US Stove Model 5780 Report Addendum

PFS has reviewed the EPA's Test Report Deficiency letter for the US Stove Model 5780, dated August 16, 2022. Upon review of the OMNI test report #0215PS061E dated May 2017, with revisions on March 2021, and May 2022, PFS has compiled the following addendum report in support of the original report.

EPA Deficiency List Item:

1. Instructions from the Manufacturer to the Laboratory – Provided instructions included in this addendum, see page 2 of this document.
2. Sample Efficiency Calculations – Calculations were performed using the locked excel sheet provided with CSA B415.1, See pages 3-5 of this document.
3. Conditioning Burn Data – Complete manufacturer's conditioning data included in this addendum report, see pages 6-7 of this document.
4. Documentation of run appropriateness – PFS has reviewed the data in the provided test report and found the one test run performed to be appropriate and valid.
5. PM emissions by run with corrected Negative weights – No negative filter weights were reported in the test data, therefore there are no "corrected" values to report.
6. Train Precision by Run – Train precision, as a percentage, is reported in the OMNI test report on page 16, the report does not list train precision as a difference between the emissions factors. The Train 1 emissions factor was reported as 1.52 g/kg, the Train 2 emissions factor was reported as 1.52 g/kg the difference between the two is 0.01 g/kg, which is within the <0.5 g/kg requirement.
7. Pellet Analysis – 3rd part Pellet analysis report provided by OMNI is included in this addendum, see page 8 of this document.

Sebastian Button
Laboratory Supervisor

227 Industrial Park Rd. South Pittsburg, TN 37380

To: OMNI-Test Laboratories

RE: 5780 test settings

Greetings:

Per our phone conversations, this letter is to acknowledge that the following settings are to be used for the EPA Certification testing:

High Burn: Heat Level 5 with damper halfway closed

Medium Burn: Heat Level 1 with the damper fully closed

Low Burn: Heat Level 1 with damper fully closed

Let me know if you have any questions.

Sincerely:

Dustin Mantooth

Manufacturer: States Stove Company
Model: 5780
Date: 04/10/17
Run: 1
Control #: 0215PS061E
Test Duration: 360 min

	HHV	LHV
Eff	72.01%	76.98%
Comb Eff	99.50%	99.50%
HT Eff	72.37%	77.37%
Output	12,338	kJ/h
Burn Rate	0.85	kg/h
Grams CO	74	g
Input	17,134	kJ/h
MC wet	5.84	

Note: In the "Input data", "Calc. % O_2", "Fuel Properties", and "Mass Balance" columns, [e], [d], [g], [a]. [b], [c], [h], [u], [w], [j], and [k] refer to their respective variables in Clauses 13.7.3 to 13.7.5.

Ultimate CO_2
$CO_{2\text{-ult}}$ 20.29
F_0
1.021

Overall Heating Efficiency:	72.01%	Air Fuel Ratio (A/F)	
Combustion Efficiency:	99.50%	Dry Molecular Weight (M_d)	29.27
Heat Transfer Efficiency:	72.37%	Dry Moles Exhaust Gas (N_t):	1139.35
		Air Fuel Ratio (A/F)	32.84

Heat Output:	11,704	Btu/h	12,338	kJ/h
Heat Input:	16,254	Btu/h	17,134	kJ/h
Burn Duration:	6.00	h		
Burn Rate:	1.87	lb/h	0.847	kg/h
Stack Temp:	274.6	Deg. F	134.8	Deg. C

%HC 0.8

Averages		**0.04**	**3.69**	**5.37**	**20.82**	**17.11**	**134.94**	**20.42**	**100.4%**	**71.2%**	**#DIV/0!**	**38.60**	**2.15**	**60.18**	**2.07**	**59.28**	**103256**	**4.19**
INPUT DATA				**Oxygen Calculation**			**Input Data**		**Combust**	**Heat**	**Net**	**Air**	**Wet Wt**	**% Wet**	**Dry Wt.**	**% Dry**		
Elapsed	**Weight**	**%**	**%**	**Excess**	**Total**	**Calc. %**	**Flue**	**Room**	**Eff**	**Transfer**	**Eff**	**Fuel**	**Now**	**Consumed**	**Now**	**Comsumed**	**Total**	**Carbon**
Time	**Remaining (kg)**	**CO [e]**	**CO_2 [d]**	**Air EA**	**O_2**	**O_2 [g]**	**Gas (°C)**	**Temp (°C)**	**%**	**%**	**%**	**Ratio**	**Wt**	**x**	**Wt_{dn}**	**y**	**Input**	**/12= [a]**
0	5.40	0.05	6.88	192.8%	20.72	13.81	184.4	18.9	100.0%	76.6%	76.6%	17.7	5.40	0.00	5.08	0.00	0	4.19
1	5.35	0.03	7.65	164.2%	20.70	13.03	185.0	18.9	100.2%	78.1%	78.2%	15.9	5.35	0.84	5.04	0.84	1296	4.19
2	5.31	0.03	7.25	178.8%	20.71	13.44	185.6	18.9	100.2%	77.3%	77.4%	16.8	5.31	1.68	5.00	1.68	432	4.19
3	5.31	0.05	7.16	181.5%	20.71	13.53	185.6	18.9	99.9%	77.1%	77.1%	17.0	5.31	1.68	5.00	1.68	432	4.19
4	5.26	0.04	6.98	189.1%	20.72	13.72	185.6	18.9	100.1%	76.7%	76.8%	17.4	5.26	2.52	4.96	2.52	864	4.19
5	5.22	0.04	7.46	170.6%	20.70	13.22	185.6	18.9	100.1%	77.7%	77.7%	16.3	5.22	3.36	4.91	3.36	432	4.19
6	5.22	0.02	8.80	130.1%	20.66	11.85	187.8	18.9	100.2%	79.6%	79.7%	13.9	5.22	3.36	4.91	3.36	432	4.19
7	5.17	0.03	8.86	128.3%	20.66	11.78	188.3	18.9	100.1%	79.6%	79.7%	13.8	5.17	4.20	4.87	4.20	864	4.19
8	5.13	0.04	6.60	205.6%	20.73	14.11	188.3	18.9	100.1%	75.6%	75.7%	18.4	5.13	5.04	4.83	5.04	432	4.19
9	5.13	0.03	7.84	157.9%	20.69	12.83	189.4	18.9	100.1%	78.0%	78.1%	15.6	5.13	5.04	4.83	5.04	432	4.19
10	5.08	0.08	7.00	186.6%	20.71	13.67	188.9	18.9	99.6%	76.4%	76.1%	17.3	5.08	5.88	4.78	5.88	864	4.19
11	5.04	0.03	8.16	147.8%	20.68	12.50	189.4	18.3	100.1%	78.5%	78.6%	15.0	5.04	6.72	4.74	6.72	864	4.19
12	4.99	0.03	8.68	133.0%	20.66	11.97	190.6	18.9	100.1%	79.2%	79.2%	14.1	4.99	7.56	4.70	7.56	432	4.19
13	4.99	0.03	7.48	170.2%	20.70	13.21	190.0	18.9	100.2%	77.3%	77.4%	16.3	4.99	7.56	4.70	7.56	432	4.19
14	4.95	0.09	5.65	253.6%	20.76	15.06	188.9	18.9	99.4%	72.9%	72.5%	21.3	4.95	8.40	4.66	8.40	432	4.19
15	4.95	0.04	7.99	152.7%	20.68	12.67	189.4	18.9	100.0%	78.2%	78.2%	15.2	4.95	8.40	4.66	8.40	432	4.19
16	4.90	0.05	7.23	178.8%	20.71	13.45	188.3	18.9	99.9%	77.0%	76.9%	16.8	4.90	9.24	4.61	9.24	864	4.19
17	4.85	0.07	6.71	199.3%	20.72	13.98	187.2	18.9	99.7%	76.0%	75.8%	18.0	4.85	10.08	4.57	10.08	432	4.19
18	4.85	0.07	6.87	192.4%	20.72	13.81	186.7	18.9	99.7%	76.4%	76.2%	17.6	4.85	10.08	4.57	10.08	432	4.19
19	4.81	0.05	8.51	137.1%	20.67	12.13	187.8	18.9	99.9%	79.2%	79.1%	14.3	4.81	10.92	4.53	10.92	864	4.19
20	4.76	0.05	8.84	128.3%	20.66	11.79	189.4	18.9	99.9%	79.5%	79.4%	13.8	4.76	11.76	4.49	11.76	864	4.19
21	4.72	0.04	7.26	178.0%	20.71	13.43	190.0	18.9	100.1%	76.9%	76.9%	16.8	4.72	12.61	4.44	12.61	432	4.19
22	4.72	0.04	7.14	182.6%	20.71	13.55	188.9	18.9	100.1%	76.7%	76.8%	17.1	4.72	12.61	4.44	12.61	432	4.19
23	4.67	0.07	7.35	173.5%	20.70	13.32	188.9	18.9	99.7%	77.2%	76.9%	16.5	4.67	13.45	4.40	13.45	864	4.19
24	4.63	0.04	7.96	153.7%	20.69	12.71	189.4	18.9	100.0%	78.2%	78.2%	15.3	4.63	14.29	4.36	14.29	864	4.19
25	4.58	0.04	8.72	131.7%	20.66	11.92	189.4	18.9	100.0%	79.3%	79.3%	14.0	4.58	15.13	4.32	15.13	432	4.19
26	4.58	0.07	7.34	173.9%	20.70	13.33	190.0	18.9	99.7%	77.0%	76.8%	16.5	4.58	15.13	4.32	15.13	432	4.19
27	4.54	0.03	8.45	139.3%	20.67	12.20	190.6	18.9	100.1%	78.8%	78.9%	14.4	4.54	15.97	4.27	15.97	432	4.19
28	4.54	0.05	7.27	177.2%	20.71	13.41	190.0	18.9	99.9%	76.9%	76.8%	16.7	4.54	15.97	4.27	15.97	432	4.19
29	4.49	0.07	6.78	196.3%	20.72	13.91	188.9	18.9	99.7%	76.0%	75.8%	17.9	4.49	16.81	4.23	16.81	864	4.19
30	4.45	0.05	7.83	157.5%	20.69	12.83	188.9	18.9	99.9%	78.0%	78.0%	15.5	4.45	17.65	4.19	17.65	864	4.19
31	4.40	0.04	8.58	135.4%	20.67	12.07	190.0	18.3	100.0%	79.0%	79.0%	14.2	4.40	18.49	4.14	18.49	864	4.19
32	4.36	0.04	8.41	140.2%	20.67	12.24	190.6	18.9	100.0%	78.8%	78.8%	14.5	4.36	19.33	4.10	19.33	432	4.19
33	4.36	0.05	7.13	182.6%	20.71	13.56	191.1	18.9	99.9%	76.5%	76.5%	17.1	4.36	19.33	4.10	19.33	864	4.19
34	4.26	0.05	7.18	180.7%	20.71	13.50	190.6	18.9	99.9%	76.7%	76.6%	16.9	4.26	21.01	4.02	21.01	1296	4.19
35	4.22	0.04	7.37	173.9%	20.70	13.31	190.0	18.9	100.1%	77.1%	77.1%	16.5	4.22	21.85	3.97	21.85	432	4.19
36	4.22	0.05	7.37	173.5%	20.70	13.31	190.0	18.9	99.9%	77.1%	77.0%	16.5	4.22	21.85	3.97	21.85	432	4.19
37	4.17	0.06	8.13	147.8%	20.68	12.52	190.6	18.9	99.8%	78.4%	78.2%	14.9	4.17	22.69	3.93	22.69	432	4.19
38	4.17	0.07	6.76	197.1%	20.72	13.93	190.0	18.9	99.7%	75.8%	75.6%	17.9	4.17	22.69	3.93	22.69	432	4.19
39	4.13	0.07	7.63	163.6%	20.69	13.03	190.0	19.4	99.7%	77.6%	77.4%	15.9	4.13	23.53	3.89	23.53	864	4.19
40	4.08	0.04	6.91	192.0%	20.72	13.79	190.0	18.9	100.1%	76.1%	76.2%	17.6	4.08	24.37	3.85	24.37	864	4.19
41	4.04	0.03	8.60	135.2%	20.67	12.05	190.6	18.9	100.1%	79.1%	79.1%	14.2	4.04	25.21	3.80	25.21	432	4.19
42	4.04	0.03	7.66	163.9%	20.70	13.02	190.6	18.9	100.2%	77.6%	77.7%	15.9	4.04	25.21	3.80	25.21	432	4.19
43	3.99	0.04	7.83	157.9%	20.69	12.84	190.6	19.4	100.0%	77.9%	77.9%	15.6	3.99	26.05	3.76	26.05	181	4.19
44	3.95	0.05	8.64	133.5%	20.66	12.00	191.1	19.4	99.9%	79.1%	79.0%	14.1	3.95	26.89	3.78	25.56	-251	4.19
45	3.95	0.06	6.69	200.6%	20.73	14.01	190.6	19.4	99.8%	75.7%	75.5%	18.1	3.95	26.89	3.78	25.56	422	4.19
46	3.90	0.05	7.15	181.9%	20.71	13.54	190.6	19.4	99.9%	76.7%	76.6%	17.0	3.90	27.73	3.74	26.38	845	4.19
47	3.86	0.05	7.32	175.4%	20.71	13.36	190.0	19.4	99.9%	77.0%	77.0%	16.6	3.86	28.57	3.70	27.21	846	4.19
48	3.81	0.06	8.21	145.4%	20.68	12.44	190.0	19.4	99.8%	78.6%	78.4%	14.8	3.81	29.41	3.66	28.03	847	4.19
49	3.77	0.07	7.42	170.9%	20.70	13.25	189.4	19.4	99.7%	77.3%	77.1%	16.3	3.77	30.25	3.62	28.85	424	4.19

Moisture Content M_{Cwb}: 5.838041

Combustion Efficiency:	99.50%		Moisture of Wood (wet basis):	5.83804	Dry kg : 5.08
Total Input (kJ):	102,805	97,505 (Btu)	Initial Dry Weight Wt_{do} (kg):	5.08	CA: 50.32
Total Output (kJ):	74,026	70,210 (Btu)	Moisture Content Dry	6.20	HY: 6.06
Efficiency:	72.01%				OX: 42.87
Total CO (g):	74.35				

Load Weight (kg):	**5.40**				
Fuel Heating	**HHV**	**LHV**		**HHV**	**LHV**
Value in kj/kg - CV:	**20,221**	**18,914**	Btu/lb	**8699.3**	**8137.2**

6.06	2.68	20221.00	5.84	79.16	21.00	0.88	2.72	-0.02	0.09	41.95	236.31	0.58	-0.28	1057.84	31.09	3.44	408.09	4557.92	3431.67	3337.42	3300.35
Fuel Properties			**Mw**	**Mass Balance**					**kg Wood per**								**Stack**	**Heat Content Change - Ambient to Stack**			
Hydrogen	**Oxygen**	**Calorific**	**Moisture**	**(moles/100 mole dry flue gas)**					**100 mole dfp**	**Moles per kg of Dry Wood**						**Moisture**	**Temp**	**Flue Gas Constituent**			
/1= [b]	**/16= [c]**	**Value**	**Fuel Burnt**	**[h]**	**[u]**	**[w]**	**[j]**	**[k]**	**Nk**	**CO_2**	**O_2**	**CO**	**HC**	**N_2**	**H_2O**	**Present**	**K**	**CO_2**	**O_2**	**CO**	**N_2**
6.06	2.68	20221.00	5.84	79.26	21.02	1.65	5.03	-0.01	0.16	42.03	84.40	0.31	-0.09	484.20	30.70	3.44	457.59	6690.05	4992.39	4844.32	4792.81
6.06	2.68	20221.00	5.84	79.29	21.03	1.83	5.57	-0.02	0.18	42.17	71.83	0.17	-0.09	437.10	30.70	3.44	458.15	6713.84	5009.55	4860.83	4809.18
6.06	2.68	20221.00	5.84	79.28	21.03	1.73	5.28	-0.02	0.17	42.17	78.20	0.17	-0.10	461.13	30.72	3.44	458.71	6737.63	5026.73	4877.35	4825.55
6.06	2.68	20221.00	5.84	79.26	21.03	1.72	5.23	-0.01	0.17	42.04	79.41	0.29	-0.08	465.38	30.69	3.44	458.71	6737.63	5026.73	4877.35	4825.55
6.06	2.68	20221.00	5.84	79.26	21.02	1.67	5.09	-0.02	0.17	42.10	82.74	0.24	-0.09	478.11	30.72	3.44	458.71	6737.63	5026.73	4877.35	4825.55
6.06	2.68	20221.00	5.84	79.28	21.03	1.79	5.44	-0.01	0.18	42.11	74.63	0.23	-0.08	447.49	30.70	3.44	458.71	6737.63	5026.73	4877.35	4825.55
6.06	2.68	20221.00	5.84	79.33	21.04	2.10	6.39	-0.02	0.21	42.23	56.86	0.10	-0.07	380.68	30.68	3.44	460.93	6832.91	5095.44	4943.43	4891.06
6.06	2.68	20221.00	5.84	79.33	21.04	2.12	6.44	-0.01	0.21	42.17	56.08	0.14	-0.07	377.60	30.66	3.44	461.48	6856.75	5112.62	4959.95	4907.44
6.06	2.68	20221.00	5.84	79.25	21.02	1.58	4.82	-0.02	0.16	42.10	89.99	0.26	-0.10	505.50	30.73	3.44	461.48	6856.75	5112.62	4959.95	4907.44
6.06	2.68	20221.00	5.84	79.30	21.03	1.87	5.71	-0.02	0.19	42.17	69.04	0.16	-0.08	426.54	30.70	3.44	462.59	6904.46	5147.00	4993.01	4940.20
6.06	2.68	20221.00	5.84	79.25	21.02	1.69	5.13	-0.01	0.17	41.83	81.72	0.48	-0.06	473.56	30.65	3.44	462.04	6880.60	5129.81	4976.48	4923.82
6.06	2.68	20221.00	5.84	79.31	21.04	1.95	5.94	-0.02	0.19	42.17	64.62	0.16	-0.08	409.87	30.68	3.44	462.59	6925.57	5163.34	5009.01	4956.00
6.06	2.68	20221.00	5.84	79.32	21.04	2.07	6.31	-0.01	0.21	42.17	58.15	0.15	-0.07	385.40	30.67	3.44	463.71	6952.21	5181.39	5026.07	4972.98
6.06	2.68	20221.00	5.84	79.28	21.03	1.79	5.45	-0.02	0.18	42.17	74.45	0.17	-0.09	447.00	30.71	3.44	463.15	6928.33	5164.19	5009.54	4956.59
6.06	2.68	20221.00	5.84	79.20	21.01	1.37	4.16	-0.01	0.14	41.66	111.07	0.66	-0.08	584.03	30.69	3.44	462.04	6880.60	5129.81	4976.48	4923.82
6.06	2.68	20221.00	5.84	79.30	21.03	1.91	5.82	-0.01	0.19	42.11	66.80	0.21	-0.07	417.94	30.68	3.44	462.59	6904.46	5147.00	4993.01	4940.20
6.06	2.68	20221.00	5.84	79.27	21.03	1.73	5.28	-0.01	0.17	42.04	78.22	0.29	-0.08	460.90	30.69	3.44	461.48	6856.75	5112.62	4959.95	4907.44
6.06	2.68	20221.00	5.84	79.24	21.02	1.61	4.91	-0.01	0.16	41.89	87.26	0.44	-0.07	494.65	30.68	3.44	460.37	6809.08	5078.25	4926.91	4874.68
6.06	2.68	20221.00	5.84	79.25	21.02	1.65	5.03	-0.01	0.16	41.89	84.24	0.43	-0.07	483.24	30.67	3.44	459.82	6785.25	5061.08	4910.39	4858.30
6.06	2.68	20221.00	5.84	79.31	21.04	2.04	6.20	-0.01	0.20	42.06	59.96	0.25	-0.06	391.98	30.64	3.44	460.93	6832.91	5095.44	4943.43	4891.06
6.06	2.68	20221.00	5.84	79.32	21.04	2.12	6.44	-0.01	0.21	42.07	56.11	0.24	-0.05	377.44	30.64	3.44	462.59	6904.46	5147.00	4993.01	4940.20
6.06	2.68	20221.00	5.84	79.27	21.03	1.74	5.29	-0.02	0.17	42.11	77.88	0.23	-0.09	459.75	30.70	3.44	463.15	6928.33	5164.19	5009.54	4956.59
6.06	2.68	20221.00	5.84	79.27	21.03	1.71	5.21	-0.02	0.17	42.10	79.91	0.24	-0.09	467.44	30.71	3.44	462.04	6880.60	5129.81	4976.48	4923.82
6.06	2.68	20221.00	5.84	79.26	21.02	1.77	5.38	-0.01	0.18	41.91	75.95	0.40	-0.06	451.97	30.65	3.44	462.04	6880.60	5129.81	4976.48	4923.82
6.06	2.68	20221.00	5.84	79.29	21.03	1.90	5.80	-0.01	0.19	42.11	67.22	0.21	-0.07	419.51	30.68	3.44	462.59	6904.46	5147.00	4993.01	4940.20
6.06	2.68	20221.00	5.84	79.32	21.04	2.09	6.35	-0.01	0.21	42.12	57.58	0.19	-0.06	383.12	30.65	3.44	462.59	6904.46	5147.00	4993.01	4940.20
6.06	2.68	20221.00	5.84	79.26	21.02	1.76	5.37	-0.01	0.18	41.91	76.11	0.40	-0.06	452.58	30.65	3.44	463.15	6928.33	5164.19	5009.54	4956.59
6.06	2.68	20221.00	5.84	79.32	21.04	2.02	6.15	-0.01	0.20	42.17	60.91	0.15	-0.07	395.85	30.67	3.44	463.71	6952.21	5181.39	5026.07	4972.98
6.06	2.68	20221.00	5.84	79.27	21.03	1.74	5.31	-0.01	0.17	42.04	77.56	0.29	-0.08	458.38	30.69	3.44	463.15	6928.33	5164.19	5009.54	4956.59
6.06	2.68	20221.00	5.84	79.24	21.02	1.63	4.96	-0.01	0.16	41.89	85.92	0.43	-0.07	489.60	30.67	3.44	462.04	6880.60	5129.81	4976.48	4923.82
6.06	2.68	20221.00	5.84	79.29	21.03	1.88	5.71	-0.01	0.19	42.05	68.92	0.27	-0.07	425.80	30.67	3.44	462.04	6880.60	5129.81	4976.48	4923.82
6.06	2.68	20221.00	5.84	79.31	21.04	2.05	6.25	-0.01	0.20	42.12	59.23	0.20	-0.06	389.34	30.66	3.44	463.15	6949.44	5180.53	5025.54	4972.39
6.06	2.68	20221.00	5.84	79.31	21.04	2.01	6.12	-0.01	0.20	42.12	61.30	0.20	-0.07	397.17	30.66	3.44	463.71	6952.21	5181.39	5026.07	4972.98
6.06	2.68	20221.00	5.84	79.26	21.02	1.71	5.21	-0.01	0.17	42.04	79.93	0.29	-0.08	467.32	30.69	3.44	464.26	6976.09	5198.59	5042.60	4989.37
6.06	2.68	20221.00	5.84	79.27	21.03	1.72	5.24	-0.01	0.17	42.04	79.07	0.29	-0.08	464.09	30.69	3.44	463.71	6952.21	5181.39	5026.07	4972.98
6.06	2.68	20221.00	5.84	79.28	21.03	1.76	5.37	-0.01	0.18	42.11	76.07	0.23	-0.09	452.92	30.70	3.44	463.15	6928.33	5164.19	5009.54	4956.59
6.06	2.68	20221.00	5.84	79.27	21.03	1.77	5.38	-0.01	0.18	42.04	75.92	0.29	-0.08	452.20	30.68	3.44	463.15	6928.33	5164.19	5009.54	4956.59
6.06	2.68	20221.00	5.84	79.29	21.03	1.95	5.93	-0.01	0.19	42.00	64.67	0.31	-0.06	409.59	30.64	3.44	463.71	6952.21	5181.39	5026.07	4972.98
6.06	2.68	20221.00	5.84	79.24	21.02	1.63	4.95	-0.01	0.16	41.89	86.30	0.43	-0.07	491.03	30.67	3.44	463.15	6928.33	5164.19	5009.54	4956.59
6.06	2.68	20221.00	5.84	79.27	21.03	1.83	5.58	-0.01	0.18	41.92	71.59	0.38	-0.06	435.54	30.64	3.44	463.15	6907.21	5147.85	4993.54	4940.79
6.06	2.68	20221.00	5.84	79.26	21.02	1.65	5.04	-0.02	0.16	42.10	84.01	0.24	-0.10	482.93	30.72	3.44	463.15	6928.33	5164.19	5009.54	4956.59
6.06	2.68	20221.00	5.84	79.32	21.04	2.05	6.25	-0.01	0.20	42.17	59.09	0.15	-0.07	388.98	30.67	3.44	463.71	6952.21	5181.39	5026.07	4972.98
6.06	2.68	20221.00	5.84	79.29	21.03	1.83	5.58	-0.02	0.18	42.17	71.68	0.17	-0.09	436.53	30.70	3.44	463.71	6952.21	5181.39	5026.07	4972.98
6.06	2.68	20221.00	5.84	79.29	21.03	1.87	5.70	-0.01	0.19	42.11	69.05	0.22	-0.08	426.44	30.68	3.44	463.71	6931.09	5165.05	5010.07	4957.18
6.06	2.68	20221.00	5.84	79.31	21.04	2.07	6.29	-0.01	0.21	42.06	58.41	0.24	-0.06	386.12	30.64	3.44	464.26	6954.97	5182.25	5026.61	4973.57
6.06	2.68	20221.00	5.84	79.24	21.02	1.61	4.89	-0.01	0.16	41.96	87.83	0.38	-0.08	496.99	30.69	3.44	463.71	6931.09	5165.05	5010.07	4957.18
6.06	2.68	20221.00	5.84	79.26	21.03	1.71	5.22	-0.01	0.17	42.04	79.58	0.29	-0.08	466.02	30.69	3.44	463.71	6931.09	5165.05	5010.07	4957.18
6.06	2.68	20221.00	5.84	79.27	21.03	1.75	5.34	-0.01	0.17	42.04	76.73	0.29	-0.08	455.27	30.68	3.44	463.15	6907.21	5147.85	4993.54	4940.79
6.06	2.68	20221.00	5.84	79.29	21.03	1.97	5.99	-0.01	0.20	42.00	63.62	0.31	-0.06	405.63	30.64	3.44	463.15	6907.21	5147.85	4993.54	4940.79
6.06	2.68	20221.00	5.84	79.26	21.02	1.78	5.43	-0.01	0.18	41.91	74.83	0.40	-0.06	447.75	30.65	3.44	462.59	6883.34	5130.66	4977.01	4924.40

			SUMS							AVERAGE	SUMS						
4384.39	3993.87	293.57	69028.56	269507.43	60165.73	1176422.82	-91005.46	538288.84	59639.65	5767.44	27966.64	-298.27	28264.9	75289.5	-288.9	74.4	-18.9
Temperature		Room Temp	Energy Losses (kJ/kg of Dry Fuel)							Total Loss							
			Flue Gas Constituent								Total	Chemical	Sensible and	Total	Chem	Grams Produced	
CH_4	H_2O	K	CO_2	O_2	CO	N_2	CH_4	H_2O Comb	H_2O Fuel MC	Rate	Loss	Loss 1	Latent Loss	Output	Loss 2	CO	HC
6532.94	5793.69	292.04	281.20	421.34	87.91	2320.66	-78.13	1527.88	171.41	4732.25	0.00	0	0.00	0	0	0.00	0.00
6557.45	5813.40	292.04	283.14	359.85	47.61	2102.09	-78.31	1528.50	171.47	4414.35	282.89	-2	284.88	1013	-2	0.30	-0.09
6581.97	5833.10	292.04	284.14	393.07	50.23	2225.23	-85.94	1529.95	171.54	4568.22	97.58	-1	98.35	334	-1	0.10	-0.03
6581.97	5833.10	292.04	283.24	399.17	84.51	2245.71	-72.75	1528.49	171.54	4639.90	99.12	0	98.88	333	0	0.18	-0.03
6581.97	5833.10	292.04	283.67	415.89	69.46	2307.13	-83.86	1529.72	171.54	4693.55	200.52	-1	201.16	663	-1	0.29	-0.06
6581.97	5833.10	292.04	283.71	375.13	64.99	2159.37	-74.62	1528.70	171.54	4508.81	96.32	0	96.53	336	0	0.14	-0.03
6680.24	5911.95	292.04	288.54	289.73	27.63	1861.94	-66.36	1530.20	171.81	4103.49	87.66	-1	88.48	344	-1	0.06	-0.03
6704.85	5931.66	292.04	289.17	286.73	41.12	1853.06	-59.44	1530.03	171.88	4112.55	175.70	-1	176.50	688	-1	0.17	-0.05
6704.85	5931.66	292.04	288.65	460.09	73.47	2480.72	-92.13	1533.67	171.88	4916.34	105.02	0	105.43	327	0	0.15	-0.04
6754.13	5971.10	292.04	291.18	355.34	46.47	2107.20	-74.98	1532.97	172.02	4430.20	94.64	-1	95.25	337	-1	0.10	-0.03
6729.48	5951.38	292.04	287.82	419.19	137.67	2331.73	-52.91	1529.91	171.95	4825.36	206.16	4	202.62	658	4	0.57	-0.04
6773.46	5990.28	291.48	292.07	333.68	44.65	2031.32	-69.69	1532.97	172.08	4337.09	185.29	-1	186.37	679	-1	0.19	-0.05
6803.47	6010.54	292.04	293.20	301.28	41.98	1916.60	-61.92	1532.72	172.15	4196.02	89.63	0	90.07	342	0	0.09	-0.02
6778.79	5990.82	292.04	292.18	384.50	48.71	2215.60	-81.47	1534.30	172.09	4565.90	97.53	-1	98.24	334	-1	0.10	-0.03
6729.48	5951.38	292.04	286.68	569.78	191.12	2875.65	-70.18	1531.83	171.95	5556.83	118.70	3	116.18	313	3	0.40	-0.03
6754.13	5971.10	292.04	290.77	343.83	60.72	2064.72	-65.72	1531.94	172.02	4398.26	93.95	0	94.07	338	0	0.13	-0.03
6704.85	5931.66	292.04	288.25	399.93	83.72	2261.84	-71.48	1531.37	171.88	4665.51	199.33	0	198.84	665	0	0.35	-0.05
6655.65	5892.23	292.04	285.21	443.14	125.81	2411.27	-65.68	1529.51	171.75	4901.02	104.69	1	103.44	327	1	0.26	-0.03
6631.07	5872.52	292.04	284.26	426.33	122.89	2347.74	-62.77	1528.59	171.68	4818.72	102.94	1	101.69	329	1	0.26	-0.02
6680.24	5911.95	292.04	287.40	305.55	71.16	1917.19	-51.77	1528.57	171.81	4229.91	180.72	1	179.92	683	1	0.30	-0.04
6754.13	5971.10	292.04	290.44	288.81	68.52	1864.62	-47.61	1529.92	172.02	4166.71	178.02	1	177.16	686	1	0.28	-0.04
6778.79	5990.82	292.04	291.72	402.16	66.81	2278.81	-78.34	1533.95	172.09	4667.20	99.70	0	99.96	332	0	0.14	-0.03
6729.48	5951.38	292.04	289.70	409.93	67.93	2301.61	-80.65	1533.00	171.95	4693.46	100.26	0	100.54	332	0	0.14	-0.03
6729.48	5951.38	292.04	288.38	389.60	114.95	2225.44	-54.81	1530.12	171.95	4665.62	199.33	3	196.83	665	3	0.48	-0.04
6754.13	5971.10	292.04	290.76	345.97	60.94	2072.46	-66.19	1531.99	172.02	4407.95	188.32	0	188.57	676	0	0.25	-0.05
6754.13	5971.10	292.04	290.81	296.36	55.64	1892.69	-55.22	1530.77	172.02	4183.07	89.36	0	89.36	343	0	0.12	-0.02
6778.79	5990.82	292.04	290.38	393.04	115.12	2243.27	-54.97	1531.35	172.09	4690.28	100.19	1	98.94	332	1	0.24	-0.02
6803.47	6010.54	292.04	293.20	315.62	43.12	1968.58	-65.24	1533.09	172.15	4260.52	91.01	0	91.49	341	0	0.09	-0.02
6778.79	5990.82	292.04	291.27	400.52	83.27	2272.01	-70.77	1533.11	172.09	4681.49	100.00	0	99.76	332	0	0.17	-0.03
6729.48	5951.38	292.04	288.23	440.76	124.54	2410.68	-64.39	1531.19	171.95	4902.95	209.47	2	206.97	654	2	0.52	-0.05
6729.48	5951.38	292.04	289.33	353.57	77.33	2096.55	-61.44	1530.86	171.95	4458.13	190.47	1	189.82	673	1	0.32	-0.05
6798.13	6010.00	291.48	292.69	306.83	56.55	1935.94	-57.09	1532.17	172.15	4239.25	181.11	0	181.16	683	0	0.23	-0.04
6803.47	6010.54	292.04	292.80	317.62	57.69	1975.12	-59.46	1532.45	172.15	4288.38	91.61	0	91.66	340	0	0.12	-0.02
6828.16	6030.27	292.04	293.26	415.50	84.91	2331.65	-73.33	1534.60	172.22	4758.81	203.31	0	202.86	661	0	0.35	-0.06
6803.47	6010.54	292.04	292.26	409.69	84.32	2307.91	-72.40	1533.89	172.15	4727.82	302.98	1	302.28	993	1	0.53	-0.08
6778.79	5990.82	292.04	291.73	392.82	65.82	2244.96	-76.28	1533.72	172.09	4624.85	98.79	0	99.03	333	0	0.14	-0.03
6778.79	5990.82	292.04	291.28	392.06	82.15	2241.37	-69.00	1532.91	172.09	4642.85	99.18	0	98.92	333	0	0.17	-0.03
6803.47	6010.54	292.04	291.97	335.08	89.27	2036.86	-50.41	1531.44	172.15	4406.36	94.13	1	93.32	338	1	0.19	-0.02
6778.79	5990.82	292.04	290.22	445.68	124.92	2433.83	-64.76	1532.44	172.09	4934.42	105.41	1	104.16	327	1	0.26	-0.02
6759.43	5971.64	292.59	289.56	368.54	110.76	2151.91	-50.63	1530.27	172.02	4572.44	195.35	3	192.85	669	3	0.46	-0.04
6778.79	5990.82	292.04	291.69	433.86	70.19	2393.67	-85.33	1534.73	172.09	4810.90	205.54	-1	206.21	658	-1	0.29	-0.07
6803.47	6010.54	292.04	293.20	306.18	42.37	1934.36	-63.06	1532.85	172.15	4218.07	90.10	0	90.55	342	0	0.09	-0.02
6803.47	6010.54	292.04	293.19	371.41	47.57	2170.86	-78.15	1534.53	172.15	4511.57	96.37	-1	97.03	336	-1	0.10	-0.03
6784.11	5991.36	292.59	291.88	356.66	61.96	2113.94	-68.29	1532.85	172.09	4461.08	39.92	0	39.98	141	0	0.05	-0.01
6808.81	6011.09	292.59	292.54	302.71	70.11	1920.39	-50.10	1531.42	172.16	4239.23	-52.62	-0.24	-52.38	-198	0	-0.08	0.01
6784.11	5991.36	292.59	290.80	453.66	108.37	2463.65	-74.04	1533.49	172.09	4948.02	103.32	0.69	102.63	319	1	0.22	-0.03
6784.11	5991.36	292.59	291.37	411.04	84.66	2310.17	-72.95	1533.37	172.09	4729.74	197.67	0.45	197.22	647	0	0.34	-0.05
6759.43	5971.64	292.59	290.39	395.01	82.70	2249.39	-69.87	1532.42	172.02	4652.05	194.69	0.50	194.20	652	0	0.34	-0.05
6759.43	5971.64	292.59	290.09	327.51	88.39	2004.11	-49.34	1530.13	172.02	4362.91	182.84	1.59	181.26	665	2	0.36	-0.04
6734.77	5951.92	292.59	288.51	383.92	113.87	2204.90	-53.73	1530.02	171.95	4639.43	97.28	1.23	96.06	327	2	0.23	-0.02

5780 48 Hour Conditioning Medium Burn Rate

Time	Exhaust Rise	Ambient	Exhaust Absolute	Fuel Added (lbs)
2/17/2017 6:00	310	53	363	45
2/17/2017 7:00	334	53	387	
2/17/2017 8:00	335	57	392	
2/17/2017 9:00	335	62	397	
2/17/2017 10:00	335	69	404	
2/17/2017 11:00	341	72	413	
2/17/2017 12:00	346	72	418	
2/17/2017 13:00	343	71	414	
2/17/2017 14:00	341	73	414	
2/17/2017 15:00	338	72	410	20.2
2/17/2017 16:00	344	73	417	
2/17/2017 17:00	346	72	418	
2/17/2017 18:00	346	71	417	
2/17/2017 19:00	339	69	408	
2/17/2017 20:00	341	67	408	
2/17/2017 21:00	342	66	408	
2/17/2017 22:00	353	66	419	
2/17/2017 23:00	350	66	416	
2/18/2017 0:00	344	65	409	
2/18/2017 1:00	347	65	412	
2/18/2017 2:00	346	64	410	
2/18/2017 3:00	347	64	411	
2/18/2017 4:00	345	64	409	
2/18/2017 5:00	344	64	408	
2/18/2017 6:00	339	64	403	
Gap in Burn				
2/21/2017 5:36	250	60	310	33.6
2/21/2017 6:36	326	62	388	
2/21/2017 7:36	312	69	381	
2/21/2017 8:36	324	71	395	
2/21/2017 9:36	328	72	400	
2/21/2017 10:36	323	73	396	
2/21/2017 11:36	321	72	393	
2/21/2017 12:36	318	73	391	
2/21/2017 13:36	326	69	395	
2/21/2017 14:36	335	71	406	20.1
2/21/2017 15:36	330	70	400	
2/21/2017 16:36	335	72	407	
2/21/2017 17:36	329	71	400	
2/21/2017 18:36	336	71	407	
2/21/2017 19:36	334	70	404	
2/21/2017 20:36	334	70	404	

2/21/2017 21:36	324	70	394	
2/21/2017 22:36	329	70	399	
2/21/2017 23:36	333	70	403	
2/22/2017 0:36	332	70	402	
2/22/2017 1:36	334	70	404	
2/22/2017 2:36	335	70	405	
2/22/2017 3:36	333	70	403	
2/22/2017 4:36	338	70	408	
2/22/2017 5:36	345	70	415	

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

Analytical Test Report

Report No: USR:W215-0901-01
Issue No: 1

Client: OMNI-TEST LABORATORIES INC.
13327 NE Airport Way
Portland, OR 97230
Attention: Sebastian Button

PO No: OTL-15-030

Signed:

Stephen Sundeen
Chemistry Laboratory Manager

Date of Issue: 8/20/2015

Sample Details

Sample Log No:	W215-0901-01	**Sample Date:**	
Sample Designation:	Lignetics #1	**Sample Time:**	
Sample Recognized As:	Pellets	**Arrival Date:**	8/13/2015

Test Results

	METHOD	UNITS	MOISTURE FREE	AS RECEIVED
Moisture Total	ASTM E871	wt. %		5.05
Ash	ASTM D1102	wt. %	0.83	0.79
Volatile Matter	ASTM D3175	wt. %		
Fixed Carbon by Difference	ASTM D3172	wt. %		
Sulfur	ASTM D4239	wt. %	0.003	0.003
SO_2	Calculated	lb/mmbtu		0.007
Net Cal. Value at Const. Pressure	ISO 1928	GJ/tonne	18.20	16.28
Net Cal. Value at Const. Pressure	ISO 1928	J/g	18196	16282
Gross Cal. Value at Const. Vol.	ASTM E711	J/g	19492	18508
Gross Cal. Value at Const. Vol.	ASTM E711	Btu/lb	8381	7957
Carbon	ASTM D5373	wt. %	49.23	46.74
Hydrogen*	ASTM D5373	wt. %	5.95	5.65
Nitrogen	ASTM D5373	wt. %	< 0.20	< 0.19
Oxygen*	ASTM D3176	wt. %	> 43.79	> 41.58
Chlorine	ASTM D6721	mg/kg		
Fluorine	ASTM D3761	mg/kg		
Mercury	ASTM D6722	mg/kg		
Bulk Density	ASTM E873	lbs/ft^3		
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		

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

Comments

Non-Confidential Business Information (Non-CBI)

Certification Test Report

United States Stove Company

Freestanding Pellet Stove

5780 Series

Models: 5780, AP5780, VG5780, SP5780, SP58

Prepared for:	United States Stove Company 227 Industrial Park Road P.O. Box 151 South Pittsburg, TN 37380
Prepared by:	OMNI-Test Laboratories, Inc. 13327 NE Airport Way Portland, OR 97230 (503) 643-3788
Test Period:	April 10, 2017
Report Date:	May 2017 Revised March 2021, May 2022
Report Number:	0215PS061E

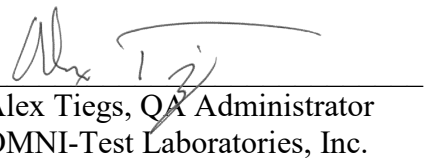
AUTHORIZED SIGNATORIES

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

Technician:

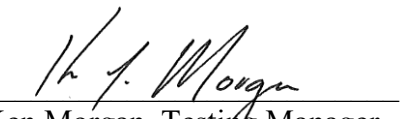
Sebastian Button, Testing Supervisor
OMNI-Test Laboratories, Inc.

QA Review:



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

Evaluation Decision:



Ken Morgan, Testing Manager
OMNI-Test Laboratories, Inc.

May 1, 2017

Issue Date

TABLE OF CONTENTS

Section 1

Sampling Procedures and Test Results

INTRODUCTION

United States Stove Company retained OMNI-Test Laboratories, Inc. (*OMNI*) to perform U.S. Environmental Protection Agency (EPA) certification testing on the 5780 Series Pellet Stove. The 5780 Series is a freestanding, pellet-fired room heater.

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 March 6, 2017. It was assigned and labeled with *OMNI* ID #2174. *OMNI* representative Sebastian Button conducted the certification testing and completed all testing by April 10, 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.

SAMPLING PROCEDURE

The 5780 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 Premium Quality Wood Pellet Fuel; this fuel was graded as Premium by the Pellet Fuels Institute and was produced at registered mill # 03304. Particulate emissions were measured using dual sampling trains consisting of two sets of filters (front and back). The results of the integrated test run indicate an average particulate emission rate of 1.3 g/hr. The 5780 Series results are within the emission limit of 2.0 g/hr for affected facilities manufactured on or after May 15, 2020.

The model 5780 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 72.0%. The calculated CO emission rate was 12.4 g/hr.

TEST NARRATIVE

A single integrated test run was performed in accordance with ASTM E2779, consisting of three distinct test segments: One hour at maximum burn rate, two hours at a medium burn rate, and three hours at the minimum burn rate. The medium burn is defined to be less than 50% of the maximum burn rate. For this appliance, the only heat setting that produces a burn rate of less than 50% of the maximum burn rate is the low burn rate setting. Therefore, the medium burn rate segment was performed at the same heat setting as the low burn rate segment. No anomalies occurred during testing and is a valid test run.

SUMMARY OF RESULTS

The average particulate emission rate over the complete, integrated test run was measured to be 1.3 g/hr.

The average particulate emission factor for the complete, integrated test run was measured to be 1.5 g/dry kg of fuel.

The average thermal efficiency for the complete, integrated test run was measured to be 72.0%.

The particulate emission rate calculated from the one-hour filter was 2.5 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 4 of this report.

Average CO emissions were 12.4 g/hr or 0.21 g/min

SUMMARY TABLES

Table 1.1 – Particulate Emissions

	One-Hour Filter	Integrated Total
Emission Rate (g/hr)	2.5	1.3
Emission Factor (g/dry kg)	1.4	1.5

Table 1.2 – Efficiency and CO

	Burn Rate Segment			Integrated
	Maximum	Medium	Minimum	Total
Time (minutes)	60	120	180	360
Burn Rate (dry kg/hr)	1.79	0.68	0.64	0.85
Heat Input Rate (BTU/hr, HHV)	34,419	13,112	12,293	16,254
Heat Output Rate (BTU/hr, HHV)	26,386	9,097	8,507	11,704
Efficiency (%, HHV)	76.7%	69.4%	69.2%	72.0%
Efficiency (%, LHV)	82.0%	74.2%	74.0%	77.0%
CO Emission Rate (g/hr)	14.4	11.5	12.3	12.4

Table 1.3 – Test Facility Conditions

	Initial	Middle	Final
Room Temperature (°F)	66	70	68
Barometric Pressure (in Hg)	30.16	30.18	30.19
Air Velocity (ft/min)	< 50	< 50	< 50
Induced Draft (in H2O)	0	0	0

Table 1.4 – Fuel Measurement Summary

Segment	Time (min)	Burn Rate (dry kg/hr)	Consumed Fuel Weight (lbs)	Fuel Moisture Content (dry basis - %)
Pretest	72	0.00	4.9	6.2
Maximum	60	1.79	4.2	6.2
Medium	120	0.68	3.2	6.2
Minimum	180	0.64	4.5	6.2
Integrated Total	360	0.85	11.9	6.2

Table 1.5 – Dilution Tunnel and Flue Gas Measurements

Segment	Average Flue Draft (in H_2O)	Average Dilution Tunnel Gas Measurements		
		Velocity (ft/sec)	Flow Rate (dscf/min)	Temperature (°F)
Integrated Total	0.044	14.72	165.6	85.9

Table 1.6 – Heater Configuration

Segment	Heat Level [1-5]	Air Inlet Damper
Pretest	5	Halfway Closed
Maximum	5	Halfway Closed
Medium	1	Fully Closed
Minimum	1	Fully Closed

Section 2

Photographs
Appliance Description
Drawings

United States Stove Company
5780 Series

PHOTOGRAPHS

	
5780 Series Front	**5780 Series Back**

	
5780 Series Left	**5780 Series Right**

APPLIANCE DESCRIPTION

Appliance Manufacturer: United States Stove Company
Pellet Stove Model: 5780
Type: Freestanding, air-circulating type, pellet-fired room heater.

The 5780's principle elements include a fuel hopper, steel firebox chamber, steel burn pot, and electrical fuel feed, combustion air, and convection air supply systems.

Air is forced by the combustion air blower through small holes in the bottom and sides of the burn pot and combustion products are routed out of the firebox chamber through a three-inch diameter flue outlet located on the rear of the unit.

Fuel is supplied from the hopper to the burn pot via an auger which lifts pellets from the bottom of the hopper. Pellets at the top of the auger screw then fall down a tube which terminates in the firebox wall just above the burn pot. 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 firebox door, features a 5mm thick glass window (9.75" x 11") sealed by ¾" diameter fiberglass rope gasket.

The electrical systems are regulated by a user-operated control board. On this board users can select manual mode, which has five heat output settings. The unit can also be controlled by an external thermostat system. Additionally, an adjustable manual air damper varies the size of the combustion air inlet.

MODEL VARIANTS

There is a total of 5 variants of the model 5780. All models are functionally identical. The models along with a description of their differences are as follows:

DESIGNATION	VARIATION
5780	Original model as described in this report
VG5780	Same as 5780 but with different logo/branding
AP5780	Same as 5780 but with different logo/branding
SP5780	Same as 5780 but with different logo/branding
SP58	Same as 5780 but with different logo/branding

Due to the nature of differences between the models listed above, it is presumed that emissions performance should be the same across all models, therefore all models are being included in this report for certification.

Section 3
Test Data by Run

Run 1

Pellet Fuels Institute

PFI GRADED FUEL

PFI Densified Fuel Grade: Premium
Mill Registration # 03304

Grade Requirements:

Bulk Density:	40–46 lbs/ft³
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:	Hardwood
Additives:	None
Minimum Higher Heating Value (as received):	8000 BTU/lb.

Other Manufacturers Guarantees:

For more information, please visit the PFI website at www.pelletheat.org.

