OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE
WASHINGTON, D.C. 20460

May 21, 2024

Mr. Guillaume Thibodeau-Fortin, P. Eng.
Laboratory Engineer
Stove Builder International, Inc.
250 rue de Copenhague
Saint-Augustin-de-Desmaures, G3A 2H3
CANADA

Re: 65R Series: Eco-65R and Blue Ridge P120 Pellet-Fired Room Heater Models; Certificate of Compliance Number 368-24

Dear Mr. Thibodeau-Fortin:

I am pleased to inform Stove Builder International, Inc. that the above-referenced pellet heater models have been approved for certification pursuant to the 2015 New Source Performance Standard (NSPS) for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces at 40 CFR Part 60, Subpart AAA (2015 NSPS) by the United States Environmental Protection Agency (EPA). Certification under the 2015 NSPS is valid through May 21, 2029. This letter serves as your pellet heater Certificate of Compliance. Please refer to the above-referenced Certificate of Compliance number in all future correspondence.

Based on a November 29, 2023,[1] test report prepared by Intertek Testing Services NA (Intertek) demonstrating compliance with the American Society for Testing and Materials (ASTM) Test Methods E2515 and E2779, as well as the information provided in your December 22, 2023, application, the above-referenced models are certified as meeting the 2015 NSPS. Under the 2015 NSPS and based on Intertek's December 21, 2023,[2] Certification of Conformity, the models' emission rate of 0.77 g/hr meets the 2020 NSPS particulate matter emissions limit of 2.0 g/hr. The heat output range and overall heating efficiency for the above-referenced models are 6,966 – 28,526 BTU/hr and 77%, respectively. This model line's carbon monoxide emission rate is 0.22 g/min.

This Certificate of Compliance is valid for the above-referenced models and cannot be transferred to another model line without applying for another Certificate of Compliance. This

[1] Revised on December 19, 2023, March 29, 2024, and April 22, 2024
[2] Revised on March 29, 2024, and April 22, 2024

Certificate of Compliance allows you to advertise and sell the above-referenced models through May 21, 2029. Thereafter, you may not advertise for sale, offer for sale, or sell pellet heaters under this Certificate of Compliance without applying for and obtaining another Certificate of Compliance.

All heaters manufactured or sold under this Certificate of Compliance must comply with the EPA labeling requirements found at §60.536. These provisions require each pellet heater to have a permanent label affixed to it, including the month and year of manufacture, model name or number, serial number, certification test emission value, test method, standard met, and compliance certification statement.

In addition, you must comply with all applicable requirements of the regulation, including:

1. Conducting a third-party certifier-approved quality assurance program which ensures that all units within a model line are similar to the wood heater submitted for certification testing in all respects that would affect emissions and are in compliance with the applicable emission limit, pursuant to §60.533(m);

2. Applying for recertification whenever any change is made to the above-referenced models that affects or is presumed to affect the particulate matter emission rate for the model line, pursuant to §60.533(k)(1);

3. Providing an owner's manual that includes the information listed in §60.536(g)(1) with each affected wood heater model offered for sale;

4. Placing a copy of the full non-Confidential Business Information (non-CBI) certification test report and summary of the test report on the manufacturer's website and available to the public within 30 days after the EPA issues a Certificate of Compliance, pursuant to §60.533(b)(12). The up-to-date non-CBI certification test report and summary (if later revised) should remain posted on the manufacturer's website for as long as the model line is manufactured and offered for sale in the U.S.;

5. Submitting a report to the EPA every two years following the issuance of a Certificate of Compliance for each model line. This report must include the sales for each model by state and certify that no changes in the design or manufacture of this model line have been made that require recertification under §60.533(k);

6. Retaining records and submitting reports as required at §60.537; and

7. Submitting heaters for audit testing if selected by the EPA under §§60.533(n)(1)(i) and (2)(i).

Failure to comply with these requirements may result in revoking this Certificate of Compliance and enforcement action, including penalties as specified under the Clean Air Act. To promote transparency in implementing the Wood Heater Program, we request that manufacturers submit a copy of the Uniform Resource Locator (URL) or web address where the non-CBI certification test report is posted to WoodHeaterReports@epa.gov within ten (10) days of posting.

Once the EPA has verified that the full non-CBI certification test report has been posted on the manufacturer's website, the agency will add the above-referenced models to the EPA-Certified Wood Heater Database.

If you have any questions concerning this letter, please contact the Wood Heater Program at WoodHeaterReports@epa.gov.

Sincerely,

LOREN DENTON

Digitally signed by LOREN DENTON
Date: 2024.05.21 18:08:53 -04'00'

Loren Denton, Ph.D.
Director
Monitoring, Assistance, and Media Programs Division
Office of Compliance
Office of Enforcement and Compliance Assurance

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CERTIFICATE OF CONFORMITY

Emissions – Wood Heater

EPA 40 CFR Part 60-2015, ASTM E2515-2011 (R2017), ASTM E2779-2010 (R2017), CSA B415.1-10 (R2020)
WHI23 – 21514327

Organization

Stove Builder International, Inc.
250 Rue de Copenhague
Saint-Augustin-De-Desmaures, QC G3A 2H3
Canada

Product: ECO-65R, P120

Catalytic: No
Maximum Output: 28,526 Btu/hr
Weighted Average Emissions: 0.77 g/hr
Weighted Average Annual Delivered Efficiency (HHV): 76.7%
Test Fuel Type: Premium Pellets
Weighted Average CO Emissions Rate (g/min): 0.22
Conformance: Complies with 2020 particulate emissions standard
Test Report No.: 105588727MID-001R3

Certification Body: Intertek Testing Services NA, Inc.
Registered Address: 545 E. Algonquin Rd., Arlington Heights, IL 60005, USA
Initial Issue Date: 21-Dec-23
Issue Status: 3

This is a certificate of conformity to confirm that the bearer has successfully completed the requirements of the Intertek certification scheme which include the testing of products and the initial assessment. The bearer is subject to continuing assessments of their compliance through surveillance and testing of products samples taken from production (as applicable to the scheme) and has been registered within the scheme for the products detailed. The validity of this certificate is contingent to the listing's status on the Intertek Directory of Building Products: bpdirectory.intertek.com.

Jean-Philippe Kayl Vice President – Global Certification		22-Apr-24
Name	Signature	Date

Certificate of Conformity WHI23-21514327
Appendix A

Certificate of Conformity #:		Certificate of Conformity Issue Date:	
WHI23-21514327			
REVISION #	**REVISION DATE**	**REPORT PAGES**	**REVISION**
0	December 21, 2023	N/A	Original Report Issue
1	March 29, 2024	N/A	Revisions made to the test report and Appendix B
2	April 22, 2024	N/A	Revisions made to Appendix C to include correct analytical balance calibration for Intertek. Included revised conditioning burn data with moisture content of pellets used in Appendix G.

Revised Report #:		Report Issue Date:	
105588727MID-001		**November 29, 2023**	
REVISION #	**REVISION DATE**	**REPORT PAGES**	**REVISION**
0	November 29, 2023	N/A	Original Report Issue
1	December 19, 2023	21	Added similar models to the conclusion of report.
2	March 29, 2024	19	Corrected Section 10 to note dry burn rates, instead of wet burn rates.
		20	Revised 1st hour emissions results to include correct filter and probe weights. Revised burn rate results to show corrected moisture information.
		Appendix B	Revised 1st hour emissions in test data to include correct filter and probe weights. Updated load data for the moisture content. Calculation was doubling the moisture content, which gave an incorrect burn rate result. Corrected DGM value for ambient filter draw.
3	April 22, 2024	Page 4, Appendix C	Revisions to include correct analytical balance calibration for Intertek.
		Appendix G	Included revised conditioning burn data with moisture content of pellets used in Appendix G.

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STOVE BUILDER INTERNATIONAL, INC.
TEST REPORT

SCOPE OF WORK
EPA EMISSIONS TESTING MODEL ECO-65

REPORT NUMBER
105588727MID-001R3

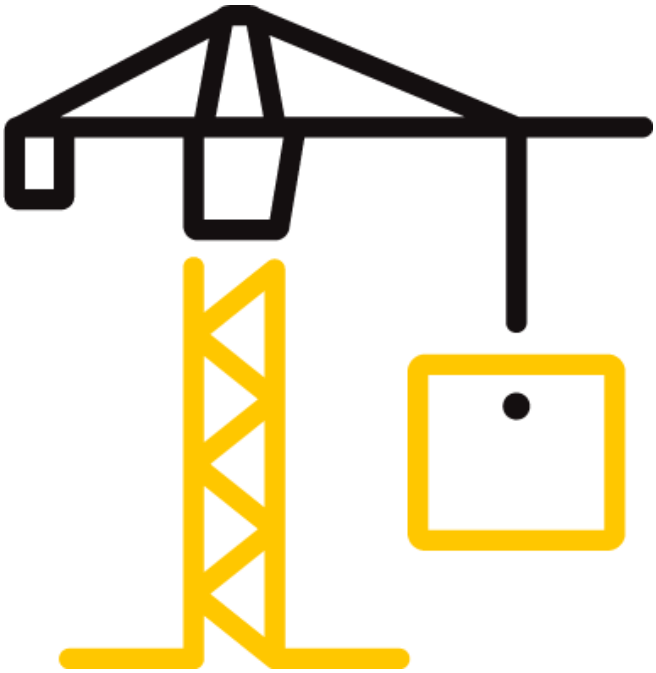
TEST DATE(S)
11/29/23

ISSUE DATE	**[REVISED DATE]**
11/29/23	04/22/24

RECORD RETENTION END DATE
11/29/33

PAGES
26

DOCUMENT CONTROL NUMBER
RT-L-AMER-TEST-3778 (03/01/2023)



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TEST REPORT FOR STOVE BUILDER INTERNATIONAL, INC.

Report No.: 105588727MID-001R3
Date: 4/22/2024

REPORT ISSUED TO

STOVE BUILER INTERNATIONAL, INC.
250 Rue de Copenhague
Saint-Augustin-De-Desmaures, QC G3A 2H3
Canada

SECTION 1

SCOPE

Intertek Testing Services NA, Inc. was contracted by Stove Builder International, Inc. to perform testing in accordance with EPA 40 CFR Part 60, “Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces,” ASTM E2515-11 (R2017), "Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel," ASTM E2779-10 (R2017), "Standard Test Method for Determining Particulate Matter Emissions from Pellet Heaters," and CSA B415.1-10 (R2020), "Performance Testing of Solid-Fuel-Burning Heating Appliances" on their model ECO-65 pellet fuel room heater. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Stove Builder International’s test facility in Saint-Augustin-De-Desmaures, QC Canada. Testing was performed by a qualified Intertek representative.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule also called “Shared Risk approach,” of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity

For INTERTEK B&C:

COMPLETED BY:	Brian Ziegler	**REVIEWED BY:**	Ken Slater
TITLE:	Technical Team Leader - Hearth	**TITLE:**	Associate Engineer - Hearth
SIGNATURE:		**SIGNATURE:**	Ken Slater
DATE:	04/22/24	**DATE:**	04/22/24

aaa:bbb

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SECTION 2
SUMMARY OF TEST RESULTS

The appliance tests resulted in the following performance:

Particulate Emissions: 0.77 g/hr
Carbon Monoxide Emissions: 0.22 g/min
Heating Efficiency: 76.7% (Higher Heating Value Basis)

SECTION 3
TEST METHOD(S)

The specimen was evaluated in accordance with the following:

EPA 40 CFR Part 60-2015, *Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces*

ASTM E2515-2011 (R2017), *Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel*

ASTM E2779-2010 (R2017), *Standard Test Method for Determining Particulate Matter Emissions from Pellet Heaters*

CSA B415.1-10 (R2020), *Performance Testing of Solid-Fuel-Burning Heating Appliances*

SECTION 4
MATERIAL SOURCE

The sample was not independently selected for testing. The test unit was inspected by Intertek on November 14, 2023 at the client's facility and found to be in good condition. The unit was set up following the manufacturer's instructions without difficulty.

Following assembly, the unit was placed on the test stand. Prior to beginning the emissions tests, the manufacturer operated the unit for a minimum of 50 hours at a medium burn rate to break in the stove. This break-in period was performed by the Stove Builder International's staff and a document is included in the final report. The unit was found to be operating satisfactory during this break-in. The 50 plus hours of pre-burning were conducted from July 25, 2023 to November 9, 2023. The fuel used for the break-in process was wood pellets.

Following the pre-burn break-in process the unit was allowed to cool and ash and residue was removed from the firebox. The unit's chimney system and laboratory dilution tunnels were cleaned using standard wire brush chimney cleaning equipment. On November 14, 2023 the unit was set-up for testing.

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SECTION 5
EQUIPMENT

EQUIPMENT	INV NUMBER	CALIBRATION DUE	MU
Pressure transmitter (Vacuum)	SBI-303	2023-12-13	±0.25 %FS
Pressure transmitter (Pressure)	SBI-299	2024-02-23	±9.5e-003 psi
Pressure transmitter (Vacuum)	SBI-372	2023-12-13	±0.4 %FS
Pressure transmitter (Pressure)	SBI-298	2024-02-06	±9.5e-003 psi
Manometer (Tunnel)	SBI-248	2024-02-27	±0.00015" H2O
Manometer (Draft)	SBI-250	2024-02-27	±0.00015" H2O
Dry Gas Meter	SBI-047	2024-03-22	±2% F.S.
Dry Gas Meter	SBI-046	2024-04-13	±2% F.S.
Dry Gas Meter	SBI-347	2024-03-22	±2% F.S.
Dry Gas Meter	SBI-346	2024-04-13	±2% F.S.
Floor Scale	SBI-014	2024-03-16	±500 x 0.02 kg
Analytical scale	713	2024-04-05	±0.06 mg
Digital Thermocouple Thermometer	SBI-004	2023-11-25	±0.4%
Anemometer	SBI-097	2024-02-03	±3% rdg
Barometer	SBI-325	2023-11-24	±0.5%
Temperature unit National Instrument	SBI-375	2023-11-25	±0.5°F
100 mg weight	SBI-237	2028-10-10	±0.0025 mg
10 g weight	SBI-238	2028-10-10	±0.012 mg
200 g weight	SBI-312	2028-10-10	±0.060 mg

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SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Guillaume Thibodeau-Fortin	Stove Builder International, Inc.
Bernard Blouin	Stove Builder International, Inc.
Nicolas Gagnon	Stove Builder International, Inc.
Brian Ziegler	Intertek B&C

SECTION 7
TEST PROCEDURE

On November 15, 2023, the unit was tested for EPA emissions. For pellet stoves, the test was conducted in accordance with ASTM E2779-2010 (R2017). The fuel used for the test run was premium-Grade Pellets (Energex).

The applicable EPA regulatory limits are:

Step 1 – 2015 – 4.5 grams per hour.

Step 2 – 2020 – 2.0 grams per hour.

TEST SET-UP DESCRIPTION

A 3” horizontal flue is connected by a 90° elbow and adapters to a standard 6” diameter vertical single wall pipe and insulated chimney system was installed to 15’ above floor level. The singe wall pipe extended to 8 feet above the floor and insulated chimney extended the remaining height.

AIR SUPPLY SYSTEM

Combustion air enters a 2” inlet pipe located on the back of the heater, which is directed to the pellet burn pot. All gases exit through the 3” flue also located at the back of the heater. The exhaust gases are assisted by a combustion blower.

TEST FUEL PROPERTIES

Wood pellets used for the testing were manufactured by Energex. The pellets have a measured heating value of 8203 Btu/hr (19067 kJ/kg) and a moisture content of 5.41% on a dry basis.

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SAMPLING LOCATIONS

Particulate samples are collected from the dilution tunnel at a point 20 feet from the tunnel entrance. The tunnel has two elbows in the system ahead of the sampling section. (See Figure 3.) The sampling section is a continuous 13 foot section of 6 inch diameter pipe straight over its entire length. Tunnel velocity pressure is determined by a standard Pitot tube located 60 inches from the beginning of the sampling section. The dry bulb thermocouple is located six inches downstream from the Pitot tube. Tunnel samplers are located 60 inches downstream of the Pitot tube and 36 inches upstream from the end of this section. (See Figure 1.)

Stack gas samples are collected from the steel chimney section 8 feet ± 6 inches above the scale platform. (See Figure 2.)

FIGURE 1 – DILUTION TUNNEL

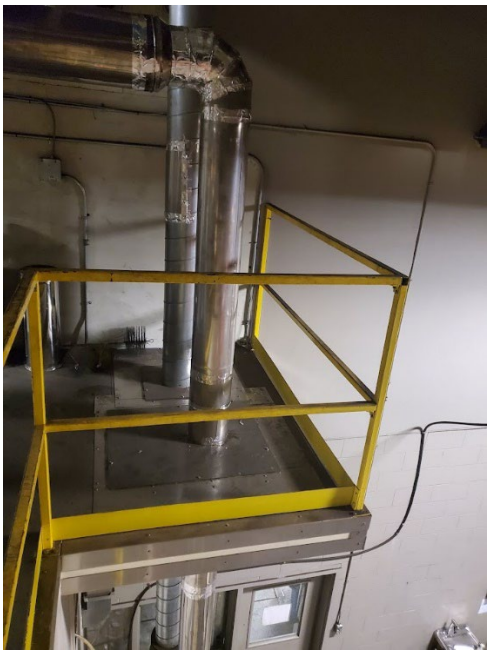

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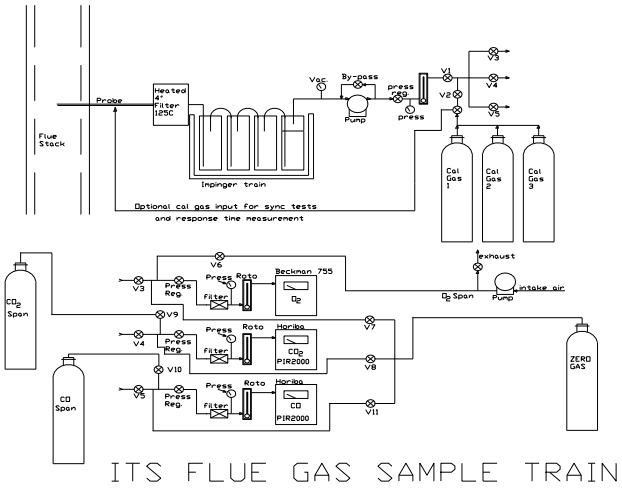
FIGURE 2 – STACK GAS SAMPLE TRAIN



ITS FLUE GAS SAMPLE TRAIN

FIGURE 2

FIGURE 3 – DILUTION TUNNEL SAMPLE SYSTEMS

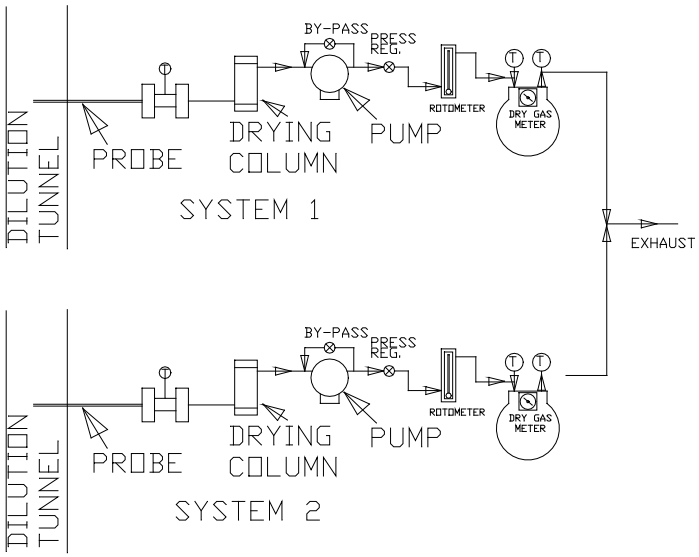


Figure 3

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SAMPLING METHODS

PARTICULATE SAMPLING

Particulates were sampled in strict accordance with ASTM E2515. This method uses two identical sampling systems with 47-mm diameter fiber filters. The dryers used in the sample systems are filled with "Drierite" before each test run. In order to measure first-hour emissions rates a third filter set is prepared at the beginning of the test run. The third filter set is turned off and weighed at one hour after the beginning of test.

INSTRUMENT CALIBRATION

DRY GAS METERS

Dry gas meters are calibrated by an ISO 17025 accredited calibration agency, results of this calibration are contained in Appendix D.

STACK SAMPLE ROTAMETER

The stack sample rotometer is checked by running three tests at each flow rate used during the test program. The flow rate is checked by running the rotometer in series with one of the dry gas meters for 10 minutes with the rotometer at a constant setting. The dry gas meter volume measured is then corrected to standard temperature and pressure conditions. The flow rate determined is then used to calculate actual sampled volumes.

GAS ANALYZERS

The continuous analyzers are zeroed and spanned before each test with appropriate gases. A mid-scale multi-component calibration gas is then analyzed (values are recorded). At the conclusion of a test, the instruments are checked again with zero, span and calibration gases (values are recorded only). The drift in each meter is then calculated and must not exceed 5% of the scale used for the test.

At the conclusion of each unit test program, a three-point calibration check is made. This calibration check must meet accuracy requirements of the applicable standards. Consistent deviations between analyzer readings and calibration gas concentrations are used to correct data before computer processing. Data is also corrected for interferences as prescribed by the instrument manufacturer's instructions.

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TEST METHOD PROCEDURES

LEAK CHECK PROCEDURES

Before and after each test, each sample train is tested for leaks. Leakage rates are measured and must not exceed 0.02 CFM or 4% of the sampling rate. Leak checks are performed checking the entire sampling train, not just the dry gas meters. Pre-test and post-test leak checks are conducted with a vacuum of 10 inches of mercury. Vacuum is monitored during each test and the highest vacuum reached is then used for the post-test vacuum value. If leakage limits are not met, the test run is rejected. During, these tests the vacuum was typically less than 2 inches of mercury. Thus, leakage rates reported are expected to be much higher than actual leakage during the tests.

TUNNEL VELOCITY/FLOW MEASUREMENT

The tunnel velocity is calculated from a center point Pitot tube signal multiplied by an adjustment factor. This factor is determined by a traverse of the tunnel as prescribed in EPA Method 1. Final tunnel velocities and flow rates are calculated from EPA Method 2, Equation 6.9 and 6.10. (Tunnel cross sectional area is the average from both lines of traverse.)

Pitot tubes are cleaned before each test and leak checks are conducted after each test.

PM SAMPLING PROPORTIONALITY

Proportionality was calculated in accordance with ASTM E2515. The data and results are included in Appendix C.

DEVIATIONS FROM STANDARD METHOD:

SECTION 8
TEST CALCULATIONS

WEIGHT OF TEST FUEL BURNED (DRY) – ASTM E2779

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

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 (lb),
M_{Ewb} = weight of test fuel in hopper at end of test run, wet basis, kg (lb), and
M_{Bdb} = weight of test fuel burned during test run, dry basis, kg (lb).

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WEIGHT OF TEST FUEL BURNED PER TEST SEGMENT (DRY) – ASTM E2779

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

where:

M_{SSiwb} = weight of test fuel in hopper at start of test run segment *i*, wet basis, kg (lb),
M_{ESiwb} = weight of test fuel in hopper at end of test run segment *i*, wet basis, kg (lb),
M_{BSidb} = weight of test fuel burned during test run segment *i*, dry basis, kg (lb), and
i = test run segments in accordance with 9.4, Table 1.

AVERAGE BURN RATE FOR FULL TEST (DRY) – ASTM E2779

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

where:

BR = average dry burn rate over the full integrated test run, kg/h (lb/h), and
θ = total length of full integrated test run, min.

AVERAGE BURN RATE PER TEST SEGMENT (DRY) – ASTM E2779

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

where:

BR_{Si} = average dry burn rate over test run segment *i*, kg/h (lb/h), and
θ_{Si} = total length of test run segment *i*, min.

AVERAGE EMISSION RATE FOR FULL TEST (g/hr) – ASTM E2779

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

where:

E_T = total particulate emissions for full integrated test run measured using Test Method E2515, g (lb),
θ = total length of test run, min, and
PM_R = average particulate emission rate over the full integrated test run, g/h.

AVERAGE EMISSION FACTOR FOR FULL TEST (g/kg dry) – ASTM E2779

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

where:

PM_F = average particulate emission factor over the full integrated test run, g/dry kg of fuel burned.

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AVERAGE EMISSIONS FOR FULL TEST (g/MJ or lb/MMBtu) – ASTM E2779

$$PM_H = E_T/E_O$$

where:

E_O = average measured overall heat output over the full integrated test run from Annex A1, MJ (MMBTU), and

PM_H = average particulate emissions in accordance with unit of average heat output over the full integrated test run, g/MJ (lb/MMBtu).

NOMENCLATURE FOR ASTM E2515:

A = Cross-sectional area of tunnel m2 (ft2).

B_{ws} = Water vapor in the gas stream, proportion by volume (assumed to be 0.02 (2.0 %)).

C_p = Pitot tube coefficient, dimensionless (assigned a value of 0.99).

c_r = Concentration of particulate matter room air, dry basis, corrected to standard conditions, g/dscm (gr/ dscf) (mg/dscf).

c_s = Concentration of particulate matter in tunnel gas, dry basis, corrected to standard conditions, g/dscm (gr/dscf) (mg/dscf).

E_T = Total particulate emissions, g.

F_p = Adjustment factor for center of tunnel pitot tube placement.

$F_p = V_{strav}/V_{scent}$

K_P = Pitot Tube Constant, $34.97 \frac{m}{\sec} \left[\frac{\left(\frac{g}{g}\blacksquare mole\right)(mm\ Hg)}{(K)(mm\ water)}\right]^{\frac{1}{2}}$

or

= Pitot Tube Constant, $85.49 \frac{ft}{\sec} \left[\frac{\left(\frac{lb}{lb}-mole\right)(in\ Hg)}{(R)(in\ water)}\right]^{\frac{1}{2}}$

L_a = Maximum acceptable leakage rate for either a pretest or post-test leak- check, equal to 0.0003 m3/min (0.010 cfm) or 4 % of the average sampling rate, whichever is less.

L_p = Leakage rate observed during the post-test leak-check, m3/min (cfm).

m_p = mass of particulate from probe, mg.

m_f = mass of particulate from filters, mg.

m_g = mass of particulate from filter gaskets, mg.

m_r = mass of particulate from the filter, filter gasket, and probe assembly from the room air blank filter holder assembly, mg.

m_n = Total amount of particulate matter collected, mg.

M_s = the dilution tunnel dry gas molecular weight (may be assumed to be 29 g/g mole (lb/lb mole).

P_{bar} = Barometric pressure at the sampling site, mm Hg (in. Hg).

P_g = Static Pressure in the tunnel (in. water).

P_R = Percent of proportional sampling rate.

P_s = Absolute average gas static pressure in dilution tunnel, mm Hg (in. Hg).

P_{std} = Standard absolute pressure, 760 mm Hg (29.92 in. Hg).

Q_{std} = Average gas flow rate in dilution tunnel.

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$Q_{std} = 60\ (1 - B_{ws})\ V_s\ A\ [T_{std}\ P_s/T_s\ P_{std}]$
dscm/min (dscf/min).

T_m = Absolute average dry gas meter temperature, K (R).

T_{mi} = Absolute average dry gas meter temperature during each 10-min interval, *i*, of the test run.

$T_{mi} = (T_{mi(b)} + T_{mi(e)})/2$

where:

$T_{mi(b)}$ = Absolute dry gas meter temperature at the beginning of each 10-min test interval, i, of the test run, K (R), and

$T_{mi(e)}$ = Absolute dry gas meter temperature at the end of each 10-min test interval, i, of the test run, K (R).

Ts = Absolute average gas temperature in the dilution tunnel, K (R).

Tsi = Absolute average gas temperature in the dilution tunnel during each 10-min interval, i, of the test run, K (R).

$T_{si} = (T_{si(b)} + T_{m=si(e)})/2$

where:

$T_{si(b)}$ = Absolute gas temperature in the dilution tunnel at the beginning of each 10-min test interval, i, of the test run, K (R), and

$T_{si(e)}$ = Absolute gas temperature in the dilution tunnel at the end of each 10-min test interval, i, of the test run, K (R).

V_m = Volume of gas sample as measured by dry gas meter, dcm (dcf).

V_{mc} = Volume of gas sampled corrected for the post test leak rate, dcm (dcf).

V_{mi} = Volume of gas sample as measured by dry gas meter during each 10-min interval, i, of the test run, dcm.

$V_{m(std)}$ = Volume of gas sample measured by the dry gas meter, corrected to standard conditions.

$V_{m(std)} = K_1\ V_m\ Y\ [(P_{bar} + (\Delta H/13.6))/T_m]$

where:

K_1 = 0.3855 K/mm Hg for SI units and = 17.64 R/in. Hg for inch-pound units.

$V_{m(std)} = K_1\ V_{mc}\ Y\ [(P_{bar} + (\Delta H/13.6))/T_m]$

where:

V_{mc} = Vm– (Lp– La)u

V_{mr} = Volume of room air sample as measured by dry gas meter, dcm (dcf), and

$V_{mr(std)}$ = Volume of room air sample measured by the dry gas meter, corrected to standard conditions.

$V_{m(std)} = K_1\ V_{mr}\ Y\ [(P_{bar} + (\Delta H/13.6))/T_m]$

Where:

K_1 = 0.3855 K/mm Hg for SI units and = 17.64 R/in. Hg for inch-pound units, and

V_s = Average gas velocity in the dilution tunnel.

$V_s = F_p\ K_p\ C_p\ (\sqrt{\Delta P_{avg}})(\sqrt{(T_s/P_s\ M_s)})$

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V_{si} = Average gas velocity in dilution tunnel during each 10-min interval, i, of the test run.

$$V_{si} = F_p K_p C_p (\sqrt{\Delta P_i})(\sqrt{(T_{si}/P_s M_s)})$$

V_{scent} = Average gas velocity at the center of the dilution tunnel calculated after the Pitot tube traverse.

V_{strav} = Average gas velocity calculated after the multipoint Pitot traverse.

Y = Dry gas meter calibration factor.

ΔH = Average pressure at the outlet of the dry gas meter or the average differential pressure across the orifice meter, if used, mm water (in. water).

ΔP_{avg} = Average velocity pressure in the dilution tunnel, mm water (in. water).

ΔP_i = Velocity pressure in the dilution tunnel as measured with the Pitot tube during each 10-min interval, i, of the test run.

$$\Delta P_i = (\Delta P_{i(b)} + \Delta P_{i(e)})/2$$

where:

$\Delta P_{i(b)}$ = Velocity pressure in the dilution tunnel as measured with the Pitot tube at the beginning of each 10-min interval, i, of the test run, mm water (in. water), and

$\Delta P_{i(e)}$ = Velocity pressure in the dilution tunnel as measured with the Pitot tube at the end of each 10-min interval, i, of the test run, mm water (in. water).

θ = Total sampling time, min.

10 = ten min, length of first sampling period.

13.6 = Specific gravity of mercury.

100 = Conversion to percent.

TOTAL PARTICULATE WEIGHT – ASTM E2515

$$M_n = m_p + m_f + m_g$$

PARTICULATE CONCENTRATION – ASTM E2515

$$C_s = K_2(m_n/V_{m(std)}) \text{ g/dscm (g/dscf)}$$

where:

K_2 = 0.001 g/mg

TOTAL PARTICULATE EMISSIONS (g) – ASTM E2515

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

PROPORTIONAL RATE VARIATION (%) – ASTM E2515

$$PR = [\theta(V_{mi} V_s T_m T_{si})/(10(V_m V_{si} T_s T_{mi})] \times 100$$

MEASUREMENT OF UNCERTAINTY – ASTM E2515

$$MU_{weighing} = \sqrt{0.1^2} \bullet X$$

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GENERAL FORMULA – ASTM E2515

$$uY = \sqrt{((\delta Y/\delta x_1) \times u_1)^2 + \ldots + ((\delta Y/\delta x_n) \times u_n)^2}$$

Where:

$\delta Y/\delta x_i$ = Partial derivative of the combining formula with respect to individual measurement xi,
u_i = is the uncertainty associated with that measurement.

TOTAL PARTICULATE EMISSIONS – ASTM E2515

$$E_T = (c_s - c_r)\, Q_{std}\, \theta$$

where:

c_s = sample filter catch/(sample flow rate x test duration), g/dscf,
c_r = room background filter catch/(sample flow x sampling time), g/dscf,
Q_{std} = average dilution tunnel flow rate, dscf/min, and
θ = sampling time, minutes.

MU OF c_s

$c_s = F_c/(Q_{sample} \times \theta) = 0.025/(0.25 \times 180) = 0.0005555$
$\delta c_s/\delta F_c = 1/Q_{sample} \bullet \Theta = 1/0.25 \bullet 180 = 0.0222$
$\delta c_s/\delta Q_{sample} = -F_c/Q^2_{sample} \bullet \Theta = -0.025/0.25^2 \bullet 180 = -0.00222$
$\delta c_s/\delta \Theta = -F_c/Q_{sample} \bullet \Theta^2 = -0.025/0.25 \bullet 180^2 = -0.000003$
$MUc_s = \sqrt{(0.00027 \bullet 0.0222)^2 + (0.0025 \bullet -0.00222)^2}$
$\sqrt{+ (0.1 \bullet -0.000003)^2} = 0.0000091g$
Thus, c_s would be 0.555 mg/dscf ± 0.0081 mg/dscf at 95% confidence level.

MU OF c_r

$c_r = BG_c/(QBG \times \theta) = 0.002/(0.15 \times 180) = 0.000074$
$\delta c_r/\delta BG_c = 1/Q_{BG} \bullet \Theta = 1/0.15 \bullet 180 = 0.03704$
$\delta c_r/\delta Q_{BG} = -BG_c/Q^2_{BG} \bullet \Theta = -0.002/0.15^2 \bullet 180 = -0.0004938$
$\delta c_r/\delta \Theta = -BG_c/Q_{BG} \bullet \Theta^2 = -0.002/0.15 \bullet 180^2 = -0.0000004$
$MUc_r = \sqrt{(0.00027 \bullet 0.03704)^2 + (0.0015 \bullet -0.0004938)^2}$
$\sqrt{+ (0.1 \bullet -0.0000004)^2} = 0.00001g$
Thus, c_r would be 0.074 mg/dscf ± 0.01 mg/dscf at 95% confidence level.

E_T AND MU_{ET}

$E_T = (c_s - c_r)\, Q_{sd}\, \theta = (0.000555 - 0.000074) \times 150 \times 180 = 13.00g$
$\delta E_T/\delta c_s = Q_{std} \bullet \Theta = 150 \bullet 180 = 27{,}000$
$\delta E_T/\delta c_r = Q_{std} \bullet \Theta = 150 \bullet 180 = 27{,}000$
$\delta E_T/\delta Q_{std} = c_s \bullet \Theta - c_r \bullet \Theta = 0.000555 \bullet 180 - 0.000074 \bullet 180 = 0.08667$
$\delta E_T/\delta \Theta = c_s \bullet Q_{std} - c_r \bullet Q_{std} = 0.000555 \bullet 180 - 0.000074 \bullet 180 = 0.07222$
$MU_{ET} = \sqrt{(27{,}000 \bullet 0.0000081)^2 + (27{,}000 \bullet 0.00001)^2\ (0.08667 \bullet 3)^2}$
$\sqrt{+ (0.07222 \bullet 0.1)^2} = 0.436$

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Thus the result in this example would be:
ET = 13.00g ± 0.44 g at a 95% confidence level.

EFFICIENCY – CSA B415.1

The change in enthalpy of the circulating air shall be calculated using the moisture content and temperature rise of the circulating air, as follows:

$$\Delta h = \Delta t\ (1.006 + 1.84x)$$

Where:
Δh = change in enthalpy, kJ/kg
Δt = temperature rise, °C
1.006 = specific heat of air, kJ/kg °C
1.84 = specific heat of water vapor, kJ/kg °C
x = humidity ratio, kg/kg

The equivalent duct diameter shall be calculated as follows:

$$ED = 2HW/H+W$$

Where:
ED = equivalent duct diameter
H = duct height, m
W = duct width, m

The air flow velocity shall be calculated as follows:

$$V = F_p \times C_p \times 34.97 \times \sqrt{T/28.56(P_{baro} + P_s)}$$

where
V = velocity, m/s
F_P = Pitot tube calibration factor determined from vane anemometer measurements
C_P = Pitot factor
= 0.99 for a standard Pitot tube or as determined by calibration for a Type S Pitot tube
34.97 = Pitot tube constant
Note: The Pitot tube constant is determined on the basis of the following units: $m/s[g/g\ mole\ (mm\ Hg)/(K)(mm\ H_2O)]^{0.5}$
ΔP = velocity pressure, mm H2O
T = temperature, K
28.56 = molecular weight of air
P_{Baro} = barometric pressure, mm Hg
P_s = duct static pressure, mm Hg

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The mass flow rate shall be calculated as follows:

$$m = 3600VAp$$

where:

m = mass flow rate, kg/h
V = air flow velocity, m/s
3600 = number of seconds per hour
A = duct cross-sectional area, m2
p = density of air at standard temperature and pressure (use 1.204 kg/m3)

The rate of heat release into the circulating air shall be calculated using the air flow and change in enthalpy, as follows:

$$\Delta e = \Delta h \times m$$

Where:

Δe = rate of heat release into the circulating air, kJ/h
Δh = change in enthalpy of the circulating air, kJ/kg
m = mass air flow rate, kg/h

The heat output over any time interval shall be calculated as the sum of the heat released over each measurement time interval, as follows:

$$E_t = \sum(\Delta e \times i) \text{ for } i = t_1 \text{ to } t_2$$

Where:

Et = delivered heat output over any time interval t_2–t_1, kJ
i = time interval for each measurement, h

The average heat output rate over any time interval shall be calculated as follows:

$$e_t = E_t / t$$

where

e_t = average heat output, kJ/h
t = time interval over which the average output is desired, h

The total heat output during the burn shall be calculated as the sum of all the heat outputs over each time interval, as follows:

$$E_d = \sum(E_t) \text{ for } t = t_0 \text{ to } t_{final}$$

Where:

E_d = heat output over a burn, kJ/h (Btu/h)
E_t = heat output during each time interval, kJ/h (Btu/h)

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The efficiency shall be calculated as the total heat output divided by the total energy input, expressed as a percentage as follows:

$$\text{Efficiency, \%} = 100 \times E_d/I$$

Where:

E_d = total heat output of the appliance over the test period, kJ/kg

I = input energy (fuel calorific value as-fired times weight of fuel charge), kJ/kg (Btu/lb)

SECTION 9
TEST SPECIMEN DESCRIPTION

The model ECO-65 Pellet Fuel Room Heater is constructed of sheet steel. The outer dimensions are 32-inches deep, 40.625-inches high, and 23.250-inches wide. The unit has a door located on the front with a viewing glass.

SECTION 10
TEST RESULTS

DESCRIPTION OF TEST RUNS:

RUN #1 (11/15/23): The test for pellet heaters is a continuous test with three separate burn rates. At 9:04 am the unit was started and operated for a minimum of 1 hour for the pretest operation. At 10:12 the unit was set to the maximum feed rate (level 12) with a dry burn rate of 2.09 kg/hr. The scale was set at 35.97-lbs and the sampling system was started. At 11:12 am, the system #3 sampling filter was turned off and the unit was set to ≤50% feed rate (level 5) with a dry burn rate of 0.87 kg/hr. At 1:12 pm, the heater was changed to the minimum feed rate (level 1) with a dry burn rate of 0.51 kg/hr. At 4:12 pm, testing was completed. The total burn time was 360 minutes.

The test run has been found to be appropriate, with no anomalies, and the test run has been validated and is deemed compliant. No negative weight was found on the filters, as the filters and gaskets are weighed together to eliminate filter material transfer to gaskets. All weightings were handled properly, with no negative weight on gaskets or probes.

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TEST REPORT FOR STOVE BUILDER INTERNATIONAL, INC.
Report No.: 105588727MID-001R3
Date: 4/22/2024

TABLE 1 – EMISSIONS

RUN#	TEST DATE	BURN RATES (kg/hr)(dry)		PARTICULATE EMISSION RATE (g/hr)	1st HOUR EMISSIONS (g)	CO EMISSIONS (g/min)	HEATING EFFICIENCY (%HHV)
1	11/15/23	H*	2.09	0.77	1.85	0.22	76.7
		M*	0.87				
		L*	0.51				
		OA*	0.89				

*Notes: H= High burn rate, M= Medium burn rate, L= low burn rate, OA= overall burn rate.

TABLE 2 – TEST FACILITY CONDITIONS

RUN #	ROOM TEMP BEFORE (°F)	ROOM TEMP AFTER (°F)	BARO PRES BEFORE (in/Hg)	BARO PRES AFTER (in/Hg)	R. H. BEFORE (%)	R. H. AFTER (%)	AIR VEL BEFORE (ft/min)	AIR VEL AFTER (ft/min)
1	67	67	29.88	29.7	19.6	25.2	0	0

TABLE 3 – DILUTION TUNNEL FLOW RATE MEASUREMENTS AND SAMPLING DATA

RUN #	BURN TIME (min)	VELOCITY (ft/sec)	VOLUMETRIC FLOW RATE (dscf/min)	AVG TEMP (°R)	SAMPLE VOLUME (dscf)		PARTICULATE CATCH (mg)	
					1	2	1	2
1	360	16.65	330.77	543.10	61.87	62.43	2.30	2.50

TABLE 4 - DILUTION TUNNEL DUAL TRAIN PRECISION

RUN #	SAMPLE RATIOS		TOTAL EMISSIONS (g)		DEVIATION (%)	DEVIATION (g/kg)
	TRAIN 1	TRAIN 2	TRAIN 1	TRAIN 2		
1	1924.61	1907.30	4.43	4.77	3.72%	0.064

TABLE 5 - GENERAL SUMMARY OF RESULTS

RUN #	BURN RATE (kg/hr)(dry) (OVERALL)	INITIAL DRAFT (in/H_2O)	RUN TIME (min)	AVERAGE DRAFT (in/H_2O)
1	0.89	0.025	360	0.019

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TABLE 6 - CSA B415.1 RESULTS

BURN RATE (kg/hr)(dry)	CO EMISSIONS (g/min)	HEATING EFFICIENCY (% HHV)	HEAT OUTPUT (Btu/hr)
HIGH – 2.10	0.41	75.3	28,526
MEDIUM – 0.87	0.33	76.2	11,927
LOW – 0.51	0.10	75.9	6,966
OVERALL – 0.89	0.22	76.7	12,365

SECTION 11
CONCLUSION

This test demonstrates that this unit is an affected facility under the definition given in the regulation. The emission rate of 0.77 g/hr meets the EPA requirements for the Step 2 limits.

Model ECO-65 was the unit tested, but models ECO-65R and P120 will be the models that are to be certified for emissions. The internal components are identical for all models. Only external cosmetic changes, including the firebox door and external cladding that make each model different.

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SECTION 12
PHOTOGRAPHS

Photo No. 1
ECO-65 Test Setup

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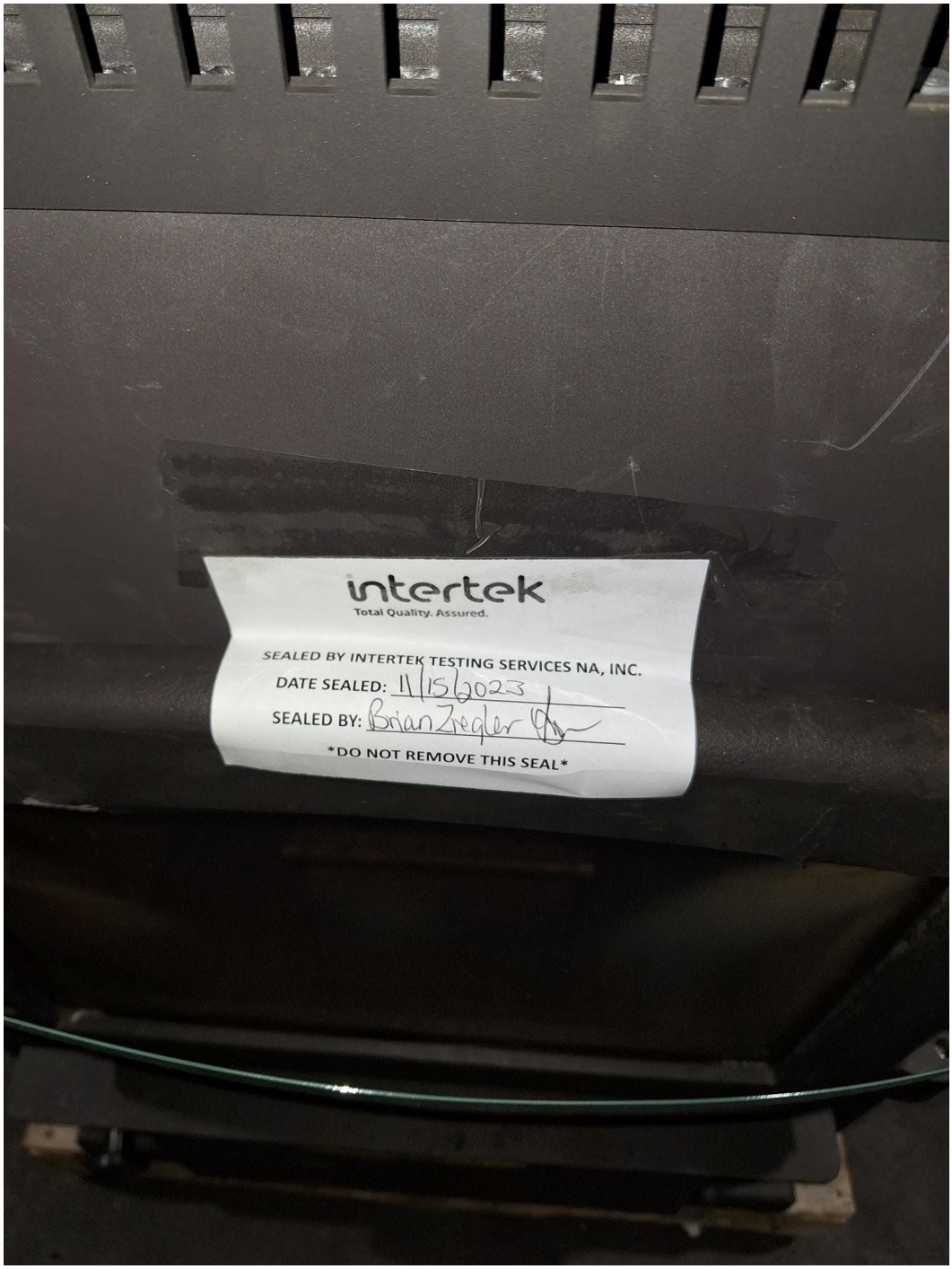

Photo No. 2
Security Seal 1

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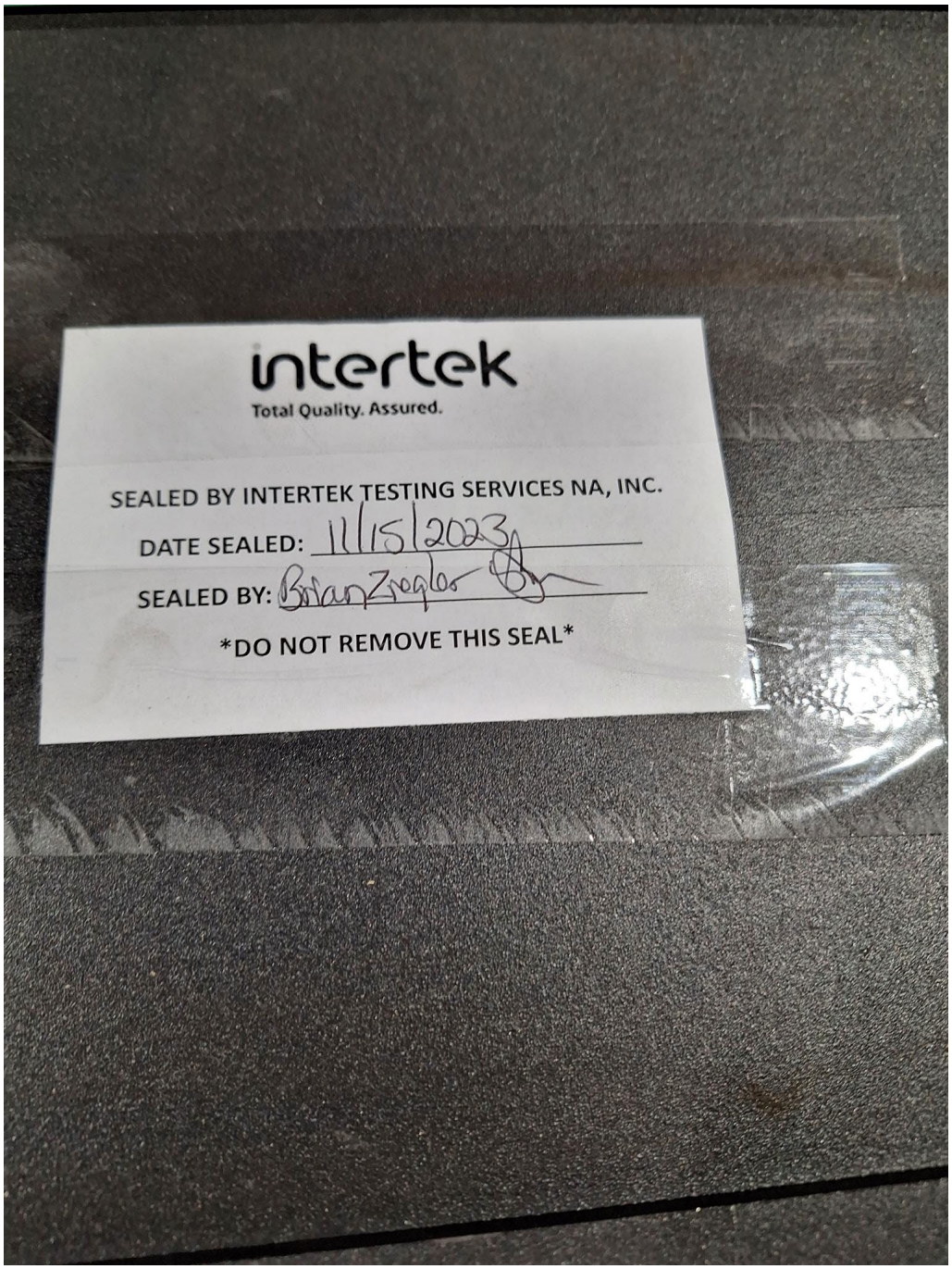

Photo No. 3
Security Seal 2

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Photo No. 4
Security Seal 3

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Photo No. 5
Sealed Unit

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SECTION 13
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	11/29/23	N/A	Original Report Issue
1	December 19, 2023	21	Added similar models to the conclusion of report.
2	March 29, 2024	19	Corrected Section 10 to note dry burn rates, instead of wet burn rates.
		20	Revised 1st hour emissions results to include correct filter and probe weights. Revised burn rate results to show corrected moisture information.
		Appendix B	Revised 1st hour emissions in test data to include correct filter and probe weights. Updated load data for the moisture content. Calculation was doubling the moisture content, which gave an incorrect burn rate result. Corrected DGM value for ambient filter draw.
		Page 4, Appendix C	Revisions to include correct analytical balance calibration for Intertek.
3	April 22, 2024	Appendix G	Included revised conditioning burn data with moisture content of pellets used in Appendix G.

INTRODUCTION

This document provides a systematic guide for the technician conducting tests to EPA standard requirements. Procedures outlined here, when followed, will result in tests in conformance with ASTM E2779 and ASTM E2515. This guide cannot cover every possible contingency that may develop during a particular test program. Many questions that may arise can be answered by a complete understanding of the test standards and their intent. When in doubt on any detail check with the laboratory manager and be sure you understand the procedures involved.

The primary measurements to be obtained are particulate emission data and efficiency data. The technician's duties include the following steps. It is critical that all spaces on the data forms be properly filled in. Each test must be represented by a complete record of what was done and when.

I. APPLIANCE INSPECTION AND SET-UP
   A. Incoming Inspection
   B. Unit Set-Up

II. SAMPLING SYSTEMS - SET-UP
   A. Gas Analysis
   B. Dilution Tunnel

III. TEST CONDUCT
   A. Pre-Test Fuel Load
   B. Test Fuel Load
   C. Unit Start - up
   D. Test Run

IV. POST TEST PROCEDURE
   A. Leak Checks
   B. Particulate Sample Recovery

The technician running this test must be familiar with the following documents that are to be kept in the laboratory at all times.

1. ASTM E2779
2. ASTM E2515

I. APPLIANCE INSPECTION AND SET-UP

A. Incoming Inspection

1. Check for completeness of unit including parts, accessories, installation and operating instructions, drawings and specifications, etc. Note any discrepancies or missing parts.
2. Check for shipping damage. If damage has occurred, notify the laboratory manager. In some cases repairs may be made, provided the manufacturer and laboratory manager concur that repairs will not affect the unit's performance. If damage is irreparable, a new unit will need to be obtained.
3. Mark unit with manufacturer's name, model number, work order number, and date received.
4. If unit is safety listed, note label data including listing agency and serial number.

B. Unit Set-Up

1. All units must be operated by the manufacturer or Intertek for a break-in period of at least 48 hours at a medium burn rate. NOTE: Inserts are tested as if they are freestanding stoves.
2. Once break-in is completed, allow unit to cool then clean unit thoroughly.
3. Prior to placing the unit on a scale, the scale must be turned on and allowed to warm up for 1-hour minimum.
4. Place the unit on a scale and align so the chimney will be centered under the hood. Record the weight of the unit and all accessories. (Do not weigh with chimney attached.)
5. Chimney and connector should be cleaned with a wire brush prior to mounting. Attach chimney and connector then seal all joints. Be sure the single wall stove pipe terminates into the insulated pipe at proper level above scale platform. The chimney must be supported from scale so that it does not touch test enclosure or hood walls.
6. Plug thermocouples into data acquisition system jacks and verify that all instrumentation is working properly.
7. Dilution tunnel must be cleaned prior to each certification test series, and at anytime a higher burn rate follows a lower burn rate.

II. SAMPLING SYSTEMS SET-UP

A. Gas Analysis

1. All instruments should be turned on and allowed to warm up for 1-hour minimum.

2. Prior to calibrating, make sure that the outlet pressure on each calibration gas bottle reads 10 PSI. Adjust flow meters at each gas analyzer to required flow.

The gas analyzer (CO_2, CO, O_2) is zeroed on nitrogen. The O_2, CO_2 and CO analyzer is spanned with a certified span gas mixture.

Calibrate analyzers as follows:

a. With calibration switch at "SPAN", adjust all span controls to values specified on span gas label.
b. Switch to "ZERO" and adjust zero controls to provide 0.00 readout on all analyzers.
c. Repeat a. and b. until no further adjustment is required.
d. Record these values on the appropriate data sheet.
e. Switch to "CAL." and record all analyzer values.

3. Response time synchronization check.

a. With switch at "SAMPLE" and no fire in unit, allow readings to stabilize (O_2 analyzer should read 20.93, CO and CO_2 should read 0.00).
b. Switch to "CAL" setting and start the stopwatch. Note the time required for each unit to reach the calibration gas bottle value. If all three analyzers reach this value within 5 seconds of each other, synchronization is adequate. If not, contact the laboratory manager. Synchronization is adjusted by either internal instrument setting or adjustment of sample line length.
c. Use EPA Method 5H 6.7-6.9 procedures to check calibration of instruments.

4. Sample clean-up train.

a. Load a new filter in 4-inch glass filter holder.
b. Load four Impingers as follows:
   #1: 100 ml. distilled water
   #2: 100 ml. distilled water
   #3: Empty
   #4: 200-300 grams Drierite.
c. Place Impingers in container and connect with greased "U TUBES". (Grease carefully on bottom half of ball joint so that grease will not get into tubes.)
d. Connect filter to impinger #1 and sample line to impinger #4.
e. Connect stack probe to filter.
f. Leak check system as follows:
   1) Plug probe.
   2) Turn on sample system and increase flow rate slowly.

3) Set vacuum-adjust valve to obtain a vacuum of 10 inches mercury.
4) If sapphire float in rotometer does not stabilize below 10 on scale, system must be resealed.
5) Repeat leak-check procedure until satisfactory results are obtained.
6) Unplug probe slowly, then decrease flow rate slowly before shutting off system.

g. Just prior to starting test, fill impinger container with ice.

B. Dilution Tunnel Sample Train Set-Up:

1. Filters and holders.
   a. Clean probes and filter holder front housings carefully and desiccate to a constant weight prior to use.
   b. Filters and filter probe combinations should be numbered and labeled prior to use.
   c. Weigh desiccated filters and probe filter units on analytical balance. Record the weights on the appropriate form. Note that the probe and front half of the front filter holder is to be weighed as a unit.
   d. Carefully assemble the filter holder units and connect to sampling systems.
   e. System #1 (Filter set #1) and System #2 (Filter set #2) will be inserted into the tunnel 90° from each other. System #3 (Filter set #3) will be placed between System #1 and System #2 and will be switched off 1-hour into the test.
   f. Room blank sample filter will be placed into the room, near the heater.
   g. Change desiccate columns with dry absorbent before each test series.

2. Leak checking.

   a. Each sample system is to be checked for leakage prior to inserting probes into the tunnel.
   b. Plug probes and start the samplers. Adjust pump bypass valve to produce a vacuum reading of 10 inches mercury. NOTE: During test, highest vacuum recorded is required for posttest leak check.
   c. Allow vacuum indication to stabilize at 10" mercury, record dry gas meter readings, (DGM_1, DGM_2). At a convenient DGM value start stopwatch. Time for 1 minute then stop vacuum pumps. Record dry gas meter readings again, (DGM_3, DGM_4). NOTE: If rotometer ball is floating above the 5-mm mark, system is leaking too much and all seals should be checked.
   d. Calculate leakage rate as follows.

