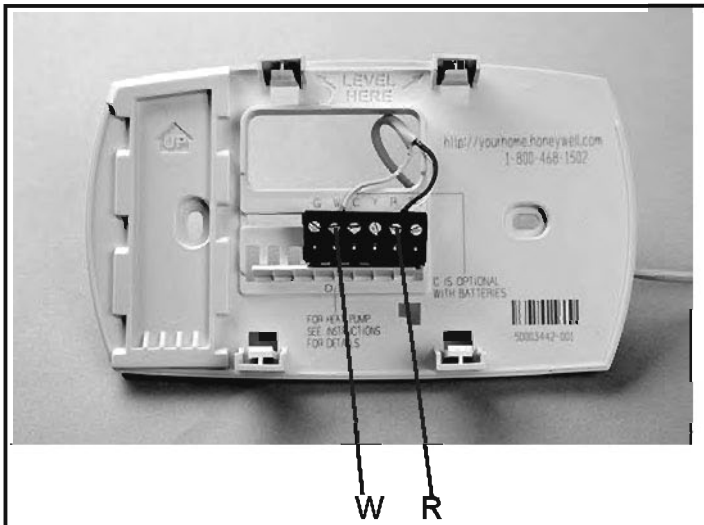


Figure 21.1

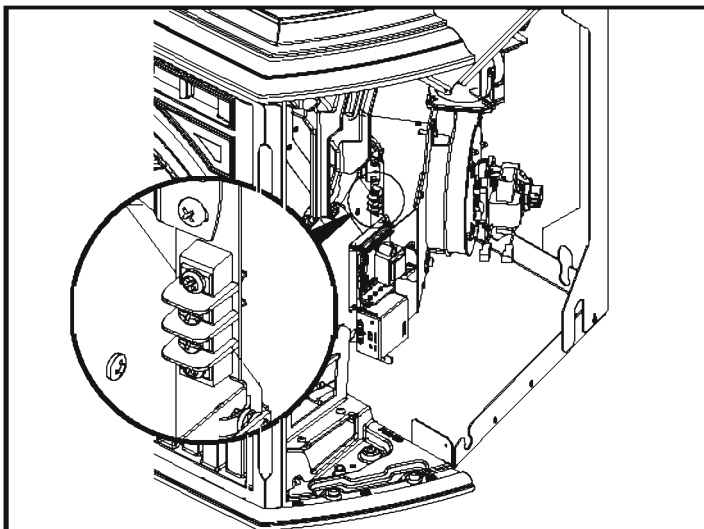


Figure 21.2

### Programming Thermostat

The thermostat maintains a desired room temperature. The 5-2 day programmable function allows one program for week days and a separate program for Saturday/Sunday. (Up to 4 periods per day).

### Thermostat Controls

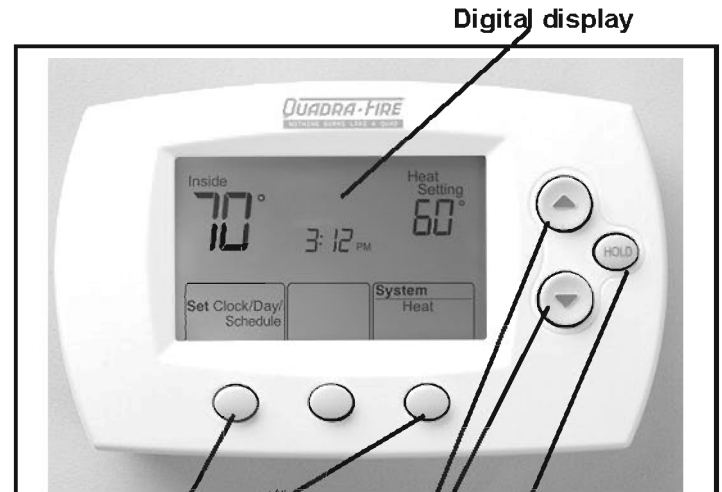


Figure 21.3

#### Function buttons

Press to select the function displayed just above each button. (Functions change depending on the task.)

#### Hold Button

Press to override programmed temperature control

#### Temperature buttons

Press up or down to set preferred temperature.

**Saturday and Sunday can be programmed individually by changing the format from 5-2 to 5-1-1. To change the format :**

1. Press and hold the up button and the center button until the display changes.
2. Press up or down to change system function number to 16.
3. Press **NEXT** to advance to next function.
4. Press up or down to change status number to 1.
5. Press **DONE** to exit and save settings.

**Program Schedule**

Pre-set settings are shown below.

You can program 4 time periods each day, with different settings for weekdays and weekends.

**Wake-** Set to time and temperature you want in the morning until you leave for the day.

**Leave-** Set the time and temperature you want the heat output reduced to during the day.

**Return-** Set the time and temperature to what you want the heat output increased to in the evening.

**Sleep –** Set the time and temperature to what you want for overnight.

	Heat
Wake (6:00 am)	70° F
Leave (8:00 am)	62° F
Return (6:00 pm)	70° F
Sleep (10:00 pm)	62° F

**To Adjust Program Schedules**

1. Press **SET CLOCK/DAY/SCHEDULE**, then **SET SCHEDULE**.
2. Press ▲ / ▼ to set your weekday wake time (Mon-Fri), then press **NEXT**.
3. Press ▲ / ▼ to set the temperature for this time period, then press **NEXT**.
4. Set time and temperature for the next time period (Leave). Repeat steps 2 and 3 for each weekday time period.
5. Press **NEXT** to set weekend time periods (Sat-Sun), then press **DONE** to save & exit.

**NOTE:** You can press **CANCEL PERIOD** to eliminate unwanted time periods (except Wake).

**Program Schedule Override (temporary)**

Press ▲ or ▼ to immediately adjust the temperature. This will temporarily override the temperature setting for the current time period.

The new temperature will be maintained only until the next programmed time period begins. For example, if you want to turn up the heat early in the morning, it will automatically be lowered later, when you leave for the day.

To cancel the temporary setting at any time, press **RUN SCHEDULE**.

**Program Schedule Override (permanent)**

Press **HOLD** to permanently adjust the temperature. This will override the temperature settings for all time periods. The “Hold” feature turns off the program schedule and allows you to adjust the thermostat manually, as needed. Whatever temperature you set will be maintained 24 hours a day, until you manually change it, or press **RUN SCHEDULE** to cancel “Hold” and resume the programmed schedule.

**Battery Installation and Replacement**

**NOTE:** 2 AA batteries are included with the thermostat and must be installed before the appliance can be operated.

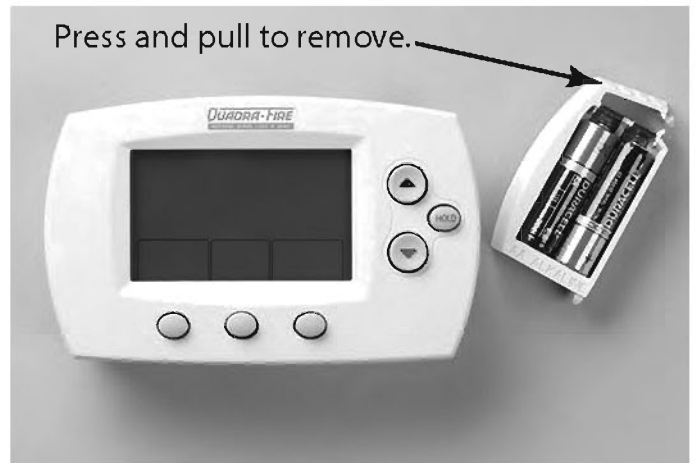


Figure 22.1

Install fresh batteries immediately when the **REPLACE BATTERY** warning begins flashing. The warning flashes about two months before the batteries are depleted.

Even if the warning does not appear, you should replace batteries once a year.

If batteries are inserted within two minutes, the time and day will not have to be reset. All other settings are permanently stored in memory.

**I. Power Cord**

1. Prior to installing the power cord, turn the dial control “OFF”.
2. Make sure the wall receptacle has 120vac output. **NOTE:** Using a circuit protector can protect the appliance circuits from power surges.
3. Remove the right side panel by releasing the upper, spring-loaded latch. Access the latch through the upper panel vent holes. The cast panel should fall forward. Lift it out of its lower nest and set the panel aside. You may need to disconnect the dial control wire harness.
4. Connect the power cord to the appliance first.
5. Route cord behind panel set.

<b>⚠ CAUTION</b>	
	<b>Shock Hazard</b>
	- Do not remove grounding prong from plug
	- Plug directly into properly grounded & prong receptacle.
	- Route cord away from appliance
	- Do not route cord under or in front of appliance

## J. Trim Adjustment (Factory default setting is -2)

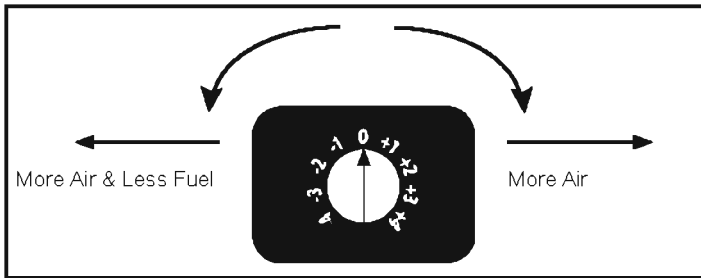


Figure 23.1

The small dial located below the main dial control is used to adjust the amount of fuel and combustion air used for efficient clean burning. Adjusting the trim along with proper cleaning of the fire pot and heat exchanger will help achieve maximum performance of your Mt Vernon E2 Appliance.

Your appliance may need to be adjusted based on any or all of the following:

- Elevation (3000 feet above Sea Level or Higher)
- Venting/Installation Configurations (installations with greater than 4' horizontal or more than two 90 degree elbows)
- Fuel Quality (lower BTU fuels or fuels with high ash content)
- Fuel Type (hardwood, softwood, lower BTU fuels)
- Appliances not properly adjusted will:
- Require more frequent cleanings
- Result in nuisance shut downs and/or missed ignitions
- Waste fuel

Consult your QuadraFire Dealer with specific questions

regarding proper adjustments for maximum performance.

### Where to Start:

#### If Burning Hardwood Pellet Fuel

QuadraFire recommends setting the appliance at a -4 trim setting as a start. From our testing, hardwood fuels burn well between -4 and -2 settings.

#### If Burning Lower BTU Pellet Fuel, Utility Pellet Fuel, or High Ash Pellet Fuel

QuadraFire recommends setting the appliance and leaving at a -4 trim setting. From our testing, lower BTU fuels result in large clinkers in the bottom of the fire pot during normal operation. Using this type of fuel will increase the recommended fire pot cleaning interval.

#### If Burning Softwood Pellet Fuel

QuadraFire recommends starting at a -2 trim setting and adjusting based on installation configurations. From our testing, softwood fuels burn well at a variety of settings.

#### If Elevation is 3000 feet above Sea Level or Higher

When burning at higher elevations you will need more air for the fire to burn properly. QuadraFire recommends starting with a Trim Setting of -3. From our testing, appliances at higher elevations burn best at settings -4, -3, +3, and +4. Review fuel types and installation configurations for choosing the right setting.

#### If appliance has long horizontal venting sections or more than two 90 degree Elbows

QuadraFire recommends starting at a -4 trim setting and making adjustments based on fuel type and elevation. From our testing, we have found that -4, -3, +3, or +4 have worked well depending on fuels.

Indicators that Trim Adjustment is needed:

1. The flame appears lazy
2. Smoke can be seen in the firebox after start up during normal burn
3. Excessive build up of clinkers taller than a 1/2" in the bottom of the fire pot
4. The fire goes out when in normal operating mode

# 7 Mobile Home Installation

You must use a Quadra-Fire Outside Air Kit for installation in a mobile home.

1. An outside air inlet must be provided for the combustion air and must remain clear of leaves, debris, ice and/or snow. It must be unrestricted while the appliance is in use to prevent room air starvation which causes smoke spillage. Smoke spillage can also set off smoke alarms.
2. The combustion air duct system must be made of metal. It must permit zero clearance to combustible construction and prevent material from dropping into the inlet or into the area beneath the dwelling and contain a rodent screen.
3. The appliance must be secured to the mobile home structure by bolting it to the floor (using lag bolts). Use the same holes that secured the appliance to the shipping pallet.
4. The appliance must be grounded with #8 solid copper grounding wire or equivalent, terminated at each end with an NEC approved grounding device.
5. Refer to Clearances to Combustibles and floor protection requirements on page 8 for listings to combustibles and appropriate chimney systems.
6. Use silicone to create an effective vapor barrier at the location where the chimney or other component penetrates to the exterior of the structure.
7. Follow the chimney manufacturer's instructions when installing the vent system for use in a mobile home.
8. Installation shall be in accordance with the Manufacturers Home & Safety Standard (HUD) CFR 3280, Part 24.

Part Number: OAK-3

<b>CAUTION</b>
<p>THE STRUCTURAL INTEGRITY OF THE MOBILE HOME FLOOR, WALL AND CEILING/ROOF MUST BE MAINTAINED</p> <p>Do NOT cut through:</p> <ul style="list-style-type: none"> <li>• Floor joist, wall, studs or ceiling trusses.</li> <li>• Any supporting material that would affect the structural integrity.</li> </ul> <p>This appliance is to be connected to a factory-built chimney conforming to CAN/ULC-S629, Standard for 650°C Factory-Built Chimneys.</p> <p>For removal of the chimney for mobile home transportation, contact the proper transportation officials.</p>

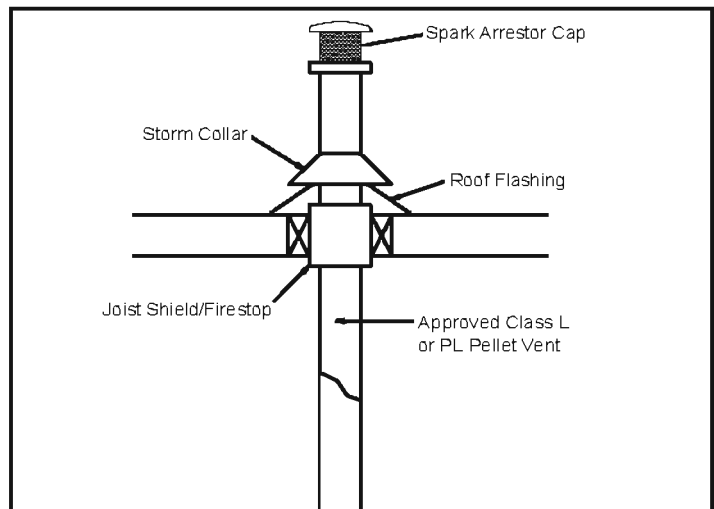


Figure 24.1

<b>CAUTION</b>
<p>Never draw outside combustion air from:</p> <ul style="list-style-type: none"> <li>• Wall, floor or ceiling cavity</li> <li>• Enclosed space such as an attic or garage</li> </ul>

<b>WARNING</b>
<p>It is critical to have a working smoke detector installed in the home of appliance operation.</p> <ul style="list-style-type: none"> <li>• Smoke alarms that are properly installed and maintained play a vital role in reducing fire deaths and injuries. Having a working smoke alarm reduces the chance of fire related injuries..</li> </ul>

<b>WARNING</b>
<p>Products of combustion generate carbon monoxide and different fuels generate different levels. Carbon monoxide</p> <ul style="list-style-type: none"> <li>• Only use approved fuels in this appliance.</li> <li>• Always keep door shut during operation. Operating this appliance with doors open can allow CO to leak into the home.</li> </ul> <p>CO can kill you before you are aware it is in your home. At lower levels of exposure, CO causes mild effects that are often mistaken for the flu. These symptoms include headaches, dizziness, disorientation, nausea and fatigue. The effects of CO exposure can vary greatly from person to person depending on age, overall health and the concentration and length of exposure.</p>

 <b>WARNING</b>
<p>NEVER INSTALL IN A SLEEPING ROOM.</p>





B. Accessory List



MT VERNON INSERT-E2

Beginning Manufacturing Date: Feb 2014  
Ending Manufacturing Date: Active

IMPORTANT: THIS IS DATED INFORMATION. Parts must be ordered from a dealer or distributor. **Hearth and Home Technologies does not sell directly to consumers.** Provide model number and serial number when requesting service parts from your dealer or distributor.