Pellet Heater Test Results - ASTM E2779 / ASTM E2515

Manufacturer: United States Stove Company
Model: 5780
Project No.: 0215PS061E
Tracking No.: 2174
Run: 1
Test Date: 04/10/17

Burn Rate (Composite)	**0.85 kg/hr dry**
Average Tunnel Temperature	86 degrees F
Average Gas Velocity in Dilution Tunnel - vs	14.72 feet/second
Average Gas Flow Rate in Dilution Tunnel - Qsd	9937.8 dscf/hour
Average Delta p	0.047 inches H20
Average Delta H	1.40 inches H20
Total Time of Test	360 minutes

Burn Rate (High)	**1.79**	kg/hr dry
Burn Rate (Med)	**0.68**	kg/hr dry
	38.1%	of High
Burn Rate (Low)	**0.64**	kg/hr dry
	35.7%	of High

	AMBIENT	SAMPLE TRAIN 1	SAMPLE TRAIN 2	1st HR FILTER (TRAIN 1)
Total Sample Volume - Vm	0.000 cubic feet	60.519 cubic feet	57.476 cubic feet	10.049 cubic feet
Average Gas Meter Temperature	69 degrees F	79 degrees F	79 degrees F	72 degrees F
Total Sample Volume (Standard Conditions) - Vmstd	0.000 dscf	58.992 dscf	56.325 dscf	9.922 dscf
Total Particulates - m_n	0 mg	7.7 mg	7.3 mg	2.5 mg
Particulate Concentration (dry-standard) - C_f/C_s	0.000000 grams/dscf	0.00013 grams/dscf	0.00013 grams/dscf	0.00025 grams/dscf
Total Particulate Emissions - E_T	0.00 grams	7.78 grams	7.73 grams	2.50 grams
Particulate Emission Rate	0.00 grams/hour	1.30 grams/hour	1.29 grams/hour	2.50 grams/hour
Emissisons Factor		1.53 g/kg	1.52 g/kg	1.40 g/kg
Difference from Average Total Particulate Emissions		0.03 grams	0.03 grams	

Dual Train Comparison Results Are Acceptable

FINAL AVERAGE RESULTS

Integrated Test Run	
Total Particulate Emissions - E_T	7.76 grams
Particulate Emission Rate	**1.29 grams/hour**
Emissisons Factor	1.53 grams/kg
First Hour Emissions	
Total Particulate Emissions - E_T	2.50 grams
Particulate Emission Rate	2.50 grams/hour
Emissisons Factor	1.40 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

Pellet Heater Test Results - ASTM E2779 / ASTM E2515

Manufacturer: United States Stove Company
Model: 5780
Project No.: 0215PS061E
Tracking No.: 2174
Run: 1
Test Date: 04/10/17

Burn Rate (Composite)	**0.85 kg/hr dry**
Average Tunnel Temperature	86 degrees F
Average Gas Velocity in Dilution Tunnel - vs	14.72 feet/second
Average Gas Flow Rate in Dilution Tunnel - Qsd	9937.8 dscf/hour
Average Delta p	0.047 inches H20
Average Delta H	1.40 inches H20
Total Time of Test	360 minutes

Burn Rate (High)	**1.79**	kg/hr dry
Burn Rate (Med)	**0.68**	kg/hr dry
	38.1%	of High
Burn Rate (Low)	**0.64**	kg/hr dry
	35.7%	of High

	AMBIENT	SAMPLE TRAIN 1	SAMPLE TRAIN 2	1st HR FILTER (TRAIN 1)
Total Sample Volume - Vm	0.000 cubic feet	60.519 cubic feet	57.476 cubic feet	10.049 cubic feet
Average Gas Meter Temperature	69 degrees F	79 degrees F	79 degrees F	72 degrees F
Total Sample Volume (Standard Conditions) - Vmstd	0.000 dscf	58.992 dscf	56.325 dscf	9.922 dscf
Total Particulates - m_n	0 mg	7.7 mg	7.3 mg	2.5 mg
Particulate Concentration (dry-standard) - C_f/C_s	0.000000 grams/dscf	0.00013 grams/dscf	0.00013 grams/dscf	0.00025 grams/dscf
Total Particulate Emissions - E_T	0.00 grams	7.78 grams	7.73 grams	2.50 grams
Particulate Emission Rate	0.00 grams/hour	1.30 grams/hour	1.29 grams/hour	2.50 grams/hour
Emissisons Factor		1.53 g/kg	1.52 g/kg	1.40 g/kg
Difference from Average Total Particulate Emissions		0.03 grams	0.03 grams	

Dual Train Comparison Results Are Acceptable

FINAL AVERAGE RESULTS

Integrated Test Run	
Total Particulate Emissions - E_T	7.76 grams
Particulate Emission Rate	**1.29 grams/hour**
Emissisons Factor	1.53 grams/kg
First Hour Emissions	
Total Particulate Emissions - E_T	2.50 grams
Particulate Emission Rate	2.50 grams/hour
Emissisons Factor	1.40 grams/kg

Dual Train Precision: Permissible difference from Total particulate Emissions = 0.075 x ((ET, train 1 + ET, train 2) / 2)
= 0.075 x ((7.78 + 7.73) / 2) = 0.581625 g

Train 1 difference from Total particulate Emissions = |ET, train 1 - ET, average| = |7.78 - 7.76| = 0.02 g = 0.26%

Train 2 difference from Total particulate Emissions = |ET, train 2 - ET, average| = |7.73 - 7.76| = 0.03 g = 0.39%

Pellet Heater Conditioning Data - ASTM E2779

Manufacturer:	United States Stove Company
Model:	5780
Tracking No.:	2174
Project No.:	0215PS061E
Test Date:	2/17/2017 - 2/22/2017
Operation Category:	Max

Elapsed Time (hours)	Stack (°F)
0	363
1	387
2	392
3	397
4	404
5	413
6	418
7	414
8	414
9	410
10	417
11	418
12	417
13	408
14	408
15	408
16	419
17	416
18	409
19	412
20	410
21	411
22	409
23	408
24	403
25	310
26	388
27	381
28	395
29	400
30	396
31	393
32	391
33	395
34	406
35	400
36	407
37	400
38	407
39	404
40	404
41	394
42	399
43	403
44	402
45	404
46	405
47	403
48	408
49	415
50	362

5780 48 Hour Conditioning

Time	Rise	Ambient	Absolute	Fuel Added (lbs)
2/17/2017 6:00	310	53	363	45
2/17/2017 7:00	334	53	387	
2/17/2017 8:00	335	57	392	
2/17/2017 9:00	335	62	397	
2/17/2017 10:00	335	69	404	
2/17/2017 11:00	341	72	413	
2/17/2017 12:00	346	72	418	
2/17/2017 13:00	343	71	414	
2/17/2017 14:00	341	73	414	
2/17/2017 15:00	338	72	410	20.2
2/17/2017 16:00	344	73	417	
2/17/2017 17:00	346	72	418	
2/17/2017 18:00	346	71	417	
2/17/2017 19:00	339	69	408	
2/17/2017 20:00	341	67	408	
2/17/2017 21:00	342	66	408	
2/17/2017 22:00	353	66	419	
2/17/2017 23:00	350	66	416	
2/18/2017 0:00	344	65	409	
2/18/2017 1:00	347	65	412	
2/18/2017 2:00	346	64	410	
2/18/2017 3:00	347	64	411	
2/18/2017 4:00	345	64	409	
2/18/2017 5:00	344	64	408	
2/18/2017 6:00	339	64	403	
Gap in Burn				
2/21/2017 5:36	250	60	310	33.6
2/21/2017 6:36	326	62	388	
2/21/2017 7:36	312	69	381	
2/21/2017 8:36	324	71	395	
2/21/2017 9:36	328	72	400	
2/21/2017 10:36	323	73	396	
2/21/2017 11:36	321	72	393	
2/21/2017 12:36	318	73	391	
2/21/2017 13:36	326	69	395	
2/21/2017 14:36	335	71	406	20.1
2/21/2017 15:36	330	70	400	
2/21/2017 16:36	335	72	407	
2/21/2017 17:36	329	71	400	
2/21/2017 18:36	336	71	407	
2/21/2017 19:36	334	70	404	
2/21/2017 20:36	334	70	404	
2/21/2017 21:36	324	70	394	

2/21/2017 22:36	329	70	399	
2/21/2017 23:36	333	70	403	
2/22/2017 0:36	332	70	402	
2/22/2017 1:36	334	70	404	
2/22/2017 2:36	335	70	405	
2/22/2017 3:36	333	70	403	
2/22/2017 4:36	338	70	408	
2/22/2017 5:36	345	70	415	

Pellet Heater Preburn Data - ASTM E2779

Manufacturer:	United States Stove Company		
Model:	5780		
Tracking No.:	2174	PB Length:	72 min
Project No.:	0215PS061E	Recording Interval:	1 min
Test Date:	4/10/2017		

			Averages:	338	66	0	4	0
	Elapsed Time (min)	Scale Reading	Weight Change	Stack (F)	Ambient (F)	Draft ("H2O)	CO2 (%)	CO (%)
0	0	24.0	-	165	66	0.02	0.00	0.00
1	1	23.9	-0.1	192	66	0.03	3.62	0.03
2	2	23.8	-0.1	219	66	0.03	5.00	0.11
3	3	23.6	-0.2	234	66	0.04	0.00	0.00
4	4	23.5	-0.1	255	66	0.04	0.00	0.00
5	5	23.4	-0.1	272	66	0.04	0.00	0.00
6	6	23.3	-0.1	285	66	0.05	0.00	0.00
7	7	23.2	-0.1	299	66	0.05	0.00	0.00
8	8	23.2	0	307	66	0.05	0.00	0.00
9	9	23.1	-0.1	316	66	0.05	0.00	0.00
10	10	23.0	-0.1	318	66	0.05	0.00	0.00
11	11	22.9	-0.1	323	66	0.05	0.00	0.00
12	12	22.9	0	328	66	0.05	0.00	0.00
13	13	22.8	-0.1	329	66	0.05	0.00	0.00
14	14	22.7	-0.1	332	66	0.05	0.00	0.00
15	15	22.7	0	334	66	0.05	0.00	0.00
16	16	22.6	-0.1	335	65	0.05	0.00	0.00
17	17	22.5	-0.1	338	65	0.05	0.00	0.00
18	18	22.5	0	339	66	0.05	0.00	0.00
19	19	22.4	-0.1	338	66	0.05	0.00	0.00
20	20	22.3	-0.1	339	66	0.05	0.00	0.00
21	21	22.3	0	341	66	0.05	0.00	0.00
22	22	22.2	-0.1	340	65	0.05	0.00	0.00
23	23	22.1	-0.1	341	66	0.05	0.00	0.00
24	24	22.1	0	342	66	0.06	0.00	0.00
25	25	22.0	-0.1	345	66	0.06	0.00	0.00
26	26	21.9	-0.1	347	65	0.06	0.00	0.00
27	27	21.9	0	348	66	0.06	0.00	0.00
28	28	21.8	-0.1	350	66	0.06	0.00	0.00
29	29	21.7	-0.1	348	66	0.06	0.00	0.00
30	30	21.7	0	345	66	0.06	0.00	0.00
31	31	21.6	-0.1	348	66	0.06	0.00	0.00
32	32	21.6	0	346	66	0.06	0.00	0.00
33	33	21.5	-0.1	347	66	0.05	0.00	0.00
34	34	21.4	-0.1	347	66	0.06	0.00	0.00
35	35	21.4	0	346	66	0.06	0.00	0.00
36	36	21.3	-0.1	349	66	0.06	16.43	4.18
37	37	21.2	-0.1	350	66	0.06	16.80	4.18
38	38	21.2	0	348	66	0.06	16.73	4.19
39	39	21.1	-0.1	349	66	0.06	1.41	0.10
40	40	21.0	-0.1	353	66	0.06	1.10	0.09
41	41	20.9	-0.1	347	66	0.06	1.02	0.09
42	42	20.9	0	348	66	0.06	9.64	2.46
43	43	20.8	-0.1	348	65	0.06	9.94	2.47
44	44	20.7	-0.1	349	66	0.06	0.99	0.12
45	45	20.7	0	353	66	0.06	12.66	0.07
46	46	20.6	-0.1	355	66	0.06	1.17	0.00
47	47	20.5	-0.1	356	66	0.06	14.77	0.05
48	48	20.7	0.2	358	66	0.06	0.89	0.00
49	49	20.5	-0.2	366	66	0.06	7.13	0.04
50	50	20.5	0	366	66	0.06	6.54	0.05
51	51	20.4	-0.1	363	66	0.06	5.88	0.07
52	52	20.3	-0.1	362	66	0.06	6.40	0.06
53	53	20.2	-0.1	360	66	0.06	6.29	0.07
54	54	20.3	0.1	360	66	0.06	6.75	0.04
55	55	20.2	-0.1	361	66	0.06	6.84	0.04
56	56	20.1	-0.1	361	66	0.06	6.76	0.03
57	57	20.1	0	361	66	0.06	7.41	0.04
58	58	20.0	-0.1	361	66	0.06	6.60	0.05
59	59	19.9	-0.1	362	66	0.06	7.03	0.03
60	60	19.9	0	362	66	0.06	7.04	0.03
61	61	19.8	-0.1	362	66	0.06	6.96	0.04
62	62	19.7	-0.1	363	66	0.06	6.38	0.06

63	63	19.6	-0.1	363	66	0.06	7.51	0.03
64	64	19.6	0	363	66	0.06	7.12	0.03
65	65	19.5	-0.1	362	66	0.06	6.40	0.04
66	66	19.4	-0.1	363	66	0.06	6.83	0.05
67	67	19.4	0	364	66	0.06	7.29	0.03
68	68	19.3	-0.1	363	66	0.06	6.38	0.04
69	69	19.2	-0.1	363	66	0.06	7.83	0.04
70	70	19.2	0	364	66	0.06	7.49	0.03
71	71	19.1	-0.1	364	66	0.06	6.81	0.05
72	72	19.1	0	363	66	0.06	6.04	0.07

Pellet Heater Test Data - ASTM E2779 / ASTM E2515

Run: 1

Manufacturer: United States Stove Company
Model: 5780
Tracking No.: 2174
Project No.: 0215PS061E
Test Date: 10-Apr-17
Beginning Clock Time: 09:39

High Burn End Time: 60
Medium Burn End Time: 180
Total Sampling Time: 360 min
Recording Interval: 1 min
Background Sample Volume: 0 cubic feet

Meter Box Y Factor: 0.984 (1) 0.99 (2) 1 (Amb)

Barometric Pressure: Begin 30.16 Middle 30.18 End 30.19 Average 30.18 "Hg

OMNI Equipment Numbers: 132, 185, 209, 335, 336, 410, 559, 594

PM Control Modules: 335/336
Dilution Tunnel MW(dry): 29.00 lb/lb-mole
Dilution Tunnel MW(wet): 28.78 lb/lb-mole
Dilution Tunnel H2O: 2.00 percent
Dilution Tunnel Static: -0.271 "H2O
Tunnel Area: 0.1963 ft2
Pitot Tube Cp: 0.99

Avg. Tunnel Velocity: 14.72 ft/sec.
Intial Tunnel Flow: 174.5 scfm
Average Tunnel Flow: 165.6 scfm
Post-Test Leak Check (1): 0.000 cfm @ -7 in. Hg
Post-Test Leak Check (2): 0.000 cfm @ -9 in. Hg
Fuel Moisture: 6.20 Dry Basis %

Velocity Traverse Data

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	Center	
Initial dP	0.042	0.062	0.070	0.048	0.040	0.064	0.062	0.046	0.052	"H2O
Temp:	89	89	89	89	89	89	89	89	89	°F

V_{strav} 15.58 ft/sec V_{scent} 15.35 ft/sec F_p 1.015

	Particulate Sampling Data														Fuel Weight (lb)		Temperature Data (°F)				Stack Gas Data		
Elapsed Time (min)	Gas Meter 1 (ft^3)	Gas Meter 2 (ft^3)	Sample Rate 1 (cfm)	Sample Rate 2 (cfm)	Orifice dH 1 ("H_2O)	Meter Temp 1 (°F)	Meter Vacuum 1 ("Hg)	Orifice dH 2 ("H_2O)	Meter Temp 2 (°F)	Meter Vacuum 2 ("Hg)	Dilution Tunnel (°F)	Dilution Tunnel Center dP	Pro. Rate 1	Pro. Rate 2	Scale Reading	Weight Change	Stack	Filter 1	Filter 2	Ambient	Draft ("H_2O)	CO_2 (%)	CO (%)
0	0.000	0.000			0.08	69	0.07	0.00	69	1.2	89	0.052			19.0		364	67	67	66	0.057	6.88	0.05
1	0.161	0.149	0.16	0.15	1.45	69	2.26	1.07	69	1.2	89	0.047	98	95	18.9	-0.1	365	68	68	66	0.058	7.65	0.03
2	0.330	0.308	0.17	0.16	1.45	69	2.27	1.07	69	1.2	89	0.049	100	99	18.8	-0.1	366	68	68	66	0.058	7.25	0.03
3	0.499	0.469	0.17	0.16	1.46	69	2.27	1.07	70	1.2	88	0.046	103	104	18.8	0	366	68	68	66	0.058	7.16	0.05
4	0.668	0.627	0.17	0.16	1.45	69	2.27	1.07	70	1.2	88	0.050	99	98	18.7	-0.1	366	68	68	66	0.058	6.98	0.04
5	0.837	0.787	0.17	0.16	1.44	69	2.27	1.07	70	1.2	88	0.047	102	102	18.6	-0.1	366	68	69	66	0.058	7.46	0.04
6	1.005	0.947	0.17	0.16	1.45	69	2.28	1.06	70	1.2	88	0.048	101	101	18.6	0	370	68	69	66	0.059	8.8	0.02
7	1.174	1.105	0.17	0.16	1.45	70	2.28	1.06	70	1.3	88	0.051	98	97	18.5	-0.1	371	69	69	66	0.059	8.86	0.03
8	1.343	1.264	0.17	0.16	1.45	70	2.29	1.06	70	1.2	88	0.051	98	97	18.4	-0.1	371	69	69	66	0.058	6.6	0.04
9	1.512	1.424	0.17	0.16	1.44	70	2.28	1.05	70	1.2	89	0.050	99	99	18.4	0	373	69	69	66	0.059	7.84	0.03
10	1.680	1.582	0.17	0.16	1.44	70	2.29	1.06	70	1.3	89	0.048	101	100	18.3	-0.1	372	69	69	66	0.058	7	0.08
11	1.849	1.742	0.17	0.16	1.44	70	2.28	1.05	70	1.3	89	0.047	102	102	18.2	-0.1	373	69	69	65	0.059	8.16	0.03
12	2.018	1.900	0.17	0.16	1.43	70	2.28	1.05	70	1.3	90	0.047	102	101	18.1	-0.1	375	69	69	66	0.059	8.68	0.03
13	2.186	2.058	0.17	0.16	1.44	70	2.28	1.05	70	1.3	89	0.049	100	99	18.1	0	374	69	69	66	0.059	7.48	0.03
14	2.355	2.217	0.17	0.16	1.43	70	2.28	1.05	70	1.3	89	0.051	98	97	18.0	-0.1	372	69	69	66	0.059	5.65	0.09
15	2.522	2.375	0.17	0.16	1.44	70	2.29	1.04	71	1.3	89	0.045	103	103	18.0	0	373	69	69	66	0.059	7.99	0.04
16	2.690	2.534	0.17	0.16	1.44	70	2.28	1.05	71	1.3	88	0.047	102	101	17.9	-0.1	371	69	69	66	0.058	7.23	0.05
17	2.858	2.692	0.17	0.16	1.44	71	2.28	1.04	71	1.3	89	0.051	97	96	17.8	-0.1	369	69	70	66	0.058	6.71	0.07
18	3.027	2.850	0.17	0.16	1.43	71	2.28	1.05	71	1.3	89	0.047	102	100	17.8	0	368	69	70	66	0.058	6.87	0.07
19	3.195	3.009	0.17	0.16	1.43	71	2.29	1.04	71	1.3	88	0.048	100	100	17.7	-0.1	370	69	70	66	0.059	8.51	0.05
20	3.363	3.166	0.17	0.16	1.43	71	2.29	1.04	71	1.3	89	0.045	104	102	17.6	-0.1	373	69	70	66	0.059	8.84	0.05
21	3.531	3.325	0.17	0.16	1.43	71	2.3	1.03	71	1.3	89	0.048	100	100	17.5	-0.1	374	69	70	66	0.059	7.26	0.04
22	3.699	3.482	0.17	0.16	1.42	71	2.3	1.03	72	1.3	88	0.046	102	101	17.5	0	372	69	70	66	0.059	7.14	0.04
23	3.868	3.639	0.17	0.16	1.42	71	2.3	1.03	72	1.3	88	0.049	100	98	17.4	-0.1	372	69	70	66	0.059	7.35	0.07
24	4.036	3.798	0.17	0.16	1.42	72	2.3	1.03	72	1.3	89	0.047	101	101	17.3	-0.1	373	70	70	66	0.059	7.96	0.04
25	4.203	3.954	0.17	0.16	1.43	72	2.31	1.03	72	1.3	89	0.046	102	100	17.2	-0.1	373	70	70	66	0.059	8.72	0.04
26	4.371	4.112	0.17	0.16	1.43	72	2.31	1.03	72	1.3	89	0.047	101	100	17.2	0	374	70	70	66	0.059	7.34	0.07
27	4.539	4.269	0.17	0.16	1.42	72	2.31	1.03	72	1.3	89	0.048	100	99	17.1	-0.1	375	70	70	66	0.059	8.45	0.03
28	4.706	4.427	0.17	0.16	1.42	72	2.32	1.02	72	1.3	89	0.049	99	98	17.1	0	374	70	70	66	0.060	7.27	0.05
29	4.874	4.584	0.17	0.16	1.43	72	2.31	1.03	73	1.3	88	0.048	100	98	17.0	-0.1	372	70	70	66	0.060	6.78	0.07
30	5.041	4.741	0.17	0.16	1.42	72	2.32	1.03	73	1.3	88	0.045	103	102	16.9	-0.1	372	70	70	66	0.060	7.83	0.05
31	5.209	4.898	0.17	0.16	1.42	73	2.32	1.02	73	1.3	88	0.048	100	98	16.8	-0.1	374	70	70	65	0.059	8.58	0.04
32	5.377	5.054	0.17	0.16	1.42	73	2.33	1.02	73	1.3	89	0.047	101	99	16.7	-0.1	375	70	70	66	0.059	8.41	0.04
33	5.544	5.211	0.17	0.16	1.42	73	2.34	1.01	73	1.4	89	0.048	99	98	16.7	0	376	70	70	66	0.060	7.13	0.05
34	5.712	5.368	0.17	0.16	1.41	73	2.33	1.02	73	1.3	88	0.047	101	99	16.5	-0.2	375	70	70	66	0.059	7.18	0.05

Pellet Heater Test Data - ASTM E2779 / ASTM E2515

Run: 1

Manufacturer: United States Stove Company
Model: 5780
Tracking No.: 2174
Project No.: 0215PS061E
Test Date: 10-Apr-17
Beginning Clock Time: 09:39

High Burn End Time: 60
Medium Burn End Time: 180
Total Sampling Time: 360 min
Recording Interval: 1 min
Background Sample Volume: 0 cubic feet

Meter Box Y Factor: 0.984 (1) 0.99 (2) 1 (Amb)

Barometric Pressure: Begin 30.16 Middle 30.18 End 30.19 Average 30.18 "Hg

OMNI Equipment Numbers: 132, 185, 209, 335, 336, 410, 559, 594

PM Control Modules: 335/336
Dilution Tunnel MW(dry): 29.00 lb/lb-mole
Dilution Tunnel MW(wet): 28.78 lb/lb-mole
Dilution Tunnel H2O: 2.00 percent
Dilution Tunnel Static: -0.271 "H2O
Tunnel Area: 0.1963 ft2
Pitot Tube Cp: 0.99

Avg. Tunnel Velocity: 14.72 ft/sec.
Intial Tunnel Flow: 174.5 scfm
Average Tunnel Flow: 165.6 scfm
Post-Test Leak Check (1): 0.000 cfm @ -7 in. Hg
Post-Test Leak Check (2): 0.000 cfm @ -9 in. Hg
Fuel Moisture: 6.20 Dry Basis %

Velocity Traverse Data

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	Center	
Initial dP	0.042	0.062	0.070	0.048	0.040	0.064	0.062	0.046	0.052	"H2O
Temp:	89	89	89	89	89	89	89	89	89	°F

V_{strav} 15.58 ft/sec V_{scent} 15.35 ft/sec F_p 1.015

	Particulate Sampling Data														Fuel Weight (lb)		Temperature Data (°F)				Stack Gas Data		
Elapsed Time (min)	Gas Meter 1 (ft^3)	Gas Meter 2 (ft^3)	Sample Rate 1 (cfm)	Sample Rate 2 (cfm)	Orifice dH 1 ("H_2O)	Meter Temp 1 (°F)	Meter Vacuum 1 ("Hg)	Orifice dH 2 ("H_2O)	Meter Temp 2 (°F)	Meter Vacuum 2 ("Hg)	Dilution Tunnel (°F)	Dilution Tunnel Center dP	Pro. Rate 1	Pro. Rate 2	Scale Reading	Weight Change	Stack	Filter 1	Filter 2	Ambient	Draft ("H_2O)	CO_2 (%)	CO (%)
35	5.880	5.524	0.17	0.16	1.41	73	2.34	1.02	73	1.3	89	0.046	102	100	16.4	-0.1	374	70	70	66	0.059	7.37	0.04
36	6.047	5.680	0.17	0.16	1.42	73	2.34	1.01	73	1.4	89	0.049	98	97	16.4	0	374	70	70	66	0.059	7.37	0.05
37	6.215	5.837	0.17	0.16	1.42	73	2.34	1.01	74	1.4	90	0.048	100	98	16.3	-0.1	375	70	70	66	0.059	8.13	0.06
38	6.383	5.993	0.17	0.16	1.40	73	2.35	1.01	74	1.4	90	0.044	105	102	16.3	0	374	70	70	66	0.058	6.76	0.07
39	6.550	6.150	0.17	0.16	1.41	73	2.35	1.01	74	1.4	91	0.046	102	101	16.2	-0.1	374	70	70	67	0.058	7.63	0.07
40	6.717	6.305	0.17	0.15	1.41	74	2.36	1.01	74	1.4	91	0.045	103	100	16.1	-0.1	374	70	70	66	0.058	6.91	0.04
41	6.884	6.461	0.17	0.16	1.41	74	2.37	1.01	74	1.4	91	0.044	104	102	16.0	-0.1	375	70	70	66	0.058	8.6	0.03
42	7.052	6.616	0.17	0.15	1.40	74	2.37	1.00	74	1.4	92	0.047	101	98	16.0	0	375	70	70	66	0.058	7.66	0.03
43	7.219	6.776	0.17	0.16	1.41	74	2.37	1.10	74	1.5	92	0.043	105	106	15.9	-0.1	375	70	70	67	0.058	7.83	0.04
44	7.386	6.938	0.17	0.16	1.41	74	2.38	1.09	74	1.5	92	0.049	98	101	15.8	-0.1	376	70	70	67	0.058	8.64	0.05
45	7.553	7.099	0.17	0.16	1.40	74	2.38	1.09	74	1.5	92	0.046	102	103	15.8	0	375	71	71	67	0.058	6.69	0.06
46	7.720	7.261	0.17	0.16	1.40	74	2.38	1.09	74	1.5	92	0.047	101	103	15.7	-0.1	375	71	71	67	0.058	7.15	0.05
47	7.886	7.424	0.17	0.16	1.40	74	2.38	1.09	75	1.5	93	0.044	103	107	15.6	-0.1	374	71	71	67	0.057	7.32	0.05
48	8.053	7.585	0.17	0.16	1.40	75	2.38	1.08	75	1.5	93	0.047	100	102	15.5	-0.1	374	71	71	67	0.058	8.21	0.06
49	8.220	7.747	0.17	0.16	1.40	75	2.39	1.08	75	1.5	92	0.046	101	104	15.4	-0.1	373	71	71	67	0.058	7.42	0.07
50	8.386	7.908	0.17	0.16	1.40	75	2.39	1.08	75	1.5	93	0.047	100	102	15.4	0	375	71	71	67	0.058	8.45	0.04
51	8.552	8.070	0.17	0.16	1.40	75	2.39	1.08	75	1.5	93	0.047	100	103	15.3	-0.1	374	71	71	67	0.058	7.18	0.04
52	8.719	8.231	0.17	0.16	1.40	75	2.4	1.07	75	1.5	93	0.044	104	105	15.3	0	374	71	71	67	0.058	7.46	0.04
53	8.885	8.392	0.17	0.16	1.39	75	2.4	1.08	75	1.5	93	0.044	103	105	15.2	-0.1	375	72	71	67	0.058	7.37	0.05
54	9.052	8.553	0.17	0.16	1.40	75	2.41	1.08	75	1.5	93	0.044	104	105	15.2	0	374	72	71	67	0.058	7.6	0.06
55	9.218	8.714	0.17	0.16	1.39	75	2.41	1.07	75	1.5	93	0.046	101	103	15.1	-0.1	375	72	72	68	0.058	7.63	0.05
56	9.385	8.875	0.17	0.16	1.39	75	2.42	1.07	76	1.6	93	0.046	102	103	15.1	0	375	72	72	67	0.058	8.36	0.05
57	9.551	9.035	0.17	0.16	1.38	75	2.42	1.07	76	1.6	94	0.048	99	100	15.0	-0.1	374	72	72	68	0.058	6.89	0.08
58	9.717	9.197	0.17	0.16	1.39	76	2.42	1.07	76	1.6	94	0.048	99	101	14.9	-0.1	375	72	72	67	0.058	7.91	0.05
59	9.883	9.356	0.17	0.16	1.39	76	2.43	1.07	76	1.6	94	0.049	98	99	14.9	0	373	72	72	67	0.058	6.19	0.07
60	10.049	9.517	0.17	0.16	1.39	76	2.43	1.07	76	1.6	94	0.046	101	103	14.8	-0.1	373	72	72	67	0.057	7.08	0.07
61	10.210	9.678	0.16	0.16	1.24	76	1.55	1.06	76	1.6	92	0.046	98	103	14.8	0	360	71	72	68	0.056	7.41	0.05
62	10.365	9.837	0.15	0.16	1.43	76	2.23	1.06	76	1.6	92	0.048	92	99	14.7	-0.1	350	72	72	68	0.056	5.06	0.08
63	10.534	9.997	0.17	0.16	1.42	76	2.23	1.06	76	1.6	91	0.047	101	101	14.6	-0.1	342	73	72	68	0.054	4.6	0.09
64	10.703	10.158	0.17	0.16	1.42	76	2.24	1.06	76	1.6	91	0.048	100	101	14.6	0	334	73	72	68	0.054	3.37	0.11
65	10.872	10.318	0.17	0.16	1.43	76	2.24	1.06	76	1.6	90	0.048	100	100	14.6	0	332	73	72	68	0.053	5.16	0.05
66	11.041	10.477	0.17	0.16	1.42	76	2.23	1.06	77	1.6	90	0.048	100	99	14.5	-0.1	328	73	72	68	0.053	5	0.08
67	11.209	10.638	0.17	0.16	1.42	77	2.24	1.06	77	1.6	89	0.045	103	103	14.5	0	321	73	72	68	0.052	2.85	0.12
68	11.378	10.798	0.17	0.16	1.43	77	2.24	1.05	77	1.6	89	0.045	103	103	14.4	-0.1	319	73	72	68	0.051	4.39	0.07
69	11.546	10.957	0.17	0.16	1.42	77	2.23	1.06	77	1.6	89	0.048	99	99	14.4	0	315	73	72	68	0.051	4.57	0.07

Pellet Heater Test Data - ASTM E2779 / ASTM E2515

Run: 1

Manufacturer: United States Stove Company
Model: 5780
Tracking No.: 2174
Project No.: 0215PS061E
Test Date: 10-Apr-17
Beginning Clock Time: 09:39

High Burn End Time: 60
Medium Burn End Time: 180
Total Sampling Time: 360 min
Recording Interval: 1 min
Background Sample Volume: 0 cubic feet

Meter Box Y Factor: 0.984 (1) 0.99 (2) 1 (Amb)

Barometric Pressure: Begin 30.16 Middle 30.18 End 30.19 Average 30.18 "Hg

OMNI Equipment Numbers: 132, 185, 209, 335, 336, 410, 559, 594

PM Control Modules: 335/336
Dilution Tunnel MW(dry): 29.00 lb/lb-mole
Dilution Tunnel MW(wet): 28.78 lb/lb-mole
Dilution Tunnel H2O: 2.00 percent
Dilution Tunnel Static: -0.271 "H2O
Tunnel Area: 0.1963 ft2
Pitot Tube Cp: 0.99

Avg. Tunnel Velocity: 14.72 ft/sec.
Intial Tunnel Flow: 174.5 scfm
Average Tunnel Flow: 165.6 scfm
Post-Test Leak Check (1): 0.000 cfm @ -7 in. Hg
Post-Test Leak Check (2): 0.000 cfm @ -9 in. Hg
Fuel Moisture: 6.20 Dry Basis %

Velocity Traverse Data

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	Center	
Initial dP	0.042	0.062	0.070	0.048	0.040	0.064	0.062	0.046	0.052	"H2O
Temp:	89	89	89	89	89	89	89	89	89	°F

V_{strav} 15.58 ft/sec V_{scent} 15.35 ft/sec F_p 1.015

	Particulate Sampling Data														Fuel Weight (lb)		Temperature Data (°F)				Stack Gas Data		
Elapsed Time (min)	Gas Meter 1 (ft^3)	Gas Meter 2 (ft^3)	Sample Rate 1 (cfm)	Sample Rate 2 (cfm)	Orifice dH 1 ("H_2O)	Meter Temp 1 (°F)	Meter Vacuum 1 ("Hg)	Orifice dH 2 ("H_2O)	Meter Temp 2 (°F)	Meter Vacuum 2 ("Hg)	Dilution Tunnel (°F)	Dilution Tunnel Center dP	Pro. Rate 1	Pro. Rate 2	Scale Reading	Weight Change	Stack	Filter 1	Filter 2	Ambient	Draft ("H_2O)	CO_2 (%)	CO (%)
70	11.715	11.118	0.17	0.16	1.43	77	2.24	1.05	77	1.6	89	0.047	101	101	14.4	0	310	73	72	68	0.050	3.02	0.09
71	11.884	11.278	0.17	0.16	1.42	77	2.24	1.05	77	1.6	89	0.047	101	101	14.3	-0.1	308	73	72	68	0.050	3.45	0.07
72	12.053	11.437	0.17	0.16	1.41	77	2.24	1.06	77	1.6	89	0.046	102	101	14.3	0	305	73	72	68	0.050	4.22	0.07
73	12.222	11.598	0.17	0.16	1.42	77	2.24	1.06	77	1.6	88	0.045	103	103	14.3	0	302	73	72	69	0.049	3.45	0.07
74	12.391	11.758	0.17	0.16	1.42	77	2.24	1.05	77	1.6	88	0.045	103	103	14.2	-0.1	300	73	72	68	0.049	3.7	0.06
75	12.560	11.918	0.17	0.16	1.42	77	2.25	1.06	77	1.6	88	0.049	99	98	14.2	0	298	73	72	69	0.048	3.56	0.07
76	12.728	12.078	0.17	0.16	1.43	77	2.24	1.06	77	1.6	88	0.049	98	98	14.1	-0.1	296	73	72	69	0.048	3.55	0.05
77	12.896	12.238	0.17	0.16	1.43	77	2.25	1.06	77	1.6	88	0.047	100	101	14.1	0	295	73	72	69	0.048	3.38	0.05
78	13.065	12.397	0.17	0.16	1.42	78	2.25	1.06	78	1.6	88	0.047	101	100	14.1	0	293	73	72	69	0.047	3.62	0.06
79	13.234	12.558	0.17	0.16	1.42	78	2.24	1.06	78	1.6	88	0.042	106	107	14.0	-0.1	292	73	72	69	0.047	3.49	0.07
80	13.403	12.718	0.17	0.16	1.42	78	2.25	1.05	78	1.6	88	0.046	102	101	14.0	0	292	73	72	69	0.047	4.55	0.05
81	13.572	12.877	0.17	0.16	1.42	78	2.25	1.06	78	1.6	87	0.050	97	97	14.0	0	289	73	72	69	0.047	2.83	0.07
82	13.741	13.037	0.17	0.16	1.41	78	2.25	1.05	78	1.6	87	0.049	98	98	14.0	0	287	73	72	69	0.047	3.13	0.06
83	13.910	13.197	0.17	0.16	1.42	78	2.25	1.05	78	1.6	87	0.047	101	100	13.9	-0.1	286	73	72	69	0.046	3.74	0.06
84	14.079	13.357	0.17	0.16	1.42	78	2.24	1.05	78	1.6	87	0.045	103	102	13.9	0	283	73	72	69	0.046	2.61	0.06
85	14.247	13.517	0.17	0.16	1.42	78	2.24	1.06	78	1.6	87	0.047	100	100	13.9	0	282	73	72	69	0.046	2.94	0.04
86	14.416	13.677	0.17	0.16	1.43	78	2.25	1.05	78	1.6	87	0.048	100	99	13.8	-0.1	280	73	72	69	0.045	3.5	0.06
87	14.584	13.836	0.17	0.16	1.42	78	2.25	1.05	78	1.6	87	0.048	99	99	13.8	0	278	73	72	69	0.045	2.94	0.05
88	14.753	13.996	0.17	0.16	1.42	78	2.25	1.05	78	1.6	87	0.048	100	99	13.8	0	276	73	72	69	0.045	2.79	0.06
89	14.922	14.156	0.17	0.16	1.42	78	2.25	1.05	78	1.6	87	0.047	101	100	13.7	-0.1	278	73	72	69	0.045	4.11	0.04
90	15.091	14.315	0.17	0.16	1.42	78	2.25	1.06	78	1.6	87	0.047	101	100	13.7	0	276	73	72	69	0.044	2.81	0.05
91	15.260	14.476	0.17	0.16	1.41	78	2.25	1.05	78	1.6	87	0.046	102	102	13.7	0	276	73	72	69	0.045	3.51	0.04
92	15.429	14.635	0.17	0.16	1.42	78	2.25	1.05	78	1.6	87	0.046	102	101	13.7	0	274	73	72	69	0.044	3.17	0.04
93	15.598	14.794	0.17	0.16	1.42	79	2.25	1.06	78	1.6	86	0.048	99	98	13.6	-0.1	271	73	72	69	0.044	2.66	0.05
94	15.766	14.955	0.17	0.16	1.42	79	2.25	1.05	79	1.6	86	0.048	99	100	13.6	0	270	73	72	69	0.044	2.88	0.05
95	15.935	15.115	0.17	0.16	1.42	79	2.25	1.05	79	1.6	86	0.045	102	102	13.6	0	270	73	72	69	0.044	3.73	0.03
96	16.104	15.274	0.17	0.16	1.42	79	2.26	1.05	79	1.6	86	0.046	101	100	13.6	0	269	73	72	69	0.043	3.01	0.03
97	16.273	15.434	0.17	0.16	1.42	79	2.26	1.05	79	1.6	86	0.047	100	100	13.5	-0.1	268	73	72	69	0.044	2.72	0.04
98	16.442	15.594	0.17	0.16	1.42	79	2.25	1.05	79	1.6	86	0.048	99	99	13.5	0	266	73	72	69	0.042	2.64	0.04
99	16.611	15.753	0.17	0.16	1.42	79	2.26	1.06	79	1.6	86	0.046	101	100	13.5	0	266	73	72	69	0.043	3.21	0.03
100	16.780	15.914	0.17	0.16	1.41	79	2.25	1.05	79	1.6	86	0.047	100	101	13.5	0	267	73	72	69	0.043	3.15	0.03
101	16.949	16.073	0.17	0.16	1.42	79	2.26	1.05	79	1.6	86	0.044	104	103	13.4	-0.1	266	73	72	69	0.042	3.34	0.03
102	17.118	16.233	0.17	0.16	1.42	79	2.26	1.05	79	1.6	86	0.045	102	102	13.4	0	263	73	72	69	0.042	2.46	0.04
103	17.286	16.393	0.17	0.16	1.42	79	2.27	1.05	79	1.6	86	0.045	102	102	13.4	0	265	73	72	69	0.043	3.36	0.04
104	17.455	16.552	0.17	0.16	1.42	79	2.26	1.05	79	1.6	86	0.040	109	108	13.4	0	263	73	72	69	0.042	2.81	0.04

Pellet Heater Test Data - ASTM E2779 / ASTM E2515

Run: 1

Manufacturer: United States Stove Company
Model: 5780
Tracking No.: 2174
Project No.: 0215PS061E
Test Date: 10-Apr-17
Beginning Clock Time: 09:39

High Burn End Time: 60
Medium Burn End Time: 180
Total Sampling Time: 360 min
Recording Interval: 1 min
Background Sample Volume: 0 cubic feet

Meter Box Y Factor: 0.984 (1) 0.99 (2) 1 (Amb)

Barometric Pressure: Begin 30.16 Middle 30.18 End 30.19 Average 30.18 "Hg

OMNI Equipment Numbers: 132, 185, 209, 335, 336, 410, 559, 594

PM Control Modules: 335/336
Dilution Tunnel MW(dry): 29.00 lb/lb-mole
Dilution Tunnel MW(wet): 28.78 lb/lb-mole
Dilution Tunnel H2O: 2.00 percent
Dilution Tunnel Static: -0.271 "H2O
Tunnel Area: 0.1963 ft2
Pitot Tube Cp: 0.99

Avg. Tunnel Velocity: 14.72 ft/sec.
Intial Tunnel Flow: 174.5 scfm
Average Tunnel Flow: 165.6 scfm
Post-Test Leak Check (1): 0.000 cfm @ -7 in. Hg
Post-Test Leak Check (2): 0.000 cfm @ -9 in. Hg
Fuel Moisture: 6.20 Dry Basis %

Velocity Traverse Data

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	Center	
Initial dP	0.042	0.062	0.070	0.048	0.040	0.064	0.062	0.046	0.052	"H2O
Temp:	89	89	89	89	89	89	89	89	89	°F

V_{strav} 15.58 ft/sec V_{scent} 15.35 ft/sec F_p 1.015

	Particulate Sampling Data														Fuel Weight (lb)		Temperature Data (°F)				Stack Gas Data		
Elapsed Time (min)	Gas Meter 1 (ft^3)	Gas Meter 2 (ft^3)	Sample Rate 1 (cfm)	Sample Rate 2 (cfm)	Orifice dH 1 ("H_2O)	Meter Temp 1 (°F)	Meter Vacuum 1 ("Hg)	Orifice dH 2 ("H_2O)	Meter Temp 2 (°F)	Meter Vacuum 2 ("Hg)	Dilution Tunnel (°F)	Dilution Tunnel Center dP	Pro. Rate 1	Pro. Rate 2	Scale Reading	Weight Change	Stack	Filter 1	Filter 2	Ambient	Draft ("H_2O)	CO_2 (%)	CO (%)
105	17.624	16.712	0.17	0.16	1.42	79	2.26	1.06	79	1.6	86	0.046	101	101	13.4	0	261	73	72	69	0.042	2.64	0.05
106	17.793	16.872	0.17	0.16	1.41	79	2.26	1.05	79	1.6	86	0.048	99	99	13.3	-0.1	262	73	72	69	0.043	3	0.03
107	17.962	17.032	0.17	0.16	1.42	79	2.26	1.05	79	1.6	86	0.049	98	98	13.3	0	261	73	72	69	0.042	3.01	0.04
108	18.131	17.191	0.17	0.16	1.41	79	2.25	1.05	79	1.6	86	0.047	100	99	13.3	0	261	73	72	69	0.042	2.84	0.03
109	18.300	17.351	0.17	0.16	1.42	79	2.25	1.05	79	1.6	86	0.046	101	101	13.3	0	261	73	72	69	0.042	2.82	0.04
110	18.469	17.510	0.17	0.16	1.42	79	2.27	1.05	79	1.6	86	0.045	102	102	13.2	-0.1	259	73	72	69	0.041	3.18	0.04
111	18.638	17.670	0.17	0.16	1.41	79	2.26	1.05	79	1.6	86	0.046	101	101	13.2	0	257	73	72	69	0.041	2.28	0.04
112	18.806	17.830	0.17	0.16	1.42	79	2.26	1.05	79	1.6	86	0.047	100	100	13.2	0	257	73	72	69	0.042	2.76	0.03
113	18.975	17.989	0.17	0.16	1.42	80	2.27	1.05	79	1.6	86	0.048	99	98	13.2	0	257	73	72	69	0.042	3.25	0.03
114	19.144	18.149	0.17	0.16	1.41	80	2.26	1.05	79	1.6	86	0.047	100	100	13.1	-0.1	258	73	72	69	0.042	3.38	0.04
115	19.313	18.309	0.17	0.16	1.41	80	2.26	1.05	79	1.6	86	0.046	101	101	13.1	0	257	73	72	69	0.041	2.83	0.05
116	19.482	18.468	0.17	0.16	1.41	80	2.27	1.05	79	1.6	86	0.046	101	100	13.1	0	255	73	72	69	0.041	2.5	0.05
117	19.651	18.627	0.17	0.16	1.41	80	2.26	1.05	79	1.6	86	0.046	101	100	13.1	0	254	73	72	69	0.041	2.54	0.04
118	19.820	18.787	0.17	0.16	1.41	80	2.26	1.05	80	1.6	86	0.044	103	103	13.0	-0.1	255	73	72	69	0.041	3.02	0.03
119	19.986	18.943	0.17	0.16	1.41	80	2.26	1.05	80	1.6	86	0.049	96	95	13.0	0	255	73	72	69	0.041	2.87	0.03
120	20.155	19.103	0.17	0.16	1.42	80	2.27	1.05	80	1.6	86	0.049	98	98	13.0	0	255	73	72	69	0.041	2.99	0.03
121	20.323	19.263	0.17	0.16	1.42	80	2.26	1.04	80	1.6	86	0.045	102	102	13.0	0	255	73	72	69	0.041	2.67	0.03
122	20.491	19.422	0.17	0.16	1.42	80	2.27	1.04	80	1.6	86	0.048	98	98	12.9	-0.1	254	73	72	69	0.040	3.14	0.03
123	20.660	19.582	0.17	0.16	1.42	80	2.27	1.05	80	1.6	86	0.048	99	99	12.9	0	253	73	72	69	0.040	2.53	0.03
124	20.829	19.740	0.17	0.16	1.41	80	2.27	1.04	80	1.6	86	0.047	100	99	12.9	0	253	73	72	69	0.041	2.53	0.02
125	20.998	19.900	0.17	0.16	1.42	80	2.27	1.04	80	1.6	85	0.046	101	101	12.9	0	252	73	72	69	0.040	3	0.02
126	21.167	20.060	0.17	0.16	1.42	80	2.28	1.05	80	1.6	86	0.046	101	101	12.9	0	252	73	72	69	0.040	2.77	0.03
127	21.336	20.219	0.17	0.16	1.41	80	2.27	1.05	80	1.6	86	0.047	100	99	12.8	-0.1	252	73	72	69	0.041	2.57	0.02
128	21.505	20.378	0.17	0.16	1.41	80	2.27	1.05	80	1.6	86	0.048	99	98	12.8	0	251	73	72	69	0.040	2.72	0.02
129	21.674	20.538	0.17	0.16	1.41	80	2.27	1.04	80	1.6	86	0.046	101	101	12.8	0	250	73	72	69	0.040	2.45	0.02
130	21.843	20.696	0.17	0.16	1.42	80	2.27	1.04	80	1.6	86	0.046	101	100	12.8	0	250	73	72	69	0.041	2.7	0.02
131	22.011	20.856	0.17	0.16	1.42	80	2.27	1.05	80	1.6	85	0.048	98	99	12.7	-0.1	250	73	72	69	0.040	3.16	0.02
132	22.180	21.015	0.17	0.16	1.41	80	2.28	1.04	80	1.7	85	0.046	101	100	12.7	0	249	73	72	69	0.040	2.8	0.02
133	22.348	21.174	0.17	0.16	1.41	80	2.28	1.04	80	1.6	85	0.049	97	97	12.7	0	249	73	72	70	0.040	2.6	0.03
134	22.517	21.334	0.17	0.16	1.41	80	2.27	1.04	80	1.6	85	0.047	100	100	12.7	0	248	73	72	69	0.039	2.73	0.02
135	22.686	21.493	0.17	0.16	1.41	80	2.28	1.04	80	1.7	85	0.045	102	101	12.6	-0.1	247	73	72	69	0.039	2.39	0.02
136	22.855	21.652	0.17	0.16	1.41	80	2.28	1.05	80	1.6	85	0.044	103	102	12.7	0.1	248	73	72	69	0.040	2.83	0.03
137	23.024	21.812	0.17	0.16	1.40	80	2.28	1.04	80	1.6	85	0.047	100	100	12.6	-0.1	250	73	72	69	0.040	4.04	0.02
138	23.193	21.970	0.17	0.16	1.41	80	2.28	1.04	80	1.6	85	0.047	100	98	12.6	0	249	73	72	69	0.039	2.77	0.03
139	23.361	22.130	0.17	0.16	1.41	80	2.28	1.04	80	1.7	86	0.047	100	100	12.6	0	249	73	72	69	0.040	2.61	0.03

Pellet Heater Test Data - ASTM E2779 / ASTM E2515

Run: 1

Manufacturer: United States Stove Company
Model: 5780
Tracking No.: 2174
Project No.: 0215PS061E
Test Date: 10-Apr-17
Beginning Clock Time: 09:39

High Burn End Time: 60
Medium Burn End Time: 180
Total Sampling Time: 360 min
Recording Interval: 1 min
Background Sample Volume: 0 cubic feet

Meter Box Y Factor: 0.984 (1) 0.99 (2) 1 (Amb)

Barometric Pressure: Begin 30.16 Middle 30.18 End 30.19 Average 30.18 "Hg

OMNI Equipment Numbers: 132, 185, 209, 335, 336, 410, 559, 594

PM Control Modules: 335/336
Dilution Tunnel MW(dry): 29.00 lb/lb-mole
Dilution Tunnel MW(wet): 28.78 lb/lb-mole
Dilution Tunnel H2O: 2.00 percent
Dilution Tunnel Static: -0.271 "H2O
Tunnel Area: 0.1963 ft2
Pitot Tube Cp: 0.99

Avg. Tunnel Velocity: 14.72 ft/sec.
Intial Tunnel Flow: 174.5 scfm
Average Tunnel Flow: 165.6 scfm
Post-Test Leak Check (1): 0.000 cfm @ -7 in. Hg
Post-Test Leak Check (2): 0.000 cfm @ -9 in. Hg
Fuel Moisture: 6.20 Dry Basis %

Velocity Traverse Data

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	Center	
Initial dP	0.042	0.062	0.070	0.048	0.040	0.064	0.062	0.046	0.052	"H2O
Temp:	89	89	89	89	89	89	89	89	89	°F