System 1: $DGM3-DGM_1 = CFM_1$
System 2: $DGM4-DGM_2 = CFM_2$

If CFM_1 or CFM_2 is greater than 0.02 cfm, or $_1S$ greater than 0.04 x Sample Rate, leakage is unacceptable and system must be resealed. For most tests the sample rate will be 0.25 cfm, thus leakage rates in excess of 0.04 x 0.25 = 0.010 cfm are not acceptable.

e. To prevent contamination, do not insert probes in tunnel until the start of the test run.

III. TEST CONDUCT

A. Pre-Test Fuel Load

1. Fill hopper with pellets, tare the scale, and place a 25lb weight on the scale to measure fuel consumed.

B. Test Fuel Load

1. Determine moisture content of pellets per ASTM E871 by weighing pellets before and after oven drying.
2. Verify and document the pellet manufacturer and grade of pellets used for test.
3. Confirm enough pellets are in the hopper to complete the test, add if necessary. Tare scale and place a 25lb weight on the scale to measure fuel consumed.

C. Unit Start-Up

1. With all doors and air controls closed, zero draft Magnehelic using screw located at bottom of meter.
2. Before lighting a fire turn on dilution tunnel and set flow rate to 140 scfm (approximately 715 fpm) if burn rate is to be less than 3 kg/hr. For higher burn rates set flow for a 150:1 air fuel ratio (see chart for approximate values).
3. Check draft imposed on cold stove. All inlets must be closed and a draft gauge in the chimney. If draft is greater than 0.005 inches water column, adjust tunnel to stack gap until draft is less than 0.005 inches water column.
4. With hot wire anemometer check for ambient airflow around unit (must be less than 50 ft/min).
5. Tare scale and start fire by turning the unit on per manufacturer's instructions. (Make sure stack sample probe is on the unit.)
6. Once fuel is burning well, operate at high fire for sufficient time to get the fuel burning well. Then adjust settings to intended test run levels.

7. Perform the dilution tunnel traverse as prescribed in ASTM E2515, Section 9.3.2 (Pitot tube should be carefully cleaned prior to each test.)
8. Pretest must burn for a minimum of 1 hour. Record room and flue temperatures.

D. Test Run

1. Stack gas analyzers should be on and in the sample mode.
2. When the 1-hour pre-burn is complete, the test is to be started.
   a. Insert the sample probes into the tunnel being careful not to hit sides of tunnel with probe tip.
   b. Check tunnel Pitot tube for proper position.
   c. Confirm heater is set to the maximum burn rate.
   d. Record initial readings.
   e. Turn on probe sample systems and start timing test.
   f. Tare platform scale and add 25lb weight.
   g. Every 10 minutes record the following:
      1) Dry gas meter readings.
      2) Weight remaining.
      3) All thermocouple temperatures.
      4) Tunnel Pitot tube reading.
      5) Draft reading.
      6) Rotometer readings.
   h. Filter temperatures shall not exceed 90ºF anytime during the test. If the filters are approaching 90ºF turn on cooling pump. Filters must be kept above the dilution tunnel wet bulb temperature in order to prevent condensation.
   i. Regularly check impinger train for ice level during test.
   j. At 1-hour, Filter set #3 is to be turned off. The heater is changed from the high burn setting to the ≤50% of maximum burn rate setting and operated for 2-hours.
   k. At the 3-hour point, the heater is changed to the lowest burn rate setting.
   l. At the 6-hour point, shut off sample trains and record last reading.
   m. Record final dry gas meter values.
   n. Shut down heater per manufacturer's instructions.

IV. POST TEST PROCEDURES

A. Leak Checks

1. Dilution Tunnel
   a. Remove sample probes from tunnel and plug with rubber stopper.
   b. Turn on sample system and set vacuum to 10" mercury or to the highest value reached during the test.

c. At a convenient value start stopwatch and record the DGM starting value.
d. After 1 minute stop sample system and record ending DGM value.
e. Calculate leakage rate per pre-test description (see II.B.2.c.).

2. Gas Analyzers

a. Set stack sample flow to about 75 mm on the rotometer.
b. Plug with rubber stopper.
c. Adjust vacuum to 10" mercury.
d. Let system stabilize then record rotometer readings.
e. If the rotometer readings do not equal zero, check with the laboratory manager.
f. SLOWLY unplug probe and decrease flow rate to zero.
g. Turn off stack sampling system.
h. Zero, span and calibrate the analyzers (see Gas Analysis). RECORD ONLY these meter values.

B. Particulate Sample Recovery

1. Disassemble filter holder and collect all loose material on filters.
2. Weigh and record probes and filters for each train. NOTE: 24 hours of desiccation must pass before final "no change" weight values can be recorded.
3. Weigh and record probes and fillers at 6-hour intervals until weight change between weighing is less than 0.5 mg.

V. DISPOSITION OF TESTED UNIT.

In order to meet the requirements of section 60.533(b)(8) of the EPA's 40CFR Part 60 Standards of Performance for New Residential Wood Heaters, Intertek Testing Services seals certified wood heaters by:

1) Applying tamper-indicating tape to the firebox door, ash pan door, and the air controls.
2) Totally covering the unit with stretch wrap.
3) Strapping the door and ash pan closed with plastic banding so that the banding goes both around the unit laterally and from top to bottom. The banding is then stamped with our WHI logo so that the banding can't be simply replaced.
4) The unit is placed on a pallet and strapped down with additional strapping to keep it on the pallet. It is then shipped back to the manufacturer.

intertek Total Quality. Assured.	CLIENT:	SBI		PERFORMED BY:	Brian Ziegler
	PROJECT #:	G105588727		REVIEWED BY:	Ken Slater
	PRODUCT:	Pellet Fueled Room Heater		MODEL:	ECO-65
SAMPLE ID #:	NA - Tested at SBI Facility			DATE:	2023-11-15
STANDARD:	ASTM E2779	VERSION YEAR:	2017	LOCATION:	SBI - Quebec Canada
STANDARD TITLE:	Standard Test Method for Determining Particulate Matter Emissions from Pellet Heaters				

RESULTS					
PASS	X	FAIL	na	NO PASS/FAIL	na

Emissions Testing Initial Stove Check Out

Date Received	NA	Shipping Carrier	NA

Shipping Damage?	No	Yes			
	No	NA	Describe Damage	NA	
			Is Damage Repairable?	Yes	No
				NA	NA

Repairs Affected by	NA	Date	NA
Client Notified about Irreparable Damage?	NA	Date	NA

Overall Unit Dimensions (in)		
Height	Width	Depth
40.875	24	29.313

Unit Weight	
(lbs)	(Kg)
371	168.29

Unit Description (check appropriate box)					
Stove	X	Top Vent	NA	Manual Draft	NA
Insert	NA	Rear Vent	X	Bimetal Spring	NA
Catalytic	NA	Grate	X	Remote T-Stat	NA
Non-Catalytic	NA	Ashpan	X	Blower	X
Other	Pellet Stove				

48-hr Conditioning Burn Dates	7/25/23 - 11/9/23

Pre/Post Checks

Facility Conditions	Pre-Test	Post-Test
Air Velocity (fpm)	0	0
Smoke Capture Check	X	X
Heater Conditions		
Date Stack Cleaned	2023-11-10	NA
Date Dilution Tunnel Cleaned	2023-11-10	NA
Induced Draft Check	X	X
Tunnel Velocity	0.066	0.069
Pitot Leak Check		
Side A	X	X
Side B	X	X

Temperature System			
Ambient (between 65°F -90°F)		67	67
Proportional Checks			
CO Analyzer Drift Check		X	X
CO2 Analyzer Drift Check		X	X
O2 Analyzer Drift Check		X	X
Thermocouple Check		X	X
Sampling Train ID Numbers	Train 1	Train 2	Train 3
Probe	1	4	5
Filter - Front	1	3	5
Filter - Back	2	4	6
Filter <90°F	X	X	X

Pre-Test Scale Audit			
Scale Type	Audit Weight	Class	Measured Weight
Analytical (mg)	200.0000	S	200.0000
Platform (lbs)	10.00	F	NA
Wood (lbs)	25.0	F	NA

Limits of Weight Ranges	
Analytical Scale	50%-150% of dry filter weight, ± 0.1 mg
Platform Scale	20%-80% of ideal test load weight, ± 0.1 lbs. or 1%
Wood Scale	20%-80% of ideal test load weight, ± 0.1 lbs. or 1%

Sampling Equipment Check out

Leakage Checks Tunnel Samplers							
Sample	1		2		3		AMB
Test	Pre	Post	Pre	Post	Pre	Post	
Vacuum (in Hg)	5	5	5	5	5	5	5
Final 1 min DGM (ft^3)	0	0	0.001	0.003	0	257.281	0
Initial 1 min DGM (ft^3)	0	0	0	0	0	257.281	0
Change (C) (ft^3)	0	0	0.001	0.003	0	0	5
Allowable leakage (cfm)	0.04	0.04	0.04	0.04	0.04	0.04	
Check Okay	X	X	X	X	X	X	X

Leakage Checks Flue Gas Sampler		
Plugged Probe	Pre Test	Post Test
Vacuum (in Hg)	10	10
Rotameter Reading	0	0
Flow Rate (cfm)	0	0
Allowable (cfm)	0.04	0.04
Check Okay	X	X

Unplugged Flow Rate = .25cfm
Allowable Leakage = .04 x Sample Rate or .02 cfm

Continuous Analyzers

Pre-Test (Adjust and Record)						
Type	Zero		Span		Cal. (Record Only)	
	Actual	Should Be	Actual	Should Be	Actual	Should Be
CO_2	0	0	4.36	4.35	0.41	0.425
CO%	0	0	18.17	18	10.51	10.10
O_2	0	0	17.92	18	7.98	7.99
CO ppm	0	0	409	402	51	50

Post Test (Record Only)								
Type	Zero	Span	Cal.	Zero Drift	Span Drift	Cal. Drift	OK?	Not OK*
CO_2	0.004	4.278	0.424	-0.004	0.082	-0.014	X	na
CO%	0.09	17.4	10.35	-0.09	0.77	0.16	X	na
O_2	-0.05	17.8	7.89	-0.05	0.12	0.09	X	na
CO ppm	2	407	49	-2	2	2	X	na

Test Data Log

Raw Dry Gas Meter Readings				
System	1	2	3	Amb
Final (ft^3)	154.720	835.166	257.27	350.79
Initial (ft^3)	92.459	772.427	244.654	278.388

Ambient Conditions	Start	End
Barometer (in Hg)	29.88	29.7
Dry Bulb (°F)	66.9	67.39
Humidity (%)	19.6	25.2

Comments
Preburn started at 9:04 am
High burn started at 10:12 am. Level 12 control setting.
11:12 am changed to medium burn rate. Level 5 control setting.
1:12 pm changed to low burn rate. Level 1 control setting.
4:12 pm end of test.

intertek Total Quality. Assured.	**CLIENT:** SBI	**PERFORMED BY:**	Brian Ziegler
	PROJECT #: G105588727	**REVIEWED BY:**	Ken Slater
	PRODUCT: Pellet Fueled Room Heater	**MODEL:**	ECO-65
SAMPLE ID #:	NA - Tested at SBI Facility	**DATE:**	2023-11-15
STANDARD(S):	ASTM E2779 **VERSION YEAR:** 2017	**LOCATION:**	Middleton
STANDARD TITLE:	Standard Test Method for Determining Particulate Matter Emissions from Pellet Heaters		

RESULTS					
PASS	X	**FAIL**	na	**NO PASS/FAIL**	na

Room Conditions							
Room Temp (°F)		Barometric Pressure (in Hg)		Relative Humidity (%)		Air Velocity (ft/sec)	
67	67	29.88	29.7	19.6	25.2	0	0

Ave Dilution Tunnel Measurements				Sample Data			
Burn Time (min)	Velocity (ft/sec)	Flow Rate (dscf/min)	Temp (R) (°F)	Total Sample		Particulate Catch	
				1	2	1	2
360	16.65	330.77	543.10	61.87	62.43	2.30	2.50

Dilution Tunnel Dual Train Precision					
Sample Ratios		Total Emissions (g)		Deviation	
Train 1	Train 2	Train 1	Train 2	(%)	(g/kg)
1924.61	1907.30	4.43	4.77	3.72%	0.064

Results			
Burn Rate (kg/hr)(Dry)	Initial Draft (in/wc)	Run Time (min)	Ave Draft (in/wc)
0.89	0.025	360	0.019

Emissions	
(g/hr)	(g/kg)
0.766	0.857

Burn Rates (kg/hr)		
High	Medium	Low
2.09	0.87	0.51

Fuel Consumed (lbs)		
High	Medium	Low
4.88	4.03	3.55

Fuel Moisture (% wet)
5.41

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SAMPLE ID #:	NA - Tested at SBI Facility			**DATE:**	2023-11-15
STANDARD(S):	ASTM E2779	**VERSION YEAR:**	2017	**LOCATION:**	Middleton

Table of Test Equipment Used				
Description	Asset #	Calibration Due	MU	Used in Test(s)
Anemometer	SBI-097	2024-02-03	21 FPM	ASTM E2779
Analytical Balance	713	2024-04-05	0.06 mg	ASTM E2779
Pressure Transducer	SBI-299	2024-02-23	0.0058 psi	ASTM E2779
Pressure Transducer	SBI-303	2023-12-13	0.00000058 A	ASTM E2779
Audit Weight	SBI-312	2028-10-10	0.06 mg	ASTM E2779
Scale	SBI-014	2024-01-04	0.033 kg	ASTM E2779
TC reader	SBI-004	2023-11-25	1.0°F	ASTM E2779
Barometer	SBI-325	2024-05-24	0.06 hPa	ASTM E2779
Pressure Transducer	SBI-372	2023-12-13	0.00000058 A	ASTM E2779
Pressure Gauge	SBI-250	2024-02-27	0.00015 in/wc	ASTM E2779
Pressure Transducer	SBI-298	2024-02-06	0.0058 psi	ASTM E2779
Audit Weight	SBI-238	2028-10-10	0.012 mg	ASTM E2779
Audit Weight	SBI-237	2028-10-10	0.0025 mg	ASTM E2779
Pressure Gauge	SBI-248	2024-02-27	0.00015 in/wc	ASTM E2779
TC reader	SBI-375	2023-11-25	1.0°F	ASTM E2779
DGM	SBI-346	2024-04-13	0.0050 ft^3	ASTM E2779
DGM	SBI-047	2024-03-22	0.0056 ft^3	ASTM E2779
DGM	SBI-347	2024-03-22	0.0062 ft^3	ASTM E2779
DGM	SBI-046	2024-04-13	0.0041 ft^3	ASTM E2779

intertek Total Quality. Assured.	**CLIENT:** SBI	**PERFORMED BY:**	Brian Ziegler
	PROJECT #: G105588727	**REVIEWED BY:**	Ken Slater
	PRODUCT: Pellet Fueled Room Heater	**MODEL:**	ECO-65
SAMPLE ID #:	NA - Tested at SBI Facility	**DATE:**	2023-11-15
STANDARD(S):	ASTM E2779 **VERSION YEAR:** 2017	**LOCATION:**	Middleton

Pre-Burn Data

Time	Flue	Room	Tunnel	Meter #3	DGM 3	DGM 1	DGM 1	Filter 1	DGM 2	DGM 2	Filter 2	DGM 3	Filter 3	Meter #1	Meter #2	Draft	Tunnel	CO	CO2	O2	Scale	36.79707	Meter	Meter	Draft	Calculated
																		%	%	%	lbs	Corrected	#1	#2		
10.0	Temp 1	Temp 2	Dry Bulb 3	11	Out 12	In 13	Out 14	15	In 16	Out 17	18	In 19	20	21	22	23	24	25	25	27	28	Scale	Cu Ft	Cu Ft		Tunnel
0.0	112.79	66.11	72.50																		40.98	4.18			0.011	0.0108
10.0	142.17	66.37	74.65																		40.64	3.85			0.011	0.0111
20.0	202.63	66.15	83.75																		40.14	3.34			0.019	0.0195
30.0	246.72	66.23	89.81																		39.29	2.49			0.024	0.0242
40.0	256.54	66.94	92.16																		38.45	1.65			0.025	0.0250
50.0	263.18	66.81	94.04																		37.64	0.84			0.026	0.0262
60.0	265.00	66.91	94.96																		36.80	0.00			0.026	0.0263

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SAMPLE ID #:	NA - Tested at SBI Facility	**DATE:**	2023-11-15
STANDARD(S):	ASTM E2779 **VERSION YEAR:** 2017	**LOCATION:**	Middleton

Raw Data

Time	Flue	Room	Tunnel	Meter #3	DGM 3	DGM 1	DGM 1	Filter 1	DGM 2	DGM 2	Filter 2	DGM 3	Filter 3	Meter #1	Meter #2	Draft	Tunnel	CO	CO2	O2	Scale	23.5132	Meter	Meter	Meter	Draft	Calculat	31.09	27.06	23.51
																		%	%	%	lbs	Correctec	#1	#2	#3		ed	NA		
10.0	Temp 1	Temp 2	Dry Bulb 3	11	Out 12	In 13	Out 14	15	In 16	Out 17	18	In 19	20	21	22	23	24	25	25	27	28	Scale	Cu Ft	Cu Ft	Cu ft		Tunnel			
0.0	267.75	66.90	95.96		69.40	68.71	68.34	76.77	67.76	67.53	81.71		87.90					0.06	5.31	15.39	35.97	12.46	92.46	772.43	244.65	0.025	0.066	4.88		
10.0	271.66	67.17	96.87		69.50	69.21	68.40	75.85	68.15	67.59	78.99		84.50					0.06	5.97	14.70	35.11	11.60	94.16	774.15	246.77	0.026	0.067	4.02		
20.0	271.59	67.10	97.29		69.60	69.16	68.38	75.17	68.20	67.55	77.30		82.70					0.06	5.68	15.04	34.28	10.77	95.85	775.85	248.88	0.027	0.066	3.19	NA	
30.0	271.27	67.28	97.33		69.60	69.16	68.35	74.83	68.14	67.48	76.22		81.40					0.06	5.48	15.26	33.44	9.92	97.54	777.54	250.97	0.027	0.065	2.35		
40.0	277.93	67.22	97.94		69.80	69.02	68.25	74.66	67.99	67.36	75.84		80.70					0.06	5.97	14.74	32.55	9.04	99.23	779.23	253.04	0.027	0.066	1.46		
50.0	271.50	67.43	97.74		69.90	69.03	68.22	74.47	68.04	67.32	75.72		80.40					0.06	5.26	15.56	31.72	8.21	100.92	780.93	255.16	0.027	0.066	0.63		
60.0	272.95	67.58	98.52		69.90	69.07	68.21	74.47	68.09	67.34	75.68		80.00					0.08	5.53	15.15	31.09	7.58	102.60	782.63	257.27	0.027	0.066	0.00	4.03	
70.0	206.45	67.49	89.65			69.04	68.27	73.99	68.10	67.40	74.59							0.08	3.34	17.56	30.42	6.90	104.28	784.32		0.022	0.066		3.36	
80.0	171.71	67.40	85.56			69.08	68.25	73.23	68.15	67.38	73.75							0.05	2.55	18.30	30.12	6.60	105.99	786.03		0.017	0.067		3.06	
90.0	161.24	67.19	83.59			69.11	68.30	72.75	68.32	67.52	73.00							0.07	2.63	18.13	29.81	6.30	107.70	787.76		0.015	0.067		2.76	
100.0	157.58	67.24	82.64			69.32	68.38	72.20	68.41	67.55	72.44							0.07	2.59	18.19	29.51	5.99	109.41	789.49		0.015	0.067		2.45	
110.0	154.33	66.96	81.85			69.07	68.31	71.84	68.23	67.49	71.97							0.05	2.41	18.36	29.22	5.71	111.14	791.22		0.014	0.068		2.16	NA
120.0	152.60	66.59	81.04			68.95	68.21	71.43	68.18	67.45	71.71							0.05	2.34	18.44	28.92	5.41	112.87	792.96		0.014	0.068		1.86	
130.0	150.09	66.59	80.57			68.98	68.19	71.27	68.18	67.49	71.41							0.05	2.55	18.18	28.65	5.14	114.59	794.68		0.013	0.067		1.59	
140.0	150.98	66.74	80.57			69.07	68.21	71.08	68.30	67.55	71.24							0.04	2.38	18.41	28.34	4.83	116.32	796.42		0.013	0.069		1.29	
150.0	150.64	66.96	80.39			69.26	68.32	71.00	68.48	67.65	71.34							0.04	2.35	18.43	28.02	4.51	118.05	798.16		0.013	0.069		0.97	
160.0	152.60	66.87	80.65			69.23	68.36	71.03	68.53	67.71	71.33							0.05	2.33	18.42	27.71	4.19	119.80	799.91		0.014	0.069		0.65	
170.0	153.04	66.97	80.52			69.21	68.38	70.99	68.54	67.73	71.28							0.05	2.45	18.29	27.40	3.89	121.55	801.66		0.014	0.069		0.34	
180.0	155.11	67.01	80.78			69.13	68.31	71.00	68.47	67.70	71.25							0.05	2.55	18.17	27.06	3.55	123.28	803.42		0.140	0.069		0.00	3.55
190.0	130.28	66.92	78.65			69.17	68.31	70.78	68.53	67.74	70.94							0.03	1.40	19.45	26.89	3.38	125.03	805.19		0.011	0.068			3.38
200.0	131.21	66.89	78.38			69.24	68.35	70.75	68.52	67.77	71.01							0.02	1.61	19.17	26.68	3.17	126.80	806.97		0.011	0.068			3.17
210.0	131.35	66.73	78.07			69.38	68.39	70.64	68.62	67.82	70.82							0.02	1.77	18.98	26.50	2.98	128.54	808.72		0.011	0.069	NA		2.98
220.0	130.32	66.69	77.97			69.50	68.46	70.62	68.64	67.89	70.78							0.02	1.70	19.06	26.28	2.77	130.27	810.48		0.011	0.068			2.77
230.0	133.04	66.71	78.21			69.59	68.58	70.60	68.72	67.99	70.83							0.02	1.75	18.99	26.07	2.56	132.02	812.25		0.011	0.069			2.56
240.0	127.24	67.03	77.79			69.63	68.63	70.59	68.80	68.02	70.75							0.02	1.50	19.27	25.89	2.38	133.77	814.01		0.011	0.069			2.38
250.0	128.86	66.99	77.66			69.57	68.68	70.50	68.84	68.09	70.71							0.02	1.65	19.08	25.68	2.17	135.50	815.76		0.011	0.069			2.17
260.0	131.86	66.88	77.93			69.67	68.67	70.56	68.89	68.12	70.72							0.02	1.77	18.95	25.48	1.96	137.25	817.53		0.011	0.069			1.96
270.0	131.19	67.33	78.07			69.78	68.83	70.68	69.06	68.25	70.83							0.02	1.82	18.89	25.27	1.76	139.00	819.30		0.011	0.069		NA	1.76
280.0	126.13	67.52	77.68			70.06	69.02	70.67	69.37	68.45	70.93							0.02	1.54	19.20	25.11	1.59	140.74	821.06		0.010	0.069			1.59
290.0	125.12	67.49	77.45			70.04	69.14	70.77	69.44	68.59	70.93							0.02	1.50	19.23	24.94	1.43	142.48	822.82		0.010	0.069			1.43
300.0	134.87	68.04	78.35			70.22	69.27	70.78	69.55	68.69	70.96							0.02	1.93	18.74	24.70	1.18	144.23	824.58		0.011	0.069			1.18
310.0	137.57	67.79	78.62			70.30	69.30	70.85	69.53	68.75	71.01							0.02	1.97	18.68	24.46	0.95	145.99	826.33		0.012	0.069			0.95
320.0	131.27	67.71	78.25			70.18	69.30	70.96	69.52	68.79	71.08							0.02	1.62	19.08	24.29	0.78	147.73	828.09		0.011	0.069			0.78
330.0	129.35	67.42	77.90			70.16	69.32	71.06	69.48	68.77	70.97							0.01	1.69	18.99	24.10	0.59	149.48	829.85		0.011	0.069			0.59
340.0	130.57	67.69	78.04			70.14	69.28	70.96	69.55	68.78	70.99							0.01	1.62	19.08	23.89	0.38	151.23	831.63		0.011	0.069			0.38
350.0	127.76	67.70	77.81			70.18	69.29	70.92	69.58	68.80	70.90							0.01	1.58	19.12	23.73	0.22	152.98	833.40		0.011	0.069			0.22
360.0	132.42	67.39	78.20			70.17	69.32	70.98	69.57	68.82	70.94							0.01	1.83	18.82	23.51	0.00	154.72	835.17		0.011	0.069			0.00

				RESULTS		
		Average emission rate:(gr/hr)		**0.766**		
			Burn Rate (Dry kg/hr):	0.891		
PRESSURE FACTOR:		0.99566			BAROMETRIC PRESSURE	
					Average:	29.79
	TEMPERATURE FACTORS				Start:	29.88
	DGM #1:	0.99807			End:	29.7
	DGM #2:	0.99945				
					DRY GAS METER VALUES	
	VOLUMES SAMPLED			DGM #1	Final:	154.720
	DGM #1:	61.87086			Initial:	92.459
	DGM #2:	62.43231				
				DGM #2	Final:	835.166
OTAL TUNNEL VOLUME (scf):		119077			Initial:	772.427
	SAMPLE RATIOS				TEMPERATURES (DEG. RANK	
	Sample Train 1:	1924.611			DGM #1:	529.021
	Sample Train 2:	1907.303			DGM #2:	528.288
	TOTAL EMISSIONS				CALIBRATION FACTORS	
	Sample Train 1 (g):	**4.43**			DGM #1:	1.0000
	Sample Train 2 (g):	**4.77**			DGM #2:	1.0000
	EMISSION RATES			TUNNEL FLOW RATE:		330.770
	Sample Train 1 (g/hr):	**0.74**				
	Sample Train 2 (g/hr):	**0.79**			PARTICULATE CATCH (mg)	
				Total Sample Train 1:		2.3
				Total Sample Train 2:		2.5
				Filter and seal Sample Train 1:		2.3
	MAX Allowed	7.50%		Filter and seal Sample Train 2:		2.4
				Probe Sample Train 1:		0
	DEVIATION:	3.72%		Probe Sample Train 2:		0.1

intertek Total Quality. Assured.	**CLIENT:**	SBI		**PERFORMED BY:**	Brian Ziegler
	PROJECT #:	G105588727		**REVIEWED BY:**	Ken Slater
	PRODUCT:	Pellet Fueled Room Heater		**MODEL:**	ECO-65
SAMPLE ID #:	NA - Tested at SBI Facility			**DATE:**	2023-11-15
STANDARD(S):	ASTM E2779	**VERSION YEAR:**	2017	**LOCATION:**	Middleton
EQUIPMENT					
ASSET # - DESCRIPTION:	See Equipment Tab			**CALIBRATION DUE:**	See Equipment Tab
CONDITIONING					
SAMPLE CONDITIONING (IF APPLICABLE):	na				
AMBIENT TEMPERATURE (°F):	66.90				
RESULTS					
PASS	X	**FAIL**	na	**NO PASS/FAIL**	na

E&E Tunnel Traverse Worksheet

Static Pressure (in Hg)	**0.138**
Barometer (in Hg)	29.88

Position	Tunnel Velocity	
	(ft/sec)	(ft/sec^2)
A CENTER	0.068	0.2608
B CENTER	0.063	0.2510
A1	0.051	0.2258
A2	0.064	0.2530
A3	0.064	0.2530
A4	0.056	0.2366
B1	0.048	0.2191
B2	0.062	0.2490
B3	0.063	0.2510
B4	0.056	0.2366
Average		0.2436

	Pitot
Constant =	0.9520

intertek Total Quality. Assured.	**CLIENT:**	SBI		**PERFORMED BY:**	Brian Ziegler
	PROJECT #:	G105588727		**REVIEWED BY:**	Ken Slater
	PRODUCT:	Pellet Fueled Room Heater		**MODEL:**	ECO-65
SAMPLE ID #:	NA - Tested at SBI Facility			**DATE:**	2023-11-15
STANDARD(S):	ASTM E2779	**VERSION YEAR:**	2017	**LOCATION:**	Middleton

E&E Pellet Fuel Data

Brand of Pellets Used	Energex

	Wet	Dry
Moisture Content (%)	5.4100	NA

Weight Used During Test		
Wet (lbs)	Dry (kg)	
12.46	5.36	1.03

Burn Rate (kg/hr)(Dry)	0.890992

Moisture Calculation	
Before Weight of Pellets - Wet (lbs)	NA
After weight of pellets - Dry (lbs)	NA
Weight of moisture removed from oven (lbs)	#VALEUR!

Weight added to Scale (lbs)	36.00

1st hour emission rate:(gr/hr)	**1.849**

PRESSURE FACTOR:	0.99566
TEMPERATURE FACTORS	
DGM #1:	0.99743
VOLUMES SAMPLED	
DGM #3:	12.52489
OTAL TUNNEL VOLUME (scf):	19302
SAMPLE RATIOS	
Sample Train 3:	1541.107
TOTAL EMISSIONS	
Sample Train 3 (g):	**1.85**

BAROMETRIC PRESSURE		
Average:		29.79
Start:		29.88
End:		29.7
DRY GAS METER VALUES		
DGM #3	Final:	257.266
	Initial:	244.654
TEMPERATURES (DEG. RANK		
DGM #1:		529.362
CALIBRATION FACTORS		
DGM #1:		1.0000
TUNNEL FLOW RATE:		321.703

PARTICULATE CATCH (mg)	
Total Sample Train 3:	1.2
Filter and seal Sample Train 3:	0.9
Probe Sample Train 3:	0.3

CLIENT:	SBI	PERFORMED BY:	Brian Ziegler
PROJECT #:	G105588727	REVIEWED BY:	Ken Slater
PRODUCT:	Pellet Fueled Room Heater	MODEL:	ECO-65
SAMPLE ID #:	NA - Tested at SBI Facility	DATE:	2023-11-15
STANDARD(S):	ASTM E2779 VERSION YEAR: 2017	LOCATION:	SBI - Quebec Canada

DILUTION TUNNEL PARTICULATE SAMPLER DATA

Filter Type: Gelman 47mm A/E

Pre-test Weight Record		SAMPLE TRAIN # 1			SAMPLE TRAIN # 2			SAMPLE TRAIN # 3			ROOM FILTER		
		Probe & Housing Number	Front Filter + Gasket Number	Back Filter + Gasket Number	Probe & Housing Number	Front Filter + Gasket Number	Back Filter + Gasket Number	Probe & Housing Number	Front Filter + Gasket Number	Back Filter + Gasket Number	Front Filter + Gasket Number	Temp	Humidity
Date	Time	1	1 & 2	na	4	3 & 4	na	5	5 & 6	na	13	°F	%
2023-11-14	10:25a	91.3480	3.6047	na	89.9086	3.6892	na	90.9880	6.5934	na	0.1227	na	na
2023-11-14	4:30p	91.3480	3.6043	na	89.9088	3.689	na	90.9881	6.5933	na	0.1227	na	na
2023-11-15	8:30a	91.3479	3.6041	na	89.9089	3.6888	na	90.9883	6.5933	na	0.1227	na	na
na	na	na	na	na	na	na	na	na	na	na	na	na	na
			3.6041	0		3.6888	0		6.5933	0	0.1227		
	Total	91.3479	3.6041		89.9086	3.6888		90.9880	6.5933		0.1227		
			1&2			3&4			5&6				

Post-test Weight Record		SAMPLE TRAIN # 1		SAMPLE TRAIN # 2		SAMPLE TRAIN # 3		ROOM FILTER		
		Probe & Housing Number	Combined Filter/Gasket	Probe & Housing Number	Combined Filter/Gasket	Probe & Housing Number	Combined Filter/Gasket	Front Filter + Gasket Number	Temp	Humidity
Date	Time	1	1&2	4	3&4	5	5&6	13	°F	%
2023-11-15	4:23 AM	91.3485	3.6085	89.9091	3.6932	90.9883	6.5944	0.1229	na	na
2023-11-17	2:58p	91.3482	3.6079	89.9089	3.6928	90.9886	6.5946	0.1229	66	22
2023-11-20	7:30a	91.3480	3.6064	89.9089	3.6913	90.9884	6.5943	0.1228	64	32
2023-11-21	6:45a	91.3479	3.6064	89.9087	3.6912	90.9883	6.5942	0.1227	64	32
na	na	na	na	na	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na	na
na	na	na	na	na	na	na	na	na	na	na

DRY DOWN WEIGHT

		SAMPLE TRAIN # 1		SAMPLE TRAIN # 2		SAMPLE TRAIN # 3		ROOM FILTER			
		Probe 1	Filter 1	Probe 2	Filter 2	Probe 3	Filter 3	Filter & Gasket			
Date	Time	1	1&2	4	3&4	5	5&6	13	Gr/hr	lb/Mmbtu	Btu
11-15-23	4:23 AM	0.6	4.4	0.5	4.4	0.3	1.1	0.2	1.58	na	na
11-17-23	2:58p	0.3	3.8	0.3	4.0	0.6	1.3	0.2	1.34	na	na
11-20-23	7:30a	0.1	2.3	0.3	2.5	0.4	1.0	0.1	0.846	na	na
11-21-23	6:45a	0.0	2.3	0.1	2.4	0.3	0.9	0.0	0.766	na	na
na	na	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	na	na	na
na	na	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	na	na	na
na	na	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	na	na	na
na	na	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	#VALEUR!	na	na	na

VERSION:	2.2	2009-12-14			
Manufacturer:	SBI		Appliance Type:	Pellet	(Cat, Non
Model:	ECO-65				
Date:	2023-11-15		Temp. Units	F	(F or C)
Run:	1		Weight Units	lb	(kg or lb)
Control #:	G105588727				
Test Duration:	60				
Output Category:	High		Fuel Data		
				Energex	
Wood Moisture (% wet):	5.41		HHV	19,067	kJ/kg
Load Weight (lb wet):	4.88		%C	44.95	
Burn Rate (dry kg/h):	2.09		%H	8.1	
Total Particulate Emissions:	4.6	g	%O	46.51	
			%Ash	0.44	

	Averages	0.06	5.60	15.12	272.09	67.24
					Temp. (ºF)	
Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%) CO	CO_2	O_2	Flue Gas	Room Temp
0	4.88	0.06	5.31	15.39	267.8	66.9
10	4.02	0.06	5.97	14.70	271.7	67.2
20	3.19	0.06	5.68	15.04	271.6	67.1
30	2.35	0.06	5.48	15.26	271.3	67.3
40	1.46	0.06	5.97	14.74	277.9	67.2
50	0.63	0.06	5.26	15.56	271.5	67.4
60	0.00	0.08	5.53	15.15	272.9	67.6

intertek Total Quality. Assured.	CLIENT:	SBI		PERFORMED BY:	Brian Ziegler
	PROJECT #:	G105588727		REVIEWED BY:	Ken Slater
	PRODUCT:	Pellet Room Heater		MODEL:	ECO-65
SAMPLE ID #:	NA - Tested at SBI Facility			DATE:	2023-11-15
STANDARD(S):	CSA B415.1	VERSION YEAR:	2010 (R2020	LOCATION:	SBI - Quebec, CA
EQUIPMENT					
ASSET # - DESCRIPTION:	See emissions TDP			CALIBRATION DUE:	See emissions TDP
CONDITIONING					
SAMPLE CONDITIONING (IF APPLICABLE):	NA				
AMBIENT TEMPERATURE (°F):	66.90				
RESULTS					
PASS	na	FAIL	na	NO PASS/FAIL	X

Run: 1
Test Duration: 60
Output Category: High

	HHV Basis	LHV Basis
Overall Efficiency	75.3%	82.9%
Combustion Efficiency	99.5%	99.5%
Heat Transfer Efficiency	76%	83.3%

Output Rate (kJ/h)	30,072	28,526	(Btu/h)
Burn Rate (kg/h)	2.10	4.62	(lb/h)
Input (kJ/h)	39,948	37,895	(Btu/h)

Test Load Weight (dry kg)	2.10	4.62	dry lb
MC wet (%)	5.41		
MC dry (%)	5.72		
Particulate (g)	4.6		
CO (g)	24		
Test Duration (h)	1.00		

Emissions	Particulate	CO	
g/MJ Output	0.15	0.81	
g/kg Dry Fuel	2.20	11.68	
g/h	4.60	24.48	0.408
lb/MM Btu Output	0.36	1.89	

Air/Fuel Ratio (A/F)	21.62

VERSION:	2.2	2009-12-14			
Manufacturer:	SBI		Appliance Type:	Pellet	(Cat, Non
Model:	ECO-65				
Date:	2023-11-15		Temp. Units	F	(F or C)
Run:	1		Weight Units	lb	(kg or lb)
Control #:	G105588727				
Test Duration:	120				
Output Category:	Medium		Fuel Data		
				Energex	
Wood Moisture (% wet):	5.41		HHV	19,067	kJ/kg
Load Weight (lb wet):	4.03		%C	44.95	
Burn Rate (dry kg/h):	0.87		%H	8.1	
Total Particulate Emissions:	4.6	g	%O	46.51	
			%Ash	0.44	

	Averages	0.06	2.77	18.00	168.41	67.05
					Temp. (ºF)	
Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%) CO	CO_2	O_2	Flue Gas	Room Temp
0	4.03	0.08	5.53	15.15	272.9	67.6
10	3.36	0.08	3.34	17.56	206.4	67.5
20	3.06	0.05	2.55	18.30	171.7	67.4
30	2.76	0.07	2.63	18.13	161.2	67.2
40	2.45	0.07	2.59	18.19	157.6	67.2
50	2.16	0.05	2.41	18.36	154.3	67.0
60	1.86	0.05	2.34	18.44	152.6	66.6
70	1.59	0.05	2.55	18.18	150.1	66.6
80	1.29	0.04	2.38	18.41	151.0	66.7
90	0.97	0.04	2.35	18.43	150.6	67.0
100	0.65	0.05	2.33	18.42	152.6	66.9
110	0.34	0.05	2.45	18.29	153.0	67.0
120	0.00	0.05	2.55	18.17	155.1	67.0

intertek Total Quality. Assured.	CLIENT:	SBI		PERFORMED BY:	Brian Ziegler
	PROJECT #:	G105588727		REVIEWED BY:	Ken Slater
	PRODUCT:	Pellet Room Heater		MODEL:	ECO-65
SAMPLE ID #:	NA - Tested at SBI Facility			DATE:	2023-11-15
STANDARD(S):	CSA B415.1	VERSION YEAR:	2010 (R2020	LOCATION:	SBI - Quebec, CA
EQUIPMENT					
ASSET # - DESCRIPTION:	See emissions TDP			CALIBRATION DUE:	See emissions TDP
CONDITIONING					
SAMPLE CONDITIONING (IF APPLICABLE):	NA				
AMBIENT TEMPERATURE (°F):	67.58				
RESULTS					
PASS	na	FAIL	na	NO PASS/FAIL	X

Run:	1
Test Duration:	120
Output Category:	Medium

	HHV Basis	LHV Basis
Overall Efficiency	76.2%	83.9%
Combustion Efficiency	99.5%	99.5%
Heat Transfer Efficiency	77%	84.3%

Output Rate (kJ/h)	12,573	11,927	**(Btu/h)**
Burn Rate (kg/h)	0.87	1.91	**(lb/h)**
Input (kJ/h)	16,501	15,653	**(Btu/h)**

Test Load Weight (dry kg)	1.73	3.81	**dry lb**
MC wet (%)	5.41		
MC dry (%)	5.72		
Particulate (g)	4.6		
CO (g)	40		
Test Duration (h)	2.00		

Emissions	**Particulate**	**CO**	
g/MJ Output	0.18	1.58	
g/kg Dry Fuel	2.66	22.94	
g/h	2.30	19.86	0.331
lb/MM Btu Output	0.43	3.67	

Air/Fuel Ratio (A/F)	43.36

VERSION:	2.2	2009-12-14		
Manufacturer:	SBI		Appliance Type:	Pellet (Cat, Non
Model:	ECO-65			
Date:	2023-11-15		Temp. Units	F (F or C)
Run:	1		Weight Units	lb (kg or lb)
Control #:	G105588727			
Test Duration:	180			
Output Category:	Low			

			Fuel Data		
				Energex	
Wood Moisture (% wet):	5.41		HHV	19,067	kJ/kg
Load Weight (lb wet):	3.55		%C	44.95	
Burn Rate (dry kg/h):	0.51		%H	8.1	
Total Particulate Emissions:	4.6	g	%O	46.51	
			%Ash	0.44	

	Averages	0.02	1.73	19.00	131.87	67.26
					Temp. (ºF)	
Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%) CO	CO_2	O_2	Flue Gas	Room Temp
0	3.55	0.05	2.55	18.17	155.1	67.0
10	3.38	0.03	1.40	19.45	130.3	66.9
20	3.17	0.02	1.61	19.17	131.2	66.9
30	2.98	0.02	1.77	18.98	131.4	66.7
40	2.77	0.02	1.70	19.06	130.3	66.7
50	2.56	0.02	1.75	18.99	133.0	66.7
60	2.38	0.02	1.50	19.27	127.2	67.0
70	2.17	0.02	1.65	19.08	128.9	67.0
80	1.96	0.02	1.77	18.95	131.9	66.9
90	1.76	0.02	1.82	18.89	131.2	67.3
100	1.59	0.02	1.54	19.20	126.1	67.5
110	1.43	0.02	1.50	19.23	125.1	67.5
120	1.18	0.02	1.93	18.74	134.9	68.0
130	0.95	0.02	1.97	18.68	137.6	67.8
140	0.78	0.02	1.62	19.08	131.3	67.7
150	0.59	0.01	1.69	18.99	129.4	67.4
160	0.38	0.01	1.62	19.08	130.6	67.7
170	0.22	0.01	1.58	19.12	127.8	67.7
180	0.00	0.01	1.83	18.82	132.4	67.4

intertek Total Quality. Assured.	CLIENT:	SBI		PERFORMED BY:	Brian Ziegler
	PROJECT #:	G105588727		REVIEWED BY:	Ken Slater
	PRODUCT:	Pellet Room Heater		MODEL:	ECO-65
SAMPLE ID #:	NA - Tested at SBI Facility			DATE:	2023-11-15
STANDARD(S):	CSA B415.1	VERSION YEAR:	2010 (R2020	LOCATION:	SBI - Quebec, CA
EQUIPMENT					
ASSET # - DESCRIPTION:	See emissions TDP			CALIBRATION DUE:	See emissions TDP
CONDITIONING					
SAMPLE CONDITIONING (IF APPLICABLE):	NA				
AMBIENT TEMPERATURE (°F):	67.01				
RESULTS					
PASS	na	FAIL	na	NO PASS/FAIL	X

Run:	1
Test Duration:	180
Output Category:	Low

	HHV Basis	LHV Basis
Overall Efficiency	75.9%	83.6%
Combustion Efficiency	99.5%	99.5%
Heat Transfer Efficiency	76%	84.0%

Output Rate (kJ/h)	7,343	6,966	**(Btu/h)**
Burn Rate (kg/h)	0.51	1.12	**(lb/h)**
Input (kJ/h)	9,670	9,173	**(Btu/h)**

Test Load Weight (dry kg)	1.52	3.35	**dry lb**
MC wet (%)	5.41		
MC dry (%)	5.72		
Particulate (g)	4.6		
CO (g)	18		
Test Duration (h)	3.00		

Emissions	**Particulate**	**CO**	
g/MJ Output	0.21	0.82	
g/kg Dry Fuel	3.02	11.90	
g/h	1.53	6.03	0.101
lb/MM Btu Output	0.49	1.91	

Air/Fuel Ratio (A/F)	70.18

VERSION:	2.2	2009-12-14		
Manufacturer:	SBI		Appliance Type:	Pellet (Cat, Non
Model:	ECO-65			
Date:	2023-11-15		Temp. Units	F (F or C)
Run:	1		Weight Units	lb (kg or lb)
Control #:	G105588727			
Test Duration:	360			
Output Category:	Overall			

			Fuel Data		
				Energex	
Wood Moisture (% wet):	5.41		HHV	19,067	kJ/kg
Load Weight (lb wet):	12.46		%C	44.95	
Burn Rate (dry kg/h):	0.89		%H	8.1	
Total Particulate Emissions:	4.6	g	%O	46.51	
			%Ash	0.44	

	Averages	0.04	2.70	18.04	166.80	67.18
					Temp. (ºF)	
Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%) CO	CO_2	O_2	Flue Gas	Room Temp
0	12.46	0.06	5.31	15.39	267.8	66.9
10	11.60	0.06	5.97	14.70	271.7	67.2
20	10.77	0.06	5.68	15.04	271.6	67.1
30	9.92	0.06	5.48	15.26	271.3	67.3
40	9.04	0.06	5.97	14.74	277.9	67.2
50	8.21	0.06	5.26	15.56	271.5	67.4
60	7.58	0.08	5.53	15.15	272.9	67.6
70	6.90	0.08	3.34	17.56	206.4	67.5
80	6.60	0.05	2.55	18.30	171.7	67.4
90	6.30	0.07	2.63	18.13	161.2	67.2
100	5.99	0.07	2.59	18.19	157.6	67.2
110	5.71	0.05	2.41	18.36	154.3	67.0
120	5.41	0.05	2.34	18.44	152.6	66.6
130	5.14	0.05	2.55	18.18	150.1	66.6
140	4.83	0.04	2.38	18.41	151.0	66.7
150	4.51	0.04	2.35	18.43	150.6	67.0
160	4.19	0.05	2.33	18.42	152.6	66.9
170	3.89	0.05	2.45	18.29	153.0	67.0
180	3.55	0.05	2.55	18.17	155.1	67.0
190	3.38	0.03	1.40	19.45	130.3	66.9
200	3.17	0.02	1.61	19.17	131.2	66.9
210	2.98	0.02	1.77	18.98	131.4	66.7
220	2.77	0.02	1.70	19.06	130.3	66.7
230	2.56	0.02	1.75	18.99	133.0	66.7
240	2.38	0.02	1.50	19.27	127.2	67.0
250	2.17	0.02	1.65	19.08	128.9	67.0
260	1.96	0.02	1.77	18.95	131.9	66.9
270	1.76	0.02	1.82	18.89	131.2	67.3
280	1.59	0.02	1.54	19.20	126.1	67.5
290	1.43	0.02	1.50	19.23	125.1	67.5
300	1.18	0.02	1.93	18.74	134.9	68.0
310	0.95	0.02	1.97	18.68	137.6	67.8
320	0.78	0.02	1.62	19.08	131.3	67.7
330	0.59	0.01	1.69	18.99	129.4	67.4
340	0.38	0.01	1.62	19.08	130.6	67.7
350	0.22	0.01	1.58	19.12	127.8	67.7
360	0.00	0.01	1.83	18.82	132.4	67.4

intertek Total Quality. Assured.	CLIENT:	SBI		PERFORMED BY:	Brian Ziegler
	PROJECT #:	G105588727		REVIEWED BY:	Ken Slater
	PRODUCT:	Pellet Room Heater		MODEL:	ECO-65
SAMPLE ID #:	NA - Tested at SBI Facility			DATE:	2023-11-15
STANDARD(S):	CSA B415.1	VERSION YEAR:	2010 (R2020	LOCATION:	SBI - Quebec, CA
EQUIPMENT					
ASSET # - DESCRIPTION:	See emissions TDP			CALIBRATION DUE:	See emissions TDP
CONDITIONING					
SAMPLE CONDITIONING (IF APPLICABLE):	NA				
AMBIENT TEMPERATURE (°F):	66.90				
RESULTS					
PASS	na	FAIL	na	NO PASS/FAIL	X

Run: 1
Test Duration: 360
Output Category: Overall

	HHV Basis	LHV Basis
Overall Efficiency	76.7%	84.4%
Combustion Efficiency	99.5%	99.5%
Heat Transfer Efficiency	77%	84.9%

Output Rate (kJ/h)	13,035	12,365	(Btu/h)
Burn Rate (kg/h)	0.89	1.96	(lb/h)
Input (kJ/h)	16,993	16,120	(Btu/h)

Test Load Weight (dry kg)	5.35	11.79	dry lb
MC wet (%)	5.41		
MC dry (%)	5.72		
Particulate (g)	4.6		
CO (g)	78		
Test Duration (h)	6.00		

Emissions	Particulate	CO	
g/MJ Output	0.06	0.99	
g/kg Dry Fuel	0.86	14.54	
g/h	0.77	12.96	0.216
lb/MM Btu Output	0.14	2.31	

Air/Fuel Ratio (A/F)	44.73

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:W223-0613-01
Issue No: 1

Client: Stove Builder International
250 Rue de Copenhague
Saint-Augustin-de-Desmaures, QC G3A 2H3
Attention: Guillaume Thibodeau-Fortin

PO No:

Signed: Katy Jahr
Katy Jahr
Chemistry Lab Supervisor
Date of Issue: 11/27/2023

Sample Details

Sample Log No:	W223-0613-01	**Sample Date:**	
Sample Designation:	Pellets	**Sample Time:**	
Sample Recognized As:	Wood Pellets	**Arrival Date:**	11/6/2023

Test Results

	METHOD	UNITS	MOISTURE FREE	AS RECEIVED
Moisture Total	ASTM E871	wt. %		5.41
Ash	ASTM D1102	wt. %	0.47	0.44
Volatile Matter	ASTM D3175	wt. %		
Fixed Carbon by Difference	ASTM D3172	wt. %		
Sulfur	ASTM D4239	wt. %	0.061	0.057
SO_2	Calculated	lb/mmbtu		0.140
Net Cal. Value at Const. Pressure	ISO 1928	GJ/tonne	18.32	17.20
Gross Cal. Value at Const. Vol.	ASTM E711	Btu/lb	8672	8203
Carbon	ASTM D5373	wt. %	47.52	44.95
Hydrogen*	ASTM D5373	wt. %	8.56	8.10
Nitrogen	ASTM D5373	wt. %	< 0.20	< 0.19
Oxygen*	ASTM D3176	wt. %	> 43.18	> 40.85

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

Chlorine	ASTM D6721	mg/kg		
Fluorine	ASTM D3761	mg/kg		
Mercury	ASTM D6722	mg/kg		
Bulk Density	ASTM E873	lbs/ft^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		

Comments:

Accreditation #60243

Fox Valley Metrology
3114 Medalist Drive
Oshkosh, WI 54902
(920) 426-5894 • Fax (920) 426-8120
https://www.FoxValleyMetrology.com

CERTIFICATE OF CALIBRATION

ilac-MRA ANAB ACCREDITED ISO/IEC 17025 CALIBRATION AND TESTING LABORATORY
Certificate No. ACT-1272

CERTIFICATION NUMBER	CN278-38757-679
FOR	Intertek 8431 Murphy Drive Middleton, WI 53562
TEST INSTRUMENT	Scales Analytical Balance
MAKE	Ohaus
MODEL	Explorer E12140
RANGE	210 g
CUSTOMER LOCATION	
CONDITION RECEIVED	In Tolerance
CONDITION RETURNED	In Tolerance
CALIBRATED BY	Danny Scherr
FORM REVIEWED BY	M.T.
CALIBRATION LOCATION	On Site
ENVIRONMENT	72.0°F, 22.2°C, 56.0%RH
CALIBRATION DATE	10/05/2023
RECALIBRATION DUE	04/05/2024

IDENTIFICATION	713
SERIAL NUMBER	B258010639
PURCHASE ORDER #	Credit Card

PROCEDURES FOLLOWED

MC-009B rev. 0

STANDARDS USED

INSTRUMENT	SERIAL NUMBER	TRACE NUMBER	NEXT CAL
FVS-019J	4MMU	CM172-44891-694	06/30/2024
FVS-505	QC4311	CN072-49580-690	03/31/2024

CALIBRATION RESULTS

* DENOTES "OUT OF TOLERANCE"

FEATURE	NOMINAL	LOWER LIMIT	UPPER LIMIT	AS FOUND	AS LEFT	UNCERTAINTY
Increasing Load	(g)	(g)	(g)	(g)	(g)	(g)
	0.0000	-0.0001	0.0001	0.0000	0.0000	6.0E-5
	5.0000	4.9999	5.0001	5.0000	5.0000	6.0E-5
	10.0000	9.9998	10.0002	10.0000	10.0000	6.0E-5
	20.0000	19.9998	20.0002	20.0000	20.0000	6.0E-5
	50.0000	49.9997	50.0003	50.0000	50.0000	6.0E-5
	100.0000	99.9997	100.0003	99.9999	99.9999	6.0E-5
	200.0000	199.9997	200.0003	199.9998	199.9998	6.0E-5
Capacity (g)	210.0000	209.9997	210.0003	210.0002	210.0002	6.0E-5
Decreasing Load	(g)	(g)	(g)	(g)	(g)	(g)
	105.0000	104.9997	105.0003	104.9998	104.9998	6.0E-5
Shift Test	(g)	(g)	(g)	(g)	(g)	(g)
Front	70.0000	69.9997	70.0003	70.0000	70.0000	6.0E-5
Left	70.0000	69.9997	70.0003	70.0000	70.0000	6.0E-5
Right	70.0000	69.9997	70.0003	69.9999	69.9999	6.0E-5
Back	70.0000	69.9997	70.0003	69.9999	69.9999	6.0E-5

COMMENTS

Scale Capacity = 210 g; Precision = .0001 g; Class = I; Total Divisions = 2100000

Fox Valley Metrology
3114 Medalist Drive
Oshkosh, WI 54902
(920) 426-5894 ● Fax (920) 426-8120
https://www.FoxValleyMetrology.com

CERTIFICATE OF CALIBRATION

Certificate No. ACT-1272

■ This certificate shall not be altered in any form or reproduced, except in full, without prior written approval from originating lab. These results relate only to the item(s) calibrated. Form Revision 8: 08/19/2021

■ Total expanded measurement uncertainties expressed are based on a confidence level of 95%; coverage factor of (k=2). The statement of compliance in this certificate was issued without taking the uncertainty of measurement into consideration. The customer shall assess the results and uncertainty when determining if the results meet their needs. (This is considered “shared responsibility.”) Uncertainties expressed in nominal units.

■ The calibrations within the certificate/report are traceable through NIST or another National Metrology Institute to the International System of Units (SI). Calibration was completed in accordance with ISO/IEC 17025:2017, ANSI/NCSL Z540-1-1994 and ANSI/NCSL Z540.3-2006. Other standards listed upon request.

mesurepro inc
106-86 boulevard des Entrprises
Boisbriand, Qc J7G2T3
Tél: 450 818 8895
www.mesurepro.ca

SCC Accredited LAB — LAB Accrédité CCN 832 — CLAS NRC·CNRC — CLAS 2016-04

Délivré à: / ***Delivred to:***

Fabricant de poêlesinternational Inc (SBI)
250 rue De Copenhague
St-Augustin-Desmaures, Qc G3A2h3

Certificat d'étalonnage/*Calibration certificate*
No E23-SBI-004
Tél que trouvé/As Found

Instrument étalonné/ Instrument calibrated			
Désignation/ designation :	Thermométre électronique	***Plage de mesure/ Range :***	1400°F
Marque/ Brand :	OMEGA	***Résolution/ readability :***	0,1°F
Type/ Model :	HH52	***Type de thermocouple/ Thermocouple Type:***	K
SN :	4435440	***Affectation/ Allocation :***	NA
ID#:	SBI-004	***EMT utilisateur/ user tolerance :***	± 4,4 °F
		Date d'étalonnage/ Calibration date :	25 mai 2023
		Prochain étalonnage/ Due date :	25 novembre 2023

Conditions d'environnement/ Test Conditions	
Température/Temperature :	72 °F
Humidité/Humidity :	35 %HR
Pression barométrique :	755 mmHg

Étalons utilisés/ Standards used

Instrument	***Type/ Model***	***Marque/ Brand***	***NS/ID#***	***Date d'étalonnage Calibration date***	***Prochain étalonnage Due Date***
Calibrateur de process	744	FLUKE	9448002	20 juil. 2021	20 juil. 2023
Thermohygrométre	HC2A-S3	ROTRONIC	20590052	7 septembre 2022	7 septembre 2024
Barométre	FB61291	Traceable	111576751	24 février 2023	24 février 2024

Le Service d'évaluation des laboratoires d'étalonnage (CLAS) du Conseil national de recherches du Canada (CNRC) a évalué et certifié la capacité d'étalonnage du laboratoire mesurepro inc et la traçabilité au Système international d'unités (SI) ou à des étalons acceptables selon le CLAS. Le présent certificat d'étalonnage est délivré conformément aux conditions de certification du CLAS et aux conditions d'accréditation du Conseil canadien des normes (CCN). Le CLAS et le CCN ne garantissent pas l'exactitude des étalonnages individuels effectués par les laboratoires accrédités. Les incertitudes élargies sont fonction du facteur de couverture k = 2, selon un degré de confiance d'environ 95 %, en supposant une répartition normale. Une étiquette mesurepro inc mentionnant la date d'étalonnage et celle de la prochaine intervention (à la demande du client) est apposée sur l'appareil à l'issue du présent étalonnage. Le droit d'auteur du présent certificat appartient au laboratoire mesurepro inc et doit être reproduit intégralement, à moins d'une autorisation écrite du laboratoire mesurepro inc.