Stocked at Depot

ITEM	DESCRIPTION	COMMENTS	PART NUMBER	
<b>Accessories</b>				
	Adjustable Hearth Support		ADJSPT-12	Y
	Damper, 3 Inch - Tall Vertical Installs Only		PEL-DAMP3	Y
	Damper, 4 Inch - Tall Vertical Installs Only		PEL-DAMP4	
	Exhaust Probe		SRV7000-669	
	Firescreen	No Longer Available	SCR-7005	
	Hearth Support	No Longer Available	ZCSPT-MVI	
	Log Set (2 Pc)	Sold as set only	LOGS-60-AE-B	Y
	Outside Air Kit		OAK-3	
	Top Vent Adapter		TPVNT-4	
	Surround, Std, Panel, For Cast Trim Component Pack		SP-MTVS-CST 7036-041	
	Surround, Std, Panel, w/Gold Trim Component Pack		SP-MTVS-GD 7036-042	
	Trim, Panel Set, Gold		SRV250-4660	
	Surround, Std, Panel w/Nickel Black Trim Component Pack	No Longer Available	SP-MTVS-NB 7036-042	
	Trim Set, Black Nickel		7019-027	
	Bracket for Trim Installation		SRV7022-503G	
	Trim Cast	Matte Black	811-0930	
		Sienna Bronze	TR-CAST-CSB	
		Porcelain Mahogany	811-0960	
	Footer, Left	Matte Black	414-7090MBK	
		Sienna Bronze	414-7090CSB	
		Porcelain Mahogany	414-7090PMH	
	Footer, Right	Matte Black	414-7100MBK	
		Sienna Bronze	414-7100CSB	
		Porcelain Mahogany	414-7100PMH	
	Header	Matte Black	414-7110MBK	
		Sienna Bronze	414-7110CSB	
		Porcelain Mahogany	414-7110PMH	
	Trim Leg, Left	Matte Black	414-7120MBK	
		Sienna Bronze	414-7120CSB	
		Porcelain Mahogany	414-7120PMH	
	Trim Leg, Right	Matte Black	414-7130MBK	
		Sienna Bronze	414-7130CSB	
		Porcelain Mahogany	414-7130PMH	



**CONTACT INFORMATION**

Hearth & Home Technologies  
352 Mountain House Road  
Halifax, PA 17032  
Division of HNI INDUSTRIES

Please contact your Quadra-Fire dealer with any questions or concerns.  
For the number of your nearest Quadra-Fire dealer  
log onto [www.quadrafire.com](http://www.quadrafire.com)

**CAUTION**



**DO NOT DISCARD THIS MANUAL**  
Important operating and maintenance instructions included. • Read, understand and follow these instructions for safe installation and operation. • Leave this manual with party responsible for use and operation.



**We recommend that you record the following pertinent information for your heating appliance.**

Date purchased/installed: \_\_\_\_\_

Serial Number: \_\_\_\_\_ Location on appliance: \_\_\_\_\_

Dealership purchased from: \_\_\_\_\_ Dealer phone: 1( ) -

Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

This product may be covered by one or more of the following patents: (United States) 5341794, 5263471, 6688302, 7216645, 7047962 or other U.S. and foreign patents pending.






# Owner's Manual

## Operation & Care

**INSTALLER:** Leave this manual with party responsible for use and operation.

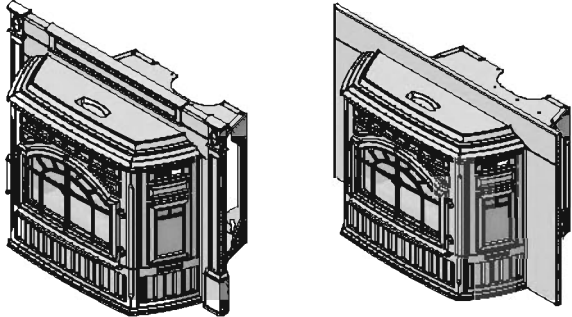

**OWNER:** Retain this manual for future reference.


Contact your dealer with questions regarding installation, operation or service.





**QUADRA-FIRE**<sup>®</sup>  
**MT. VERNON E2 INSERT**  
**PELLET Appliance**

Model(s):  
**MTVI-E2-MBK-C**      **MTVI-E2-CSB-C**  
**MTVI-E2-PMH-C**






Trades and Licensed by  Portland, Oregon USA  
 C-#111111 US  
 OMNI Test Laboratories, Inc.  
 061-S-84-2

 **WARNING**

 Please read this entire manual before use of this pellet fuel-burning room appliance. Failure to follow these instructions could result in property damage, bodily injury, or death.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- Do NOT burn garbage or flammable fluids such as gasoline, naphtha, or engine oil in room appliance.
- Do not over fire - If appliance or chimney connector glows, you are over firing. Over firing will void your warranty.
- Comply with all minimum clearances to combustibles as specified. Failure to comply may cause house fire.

 **WARNING**

 **HOT SURFACES!**  
 Glass and other surfaces are hot during operation AND cool down.

**Hot glass will cause burns.**

- Do not touch glass until it is cooled
- NEVER allow children to touch glass
- Keep children away
- CAREFULLY SUPERVISE children in same room as fireplace.
- Alert children and adults to hazards of high temperatures
- **High temperatures may ignite clothing or other flammable materials.**
- Keep clothing, furniture, draperies and other flammable materials away.

**CAUTION**

Tested and approved for wood pellets only. Burning of any other type of fuel voids your warranty.

**NOTE**

To obtain a French translation of this manual, please contact your dealer or visit [www.QuadraFire.com](http://www.QuadraFire.com)  
 Pour obtenir une traduction française de ce manuel, s'il vous plaît contacter votre revendeur ou visitez [www.QuadraFire.com](http://www.QuadraFire.com)

Installation and service of this appliance should be performed by qualified personnel. Hearth & Home Technologies recommends HHT Factory Trained or NFI certified professionals.




**CAUTION**

Check building codes prior to installation.

- Installation MUST comply with local, regional, state and national codes and regulations.
- Consult local building, fire officials or authorities having jurisdiction about restrictions, installation inspection, and permits.



and Welcome to the Quadra-Fire Family!

**NOTE: Clearances may only be reduced by means approved by the regulatory authority having jurisdiction**


**A. Sample of Serial Number / Safety Label**

LOCATION: Behind right cast side panel


Test Lab & Report No.

Model Name

Serial No.




Report: 0615 242



**Quadra-Fire**

Mt Vernon E2 Pellet Insert



007059

**CAUTION: HOT WHILE IN OPERATION DO NOT TOUCH, KEEP CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.**

**ATTENTION: CHAUD LORS DE L'OPÉRATION. NE PAS TOUCHER. L'ESPACE DÉSIGNÉ DE L'INSTALLATION. LE CONTACT PEUT CAUSER DES BRÛLURES À LA PEAU. VOIR L'ÉTIQUETTE ET LES INSTRUCTIONS.**

**PREVENT HOUSE FIRES / PRÉVENTION DES FEUX DE MAISON**

Install and use only in accordance with manufacturer's installation and operating instructions. Contact local building or fire official for restrictions and inspection in your area.

**WARNING - FOR MOBILE HOMES:** Do not install appliance in a sleeping room. An outdoor combustion air inlet must be provided. The structural integrity of the mobile home body or legs and deck must be maintained. Refer to manufacturer's instructions and local codes for procedures required for passing chimney through a combustible wall or ceiling. Inspect and clean vent system frequently in accordance with manufacturer's instructions. **DO NOT TOUCH THIS UNIT TO A CHIMNEY/SERVING ANOTHER APPLIANCE.** Use only an A-1 chimney type L or PL venting system.

Installez et utilisez en accord avec les instructions d'installation et d'opération du fabricant. Contactez le bureau de la construction ou le bureau des incendies au sujet des restrictions et des inspections d'installation de votre région.

**AVERTISSEMENT - POUR LES MAISONS MOBILES:** Ne pas installer dans une chambre à coucher. Une entrée extérieure d'air de combustion doit être installée et ne doit pas être obstruée lorsque l'appareil est en service. L'intégrité structurelle du plancher, du plafond et des murs de la maison mobile doit être maintenue. Consultez les instructions du fabricant et les codes locaux pour les procédures requises pour faire passer la cheminée à travers un mur ou un plafond combustible et les recommandations relatives à l'inspection et au nettoyage de la cheminée. Équipement: Ne pas connecter cet appareil à une cheminée servant une autre application. Utilisez un système de ventilation L ou PL de diamètre 110 mm.

**MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS / ESPACES LIBRES MINIMUM DES MATÉRIELUX COMBUSTIBLES**

**A S A BUILT-IN AS COMME APAREIL INSÉRÉ**

A Top of Range / Haut de l'Appareil	Type A or Vent / Type A ou Vent	3 in (80mm)
B Side of Chimney Stack / Côté de la Cheminée	Type A or Vent / Type A ou Vent	2 in (50mm)
C Vent Pipe to Combustible / Conduite de Vent à Combustible	Type A or Vent / Type A ou Vent	3 in (80mm)
D Cast Stone to Side Wall / Aléage Stone à Mur de Stone	Type A or Vent / Type A ou Vent	6 in (150mm)

**MASONRY OR ZERO CLEARANCE / DÉGAGEMENT DE LA MAÇONNERIE OU DÉGAGEMENT ZÉRO**

A Cast Stone to Side Wall / Aléage Stone à Mur de Stone	6 in (150mm)
B Metal Top to Combustible / Métal au-dessus de la garniture de l'appareil	0 in (0mm)
C Metal Side to Combustible / Métal sur le côté de la garniture de l'appareil	0 in (0mm)
D Metal to Combustible / Métal au-dessus de la garniture de l'appareil	6 in (150mm)
E Heat Radiation Barrier to Top of Range / Protection contre la chaleur au-dessus de la garniture de l'appareil	6 in (150mm)

**MANUFACTURED BY / FABRIQUÉ PAR**

**HEARTHSTONE**

10000 Highway 28, Covington, VA 22024

www.hearthstone.com

**ENVIRONMENTAL PROTECTION AGENCY**

Call first to comply with 2013 gas boiler emissions standard of 0.5 gpm EPA Method 30 and 5.0. Not approved to sell after May 15, 2015.

Prenez soin de respecter les règlements en matière de gaz au premier appel. Consultez les règlements de l'Agence américaine de protection de l'environnement. Il est interdit de vendre après le 15 mai 2015.

Prendre soin de respecter les règlements en matière de gaz au premier appel.

**DO NOT REMOVE THIS LABEL / NE PAS ENLEVER L'ÉTIQUETTE**

2011	2012	SEP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Made in U.S.A. at US and other facilities. / Fabriqué aux États-Unis et dans d'autres usines.

Mfg. Date



**Safety Alert Key:**

- **DANGER!** Indicates a hazardous situation which, if not avoided will result in death or serious injury.
- **WARNING!** Indicates a hazardous situation which, if not avoided could result in death or serious injury.
- **CAUTION!** Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE:** Indicates practices which may cause damage to the appliance or to property.

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B. Warranty Policy

**Hearth & Home Technologies  
LIMITED LIFETIME WARRANTY**

Hearth & Home Technologies, on behalf of its hearth brands (“HHT”), extends the following warranty for HHT gas, wood, pellet, coal and electric hearth appliances that are purchased from an HHT authorized dealer.

**WARRANTY COVERAGE:**

HHT warrants to the original owner of the HHT appliance at the site of installation, and to any transferee taking ownership of the appliance at the site of installation within two years following the date of original purchase, that the HHT appliance will be free from defects in materials and workmanship at the time of manufacture. After installation, if covered components manufactured by HHT are found to be defective in materials or workmanship during the applicable warranty period, HHT will, at its option, repair or replace the covered components. HHT, at its own discretion, may fully discharge all of its obligations under such warranties by replacing the product itself or refunding the verified purchase price of the product itself. The maximum amount recoverable under this warranty is limited to the purchase price of the product. This warranty is subject to conditions, exclusions and limitations as described below.

**WARRANTY PERIOD:**

Warranty coverage begins on the date of original purchase. In the case of new home construction, warranty coverage begins on the date of first occupancy of the dwelling or six months after the sale of the product by an independent, authorized HHT dealer/ distributor, whichever occurs earlier. The warranty shall commence no later than 24 months following the date of product shipment from HHT, regardless of the installation or occupancy date. The warranty period for parts and labor for covered components is produced in the following table.

The term “Limited Lifetime” in the table below is defined as: 20 years from the beginning date of warranty coverage for gas appliances, and 10 years from the beginning date of warranty coverage for wood, pellet, and coal appliances. These time periods reflect the minimum expected useful lives of the designated components under normal operating conditions.

Warranty Period		HHT Manufactured Appliances and Venting							Components Covered
Parts	Labor	Gas	Wood	Pellet	EPA Wood	Coal	Electric	Venting	
1 Year		X	X	X	X	X	X	X	All parts and material except as covered by Conditions, Exclusions, and Limitations listed
2 years				X	X	X			Igniters, electronic components, and glass
		X	X	X	X	X			Factory-installed blowers
		X		X					Molded refractory panels
3 years				X					Ignition Modules
5 years	1 year			X	X				Firepots and burnpots
7 years	3 years		X	X	X				Castings and baffles
10 years	1 year	X							Manifold tubes, HHT chimney and termination
Limited Lifetime	3 years	X	X	X	X	X			Burners, logs and refractory
90 Days		X	X	X	X	X	X	X	Firebox and heat exchanger
		X	X	X	X	X	X	X	All replacement parts beyond warranty period

See conditions, exclusions, and limitations on next page.