V_{strav} 15.58 ft/sec V_{scent} 15.35 ft/sec F_p 1.015

	Particulate Sampling Data														Fuel Weight (lb)		Temperature Data (°F)				Stack Gas Data		
Elapsed Time (min)	Gas Meter 1 (ft^3)	Gas Meter 2 (ft^3)	Sample Rate 1 (cfm)	Sample Rate 2 (cfm)	Orifice dH 1 ("H_2O)	Meter Temp 1 (°F)	Meter Vacuum 1 ("Hg)	Orifice dH 2 ("H_2O)	Meter Temp 2 (°F)	Meter Vacuum 2 ("Hg)	Dilution Tunnel (°F)	Dilution Tunnel Center dP	Pro. Rate 1	Pro. Rate 2	Scale Reading	Weight Change	Stack	Filter 1	Filter 2	Ambient	Draft ("H_2O)	CO_2 (%)	CO (%)
140	23.529	22.289	0.17	0.16	1.42	80	2.29	1.04	80	1.7	86	0.047	100	99	12.5	-0.1	252	73	72	69	0.040	4.26	0.03
141	23.698	22.448	0.17	0.16	1.41	80	2.28	1.04	80	1.7	86	0.049	98	97	12.5	0	252	73	72	69	0.040	3.09	0.05
142	23.867	22.607	0.17	0.16	1.41	80	2.29	1.04	80	1.7	86	0.044	103	102	12.5	0	253	73	72	69	0.041	3.05	0.04
143	24.036	22.766	0.17	0.16	1.41	80	2.28	1.03	80	1.7	86	0.046	101	100	12.4	-0.1	255	73	72	70	0.041	4.16	0.03
144	24.205	22.925	0.17	0.16	1.41	80	2.28	1.04	80	1.7	86	0.046	101	100	12.4	0	254	73	72	69	0.041	2.95	0.05
145	24.374	23.084	0.17	0.16	1.41	80	2.29	1.04	80	1.7	86	0.048	99	98	12.4	0	254	73	72	70	0.040	2.9	0.06
146	24.542	23.243	0.17	0.16	1.40	80	2.29	1.03	80	1.7	86	0.044	103	102	12.4	0	255	73	72	69	0.041	2.94	0.05
147	24.711	23.402	0.17	0.16	1.41	81	2.29	1.04	80	1.7	86	0.047	100	99	12.4	0	256	73	72	70	0.041	3.04	0.04
148	24.880	23.562	0.17	0.16	1.41	81	2.29	1.04	80	1.7	86	0.046	101	101	12.4	0	255	73	72	69	0.040	2.53	0.04
149	25.048	23.720	0.17	0.16	1.41	81	2.29	1.04	80	1.7	86	0.047	99	99	12.4	0	256	73	72	70	0.041	3.28	0.05
150	25.216	23.878	0.17	0.16	1.41	81	2.29	1.04	80	1.7	86	0.046	100	100	12.3	-0.1	255	73	73	69	0.041	2.64	0.05
151	25.385	24.038	0.17	0.16	1.41	81	2.28	1.04	80	1.7	86	0.048	99	99	12.3	0	256	73	73	69	0.041	3.42	0.04
152	25.553	24.196	0.17	0.16	1.41	81	2.29	1.04	80	1.7	86	0.046	100	100	12.3	0	256	73	73	69	0.041	2.75	0.04
153	25.722	24.356	0.17	0.16	1.41	81	2.29	1.04	80	1.7	86	0.049	98	98	12.3	0	254	73	73	69	0.040	2.77	0.04
154	25.891	24.514	0.17	0.16	1.40	81	2.29	1.03	80	1.7	86	0.046	101	100	12.3	0	251	73	73	69	0.040	1.88	0.06
155	26.060	24.673	0.17	0.16	1.41	81	2.29	1.04	80	1.7	86	0.046	101	100	12.2	-0.1	252	73	73	69	0.040	2.94	0.05
156	26.228	24.833	0.17	0.16	1.41	81	2.28	1.04	80	1.7	86	0.047	99	100	12.2	0	252	73	73	70	0.040	2.65	0.04
157	26.397	24.991	0.17	0.16	1.41	81	2.29	1.04	80	1.7	86	0.048	99	97	12.2	0	252	73	73	70	0.040	2.88	0.04
158	26.566	25.149	0.17	0.16	1.41	81	2.29	1.04	81	1.7	86	0.047	100	98	12.1	-0.1	254	73	73	69	0.040	3.74	0.04
159	26.734	25.309	0.17	0.16	1.41	81	2.29	1.04	80	1.7	86	0.047	99	100	12.1	0	252	73	73	69	0.040	2.39	0.04
160	26.902	25.467	0.17	0.16	1.41	81	2.29	1.04	81	1.7	86	0.047	99	98	12.1	0	250	73	73	70	0.040	2.52	0.04
161	27.071	25.626	0.17	0.16	1.41	81	2.29	1.03	81	1.7	86	0.045	102	101	12.1	0	249	73	73	69	0.040	2.45	0.04
162	27.240	25.785	0.17	0.16	1.41	81	2.29	1.04	81	1.7	86	0.044	103	102	12.1	0	248	73	73	69	0.039	2.53	0.04
163	27.408	25.943	0.17	0.16	1.40	81	2.3	1.03	81	1.7	86	0.045	102	101	12.1	0	248	73	73	70	0.039	2.83	0.04
164	27.577	26.103	0.17	0.16	1.40	81	2.3	1.04	81	1.7	86	0.047	100	100	12.0	-0.1	249	73	73	69	0.039	3.09	0.02
165	27.746	26.261	0.17	0.16	1.41	81	2.3	1.04	81	1.7	86	0.046	101	99	12.0	0	248	73	73	69	0.039	2.24	0.04
166	27.918	26.422	0.17	0.16	1.41	81	2.3	1.04	81	1.7	86	0.047	102	100	11.9	-0.1	249	73	73	69	0.040	3.2	0.03
167	28.085	26.581	0.17	0.16	1.41	81	2.3	1.04	81	1.7	86	0.046	100	100	11.9	0	251	73	73	69	0.040	3.21	0.02
168	28.257	26.742	0.17	0.16	1.41	81	2.3	1.04	81	1.7	86	0.047	102	100	11.9	0	249	73	73	69	0.040	2.8	0.03
169	28.428	26.903	0.17	0.16	1.41	81	2.3	1.04	81	1.7	86	0.047	101	100	11.9	0	249	73	73	69	0.039	3.01	0.03
170	28.597	27.063	0.17	0.16	1.40	81	2.3	1.03	81	1.7	86	0.047	100	100	11.9	0	250	73	73	69	0.040	2.88	0.03
171	28.769	27.223	0.17	0.16	1.40	81	2.3	1.04	81	1.7	86	0.049	100	98	11.8	-0.1	249	73	73	69	0.039	2.55	0.03
172	28.937	27.382	0.17	0.16	1.41	81	2.3	1.03	81	1.7	86	0.045	102	101	11.8	0	249	73	73	69	0.039	2.74	0.03
173	29.105	27.541	0.17	0.16	1.41	81	2.3	1.03	81	1.7	86	0.045	102	101	11.8	0	250	73	73	69	0.040	2.74	0.03
174	29.273	27.699	0.17	0.16	1.41	81	2.3	1.03	81	1.7	86	0.046	100	99	11.8	0	251	73	73	69	0.039	3.39	0.04

Pellet Heater Test Data - ASTM E2779 / ASTM E2515

Run: 1

Manufacturer: United States Stove Company
Model: 5780
Tracking No.: 2174
Project No.: 0215PS061E
Test Date: 10-Apr-17
Beginning Clock Time: 09:39

High Burn End Time: 60
Medium Burn End Time: 180
Total Sampling Time: 360 min
Recording Interval: 1 min
Background Sample Volume: 0 cubic feet

Meter Box Y Factor: 0.984 (1) 0.99 (2) 1 (Amb)

Barometric Pressure: Begin 30.16 Middle 30.18 End 30.19 Average 30.18 "Hg

OMNI Equipment Numbers: 132, 185, 209, 335, 336, 410, 559, 594

PM Control Modules: 335/336
Dilution Tunnel MW(dry): 29.00 lb/lb-mole
Dilution Tunnel MW(wet): 28.78 lb/lb-mole
Dilution Tunnel H2O: 2.00 percent
Dilution Tunnel Static: -0.271 "H2O
Tunnel Area: 0.1963 ft2
Pitot Tube Cp: 0.99

Avg. Tunnel Velocity: 14.72 ft/sec.
Intial Tunnel Flow: 174.5 scfm
Average Tunnel Flow: 165.6 scfm
Post-Test Leak Check (1): 0.000 cfm @ -7 in. Hg
Post-Test Leak Check (2): 0.000 cfm @ -9 in. Hg
Fuel Moisture: 6.20 Dry Basis %

Velocity Traverse Data

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	Center	
Initial dP	0.042	0.062	0.070	0.048	0.040	0.064	0.062	0.046	0.052	"H2O
Temp:	89	89	89	89	89	89	89	89	89	°F

V_{strav} 15.58 ft/sec V_{scent} 15.35 ft/sec F_p 1.015

	Particulate Sampling Data														Fuel Weight (lb)		Temperature Data (°F)				Stack Gas Data		
Elapsed Time (min)	Gas Meter 1 (ft^3)	Gas Meter 2 (ft^3)	Sample Rate 1 (cfm)	Sample Rate 2 (cfm)	Orifice dH 1 ("H_2O)	Meter Temp 1 (°F)	Meter Vacuum 1 ("Hg)	Orifice dH 2 ("H_2O)	Meter Temp 2 (°F)	Meter Vacuum 2 ("Hg)	Dilution Tunnel (°F)	Dilution Tunnel Center dP	Pro. Rate 1	Pro. Rate 2	Scale Reading	Weight Change	Stack	Filter 1	Filter 2	Ambient	Draft ("H_2O)	CO_2 (%)	CO (%)
175	29.445	27.860	0.17	0.16	1.41	81	2.3	1.03	81	1.7	86	0.048	101	99	11.7	-0.1	250	73	73	69	0.040	2.29	0.04
176	29.613	28.019	0.17	0.16	1.41	81	2.3	1.03	81	1.7	86	0.047	99	99	11.7	0	251	73	73	70	0.040	2.97	0.02
177	29.782	28.177	0.17	0.16	1.40	81	2.29	1.03	81	1.7	86	0.050	97	95	11.7	0	250	73	73	69	0.039	2.59	0.03
178	29.951	28.336	0.17	0.16	1.40	81	2.31	1.04	81	1.7	86	0.045	102	101	11.7	0	250	73	73	70	0.039	2.8	0.03
179	30.120	28.494	0.17	0.16	1.40	81	2.3	1.03	81	1.7	86	0.044	103	102	11.6	-0.1	249	73	73	69	0.039	2.81	0.03
180	30.288	28.652	0.17	0.16	1.41	81	2.3	1.03	81	1.7	86	0.046	100	99	11.6	0	247	74	73	70	0.039	2.24	0.04
181	30.457	28.811	0.17	0.16	1.41	81	2.3	1.03	81	1.7	86	0.044	103	102	11.6	0	247	74	73	70	0.039	2.74	0.04
182	30.625	28.969	0.17	0.16	1.41	81	2.3	1.03	81	1.7	86	0.044	103	102	11.6	0	248	74	73	69	0.040	2.88	0.02
183	30.793	29.128	0.17	0.16	1.41	81	2.3	1.03	81	1.7	86	0.047	99	99	11.5	-0.1	248	74	73	70	0.039	2.92	0.02
184	30.961	29.286	0.17	0.16	1.41	81	2.31	1.03	81	1.7	87	0.046	100	99	11.5	0	248	74	73	70	0.039	2.33	0.03
185	31.130	29.444	0.17	0.16	1.41	81	2.3	1.03	81	1.7	87	0.047	100	98	11.5	0	249	74	73	70	0.039	2.83	0.03
186	31.298	29.603	0.17	0.16	1.40	81	2.3	1.03	81	1.7	86	0.046	100	100	11.5	0	248	74	73	70	0.039	2.63	0.04
187	31.467	29.761	0.17	0.16	1.41	81	2.3	1.03	81	1.7	87	0.046	101	99	11.4	-0.1	247	74	73	70	0.039	2.48	0.03
188	31.636	29.920	0.17	0.16	1.40	81	2.31	1.03	81	1.7	86	0.048	99	98	11.4	0	247	74	73	70	0.039	2.76	0.02
189	31.804	30.078	0.17	0.16	1.40	81	2.31	1.03	81	1.7	87	0.046	100	99	11.4	0	247	74	73	70	0.039	2.83	0.04
190	31.973	30.236	0.17	0.16	1.40	81	2.3	1.03	81	1.7	87	0.047	100	98	11.4	0	246	74	73	70	0.038	2.25	0.04
191	32.141	30.395	0.17	0.16	1.40	81	2.31	1.03	81	1.7	87	0.045	102	101	11.3	-0.1	247	74	73	70	0.038	2.94	0.03
192	32.309	30.553	0.17	0.16	1.41	81	2.31	1.03	81	1.7	86	0.048	98	97	11.3	0	245	74	73	70	0.037	2.38	0.04
193	32.477	30.711	0.17	0.16	1.41	81	2.3	1.03	81	1.7	87	0.046	100	99	11.3	0	245	74	73	70	0.038	2.48	0.03
194	32.646	30.869	0.17	0.16	1.41	81	2.3	1.02	81	1.7	87	0.043	105	103	11.2	-0.1	246	74	73	70	0.039	2.48	0.03
195	32.814	31.027	0.17	0.16	1.40	81	2.3	1.03	81	1.7	87	0.045	102	101	11.2	0	243	74	73	70	0.037	1.93	0.04
196	32.982	31.186	0.17	0.16	1.41	81	2.31	1.03	81	1.7	87	0.047	99	99	11.2	0	244	74	73	70	0.038	2.69	0.03
197	33.151	31.344	0.17	0.16	1.40	81	2.31	1.03	81	1.7	87	0.045	102	101	11.2	0	245	74	73	70	0.039	2.87	0.03
198	33.319	31.502	0.17	0.16	1.40	81	2.3	1.03	81	1.7	87	0.044	103	102	11.2	0	244	74	73	70	0.038	2.7	0.04
199	33.488	31.660	0.17	0.16	1.39	81	2.31	1.03	81	1.7	87	0.046	101	99	11.1	-0.1	244	74	73	70	0.038	2.68	0.04
200	33.657	31.818	0.17	0.16	1.40	81	2.31	1.02	81	1.7	87	0.046	101	99	11.1	0	242	74	73	70	0.037	2.18	0.04
201	33.825	31.977	0.17	0.16	1.40	82	2.3	1.03	81	1.7	87	0.047	99	99	11.1	0	242	74	73	70	0.038	2.41	0.05
202	33.994	32.134	0.17	0.16	1.40	82	2.3	1.03	81	1.7	87	0.046	101	99	11.1	0	244	74	73	71	0.039	3.08	0.02
203	34.161	32.293	0.17	0.16	1.41	82	2.31	1.03	81	1.7	87	0.045	101	101	11.0	-0.1	247	74	73	70	0.039	3.27	0.03
204	34.329	32.451	0.17	0.16	1.41	82	2.3	1.02	81	1.7	87	0.046	100	99	11.0	0	248	74	73	70	0.039	3.14	0.03
205	34.498	32.609	0.17	0.16	1.41	82	2.31	1.03	81	1.7	88	0.046	101	100	11.0	0	248	74	73	71	0.039	2.76	0.03
206	34.666	32.767	0.17	0.16	1.40	82	2.31	1.03	81	1.7	88	0.044	103	102	10.9	-0.1	249	74	73	71	0.039	2.56	0.03
207	34.835	32.925	0.17	0.16	1.40	82	2.31	1.03	81	1.7	88	0.045	102	101	10.9	0	249	74	73	71	0.039	3.25	0.02
208	35.003	33.083	0.17	0.16	1.40	82	2.31	1.03	81	1.7	88	0.046	100	100	10.9	0	248	74	73	71	0.038	2.56	0.03
209	35.171	33.241	0.17	0.16	1.40	82	2.31	1.03	81	1.7	88	0.045	102	101	10.9	0	248	74	73	71	0.039	2.47	0.03

Pellet Heater Test Data - ASTM E2779 / ASTM E2515

Run: 1

Manufacturer: United States Stove Company
Model: 5780
Tracking No.: 2174
Project No.: 0215PS061E
Test Date: 10-Apr-17
Beginning Clock Time: 09:39

High Burn End Time: 60
Medium Burn End Time: 180
Total Sampling Time: 360 min
Recording Interval: 1 min
Background Sample Volume: 0 cubic feet

Meter Box Y Factor: 0.984 (1) 0.99 (2) 1 (Amb)

Barometric Pressure: Begin 30.16 Middle 30.18 End 30.19 Average 30.18 "Hg

OMNI Equipment Numbers: 132, 185, 209, 335, 336, 410, 559, 594

PM Control Modules: 335/336
Dilution Tunnel MW(dry): 29.00 lb/lb-mole
Dilution Tunnel MW(wet): 28.78 lb/lb-mole
Dilution Tunnel H2O: 2.00 percent
Dilution Tunnel Static: -0.271 "H2O
Tunnel Area: 0.1963 ft2
Pitot Tube Cp: 0.99

Avg. Tunnel Velocity: 14.72 ft/sec.
Intial Tunnel Flow: 174.5 scfm
Average Tunnel Flow: 165.6 scfm
Post-Test Leak Check (1): 0.000 cfm @ -7 in. Hg
Post-Test Leak Check (2): 0.000 cfm @ -9 in. Hg
Fuel Moisture: 6.20 Dry Basis %

Velocity Traverse Data

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	Center	
Initial dP	0.042	0.062	0.070	0.048	0.040	0.064	0.062	0.046	0.052	"H2O
Temp:	89	89	89	89	89	89	89	89	89	°F

V_{strav} 15.58 ft/sec V_{scent} 15.35 ft/sec F_p 1.015

	Particulate Sampling Data														Fuel Weight (lb)		Temperature Data (°F)				Stack Gas Data		
Elapsed Time (min)	Gas Meter 1 (ft^3)	Gas Meter 2 (ft^3)	Sample Rate 1 (cfm)	Sample Rate 2 (cfm)	Orifice dH 1 ("H_2O)	Meter Temp 1 (°F)	Meter Vacuum 1 ("Hg)	Orifice dH 2 ("H_2O)	Meter Temp 2 (°F)	Meter Vacuum 2 ("Hg)	Dilution Tunnel (°F)	Dilution Tunnel Center dP	Pro. Rate 1	Pro. Rate 2	Scale Reading	Weight Change	Stack	Filter 1	Filter 2	Ambient	Draft ("H_2O)	CO_2 (%)	CO (%)
210	35.340	33.399	0.17	0.16	1.39	82	2.32	1.03	81	1.7	87	0.047	100	98	10.9	0	246	74	74	71	0.038	2.57	0.03
211	35.508	33.557	0.17	0.16	1.40	82	2.31	1.03	81	1.7	88	0.043	104	103	10.8	-0.1	245	74	74	70	0.038	2.28	0.03
212	35.677	33.715	0.17	0.16	1.39	82	2.31	1.02	81	1.7	88	0.046	101	100	10.8	0	246	74	74	70	0.038	2.97	0.02
213	35.845	33.873	0.17	0.16	1.40	82	2.31	1.03	82	1.7	88	0.046	100	99	10.8	0	245	74	74	70	0.038	2.22	0.03
214	36.013	34.031	0.17	0.16	1.40	82	2.31	1.02	82	1.7	88	0.046	100	99	10.8	0	246	74	74	71	0.038	2.76	0.02
215	36.181	34.189	0.17	0.16	1.40	82	2.32	1.03	82	1.7	88	0.046	100	99	10.8	0	246	74	74	71	0.038	2.47	0.03
216	36.349	34.347	0.17	0.16	1.40	82	2.31	1.02	82	1.7	88	0.046	100	99	10.7	-0.1	245	74	74	71	0.037	2.96	0.03
217	36.517	34.504	0.17	0.16	1.40	82	2.31	1.02	82	1.7	88	0.046	100	99	10.7	0	243	74	74	71	0.038	2.35	0.03
218	36.686	34.663	0.17	0.16	1.39	82	2.32	1.03	82	1.7	88	0.049	98	97	10.7	0	243	74	74	71	0.038	2.52	0.04
219	36.854	34.820	0.17	0.16	1.39	82	2.32	1.02	82	1.7	88	0.046	100	99	10.7	0	244	74	74	71	0.037	2.69	0.05
220	37.022	34.978	0.17	0.16	1.40	82	2.31	1.02	82	1.7	88	0.046	100	99	10.6	-0.1	243	75	74	71	0.038	2.17	0.05
221	37.191	35.136	0.17	0.16	1.39	82	2.31	1.02	82	1.7	88	0.046	101	99	10.6	0	245	75	74	71	0.038	3.11	0.03
222	37.359	35.293	0.17	0.16	1.40	82	2.31	1.02	82	1.7	88	0.044	103	101	10.6	0	246	75	74	71	0.038	3.25	0.03
223	37.527	35.452	0.17	0.16	1.40	82	2.32	1.02	82	1.7	87	0.044	103	102	10.6	0	245	75	74	71	0.038	2.52	0.04
224	37.696	35.609	0.17	0.16	1.40	82	2.31	1.02	82	1.7	87	0.044	103	101	10.5	-0.1	245	75	74	71	0.038	2.77	0.04
225	37.864	35.769	0.17	0.16	1.39	82	2.32	1.07	82	1.8	87	0.045	101	102	10.5	0	246	75	74	71	0.039	3.22	0.02
226	38.031	35.931	0.17	0.16	1.40	82	2.32	1.07	82	1.8	87	0.044	102	104	10.5	0	244	75	74	71	0.038	2.37	0.04
227	38.200	36.092	0.17	0.16	1.40	82	2.31	1.08	82	1.8	86	0.043	104	105	10.5	0	245	75	74	71	0.039	2.66	0.03
228	38.368	36.254	0.17	0.16	1.40	82	2.32	1.08	82	1.8	86	0.045	101	103	10.4	-0.1	247	75	74	71	0.039	3.31	0.03
229	38.536	36.416	0.17	0.16	1.40	82	2.32	1.08	82	1.8	86	0.045	101	103	10.4	0	246	75	74	71	0.039	2.49	0.03
230	38.704	36.578	0.17	0.16	1.39	82	2.32	1.08	82	1.8	86	0.045	101	103	10.4	0	248	74	74	71	0.039	3.05	0.02
231	38.872	36.739	0.17	0.16	1.40	82	2.32	1.08	82	1.8	86	0.047	99	100	10.3	-0.1	250	74	74	71	0.040	3.16	0.02
232	39.041	36.901	0.17	0.16	1.40	82	2.32	1.08	82	1.8	86	0.045	102	103	10.3	0	247	74	74	71	0.039	2.2	0.03
233	39.209	37.064	0.17	0.16	1.39	82	2.32	1.08	82	1.8	86	0.046	100	102	10.3	0	248	74	74	71	0.039	2.61	0.02
234	39.378	37.225	0.17	0.16	1.40	82	2.32	1.07	82	1.8	86	0.046	101	101	10.3	0	248	74	74	71	0.039	2.74	0.02
235	39.546	37.386	0.17	0.16	1.40	82	2.33	1.08	82	1.8	85	0.049	97	98	10.2	-0.1	247	74	74	70	0.039	2.39	0.02
236	39.714	37.548	0.17	0.16	1.40	82	2.32	1.08	82	1.8	86	0.048	98	100	10.2	0	247	74	74	71	0.039	2.46	0.02
237	39.882	37.711	0.17	0.16	1.40	82	2.32	1.07	82	1.8	85	0.047	99	101	10.2	0	248	74	74	71	0.039	2.93	0.02
238	40.050	37.872	0.17	0.16	1.40	82	2.32	1.07	82	1.8	85	0.049	97	98	10.2	0	246	74	74	71	0.039	2.21	0.03
239	40.218	38.033	0.17	0.16	1.41	82	2.32	1.08	82	1.8	85	0.042	105	106	10.2	0	245	74	74	71	0.038	2.55	0.02
240	40.386	38.195	0.17	0.16	1.40	82	2.33	1.08	82	1.8	85	0.045	101	103	10.2	0	245	74	74	71	0.039	2.53	0.02
241	40.555	38.358	0.17	0.16	1.40	82	2.32	1.08	82	1.8	85	0.045	102	103	10.1	-0.1	244	74	73	71	0.038	2.44	0.04
242	40.723	38.519	0.17	0.16	1.40	82	2.33	1.07	82	1.8	85	0.044	102	103	10.1	0	245	74	73	70	0.039	2.63	0.03
243	40.891	38.680	0.17	0.16	1.39	82	2.32	1.08	82	1.8	84	0.047	99	100	10.1	0	247	74	73	70	0.040	3.25	0.02
244	41.060	38.842	0.17	0.16	1.40	82	2.32	1.08	82	1.8	84	0.048	99	99	10.1	0	245	74	73	70	0.039	2.22	0.05

Pellet Heater Test Data - ASTM E2779 / ASTM E2515

Run: 1

Manufacturer: United States Stove Company
Model: 5780
Tracking No.: 2174
Project No.: 0215PS061E
Test Date: 10-Apr-17
Beginning Clock Time: 09:39

High Burn End Time: 60
Medium Burn End Time: 180
Total Sampling Time: 360 min
Recording Interval: 1 min
Background Sample Volume: 0 cubic feet

Meter Box Y Factor: 0.984 (1) 0.99 (2) 1 (Amb)

Barometric Pressure: Begin 30.16 Middle 30.18 End 30.19 Average 30.18 "Hg

OMNI Equipment Numbers: 132, 185, 209, 335, 336, 410, 559, 594

PM Control Modules: 335/336
Dilution Tunnel MW(dry): 29.00 lb/lb-mole
Dilution Tunnel MW(wet): 28.78 lb/lb-mole
Dilution Tunnel H2O: 2.00 percent
Dilution Tunnel Static: -0.271 "H2O
Tunnel Area: 0.1963 ft2
Pitot Tube Cp: 0.99

Avg. Tunnel Velocity: 14.72 ft/sec.
Intial Tunnel Flow: 174.5 scfm
Average Tunnel Flow: 165.6 scfm
Post-Test Leak Check (1): 0.000 cfm @ -7 in. Hg
Post-Test Leak Check (2): 0.000 cfm @ -9 in. Hg
Fuel Moisture: 6.20 Dry Basis %

Velocity Traverse Data

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	Center	
Initial dP	0.042	0.062	0.070	0.048	0.040	0.064	0.062	0.046	0.052	"H2O
Temp:	89	89	89	89	89	89	89	89	89	°F

V_{strav} 15.58 ft/sec V_{scent} 15.35 ft/sec F_p 1.015

	Particulate Sampling Data														Fuel Weight (lb)		Temperature Data (°F)				Stack Gas Data		
Elapsed Time (min)	Gas Meter 1 (ft^3)	Gas Meter 2 (ft^3)	Sample Rate 1 (cfm)	Sample Rate 2 (cfm)	Orifice dH 1 ("H_2O)	Meter Temp 1 (°F)	Meter Vacuum 1 ("Hg)	Orifice dH 2 ("H_2O)	Meter Temp 2 (°F)	Meter Vacuum 2 ("Hg)	Dilution Tunnel (°F)	Dilution Tunnel Center dP	Pro. Rate 1	Pro. Rate 2	Scale Reading	Weight Change	Stack	Filter 1	Filter 2	Ambient	Draft ("H_2O)	CO_2 (%)	CO (%)
245	41.228	39.004	0.17	0.16	1.40	82	2.32	1.08	82	1.8	84	0.049	97	98	10.0	-0.1	247	74	73	70	0.040	3.18	0.02
246	41.397	39.166	0.17	0.16	1.40	82	2.33	1.07	82	1.8	84	0.049	97	98	10.0	0	247	74	73	70	0.039	3.09	0.03
247	41.565	39.327	0.17	0.16	1.39	82	2.33	1.07	82	1.8	83	0.046	100	101	10.0	0	244	74	73	70	0.039	2.14	0.05
248	41.733	39.489	0.17	0.16	1.41	82	2.32	1.08	82	1.8	83	0.047	99	100	10.0	0	243	74	73	70	0.039	2.59	0.04
249	41.901	39.651	0.17	0.16	1.40	82	2.32	1.08	82	1.8	83	0.048	98	99	9.9	-0.1	245	74	73	70	0.039	3	0.04
250	42.069	39.813	0.17	0.16	1.40	82	2.33	1.08	82	1.8	83	0.048	98	99	9.9	0	245	74	73	69	0.040	2.73	0.03
251	42.237	39.974	0.17	0.16	1.41	82	2.32	1.08	82	1.8	83	0.045	101	102	9.9	0	245	74	73	70	0.039	2.69	0.03
252	42.406	40.136	0.17	0.16	1.40	82	2.33	1.08	82	1.8	83	0.046	101	101	9.9	0	246	74	73	69	0.039	3.14	0.03
253	42.574	40.298	0.17	0.16	1.40	82	2.33	1.08	82	1.8	83	0.050	96	97	9.9	0	243	74	73	70	0.039	2.4	0.05
254	42.743	40.459	0.17	0.16	1.40	82	2.33	1.07	82	1.8	83	0.050	96	97	9.8	-0.1	244	73	73	70	0.039	2.73	0.05
255	42.911	40.621	0.17	0.16	1.39	82	2.33	1.08	82	1.8	83	0.049	97	98	9.8	0	246	73	73	70	0.039	3.26	0.03
256	43.080	40.783	0.17	0.16	1.40	82	2.33	1.08	82	1.8	83	0.048	98	99	9.8	0	245	73	73	70	0.039	2.62	0.04
257	43.248	40.945	0.17	0.16	1.40	82	2.32	1.07	82	1.8	83	0.046	100	101	9.7	-0.1	247	73	73	70	0.040	3.36	0.03
258	43.416	41.106	0.17	0.16	1.40	82	2.33	1.07	82	1.8	83	0.049	97	98	9.7	0	249	73	73	69	0.040	3.22	0.03
259	43.584	41.268	0.17	0.16	1.40	82	2.33	1.08	82	1.8	83	0.046	100	101	9.7	0	247	73	72	69	0.039	2.46	0.04
260	43.752	41.430	0.17	0.16	1.40	82	2.32	1.07	82	1.8	83	0.048	98	99	9.6	-0.1	248	73	73	69	0.040	2.59	0.04
261	43.920	41.591	0.17	0.16	1.40	82	2.33	1.07	82	1.8	83	0.049	97	98	9.6	0	250	73	72	70	0.040	2.96	0.04
262	44.088	41.753	0.17	0.16	1.40	82	2.33	1.08	82	1.8	83	0.050	96	97	9.6	0	249	73	72	70	0.039	3.13	0.04
263	44.257	41.914	0.17	0.16	1.40	82	2.33	1.08	82	1.8	84	0.048	99	99	9.6	0	248	73	72	70	0.039	2.47	0.04
264	44.425	42.076	0.17	0.16	1.40	82	2.34	1.07	82	1.8	83	0.048	98	99	9.6	0	246	73	72	70	0.039	2.38	0.03
265	44.594	42.238	0.17	0.16	1.40	82	2.33	1.07	82	1.8	83	0.047	99	100	9.5	-0.1	245	73	72	70	0.039	2.67	0.04
266	44.762	42.399	0.17	0.16	1.39	82	2.34	1.07	82	1.8	83	0.047	99	100	9.5	0	244	73	72	70	0.038	2.52	0.03
267	44.931	42.560	0.17	0.16	1.40	82	2.33	1.07	82	1.8	83	0.047	99	100	9.4	-0.1	246	73	72	70	0.039	3.27	0.03
268	45.099	42.722	0.17	0.16	1.40	82	2.34	1.07	82	1.8	83	0.048	98	99	9.4	0	247	73	72	70	0.040	3.13	0.03
269	45.267	42.883	0.17	0.16	1.40	82	2.33	1.07	82	1.8	83	0.047	99	100	9.4	0	244	73	72	70	0.038	2.17	0.04
270	45.435	43.044	0.17	0.16	1.39	82	2.33	1.07	82	1.8	83	0.049	97	98	9.4	0	245	73	72	70	0.040	2.9	0.03
271	45.603	43.206	0.17	0.16	1.41	82	2.33	1.07	82	1.8	83	0.047	99	100	9.4	0	244	73	72	70	0.039	2.72	0.04
272	45.771	43.368	0.17	0.16	1.40	82	2.34	1.07	82	1.8	83	0.045	101	103	9.3	-0.1	244	73	72	69	0.039	2.77	0.06
273	45.939	43.529	0.17	0.16	1.40	82	2.34	1.07	82	1.8	83	0.047	99	100	9.3	0	246	73	72	69	0.039	2.95	0.05
274	46.107	43.690	0.17	0.16	1.40	82	2.34	1.07	82	1.8	83	0.044	102	103	9.3	0	246	73	72	69	0.039	2.87	0.05
275	46.276	43.852	0.17	0.16	1.40	82	2.34	1.07	82	1.8	83	0.047	99	100	9.2	-0.1	246	73	72	69	0.039	2.55	0.06
276	46.444	44.013	0.17	0.16	1.40	82	2.33	1.07	82	1.8	83	0.047	99	100	9.2	0	246	73	72	69	0.039	2.67	0.05
277	46.613	44.174	0.17	0.16	1.40	82	2.33	1.07	82	1.8	83	0.048	98	99	9.2	0	244	73	72	70	0.038	2.71	0.05
278	46.781	44.336	0.17	0.16	1.39	82	2.33	1.07	82	1.8	83	0.046	100	101	9.2	0	242	73	72	69	0.039	2.17	0.05
279	46.949	44.498	0.17	0.16	1.39	82	2.34	1.07	82	1.8	83	0.047	99	100	9.2	0	245	73	72	69	0.040	2.94	0.04

Pellet Heater Test Data - ASTM E2779 / ASTM E2515

Run: 1

Manufacturer: United States Stove Company
Model: 5780
Tracking No.: 2174
Project No.: 0215PS061E
Test Date: 10-Apr-17
Beginning Clock Time: 09:39

High Burn End Time: 60
Medium Burn End Time: 180
Total Sampling Time: 360 min
Recording Interval: 1 min
Background Sample Volume: 0 cubic feet

Meter Box Y Factor: 0.984 (1) 0.99 (2) 1 (Amb)

Barometric Pressure: Begin 30.16 Middle 30.18 End 30.19 Average 30.18 "Hg

OMNI Equipment Numbers: 132, 185, 209, 335, 336, 410, 559, 594

PM Control Modules: 335/336
Dilution Tunnel MW(dry): 29.00 lb/lb-mole
Dilution Tunnel MW(wet): 28.78 lb/lb-mole
Dilution Tunnel H2O: 2.00 percent
Dilution Tunnel Static: -0.271 "H2O
Tunnel Area: 0.1963 ft2
Pitot Tube Cp: 0.99

Avg. Tunnel Velocity: 14.72 ft/sec.
Intial Tunnel Flow: 174.5 scfm
Average Tunnel Flow: 165.6 scfm
Post-Test Leak Check (1): 0.000 cfm @ -7 in. Hg
Post-Test Leak Check (2): 0.000 cfm @ -9 in. Hg
Fuel Moisture: 6.20 Dry Basis %

Velocity Traverse Data

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	Center	
Initial dP	0.042	0.062	0.070	0.048	0.040	0.064	0.062	0.046	0.052	"H2O
Temp:	89	89	89	89	89	89	89	89	89	°F

V_{strav} 15.58 ft/sec V_{scent} 15.35 ft/sec F_p 1.015

	Particulate Sampling Data														Fuel Weight (lb)		Temperature Data (°F)				Stack Gas Data		
Elapsed Time (min)	Gas Meter 1 (ft^3)	Gas Meter 2 (ft^3)	Sample Rate 1 (cfm)	Sample Rate 2 (cfm)	Orifice dH 1 ("H_2O)	Meter Temp 1 (°F)	Meter Vacuum 1 ("Hg)	Orifice dH 2 ("H_2O)	Meter Temp 2 (°F)	Meter Vacuum 2 ("Hg)	Dilution Tunnel (°F)	Dilution Tunnel Center dP	Pro. Rate 1	Pro. Rate 2	Scale Reading	Weight Change	Stack	Filter 1	Filter 2	Ambient	Draft ("H_2O)	CO_2 (%)	CO (%)
280	47.118	44.659	0.17	0.16	1.39	82	2.34	1.07	82	1.8	83	0.047	99	100	9.1	-0.1	245	73	72	70	0.039	2.77	0.04
281	47.285	44.820	0.17	0.16	1.40	82	2.34	1.07	81	1.8	83	0.050	95	97	9.1	0	246	73	72	69	0.039	3.04	0.04
282	47.453	44.981	0.17	0.16	1.39	82	2.34	1.07	81	1.8	83	0.044	102	103	9.1	0	247	73	72	70	0.039	2.85	0.03
283	47.621	45.143	0.17	0.16	1.40	82	2.33	1.07	81	1.8	83	0.046	100	102	9.1	0	245	73	72	69	0.039	2.85	0.04
284	47.789	45.304	0.17	0.16	1.40	82	2.34	1.07	81	1.8	83	0.047	99	100	9.1	0	243	73	72	69	0.039	2.44	0.04
285	47.957	45.464	0.17	0.16	1.39	82	2.34	1.07	81	1.8	83	0.045	101	101	9.0	-0.1	244	73	72	69	0.040	2.63	0.06
286	48.125	45.626	0.17	0.16	1.39	82	2.34	1.07	81	1.8	83	0.048	98	100	9.0	0	245	73	72	69	0.039	3.39	0.06
287	48.294	45.787	0.17	0.16	1.40	81	2.34	1.07	81	1.8	83	0.044	103	103	9.0	0	244	73	72	69	0.039	2.68	0.05
288	48.461	45.948	0.17	0.16	1.39	81	2.34	1.07	81	1.8	83	0.048	97	99	8.9	-0.1	245	73	72	69	0.040	3.18	0.05
289	48.630	46.109	0.17	0.16	1.40	81	2.34	1.06	81	1.8	83	0.048	99	99	8.9	0	248	73	72	69	0.040	4.57	0.06
290	48.798	46.271	0.17	0.16	1.39	81	2.34	1.06	81	1.8	83	0.048	98	100	8.8	-0.1	250	73	72	69	0.040	3.58	0.08
291	48.966	46.431	0.17	0.16	1.39	81	2.33	1.07	81	1.8	84	0.049	97	97	8.8	0	251	73	72	69	0.041	3.27	0.08
292	49.134	46.592	0.17	0.16	1.39	81	2.33	1.07	81	1.8	84	0.047	99	100	8.8	0	254	73	72	69	0.041	4.12	0.07
293	49.302	46.753	0.17	0.16	1.40	81	2.34	1.07	81	1.8	83	0.048	98	99	8.7	-0.1	256	73	72	70	0.041	3.7	0.08
294	49.470	46.914	0.17	0.16	1.39	81	2.34	1.06	81	1.8	84	0.044	102	103	8.7	0	256	73	72	69	0.041	2.81	0.11
295	49.637	47.075	0.17	0.16	1.40	81	2.34	1.06	81	1.8	84	0.045	101	102	8.7	0	258	73	72	69	0.042	3.81	0.07
296	49.805	47.236	0.17	0.16	1.40	81	2.34	1.07	81	1.8	83	0.049	97	98	8.6	-0.1	259	73	72	69	0.042	3.33	0.09
297	49.973	47.398	0.17	0.16	1.40	81	2.35	1.06	81	1.8	84	0.049	97	99	8.6	0	259	73	72	69	0.042	3.07	0.1
298	50.141	47.558	0.17	0.16	1.40	81	2.34	1.06	81	1.8	84	0.045	101	102	8.6	0	259	73	72	69	0.041	3.71	0.07
299	50.309	47.718	0.17	0.16	1.39	81	2.34	1.07	81	1.8	84	0.045	101	102	8.6	0	257	73	72	69	0.041	2.64	0.09
300	50.477	47.880	0.17	0.16	1.39	81	2.34	1.06	81	1.8	83	0.048	98	100	8.6	0	255	73	72	69	0.041	2.48	0.09
301	50.645	48.040	0.17	0.16	1.39	81	2.34	1.06	81	1.8	84	0.046	100	100	8.5	-0.1	258	73	72	69	0.043	3.86	0.06
302	50.812	48.201	0.17	0.16	1.40	81	2.35	1.06	81	1.8	83	0.045	101	102	8.5	0	257	73	72	69	0.042	2.76	0.09
303	50.981	48.361	0.17	0.16	1.39	81	2.34	1.06	81	1.8	83	0.049	98	97	8.5	0	257	73	72	69	0.042	2.87	0.07
304	51.149	48.523	0.17	0.16	1.39	81	2.34	1.06	81	1.8	84	0.048	98	100	8.5	0	257	73	72	69	0.042	2.96	0.07
305	51.316	48.683	0.17	0.16	1.40	81	2.35	1.06	81	1.8	83	0.044	102	103	8.4	-0.1	255	73	72	68	0.041	2.57	0.09
306	51.484	48.844	0.17	0.16	1.39	81	2.35	1.06	81	1.8	83	0.044	102	103	8.4	0	254	73	72	69	0.041	2.52	0.08
307	51.652	49.005	0.17	0.16	1.39	81	2.34	1.06	81	1.8	83	0.046	100	101	8.4	0	256	73	72	68	0.042	3.36	0.07
308	51.820	49.165	0.17	0.16	1.39	81	2.35	1.06	81	1.8	83	0.047	99	99	8.3	-0.1	256	72	72	69	0.041	2.95	0.07
309	51.987	49.325	0.17	0.16	1.40	81	2.34	1.06	81	1.8	83	0.047	98	99	8.3	0	255	72	72	69	0.041	2.45	0.07
310	52.155	49.487	0.17	0.16	1.40	81	2.35	1.06	81	1.8	83	0.048	98	100	8.3	0	256	72	72	68	0.042	3.15	0.06
311	52.322	49.647	0.17	0.16	1.39	81	2.35	1.05	81	1.8	83	0.047	98	99	8.2	-0.1	253	72	72	68	0.040	2.58	0.06
312	52.490	49.807	0.17	0.16	1.40	81	2.34	1.06	81	1.8	83	0.048	98	98	8.2	0	251	72	72	69	0.040	2.22	0.07
313	52.658	49.968	0.17	0.16	1.40	81	2.36	1.06	81	1.8	83	0.044	102	103	8.2	0	253	72	72	69	0.040	3.1	0.06
314	52.826	50.129	0.17	0.16	1.39	81	2.35	1.06	81	1.8	84	0.047	99	100	8.2	0	251	72	72	69	0.040	2.28	0.07

Pellet Heater Test Data - ASTM E2779 / ASTM E2515

Run: 1

Manufacturer: United States Stove Company
Model: 5780
Tracking No.: 2174
Project No.: 0215PS061E
Test Date: 10-Apr-17
Beginning Clock Time: 09:39

High Burn End Time: 60
Medium Burn End Time: 180
Total Sampling Time: 360 min
Recording Interval: 1 min
Background Sample Volume: 0 cubic feet

Meter Box Y Factor: 0.984 (1) 0.99 (2) 1 (Amb)

Barometric Pressure: Begin 30.16 Middle 30.18 End 30.19 Average 30.18 "Hg

OMNI Equipment Numbers: 132, 185, 209, 335, 336, 410, 559, 594

PM Control Modules: 335/336
Dilution Tunnel MW(dry): 29.00 lb/lb-mole
Dilution Tunnel MW(wet): 28.78 lb/lb-mole
Dilution Tunnel H2O: 2.00 percent
Dilution Tunnel Static: -0.271 "H2O
Tunnel Area: 0.1963 ft2
Pitot Tube Cp: 0.99

Avg. Tunnel Velocity: 14.72 ft/sec.
Intial Tunnel Flow: 174.5 scfm
Average Tunnel Flow: 165.6 scfm
Post-Test Leak Check (1): 0.000 cfm @ -7 in. Hg
Post-Test Leak Check (2): 0.000 cfm @ -9 in. Hg
Fuel Moisture: 6.20 Dry Basis %

Velocity Traverse Data

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	Center	
Initial dP	0.042	0.062	0.070	0.048	0.040	0.064	0.062	0.046	0.052	"H2O
Temp:	89	89	89	89	89	89	89	89	89	°F

V_{strav} 15.58 ft/sec V_{scent} 15.35 ft/sec F_p 1.015

	Particulate Sampling Data														Fuel Weight (lb)		Temperature Data (°F)				Stack Gas Data		
Elapsed Time (min)	Gas Meter 1 (ft^3)	Gas Meter 2 (ft^3)	Sample Rate 1 (cfm)	Sample Rate 2 (cfm)	Orifice dH 1 ("H_2O)	Meter Temp 1 (°F)	Meter Vacuum 1 ("Hg)	Orifice dH 2 ("H_2O)	Meter Temp 2 (°F)	Meter Vacuum 2 ("Hg)	Dilution Tunnel (°F)	Dilution Tunnel Center dP	Pro. Rate 1	Pro. Rate 2	Scale Reading	Weight Change	Stack	Filter 1	Filter 2	Ambient	Draft ("H_2O)	CO_2 (%)	CO (%)
315	52.994	50.289	0.17	0.16	1.39	81	2.36	1.06	81	1.8	83	0.048	98	98	8.2	0	251	72	72	68	0.040	2.42	0.06
316	53.161	50.449	0.17	0.16	1.39	81	2.35	1.06	81	1.8	83	0.045	101	101	8.1	-0.1	252	72	72	68	0.040	3.18	0.03
317	53.329	50.610	0.17	0.16	1.39	81	2.35	1.06	81	1.8	83	0.048	98	99	8.1	0	249	72	72	69	0.039	2.26	0.07
318	53.497	50.770	0.17	0.16	1.39	81	2.35	1.06	81	1.8	83	0.044	102	103	8.1	0	248	72	72	68	0.040	2.57	0.05
319	53.665	50.930	0.17	0.16	1.39	81	2.35	1.06	81	1.8	83	0.047	99	99	8.1	0	250	72	71	69	0.040	3.22	0.04
320	53.832	51.092	0.17	0.16	1.39	81	2.36	1.06	81	1.8	83	0.045	101	103	8.0	-0.1	249	72	71	68	0.040	2.55	0.07
321	54.000	51.251	0.17	0.16	1.39	81	2.36	1.06	81	1.8	83	0.047	99	99	8.0	0	248	72	71	68	0.040	2.14	0.08
322	54.168	51.411	0.17	0.16	1.39	81	2.36	1.06	81	1.8	83	0.049	97	97	8.0	0	250	72	71	68	0.040	3.46	0.06
323	54.335	51.572	0.17	0.16	1.40	81	2.36	1.06	81	1.8	83	0.045	101	102	7.9	-0.1	250	72	71	69	0.040	3.15	0.07
324	54.502	51.732	0.17	0.16	1.39	81	2.36	1.05	81	1.8	83	0.049	96	97	7.9	0	249	72	71	68	0.040	2.43	0.08
325	54.669	51.891	0.17	0.16	1.39	81	2.36	1.06	81	1.8	83	0.046	100	100	7.9	0	252	72	71	68	0.041	3.49	0.05
326	54.837	52.052	0.17	0.16	1.39	81	2.36	1.05	81	1.8	82	0.049	97	98	7.9	0	248	72	71	68	0.039	2.13	0.08
327	55.004	52.212	0.17	0.16	1.39	81	2.36	1.05	81	1.9	82	0.047	98	99	7.9	0	246	72	71	68	0.040	2.1	0.06
328	55.172	52.371	0.17	0.16	1.39	81	2.36	1.06	81	1.9	82	0.047	99	99	7.8	-0.1	245	72	71	68	0.039	2.34	0.05
329	55.339	52.532	0.17	0.16	1.39	81	2.36	1.05	81	1.9	82	0.048	97	99	7.8	0	245	72	71	68	0.039	2.9	0.05
330	55.506	52.692	0.17	0.16	1.39	81	2.36	1.05	81	1.9	82	0.046	99	100	7.8	0	244	72	71	68	0.039	2.4	0.05
331	55.674	52.852	0.17	0.16	1.39	81	2.36	1.05	81	1.9	82	0.048	98	98	7.8	0	245	72	71	68	0.040	2.95	0.05
332	55.841	53.012	0.17	0.16	1.39	81	2.37	1.06	81	1.9	81	0.043	103	104	7.8	0	243	72	71	68	0.039	2.28	0.05
333	56.009	53.172	0.17	0.16	1.39	81	2.37	1.05	81	1.9	82	0.049	97	97	7.7	-0.1	245	72	71	68	0.040	3.07	0.04
334	56.177	53.331	0.17	0.16	1.39	81	2.37	1.05	81	1.9	82	0.048	98	98	7.7	0	246	72	71	68	0.040	2.64	0.04
335	56.344	53.492	0.17	0.16	1.38	81	2.37	1.05	81	1.9	81	0.046	99	101	7.7	0	244	72	71	68	0.039	2.42	0.03
336	56.511	53.651	0.17	0.16	1.39	81	2.36	1.05	81	1.9	81	0.050	95	96	7.7	0	243	72	71	68	0.039	2.33	0.05
337	56.679	53.811	0.17	0.16	1.38	81	2.37	1.05	81	1.9	81	0.049	97	97	7.6	-0.1	246	72	71	68	0.040	3.16	0.03
338	56.846	53.971	0.17	0.16	1.38	81	2.36	1.05	81	1.9	81	0.044	102	102	7.6	0	244	72	71	68	0.039	2.35	0.05
339	57.013	54.131	0.17	0.16	1.38	81	2.37	1.04	81	1.9	81	0.048	97	98	7.6	0	243	72	71	68	0.039	2.4	0.05
340	57.181	54.290	0.17	0.16	1.39	81	2.37	1.05	81	1.9	81	0.047	99	99	7.6	0	244	72	71	68	0.040	2.85	0.04
341	57.348	54.450	0.17	0.16	1.39	81	2.37	1.05	81	1.9	81	0.047	98	99	7.5	-0.1	244	72	71	68	0.039	2.81	0.05
342	57.515	54.609	0.17	0.16	1.39	81	2.38	1.04	81	1.9	81	0.048	97	97	7.5	0	244	72	71	68	0.039	2.57	0.06
343	57.682	54.769	0.17	0.16	1.39	81	2.38	1.05	81	1.9	81	0.049	96	97	7.5	0	245	72	71	68	0.039	2.71	0.04
344	57.849	54.929	0.17	0.16	1.38	81	2.38	1.05	81	1.9	81	0.047	98	99	7.5	0	243	72	71	68	0.039	2.55	0.05
345	58.016	55.088	0.17	0.16	1.39	80	2.38	1.05	80	1.9	81	0.048	97	98	7.4	-0.1	243	72	71	68	0.039	2.45	0.04
346	58.182	55.247	0.17	0.16	1.39	81	2.37	1.05	80	1.9	81	0.047	98	99	7.4	0	242	72	71	68	0.039	2.05	0.04
347	58.350	55.408	0.17	0.16	1.39	80	2.37	1.05	80	1.9	81	0.048	98	99	7.4	0	241	72	71	68	0.039	2.49	0.04
348	58.517	55.566	0.17	0.16	1.39	80	2.37	1.05	80	1.9	81	0.049	96	96	7.4	0	242	72	71	68	0.039	2.8	0.04
349	58.684	55.726	0.17	0.16	1.38	80	2.38	1.04	80	1.9	81	0.047	98	99	7.3	-0.1	242	71	71	68	0.040	2.5	0.04

Pellet Heater Test Data - ASTM E2779 / ASTM E2515

Run: 1

Manufacturer:	United States Stove Company	High Burn End Time:	60				
Model:	5780	Medium Burn End Time:	180				
Tracking No.:	2174	Total Sampling Time:	360	min			
Project No.:	0215PS061E	Recording Interval:	1	min			
Test Date:	10-Apr-17						
Beginning Clock Time:	09:39	Background Sample Volume:	0	cubic feet			

Meter Box Y Factor: 0.984 (1) 0.99 (2) 1 (Amb)

Barometric Pressure:	Begin	Middle	End	Average
	30.16	30.18	30.19	30.18 "Hg

OMNI Equipment Numbers: 132, 185, 209, 335, 336, 410, 559, 594

PM Control Modules:	335/336					
Dilution Tunnel MW(dry):	29.00	lb/lb-mole	Avg. Tunnel Velocity:	14.72	ft/sec.	
Dilution Tunnel MW(wet):	28.78	lb/lb-mole	Intial Tunnel Flow:	174.5	scfm	
Dilution Tunnel H2O:	2.00	percent	Average Tunnel Flow:	165.6	scfm	
Dilution Tunnel Static:	-0.271	"H2O	Post-Test Leak Check (1):	0.000	cfm @ -7	in. Hg
Tunnel Area:	0.1963	ft2	Post-Test Leak Check (2):	0.000	cfm @ -9	in. Hg
Pitot Tube Cp:	0.99		Fuel Moisture:	6.20	Dry Basis %	

Velocity Traverse Data										
	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	Center	
Initial dP	0.042	0.062	0.070	0.048	0.040	0.064	0.062	0.046	0.052	"H2O
Temp:	89	89	89	89	89	89	89	89	89	°F

V_{strav} 15.58 ft/sec V_{scent} 15.35 ft/sec F_p 1.015

	Particulate Sampling Data														Fuel Weight (lb)		Temperature Data (°F)				Stack Gas Data		
Elapsed Time (min)	Gas Meter 1 (ft^3)	Gas Meter 2 (ft^3)	Sample Rate 1 (cfm)	Sample Rate 2 (cfm)	Orifice dH 1 ("H_2O)	Meter Temp 1 (°F)	Meter Vacuum 1 ("Hg)	Orifice dH 2 ("H_2O)	Meter Temp 2 (°F)	Meter Vacuum 2 ("Hg)	Dilution Tunnel (°F)	Dilution Tunnel Center dP	Pro. Rate 1	Pro. Rate 2	Scale Reading	Weight Change	Stack	Filter 1	Filter 2	Ambient	Draft ("H_2O)	CO_2 (%)	CO (%)
350	58.851	55.885	0.17	0.16	1.39	80	2.38	1.05	80	1.9	81	0.045	101	101	7.3	0	243	71	71	68	0.039	2.97	0.03
351	59.018	56.044	0.17	0.16	1.38	80	2.39	1.05	80	1.9	81	0.047	98	99	7.3	0	243	71	71	68	0.039	2.57	0.03
352	59.184	56.203	0.17	0.16	1.39	80	2.38	1.04	80	1.9	81	0.048	97	98	7.3	0	240	71	71	68	0.039	2.03	0.05
353	59.351	56.363	0.17	0.16	1.39	80	2.38	1.04	80	1.9	81	0.049	96	97	7.2	-0.1	241	71	71	68	0.039	2.82	0.05
354	59.518	56.522	0.17	0.16	1.38	80	2.39	1.04	80	1.9	81	0.052	94	94	7.2	0	241	71	71	68	0.039	2.5	0.05
355	59.685	56.681	0.17	0.16	1.38	80	2.39	1.04	80	1.9	81	0.048	97	98	7.2	0	242	71	71	68	0.039	2.74	0.04
356	59.852	56.840	0.17	0.16	1.38	80	2.38	1.04	80	1.9	81	0.047	98	99	7.2	0	243	71	71	68	0.039	3.05	0.04
357	60.019	56.999	0.17	0.16	1.38	80	2.39	1.04	80	1.9	81	0.050	95	96	7.2	0	241	71	71	68	0.039	2.22	0.04
358	60.186	57.159	0.17	0.16	1.38	80	2.4	1.03	80	1.9	81	0.050	95	96	7.1	-0.1	241	71	71	68	0.039	2.53	0.03
359	60.352	57.317	0.17	0.16	1.38	80	2.39	1.04	80	1.9	81	0.046	99	99	7.1	0	243	71	71	68	0.039	3.07	0.04
360	60.519	57.476	0.17	0.16	1.38	80	2.4	1.04	80	1.9	81	0.046	100	100	7.1	0	241	71	71	68	0.038	2.37	0.04
Avg/Tot	60.519	57.476	0.17	0.16	1.40	79	2.31	1.05	79	1.67	86	0.05	100	100			275	73	72	69	0.044	3.69	0.04

OMNI-Test Laboratories

Manufacturer: States Stove Company
Model: 5780
Date: 04/10/17
Run: 1
Control #: 0215PS061E
Test Duration: 360
Output Category: Integrated

Technicians: _____

Test Results in Accordance with CSA B415.1-09

	HHV Basis	LHV Basis
Overall Efficiency	72.0%	77.0%
Combustion Efficiency	99.5%	99.5%
Heat Transfer Efficiency	72%	77.4%

Output Rate (kJ/h)	12,338	11,704	**(Btu/h)**
Burn Rate (kg/h)	0.85	1.87	**(lb/h)**
Input (kJ/h)	17,134	16,254	**(Btu/h)**

Test Load Weight (dry kg)	5.08	11.21	**dry lb**
MC wet (%)	5.838041431		
MC dry (%)	6.20		
Particulate (g)	7.76		
CO (g)	74		
Test Duration (h)	6.00		

Emissions	Particulate	CO
g/MJ Output	0.10	1.00
g/kg Dry Fuel	1.53	14.62
g/h	1.29	12.39
lb/MM Btu Output	0.24	2.33

Air/Fuel Ratio (A/F)	32.84

VERSION: **2.2** **12/14/2009**

OMNI-Test Laboratories

Manufacturer: States Stove Company
Model: 5780
Date: 04/10/17
Run: 1
Control #: 0215PS061E
Test Duration: 60
Output Category: Maximum

Technicians: _____

_____

_____

Test Results in Accordance with CSA B415.1-09

	HHV Basis	LHV Basis
Overall Efficiency	76.7%	82.0%
Combustion Efficiency	99.5%	99.5%
Heat Transfer Efficiency	77%	82.4%

Output Rate (kJ/h)	27,815	26,386	**(Btu/h)**
Burn Rate (kg/h)	1.79	3.95	**(lb/h)**
Input (kJ/h)	36,284	34,419	**(Btu/h)**

Test Load Weight (dry kg)	1.79	3.95	**dry lb**
MC wet (%)	5.838041431		
MC dry (%)	6.20		
Particulate (g)	0		
CO (g)	14		
Test Duration (h)	1.00		

Emissions	**Particulate**	**CO**
g/MJ Output	0.00	0.52
g/kg Dry Fuel	0.00	8.02
g/h	0.00	14.40
lb/MM Btu Output	0.00	1.20

Air/Fuel Ratio (A/F)	16.08

VERSION: **2.2** **12/14/2009**

OMNI-Test Laboratories

Manufacturer: States Stove Company
Model: 5780
Date: 04/10/17
Run: 1
Control #: 0215PS061E
Test Duration: 120
Output Category: Medium

Technicians: _____

Test Results in Accordance with CSA B415.1-09

	HHV Basis	LHV Basis
Overall Efficiency	69.4%	74.2%
Combustion Efficiency	99.5%	99.5%
Heat Transfer Efficiency	70%	74.5%

Output Rate (kJ/h)	9,590	9,097	**(Btu/h)**
Burn Rate (kg/h)	0.68	1.51	**(lb/h)**
Input (kJ/h)	13,822	13,112	**(Btu/h)**

Test Load Weight (dry kg)	1.37	3.01	**dry lb**
MC wet (%)	5.838041431		
MC dry (%)	6.20		
Particulate (g)	0		
CO (g)	23		
Test Duration (h)	2.00		

Emissions	**Particulate**	**CO**
g/MJ Output	0.00	1.19
g/kg Dry Fuel	0.00	16.76
g/h	0.00	11.46
lb/MM Btu Output	0.00	2.78

Air/Fuel Ratio (A/F)	38.43

VERSION: **2.2** **12/14/2009**

OMNI-Test Laboratories

Manufacturer: States Stove Company
Model: 5780
Date: 04/10/17
Run: 1
Control #: 0215PS061E
Test Duration: 180
Output Category: Minimum

Technicians: _____

Test Results in Accordance with CSA B415.1-09

	HHV Basis	LHV Basis
Overall Efficiency	69.2%	74.0%
Combustion Efficiency	99.5%	99.5%
Heat Transfer Efficiency	70%	74.4%

Output Rate (kJ/h)	8,968	8,507	**(Btu/h)**
Burn Rate (kg/h)	0.64	1.41	**(lb/h)**
Input (kJ/h)	12,959	12,293	**(Btu/h)**

Test Load Weight (dry kg)	1.92	4.24	**dry lb**
MC wet (%)	5.838041431		
MC dry (%)	6.20		
Particulate (g)	0		
CO (g)	37		
Test Duration (h)	3.00		

Emissions	**Particulate**	**CO**
g/MJ Output	0.00	1.37
g/kg Dry Fuel	0.00	19.19
g/h	0.00	12.30
lb/MM Btu Output	0.00	3.19

Air/Fuel Ratio (A/F)	43.88

VERSION: **2.2** **12/14/2009**

Client: **US Stove** Project Number: **0215PS061E** Run Number: **1**
Model: **5780** Tracking Number: **2174** Date: **4/10//17**
Test Crew: **S. Button, A. Kravitz**
OMNI Equipment ID numbers: 132, 185, 209, 224, 283A, 335, 336, 410, 420, 559, 592, 594

Pellet Heater Run Notes

Air Control Settings

High Burn Rate Target: 100%
Settings: Heat Level 5 of 5,
Air Damper Set Halfway Closed

Medium Burn Rate Target: <50%
Settings: Heat Level 1 of 5,
Air Damper Set Fully Closed

Low Burn Rate Target: Minimum
Settings: Heat Level 1 of 5,
Air Damper Set Fully Closed

Additional Settings Notes:

"Low" burn rate setting is the only rate which is less than 50% of Maximum, therefore the "Medium" burn portion of the test was performed at "Low" setting.