Karim Bouyahia
Travaux effectués par/ *Performed By*

Date d'émission du certificat/ Date of issue : **25 mai 2023**

Le Directeur du Laboratoire/The Lab manager

mesurepro inc
106-86 boulevard des Entrprises
Boisbriand, Qc J7G2T3
Tél: 450 818 8895
www.mesurepro.ca

SCC Accredited LAB — LAB Accrédité CCN 832 — CLAS NRC-CNRC — CLAS 2016-04

Délivré à: / ***Delivred to:***

Fabricant de poêlesinternational Inc (SBI)
250 rue De Copenhague
St-Augustin-Desmaures, Qc G3A2h3

Certificat d'étalonnage/*Calibration certificate*
No E23-SBI-004

Résultat de l'étalonnage/ Calibration result

Procédure utilisée/ procedure used : *PC 7.2.70_Étalonnage des thermométre pas simulation*

Les résultats de l'étalonnage concernent l'instrument décrit à la section **«Instrument étalonné»**

Déclaration de conformité : Selon ILAC G8 - Simple Accéptation (W=0)

Justesse-Répétabilité-Incertitude élargie

Point de consigne	***Valeur Étalon***	***Valeur lue***	***Écart***	***Incertitude élargie (K-2)***	***Tolérance***	***Conformité***
Set point	*Standard value*	*Avant ajustage*	*deviation*	*Expanded uncertainty (K=2)*		*Conformity*
T1						
[°F]	**[°F]**	**[°F]**	**[°F]**	**±[°F]**	**±[°F]**	
70,00	**70,00**	**68,6**	**-1,4**	**1,0**	**4,4**	**Conforme**
200,00	**200,00**	**198,8**	**-1,2**	**1,0**	**4,4**	**Conforme**
600,00	**600,00**	**598,5**	**-1,5**	**1,0**	**4,4**	**Conforme**
1000,00	**1000,00**	**999,0**	**-1,0**	**1,0**	**4,4**	**Conforme**
1400,00	**1400,00**	**1398,4**	**-1,6**	**1,0**	**4,4**	**Conforme**
T2						
[°F]	**[°F]**	**[°F]**	**[°F]**	**±[°F]**	**±[°F]**	
70,00	**70,00**	**69,0**	**-1,0**	**1,0**	**4,4**	**Conforme**
200,00	**200,00**	**198,8**	**-1,2**	**1,0**	**4,4**	**Conforme**
600,00	**600,00**	**598,4**	**-1,6**	**1,0**	**4,4**	**Conforme**
1000,00	**1000,00**	**998,4**	**-1,6**	**1,0**	**4,4**	**Conforme**
1400,00	**1400,00**	**1398,2**	**-1,8**	**1,0**	**4,4**	**Conforme**

Fin du certificat d'étalonnage

ID Certificat d'étalonnage
CA0003-083-031623-ACC-USI

METTLER TOLEDO

Mettler-Toledo Inc.
Service Division
1900 Polaris Parkway
Columbus, OH 43240
1-800-METTLER

Accrédité par le "American Association for Laboratory Accreditation (A2LA)"
CERTIFICAT D'ÉTALONNAGE #1902.01

ISO 17025 Registered
ANSI/NCSL Z540-1 Accredited

Certificat d'étalonnage ACC

Accuracy Calibration Certificate

Client

Société:	SBI Fabricant De Poeles		
Adresse:	250 rue de Copenhague		
Ville:	Saint-Augustin-de-Desmaures	**Contact:**	André Bouchard
Code Postal:	G3A 2H3		
Région:	Quebec		

Appareil de pesage

Constructeur:	Avery Weigh-Tronix	**Type d'instrument:**	Instrument de pesage
Modèle:	DSL-4848	**N° inventaire:**	SBI-014 FLOOR SCALE
N° de série:	B00927386KL	**Modèle Terminal:**	N/A
Bâtiment:	N/A	**N° de série Terminal:**	N/A
Étage:	N/A	**N° inventaire Terminal:**	N/A
Pièce:	N/A		

Étendue	Portée Max.	Résolution (d)
1	500 kg	0.02 kg

Procédure

Instruction d'étalonnage :	ASTM E898 - 20
Instruction de travail :	30260953

This calibration certificate including procedures and uncertainty estimation also complies with EURAMET cg-18 v 4.0.

Ce certificat d'étalonnage contient des mesures pour les étalonnages Avant et Après réglage.

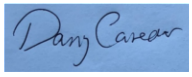
La sensibilité/pente de l'instrument a été ajustée avant l'étalonnage Après réglage avec un poids externe.

Il a été convenu avec l'utilisateur d'étalonner en dessous de la portée maximale de la balance.

	Température		Humidité	
Avant réglage	Début: 19.8 °C	Fin: 19.8 °C	Début: 31.0 %	Fin: 31.0 %
Après réglage	Début: 19.9 °C	Fin: 19.9 °C	Début: 31.0 %	Fin: 31.0 %

Les conditions ambiantes ont été vérifiées pour s'assurer de l'exactitude de l'étalonnage.

Ce certificat est délivré conformément aux conditions d'accréditation accordées par l'A2LA, sur la base de la norme ISO/IEC 17025.
L'A2LA a évalué la capacité de mesure du laboratoire et sa traçabilité aux étalons nationaux reconnus.

Date étal. Avant réglage :	16-03-2023	**Signataire autorisé A2LA :**	
Date étal. Après réglage :	16-03-2023		
Date d'édition :	16-03-2023		Dany Careau

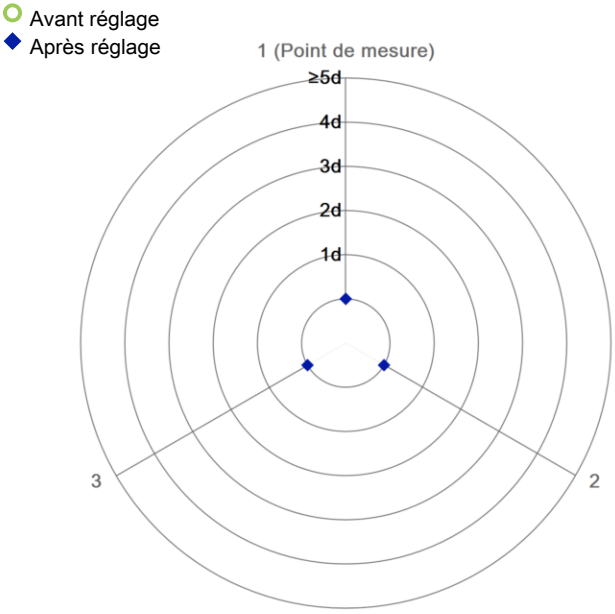
Résultats de mesure

Répétabilité

Charge d'essai: 100 kg

	Avant réglage	Après réglage
1	N/A	100.00 kg
2	N/A	100.00 kg
3	N/A	100.00 kg

Écart-type	**N/A**	**0.000 kg**



Le "d" dans le graphique représente la résolution de l'étendue/échelon dans lequel l'essai a été effectué.

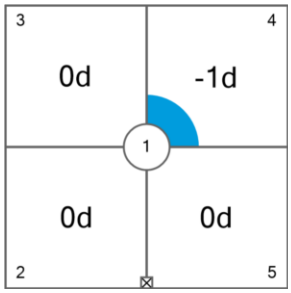
Les résultats de ce graphique sont basés sur les valeurs absolues des différences par rapport à la valeur moyenne.

Excentration

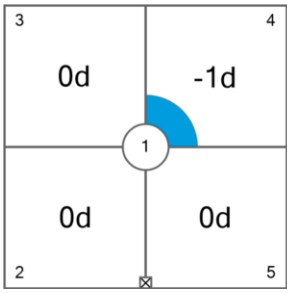
Charge d'essai: 100 kg

Position	Avant réglage	Après réglage
1	100.02 kg	100.00 kg
2	100.02 kg	100.00 kg
3	100.02 kg	100.00 kg
4	100.00 kg	99.98 kg
5	100.02 kg	100.00 kg

Écart maximal	**0.02 kg**	**0.02 kg**



Avant réglage



Après réglage

Le "d" dans le graphique représente la résolution de l'étendue/échelon dans lequel l'essai a été effectué.

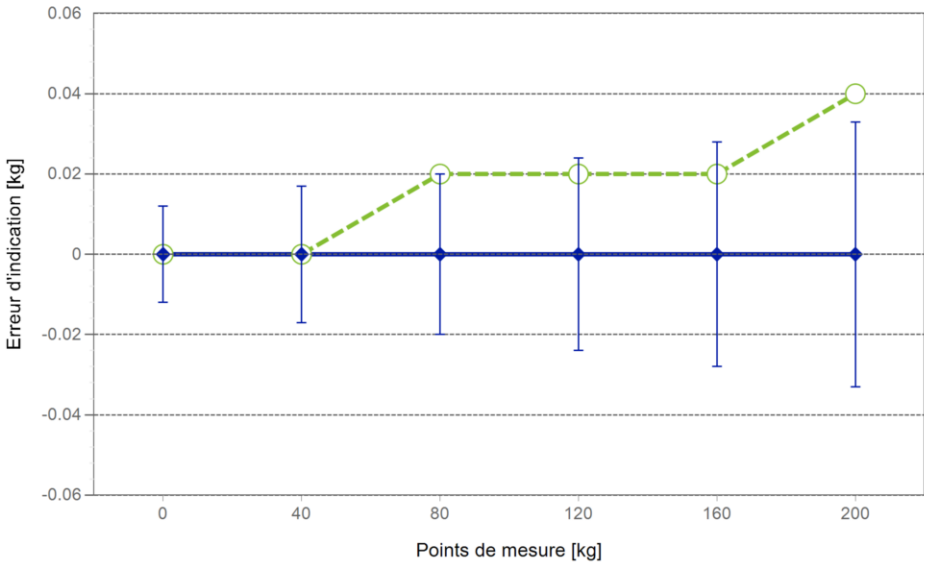
Erreur d'indication

Avant réglage

	Valeur Référence	Indication	Erreur d'indication	Incertitude élargie	k
1	0 kg	0.00 kg	0.00 kg	N/A	N/A
2	40 kg	40.00 kg	0.00 kg	N/A	N/A
3	80 kg	80.02 kg	0.02 kg	N/A	N/A
4	120 kg	120.02 kg	0.02 kg	N/A	N/A
5	160 kg	160.02 kg	0.02 kg	N/A	N/A
6	200 kg	200.04 kg	0.04 kg	N/A	N/A

Après réglage

	Valeur Référence	Indication	Erreur d'indication	Incertitude élargie	k
1	0 kg	0.00 kg	0.00 kg	0.012 kg	2
2	40 kg	40.00 kg	0.00 kg	0.017 kg	2
3	80 kg	80.00 kg	0.00 kg	0.020 kg	2
4	120 kg	120.00 kg	0.00 kg	0.024 kg	2
5	160 kg	160.00 kg	0.00 kg	0.028 kg	2
6	200 kg	200.00 kg	0.00 kg	0.033 kg	2



Avant réglage

Après réglage

Pour améliorer la lisibilité des graphiques, les points de mesure décroissants et ceux proches de zéro ne sont pas affichés.

The uncertainty stated is the expanded uncertainty at calibration obtained by multiplying the standard combined uncertainty by the coverage factor k - which can be larger than 2 according to ASTM E898 and EURAMET cg-18. The value of the measurand lies within the assigned range of values with a probability of approximately 95%.

The user is responsible for maintaining environmental conditions and the settings of the weighing instrument when it was calibrated.

Équipement d'essai

Tous les poids utilisés pour le contrôle métrologique sont raccordés aux étalons nationaux et internationaux. Les poids sont étalonnés par un laboratoire accrédité.

Série de Poids 1: OIML M1

N° série de poids :	Q1	Date d'édition :	04-01-2023
N° Certificat :	1415726-1415728	Date proch. étalonnage :	04-01-2024

Remarques

N/A

Fin de la partie Étalonnage

L'information ci-après et les annexes à ce certificat d'étalonnage ne font pas partie du domaine d'accréditation.

Incertitude de mesure de l'instrument de pesage en utilisation

Établie à partir de l'incertitude élargie en utilisation avec k = 2. La formule sera utilisée pour estimer l'incertitude en prenant en compte les erreurs d'indication. La valeur R représente l'indication de la charge nette selon l'unité de mesure de l'appareil.

Coefficient de température pour l'évaluation de l'incertitude en utilisation : $10.0 \cdot 10^{-6}$ / K

Étendue de température sur site pour l'évaluation de l'incertitude en utilisation : 10 K

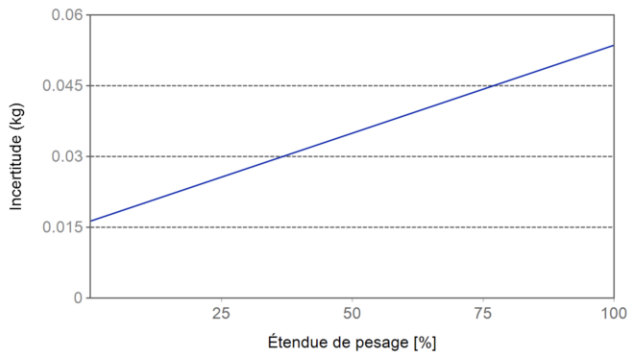
Linéarisation de l'équation d'incertitude

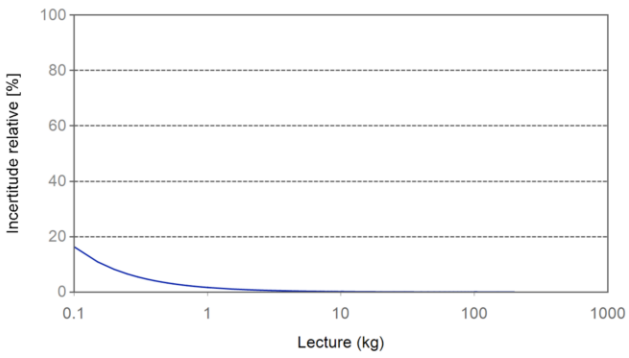
Étendue			Avant réglage	Après réglage
	d	Max		
1	0.02 kg	200 kg	N/A	U_1 = 16 g + 0.186 g/kg · R

Pour optimiser la stabilité de la linéarisation, en plus du zéro, les points de mesure croissants avec une charge supérieure à 5% de la plage de mesure ou plus sont retenus pour calculer l'équation linéaire.

Incertitude de mesure absolue et relative en utilisation pour diverses indications nettes (exemples)

Indication Nette	Avant réglage		Après réglage	
0.20 kg	N/A	N/A	0.016 kg	8.0%
2.00 kg	N/A	N/A	0.016 kg	0.82%
20.00 kg	N/A	N/A	0.020 kg	0.099%
100.00 kg	N/A	N/A	0.035 kg	0.035%
200.00 kg	N/A	N/A	0.053 kg	0.027%





Avant réglage Après réglage

Évaluation selon les tolérances du HB 44 (Maintenance)

Évaluation effectuée sans tenir compte de l'incertitude de mesure

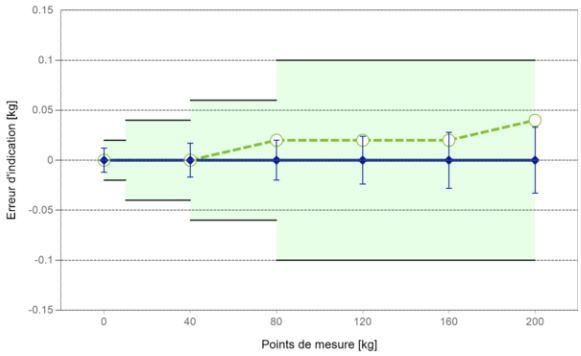
Les mesures du certificat d'étalonnage joint ont été évaluées selon les tolérances définies dans le HB44 du NIST. L'étendue des mesures pour les essais de répétabilité et d'excentration (si réalisé) est comparée aux tolérances de maintenance.

	Avant réglage	Après réglage
Global	✓	✓

✓ = Réussi
✗ = Échec

Appareil de pesage

Étendue	Portée Max.	Résolution (d)	Échelon de vérification (e)	Classe
1	500 kg	0.02 kg	0.02 kg	III



Tolérances définies dans le HB 44 du NIST

Charge d'essai		Tolérance
De	jusqu'à	
0.00 kg	0.00 kg	0.005 kg
0.02 kg	10.00 kg	0.02 kg
10.02 kg	40.00 kg	0.04 kg
40.02 kg	80.00 kg	0.06 kg
80.02 kg	200.00 kg	0.1 kg

○ Avant réglage
◆ Après réglage
— Tolérance

Excentration et Répétabilité

Essai	Charge d'essai	Tolérance	Avant réglage		Après réglage	
			Erreur max. / Étendue	Résultat	Erreur max. / Étendue	Résultat
Excentration (Erreur max.)	100 kg	0.10 kg	0.02 kg	✓	0.02 kg	✓
Excentration (Étendue)	100 kg	0.1 kg	0.02 kg	✓	0.02 kg	✓
Répétabilité (Erreur max.)	100 kg	0.1 kg	N/A	N/A	0.00 kg	✓
Répétabilité (Étendue)	100 kg	0.10 kg	N/A	N/A	0.00 kg	✓

Erreur max.: Maximum des valeurs absolues of erreurs individuelles.
Étendue: Différence entre la plus grande et la plus valeur de mesure.

Erreur d'indication

	Valeur référence	Tolérance	Avant réglage		Après réglage	
			Erreur d'indication	Résultat	Erreur d'indication	Résultat
1	0 kg	0.02 kg	0.00 kg	✓	0.00 kg	✓
2	40 kg	0.04 kg	0.00 kg	✓	0.00 kg	✓
3	80 kg	0.06 kg	0.02 kg	✓	0.00 kg	✓
4	120 kg	0.10 kg	0.02 kg	✓	0.00 kg	✓
5	160 kg	0.10 kg	0.02 kg	✓	0.00 kg	✓
6	200 kg	0.10 kg	0.04 kg	✓	0.00 kg	✓

MICRO PRECISION

MICRO PRECISION CALIBRATION, INC.
22835 INDUSTRIAL PLACE
GRASS VALLEY CA 95949
530-268-1860

ilac-MRA
ANAB
ANSI National Accreditation Board
ACCREDITED
ISO/IEC 17025
CALIBRATION AND DIMENSIONAL MEASUREMENT
AC-1969

Certificate of Calibration

Date: Feb 3, 2023

Cert No. 551220085655084

Customer:

STOVE BUILDERS INTERNATIONAL INC.

PORTES 11-12
250 DE COPENHAGUE
SAINT-AUGUSTIN-DE-DESMAURES QC G3A 2H3

		Work Order #:	SAC-70126947
		Purchase Order #:	76863
MPC Control #:	DA5991	Serial Number:	79977
Asset ID:	SBI-097	Department:	N/A
Gage Type:	THERMO-ANEMOMETER	Performed By:	RICHARD BURGESS
Manufacturer:	EUROTRON	Received Condition:	IN TOLERANCE
Model Number:	VT 50	Returned Condition:	IN TOLERANCE
Size:	N/A	Cal. Date:	February 03, 2023
Temp/RH:	21.0°C / 45.0%	Cal. Interval:	12 MONTHS
Location:	Calibration performed at MPC facility	Cal. Due Date:	February 03, 2024

Calibration Notes:

See attached calibration data. (1 page/s)

Standards Used to Calibrate Equipment

I.D.	Description.	Model	Serial	Manufacturer	Cal. Due Date	Traceability #
CR6800	HUMIDITY GENERATOR/ENVIRONMENTAL CHAMBER	2500	0012263	THUNDER SCIENTIFIC CORPORATION	Feb 28, 2023	551220084791099
DA8367	PRECISION PLATINUM RESISTANCE THERMOMETER SPRT W/ CASE	8167-25	180322	LEEDS & NORTHRUP CO.	Mar 31, 2023	551220085379565
CS0080	ANEMOMETER	HHF141A	1017400	OMEGA	Sep 30, 2023	800413329
CJ5100	WIND TUNNEL WITH CONTROLLER	JS-500	375/305	INTERACTIVE INSTRUMENTS	Nov 30, 2023	551220084628339

Calibrating Technician: RICHARD BURGESS

QC Approval: MARVIN ILAO

STATEMENTS OF PASS OR FAIL CONFORMANCE: The uncertainty of measurement has been taken into account when determining compliance with specification. All measurements and test results guard banded to ensure the probability of false-accept does not exceed 2% in compliance with ANSI/NCSL Z540.3-2006.

THE CALIBRATION REPORT STATUS:
PASS - Term used when compliance statement is given, and the measurement result is **PASS**.
PASS* - Term used when compliance statement is given, and the measurement result is conditional passed or PASS*.
FAIL - Term used when compliance statement is given, and the measurement result is FAIL.
FAIL* - Term used when compliance statement is given, and the measurement result is conditional failed or FAIL*.
REPORT OF VALUE - Term used when reported measurement is not requiring compliance statement in report.
ADJUSTED - When adjustments are made to an instrument which changes the value of measurement from what was measured as found to new value as left.
LIMITED - When an instrument fails calibration but is still functional in a limited manner.

The expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%, unless otherwise stated. This calibration report complies with ISO/IEC 17025:2017, ANSI/NCSL Z540.3-2006 and ANSI/NCSL Z540.1-1994. Calibration cycles and resulting due dates were submitted/approved by the customer. Any number of factors may cause an instrument to drift out of tolerance before the next scheduled calibration. Recalibration cycles should be based on frequency of use, environmental conditions and customer's established systematic accuracy. All standards are traceable to SI through the National Institute of Standards and Technology (NIST) and/or recognized national or international standards laboratories. Services rendered include proper manufacturer's service instruction and are warranted for no less than thirty (30) days. The information on this report pertains only to the instrument identified, this may not be reproduced in part or in a whole without the prior written approval of the issuing MP Calibration Laboratory.

(CERT, Rev 9)

MICRO PRECISION

MICRO PRECISION CALIBRATION, INC.
22835 INDUSTRIAL PLACE
GRASS VALLEY CA 95949
530-268-1860

ilac-MRA
ANAB
ANSI National Accreditation Board
ACCREDITED
ISO/IEC 17025
CALIBRATION AND DIMENSIONAL MEASUREMENT
AC-1969

Certificate of Calibration

Date: Feb 3, 2023

Cert No. 551220085655084

Procedures Used in this Event

Procedure Name	Description
MPC-AIR-001 Rev. 02	Air Velocity, Temperature and Flow Meters, General, rev02, Jun-28-2021
MPC-TEM-001 Rev. 04	Temperature Sensors and Indicators, General, rev.04, Jul-07-2021

Calibrating Technician: RICHARD BURGESS

QC Approval: MARVIN ILAO

STATEMENTS OF PASS OR FAIL CONFORMANCE: The uncertainty of measurement has been taken into account when determining compliance with specification. All measurements and test results guard banded to ensure the probability of false-accept does not exceed 2% in compliance with ANSI/NCSL Z540.3-2006.

THE CALIBRATION REPORT STATUS:
PASS- Term used when compliance statement is given, and the measurement result is PASS.
PASS²- Term used when compliance statement is given, and the measurement result is conditional passed or PASS².
FAIL- Term used when compliance statement is given, and the measurement result is FAIL.
FAIL²- Term used when compliance statement is given, and the measurement result is conditional failed or FAIL².
REPORT OF VALUE - Term used when reported measurement is not requiring compliance statement in report.
ADJUSTED- When adjustments are made to an instrument which changes the value of measurement from what was measured as found to new value as left.
LIMITED - When an instrument fails calibration but is still functional in a limited manner.

The expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%, unless otherwise stated.
This calibration report complies with ISO/IEC 17025:2017, ANSI/NCSL Z540.3-2006 and ANSI/NCSL Z540.1-1994. Calibration cycles and resulting due dates were submitted/approved by the customer. Any number of factors may cause an instrument to drift out of tolerance before the next scheduled calibration. Recalibration cycles should be based on frequency of use, environmental conditions and customer's established systematic accuracy. All standards are traceable to SI through the National Institute of Standards and Technology (NIST) and/or recognized national or international standards laboratories. Services rendered include proper manufacturer's service instruction and are warranted for no less than thirty (30) days. The information on this report pertains only to the instrument identified, this may not be reproduced in part or in a whole without the prior written approval of the issuing MP Calibration Laboratory.

(CERT, Rev 9)

MICRO PRECISION

Calibration Report of Eurotron VT 50 Thermo-Anemometer

MPC Control #:	DA5991	Serial Number:	79977
Asset ID:	SBI-097	Calibration Date:	February 03, 2023

Hotwire Air Velocity Accuracy

Function Tested	Nominal	Lower Limit	As Found	As Left	Upper Limit	Result	Uncertainty (±)	TUR
Velocity, FPM	1500 FPM	1416 FPM	1511 FPM	1511 FPM	1584 FPM	PASS	21 FPM	≥ 4.0 : 1
	3000 FPM	2871 FPM	3017 FPM	3017 FPM	3129 FPM	PASS	37 FPM	3.5 : 1
	4500 FPM	4326 FPM	4509 FPM	4509 FPM	4674 FPM	PASS	54 FPM	3.2 : 1
	5700 FPM	5490 FPM	5711 FPM	5711 FPM	5910 FPM	PASS	68 FPM	3.1 : 1

Temperature Accuracy

Function Tested	Nominal	Lower Limit	As Found	As Left	Upper Limit	Result	Uncertainty (±)	TUR
Temperature, °F	45.0 °F	43.56 °F	44.9 °F	44.9 °F	46.44 °F	PASS	0.12 °F	≥ 4.0 : 1
	90.0 °F	87.66 °F	89.8 °F	89.8 °F	92.34 °F	PASS	0.12 °F	≥ 4.0 : 1
	135.0 °F	131.76 °F	134.6 °F	134.6 °F	138.24 °F	PASS	0.12 °F	≥ 4.0 : 1
	171.0 °F	167.04 °F	170.1 °F	170.1 °F	174.96 °F	PASS	0.12 °F	≥ 4.0 : 1

Statements of Pass or Fail Conformance

The uncertainty of measurement has been taken into account when determining compliance with specification.
All measurements and test results guard banded to ensure the probability of false-accept does not exceed 2% in compliance with ANSI/NCSL Z540.3-2006

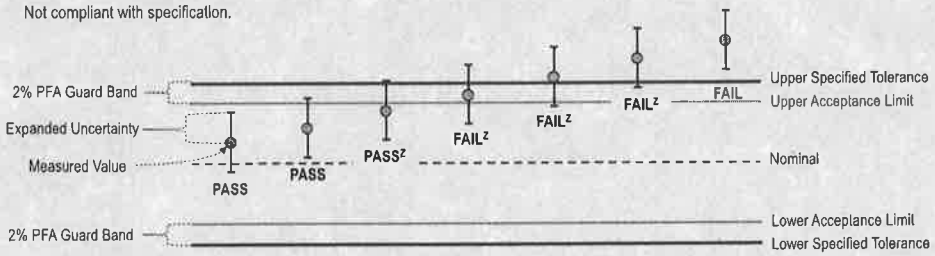
The status of compliance with the acceptance criteria is reported as:

PASS — Compliant with specification.

PASS^Z — The measured value is within acceptance limits.
However, a portion of the expanded uncertainty of measurement at 95% exceeds the specified tolerance.

FAIL^Z — The measured value is not within the acceptance limits.
However, a portion of the expanded uncertainty of measurement at 95% is within the specified tolerance.

FAIL — Not compliant with specification.



Acceptance limits for ≤ 2% probability of false accept (PFA) guard band

The expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k = 2, which for a normal distribution corresponds to a coverage probability of approximately 95%, unless otherwise stated.

This calibration report complies with ISO/IEC 17025:2017 and ANSI/NCSL Z540.3-2006, Method 6 --- Guard Bands Based on Test Uncertainty Ratio.

- End of Calibration Report -

Certificate No: 220721441-1

METTLER TOLEDO

METTLER-TOLEDO, LLC
201 Wolf Dr
Thorofare NJ 08086
1-800-METTLER

NVLAP® CALIBRATION NVLAP LAB CODE 105013-0

ilac-MRA

Mass Calibration Certificate

Customer Information

Customer Name:	Stove Builder International, Inc.	*City:*	
Address:	250 rue de Copenhauge St.-Augustin-de-Desmaures	*State / Province:*	QC
Purchase Order:	220719397	*Zip / Postal Code:*	G3A 2H3

Measurement and Test Equipment Identification

Serial Number:	B316238717	*Date Received:*	05-Oct-2023
Manufacturer:	Mettler Toledo	*Condition:*	Good
Asset Number:	SBI-237	*Tolerance Class:*	OIML R111 Class E2

Environmental Conditions

Temperature: 21.72 °C *Barometric Pressure:* 756.56 mm Hg *Relative Humidity:* 46 %RH

The standards used to perform this calibration have been compared to reference mass standards that are traceable to the SI through the National Institute of Standards and Technology under Test No 684/O-0000036014-22.

The weights calibrated for this report have been calibrated in accordance with the calibration laboratory's process. The calibration performed meets the criteria as described in the current revisions of ASTM E617 and OIML R111. This calibration also meets specifications as outlined in ISO/IEC 17025, ANSI/NCSL Z540-1-1994, and applicable documents.

Calibration Date:	10-Oct-2023	*Next Calibration Due:*	10-Oct-2028
Calibration Technician:	Robotic Calibration	*Signature:*	

Lynn Dickerson, Metrologist
Approved Signatory 10-Oct-2023

Certificate No: 220721441-1

As Found Data

Nominal Value&Suffix	Serial Number	True Mass	Conventional Mass	Uncertainty (mg, k = 2)	Tolerance	Density (g/cm^3)
100 mg	B316238717	0.0999981 g	0.0999981 g	0.0025	0.0160 mg	8.00

Certificate No: 220721441-1

As Left Data

Nominal Value&Suffix	Serial Number	True Mass	Conventional Mass	Uncertainty (mg, k = 2)	Tolerance	Density (g/cm³)
100 mg	B316238717	0.0999981 g	0.0999981 g	0.0025	0.0160 mg	8.00

Certificate No: 220721441-1

Standards and Comparators Used

Nominal Value&Suffix	Serial Number	Standard Set No.	Cal Due	Comparator Used	Cal Due	Procedure Used
100 mg	B316238717	X3	01-Jul-2024	A5XL-141	01-Jul-2024	Multi A-B

Comments

No remarks

1 As Found / 1 Total

Definitions

Nominal Value - The value as labeled on the weight or defined by shape in accordance with OIML R111 for milligram weights.

True Mass - The mass value of the weight if measured in a vacuum.

Conventional Mass - For a mass at 20 °C, "Conventional Mass" is the mass of a reference standard of density 8000 kg/m³ which it balances in air with a density of 1.2 kg/m³. This value should be referenced when testing the accuracy of a weighing device using any of the nominal values contained in this certificate. The As Found results will equal the As Left in cases where no adjustment or replacement was required.

Uncertainty - All Uncertainty values are reported at approximately 95% confidence level (k=2). The uncertainty value does not include a component for the affects due to magnetism.

Tolerance - The acceptable range of deviation (positive and negative) from the nominal value, including the uncertainty, as defined by ASTM and OIML for the respective classes.

Density - The assumed density of the material used by the manufacturer.

Calibration Process - This calibration was performed in the Level I Mass Metrology Laboratory at 201 Wolf Dr Thorofare, New Jersey 08086 unless otherwise noted in Comments.

OOT - The As Found measurement result combined with the uncertainty exceeded the tolerance for the specified weight class.

A - Weight was adjusted after As Found testing to within the appropriate tolerance class.

R - The received weight was replaced due to an out of tolerance condition and the weight was not adjustable or the weight for this nominal value was missing.

Certificate No: 220721441A-1

METTLER TOLEDO

METTLER-TOLEDO, LLC
201 Wolf Dr
Thorofare NJ 08086
1-800-METTLER

NVLAP® CALIBRATION NVLAP LAB CODE 105013-0

ilac-MRA

Mass Calibration Certificate

Customer Information

Customer Name:	Stove Builder International, Inc.	*City:*	
Address:	250 rue de Copenhauge St.-Augustin-de-Desmaures	*State / Province:*	QC
Purchase Order:	220719397	*Zip / Postal Code:*	G3A 2H3

Measurement and Test Equipment Identification

Serial Number:	B316238717	*Date Received:*	05-Oct-2023
Manufacturer:	Mettler Toledo	*Condition:*	Good
Asset Number:	SBI-238	*Tolerance Class:*	OIML R111 Class F1

Environmental Conditions

Temperature: 21.56 °C *Barometric Pressure:* 756.64 mm Hg *Relative Humidity:* 44 %RH

The standards used to perform this calibration have been compared to reference mass standards that are traceable to the SI through the National Institute of Standards and Technology under Test No 684/O-0000036014-22.

The weights calibrated for this report have been calibrated in accordance with the calibration laboratory's process. The calibration performed meets the criteria as described in the current revisions of ASTM E617 and OIML R111. This calibration also meets specifications as outlined in ISO/IEC 17025, ANSI/NCSL Z540-1-1994, and applicable documents.

Calibration Date:	10-Oct-2023	*Next Calibration Due:*	10-Oct-2028
Calibration Technician:	Robotic Calibration	*Signature:*	

Lynn Dickerson, Metrologist
Approved Signatory 10-Oct-2023

Certificate No: 220721441A-1

As Found Data

Nominal Value&Suffix	Serial Number	True Mass	Conventional Mass	Uncertainty (mg, k = 2)	Tolerance	Density (g/cm³)
10 g	B316238717	10.000079 g	10.000069 g	0.012	0.200 mg	7.95

Certificate No: 220721441A-1

As Left Data

Nominal Value&Suffix	Serial Number	True Mass	Conventional Mass	Uncertainty (mg, k = 2)	Tolerance	Density (g/cm^3)
10 g	B316238717	10.000079 g	10.000069 g	0.012	0.200 mg	7.95

Certificate No: 220721441A-1

Standards and Comparators Used

Nominal Value&Suffix	Serial Number	Standard Set No.	Cal Due	Comparator Used	Cal Due	Procedure Used
10 g	B316238717	T3	01-Jul-2024	AX206-142	01-Jul-2024	Multi A-B

Comments

No remarks

1 As Found / 1 Total

Definitions

Nominal Value - The value as labeled on the weight or defined by shape in accordance with OIML R111 for milligram weights.

True Mass - The mass value of the weight if measured in a vacuum.

Conventional Mass - For a mass at 20 °C, "Conventional Mass" is the mass of a reference standard of density 8000 kg/m³ which it balances in air with a density of 1.2 kg/m³. This value should be referenced when testing the accuracy of a weighing device using any of the nominal values contained in this certificate. The As Found results will equal the As Left in cases where no adjustment or replacement was required.

Uncertainty - All Uncertainty values are reported at approximately 95% confidence level (k=2). The uncertainty value does not include a component for the affects due to magnetism.

Tolerance - The acceptable range of deviation (positive and negative) from the nominal value, including the uncertainty, as defined by ASTM and OIML for the respective classes.

Density - The assumed density of the material used by the manufacturer.

Calibration Process - This calibration was performed in the Level I Mass Metrology Laboratory at 201 Wolf Dr Thorofare, New Jersey 08086 unless otherwise noted in Comments.

OOT - The As Found measurement result combined with the uncertainty exceeded the tolerance for the specified weight class.

A - Weight was adjusted after As Found testing to within the appropriate tolerance class.

R - The received weight was replaced due to an out of tolerance condition and the weight was not adjustable or the weight for this nominal value was missing.

CERTIFICATE OF CALIBRATION

ACCREDITED
CALIBRATION
CERT #2260.01

Certificate Number: 2023001259

Manufacturer:	Dwyer Instruments Inc.	***RMA:***	AC23021162
Model:	MS-121-LCD	***Workorder:***	2023001259
Description:	Digital Pressure Gauge	***Barcode:***	AL0015073-P
Serial:	E52U01007411	***Received Conditions:***	In Tolerance
ID:	SBI-248	***Calibration Date:***	27-Feb-2023
Customer:	STOVE BUILDER INTERNATIONAL INC. 250 RUE DE COPENHAGUE ST-AUGUSTIN-DE-DESMAURES QC G3A 2H3	***Calibration Due:***	27-Feb-2024
		Temperature:	22.12°C
		Humidity:	15.5%RH

STATEMENT OF UNCERTAINTY: The reported expanded uncertainty of measurement is stated as the standard measurement uncertainty multiplied by the coverage factor K = 2, which for a normal distribution corresponds to a coverage probability of approximately 95 percent. Alpha Controls & Instrumentation Inc. certifies this instrument was calibrated on the date shown using standards traceable to NIST /NRC or accepted intrinsic standards and in compliance with ISO/IEC-17025:2017 and ANSI/NCSL Z540-1.

Any statement of compliance is made without taking measurement uncertainty into account and is based on UUT performance against required tolerance only. The customer must ensure equipment calibrated meets the intended use.

Tolerance is based on manufacturer specification if not stated otherwise . Calibration results relate to items calibrated only.

This certificate shall not be reproduced except in full without written approval of Alpha Controls and Instrumentation Inc .

Functional tests are not covered by our scope of accreditation.

STANDARDS USED

Description	***Model***	***ID***	***Cal Date***	***Due Date***
Multimeter	Fluke 8845A	ELC-MTR-04	21-Feb-2023	21-Feb-2024
Low Pressure Calibrator	Ruska 7250LP	PRE-CAL-06	07-Mar-2022	31-Mar-2023

Notes: None.

Performed by: Anthony Morra
Technician
(digitally signed on 27-Feb-2023 12:22 pm)

QA Reviewed by: Slava Peciurov
Lab Manager
(digitally signed on 27-Feb-2023 3:29 pm)

Form: ROC101 Rev 9.3b

Procedure: Dwyer MS-121-LCD: 0-0.25 inH2O /7520LP,8845A (1.0.A) **Found / Left (Pass)**

Test Description	True Value	Test Results	Tolerance	Lower Limit	Upper Limit	Status	Uncertainty
Range: 0 to 0.25 inH2O							
Output signal: 4 to 20 mA							
PRESSURE TEST							
Display Reading						-.0004	
Output @ 0.0000 inH2O, mA						3.996	
0.0000 inH2O	0.0000 inH2O	-0.0005 inH2O	±0.0025 inH2O	-0.0025 inH2O	0.0025 inH2O	Pass	1.5e-004 inH2O
Display Reading						.0610	
Output @ 0.0625 inH2O, mA						7.85	
0.0625 inH2O	0.0625 inH2O	0.0610 inH2O	±0.0025 inH2O	0.0600 inH2O	0.0650 inH2O	Pass	1.5e-004 inH2O
Display Reading						.123	
Output @ 0.1250 inH2O, mA						11.85	
0.1250 inH2O	0.1250 inH2O	0.1230 inH2O	±0.0025 inH2O	0.1225 inH2O	0.1275 inH2O	Pass	1.5e-004 inH2O
Display Reading						.1865	
Output @ 0.1875 inH2O, mA						15.851	
0.1875 inH2O	0.1875 inH2O	0.1865 inH2O	±0.0025 inH2O	0.1850 inH2O	0.1900 inH2O	Pass	1.5e-004 inH2O
Display Reading						.2486	
Output @ 0.2500 inH2O, mA						19.852	
0.2500 inH2O	0.2500 inH2O	0.2485 inH2O	±0.0025 inH2O	0.2475 inH2O	0.2525 inH2O	Pass	1.5e-004 inH2O
Display Reading						.1864	
Output @ 0.1875 inH2O, mA						15.892	
0.1875 inH2O	0.1875 inH2O	0.1864 inH2O	±0.0025 inH2O	0.1850 inH2O	0.1900 inH2O	Pass	1.5e-004 inH2O
Display Reading						.1231	
Output @ 0.1250 inH2O, mA						11.856	
0.1250 inH2O	0.1250 inH2O	0.1231 inH2O	±0.0025 inH2O	0.1225 inH2O	0.1275 inH2O	Pass	1.5e-004 inH2O
Display Reading						0.061	
Output @ 0.0625 inH2O, mA						7.921	
0.0625 inH2O	0.0625 inH2O	0.0610 inH2O	±0.0025 inH2O	0.0600 inH2O	0.0650 inH2O	Pass	1.5e-004 inH2O
Display Reading						-.0002	
Output @ 0.0000 inH2O, mA						3.996	
0.0000 inH2O	0.0000 inH2O	-0.0002 inH2O	±0.0025 inH2O	-0.0025 inH2O	0.0025 inH2O	Pass	1.5e-004 inH2O

END OF CERTIFICATE

CERTIFICATE OF CALIBRATION

ACCREDITED
CALIBRATION
CERT #2260.01

Certificate Number: 2023001260

Manufacturer:	Dwyer Instruments Inc.	***RMA:***	AC23021162
Model:	MS-121-LCD	***Workorder:***	2023001260
Description:	Digital Pressure Gauge	***Barcode:***	AL0015070-P
Serial:	E52U0100523	***Received Conditions:***	In Tolerance
ID:	SBI-250	***Calibration Date:***	27-Feb-2023
Customer:	STOVE BUILDER INTERNATIONAL INC. 250 RUE DE COPENHAGUE ST-AUGUSTIN-DE-DESMAURES QC G3A 2H3	***Calibration Due:***	27-Feb-2024
		Temperature:	21.89°C
		Humidity:	16.3%RH

STATEMENT OF UNCERTAINTY: The reported expanded uncertainty of measurement is stated as the standard measurement uncertainty multiplied by the coverage factor K = 2, which for a normal distribution corresponds to a coverage probability of approximately 95 percent. Alpha Controls & Instrumentation Inc. certifies this instrument was calibrated on the date shown using standards traceable to NIST /NRC or accepted intrinsic standards and in compliance with ISO/IEC-17025:2017 and ANSI/NCSL Z540-1.

Any statement of compliance is made without taking measurement uncertainty into account and is based on UUT performance against required tolerance only. The customer must ensure equipment calibrated meets the intended use.

Tolerance is based on manufacturer specification if not stated otherwise. Calibration results relate to items calibrated only.

This certificate shall not be reproduced except in full without written approval of Alpha Controls and Instrumentation Inc.

Functional tests are not covered by our scope of accreditation.

STANDARDS USED

Description	***Model***	***ID***	***Cal Date***	***Due Date***
Multimeter	Fluke 8845A	ELC-MTR-04	21-Feb-2023	21-Feb-2024
Low Pressure Calibrator	Ruska 7250LP	PRE-CAL-06	07-Mar-2022	31-Mar-2023

Notes: Bad display segment second ms digit.

Performed by: Anthony Morra
Technician
(digitally signed on 27-Feb-2023 1:11 pm)

QA Reviewed by: Slava Peciurov
Lab Manager
(digitally signed on 27-Feb-2023 3:29 pm)

Form: ROC101 Rev 9.3t

Quality Management System is assessed and registered by Intertek as conforming to the requirements of ISO9001

Procedure: Dwyer MS-121-LCD: 0-0.25 inH2O /7520LP,8846A (1.0.A) **Found / Left (Pass)**

Test Description	True Value	Test Results	Tolerance	Lower Limit	Upper Limit	Status	Uncertainty
Range: 0 to 0.25 inH2O							
Output signal: 4 to 20 mA							
PRESSURE TEST							
Display Reading						.001	
Output @ 0.0000 inH2O, mA						4.01	
0.0000 inH2O	0.0000 inH2O	0.0005 inH2O	±0.0025 inH2O	-0.0025 inH2O	0.0025 inH2O	Pass	1.5e-004 inH2O
Display Reading						.061	
Output @ 0.0625 inH2O, mA						7.9	
0.0625 inH2O	0.0625 inH2O	0.0610 inH2O	±0.0025 inH2O	0.0600 inH2O	0.0650 inH2O	Pass	1.5e-004 inH2O
Display Reading						.1230	
Output @ 0.1250 inH2O, mA						11.87	
0.1250 inH2O	0.1250 inH2O	0.1230 inH2O	±0.0025 inH2O	0.1225 inH2O	0.1275 inH2O	Pass	1.5e-004 inH2O
Display Reading						.186	
Output @ 0.1875 inH2O, mA						15.904	
0.1875 inH2O	0.1875 inH2O	0.1860 inH2O	±0.0025 inH2O	0.1850 inH2O	0.1900 inH2O	Pass	1.5e-004 inH2O
Display Reading						.24	
Output @ 0.2500 inH2O, mA						19.872	
0.2500 inH2O	0.2500 inH2O	0.2480 inH2O	±0.0025 inH2O	0.2475 inH2O	0.2525 inH2O	Pass	1.5e-004 inH2O
Display Reading						.1861	
Output @ 0.1875 inH2O, mA						15.91	
0.1875 inH2O	0.1875 inH2O	0.1861 inH2O	±0.0025 inH2O	0.1850 inH2O	0.1900 inH2O	Pass	1.5e-004 inH2O
Display Reading						.123	
Output @ 0.1250 inH2O, mA						11.872	
0.1250 inH2O	0.1250 inH2O	0.1230 inH2O	±0.0025 inH2O	0.1225 inH2O	0.1275 inH2O	Pass	1.5e-004 inH2O
Display Reading						.0615	
Output @ 0.0625 inH2O, mA						7.936	
0.0625 inH2O	0.0625 inH2O	0.0615 inH2O	±0.0025 inH2O	0.0600 inH2O	0.0650 inH2O	Pass	1.5e-004 inH2O
Display Reading						.001	
Output @ 0.0000 inH2O, mA						4.058	
0.0000 inH2O	0.0000 inH2O	0.0010 inH2O	±0.0025 inH2O	-0.0025 inH2O	0.0025 inH2O	Pass	1.5e-004 inH2O

END OF CERTIFICATE

CERTIFICATE OF CALIBRATION

ACCREDITED
CALIBRATION
CERT #2260.01

Certificate Number: 2023000439

Manufacturer:	Dwyer Instruments Inc.	***RMA:***	AC23011212
Model:	626-06-GH-PA-E1-S1	***Workorder:***	2023000439
Description:	Pressure Transmitter	***Barcode:***	AL00023736-P
Serial:	N/A	***Received Conditions:***	In Tolerance
ID:	SBI-298	***Calibration Date:***	06-Feb-2023
Customer:	STOVE BUILDER INTERNATIONAL INC. 250 RUE DE COPENHAGUE ST-AUGUSTIN-DE-DESMAURES QC G3A 2H3	***Calibration Due:***	06-Feb-2024
		Temperature:	21.96ºC
		Humidity:	17.1%RH

STATEMENT OF UNCERTAINTY: The reported expanded uncertainty of measurement is stated as the standard measurement uncertainty multiplied by the coverage factor K = 2, which for a normal distribution corresponds to a coverage probability of approximately 95 percent. Alpha Controls & Instrumentation Inc. certifies this instrument was calibrated on the date shown using standards traceable to NIST /NRC or accepted intrinsic standards and in compliance with ISO/IEC-17025:2017 and ANSI/NCSL Z540-1.

Any statement of compliance is made without taking measurement uncertainty into account and is based on UUT performance against required tolerance only. The customer must ensure equipment calibrated meets the intended use.

Tolerance is based on manufacturer specification if not stated otherwise . Calibration results relate to items calibrated only.

This certificate shall not be reproduced except in full without written approval of Alpha Controls and Instrumentation Inc .

Functional tests are not covered by our scope of accreditation.

STANDARDS USED

Description	***Model***	***ID***	***Cal Date***	***Due Date***
Multimeter	Fluke 8845A	ELC-MTR-04	12-Jan-2022	28-Feb-2023
Pressure Controller/Calibrator	DH Instruments PPC3	PRE-CAL-04	14-Jun-2022	30-Jun-2023

Notes: None

Performed by: Tony Wheaton
Technician
(digitally signed on 06-Feb-2023 11:16 am)

QA Reviewed by: Slava Peciurov
Lab Manager
(digitally signed on 06-Feb-2023 1:32 pm)

Form: ROC101 Rev 9.3b

Quality Management System is assessed and registered by Intertek as conforming to the requirements of ISO9001

Procedure: Pressure Transmitter: psi/4-20mA: CAL VER /PPC3,8845 (1.1.A) **FOUND-LEFT (Pass)**

Test Description	True Value	Test Results	Tolerance	Lower Limit	Upper Limit	Status	Uncertainty
Calibrated in the vertical position.							
Range: 0 to 5 psi							
Output: 4-20 mA							
PRESSURE TEST							
Output=4.119 mA							
0.0000 psi	0.0000 psi	0.037 psi	±0.0400 psi	-0.040 psi	0.040 psi	Pass	4.6e-003 psi
Output=8.11 mA							
1.2500 psi	1.2500 psi	1.284 psi	±0.0400 psi	1.210 psi	1.290 psi	Pass	5.8e-003 psi
Output=12.102 mA							
2.5000 psi	2.5000 psi	2.532 psi	±0.0400 psi	2.460 psi	2.540 psi	Pass	7.0e-003 psi
Output=16.092 mA							
3.7500 psi	3.7500 psi	3.779 psi	±0.0400 psi	3.710 psi	3.790 psi	Pass	8.2e-003 psi
Output=20.116 mA							
5.0000 psi	5.0000 psi	5.036 psi	±0.0400 psi	4.960 psi	5.040 psi	Pass	9.5e-003 psi
Output=16.091 mA							
3.7500 psi	3.7500 psi	3.779 psi	±0.0400 psi	3.710 psi	3.790 psi	Pass	8.2e-003 psi
Output=12.074 mA							
2.5000 psi	2.5000 psi	2.523 psi	±0.0400 psi	2.460 psi	2.540 psi	Pass	7.0e-003 psi
Output=8.063 mA							
1.2500 psi	1.2500 psi	1.270 psi	±0.0400 psi	1.210 psi	1.290 psi	Pass	5.8e-003 psi
Output=4.116 mA							
0.0000 psi	0.0000 psi	0.037 psi	±0.0400 psi	-0.040 psi	0.040 psi	Pass	4.6e-003 psi

END OF CERTIFICATE

CERTIFICATE OF CALIBRATION

ACCREDITED
CALIBRATION
CERT #2260.01

Certificate Number: 2023001261

Manufacturer:	Dwyer Instruments Inc.	***RMA:***	AC23021162
Model:	626-06-GH-P1-E1-S1	***Workorder:***	2023001261
Description:	Pressure Transmitter	***Barcode:***	AL00024176-P
Serial:	N/A	***Received Conditions:***	In Tolerance
ID:	SBI-299	***Calibration Date:***	23-Feb-2023
Customer:	STOVE BUILDER INTERNATIONAL INC. 250 RUE DE COPENHAGUE ST-AUGUSTIN-DE-DESMAURES QC G3A 2H3	***Calibration Due:***	23-Feb-2024
		Temperature:	20.56°C
		Humidity:	15.8%RH

STATEMENT OF UNCERTAINTY: The reported expanded uncertainty of measurement is stated as the standard measurement uncertainty multiplied by the coverage factor K = 2, which for a normal distribution corresponds to a coverage probability of approximately 95 percent. Alpha Controls & Instrumentation Inc. certifies this Instrument was calibrated on the date shown using standards traceable to NIST /NRC or accepted intrinsic standards and in compliance with ISO/IEC-17025:2017 and ANSI/NCSL Z540-1.

Any statement of compliance is made without taking measurement uncertainty into account and is based on UUT performance against required tolerance only. The customer must ensure equipment calibrated meets the intended use.

Tolerance is based on manufacturer specification if not stated otherwise . Calibration results relate to items calibrated only.

This certificate shall not be reproduced except in full without written approval of Alpha Controls and Instrumentation Inc .

Functional tests are not covered by our scope of accreditation.

STANDARDS USED

Description	*Model*	*ID*	*Cal Date*	*Due Date*
Multimeter	Fluke 8845A	ELC-MTR-04	21-Feb-2023	21-Feb-2024
Pressure Controller/Calibrator	DH Instruments PPC3	PRE-CAL-04	14-Jun-2022	30-Jun-2023

Notes: None.

Performed by: Anthony Morra
Technician
(digitally signed on 23-Feb-2023 3:39 pm)

QA Reviewed by: Slava Peciurov
Lab Manager
(digitally signed on 23-Feb-2023 4:11 pm)

Form: ROC101 Rev 9.3b

Quality Management System is assessed and registered by Intertek as conforming to the requirements of ISO9001

Procedure: Pressure Transmitter: psi/4-20mA: CAL VER /PPC3,8845 (1.1.A) **FOUND-LEFT (Pass)**

Test Description	True Value	Test Results	Tolerance	Lower Limit	Upper Limit	Status	Uncertainty
Calibrated in the vertical position.							
Range: 0 to 5 psi							
Output: 4-20 mA							
PRESSURE TEST							
Output=4.043 mA							
0.0000 psi	0.0000 psi	0.013 psi	±0.0300 psi	-0.030 psi	0.030 psi	Pass	4.5e-003 psi
Output=8.007 mA							
1.2500 psi	1.2500 psi	1.252 psi	±0.0300 psi	1.220 psi	1.280 psi	Pass	5.8e-003 psi
Output=12.004 mA							
2.5000 psi	2.5000 psi	2.501 psi	±0.0300 psi	2.470 psi	2.530 psi	Pass	7.0e-003 psi
Output=16.02 mA							
3.7500 psi	3.7500 psi	3.756 psi	±0.0300 psi	3.720 psi	3.780 psi	Pass	8.2e-003 psi
Output=20.064 mA							
5.0000 psi	5.0000 psi	5.020 psi	±0.0300 psi	4.970 psi	5.030 psi	Pass	9.5e-003 psi
Output=16.034 mA							
3.7500 psi	3.7500 psi	3.761 psi	±0.0300 psi	3.720 psi	3.780 psi	Pass	8.2e-003 psi
Output=12.013 mA							
2.5000 psi	2.5000 psi	2.504 psi	±0.0300 psi	2.470 psi	2.530 psi	Pass	7.0e-003 psi
Output=8.001 mA							
1.2500 psi	1.2500 psi	1.250 psi	±0.0300 psi	1.220 psi	1.280 psi	Pass	5.8e-003 psi
Output=4.044 mA							
0.0000 psi	0.0000 psi	0.013 psi	±0.0300 psi	-0.030 psi	0.030 psi	Pass	4.5e-003 psi

END OF CERTIFICATE

CERTIFICATE OF CALIBRATION

ACCREDITED
CALIBRATION
CERT #2260.01

Certificate Number: 2022009111

Manufacturer:	Dwyer Instruments Inc.	***RMA:***	AC22111890
Model:	628-00C-GH-P1-E1-S1	***Workorder:***	2022009111
Description:	Pressure Transmitter	***Barcode:***	AL00023154-P
Serial:	N/A	***Received Conditions:***	In Tolerance
ID:	SBI-303	***Calibration Date:***	13-Dec-2022
Customer:	STOVE BUILDER INTERNATIONAL INC. 250 RUE DE COPENHAGUE ST-AUGUSTIN-DE-DESMAURES QC G3A 2H3	***Calibration Due:***	13-Dec-2023
		Temperature:	20.25°C
		Humidity:	16.5%RH

STATEMENT OF UNCERTAINTY: The reported expanded uncertainty of measurement is stated as the standard measurement uncertainty multiplied by the coverage factor K = 2, which for a normal distribution corresponds to a coverage probability of approximately 95 percent. Alpha Controls & Instrumentation Inc. certifies this instrument was calibrated on the date shown using standards traceable to NIST/NRC or accepted intrinsic standards and in compliance with ISO/IEC-17025:2017 and ANSI/NCSL Z540-1.

Any statement of compliance is made without taking measurement uncertainty into account and is based on UUT performance against required tolerance only. The customer must ensure equipment calibrated meets the intended use.

Tolerance is based on manufacturer specification if not stated otherwise. Calibration results relate to items calibrated only.

STANDARDS USED

Description	***Model***	***ID***	***Cal Date***	***Due Date***
Multimeter	Fluke 8845A	ELC-MTR-04	12-Jan-2022	31-Jan-2023
Pressure Controller/Calibrator	DH Instruments PPC3	PRE-CAL-04	14-Jun-2022	30-Jun-2023

Notes: None.

Performed by: Tony Wheaton
Technician
(digitally signed on 13-Dec-2022 11:40 am)

QA Reviewed by: Slava Peciurov
Lab Manager
(digitally signed on 13-Dec-2022 4:36 pm)

Form: ROC101 Rev 9.3

Quality Management System is assessed and registered by Intertek as conforming to the requirements of ISO9001

Procedure: Pressure Transducer: BFSL: CAL VER (1.3.A) **FOUND-LEFT (Pass)**

RANGE: -30 inHg to 0 inHg

OUTPUT: 4mA to 20mA

EXCITATION: 24 V

ACCURACY: 0.25 %FS

PRESSURE RAW DATA

@ 0 %FS: -28.000inHg ---> 5.1977mA

@ 25 %FS: -21.000inHg ---> 8.9104mA

@ 50 %FS: -14.000inHg ---> 12.6187mA

@ 75 %FS: -7.000inHg ---> 16.3232mA

@ 100 %FS: -0.000inHg ---> 20.0241mA

BEST FIT STRAIGHT LINE (BFSL) COEFFICIENTS

SLOPE: 0.52951

INTERCEPT: 20.02794

PRESSURE BFSL COMPARISON

Test Description	True Value	Test Results	Tolerance	Lower Limit	Upper Limit	Status	Uncertainty
0 %FS	5.2020 mA	5.198 mA	±0.0400 mA	5.162 mA	5.242 mA	Pass	5.8e-007 A
25 %FS	8.908 mA	8.91 mA	±0.040 mA	8.87 mA	8.95 mA	Pass	5.8e-006 A
50 %FS	12.6150 mA	12.619 mA	±0.0400 mA	12.575 mA	12.655 mA	Pass	1.1e-006 A
75 %FS	16.3210 mA	16.323 mA	±0.0400 mA	16.281 mA	16.361 mA	Pass	1.4e-006 A
100 %FS	20.0280 mA	20.024 mA	±0.0400 mA	19.988 mA	20.068 mA	Pass	1.7e-006 A

CALCULATED PARAMETERS

ZERO: 4.1426mA

SPAN: 20.0279mA

SENSITIVITY: 0.5295mA/inHg

END OF CERTIFICATE

Certificate No: 220721441B-1

METTLER TOLEDO

METTLER-TOLEDO, LLC
201 Wolf Dr
Thorofare NJ 08086
1-800-METTLER

NVLAP® CALIBRATION NVLAP LAB CODE 105013-0

ilac-MRA

Mass Calibration Certificate

Customer Information

Customer Name:	Stove Builder International, Inc.	*City:*	
Address:	250 rue de Copenhauge St.-Augustin-de-Desmaures	*State / Province:*	QC
Purchase Order:	220719397	*Zip / Postal Code:*	G3A 2H3

Measurement and Test Equipment Identification

Serial Number:	B739752165	*Date Received:*	05-Oct-2023
Manufacturer:	Mettler Toledo	*Condition:*	Good
Asset Number:	SBI-312	*Tolerance Class:*	OIML R111 Class E2

Environmental Conditions

Temperature: 21.63 °C *Barometric Pressure:* 756.52 mm Hg *Relative Humidity:* 46 %RH

The standards used to perform this calibration have been compared to reference mass standards that are traceable to the SI through the National Institute of Standards and Technology under Test No 684/O-0000036014-22.