**WARRANTY CONDITIONS:**

- This warranty only covers HHT appliances that are purchased through an HHT authorized dealer or distributor. A list of HHT authorized dealers is available on the HHT branded websites.
- This warranty is only valid while the HHT appliance remains at the site of original installation.
- This warranty is only valid in the country in which the HHT authorized dealer or distributor that sold the appliance resides.
- Contact your installing dealer for warranty service. If the installing dealer is unable to provide necessary parts, contact the nearest HHT authorized dealer or supplier. Additional service fees may apply if you are seeking warranty service from a dealer other than the dealer from whom you originally purchased the product.
- Check with your dealer in advance for any costs to you when arranging a warranty call. Travel and shipping charges for parts are not covered by this warranty.

**WARRANTY EXCLUSIONS:**

This warranty does not cover the following:

- Changes in surface finishes as a result of normal use. As a heating appliance, some changes in color of interior and exterior surface finishes may occur. This is not a flaw and is not covered under warranty.
- Damage to printed, plated, or enameled surfaces caused by fingerprints, accidents, misuse, scratches, melted items, or other external sources and residues left on the plated surfaces from the use of abrasive cleaners or polishes.
- Repair or replacement of parts that are subject to normal wear and tear during the warranty period. These parts include: paint, wood, pellet and coal gaskets, firebricks, grates, flame guides, batteries and the discoloration of glass.
- Expansion, contraction, or movement of certain parts causing noise. These conditions are normal and complaints related to this noise are not covered by this warranty.
- Damages resulting from: (1) failure to install, operate, or maintain the appliance in accordance with the installation instructions, operating instructions, and listing agent identification label furnished with the appliance; (2) failure to install the appliance in accordance with local building codes; (3) shipping or improper handling; (4) improper operation, abuse, misuse, continued operation with damaged, corroded or failed components, accident, or improperly/incorrectly performed repairs; (5) environmental conditions, inadequate ventilation, negative pressure, or drafting caused by tightly sealed constructions, insufficient make-up air supply, or handling devices such as exhaust fans or forced air furnaces or other such causes; (6) use of fuels other than those specified in the operating instructions; (7) installation or use of components not supplied with the appliance or any other components not expressly authorized and approved by HHT; (8) modification of the appliance not expressly authorized and approved by HHT in writing; and/or (9) interruptions or fluctuations of electrical power supply to the appliance.
- Non-HHT venting components, hearth components or other accessories used in conjunction with the appliance.
- Any part of a pre-existing fireplace system in which an insert or a decorative gas appliance is installed.
- HHT's obligation under this warranty does not extend to the appliance's capability to heat the desired space. Information is provided to assist the consumer and the dealer in selecting the proper appliance for the application. Consideration must be given to appliance location and configuration, environmental conditions, insulation and air tightness of the structure.

**This warranty is void if:**

- The appliance has been over-fired or operated in atmospheres contaminated by chlorine, fluorine, or other damaging chemicals. Over-firing can be identified by, but not limited to, warped plates or tubes, rust colored cast iron, bubbling, cracking and discoloration of steel or enamel finishes.
- The appliance is subjected to prolonged periods of dampness or condensation.
- There is any damage to the appliance or other components due to water or weather damage which is the result of, but not limited to, improper chimney or venting installation.

**LIMITATIONS OF LIABILITY:**

- The owner's exclusive remedy and HHT's sole obligation under this warranty, under any other warranty, express or implied, or in contract, tort or otherwise, shall be limited to replacement, repair, or refund, as specified above. In no event will HHT be liable for any incidental or consequential damages caused by defects in the appliance. Some states do not allow exclusions or limitation of incidental or consequential damages, so these limitations may not apply to you. This warranty gives you specific rights; you may also have other rights, which vary from state to state. EXCEPT TO THE EXTENT PROVIDED BY LAW, HHT MAKES NO EXPRESS WARRANTIES OTHER THAN THE WARRANTY SPECIFIED HEREIN. THE DURATION OF ANY IMPLIED WARRANTY IS LIMITED TO DURATION OF THE EXPRESSED WARRANTY SPECIFIED ABOVE.

C. Quick Start Guide

# Set Up

1. Empty Fire box
2. Add pellets and close lid
3. Turn DIAL to OFF
4. Plug in the appliance
  - Exhaust blower will run for about 45 Seconds (**wait for it to stop before priming**)
  - Green light will start flashing
5. Ensure thermostat is connected properly per included instructions.

# Prime

1. After the exhaust blower has stopped; quickly turn the dial from OFF to HI two times



- The LIGHT will turn solid green and pellets will feed. Wait for 2 minutes
- If the LIGHT did not turn solid green:
  - Turn dial back to OFF
  - Unplug appliance, plug it back in and repeat

*Priming is only needed for first fire or starting fire on empty hopper.*

**Note: The prime function is only required during initial set up of the unit, or after the unit has alarmed out due to an empty hopper. Priming while under normal operating conditions will cause the fire pot to overflow.**

# Run

1. Press up arrow on thermostat to desired temperature.

\*appliance will not turn on unless target temperature is minimum of one degree above room temperature.

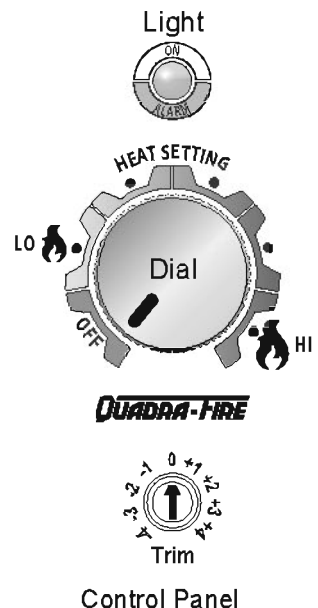


2. Choose Setting: LO – HI\*

Green LIGHT will begin flashing and stove will start

It may take as long as 10 minutes to achieve a fire in the fire pot. Turning the knob or thermostat to off during this time will interrupt the startup process.

\*For first fire, HHT recommends running on HI for first 30 minutes



# 1 Listing and Code Approvals

## A. Appliance Certification

<b>Model</b>	Mt. Vernon E2 Pellet Insert
<b>Laboratory</b>	OMNI Test Laboratories, Inc.
<b>Report No.</b>	061-S-84-2
<b>Type</b>	Solid Fuel Room Appliance, Pellet Fuel Burning Type
<b>Standard</b>	ASTM E1509-12, ULC S628-93 and 84-HUD, Mobile Home Approved.
<b>FCC</b>	Complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**NOTICE:** This installation must conform with local codes. In the absence of local codes you must comply with the **ASTM E1059-12, ULC S628-93, (UM) 84-HUD and ULC/ORD-C-1482.**

The Quadra-Fire Mt. Vernon E2 Pellet Insert Appliance meets the U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards at 0.74 G/HR EPA CFR subpart AAA, using ASTM E2779-10, ASTM 2515-11 Method- Pellet Appliance sections, CSA B415.1-10. This pellet appliance needs periodic inspection and repair for proper operation. It is against federal regulations to operate this pellet appliance in a manner inconsistent with the operating instructions in the owner's manual.

## B. BTU & Efficiency Specifications

Emissions Report Number:	0061PS094E
EPA Certification #:	
EPA Certified Emissions:	0.74 g/hr
*LHV Tested Efficiency:	83.2%
**HHV Tested Efficiency:	77.9%
***EPA BTU Output:	39,428 / HR
****BTU Input:	50.775 / HR
Vent Size:	3, 4 or 6 inches, "L" or "PL"
Hopper Capacity:	80 lbs.
Fuel	Wood Pellets
* Weighted average LHV efficiency using data collected during EPA emissions test.	
**Weighted average HHV efficiency using data collected during EPA emissions test.	
***A range of BTU outputs based on HHV and the burn rates from the low and high EPA tests.	
****Based on the maximum feed rate per hour multiplied by approximately 8600 BTU's which is the average BTU's from a pound of pellets.	

## C. Glass Specifications

This appliance is equipped with 5mm ceramic glass. Replace glass only with 5mm ceramic glass. Please contact your dealer for replacement glass.

## D. Electrical Rating

115 VAC, 60 Hz, Start 2.9 Amps, Run 2.45 Amps

## E. Mobile Home Approved

- This appliance is approved for mobile home installations when not installed in a sleeping room and when an outside combustion air inlet is provided.
- The structural integrity of the mobile home floor, ceiling, and walls must be maintained.
- The appliance must be properly grounded to the frame of the mobile home and use only Listed pellet vent Class "L" or "PL" connector pipe.
- Outside Air Kit (OAK-3) must be installed in a mobile home installation.

## WARNING



### Fire Risk.

Hearth & Home Technologies disclaims any responsibility for, and the warranty will be voided by, the following actions:

- Installation and use of any damaged appliance.
  - Modification of the appliance.
  - Installation other than as instructed by Hearth & Home Technologies.
  - Installation and/or use of any component part not approved by Hearth & Home Technologies.
  - Operating appliance without fully assembling all components.
  - Operating appliance without legs attached (if supplied with appliance).
  - Do NOT Over fire - If appliance or chimney connector glows, you are over firing.
- Any such action that may cause a fire hazard.




Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. For assistance or additional information, consult a qualified installer, service agency or your dealer.

**NOTE:** Hearth & Home Technologies, manufacturer of this appliance, reserves the right to alter its products, their specifications and/or price without notice.

Quadra-Fire is a registered trademark of Hearth & Home Technologies.

# User Guide

## 2 Operating Instructions

 <b>WARNING</b>	
	<b>Fire Risk.</b>
	<ul style="list-style-type: none"> <li>Do not operate appliance before reading and understanding operating instructions.</li> <li>Failure to operate appliance properly may cause a house fire.</li> </ul>

### A. Fire Safety

To provide reasonable fire safety, the following should be given serious consideration:

- Install at least one smoke detector on each floor of your home.
- Install at least one carbon monoxide detector on each floor of your home.
- Locate smoke detector away from the heating appliance and close to the sleeping areas.
- Follow the smoke detector manufacturer's placement and installation instructions and maintain regularly.
- Follow the carbon monoxide manufacturer's placement and installation instructions and maintain regularly.
- Conveniently locate a Class A fire extinguisher to contend with small fires.
- In the event of a hopper fire:
  - Evacuate the house immediately.
  - Notify fire department.

### B. Non-Combustible Materials

Material which will not ignite and burn, composed of any combination of the following:

- Steel                      - Plaster                      - Glass                      - Tile
- Brick                      - Iron                      - Slate                      - Concrete

Materials reported as passing **ASTM E 136, Standard Test Method for Behavior of Metals, in a Vertical Tube Furnace of 750° C.**

### C. Combustible Materials

Material made of/ or surfaced with any of the following materials:

- Compressed Paper                      - Wood                      - Plywood/OSB
- Sheet Rock (drywall)                      - Plastic                      - Plant Fibers

Any material that can ignite and burn: flame proofed or not, plastered or non-plastered.

### D. Fuel Material and Fuel Storage

Pellet fuel quality can greatly fluctuate. We recommend that you buy fuel in multi-ton lots whenever possible. However, we do recommend trying various brands before purchasing multi-ton lots to ensure your satisfaction.

#### Fuel Material

- Made from sawdust or wood by-products
- Depending on the source material it may have a high or low ash content.

#### Higher Ash Content Material

- Hardwoods with a high mineral content
- Fuel that contains bark
- Standard grade pellets or high ash pellets

#### Lower Ash Content Material

- Most softwoods
- Fuels with low mineral content
- Most premium grade pellets

#### Clinkers

Minerals and other non-combustible materials such as sand will turn into a hard, glass-like substance called a clinker when heated in the fire pot.

Trees from different areas will vary in mineral content. That is why some fuels produce more clinkers than others.

#### Moisture

Always burn dry fuel. Burning fuel with high moisture content takes heat from the fuel and tends to cool the appliance, robbing heat from your home. Damp pellet fuel can clog the feed system.

#### Size

- Pellets are either 1/4 inch or 5/16 inch (6-8mm) in diameter
- Length should be no more than 1-1/2 inches (38mm)
- Pellet lengths can vary from lot to lot from the same manufacturer
- Due to length variations, the feed rate may need adjusting occasionally

#### Performance

- Higher ash content requires the fire pot and the ash drawer to be emptied more frequently
- Hardwoods require more air to burn properly
- Premium wood pellets produce the highest heat output
- Burning pellets longer than 1-1/2 inches (38mm) can cause an inconsistent fuel feed rate and/or missed ignitions or feed jams.

#### Storage

- Wood pellets should be left in their original sealed bag until using to prevent moisture absorption
- Do not store any pellet fuel within the clearance requirements or in an area that would hinder routine cleaning and maintenance

### E. Before Your First Fire

1. First, make sure your appliance has been properly



installed and that all safety requirements have been met. Pay particular attention to the fire protection and venting.

2. Double check that the firebox is empty and the fire pot floor is fully closed.
3. Close and latch the door.

### F. Filling the Hopper

Open the hopper lid by lifting the handle. Fill the hopper with fuel. Close the hopper lid. The appliance will not feed with the hopper lid open and the fire will go out.

### G. User Dial Control

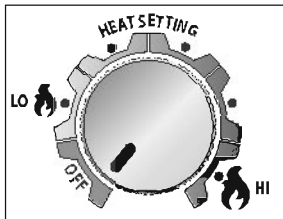
The appliance has one dial control located on the side of the appliance (behind a drop door) used for changing the heat setting and restarting the appliance. There are five heat settings on this dial ranging to include: LOW, MED-LOW, MED, MED-HIGH, and HIGH. **Figure 10.1**

Turn the dial control to the desired heat setting and turn the appliance ON and OFF using the remote thermostat.

### H. Normal Startup Sequence

The appliance will go into the ignition sequence followed by a start up sequence (the green LED will flash rapidly).

The ignition sequence involves the exhaust blower and igniter turning on, and the feed motor running in two stages. The first stage involves the feed motor running continuously for about one minute to begin loading pellets into the fire pot. In the second stage, the feed motor will begin cycling on and off.



**Figure 9.1**

When the pellets are warming - on the verge of igniting - it is not uncommon for the firebox to fill with smoke.

Once ignition happens, the smoke should quickly disappear. During this stage, as well as any part during the burn process, the front door should not be opened.

This startup cycle continues until the appliance senses ignition by a rise in the exhaust temperature or the appliance times out. Following the ignition cycle the appliance continues to feed pellets to build up the fire.

After warming up, the convection blower will begin to blow warm air into the room. As the appliance increases heat the blower will increase its output.

### I. Fire pot Purge

**Purpose:** To help remove debris from the fire pot and help the appliance burn as efficient as possible.

The frequency of the purge cycle is once every 30 minutes while the appliance is burning. During the fire pot purge, the feed is reduced to the lowest setting and exhaust blower ramps up to a very high setting. The purge cycle lasts 99 seconds.

*The purge cycle does not replace daily cleaning.*

### J. Shutdown

To shut the appliance down, turn the dial control to OFF or turn the thermostat to OFF. During the shutdown process, the light will flash amber or green rapidly.

Unlike the fire pot purge, during shutdown existing fuel in the fire pot will continue to burn without the feed motor running; but, the exhaust and convection blowers will remain on until the exhaust has cooled.