Preburn Notes

Time	Notes
None	N/A

Test Notes

Time	Notes
60 min	Changed Front Filter on Train A. Adjusted heat setting to "Medium" Rate
180 min	"Medium" Rate same as "Low" no burn rate adjustment made.
360 min	End of test

Pellet Moisture Content: 6.2% DB

Technician Signature:  Date: 4/14/2017

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

Client: **US Stove** Project Number: **0215PS061E** Run Number: **1**
Model: **5780** Tracking Number: **2174** Date: **4/10//17**
Test Crew: **S. Button, A. Kravitz**
OMNI Equipment ID numbers: 132, 185, 209, 224, 283A, 335, 336, 410, 420, 559, 592, 594

Pellet Heater Supplemental Data

Start Time: 9:39 Booth #: E1
Stop Time: 15:39

Stack Gas Leak Check:
Initial: 0 Final: 0

Sample Train Leak Check:
A: 0 @ -7 "Hg
B: 0 @ -9 "Hg

Calibrations: Span Gas CO_2: 16.74 CO(%): 4.202 CO(ppm): 901
Mid Gas CO_2: 9.967 CO(%): 2.503 CO(ppm): 501

	Pre Test			Post Test		
	Zero	Span	Mid	Zero	Span	Mid
Time	9:01	9:04	9:09	15:45	15:47	15:51
CO_2	0.00	16.74	9.96	-0.01	16.70	10.04
CO(%)	0.000	4.202	2.477	0.000	4.248	2.499
CO(ppm)	0	901	496	0	892	494

Air Velocity (ft/min): Initial: <50 Final: <50
Scale Audit (lbs): Initial: 10 Final: 10
Pitot Tube Leak Test: Initial: 0 Final: 0
Stack Diameter (in): 3
Induced Draft: 0
% Smoke Capture: 100
Flue Pipe Cleaned Prior to First Test in Series:
Date: 4/7/2017 Initials: SB

	Initial	Middle	Ending
P_b (in/Hg)	30.16	30.18	30.19
Ambient (°F)	66	70	68

Background Filter Volume: N/A

Tunnel Traverse		
Microtector Reading	dP (in H_2O)	T(°F)
0.021	0.042	89
0.031	0.062	89
0.035	0.070	89
0.024	0.048	89
0.020	0.040	89
0.032	0.064	89
0.031	0.062	89
0.023	0.046	89
Center:		
0.026	0.052	89
Static:		
N/A	-.271	89

Technician Signature: Date: 4/14/2017

Section 4

Quality Assurance/Quality Control

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 5780 Series at United States Stove Company 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.

Sample Analysis

Analysis Worksheets
Moisture Content Worksheet
Tared Filter, Probe, and O-Ring Data

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

Client: **US Stove** Project Number: **0215PS061E** Run Number: **1**
Model: **5780** Tracking Number: **2174** Date: **4/10//17**
Test Crew: **S. Button, A. Kravitz**
OMNI Equipment ID numbers: 132, 185, 209, 224, 283A, 335, 336, 410, 420, 559, 592, 594

ASTM E2515 Lab Sheet

Assembled By:

A. Kravitz

Date/Time in Dessicator:

4/10/2017 – 16:00

	Weighing #1	Weighing #2	Weighing #3	Weighing #4	Weighing #5
	Date: 4/11/17	Date: 4/12/17	Date: 4/13/17	Date:	Date:
	Time: 16:15	Time: 8:30	Time: 8:30	Time:	Time:
	R/H %: 10.3	R/H %: 7.8	R/H %: 9.0	R/H %:	R/H %:
	Temp (F): 72	Temp (F): 69	Temp (F): 69	Temp (F):	Temp (F):
	Audit 1: 200.0	Audit 1: 200.0	Audit 1: 200.0	Audit 1:	Audit 1:
	Audit 2: 1999.9	Audit 2: 1999.9	Audit 2: 1999.9	Audit 2:	Audit 2:
	Audit 3: 99999.4	Audit 3: 99999.5	Audit 3: 99999.4	Audit 3:	Audit 3:
	Initials: SB	Initials: SB	Initials: SB	Initials:	Initials:

Train	Item	ID #	Tare (mg)	Weight (mg)	Weight (mg)	Weight (mg)	Weight (mg)	Weight (mg)
A	Front Filter (60 min)	**D133**	**122.9**	**125.5**	**125.4**	**-**		
A	Front Filter (Remainder)	**D134**	**123.6**	**128.1**	**128.1**	**-**		
A	Rear Filter	**D135**	**120.7**	**121.0**	**121.1**	**-**		
A	Probe	**29**	**114282.1**	**114282.7**	**114282.0**	**114282.2**		
A	O-Ring Set	**R459**	**3306.0**	**3306.9**	**3306.4**	**3306.2**		
B	Front Filter	**D136**	**122.2**	**129.3**	**128.9**	**128.7**		
B	Rear Filter	**D137**	**123.2**	**123.2**	**123.3**	**-**		
B	Probe	**30**	**114336.4**	**114336.9**	**114336.5**	**114336.6**		
B	O-Ring Set	**R460**	**4170.4**	**4171.3**	**4171.0**	**4170.9**		
BG	Filter	***N/A***						

Technician Signature: Date: 4/14/2017

Pellet Heater Lab Data - ASTM E2779 / ASTM E2515

Manufacturer:	United States Stove Con	Equipment Numbers:	244, 283A, 592
Model:	5780		
Tracking No.:	2174		
Project No.:	0215PS061E		
Run #:	1		
Date:	4/10/17		

TRAIN 1 (First Hour emissions)

Sample Component	Reagent	Filter, Probe or Dish #	Weights		
			Final, mg	Tare, mg	Particulate, mg
A. Front filter catch	Filter	D133	125.4	122.9	2.5
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:	2.5

TRAIN 1 (Remainder of Test)

Sample Component	Reagent	Filter, Probe or Dish #	Weights		
			Final, mg	Tare, mg	Particulate, mg
A. Front filter catch	Filter	D134	128.1	123.6	4.5
B. Rear filter catch	Filter	D135	121.1	120.7	0.4
C. Probe catch*	Probe	29	114282.2	114282.1	0.1
D. Filter seals catch*	Seals	R459	3306.2	3306	0.2

Sub-Total	Total Particulate, mg:	5.2
Train 1 Aggregate	Total Particulate, mg:	**7.7**

TRAIN 2

Sample Component	Reagent	Filter, Probe or Dish #	Weights		
			Final, mg	Tare, mg	Particulate, mg
A. Front filter catch	Filter	D136	128.7	122.2	6.5
B. Rear filter catch	Filter	D137	123.3	123.2	0.1
C. Probe catch*	Probe	30	114336.6	114336.4	0.2
D. Filter seals catch*	Seals	R460	4170.9	4170.4	0.5

Total Particulate, mg:	7.3

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 weight

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

Moisture Content Worksheet

Client: US Stove Company
Model: 5780
Project #: 0215PS061E Tracking #: 2174
Sample description: Lignetics Wood Pellets

Weight record:

Prior to Oven-Drying

Balance ID #: OMNI - 244 Audit ID #: 283a – 100g

Date/Time in: 4/13/2017 – 10:00 Audit weight: 99.99 g

Container: ID#: 1 Tare weight: 6.04 g

Total weight: 117.90 g

Material weight (total weight - container tare weight): 111.86 g

Post Oven-Drying

Balance ID #: OMNI - 244

Date/Time out: 4/14/17 – 10:00 Audit ID #: 283a – 100g

Total weight: 111.37 g Audit weight (if necessary): 99.99 g

Material weight (total weight - container tare weight): 105.33 g

Calculations:

Dry basis (%) = $\frac{\text{Initial - Final}}{\text{Final}} \times 100 \Rightarrow \frac{(111.86 - 105.33)}{105.33} \times 100 =$ **6.2%**

Wet basis (%) = $\frac{\text{Initial - Final}}{\text{Initial}} \times 100 \Rightarrow \frac{(111.86 - 105.33)}{111.86} \times 100 =$ **5.8%**

Method: ASTM D4442-92 Method A—Oven-Drying Method

Technician signature: Date: 4/14/2017

Reviewed by: Date:

Tare Sheet: (check one) **Probes** ✓ **47mm Filters**_____ **100mm Filters**_____ **O-Ring Pair**_____

Prepared By: A. Kravitz Balance ID #: 244 Thermohygrometer ID #: 592 Audit Weight ID #/Mass: 131 / 500 mg

Placed in Dessicator: Date: 3/9/17 Time: 1400 ID #	Date: 3/14/17 Time: 11:00 RH %: 11.1 T (°F): 69.4 Audit: 99998.1	Date: 3/17/17 Time: 13:00 RH %: 12.6 T (°F): 70.8 Audit: 99999.3	Date: Time: RH %: T (°F): Audit:	Date: Time: RH %: T (°F): Audit:	Date Used	Project Number	Run No.
14	114552.8	114552.9					
16	114270.7	114270.9	-				
17	114564.8	114564.6	-				
~~18~~	~~114407.7~~	~~114404.7~~ A					
21	114397.0	114397.0	-				
22	114351.1	114350.9	-				
27	114281.2	114281.3	-				
29	114282.2	114282.1	-		4/10/17	6215 PSOGIE	1
36	114336.3	114336.4	-		〃	〃	〃
33	113947.0	113946.8	-				
62	117664.0	117663.9	-				
66	118461.6	118461.4	-				
	Initials: A	Initials: A	Initials:	Initials:			

Final Technician Signature: 3/17/ Date: 3/17/17 Evaluator signature: 4/24/2017

Tare Sheet: (check one) Probes_____ 47mm Filters_____ 100mm Filters_____ O-Ring Pair ✓

Prepared By: A. Kravitz Balance ID #: 244 Thermohygrometer ID #: 592 Audit Weight ID #/Mass: 2834 1 g 5 g ~~1 g 500 mg~~

Placed in Dessicator: Date: 3/9/17 Time: 14:00 ID #	Date: 3/14/17 Time: 11:15 RH %: 11.2 T (°F): 69.8 Audit: 4999.9	Date: 3/17/17 Time: 1000 RH %: 7.6 T (°F): 69.9 Audit: 4999.9	Date: Time: RH %: T (°F): Audit:	Date: Time: RH %: T (°F): Audit:	Date Used	Project Number	Run No.
R447	3330.1	3330.3					
R448	3343.1	3343.2					
R449	3345.0	3345.2					
R450	3306.8	3306.9					
R451	4119.4	4119.6					
R452	4090.6	4090.0					
R453	4906.8	4906.6					
R454	3308.0	3308.1					
R455	3331.6	3331.8					
R456	3316.84	3316.6					
R457	4076.9	4077.0					
R458	4155.9	4155.9					
R459	3306.0	3306.0			4/10/17	0215~~064~~ PSO61E	1
R460	4170.4	4170.4			↓	↓	↓
R461	4143.5	4143.6					
R462	3292.5	3292.3					
R463	3382.6	3382.6					
R464	3297.6	3297.6					
R465	3333.5	3333.4					
R466	3372.3	3372.4					
	Initials:	Initials:	Initials:	Initials:			

Final Technician Signature: _____ Date: 3/17/17

Evaluator signature: _____ 4/24/2017

Tare Sheet: (check one) **Probes**_____ **47mm Filters** ✓ **100mm Filters**_____ **O-Ring Pair**_____

Prepared By: J. Kravitz Balance ID #: 244 Thermohygrometer ID #: 592 Audit Weight ID #/Mass: 131 / 500 mg

Placed in Dessicator: Date: 3/9/17 Time: 1400 ID #	Date: 3/14/17 Time: 11:06 RH %: 11.1 T (°F): 69.4 Audit: 500.1	Date: 3/17/17 Time: 13:00 RH %: 12.6 T (°F): 70.8 Audit: 500.1	Date: Time: RH %: T (°F): Audit:	Date: Time: RH %: T (°F): Audit:	Date Used	Project Number	Run No.
D122	123.4	123.6					
D123	120.8	120.6					
D124	121.5	121.5					
D125	123.4	123.2					
D126	120.3	120.1					
D127	122.2	122.0					
D128	123.0	122.9					
D129	120.4	120.2					
D130	121.3	121.1					
D131	123.2	123.3					
D132	119.8	119.7					
D133	123.0	122.9			4/10/17	0215PS061E	1
D134	123.7	123.6			↓	↓	↓
D135	120.6	120.7					
D136	122.3	122.2					
D137	123.3	123.2					
D138	121.0	120.9					
D139	121.1	121.1					
D140	123.5	123.4					
D141	120.6	120.8					
	Initials:	Initials:	Initials:	Initials:			

Final Technician Signature: _____ Date: 3/17/17

Evaluator signature: _____ 4/24/2017

Calibrations

EPA Method 28R, ASTM E2515, ASTM E2779

ID #	Lab Name/Purpose	Log Name	Attachment Type
132	10 lb Weight	Weight Standard, 10 lb.	Calibration Certificate
185	Platform Scale	Weigh-Tronix Platform Scale	Calibration Certificate
209	Barometer	Barometer – Princo	Equipment Record
224	Scale-Analytical Balance	Sartorius Analytical Balance	Calibration Certificate
283A	Calibration Weights	Troemner Metric Weight Standards	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	ZRE Combustion Gas Analyzer	Equipment Record

SCALE WEIGHT CALIBRATION DATA SHEET

Weight to be calibrated: 10 lb

ID Number: 132

Standard Calibration Weight: 10 lb

ID Number: 256

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	Ø

*Acceptable tolerance is 1%.

This calibration is traceable to NIST using calibrated standard weights.

Technician signature: Date: 2/19/13

Established 1974

QUALITY CONTROL SERVICES

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

ACCREDITED
Calibration Services
Certificate Number: 1550.01
Laboratory code: 115953

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: 500 Tol: 0.5	Test Wt: HB44 Tol: HB44	Test Wt: 200 Tol: 0.2	☐ Good ☑ Fair ☐ Poor
As-Found: Pass:☑ Fail:☐	As-Found: Pass:☑ Fail:☐	As-Found: Pass:☑ Fail:☐	Temperature: 20.3°C
As-Left: Pass:☑ Fail:☐	As-Left: Pass:☑ Fail:☐	As-Left: Pass:☑ Fail:☐	

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:

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

0723.01
Calibration

PO: **170117**
Order Date: **02/06/2017**
Authorized By: **N/A**

Property #: **Omni-00244**
User: **N/A**
Department: **N/A**
Make: **Sartorius**
Model: **BP 1215**
Serial #: **90709883**
Description: **Balance, Analytical, 120g**
Procedure: **500887**
Accuracy: **±.0005g**

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**

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 (Accredited = ✓)
Before/After							
Force							
	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 ✓

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

ACCREDITED
0723.01
Calibration

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

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 10/11/2013 Rev # 14

Inspector

JJ Calibrations, Inc.

Manufacturer: Troemner Inc.
Model: 1mg-100g (Class F)
Nomenclature: Mass Set, 21 Pc.
Serial: 47883

Certificate #: 543402
Date: 09Oct2013
Technician: 34
Calibration Interval: 60 Months

Parameter		Nominal	JJ Standard	UUT	UUT ± Limit	Uncertainty ±
Mass Verification						
Data in mg		1	0.996	1.048	0.100	0.0115
	dot	2	2.002	1.973	0.120	0.0115
		2	2.002	2.048	0.120	0.0115
		5	4.996	5.033	0.170	0.0115
		10	10.000	10.053	0.210	0.0115
	dot	20	19.999	19.966	0.260	0.0115
		20	19.999	20.069	0.260	0.0115
		50	49.998	50.018	0.350	0.0115
		100	99.998	100.144	0.430	0.0115
	dot	200	199.999	200.045	0.540	0.0115
		200	199.999	199.967	0.540	0.0115
		500	499.996	500.334	0.720	0.0115
Data in grams		1		Missing		
	dot	2	2.000000	1.999888	0.0011	0.0000394
		2	2.000000	2.000335	0.0011	0.0000394
		5	5.000002	4.999996	0.0015	0.0000395
		10	9.99998	9.99984	0.0020	0.0000580
	dot	20	19.99999	20.00100	0.0040	0.0000855
		20	19.99999	20.00079	0.0040	0.0000855
		50	49.99997	49.99949	0.0100	0.0001390
		100	99.99999	99.99802	0.0200	0.0002900

Supplement Data Sheet
Bold Italics indicates Out of Tolerance Value.

Thermal Metering System Calibration
Y Factor

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

Previous Calibration Comparision

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

Current Calibration

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

Average Gas Meter y Factor	Orifice Meter dH@
0.984	N/A

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

Reference Standard *			
Standard Calibrator	Model	Standard Test Meter	
	S/N	OMNI-00001	
	Calib. Date	27-Oct-16	
	Calib. Value	0.9823	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
Gas Meter y Factor =	**0.991**	**0.982**	**0.981**
Gas Meter y Factor Deviation (from avg.)	0.006	0.002	0.004
Orifice dH@	**N/A**	**N/A**	**N/A**
Orifice dH@ Deviation (from avg.)	N/A	N/A	N/A

where:

1. Deviation = |Average value for all runs - current run value|

** 2. y = [Vr x (y factor (ref)) x (Pb + (Pr/ 13.6)) x (Td + 460)]/ [Vd x (Pb + (Pd / 13.6)) x (Tr + 460)]

** 3. dH@ = 0.0317 x Pd / (Pb (Td + 460)) x [(Tr + 460) x time) / Vr]^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 ±0.14 ft^3/min. This is based on the reference standard having a TAR (Test Accuracy Ratio) of at least 4:1.

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 ±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

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	506	500	506	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								1501	
2000								2001	

Technician signature: _____ Date: 1/4/17

Reviewed By: _____ Date: _____

1/6/2017

Thermal Metering System Calibration
Y Factor

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

Previous Calibration Comparision

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

Current Calibration

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

Average Gas Meter y Factor	Orifice Meter dH@
0.990	N/A

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

Reference Standard *			
Standard Calibrator	Model	Standard Test Meter	
	S/N	OMNI-00001	
	Calib. Date	27-Oct-16	
	Calib. Value	0.9823	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
Gas Meter y Factor =	**0.989**	**0.992**	**0.989**
Gas Meter y Factor Deviation (from avg.)	0.001	0.002	0.001
Orifice dH@	**N/A**	**N/A**	**N/A**
Orifice dH@ Deviation (from avg.)	N/A	N/A	N/A

where:

1. Deviation = |Average value for all runs - current run value|

** 2. y = [Vr x (y factor (ref)) x (Pb + (Pr/ 13.6)) x (Td + 460)]/ [Vd x (Pb + (Pd / 13.6)) x (Tr + 460)]

** 3. dH@ = 0.0317 x Pd / (Pb (Td + 460)) x [(Tr + 460) x time) / Vr]^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 ±0.14 ft^3/min. This is based on the reference standard having a TAR (Test Accuracy Ratio) of at least 4:1.

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 ±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

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	506	500	506	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								1501	
2000								2001	

Technician signature: _____ Date: 1/4/17

Reviewed By: _____ Date: _____

1/6/2017

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

ACCREDITED
0723.01
Calibration

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	[8]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

Stacy Heath
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:		YES	X	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

Six Month
OMNI-00559
Vaneometer

Last Cal Date: **11/15/2016**
Due Date of Cal: **5/15/2017**

Six Month
OMNI-00559
Vaneometer

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 desiccate 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 ± 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 desiccate: 0900 Recording time: 0845 1/6/17

NIST Standard Temperature: 67.5 °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 ± 4% of Reference meter BD

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

Verify before use
OMNI-00594
Gas Analyzer

Verify before use
OMNI-00594
Gas Analyzer

Example Calculations

Equations and Sample Calculations – ASTM E2779 & E2515

Manufacturer:	United States Stove Company
Model:	5780
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 ra 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 Em Dilution tunnel gas flow rate, dscf/min

PR - Proportional Rate Va Particulate emission rate, lbs/hr

PM_R – Average particulat Total particulate emissions, grams

PM_F – Average particulat Average fuel load moisture content, %

M_{Bdb} – 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_{Swb} = weight of test fuel in hopper at start of test run, wet basis, kg
M_{Ewb} = weight of test fuel in hopper at end of test run, wet basis, kg

Sample Calculation:

6.2 %
M_{Swb} = 19.0 lbs
M_{Ewb} = 7.1 lbs
0.4536 = Converstion factor from lbs to kg

M_{Bdb} = [(19.0 x 0.4536) - (7.1 x 0.4536)] (100/(100 + 6.2)

M_{Bdb} = **5.1** kg

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

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

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 = 6.2 %

M_{SSiwb} = 14.8 lbs

M_{ESiwb} = 11.6 lbs

0.4536 = Converstion factor from lbs to kg

M_{BSidb} = [(14.8 x 0.4536) - (11.6 x 0.4536)] (100/(100 + 6)

M_{BSidb} = **1.4** kg

BR – Average dry burn rate over full integrated test run, kg/hr
ASTM E2779 equation (3)

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

Where,

θ = Total length of full intergrated test run, min

Sample Calculation:

M_{Bdb} = 5.08 kg

θ = 360 min

$$BR = \frac{60 \times 5.08}{360}$$

BR = **0.85** kg/hr

BR_{Si} – Average dry burn rate over test run segment *i* , kg/hr
ASTM E2779 equation (4)

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

Where,

θ_{Si} = Total length of test run segment *i* , min

Sample Calculation (from medium burn rate segment):

M_{BSidb} = 1.37 kg

θ = 120 min

$$BR = \frac{60 \times 1.37}{120}$$

BR = **0.68** kg/hr

V_s – Average gas velocity in the dilution tunnel, ft/sec
ASTM E2515 equations (9)

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

Where:

F_p	=	Adjustment factor for center of tunnel pitot tube placement, Fp = $\frac{V_{strav}}{V_{scent}}$, ASTM E2515 Equation (1)
v_{scent}	=	Dilution tunnel velocity calculated after the multi-point pitot traverse at the center, ft/sec
v_{strav}	=	Dilution tunnel velocity calculated after the multi-point pitot traverse, ft/sec
k_p	=	Pitot tube constant, 85.49
C_p	=	Pitot tube coefficient: 0.99, unitless
ΔP*	=	Velocity pressure in the dilution tunnel, in H_2O
T_s	=	Absolute average gas temperature in the dilution tunnel, °R; (°R = °F + 460)
P_s	=	Absolute average gas static pressure in diltuion tunnel, = P_{bar} + P_g , in Hg
P_{bar}	=	Barometric pressure at test site, in. Hg
P_g	=	Static pressure of tunnel, in. H_20; (in Hg = in H_20/13.6)
M_s	=	**The dilution tunnel wet molecular weight; M_s = 28.78 assuming a dry weight of 29 lb/lb-mole

Sample calculation:

$$Fp = \frac{15.58}{15.35} = 1.015$$

$$V_s = 1.015 \times 85.49 \times 0.99 \times 0.216 \times \left(\frac{85.9 + 460}{\left(30.18 + \frac{-0.27}{13.6} \right) \times 28.78} \right)^{1/2}$$

V_s = **14.72** 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 Ms as the dry molecular weight. It should be the wet molecular weight as indicated in EPA Method 2.

Q_{sd} – 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_{ws}	=	Water vapor in gas stream, proportion by volume; assume 2%
A	=	Cross sectional area of dilution tunnel, ft^2
T_{std}	=	Standard absolute temperature, 528 °R
P_s	=	Absolute average gas static pressure in diltuion tunnel, = P_{bar} + P_g , in Hg
T_s	=	Absolute average gas temperature in the dilution tunnel, °R; (°R = °F + 460)
P_{std}	=	Standard absolute pressure, 29.92 in Hg

Sample calculation:

$$Q_{sd} = 3600 \times (1 - 0.02) \times 14.72 \times 0.196 \times \frac{528}{85.9 + 460} \times \frac{30.2 + \frac{-0.27}{13.6}}{29.92}$$

Q_{sd} = **9937.8** dscf/hr

$V_{m(std)}$ – 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
ΔH	=	Average pressure differential across the orifice meter, in. H_2O
T_m	=	Absolute average dry gas meter temperature, °R

Sample Calculation:

Using equation for Train 1:

$$V_{m(std)} = 17.64 \times 60.519 \times 0.984 \times \frac{\left(30.18 + \frac{1.40}{13.6}\right)}{(79.2 + 460)}$$

$V_{m(std)}$ = **58.992** dscf

Using equation for Train 2:

$$V_{m(std)} = 17.64 \times 57.476 \times 0.99 \times \frac{\left(30.18 + \frac{1.05}{13.6}\right)}{(79.1 + 460)}$$

$V_{m(std)}$ = **56.325** dscf

Using equation for ambient train:

$$V_{m(std)} = 17.64 \times 0.00 \times 1 \times \frac{\left(\underline{30.18} + \frac{0.00}{13.6}\right)}{(68.8 + 460)}$$

$V_{m(std)}$ = **0.000** dscf

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 + 2.5 + 0.0

m_n = 2.5 mg

Using equation for Train 1 (remainder):

m_n = 0.1 + 4.9 + 0.2

m_n = 5.2 mg

Train 1 Aggregate = **7.7** mg

Using equation for Train 2:

m_n = 0.2 + 6.6 + 0.5

m_n = **7.3** mg

C_s - Concentration of particulate matter in tunnel gas, dry basis, corrected to standard conditions, g/dsc
ASTM E2515 equation (13)

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

Where:

K_2	=	Constant, 0.001 g/mg
m_n	=	Total mass of particulate matter collected in the sampling train, mg
$V_{m(std)}$	=	Volume of gas sampled corrected to dry standard conditions, dscf

Sample calculation:

For Train 1:

$$C_s = 0.001 \times \frac{7.7}{58.99}$$

C_s = **0.00013** g/dscf

For Train 2

$$C_s = 0.001 \times \frac{7.3}{56.32}$$

C_s = **0.00013** g/dscf

For Ambient Train

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

C_r = **0.000000** g/dscf

E_T – Total Particulate Emissions, g
ASTM E2515 equation (15)

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

Where:

C_s	=	Concentration of particulate matter in tunnel gas, g/dscf
C_r	=	Concentration particulate matter room air, g/dscf
Q_{std}	=	Average dilution tunnel gas flow rate, dscf/hr
θ	=	Total time of test run, minutes

Sample calculation:

For Train 1

E_T = (0.000131 - 0.000000) x 9937.8 x 360 /60

E_T = 7.78 g

For Train 2

E_T = (0.000130 - 0.000000) x 9937.8 x 360 /60

E_T = 7.73 g

Average

E = 7.76 g

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

7.5% of the average =	0.58
Train 1 difference =	0.03
Train 2 difference =	0.03

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:

θ = Total sampling time, min

θ_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, ^oR

T_m = Absolute average dry gas meter temperature, ^oR

T_{si} = Absolute average gas temperature in the dilution tunnel during the "ith" time interval, ^oR

T_s = Absolute average gas temperature in the dilution tunnel, ^oR

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

$$PR = \left(\frac{360 \times 0.161 \times 14.72 \times (89.0 + 460) \times (79.2 + 460)}{1 \times 60.52 \times 14.80 \times (85.9 + 460) \times (69.0 + 460)} \right) \times 100$$

PR = 98 %

PM_R – Average particulate emissions for full integrated test run, g/hr
ASTM E2779 equation (5)

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

Where,

E_T = Tota particulate emissions, grams

θ = Total length of full intergrated test run, min

Sample Calculation:

E_T (Dual train average) = 7.76 g

θ = 360 min

$PM_R = 60$ x (7.76 / 360)

PM_R = **1.29** g/hr

PM_F – 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 = Tota particulate emissions, grams

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

Sample Calculation:

E_T (Dual train average) = 7.76 g

M_{Bdb} = 5.08 kg

PM_F = 7.76 / 5.08)

PM_F = **1.53** g/kg

Section 5

Labeling & Owner's Manual(s)

REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	INITIAL RELEASE	2/23/17	SEH

LABELING VENDOR NOTES:

MATERIAL: 0.012 THK. ALUMINUM / 3M 9672 ADEHESIVE BACKED.

FINISH: BLACK BACKGROUND, ALUMINUM TO SHOW THRU (ALL TEXT AND ILLUSTRATIONS) UNLESS NOTED OTHERWISE.

TEXT: ALL TEXT TO BE 0.06 HIGH UNLESS OTHERWISE SPECIFIED

HEATER MANUFACTURER INSTRUCTIONS:

ALL PLATES ARE TO BE STAMPED BY THE HEATER MFG. WITH A FACTORY IDENTIFIER NUMBER ISSUED BY USSC. (i.e. 00000-XX)

WHEN LABEL IS APPLIED TO THE HEATER, IT IS TO BE FIRMLY PRESSED OVER THE ENTIRE SURFACE TO ENSURE IT PROPERLY ADHERES TO THE MATING SURFACE OF THE HEATER.

1 INCH SQ. BORDER, LOGS AND FLAMES ARE TO BE RED

0.25 TEXT HEIGHT

0.125 TEXT HEIGHT

SEE NOTE

0.10 TEXT HEIGHT

CAUTION: Hot while in operation. Do not touch. Keep children and clothing away. Contact may cause skin burns. See name-plate and instructions. Keep furnishings and other combustible materials a considerable distance away from the appliance.

CAUTION: Operate this unit only with the fuel hopper lid closed. Failure to do so may result in emission of products of combustion from the hopper under certain conditions. Do not overfill hopper.

CAUTION: Moving parts may cause injury. Do not operate with the side panels or repair panel removed. Do not place hands or fingers in the moving auger area at the bottom of the hopper. Do not obstruct the combustion air inlet opening at the rear of the appliance. DANGER: Risk of electrical shock. Disconnect power before servicing unit. Route power supply cord away from the appliance. Keep viewing and ash removal doors tightly closed during operation. Replace glass with 5mm ceramic glass ONLY. IMPORTANT: When the hopper lid is open, the auger will stop. Close the hopper lid to allow system to operate. Provide a source of fresh air to the room where the appliance is installed. Do not obstruct the space beneath the appliance. Inspect and clean exhaust vent system frequently in accordance with manufacturer's instructions. Install and use only in accordance with the manufacturer's installation and operating instructions. Contact local building or fire officials about restrictions and installation inspection in your area. Do not install in a sleeping room. Do not connect this unit to a chimney flue serving another appliance. Refer to local building codes and the installation and operating instructions for precautions required for passing an exhaust venting system through a combustible wall or ceiling. Components required for residential or mobile home installation: Model PL Vent Chimney and Components - 3"/75mm or 4" 100mm diameter. START-UP / Automatic Ignition - Position damper between closed and 1/4" open. Then press the ON/OFF button. Green power light begins to blink. When the light becomes solid, set the desired heat level. Damper may need to be adjusted based upon heat level. SHUT DOWN: Press the "OFF" button. Unit will shutdown automatically after fuel burns out and unit cools down.. This wood heater needs periodic inspection and repair. For proper operation, consult the owner's manual for further information. It is against federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual. Warning: Disconnect the electric power before installation and servicing.

0.25 TEXT HEIGHT

0.125 TEXT HEIGHT

ATTENTION: Chaud pendant le fonctionnement-ne pas toucher maintenir les enfants et les vêtements éloignés. Tout contact peut entraîner des brûlures. Consulter la plaque signalétique et les instructions. Maintenir le mobilier et les autres matières combustibles à bonne distance de l'appareil.

ATTENTION: Faire fonctionner cette unité uniquement avec le couvercle de trémie du combustible fermé. Nes pas le faire peut entrîner des émissions de produits de la trémie dans certaines conditions. Ne Pas surcharger la trémie.

ATTENTION: Les pièces en mouvement peuvent provoquer des blessures. Ne pas faire fonctionner cette unité avec les panneaux latéraux ou le panneau arrière retirés. Ne pas placer les mains ou les doigts à l'intérieur de la zone de la vis sans fin en bas de la trémie. N'obstruez pas l'admission d'air de combustion. DANGER: Risque de choc électrique. Déconnecter l'alimentation avant de réaliser l'entretien de l'unité. Faire passer le cordon d'alimentation à distance de l'unité. Maintenir les portes d'inspection et de retrait des cendres bien fermées pendent le fonctionnement. Remplacer le verre uniquement par du verre céramique (5mm). IMPORTANT: Quand le couvercle de la trémie est ouvert, la vis sans fin d'alimentation s'arrêtera. Fermer le couvercle pour permettre au système de fonctionner. Fournir une source d'air frais dans le chambre. Ne pas obsturer l'espace sous l'app. de chauffage. Inspecter et nettoer fréquemment le système de ventilation d'évacuation conformément aux instructions du fabricant. Installer et utiliser conformément aux instructions du fabricant uniquement. Contacter les fonctionnaires locaux de construction ou fonctionnaires des services d'incendie concernant les limitations et l'inspection de l'installation dans votre maison. Ne pas installer dans une chambre à coucher. Ne pas connecter cette unité à un carneau de chiminée utilisé pour un autre appareil. Consulter le code local de construction et les instructions du fabricant pour les précautions requises pour passer à travers un mur ou un plafond combustible. Composants nécessaires pour une installation dans une résidence ou une maison mobile: Ventilation modèle PL chiminée et composants - Diamètre de 3"/75mm ou 4"/100mm. MISE en MARCHE / Allumage Automatique - Ajuster la tige du régulateur de tirage entre la position fremée et 6mm(1/4 po). Appuyer sur le buoton ON/OFF. Le voyant vert se met à clignoter. Lorsque le voyant s'arrête de clignoter et reste allumé, régler le thermostat au niveau souhaité. Régler le régulateur de tirage suivant le niveau de chaleur souhaité. ARRÊT: Placer le réglage de chaleur sur "OFF". L'unité s'éteindra automatiquement une fois que le combustible sera consumé et que l'unité ait refroidi. Ce poêle à bois doit inspection et la réparation périodique. Pour un fonctionnement correct, consultez le manuel du propriétaire pour plus d'informations. Ce est contre les règlements fédéraux pour faire fonctionner ce poêle à bois d'une manière incompatible avec les instructions d'utilisation dans le manuel du propriétaire. Avertissement: Deconnecter du circuit d'alimentation electrique avant l'installation et l'entretien.

108 Garner Road,
Bridgeport, AL - 4002719

No. 221 Huyuan Road
Junhua, Zhejiang - 4003328

SERIAL NUMBER / NUMÉRO DU SÉRIE

DATE OF MANUFACTURE / DATE DE FABRICATION

MODEL / MODÈLE : 5780

Conforms to: ASTM Std E1509-12 Certified to: ULC Std S627-00 and (UM) 84-HUD
Room Heater, Pellet Fuel-Burning Type, Also for Use in Mobile Homes. (US Only). For use with wood pellet fuel only. Use of other fuels will void warranty. /
Appareil de chauffage inséré de combustible solide/de type de boulettes. l'installation dans les maisons mobile. (USA only). Pour Utilisation avec dec granulés uniquement! L'utilisation d'autres combustibles annulera la garantie.

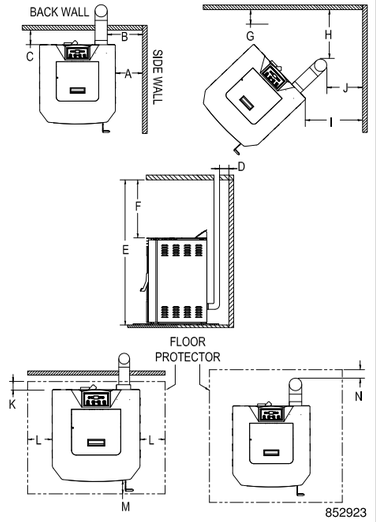
DO NOT REMOVE OR COVER THIS LABEL / NE PAS RETIRER OU COUVRIR CETTE ÉTIQUETTE

U.S. Stove Company
227 Industrial Park Road, South Pittsburg, TN 37380
Phone: (800) 750-2723, Web: www.usstove.com

Tested & Listed by O-T-L Portland Oregon USA C US
OMNI-Test Laboratories, Inc.
Report No. / Rapport N°
0215PS061E
0215PS061S
ELECTRICAL RATING: 110-120Vac, 60Hz, 3A

ENVIRONMENTAL PROTECTION AGENCY
Certified to comply with 2015 particulate emission standards.
Not for sale after May 15, 2020.
Tested to ASTM E2779 / EPA Method 28R at 1.3 g/hr.

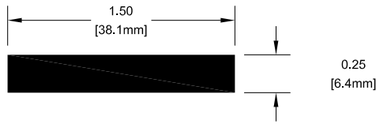
Clearances to Combustibles: Residential and Mobile Home Dégagements Combustibles: Dans Une Résidence ou Une Maison Mobile		
A	Side Wall to Stove/Mur Side à Poêle	8" (204mm)
B	Side Wall to Vent Pipe/Mur latéral tuyau d'évent	12" (305mm)
C	Back Wall to Stove/Mur Retour à poêle	12" (305mm)
D	Back Wall to Vent Pipe/Paroi arrière tuyau d'évent	3" (77mm)
E	Ceilling to Floor /Sol au plafond	84" (2134mm)
F	Ceilling to Stove/Plafond à Stove	46.875" (1191mm)
G	(Corner Install) Side Wall to Stove/(À l'angle d'installation) paroi latérale pour poêle	10" (254mm)
H	(Corner Install) Side Wall to Vent Pipe/(À l'angle d'installation) paroi latérale tuyau d'évent	3" (77mm)
I	(Corner Install) Back Wall to Stove/(À l'angle d'installation) mur Retour au poêle	10" (254mm)
J	(Corner Install) Back Wall to Vent Pipe/(À l'angle d'installation) mur Retour à tuyau de ventilation	3" (77mm)
K	Back to Stove/Retour à Stove	1" (26mm) U.S. (8" (204mm) Can.)
L	Side to Stove/Side à Poêle	6" (153mm) U.S. (8" (204mm) Can.)
M	Front to Stove/Avant de poêle	6" (153mm) U.S. (18" (457.2mm) Can.)
N	Back to Flue/Retour à combustion	6" (153mm)



5.50

12.00

SERIAL & DATE BOX DETAIL



TOLERANCES EXCEPT AS NOTED
HOLES ± .005"
DECIMAL .XX = 0.03 XXX = 0.010
ANGULAR ± 2°

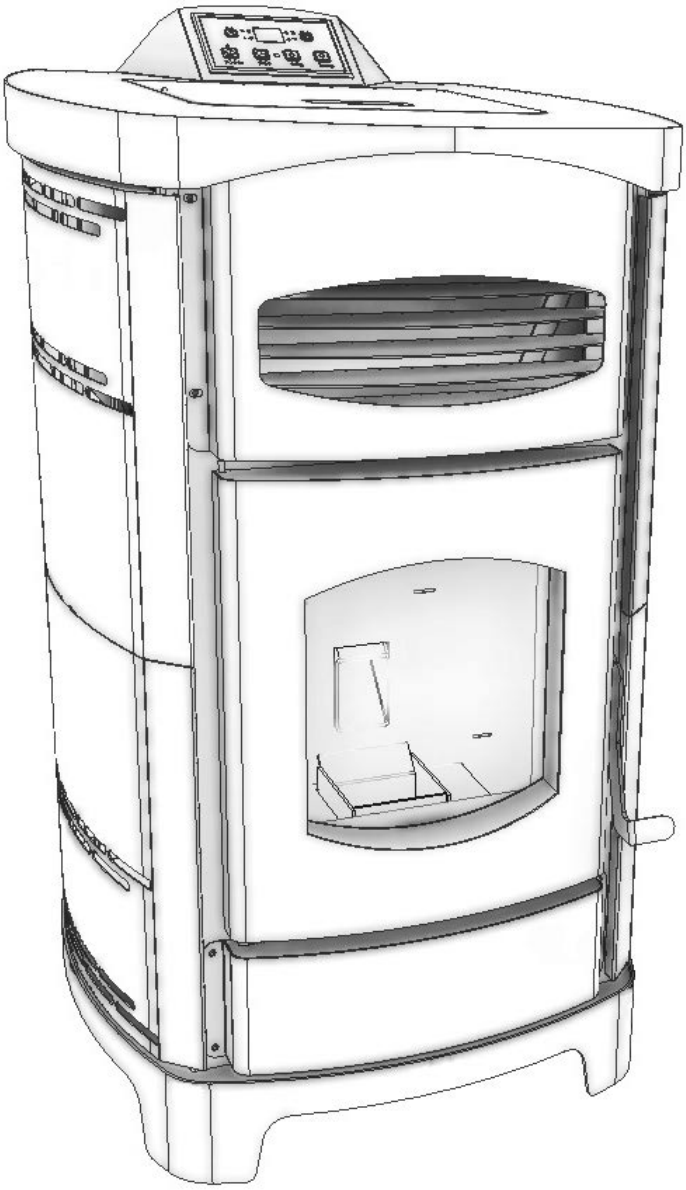
DESCRIPTION: SEE NOTE
FINISH: SEE NOTE
REFERENCE: 5780 / AP5780 / VG5780
SCALE: 1:1
DWN BY: SEH
DATE: 2/23/17
SIZE: B
REV: A

UNITED STATES STOVE COMPANY
ESTABLISHED 1869

TITLE: CERTIFICATION LABEL
NUMBER: 852923
SHEET: 1 OF 1

Owner's Manual

MODEL: 5780



Tested & Listed By O-T L Portland Oregon USA
C US
OMNI-Test Laboratories, Inc.

Report No. 0215PS061E
0215PS061S

Certified for installations in the USA and Canada.

U.S. Environmental Protection Agency
Certified to comply with 2015 particulate emissions standards.

French version is available for download from the U.S. Stove website: http://www.usstove.com/
Version française est disponible pour téléchargement à partir du site U.S. Stove: http://www.usstove.com

This unit is not intended to be used as a primary source of heat.

- PLEASE READ THIS ENTIRE MANUAL BEFORE INSTALLATION AND USE OF THIS APPLIANCE. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN PROPERTY DAMAGE, BODILY INJURY, OR EVEN DEATH.
- CONTACT YOUR LOCAL BUILDING OR FIRE OFFICIALS ABOUT OBTAINING PERMITS, RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA.
- SAVE THESE INSTRUCTIONS.

U.S. Stove Company
227 Industrial Park Road, South Pittsburg, TN 37380
FOR TECHNICAL ASSISTANCE: Phone 800-750-2723 www.usstove.com

852922-0804G

Safety Precautions

This manual describes the installation and operation of the U.S. Stove, 5780 wood heater. This heater meets the 2015 U.S. Environmental Protection Agency's crib wood emission limits for wood heaters sold after May 15, 2015. Under specific test conditions this heater has been shown to deliver heat at rates ranging from 8,507 to 26,386 Btu/hr. This heater achieved a particulate emissions rate of 1.3g/hr when tested to method ASTM E2779-10 (*and an efficiency of 72%).

- IMPORTANT: Read this entire manual before installing and operating this product. Failure to do so may result in property damage, bodily injury, or even death. Proper installation of this stove is crucial for safe and efficient operation.
- Install vent at clearances specified by the vent manufacturer.
- Do not connect the pellet vent to a vent serving any other appliance or stove.
- Do not install a flue damper in the exhaust venting system of this unit.
- Use of outside air is not required for this unit.
- Contact your local building officials to obtain a permit and information on any additional installation restrictions or inspection requirements in your area.
- Do not throw this manual away. This manual has important operating and maintenance instructions that you will need at a later time. Always follow the instructions in this manual.
- This appliance is designed for the use of pelletized fuel that meet or exceed the standard set by the Pellet Fuel Institute(PFI).
- Never use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or 'freshen up' a fire in this stove. Keep all such liquids well away from the stove while it is in use.
- A working smoke detector must be installed in the same room as this product.
- Install a smoke detector on each floor of your home; incase of accidental fire from any cause it can provide time for escape.
- The smoke detector must be installed at least 15 feet (4,57 M) from the appliance in order to prevent undue triggering of the detector when reloading.
- Do not unplug the stove if you suspect a malfunction. Turn the ON/OFF SWITCH to "OFF' and contact your dealer.
- Your stove requires periodic maintenance and cleaning (see "MAINTENANCE "). Failure to maintain your stove may lead to improper and/or unsafe operation.
- Disconnect the power cord before performing any maintenance! NOTE: Turning the ON/OFF Switch to "OFF" does not disconnect all power to the electrical components of the stove.
- Never try to repair or replace any part of the stove unless instructions for doing so are given in this manual. All other work should be done by a trained technician.
- Do not operate your stove with the viewing door open. The auger will not feed pellets under these circumstances and a safety concern may arise from sparks or fumes entering the room.
- Allow the stove to cool before performing any maintenance or cleaning. Ashes must be disposed in a metal container with a tight fitting lid. The closed container of ashes should be placed on a non-combustible surface or on the ground, well away from all combustible materials, pending final disposal.
- The exhaust system should be checked monthly during the burning season for any build-up of soot or creosote.
- Do not touch the hot surfaces of the stove. Educate all children on the dangers of a high-temperature stove. Young children should be supervised when they are in the same room as the stove.
- The hopper and stove top will be hot during operation; therefore, you should always use some type of hand protection when refueling your stove.
- A power surge protector is required. This unit must be plugged into a 110 - 120V, 60 Hz grounded electrical outlet. Do not use an adapter plug or sever the grounding plug. Do not route the electrical cord underneath, in front of, or over the heater. Do not route the cord in foot traffic areas or pinch the cord under furniture.
- The heater will not operate during a power outage. If a power outage does occur, check the heater for smoke spillage and open a window if any smoke spills into the room.
- The feed door must be closed and sealed during operation.
- Never block free airflow through the open vents of the unit.
- Keep foreign objects out of the hopper.
- The moving parts of this stove are propelled by high torque electric motors. Keep all body parts away from the auger while the stove is plugged into an electrical outlet. These moving parts may begin to move at any time while the stove is plugged in.
- Do not place clothing or other flammable items on or near this stove.
- When installed in a mobile home, the stove must be grounded directly to the steel chassis and bolted to the floor. WARNING—THIS UNIT MUST NOT BE INSTALLED IN THE BEDROOM (per HUD requirements). CAUTION—The structural integrity of the mobile home floor, wall, and ceiling/roof must be maintained.
- This appliance is not intended for commercial use.
- CAUTION: Burning fuel creates carbon monoxide and can be hazardous to your health if not properly vented.