The weights calibrated for this report have been calibrated in accordance with the calibration laboratory's process. The calibration performed meets the criteria as described in the current revisions of ASTM E617 and OIML R111. This calibration also meets specifications as outlined in ISO/IEC 17025, ANSI/NCSL Z540-1-1994, and applicable documents.

Calibration Date:	10-Oct-2023	*Next Calibration Due:*	10-Oct-2028
Calibration Technician:	Robotic Calibration	*Signature:*	

Lynn Dickerson, Metrologist
Approved Signatory 10-Oct-2023

Certificate No: 220721441B-1

As Found Data

Nominal Value&Suffix	Serial Number	True Mass	Conventional Mass	Uncertainty (mg, k = 2)	Tolerance	Density (g/cm^3)
200 g	B739752165	200.000110 g	200.000110 g	0.060	0.300 mg	8.00

1 As Found / 1 Total

Certificate No: 220721441B-1

As Left Data

Nominal Value&Suffix	Serial Number	True Mass	Conventional Mass	Uncertainty (mg, k = 2)	Tolerance	Density (g/cm^3)
200 g	B739752165	200.000110 g	200.000110 g	0.060	0.300 mg	8.00

1 As Found / 1 Total

Certificate No: 220721441B-1

Standards and Comparators Used

Nominal Value&Suffix	Serial Number	Standard Set No.	Cal Due	Comparator Used	Cal Due	Procedure Used
200 g	B739752165	T3	01-Jul-2024	AX206-142	01-Jul-2024	Multi A-B

Comments

No remarks

1 As Found / 1 Total

Definitions

Nominal Value - The value as labeled on the weight or defined by shape in accordance with OIML R111 for milligram weights.

True Mass - The mass value of the weight if measured in a vacuum.

Conventional Mass - For a mass at 20 °C, "Conventional Mass" is the mass of a reference standard of density 8000 kg/m³ which it balances in air with a density of 1.2 kg/m³. This value should be referenced when testing the accuracy of a weighing device using any of the nominal values contained in this certificate. The As Found results will equal the As Left in cases where no adjustment or replacement was required.

Uncertainty - All Uncertainty values are reported at approximately 95% confidence level (k=2). The uncertainty value does not include a component for the affects due to magnetism.

Tolerance - The acceptable range of deviation (positive and negative) from the nominal value, including the uncertainty, as defined by ASTM and OIML for the respective classes.

Density - The assumed density of the material used by the manufacturer.

Calibration Process - This calibration was performed in the Level I Mass Metrology Laboratory at 201 Wolf Dr Thorofare, New Jersey 08086 unless otherwise noted in Comments.

OOT - The As Found measurement result combined with the uncertainty exceeded the tolerance for the specified weight class.

A - Weight was adjusted after As Found testing to within the appropriate tolerance class.

R - The received weight was replaced due to an out of tolerance condition and the weight was not adjustable or the weight for this nominal value was missing.

CERTIFICATE OF CALIBRATION

ACCREDITED
CALIBRATION
CERT #2260.01

Certificate Number: 2023004143

Manufacturer:	Cole-Parmer	***RMA:***	AC23051668
Model:	4199	***Workorder:***	2023004143
Description:	Barometer	***Barcode:***	AL00041365-P
Serial:	200392766	***Received Conditions:***	In Tolerance
ID:	SBI-325	***Calibration Date:***	24-May-2023
Customer:	STOVE BUILDER INTERNATIONAL INC. 250 RUE DE COPENHAGUE ST-AUGUSTIN-DE-DESMAURES QC G3A 2H3	***Calibration Due:***	24-May-2024
		Temperature:	21.41°C
		Humidity:	22.16%RH

STATEMENT OF UNCERTAINTY: The reported expanded uncertainty of measurement is stated as the standard measurement uncertainty multiplied by the coverage factor K = 2, which for a normal distribution corresponds to a coverage probability of approximately 95 percent. Alpha Controls & Instrumentation Inc. certifies this instrument was calibrated on the date shown using standards traceable to NIST /NRC or accepted intrinsic standards and in compliance with ISO/IEC-17025:2017 and ANSI/NCSL Z540-1.

Any statement of compliance is made without taking measurement uncertainty into account and is based on UUT performance against required tolerance only. The customer must ensure equipment calibrated meets the intended use.

Tolerance is based on manufacturer specification if not stated otherwise. Calibration results relate to items calibrated only.

This certificate shall not be reproduced except in full without written approval of Alpha Controls and Instrumentation Inc.

Functional tests are not covered by our scope of accreditation.

STANDARDS USED

Description	***Model***	***ID***	***Cal Date***	***Due Date***
Pressure Controller/Calibrator	DH Instruments PPC3	PRE-CAL-04	14-Jun-2022	30-Jun-2023
Reference Pressure Monitor	Fluke RPM4	PRE-MTR-04	14-Jun-2022	30-Jun-2023

Notes: Adjusted trim pot.

Performed by: Ellie Hejazi
Technician
(digitally signed on 24-May-2023 9:16 am)

QA Reviewed by: Slava Peciurov
Lab Manager
(digitally signed on 24-May-2023 9:56 am)

Form: ROC101 Rev 9.3.b

Quality Management System is assessed and registered by Intertek as conforming to the requirements of ISO9001

Procedure: Pressure/Vacuum: CAL VER /DHI PPC3 (2.3.A) — **FOUND (Pass)**

Test Description	True Value	Test Results	Tolerance	Lower Limit	Upper Limit	Status	Uncertainty
PRESSURE TEST							
MEASUREMENT UNITS: hPa							
1000.91	1000.9	996	±5.0	996	1006	Pass	6.0e-001

Procedure: Pressure/Vacuum: CAL VER /DHI PPC3 (2.3.A) — **LEFT (Pass)**

Test Description	True Value	Test Results	Tolerance	Lower Limit	Upper Limit	Status	Uncertainty
PRESSURE TEST							
MEASUREMENT UNITS: hPa							
999.4	999.4	998	±5.0	994	1004	Pass	6.0e-001

END OF CERTIFICATE

CERTIFICATE OF CALIBRATION

ACCREDITED CALIBRATION CERT #2260.01

Certificate Number: 2022009107

Manufacturer:	Ashcroft Inc.	***RMA:***	AC22111890
Model:	K17M0242F20#&VAC	***Workorder:***	2022009107
Description:	Vacuum Transmitter	***Barcode:***	AL00041910-P
Serial:	21027014	***Received Conditions:***	In Tolerance
ID:	SBI-372	***Calibration Date:***	13-Dec-2022
Customer:	STOVE BUILDER INTERNATIONAL INC. 250 RUE DE COPENHAGUE ST-AUGUSTIN-DE-DESMAURES QC G3A 2H3	***Calibration Due:***	13-Dec-2023
		Temperature:	20.7°C
		Humidity:	16.7%RH

STATEMENT OF UNCERTAINTY: The reported expanded uncertainty of measurement is stated as the standard measurement uncertainty multiplied by the coverage factor K = 2, which for a normal distribution corresponds to a coverage probability of approximately 95 percent. Alpha Controls & Instrumentation Inc. certifies this instrument was calibrated on the date shown using standards traceable to NIST/NRC or accepted intrinsic standards and in compliance with ISO/IEC-17025:2017 and ANSI/NCSL Z540-1.

Any statement of compliance is made without taking measurement uncertainty into account and is based on UUT performance against required tolerance only. The customer must ensure equipment calibrated meets the intended use.

Tolerance is based on manufacturer specification if not stated otherwise. Calibration results relate to items calibrated only.

STANDARDS USED

Description	***Model***	***ID***	***Cal Date***	***Due Date***
Multimeter	Fluke 8845A	ELC-MTR-04	12-Jan-2022	31-Jan-2023
Pressure Controller/Calibrator	DH Instruments PPC3	PRE-CAL-04	14-Jun-2022	30-Jun-2023

Notes: None.

Performed by: Tony Wheaton
Technician
(digitally signed on 13-Dec-2022 1:41 pm)

QA Reviewed by: Slava Peciurov
Lab Manager
(digitally signed on 13-Dec-2022 4:36 pm)

Form: ROC101 Rev 9.3

Quality Management System is assessed and registered by Intertek as conforming to the requirements of ISO9001

Procedure: Pressure Transducer: BFSL: CAL VER (1.3.A) **FOUND-LEFT (Pass)**

Test Description	True Value	Test Results	Tolerance	Lower Limit	Upper Limit	Status	Uncertainty

RANGE: 0 inHg to -30 inHg

OUTPUT: 4mA to 20mA

EXCITATION: 24 V

ACCURACY: 0.4 %FS

PRESSURE RAW DATA

@ 0 %FS: -28.000inHg ---> 19.4408mA

@ 25 %FS: -21.000inHg ---> 15.6882mA

@ 50 %FS: -14.000inHg ---> 11.9311mA

@ 75 %FS: -7.000inHg ---> 8.1843mA

@ 100 %FS: -0.000inHg ---> 4.4309mA

BEST FIT STRAIGHT LINE (BFSL) COEFFICIENTS

SLOPE: -0.53605

INTERCEPT: 4.43032

PRESSURE BFSL COMPARISON

0 %FS	19.4400 mA	19.441 mA	±0.0640 mA	19.376 mA	19.504 mA	Pass	5.8e-007 A
25 %FS	15.6870 mA	15.688 mA	±0.0640 mA	15.623 mA	15.751 mA	Pass	2.0e-006 A
50 %FS	11.9350 mA	11.931 mA	±0.0640 mA	11.871 mA	11.999 mA	Pass	1.7e-006 A
75 %FS	8.1830 mA	8.184 mA	±0.0640 mA	8.119 mA	8.247 mA	Pass	1.3e-006 A
100 %FS	4.4300 mA	4.431 mA	±0.0640 mA	4.366 mA	4.494 mA	Pass	1.0e-006 A

CALCULATED PARAMETERS

ZERO: 4.4303mA

SPAN: 20.5118mA

SENSITIVITY: -0.536mA/inHg

END OF CERTIFICATE

mesurepro inc
106-86 boulevard des Entrprises
Boisbriand, Qc J7G2T3
Tél: 450 818 8895
www.mesurepro.ca

SCC Accredited LAB — LAB Accrédité CCN 832 — CLAS NRC·CNRC — CLAS 2016-04

Délivré à: / ***Delivred to:***

Fabricant de poêlesinternational Inc (SBI)
250 rue De Copenhague
St-Augustin-Desmaures, Qc G3A2h3

Certificat d'étalonnage/*Calibration certificate*
No E23-SBI-375
Tél que trouvé/As Found

Instrument étalonné/ Instrument calibrated			
Désignation/ designation :	Module d'acquisition	***Plage de mesure/ Range :***	1400°F
Marque/ Brand :	National Instrument	***Résolution/ readability :***	0,1°F
Type/ Model :	NI 9213	***Type de thermocouple/ Thermocouple Type:***	K
SN :	NA	***Affectation/ Allocation :***	NA
ID#:	SBI-375	***EMT utilisateur/ user tolerance :***	± 1°F
		Date d'étalonnage/ Calibration date :	25 mai 2023
		Prochain étalonnage/ Due date :	25 novembre 2023

Conditions d'environnement/ Test Conditions	
Température/Temperature :	72 °F
Humidité/Humidity :	35 %HR
Pression barométrique :	755 mmHg

Étalons utilisés/ Standards used

Instrument	***Type/ Model***	***Marque/ Brand***	***NS/ID#***	***Date d'étalonnage Calibration date***	***Prochain étalonnage Due Date***
Calibrateur de process	744	FLUKE	9448002	20 juil. 2021	20 juil. 2023
Thermohygrométre	HC2A-S3	ROTRONIC	20590052	7 septembre 2022	7 septembre 2024
Barométre	FB61291	Traceable	111576751	24 février 2023	24 février 2024

Le Service d'évaluation des laboratoires d'étalonnage (CLAS) du Conseil national de recherches du Canada (CNRC) a évalué et certifié la capacité d'étalonnage du laboratoire mesurepro inc et la traçabilité au Système international d'unités (SI) ou à des étalons acceptables selon le CLAS. Le présent certificat d'étalonnage est délivré conformément aux conditions de certification du CLAS et aux conditions d'accréditation du Conseil canadien des normes (CCN). Le CLAS et le CCN ne garantissent pas l'exactitude des étalonnages individuels effectués par les laboratoires accrédités. Les incertitudes élargies sont fonction du facteur de couverture k = 2, selon un degré de confiance d'environ 95 %, en supposant une répartition normale. Une étiquette mesurepro inc mentionnant la date d'étalonnage et celle de la prochaine intervention (à la demande du client) est apposée sur l'appareil à l'issue du présent étalonnage. Le droit d'auteur du présent certificat appartient au laboratoire mesurepro inc et doit être reproduit intégralement, à moins d'une autorisation écrite du laboratoire mesurepro inc.

Karim Bouyahia
Travaux effectués par/ *Performed By*

Date d'émission du certificat/ Date of issue : **25 mai 2023**

Le Directeur du Laboratoire/The Lab manager

mesurepro inc
106-86 boulevard des Entrprises
Boisbriand, Qc J7G2T3
Tél: 450 818 8895
www.mesurepro.ca

SCC Accredited LAB
LAB Accrédité CCN
832
CLAS NRC-CNRC
CLAS 2016-04

Délivré à:
Delivred to:

Fabricant de poêlesinternational Inc (SBI)
250 rue De Copenhague
St-Augustin-Desmaures, Qc G3A2h3

Certificat d'étalonnage/*Calibration certificate*
No E23-SBI-375

Résultat de l'étalonnage/ Calibration result

Procédure utilisée/ procedure used : *PC 7.2.70_Étalonnage des thermométre pas simulation*

Les résultats de l'étalonnage concernent l'instrument décrit à la section **«Instrument étalonné»**

Déclaration de conformité : Selon ILAC G8 - Simple Accéptation (W=0)

Justesse-Répétabilité-Incertitude élargie

Point de consigne	***Valeur Étalon***	***Valeur lue***	***Écart***	***Incertitude élargie (K-2)***	***Tolérance***	***Conformité***
Set point	*Standard value*	*Avant ajustage*	*deviation*	*Expanded uncertainty (K=2)*		*Conformity*
[°F]	**[°F]**	**[°F]**	**[°F]**	**±[°F]**	**±[°F]**	
70,00	**70,0**	**70,2**	**0,2**	**1,0**	**1**	**Conforme**
200,00	**200,0**	**200,1**	**0,1**	**1,0**	**1**	**Conforme**
600,00	**600,0**	**600,0**	**0,0**	**1,0**	**1**	**Conforme**
1000,00	**1000,0**	**1000,0**	**0,0**	**1,0**	**1**	**Conforme**
1400,00	**1400,0**	**1400,1**	**0,1**	**1,0**	**1**	**Conforme**

Fin du certificat d'étalonnage

CLAS 2009-02

CALIBRATION CERTIFICATE # 21658

Calibration date : 2023-10-13
Certificate issued : 2023-10-13

Stove Builder International
250, rue de Copenhague
Saint-Augustin-de-Desmaures, Québec, Canada
G3A 2H3

Calibration of
Positive displacement flow meter American Meter Company DTM-200A S/N : 90R054300

QUALITY PROGRAM CONFORMANCE

All calibrations are performed in accordance with Polycontrols Laboratory Quality Assurance Manual and conform to ISO/IEC 17025: 2017, ISO 9001 – 2015 and/or other quality requirements defined in customers purchase descriptions. The results are strictly valid for the device under test or calibration. If applicable, the decision rule is described in the certificate.

TRACEABILITY

The traceability for flow standard to the National Institute of Standards and Technology, NIST, is maintained by Fluke Corporation of Phoenix, Arizona and conform to ISO/IEC 17025, ANSI/NCSL Z540-1-1994, ISO-10012-1 and MIL-STD 45662A.

The Calibration Laboratory Assessment Service (CLAS) of the National Research Council of Canada (NRC) has assessed and certified specific calibration capabilities of this laboratory and traceability to the International System of Units (SI) or to standards acceptable to the CLAS program. This certificate of calibration is issued in accordance with the conditions of certification granted by CLAS and the conditions of accreditation granted by the Standards Council of Canada (SCC). Neither CLAS nor SCC guarantee the accuracy of individual calibrations by accredited laboratories.

CALIBRATION OF MEASURING AND TEST EQUIPMENT

For calibration measurement capability, please refer to the Canadian Calibration Network web page at the National Research Council of Canada. This laboratory is accredited by the Standards Council of Canada as part of the Calibration Laboratory Assessment Service (CLAS) program and is listed at nrc.canada.ca.

This document forms part of the Certificate of Accreditation issued by the Standards Council of Canada (SCC). The original version is available in the Directory of Accredited Laboratories on the SCC website at www.scc.ca.

CONDITION SUMMARY OF THE DEVICE UNDER TEST

Initial conditions	In good condition
Work done	Initial readings = Final readings, no adjustment Calibration of the instrument
Results	Final readings in tolerance
Remarks	Calibration frequency every 6 months

Carl Tessier - Dansereau

Carl Tessier Dansereau
Metrologist

Laboratory Manager

3650, Matte blvd. (Unit A-1), Brossard (Quebec), Canada, J4Y 2Z2
Tel: (450) 444-3600 Fax: (450) 444-1088 www.polycontrols.com

POLYCONTROLS

CLAS 2009-02

Calibration certificate # 21658

Serial Number:	90R054300	Test stand:	4
Calibration Date:	2023-10-13	Procedure:	POS-CAL-005
Instrument ID:	SBI-046	Decision rule:	Method #3

Standard equipment used for final calibration

Description	Model	Serial #	Traceability	Due date
Fluke molbloc_30 slpm	3E4-VCR-V-Q	2403	1500358529	2024-07-24
Fluke molbloc_5 slpm	5E3-VCR-V-Q	2473	1500358447	2024-07-25
Fluke molbox 1+	Molbox 1+	755+	1500358439	2024-07-21
RTD Mist	Mist	L00295	2022009672	2024-01-03
Module 44.5 PSI avec Baro 163671	Module 30	160659	2023003753	2024-05-18

Final specifications of the device under test		Calibration conditions	
Gas	Air	Gas	Air
Operation temperature	20 °C	Ambient temperature	22.7 °C
Inlet pressure		Ambient pressure	1012.55 mbar
Outlet pressure		Orientation	Horizontal
Reference temperature		Seals	
Reference pressure		Valve	
Range	0-200 ACFH		
Input/Output Signals	-		
Supply			
Accuracy ±2 %F.S.			

Final readings

Test Flow ACFH	Device under test ft³	Measured values Pressure PSIA	Temperature °C	Reference ft³	Calculated Reference ft³	Calculated Error ft³	Acceptable Error ft³	Uncertainty k = 2 ft³	TUR
4.8361	0.8090	14.6893	22.22	0.8015	0.8049	0.0041	0.6657	0.0021	>4
9.9425	1.6650	14.6901	22.25	1.6451	1.6522	0.0128	0.6647	0.0041	>4
15.0742	2.5200	14.6910	22.25	2.4995	2.5101	0.0099	0.6661	0.0084	>4
25.8528	4.3275	14.6953	22.11	4.2871	4.3019	0.0256	0.6656	0.0143	>4
40.7773	6.8170	14.7028	22.23	6.7516	6.7741	0.0429	0.6645	0.0225	>4

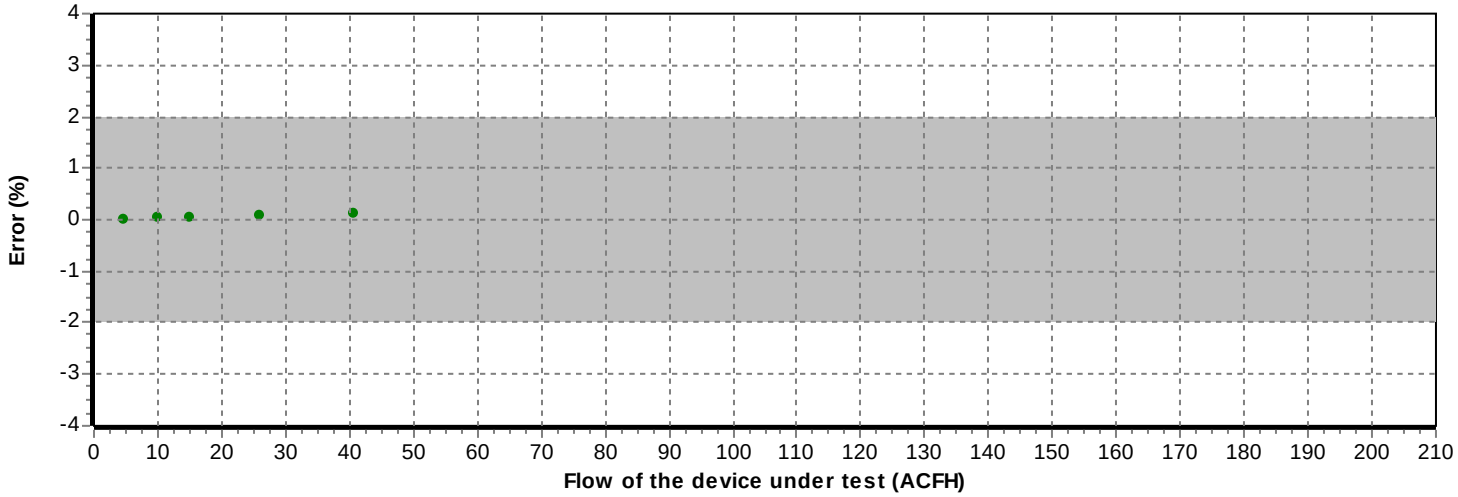
POLYCONTROLS

CLAS 2009-02

Calibration certificate # 21658

Serial Number:	90R054300	Test stand:	4
Calibration Date:	2023-10-13	Procedure:	POS-CAL-005
Instrument ID:	SBI-046	Decision rule:	Method #3

Final results



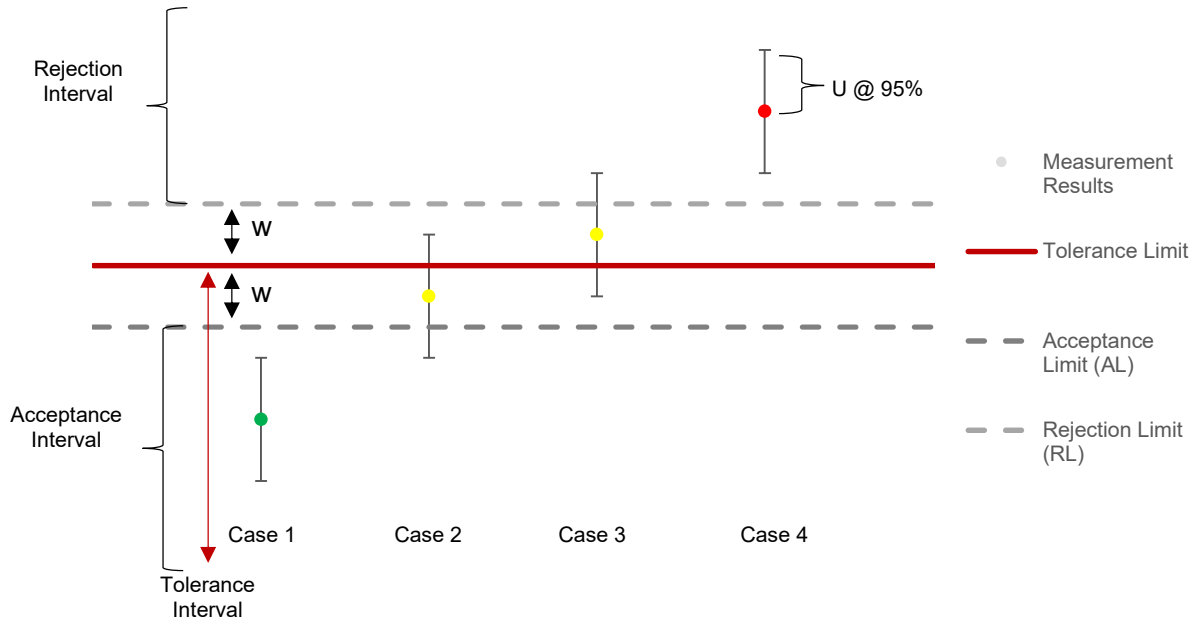
See the appendix for the guideline of decision rule

Appendix for the decision rule

Method #3 Non-binary Statement with Guard Band, uncertainty directly taken into account

This decision rule uses a guard band to define the acceptance and rejection interval. The acceptance limit is defined by the following mathematical formula AL = TL – w and the rejection limit RL = TL + w, where w = rU. The multiple r that is multiplied by the expanded measurement uncertainty U can be defined following ILAC G8: 2019 table 1 section 5.2. The expanded measurement uncertainty U has a 95% coverage probability (k = 2). Non-binary statement with guard band exists when the result is limited to four choices: pass, conditional pass, conditional fail, and fail.

Statements of conformity are reported as:



Graphical representation of a Non-Binary Statement with a Guard Band

Case 1 – Below acceptance limit AL

Status: In tolerance

- The result is inside the acceptance interval. However, assuming a normal distribution, the risk that the result is outside the tolerance limit could be up to 2.5%. Uncertainty is directly taken into account. *Green*.

Case 2 – Below tolerance limit TL, greater than acceptance limit AL

Status: In tolerance-Conditional

- The result is outside the acceptance interval but below tolerance limit. However, the observed value is inside the guard band w = TL – AL and the status is conditional on the customer's risk assessment. Uncertainty is directly taken into account. *Yellow*.

Case 3 – Greater than tolerance limit, below rejection limit RL

Status: Out of tolerance-Conditional

- Le result is greater than tolerance limit but outside the rejection interval. However, the observed value is inside the guard band w = TL – RL and the status is conditional on the customer's risk assessment. Uncertainty is directly taken into account. *Yellow*.

Case 4 – Greater than rejection limit RL

Status: Out of tolerance

- The result is inside the rejection interval. Uncertainty is directly taken into account. *Red.*

3650-A1, Matte Blvd., Brossard, (Quebec) J4Y 2Z2 Canada – CAN: (450) 444-3600 USA: 1-844-660-7659

CLAS 2009-02

CALIBRATION CERTIFICATE # 21522

Calibration date : 2023-09-22

Certificate issued : 2023-09-22

Stove Builder International
250, rue de Copenhague
Saint-Augustin-de-Desmaures, Québec, Canada
G3A 2H3

Calibration of
Positive displacement flow meter American Meter Company DTM-200A S/N : 98Z332226

QUALITY PROGRAM CONFORMANCE

All calibrations are performed in accordance with Polycontrols Laboratory Quality Assurance Manual and conform to ISO/IEC 17025: 2017, ISO 9001 – 2015 and/or other quality requirements defined in customers purchase descriptions. The results are strictly valid for the device under test or calibration. If applicable, the decision rule is described in the certificate.

TRACEABILITY

The traceability for flow standard to the National Institute of Standards and Technology, NIST, is maintained by Fluke Corporation of Phoenix, Arizona and conform to ISO/IEC 17025, ANSI/NCSL Z540-1-1994, ISO-10012-1 and MIL-STD 45662A.

The Calibration Laboratory Assessment Service (CLAS) of the National Research Council of Canada (NRC) has assessed and certified specific calibration capabilities of this laboratory and traceability to the International System of Units (SI) or to standards acceptable to the CLAS program. This certificate of calibration is issued in accordance with the conditions of certification granted by CLAS and the conditions of accreditation granted by the Standards Council of Canada (SCC). Neither CLAS nor SCC guarantee the accuracy of individual calibrations by accredited laboratories.

CALIBRATION OF MEASURING AND TEST EQUIPMENT

For calibration measurement capability, please refer to the Canadian Calibration Network web page at the National Research Council of Canada. This laboratory is accredited by the Standards Council of Canada as part of the Calibration Laboratory Assessment Service (CLAS) program and is listed at nrc.canada.ca.

This document forms part of the Certificate of Accreditation issued by the Standards Council of Canada (SCC). The original version is available in the Directory of Accredited Laboratories on the SCC website at www.scc.ca.

CONDITION SUMMARY OF THE DEVICE UNDER TEST

Initial conditions	In good condition
Work done	Calibration of the instrument
	Initial readings = Final readings, no adjustment
Results	Final calibration limited, see final readings
Remarks	Calibration frequency every 6 months

Bernard Poirier
Metrologist

Laboratory Manager

3650, Matte blvd. (Unit A-1), Brossard (Quebec), Canada, J4Y 2Z2
Tel: (450) 444-3600 Fax: (450) 444-1088 www.polycontrols.com

POLYCONTROLS

CLAS 2009-02

Calibration certificate # 21522

Serial Number:	98Z332226	Test stand:	3
Calibration Date:	2023-09-22	Procedure:	POS-CAL-005
Instrument ID:	SBI-047	Decision rule:	Method #3

Standard equipment used for final calibration

Description	Model	Serial #	Traceability	Due date
Fluke molbloc_30 slpm	3E4-VCR-V-Q	2359	1500349861	2024-03-02
Fluke molbloc_5 slpm	5E3-VCR-V-Q	2473	1500358447	2024-07-25
Fluke molbox1+	Molbox1+	2089	1500349737	2024-02-28
RTD Mist	M22	2208101	2023007093	2024-08-30
Module 44.5 PSI avec Baro 163671	Module 30	160659	2023003753	2024-05-18

Final specifications of the device under test		Calibration conditions	
Gas	Air	Gas	Air
Operation temperature	20 °C	Ambient temperature	23 °C
Inlet pressure		Ambient pressure	1025.94 mbar
Outlet pressure		Orientation	
Reference temperature		Seals	
Reference pressure		Valve	
Range	0-200 ACFH		
Input/Output Signals	-		
Supply			
Accuracy ±2 %O.R.			

Final readings

Test Flow ACFH	Device under test ft³	Measured values Pressure PSIA	Temperature °C	Reference ft³	Calculated Reference ft³	Calculated Error ft³	Acceptable Error ft³	Uncertainty k = 2 ft³	TUR
4.9744	0.8380	14.892	23.46	0.8335	0.8291	0.0089	0.0166	0.0021	>4
9.9825	1.6670	14.891	23.36	1.6709	1.6616	0.0054	0.0332	0.0056	>4
15.0294	2.5140	14.891	23.27	2.5165	2.5018	0.0122	0.0500	0.0083	>4
24.7888	4.1470	14.893	23.18	4.1515	4.1256	0.0214	0.0825	0.0137	>4
40.3728	6.7720	14.898	23.13	6.7655	6.7195	0.0525	0.1344	0.0224	>4

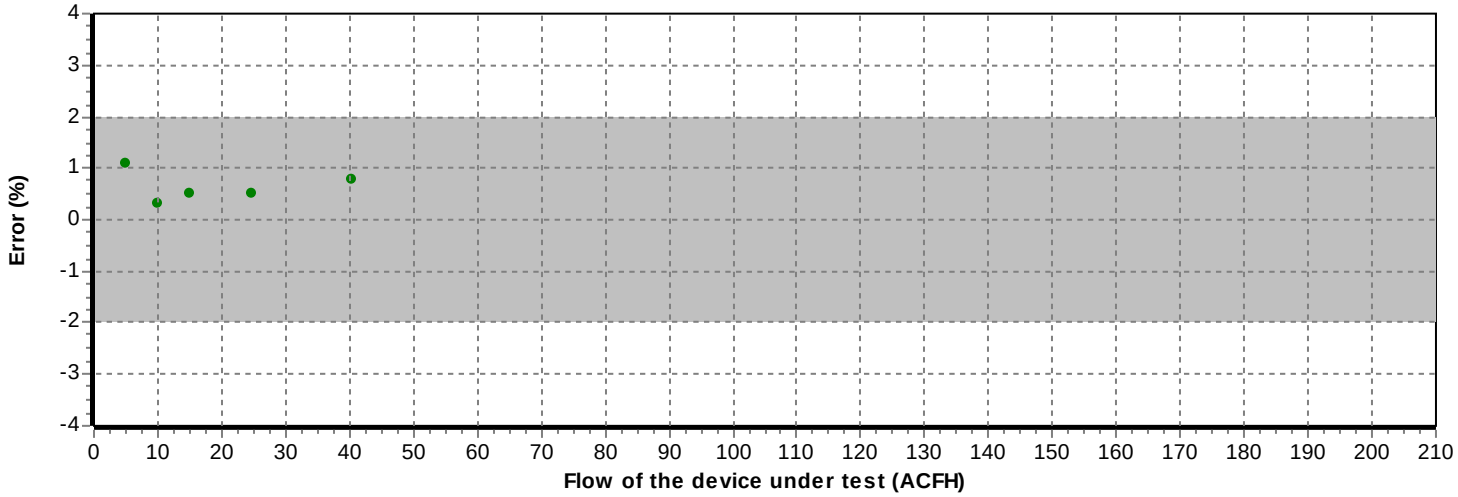
POLYCONTROLS

CLAS 2009-02

Calibration certificate # 21522

Serial Number:	98Z332226	Test stand:	3
Calibration Date:	2023-09-22	Procedure:	POS-CAL-005
Instrument ID:	SBI-047	Decision rule:	Method #3

Final results



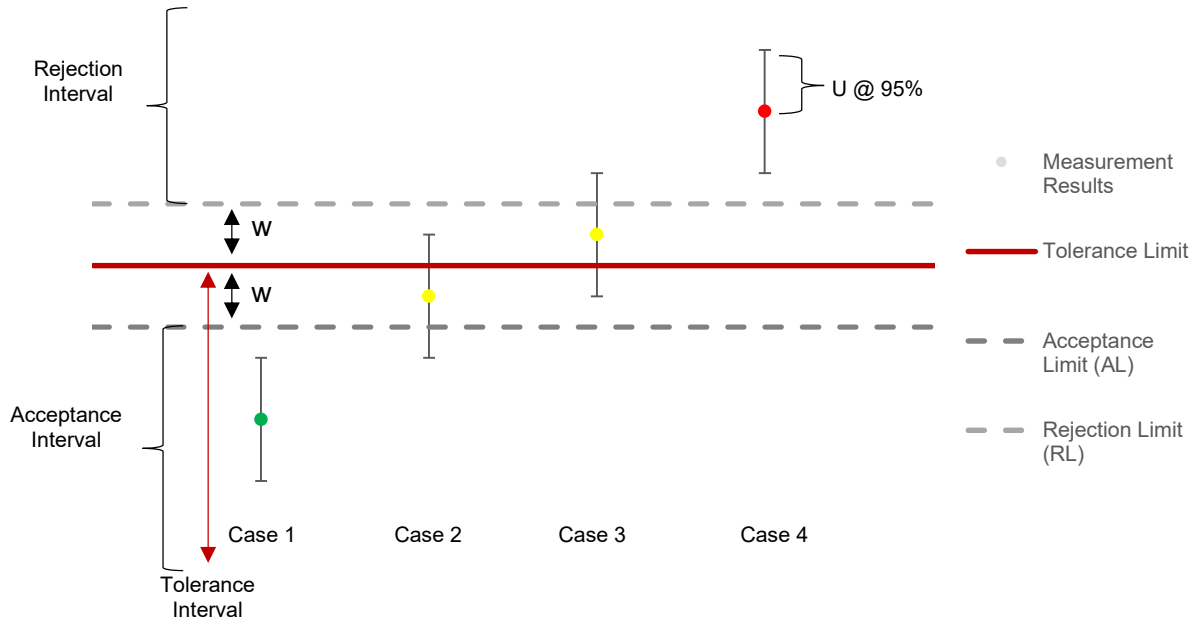
See the appendix for the guideline of decision rule

Appendix for the decision rule

Method #3 Non-binary Statement with Guard Band, uncertainty directly taken into account

This decision rule uses a guard band to define the acceptance and rejection interval. The acceptance limit is defined by the following mathematical formula AL = TL – w and the rejection limit RL = TL + w, where w = rU. The multiple r that is multiplied by the expanded measurement uncertainty U can be defined following ILAC G8: 2019 table 1 section 5.2. The expanded measurement uncertainty U has a 95% coverage probability (k = 2). Non-binary statement with guard band exists when the result is limited to four choices: pass, conditional pass, conditional fail, and fail.

Statements of conformity are reported as:



Graphical representation of a Non-Binary Statement with a Guard Band

Case 1 – Below acceptance limit AL

Status: In tolerance

- The result is inside the acceptance interval. However, assuming a normal distribution, the risk that the result is outside the tolerance limit could be up to 2.5%. Uncertainty is directly taken into account. *Green*.

Case 2 – Below tolerance limit TL, greater than acceptance limit AL

Status: In tolerance-Conditional

- The result is outside the acceptance interval but below tolerance limit. However, the observed value is inside the guard band w = TL – AL and the status is conditional on the customer's risk assessment. Uncertainty is directly taken into account. *Yellow*.

Case 3 – Greater than tolerance limit, below rejection limit RL

Status: Out of tolerance-Conditional

- Le result is greater than tolerance limit but outside the rejection interval. However, the observed value is inside the guard band w = TL – RL and the status is conditional on the customer's risk assessment. Uncertainty is directly taken into account. *Yellow*.

Case 4 – Greater than rejection limit RL

Status: Out of tolerance

- The result is inside the rejection interval. Uncertainty is directly taken into account. *Red.*

3650-A1, Matte Blvd., Brossard, (Quebec) J4Y 2Z2 Canada – CAN: (450) 444-3600 USA: 1-844-660-7659

CLAS 2009-02

CALIBRATION CERTIFICATE # 21656

Calibration date : 2023-10-13
Certificate issued : 2023-10-13

Stove Builder International
250, rue de Copenhague
Saint-Augustin-de-Desmaures, Québec, Canada
G3A 2H3

Calibration of
Volumetric flow meter Sensus S-275 S/N : 25125396

QUALITY PROGRAM CONFORMANCE

All calibrations are performed in accordance with Polycontrols Laboratory Quality Assurance Manual and conform to ISO/IEC 17025: 2017, ISO 9001 – 2015 and/or other quality requirements defined in customers purchase descriptions. The results are strictly valid for the device under test or calibration. If applicable, the decision rule is described in the certificate.

TRACEABILITY

The traceability for flow standard to the National Institute of Standards and Technology, NIST, is maintained by Fluke Corporation of Phoenix, Arizona and conform to ISO/IEC 17025, ANSI/NCSL Z540-1-1994, ISO-10012-1 and MIL-STD 45662A.

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CALIBRATION OF MEASURING AND TEST EQUIPMENT

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This document forms part of the Certificate of Accreditation issued by the Standards Council of Canada (SCC). The original version is available in the Directory of Accredited Laboratories on the SCC website at www.scc.ca.

CONDITION SUMMARY OF THE DEVICE UNDER TEST

Initial conditions	In good condition
Work done	Initial readings = Final readings, no adjustment Calibration of the instrument
Results	Final readings in tolerance
Remarks	Calibration frequency every 6 months

Carl Tessier - Dansereau

Carl Tessier Dansereau
Metrologist

Laboratory Manager

3650, Matte blvd. (Unit A-1), Brossard (Quebec), Canada, J4Y 2Z2
Tel: (450) 444-3600 Fax: (450) 444-1088 www.polycontrols.com

POLYCONTROLS

CLAS 2009-02

Calibration certificate # 21656

Serial Number:	25125396	Test stand:	4
Calibration Date:	2023-10-13	Procedure:	POS-CAL-005
Instrument ID:	SBI-346	Decision rule:	Method #3

Standard equipment used for final calibration

Description	Model	Serial #	Traceability	Due date
Fluke molbloc_30 slpm	3E4-VCR-V-Q	2403	1500358529	2024-07-24
Fluke molbloc_5 slpm	5E3-VCR-V-Q	2473	1500358447	2024-07-25
Fluke molbox 1+	Molbox 1+	755+	1500358439	2024-07-21
RTD Mist	Mist	L00295	2022009672	2024-01-03
Module 44.5 PSI avec Baro 163671	Module 30	160659	2023003753	2024-05-18

Final specifications of the device under test		Calibration conditions	
Gas	Air	Gas	Air
Operation temperature	20 °C	Ambient temperature	22.6 °C
Inlet pressure		Ambient pressure	1012.76 mbar
Outlet pressure		Orientation	Horizontal
Reference temperature		Seals	
Reference pressure		Valve	
Range	0-275 ACFH		
Input/Output Signals	-		
Supply			
Accuracy ±2 %F.S.			

Final readings

Test Flow ACFH	Device under test ft³	Measured values Pressure PSIA	Temperature °C	Reference ft³	Calculated Reference ft³	Calculated Error ft³	Acceptable Error ft³	Uncertainty k = 2 ft³	TUR
5.3053	0.8600	14.6946	22.25	0.8793	0.8828	-0.0228	0.9152	0.0037	>4
9.9256	1.6150	14.6963	22.23	1.6440	1.6503	-0.0353	0.9144	0.0050	>4
15.6817	2.5550	14.6975	22.39	2.6019	2.6130	-0.0580	0.9164	0.0092	>4
27.0014	4.4025	14.7026	22.47	4.4800	4.4987	-0.0962	0.9164	0.0152	>4
40.0023	6.5100	14.7072	22.58	6.6285	6.6566	-0.1466	0.9152	0.0223	>4

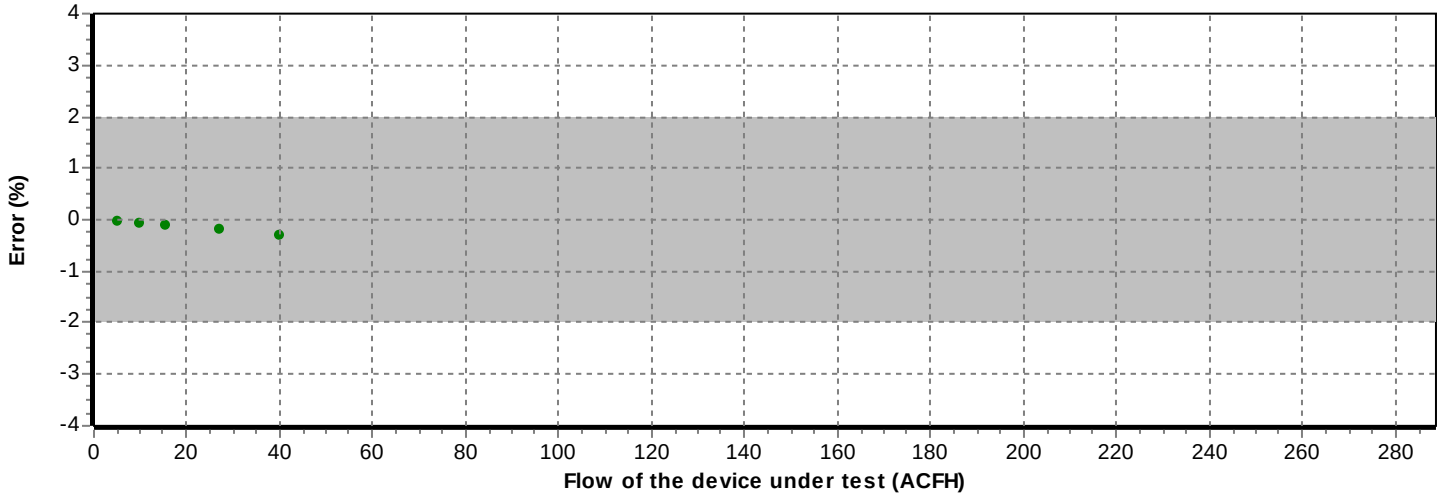
POLYCONTROLS

CLAS 2009-02

Calibration certificate # 21656

Serial Number:	25125396	Test stand:	4
Calibration Date:	2023-10-13	Procedure:	POS-CAL-005
Instrument ID:	SBI-346	Decision rule:	Method #3

Final results



See the appendix for the guideline of decision rule

Appendix for the decision rule

Method #3 Non-binary Statement with Guard Band, uncertainty directly taken into account

This decision rule uses a guard band to define the acceptance and rejection interval. The acceptance limit is defined by the following mathematical formula AL = TL – w and the rejection limit RL = TL + w, where w = rU. The multiple r that is multiplied by the expanded measurement uncertainty U can be defined following ILAC G8: 2019 table 1 section 5.2. The expanded measurement uncertainty U has a 95% coverage probability (k = 2). Non-binary statement with guard band exists when the result is limited to four choices: pass, conditional pass, conditional fail, and fail.

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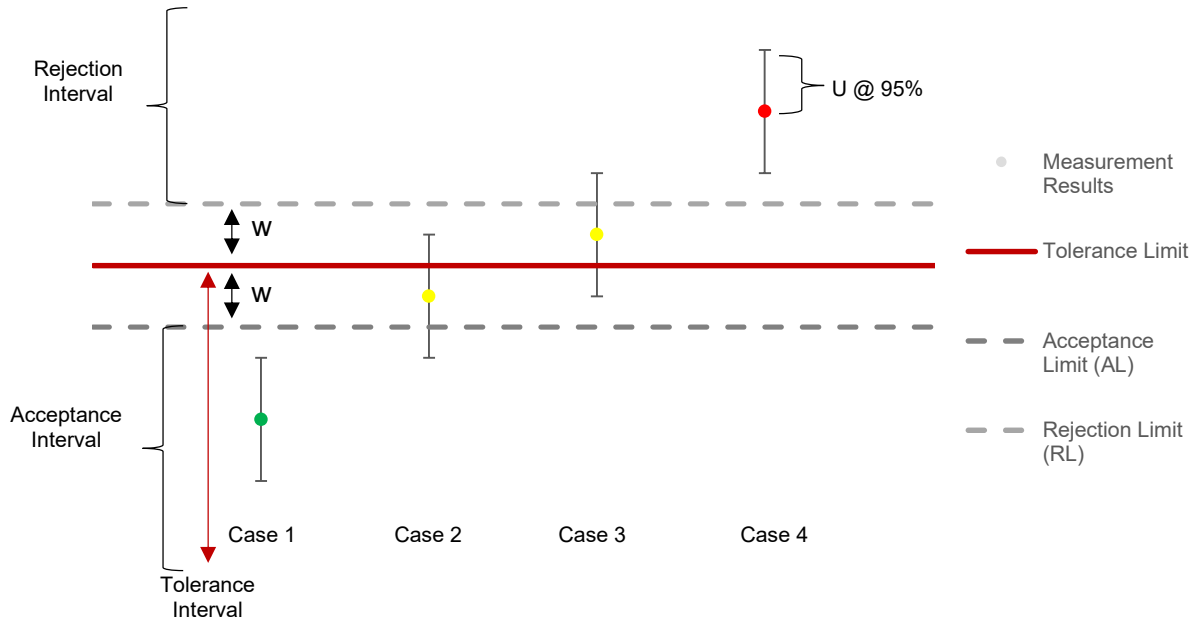

Graphical representation of a Non-Binary Statement with a Guard Band

Case 1 – Below acceptance limit AL

Status: In tolerance

- The result is inside the acceptance interval. However, assuming a normal distribution, the risk that the result is outside the tolerance limit could be up to 2.5%. Uncertainty is directly taken into account. *Green*.

Case 2 – Below tolerance limit TL, greater than acceptance limit AL

Status: In tolerance-Conditional

- The result is outside the acceptance interval but below tolerance limit. However, the observed value is inside the guard band w = TL – AL and the status is conditional on the customer's risk assessment. Uncertainty is directly taken into account. *Yellow*.

Case 3 – Greater than tolerance limit, below rejection limit RL

Status: Out of tolerance-Conditional

- Le result is greater than tolerance limit but outside the rejection interval. However, the observed value is inside the guard band w = TL – RL and the status is conditional on the customer's risk assessment. Uncertainty is directly taken into account. *Yellow*.

Case 4 – Greater than rejection limit RL

Status: Out of tolerance

- The result is inside the rejection interval. Uncertainty is directly taken into account. *Red.*

3650-A1, Matte Blvd., Brossard, (Quebec) J4Y 2Z2 Canada – CAN: (450) 444-3600 USA: 1-844-660-7659

CLAS 2009-02

CALIBRATION CERTIFICATE # 21523

Calibration date : 2023-09-22

Certificate issued : 2023-09-22

Stove Builder International
250, rue de Copenhague
Saint-Augustin-de-Desmaures, Québec, Canada
G3A 2H3

Calibration of
Volumetric flow meter Sensus S-275 S/N : 25125397

QUALITY PROGRAM CONFORMANCE

All calibrations are performed in accordance with Polycontrols Laboratory Quality Assurance Manual and conform to ISO/IEC 17025: 2017, ISO 9001 – 2015 and/or other quality requirements defined in customers purchase descriptions. The results are strictly valid for the device under test or calibration. If applicable, the decision rule is described in the certificate.

TRACEABILITY

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CALIBRATION OF MEASURING AND TEST EQUIPMENT

For calibration measurement capability, please refer to the Canadian Calibration Network web page at the National Research Council of Canada. This laboratory is accredited by the Standards Council of Canada as part of the Calibration Laboratory Assessment Service (CLAS) program and is listed at nrc.canada.ca.

This document forms part of the Certificate of Accreditation issued by the Standards Council of Canada (SCC). The original version is available in the Directory of Accredited Laboratories on the SCC website at www.scc.ca.

CONDITION SUMMARY OF THE DEVICE UNDER TEST

Initial conditions	In good condition
Work done	Calibration of the instrument
	Initial readings = Final readings, no adjustment
Results	Final calibration limited, see final readings
Remarks	Calibration frequency every 6 months

Bernard Poirier
Metrologist

Laboratory Manager

3650, Matte blvd. (Unit A-1), Brossard (Quebec), Canada, J4Y 2Z2
Tel: (450) 444-3600 Fax: (450) 444-1088 www.polycontrols.com

POLYCONTROLS

CLAS NRC-CNRC CLAS 2009-02

SCC Accredited LAB Accrédité CCN

Calibration certificate # 21523

Serial Number:	25125397	Test stand:	3
Calibration Date:	2023-09-22	Procedure:	POS-CAL-005
Instrument ID:	SBI-347	Decision rule:	Method #3

Standard equipment used for final calibration

Description	Model	Serial #	Traceability	Due date
Fluke molbloc_30 slpm	3E4-VCR-V-Q	2359	1500349861	2024-03-02
Fluke molbloc_5 slpm	5E3-VCR-V-Q	2473	1500358447	2024-07-25
Fluke molbox1+	Molbox1+	2089	1500349737	2024-02-28
RTD Mist	M22	2208101	2023007093	2024-08-30
Module 44.5 PSI avec Baro 163671	Module 30	160659	2023003753	2024-05-18

Final specifications of the device under test		Calibration conditions	
Gas	Air	Gas	Air
Operation temperature		Ambient temperature	23 °C
Inlet pressure		Ambient pressure	1026.63 mbar
Outlet pressure		Orientation	Horizontal
Reference temperature		Seals	
Reference pressure		Valve	
Range	0-200 ACFH		
Input/Output Signals	-		
Supply			
Accuracy ±2 %F.S.			

Final readings

Test Flow ACFH	Device under test ft³	Measured values Pressure PSIA	Temperature °C	Reference ft³	Calculated Reference ft³	Calculated Error ft³	Acceptable Error ft³	Uncertainty k = 2 ft³	TUR
5.0251	0.7400	14.896	23.52	0.8409	0.8364	-0.0964	0.6658	0.0039	>4
9.9456	1.6500	14.904	22.74	1.6662	1.6521	-0.0021	0.6645	0.0062	>4
14.9910	2.4900	14.900	23.42	2.5101	2.4953	-0.0053	0.6658	0.0088	>4
24.8810	4.0300	14.905	23.25	4.1700	4.1414	-0.1114	0.6658	0.0141	>4
39.9698	6.6550	14.917	22.59	6.7193	6.6532	0.0018	0.6658	0.0223	>4

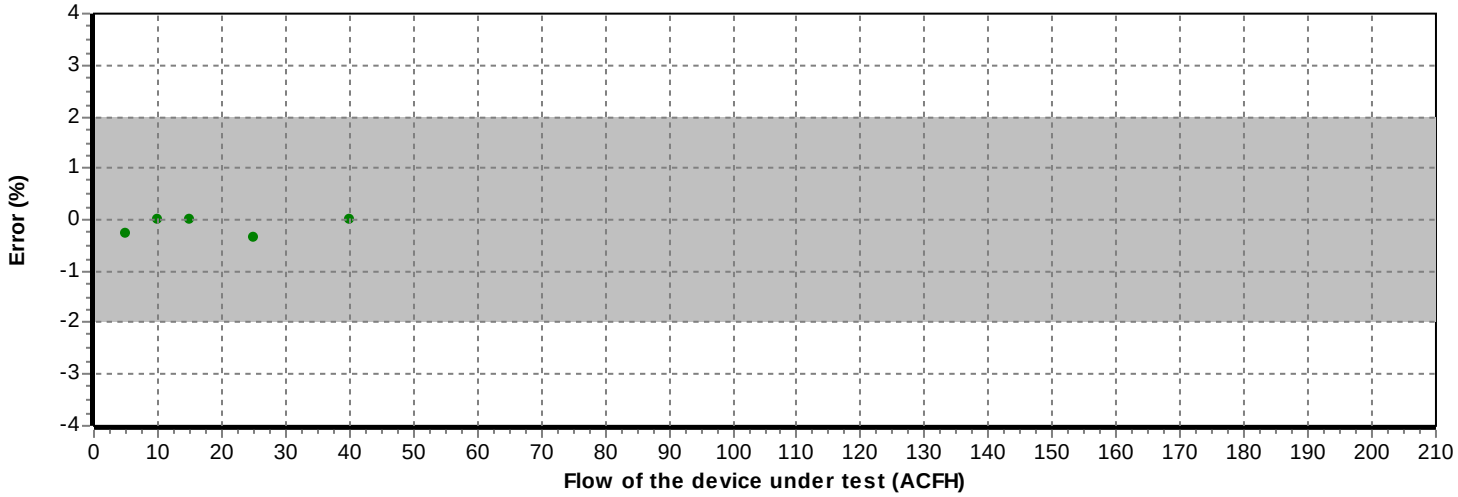
POLYCONTROLS

CLAS 2009-02

Calibration certificate # 21523

Serial Number:	25125397	Test stand:	3
Calibration Date:	2023-09-22	Procedure:	POS-CAL-005
Instrument ID:	SBI-347	Decision rule:	Method #3

Final results



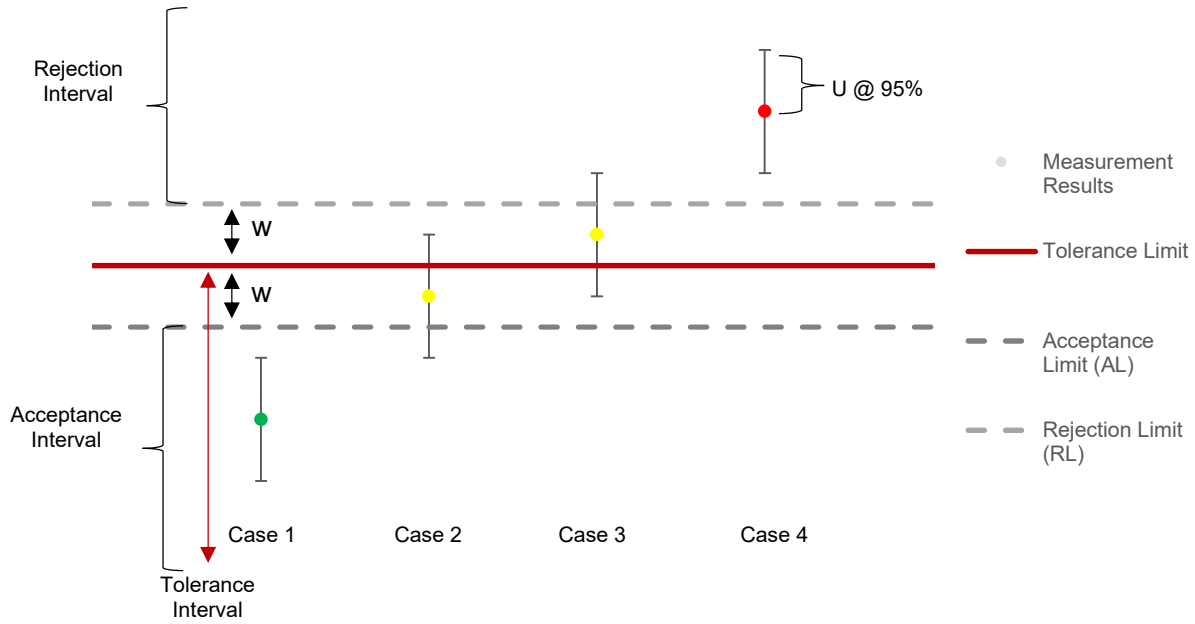
See the appendix for the guideline of decision rule

Appendix for the decision rule

Method #3 Non-binary Statement with Guard Band, uncertainty directly taken into account

This decision rule uses a guard band to define the acceptance and rejection interval. The acceptance limit is defined by the following mathematical formula AL = TL – w and the rejection limit RL = TL + w, where w = rU. The multiple r that is multiplied by the expanded measurement uncertainty U can be defined following ILAC G8: 2019 table 1 section 5.2. The expanded measurement uncertainty U has a 95% coverage probability (k = 2). Non-binary statement with guard band exists when the result is limited to four choices: pass, conditional pass, conditional fail, and fail.