**NOTE:** If maintenance or daily cleaning is going to be conducted immediately following a shutdown, please use caution as components especially those inside the firebox may still be hot.

Due to safety precautions:

- If the dial control is turned to OFF and back on (even if by mistake) the appliance will go through the shutdown sequence before restarting.
- Additionally, if the remote thermostat is set to "OFF" or "THERMOFF" during operation the appliance will go through a shutdown sequence before restarting.


## CAUTION

**HOT WHILE IN OPERATION. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS.**

### K. Fire Characteristics

The overall height of the flame will vary throughout the burn for a couple of reasons:

- 1) The flame will vary based on type of fuel or batch of fuel.
- 2) The appliance adjusts the burn rate according to the dial setting – the further the dial is rotated clockwise the higher the flame and consequently, heat output.
- 3) General maintenance and cleaning. Infrequent or poor general maintenance will result in poorer performance. Indicators for additional maintenance activities include:
  - Lazy flame
  - Black-sooted glass
  - Pellets not igniting
  - Excess pellets falling to the side of the fire pot.

<b>WARNING</b>	
	<b>HOT SURFACES!</b> Glass and other surfaces are hot during operation AND cool down. <b>Hot glass will cause burns.</b>
	<ul style="list-style-type: none"> <li>• <b>DO NOT</b> touch glass until it is cooled.</li> <li>• <b>NEVER</b> allow children to touch glass.</li> <li>• Keep children away.</li> <li>• <b>CAREFULLY SUPERVISE</b> children in same room as appliance.</li> <li>• Alert children and adults to hazards of high temperatures.</li> </ul> <p><b>High temperatures may ignite clothing or other flammable materials.</b></p> <ul style="list-style-type: none"> <li>• Keep clothing, furniture, draperies and other flammable materials away.</li> </ul>

**NOTICE:** If you expect that children may come into contact with this appliance, we recommend a barrier such as a decorative screen. See your retailer for suggestions.

<b>CAUTION</b>	
<p>Odors and vapors released during initial operation.</p> <ul style="list-style-type: none"> <li>• Curing of high temperature paint.</li> <li>• Open windows for air circulation.</li> </ul> <p>Odors may be irritating to sensitive individuals.</p>	

### L. Your Pellet Appliance’s General Operating Parts

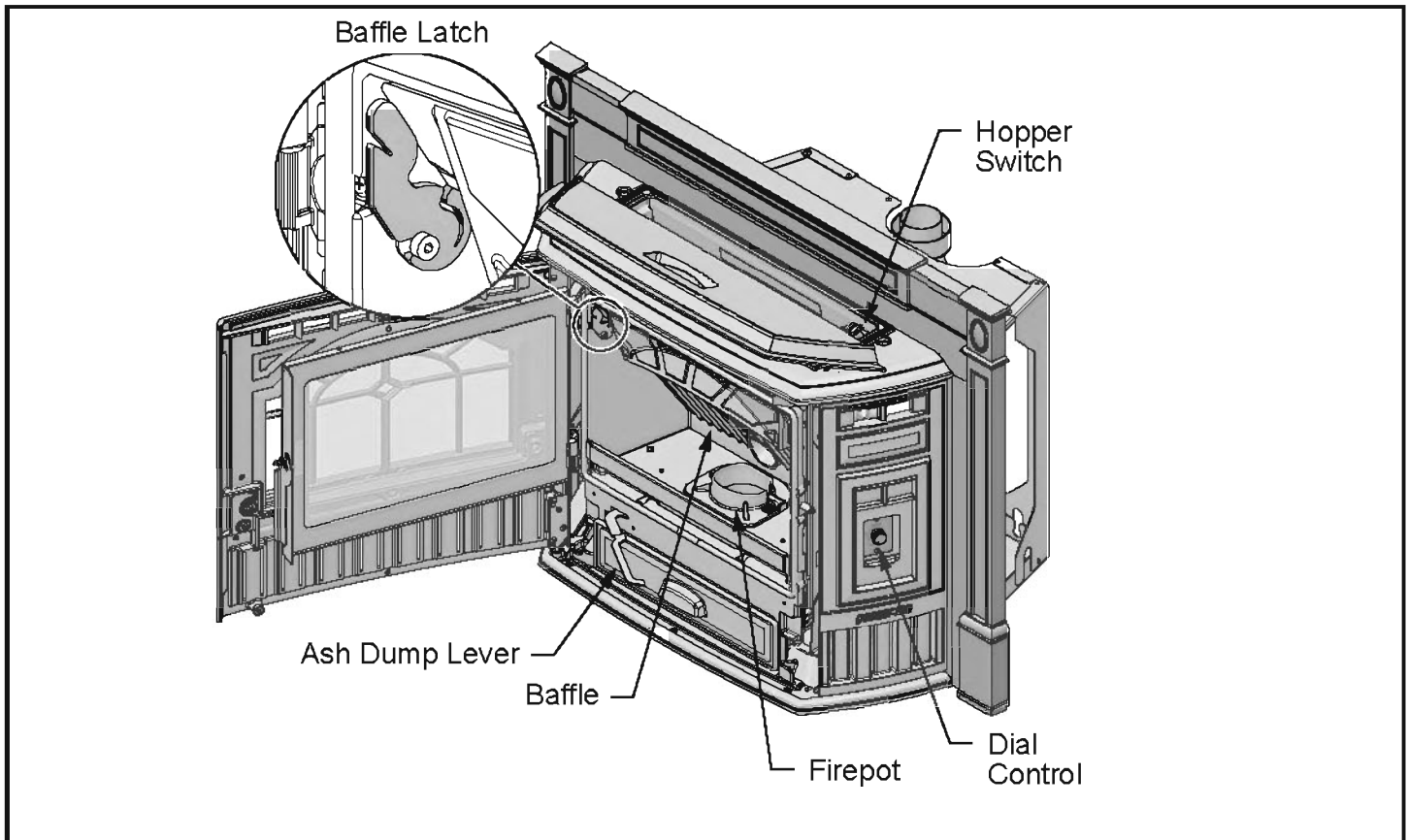




Figure 10.1

**M. LED Color Coding Chart and Explanation**

The number of flashes between pauses is per one second unless otherwise indicated.

LED Color	No. of Flashes between pauses	Description	Notes
Green	Steady ON while priming feed tube (max time 2 minutes)	Feed Motor is running continuously. (priming the feed tube)	When priming the feed system and filling the fire pot, DO NOT OVERFILL Fire pot FOR IGNITION. The appliance will automatically go into start up following the prime function.
Green	1x every 2 seconds	Appliance is on standby	To start appliance, follow start up sequence.
Green	Blinks Continuously	Appliance is in the start up/ignition sequence or in shutdown.	During shut down, the blowers will shut off when the exhaust temperature has cooled.
Green	1X	Stage 1: Low heat	BTU Range: 14,620 - 19,694      Average: 19,054
Green	2X	Stage 2: Med-Low heat	BTU Range: 22,102 - 23,506      Average: 22,735
Green	3X	Stage 3: Med heat	BTU Range: 30,778 - 32,680      Average: 31,603
Green	4X	Stage 4: Med-Hi heat	BTU Range: 38,576 - 42,914      Average: 40,665
Green	5X	Stage 5: Hi heat	BTU Range: 49,830 - 52,460      Average: 51,528
Amber	Blinks Continuously	Appliance is in the shut-down sequence.	During shut down, the blowers will shut off when the exhaust temperature has cooled.
Red	1X	Empty Hopper Alarm	This alarm is caused by the fire going out from lack of fuel. Reset by turning to "OFF" then turn dial to desired setting.
Red	2X	Exhaust Probe Alarm	Failed component error. See troubleshooting section for more information.
Red	4X	Missed Ignition	There are a total of 2 tries per ignition sequence. If after 2 tries there is no rise in exhaust temperature this error will occur. See the troubleshooting section for additional information.
Red	6X	Encoder Alarm	Failed Component Error: Exhaust Speed Sensor. See troubleshooting guide for more information
Red	8X	Exhaust Over Temperature Alarm	See troubleshooting guide for more information.

 **WARNING**



**Fire Risk**  
Do NOT operate appliance:

- With appliance door open.
- Fire pot floor open.

Do NOT store fuel:

- Closer than required clearances to combustibles to appliance
- Within space required for loading or ash removal.

## N. Restarting the Appliance

### Restart Process

1. When the appliance has run out of fuel and the “empty hopper” error code illuminates, add pellet fuel to the hopper.
2. Dump the ashes and clinkers built up in the fire pot by pulling the ash dump removal handle out several times. Make sure clinkers have dropped into the ash pan then return the handle to fully closed position.
3. Turn the dial control to OFF and then up to high 2X to prime.
4. After seeing pellets drop then turn to desired setting to reset the appliance control system. The appliance will then begin its startup sequence.

### Restarting After a Power Failure

1. For an electrical disruption the appliance will start on its own without need for priming - providing the control system is asking for heat.
2. The appliance will always go through a normal shut-down sequence before restarting.

### Remote Power Requirements

- The remote receiver power is maintained through appliance power.
- The remote thermostat uses four AAA batteries.

## O. Clear Space

**NOTICE:** Clearances may only be reduced by means approved by the regulatory authority having jurisdiction.

**Mantel:** Avoid placing candles and other heat-sensitive objects on mantel or hearth. Heat may damage these objects.

## P. Trim Adjustment (Default factory setting is -2)

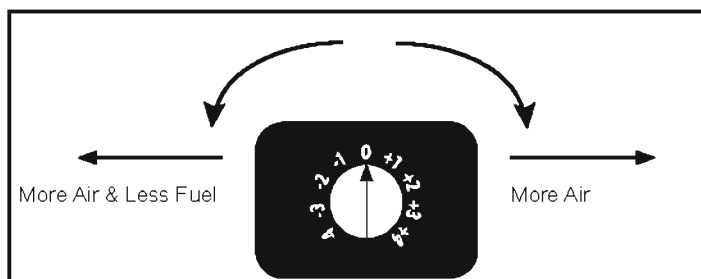


Figure 12.1

The small dial located below the main dial control is used to adjust the amount of fuel and combustion air used for efficient clean burning. Adjusting the trim along with proper cleaning of the fire pot and heat exchanger will help achieve maximum performance of your Mt Vernon E2 Appliance.

Your appliance may need to be adjusted based on any or all of the following:

- Elevation (3000 feet above Sea Level or Higher)
- Venting/Installation Configurations (installations with greater than 4' horizontal or more than two 90 degree elbows)

- Fuel Quality (lower BTU fuels or fuels with high ash content)
- Fuel Type (hardwood, softwood, lower BTU fuels)
- Appliances not properly adjusted will:
  - Require more frequent cleanings
  - Result in nuisance shut downs and/or missed ignitions
  - Waste fuel

Consult your Quadra-Fire Dealer with specific questions regarding proper adjustments for maximum performance.

### Where to Start:

#### If Burning Hardwood Pellet Fuel

Quadra-Fire recommends setting the appliance at a -4 trim setting as a start. From our testing, hardwood fuels burn well between -4 and -2 settings.

#### If Burning Lower BTU Pellet Fuel, Utility Pellet Fuel, or High Ash Pellet Fuel

Quadra-Fire recommends setting the appliance and leaving at a -4 trim setting. From our testing, lower BTU fuels result in large clinkers in the bottom of the fire pot during normal operation. Using this type of fuel will increase the recommended fire pot cleaning interval.

#### If Burning Softwood Pellet Fuel

Quadra-Fire recommends starting at a -2 trim setting and adjusting based on installation configurations. From our testing, softwood fuels burn well at a variety of settings.

#### If Elevation is 3000 feet above Sea Level or Higher

When burning at higher elevations you will need more air for the fire to burn properly. Quadra-Fire recommends starting with a Trim Setting of -3. From our testing, appliances at higher elevations burn best at settings -4, -3, +3, and +4. Review fuel types and installation configurations for choosing the right setting.

#### If appliance has long horizontal venting sections or more than two 90 degree Elbows

Quadra-Fire recommends starting at a -4 trim setting and making adjustments based on fuel type and elevation. From our testing, we have found that -4, -3, +3, or +4 have worked well depending on fuels.

Indicators that Trim Adjustment is needed:

1. The flame appears lazy
2. Smoke can be seen in the firebox after start up during normal burn
3. Excessive build up of clinkers taller than a 1/2" in the bottom of the fire pot
4. The fire goes out when in normal operating mode

## Q. Programming Thermostat

The thermostat maintains a desired room temperature. The 5-2 day programmable function allows one program for week days and a separate program for Saturday/Sunday. (Up to 4 periods per day).

### Thermostat Controls

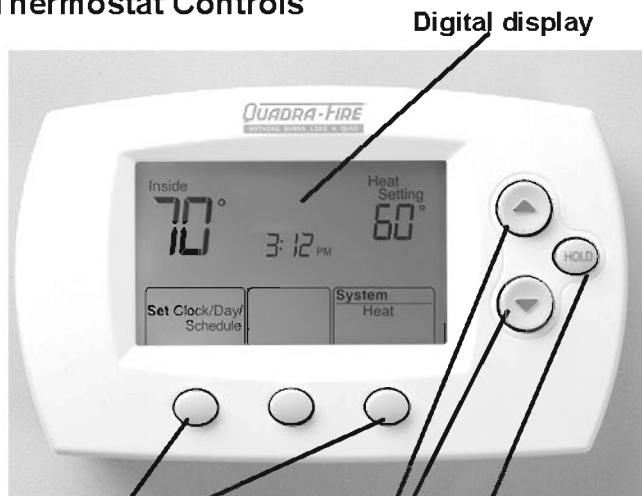


Figure 13.1

**Function buttons**  
Press to select the function displayed just above each button. (Functions change depending on the task.)

**Temperature buttons**  
Press up or down to set preferred temperature.

**Hold Button**  
Press to override programmed temperature control

**Saturday and Sunday can be programmed individually by changing the format from 5-2 to 5-1-1. To change the format :**

1. Press and hold the up button and the center button until the display changes.
2. Press up or down to change system function number to 16.
3. Press **NEXT** to advance to next function.
4. Press up or down to change status number to 1.
5. Press **DONE** to exit and save settings.

### Program Schedule

Pre-set settings are shown below.

You can program 4 time periods each day, with different settings for weekdays and weekends.

**Wake-** Set to time and temperature you want in the morning until you leave for the day.

**Leave-** Set the time and temperature you want the heat output reduced to during the day.

**Return-** Set the time and temperature to what you want the heat output increased to in the evening.

**Sleep –** Set the time and temperature to what you want for overnight.

	Heat
<b>Wake</b> (6:00 am)	70° F
<b>Leave</b> (8:00 am)	62° F
<b>Return</b> (6:00 pm)	70° F
<b>Sleep</b> (10:00 pm)	62° F

### To Adjust Program Schedules

1. Press **SET CLOCK/DAY/SCHEDULE**, then **SET SCHEDULE**.
2. Press **▲ / ▼** to set your weekday wake time (Mon-Fri), then press **NEXT**.
3. Press **▲ / ▼** to set the temperature for this time period, then press **NEXT**.
4. Set time and temperature for the next time period (Leave). Repeat steps 2 and 3 for each weekday time period.
5. Press **NEXT** to set weekend time periods (Sat-Sun), then press **DONE** to save & exit.