*This appliance is a freestanding heater. It is not intended to be attached to any type of ducting. It is not a furnace.

Specifications

Heating Specifications	
Fuel Burn Rate* (lowest setting)	1.4lbs per hr
Burn Time (lowest setting)	32 hrs
Hopper Capacity	46lbs
Flue Size	3“ or 4” (77mm to 102mm)

* Pellet size may effect the actual rate of fuel feed and burn times. Fuel feed rates may vary by as much as 20%. Use PFI listed fuel for best results.

Dimensions	
Height	37.16” (944mm)
Width	20.81” (529mm)
Depth	22.25” (566mm)
Weight	162lbs

Electrical Specifications	
Electrical Rating	120 Volts AC, 60 HZ, 3 Amps
Watts (operational)	125W
Watts (igniter running)	310W

FUEL CONSIDERATIONS

Your pellet stove is designed to burn premium hardwood pellets that comply with Association of Pellet Fuel Industries standards. (Minimum of 40 lbs density per cubic ft, 1/4” to 5/16” diameter, length no greater than 1.5”, not less than 8,200 BTU/lb, moisture under 8% by weight, ash under 1% by weight, and salt under 300 parts per million). Pellets that are soft, contain excessive amounts of loose sawdust, have been, or are wet, will result in reduced performance.

Store your pellets in a dry place. DO NOT store the fuel within the installation clearances of the unit or within the space required for refuelling and ash removal. Doing so could result in a house fire.

Do not over fire or use volatile fuels or combustibles, doing so may cause a personal and property damage hazards.

SAFETY AND EPA COMPLIANCE

WARNING: It is against federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner’s manual.

Your pellet stove has been approved for installation in the USA and Canada. It may also be installed in a manufactured or mobile home. Your stove conforms to ASTM E 1509-12, and Certified to ULC S627-00, and(UM) 84-HUD.

Note: Register your product on line at www.usstove.com. See “Limited Warranty” section for specific warranty information for your new purchase. Save your receipt with your records for any claims.

Installation

INSTALLATION OPTIONS

Read this entire manual before you install and use your pellet stove. Failure to follow instructions may result in property damage, bodily injury, or even death!

(See specific installation details for clearances and other installation requirements)

A Freestanding Unit—supported by pedestal/legs and placed on a non-combustible floor surface in compliance with clearance requirements for a freestanding stove installation.

Your pellet stove may be installed to code in either a conventional or mobile home (see SPECIAL MOBILE HOME REQUIREMENTS). The installation must comply with the Manufactured Home and Safety Standard (HUD), CFR3280, Part 24.

It is recommended that only a authorized technician install your pellet stove, preferably an NFI certified specialist.

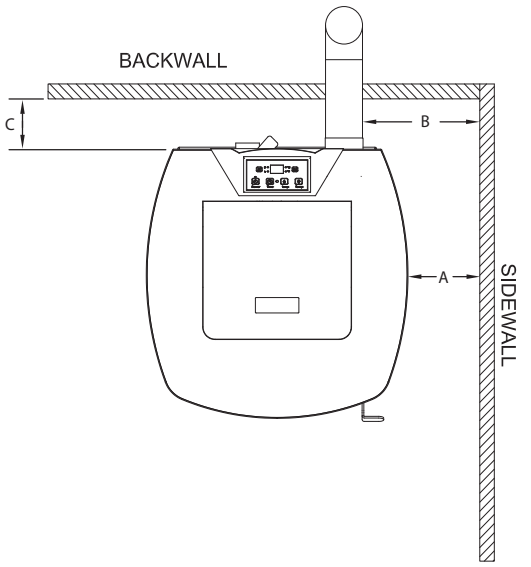
DO NOT CONNECT THIS UNIT TO ANY AIR DISTRIBUTION DUCT OR SYSTEM.

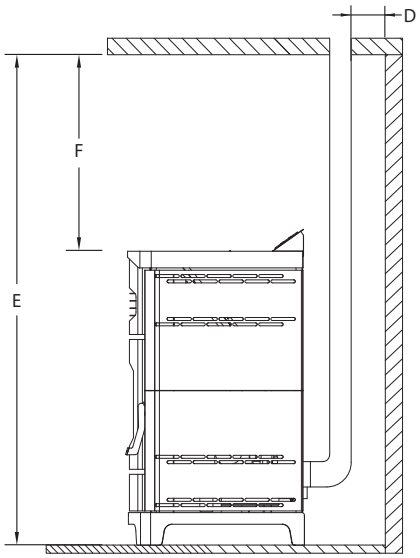
The use of other components other than stated herein could cause bodily harm, heater damage, and void your warranty.

IMPROPER INSTALLATION: The manufacturer will not be held responsible for damage caused by the malfunction of a stove due to improper venting or installation. Call (800) 750-2723 and/or consult a professional installer if you have any questions.

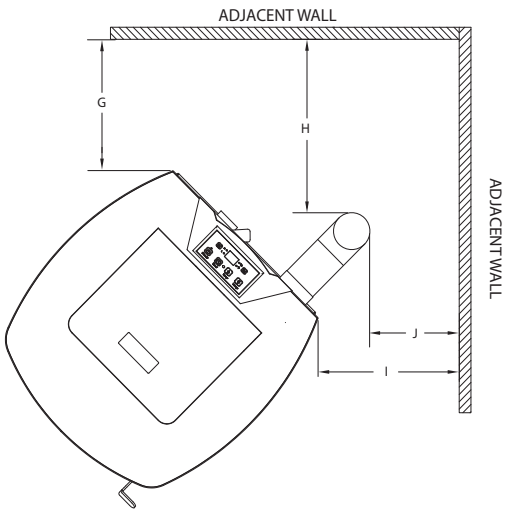
CLEARANCES

Your pellet stove has been tested and listed for installation in residential, mobile home in accordance with the clearances given below. For safety reasons, please adhere to the installation clearances and restrictions. Any reduction in clearance to combustibles may only be done by means approved by a regulatory authority.





CLEARANCES			
		inches	mm
A	Side Wall to Stove	8	204
B	Side Wall to Vent Pipe	12	305
C	Back Wall to Stove	12	305
D	Back Wall to Vent Pipe	3	77
E	Ceiling to Floor	84	2134
F	Ceiling to Stove	46.875	1191
CORNER CLEARANCES			
G	Side Wall to Stove	10	254
H	Side Wall to Vent Pipe	3	77
I	Back Wall to Stove	10	254
J	Back Wall to Vent Pipe	3	77

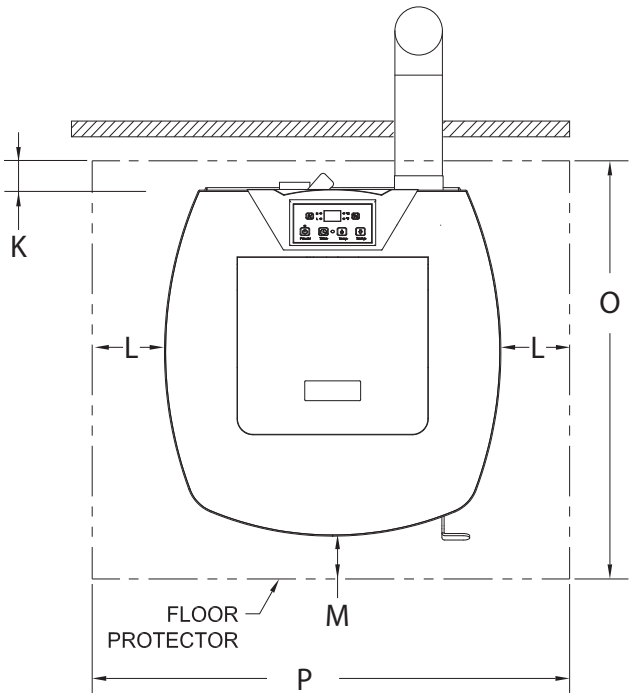


Installation

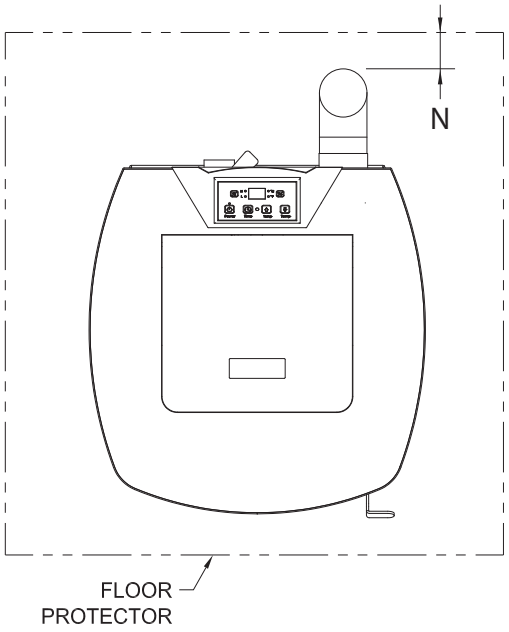
FLOOR PROTECTION

This heater must have a non-combustible floor protector (UL1618 ember protection) installed beneath it if the floor is of combustible material. US: Floor protector should be UL listed or equal too, needs to extend 16" to the front, 8" to each side, 1" to the rear of the unit. Under and 2" beyond each side of the cleanout tee if an interior vertical instillation.

Canada: Floor protector should comply with CAN/ULC standards. Needs to extend 18" to the front, 8" beyond each side of the unit.



THROUGH THE WALL
INSTALLATION



INTERIOR VERTICAL
INSTALLATION

FLOOR PROTECTOR DIMENSIONS		
K	Back to Stove	1" (26mm) U.S. (8" (204mm) Can.)
L	Side to Stove	6" (153mm) U.S. (8" (204mm) Can.)
M	Front to Stove	6" (153mm) U.S. (18" (458mm)Can.)
N	Back and Sides to Flue	6" (153mm)

Installation

VENTING REQUIREMENTS

- Install vent at clearances specified by the vent manufacturer.
- Do not connect the pellet vent to a vent serving any other appliance or stove.
- Do not install a flue damper in the exhaust venting system of this unit.
- The following installation guidelines must be followed to ensure conformity with both the safety listing of this stove and to local building codes. Do not use makeshift methods or compromise in the installation.

IMPORTANT: This unit is equipped with a negative draft system that pulls air through the burn pot and pushes the exhaust out of the dwelling. If this unit is connected to a flue system other than the way explained in this manual, it will not function properly.

MAXIMUM VENTING DISTANCE

Installation MUST include at least 3-feet of vertical pipe outside the home. This will create some natural draft to reduce the possibility of smoke or odor during appliance shutdown and keep exhaust from causing a nuisance or hazard by exposing people or shrubs to high temperatures. The maximum recommend vertical venting height is 12-feet for 3-inch type "PL" vent. Total length of horizontal vent must not exceed 4-feet. This could cause back pressure. Use no more than 180 degrees of elbows (two 90-degree elbows, or two 45-degree and one 90-degree elbow, etc.) to maintain adequate draft.

IMPORTANCE OF PROPER DRAFT

Draft is the force which moves air from the appliance up through the chimney. The amount of draft in your chimney depends on the length of the chimney, local geography, nearby obstructions and other factors. Too much draft may cause excessive temperatures in the appliance. Inadequate draft may cause backpuffing into the room and 'plugging' of the chimney.

Inadequate draft will cause the appliance to leak smoke into the room through appliance and chimney connector joints. An uncontrollable burn or excessive temperature indicates excessive draft.

Take into account the chimney's location to insure it is not too close to neighbours or in a valley which may cause unhealthy or nuisance conditions.

PELLET VENT TYPE

A UL listed 3-inch or 4-inch type "PL" pellet vent exhaust system must be used for installation and attached to the pipe connector provided on the back of the stove (use a 3-inch to 4-inch adapter for 4-inch pipe). Connection at back of stove must be sealed using Hi-Temp RTV. Use 4-inch vent if the vent height is over 12-feet or if the installation is over 2,500 feet above sea level. We recommend the use of Simpson Dura-Vent® or Metal-Fab® pipe (if you use other pipe, consult your local building codes and/or building inspectors). Do not use Type-B Gas Vent pipe or galvanized pipe with this unit. The pellet vent pipe is designed to disassemble for cleaning and should be checked several times during the burning season. Pellet vent pipe is not furnished with the unit and must be purchased separately.

PELLET VENT INSTALLATION

The installation must include a clean-out tee to enable collection of fly ash and to permit periodic cleaning of the exhaust system. 90-degree elbows accumulate fly ash and soot thereby reducing exhaust flow and performance of the stove. Each elbow or tee reduces draft potential by 30% to 50%.

All joints in the vent system must be fastened by at least 3 screws, and all joints must be sealed with Hi-Temp RTV silicone sealant to be airtight. The area where the vent pipe penetrates to the exterior of the home must be sealed with silicone or other means to maintain the vapor barrier between the exterior and the interior of the home. Vent surfaces can get hot enough to cause burns if touched by children. Noncombustible shielding or guards may be required.

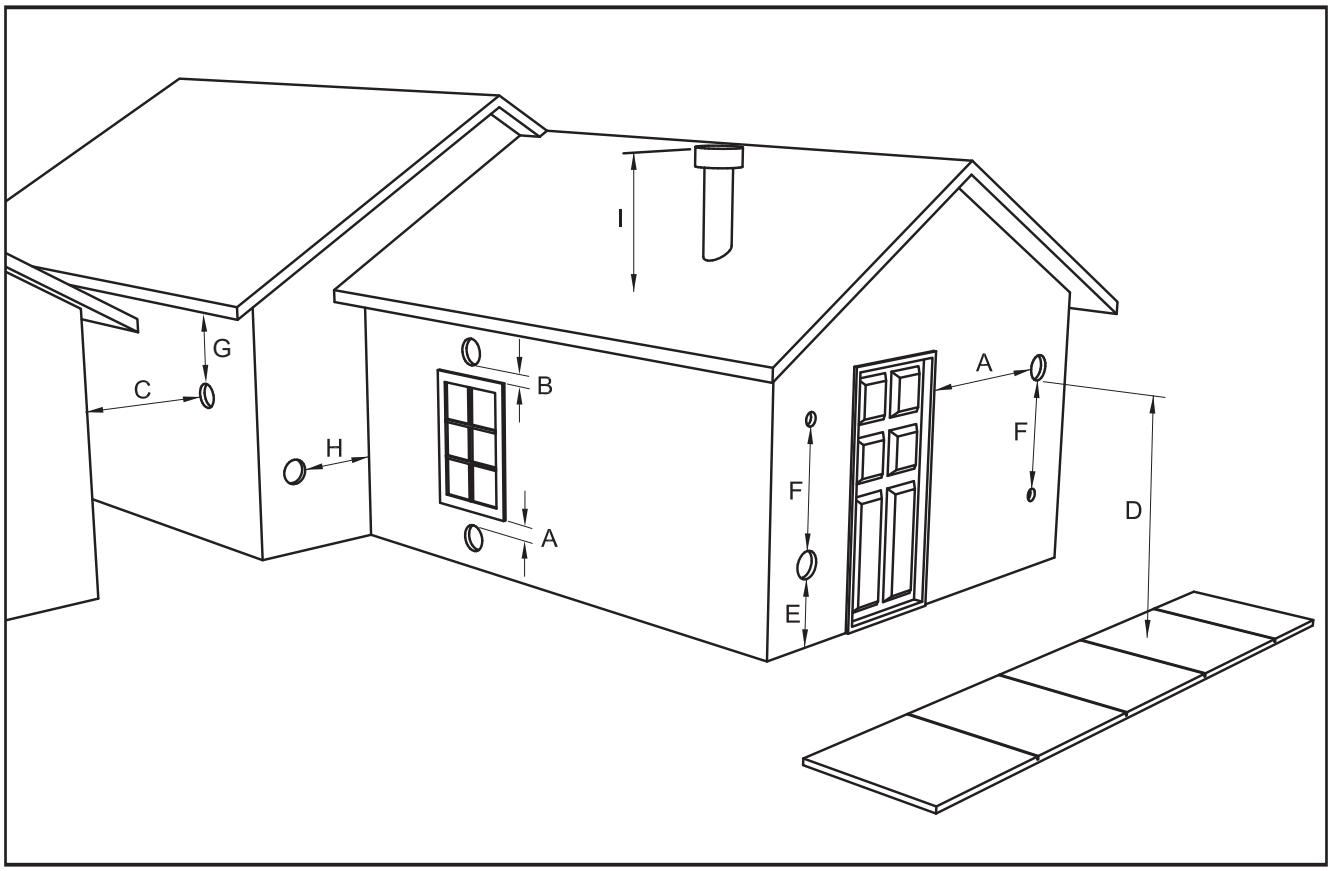
PELLET VENT TERMINATION

Do not terminate the vent in an enclosed or semi-enclosed area, such as; carport, garage, attic, crawl space, under a sun deck or porch, narrow walkway, or any other location that can build up a concentration of fumes. Termination in one of these areas can also lead to unpredictable pressure situations with the appliance, and could result in improper performance and/or malfunction. The termination must exhaust above the outside air inlet elevation. The termination must not be located where it will become plugged by snow or other materials. Do not terminate the venting into an existing steel or masonry chimney.

Installation

VENT TERMINATION CLEARANCES

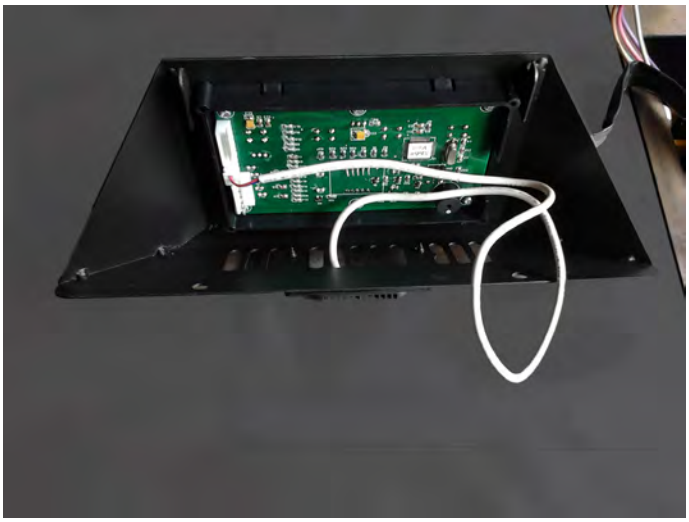
A. Minimum 4-foot (1.22m) clearance below or beside any door or window that opens.
B. Minimum 1-foot (0.3m) clearance above any door or window that opens.
C. Minimum 3-foot (0.91m) clearance from any adjacent building.
D. Minimum 7-foot (2.13m) clearance from any grade when adjacent to public walkways.
E. Minimum 2-foot (0.61m) clearance above any grass, plants, or other combustible materials.
F. Minimum 3-foot (0.91m) clearance from an forced air intake of any appliance.
G. Minimum 2-foot (0.61m) clearance below eves or overhang.
H. Minimum 1-foot (0.3m) clearance horizontally from combustible wall.
I. Must be a minimum of 3 foot (0.91m) above the roof and 2 foot (0.61m) above the highest point or the roof within 10 feet (3.05m).



VENT TERMINATION
CLEARANCES

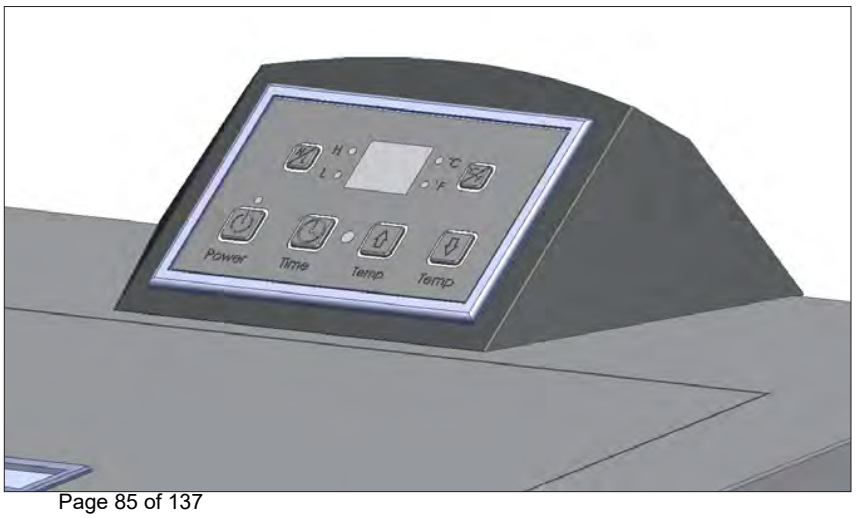
Assembly Instructions

Step 1
Pull the factory installed wires out of the top of the stove. There will be two wire harnesses, as shown.



Step 2
Unpack the top mount controls and ensure that the wiring harness shown is attached securely.

Step 3
Connect the factory installed wiring harnesses to the control panel as shown.



Step 4
Attach the control panel to the top of the stove, as shown.

Step 5
Secure with two sheet metal screws.

Installation

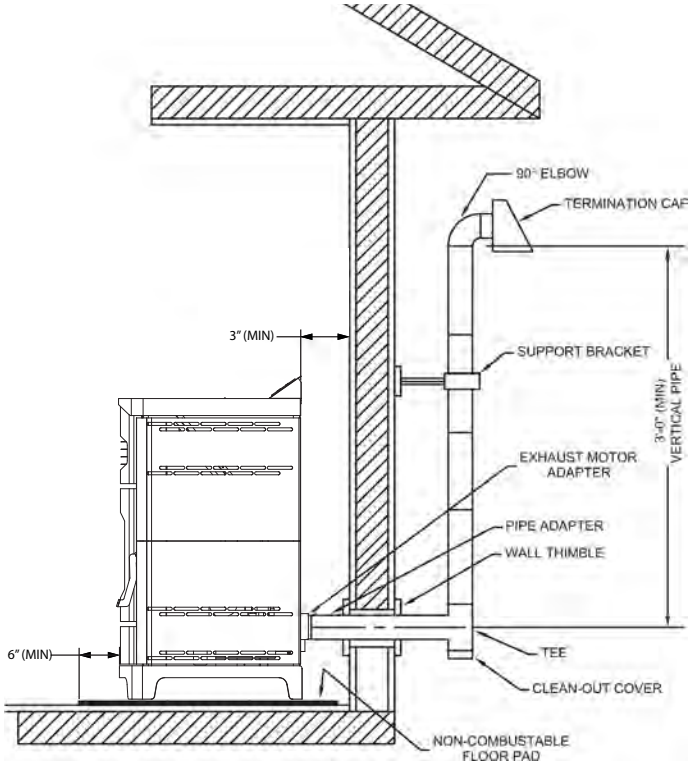
THROUGH THE WALL INSTALLATION (RECOMMENDED INSTALLATION)

Canadian installations must conform to CAN/CSA-B365.

To vent the unit through the wall, connect the pipe adapter to the exhaust motor adapter. If the exhaust adapter is at least 18 in.(457mm) above ground level, a straight section of pellet vent pipe can be used through the wall.

Your heater dealer should be able to provide you with a kit that will handle most of this installation, which will include a wall thimble that will allow the proper clearance through a combustible wall. Once outside the structure, a 3 in.(76mm) clearance should be maintained from the outside wall and a clean out tee should be placed on the pipe with a 90-degree turn away from the house. At this point, a 3ft (0.91m) (minimum) section of pipe should be added with a horizontal cap, which would complete the installation.

A support bracket should be placed just below the termination cap or one every 4ft (1.22m) to make the system more stable. If you live in an area that has heavy snowfall, it is recommended that the installation be taller than 3ft (0.91m) to get above the snowdrift line. This same installation can be used if your heater is below ground level by simply adding the clean-out section and vertical pipe inside until ground level is reached. With this installation you have to be aware of the snowdrift line, dead grass, and leaves. We recommend a 3ft (0.91m) minimum vertical rise on the inside or outside of the house.



TYPICAL THROUGH THE WALL INSTALLATION

The "through the wall" installation is the least expensive and simplest installation. Never terminate the end vent under a deck, in an alcove, under a window, or between two windows. We recommend Simpson Dura-Vent® or Metal-Fab® kits.

THROUGH THE ROOF/CEILING INSTALLATION

When venting the heater through the ceiling, the pipe is connected the same as through the wall, except the clean-out tee is always on the inside of the house, and a 3 in.(76mm) adapter is added before the clean-out tee.

You must use the proper ceiling support flanges and roof flashing (supplied by the pipe manufacturer; follow the pipe manufacturer's directions). It is important to note that if your vertical run of pipe is more than 12ft (3.7m), the pellet vent pipe size should be increased to 4 in. (102mm) in diameter.

Do not exceed more than 4ft (1.22m) of pipe on a horizontal run and use as few elbows as possible. If an offset is required, it is better to install 45-degree elbows rather than 90-degree elbows.

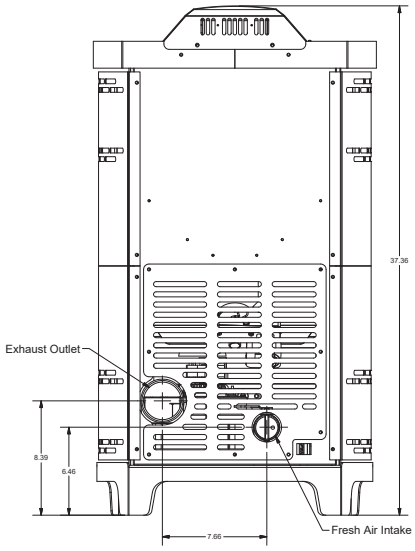
Installation

OUTSIDE AIR SUPPLY (OPTIONAL, UNLESS INSTALLING IN A MOBILE HOME)

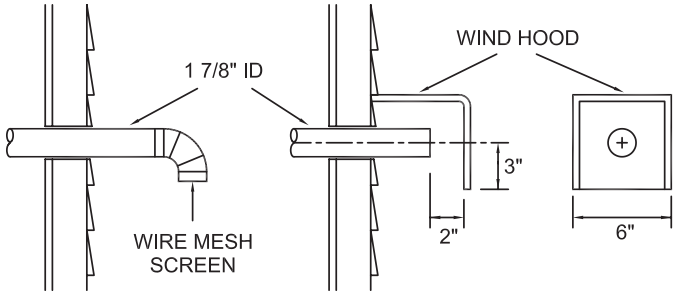
Adequate ventilation air is required to operate this heater. During operation, the heater draws air for combustion which can be assisted by the installation of outside combustion air inlets. However, certain weather conditions such as icing or use of kitchen exhaust fans may impact and reduce the effectiveness of vents. It is important to note that room air starvation will negatively impact the operation of the heater.

Depending on your location and home construction, outside air may be necessary for optimal performance. Metal pipe (solid or flexible) must be used for the outside air installation. PVC pipe is NOT approved and should NEVER be used. A wind shield over the termination of the outside air pipe or a 90-degree elbow or bend away from the prevailing winds MUST be used when an outside air pipe is installed through the side of a building. The outside air termination MUST be at least 1ft (0.305m) away from the exhaust system termination.

The outside air pipe on your heater is 2" (50.8mm) OD. The outside air connecting pipe must be at least 2" (50.8mm) ID. The outside air connection used MUST NOT restrict the amount of air available to your heater. The outside air connecting pipe must be as short and free of bends as possible, and it must fit over, not inside, the outside air connection to the heater.



EXHAUST/INLET LOCATIONS



TYPICAL FRESH AIR TERMINATION

NOTE: Dimensions from the floor to your stoves inlet/exhaust pipes are approximate and may vary depending on your installation.

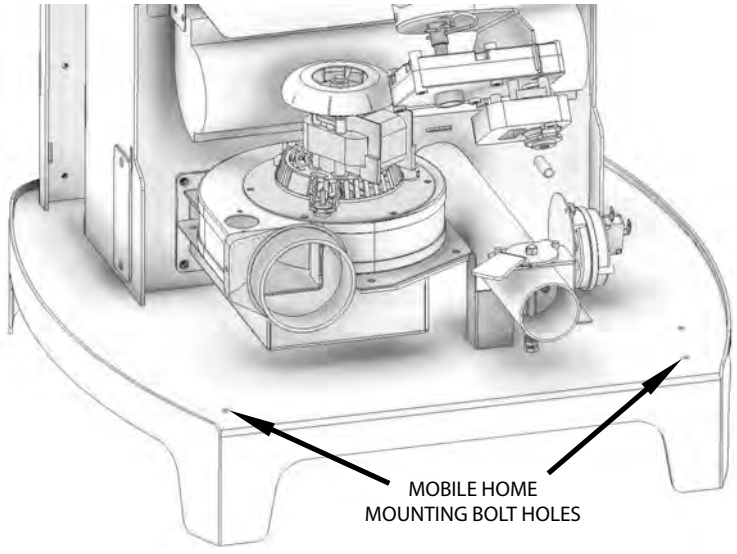
SPECIAL MOBILE HOME REQUIREMENTS

- WARNING! - Do not install in a sleeping room
- CAUTION! - The structural integrity of the mobile home floor, wall, and ceiling/roof must be maintained.

NOTE: Installation should be in accordance with the Manufactured Home and Safety Standard (HUD), CFR 3280, Part 24.

In addition to the previously detailed installation requirements, mobile home installations must meet the following requirements:

- This stove must be securely fastened to the floor of the mobile home through the two holes in the rear of the stove using 2, ¼" lag bolts that are long enough to go through both a hearth pad, if used, and the floor of the home.
- The heater must be electrically grounded to the steel chassis of the mobile home with 8 GA copper wire using a serrated or star washer to penetrate paint or protective coating to ensure grounding.



- Vent must be 3 or 4-inch "PL" Vent and must extend a minimum or 36 in.(914mm) above the roof line of the mobile home and must be installed using a UL listed ceiling fire stop and rain cap.
- When moving your mobile home, all exterior venting must be removed while the mobile home is being relocated. After relocation, all venting must be reinstalled and securely fastened.
- Outside Air is mandatory for mobile home installation. See Outside Air Supply section and your dealer for purchasing.
- Check with your local building officials as other codes may apply.

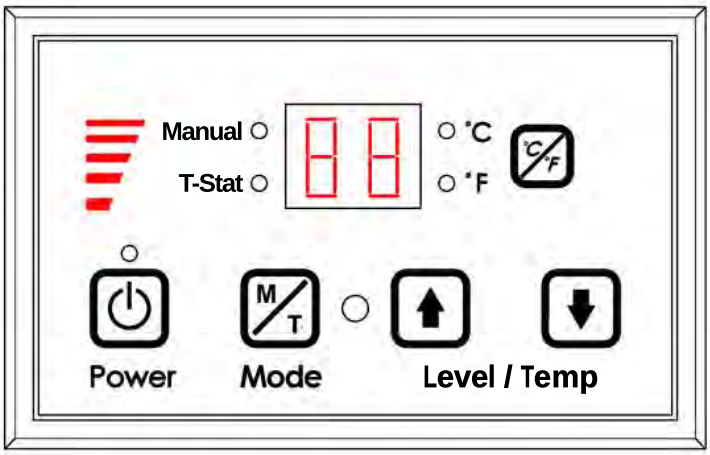
Control Panel

PANEL CONTROLS

The blowers and automatic fuel supply are controlled from a panel on the top of this unit. The control panel functions are a follows.

A. ON/OFF SWITCH ("POWER" BUTTON)

- When pushed, the stove will automatically ignite. No other fire starter is necessary. The igniter will stay on for at least 10 and up to 12 minutes, depending on when Proof of Fire is reached. The fire should start in approximately 5 minutes.
- The red light located above the "POWER" button will turn green when pressed and remain green until the stove is turned off.
- After pushing "POWER", the auger motor is on for 3.5 minutes, off for 1 minute. During the remainder of the start-up period, the auger motor operates on the heat range "1" setting.
- During start up the heat level advance (Up and Down keys) will change the heat range indicator level accordingly, but there is no change in the stoves operating conditions until start-up is completed.
- During start-up ignition must occur within 12 minutes or the stove will error out and show E4.
- During the start-up phase, the Mode key does not function.



CONTROLS

B. LEVEL / TEMP ARROW BUTTONS

- These buttons when pushed will set the pellet feed rate, hence the heat output or heat range of your stove.
- The levels of heat output will incrementally change on the bar graph starting from heat range "1" to heat range "5".

C. °C / °F Button

- The °C / °F button changes the two digit display from degrees Celsius to degrees Fahrenheit.

D. MODE (M/T) BUTTON

- The Mode of the stove can be switched between manual and controlled with a Thermostat. Separate LEDs to the left of the two digit display indicate the mode of operation – Manual or T-Stat. The stove has to be in normal operation to be switched from Manual to T-Stat mode.
- Manual mode operates according to the 5 set levels of feed on the bar graph from heat range "1" to heat range "5".
- T-Stat mode works as follows:
- The stove has a built in Thermostat into the controls of the appliance. The temperature sensor for the T-Stat is located on the back of the stove behind the display board.
- Once the stove has gone into run mode the stove can be switch into T-Stat mode.
- The Up and Down Level / Temp Arrow buttons are used to change the desired set-point temperature. Once the desired temperature is reached the two digit display will flash for four seconds and reset to the actual room temperature.
- Once the stove reaches within 3°F of the desired temperature set point, it returns to the heat range that the stove was set on before it was switched to T-Stat mode (if the stove was running on heat range "5" when switched to T-stat mode when it gets within 3°F of the set point it will return to heat range "5").
- Once the stove reaches the desired set-point, the stove will drop to heat range "1".
- When room temperature drops below desired set-point the stove will ramp back up until it reaches the desired temperature.

Operation

- Do not use chemicals or fluids to start the fire - never use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or "freshen up" a fire in this stove. Keep all such liquids well away from the stove while it is in use.
- Hot while in operation. Keep children, clothing and furniture away. Contact may cause skin burns.

This heater is designed to burn only PFI Premium grade pellets. This appliance can also burn pellets rated as standard after May 16, 2015.

DO NOT BURN:

1. Garbage;
2. Lawn clippings or yard waste;
3. Materials containing rubber, including tires;
4. Materials containing plastic;
5. Waste petroleum products, paints or paint thinners, or asphalt products;
6. Materials containing asbestos;
7. Construction or demolition debris;
8. Railroad ties or pressure-treated wood;
9. Manure or animal remains;
10. Salt water driftwood or other previously salt water saturated materials;
11. Unseasoned wood; or
12. Paper products, cardboard, plywood, or particleboard. The prohibition against burning these materials does not prohibit the use of fire starters made from paper, cardboard, saw dust, wax and similar substances for the purpose of starting a fire in an affected wood heater.

Burning these materials may result in release of toxic fumes or render the heater ineffective and cause smoke.

PROPER FUEL

This stove is approved for burning pelletized wood fuel only ! Factory-approved pellets are those 1/4" or 5/16" in diameter and not over 1" long. Longer or thicker pellets sometimes bridge the auger flights, which prevents proper pellet feed. Burning wood in forms other than pellets is not permitted. It will violate the building codes for which the stove has been approved and will void all warranties. The design incorporates automatic feed of the pellet fuel into the fire at a carefully prescribed rate. Any additional fuel introduced by hand will not increase heat output but may seriously impair the stoves performance by generating considerable smoke. Do not burn wet pellets. The stove's performance depends heavily on the quality of your pellet fuel. Avoid pellet brands that display these characteristics:

1. Excess Fines – "Fines" is a term describing crushed pellets or loose material that looks like sawdust or sand. Pellets can be screened before being placed in hopper to remove most fines.
2. Binders – Some pellets are produced with materials to hold the together, or "bind" them.
3. High ash content – Poor quality pellets will often create smoke and dirty glass. They will create a need for more frequent maintenance. You will have to empty the burn pot plus vacuum the entire system more often. Poor quality pellets could damage the auger. We cannot accept responsibility for damage due to poor quality pellet.

PRE-START-UP CHECK

Remove burn pot, making sure it is clean and none of the air holes are plugged. Clean the firebox, and then reinstall burn pot. Clean door glass if necessary (a dry cloth or paper towel is usually sufficient). Never use abrasive cleaners on the glass or door. Check fuel in the hopper, and refill if necessary.

NOTE: This hopper can hold up to 20 lbs. of pellets.

BUILDING A FIRE

Never use a grate or other means of supporting the fuel. Use only the burn pot supplied with this heater.

Hopper lid must be closed in order for the unit to feed pellets.

During the start-up period:

1. Make sure burn pot is free of pellets.
2. DO NOT open the viewing door.
3. Damper may need to be closed during start up.
4. DO NOT add pellets to the burn pot by hand.

NOTE: During the first few fires, your stove will emit an odor as the high temperature paint cures or becomes seasoned to the metal. Maintaining smaller fires will minimize this. Avoid placing items on stove top during this period because paint could be affected. Attempts to achieve heat output rates that exceed heater design specifications can result in permanent damage to the heater.

Operation

AUTOMATIC IGNITOR

Fill hopper and clean burn pot.

1. Press "On/Off" button. Make sure green light comes on.
2. The damper should be completely closed or open no more than ¼ of the way during start-up. This will vary depending on your installation and elevation. Once fire is established adjust for desired flame increasing the amount the damper is open as the heat setting is increased. (See "DAMPER CONTROL")
3. Adjust feed rate to desired setting by pressing "Heat Level Advance" button.

If fire doesn't start in 12 minutes, press "On/Off", wait a few minutes, clear the burn pot, and start procedure again.

DAMPER CONTROL

The damper control lever is located on the back of the stove on the lower left side. The damper adjusts the combustion air. This control is necessary due to the varied burn characteristics of individual installations, different pellet brands and pellet feed rates. It allows you to improve the efficiency of your stove. Providing correct combustion air will reduce the frequency of cleaning your glass door and prevent the rapid buildup of creosote inside your stove and chimney. You should adjust the damper based on the fire's appearance. A low, reddish, dirty fire can be improved by turning the damper slightly to the right. A "blow torch" fire can be improved by turning the dampener to the left a little bit. As a general rule, on lower feed rate settings, the damper should be farther to the left closing it off. On higher feed rates, the damper should be open more by having it set more towards the right. Through trial and error, you will find the best setting. Consult your dealer if you need help.

NOTE: On heat range "1", damper should be either completely closed or open no more than a ¼ of the way. If damper is open to far, it can cause the fire to go out.

OPENING DOOR

If the door is opened while the stove is in operation it must be closed within 30 seconds or the stove will shut down. If the stove shuts down push the "On/Off" button to re-start your stove. The stove will have to fully shut down and turn off before you will be able to restart the stove.

ROOM AIR FAN

When starting your stove the Room Air Fan will not come on until the stove's heat exchanger warms up. This usually takes about 10 minutes from start-up.

IF STOVE RUNS OUT OF PELLETS

The fire goes out and the auger motor and blowers will run until the stove cools. This will take 30 minutes or longer depending on the heat remaining in the appliance. After the stove components stop running all lights on the display will go out and the two digit display will begin flashing "E3"

REFUELLING

- The hopper and stove top will be hot during operation; therefore, you should always use some type of hand protection when refuelling your stove.
- Never place your hand near the auger while the stove is in operation. We recommend that you not let the hopper drop below ¼ full.

TAMPER WARNING

This wood 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 wood heater in a manner inconsistent with operating instructions in this manual.

KEEP HOPPER LID CLOSED AT ALL TIMES EXCEPT WHEN REFILLING. DO NOT OVERFILL HOPPER.

Operation / Maintenance

SHUTDOWN PROCEDURE

Turning your stove off is a matter of pressing the "POWER" button on the display board. The green light will turn back to red when the "POWER" button is pushed. The auger motor will stop, and the blowers will continue to operate until the internal firebox temperatures have fallen to a preset level.

WARNING: Never shut down this unit by unplugging it from the power source.

1. Your stove is equipped with a high temperature thermodisc. This unit has a manual reset thermodisc. This safety switch has two functions.
   A. To recognize an overheat situation in the stove and shut down the fuel feed or auger system.
   B. In case of a malfunctioning convection blower, the high-temperature thermodisc will automatically shut down the auger, preventing the stove from overheating.

NOTE: On some units, once tripped, like a circuit breaker, the reset button will have to be pushed before restarting your stove. On other units the thermodisc has no reset button and will reset itself once the stove has cooled. The manufacturer recommends that you call your dealer if this occurs as this may indicate a more serious problem. A service call may be required.

2. If the combustion blower fails, an air pressure switch will automatically shut down the auger.

NOTE: Opening the stove door for more than 30 seconds during operation will cause enough pressure change to activate the air switch, shutting the fuel feed off. The stove will shut down and show "E2" on the two digit display. The stove has to fully shut down before restarting.

- Failure to clean and maintain this unit as indicated can result in poor performance, safety hazards, fire, and even death.
- Unplug your stove's electrical cord prior to removing the back panel or opening the exhaust system for any inspection, cleaning, or maintenance work.
- Never perform any inspections, cleaning, or maintenance on a hot stove.
- Do not operate stove with broken glass, leakage of flue gas may result.

EXHAUST SYSTEM

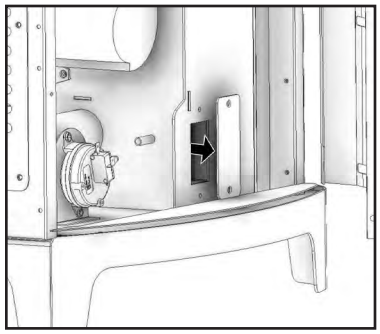
Creosote Formation – When any wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cool chimney flue or a newly started fire or from a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited, this creosote makes an extremely hot fire, which may damage the chimney or even destroy the house. Despite their high efficiency, pellet stoves can accumulate creosote under certain conditions.

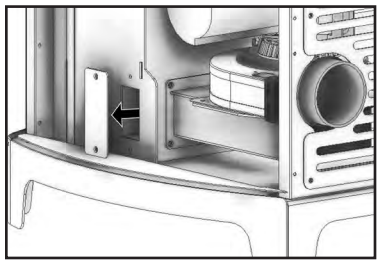
Fly Ash – This accumulates in the horizontal portion of an exhaust run. Though non-combustible, it may impede the normal exhaust flow. It should therefore be periodically removed.

Inspection and Removal – The chimney connector and chimney should be inspected by a qualified person annually or per ton of pellets to determine if a creosote or fly ash build-up has occurred. If creosote has accumulated, it should be removed to reduce the risk of a chimney fire. Inspect the system at the stove connection and at the chimney top. Cooler surfaces tend to build creosote deposits quicker, so it is important to check the chimney from the top as well as from the bottom. The creosote should be removed with a brush specifically designed for the type of chimney in use. A qualified chimney sweep can perform this service. It is also recommended that before each heating season the entire system be professionally inspected, cleaned and, if necessary, repaired. To clean the chimney, disconnect the vent from the stove.

Maintenance

INTERIOR CHAMBERS





- Burn Pot: Periodically remove and clean the burn pot and the area inside the burn pot housing. In particular, it is advisable to clean out the holes in the burn pot to remove any build up that may prevent air from moving through the burn pot freely.
- Heat Exchanger: There is a clean out plate on both sides of the heat exchanger that need to be removed to clean fly ash out of the heat exchanger. The cleanouts are located inside the cabinet doors, on the lower front corners of the heat exchanger. To access these clean outs, you must remove both side panels. The clean outs are secured to the firebox with (2) 5/16" screws. Remove the clean outs and vacuum out any accumulated ash. This should be done at least once per month or more frequently if large amounts of ash are noticed while cleaning or if the stove does not seem to be burning properly.

If a vacuum is used to clean your stove, we suggest using a vacuum designed for ash removal. some regular vacuum cleaner (i.e. shop vacs) may leak ash into the room.

DO NOT VACUUM HOT ASH

ASH DISPOSAL

Remove ashes when unit has cooled. Ashes should be placed in a metal container with a tight fitting lid. The closed container of ashes should be placed on a noncombustible floor or on the ground, well away from all combustible materials, pending final disposal. If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all embers have been thoroughly cooled. The container shall not be used for other trash or waste disposal. If combined with combustible substances, ashes and embers may ignite.

SMOKE AND CO MONITORS

Burning wood naturally produces smoke and carbon monoxide(CO) emissions. CO is a poisonous gas when exposed to elevated concentrations for extended periods of time. While the modern combustion systems in heaters drastically reduce the amount of CO emitted out the chimney, exposure to the gases in closed or confined areas can be dangerous. Make sure you stove gaskets and chimney joints are in good working order and sealing properly to ensure unintended exposure. It is recommended that you use both smoke and CO monitors in areas having the potential to generate CO.

CHECK AND CLEAN THE HOPPER

Check the hopper periodically to determine if there is any sawdust (fines) that is building up in the feed system or pellets that are sticking to the hopper surface. Clean as needed.

DOOR AND GLASS GASKETS

Inspect the main door and glass window gaskets periodically. The main door may need to be removed to have frayed, broken, or compacted gaskets replaced by your authorized dealer. This unit's door uses a 5/8" diameter rope gasket.

BLOWER MOTORS

Clean the air holes on the motors of both the exhaust and distribution blowers annually. Remove the exhaust blower from the exhaust duct and clean out the internal fan blades as part of your fall start-up. If you have indoor pets your power motors should be inspected monthly to make sure they are free of animal hair build up. Animal hair build up in blowers can result in poor performance or unforeseen safety hazards.

PAINTED SURFACES

Painted surfaces may be wiped down with a damp cloth. If scratches appear, or you wish to renew your paint, contact your authorized dealer to obtain a can of suitable high-temperature paint.

GLASS - CLEANING, REMOVAL AND REPLACEMENT OF BROKEN DOOR GLASS

Cleaning - We recommend using a high quality glass cleaner. Should a buildup of creosote or carbon accumulate,

you may wish to use 000 steel wool and water to clean the glass. DO NOT use abrasive cleaners. DO NOT perform the cleaning while the glass is HOT. ,

In the event you need to replace the glass, remove the four (4) screws and glass retainers. While wearing leather gloves (or any other gloves suitable for handling broken glass), carefully remove any loose pieces of glass from the door frame. Dispose of all broken glass properly. ONLY high temperature ceramic glass of the correct size and thickness may be used. DO NOT substitute alternative materials for the glass. Contact your authorized dealer to obtain this glass. Re-install the new glass by re-attaching the retainers and screws, be careful not to over tighten the screws for this could damage the glass.

DO NOT abuse the door glass by striking, slamming or similar trauma. Do not operate the stove with the glass removed, cracked or broken.

FALL START UP

Prior to starting the first fire of the heating season, check the outside area around the exhaust and air intake systems for obstructions. Clean and remove any fly ash from the exhaust venting system. Clean any screens on the exhaust system and on the outside air intake pipe. Turn all of the controls on and make sure that they are working properly. This is also a good time to give the entire stove a good cleaning throughout.

SPRING SHUTDOWN

After the last burn in the spring, remove any remaining pellets from the hopper and the auger feed system. Scoop out the pellets and then run the auger until the hopper is empty and pellets stop flowing (this can be done by pressing the "ON" button with the viewing door open). Vacuum out the hopper. Thoroughly clean the burn pot, and firebox. It may be desirable to spray the inside of the cleaned hopper with an aerosol silicone spray if your stove is in a high humidity area. The exhaust system should be thoroughly cleaned.

Spring shutdown

After the last burn in the spring, remove any remaining pellets from the hopper and the auger feed system. Scoop out the pellets and then run the auger until the hopper is empty and pellets stop flowing (this can be done by pressing the "ON" button with the viewing door open). Vacuum out the hopper. Thoroughly clean the burn pot, and firebox. It may be desirable to spray the inside of the cleaned hopper with an aerosol silicone spray if your stove is in a high humidity area. The exhaust system should be thoroughly cleaned.

MAINTENANCE SCHEDULE

Use the following as a guide under average use conditions.

Gaskets around door and door glass should be inspected and repaired or replaced when necessary.

	Daily	Weekly	Monthly or as needed
Burn Pot	Stirred	Empty	
Combustion Chamber		Brushed	
Ashes		Check	Empty
Interior Chambers			Vacuumed
Combustion Blower Blades			Vacuumed / Brushed
Convection Blower Impeller			Vacuumed / Brushed
Vent System			Cleaned
Gaskets			Inspected
Glass	Wiped	Cleaned	
Hopper (end of season)			Empty and vacuumed

Trouble Shooting Guide

When your stove acts out of the ordinary, the first reaction is to call for help. This guide may save time and money by enabling you to solve simple problems yourself. Problems encountered are often the result of only five factors: 1) poor fuel; 2) poor operation or maintenance; 3) poor installation; 4) component failure; 5) factory defect. You can usually solve those problems related to 1 and 2. Your dealer can solve problems relating to 3, 4 and 5. Refer to diagrams on page 25 to help locate indicated parts.

For the sake of troubleshooting and using this guide to assist you, you should look at your heat level setting to see which light is flashing.

- Disconnect the power cord before performing any maintenance! NOTE: Turning the ON/OFF Switch to "OFF" does not disconnect all power to the electrical components of the stove.
- Never try to repair or replace any part of the stove unless instructions for doing so are given in this manual. All other work should be done by a trained technician.

Display is Flashing "E1"	
Possible Causes	Possible Remedies: (Unplug stove first when possible)
1. The convection blower is overheating and tripping the internal temperature shutoff.	Clean any dust off of the windings and fan blade. If oiling the blower does not help, the blower may be bad.
2. The stove is being left on the highest setting for extended periods of time.	If operating the heater on the highest heat setting, the room temperature could increase enough and lead to potential overheating situations. If this happens try operating at a lower heat setting.
3. Fuel other than wood pellets is being burned in the stove.	This pellet stove is designed and tested to use wood pellets. Check for signs of fuel other than wood pellets. No other types of fuel have been approved for this pellet stove. If there are signs of other types of fuel being used, stop using them immediately.
4. Power surge or brown out situation.	A power surge, spike, or voltage drop could cause the high limit switch to trip. Check to see if a surge protector is being used on the stove. If not, recommend one to the customer.
5. High Limit Switch is malfunctioning.	If the other items check out OK, replace the high limit switch.