Statements of conformity are reported as:



Graphical representation of a Non-Binary Statement with a Guard Band

Case 1 – Below acceptance limit AL

Status: In tolerance

- The result is inside the acceptance interval. However, assuming a normal distribution, the risk that the result is outside the tolerance limit could be up to 2.5%. Uncertainty is directly taken into account. *Green*.

Case 2 – Below tolerance limit TL, greater than acceptance limit AL

Status: In tolerance-Conditional

- The result is outside the acceptance interval but below tolerance limit. However, the observed value is inside the guard band w = TL – AL and the status is conditional on the customer's risk assessment. Uncertainty is directly taken into account. *Yellow*.

Case 3 – Greater than tolerance limit, below rejection limit RL

Status: Out of tolerance-Conditional

- Le result is greater than tolerance limit but outside the rejection interval. However, the observed value is inside the guard band w = TL – RL and the status is conditional on the customer's risk assessment. Uncertainty is directly taken into account. *Yellow*.

Case 4 – Greater than rejection limit RL

Status: Out of tolerance

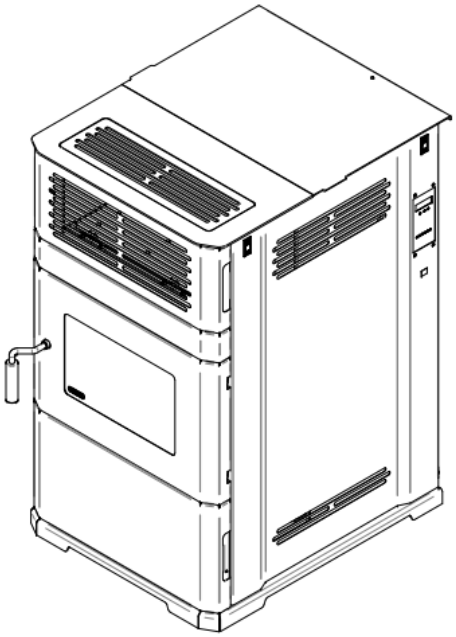
- The result is inside the rejection interval. Uncertainty is directly taken into account. *Red.*

3650-A1, Matte Blvd., Brossard, (Quebec) J4Y 2Z2 Canada – CAN: (450) 444-3600 USA: 1-844-660-7659

Installation and Operation Manual

ECO-65R

(DP00061 model)



Safety tested according to ULC S627, UL1482 and ASTM E1509 by an accredited laboratory

MOBILE HOME approved

US Environmental Protection Agency phase II certified pellet stove compliant with 2020 standard using pellet fuel

EPA ≤ 2.0 g/h

Fabricant de poêles international inc.

250, rue de Copenhague, St-Augustin-de-Desmaures (Québec) Canada G3A 2H3

After-sale service: 418-908-8002

E-mail: tech@sbi-international.com

www.drolet.ca

CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA.

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

INSTALLATION BY A PROFESSIONAL IS STRONGLY RECOMMENDED

READ AND KEEP THIS MANUAL FOR REFERENCE

46377A

Printed in Canada

2023-12-18

THANK YOU FOR CHOOSING THIS DROLET PELLET STOVE

As one of North America's largest and most respected pellet stove, wood stove and fireplace manufacturers, Stove Builder International takes pride in the quality and performance of all its products. We want to help you get maximum satisfaction as you use this product.

In the pages that follow you will find general advice on pellet heating, detailed instructions for safe and effective installation, and guidance on how to get the best performance from this stove as you build and maintain your pellet heating system.

We highly recommend that our pellet burning hearth products be installed and serviced by professionals who are certified in the United States by NFI (National Fireplace Institute®) or in Canada by WETT (Wood Energy Technology Transfer) or in Quebec by APC (Association des Professionnels du Chauffage).

Congratulations on making a wise purchase.

REGISTER YOUR WARRANTY ONLINE

To receive full warranty coverage, you will need to show evidence of the date you purchased your stove. Keep your sales invoice. We also recommend that you register your warranty online at:
http://www.drolet.ca/en/service-support/warranty-registration
Registering your warranty online will help us to quickly track the information we need about your stove.

Table of contents

1 Introduction

1.1 About Pellet Heating

Pellet stoves offer a dramatic improvement in the convenience of heating with solid fuel. Wood pellets are handled in bags and are therefore easily and cleanly stored. A single loading of a pellet stove can provide long hours of warmth. Pellet stoves also provide a special comfort associated with wood burning. The combination of fans delivering warm air currents and the direct comfort of radiant heat provides special satisfaction on a cold winter day. The heat provided is even and constant, due to the auto fuel feed responding to owner settings. Pellet stoves also offer strong environmental benefits; pellets not only reduce dependence on finite supplies of fossil fuels like oil and gas, but they also put to good use materials that would otherwise unnecessarily and expensively add to our waste disposal problems.

In addition, pellet stoves burn very cleanly and offer the lowest emissions of unwanted pollutants of all solid fuel burning appliances.

1.1.1 Top 10 Reasons for Buying a Pellet Stove

- Fuel is relatively cheap, easy to handle and store
- Installation is relatively inexpensive and flexible
- Can be thermostatically controlled
- Can run for long hours without the need to refuel
- Heat output is steady because fuel feed is regulated
- Provides powerful convection heat
- Has the lowest emissions of all solid fuels
- Reduces our dependence on fossil fuels
- Pellets are a renewable fuel
- Wood pellets are made of 100% residual matter (saw dust). This creates added-value from waste that would otherwise end up in a landfill.

1.2 Appliance performance(1)

Fuel type	Wood Pellet (Premium grade or better)(†)	
Recommended heating area[*]	800 to 2,600 ft^2 (74 to 242 m^2)	
Hopper capacity	125 lb (57 kg)	
Maximum burn time[*]	105 h	
Maximum heat input rate(2)	40,000 BTU/h (11.7 kW)	
Overall heat output rate (min. to max.)(3)	6,966 BTU/h to 28,526 BTU/h (2.04 kW to 8.36 kW)	
Average overall efficiency(3)	76.7% (HHV(4))	84.4% (LHV(5))
Optimum efficiency(6)	84.4%	
Burn rate	1.12 lb/h to 4.63 lb/h (0.51 kg/h to 2.10 kg/h)	
Average particulate emissions rate(7)	0.77 g/h (EPA / CSA B415.1-10)(8)	
Average CO(9)	13.2 g/h	
Average electrical power consumption(10)	3.7A (360W) for ignition cycle 2.15A (258W) min. / 2.9A (348W) max. for continuous operation	

[*] Recommended heating area and maximum burn time may vary subject to location in home, chimney draft, heat loss factors, climate, fuel type, feed rate, fuel level, and other variables. The recommended heated area for a given appliance is defined by the manufacturer as its capacity to maintain a minimum acceptable temperature considering that the space configuration and the presence of heat distribution systems have a significant impact in making heat circulation optimum.

(†) Grades of pellet fuel are determined by organizations such as Pellet Fuels Institute (PFI), ENplus and CANplus.

(1) Values are as measured per test method, except for the recommended heating area, hopper capacity, maximum burn time and maximum heat input rate. Results may vary depending on pellet quality, density, length, and diameter.

(2) Based on the maximum burn-rate and a dry energy value of pellet at 8,600 BTU/lb.

(3) As measured per CSA B415.1-10 stack loss method.

(4) Higher Heating Value of the fuel.

(5) Lower Heating Value of the fuel.

(6) Optimum overall efficiency at a specific burn rate (LHV).

(7) This appliance is officially tested and certified by an independent agency.

(8) Tested and certified in compliance with EPA 40 CFR Part 60, ASTM E2515-11, ASTM E2779-10 and CSA B415.1-10.

(9) Carbon monoxide.

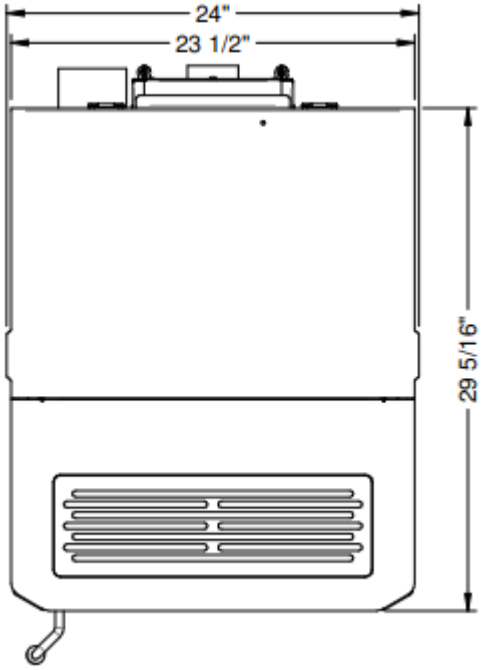
(10) Unless stated otherwise, measures were taken directly at the main power source and include all electrical components present in the appliance.

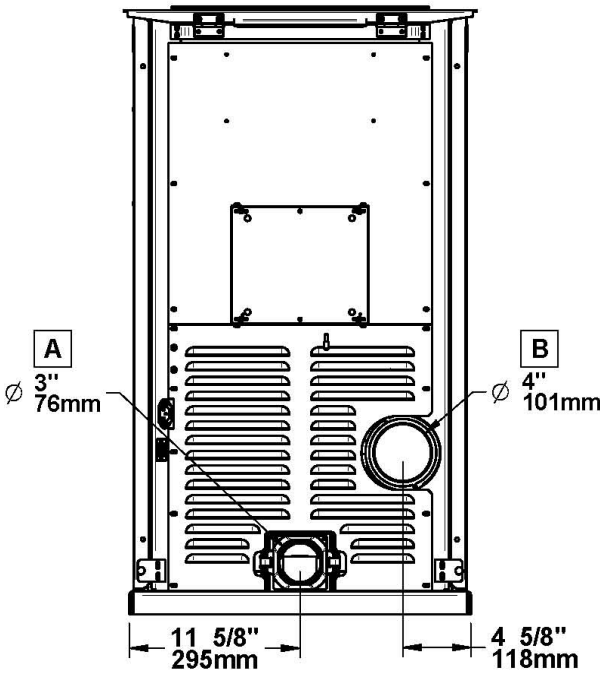
1.3 General Features

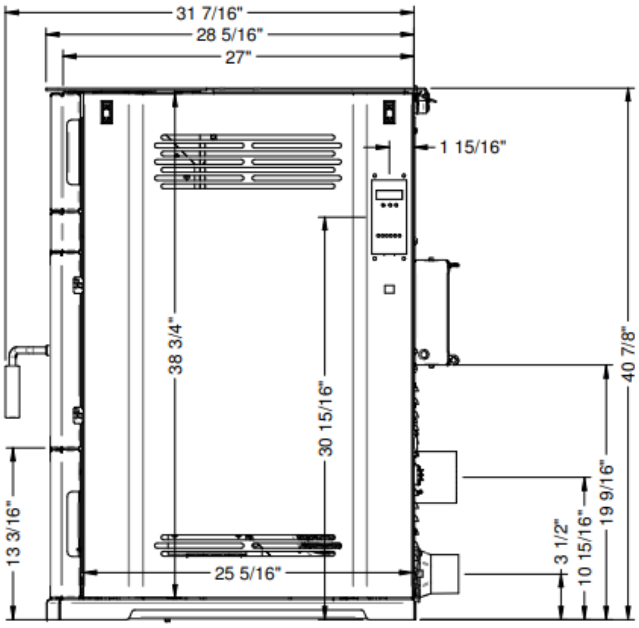
Recommended chimney diameter	4 po (see Section 4.3: Equivalent Vent Length (EVL))
Flue outlet diameter	4 po (100 mm)
Type of chimney	ULC/ORD-C441, CAN/ULC S609, UL 641 (TYPE L)
Baffle material	Stainless Steel
Approved for alcove installation	Not approved
Approved for mobile home installation‡	Yes
Shipping weight (without option)	440 lb (200 kg)
Appliance weight (without option)	371 lb (168 kg)
Type of door	Single, glass with cast iron frame
Glass type	Ceramic glass
Blower	Included (up to 500 CFM)
Particulate emission standard	EPA / CSA B415.1-10
USA standard (safety)	ASTM E1509 and UL 1482
Canadian standard (safety)	ULC S627
Noise level at 6 feet	Min: 53 dBa (+/- 3 dBa) − Max: 59 dBa (+/- 3 dBa)
Electrical requirements	Voltage and frequency: 120VAC and 60Hz AC Current: 2.15A/120VAC - 3.7A/120VAC
Control board fuses	-Main: 7.5A-250V fast-blow fuse -Convection blower: 5A-250V fast-blow fuse -Combustion blower: 3A-250V fast-blow fuse -Exhaust blower: 3A-250V fast-blow fuse -Auger motor #1: 3A-250V fast-blow fuse -Auger motor #2: 3A-250V fast-blow fuse -Igniter: 5A-250V fast-blow fuse

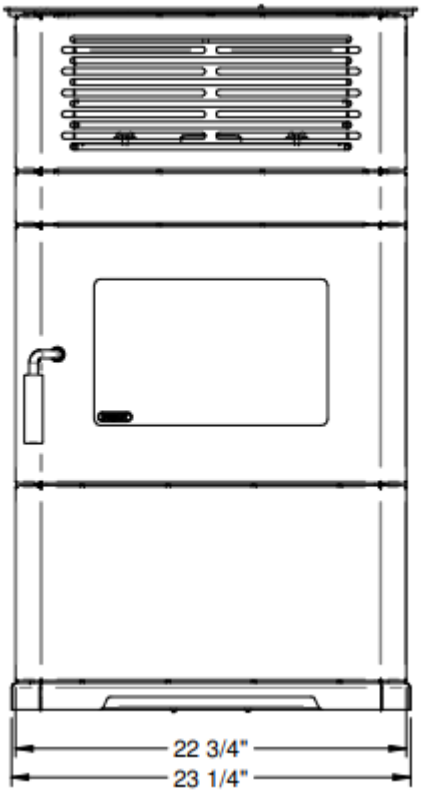
‡ *Mobile home (Canada) or manufactured home (USA): The US department of Housing and Urban Development describes "manufactured homes" better known as "mobile homes" as followed; buildings built on fixed wheels and those transported on temporary wheels/axles and set on a permanent foundation. In Canada, a mobile home is a dwelling for which the manufacture and assembly of each component is completed or substantially completed prior to being moved to a site for installation on a foundation and connection to service facilities and which conforms to the CAN/CSA-Z240 MH standard.*

1.4 Overall Exterior Dimensions









A	FRESH AIR INLET
B	FLUE OUTLET

PART A – INSTALLATION

2 Installation Safety Information

2.1 Installation Warnings, Cautions and Recommendations

- **PROFESSIONNAL INSTALLATION IS HIGHLY RECOMMENDED.**
- **YOU MAY NEED TO OBTAIN A BUILDING PERMIT FOR THE INSTALLATION OF THIS STOVE AND ITS VENTING SYSTEM. CONSULT YOUR MUNICIPAL BUILDING DEPARTMENT OR FIRE DEPARTMENT BEFORE INSTALLATION TO DETERMINE THE NEED TO OBTAIN ONE. WE RECOMMEND THAT YOU ALSO INFORM YOUR HOME INSURANCE COMPANY TO FIND OUT IF THE INSTALLATION WILL AFFECT YOUR POLICY.**
- **THIS STOVE MUST BE CONNECTED TO A STANDARD 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 OR OVER THE STOVE.**
- **IF THIS STOVE IS NOT PROPERLY INSTALLED, A HOUSE FIRE MAY RESULT. TO REDUCE THE RISK OF FIRE, FOLLOW THE INSTALLATION INSTRUCTIONS.**
- **BURNING ANY SOLID FUELS GENERATES CARBON MONOXIDE IN LOW CONCENTRATION. THIS GAS IS EVACUATED BY THE VENTING SYSTEM. IN HIGHER CONCENTRATIONS, CARBON MONOXIDE IS TOXIC AND MAY CAUSE DEATH. TO PREVENT THIS, ENSURE THAT YOUR VENTING SYSTEM IS AIRTIGHT.**
- **THIS STOVE IS MOBILE HOME APPROVED AND REQUIRES INSTALLATION OF A FRESH AIR KIT, SOLD SEPARATELY. THE STOVE MUST BE ATTACHED TO THE STRUCTURE OF THE MOBILE HOME AND THE STRUCTURAL INTEGRITY OF THE MOBILE HOME FLOOR, WALL, AND CEILING/ROOF MUST BE MAINTAINED. DO NOT INSTALL IN A SLEEPING ROOM.**
- **THIS STOVE IS NOT RECOMMENDED TO BE INSTALLED IN A BEDROOM.**
- **THIS STOVE HAS BEEN DEVELOPED AND BUILT FOR RESIDENTIAL SUPPLEMENTARY HEAT SOURCE. COMMERCIAL AND INDUSTRIAL USE IS PROHIBITED AND WILL VOID THE WARRANTY.**
- **THE INFORMATION GIVEN ON THE CERTIFICATION LABEL AFFIXED TO THE STOVE ALWAYS OVERRIDES THE INFORMATION PUBLISHED IN ANY OTHER MEDIA (OWNER'S MANUAL, CATALOGUES, FLYERS, MAGAZINES AND/OR WEB SITES).**
- **CONNECT THIS STOVE ONLY TO A LISTED PELLET VENT FOR USE WITH SOLID FUEL OR TO A LINED CHIMNEY CONFORMING TO NATIONAL AND LOCAL BUILDING CODES.**
- **DO NOT INSTALL A FLUE DAMPER IN THE EXHAUST VENTING SYSTEM OF THIS UNIT.**
- **DO NOT CONNECT THIS STOVE TO ANY OTHER EXISTING VENTING SYSTEM SERVING ANOTHER APPLIANCE.**
- **DO NOT CONNECT TO OR USE IN CONJUNCTION WITH ANY AIR DISTRIBUTION DUCTWORK.**
- **THE VENTING SYSTEM MUST BE COMPLETELY AIRTIGHT AND PROPERLY INSTALLED. ALL VENT CONNECTOR JOINTS MUST BE SEALED AND FASTENED IN ACCORDANCE WITH THE PELLET VENT MANUFACTURER'S INSTRUCTIONS TO ENSURE CONSISTENT PERFORMANCE AND AVOID SMOKE AND ASH SPILLAGE.**
- **THE VENTING SYSTEM SHOULD BE CHECKED, AT LEAST TWICE A YEAR FOR ANY BUILDUP OF SOOT OR CREOSOTE.**
- **NEVER BLOCK ANY LOUVERS OF THE STOVE.**
- **IF REQUIRED, A FRESH AIR KIT CAN BE INSTALLED TO SUPPLY COMBUSTION AIR TO THE ROOM OR SPACE (SEE APPENDIX D: *COMBUSTION AIR SUPPLY*).**

- **MIXING OF APPLIANCE COMPONENTS FROM DIFFERENT SOURCES OR MODIFYING COMPONENTS IS PROHIBITED AND WILL VOID THE WARRANTY.**
- **ANY MODIFICATION OF THE STOVE THAT HAS NOT BEEN APPROVED IN WRITING BY THE TESTING AUTHORITY IS PROHIBITED AND VIOLATES CSA B365 (CANADA), AND ANSI NFPA 211 (USA).**
- **THIS WOOD HEATER NEEDS PERIODIC INSPECTION AND REPAIRS FOR THE PROPER OPERATION. IT IS AGAINST FEDERAL REGULATIONS TO OPERATE THIS WOOD HEATER IN A MANNER INCONSISTENT WITH OPERATING INSTRUCTIONS IN THIS MANUAL.**
- **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.**
- **STOVE BUILDER INTERNATIONAL INC. (SBI) GRANTS NO WARRANTY, IMPLIED OR STATED, FOR THE POOR INSTALLATION OR LACK OF MAINTENANCE OF YOUR STOVE AND ASSUMES NO RESPONSIBILITY OF ANY CONSEQUENTIAL DAMAGES.**

2.2 Regulations Covering Pellet Stove Installation

When installed and operated as described in these instructions, this pellet stove is suitable for use as a freestanding heater in residential installations.

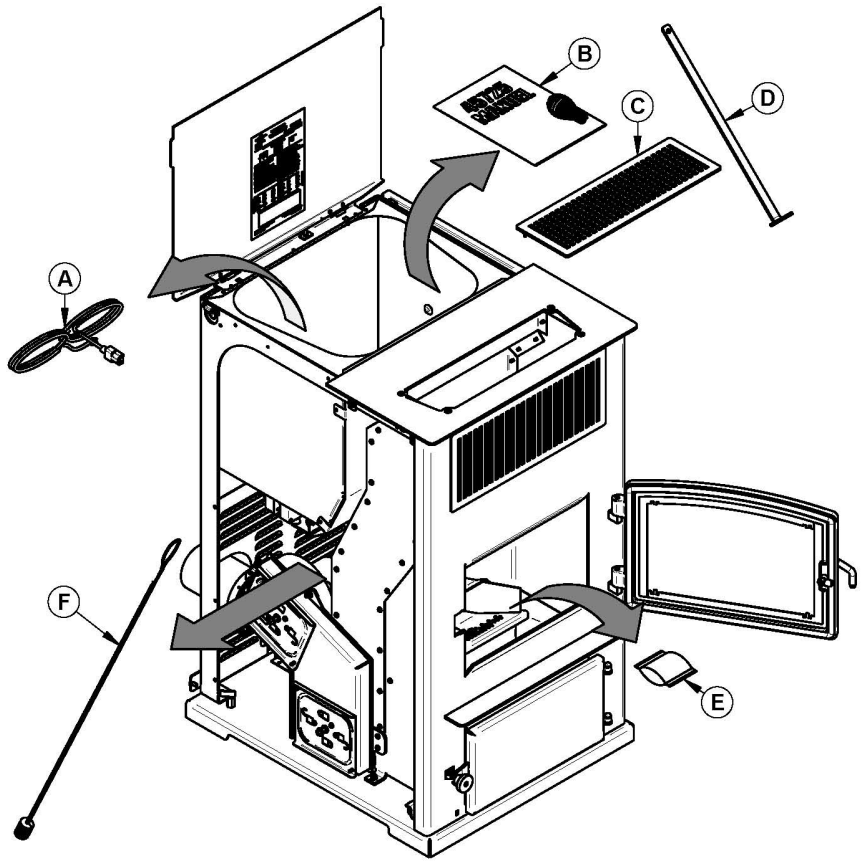
In Canada, the CSA B365 Installation Code for Solid Fuel Burning Appliances and Equipment and the CSA C22.1 Canadian National Electrical Code are to be followed in the absence of local code requirements. In the USA, the ANSI NFPA 211 Standard for Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances and the ANSI NFPA 70 National Electrical Code are to be followed in the absence of local code requirements.

This stove must be connected to a pellet vent system complying with the requirements for Pellet Vent in the standards UL 103, UL 641, ULC S629M, CAN/ULC S609 and ULC/ORD C441 or to a code-approved masonry chimney with a stainless steel flue liner.

2.3 Before Operating Your Stove

Some minor installation and adjustment are required prior to use:

- The handle and door must be adjusted; (see **section 7.1.10: Door Adjustment**)
- The stove must be leveled using threaded legs;
- Make sure the fresh air intake back draft shutter works freely.
- Make sure to remove all tools or accessories that have been inserted in the stove for transportation purposes (see following illustration.)



A	POWER CORD
B	OWNER'S MANUAL
C	TOP GRILL
D	SCRAPER
E	DESICCANT (drying agent)
F	SWEEPING BRUSH (the tie wrap must be cut)

3 Clearances to Combustible Material

The clearances shown in this section have been determined by tests according to procedures set out in safety standards ULC S627 (Canada), ASTM E1509 (U.S.A). When the pellet stove is installed so that its surfaces are at, or beyond, the minimum clearances specified, combustible surfaces will not overheat under normal and even abnormal operating conditions.

WARNING: NO PART OF THE STOVE MAY BE LOCATED CLOSER TO COMBUSTIBLES THAN THE MINIMUM CLEARANCES SPECIFIED ON THE CERTIFICATION LABEL.

CAUTION: NO PART OF THE PELLET VENT SYSTEM MAY BE LOCATED CLOSER TO COMBUSTIBLES THAN THE MINIMUM CLEARANCES SPECIFIED BY THE VENT MANUFACTURER.

CAUTION: DO NOT USE MAKESHIFT MATERIALS OR MAKE ANY COMPROMISES WHEN INSTALLING THIS STOVE.

3.1 Certification Label Location

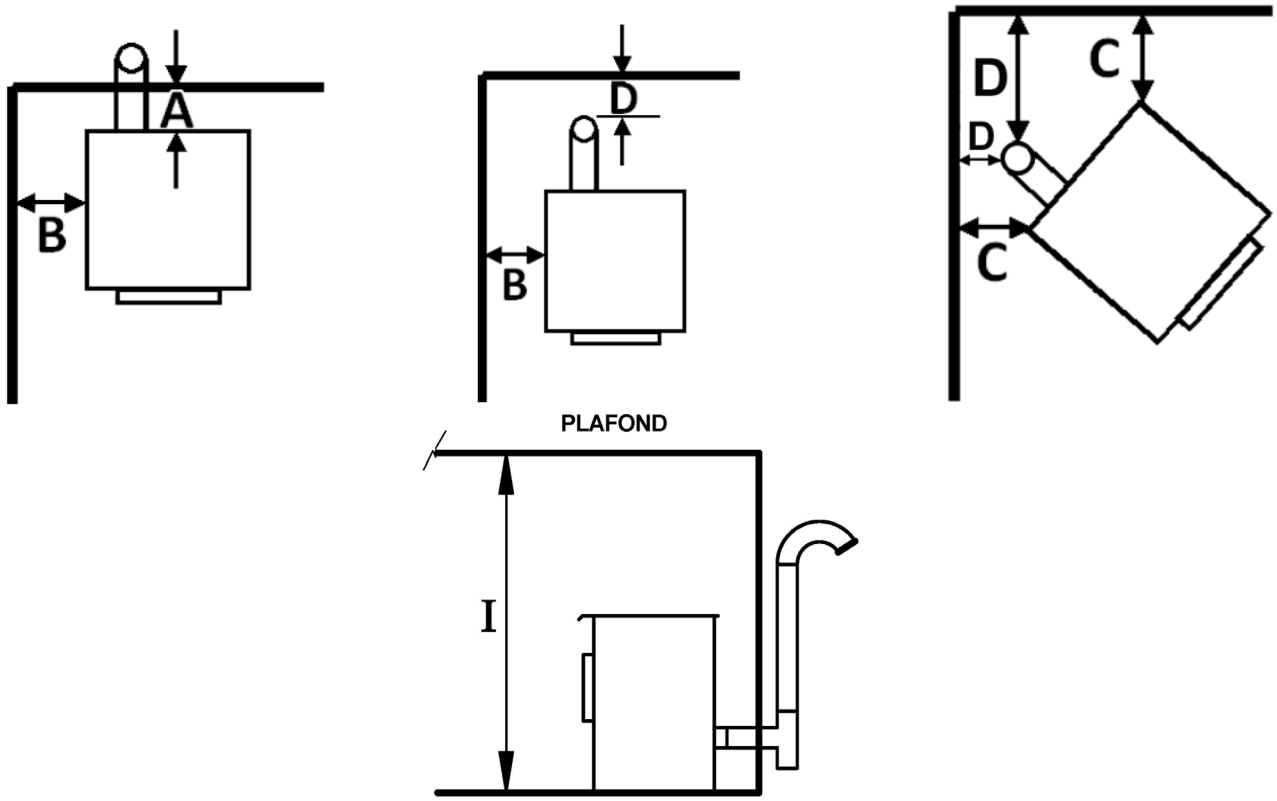
Since the information given on the certification label affixed to the stove always overrides the information published in any other media (owner's manual, catalogues, flyers, magazines and/or web sites), it is important to refer to it in order to have a safe and compliant installation. In addition, you will find important information about your stove (model, serial number, etc.). You will find the certification label on the inner side of the hopper lid of the stove.

3.2 Minimum Clearances to Combustibles

LETTER	CLEARANCES TO COMBUSTIBLES	
	CANADA	USA
A*	3″ (76 mm)	3″ (76 mm)
B	6″ (152 mm)	6″ (152 mm)
C	3″ (76 mm)	3″ (76 mm)
D	Refer to vent manufacturer's clearances	Refer to vent manufacturer's clearances
I**	72″ (1 829 mm)	72″ (1 829 mm)

<u>Note</u>: We recommend leaving 24″ on each side of the stove and 12″ at the back of the stove in order to facilitate access for maintenance.

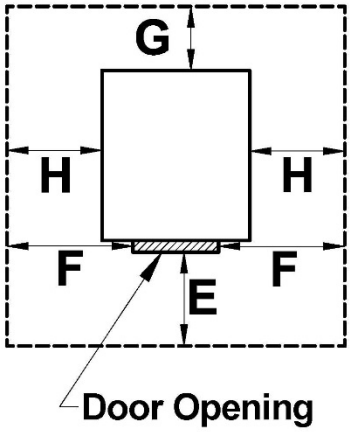
** From the fresh air intake.*
*** Measured from the platform on which the product is installed.*



3.3 Floor Protection

For floor protection clearances refer to the following table.

	FLOOR PROTECTION	
LETTER	**CANADA**	**USA**
E	18″ (460 mm)**	6″ (155 mm)
F	N/A (USA only)	6″ (155 mm)
G	8″ (205 mm)	N/A (Canada only)
H	8″ (205 mm)	N/A (Canada only)



<u>CAUTION</u>: THE STOVE MUST BE PLACED ON A CONTINUOUS (GROUTED JOINTS) NONCOMBUSTIBLE MATERIAL SUCH AS CERAMIC TILE*, CEMENT BOARD, BRICK, MILLBOARD OR EQUIVALENT, OR ANY OTHER APPROVED OR LISTED MATERIAL SUITED FOR FLOOR PROTECTION.

**Any type of tile will require a continuous non combustible sheet beneath to prevent the possibility of embers falling through to the combustible floor if cracks or separation should occur in the finished surface, this would include floor protection for built-in raised hearths. Check local codes for approved alternatives.*

***In Canada, you may reduce to the U.S. floor protection requirements (E) ONLY if the following actions are respected: Allow for the appliance to shut-down and fires to be extinguish. Once completely cool and all blowers have stopped you may proceed with opening the firebox or ash door.*

4 Venting system

4.1 General

Even though the chimney draft is mechanical, a suitable venting system will ensure a natural draft which will prevent smoke spillage in your home if a power outage occurs. Moreover, a suitable venting system configuration will help getting the best efficiency out of your stove when installed in accordance with the required EVL (see **Section 4.3: Equivalent Vent Length (EVL)**).

Even the best stove will not function safely and efficiently as intended if it is not connected to a suitable venting system.

4.2 Recommendations

In Canada, we recommend that you use a listed pellet vent that meets the CAN/ULC S609 or ULC/ORD C441 Standard. A pellet vent listed to ULC S629M is also suitable for installation with this stove.

For the United States, we recommend that you use a listed pellet vent that meets the UL 641 Standard. A pellet vent listed to UL 103 is also suitable for installation with this stove.

This stove can be vented in an existing factory-built or masonry chimney with the addition of a stainless steel liner, provided the chimney is more than 4” in diameter. The liner should be listed and should meet the ULC S635 CAN/ULC S640 standard in Canada and the UL 1777 standard in the USA. Refer to the instructions provided by the vent manufacturer, especially when passing through a wall, ceiling or roof.

4.3 Equivalent Vent Length (EVL)

Recommended venting system inner pipe diameter is 4”.

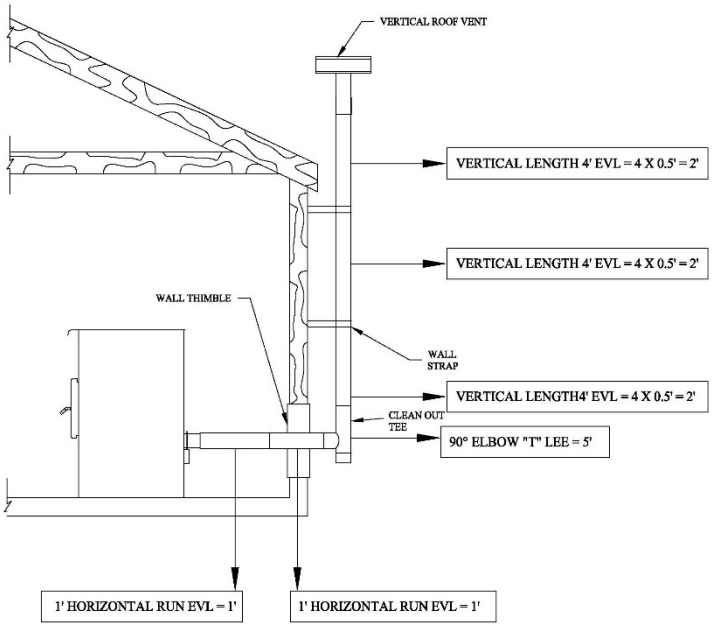
To calculate the EVL of your installation, use the following conversions:

Qty	Type of pipe	EVL equivalent(ft)
1	90° elbow or “T”	5
1	45° elbow	3
1 ft	Horizontal pipe run	1
1 ft	Vertical pipe run	0.5

NOTE: Horizontal runs shall not exceed 9 feet.

NOTE: Never exceed 30 feet of EVL.

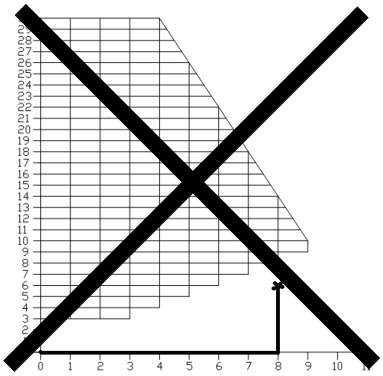
Here is an example to help you calculate Equivalent Vent Length. On the following figure the EVL can be calculated like this:



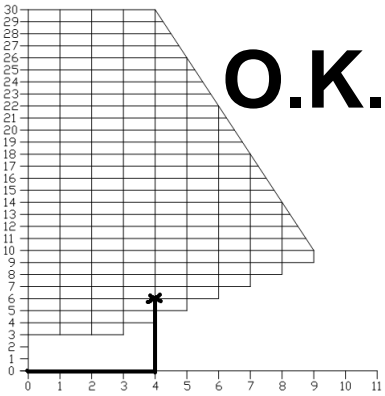
- 2 horizontal run of 1’ = (2 X 1’) X 1’ = 2’ of EVL
- 1 elbow 90° or "Tee" = 5’ of EVL
- 3 vertical length of 4’ = (3 X 4’) X 0.5’ = 6’ of EVL
- Total EVL = (2’ + 5’ + 6’) = 13’

<u>NOTE</u>: Do not include the exterior wall termination in the EVL calculation (45° elbow and termination).

For example, let’s imagine an installation consisting of a horizontal vent coming out at the back of the stove on a total distance of 8 feet. This horizontal run is followed by a tee and a 6-foot vertical rise. This type of installation is not acceptable. As you can see, the vent termination is clearly outside the allowed configuration zone on the chart because the venting system proposed **<u>does not have at least one foot of vertical rise for each foot of horizontal run</u>**.



Instead, if the installation consisted of a horizontal vent coming out at the back of the stove on a total distance of 4 feet, followed by a tee and a 6-foot vertical rise, it would be acceptable. The installation end should be within the allowable configuration zone on the chart since it would have at least one foot of vertical rise for each foot of horizontal run. Furthermore, the total vertical rise would be at least 3-foot high.

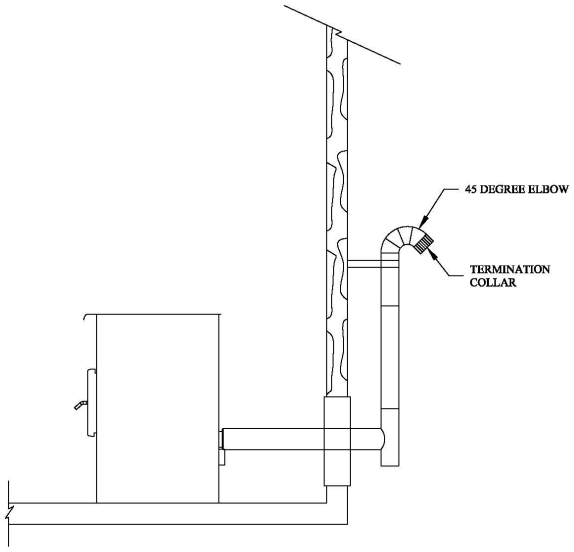


<u>WARNING:</u> To reduce the risk of smoke spillage there should always be at least one foot of vertical rise for each foot of horizontal run. In all cases, at least 3 feet of vertical rise is needed.

4.4 Termination Location

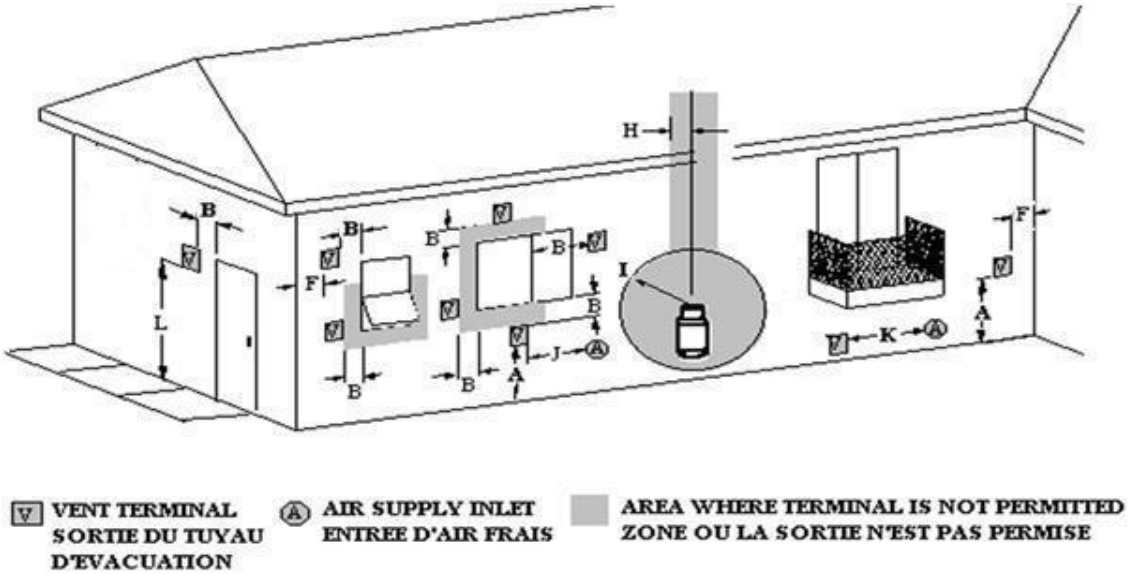
Termination should not be located so that hot exhaust gases can be a hazard. They can reach temperatures of 500°F (260°C) and cause serious burns.

CAUTION: TERMINATION COLLAR (SPARK ARRESTER) IS MANDATORY.



4.4.1 Permitted Termination Location

Refer to NFPA 211 (USA) or CSA B365 (Canada) for rules for the distance of exit terminal from windows and openings. The exit terminal of a mechanical draft system, other than a direct vent appliance shall be located in accordance with the following.



Canada:

Letter	Min. clearances	Description
A	12'' (30 cm)	Clearances above grade level or any adjacent surface that might support snow, ice, or debris
B	39'' (100 cm)	Clearance to window or door that may be opened
F	39'' (100 cm)	Clearance to corner or adjacent wall
H	39'' (100 cm)	Not to be installed above a meter/regulator assembly within 39" (100 cm) horizontally from the vertical center-line of the regulator and for 15' vertically
I	72'' (183 cm)	Clearance to gas service regulator vent outlet or within 39'' (100 cm) of an oil tank vent or an oil tank fill inlet
J	39'' (100 cm)	Clearance to the combustion air inlet to any other appliance
K	72'' (183 cm)	Clearance to a mechanical air supply inlet
L	84'' (213 cm)	Clearance above paved side-walk or a paved driveway located on public property
	39'' (100 cm)	Clearance to property boundary
		A vent shall not terminate underneath a veranda, porch, or deck

United States:

- Not Less than 36'' (91 cm) above any forced air inlet located within 10 feet (305 cm);
- Not Less than 48'' (122 cm) below and horizontally from, or one foot (30 cm) above, any door, window or gravity air inlet into any building;
- Not Less than 24'' (61 cm) from an adjacent building and not less than 84'' (213 cm) above grade when located adjacent to a public walkway.
- Cannot be located less than 12 inches (300mm) above grade.
- Cannot be located above a gas meter/regulator within 3 feet (900mm) horizontally of the vertical center line of the regulator.
- Not within 6 feet (1.8 meters) of a gas service regulator vent outlet.
- Other restrictions may apply. See NFPA 211 for further information.

4.5 Installation Configurations

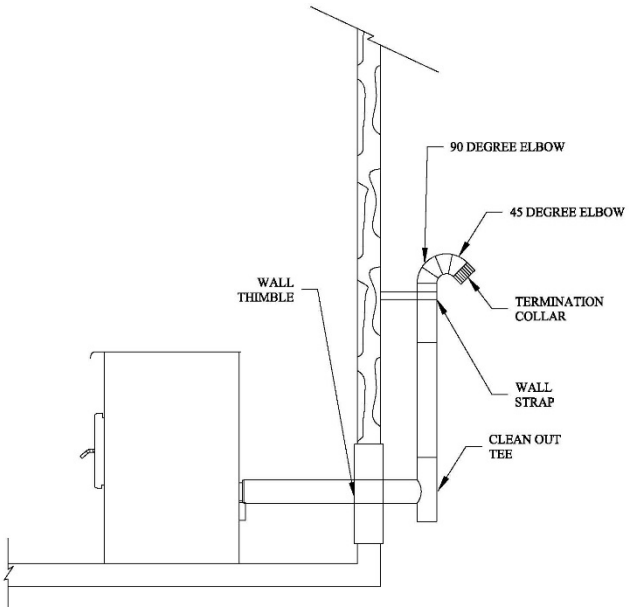
4.5.1 Installation Warnings, Cautions and Recommendations Reminder

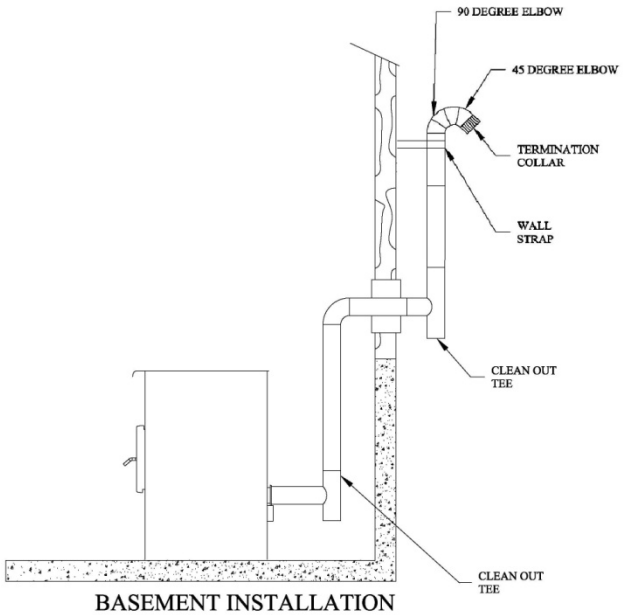
- **PROFESSIONNAL INSTALLATION IS HIGHLY RECOMMENDED**

- **THIS STOVE USES A PRESSURIZED VENTING SYSTEM. ALL VENT CONNECTOR JOINTS MUST BE SEALED AND FASTENED. CONSULT THE PELLET VENT MANUFACTURER'S INSTRUCTION TO ENSURE PROPER INSTALLATION, CONSISTENT PERFORMANCE, AND TO AVOID SMOKE AND ASH SPILLAGE.**

- **USE RTV SILICONE (Room Temperature Vulcanization), METALLIC TAPE, AND A MINIMUM OF THREE SELF-TAPING SCREWS AT ALL JOINT CONNECTIONS TO ENSURE A TIGHT SEAL.**
- **THE CHIMNEY CONNECTOR SHALL NOT PASS THROUGH AN ATTIC OR ROOF SPACE, CLOSET OR SIMILAR CONCEALED SPACE OR FLOORS OR CEILING.**
- **INSTALL VENTING SYSTEM AT CLEARANCES SPECIFIED BY THE VENT MANUFACTURER.**
- **THE USE OF A SPARK ARRESTER AT THE END OF THE TERMINATION IS MANDATORY.**

4.5.2 Through Wall Installation (Main Floor or Basement)





BASEMENT INSTALLATION

1. Position stove following clearances given in **Section 3: Clearances to Combustible Material** and following vent manufacturer's instructions. Then locate the position of the exhaust pipe in the wall.
2. Install wall thimble as per vent manufacturer's instructions.
3. Attach enough piping length to go through the wall thimble and extend at least 6 inches beyond the exterior wall.
4. Attach cap and seal outside wall thimbles with high temperature waterproof silicone sealant.

<u>CAUTION</u>: TO REDUCE THE RISK OF SMOKE SPILLAGE THERE SHOULD ALWAYS BE AT LEAST 12" (30 CM) OF VERTICAL RISE FOR EACH FOOT OF HORIZONTAL RUN. IN ALL CASES, AT LEAST 36" (91 CM) OF VERTICAL RISE IS NEEDED BEFORE THE TERMINATION.

<u>WARNING</u>: TERMINATION SHOULD NOT BE LOCATED SO THAT HOT EXHAUST GASES CAN BE A HAZARD. EXHAUST GASES CAN REACH TEMPERATURES OF 500°F (260°C) AND CAUSE SERIOUS BURNS. SEE SECTION 4.4.1: PERMITTED TERMINATION LOCATION.

4.5.3 Through Roof Installation

1. Position stove following clearances given in **Section 3.2: Minimum Clearances to Combustibles** and following vent manufacturer's instructions.

2. Install a cleanout tee to the stove flue outlet. If necessary, use a horizontal additional length between the flue outlet and the tee. If you wish to center the vertical part of the vent with the stove, a 45° elbow and a tee can be used to route the pipe from the flue outlet towards the back center of the stove.

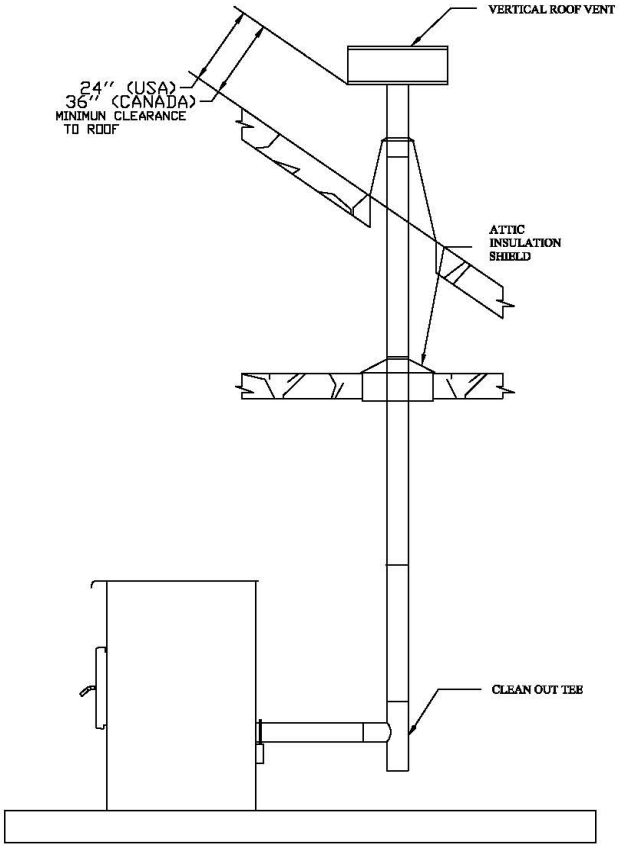
3. Drop the plumb bob over the center of the tee outlet and mark location on the ceiling. Install the ceiling support and the vent pipe by following the vent manufacturer's instructions.

4. Always follow vent manufacturer's clearances instructions from combustible materials. When passing through additional floors or ceilings, always install a fire stop spacer.

5. After lining up for hole in roof, cut either a round or square hole in roof. Install upper edge and sides of flashing under roofing materials. Nail it to the roof along upper edge. Do not nail lower edge. Seal nail heads with flexible waterproof sealant.

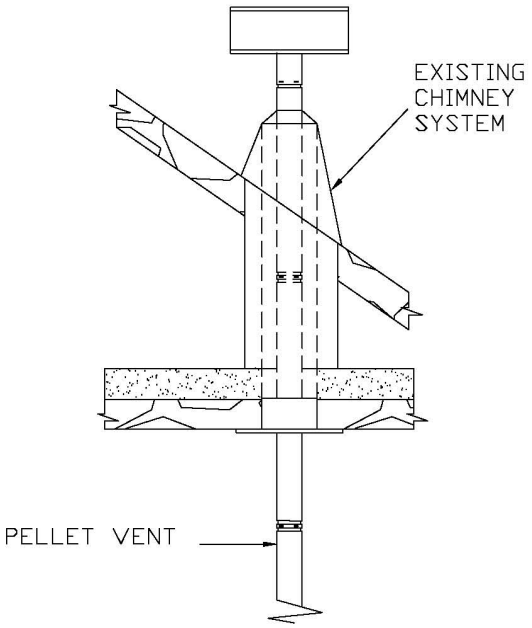
6. Apply high temperature waterproof silicone sealant where the storm collar meets the vent. Slide storm collar down until it sits on the flashing.

7. Seal and install vertical roof vent. If required, seal and install a storm collar.



4.5.4 Through a Factory Built Chimney

To make an installation through a factory built chimney, run a 4" stainless steel liner inside the factory built chimney.



1. Position stove following clearances given in **Section 3.2: Minimum Clearances to Combustibles** and following vent manufacturer's instructions.

2. Install a cleanout tee to the stove flue outlet. If necessary, use a horizontal additional length between the flue outlet and the tee. If you wish to center the vertical part of the vent with the stove, a 45° elbow and a tee can be used to route the pipe from the flue outlet towards the back center of the stove.

3. Connect the pellet vent to the stainless steel liner according to the vent manufacturer's instructions.

4. Seal and install vertical roof vent. If required, seal and install a storm collar.

<u>WARNING</u>: IN THE U.S., THE USE OF A STAINLESS STEEL LINER IS MANDATORY. IN CANADA, IT IS NOT MANDATORY BUT IS STRONGLY RECOMMENDED.

<u>NOTE</u>: VENTING DIRECTLY IN AN OVERSIZED CHIMNEY AND OMITTING THE USE OF A STAINLESS STEEL LINER CAN AFFECT CHIMNEY DRAFT AND DECREASE STOVE PERFORMANCES.

4.5.5 Through an Existing Masonry Fireplace

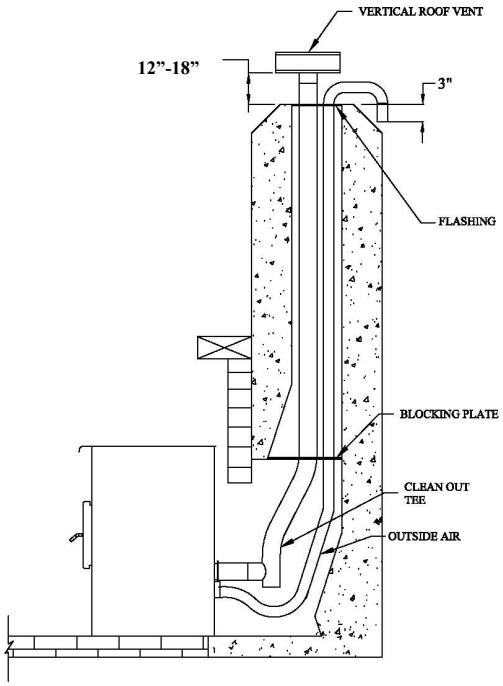
1. Position stove, following clearances shown in **Section 3.2: Minimum Clearances to Combustibles** and following vent manufacturer's instructions.

2. Build and Install a blocking plate inside the chimney to seal the fireplace damper. Stainless steel plate and screws are recommended. Cut a hole for the exhaust pipe. If needed, cut a second hole for the air intake pipe (see **Appendix D: Combustion Air Supply**).

3. Attach a section of pipe and clean out tee to the flue outlet, making sure the clean out tee is centered in the chimney flue area.

4. Install a vented flashing at the top of the fireplace chimney. Stainless steel plate and screws are recommended. Cut a hole for the vent pipe. If needed, cut a second hole for the air intake pipe. Seal all joints with high temperature waterproof silicone sealant to prevent water leakage.

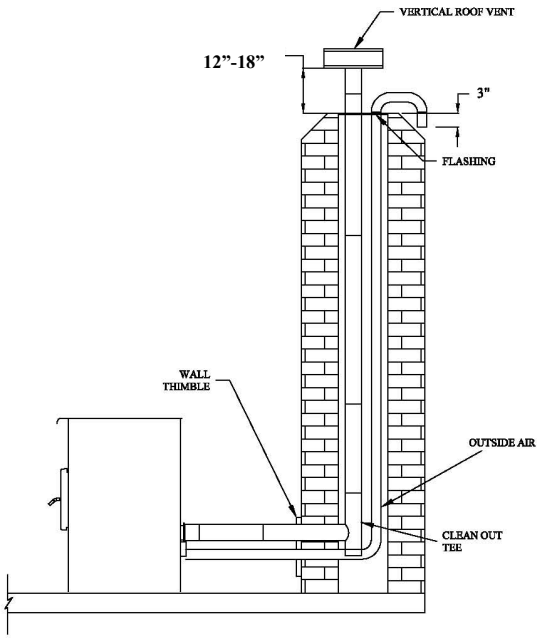
5. Seal and install vertical roof vent. If required, seal and install a storm collar.



<u>NOTE</u>: THE STRUCTURAL CONDITION OF THE MASONRY CHIMNEY MUST FIRST BE INSPECTED BY A QUALIFIED CHIMNEY SWEEP OR INSTALLER.

<u>NOTE</u>: YOU WILL NEED A PIPE LENGTH EQUAL TO THE CHIMNEY HEIGHT FROM THE HEARTH. IF OUTSIDE COMBUSTION AIR IS TO BE USED, YOU WILL NEED A PIPE LENGTH SUPERIOR FROM 12 TO 18 INCHES (30 TO 46 CM) OF THE CHIMNEY HEIGHT TO ENSURE A PROPER STOVE BEHAVIOUR.

4.5.6 Through an Existing Masonry Chimney



1. Position stove following clearances shown in **Section 3.2: Minimum Clearances to Combustibles** and following vent manufacturer’s instructions.
2. Mark the center of the hole where the vent pipe will go through the masonry chimney.
3. It is necessary to make a hole in the masonry with a one-inch diameter greater than the diameter of the vent pipe used.
4. Install a vented flashing at the top of the masonry chimney. Stainless steel plate and screws are recommended. Cut a hole for the vent pipe. If needed, cut a second hole for the air intake pipe. Seal all joints with high temperature waterproof silicone sealant to prevent water leakage.
5. Install the cleanout tee at the bottom of the vertical vent system and lower it down the chimney until the center branch of the tee is aligned with the hole in the masonry.
6. Install and seal flashing with high temperature waterproof silicone sealant.
7. Seal and install vertical roof vent. If required, seal and install a storm collar.
8. Connect the horizontal vent pipe to the cleanout tee by pushing it through the hole in the masonry.
9. If desired, once the horizontal pipe is in place, the space between the pipe and masonry may be filled with high-temperature grout.

If desired, install a trim collar and use an additional horizontal vent pipe length, if required, to connect the stove to the chimney.

<u>NOTE</u>: YOU WILL NEED A PIPE LENGTH EQUAL TO THE CHIMNEY HEIGHT FROM THE HEARTH. IF OUTSIDE COMBUSTION AIR IS TO BE USED, YOU WILL NEED A PIPE LENGTH SUPERIOR FROM 12 TO 18 INCHES (30 TO 46 CM) OF THE CHIMNEY HEIGHT TO ENSURE A PROPER STOVE BEHAVIOUR.