**NOTE:** You can press **CANCEL PERIOD** to eliminate unwanted time periods (except Wake).

### Program Schedule Override (temporary)

Press **▲** or **▼** to immediately adjust the temperature. This will temporarily override the temperature setting for the current time period.

The new temperature will be maintained only until the next programmed time period begins. For example, if you want to turn up the heat early in the morning, it will automatically be lowered later, when you leave for the day.

To cancel the temporary setting at any time, press **RUN SCHEDULE**.

### Program Schedule Override (permanent)

Press **HOLD** to permanently adjust the temperature. This will override the temperature settings for all time periods. The "Hold" feature turns off the program schedule and allows you to adjust the thermostat manually, as needed. Whatever temperature you set will be maintained 24 hours a day, until you manually change it, or press **RUN SCHEDULE** to cancel "Hold" and resume the programmed schedule.

## R. Frequently Asked Questions

### **What causes my glass to become dirty?**

If the glass has white ash build up it is normal and the glass should be cleaned. If it is a black soot build up airflow through the appliance may be restricted. The most often cause is overdue maintenance and cleaning. See "Maintaining and Servicing Appliance" and/or make adjustments to the trim control.

### **How can I get more heat out of the appliance?**

The most often cause of diminished heat output is overdue maintenance and cleaning. See "Maintaining and Servicing Appliance".

### **What should I do if I smell smoke or there is ash/soot coming from the appliance?**

While there will always be some smoke smell from wood burning appliances (including pellet) you should investigate all venting to make sure it is sealed properly. Most venting requires silicone to seal the seams.

In addition most homes are built very tight today and with exhaust systems can create negative pressure in the home. See "Negative Pressure" under "Getting Started" in the owner's manual if you have checked the venting but still have smoke coming from the appliance. For ash or soot check the above and the exhaust blower housing and seals.

### **Why would my appliance run fine last winter but not start this fall?**

It is possible that the appliance was not properly prepared for the Non-burn season (see troubleshooting section).

### **Is there a place to lubricate the blowers to quiet them down?**

No. The most often cause of noisy blowers is from the impellers becoming dirty over time. See maintenance and service section for maintaining and servicing.

### **What is the metal object with the bend in it that came inside the plastic bag?**

It is a clean-out tool used to help clean the fire pot and remove any jams in the rare event they occur in the feed tube.

### **Why is there a black residue building up on the outside of my home?**

Wind can cause this to happen. If the appliance is operating correctly very little soot should ever exit the termination cap. Check to be sure the venting is installed per the owner's manual and local codes.

### **Do I need an outside air kit?**

Outside air is required for mobile home installs and in some jurisdictions. Refer to "Listing & Code Approvals", "Mobile Home Installation" and "Appliance Set-up". Also refer to local building codes.

### **I am seeing sparks coming out of my pipe (termination cap) outside is this safe?**

This is normal. As long as clearances to combustibles were followed this is safe.

### **I have no power to anything. Does this appliance have a circuit breaker or fuse or a reset button?**

This appliance has one fuse on the control board and a resettable snap disc mounted to the feed tube. If the appliance overheats then the snap disc can be reset; if the fuse is blown the control board must be replaced.

### **Can I burn corn in my appliance?**

No, this appliance is not approved to burn corn type fuel.

### **Where is the serial # located on my appliance?**

The serial number is located behind the right panel on a hang tag.

### **No pellets are dropping in my fire pot.**

See troubleshooting guide.

**Contact your dealer** for additional information regarding operation and troubleshooting.  
Visit [www.QuadraFire.com](http://www.QuadraFire.com) to locate a dealer.


# 3 Maintenance and Service


When properly maintained, your fireplace will give you many years of trouble-free service. **Contact your dealer** to answer questions regarding proper operation, troubleshooting and service for your appliance. Visit [www.QuadraFire.com](http://www.QuadraFire.com) to locate a dealer. We recommend annual service by a qualified dealer.

## A. Proper Shutdown Procedure

Turn dial control to OFF, let appliance completely cool and exhaust blower must be off. Now you can unplug appliance before servicing.

This pellet insert has a manufacturer-set minimum low burn rate that must not be altered. It is against federal regulations to alter this setting or otherwise operate this pellet insert in a manner inconsistent with operating instructions in this manual.

 **CAUTION**



**Shock and Smoke Hazard**

- Smoke spillage into room can occur if appliance is not cool before unplugging.
- Risk of shock if appliance not unplugged before servicing appliance.

*Follow the detailed instructions found in this section for each step listed as referenced in the chart below.*

## B. Quick Reference Maintenance Chart

Cleaning or Inspection	Frequency		Daily	Weekly	Monthly	Yearly
Fire pot	As needed	OR	X			
Ash Removal from Firebox	About 5 bags of fuel depending on ash build-up	OR		X		
Glass	When clear view of fire pot becomes obscure	OR		X		
Hopper	Every ton of fuel (50 bags)	OR			X	
Exhaust Path, Drop Tube and Behind Baffles	Every ton of fuel (50 bags) or more frequently	OR			X	
Door Handle & Gasket Inspection	Prior to heating season	OR			X	
Blower, Convection	Every ton of fuel or more frequently depending on performance	OR			X	
Blower, Exhaust	Every ton of fuel or more frequently depending on performance	OR				X
Firebox - Prepare for Non-Burn Season	At end of heating season	OR				X
Venting System	Every 3 tons of fuel or more frequently depending on performance	OR				X

**NOTICE:** These are recommendations. When burning high ash content pellet fuel you may need to clean the fire pot several times a day. Clean the appliance and fire pot more frequently if you encounter heavy build-up of ash at the recommended interval or you see soot coming from the vent. Not properly cleaning your appliance on a regular basis will void your warranty.

**C. General Maintenance and Cleaning**

**1. Cleaning Fire pot using Lever**

- **Frequency:** Daily or as needed”
- **By:** Homeowner

\*When burning high ash content pellet fuel you may need to clean the fire pot several times a day.

- a. Be sure the appliance is allowed to cool.
- b. Open cast face of appliance
- c. Pull fire pot floor cleaning lever two times until the ash falls into the ash pan below. **Figure 16.2**
- d. It may be necessary to use your fire pot clean out tool to chip away material that has built up on the sides of the fire pot and to push out any clinkers. **Figure 16.1**
- e. Larger clinkers may have to be removed from the top of the fire pot.
- f. If the clinker adheres to the sides of the fire pot, you will need to manually clean the fire pot. The fire pot floor plate must be fully closed when finished.

**2. Cleaning Ash Pan**

- **Frequency:** Weekly or every 3-5 bags
- **By:** Homeowner
  - a. Locate the ash pan underneath the fire pot.
  - b. Slide the ash pan straight out.
  - c. Empty into a non-combustible container and re-install ash pan.
  - d. When replacing ash pan push it back until it catches on the 2 side latches.

Clinkers filling the ash pan will have to be cleaned out more often than ash.

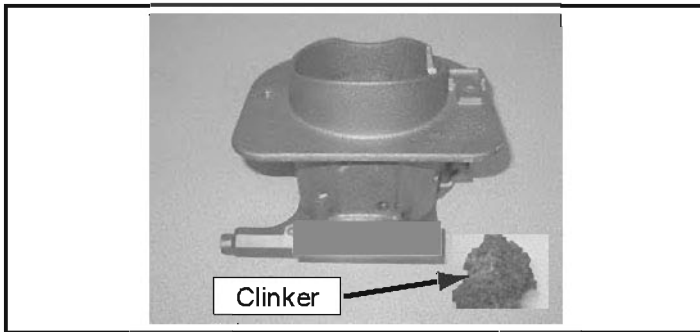
Ash Disposal:

Ashes should be placed in a steel container with a tight-fitting lid. The container of ashes should be moved outdoors immediately and placed on a non-combustible floor or on the ground, well away from combustible materials, pending final disposal.

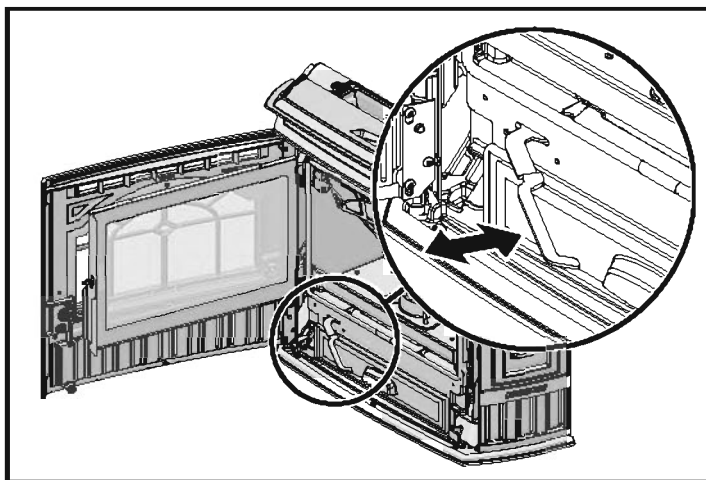
If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled. Other waste shall not be placed in this container.

**3. Ash Removal from Firebox**

- **Frequency:** Weekly or more frequently depending on ash build-up
- **By:** Homeowner
  - a. Be sure the appliance is allowed to cool.
  - b. There must not be any hot ashes in the firebox during cleaning.
  - c. Frequent cleaning of the ash in the firebox with a vacuum cleaner will help slow down the build-up of ash in the exhaust blower and vent system.



**Figure 16.1 - Fire pot with large clinker**



**Figure 16.2**

<b>WARNING</b>	
	<b>RISK OF FIRE</b>
	<p>Keep combustible materials, gasoline and other flammable vapors and liquids clear of appliance.</p> <ul style="list-style-type: none"> <li>• Do NOT store flammable materials in the appliance's vicinity.</li> <li>• Do NOT use gasoline, lantern fuel, kerosene, charcoal lighter fluid or similar liquids to start or "freshen up" a fire in this appliance.</li> </ul> <p>Keep all such liquids well away from the appliance while it is in use as combustible materials may ignite.</p>



**4. Cleaning Heat Exchanger & Drop Tube**

- **Frequency:** Monthly or every ton of fuel (50 bags).
- **By:** Homeowner

NOTE: Heavy duty vacuum cleaners may be obtained, specifically designed for solid fuel appliance cleaning.

**Tools Needed:** A Shop Vacuum and generic micro cleaning kit; flat head and Phillips screwdriver; 7mm socket wrench or nut-driver, bottle brush, 1/2" ID hose.

- It is necessary to remove the baffle to gain access to the heat exchanger (figure 18.2). Follow instructions for baffle removal on page 20.
- Vacuum the ash from the heat exchanger with an upholstery brush to remove the majority of the ash. Be sure to vacuum the back of the baffle also. Inspect the drop tube and remove any residue build-up in the drop tube. **Figure 17.3.**
- Assemble the crevice tool from the micro cleaning kit to attach to a Shop Vac. **Figure 17.4.**
- Use the crevice tool to finish cleaning the heat exchanger fins. It is critical that the 2 exhaust exits at the back of the firebox floor (left and right) be thoroughly cleaned. **Figure 17.1** There are several ways this can be done:
  - Use the crevice tool.
  - Attach a hose 1/2 inch (12.7mm) inside diameter and approximately 2 feet (607mm) in length to your vacuum hose.
  - Use a bottle brush and push the ash down to the bottom.



**Figure 17.1 - Shop Vacuum and Micro Cleaning Kit examples - items that can be purchased at local hardware stores.**



**Figure 17.2 - Example of a dirty heat exchanger**



**Figure 17.3**



**Figure 17.4**

**⚠ WARNING**

**Hopper Fire Risk!**

For trouble free use of your pellet appliance you must perform cleaning as called for in these instructions. Not doing so will result in:

- Poor operating performance
- Smoke spillage into the home
- Overheating of components

Not properly cleaning your appliance on a regular basis will void your warranty.

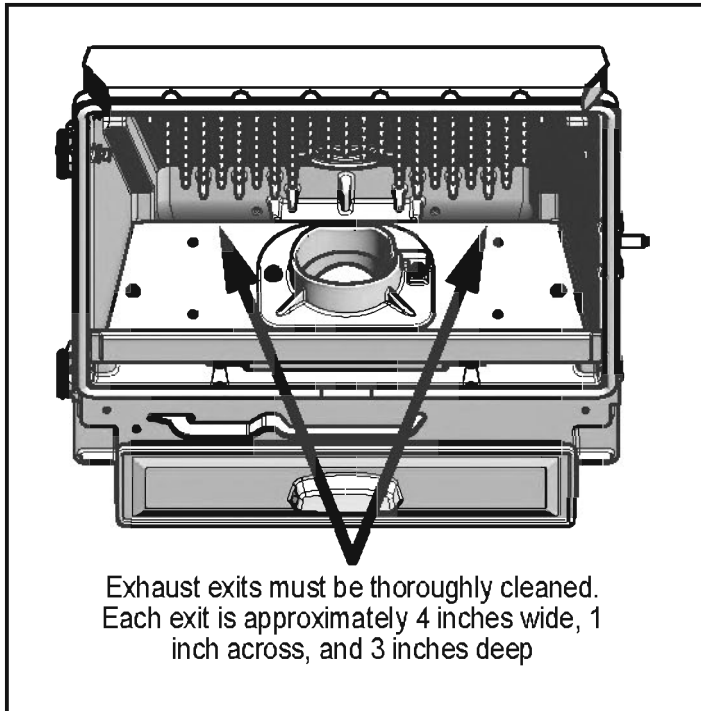



Figure 18.1

**NOTE** It is normal to see a certain amount of wear of the heat exchanger fins. You may notice some flaking and pitting on some of the pins. The heat exchanger system will function as designed with as many as 15 of these pins missing.

**5. Ash Removal System Inspection & Cleaning**

- **Frequency:** Monthly or after burning 50 bags of fuel.
- **By:** Homeowner
- a. Be sure the appliance is allowed to cool.
- b. Open the front cast door and cycle the ash removal handle - these should be inspected for functionality
- c. Inspect for any degradation or deformation.
  - As the springs heat up and cool down they can lose tension
  - If there is a gap showing above the fire pot bottom, approximately 1/16 inch (1.59mm) or more, it means the springs have lost their tension
  - Lost tension cannot keep the floor in the proper position causing ignition problems and fuel falling into the ash pan. If noted, call your dealer to replace the springs.