ATTENTION: This wood heater needs periodic inspection and repair for proper operation. It is against federal regulations to operate this wood heater in a manner inconsistent with operating instructions in this manual.

Trouble Shooting Guide

Display is Flashing "E2"	
Possible Causes	Possible Remedies: (Unplug stove first when possible)
1. Airflow switch hose or stove attachment pipes for hose are blocked.	Unhook air hose from the air switch and blow through it. If air flows freely, the hose and tube are fine. If air will not flow throw the hose, use a wire coat hanger to clear the blockage.
2. The air inlet, burnpot, interior combustion air chambers, combustion blower, or exhaust pipe are blocked with ash or foreign material.	Follow all cleaning procedures in the maintenance section of the owner's manual.
3. The firebox is not properly sealed.	Make sure the door is closed and that the gasket is in good shape.
4. Vent pipe is incorrectly installed.	Check to make sure vent pipe installation meets criteria in owner's manual.
5. The airflow switch wire connections are bad.	Check the connectors that attach the gray wires to the air switch.
6. Combustion blower failure.	With the stove on, check to see if the combustion blower is running. If it is not, you will need to check for power going to the combustion blower. It should be a full current. If there is power, the blower is bad. If there is not, see #8.
7. Control board not sending power to combustion blower.	If there is no current going to the combustion blower, check all wire connections. If all wires are properly connected, you have a bad control board.
8. Control board not sending power to air switch.	There should be a 5-volt current (approximately) going to the air switch after the stove has been on for 30 seconds.
9. Air switch has failed.	To test the air switch, you will need to disconnect the air hose from the body of the stove. With the other end still attached to the air switch, very gently suck on the loose end of the hose (you may want to remove the hose entirely off the stove and the air switch first and make sure it is clear). If you hear a click, the air switch is working. BE CAREFUL TOO MUCH VACUUM CAN DAMAGE THE AIR SWITCH.

Trouble Shooting Guide

Display is Flashing "E3"	
Possible Causes	Possible Remedies: (Unplug stove first when possible)
1. The hopper is out of pellets	Refill the hopper.
2. The air dampener is too far open for a low feed setting	If on the low setting, you may need to close the dampener all the way.
3. The burnpot holes are blocked.	Remove the burnpot and thoroughly clean it.
4. The air inlet, the interior chambers, or exhaust system has a partial blockage.	Follow all cleaning procedures in the maintenance section of the owner's manual
5. The hopper safety switch has failed or hopper is open.	When operating the unit, be sure the hopper lid is closed so that the hopper safety switch will activate. Check the wires leading from the hopper safety switch to the control panel and auger motor for secure connections. Use a continuity tester to test the hopper safety switch; replace if necessary.
6. The auger shaft is jammed.	"Start by emptying the hopper. Then remove the auger motor by removing the auger pin, then remove the two bolts that hold the auger bracket to the auger tube. The auger bracket will now be able to be removed form the auger tube. Remove the two bolts on the side of the auger tube to remove the lower bearing of the auger. Pull the auger out of the tube to free the jam.
7. The auger motor has failed.	Remove the auger motor from the auger shaft and try to run the unit. If the motor will turn the shaft is jammed on something. If the motor will not turn, the motor is bad.
8. The Proof of Fire (POF) thermodisc has malfunctioned.	Temporarily bypass the POF thermodisc by disconnecting the two wires and connecting them with a short piece of wire. Then plug the stove back up. If the stove comes on and works, you need to replace the POF thermodisc. This is for testing only. DO NOT LEAVE THE THERMODISC BYPASSED. Your blowers will never shut off and if the fire went out the auger will continue to feed pellets until the hopper is empty if you leave the POF thermodisc bypassed.
9. The control board is not sending power to the POF thermodisc or other auger system components.	There should be a 5-volt (approximately) current going to the POF thermodisc after the stove has been on for 10 minutes.

Trouble Shooting Guide

Display is Flashing "E4"	
Possible Causes	Possible Remedies: (Unplug stove first when possible)
1. The air inlet, burnpot, interior combustion air chambers, combustion blower, or exhaust pipe are blocked with ash or foreign material.	Follow all cleaning procedures in the maintenance section of the owner's manual.
2. The Proof of Fire (POF) thermodisc has came unplugged	Check the (POF) thermodisc to see if the wires are connected properly.
3. The Proof of Fire (POF) thermodisc has malfunctioned.	Temporarily bypass the POF thermodisc by disconnecting the two wires and connecting them with a short piece of wire. Then plug the stove back up. If the stove comes on and works, you need to replace the POF thermodisc. This is for testing only. DO NOT LEAVE THE THERMODISC BYPASSED. Your blowers will never shut off and if the fire went out the auger will continue to feed pellets until the hopper is empty if you leave the POF thermodisc bypassed.
4. The hopper is out of Pellets.	Refill the hopper.
5. The hopper safety switch has failed or hopper is open.	When operating the unit, be sure the hopper lid is closed so that the hopper safety switch will activate. Check the wires leading from the hopper safety switch to the control panel and auger motor for secure connections. Use a continuity tester to test the hopper safety switch; replace if necessary.
6. The auger shaft is jammed.	Start by emptying the hopper. Then remove the auger motor by removing the auger pin. Remove the auger shaft inspection plate in the hopper so that you can see the auger shaft. Gently lift the auger shaft straight up so that the end of the auger shaft comes up out of the bottom auger bushing. Next, remove the two nuts that hold the top auger biscuit in. Then rotate the bottom end of the auger shaft up towards you until you can lift the shaft out of the stove. After you have removed the shaft, inspect it for bent flights, burrs, or broken welds. Remove any foreign material that might have caused the jam. Also, check the auger tube for signs of damage such as burrs, rough spots, or grooves cut into the metal that could have caused a jam.
7. The auger motor has failed.	Remove the auger motor from the auger shaft and try to run the unit. If the motor will turn the shaft is jammed on something. If the motor will not turn, the motor is bad.

Display is Flashing "E5"	
Possible Causes	Possible Remedies: (Unplug stove first when possible)
1. The stove automatically flashes "E5" when turned on	The T-stat sensor has come unplugged form the control board. Check to see if the sensor is unplugged. If the sensor is not unplugged then the sensor is damaged or has a short. If the sensor is damaged or has a short it will need to be replaced.

Trouble Shooting Guide

Stove Feeds Pellets, But Will Not Ignite	
Possible Causes	Possible Remedies: (Unplug stove first when possible)
1. Air damper open too far for ignition.	Push the air damper in closer to the side of the stove for startup. In some situations it may be necessary to have the damper completely closed for ignition to take place. After there is a flame, the damper can then be adjusted for the desired feed setting.
2. Blockage in igniter tube or inlet for igniter tube.	Find the igniter housing on the backside of the firewall. The air intake hole is a small hole located on bottom side of the housing. Make sure it is clear. Also, look from the front of the stove to make sure there is not any debris around the igniter element inside of the igniter housing.
3. The burnpot is not pushed completely to the rear of the firebox.	Make sure that the air intake collar on the burnpot is touching the rear wall of the firebox.
4. Bad igniter element.	Put power directly to the igniter element. Watch the tip of the igniter from the front of the stove. After about 2 minutes the tip should glow. If it does not, the element is bad.
5. The control board is not sending power to the igniter.	Check the voltage going to the igniter during startup. It should be a full current. If the voltage is lower than full current, check the wiring. If the wiring checks out good, the board is bad.

Smoke Smell Coming Back Into The Home	
Possible Causes	Possible Remedies: (Unplug stove first when possible)
1. There is a leak in the vent pipe system.	Inspect all vent pipe connections. Make sure they are sealed with RTV silicone that has a temperature rating on 500 degree F or higher. Also, seal joints with UL-181-AP foil tape. Also, make sure the square to round adapter piece on the combustion blower has been properly sealed with the same RTV.
2. The gasket on the combustion blower has gone bad.	Inspect both gaskets on the combustion blower to make sure they are in good shape.
Because it is a wood-burning device, your pellet heater may emit a faint wood-burning odor. If this increases beyond normal, or if you notice an unusual soot build-up on walls or furniture, check your exhaust system carefully for leaks. All joints should be properly sealed. Also clean your stove, following instructions in "MAINTENANCE". If problem persists, contact your dealer.	

Convection Blower Shuts Off And Comes Back On	
Possible Causes	Possible Remedies: (Unplug stove first when possible)
1. The convection blower is overheating and tripping the internal temperature shutoff.	Clean any dust off of the windings and fan blades. If cleaning the blower does not help, the blower may be bad.
2. Circuit board malfunction.	Test the current going to the convection blower. If there is power being sent to the blower when it is shut off, then the control board is fine. If there is NOT power being sent to the blower when it shuts off during operation, then you have a bad control board.

Trouble Shooting Guide

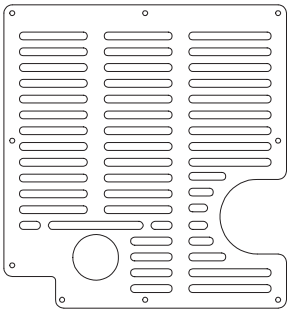
Stove Will Not Feed Pellets, But Fuel Feed Light Comes On As Designed	
Possible Causes	Possible Remedies: (Unplug stove first when possible)
1. High limit switch has tripped or is defective.	Wait for the stove to cool for about 30 - 45 minutes. Locate the High Limit thermodisc and press the reset button on the back of it. If the heater will not restart, check the thermodisc to see if it's bad. To test if the thermodisc is bad, you can bypass it as described previously for the POF thermodisc.
2. Bad Auger Motor.	Remove the auger motor from the auger shaft and try to run the unit. If the motor will turn the shaft is jammed on something. If the motor will not turn, the motor is bad.
3. Auger Jam.	Start by emptying the hopper. Then remove the auger motor by removing the auger pin. Remove the auger shaft inspection plate in the hopper so that you can see the auger shaft. Gently lift the auger shaft straight up so that the end of the auger shaft comes up out of the bottom auger bushing. Next, remove the two nuts that hold the top auger biscuit in. Then rotate the bottom end of the auger shaft up towards you until you can lift the shaft out of the stove. After you have removed the shaft, inspect it for bent flights, burrs, or broken welds. Remove any foreign material that might have caused the jam. Also, check the auger tube for signs of damage such as burrs, rough spots, or grooves cut into the metal that could have caused a jam.
4. Loose wire or connector.	Check all wires and connectors that connector to the auger motor, high limit switch, and the Molex connector.
5. Bad control board.	If the fuse is good, the wires and connectors check out good, and the high limit switch did not trip, test for power going to the auger motor. If there is not a full current going to the auger motor when the fuel feed light is on, you have a bad control board.

High Limit Switch Keeps Tripping	
Possible Causes	Possible Remedies: (Unplug stove first when possible)
1. The convection blower is overheating and tripping the internal temperature shutoff.	Clean any dust off of the windings and fan blades. If oiling the blower does not help, the blower may be bad.
2. The stove is being left on the highest setting for extended periods of time.	If operating the heater on the highest heat setting, the room temperature could increase enough and lead to potential overheating situations. If this happens, try operating at a lower heat setting.
3. Fuel other than wood pellets is being burned in the stove.	This pellet stove is designed and tested to use wood pellets. Check for signs of fuel other than wood pellets. No other types of fuel have been approved for this pellet stove. If there are signs of other types of fuel being used, stop using them immediately.
4. Power surge or brown out situation.	A power surge, spike, or voltage drop could cause the high limit switch to trip. Check to see if a surge protector is being used on the stove. If not, recommend one to the consumer.
5. High limit switch is malfunctioning.	If the other items check out OK, replace the high limit switch.

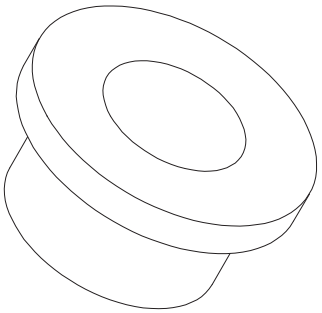
Trouble Shooting Guide

• Glass "Soot's" Up At A Very Fast Rate • Flame Is Lazy, Dark, And Has Black Tips • After Stove Has Been On For A While, The Burnpot Overfills	
Possible Causes	Possible Remedies: (Unplug stove first when possible)
1. Stove or vent pipe is dirty, which restricts airflow through the burnpot.	Follow all cleaning procedure in the maintenance section of the owner's manual.
2. Vent pipe installed improperly.	Check to make sure the vent pipe has been installed according to the criteria in the owner's manual.
3. Air damper is set too far in (closed) for a higher setting.	Pull the damper knob farther out away from the side of the stove and try to burn the unit again.
4. Burnpot holes are blocked.	Remove the burnpot and thoroughly clean it.
5. Air damper is broken.	Visually inspect the damper assembly. Make sure the damper plate is attached to the damper rod. When the damper rod is moved the plate should move with it.
6. Blockage in air intake pipe.	Visually inspect the air intake pipe that leads into the burnpot for foreign material.
7. Combustion blower is not spinning fast enough.	Test the RPM on the blower after the blades have been cleaned. The RPM should be approximately 3000 RPM.
8. Bad Pellets. (Applies to GLASS "SOOT'S" UP AT A VERY FAST RATE Only)	The brand of pellets or the batch of pellets that are being used may be of poor quality. If possible, try a different brand of pellets. You might also want to try a brand that is made from a different type of wood (softwood vs. hardwood). Different woods have different characteristics when being burned.

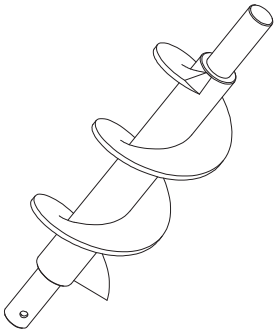
Replacement Parts



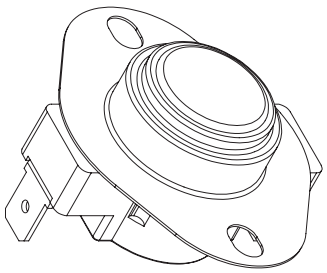
Vented Back Panel	
892776	1



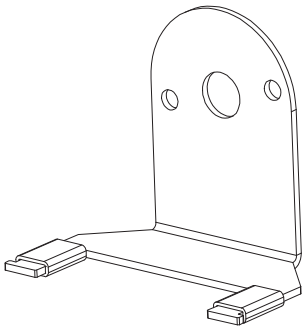
Auger Bushing	
891132	1



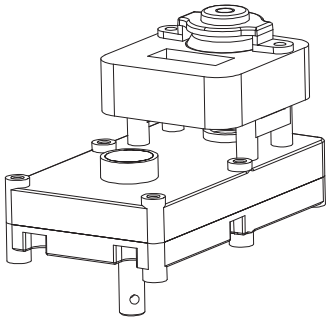
Auger	
892187	1



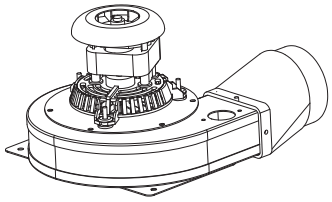
High Limit T-disc	
80455	1



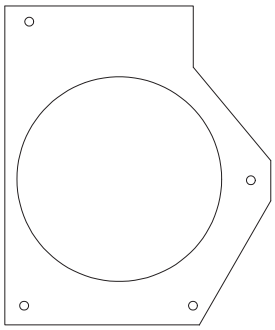
Auger Motor Bracket	
892188	1



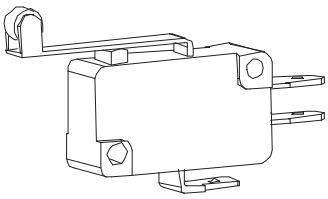
Auger Motor	
80488	1



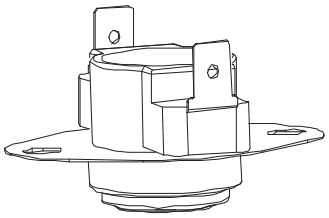
Exhaust Blower	
80602	1



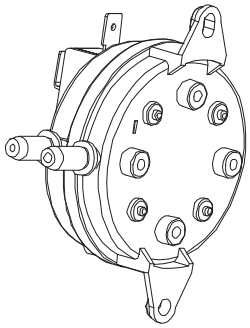
Gasket, Exhaust Blower	
88166	1



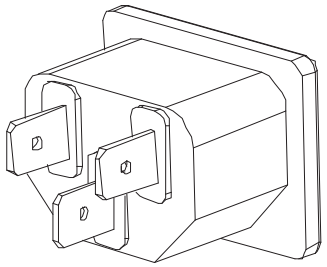
Hopper Switch	
80491	1



T-disc Exhaust	
80599	1



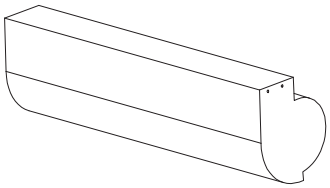
Vacuum Switch	
80549	1



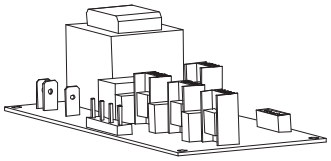
3 Prong Receptacle	
80462	1

In order to maintain warranty, components must be replaced using original manufacturers parts purchased through your dealer or directly from the appliance manufacturer.
Use of third party components will void the warranty.

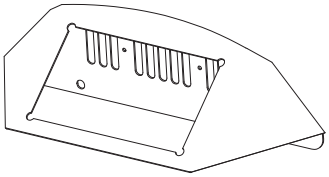
Replacement Parts



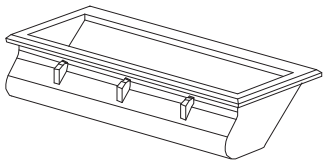
Convection Blower	
80709	1



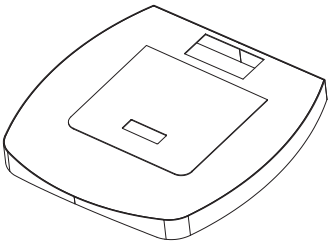
PCBA	
80631	1



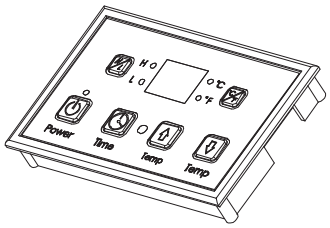
Housing, PCBA Controller	
892199	1



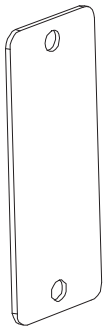
Hopper Handle	
891148	1



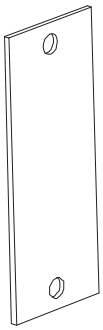
Top Assembly	
892771	1



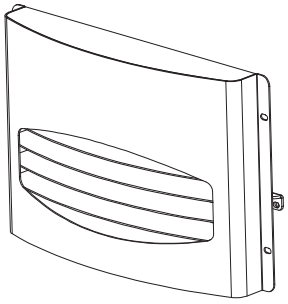
PCBA, Controller	
80630	1



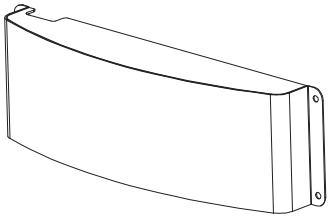
Ash Covers	
892770	2



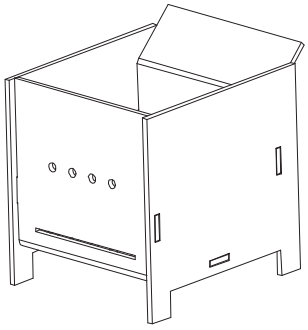
Ash Cover Gaskets	
88266	2



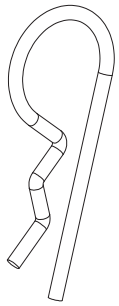
Front Louver	
892774	1



Front Lower Plate	
892773	1



Burn Pot	
86624	1

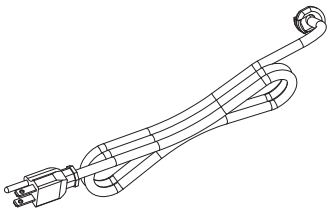


Hair Pin	
83529	1

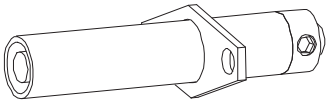
In order to maintain warranty, components must be replaced using original manufacturers parts purchased through your dealer or directly from the appliance manufacturer.
Use of third party components will void the warranty.

Replacement Parts

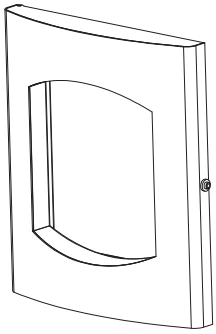
Ignitor	
80607	1



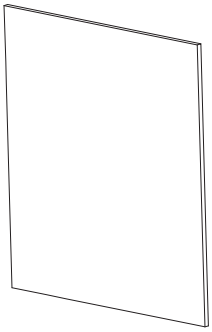
Power Cord	
80461	1



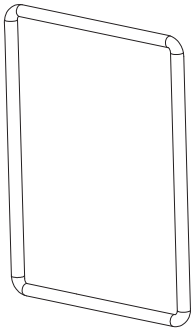
Ignitor Tube	
86633	1



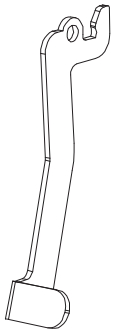
Door Assy.	
892772	1



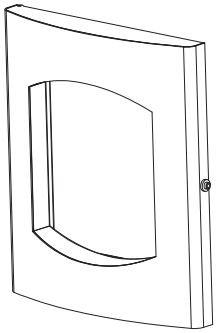
Door Glass	
892775	1



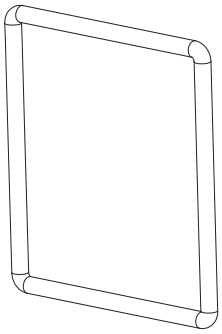
Glass Gasket	
88267	41“



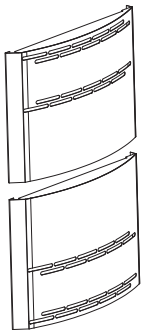
Door Handle	
892663	1



Door	
892777	1



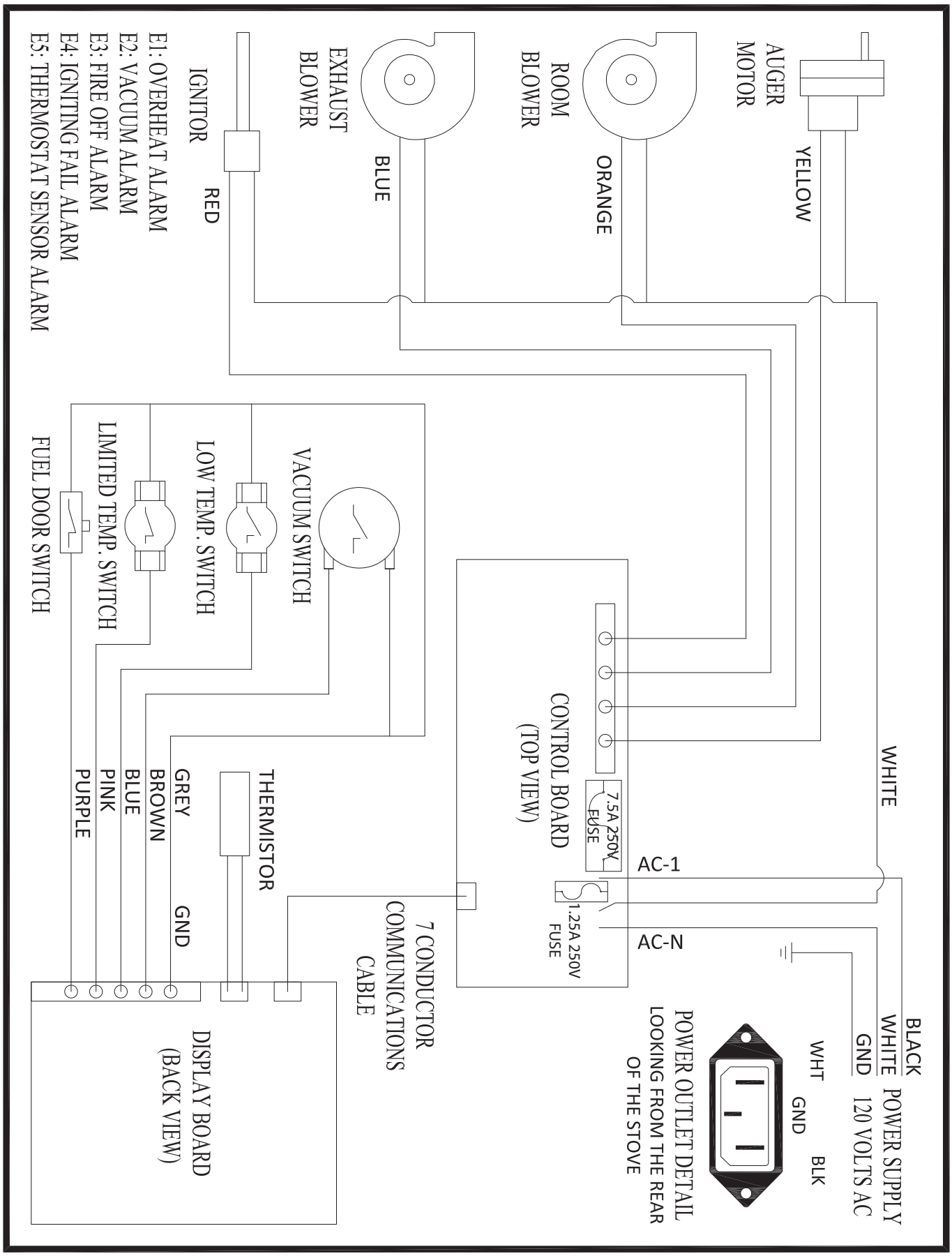
Door Gasket	
88082	45“



Side Panels - Set of 2, Gloss Black	
892764	2
Side Panels - Set of 2, Polished Stainless	
892765	2
Side Panels - Set of 2, Brushed Stainless	
892766	2

In order to maintain warranty, components must be replaced using original manufacturers parts purchased through your dealer or directly from the appliance manufacturer.
Use of third party components will void the warranty.

Wiring Diagram



Notes

Notes

Service Record

It is recommended that your heating system is serviced regularly and that the appropriate Service Interval Record is completed.

SERVICE PROVIDER

Before completing the appropriate Service Record below, please ensure you have carried out the service as described in the manufacturer's instructions. Always use the manufacturer's specified spare part when replacement is necessary.

Service 01 Date:_____
Engineer Name:_____
License No.:_____
Company:_____
Telephone No.:_____
Stove Inspected: ☐ Chimney Swept: ☐
Items Replaced:_____

Service 02 Date:_____
Engineer Name:_____
License No.:_____
Company:_____
Telephone No.:_____
Stove Inspected: ☐ Chimney Swept: ☐
Items Replaced:_____

Service 03 Date:_____
Engineer Name:_____
License No.:_____
Company:_____
Telephone No.:_____
Stove Inspected: ☐ Chimney Swept: ☐
Items Replaced:_____

Service 04 Date:_____
Engineer Name:_____
License No.:_____
Company:_____
Telephone No.:_____
Stove Inspected: ☐ Chimney Swept: ☐
Items Replaced:_____

Service 05 Date:_____
Engineer Name:_____
License No.:_____
Company:_____
Telephone No.:_____
Stove Inspected: ☐ Chimney Swept: ☐
Items Replaced:_____

Service 06 Date:_____
Engineer Name:_____
License No.:_____
Company:_____
Telephone No.:_____
Stove Inspected: ☐ Chimney Swept: ☐
Items Replaced:_____

Service 07 Date:_____
Engineer Name:_____
License No.:_____
Company:_____
Telephone No.:_____
Stove Inspected: ☐ Chimney Swept: ☐
Items Replaced:_____

Service 08 Date:_____
Engineer Name:_____
License No.:_____
Company:_____
Telephone No.:_____
Stove Inspected: ☐ Chimney Swept: ☐
Items Replaced:_____

Limited Warranty

Pellet / Corn / Multi-Fuel Heaters
(Inserts, Freestanding, and Pedestal)

The operation of this heater in a manner inconsistent with the owner's manual will void the warranty and is also against federal regulations.

United States Stove Company warrants to the original purchaser its products against premature failure of any component due to workmanship, quality, or materials as follows:

TIME PERIOD:

Firebox / Firepot	Three Years
Heat Exchanger	Three Years
Door	Three Years
Cabinets and Trim	One Year
Gaskets	One Year
All Electrical Components (Blower, Auger / Agitator Motor, PC Board, Switches)	One Year
Ceramic Glass / Agitator	One Year

CLAIM PROCEDURE

Any defects should be reported to United States Stove Company or its dealer and/or distributor giving descriptions and pertinent data, including proof or purchase which will be returned upon request.
Providing the heater has been installed and used in accordance with the Owners Manual supplied with the heater, United States Stove Company will either:

1) Replace the defective part free of charge
2) Replace the heater free of charge
3) Where the defect is of a cosmetic (non-functional) nature, United States Stove Company will bear reasonable expense to refurbish the heater, including such items as welding, painting, and incidental labor. A "Reasonable" is defined by terms of this warranty as $30.00/hour with full refund for any purchase of parts from U.S. Stove Company.

NOT COVERED

Specifically not covered under terms of this limited warranty or any other warranty are problems relating to smoking or creosote. Smoking is attributable to inadequate draft due to the design or installation of the flue system or installation of the heater itself. Creosote formation is largely attributable to improper operation of the unit and/or draft as mentioned above. Also, not covered are:

1) Removal and re-installation cost.
2) Service calls to diagnose trouble (unless authorized in writing by the manufacturer, distributor, or dealer).
3) Painted or plated surfaces.
4) Damage or defect caused by improper installation, accidents, misuse, abuse (including overfiring) or alteration.
5) Transportation or shipping costs.

LIMITATIONS AND EXCLUSIONS

1) United States Stove Company shall not be liable for incidental, consequential, special, or contingent damages anyone might suffer as a result of their breach of this written warranty or any implied warranty.
2) Should the heater be replaced by United States Stove Company "free of charge", all further warranty obligations are thereby met.
3) Parts and/or service replacements made under the terms of this warranty are warranted only for the remaining period of the original heater warranty.
4) Without specific written exclusionary waivers, no one has authority to add to or vary this limited warranty, or to create for United States Stove Company any further obligation of liability in connection with this heater or any other applicable accessory. Any further warranty implication applicable to this heater or any applicable accessory is limited in duration to the same time period as the original statement in the above schedule.

YOUR DUTIES

1) This heater, including all applicable accessories, must be installed and operated in accordance with local authorities having jurisdiction and the instructions furnished with the Owners Manual.
2) You should keep as permanent record your proof of purchase (or canceled check or invoice).

PROBLEM/RESOLUTION

1) As purchaser, you must first contact the dealer and/or distributor from whom you purchased your heater.
2) If within a reasonable period of time you do not receive satisfactory service from the distributor and/or dealer, write or call United States Stove Company, Customer Service Department, including complete details of the problem and/or problems you are experiencing, details of your installation, your proof of purchase, and the heater serial number or test agency code number.

WARRANTOR

The warrantor of record is United States Stove Company, PO Box 151, 227 Industrial Park Road, South Pittsburg, Tennessee 37380.

Phone number: (800)-750-2723 • Website: www.usstove.com

NOTE

This warranty gives you specific legal rights; and, you may also have other rights which vary from state to state. Register your product on line at www.usstove.com. Save your receipt with your records for any claims.

IMPORTANT

We congratulate you on your selection of United States Stove Company and its products. As the oldest solid fuel manufacturer in the United States (since 1869), the United States Stove Company is very proud of its products, service, employees, and satisfied customers. We would like to hear from you if you are not satisfied with the manner in which you have been handled by our distributor, dealer, representative, customer service department, parts department, or sales department. Please reach out to us by using any of the contact information listed above.

How To Order Repair Parts /

Comment Commander Les Pièces De Rechange

THIS MANUAL WILL HELP YOU OBTAIN EFFICIENT, DEPENDABLE SERVICE FROM YOUR PELLET STOVE, AND ENABLE YOU TO ORDER REPAIR PARTS CORRECTLY.

KEEP THIS MANUAL IN A SAFE PLACE FOR FUTURE REFERENCE.

WHEN WRITING, ALWAYS GIVE THE FULL MODEL NUMBER WHICH IS ON THE NAMEPLATE ATTACHED TO THE HEATER.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST /

CE GUIDE VOUS AIDERA A OBTENIR UN SERVICE EFFICACE ET FIABLE POUR CE POELE A GRANULES ET VOUS PERMETTRA DE COMMANDER CORRECTEMENT LES PIECES DE RECHANGE.

VEUILLEZ CONSERVER CE GUIDE DANS UN ENDROIT SUR POUR VOUS Y REFERER.

LORSQUE VOUS NOUS ÉCRIVEZ, VEUILLEZ INDIQUER LE NUMÉRO COMPLET DU MODÈLE AFFICHÉ SUR LA PLAQUE SIGNALÉTIQUE DE L'APPAREIL DE CHAUFFAGE.

LORSQUE VOUS COMMANDEZ DES PIECES DE RECHANGE, VEUILLEZ TOUJOURS FOURNIR LES RENSEIGNEMENTS SUIVANTS QUI FIGURENT DANS CETTE NOMENCLATURE:

1. The part number / Le numero de reference de la piece _____
2. The part description / La description de la piece _____
3. The model number / Le numero de modele _____
4. The serial number / Le numero de serie _____

227 Industrial Park Road,
South Pittsburg, TN 37380
www.usstove.com
Phone 1-800-750-2723

Enregistrement De Service

Il est recommandé que votre système de chauffage est desservi régulièrement et que le Service Interval enregistrement approprié est terminée.

FOURNISSEUR DE SERVICES

Avant de terminer l'enregistrement de service approprié ci-dessous, s'il vous plaît vous assurer que vous avez effectué le service tel que décrit dans le les instructions du fabricant. Toujours utiliser pièce de rechange indiquée par le fabricant lors de remplacement est nécessaire.

Service de 01 Date:_____
Nom de l'ingénieur: _____
N° de licence.: _____
Compagnie: _____
N° de téléphone:_____
Poêle Inspecté: ☐ Cheminée balayée: ☐
Articles Remplacé: _____

Service de 02 Date:_____
Nom de l'ingénieur: _____
N° de licence.: _____
Compagnie: _____
N° de téléphone:_____
Poêle Inspecté: ☐ Cheminée balayée: ☐
Articles Remplacé: _____

Service de 03 Date:_____
Nom de l'ingénieur: _____
N° de licence.: _____
Compagnie: _____
N° de téléphone:_____
Poêle Inspecté: ☐ Cheminée balayée: ☐
Articles Remplacé: _____

Service de 04 Date:_____
Nom de l'ingénieur: _____
N° de licence.: _____
Compagnie: _____
N° de téléphone:_____
Poêle Inspecté: ☐ Cheminée balayée: ☐
Articles Remplacé: _____

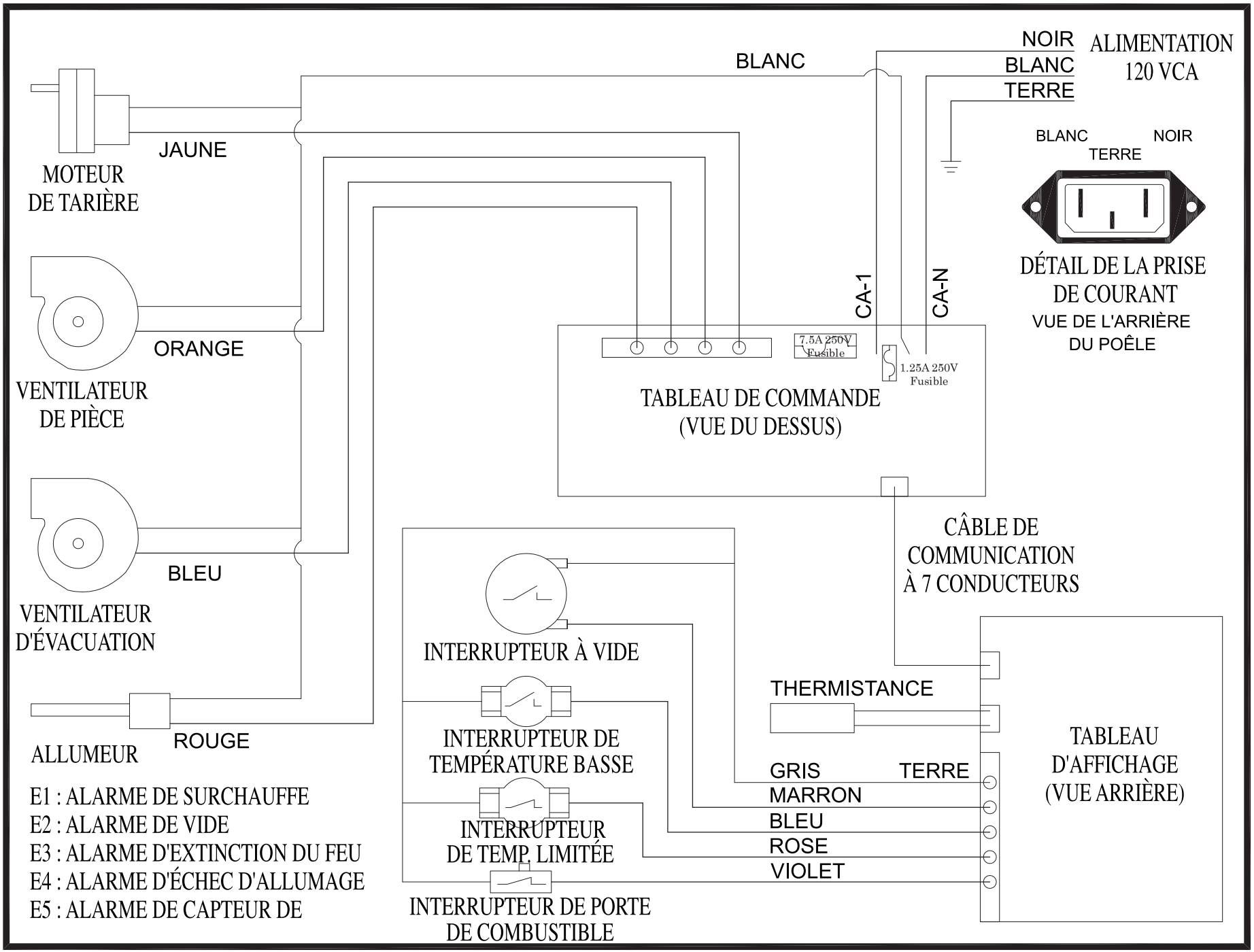
Service de 05 Date:_____
Nom de l'ingénieur: _____
N° de licence.: _____
Compagnie: _____
N° de téléphone:_____
Poêle Inspecté: ☐ Cheminée balayée: ☐
Articles Remplacé: _____

Service de 06 Date:_____
Nom de l'ingénieur: _____
N° de licence.: _____
Compagnie: _____
N° de téléphone:_____
Poêle Inspecté: ☐ Cheminée balayée: ☐
Articles Remplacé: _____

Service de 07 Date:_____
Nom de l'ingénieur: _____
N° de licence.: _____
Compagnie: _____
N° de téléphone:_____
Poêle Inspecté: ☐ Cheminée balayée: ☐
Articles Remplacé: _____

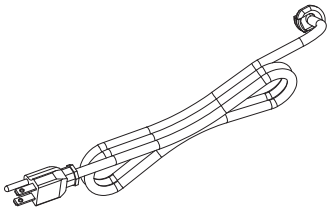
Service de 08 Date:_____
Nom de l'ingénieur: _____
N° de licence.: _____
Compagnie: _____
N° de téléphone:_____
Poêle Inspecté: ☐ Cheminée balayée: ☐
Articles Remplacé: _____

Schéma De Câblage

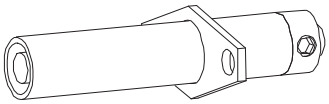


Pièces De Rechange

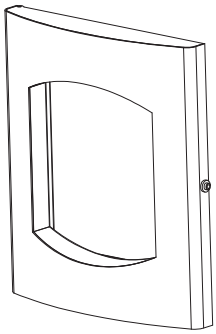
Allumeur	
80607	1



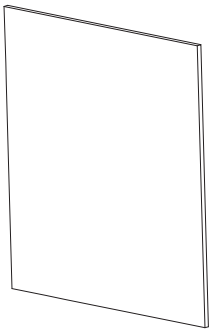
Cordon d'alimentation	
80461	1



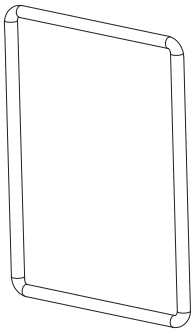
Tube d'allumage	
86633	1



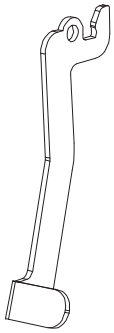
Ensemble de porte	
892772	1



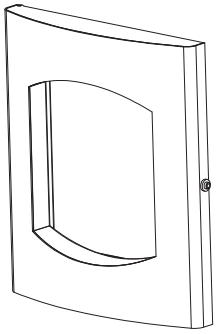
Verre de porte	
892775	1



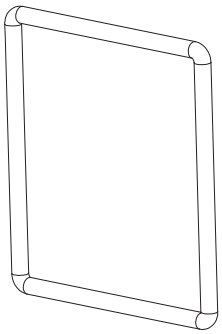
Joint en verre	
88267	41“



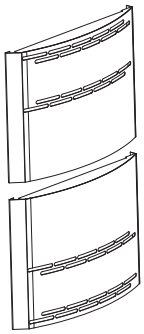
Poignée de porte	
892663	1



Porte	
892777	1



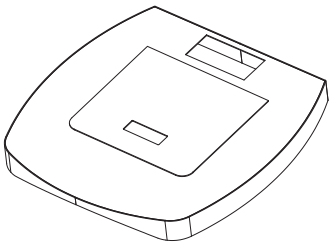
Joint de porte	
88082	45“



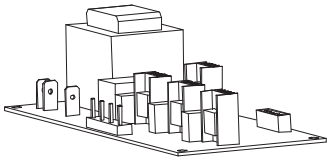
Panneaux latéraux - ensemble de 2, noir brillant	
892764	2
Panneaux latéraux - ensemble de 2, Acier inoxydable poli	
892765	2
Panneaux latéraux - ensemble de 2, Inox brossé	
892766	2

Afin de maintenir la garantie, les composants doivent être remplacés par des pièces d'origine du fabricant achetés auprès de votre revendeur ou directement auprès du fabricant de l'appareil.
L'utilisation de composants tiers annulera la garantie.

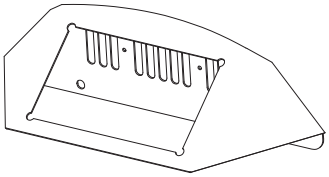
Pièces De Rechange



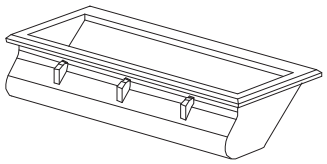
Assemblage supérieur	
892771	1



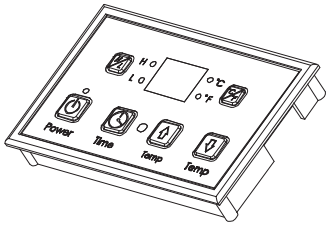
PCBA	
80631	1



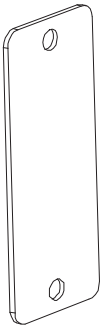
Housin, contrôleur PCBA	
892199	1



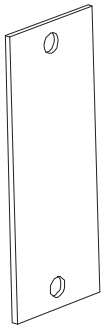
Poignée de trémie	
891148	1



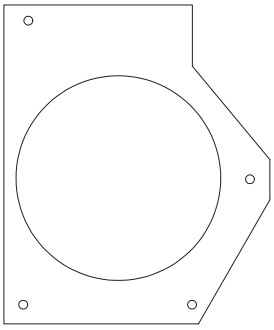
Contrôleur PCBA	
80630	1



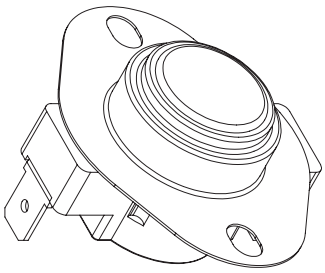
Couvertures de cendres	
892770	2



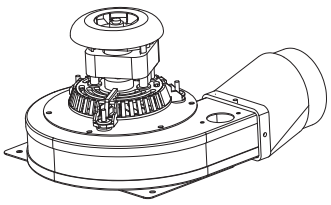
Joints de cendres	
88266	2



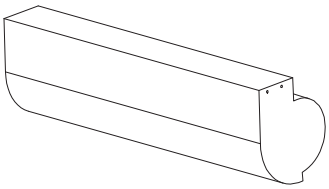
Joint d'étanchéité	
88166	1



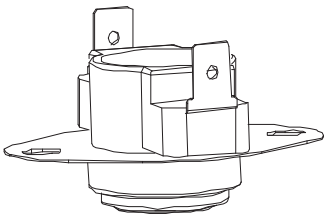
Limite haute T-disque	
80455	1



Ventilateur d'échappement	
80602	1



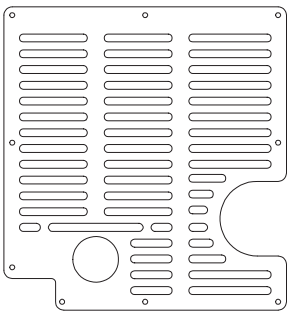
Ventilateur de convection	
80709	1



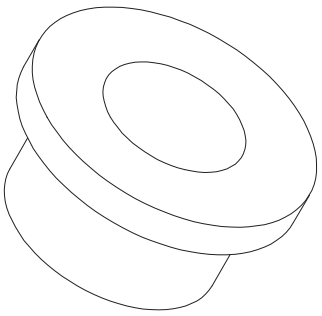
Echappement du disque T	
80599	1

Afin de maintenir la garantie, les composants doivent être remplacés par des pièces d'origine du fabricant achetés auprès de votre revendeur ou directement auprès du fabricant de l'appareil.
L'utilisation de composants tiers annulera la garantie.

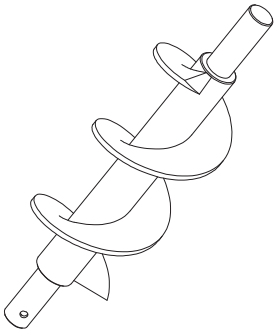
Pièces De Rechange



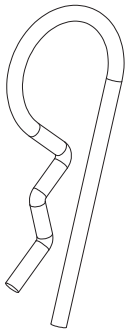
Panneau arrière ventilé	
892776	1



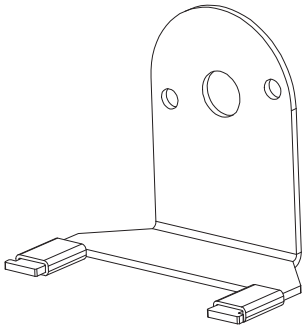
Bague de vis sans fin	
891132	1



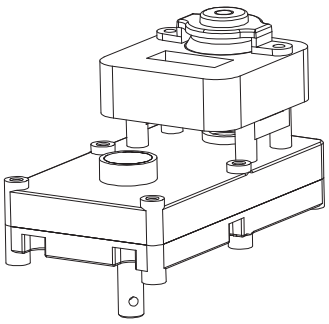
Auger	
892187	1



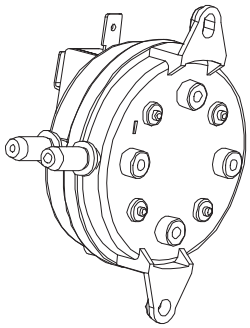
Épingle à cheveux	
83529	1



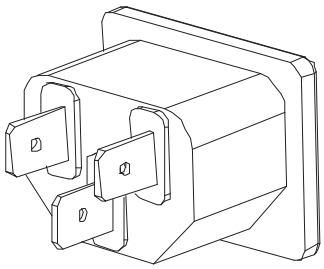
Support du moteur Auger	
892188	1



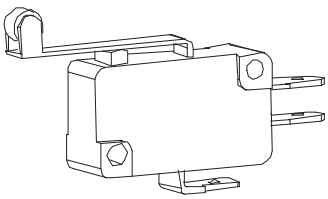
Moteur Auger	
80488	1



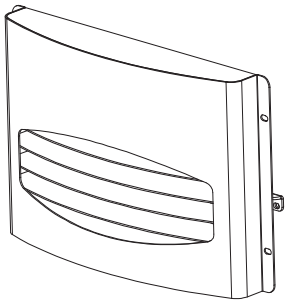
Interrupteur à vide	
80549	1



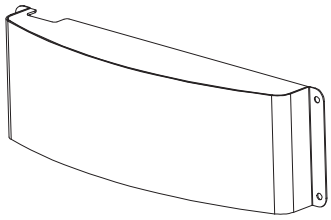
Prise à 3 broches	
80462	1



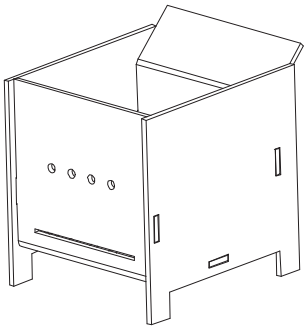
Interrupteur de trémie	
80491	1



Volet avant	
892774	1



Plaque inférieure avant	
892773	1



Brûler le pot	
86624	1

Afin de maintenir la garantie, les composants doivent être remplacés par des pièces d'origine du fabricant achetés auprès de votre revendeur ou directement auprès du fabricant de l'appareil.
L'utilisation de composants tiers annulera la garantie.

Guide De Dépannage

L'interrupteur de surchauffe se déclenche tout le temps	
Causes possibles	Solutions possibles: (Débranchez le poêle avant toute chose quand c'est possible.)
1. Le ventilateur de convection surchauffe et déclenche l'arrêt de température interne.	Enlevez la poussière des bobinages et pales de ventilateur. Si le graissage du ventilateur ne suffit pas, il se peut que le ventilateur soit défectueux.
2. Le poêle est resté sur le réglage le plus élevé pendant de longues périodes.	En cas d'utilisation du poêle sur le réglage de chauffage le plus élevé, il se peut que la température de la pièce s'élève au point de créer une situation de surchauffe potentielle. Dans ce cas, essayez d'utiliser un réglage de chauffage inférieur.
3. Un autre combustible que les granulés de bois est brûlé dans le poêle.	Ce poêle à granulés a été conçu et testé pour brûler des granulés de bois. Recherchez la présence de combustibles autre que des granulés de bois. Aucun autre type de combustible n'a été approuvé pour ce poêle à granulés. En présence de signes d'utilisation d'autres types de combustible, cessez immédiatement de les utiliser.
4. Surtension ou baisse de tension.	Une surtension, un pic ou une chute de tension peut provoquer le déclenchement du l'interrupteur de surchauffe. Vérifiez si une protection contre les surtensions est installée sur le poêle. Sinon, il est conseillé d'en installer une.
5. L'interrupteur de surchauffe fonctionne mal.	Si tous les autres éléments paraissent corrects, remplacez l'interrupteur de surchauffe.