PART B - OPERATION

4.6 General Information

4.7 Operation Warnings, Cautions and Recommendations

- **KEEP THIS MANUAL FOR REFERENCE.**
- **DURING THE FIRST FEW FIRES, YOUR STOVE WILL EMIT AN ODOR AND A SMALL AMOUNT OF FUMES AS THE HIGH TEMPERATURE PAINT CURES OR BECOMES SEASONED TO THE METAL. MAINTAINING SMALLER FIRES WILL MINIMIZE THIS. AVOID PLACING ITEMS ON STOVETOP DURING THIS PERIOD TO AVOID DAMAGING THE PAINT SURFACE. MAKE SURE THE ROOM IS WELL-VENTILATED. OPEN WINDOWS. ODORS AND FUMES RELEASED DURING THIS PROCESS ARE UNPLEASANT BUT THEY ARE NOT TOXIC. ONCE YOU HAVE BURNED THE FIRST 40LBS OF PELLETS, IT IS RECOMMENDED TO INSPECT THE STOVE AND THE VENTING SYSTEM TO MAKE SURE THAT THERE IS NO LEAKS.**
- **HOT WHILE IN OPERATION, KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. GLOVES MAY BE NEEDED FOR STOVE OPERATION.**
- **IT IS HIGHLY RECOMMENDED THAT THE USER BUYS THIS PRODUCT FROM A RETAILER WHO CAN PROVIDE INSTALLATION AND MAINTENANCE ADVICE.**
- **THIS STOVE MUST SERVE AS A SUPPLEMENTARY HEAT SOURCE. AN ALTERNATIVE HEAT SOURCE SHOULD BE AVAILABLE IN THE HOME IF NEEDED. THE MANUFACTURER CANNOT BE HELD RESPONSIBLE FOR ADDITIONAL HEATING COSTS ASSOCIATED WITH THE USE OF AN ALTERNATIVE HEAT SOURCE.**
- **USING A STOVE WITH CRACKED OR BROKEN COMPONENTS, SUCH AS GLASS OR BAFFLE MAY PRODUCE AN UNSAFE CONDITION AND MAY DAMAGE THE STOVE.**
- **NEVER USE GASOLINE, GASOLINE-TYPE LANTERN FUEL (NAPHTHA), FUEL OIL, MOTOR OIL, KEROSENE, CHARCOAL LIGHTER FLUID, OR SIMILAR LIQUIDS OR AEROSOLS. KEEP ALL SUCH LIQUIDS OR AEROSOLS WELL AWAY FROM THE STOVE WHILE IT IS IN USE.**
- **DO NOT STORE FUEL WITHIN STOVE MINIMUM CLEARANCES TO COMBUSTIBLE.**
- **THIS STOVE SHOULD BE MAINTAINED AND OPERATED AT ALL TIMES IN ACCORDANCE WITH THESE INSTRUCTIONS. NOT FOLLOWING THE INSTRUCTIONS OF THIS MANUAL MAY CAUSE SMOKE SPILLAGE AND OTHER POTENTIAL HAZARDS. IT IS ALWAYS RECOMMENDED TO INSTALL SMOKE DETECTORS, CARBON MONOXIDE MONITORS AND FIRE EXTINGUISHER IN A CONVENIENT LOCATION.**
- **THE VIEWING DOOR MUST BE CLOSED AND LATCHED AT ALL TIMES DURING OPERATION. THE ASH DRAWER ACCESS PANEL MUST ALSO BE CLOSED DURING OPERATION.**
- **NEVER TRY TO REPAIR OR REPLACE ANY PART OF THE STOVE UNLESS INSTRUCTIONS ARE GIVEN BY THE MANUFACTURER. ALL OTHER WORK SHOULD BE DONE BY A TRAINED TECHNICIAN.**
- **DO NOT OPERATE THE STOVE IF THE FLAME BECOMES DARK AND SOOTY OR IF THE BURN POT OVERFILLS WITH PELLETS. TURN THE STOVE OFF, INSPECT IT, AND CALL YOUR DEALER.**
- **TURNING THE STOVE OFF DOES NOT DISCONNECT ALL POWER FROM THE STOVE. DISCONNECT THE POWER CORD BEFORE PERFORMING ANY MAINTENANCE OR REPAIRS ON THE STOVE.**

- **ALLOW THE STOVE TO COOL BEFORE CARRYING OUT ANY MAINTENANCE OR CLEANING. ASHES SHOULD BE PLACED IN A METAL CONTAINER WITH A TIGHT FITTING LID. THE CLOSED METAL CONTAINER 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 ASHES HAVE BEEN THOROUGHLY COOLED.**
- **DO NOT OPERATE THE STOVE IF YOU SMELL OR SEE SMOKE. TURN IT OFF, MONITOR IT AND CALL YOUR DEALER IF NECESSARY. DO NOT UNPLUG IT. NEVER OPEN THE DOOR.**
- **IT IS RECOMMENDED TO UNPLUG THE STOVE WHEN IT'S NOT IN USE FOR PROLONGED AMOUNT OF TIME (I.E. DURING SUMMER). SENSORS ON THE STOVE ARE ACTIVATED BY HEAT AND COULD ACTIVATE THE FANS EVEN IF THE STOVE IS NOT IN FUNCTION.**
- **THIS STOVE REQUIRES REGULAR MAINTENANCE AND CLEANING. FAILURE TO FOLLOW THE MAINTENANCE SCHEDULE (SEE SECTION 7.1.1: RECOMMENDED MAINTENANCE SCHEDULE) WILL REDUCE THE STOVE PERFORMANCE AND COULD EVENTUALLY DAMAGE IT. IT ALSO MAY LEAD TO SMOKE SPILLAGE IN YOUR HOME.**
- **THIS STOVE IS DESIGNED AND TESTED TO BURN ONLY WOOD PELLETS. ANY OTHER TYPE OF FUEL BURNED IN THIS HEATER WILL VOID THE WARRANTY.**
- **HOPPER SHOULD ONLY CONTAIN PELLETS. HOPPER SHOULD BE KEPT FREE OF ANY FOREIGN OBJECTS AT ALL TIME TO PREVENT ANY DAMAGE TO THE STOVE.**
- **THE STOVE WILL NOT OPERATE DURING A POWER OUTAGE. IF AN OUTAGE DOES OCCUR, CHECK THE STOVE FOR SMOKE SPILLAGE. OPENING A WINDOW WILL PREVENT NEGATIVE PRESSURE AND SMOKE SPILLAGE IN THE ROOM.**
- **DO NOT UNPLUG THE STOVE IF YOU SUSPECT IT IS MALFUNCTIONING. TURN IT OFF, MONITOR IT AND CALL YOUR DEALER IF NECESSARY.**
- **THIS STOVE IS DESIGNED TO PROVIDE THE OPTIMUM PROPORTIONS OF FUEL AND AIR TO THE FIRE IN ORDER TO BURN FREE OF SMOKE AND SOOT. ANY BLOCKAGE OF THE AIR SUPPLY TO OR FROM THE STOVE WILL SERIOUSLY DECREASE ITS PERFORMANCE AND WILL BE EVIDENT BY A SMOKING EXHAUST, A SOOT BUILDUP ON THE WINDOW AND ON OUTSIDE WALLS. FOR BEST OPERATION, THE ASH CONTENT OF THE PELLET FUEL SHOULD BE LESS THAN 1% AND THE CALORIFIC VALUE APPROXIMATELY 8,500 BTU/LB. OTHERS FUELS WITH A HIGH ASH CONTENT WILL REQUIRE A HIGHER LEVEL OF MAINTENANCE AND CLEANING.**
- **THE STOVE WILL NOT OPERATE USING NATURAL DRAFT OR WITHOUT A POWER SOURCE TO ACTIVATE THE BLOWER SYSTEMS AND FUEL FEED SYSTEM.**
- **STOVE BUILDER INTERNATIONAL INC. GRANTS NO WARRANTY, IMPLIED OR STATED, FOR IMPROPER INSTALLATION OR LACK OF MAINTENANCE OF YOUR STOVE, AND ASSUMES NO RESPONSIBILITY OF ANY CONSEQUENTIAL DAMAGES.**
- **IF YOU NOTICE A SMOLDERING FIRE (BURNPOT FULL BUT NO VISIBLE FLAME) AND A HEAVY SMOKE BUILDUP IN FIREBOX, IMMEDIATELY TURN OFF THE STOVE, BUT DO NOT UNPLUG IT. DO NOT OPEN THE DOOR OR THE HOPPER LID. MAKE SURE THAT THE FRESH AIR INTAKE SHUTTER WORKS FREELY. WAIT UNTIL SMOKE INSIDE THE FIREBOX CLEARS AND BLOWERS SHUT DOWN. DO AS INSTRUCTED IN "EVERYDAY STARTUP" THEN ATTEMPT TO RESTART THE STOVE. IF THE PROBLEM PERSISTS, CONTACT YOUR DEALER. NOTE THAT SMOKE BUILD-UP DURING IGNITION MAY OCCUR. SMOKE CAN ACCUMULATE IN THE FIREBOX FOR A FEW SECONDS JUST BEFORE THE IGNITOR IS HOT**

ENOUGH TO FIRE-UP THE PELLETS IN THE BURN POT. THIS IS NORMAL. AS SOON AS THERE IS FIRE IN THE BURN POT, SMOKE WILL DISAPPEAR.

- **MAINTAIN PROPER VENTILATION. IT IS IMPORTANT THAT ADEQUATE OXYGEN IS BEING SUPPLIED TO THE FIRE FOR PROPER COMBUSTION. DURING THE WINTER SEASON, MAKE SURE THAT THE FRESH AIR INTAKE IS FREE OF ANY ICE, SNOW, ETC., AS THIS WILL STARVE THE FIRE OF AIR AND PREVENT THE PROPER OPERATION OF THE STOVE. MAKE SURE THE FRESH AIR INTAKE BACKDRAFT SHUTTER WORKS FREELY.**
- **OPERATING YOUR STOVE AT THE MAXIMUM SETTING DURING A LONG PERIOD OF TIME MAY REDUCE THE STOVE AND ITS COMPONENTS LIFE EXPECTANCY.**

WARNING: This product can expose you to chemicals including carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to www.P65warnings.ca.gov/

4.7.1 Zone Heating and How to Make It Work for You

Your new pellet stove is a space heater, which means it is intended to heat the area it is installed in, as well as spaces that connect to that area, although to a lower temperature. This is called zone heating and it is an increasingly popular way to heat homes or spaces within homes.

Zone heating can be used to supplement another heating system by heating a particular space within a home, such as a basement family room or an addition that lacks another heat source.

Although the stove may be able to heat the main living areas of your house to an adequate temperature, this stove must serve as a supplementary heat source. You should have a conventional oil, gas or electric additional heating system to provide heating in the home. The manufacturer cannot be responsible for additional heating costs associated with the use of an alternative heat source in case of stove failure or power outage.

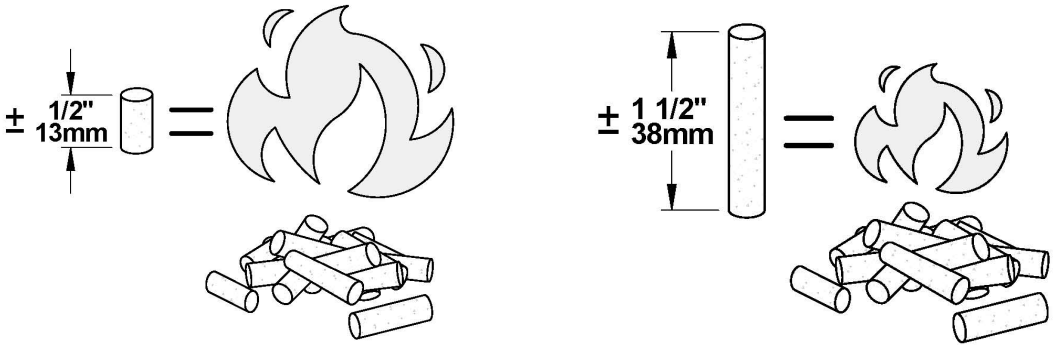
Your success with zone heating will depend on several factors: Proper stove size, stove location, heating area, house layout, insulation and your climate zone.

4.8 Combustible

4.8.1 Proper Fuel

Each type of pellet has its properties and will burn differently. The amount of ashes produced can also vary greatly. Conventional pellets are those ¼” or 5/16” in diameter and not over 1” long. Longer or thicker pellets will affect the constancy of pellet feed.

For example, if the pellets are very short, they will have more ease to accumulate and pile into the feed screws. Thus, the volume of pellets will be denser, which will lead to an increase in BTU. By contrast, longer pellets will pile less so the BTU will be reduced.



The bottom-feed system of this stove is designed and tested specifically for use with wood pellets.

<u>WARNING</u>: BURNING OTHER TYPES OF PELLETS IS PROHIBITED. IT VIOLATES THE BUILDING CODES FOR WHICH THE STOVE HAS BEEN APPROVED AND WILL VOID THE WARRANTY

DO NOT BURN :

- **COAL;**
- **GARBAGE;**
- **LAWN CLIPPINGS OR YARD WASTE;**
- **MATERIALS CONTAINING RUBBER, INCLUDING TIRES;**
- **MATERIALS CONTAINING PLASTIC;**
- **WASTE PETROLEUM PRODUCTS, PAINTS OR PAINT THINNERS, OR ASPHALT PRODUCTS;**
- **MATERIALS CONTAINING ASBESTOS;**
- **CONSTRUCTION OR DEMOLITION DEBRIS;**
- **RAILROAD TIES OR PRESSURE-TREATED WOOD;**
- **MANURE OR ANIMAL REMAINS;**
- **SALT WATER DRIFTWOOD OR OTHER PREVIOUSLY SALT WATER SATURATED MATERIALS;**
- **UNSEASONED WOOD; OR**
- **PAPER PRODUCTS, CARDBOARD, PLYWOOD, OR PARTICLE BOARD. 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 the release of toxic fumes or render the heater ineffective and cause smoke

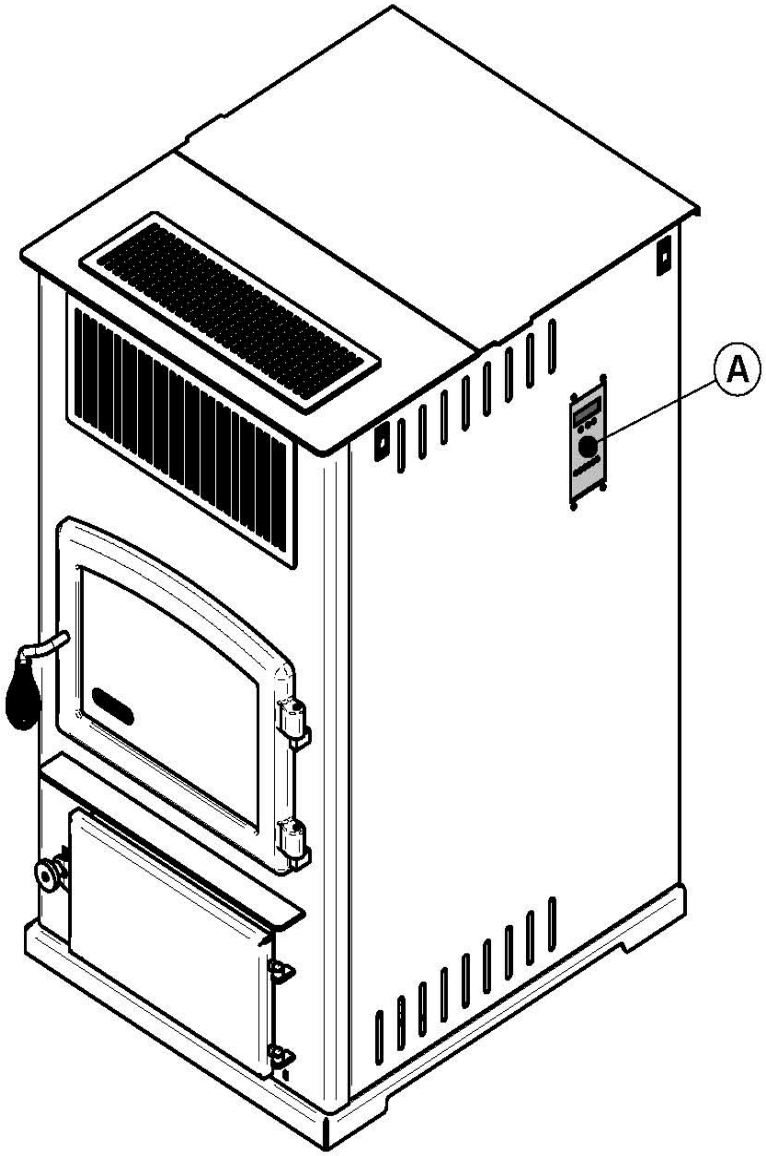
4.8.2 Where to Store Bags of Pellets

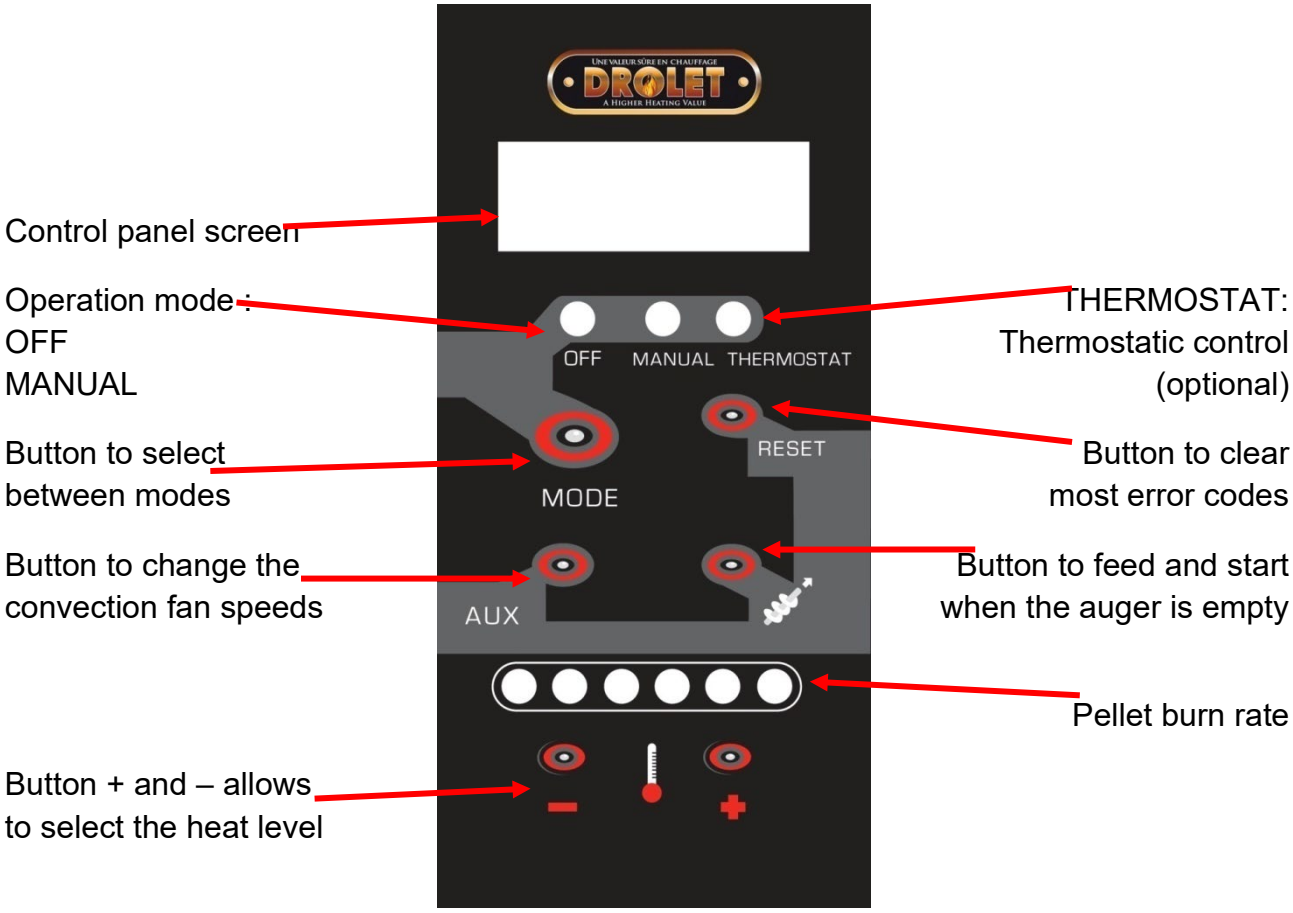
We recommend that you store your bags of pellets in a dry and well ventilated area if possible. Using dry pellets will increase the performance of your stove. You may want to have a bag or two in the same room as your stove for refueling but make sure to respect the minimum clearances to combustible materials and the space required for refilling and ash removal.

5 Stove Controls

5.1 Control Panel

The blowers and automatic fuel supply are controlled from a control panel (A) on the right-hand side of the ECO-65R. The control panel functions are as follows:





5.1.1 Mode Button

When the mode switch is pressed, you will be able to choose the Manual or the Thermostat mode, or to turn off the appliance. If the Manual mode is selected, the stove will automatically ignite. At this time, the heat level must be selected manually to adjust the stove's heat output to the desired level. If the thermostat mode is selected, the stove will automatically modulate between the lowest heat level and the heat level selected to keep the room temperature at the thermostat's setting (see **Section 6.6.1: Pilot mode selection***).* No fire starter is necessary to ignite the unit. The auger will feed fuel and the electric igniter will start. If the unit doesn't ignite within 12 minutes, the stove will start another ignition cycle. If ignition fails a second time, a warning message will appear on the control panel.

The Heat Level may be selected during the ignition cycle. However, the unit will only feed fuel at the desired heat level setting when the heat sensor located into the stove will receive a signal indicating that the unit has been fully ignited. This may take anywhere between 10 and 15 minutes.

5.1.2 Fuel Feed Button

When the “Fuel Feed” button is pushed the stove will feed pellets continuously into the burn pot during 1 minute and then the ignition cycle will begin. The “Feed and Start” message will appear.

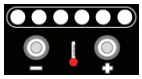
Use this option when you start your stove for the first time in the season or when the stove has run out of pellets, i.e. the hopper is empty. The auger will turn and then the stove will start automatically an ignition cycle.

CAUTION: THIS FUNCTION CAN ONLY BE OPERATED WHEN THE STOVE IS IN “OFF” POSITION. THE FUEL FEED SWITCH IS USED TO PRIME THE AUGER WHEN AUGER IS EMPTY.

5.1.3 Convection Fan Speed Control

The convection fan can be adjusted to 9 predetermined speeds. By pressing on AUX, the message FAN followed by a number between 1 to 9 will appear on the screen. It will be possible to modify the blower speed by pressing on the + or the -. Take note that not all fan ranges are available, but the speed of the convection blower is consistent with the requested burn rate.

5.1.4 Heat Level



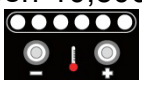
By pressing + or -, you can set the pellet feed rate and hence the heat output of your stove. The levels of heat output will incrementally change and each LED indicates the level from 1 to 6.

5.1.5 Reset

The reset button has to be used to clear most warnings on the control panel and restart your stove (see **Section 6.6: Operating the Stove Using a Thermostat** and **Section 8.3: Main Error Codes, Possible Causes and Solutions**).

5.2 Adjustments

5.2.1 Selecting the Combustion Level (Heat Rate)

The heat input of the stove varies between 10,500 BTU/h to 65,000 BTU/h. To change the combustion level select the + or – button  when the stove is in function.

<u>Note</u>: Input range may vary according to the type of pellets being used.

Even though your stove can burn a large variety of wood pellets, we strongly recommend the use of high quality pellets to obtain maximum performance out of your stove (see **Section 4.8.1: Proper Fuel**).

<u>Note</u>: To obtain optimal results make sure the venting system, heat exchanger and exhaust channels are cleaned before performing any setting changes.

5.2.2 Adjusting the Convection Fan Speed

You can adjust the stove's convection fan speed for each combustion level selected. Thus, an adjustment range is offered to reduce or increase air distribution in the room. Take note that not all fan ranges are available, but the speed of the convection blower is consistent with the requested burn rate. Therefore, if you use your stove in a lower combustion setting, you will not be able to bring the fan to its maximum capacity. Conversely, for the higher combustion settings, the lowest convection fan speed is blocked.

If overheating is detected, the convection fan speed will automatically go to the maximum setting, an error code of F-160 will appear and the convection fan will operate at its highest setting until the stove reaches a safe temperature. Once the stove reaches that temperature, it will return to the previously selected convection fan selection.

6 Stove Operation

6.1 First Startup

Before starting your stove, make sure that the burn pot, the baffle and the maintenance access panels are properly installed. Make sure that the stove has been emptied of all tools and accessories (see **Section 2.3: Before Operating Your Stove**). Also make sure that the venting system is properly sealed, that all doors and hopper lid are closed. Make sure that the hopper is full of pellets. Press the auger button  .

If fire doesn't start within 20 minutes, a warning code  will appear. Refer to troubleshooting section for more details.

<u>WARNING</u>: NEVER USE A GRATE OR OTHER MEANS OF SUPPORTING THE FUEL. ONLY USE THE APPROVED STOVE BURN POT.

6.2 Everyday Startup

Before starting the stove, make sure there is enough pellets in the hopper and that the recommended maintenance schedule has been followed (see **Section 7.1.1: Recommended maintenance schedule**). Press the 

icon for either MANUEL or THERMOSTAT.

6.3 Running Out of Pellets

If your stove runs out of pellets, the fire will slowly go out; the convection fan will run until the heat sensor on the exhaust fan reads 115°F. The cooling cycle will take a few minutes before all other motors stops. When this temperature is reached, a warning message  will appear on the screen.

To restart the stove, wait until all components stop running (usually 10 minutes after the warning message has been displayed). Press the 

button, refill the hopper, and press the auger icon  .

6.4 Refueling

While the stove is running, you have up to 3 minutes to refill the hopper with pellets. Note that opening the hopper lid will stop the auger from feeding pellets to the stove. If the hopper lid is left open more than 3 minutes, the stove will stop and a warning code  will appear on the control panel. To restart the stove, close the lid, press the 

button, and then press the 

to select either MANUAL or THERMOSTAT.

<u>NOTE</u>: Keep hopper lid closed at all times except when refueling. Do not overfill the hopper.

6.5 Shutting Down Procedure

To turn your stove off, press the 

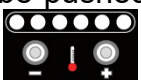
button on the control panel until the LED light is in the OFF position. The cooling cycle will take a few minutes and the blowers will continue to function while the stove is cooling down.

IMPORANT: DO NOT DISCONNECT THE POWER CORD TO TURN OFF THE STOVE.

6.6 Operating the Stove Using a Thermostat

A thermostat may help you maintain a constant house temperature automatically (**See APPENDIX B: Thermostat installation (AC05558)**). A Low voltage thermostat is required. A fixed wall mount or hand held model can be used.

To use this mode, the 

button must be pushed to “Thermostat” upon starting the stove. The heat setting is then selected using the  selector “+ or –”. When set in thermostatic mode, the stove will automatically run at the heat level selected until the set room temperature is reached. When that occurs, the stove will switch to heat setting #1 (lowest) until the thermostat calls for heat again. The convection blower will also slow to its lowest speed. When the thermostat calls for heat again, the stove will increase its feed rate to match the heat setting previously selected.

If the room temperature remains stable and the thermostat does not call for heat during at least 45 minutes, the stove will shut down. When the thermostat calls for heat again, the stove will start an ignition cycle. Once the ignition cycle is completed, the stove will increase its feed rate to match the heat setting selected.

6.6.1 Pilot Mode Selection

It is possible to change the setting of your unit such that if the thermostat does not call for heat after 45 minutes, the unit will remain at the lowest heat setting (#1) but will not shut down (this is the PILOT ON mode). The stove will remain at the lowest heat level until the thermostat calls for heat again. It is also possible that the unit shuts down as soon as the thermostat stops calling for heat. This mode is called “PILOT OFF”. If you prefer that your unit runs following one of these logics, you need to change the setting to PILOT ON or PILOT OFF by simultaneously pressing the following two buttons on the PC Board for a couple of seconds:

 and 

Once you do that, the letters P, I, L, O, T, O, N will appear on the PC Board to let you know that you are in the “PILOT ON” mode. By pressing again the two buttons, the letters P, I, L, O, T, O,F,F will appear on the PC Board to let you know that you are in the “PILOT OFF” mode. If you wish to go back to the default thermostatic mode (i.e. the unit shuts down after 45 minutes if the thermostat does not call for heat), simply press the same two buttons again for a couple of seconds. The letters P, I, L, O, T, A, U, T, O will appear on the PC Board to let you know that you are in the “PILOT AUTO” mode.

6.7 Signs of an Overheating Stove

Under normal conditions, the flame should have a bright yellow color and be very active, but stable. If you see the flame getting lazy, very high and orange, it may be a sign that there is something wrong. Usually, overheating issues are caused by too much restriction in the venting system, a blocked heat exchanger, a lack of combustion air or a lack of maintenance.

If this happens, your stove will become very hot. If the stove becomes too hot, an 

code will appear on the control panel. Before starting the stove again make sure the recommended maintenance has been done properly. Press the 

and the 

buttons and hold simultaneously for 2 seconds to reset the stove. If an 

code occurs twice, call you dealer. He will be able to give you some recommendations so this code won't appear again.

<u>WARNING:</u> IF YOU CHOOSE A STOVE THAT IS TOO SMALL FOR YOUR HOUSE AND YOU NEED TO OPERATE IT AT THE MAXIMUM SETTING FOR A LONG PERIOD OF TIME, YOU MAY END UP OVERHEATING THE STOVE. THE STOVE AND ITS COMPONENTS LIFE EXPECTANCY WILL BE REDUCED.

<u>WARNING:</u> IF ANY EXTERNAL PART OF THE STOVE BEGINS TO GLOW RED, THE STOVE IS OVERHEATING. IMMEDIATELY TURN THE STOVE OFF. DO NOT UNPLUG IT AND DO NOT OPEN THE DOOR. UNPLUGING THE STOVE WILL DISABLE ALL THE SAFETY FEATURES OF THE STOVE.

<u>DANGER</u> : AN OVERHEATING STOVE MAY LEAD TO A HOUSE FIRE. EACH H CODE SHOULD BE FOLLOWED BY A STOVE MAINTENANCE AND A VENTING SYSTEM VERIFICATION.

7 Maintenance

7.1 Stove Maintenance

7.1.1 Recommended Maintenance Schedule

Use this as a guide when used under average conditions.

Components	Weekly or after **± 250 pounds**	Twice a year or after **± 1 tons**	Annually or **± 2 tons**
Baffle	**Vacuum**		
Bottom airwash inlet	**Vacuum**		
Burn Pot	**Scrape / Vacuum**		
Glass	**Clean**		
Ash Drawer	**Empty / Vacuum**		
Combustion Chamber	**Vacuum**	**Vacuum / Brush***	
Heat Exchanger Tubes	**Brush**	**Scrape and Vacuum***	
Exhaust Channels (through access traps)		**Vacuum***	
Exhaust Blower		**Vacuum***	
Combustion Blower		**Inspect***	
Convection Blower		**Vacuum***	
Venting System		**Inspect / Sweep***	**Sweep and Clean**
Gaskets		**Inspect**	
Hopper			**Empty / Vacuum**

*Cleaning frequency may vary depending on the type of fuel used. Fuel with higher ash content will increase cleaning frequency. See **Section 4.8.1: Proper Fuel** for recommended combustibles.

WARNING: FAILURE TO CLEAN AND MAINTAIN THIS STOVE AS INDICATED CAN RESULT IN POOR PERFORMANCE AND SAFETY HAZARDS.

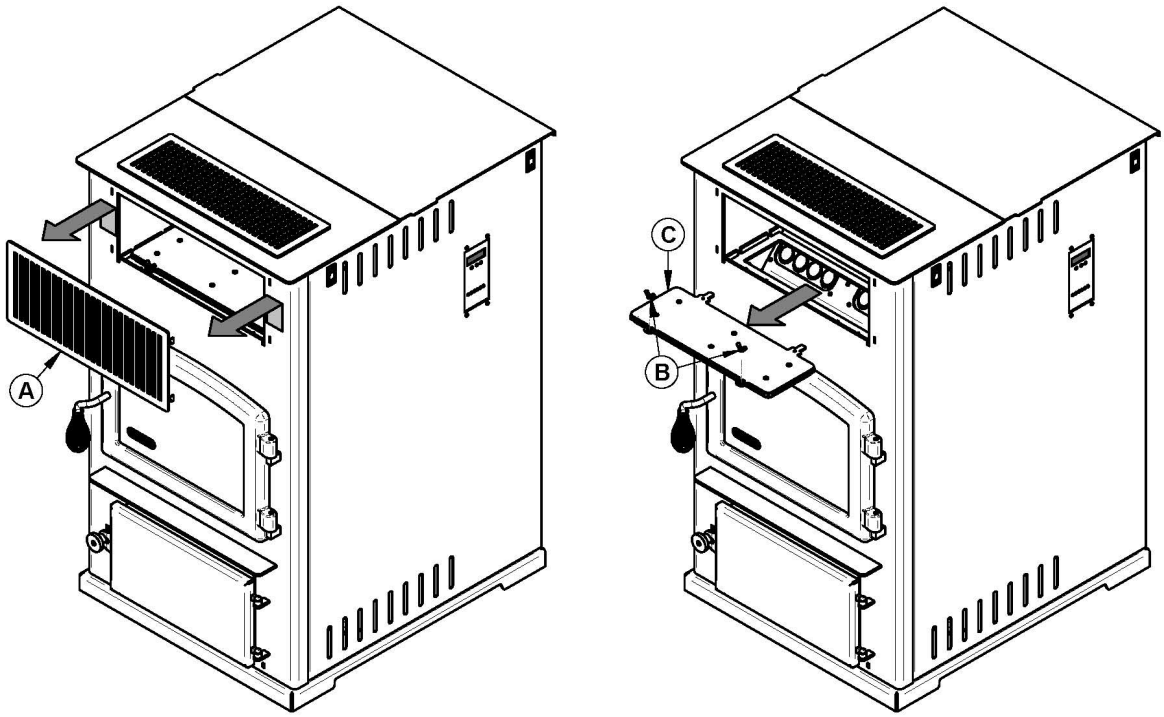
WARNING: NEVER CLEAN WHEN HOT.

WARNING: THE USE OF A DOMESTIC, CENTRAL OR COMMERCIAL VACUUM CLEANER TO PERFORM THE MAINTENANCE OF YOUR PELLET STOVE IS NOT RECOMMENDED. ASH PARTICLES MAY DAMAGE THE MOTORS OF THESES APPLIANCES. FURTHERMORE, EMBERS THAT ARE STILL HOT MAY SET YOUR VACCUM CLEANER'S CONTENT ON FIRE. THE USE OF AN ASH VACCUM CLEANER IS HIGHLY RECOMMENDED.

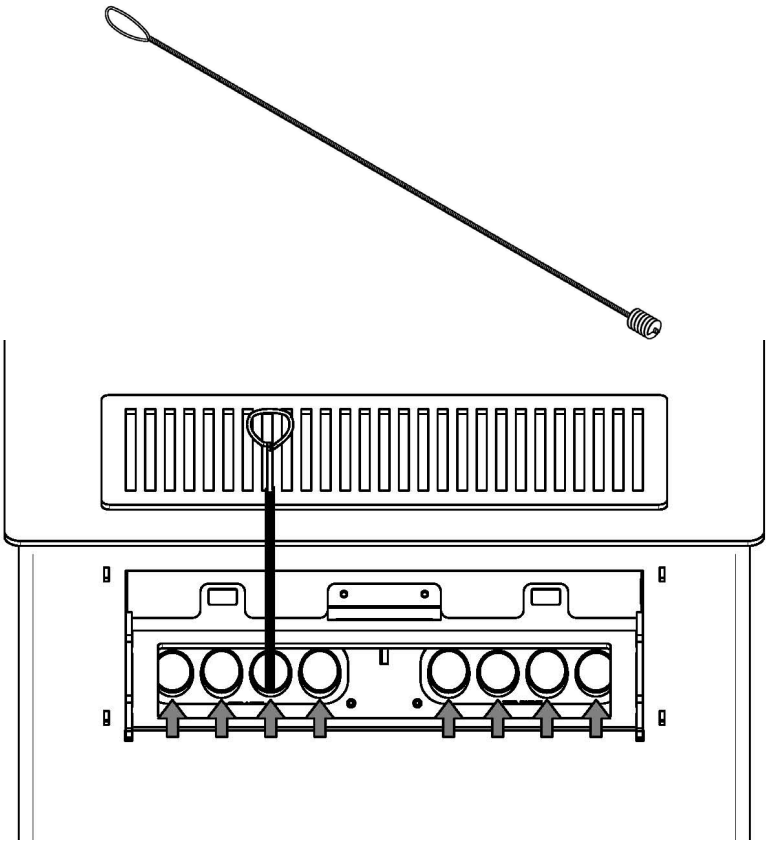
WARNING: ASHES SHOULD BE PLACED IN A METAL CONTAINER WITH A TIGHT FITTING LID. THE CLOSED METAL CONTAINER SHOULD BE PLACED ON A NONCOMBUSTIBLE SURFACE, WELL AWAY FROM ALL COMBUSTIBLE MATERIALS, PENDING FINAL DISPOSAL. IF THE ASHES ARE DISPOSED OF BY BURIAL IN SOIL OR OTHERWISE LOCALLY DISPERSED, THEY SHOULD BE RETAINED IN THE CLOSED CONTAINER UNTIL ALL CINDERS HAVE BEEN THOROUGHLY COOLED.

7.1.2 Cleaning the Baffle, the Heat Exchanger and the Combustion Chamber

Cleaning of the heat exchanger must be done on a regular basis (see **Section 7.1.1: Recommended Maintenance Schedule**). To access the heat exchanger you need to first rise up and pull towards you the decorative grill (A) above the viewing door. Unscrew the two wing nuts (B) and remove the access panel (C) to the heat exchangers. Take care in not damaging the sealing gasket when putting the panel aside. Take the brush that was supplied with the stove and insert it into each tube in a complete motion from top to bottom. **IT IS IMPERATIVE TO SLIDE THE BRUSH COMPLETY DOWN. IT WILL BE VERY DIFFICULT TO REMOVE THE BRUSH IF IT IS STOPPED HALFWAY IN ONE OF THE TUBES**. It is recommended to use an ash vacuum to remove dust escaping from the tubes during the use of the brush.



Using the provided sweeping rod, sweep up and down each exchanger. Make sure you go all the way down to the bottom.

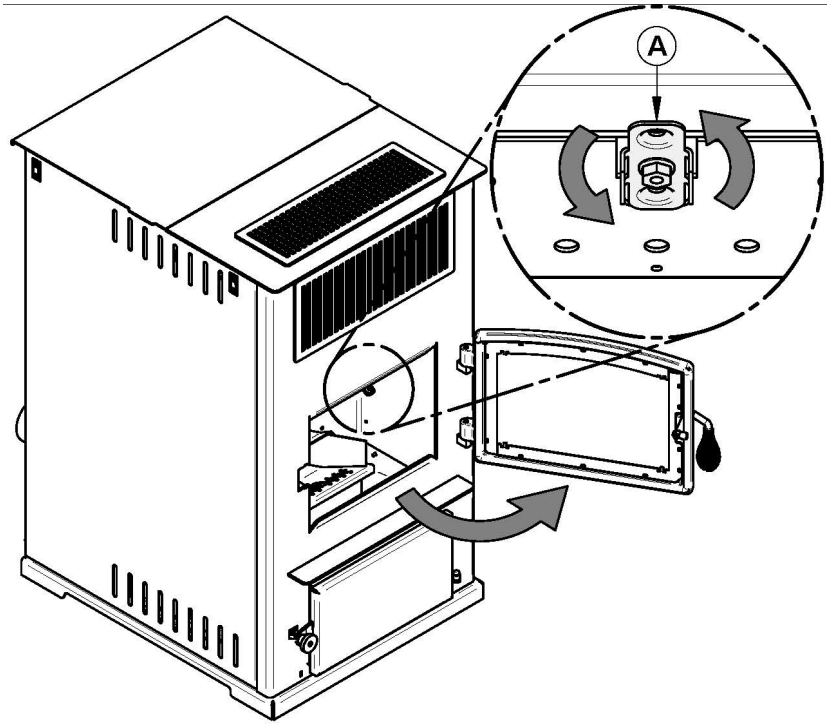


Reinstall the access panel to the combustion chamber and tighten the wing nuts.

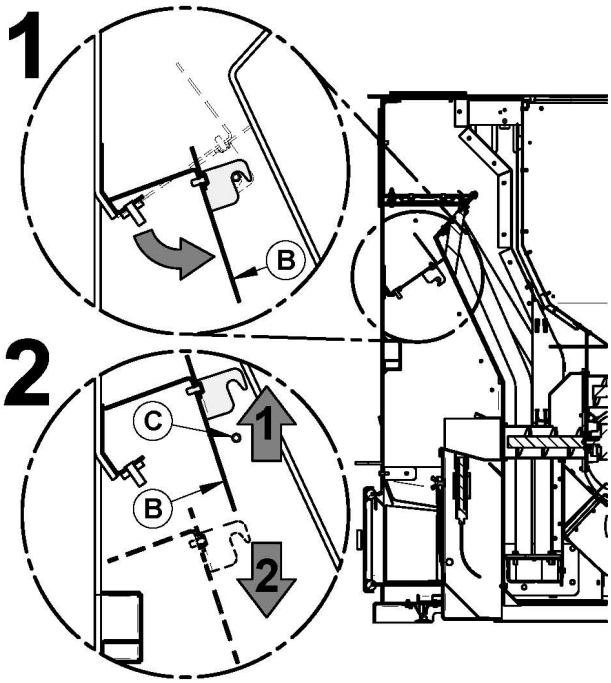
DO NOT USE PLIERS OR OTHER TOOLS TO TIGHTEN THE WING NUTS.

To clean the baffle, pivot the lock plate by 90° found above the access door of the combustion chamber. The baffle will rotate and drop the accumulated fly ash. Clean and reinstall the baffle.

To remove the baffle (for a replacement) pivot the lock plate by 90°. When the baffle has ended its rotation, place the lock to its initial position. Lift the baffle above its pivots and lower it by gently pulling towards you. To take it out of the door, you must rotate it slowly towards you to avoid hitting the walls of the combustion chamber.

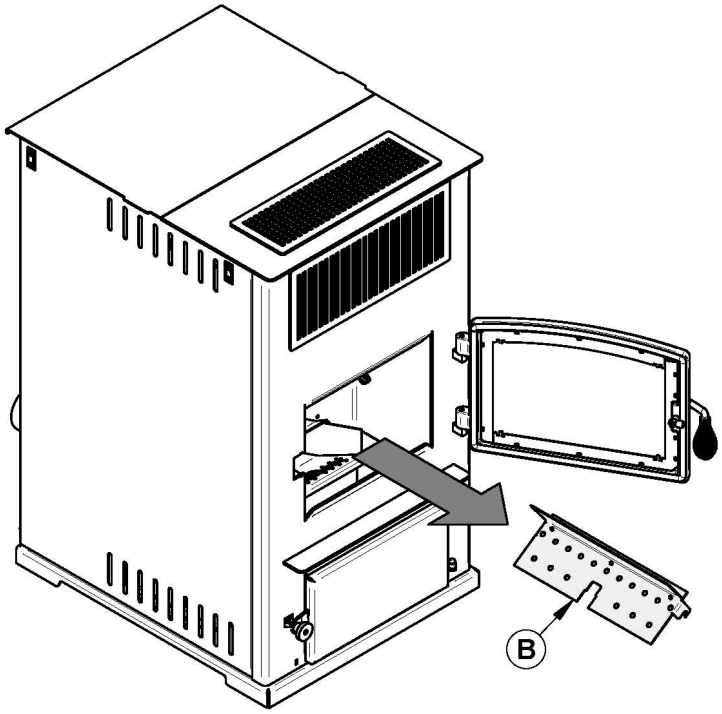


1) Open the door and turn the lock (A) that can be found above the door opening.



2) Once the baffle (B) is unlocked, it will pivot downwards automatically.

3) Lift the baffle (B) from its pivots (C). Pull it down.



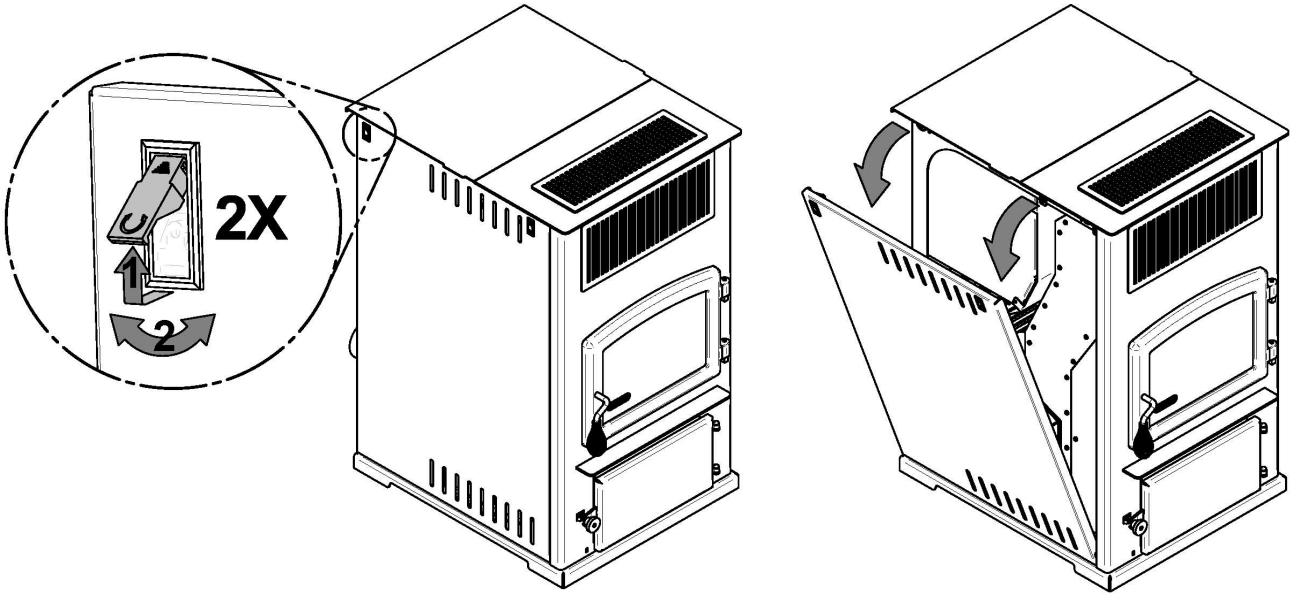
4) Take out the baffle from the combustion chamber.

IT IS HIGHLY RECOMMENDED TO CLEAN THE EXHAUST CHANNEL (SEE SECTION 7.1.3: EXHAUST CHANNEL AND EXHAUST BLOWER MAINTENANCE) IMMEDIATLY AFTER CLEANING THE HEAT EXCHANGER.

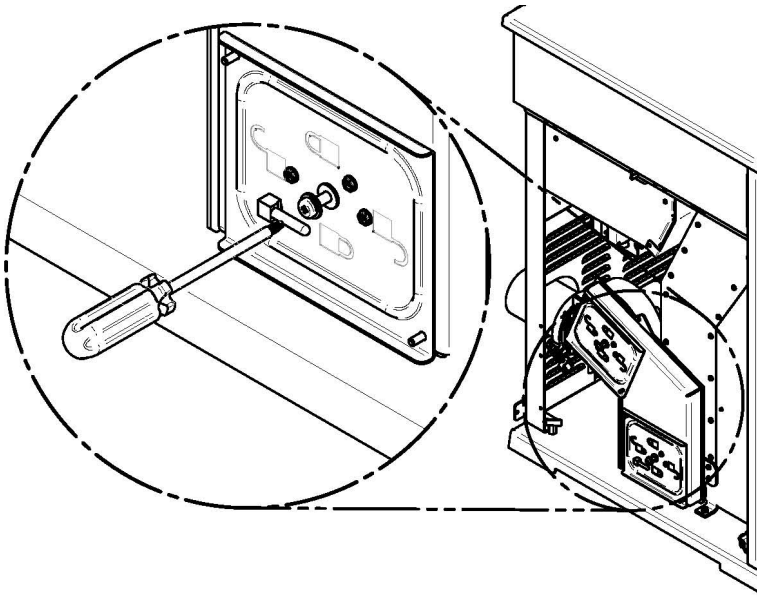
7.1.3 Exhaust Channel and Exhaust Blower Maintenance

Exhaust channels and the exhaust blower are located on the left hand side of the stove. The following procedure demonstrates how to perform inspection and cleaning:

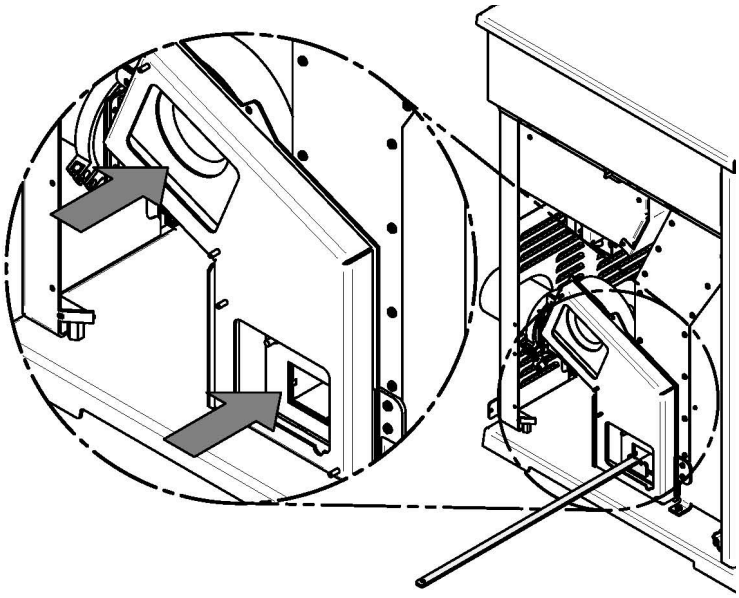
In order to access the exhaust channels, open the left side decorative panels.



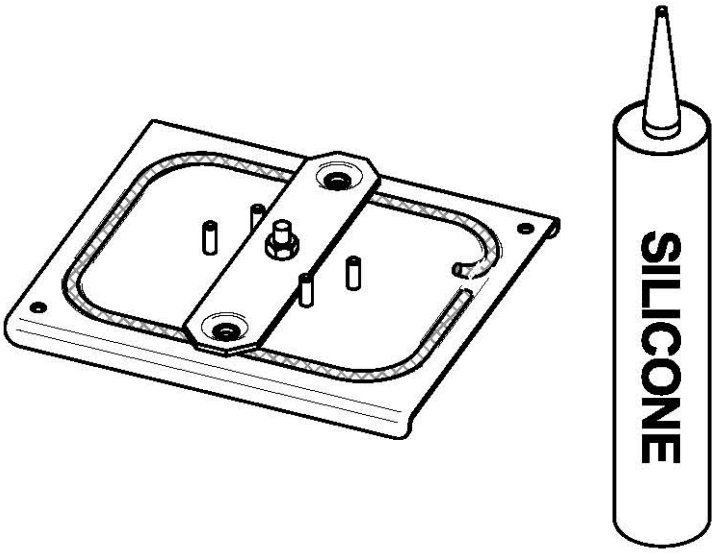
Using a Philips or Robertson screwdriver, remove both clean-out traps by unlocking them. Push the screw and give it a counter-clockwise quarter turn.



Locate both openings. Using the provided scraper, remove the dirt in the bottom channel of the heat exchangers. Use an ash vacuum to complete the cleaning operation.



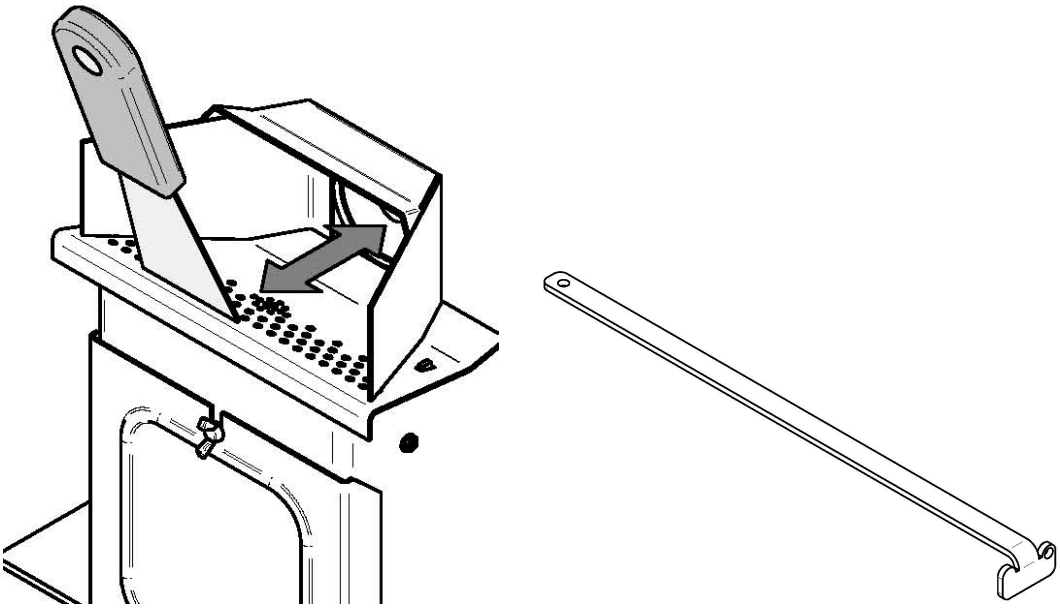
Make sure that the gaskets are still in good condition, replace them if needed. (3/16’’ black round gasket)



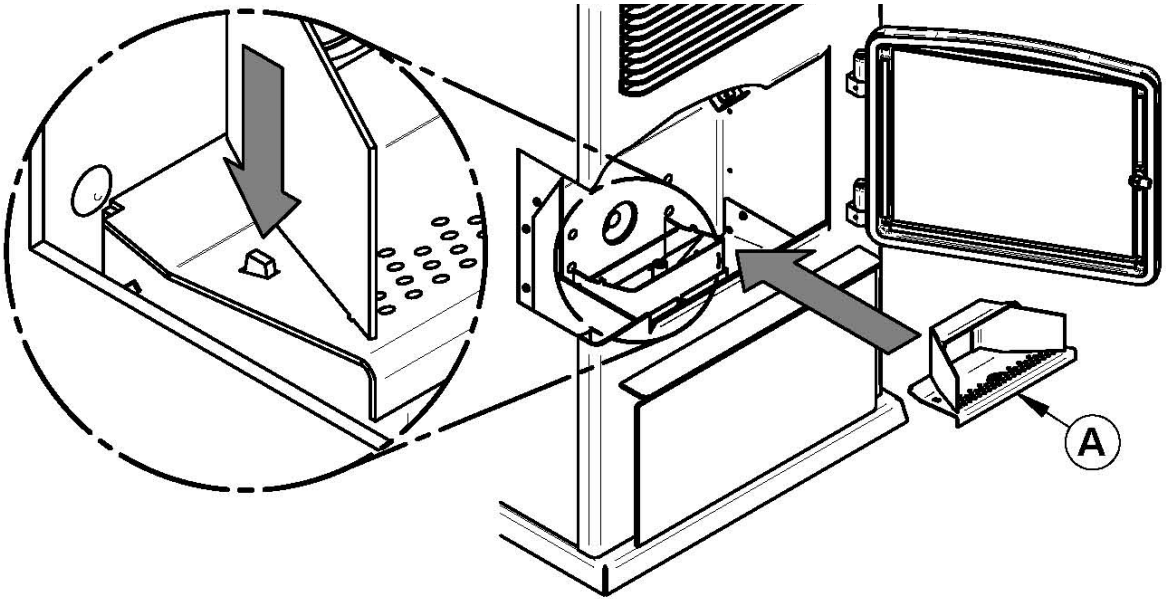
7.1.4 Cleaning the Burn Pot

The burn pot must remain clean and the holes should not be obstructed by combustion residues (ashes or clinkers).

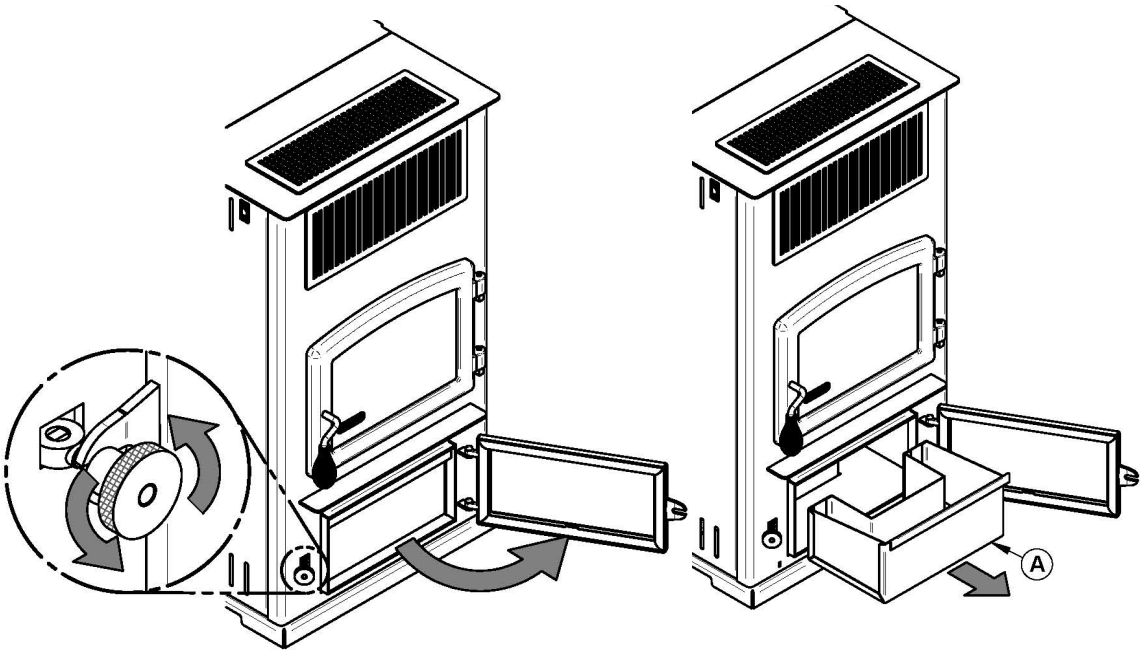
1. Clean the burn pot using the scraper provided with the stove or a smaller one.



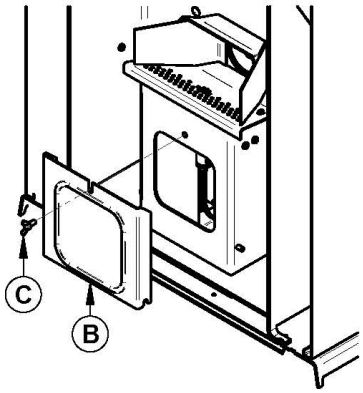
2. The burn pot simply sits onto the air intake channel. You must lift to remove it from the stove. Two small pins guide the burn pot in place. Make sure that the burn pot is well in place before turning on the stove (as shown in the diagram).



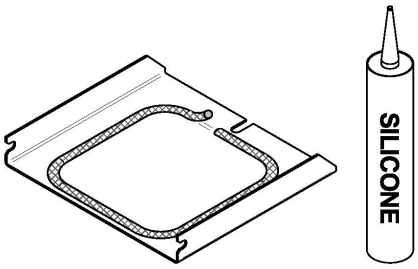
3. If necessary, clean the air intake channel. To reach the air intake channel clean out trap, open the ash drawer access door and remove the ash drawer (A).