<b>⚠ WARNING</b>	
	<p><b>RISK OF FIRE!</b></p> <p>Do NOT store fuel:</p> <ul style="list-style-type: none"> <li>• Closer than required clearances to combustibles to appliance.</li> <li>• Within space required for loading or ash removal</li> </ul>

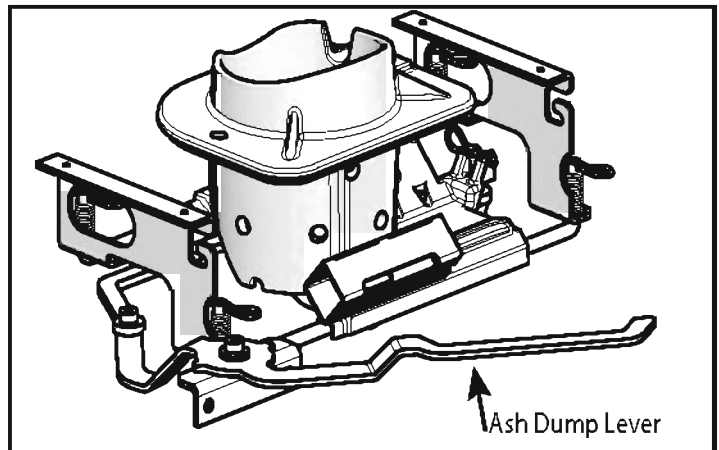



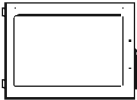
Figure 18.2

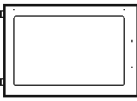
**6. Cleaning the Hopper**

- **Frequency:** See chart on pg. 16
  - **By:** Homeowner
- a. Be sure the appliance is allowed to cool.
  - b. After burning approximately 1 ton of fuel you will need to clean the hopper to prevent sawdust and/or fines build-up.
  - c. A combination of sawdust/fines and pellets on the auger reduces the amount of fuel supply to the fire pot.
  - d. This can result in nuisance shut downs and mis-starts
    - Empty the hopper of any remaining pellets.
    - Vacuum the hopper and feed tube.

**7. Cleaning the Glass**

- **Frequency:** See chart on pg. 16
  - **By:** Homeowner
- a. Be sure the appliance is allowed to cool.
  - b. Clean glass with a non-abrasive commercially available cleaner. Wipe down with dry towel.

 <b>WARNING</b>	
	<p>Handle glass doors with care.</p> <ul style="list-style-type: none"> <li>• Inspect the gasket to ensure it is undamaged.</li> <li>• Do NOT strike, slam or scratch glass.</li> <li>• Do NOT operate appliance with glass door removed, cracked, broken or scratched.</li> </ul>

<b>CAUTION</b>	
	<p>Handle glass assembly with care.</p> <p><b>When cleaning glass door:</b></p> <ul style="list-style-type: none"> <li>• Avoid striking, scratching or slamming glass.</li> <li>• Do NOT clean glass when hot.</li> <li>• Do NOT use abrasive cleaners.</li> <li>• Use a hard water deposit glass cleaner on white film.</li> </ul> <p>Refer to maintenance instructions.</p>

**8. Door Latch Inspection**

- **Frequency:** See chart on pg. 16
- **By:** Homeowner

The door latch is non-adjustable but the gasket between the glass and firebox should be inspected periodically to make sure there is a good seal. If the gasket is frayed or damaged, replace with a new one.

**9. Cleaning Exhaust System - Requires No Lubrication**

- **Frequency:** See chart on pg. 16
  - **By:** Homeowner
- a. Be sure the appliance is allowed to cool.
  - b. Remove blower per replacement instructions.
  - c. Use a soft brush and vacuum to clean the propellers.
  - d. Vacuum out exhaust path and housing.
  - e. Replace fan (make sure electrical connections are fully assembled).

**10. Cleaning Convection Blower - Requires No Lubrication**

- **Frequency:** Yearly or as needed
  - **By:** Homeowner
- a. Be sure the appliance is allowed to cool.
  - b. Remove blower per blower replacement instructions.
  - b. Use a soft brush and vacuum to clean the propellers.

**11. Cleaning the Top Vent Adapter (if installed)**

- **Frequency:** See chart on pg. 16
  - **By:** Homeowner
- a. Be sure the appliance is allowed to cool.
  - b. Open the clean out cover.
  - c. Sweep out any ash build-up.

**12. Soot and Fly-ash: Formation & Need for Removal in Exhaust Venting System.**

- **Frequency:** See chart on pg. 16
- **By:** Qualified Service Technician/Homeowner

The products of combustion will contain small particles of fly-ash. The fly-ash 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 appliance will lead to some soot formation which will collect in the exhaust venting system.

Note: Ash will build up more quickly in the horizontal venting sections.

**13. Preparing Firebox for Non-Burn Season**

- **Frequency:** See chart on pg. 16
  - **By:** Homeowner
- a. The appliance must be in complete shutdown and allow the appliance to completely cool down.
  - b. Unplug appliance.
  - c. Remove all ash from firebox and vacuum thoroughly.
  - d. To minimize corrosion paint all exposed steel, including cast-iron. Use the Touch-Up paint supplied with the appliance or purchase paint from your local dealer. You must use a high-temperature paint made specifically for heating appliances.
  - e. Cleaning the flue at the end of the burn season will prevent corrosives to build-up and damage the flue.
  - f. Outside temperatures should have no effect on the performance of the appliance under freezing conditions.

**D. Soot or Creosote Fire Awareness**

The chimney should be inspected periodically during the heating season to determine if a creosote build-up has occurred. If a significant layer of creosote has accumulated (1/8 inch [3mm] or more) it should be removed to reduce the risk of chimney fire.

Check daily for creosote build-up until experience shows how often you need to clean to be safe. Be aware that the hotter the fire the less creosote is deposited, and weekly cleaning may be necessary in the mild weather even though monthly cleaning may be enough in the coldest months. Contact your local municipal or provincial fire authority for information on how to handle a chimney fire.

**In the event of a soot or creosote fire, close the firebox door, exit the building immediately and contact the proper fire authorities.**

**DO NOT under any circumstances re-enter the building.**

**E. High Ash Fuel Content Maintenance**

- **Frequency:** Daily
- **By:** Homeowner

If the ash build-up exceeds the half way point in the fire pot or clinkers are adhering to the sides of the fire pot, then the fire pot floor is not being cleaned often enough.

**⚠ WARNING**

**Risk of Fire and Smoke!**

- High ash fuels or lack of maintenance can cause fire pot to overfill. Follow proper shutdown procedure if ash buildup exceeds half way point in fire pot.
- Failure to do so could result in smoking, sooting and possible hopper fires.

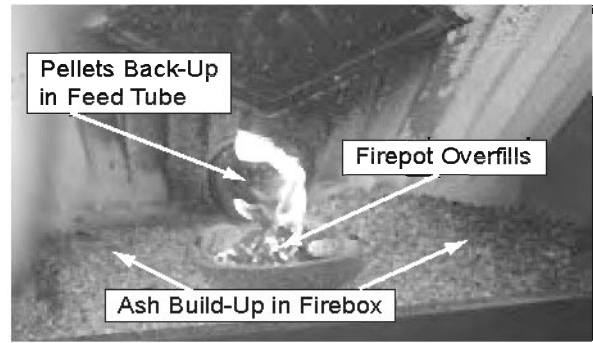


Figure 20.1

**NOTE**

• This appliance is required to be cleaned frequently because soot creosote and ash may accumulate.

**F. Baffle Removal**

1. The appliance must be in complete shutdown, completely cool and the exhaust blower off.
2. Open door.
3. The baffle is located at the top inside of firebox.
4. Remove baffle by placing a flat head screw driver into the slot of the latches located in the upper corners and rotate down. The bottom of the latch will fall forward off of the post. Lift the baffle up and then out toward you.

- Figure 20.2**
5. To replace the baffle, place the 2 locating ears behind the bottom edge and tilt the baffle up and into place.
  6. The baffle must be centered in the firebox before latching it in place. If it is not centered the latch will slip between the baffle and side of the firebox instead of latching properly.
  7. The bottom of the latches will fit over the posts. Using the screwdriver, push the top of the latch forward to lock latch into place.

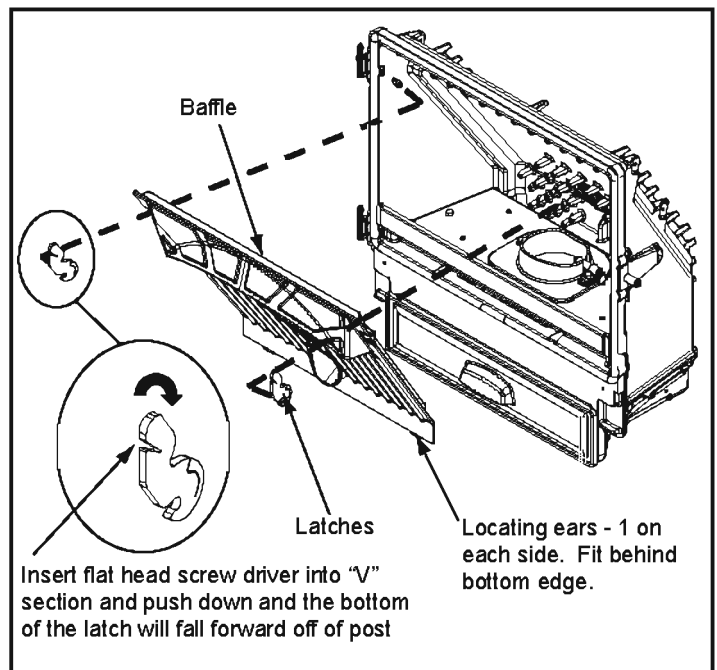


Figure 20.2



**WARNING**



Cast iron is a very heavy material. The baffle is made of cast iron and therefore is heavy and awkward at times to maneuver. Clear and prepare your work area before you begin.

**G. Glass Replacement**

1. Swing open the face and remove the door from the appliance by lifting the door off of the hinge pins and lay on a flat surface face down.
2. Using a Phillips head screw driver, remove 4 screws, 2 on the top and 2 on the bottom. Remove metal bracket and then remove the glass. **Figure 21.1**
3. Replace with new glass with gasket.
4. Re-attach metal bracket with 4 screws.
5. Re-install door over hinge pins and close face.

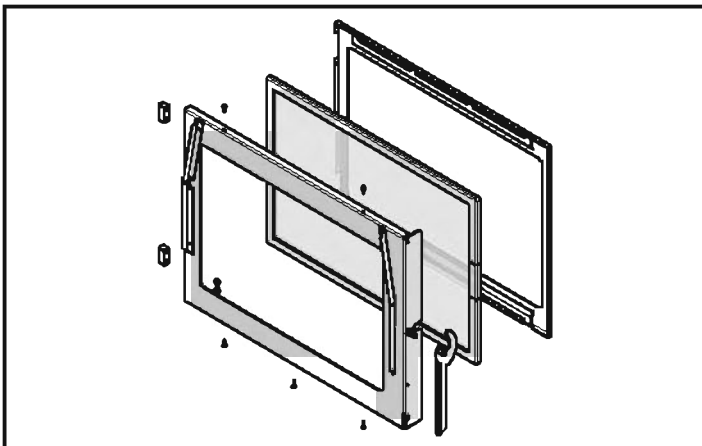


Figure 21.1



**WARNING**



- Glass is 5mm thick high temperature heat-resistant ceramic glass.
- DO NOT REPLACE with any other material.
- Alternate material may shatter and cause injury.

**H. Combustion/Exhaust Blower Replacement**

1. Follow the proper shut down procedures.
2. Remove the right side panel by releasing the upper, spring-loaded latch. Access the latch through the upper panel vent holes. The cast panel should fall forward. Lift it out of its lower nest and set the panel aside. You may need to disconnect the dial control wire harness.
3. It is not necessary or recommended to remove the housing to replace or service the combustion blower. You only need to remove the motor and impeller.

4. Disconnect the wire from the control board connection and hall effect switch/housing.
5. Using a 7mm socket wrench or nut driver, loosen the nuts securing the motor and impeller to the housing. Rotate the blower and remove from housing.
6. Holding the motor, rotate the mounting plate and remove motor and impeller.
7. If the gasket between housing and motor is damaged it will have to be replaced. A gasket is included with the replacement blower.
8. Re-install in reverse order.

**I. Convection Blower Replacement**

1. Follow the proper shut down procedures.
2. Remove the left and right side panels.
3. Disconnect the wire terminals.
4. Reach behind the blower and release the latch by pushing the top of the latch towards the blower. **Figure 21.2**
5. Rock the top of the blower slightly and lift up. The blower will pass out the left side of the appliance.

Note: You may need to loosen the surround to move it out of the way.

6. Install replacement blower by placing the bottom flange into the opening first then rotate blower up into position.
8. When the blower is properly positioned the latch will engage the notch to hold the blower in place. **Figure 21.2**
9. Re-connect wire terminals to the new blower.
10. Reposition and Re-secure the back panel.

Note: Make sure wires are connected prior to restarting the appliance. Failure to do so will result in the (side-mounted) safety thermal snap disc tripping resulting in cutting power to the appliance feed system.

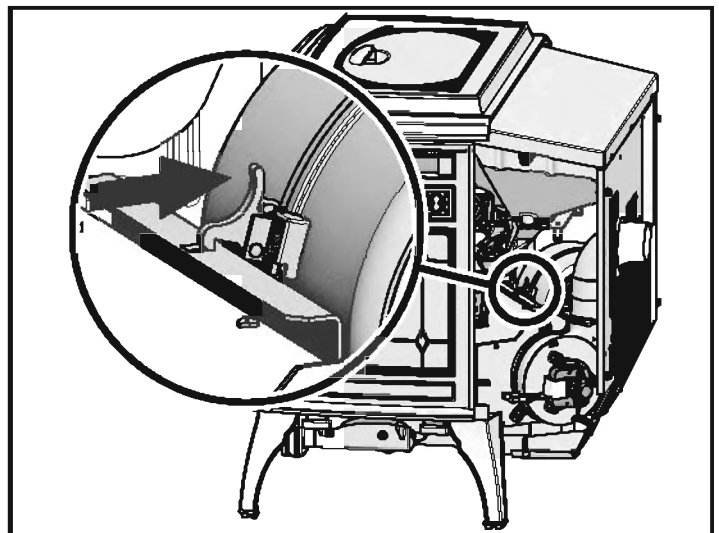


Figure 21.2

# 4 Troubleshooting Guide

With proper installation, operation, and maintenance your appliance will provide years of trouble-free service. If you do experience a problem, this troubleshooting guide will assist a qualified service person in the diagnosis of a problem and the corrective action to be taken. This troubleshooting guide can only be used by a qualified service technician.