• LA VITRE NOIRCIT TRÈS RAPIDEMENT • LA FLAMME EST MOLLE, FONCÉE ET SES POINTES SONT NOIRES • APRÈS UN CERTAIN TEMPS D'UTILISATION DU POÊLE, LE POT DE COMBUSTION DÉBORDE	
Causes possibles:	Solutions possibles: (Débranchez le poêle avant toute chose quand c'est possible.)
1. Le poêle ou le conduit d'évacuation est sale, ce qui limite la circulation d'air dans le pot de combustion.	Suivez toutes les procédures de nettoyage de la section d'entretien du Guide d'utilisation.
2. Le conduit d'évacuation est mal installé.	Assurez-vous que le conduit d'évacuation ait été installé conformément aux critères énoncés dans le Guide d'utilisation.
3. Le registre de tirage est trop fermé pour un réglage de chauffage élevé.	Tirez le bouton du registre de tirage plus loin vers le côté du poêle et essayez de rallumer l'appareil.
4. Les orifices du pot de combustion sont bouchés.	Retirez le pot de combustion et nettoyez-le à fond.
5. Amortisseur Air est cassé.	Inspecter visuellement l'amortisseur. Assurez-vous que la plaque d'amortissement est fixé à la tige d'amortisseur. Lorsque la tige de l'amortisseur est déplacé la plaque doit se déplacer avec elle.
6. Blocage du conduit d'admission d'air.	Inspecter visuellement le conduit d'admission d'air qui entre dans le pot de combustion en recherchant des corps étrangers.
7. Le ventilateur de combustion ne tourne pas assez vite.	Testez la vitesse de rotation du ventilateur après avoir nettoyé les pales. La vitesse de rotation doit être d'environ 3000 t/min.
8. Granulés de mauvaise qualité. (Ne s'applique qu'au problème « LA VITRE NOIRCIT TRÈS RAPIDEMENT ».)	La marque ou le lot de granulés utilisés est peut-être de mauvaise qualité. Si possible, essayez une autre marque de granulés. Essayez aussi une marque composée d'un autre type de bois (résineux plutôt que feuillus). Des bois différents présentent des caractéristiques différentes qui affectent la combustion.

Guide De Dépannage

LE VENTILATEUR DE CONVECTION S'ARRÊTE PUIS REDÉMARRE	
1. Causes possibles:	Solutions possibles: (Débranchez le poêle avant toute chose quand c'est possible.)
2. Le ventilateur de convection surchauffe et déclenche l'arrêt de température interne.	Enlevez la poussière des bobinages et pales de ventilateur. Si le nettoyage du ventilateur ne suffit pas, il se peut que le ventilateur soit défectueux.
3. Dysfonctionnement de la carte de circuit imprimé.	Testez la tension arrivant au ventilateur de convection. Si le courant arrive au ventilateur quand il est arrêté, le tableau de commande fonctionne normalement. Si aucun courant n'arrive au ventilateur quand il est arrêté pendant le fonctionnement du poêle, le tableau de commande est défectueux.

LE POÊLE N'EST PAS ALIMENTÉ EN GRANULÉS, MAIS LE TÉMOIN D'ALIMENTATION EN COMBUSTIBLE S'ALLUME COMME PRÉVU	
Causes possibles:	Solutions possibles: (Débranchez le poêle avant toute chose quand c'est possible.)
1. L'interrupteur de surchauffe s'est déclenché ou est défectueux.	Attendez que le poêle refroidisse pendant environ 30 à 45 minutes. Localisez le thermodisque de surchauffe et appuyez sur le bouton de réinitialisation situé à l'arrière de celui-ci. Si le poêle ne redémarre pas, vérifiez que le thermodisque ne soit pas défectueux. Pour tester si le thermodisque est défectueux, vous pouvez le contourner comme décrit précédemment pour le thermodisque POF.
2. Moteur de tarière défectueux.	Retirez le moteur de l'arbre de la tarière et essayez de le faire fonctionner. Si le moteur tourne, c'est l'arbre qui est coincé sur quelque chose. Si le moteur ne tourne pas, il est défectueux.
3. Tarière bloquée.	Commencez par vider la trémie. Puis retirez le moteur de la tarière en retirant la goupille de la tarière. Retirez la plaque d'inspection de l'arbre de la tarière dans la trémie pour pouvoir examiner l'arbre de la tarière. Soulevez légèrement l'arbre de la tarière de sorte que l'extrémité de l'arbre sorte du manchon inférieur de tarière. Retirez ensuite les deux écrous qui tiennent la pastille supérieure de la tarière. Puis faites pivoter l'extrémité inférieur de l'arbre de la tarière vers vous, jusqu'à ce que vous puissiez soulever l'arbre et le sortir du poêle. Après avoir sorti l'arbre, recherchez des pales déformées, des bavures ou des soudures cassées. Retirez tout corps étranger susceptible d'avoir provoqué le blocage. Vérifiez également le tube de la tarière, en recherchant des signes de dommage, tels que des bavures, des zones rugueuses, ou des rainures creusées dans le métal qui pourraient être à l'origine du blocage.
4. Fil débranché ou connecteur desserré.	Vérifiez tous les fils et connecteurs branchés sur le moteur de tarière, l'interrupteur de surchauffe et le connecteur Molex.
5. Tableau de commande défectueux.	Si le fusible est bon, les fils et connecteurs bien raccordés, et que l'interrupteur de surchauffe ne s'est pas déclenché, testez la tension qui arrive au moteur de tarière. En l'absence de tension nominale arrivant au moteur de tarière lorsque le témoin d'alimentation en combustible est allumé, c'est le tableau de commande qui est défectueux.

Guide De Dépannage

LE POÊLE EST BIEN ALIMENTÉ EN GRANULÉS, MAIS NE S'ALLUME PAS	
Causes possibles:	Solutions possibles: (Débranchez le poêle avant toute chose quand c'est possible.)
1. Le registre de tirage est trop ouvert pour l'allumage.	Poussez le registre de tirage plus près du côté du poêle pour le démarrage. Dans certaines situations, il peut être nécessaire de fermer complètement le registre pour permettre l'allumage. Après l'apparition d'une flamme, le registre peut être réglé en fonction du réglage d'alimentation souhaité.
2. Le tube d'allumeur ou l'entrée d'air du tube d'allumeur est obstrué.	Localisez le boîtier de l'allumeur à l'arrière du pare-feu. L'orifice d'entrée d'air est un petit trou situé sur le côté, en bas du boîtier. Vérifiez qu'il soit dégagé. Regardez aussi depuis l'avant du poêle pour vérifier l'absence de tout débris autour de l'élément d'allumage à l'intérieur du boîtier de l'allumeur.
3. Le pot de combustion n'est pas poussé à fond vers l'arrière du foyer.	Vérifiez que le collet de prise d'air du pot de combustion touche la paroi arrière du foyer.
4. Élément allumeur défectueux.	Envoyez directement le courant à l'allumeur. Observez l'extrémité de l'allumeur, depuis l'avant du poêle. Au bout de 2 minutes, cette extrémité doit rougeoyer. Sinon, c'est que l'élément est défectueux.
5. Le tableau de commande n'envoie pas de courant à l'allumeur.	Vérifiez la tension qui arrive à l'allumeur lors du démarrage. Ce doit être la tension nominale. Si la tension est inférieure à la valeur nominale, vérifiez le câblage. Si le câblage est bon, c'est le tableau qui est défectueux.

UNE ODEUR DE FUMÉE EST REFOULÉE DANS LA PIÈCE	
Causes possibles:	Solutions possibles: (Débranchez le poêle avant toute chose quand c'est possible.)
1. Il y a une fuite dans le système de conduit d'évacuation.	Inspectez tous les raccords de tuyaux d'évacuation. Assurez-vous qu'ils soient tous scellés avec du silicone RTV supportant une température de 500 °F (260 °C) ou plus. En outre, scellez les joints avec du ruban métallique UL-181-AP. Vérifiez également que la pièce d'adaptation carré/cercle du ventilateur de combustion ait été correctement scellée avec le même silicone RTV.
2. Le joint d'étanchéité du ventilateur de combustion est défectueux.	Inspectez les deux joints du ventilateur de combustion qui doivent être en bon état.
S'agissant d'un appareil qui brûle du bois, ce poêle à granulé peut émettre une faible odeur de feu de bois. Si cette odeur devient anormale, ou si vous remarquez qu'un peu de suie s'accumule sur les murs ou les meubles, vérifiez soigneusement le système d'évacuation des fumées en recherchant des fuites. Tous les joints doivent être correctement scellés. Nettoyez également le poêle en suivant les instructions de la section « ENTRETIEN ». Si le problème persiste, prenez contact avec votre revendeur.	

Guide De Dépannage

L'écran affiche « E4 » clignotant	
Causes possibles:	Solutions possibles: (Débranchez le poêle avant toute chose quand c'est possible.)
1. L'entrée d'air, le pot de combustion, les chambres de combustion internes, les ventilateurs de combustion ou le conduit d'évacuation sont bouchés par des cendres ou des corps étrangers.	Suivez toutes les procédures de nettoyage de la section d'entretien du Guide d'utilisation.
2. Le thermodisque de détection de feu (POF) a été débranché.	Vérifiez si les fils du thermodisque POF sont correctement branchés.
3. Le thermodisque de détection de feu (POF) a mal fonctionné.	Contournez temporairement le thermodisque POF en débranchant les deux fils et en les raccordant avec un petit morceau de fil. Puis rebranchez le poêle. Si le poêle s'allume et fonctionne, vous devez remplacer le thermodisque POF. Cette manœuvre est réservée aux tests. NE LAISSEZ PAS LE THERMODISQUE HORS CIRCUIT. Si le thermodisque POF restait hors circuit, les ventilateurs ne s'arrêteraient jamais et si le feu s'éteignait, la tarière continuerait à envoyer les granulés jusqu'à ce que la trémie soit vide.
4. La trémie est vide de granulés.	Remplissez la trémie.
5. L'interrupteur de sécurité de la trémie est affecté d'une défaillance ou la trémie est ouverte.	Lors de l'utilisation de l'appareil, vérifiez que le couvercle de la trémie soit fermé pour permettre à l'interrupteur de sécurité de la trémie de s'activer. Vérifiez le branchement des fils qui partent de l'interrupteur de sécurité de la trémie jusqu'au tableau de commande et au moteur de la tarière. Utilisez un testeur de continuité pour tester l'interrupteur de sécurité de la trémie; remplacer-le si nécessaire.
6. L'arbre de la tarière est coincé.	Commencez par vider la trémie. Puis retirez le moteur de la tarière en retirant la goupille de la tarière. Retirez la plaque d'inspection de l'arbre de la tarière dans la trémie pour pouvoir examiner l'arbre de la tarière. Soulevez légèrement l'arbre de la tarière de sorte que l'extrémité de l'arbre sorte du manchon inférieur de tarière. Retirez ensuite les deux écrous qui tiennent la pastille supérieure de la tarière. Puis faites pivoter l'extrémité inférieure de l'arbre de la tarière vers vous, jusqu'à ce que vous puissiez soulever l'arbre et le sortir du poêle. Après avoir sorti l'arbre, recherchez des pales déformées, des bavures ou des soudures cassées. Retirez tout corps étranger susceptible d'avoir provoqué le blocage. Vérifiez également le tube de la tarière, en recherchant des signes de dommage, tels que des bavures, des zones rugueuses, ou des rainures creusées dans le métal qui pourraient être à l'origine du blocage.
7. Le moteur de la tarière est affecté d'une défaillance.	Retirez le moteur de l'arbre de la tarière et essayez de le faire fonctionner. Si le moteur tourne, c'est l'arbre qui est coincé sur quelque chose. Si le moteur ne tourne pas, il est défectueux.

L'écran affiche « E5 » clignotant	
Causes possibles:	Solutions possibles: (Débranchez le poêle avant toute chose quand c'est possible.)
1. Le poêle affiche automatiquement « E5 » en clignotant lorsqu'il est allumé.	Le capteur du thermostat a été débranché du tableau de commande. Vérifiez si le capteur est débranché. Si le capteur n'est pas débranché, c'est le capteur qui est endommagé ou en court-circuit. Dans ce cas, le capteur doit être remplacé.

Guide De Dépannage

L'écran affiche « E3 » clignotant	
Causes possibles:	Solutions possibles: (Débranchez le poêle avant toute chose quand c'est possible.)
1. La trémie est vide de granulés.	Remplissez la trémie.
2. Le registre de réglage d'air est trop ouvert pour un réglage de chauffage trop bas.	Si le réglage de chauffage est réduit, vous devrez peut-être fermer complètement le registre.
3. Les orifices du pot de combustion sont bouchés.	Retirez le pot de combustion et nettoyez-le à fond.
4. L'entrée d'air, les chambres intérieures, ou le système d'évacuation sont partiellement obstrués.	Suivez toutes les procédures de nettoyage de la section d'entretien du Guide d'utilisation
5. L'interrupteur de sécurité de la trémie est affecté d'une défaillance ou la trémie est ouverte.	Lors de l'utilisation de l'appareil, vérifiez que le couvercle de la trémie soit fermé pour permettre à l'interrupteur de sécurité de la trémie de s'activer. Vérifiez les connexions des fils qui partent de l'interrupteur de sécurité de la trémie jusqu'au tableau de commande et au moteur de la tarière. Utilisez un testeur de continuité pour tester l'interrupteur de sécurité de la trémie; remplacer-le si nécessaire.
6. L'arbre de la tarière est coincé.	Commencez par vider la trémie. Retirez ensuite le moteur de la tarière en retirant la goupille de la tarière, puis retirez les deux boulons qui fixent le support de tarière au tube de tarière. Vous pouvez maintenant retirer le support du tube de tarière. Retirez les deux boulons du côté du tube de tarière pour déposer le roulement inférieur de la tarière. Tirez sur la tarière pour la sortir du tube afin de lever le blocage.
7. Le moteur de la tarière est affecté d'une défaillance.	Retirez le moteur de l'arbre de la tarière et essayez de le faire fonctionner. Si le moteur tourne, c'est l'arbre qui est coincé sur quelque chose. Si le moteur ne tourne pas, il est défectueux.
8. Le thermodisque de détection de feu (POF) a mal fonctionné.	Contournez temporairement le thermodisque POF en débranchant les deux fils et en les raccordant avec un petit morceau de fil. Puis rebranchez le poêle. Si le poêle s'allume et fonctionne, vous devez remplacer le thermodisque POF. Cette manœuvre est réservée aux tests. NE LAISSEZ PAS LE THERMODISQUE HORS CIRCUIT. Si le thermodisque POF restait hors circuit, les ventilateurs ne s'arrêteraient jamais et si le feu s'éteignait, la tarière continuerait à envoyer les granulés jusqu'à ce que la trémie soit vide.
9. La tableau de commande n'envoie pas le courant au thermodisque POF ou aux autres composants du système de tarière.	Une tension approximative de 5 V doit arriver au Thermodisque POF après 10 minutes de fonctionnement du poêle.

Guide De Dépannage

L'écran affiche « E2 » clignotant	
Causes possibles:	Solutions possibles: (Débranchez le poêle avant toute chose quand c'est possible.)
1. Le tuyau souple de l'interrupteur de débit d'air ou les tuyaux de fixation au poêle pour le tuyau souple sont bouchés.	Débranchez le tuyau souple d'air de l'interrupteur de débit d'air et soufflez dans le tuyau. Si l'air circule librement, le tuyau souple et le tube sont ouverts. Si l'air ne circule pas dans le tuyau souple, utilisez un cintre à vêtements métallique pour le déboucher.
2. L'entrée d'air, le pot de combustion, les chambres de combustion internes, les ventilateurs de combustion ou le conduit d'évacuation sont bouchés par des cendres ou des corps étrangers.	Suivez toutes les procédures de nettoyage de la section d'entretien du Guide d'utilisation.
3. Le foyer n'est pas correctement scellé.	Vérifiez que la porte est fermée et que le joint est en bon état.
4. Le conduit d'évacuation est mal installé.	Vérifiez que l'installation du conduit d'évacuation satisfait aux critères du Guide d'utilisation.
5. Les connexions du fil de l'interrupteur de débit d'air sont défectueuses.	Vérifiez les connecteurs qui relient les fils gris à l'interrupteur de débit d'air.
6. Panne du ventilateur de combustion.	Lorsque le poêle est en marche, vérifiez si le ventilateur de combustion est en fonctionnement. Sinon, vérifiez l'alimentation électrique du ventilateur de combustion. Ce doit être la tension nominale. Si l'alimentation électrique est bonne, c'est le ventilateur qui est défectueux. Si l'alimentation est absente, reportez-vous au point No. 8.
7. Le tableau de commande n'envoie pas le courant au ventilateur de combustion.	Si l'alimentation électrique n'arrive pas au ventilateur de combustion, vérifiez toutes les connexions des fils électriques. Si tous les fils sont bien connectés, c'est le tableau de commande qui est défectueux.
8. Le tableau de commande n'envoie pas le courant à l'interrupteur de débit d'air.	Après 30 secondes de fonctionnement du poêle, la tension d'alimentation de l'interrupteur de débit d'air doit atteindre environ 5 V.
9. Panne de l'interrupteur d'air.	Pour vérifier l'interrupteur de débit d'air, débranchez le tuyau souple d'air du corps du poêle. L'autre extrémité restant branchée sur l'interrupteur d'air, aspirez très doucement depuis l'extrémité libre du tuyau (vous pouvez débrancher entièrement le tuyau souple du poêle et de l'interrupteur d'air pour vérifier qu'il ne soit pas bouché). Si vous entendez un clic, c'est que l'interrupteur de débit d'air fonctionne. ATTENTION, UNE DÉPRESSION TROP IMPORTANTE PEUT ENDOMMAGER L'INTERRUPTEUR DE DÉBIT D'AIR.

Guide De Dépannage

Lorsque le poêle ne fonctionne pas comme d'ordinaire, la première réaction est de demander à l'aide. Ce guide peut vous faire gagner du temps et économiser de l'argent en vous permettant de résoudre les problèmes simples par vous-même. Les problèmes rencontrés sont souvent le résultat de cinq facteurs seulement: 1) mauvais combustible; 2) mauvaise utilisation ou mauvais entretien; 3) mauvaise installation; 4) défaillance d'un composant; 5) défaut de fabrication. Vous pouvez en général résoudre les problèmes liés aux causes 1 et 2. Votre concessionnaire peut quant à lui régler les problèmes liés aux causes 3, 4 et 5. Reportez-vous aux schémas de la page 25 pour aider à localiser des pièces indiquées.

Pour le dépannage et en vous aidant de ce guide, observez le réglage du niveau de chauffage pour voir quel témoin clignote.

- Débranchez le cordon d'alimentation avant toute opération d'entretien ! REMARQUE: Le fait de placer l'interrupteur ON/OFF en position « OFF » ne coupe pas entièrement l'alimentation des composants électriques du poêle.
- Ne tentez jamais de réparer ou de remplacer une pièce du poêle sauf indication contraire dans les directives de ce guide. Tous les autres travaux doivent être effectués par un technicien qualifié.

L'écran affiche « E1 » clignotant	
Causes possibles:	Solutions possibles: (Débranchez le poêle avant toute chose quand c'est possible.)
1. Le ventilateur de convection surchauffe et déclenche l'arrêt de température interne.	Enlevez la poussière des bobinages et pales de ventilateur. Si le graissage du ventilateur ne suffit pas, il se peut que le ventilateur soit défectueux.
2. Le poêle est demeuré sur le réglage le plus élevé pendant de longues périodes.	En cas d'utilisation du poêle sur le réglage de chauffage le plus élevé, il se peut que la température de la pièce s'élève au point de créer une situation de surchauffe potentielle. Dans ce cas, essayez d'utiliser un réglage de chauffage inférieur.
3. Un autre combustible que les granulés de bois est brûlé dans le poêle.	Ce poêle à granulés a été conçu et testé pour brûler des granulés de bois. Recherchez la présence de combustibles autre que des granulés de bois. Aucun autre type de combustible n'a été approuvé pour ce poêle à granulés. En présence de signes d'utilisation d'autres types de combustible, cessez immédiatement de les utiliser.
4. Surtension ou baisse de tension.	Une surtension, un pic ou une chute de tension peut provoquer le déclenchement du l'interrupteur de surchauffe. Vérifiez si une protection contre les surtensions est installée sur le poêle. Sinon, il est conseillé d'en installer une.
5. L'interrupteur de surchauffe fonctionne mal.	Si tous les autres élément paraissent corrects, remplacez l'interrupteur de surchauffe.

ATTENTION: Cet appareil de chauffage au bois a besoin d'inspection périodique et la réparation pour un fonctionnement correct. Il est contre les règlements fédéraux pour faire fonctionner ce poêle à bois d'une manière incompatible avec les instructions de ce manuel.

Entretien

SURFACES PEINTES

Les surfaces peintes peuvent être essuyées avec un chiffon humide. Si des rayures apparaissent, ou si vous souhaitez rénover la peinture, adressez-vous au revendeur agréé qui vous fournira un bidon de peinture à haute température adaptée.

VITRE – NETTOYAGE, DÉPOSE ET REMPLACEMENT D'UNE VITRE DE PORTE CASSÉE

Nettoyage – Nous conseillons d'utiliser un produit de nettoyage pour vitres de bonne qualité. En cas d'accumulation de créosote ou de charbon, il peut s'avérer nécessaire d'utiliser de la laine d'acier 000 et de l'eau pour nettoyer la vitre. N'utilisez PAS de produits de nettoyage abrasifs. Ne procédez PAS au nettoyage lorsque la vitre est CHAUDE.

S'il est nécessaire de remplacer la vitre, enlevez les quatre (4) vis et taquets de support de la vitre. Portez des gants de cuir (ou des gants appropriés pour manipuler le verre cassé), et retirez soigneusement tous les morceaux de verre du cadre de la porte. Jetez tous les débris de verre de manière appropriée. N'utilisez que du verre céramique à haute température de la bonne taille et de la bonne épaisseur. Ne remplacez pas le verre par des matériaux de substitution. Adressez-vous à votre revendeur agréé pour vous procurer ce verre. Réinstallez la nouvelle vitre en la refixant avec les taquets de support et les vis, sans trop serrer les vis pour ne pas endommager le verre.

Ne malmenez pas la vitre de la porte en la frappant, en la claquant ou en lui infligeant des chocs similaires. N'utilisez pas le poêle lorsque la vitre est retirée, fissurée ou cassée.

MISE EN MARCHE À L'AUTOMNE

Avant de démarrer le premier feu de la saison de chauffage, vérifiez que la zone à l'extérieur des systèmes d'évacuation et d'admission d'air ne soit pas obstruée. Nettoyez et retirez les cendres volantes du système d'évacuation. Nettoyez tous les filtres du système d'évacuation et du tuyau d'entrée d'air extérieur. Activez toutes les commandes et vérifiez qu'elles fonctionnent correctement. C'est aussi le bon moment pour nettoyer à fond la totalité du poêle.

ARRÊT AU PRINTEMPS

Après la dernière flambée du printemps, retirez tous les granulés restants de la trémie et du système d'alimentation à tarière. Enlevez tout d'abord les granulés avec une pelle, puis faites fonctionner la tarière jusqu'à ce que la trémie soit vide et que les granulés cessent de couler (il suffit pour cela d'appuyer sur l'interrupteur ON en gardant la porte d'observation ouverte). Passez l'aspirateur dans la trémie. Nettoyez soigneusement le pot de combustion et la chambre de combustion. Si le poêle est dans un endroit humide, il peut être souhaitable de pulvériser du silicone en aérosol à l'intérieur de la trémie nettoyée. Le système d'évacuation doit être soigneusement nettoyé.

CALENDRIER D'ENTRETIEN

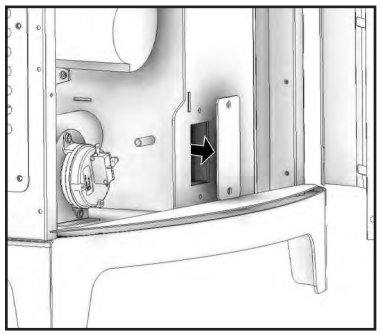
Suivez le calendrier ci-dessous dans des conditions d'utilisation moyennes.

Les joints autour de la porte et de la vitre doivent être inspectés et réparés ou remplacés si nécessaire.

	Tous les jours	Toutes les semaines	Tous les mois ou selon les besoins
Pot de combustion	Agité	Vidé	
Chambre de combustion		Brossée	
Cendres		Vérifiées	Vidées
Chambres intérieures			Aspirées
Pales du ventilateur de combustion			Aspirées / Brossées
Turbine du ventilateur de convection			Aspirée / Brossée
Système d'évacuation			Nettoyé
Joints			Inspectés
Vitre	Essuyée	Nettoyée	
Trémie (fin de saison)			Vidée et aspirée

Entretien

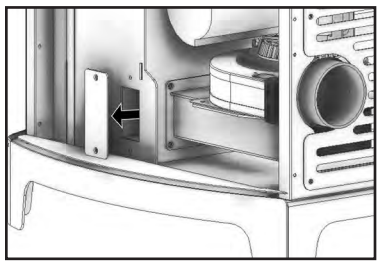
chaleur. Pour accéder à ces outs propres, vous devez retirer les deux panneaux latéraux. Les sorties propres sont fixées à la chambre de combustion avec (2) vis 5/16 “. Retirez les feuilles propres et aspirer les cendres accumulées. Cela devrait être fait au moins une fois par mois ou plus fréquemment si de grandes quantités de cendres sont remarqués lors du nettoyage ou si le poêle ne semble pas être brûler correctement.



Si le vide est utilisé pour nettoyer votre poêle, nous vous suggérons d’utiliser un aspirateur conçu pour l’élimination des cendres. Certains aspirateur classique (à savoir la boutique de vacs) peut fuir la cendre dans la pièce.

NE PAS ASPIRER HOT ASH

ÉLIMINATION DES CENDRES



Retirez les cendres lorsque l’appareil a refroidi. Les cendres doivent être placées dans un récipient métallique doté d’un couvercle hermétique. Le récipient à cendres fermé doit être déposé sur un sol en matériau non combustible ou à même la terre, bien à l’écart de tout matériau combustible, en attendant l’élimination définitive. Si vous éliminez les cendres en les enterrant ou en les dispersant localement, elles doivent demeurer dans un récipient fermé jusqu’à ce qu’elles soient complètement refroidies. Le récipient ne doit pas être utilisé pour l’élimination d’autres déchets ou rebut. En cas de mélange avec des matières combustibles, les cendres et les braises peuvent s’enflammer.

VÉRIFICATION ET NETTOYAGE DE LA TRÉMIE

Vérifiez périodiquement la trémie pour déterminer si de la sciure (des fines) s’est accumulée dans le système d’alimentation ou si des granulés sont restés collés à la surface de la trémie. Nettoyez-les si nécessaire.

Joints de porte et de vitre

Inspectez périodiquement les joints de la porte principale et de la vitre. Il peut s’avérer nécessaire de retirer la porte pour faire remplacer les joints usés, déchirés ou compactés par votre revendeur agréé.

MOTEURS DES VENTILATEURS

Nettoyez tous les ans les orifices d’aération des moteurs des ventilateurs d’évacuation et de distribution. Retirez le ventilateur d’évacuation du conduit d’évacuation et nettoyez ses pales dans le cadre des opérations de mise en marche en automne.

SMOKE AND CO MONITEURS

La combustion du bois produit naturellement le monoxyde de carbone (CO) et de la fumée. CO est un gaz toxique lorsqu’il est exposé à des concentrations élevées pendant des périodes de temps prolongées. Alors que les systèmes de combustion modernes réchauffeurs réduisent considérablement la quantité de CO émise par la cheminée, l’exposition aux gaz dans des zones fermées ou confinés peut être dangereux. Assurez-vous que vous les joints du poêle et les joints de cheminée sont en bon état de fonctionnement et d’étanchéité correctement pour assurer une exposition involontaire. Il est recommandé d’utiliser les deux écrans de fumée et de CO dans les zones ayant le potentiel de générer CO.

VÉRIFICATION ET NETTOYAGE DE LA TRÉMIE

Vérifiez périodiquement la trémie pour déterminer si de la sciure (des fines) s’est accumulée dans le système d’alimentation ou si des granulés sont restés collés à la surface de la trémie. Nettoyez-les si nécessaire.

JOINTS DE PORTE ET DE VITRE

Inspecter régulièrement les principales portes et fenêtres en verre joints. La porte principale peut avoir besoin d’être enlevé pour avoir des joints effilochés, brisés ou compactés remplacés par votre revendeur agréé. La porte de cet appareil utilise un “joint 5/8 corde de diamètre

MOTEURS DES VENTILATEURS

Nettoyez tous les ans les orifices d’aération des moteurs des ventilateurs d’évacuation et de distribution. Retirez le ventilateur d’évacuation du conduit d’évacuation et nettoyez ses pales dans le cadre des opérations de mise en marche en automne.

Entretien

PROCÉDURE D'ARRÊT

Pour arrêter le poêle, il suffit d'appuyer sur la touche « POWER » du tableau d'affichage. Le témoin vert repasse au rouge lorsqu'on appuie sur la touche « POWER ». Le moteur de la tarière s'arrête et les ventilateurs continuent de fonctionner jusqu'à ce que la température de la chambre de combustion interne ait baissé jusqu'à un niveau prédéfini.

AVERTISSEMENT: N'arrêtez jamais cet appareil en le débranchant de la source d'alimentation électrique.

1. Ce poêle est équipé d'un thermodisque haute température. Cet appareil comporte un thermodisque à réarmement manuel. Cet interrupteur de sécurité a deux fonctions.

A. Détecter une surchauffe du poêle et arrêter le système d'alimentation en combustible ou la tarière.

B. En cas de dysfonctionnement du ventilateur de convection, le thermodisque haute température arrête automatiquement la tarière, ce qui prévient une surchauffe du poêle.

REMARQUE: Sur certains appareils, une fois le bouton de réinitialisation déclenché, comme un disjoncteur, il faut appuyer dessus pour redémarrer le poêle. Sur d'autres appareils, le thermodisque ne comporte pas de bouton de réinitialisation et se réinitialise lorsque le poêle a refroidi. Le fabricant vous recommande de vous adresser au revendeur si cela se produit car cela peut indiquer un problème plus grave. Il peut s'avérer nécessaire d'appeler le service de réparation.

En cas de défaillance du ventilateur de combustion, un interrupteur pneumatique interrompt automatiquement la tarière.

REMARQUE: L'ouverture de la porte du poêle pendant plus de 30 secondes pendant le fonctionnement provoque un changement de pression suffisant pour activer l'interrupteur pneumatique qui arrête l'alimentation en combustible. Le poêle s'éteint et la mention « E2 » s'affiche sur l'écran à deux chiffres. Le poêle doit s'arrêter complètement avant de pouvoir être redémarré.

- Le défaut de nettoyage et d'entretien de cet appareil comme indiqué peut entraîner une baisse des performances et un risque pour la sécurité.
- Débranchez le cordon électrique du poêle avant de retirer le panneau arrière ou d'ouvrir le système d'évacuation pour toute tâche d'inspection, de nettoyage ou d'entretien.
- Ne procédez jamais à l'inspection, au nettoyage ou à l'entretien sur un poêle chaud.
- N'utilisez pas le poêle si la vitre est cassée, il pourrait en résulter une fuite de gaz de combustion.

SYSTÈME D'ÉVACUATION

Formation de créosote – Lorsque le bois brûle lentement, il produit du goudron et d'autres vapeurs organiques qui se combinent avec l'humidité rejetée pour former la créosote. Les vapeurs de créosote se condensent dans un conduit de cheminée relativement froid ou si le feu vient de démarrer ou brûle lentement. Ainsi, les résidus de créosote s'accumulent sur le boisseau. Si elle prend feu, cette créosote produit un feu extrêmement chaud qui peut endommager la cheminée, voire détruire la maison. En dépit de leur grande efficacité, les poêles à granulés peuvent accumuler de la créosote dans certaines conditions.

Cendres volantes – Elles s'accumulent dans la portion horizontale du conduit d'évacuation. Bien qu'elles ne soient pas combustibles, elles peuvent gêner le flux normal d'évacuation. Elles doivent donc être périodiquement éliminées.

Inspection et élimination – Le raccord et le conduit de cheminée doivent être inspectés par une personne qualifiée une fois par an ou par tonne de granulés pour déterminer si une accumulation de créosote ou de cendres volantes s'est produite. Si la créosote s'est accumulée, elle doit être enlevée pour réduire le risque de feu de cheminée. Inspectez le système au niveau du raccord avec le poêle et en haut de la cheminée. Les surfaces plus froides ont tendance à accumuler les dépôts de créosote plus rapidement; il est donc important de vérifier la cheminée par le haut ainsi que par le bas. La créosote doit être éliminée avec une brosse spécialement conçue pour le type de cheminée utilisé. Un ramoneur qualifié peut fournir ce service. Il est également conseillé d'inspecter, de nettoyer et si nécessaire de réparer la totalité du système avant chaque saison de chauffage. Pour nettoyer la cheminée, déconnecter l'évacuation du poêle.

CHAMBRES INTÉRIEURES

- Graver Pot: Périodiquement enlever et nettoyer le pot de combustion et la zone à l'intérieur du logement du pot de combustion. En particulier, il est conseillé de nettoyer les trous dans le pot de combustion pour éliminer toute accumulation qui peut empêcher l'air de se déplacer à travers le pot de combustion librement.
- Echangeur de chaleur: Il y a une plaque à nettoyer des deux côtés de l'échangeur de chaleur qui ont besoin d'être enlevé pour le nettoyage des cendres volantes hors de l'échangeur de chaleur. Les regards de nettoyage sont situés à l'intérieur des portes d'armoires, sur les coins avant inférieurs de l'échangeur de

Fonctionnement

Réglez la vitesse d'alimentation en appuyant sur la touche « Heat Level Advance » (Augmentation du niveau de chauffage). Si le feu ne démarre pas dans les 12 minutes, appuyez sur l'interrupteur ON/OFF, attendez quelques minutes, nettoyez le pot de combustion et recommencez la procédure.

AUTOMATIQUE

Remplissez la trémie et nettoyez la casserole.

1. Appuyez sur le bouton «On / Off». Assurez-vous que le voyant vert s'allume.
2. L'amortisseur doit être complètement fermé ou ouvert au maximum ¼ de la voie pendant le démarrage. Cela dépendra de votre installation et de votre élévation. Une fois le feu réglé, ajustez la flamme désirée en augmentant la quantité d'amortisseur ouverte à mesure que le réglage de la chaleur augmente. (Voir «DAMPER CONTROL»)
3. Réglez la vitesse d'avance sur le réglage désiré en appuyant sur la touche «Avance du niveau de chaleur».

Si le feu ne démarre pas en 12 minutes, appuyez sur «On / Off», attendez quelques minutes, effacez la casserole et recommencez la procédure.

RÉGLAGE DU REGISTRE DE TIRAGE

Le levier de commande du registre de tirage se trouve à l'arrière du poêle, en bas du côté gauche. Le registre règle l'air de combustion. Ce réglage est nécessaire en raison des différentes caractéristiques de combustion des installations individuelles, des différentes marques de granulés et de la vitesse d'alimentation en granulés. Il permet d'améliorer l'efficacité du poêle. L'apport suffisant d'air pour la combustion permet de réduire la fréquence de nettoyage de la porte vitrée et prévient l'accumulation rapide de créosote à l'intérieur du poêle et de la cheminée.

Réglez le registre de tirage en fonction de l'aspect de la flamme. Une flamme basse, rougeâtre, peut être améliorée en tournant légèrement le registre vers la droite. Une flamme « en torche » peut être améliorée en tournant légèrement le registre vers la gauche.

En règle générale, en cas de réglage pour une faible vitesse d'alimentation, le registre doit être réglé vers la gauche, dans le sens de fermeture. Pour une vitesse d'alimentation élevée, le registre doit être plus ouvert en le réglant vers la droite. Vous trouverez le réglage optimal par tâtonnements. Consultez votre revendeur si vous avez besoin d'aide.

REMARQUE: Sur le réglage de chaleur « 1 », le registre de tirage doit être soit complètement fermé, soit ouvert au maximum au quart de sa course. Si le registre est trop ouvert, le feu pourrait s'éteindre.

OUVERTURE DE LA PORTE

Si la porte est ouverte pendant le fonctionnement du poêle, elle doit être refermée dans les 30 secondes, sinon le poêle s'éteint. Si le poêle s'éteint, appuyez sur l'interrupteur ON/OFF pour le redémarrer. Le poêle doit être complètement arrêté et débranché avant de pouvoir être redémarré.

VENTILATEUR DE LA PIÈCE

Lors du démarrage du poêle, le ventilateur de la pièce ne se met pas en marche tant que l'échangeur thermique du poêle n'est pas chaud. Cela prend habituellement environ 10 minutes après le démarrage.

SI LE POÊLE MANQUE DE GRANULÉS

Le feu s'éteint; le moteur de la tarière et les ventilateurs restent en fonctionnement jusqu'à ce que le poêle ait refroidi. Cela peut prendre 30 minutes ou plus, en fonction de la chaleur résiduelle dans l'appareil. Après l'arrêt des composants du poêle, tous les témoins de l'écran s'éteignent et l'écran à deux chiffres affiche « E3 » en clignotant.

RECHARGE EN COMBUSTIBLE

- La trémie et le couvercle du poêle sont chauds pendant le fonctionnement; vous devez toujours protéger vos mains lors du remplissage du poêle.
- Ne placez jamais la main près de la tarière pendant le fonctionnement du poêle.

Nous recommandons de ne pas laisser la trémie se vider à moins du quart de sa capacité.

AVERTISSEMENT DE SABOTAGE

Ce chauffe-bois a un taux minimal de brûlure minimum établi par le fabricant qui ne doit pas être modifié. Il est contraire aux règlements fédéraux de modifier ce réglage ou de faire fonctionner ce chauffe-bois d'une manière incompatible avec les instructions d'utilisation de ce manuel.

GARDEZ LE COUVERCLE DE LA TRÉMIE FERMÉ À TOUT MOMENT, SAUF PENDANT LE REMPLISSAGE. NE REMPLISSEZ PAS TROP LA TRÉMIE.

Fonctionnement

- N'utilisez pas de produits chimiques ou autres liquides pour démarrer le feu – n'utilisez jamais d'essence, de combustible à lanterne de type essence, de kérosène, d'allume-feu liquide pour charbon ou d'autres liquides similaires pour allumer ou raviver le feu dans ce poêle. Gardez tous ces liquides éloignés du poêle lorsqu'il est en marche.
- Ne brûlez pas de déchets, de liquides inflammables tels qu'essence, kérosène ou huile pour moteur.

Chaud lors du fonctionnement. Gardez les enfants, les vêtements et les meubles éloignés de l'appareil. Un contact peut causer des brûlures de la peau.

Cet appareil est conçu pour brûler uniquement PFI pellets Premium qualité. Cet appareil peut également brûler des granules notés en standard après le 16 mai 2015.

NE PAS BRÛLER:

1. Des déchets;
2. coupures de gazon ou les déchets de jardin;
3. Les matériaux contenant du caoutchouc, y compris les pneumatiques;
4. Les matériaux contenant de plastique;
5. produits pétroliers des déchets, des peintures ou des diluants de peinture ou de produits d'asphalte;
6. Les matériaux contenant de l'amiante;
7. Les débris de construction ou de démolition;
8. liens ou de bois traité sous pression Railroad;
9. Fumier ou restes d'animaux;
10. Sel de bois flotté de l'eau ou d'autres matériaux préalablement eau salée saturés;
11. BOIS DE; ou
12. Les produits de papier, de carton, de contreplaqué ou de particules. L'interdiction de la combustion de ces matériaux n'interdit pas l'utilisation des démarreurs de feu fabriqués à partir de papier, de carton, de sciure, de cire et substances similaires dans le but de déclencher un incendie dans un poêle à bois affecté.

Brûler ces matériaux peut entraîner la libération de fumées toxiques ou de rendre l'appareil de chauffage de la fumée inefficace et cause.

COMBUSTIBLE APPROPRIÉ

Cet appareil n'est homologué que pour brûler du carburant sous forme de granulés de bois ! Les granulés approuvés mesurent 1/4 po. Ou 5/16 po. De diamètre et pas plus de 1 po. De long. Les granulés plus longs ou plus épais peuvent bloquer les ailettes de la tarière, ce qui empêche une bonne alimentation en granulés. Il est interdit de brûler du bois sous d'autres formes que des granulés. Il s'agirait d'une violation des codes du bâtiment pour lesquels le poêle a été approuvé, et cela annulerait toutes les garanties. La conception du poêle intègre l'alimentation automatique des granulés dans le feu selon un rythme soigneusement calculé. Un autre combustible introduit à la main n'augmenterait pas la production de chaleur, mais pourrait nuire gravement aux performances du poêle en générant beaucoup de fumée. Ne brûlez pas de granulés mouillés.

Les performances du poêle dépendent fortement de la qualité des granulés. Évitez les marques de granulés qui présentent les caractéristiques suivantes:

1. Un excès de fines – Le terme « fines » décrit les granulés écrasés ou les matériaux libres qui ressemblent à de la sciure ou à du sable. Il est possible de tamiser les granulés avant de les placer dans la trémie pour éliminer la plupart des fines.
2. Des liants – Certains granulés sont produits avec des matériaux liants qui les agglutinent, les « lient ».
3. Un contenu élevé en cendres – Ces granulés de mauvaise qualité créent souvent de la fumée et salissent la vitre. L'entretien devra être plus fréquent. Il faudra vider le pot de combustion et aspirer la totalité du système plus fréquemment. Des granulés de mauvaise qualité pourraient endommager la tarière. Nous ne pouvons accepter aucune responsabilité en cas de dommages dus à des granulés de mauvaise qualité.

VÉRIFICATION AVANT LA MISE EN MARCHE

Retirez le pot de combustion, vérifier qu'il soit propre et qu'aucun des orifices d'air ne soit bouché. Nettoyez la chambre de combustion puis réinstallez le pot de combustion. Nettoyez la vitre de la porte si nécessaire (un chiffon sec ou une serviette en papier suffit généralement). N'utilisez jamais de produits nettoyants abrasifs sur la vitre ou la porte. Vérifiez le combustible dans la trémie, et remplissez-la si nécessaire.

REMARQUE: La trémie peut contenir jusqu'à 20 lb (9.1 kg) de granulés.

LE DÉMARREUR DE FEU AUTOMATIQUE HOTROD

Remplissez la trémie et nettoyez le pot de combustion.

Appuyez sur l'interrupteur ON/OFF. Assurez-vous que le témoin vert s'allume.

Le registre de tirage doit être complètement fermé ou ouvert d'un quart au maximum pendant le démarrage. C'est variable en fonction de votre installation et de l'altitude. Une fois le feu bien démarré, réglez le registre pour obtenir la flamme voulue, en l'ouvrant au fur et à mesure que vous augmentez le réglage de la température. (Voir « COMMANDE DU REGISTRE DE TIRAGE ».)

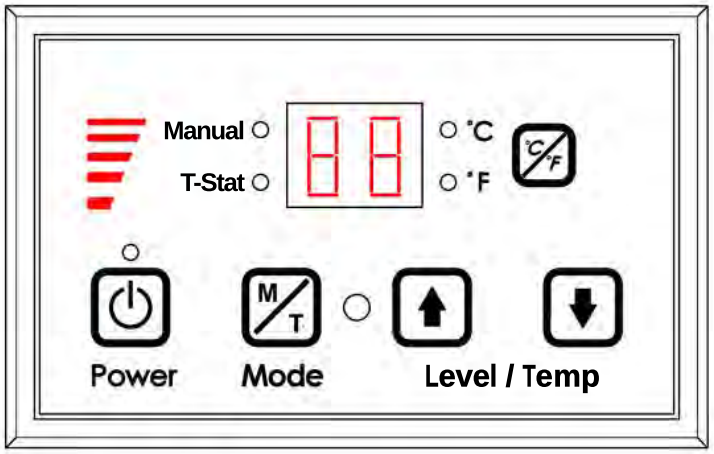
Panneau De Contrôle

COMMANDES DU TABLEAU

Les ventilateurs et le système d'alimentation automatique en combustible sont contrôlés à partir d'un tableau à la partie supérieure cette unité. Les fonctions du tableau de commande sont les suivantes:

A. INTERRUPTEUR ON/OFF (BOUTON DE MISE EN MARCHE)

- En appuyant sur ce bouton, le poêle s'allume automatiquement. Aucun autre allume-feu n'est nécessaire. L'allumeur reste activé pendant au moins 10 minutes et jusqu'à 12 minutes en fonction du moment où le seuil de détection de feu est atteint. Le feu devrait démarrer en 5 minutes environ.
- Le témoin rouge situé au-dessus du bouton « POWER » passe au vert lorsqu'il est enfoncé et reste vert jusqu'à l'arrêt du poêle.
- Après l'appui sur le bouton « POWER », le moteur de la tarière fonctionne pendant 3,5 minutes, puis s'arrête pendant 1 minute. Pendant le reste de la période de démarrage, le moteur de la tarière fonctionne sur le réglage « 1 » de niveau de chauffage.
- Pendant le démarrage, le réglage du niveau de chauffage (touches H et L) modifie le niveau du témoin de plage de chaleur, mais les conditions de fonctionnement du poêle ne changent pas avant la fin de la période de démarrage.
- Pendant la période de démarrage, le feu doit démarrer en 12 minutes, sinon le poêle passe en mode d'erreur et affiche le code E4.
- Pendant la phase de démarrage, la touche Mode n'est pas fonctionnelle.



B. TOUCHES FLÉCHÉES DE NIVEAU / TEMPÉRATURE

- Ces touches permettent de régler le débit d'alimentation des granulés, et par conséquent la production ou la plage de chaleur du poêle.
- Les niveaux de production de chaleur changent progressivement sur le diagramme en barres, passant du niveau « 1 » au niveau « 5 » de chauffage.

C. TOUCHE °C / °F

- La touche °C / °F fait passer l'affichage à deux chiffres des degrés Celsius aux degrés Fahrenheit et vice-versa.

D. TOUCHE MODE (M/T)

- Le Mode de fonctionnement du poêle peut être Manuel ou commandé par un Thermostat. Des diodes distinctes, à gauche de l'écran à deux chiffres, indiquent le mode de fonctionnement – Manuel ou T-stat. Le poêle doit être en mode de fonctionnement normal pour pouvoir passer du mode Manuel au mode T-Stat.
- Le mode Manuel fonctionne conformément aux 5 niveaux de réglage d'alimentation sur le diagramme, du niveau de chauffage « 1 » au niveau « 5 ».
- Le mode T-stat fonctionne de la manière suivante:
- Le poêle est équipé d'un thermostat intégré dans ses commandes. Le capteur de température du thermostat se trouve à l'arrière du poêle, derrière le panneau d'affichage.
- Une fois le poêle en mode de fonctionnement, il est possible de le placer en mode T-stat.
- Les touches fléchées Haut et Bas de Niveau / Température permettent de modifier la température de déclenchement (point de consigne).
- Une fois la température souhaitée atteinte, l'écran à deux chiffres clignote pendant quatre secondes et indique la température réelle de la pièce.
- Lorsque le poêle atteint une plage de 3 °F autour du point de consigne souhaité, il revient à la plage de chaleur pour laquelle il était réglé avant de passer en mode T-stat (si le poêle était réglé sur le niveau de chauffage « 5 » avant de passer en mode T-stat, il revient à niveau de chauffage « 5 » lorsqu'il atteint la plage de 3 °F autour du point de consigne.
- Lorsque le poêle atteint le point de consigne souhaité, il passe au niveau de chauffage « 1 ».
- Lorsque la température ambiante passe sous le point de consigne souhaité, le poêle chauffe de nouveau jusqu'à la température souhaitée.

Installation

PRISE D'AIR EXTÉRIEUR (FACULTATIVE, SAUF EN CAS D'INSTALLATION DANS UNE MAISON MOBILE)

Une ventilation adéquate est nécessaire au fonctionnement de ce poêle. Pendant le fonctionnement, le poêle aspire de l'air pour la combustion; ce processus peut être facilité par l'installation de prises d'air extérieur. Cependant, certaines conditions atmosphériques, comme le gel ou l'utilisation de ventilateurs d'extraction de cuisine peuvent avoir un impact en diminuant l'efficacité des prises d'air. Il est important de noter que le défaut d'aération de la pièce aurait un impact négatif sur le fonctionnement du poêle.

En fonction de l'endroit et de la construction de la maison, l'admission d'air extérieur peut être nécessaire pour des performances optimales.

Utilisez un tuyau métallique (rigide ou flexible) pour l'installation de prise d'air extérieur. L'utilisation d'un tuyau en PVC n'est PAS approuvée. N'utilisez JAMAIS de tuyau en PVC.

Il convient d'installer un coupe-vent au-dessus de la terminaison d'entrée du tuyau d'air extérieur ou un coude/ une courbure à 90 degrés dans la direction opposée aux vents dominants lorsque le tuyau d'entrée d'air extérieur est installé dans le mur d'un bâtiment. La terminaison d'admission d'air extérieur DOIT se trouver à au moins 1 pi. (0,305 m) de la sortie du système d'évacuation des fumées.

Le diamètre extérieur du branchement d'air extérieur du poêle est de 2 po. (50,8 mm). Le diamètre intérieur du tuyau de raccordement doit mesurer au moins 2 po. (50,8 mm).

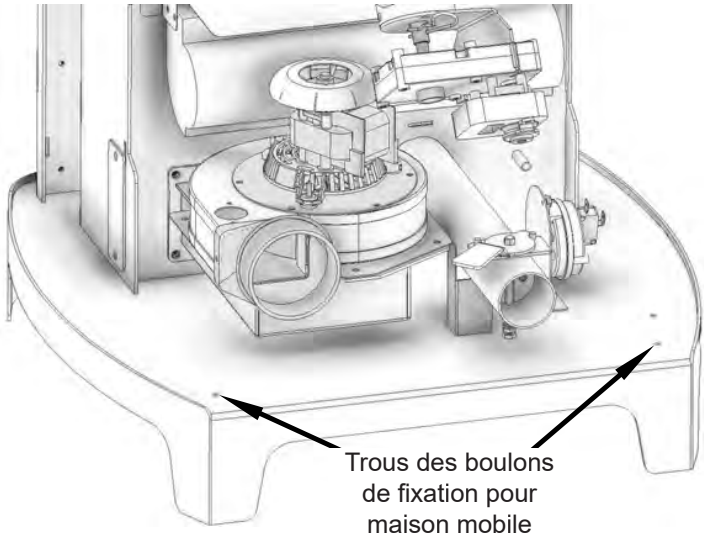
Le branchement d'air extérieur utilisé ne doit PAS limiter la quantité d'air disponible pour l'appareil. Le tuyau de raccordement doit être aussi court et rectiligne que possible et doit s'adapter par-dessus, et non pas à l'intérieur, du branchement d'air extérieur du poêle.

CONDITIONS SPECIALES D'INSTALLATION DANS UNE MAISON MOBILE

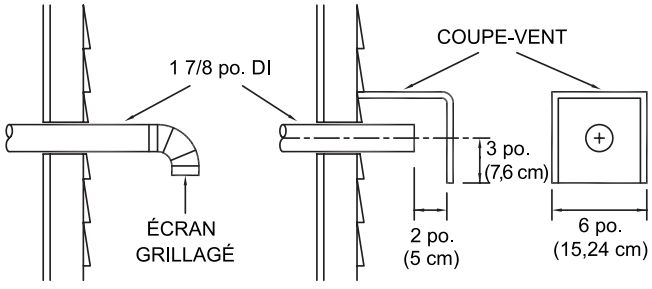
- Avertissement ! - N'installez pas l'appareil dans une chambre a coucher
- Attention ! - L'integrite structurelle du plancher de la maison mobile, des murs et du toit doit etre preservee.