4. Unscrew the wing nut (C) to open the clean out trap (B). Vacuum the combustion residues.

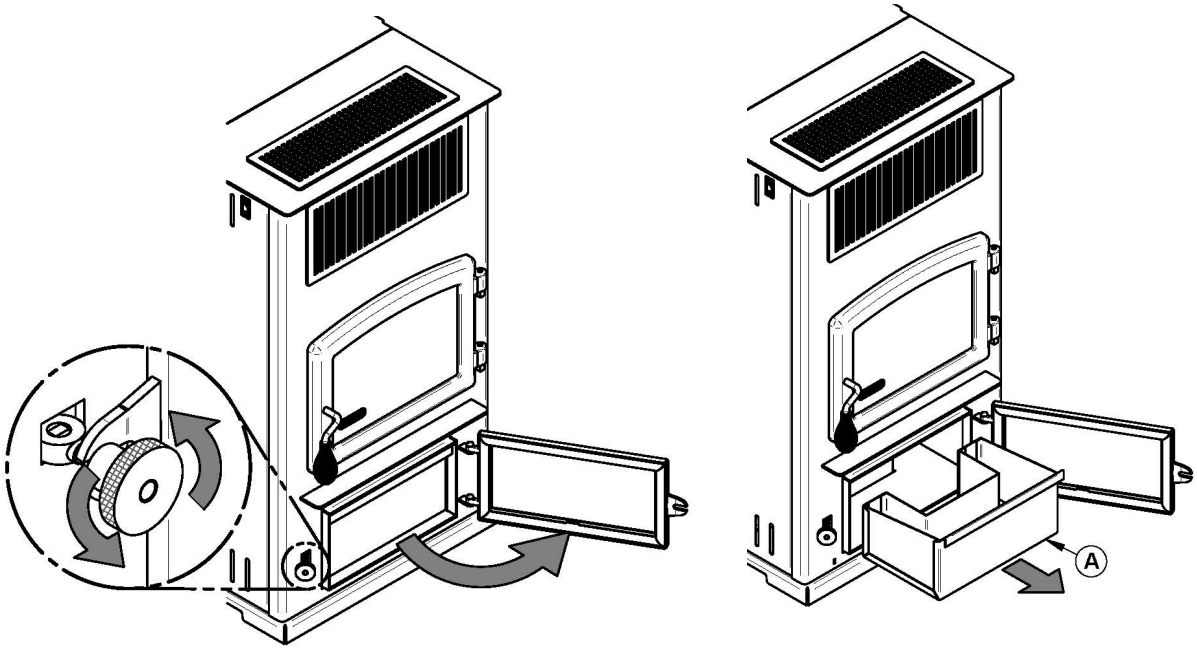


Verify that the clean out trap gasket is still in good condition, replace it if needed (3/16'' black round gasket, AC06815).



7.1.5 Ash Removal

1. To empty the ash drawer (A) of its contents, open the ash pan access door by loosening the round knob on the bottom left hand side.

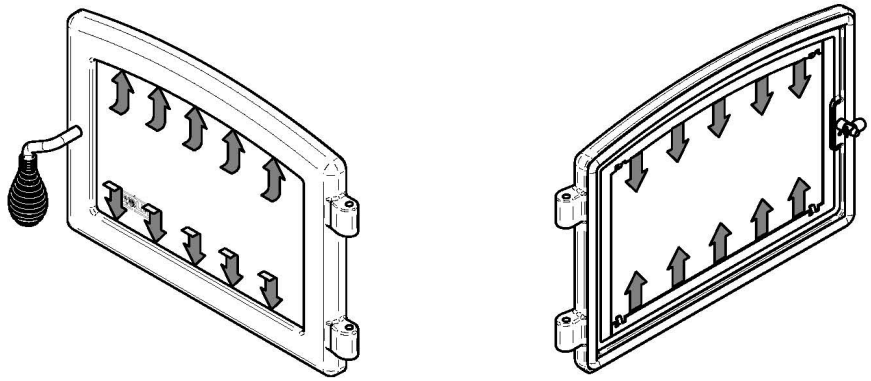


2. Empty the ash drawer, vacuum around the drawer and at the bottom of the combustion chamber.

<u>WARNING</u>: ASH PAN MUST BE IN PLACE AND THE ASH PAN ACCESS DOOR MUST BE KEPT CLOSED AT ALL TIMES WHEN THE STOVE IS IN USE.

7.1.6 Cleaning the Air Wash System

Vacuum the ashes that may have accumulated into the airwash system inlet between the bottom glass retainer and the glass. This will allow an optimum air flow along the inside portion of the glass and prevents the glass from sooting-up.



7.1.7 Glass Care

Clean door glass when necessary. The use of a stove glass cleaner is recommended. Regular household glass cleaners will not remove creosote properly.

WARNING: NEVER USE ABRASIVE CLEANERS ON THE GLASS OR ON ANY PLATED PART.

WARNING: DO NOT CLEAN THE GLASS WHILE IT'S HOT.

WARNING: DO NOT FORCE, STRIKE OR ADOPT ANY BEHAVIOUR THAT COULD WEAKEN THE GLASS DOOR.

WARNING: DO NOT OPERATE THE STOVE WITH THE GLASS REMOVED, CRACKED OR BROKEN.

7.1.8 Replacement of Broken Door Glass

Carefully remove any loose pieces of glass from the doorframe. Dispose of all broken glass properly.

A broken glass must be replaced with an identical ROBAX (ceramic glass) 5 mm thick with the dimensions: 10" 5/32 x 14" 21/32''. Refer to **Section 14: Exploded View and Replacement Parts**.

WARNING: ALWAYS WEAR SUITABLE GLOVES WHILE HANDLING BROKEN GLASS.

WARNING: REPLACEMENT GLASS SHOULD ONLY BE PURCHASED FROM AN AUTHORIZED DEALER (SEE SECTION 14: EXPLODED VIEW AND REPLACEMENT PARTS). TEMPERED GLASS OR ORDINARY GLASS WILL NOT WITHSTAND THE HIGH TEMPERATURES OF THE STOVE.

WARNING: IF YOU HAVE TO CHANGE THE DOOR GLASS, MAKE SURE YOU INSTALL THE NEW GASKETS AT THE SAME PLACE AS THE ORIGINAL IN ORDER TO KEEP THE AIRWASH WORKING PROPERLY.

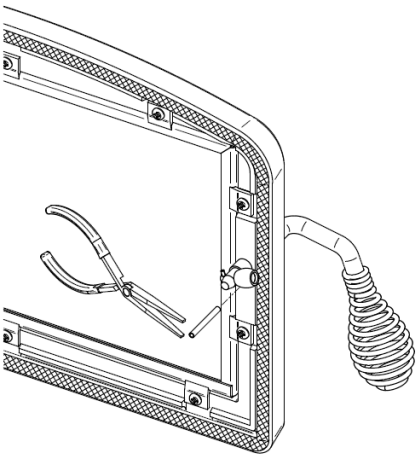
7.1.9 Door Gasket Maintenance

It is important to maintain the door gasket in good condition. After a while, the gasket will wear and compress; adjusting the door may then be required. If the door adjustment is not sufficient, replace the door gasket with a genuine part. If the stove door is not properly sealed, it will be difficult to keep the door glass clean and combustion gases may leak into the room.

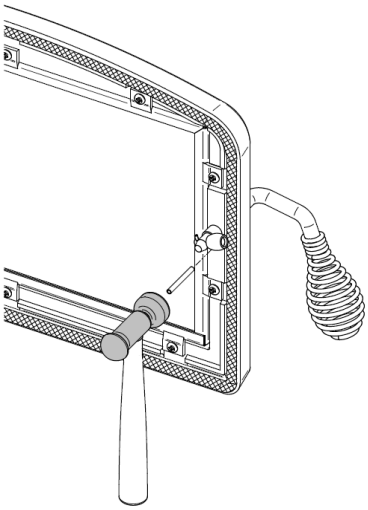
7.1.10 Door Adjustment

In order for your stove to burn at its best efficiency, the door must provide a perfect seal with the firebox. Therefore, the gasket should be inspected periodically making sure to obtain an air tight fit. Air tightness can be improved with a simple latch mechanism adjustment. To adjust:

Remove the lock pin by pulling and turning with pliers. Turn the handle counter clock wise one turn to increase pressure.



Re-install the lock pin (spring pin) with a small hammer



7.1.11 Gasket replacement

It is important to replace the gasket with another having the same diameter and density to maintain a good seal.

1. Remove the old gasket. Use a screwdriver to scrape the old gasket adhesive from the groove.

2. Apply a bead of approximately 3/16" (5 mm) of high temperature silicone in the groove. The gasket must not be stretched during installation.

3. Leave about ½" long of the gasket when cutting and press the end into the groove. Tuck any loose fibers under the gasket and into the silicone.

4. Close the door or trap. Do not use the pellet stove for 24 hours.

7.2 Venting System Maintenance

CAUTION: REGULARLY EXAMINE THE VENTING SYSTEM, THE JOINTS, AND THE SEALING TRIMS TO ENSURE THAT THE SMOKE AND THE COMBUSTION GASES ARE NOT DRAWN BY THE CONVECTION BLOWER.

The most efficient method to sweep the venting system is by using a 4" pellet brush depending on your installation. Brush downwards so ash, soot and creosote residues will come off the inner surface and fall at the bottom of the clean out tee where they can be easily removed. The venting system must be in good condition and kept clean.

WARNING: IF A SIGNIFICANT LAYER OF CREOSOTE HAS ACCUMULATED (3MM / 1/8" OR MORE), IT MUST BE REMOVED IMMEDIATELY TO ELIMINATE THE RISK OF A CHIMNEY FIRE.

7.2.1 Dealing With a Chimney Fire

Regular chimney maintenance and inspection can prevent chimney fires. If you have a chimney fire, follow these steps:

1. Alert your family of a possible danger.
2. If you need assistance, call the fire department;
3. If possible, use a dry chemical fire extinguisher, baking soda or sand to control the fire. Do not use water, as it may cause dangerous vapor explosions.
4. Check outside to ensure that sparks and hot embers coming out of the chimney are not igniting any combustible material close by;
5. Do not use the stove again until your chimney and stove have been inspected by a qualified chimney sweep or a Fire Department Inspector;

CAUTION: CLEANOUT OF THE STOVE AND THE VENTING SYSTEM IS ESPECIALLY IMPORTANT AT THE END OF THE HEATING SEASON TO MINIMIZE CORROSION DURING THE SUMMER MONTHS, CAUSED BY ACCUMULATED ASH.

7.2.2 Soot and Fly Ash

The combustion products contain small particles of fly ash. Fly ash can accumulate especially in horizontal sections of exhaust pipe and restrict the flow of combustion gases. Incomplete combustion, produced when igniting, shut down or misuse of the stove will cause some soot formation which can accumulate in venting system. The venting system must be inspected at least twice a year to determine if cleaning is necessary.

8 Troubleshooting

When you have issues with your stove, your first reaction may be to call technical support. This section will help you save time and money by enabling you to solve simple problems by yourself.

Most common problems are generally caused by the following five factors:

1. Wrong operation or lack of maintenance;
2. Bad installation;
3. Poor quality combustible;
4. Component failure;
5. Factory defect.

The stove is equipped with a pc board that allows the stove to diagnose itself. It is thus important not to unplug the stove if there is an issue with it. First, because unplugging the stove will disable all the security features of the stove, and second, because you will not be able to see the error code given by the stove to understand what is the problem. It is thus important to read carefully this section before calling technical support.

The following sections will help you test each component individually and will also give you many tips in how to solve any problems related to a specific error code.

NOTE: IF YOU NEED TO CONTACT YOUR DEALER OR TECHNICAL SUPPORT, MAKE SURE TO HAVE THE MODEL OF YOUR STOVE AND THE SERIAL NUMBER ON HAND. (THEY CAN BE FOUND ON THE CERTIFICATION LABEL INSIDE THE HOPPER LID).

8.1 Electric Components List

- Electronic components (low power rated)
  - F160 (security heat sensor)
  - L-250A (security heat sensor)
  - Pressure switch (security sensor)
  - Hopper switch (mechanical security sensor)
  - Thermostat (temperature regulator device)

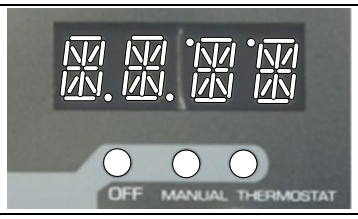
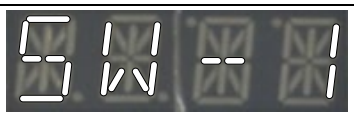
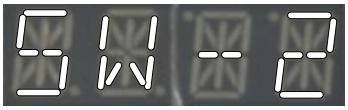
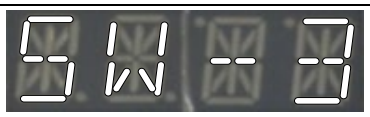
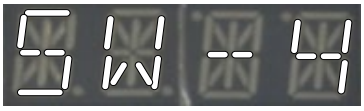
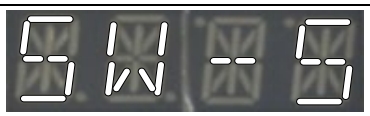
- Electrical components (high power rated)
  - Igniter (heater)
  - Combustion blower (will feed fire with fresh air)
  - Convection blower (will send hot air into the room)
  - Exhaust blower (will extract combustion gas out of the stove)
  - Auger motor 1 (located under the hopper)
  - Auger motor 2 (will feed the fire with pellets)

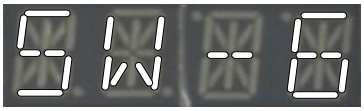
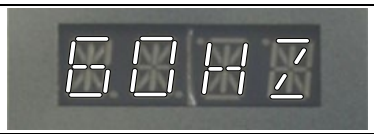
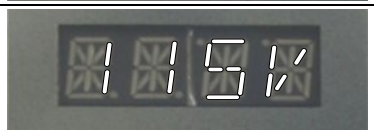
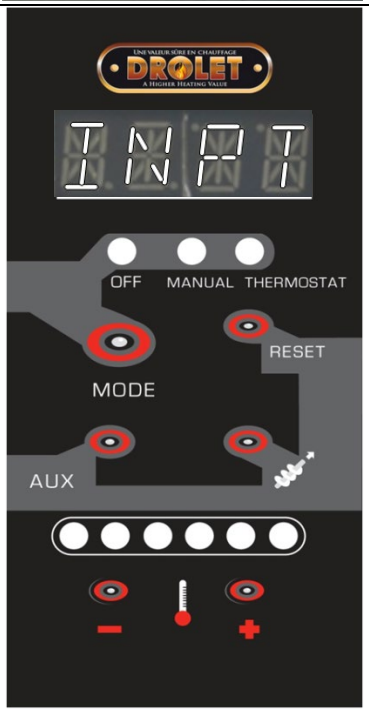
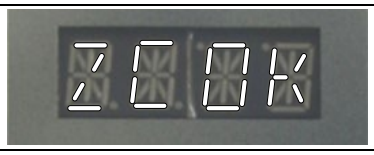
WARNING: RISK OF ELECTRICAL SHOCK. IF YOU NEED TO MANUALLY TEST, MANIPULATE OR REPLACE ANY COMPONENTS, THE STOVE NEEDS TO BE DISCONNECTED FROM THE WALL OUTLET.

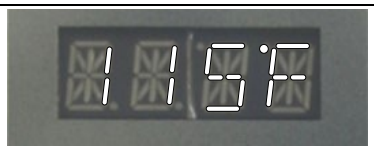
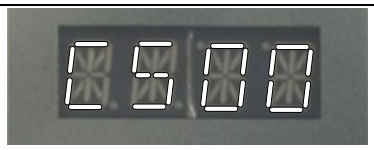
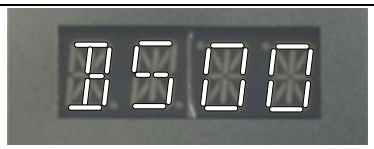
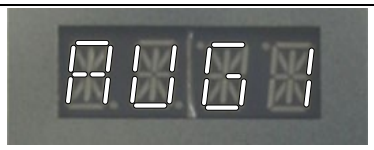
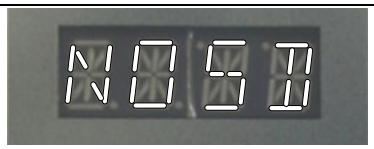
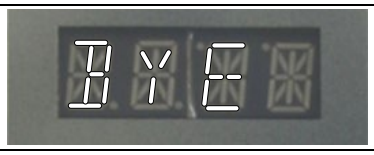
8.2 Testing a Component

If you suspect that an electrical component to be defective, you can test it by following the procedure given below.

Note that you will be able to test only components when the stove is OFF and that all the components are no more in function. (*Take note that the software versions given below are an example only and may not reflect the actual software versions of your stove.*)

Connect the stove and read the version of software included in the control board	
In order to access the test mode, press both of these control keys simultaneously.	
Each segment of each section of the display will turn on in sequence. Push any control key to proceed.	
Each complete section of the display will turn on in sequence. Push any control key to proceed.	
Each LED lights up in sequence (from « OFF » to « #6 feed rate ». Push any control key to proceed.	
Complete display and all LEDs light up simultaneously. Push any control key to proceed.	
Control Key Tests Push the  control key to proceed.	
Push the  control key to proceed.	
Push the  control key to proceed.	
Push the  control key to proceed.	
Push the  control key to proceed.	

Push the  control key to proceed.	
The frequency of the power source is displayed. Push any control key to proceed.	
The voltage of the power source is displayed. Push any control key to proceed.	
Displays if polarity is good (POLP) If polarity is reversed (POLF). Push any control key to proceed.	
The version of software included in the control board is displayed. Push any control key to proceed.	
Displays the status of different components. OFF LED: Pressure switch MANUAL LED: Hopper switch THERMOSTAT LED: Wall thermostat FEED RATE 1 : (non operative) FEED RATE 2 : F160 FEED RATE 3 : L250 FEED RATE 4 : (non operative) FEED RATE 5 : auger # 2 fuse FEED RATE 6 : igniter fuse Note : - LED ON = open circuit - LED ON = blown fuse - LED OFF = close circuit - LED OFF = fuse good Push any control key to proceed.	
SPARE output testing section. (NOT OPERATIVE ON THIS VERSION) Push any control key to proceed.	
« Zero current » test used by the control board. Push any control key to proceed.	

Displays the temperature read by the thermistor. Push any control key to proceed.	
Convection blower test. Push the MODE control key to proceed.	
Combustion blower test. Push the MODE control key to proceed.	
Exhaust blower test. Push the MODE control key to proceed.	
Ignitor test. Push the MODE control key to proceed.	
Auger# 1 test. Push the MODE control key to proceed.	
Auger#2 test. Push the MODE control key to proceed.	
Validate the absence of an SD card in the reprogramming port. Push any control key to proceed.	
Validate that the control board's EEPROM is functional. Push any control key to proceed.	
End of the test mode sequence. The stove turns on by itself.	

8.3 Main Error Codes, Possible Causes and Solutions

WARNING: RISK OF ELECTRICAL SHOCK. IF YOU NEED TO MANUALLY TEST, MANIPULATE OR REPLACE ANY COMPONENTS, THE STOVE NEEDS TO BE DISCONNECTED FROM THE WALL OUTLET.

This section contains main error codes, possible causes and many suggestions to guide you in resolving them. After giving an error code, your stove will shut down by itself and start a cool down cycle. If you want to start your stove again, you will need to press on the 

button and then on the 

button. Your stove will only restart when the cool down cycle is completed.

NOTE: IF, AFTER PERFORMING ALL THE POSSIBLE SOLUTIONS MENTIONED IN THE FOLLOWING SECTION, YOU ARE STILL EXPERIENCING PROBLEMS WITH YOUR STOVE, CALL YOUR LOCAL DEALER OR A SERVICE TECHNICIAN AT 418-908-8002. YOU CAN ALSO WRITE AN EMAIL TO tech@sbi-international.com. ALL EMAILS ARE ANSWERED WITHIN A 24H DELAY.

NOTE: IF YOU NEED TO CONTACT YOUR DEALER OR TECHNICAL SUPPORT, MAKE SURE TO HAVE THE MODEL OF YOUR STOVE AND THE SERIAL NUMBER ON HAND. (THEY CAN BE FOUND ON THE CERTIFICATION LABEL INSIDE THE HOPPER LID).

ALARM CODES CHART	
MESSAGE	**CORRESPONDING WARNING**
P	Pressure switch warning.
H	Warning caused by the automatic L-250 sensors: it is located over the pellet housing.
E	Hopper is empty
L	Lighting warning.
d	Hopper lid stayed open more than 3 minutes.
N	Inverted polarity in power outlet.
C	Power outage
I	Igniter fuse is blown
A	Auger fuse has blown

8.3.1 P Code

STOVE SHUTS OFF AND  APPEARS ON CONTROL BOARD	
Possible Causes:	**Possible Remedies:** (Unplug stove first when possible)
1. Pressure tap (located on the exhaust blower) is blocked.	Pull off the air hose from the exhaust blower pressure tap and from the negative (white) pressure switch tap. **WARNING: THE TUBE MUST ABSOLUTELY BE DISCONNECTED FROM THE PRESSURE SWITCH AS TO NOT DAMAGE IT.**. Blow in the air tube. If air flows freely, the hose is fine. If air does not flow through the hose, use a thin wire to clear the blockage.
2. The flue is blocked or needs cleaning.	One of the following components is obstructed or blocked by ashes of by a foreign object; air intake shutter, combustion blower, burn pot, heat exchangers and exhaust channels, exhaust blower and or venting system. Refer to the maintenance section.
3. The flue is not properly installed.	Make sure the venting system meets the criteria in the installation section of this manual as well as the venting system manufacturer's instructions.
4. A back draft occurred inside the flue.	This can occur on a very windy day or if your venting system does not have a proper termination.
5. The pressure switch wire connections are faulty.	Make sure that the pressure switch wires and connections are not grounded or loose. Replace or replug wires if necessary.
6. The pressure switch hose is disconnected.	Make sure the pressure switch hose is well installed on the exhaust blower pressure tap and on the white (-) pressure switch tap. If not, reinstall it.
7. The exhaust or combustion blower failed.	See **Section 8.2: Testing a Component** and test the exhaust and the combustion blowers independently. If one of them does not work, make sure there is power and that blowers are well connected. If they still don't work, check fuse F4 and F5 on the control board. A defective fuse will be darkened or will have a broken filament. If the fuses are good, the combustion or exhaust blower is probably defective. Replace the faulty part.

8. Pressure switch is defective (very rare).	Even though this situation is highly unlikely, it's possible the pressure switch is defective. To test the airflow pressure switch, you need to disconnect the air hose from the blower casing. With the other end still attached to the switch, very gently suck on the loose end of the hose (you may want to completely disconnect the hose from the stove and the switch first and make sure it is clear). If you hear a « click », the switch is working. **Be careful: too much suction can damage the switch.**

8.3.2 H Code

STOVE STOPS FEEDING PELLETS AND H APPEARS ON THE CONTROL BOARD. BEFORE RESETTING TAKE CARE IN READING THE POSSIBLE CAUSES AND THEN PRESS ON RESET AND MODE AT THE SAME TIME FOR 2 SECONDS.

Possible Cause:	**Possible Remedy:**
1. Inadequate fuel is used.	Remove the burn pot, make sure that all openings are clear and check that no ash has filled the tube around the igniter. Refer to the maintenance section. Also, make sure that the recommended fuel is used (see **Section 4.8.1: Proper Fuel**).
2. The flue is not properly installed.	Make sure the venting system meets the criteria in the **Section 4: Venting System** as well as the venting system manufacturer's instructions.
3. The flue is blocked or needs cleaning.	One of the following components is obstructed or blocked; air intake shutter, combustion blower, burn pot, heat exchangers and channels, exhaust blower and or venting system. Refer to **Section 7: Maintenance**.
4. The stove needs maintenance.	Refer to **Section 7: Maintenance**.
5. The burn pot is not installed properly.	Make sure the burn pot is installed correctly (see **Section 7.1.4: Cleaning the Burn Pot)**.
6. The baffle is not installed properly or holes may be blocked.	Make sure the baffle is well installed and the lock is in place. Make sure the holes are clear (see **Section 7.1.2: Cleaning the Baffle, the Heat Exchanger and the Combustion Chamber**).
7. The convection blower is defective.	See **Section 8.2: Testing a Component** and test the convection blower.
8. he combustion blower needs cleaning.	Carefully clean blower housing and make sure blower louvers are not blocked.
9. The exhaust blower is defective.	See **Section 8.2: Testing a Component** and test the exhaust blower.

NOTE: IF THE CODE APPEARS MORE THAN THREE TIMES, THE ERROR CODE WILL LOCK ITSELF UP.

THIS PELLET STOVE IS EQUIPED WITH MULTIPLE DEVICES TO ENSURE YOUR SAFETY. IF A WARNING ERROR CODE STOPS YOUR STOVE ON SEVERAL OCCASIONS, IT IS MORE THAN LIKELY THAT THE STOVE DOES NOT EXHAUST PROPERLY.

COMPLETE the stove maintenance as described in this manual before resetting the electronic board displaying an error code.

For an Overheat Code

- **Service the stove COMPLETELY as described in this manual. See section 7 : Maintenance**
- **Verify the complete venting system.**

FOLLOW THESE INSTRUCTIONS ONCE THE MAINTENANCE COMPLETED

Press on the following buttons in the sequence given (one button at a time).

« Reset » 

then « Mode » 

then « + » 
then « - » 
and hold « Auxiliary » 

for 3 seconds. The system will reset.

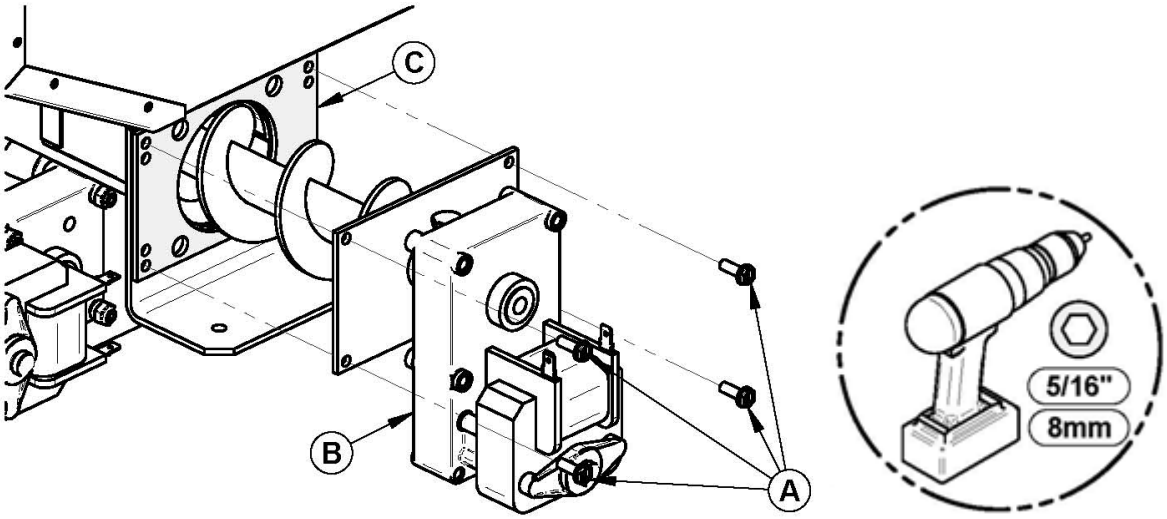
8.3.3 E Code

STOVE SHUTS OFF AND DISPLAYS WARNING CODE E	
Possible Causes:	**Possible Remedies:** (Unplug stove first when possible)
1. The stove ran out of pellets.	Refill the hopper. Erase the error code and press the auger button (see **Section 5.1.2: Fuel Feed Button**).
2. The burn pot holes are blocked.	Remove the burn pot and clean it thoroughly.
3. The air intake, the inner parts of the combustion chamber or the venting system is partly blocked.	Follow instructions in the Maintenance section.
4. One or both auger motors are jammed or have failed.	See **Section 8.2: Testing a Component** and test auger motors independently. If one of the motors is not running check if motor is defective or if the auger is jammed. Make sure that the hopper lid is closed. If the auger motor seems defective, check to make sure that electrical connections are not loose and check the fuses F2 and F6 on the control board. A defective fuse will be darkened or will have a broken filament. If the fuses are good, the auger motor may be jammed by an object. If the auger is jammed, remove it from its housing (see drawing below). **NOTE: IF THE HOPPER AUGER MOTOR FAILED OR THE HOPPER AUGER IS JAMMED, TO AVOID PELLET SPILLAGE, EMPTY THE HOPPER OF ITS CONTENTS BEFORE EXECUTING THE FOLLOWING TESTS.** Disconnect the motor and then remove the four screws on the steel plate that holds the auger shaft to the auger housing. To have an easier access, remove the rear panel for an easier access. Pull out the auger from the housing. Once the auger has been removed, make sure the auger is straight, that the surface is not damaged and there are no burrs, or broken welds. Remove any foreign material that may have caused the jam. Inspect the auger housing for signs of damage such as burrs, rough spots, or grooves cut into the metal that could have caused a jam. Clean the auger housing thoroughly to remove all pellet dust.

5. The flue temperature sensor failed.	The “thermistor” is a heat sensor located on the exhaust motor housing. Its function is to tell the control board that the stove has ignited properly by measuring the heat at the exhaust. The pellet stove will not start feeding pellets at the desired heat setting until it has received a signal from the thermistor heat sensor. If the thermistor heat sensor is faulty, the unit will stop after the ignition cycle. To display the temperature reading from the thermistor press and hold the + and auger buttons for 3 seconds. Confirm that the value displayed is equal to the ambient temperature in the room where the appliance is installed. If this is the case, turn on the stove and check the same temperature display. If after 10 minutes, the value has not increased despite the unit is in operation this means that the temperature sensor is disconnected or defective. If the temperature rises, the problem may be with the feed rate or pilot mode. Depending on many factors (ambient temperature, pellet quality, etc) the heat produced by the stove may not be sufficient to keep the exhaust temperature high enough. To resolve the situation increase feed rate (see **Section 5.2.1: Selecting the Combustion Level (Heat Rate)**).

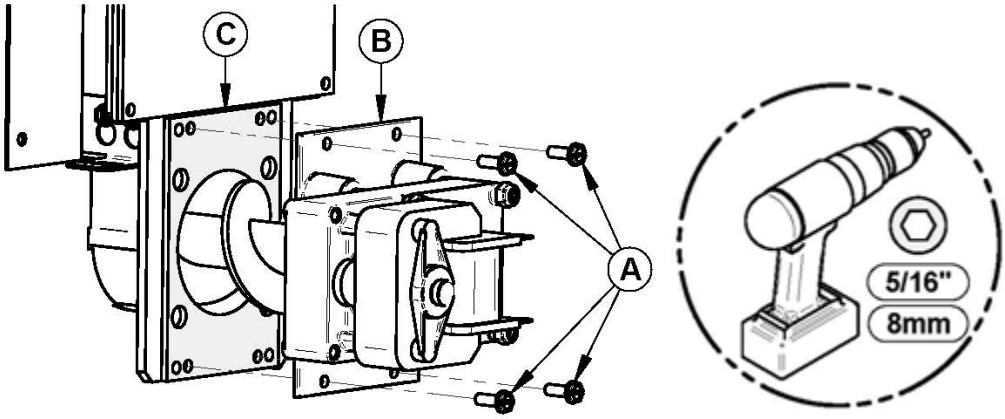
NOTE: IF THE HOPPER AUGER MOTOR FAILED OR THE HOPPER AUGER IS JAMMED, TO AVOID PELLET SPILLAGE, EMPTY THE HOPPER OF ITS CONTENTS BEFORE EXECUTING THE FOLLOWING TESTS.

HOPPER AUGER



A	Screws
B	Auger and motor assembly
C	gasket

BURN POT AUGER



A	Screws
B	Auger and motor assembly
C	GASKET

8.3.4 L Code

STOVE FEEDS PELLETS, BUT WILL NOT IGNITE AND L APPEARS ON THE CONTROL BOARD	
Possible Causes:	**Possible Remedies:**
1. Inadequate fuel is used.	Remove the burn pot, make sure that all openings are clear and check that no ash has filled the tube around the igniter. Refer to the maintenance section. Also, make sure that recommended fuel is used (see **Section 4.8.1: Proper Fuel**).
2. The igniter is defective.	See **Section 8.2: Testing a Component** and follow instructions for component check. Test the igniter to see if it glows. It should take no longer than two minutes. If it does not glow red, check the wiring and the F3 fuse. If the wiring is properly connected and the fuse is good, disconnect the igniter and check its resistance (ohms, Ω) with a multimeter. If the value is near zero, replace the igniter.
3. The thermistor heat sensor has malfunctioned.	The "thermistor" is a heat sensor located on the exhaust motor housing. Its function is to tell the control board that the stove has ignited properly by measuring the heat at the exhaust. The pellet stove will not start feeding pellets at the desired heat setting until it has received a signal from the thermistor heat sensor. If the thermistor heat sensor is faulty, the unit will stop after the ignition cycle. To display the temperature reading from the thermistor press and hold the + and auger buttons for 3 seconds. Confirm that the value displayed is equal to the ambient temperature in the room where the appliance is installed. If this is the case, turn on the stove and check the same temperature display. If after 10 minutes, the value has not increased despite the unit is in operation this means that the temperature sensor is disconnected or defective. If the temperature rises, the problem may be with the feed rate or pilot mode. Depending on many factors (ambient temperature, pellet quality, etc) the heat produced by the stove may not be sufficient to keep the exhaust temperature high enough. To resolve the situation increase feed rate or replace the part (see **Section 5.2.2: Adjusting the Convection Fan Speed**).

8.3.5 d Code

STOVE STOPS FEEDING PELLETS AND d APPEARS ON THE CONTROL BOARD	
Possible Cause:	**Possible Remedy:**
1. The hopper lid has stayed open for more than 3 minutes.	As a security measure, the auger stops turning and feeding pellets as soon as the hopper lid opens. It will resume normal operation as soon as the hopper lid is closed. If the hopper lid stays open for more than 3 minutes, the stove will stop.
2. The hopper lid safety switch is faulty or disconnected.	Make sure that the switch wiring is properly connected. If it is, the hopper switch may be faulty (see **Section 8.2: Testing a Component**) and verify the proper function of the safety switch. Replace it if necessary.

8.3.6 N Code

THE STOVE FUNCTIONS BUT DISPLAYS WARNING CODE N	
Possible Cause:	**Possible Remedy:**
1. A reversed polarity is detected on the electrical outlet or on the same electrical circuit.	Test and ensure the proper connections.
2. No ground is detected or connected in the wall outlet.	Test and ensure the proper connections of the electrical wires and/or correct the grounds of the unit.

8.3.7 C Code

THE STOVE FUNCTIONS BUT DISPLAYS WARNING CODE C	
Possibles Cause:	**Possible Remedy :**
Warning generated by a power failure while the stove was running.	The stove will restart on the initial setting once it cools off. Note: For a short power failure (less than 5 seconds), the stove will continue to function at the selected speed.

8.3.8 I Code

STOVE FEEDS PELLETS, BUT WILL NOT IGNITE AND  APPEARS ON THE CONTROL BOARD	
Possible Cause:	**Possible Remedy:**
1. The igniter fuse on the control board has blown.	Test the resistance (ohms, Ω) with a multimeter. If the value is near zero, replace the igniter and the F3 fuse.
2. The wiring harness shorted.	Inspect the wiring and replace any defective wire and or connector. Make sure the wires are not shorted to the stove frame. Locate the fuse F3 on the control board and replace it. See **Section 9.2: Testing a Component**) and follow instructions for component check. Test the igniter to see if it glows. It should take no longer than two minutes.

8.3.9 A Code

STOVE STARTS, BUT DOESN'T FEED PELLETS AND  APPEARS ON THE CONTROL BOARD	
Possible Causes:	**Possible Remedies:**
1. The auger jammed or auger motor failed.	See **Section 9.2: Testing a Component** and test auger motors independently. If one of the motors is not running check if motor is defective or if the auger is jammed. Make sure that the hopper lid is closed. If the auger motor seems defective, check to make sure that electrical connections are not loose and check the fuses F2 and F6 on the control board. A defective fuse will be darkened or will have a broken filament. If the fuses are good, the auger motor may be jammed by an object. If the auger is jammed, remove it from its housing (see drawing **Section 8.3.3: E Code**.) **NOTE: IF THE HOPPER AUGER MOTOR FAILED OR THE HOPPER AUGER IS JAMMED, TO AVOID PELLET SPILLAGE, EMPTY THE HOPPER OF ITS CONTENTS BEFORE EXECUTING THE FOLLOWING TESTS.** Disconnect the motor and then remove the four screws on the steel plate that holds the auger shaft to the auger housing. To have an easier access, remove the rear panel for an easier access. Pull out the auger from the housing. Once the auger has been removed, make sure the auger is straight, that the surface is not damaged and there are no burrs, or broken welds. Remove any foreign material that may have caused the jam. Inspect the auger housing for signs of damage such as burrs, rough spots, or grooves cut into the metal that could have caused a jam. Clean the auger housing thoroughly to remove all pellet dust.

2. The wiring harness shorted.	Make sure the auger motor wiring is properly connected and not shorted.

8.3.10 Smoke Smell

SMOKE SMELL COMING BACK INTO THE HOME	
Possible Causes:	**Possible Remedies:**
1. Venting system leaks.	Inspect all vent connections. This is a pressurized venting system. All vent connector joints must be sealed and fastened in accordance with the pellet vent manufacturer's instructions to ensure consistent performance and avoid smoke and ash spillage (see **Section 4.5.1: Installation Warnings, Cautions and Recommendations Reminder**).
2. Worn gaskets	Gaskets may be allowing smoke spillage (doors, clean out traps, etc). Make sure that all gaskets are in good condition and replace them with original parts if necessary. Make sure the door is well adjusted (see **Section 7.1.9: Door Adjustment**).
3. Negative pressure.	A faint wood-burning odor during ignition or shut down is normal. Although, if this increases beyond what is considered normal or if you notice an unusual soot build-up on walls or furniture, check your venting system carefully for leaks and make sure all gaskets are in good condition. The stove exhaust blower produces a negative pressure in the room. It draws air from the inside of the room, through the stove and then outdoors. In the same manner, other appliances can also create a larger negative pressure. In this case, as the air naturally flows from a high pressure point to a low pressure point, a larger negative pressure can draw smoke from the inside of the stove into the room. The stove can also be affected by other mechanical ventilation systems, causing the same effect as mentioned previously. Using a fresh air intake will prevent negative pressure (see Appendix D: Combustion Air supply). Also, make sure the recommended maintenance schedule has been followed.

8.3.11 Auger Motor Stops Momentarily

AUGER MOTOR STOP FEEDING PELLETS AND COMES BACK ON	
Possible Cause:	**Possible Remedy:**
1. The auger motor is overheating and tripping the internal temperature shutoff (thermal protector).	It's possible that the auger is jammed. Remove it from its housing (see drawing **Section 8.3.3: E Code**). **NOTE: IF THE HOPPER AUGER MOTOR FAILED OR THE HOPPER AUGER IS JAMMED, TO AVOID PELLET SPILLAGE, EMPTY THE HOPPER OF ITS CONTENTS BEFORE EXECUTING THE FOLLOWING TESTS.** Disconnect the motor and then remove the four screws on the steel plate that holds the auger shaft to the auger housing. To have an easier access, remove the rear panel for an easier access. Pull out the auger from the housing. Once the auger has been removed, make sure the auger is straight, that the surface is not damaged and there are no burrs, or broken welds. Remove any foreign material that may have caused the jam. Inspect the auger housing for signs of damage such as burrs, rough spots, or grooves cut into the metal that could have caused a jam. Clean the auger housing thoroughly to remove all pellet dust.

8.3.12 Poor Burn or Dirty Glass

- **GLASS "SOOTS" 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**

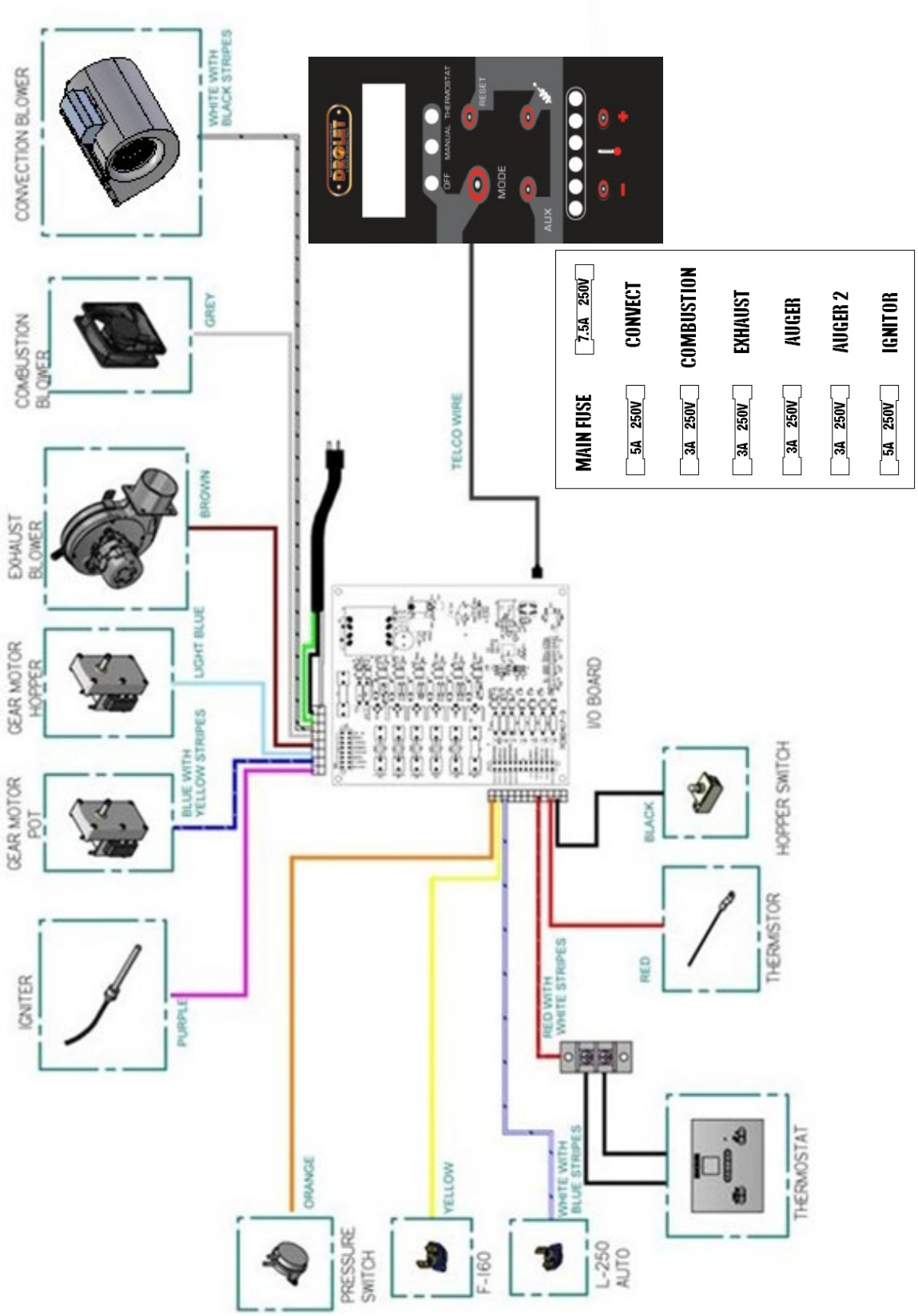
Possible Causes:	**Possible Remedies:**
1. Venting system is dirty.	Refer to **Section 7: Maintenance**.
2. The flue is not properly installed.	Make certain the venting system meets the criteria in the installation section of this manual as well as the venting system manufacturer's instructions.
3. Inadequate fuel is used.	Remove the burn pot, make sure that all openings are clear and check that no ash has filled the tube around the igniter. Refer to **Section 7: Maintenance**. Also, make sure that recommended fuel is used (see **Section 4.8.1: Proper Fuel**) and settings are adjusted to the type of pellets that are being used.

4. Air intake channel is restricted.	Visually inspect the air intake channel that leads to the burn pot for foreign material. Make sure that the air-intake shutter is functional and free of any obstruction.
5. The combustion/exhaust blower failed.	See **Section 8.2: Testing a Component** and test the combustion and the exhaust blowers independently. If one of them does not function, make sure there is power and that the blowers are properly connected. If they still don't work, check fuse F4 and F5 on the control board. A blown fuse will be darkened or will have a broken filament. If the fuses are in good condition, the combustion or exhaust blower is probably defective. Replace the faulty part.

8.3.13 No Display

• **The control board does not display any information.**	
Possible Cause:	**Possible Remedy :**
1. There is no electrical current going to the stove.	Check if the stove is connected and if there is current in the wall outlet. Check if the F7 fuse is blown. Replace it if necessary.
2. TELCO wire is defective or not connected properly.	Convection blower, combustion blower, exhaust blower and burn pot auger will start but the stove will beep continuously. Verify the connection between the control panel and the electronic card. Change wire if necessary.

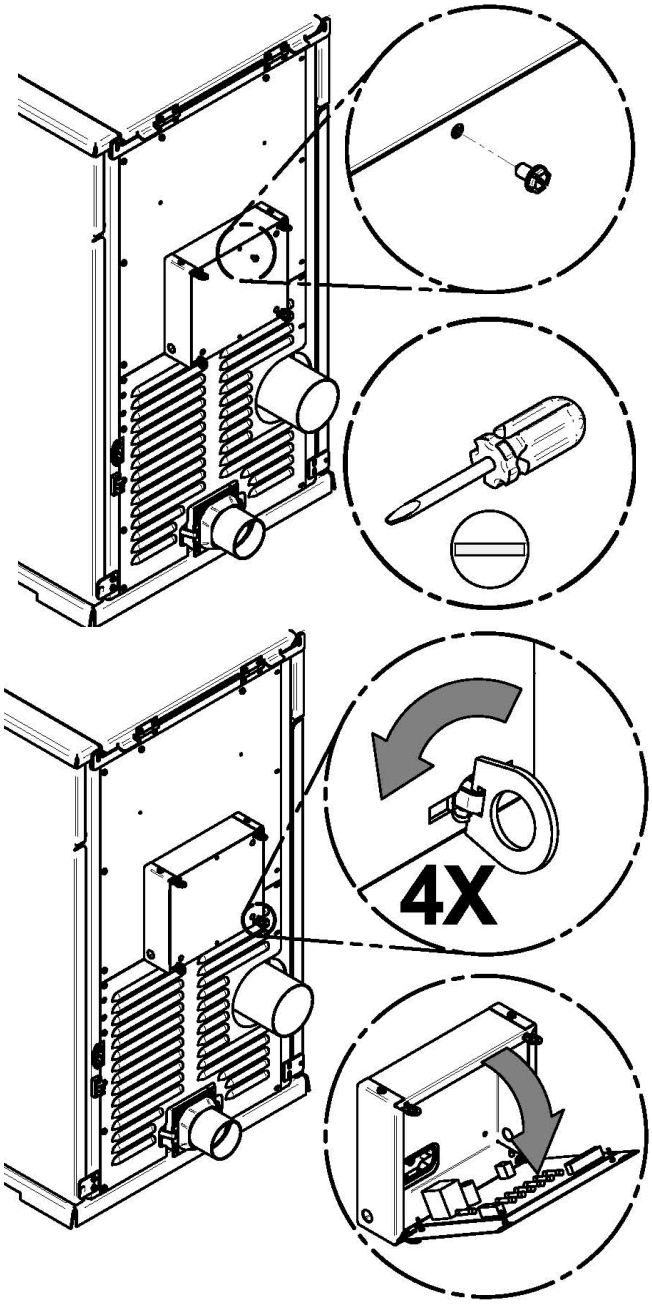
9 Wiring Diagram

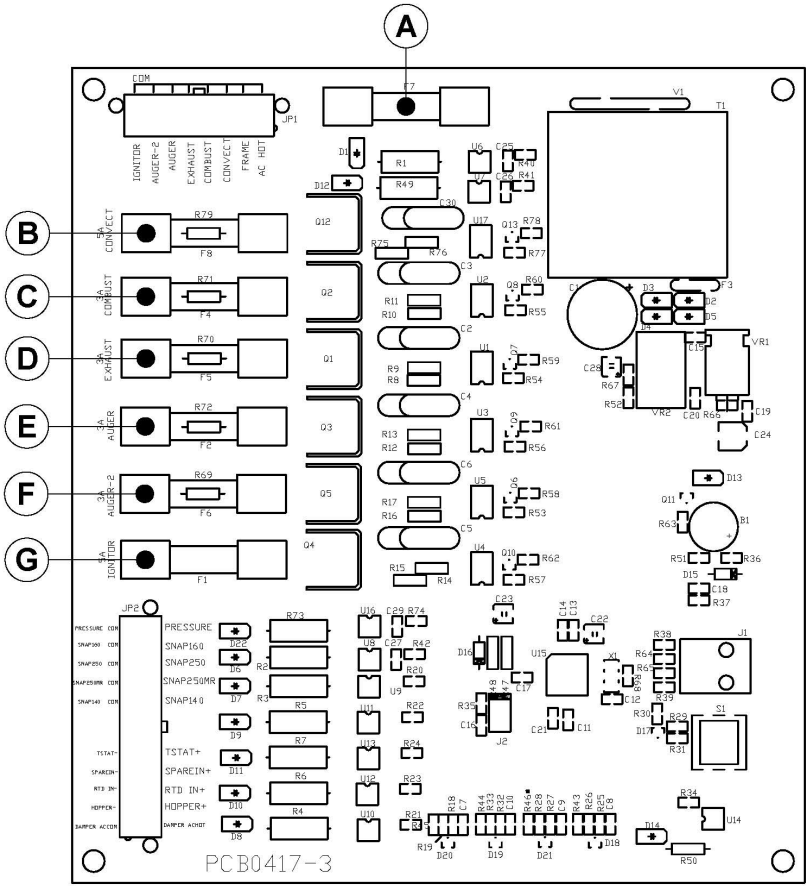


10 Access to Fuses

<u>WARNING:</u> UNPLUG THE STOVE BEFORE CHANGING THE FUSES.

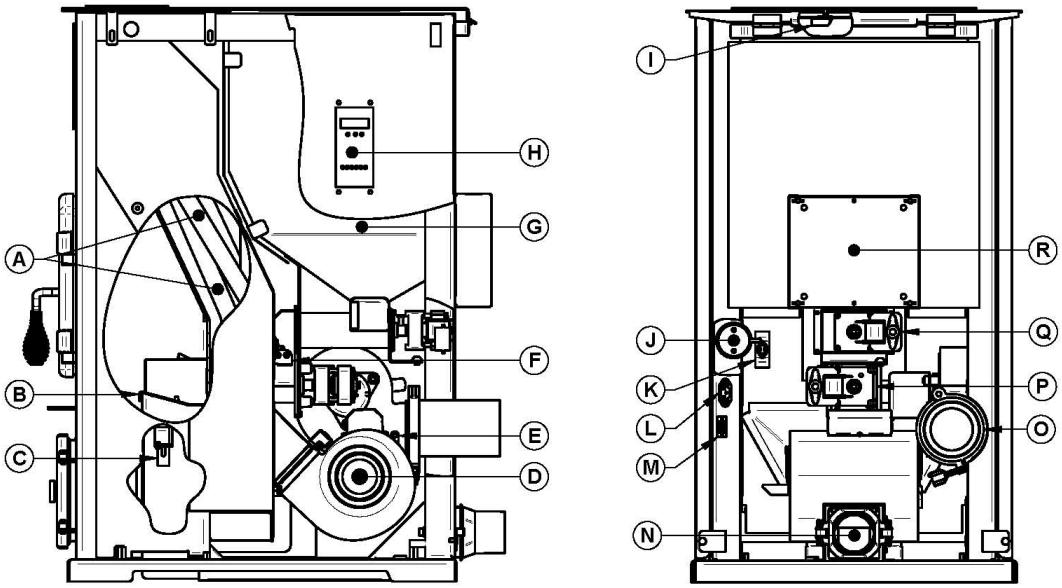
All fuses are located inside the housing of the electronic board; the housing is on the back of your stove. Unplug your stove, remove the screw and turn the four spring clips to open the housing.





LETTER	FUSE FUNCTION	AMPERAGE
A	MAIN BOARD FUSE	7.5A
B	CONVECTION BLOWER	5A
C	COMBUSTION BLOWER	3A
D	EXHAUST BLOWER	3A
E	TOP AUGER #1	3A
F	BOTTOM AUGER #2	3A
G	IGNITOR	5A

11 Components Location

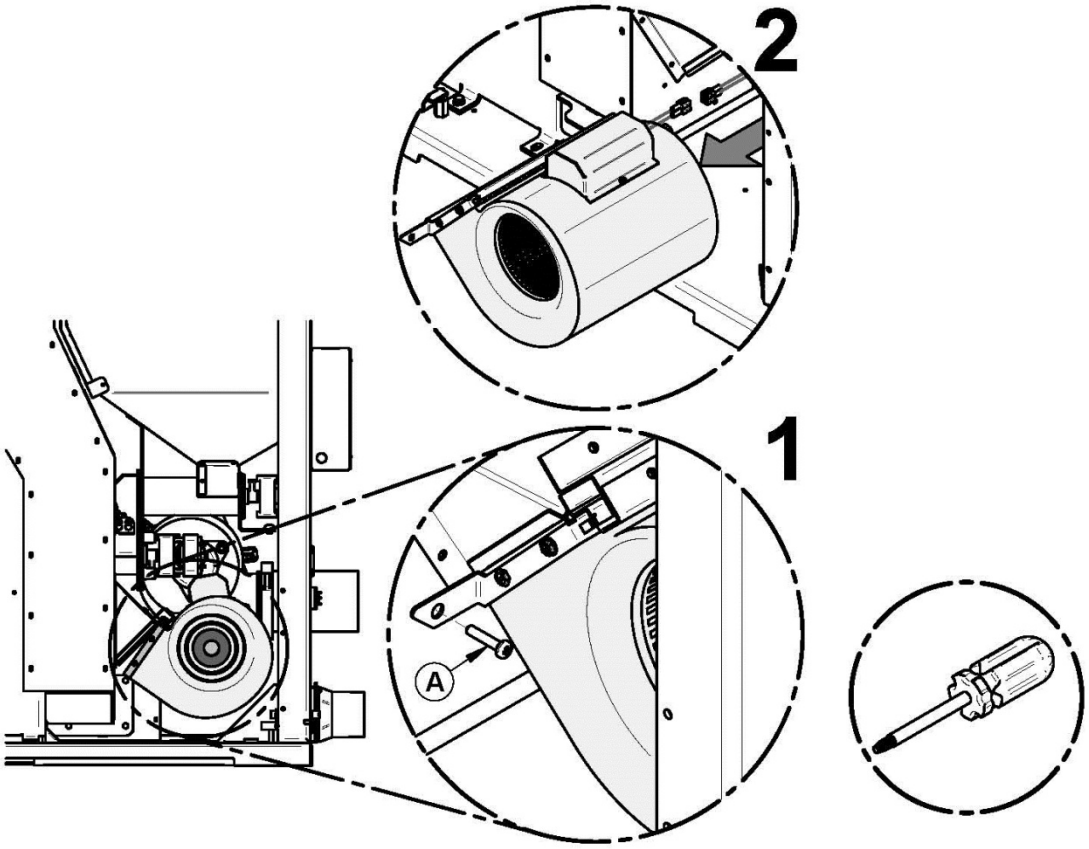


LETTER	COMPONENT
A	HEAT EXCHANGER TUBES
B	BURN POT
C	IGNITOR
D	CONVECTION BLOWER
E	THERMISTOR
F	L-250 THERMAL SWITCH
G	HOPPER
H	CONTROL PANEL
I	HOPPER SAFETY SWITCH
J	PRESSURE SWITCH
K	F-160 THERMAL SWITCH
L	POWER CORD RECEPTACLE
M	THERMOSTAT TERMINAL BLOCK
N	COMBUSTION BLOWER/FRESH AIR INTAKE
O	EXHAUST BLOWER
P	BOTTOM AUGER #2
Q	TOP AUGER #1
R	ELECTRONIC BOARD

12 Blower Replacement

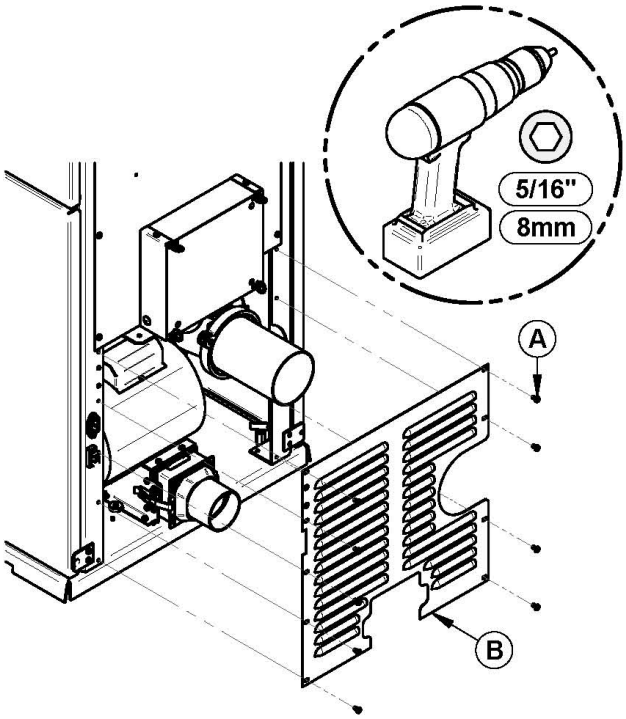
CONVECTION BLOWER

Unscrew screw A **(1)**, slightly pivot the fan upward then partially slide the fan out **(2)**. Disconnect the fan from the harness and remove completely.