Symptom	Possible Cause	Corrective Action
Plug in appliance - No response	No Power to outlet.	Check circuit breaker at service panel.
	5 amp fuse blown	Replace control board - don't replace fuse
	Snap disc tripped or defective.	Reset or replace snap disc.
Appliance will not light	No Fuel	Check hopper; load with wood pellets
	Vacuum switch not closing; no vacuum	Check vacuum switch wires are installed Check vacuum hose is connected to switch and feed tube port and is in good condition Make sure venting system is clean Make sure front door is closed Check vacuum tube for blockage or restrictions/kink
	Hopper lid open	Close hopper lid
	Defective hopper switch.	Check hopper switch operation Check hopper switch wires for integrity
	Safety snap disc is tripped	Check to make sure convection blower wires are connected and reset snap disc (located on RH side of appliance) Clean & inspect convection blower and convection air path.
	Feed System is jammed	Inspect and un-jam the feed assembly
	Feed motor not plugged in	Reconnect feed motor
	Igniter not plugged in	Connect the igniter wires
	Defective igniter	Replace igniter
	Fire pot plugged-up / dirty	Clean fire pot and movable floor Remove ash from the ash pan
	Dial control is set to "OFF"	Turn dial control (on the appliance) to a setting other than OFF
	Hopper top not sitting on appliance correctly	Adjust hopper top

Fire starts but goes out	Dirty fire pot, exhaust path, and/or venting plugged	Clean fire pot and movable floor Inspect and clean exhaust path and venting Clean firebox, exhaust path, and venting (including behind baffle)
	Exhaust sensor cannot read temperature or is loose	Secure the exhaust probe to exhaust blower housing – keeping its wire away from hot surfaces
	Exhaust plenum is dirty	Clean exhaust path to plenum
	Exhaust probe is defective (error code may result)	Check for probe wire integrity and/or replace defective exhaust probe securing the exhaust probe to exhaust blower housing – keeping its wire away from hot surfaces
<b>Symptom</b>	<b>Possible Cause</b>	<b>Corrective Action</b>
Appliance starts and stops frequently when operating in the mode	Area where the thermostat is placed affects temperature.	Check thermostat proximity to doors and windows
	Thermostat located in tight spaces effecting the on/off cycling of the appliance.	Inspect thermostat location and make sure it is not close to a surface that heats and cools quickly.
	Thermostat SWING function is set too low	Raise the thermostat swing temperature (see function section for instructions)
Slow or smoky start-up and/or lazy flame	Dirty fire pot, exhaust path, and/or venting system.	Clean entire appliance including: fire pot, ash build up in firebox, fire pot area, behind baffle, firebox, exhaust blower, venting, and ash pan.
	Not enough combustion air	Adjust the trim (see trim adjustment section)
	Misaligned igniter	Center the igniter in the chamber
	Wet fuel or poor quality fuel	Replace wood pellet fuel
Convection blower fails to start	Convection Blower is jammed	Clean and un-jam the blower
	Not electrically connected	Connect the blower wires to its respective power wires
	Blower is defective	Replace blower
	Exhaust probe not sensing correct temperature	Secure the exhaust probe to exhaust blower housing – keeping its wire away from hot surfaces
	Control board is defective.	Replace control board
Convection Blower fails to shut off	Wire short between blower and ground - Control board is defective	Repair wire and replace control board

Exhaust blower fails to start and/or red flashes 6X – indicating a exhaust encoder alarm.	Exhaust blower is jammed	Clean, and undo jam from the blower
	Not electrically connected	Connect the blower wires to its respective power wires
	Blower is defective	Replace blower
	Control board or dial control is defective.	Unplug dial control, if exhaust blower runs, dial control is defective. If exhaust blower <i>does not</i> run with dial control unplugged, replace control board.
Exhaust Blower fails to shut off	Wire short between blower and ground - Control board is defective	Repair wire and replace control board
Feed Motor fails to shut off	Wire short between ground and: feed motor, vacuum switch, hopper switch, or safety snap disc	Repair wire(s) and replace control board
	Control board is defective	Replace control board
Convection Blower makes noise	Convection blower is dirty causing an out-of-balance condition	Clean blower impellers
Igniter does not turn off	Wire short between igniter and ground – Control board is defective	Repair wire and replace control board
<b>Symptom</b>	<b>Possible Cause</b>	<b>Corrective Action</b>
Large, lazy flame (orange color) with black ash / soot buildup on glass	Dirty appliance or venting	Clean appliance including the fire pot, exhaust path, and venting system
	Poor fuel quality, high ash content.	Purge old fuel and use higher quality / or brand of fuel
	Incorrect air-fuel adjustment	Adjust the trim (see trim adjustment section)
	Excessive feeding	Adjust trim per trim dial instructions
	Feed Motor locked on	Follow corrective action for feed motor not turning off
Excessive fuel spilling over the fire pot and/or excessive flame	Dirty Appliance	Clean appliance including the fire pot, exhaust path, and venting system
	Feed Motor locked on	Follow corrective action for feed motor not turning off
Black soot on the side of the house	Dirty Appliance	Clean appliance including the fire pot, exhaust path, and venting system
	Exhaust termination cap too close to the structure	Extend the termination further from the structure
	Excessive feeding (incorrect air-fuel ratio)	Adjust trim per trim dial instructions
Appliance rumbles consistently during burns	Too much fuel	Turn trim dial counterclockwise one notch at a time
	Too much air	Turn trim dial towards the zero setting one notch at a time
	Note: Refer to trim setting section for more information, page 13	



*Following correction of any Alarm, turn the dial control to the OFF position, wait 10 seconds and turn back to desired setting OR unplug the appliance, wait 10 seconds then restore power.*

Alarm (LED Flashing RED)	Possible Cause	Corrective Action
1 Red Flash: Empty Hopper Alarm	Hopper empty	Fill the hopper
	Auger jam	Inspect the feed tube for jams
	Vacuum switch not closing	Make sure firebox door is shut, vacuum hose is connected to switch and drop tube, wire connectors are connected to vacuum switch, control board, hopper switch, and safety snap disc.
	Hopper lid open	Close the hopper lid
	Exhaust probe does not sense temperature	Secure the exhaust probe keeping its wire away from hot surfaces and clean the exhaust plenum
	Snap disc tripped	Reset snap disc
	Exhaust probe not attached to exhaust blower properly	Secure exhaust probe to exhaust blower housing – keeping its wire away from hot surfaces
	Exhaust path is dirty	Clean appliance including the fire pot, exhaust path, and venting system
2 Red Flashes: Exhaust Probe Fail	Not connected to the control board	Connect terminal end to control board
	Failed component	Replace exhaust probe – securing it to exhaust blower housing – keeping wire away from hot surfaces
4 Red Flashes: Missed Ignition	Hopper empty	Fill the hopper
	Feed motor doesn't turn	Inspect feed motor circuit (hopper lid must be closed, vacuum switch must be closed, snap disc closed, and feed motor must be plugged in) Clear jam in feed tube
	Dirty appliance	Clean appliance including the fire pot, exhaust path, and venting system
	Igniter has no power or is defective	Check igniter lead connections or replace igniter
	Exhaust probe not properly installed	Secure exhaust probe to exhaust blower housing – keeping its wire away from hot surfaces
	Igniter chamber plugged with debris	Clean igniter chamber
6 Red Flashes: Exhaust Blower Alarm	Wire from exhaust blower or encoder is disconnected or shorted	Make sure wire is not damaged / melted and ends are fully connected to the encoder and control board.
	Defective exhaust blower	Replace exhaust blower
	Defective encoder (on end of exhaust blower)	Replace exhaust blower
8 Red Flashes: Exhaust Over-Temp	Feed Motor Locked On	Repair wire(s) and replace control board
	Non-approved fuel used	Only use wood pellet fuel. Do not enhance its performance with any other combustible substance.
	Convection blower dirty	Clean impellers

# 5 Reference Materials

## A. Component Functions



When describing the location of a component, it is always AS YOU FACE THE FRONT OF THE APPLIANCE.

### 1. Exhaust Blower

The combustion (exhaust) blower is mounted in the bottom right rear of appliance. The blower is designed to pull the exhaust from the appliance and push it out through the venting system.

### 2. Control Board

The control board is located on the right side of appliance. It controls the functioning of the appliance and communicates with the dial control. The control board can only be replaced by an authorized dealer.

### 3. Convection Blower

The convection blower is mounted at the bottom left of the appliance. The convection blower pushes heated air through the heat exchange system into the room.

### 4. Feed System

The feed system is located on the right side of the appliance and can be removed as an entire assembly. The hollow feed spring (auger) pulls pellets up the feed tube from the hopper area and drops them down the feed chute into the fire pot. Reference the parts list for individual parts in feed assembly .

### 5. Fire pot

The fire pot is made of high quality ductile iron. The floor of the fire pot opens for cleaning and is manually operated by the homeowner. The floor needs to return to a completely closed position or the appliance will not operate properly.

### 6. Fuse

The control board fuse will blow should a short occur. The control board will need to be replaced. DO NOT REPLACE THE FUSE. If the control board fuse blows its TRIAC, that portion of the circuit, will remain closed causing the motor on that leg to run continuously at high speed.

### 7. Heat Exchanger

The heat exchanger is located behind the baffle and transfers heat from the exhaust system into the convection air chamber. Remove the cast iron baffle to access the heat exchanger.

### 8. Hopper Lid Switch

The hopper lid switch is located on the right side, inside the hopper. It switches the feed motor off if the hopper lid is open.

### 9. Igniter (Heating Element)

The igniter is mounted on the base of the fire pot. Combustion air travels over the red hot igniter creating super heated air that ignites the pellets.

### 10. Power Receptacle

The power receptacle is located below the control box on right side. Install the power cord (supplied in the appliance component pack) to the appliance receptacle. Prior to installing, check the wall receptacle for 120 volt, 60 Hz (standard current). Make sure the outlet is grounded and has the correct polarity. A good quality surge protector is highly recommended to protect the appliance electronics.

### 11. Overheat Snap Discs

There are two overheat snap discs located within the electro-mechanical cavity of the appliance. One is mounted on the back of the drop tube in the center of the appliance; the other is mounted in the RH side between the firebox and cast side

panel. Both snap discs have a reset button. If the fire tries to burn back into the feed system, the drop tube snap disc will shut the appliance down. If there is not enough circulation from the convection blower the second snap disc will shut the feed system off. Either sensor must be manually re-set if tripped. Disconnect power before resetting.

### 12. Exhaust Probe - Exhaust Blower

The exhaust probe is a temperature-sensing device attached to the exhaust blower housing via screw and clamp. It provides sympathetic exhaust temperature feedback to the control board. In turn, the control board uses this information to adjust its heat-output systems for best performance.

### 13. Vacuum Switch

The vacuum switch is located on the right side of the appliance under the feed motor, behind right side panel. Its vacuum hose connects to the drop tube. This switch turns the feed system on when vacuum is present in the firebox. The vacuum switch is a safety device to shut off the feed motor if the exhaust or the heat exchanger system is dirty, plugged, or if the firebox door is open.

### 14. Thermostat

Refer to Thermostat Instructions on page 14.

### 15. Wiring Schematic for Control Board (below)

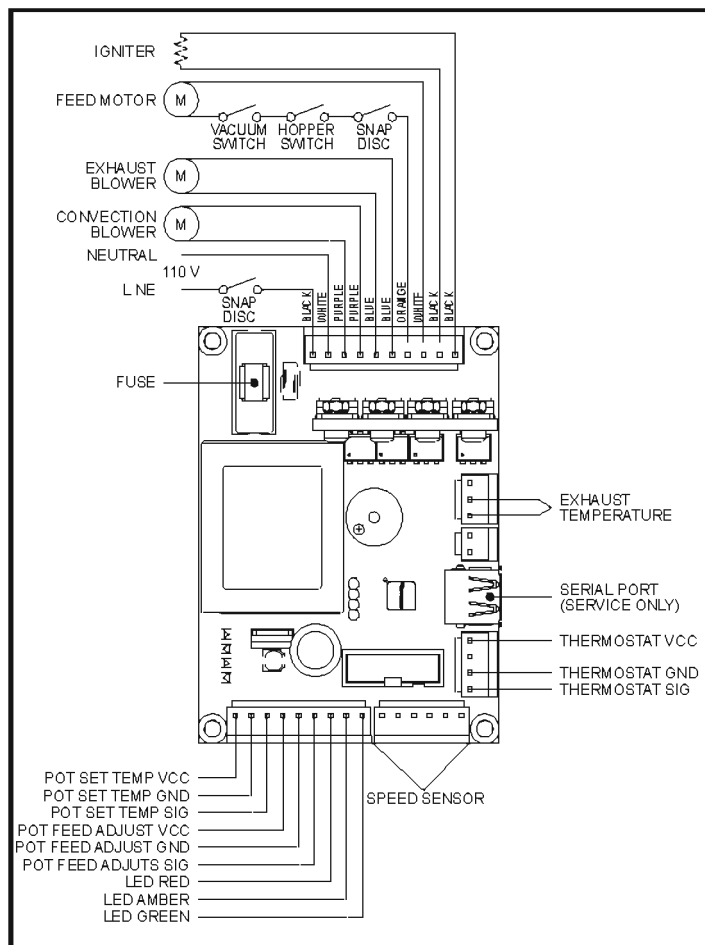


Figure 26.1 - Control Board Schematic

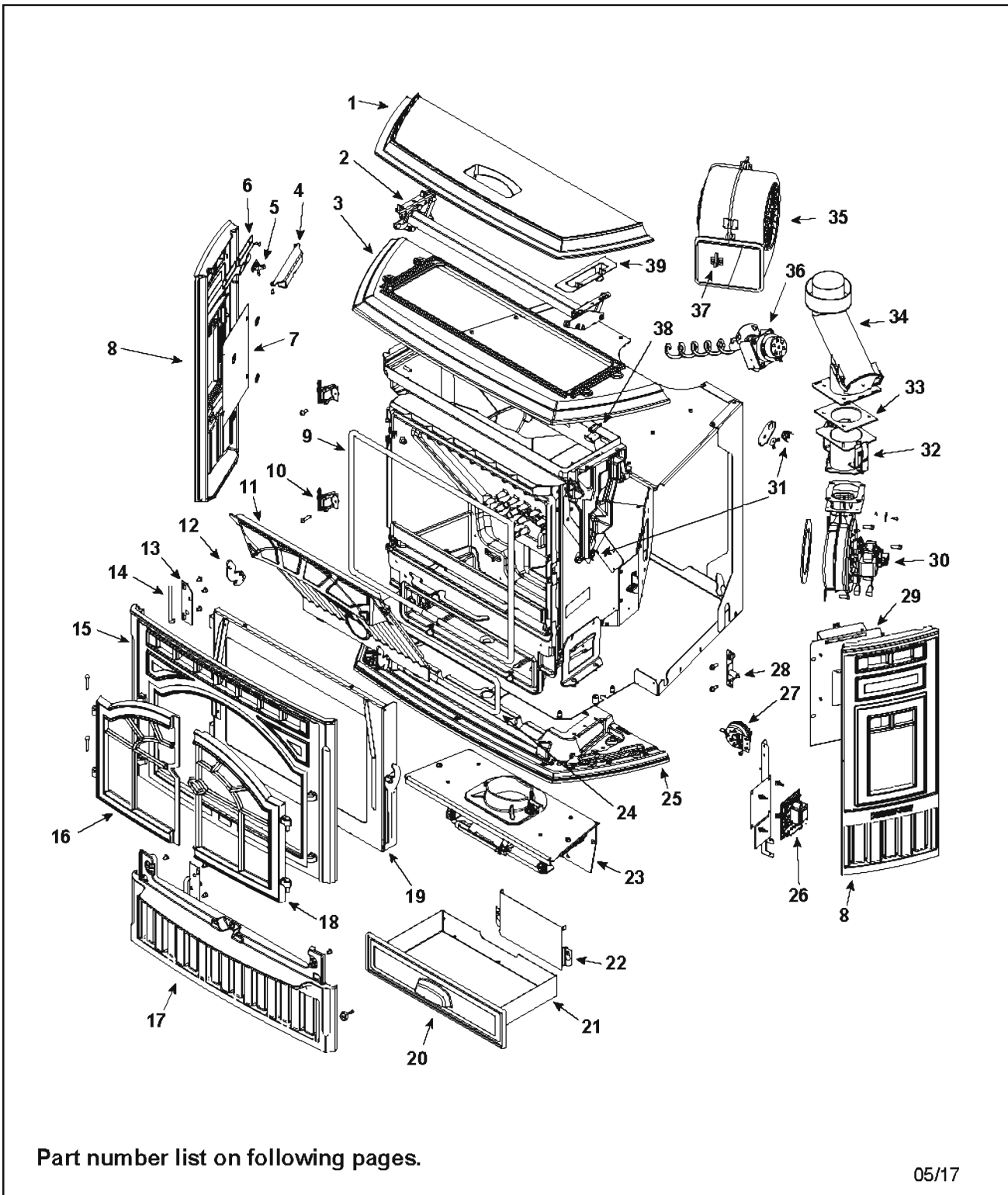
B. Exploded Drawings

**QUADRA-FIRE**<sup>®</sup> Service Parts  
Pellet Insert

**MT VERNON INSERT-E2**

Beginning Manufacturing Date: Feb 2014  
Ending Manufacturing Date: Active

MTVI-E2-CSB, MTVI-E2-MBK, MTVI-E2-PMH



C. Parts List



MT VERNON INSERT-E2

Beginning Manufacturing Date: Feb 2014

Ending Manufacturing Date: Active

IMPORTANT: THIS IS DATED INFORMATION. Parts must be ordered from a dealer or distributor. **Hearth and Home Technologies does not sell directly to consumers.** Provide model number and serial number when requesting service parts from your dealer or distributor.