Outre les critères d'installations détaillés ci-dessus, l'installation dans une maison mobile soit satisfaire aux conditions suivantes:

- L'appareil doit être fixé au sol à l'aide des tire-fond dans les trous prévus à cet effet dans le socle.
- Le poêle doit être mis à la terre sur le châssis d'acier de la maison mobile en utilisant un fil de cuivre de 8 GA avec une rondelle striée ou en étoile pour attaquer la peinture ou le revêtement protecteur afin d'assurer la mise à la masse.
- L'évacuation doit être de type « PL » de 3 ou 4 po. (76 ou 101 mm) et doit dépasser d'au moins 36 po. (914 mm) au-dessus de la faîtière de la maison mobile; elle doit être installée avec un pare-feu de plafond et un chapeau anti-pluie homologués UL.



- En cas de déplacement de la maison mobile, toutes les sorties extérieures doivent être déposées pendant ce déplacement. Après la réimplantation, toutes les sorties extérieures doivent être réinstallées et refixées.
- Une prise d'air extérieur est obligatoire pour l'installation dans une maison mobile. Consultez la section Admission d'air extérieur et votre concessionnaire pour l'achat.
- Vérifiez auprès de votre municipalité si d'autres codes sont applicables.



TERMINAISON TYPIQUE D'ENTRÉE D'AIR FRAIS

REMARQUE: Les dimensions entre le sol et les tuyaux d'admission d'air/d'évacuation du poêle sont approximatives et peuvent varier en fonction de l'installation.

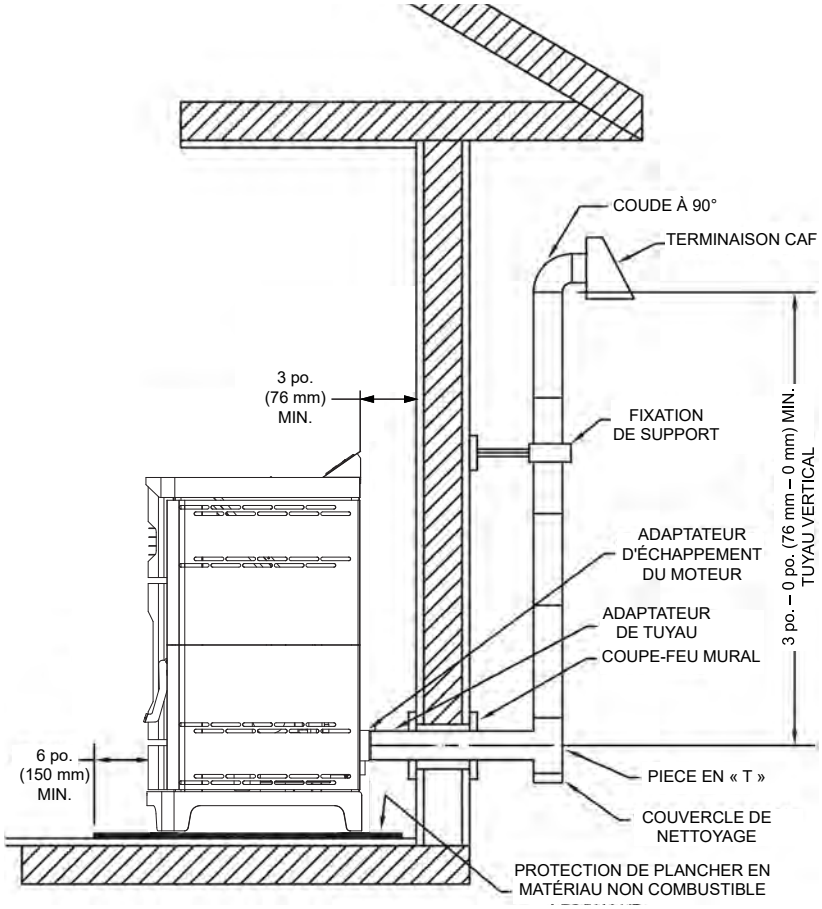
Installation

INSTALLATION AU TRAVERS DU MUR (INSTALLATION RECOMMANDEE)

Au Canada, l'installation doit être conforme à la norme CAN/CSA-B365.

Pour évacuer l'appareil par le mur, raccordez l'adaptateur de tuyau à l'adaptateur d'échappement du moteur. Si l'adaptateur d'échappement se trouve à 18 po. (762 mm) au moins au-dessus du sol, il est possible de traverser le mur avec une section droite de conduit d'évacuation pour poêle à granulés.

Le concessionnaire revendeur du poêle devrait pouvoir vous fournir un kit adapté à la plupart des cas pour cette installation, dont une bague murale permettant de préserver le dégagement nécessaire dans un mur en matériau combustible. Une fois à l'extérieur de la structure, un dégagement de 3 po. (76 mm) doit être conservé par rapport au mur extérieur et un T de nettoyage doit être placé sur le tuyau selon un angle de 90 degrés en s'éloignant de la maison. Puis une section de tuyau d'au moins 3 pi. (0,91 m) doit être ajoutée, avec un chapeau horizontal pour achever l'installation (voir la FIGURE 7).



INSTALLATION DANS LE MUR TYPIQUE

Un support doit être placé juste au-dessous du chapeau de sortie, ou à raison d'un support tous les 4 pi. (1,22 m) pour rendre le système plus stable. Si vous vivez dans une région où la neige est abondante, il est recommandé que la sortie de l'installation se trouve à plus de 3 pi. (0,91 m) pour échapper à la ligne de congère. Cette même installation peut être utilisée si le poêle se trouve sous le niveau du sol en ajoutant simplement la section de nettoyage et un tuyau vertical à l'intérieur jusqu'au niveau du sol. Avec cette installation, il faut tenir compte de la ligne de congère, des herbes et des feuilles mortes. Nous recommandons une élévation verticale minimum de 3 pi. (0,91m) à l'intérieur ou à l'extérieur de la maison.

L'installation « à travers le mur » est la moins chère et la plus simple. Ne jamais placer la sortie d'évacuation sous une terrasse, dans une alcôve, sous une fenêtre ou entre deux fenêtres. Nous recommandons les kits Simpson Dura-Vent® ou Metal-Fab®.

INSTALLATION PAR LE TOIT/LE PLAFOND

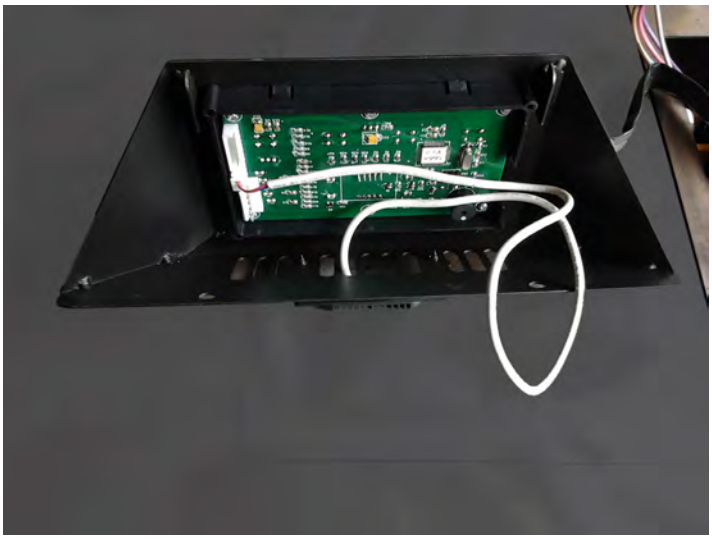
En cas d'évacuation des fumées du poêle par le plafond, le tuyau est raccordé comme pour l'évacuation par le mur, mais le T de nettoyage est toujours à l'intérieur de la maison et un adaptateur de 3 po. (76 mm) est ajouté avant le T de nettoyage.

Vous devez toujours utiliser les brides de support de plafond et le solin de toit adaptés (fournis par le fabricant de conduits; suivez les instructions du fabricant). Il est important de noter que si la longueur de tuyau vertical est supérieure à 12 pi. (3,7 m), la taille du conduit d'évacuation pour poêle à granulés doit être de 4 po. (102 mm) de diamètre.

Ne dépassez pas 4 pi. (1,22 m) de longueur horizontale de tuyau et utilisez le moins de coudes possible. S'il est nécessaire de décaler l'axe du tuyau, il est préférable d'installer des coudes à 45 degrés plutôt qu'à 90 degrés.

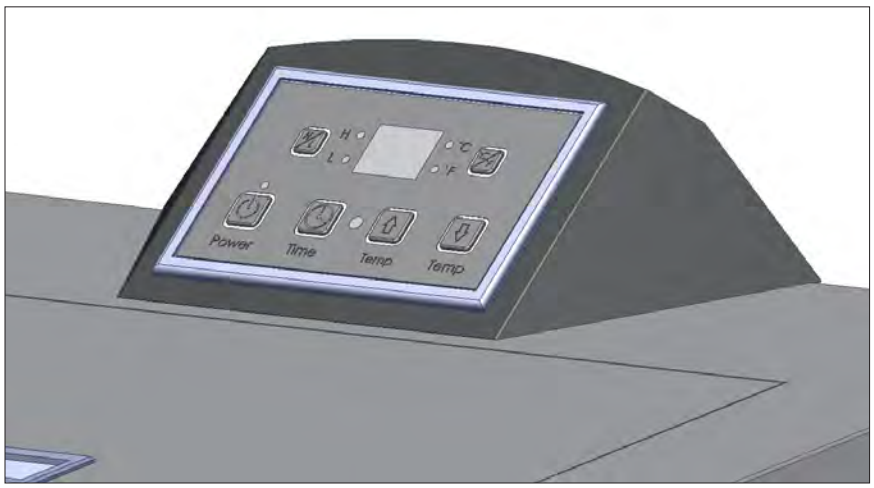
Instructions De Montage

Étape 1
Tirer les fils installés en usine sur le dessus du poêle.
Il y aura deux faisceaux de câbles, comme illustré.



Étape 2
Déballez les meilleurs contrôles de montage et de veiller à ce que le faisceau de câblage illustré est fixé.

Étape 3
Connecter les installés en usine faisceaux de câblage sur le panneau de commande comme indiqué.



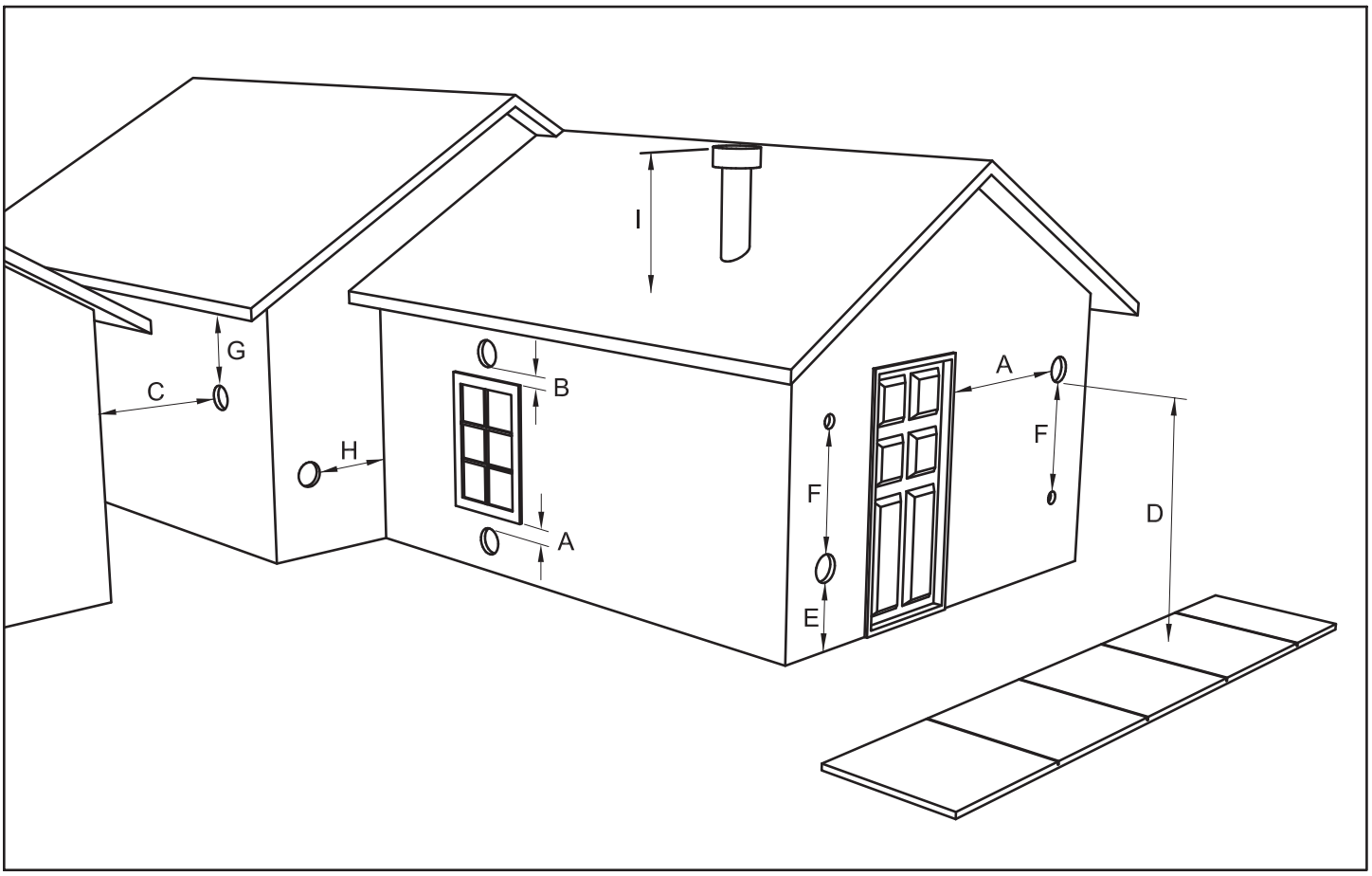
Étape 4
Fixez le panneau de commande au dessus du poêle, comme indiqué.

Etape 5
Fixer avec deux vis à tôle.

Installation

DEGAGEMENTS POUR LA SORTIE D'EVACUATION

A. Dégagement minimum 4 pi. (1,22 m) sous ou à côté de toute porte ou fenêtre ouvrante.
B. Dégagement minimum de 1 pi. (0,3 m) au-dessus de toute porte ou fenêtre ouvrante.
C. Dégagement minimum de 3 pi. (0,91 m) de tout bâtiment adjacent.
D. Dégagement minimum de 7 pi. (2,13 m) au-dessus de tout passage public.
E. Dégagement minimum de 2 pi. (0,61 m) au-dessus de toute plante, herbe ou autre matériau combustible.
F. Dégagement minimum de 3 pi. (0,91 m) autour de l'entrée d'air forcée de tout appareil.
G. Dégagement minimum de 2 pi. (0,61 m) sous les avancées de toiture ou surplombs.
H. Dégagement minimum de 1 pi. (0,3 m) à l'horizontale de tout mur en matériau combustible.
I. Doit se trouver au minimum à 3 pi. (0,91 m) au-dessus du toit et à 2 pi. (0,61 m) au-dessus de toute faîtière du toit située à moins de 10 pi (3,05 m).



DÉGAGEMENTS POUR LA SORTIE
D'ÉVACUATION POUR POÊLE À GRANULÉS

Installation

DISTANCE D'EVACUATION MAXIMALE

L'installation DOIT comporter au moins 3 pi. (91 cm) de conduit vertical hors de la maison. Ceci crée un appel d'air naturel qui limite le risque de fumée ou d'odeur lors de l'arrêt de l'appareil et évite que l'évacuation ne provoque des nuisances et un danger en exposant les personnes ou les buissons à des températures élevées. La hauteur verticale maximale recommandée pour l'évacuation des fumées est de 12 pi. (3,66 m) pour une évacuation de type « PL » de 3 po. (76 mm). La longueur totale de l'évacuation horizontale NE DOIT PAS dépasser 4 pi. (1,22 m). Ceci pourrait provoquer une contre-pression. N'utilisez pas plus de 180 degrés de coudage (deux coudes à 90 degrés, ou deux coudes à 45 degrés et un coude à 90 degrés, etc.) pour conserver un tirage adéquat.

MPORTANCE DU PROJET CORRECTE

Le tirage est la force qui déplace l'air de l'appareil à travers la cheminée. Le montant du projet dans votre cheminée dépend de la longueur de la cheminée, la géographie locale, les obstructions avoisinantes et d'autres facteurs. Trop projet peut causer des températures excessives dans l'appareil. Un tirage inadéquat peut provoquer un retour de fumée dans la pièce et «brancher» de la cheminée.

Un tirage inadéquat entraînera l'appareil à une fuite de fumée dans la pièce par appareil et le connecteur de cheminée joints. Une combustion incontrôlable ou une température excessive indique un tirage excessif.

Prendre en compte l'emplacement de la cheminée pour assurer qu'il ne soit pas trop proche de voisins ou dans une vallée qui peut causer des conditions insalubres ou nuisibles.

TYPE D'EVACUATION POUR POELE A GRANULES

Utilisez pour l'installation un système d'évacuation pour poêle à granulés de type « PL » de 3 ou 4 po. (76 à 102 mm) homologué UL et fixez-le au raccord de tube installé à l'arrière du poêle (utilisez un adaptateur de 3 ou 4 po. pour un tuyau de 4 po.). Le raccord à l'arrière du poêle doit être étanchéifié avec du RTV haute température (composé de caoutchouc de silicone résistant aux variations de température). Utiliser une évacuation de 4 po. si sa hauteur doit dépasser 12 pi. (3,66 m) ou si l'installation se trouve à plus de 2 500 pi. (762 m) d'altitude.

Nous recommandons l'utilisation de conduits Simpson Dura-Vent® ou Metal-Fab® (si vous utilisez d'autres tuyaux, consultez les codes de construction locaux et/ou les inspecteurs en bâtiment). N'utilisez pas de tuyaux d'évacuation de gaz de type B ni de tuyaux galvanisés avec cet appareil. Le conduit d'évacuation pour poêle à granulés est conçu pour être démonté aux fins de nettoyage et doit être vérifié plusieurs fois au cours de la saison de chauffage. Le conduit d'évacuation pour poêle à granulés n'est pas fourni avec l'appareil et doit être acheté séparément.

INSTALLATION DE L'EVACUATION POUR POELE A GRANULES

L'installation doit comprendre un T de nettoyage pour permettre la collecte des cendres volantes et le nettoyage périodique du système d'évacuation des fumées. Les coudes à 90 degrés accumulent les cendres volantes et la suie, réduisant par là même le débit de l'évacuation et les performances du poêle. Chaque coude ou T réduit le potentiel de tirage de 30 à 50 %.

Tous les raccords du système d'évacuation doivent être fixés par au moins 3 vis, et scellés avec une colle de silicone RTV haute température pour les rendre étanches à l'air. La zone où le conduit d'évacuation sort de la maison doit être scellée au silicone ou un autre moyen pour préserver le pare-vapeur entre l'extérieur et l'intérieur de la maison.

Les surfaces d'évacuation peuvent devenir assez chaudes pour provoquer des brûlures si des enfants venaient à y toucher. Un blindage ou des protections non combustibles peuvent s'avérer nécessaires.

SORTIE DE L'EVACUATION POUR POELE A GRANULES

Ne pas faire sortir l'évacuation dans un endroit clos ou semi clos, tel qu'un abri pour voiture, garage, grenier, vide sanitaire, sous une terrasse ou un porche, dans un passage étroit ou tout autre endroit susceptible de permettre à la fumée de s'accumuler. La sortie dans un endroit de ce type peut aussi provoquer des conditions de pression impossibles à prévoir pour l'appareil, et entraîner de mauvaises performances et/ou un dysfonctionnement.

La sortie doit s'évacuer plus haut que l'entrée d'air extérieur.

La sortie ne doit pas être placée là où elle pourrait être obstruée par la neige ou d'autres matériaux.

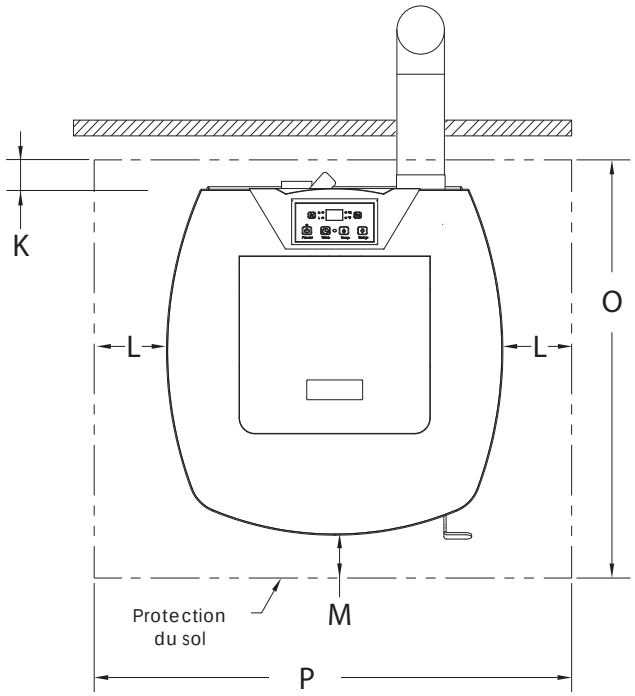
Ne faites pas sortir l'évacuation dans une cheminée en acier ou en maçonnerie existante.

Installation

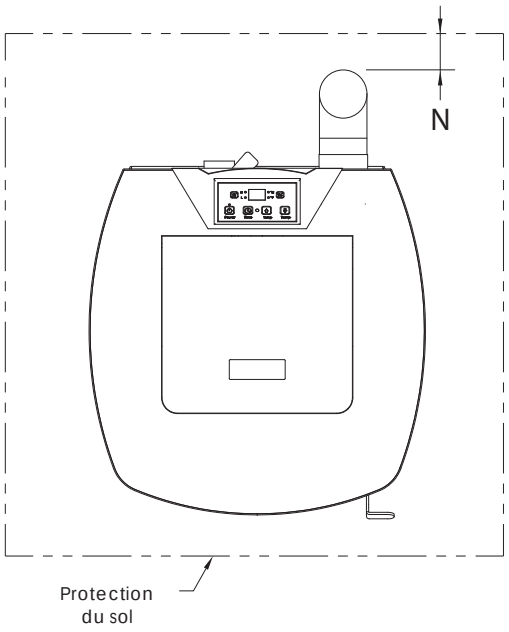
PROTECTION DU SOL

Cet appareil de chauffage doit avoir un protecteur de plancher non-combustible (UL1618 protection de braises) installé au-dessous si le plancher est en matériau combustible. US: protection de sol doit être UL ou égale aussi, a besoin d'étendre 6 "à l'avant, 6" de chaque côté, 1 "à l'arrière de l'appareil. Sous et 2 "au-delà de chaque côté du té de nettoyage si un instillation vertical intérieur.

Canada: Protecteur de plancher doit se conformer à la norme CAN / ULC. Besoins d'étendre 18 "à l'avant, 8" au-delà de chaque côté de l'unité.



PAR L'INSTALLATION DU MUR



INTÉRIEUR VERTICALE
INSTALLATION

DÉGAGEMENTS PLANCHER DE PROTECTION		
K	Retour au poêle	1" (26mm) U.S. (8" (204mm) Can.)
L	Côté au poêle	6" (153mm) U.S. (8" (204mm) Can.)
M	Avant au poêle	6" (153mm) U.S. (18" (458mm)Can.)
N	Dos et côtés à la cheminée	6" (153mm)

EXIGENCES POUR L'EVACUATION

Installez l'évacuation des fumées en respectant les dégagements spécifiés par le fabricant d'évacuations.

Ne reliez pas l'évacuation pour poêle à granulés à une évacuation utilisée pour un autre appareil ou un autre poêle.

N'installez pas de registre de tirage sur le système d'évacuation de cet appareil.

Les directives d'installation ci-dessous doivent être respectées pour garantir la conformité tant avec la liste de sécurité de ce poêle qu'avec les codes de construction locaux. Ne pas recourir à des méthodes de fortune ou à des compromis lors de l'installation.

IMPORTANT ! Cet appareil est équipé d'un système de tirage négatif qui extrait l'air au travers de la chambre de combustion et repousse la fumée hors du logement. Si cet appareil est branché à un système d'évacuation des fumées autrement que de la manière expliquée dans ce guide, il ne peut fonctionner correctement.

Installation

OPTIONS D'INSTALLATION

Lisez la totalité de ce guide avant d'installer et d'utiliser ce poêle à granulés. Le non-respect des directives peut entraîner des dommages matériels, des blessures et même la mort !

(Voir les détails spécifiques de l'installation pour les dégagements et autres directives d'installation.)

Un appareil autoportant–reposant sur des pieds et placé sur une surface au sol non combustible en respectant les exigences de dégagement pour l'installation d'un poêle autoportant.

Un appareil en alcôve–reposant sur des pieds posés sur une surface au sol non combustible en respectant les exigences de dégagement pour l'installation d'un poêle en alcôve.

Le poêle à granulés peut être installé selon les codes dans une maison conventionnelle ou une maison mobile (voir CONDITIONS SPÉCIALES POUR L'INSTALLATION DANS UNE MAISON MOBILE). L'installation doit être conforme à la norme HUD (Manufactured Home and Safety Standard), CFR3280, partie 24.

Il est recommandé de faire installer le poêle à granulés par un technicien autorisé, de préférence un spécialiste agréé NFI.

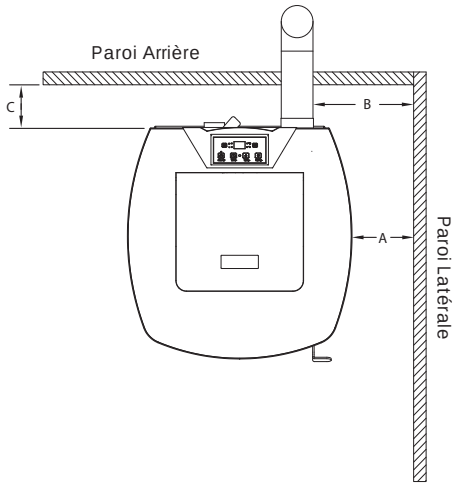
NE BRANCHEZ PAS CET APPAREIL À UN CONDUIT OU À UN SYSTÈME DE DISTRIBUTION D'AIR.

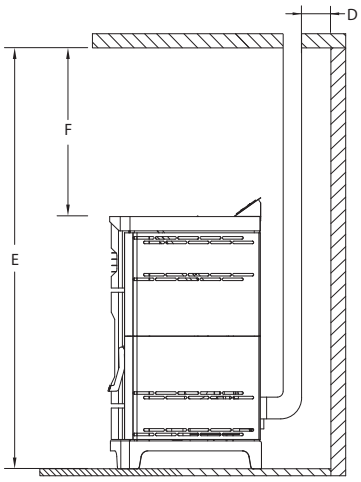
L'utilisation de composants autres que ceux qui sont indiqués ici pourrait provoquer des blessures, endommager le poêle et annuler la garantie.

Installation inadéquate: Le fabricant ne pourra être tenu pour responsable des dommages causés par le mauvais fonctionnement d'un poêle dû à une mauvaise évacuation ou installation. Pour toute question, appelez le (800) 750-2723 et/ou consultez un installateur professionnel.

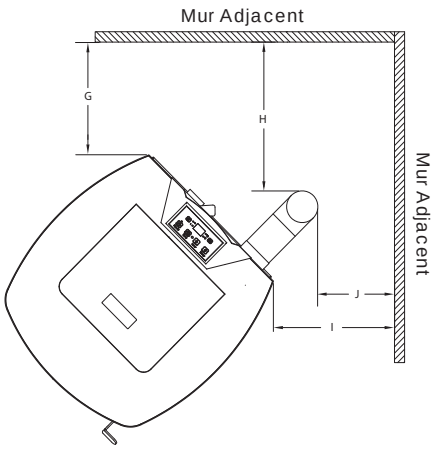
DEGAGEMENTS

Ce poêle a granulé a été testé et homologué pour une installation dans des applications résidentielles, dans une maison mobile et en alcôve, en respectant les dégagements indiqués par les FIGURES 3 à 6 et le TABLEAU 1. Pour des raisons de sécurité, veuillez respecter les dégagements et restrictions d'installation. Toute diminution du dégagement entre le poêle et des produits combustibles ne peut être réalisée que par des moyens approuvés par une autorité de réglementation.





DÉGAGEMENTS			
		inches	mm
A	Mur Side à Poêle	8	204
B	Mur latéral tuyau d'évent	12	305
C	Mur Retour à Stove	12	305
D	Paroi arrière tuyau d'évent	3	77
E	Sol au plafond	84	2134
F	Plafond à Poêle	46.875	1191
ESPACES DE COIN			
G	Mur Side à Poêle	10	254
H	Mur latéral tuyau d'évent	3	77
I	Mur Retour à Stove	10	254
J	Paroi arrière tuyau d'évent	3	77



Specifications

Caractéristiques de chauffage	
Taux de combustion du combustible* (à bas régime)	1,4 livres par heure
Temps de combustion (à bas régime)	32 heures
Capacité de la trémie	46lbs
Flue Taille	3“ or 4” (77mm to 102mm)

* La taille des granulés peut influencer le débit réel d’alimentation en combustible et le temps de combustion. Le taux d’alimentation en combustible peut varier de près de 20 %. Pour les meilleurs résultats, utilisez un combustible homologué PFI.

Dimensions	
Hauteur	37.16” (944mm)
Largeur	20.81” (529mm)
Profondeur	22.25” (566mm)
Poids	162lbs

Caractéristiques électriques	
Puissance électrique	120 Volts AC, 60 HZ, 3 Amps
Watts (en fonctionnement)	125W
Watts (allumeur en fonctionnemen)	310W

CONSIDERATIONS CONCERNANT LES COMBUSTIBLES

Votre poêle à granulés est conçu pour brûler des granules de bois franc haut de gamme qui sont conformes à l’Association des normes Pellet Fuel Industries. (Minimum de 40 livres par pied cube densité, 1/4 “à 16/5” de diamètre, la longueur ne dépasse pas 1,5 “, non inférieure à 8,200 Btu / lb humidité inférieure à 8% en poids, de cendre de moins de 1% en poids, et le sel à moins de 300 parties par million). Pellets qui sont doux, contenir des quantités excessives de la sciure de bois en vrac, ont été ou sont mouillés, se traduira par une réduction des performances.

Stockez vos pellets dans un endroit sec. NE PAS entreposer le carburant dans les autorisations d’installation de l’unité ou à l’intérieur de l’espace nécessaire pour le ravitaillement et l’élimination des cendres. Cela pourrait provoquer un incendie de maison.

Ne pas sur le feu ou utiliser des combustibles volatiles ou combustibles, cela peut causer un danger de dommages personnels et matériels.

AVERTISSEMENT: Il est contre les règlements fédéraux pour faire fonctionner ce poêle à bois d'une manière incompatible avec les instructions d'utilisation dans le manuel du propriétaire.

SECURITE ET CONFORMITE EPA

Votre poêle à granulés a été approuvé pour l’installation dans les Etats-Unis et au Canada. Il peut également être installé dans une maison préfabriquée ou mobile. Votre poêle est conforme à la norme ASTM E 1509-12 et certifié à la norme ULC S627-00, et (UM) 84-HUD.

Remarque: Enregistrez votre produit en ligne à www.usstove.com. section «Garantie limitée» pour obtenir des informations de garantie spécifique pour votre nouvel achat Voir. Conservez votre reçu avec vos dossiers pour toute réclamation.

Consignes De Sécurité

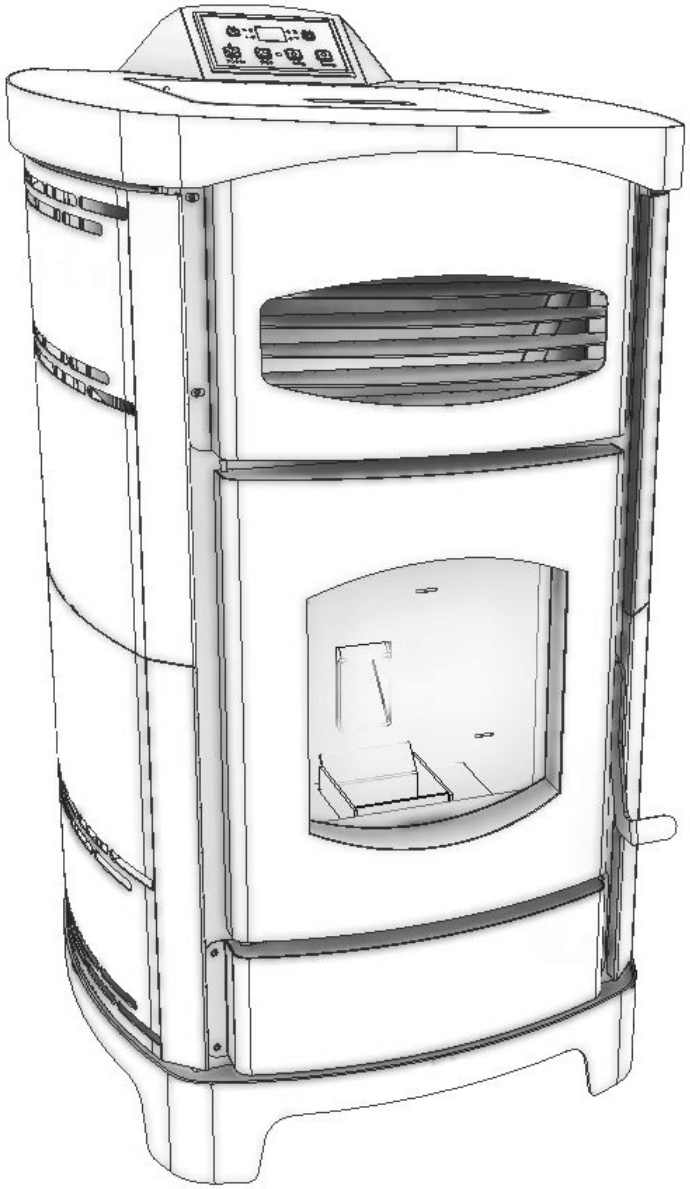
Ce manuel décrit l'installation et l'utilisation du poêle à bois américain 5780. Cet appareil de chauffage satisfait aux limites d'émissions de bois de berceau de l'Agence de protection de l'environnement des États-Unis de 2015 pour les appareils de chauffage de bois vendus après le 15 mai 2015. Dans des conditions d'essai spécifiques, ce radiateur a fourni de la chaleur à des taux variant de 8,507 à 26,386 Btu / h. Ce dispositif de chauffage a obtenu un taux d'émission de particules de 1.3g/hr lorsqu'il a été testé selon la méthode ASTM E2779-10 (* et un rendement de 72%).

- IMPORTANT: Veuillez lire entièrement ce guide avant d'installer et d'utiliser le produit. Le non-respect de cette consigne peut entraîner des dommages matériels, des blessures et même la mort. L'installation appropriée de ce poêle est essentielle pour un fonctionnement efficace en toute sécurité.
- Installez l'évacuation des fumées en respectant les dégagements spécifiés par le fabricant de conduits d'évacuation.
- Ne reliez pas l'évacuation pour poêle à granulés à une évacuation utilisée pour un autre appareil ou un autre poêle.
- N'installez pas de registre de tirage sur le système d'évacuation de cet appareil.
- L'utilisation d'air extérieur n'est pas nécessaire pour cet appareil.
- Adressez-vous aux autorités locales de l'urbanisme pour obtenir un permis et des renseignements sur toute autre restriction à l'installation et sur les exigences d'inspection dans votre région.
- Ne jetez pas ce guide. Ce guide contient des directives d'utilisation et d'entretien importantes dont vous pourriez avoir besoin. Suivez toujours les directives du guide.
- L'appareil est conçu pour être utilisé avec du combustible en granulés conforme à ou excédant la norme établie par le Pellet Fuel Institute (PFI). L'utilisation d'autres combustibles annule la garantie.
- N'utilisez jamais d'essence, de combustible à lanterne de type essence, de kérosène, d'essence d'allume-feu ou d'autres liquides similaires pour allumer ou raviver le feu dans ce poêle. Gardez tous ces liquides éloignés du poêle lorsqu'il est en marche.
- Un détecteur de fumée fonctionnel doit être installé dans la pièce où se trouve le poêle.
- Installez un détecteur de fumée à chaque étage de votre maison; en cas d'incendie accidentel dû à n'importe quelle cause, ce dispositif peut laisser le temps de s'échapper.
- Le détecteur de fumée doit être installé à au moins 15 pieds (4,57 m) de l'appareil afin d'éviter qu'il ne se déclenche inutilement lors du rechargement du poêle.
- Ne débranchez pas le poêle si vous soupçonnez un dysfonctionnement. Placez le contacteur ON/OFF sur « OFF » puis prenez contact avec le concessionnaire.
- Ce poêle doit être régulièrement entretenu et nettoyé (voir la section « ENTRETIEN »). Le défaut d'entretien du poêle peut entraîner un fonctionnement inapproprié et dangereux.
- Débranchez le cordon d'alimentation avant toute opération d'entretien ! REMARQUE: Le fait de placer l'interrupteur ON/OFF en position « OFF » ne coupe pas entièrement l'alimentation des composants électriques du poêle.
- Ne tentez jamais de réparer ou de remplacer une pièce du poêle sauf indication contraire dans les directives de ce guide. Tous les autres travaux doivent être effectués par un technicien qualifié.
- Ne faites pas fonctionner le poêle lorsque la porte d'observation est ouverte. Dans ce cas, la tarière ne distribue pas les granulés et un problème de sécurité peut se poser en raison des étincelles ou des fumées pénétrant dans la pièce.
- Laissez le poêle refroidir avant d'effectuer tout entretien ou nettoyage. Les cendres doivent être évacuées dans un récipient métallique doté d'un couvercle hermétique. Le récipient à cendres fermé doit être déposé sur une surface non combustible ou sur le sol, bien à l'écart de toute matière combustible, avant l'élimination définitive.
- L'accumulation de suie ou de créosote dans le système d'évacuation des fumées doit être vérifiée mensuellement au cours de la saison de chauffage.
- Ne touchez pas aux surfaces chaudes du poêle. Enseignez aux enfants les dangers des poêles à haute température. Les jeunes enfants doivent être surveillés lorsqu'ils se trouvent dans la même pièce que le poêle.
- La trémie et le couvercle du poêle sont chauds pendant le fonctionnement ; vous devez toujours protéger vos mains lors du remplissage du poêle.
- Un disjoncteur doit être installé. Cet appareil doit être branché sur une prise murale avec terre de 110-120 V, 60 z. N'utilisez pas d'adaptateur de prise et ne coupez pas la fiche de terre. N'acheminez pas le cordon électrique sous, devant ou sur le poêle. Ne faites pas courir le cordon électrique dans les zones de passage et ne le coincez pas sous les meubles.
- Le poêle ne fonctionne pas pendant les coupures de courant. En cas de panne de courant, veillez aux émanations de fumée du poêle et ouvrez une fenêtre si la fumée se répand dans la pièce.
- La porte de remplissage doit être fermée et étanche pendant le fonctionnement.
- N'obstruez jamais la circulation de l'air des grilles d'aération ouvertes de l'appareil.
- Éloignez tout objet étranger de la trémie.
- Les pièces mobiles de ce poêle sont mues par des moteurs électriques au couple élevé. Éloignez toutes les parties du corps de la tarière lorsque le poêle est branché sur la prise électrique. Ces pièces mobiles peuvent commencer à bouger à tout moment lorsque le poêle est branché.
- Ne placez aucun vêtement ou autre objet inflammable sur ou près du poêle.
- En cas d'installation dans une maison mobile, le poêle doit être mis à la terre directement sur le châssis d'acier et boulonné au sol. AVERTISSEMENT – CET APPAREIL NE DOIT PAS ÊTRE INSTALLÉ DANS LA CHAMBRE (conformément aux exigences de HUD). ATTENTION– L'INTEGRITE STRUCTURELLE DU SOL, DES MURS ET DU TOIT/DU PLAFOND DE LA MAISON MOBILE DOIT ETRE RESPECTEE.
- Cet appareil n'est pas destiné à un usage commercial.
- ATTENTION: La combustion du combustible génère du monoxyde de carbone qui peut s'avérer dangereux pour la santé en l'absence d'une ventilation appropriée.

* Cet appareil est un appareil de chauffage autonome. Il n'est pas conçu pour être relié à des conduits de distribution d'air. Ce n'est pas un fourneau.

Le Manuel Du Propriétaire

MODÈLE: 5780



Tested & Listed By O-T L Portland Oregon USA
C US
OMNI-Test Laboratories, Inc.

Rapport Numéro: 0215PS061E
0215PS061S

Certifié pour les installations aux États-Unis et au Canada.

US Environmental Protection Agency
Certifié conforme aux normes d'émissions de 2015 à particules

French version is available for download from the U.S. Stove website: http://www.usstove.com/
Version française est disponible pour téléchargement à partir du site U.S. Stove: http://www.usstove.com

Cet appareil n'a pas été conçu pour être utilisé en tant que source principale de chaleur.

- S'IL VOUS PLAÎT LIRE CE MANUEL EN ENTIER AVANT L'INSTALLATION ET L'UTILISATION DE CET APPAREIL. NE PAS SUIVRE CES INSTRUCTIONS PEUT PRODUIRE DES DEGATS MATERIELS, DES BLESSURES OU MÊME LA MORT.
- CONTACTEZ VOTRE IMMEUBLE OU D'INCENDIE LOCAL FONCTIONNAIRES AU SUJET OBTENTION DES PERMIS, RESTRICTIONS ET EXIGENCES D'INSPECTION D'INSTALLATION DANS VOTRE RÉGION.
- CONSERVER CES INSTRUCTIONS.

U.S. Stove Company
227 Industrial Park Road, South Pittsburg, TN 37380, États-Unis
POUR L'ASSISTANCE TECHNIQUE: Téléphone 1-800-222-6950 www.usstove.com

United States Environmental Protection Agency

OMB Control No. 2060-0161
Approval expires 03/31/2019

OMB Control No. 2060-0693
Approval expires 03/31/2019

30-DAY NOTIFICATION

2015 CLEAN AIR ACT (CAA) STANDARDS OF PERFORMANCE FOR NEW RESIDENTIAL WOOD HEATERS, NEW RESIDENTIAL HYDRONIC HEATERS AND FORCED-AIR FURNACES 40 CFR PART 60 SUBPARTS AAA AND QQQQ

The public reporting and recordkeeping burden for this collection of information is estimated to average 2 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Regulatory Support Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Disclaimer: The statutory provisions and the EPA regulations described in this document contain legally binding requirements. This document is not a substitute for those provisions or regulations, nor is it a regulation itself. In the event of a discrepancy, please refer to 40 CFR PART 60 Subparts AAA AND QQQQ, sections 60.537 and 60.5479. If you have additional questions, please contact Rafael Sanchez at 202-564-7028 or via email at sanchez.rafael@epa.gov.

Instructions: The manufacturer of an affected wood/pellet heater/central heater model line must notify the Administrator of the date that certification testing is scheduled to begin by email to WoodHeaterReports@epa.gov. This notice must be received by the EPA at least 30 days before the start of testing.

GENERAL INFORMATION						
Manufacturer's Name: United States Stove Company						
Heater Type (Circle One):	☐Adjustable Burn Rate Wood Heater	☒Pellet Stove	☐Single Burn Rate Heater	☐Hydronic Heater	☐Forced Air Furnace	☐Other:
Hydronic Heater Type (Check one):	☐Full Storage	☐Partial Storage	☐Indoor	☐Outdoor	☐Other:	
Forced-Air Furnace Type (Check one):	☐Small (less than 65,000 BTU/hr heat output)		☐Large (greater than 65,000 BTU/hr heat output)			
Fuel Tested (Check one):	☐Crib	☐Pellet	☐Cordwood	☐Wood Chips	☐Other:	
Model Name(s) (as will appear on test report): 5780, AP5780, VG5780						
Model Number(s) (as will appear on test report): 5780, AP5780, VG5780						
Equipped with a catalytic combustor? ☐Yes ☒No						
Mailing Address: 227 Industrial Park Rd						
Street Address: 227 Industrial Park Rd						

United States Environmental Protection Agency

OMB Control No. 2060-0161
Approval expires 03/31/2019

OMB Control No. 2060-0693
Approval expires 03/31/2019

30-DAY NOTIFICATION

2015 CLEAN AIR ACT (CAA) STANDARDS OF PERFORMANCE FOR NEW RESIDENTIAL WOOD HEATERS, NEW RESIDENTIAL HYDRONIC HEATERS AND FORCED-AIR FURNACES 40 CFR PART 60 SUBPARTS AAA AND QQQQ

The public reporting and recordkeeping burden for this collection of information is estimated to average 2 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Regulatory Support Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Disclaimer: The statutory provisions and the EPA regulations described in this document contain legally binding requirements. This document is not a substitute for those provisions or regulations, nor is it a regulation itself. In the event of a discrepancy, please refer to 40 CFR PART 60 Subparts AAA AND QQQQ, sections 60.537 and 60.5479. If you have additional questions, please contact Rafael Sanchez at 202-564-7028 or via email at sanchez.rafael@epa.gov.

Instructions: The manufacturer of an affected wood/pellet heater/central heater model line must notify the Administrator of the date that certification testing is scheduled to begin by email to WoodHeaterReports@epa.gov. This notice must be received by the EPA at least 30 days before the start of testing.

City: South Pittsburg	**State:** TN	**ZIP Code:** 37380
Phone: (423) 837-2100 ext 4513	**Fax:**	**Web Site:** www.usstove.com
Address of Manufacturer: 227 Industrial Park Rd		
City: South Pittsburg	**State** TN	**ZIP Code:** 37380
EPA APPROVED TEST LABORATORY		
Name and Title of Authorized Representative: Sebastian Button Testing Supervisor		
Company: OMNI-Test Laboratories		
Phone: (503) 643-3788	**E-mail:** sbutton@omni-test.com	**Fax:**
City: Portland	**State:** OR	**ZIP Code:** 97230
EPA APPROVED THIRD-PARTY CERTIFIER		
Name and Title of Authorized Representative: Alex Tiegs President		
Company: OMNI-Test Laboratories		
Phone: (503) 643-3788	**E-mail:** atiegs@omni-test.com	**Fax:**

United States Environmental Protection Agency

OMB Control No. 2060-0161
Approval expires 03/31/2019

OMB Control No. 2060-0693
Approval expires 03/31/2019

30-DAY NOTIFICATION

2015 CLEAN AIR ACT (CAA) STANDARDS OF PERFORMANCE FOR NEW RESIDENTIAL WOOD HEATERS, NEW RESIDENTIAL HYDRONIC HEATERS AND FORCED-AIR FURNACES 40 CFR PART 60 SUBPARTS AAA AND QQQQ

The public reporting and recordkeeping burden for this collection of information is estimated to average 2 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Regulatory Support Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Disclaimer: The statutory provisions and the EPA regulations described in this document contain legally binding requirements. This document is not a substitute for those provisions or regulations, nor is it a regulation itself. In the event of a discrepancy, please refer to 40 CFR PART 60 Subparts AAA AND QQQQ, sections 60.537 and 60.5479. If you have additional questions, please contact Rafael Sanchez at 202-564-7028 or via email at sanchez.rafael@epa.gov.

Instructions: The manufacturer of an affected wood/pellet heater/central heater model line must notify the Administrator of the date that certification testing is scheduled to begin by email to WoodHeaterReports@epa.gov. This notice must be received by the EPA at least 30 days before the start of testing.

City: Portland	**State:** OR	**ZIP Code:** 97230
COMPLIANCE TEST INFORMATION		
Test Method(s): ASTM E2779		
Date(s) of Proposed Test: April 10, 2017 – April 14, 2017		
Testing Location: OMNI-Test Laboratories, Inc. 13327 NE Airport Way, Portland, Oregon 97230		

United States Environmental Protection Agency

OMB Control No. 2060-0161
Approval expires 03/31/2019

OMB Control No. 2060-0693
Approval expires 03/31/2019

30-DAY NOTIFICATION

2015 CLEAN AIR ACT (CAA) STANDARDS OF PERFORMANCE FOR NEW RESIDENTIAL WOOD HEATERS, NEW RESIDENTIAL HYDRONIC HEATERS AND FORCED-AIR FURNACES 40 CFR PART 60 SUBPARTS AAA AND QQQQ

The public reporting and recordkeeping burden for this collection of information is estimated to average 2 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Regulatory Support Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Disclaimer: The statutory provisions and the EPA regulations described in this document contain legally binding requirements. This document is not a substitute for those provisions or regulations, nor is it a regulation itself. In the event of a discrepancy, please refer to 40 CFR PART 60 Subparts AAA AND QQQQ, sections 60.537 and 60.5479. If you have additional questions, please contact Rafael Sanchez at 202-564-7028 or via email at sanchez.rafael@epa.gov.

Instructions: The manufacturer of an affected wood/pellet heater/central heater model line must notify the Administrator of the date that certification testing is scheduled to begin by email to WoodHeaterReports@epa.gov. This notice must be received by the EPA at least 30 days before the start of testing.

Brandon Barry Director of Engineering

Print Name and Title of Authorized Official

Signature

March 7, 2017

Date

Telephone Number: _423 837-2100 Ext 4513

Email Address: __brandon@usstove.com

Remarks:

v1

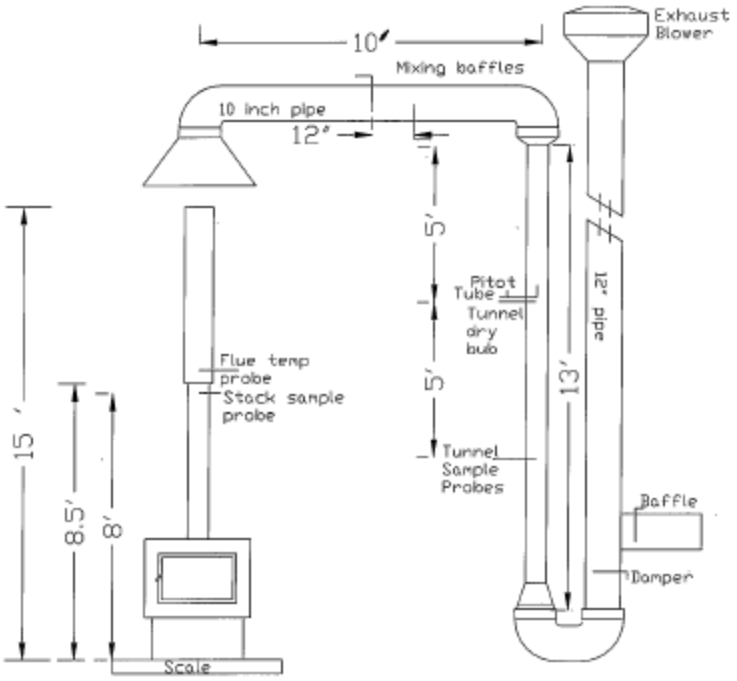

10'
Mixing baffles
Exhaust Blower
10 inch pipe
12"
5'
Pitot Tube
Tunnel dry bulb
5'
13'
12' pipe
Flue temp probe
Stack sample probe
15'
8.5'
8'
Tunnel Sample Probes
Baffle
Damper
Scale

FIGURE 1