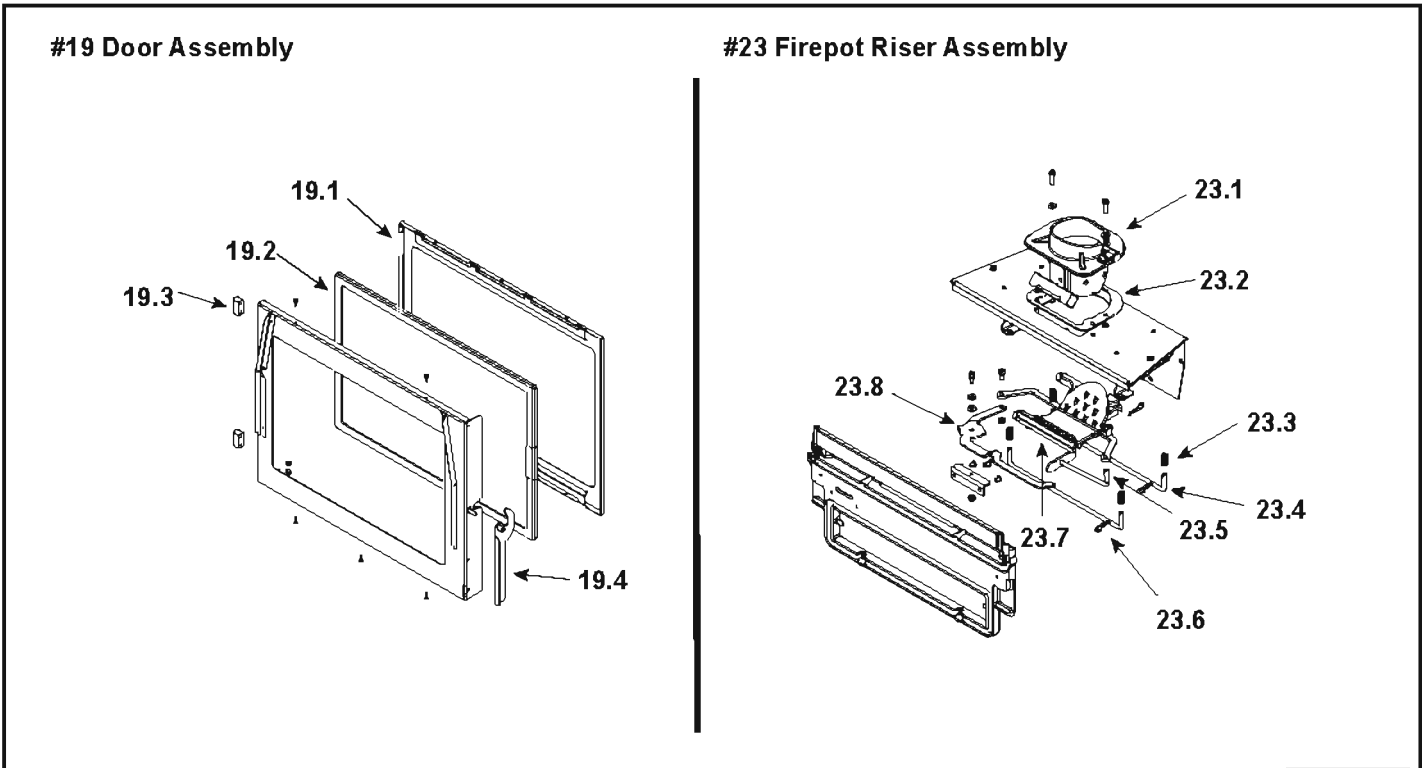


Stocked at Depot

ITEM	DESCRIPTION	COMMENTS	PART NUMBER	
1	Hopper Lid	Matte Black	7036-107MBK	
		Porcelain Mahogany	7036-107PMH	
		Sienna Bronze	7036-107CSB	
	Gasket, Extruded - Field Cut to Size	10 FT	7000-320/10	
2	Top Hinge Assembly		SRV7036-006	
3	Top	Matte Black	7036-101MBK	
		Porcelain Mahogany	7036-101PMH	
		Sienna Bronze	7036-101CSB	
4	Catch Clip		7036-146	
5	Elbow Catch		7000-393	
6	Bracket, Catch		7036-145	
7	Backer, Side Window		414-0280	
8	Side	Matte Black	7036-103MBK	
		Porcelain Mahogany	7036-103PMH	
		Sienna Bronze	7036-103CSB	
9	Gasket, Door Rope		SRV7034-177	Y
10	Hinge Male		SRV7034-138	
11	Baffle		SRV7034-263	Y
12	Latch, Baffle		SRV7034-149	
13	Hinge Pin Retainer		7036-112	
14	Pin, Hinge		SRV7036-110	
15	Front Upper	Matte Black	7036-105MBK	
		Porcelain Mahogany	7036-105PMH	
		Sienna Bronze	7036-105CSB	
16	Door Left	Matte Black	7005-110MBK	
		Porcelain Mahogany	7005-110PMH	
		Sienna Bronze	7005-110CSB	
17	Front Lower	Matte Black	7036-122MBK	
		Porcelain Mahogany	7036-122PMH	
		Sienna Bronze	7036-122CSB	
18	Door Right	Matte Black	7005-109MBK	
		Porcelain Mahogany	7005-109PMH	
		Sienna Bronze	7005-109CSB	

Additional service part numbers appear on following page.

Beginning Manufacturing Date: Feb 2014  
Ending Manufacturing Date: Active



IMPORTANT: THIS IS DATED INFORMATION. Parts must be ordered from a dealer or distributor. **Hearth and Home Technologies does not sell directly to consumers.** Provide model number and serial number when requesting service parts from your dealer or distributor.



Stocked at Depot

ITEM	DESCRIPTION	COMMENTS	PART NUMBER	
19	Door Assembly		SRV7080-015	
19.1	Glass Retainer		7034-136	
19.2	Glass Assembly	21" W x 14" H	7034-007	Y
19.3	Hinge, Female		SRV450-2910	
19.4	Door Latch Assembly		413-5200	
	Gasket, Channel 3 Mm X 32 - Field Cut to Size	10 Ft	7000-377/10	Y
20	Ash Pan Door		7034-133	
21	Ash Pan Assembly		SRV7034-069	
	Twin Ball catch		SRV7000-532	Y
22	Intake Shield		7034-224	Y
23	Firepot Riser Assembly		SRV7080-002	
23.1	Firepot Assembly		SRV7034-072B	Y
23.2	Gasket, Firepot		SRV7034-190	Y
23.3	Spring	Pkg of 4	7000-513/4	Y
23.4	Rail, Auto-Clean		SRV7034-152	Y
23.5	Plow Weldment, Auto-Clean		SRV7034-024	Y
23.6	Hitch Pin Clip 3/32	Pkg of 10	7000-374/10	Y
23.7	Firepot Bottom		SRV7034-153	Y
23.8	Firepot Floor Lever Assembly		SRV7080-018	Y

Additional service part numbers appear on following page.

IMPORTANT: THIS IS DATED INFORMATION. Parts must be ordered from a dealer or distributor. **Hearth and Home Technologies does not sell directly to consumers.** Provide model number and serial number when requesting service parts from your dealer or distributor.



Stocked at Depot

ITEM	DESCRIPTION	COMMENTS	PART NUMBER	Stocked at Depot
24	Gasket, Rope, Ash Door		SRV7034-178	Y
25	Bottom	Matte Black	7036-109MBK	
		Sienna Bronze	7036-109CSB	
		Porcelain Mahogany	7036-109PMH	
26	Control Board		SRV7080-050	Y
	Wire Harness		SRV7080-129	Y
27	Vacuum Switch		SRV7000-531	Y
	Vacuum Hose	3 FT cut ro fit	SRV7000-373	Y
28	Latch Bracket Assembly		SRV7034-049	Y
29	Dial Control Panel Door Assembly		SRV7082-037	
	Dial Control w/Wire Harness		SRV7080-036	Y
30	Combustion Blower		SRV7080-106	Y
	Gasket, Blower, Combustion (Between ...)	...Housing & Stove	SRV7080-117	Y
	Gasket, Motor, Blower, Combustion (Between ...)	...Housing & Motor	SRV7080-107	Y
31	Snap Disc, L250, Manual Reset		SRV230-1290	Y
	Gasket, Exhaust		SRV7034-109	
32	Flue Collar Assembly		SRV7082-013	
33	Gasket, Flue Adpator Flange		SRV7036-180	Y
34	Top Vent Adapter		TPVNT-4	
35	Convection Blower		SRV7080-105	Y
36	Feed Assembly		SRV7080-010	Y
	Feed Spring Assembly (Only)		SRV7001-046	Y
	Gasket, Feed Motor		SRV7034-144	
	Feed Motor		812-4421	Y
37	Elbow Catch		7000-393	
38	Magnetic Switch		SRV7000-375	Y
39	Bracket, Hopper Magnet		7036-149	
	Component Pack	Matte Black	SRV7082-040	
		Sienna Bronze	SRV7082-041	
		Porcelain Mahogany	SRV7082-042	
	Cleanout Tool		414-1140	Y
	Paint Touch-Up	Matte Black	812-0910	
		Sienna Bronze	TOUCHUP-CSB	
		Porcelain Mahogany	855-1450	
	Power Cord		812-1180	Y
	Heating Element Assembly 18" (Loop Igniter)	Pkg of 1	SRV7000-462	Y
		Pkg of 10	SRV7000-462/10	Y
	Wing Thumb Screw 8-32 X 1/2	Pkg of 24	7000-223/24	Y
	Wire Clip		7000-400/10	Y
	Thermostat, Programmable		WALL-STAT-P	

Beginning Manufacturing Date: Feb 2014  
Ending Manufacturing Date: Active

IMPORTANT: THIS IS DATED INFORMATION. Parts must be ordered from a dealer or distributor. **Hearth and Home Technologies does not sell directly to consumers.** Provide model number and serial number when requesting service parts from your dealer or distributor.



Stocked  
at Depot

ITEM	DESCRIPTION	COMMENTS	PART NUMBER	
<b>Accessories</b>				
	Adjustable Hearth Support		ADJSPT-12	Y
	Damper, 3 Inch - Tall Vertical Installs Only		PEL-DAMP3	Y
	Damper, 4 Inch - Tall Vertical Installs Only		PEL-DAMP4	
	Exhaust Probe		SRV7000-669	
	Firescreen	No Longer Available	SCR-7005	
	Hearth Support	No Longer Available	ZCSPT-MVI	
	Log Set (2 Pc)	Sold as set only	LOGS-60-AE-B	Y
	Outside Air Kit		OAK-3	
	Top Vent Adapter		TPVNT-4	
	Surround, Std, Panel, For Cast Trim		SP-MTVS-CST	
	Component Pack		7036-041	
	Surround, Std, Panel, w/Gold Trim		SP-MTVS-GD	
	Component Pack		7036-042	
	Trim, Panel Set, Gold		SRV250-4660	
	Surround, Std, Panel w/Nickel Black Trim	No Longer Available	SP-MTVS-NB	
	Component Pack		7036-042	
	Trim Set, Black Nickel		7019-027	
	Bracket for Trim Installation		SRV7022-503G	
	Trim Cast	Matte Black	811-0930	
		Sienna Bronze	TR-CAST-CSB	
		Porcelain Mahogany	811-0960	
	Footer, Left	Matte Black	414-7090MBK	
		Sienna Bronze	414-7090CSB	
		Porcelain Mahogany	414-7090PMH	
	Footer, Right	Matte Black	414-7100MBK	
		Sienna Bronze	414-7100CSB	
		Porcelain Mahogany	414-7100PMH	
	Header	Matte Black	414-7110MBK	
		Sienna Bronze	414-7110CSB	
		Porcelain Mahogany	414-7110PMH	
	Trim Leg, Left	Matte Black	414-7120MBK	
		Sienna Bronze	414-7120CSB	
		Porcelain Mahogany	414-7120PMH	
	Trim Leg, Right	Matte Black	414-7130MBK	
		Sienna Bronze	414-7130CSB	
		Porcelain Mahogany	414-7130PMH	



**CONTACT INFORMATION**

Hearth & Home Technologies  
352 Mountain House Road  
Halifax, PA 17032  
Division of HNI INDUSTRIES

Please contact your Quadra-Fire dealer with any questions or concerns.  
For the number of your nearest Quadra-Fire dealer  
log onto [www.quadrafire.com](http://www.quadrafire.com)

**CAUTION**



**DO NOT DISCARD THIS MANUAL**

Important operating and maintenance instructions included.

• Read, understand and follow these instructions for safe installation and operation.

• Leave this manual with party responsible for use and operation.



**We recommend that you record the following pertinent information for your heating appliance.**

Date purchased/installed: \_\_\_\_\_

Serial Number: \_\_\_\_\_ Location on appliance: \_\_\_\_\_

Dealership purchased from: \_\_\_\_\_ Dealer phone: 1(\_\_\_\_) \_\_\_\_ - \_\_\_\_\_

Notes: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

This product may be covered by one or more of the following patents: (United States) 5341794, 5263471, 6688302, 7216645, 7047962 or other U.S. and foreign patents pending.