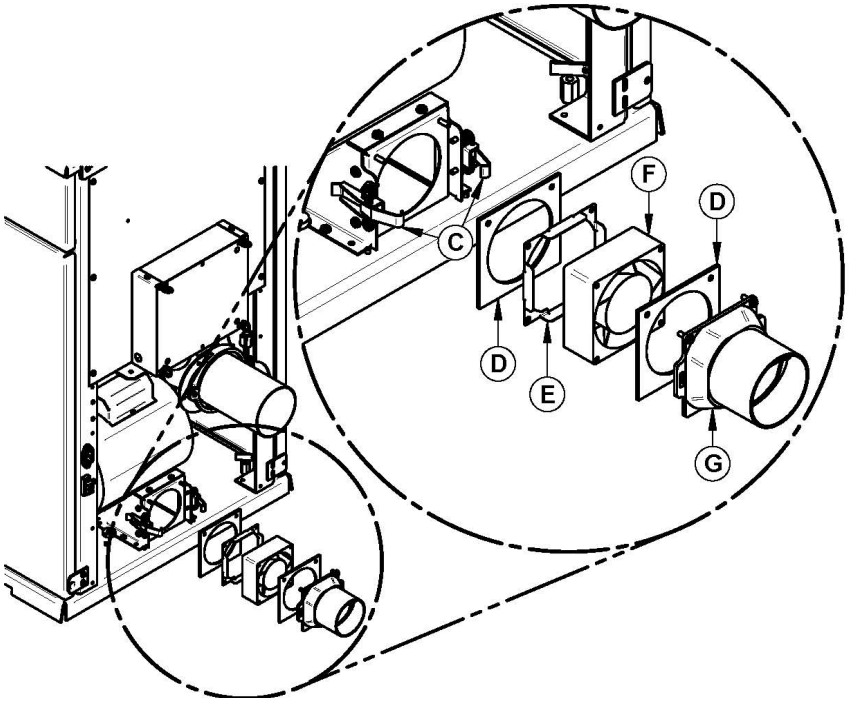


COMBUSTION BLOWER

Remove the 9 screws **(A)** and the bottom grille **(B)**.

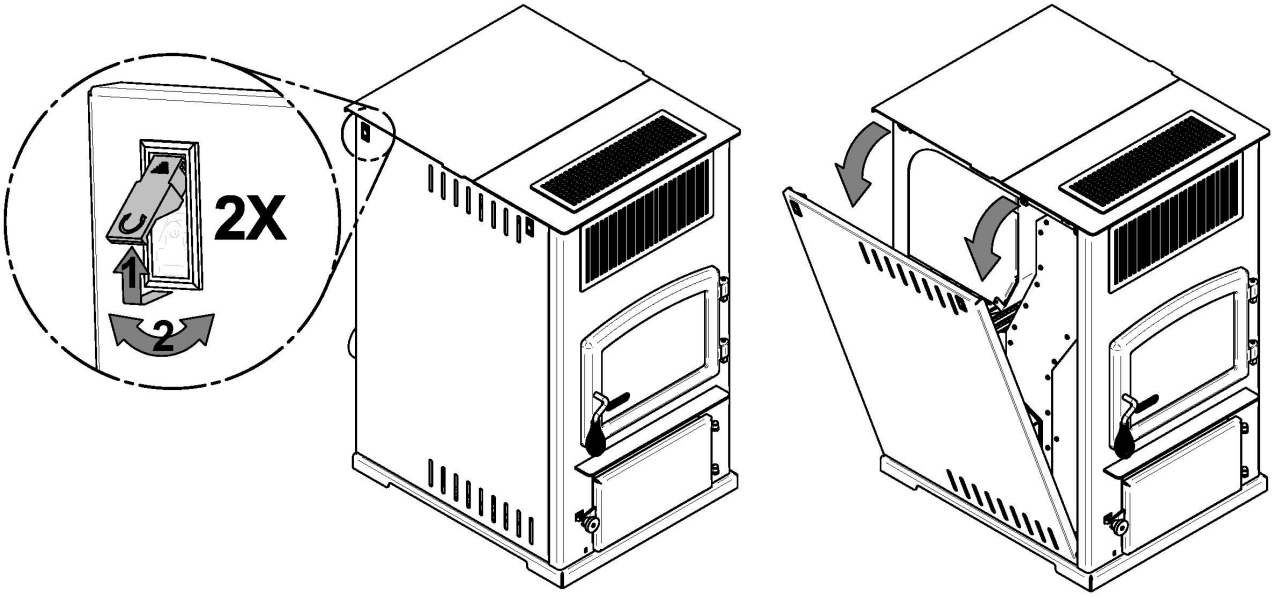


Unlatch the clamps **(C)**. Remove the back draft shutter **(G)** and the gasket **(D)**. Pull the combustion blower **(F)** and unplug the wire connector from the harness. Remove the plug **(E)** of the blower.

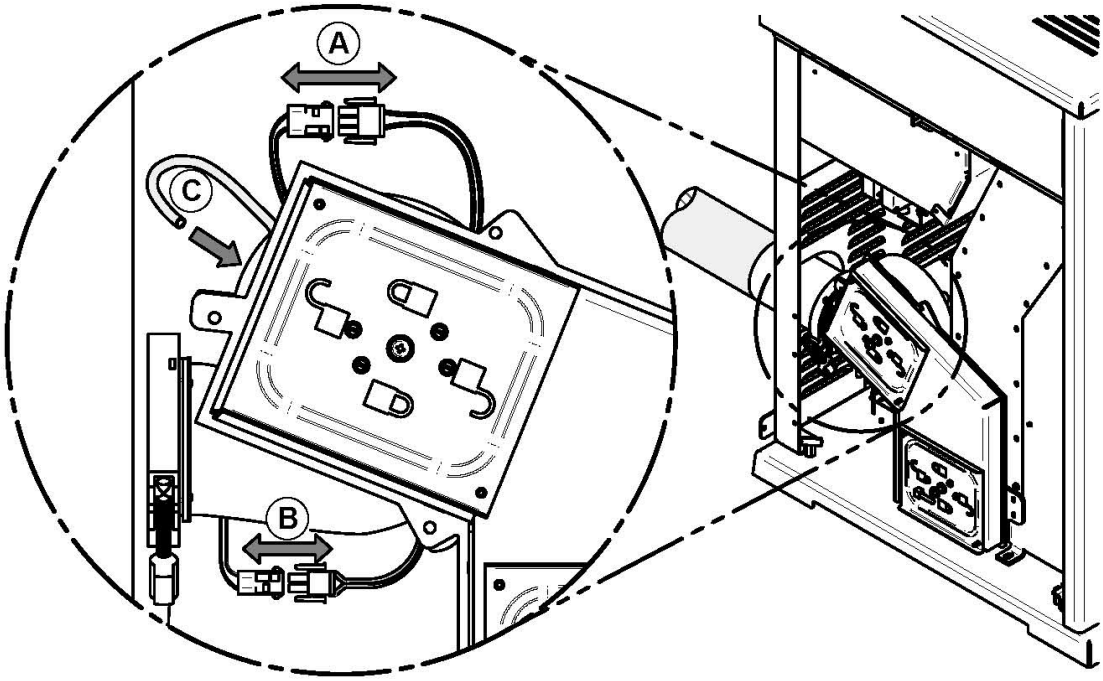


EXHAUST BLOWER

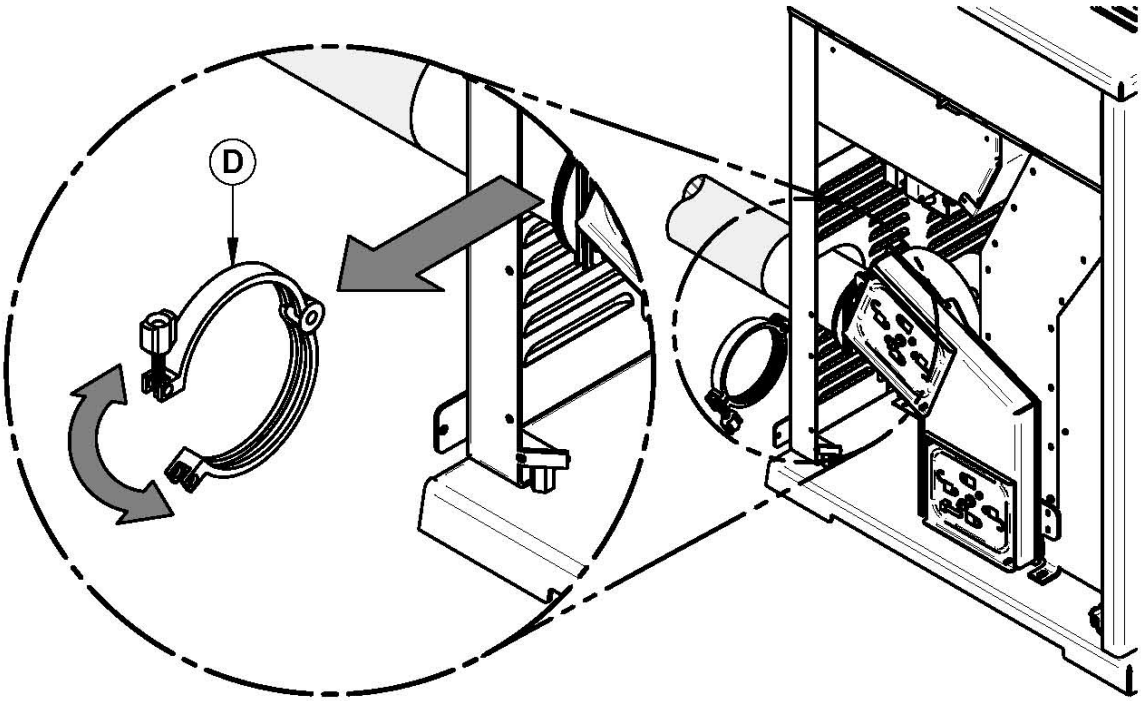
Remove the left panel.



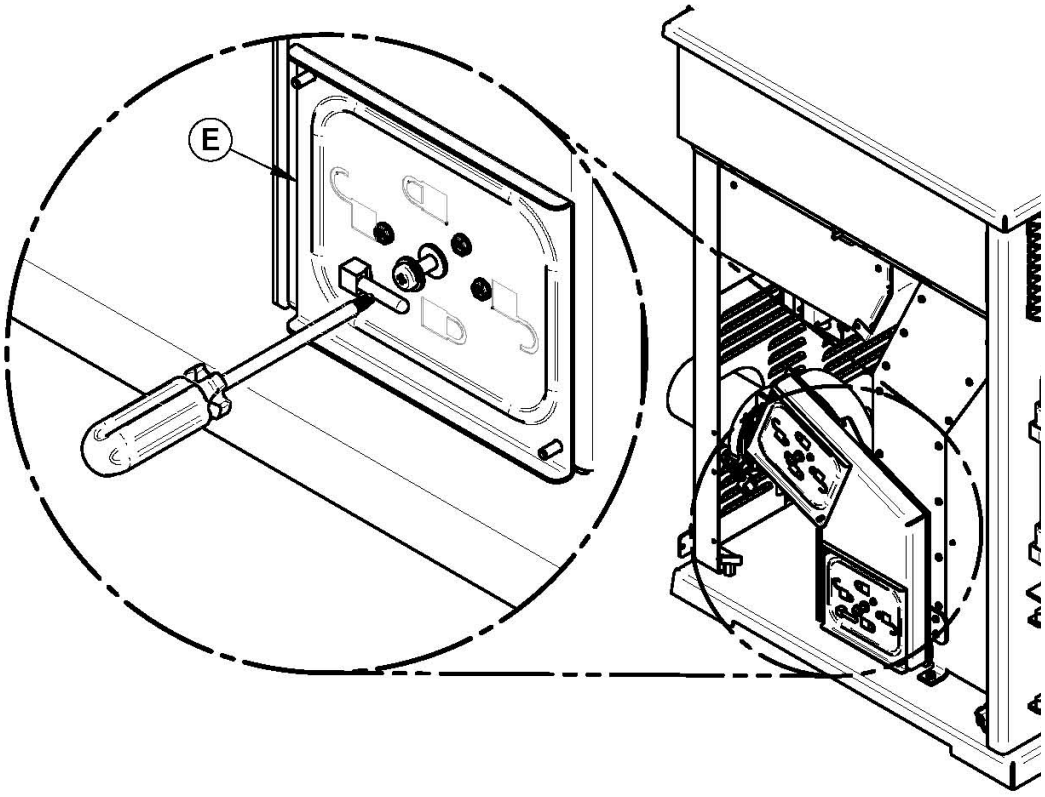
Unplug the connections **(A)** and **(B)**. Unplug the silicone tube **(C).**



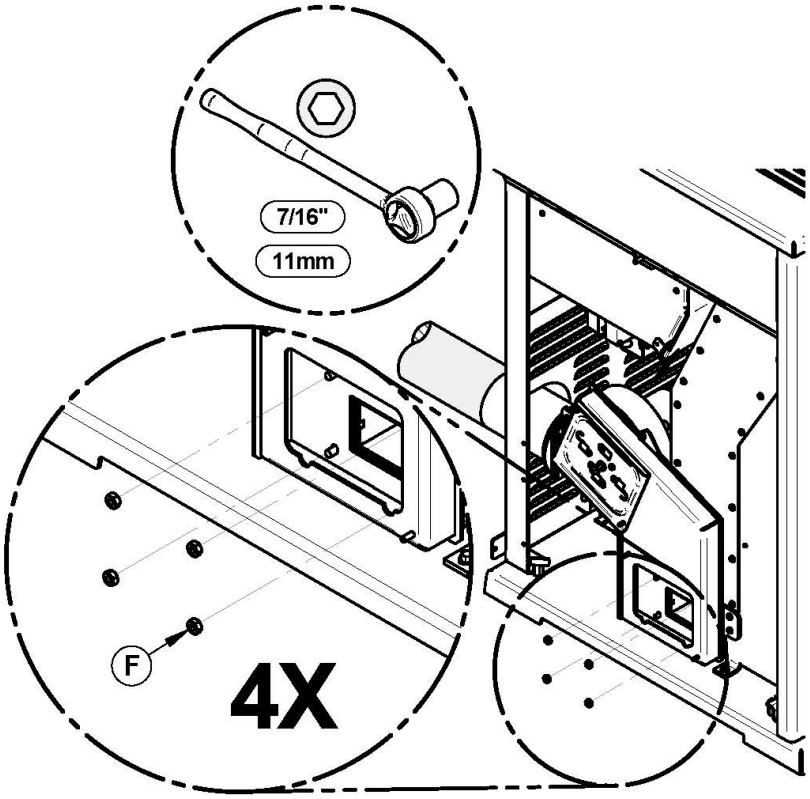
Remove the clamp **(D).**



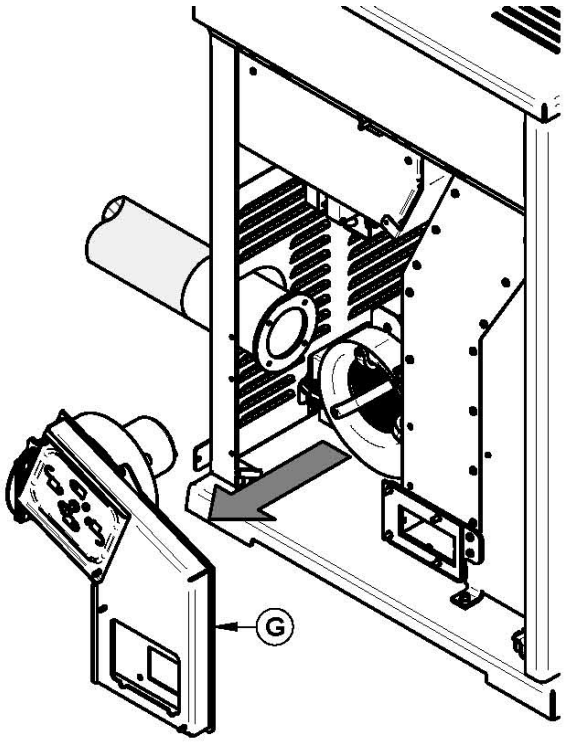
With a Philips screwdriver, unlock and remove the access panel **(E)**.



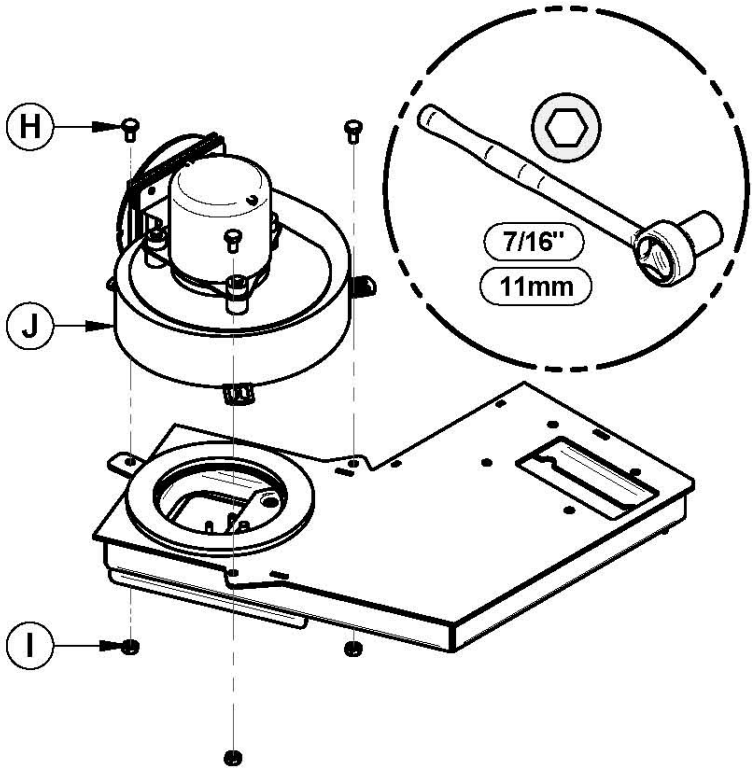
Remove the nuts **(F)** located in the opening of the trapdoor.



Remove the duct assembly **(G).**



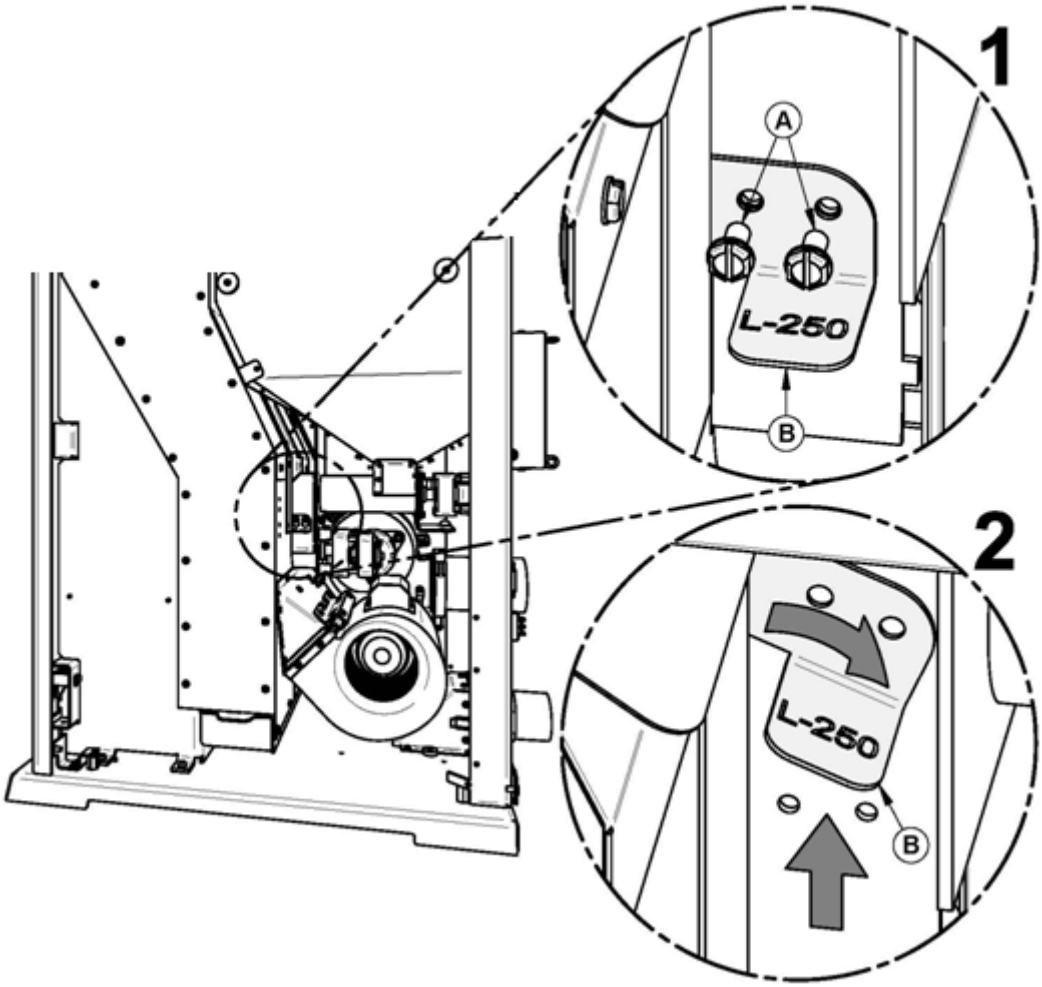
Remove the bolts **(H)** and nuts **(I)** to remove the exhaust blower **(J)**



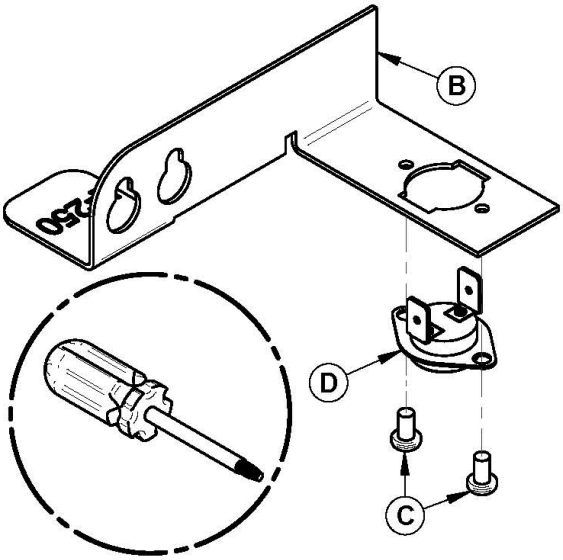
13 L-250 and F-160 Thermal Switch Replacement

L-250

1. Remove both retaining screws **(A)** holding the thermal switch support bracket **(B).**
2. Lift up the support bracket. Rotate the bracket 90° clockwise then pull the bracket toward you.

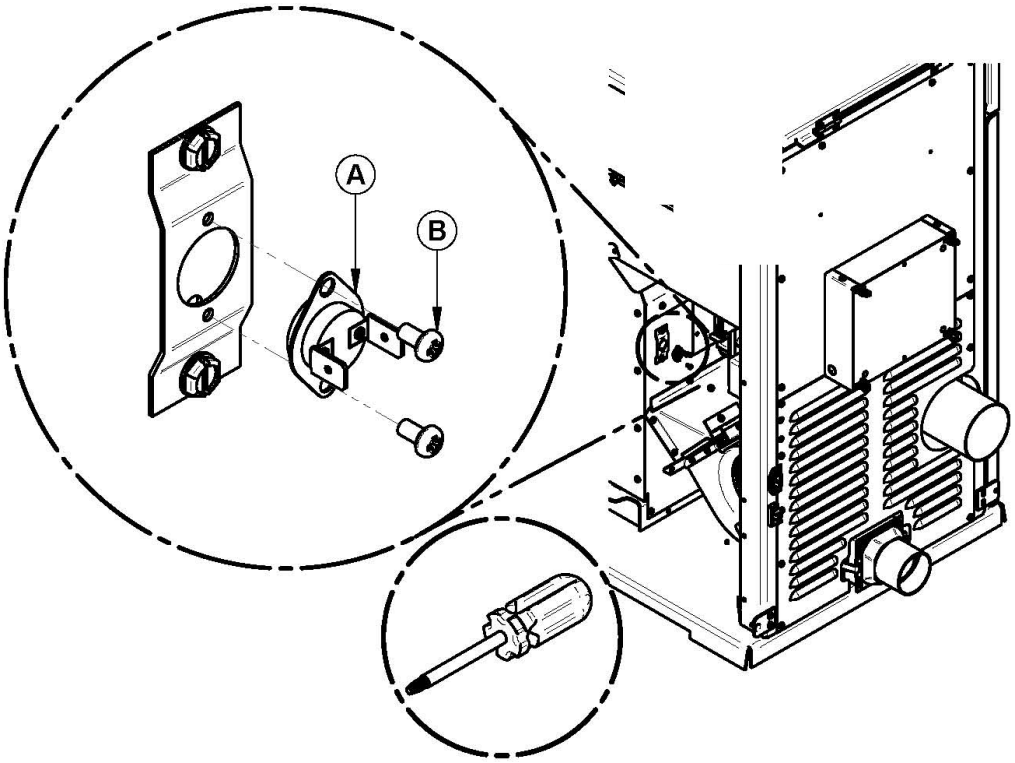


Remove the faulty thermal switch. Replace new thermal switch **(D)** underneath the bracket **(B)** by means of 2 screws **(C).**

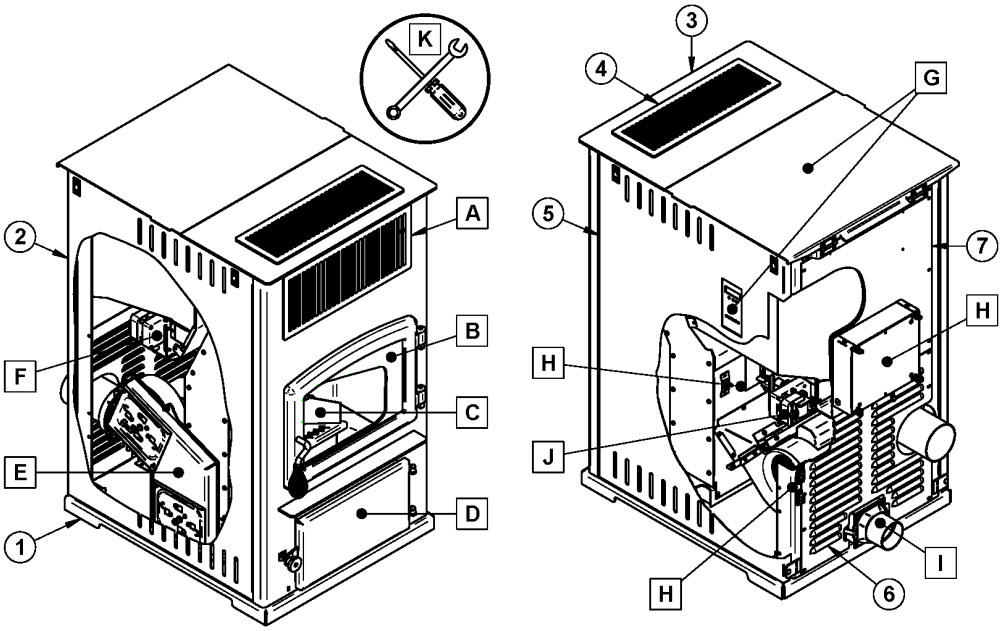


F-160

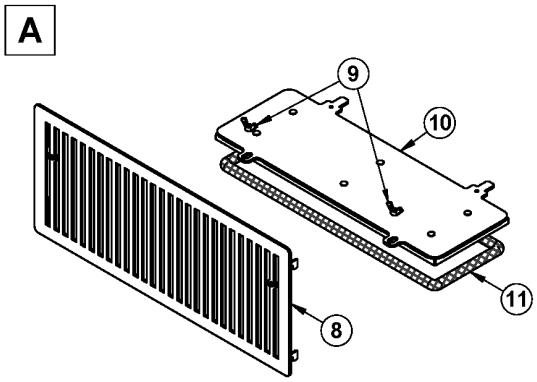
Unscrew both screws **(B)** and take out the thermal switch F-160 **(A)**.



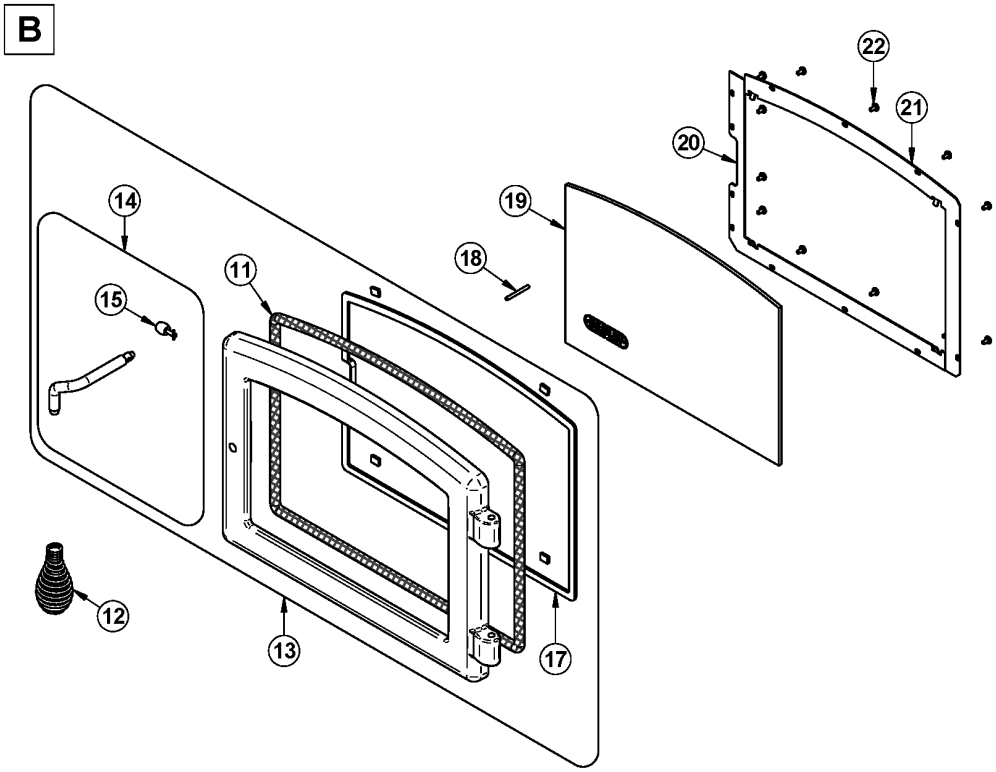
14 Exploded View and Replacement Parts



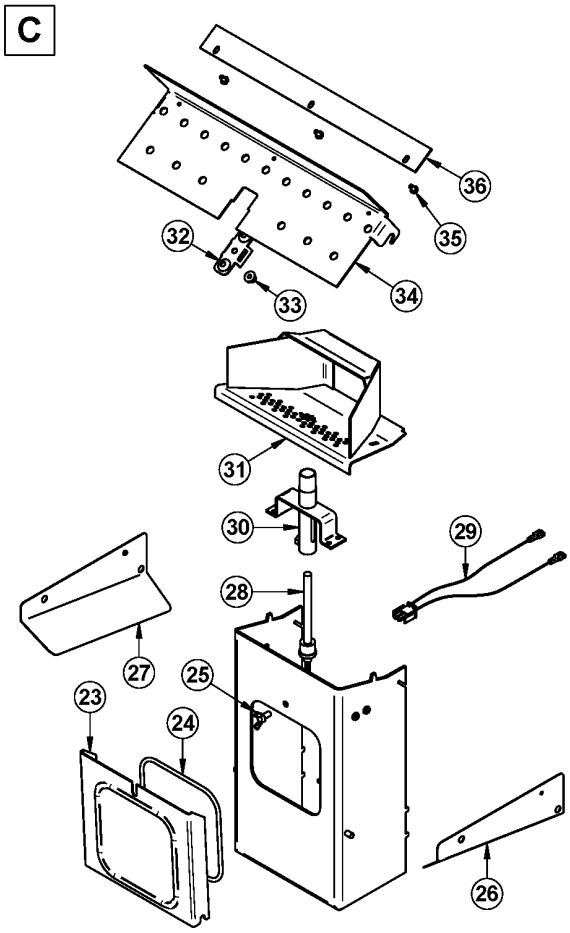
SECTION A



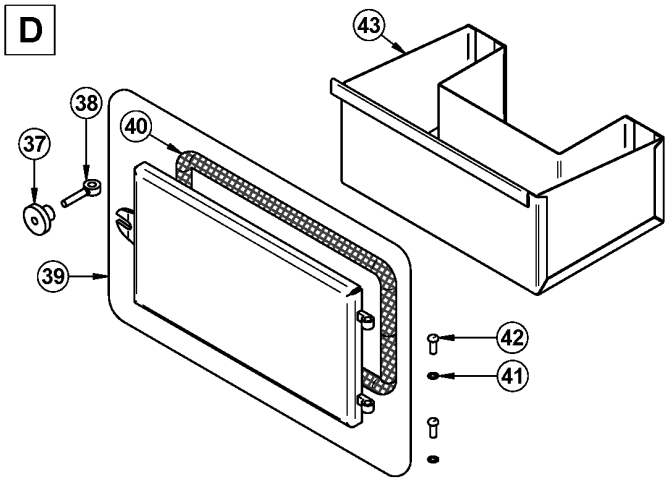
SECTION B



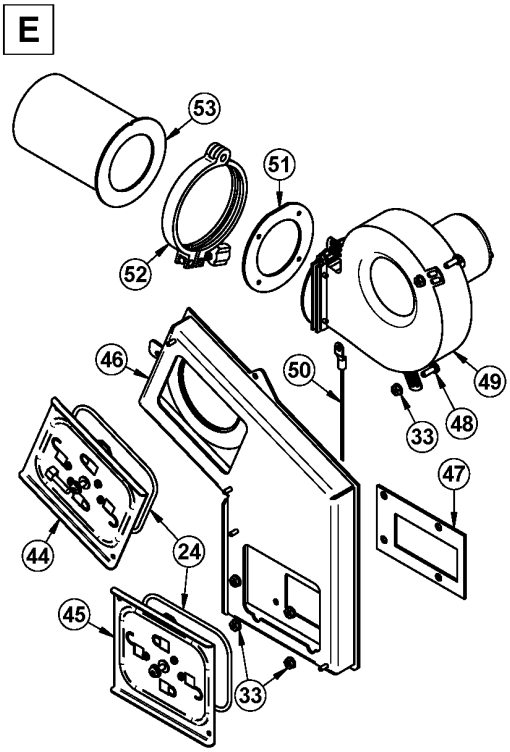
SECTION C



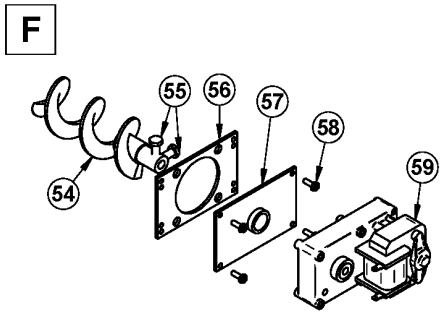
SECTION D



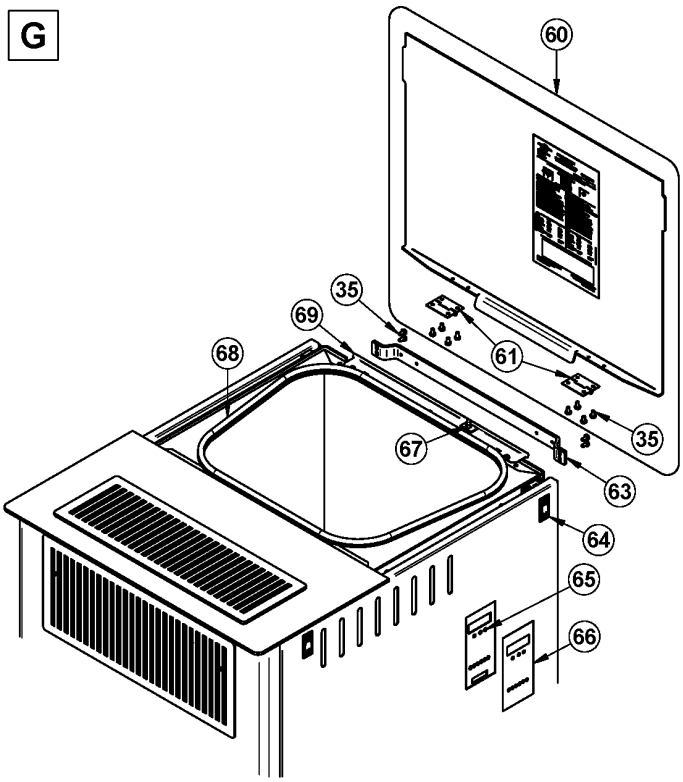
SECTION E



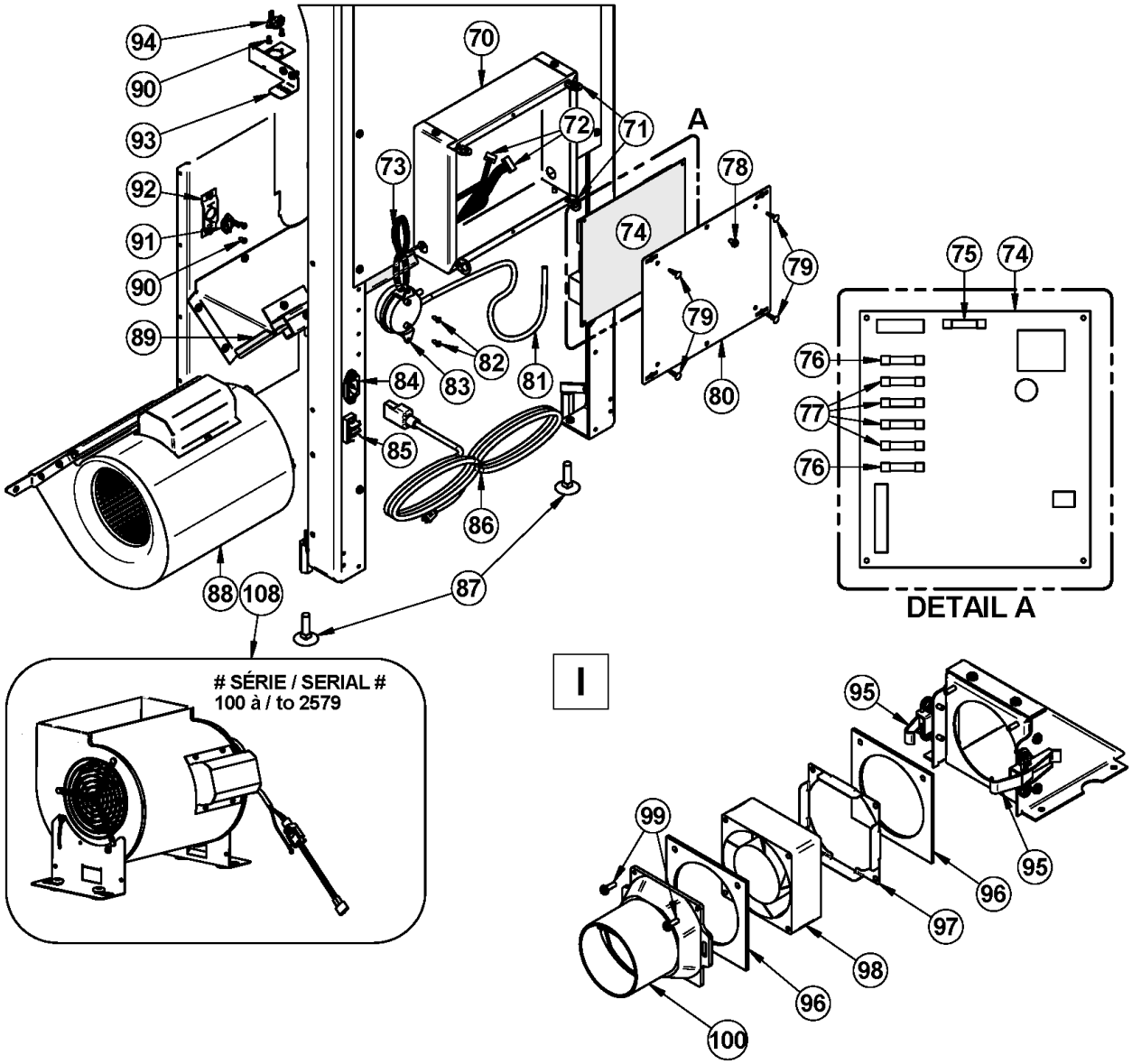
SECTION F



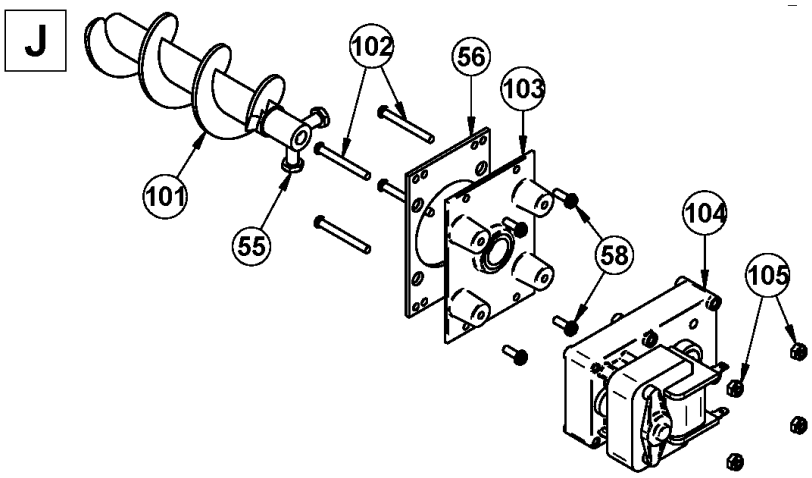
SECTION G



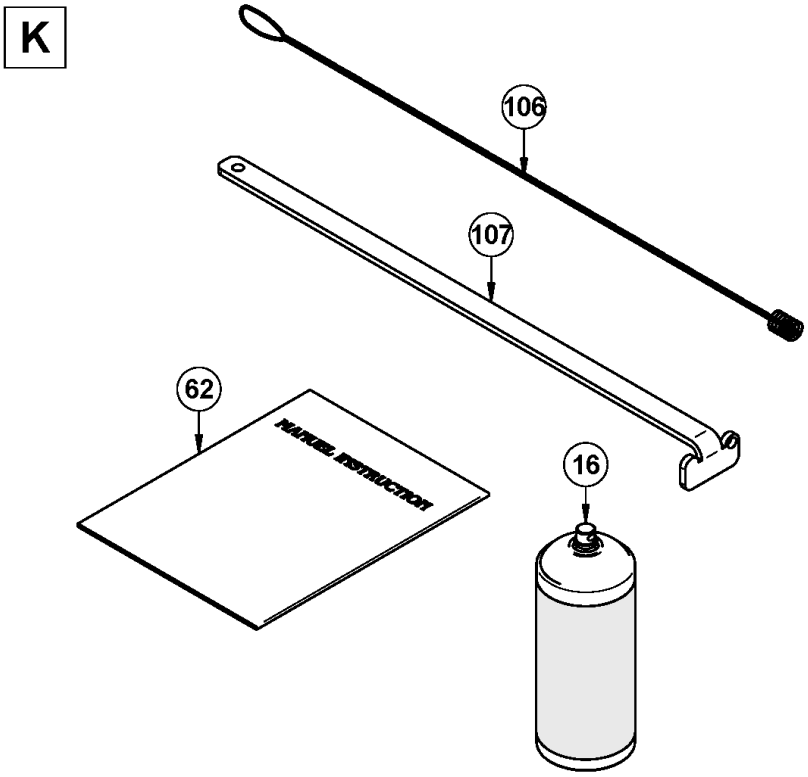
SECTION H AND I



SECTION J



SECTION K



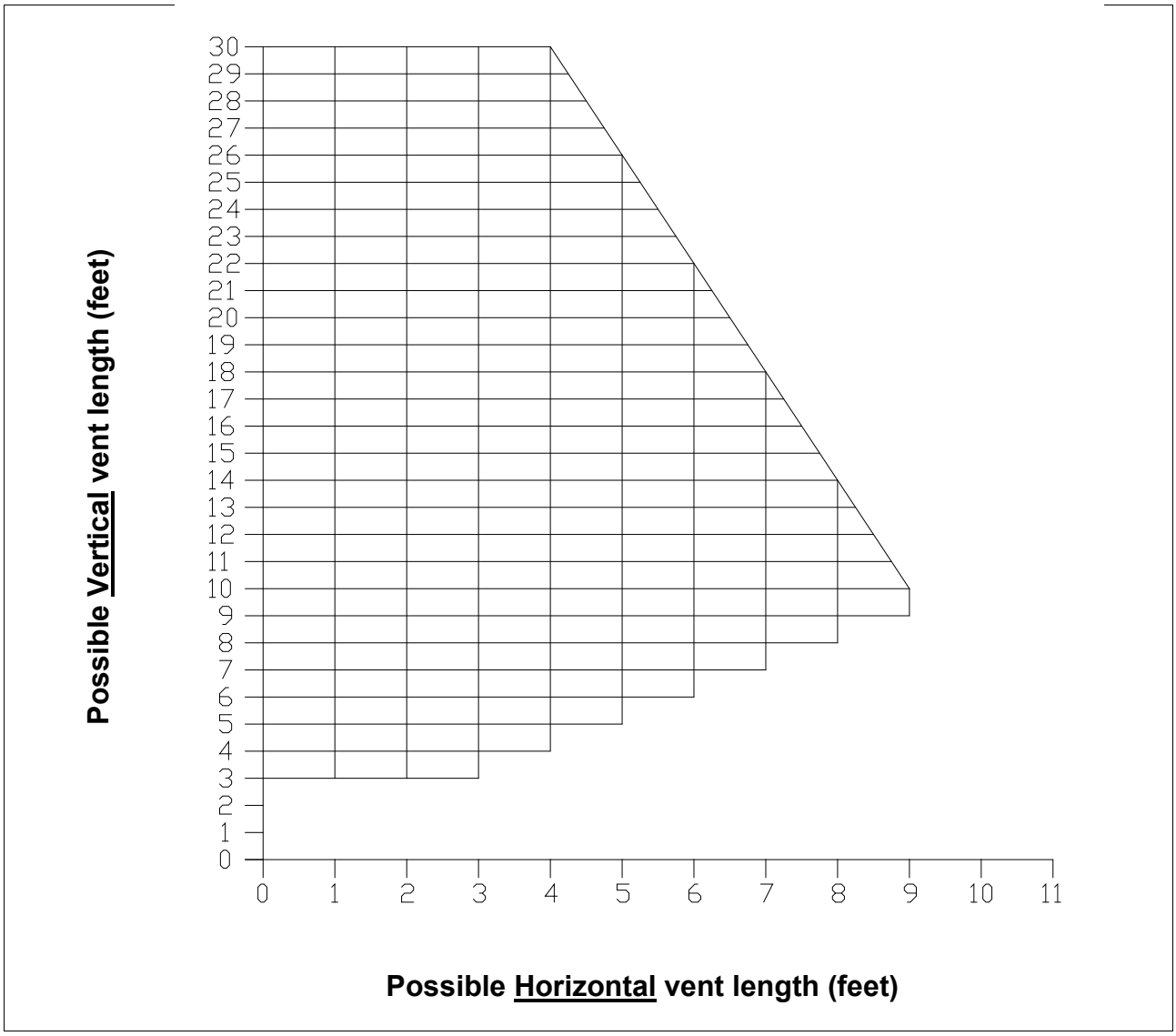
IMPORTANT: THIS IS DATED INFORMATION. When requesting service or replacement parts for your stove, please provide the model number and the serial number. We reserve the right to change parts due to technology upgrade or availability. Contact an authorized dealer to obtain any of these parts. Never use substitute materials. Use of non-approved parts can result in poor performance and safety hazards and will void your warranty.

#	Item	Description	Qty
1	99999	BUILD TO ORDER	1
2	SE67093	LEFT DECORATIVE PANEL	1
3	SE67094	TOP	1
4	SE62389	TOP DECORATIVE GRILL	1
5	SE67082	RIGHT DECORATIVE SIDE PANEL	1
6	PL67035	REAR LOUVER	1
7	PL67078	REAR TOP PANEL	1
8	SE67089	FRONT DECORATIVE GRILL	1
9	30484	WING NUT 1/4-20 X 1/2''	2
10	SE67097	MAINTENANCE ACCESS PANEL	1
11	AC06900	BLACK ROUND GASKET 1/2'' X 9' WITH ADHESIVE KIT	1
12	AC07867	1/2" CHROME PLATED COIL HANDLE	1
13	SE24219	CAST IRON DOOR WITH GASKET, HANDLE AND LATCH	1
14	AC09155	HANDLE AND LATCH KIT	1
15	AC09185	DOOR LATCH KIT	1
16	AC05963	METALLIC BLACK STOVE PAINT - 85 g (3oz) AEROSOL	1
17	AC06810	1/8" X 3/8" X 6' SELF ADHESIVE BLACK GASKET	1
18	30101	SPRING TENSION PIN 5/32"Ø X 1 1/2"L	1
19	PL62417	ARCHED REPLACEMENT GLASS	1
20	PL62415	LOWER GLASS RETAINER	1
21	PL62416	UPPER GLASS RETAINER	1
22	30124	SCREW #8 - 32 X 5/16'' TRUSS QUADREX ZINC	12
23	SE67033	BURN POT RECEPTACLE CLEAN-OUT ACCESS DOOR	1
24	AC06815	3/16'' X 5' BLACK GASKET AND SILICONE KIT	1
25	30485	WING NUT 1/4-20 X 1/2'' ZINC PLATTED	1
26	PL67104	RIGHT HAND ASH GUIDE	1
27	PL67103	LEFT HAND ASH GUIDE	1
28	SE44132	IGNITER ASSEMBLY 120V-300W	1
29	60360	IGNITOR WIRE EXTENSION WITH QUICK CONNECT (23.375'')	1
30	44146	IGNITER TUBE	1
31	SE67101	BURN POT	1
32	PL67175	BAFFLE LATCH	1
33	30220	FLANGED LOCKNUT 1/4-20	1
34	PL67172	BAFFLE	1
35	30029	THREAD CUTTING SCREW 10-24 TYPE "F" X 3/8" HEX WASHER	15

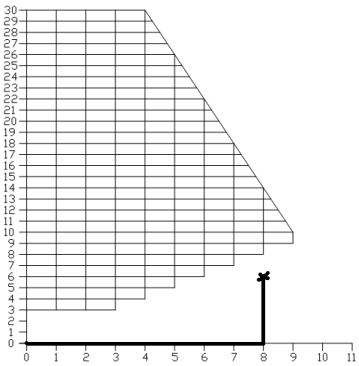
#	Item	Description	Qty
36	PL67173	BAFFLE EXTENSION	1
37	30799	STEEL ROUND KNOB, 3/8"-16 THREADED	1
38	30800	FULLY THREADED STEEL EYE BOLT, 3/8"-16	1
39	SE67151	ASH DRAWER ACCESS DOOR	1
40	AC06725	GLUE AND 3/4" X 7' WHITE DOOR GASKET KIT	1
41	30055	HINGE PIN RETAINING RING 5/16" ID X 0.512" OD	2
42	30167	HINGE PIN 5/16"Ø X 3/4"L	2
43	SE67025	ASH DRAWER	1
44	SE64378	EXHAUST CHANNEL MAINTENANCE ACCESS DOOR	1
45	SE67154	INFERIOR EXHAUST CHANNEL MAINTENANCE ACCESS DOOR	1
46	SE67003	EXHAUST CHANEL	1
47	21401	EXHAUST CHANEL GASKET	1
48	30093	BOLT 1/4-20 X 3/4" HEX GRADE 5	3
49	SE44193	EXHAUST FAN WITH GASKETS	1
50	SE44095	THERMISTOR ASSEMBLY	1
51	21392	EXHAUST ADAPTER GASKET	1
52	30762	VENT ADAPTER SECURE CLAMP	1
53	SE67018	EXHAUST ADAPTER PIPE	1
54	24030	AUGER	1
55	30092	BOLT 5/16''-18 X 3/4" HEX GRADE 5	4
56	21193	AUGER SUPPORT GASKET	2
57	PL62281	AUGER BUSHING PLATE	1
58	30026	THREAD CUTTING SCREW 10-24 F 5/8" HEX WASHER HEAD	4
59	44106	GEAR MOTOR FOR PELLET STOVE AUGER 1.5 RPM	1
60	SE67095	UPPER LID	1
61	30013	HINGE 2" X 1 1/2"	2
62	SE45725	ECO 65 INSTRUCTION MANUAL KIT	1
63	PL67141	HOPPER STOPPER	1
64	30572	RETRACTABLE LATCH HANDLE (BLACK)	4
65	SE62332	HOUSING FOR ELECTRONIC CONTROL BOARD MEMBRANE	1
66	SE44139	MEMBRANE SWITCH ON COVER	1
67	44098	HOPPER LID SAFETY SWITCH	1
68	AC06820	EPDM GASKET KIT 3/8 X 3/8 X 37/64 (5')	1
69	PL67155	SWITCH SUPPORT	1
70	SE64494	MOTHER BOARD HOUSING	1
71	30710	SPRING CLIP	4
72	60342	MAIN CONTROL BOARD WIRE HARNESS	1
73	60327	JUNCTION WIRE MAIN CONTROL BOARD TO LCD	1
74	PL64357	MOTHER BOARD 6 OUPUT	1
75	44013	FUSE 7.5A / 250V / 1/4"Ø X 1 1/4''L	1

#	Item	Description	Qty
76	44015	FUSE 5A / 250V / 1/4"Ø X 1 1/4''L	2
77	44016	FUSE 3A / 250V / 1/4"Ø X 1 1/4''L	4
78	30132	SCREW #10 X 3/8" HEX WASHER ZINC GR 5 TYPE "A"	1
79	30408	ELECTRONIC BOARD CLIP	4
80	PL64459	MOTHER BOARD HOUSING COVER	1
81	49006	3/8" X 24" SILICONE HOSE (INT.1/16"Ø 0.156'' +/- 0.010'')	1
82	30138	METAL SCREW #6 3/8'' QUADREX ''A'' TYPE BLACK	2
83	44029	PRESSURE SWITCH	1
84	60196	POWER CORD RECEPTACLE	1
85	60036	THERMOSTAT TERMINAL	1
86	60331	POWER CORD 6'	1
87	30050	LEVELING BOLT 3/8-16 X 1 1/2"	4
88	SE67137	CONVECTION FAN (500 CFM, 115v, 60Hz, 1100 RPM)	1
89	40042	EPDM GASKET 13/64 X 3/8 X 37/64	2.13
90	30080	METAL SCREW #6 X 1/4 TYPE B PAN PHILLIPS	4
91	44058	THERMODISC 36T12 F160	1
92	PL62343	F-160 SUPPORT	1
93	PL67149	L250-25 AUTOMATIC SUPPORT	1
94	44059	THERMODISC 36T11 L250-25 AUTOMATIC	1
95	30439	SPRING CLAMP ZINC PLATED BRIGHT CHROMATE DIP	2
96	21400	COMBUSTION FAN GASKET	2
97	PL64359	COMBUSTION FAN GASKET FRAME	1
98	44195	AXIAL BLOWER 115V 9W 92 X 92 X 38 (PLASTIC IMPELLER)	1
99	30502	SELF TAPING SCREW #8 - 32 X 1/2" TYPE F x 3/4 HEX FLAT HEAD	2
100	30777	PLASTIC BACKDRAFT DAMPER ASSEMBLY	1
101	24031	AUGER	1
102	30232	MECHANICAL SCREW 10-32 x 1-3/4'' PAN QUADREX ZINC	4
103	SE24233	GEAR MOTOR SUPPORT WITH INSULATION	1
104	44126	GEAR MOTOR FOR PELLET STOVE 2.4 RPM	1
105	30233	NYLON HEX LOCK NUT 10-32 ZINC	4
106	30798	HEAT EXCHANGER MAINTENANCE BRUSH Ø1 1/8'' - 42''	1
107	PL67171	SCRAPER	1
108	SE44108	BLOWER WITH CAPACITOR (500 PCM, 115v, 60Hz, 1100 TPM)	1

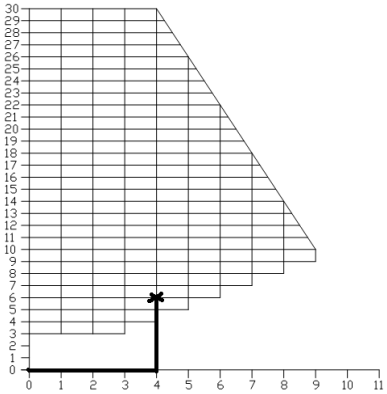
APPENDIX A: HORIZONTAL AND VERTICAL VENT CHART



For example, let's imagine an installation consisting of a horizontal vent coming out at the back of the stove on a total distance of 8 feet. This horizontal run is followed by a tee and a 6-foot vertical rise. This type of installation is not acceptable. As you can see, the vent termination is clearly outside the allowed configuration zone on the chart because the venting system proposed **does not have at least one foot of vertical rise for each foot of horizontal run**.



Instead, if the installation consisted of a horizontal vent coming out at the back of the stove on a total distance of 4 feet, followed by a tee and a 6-foot vertical rise, it would be acceptable. The termination is within the allowable configuration zone on the chart since it would have at least one foot of vertical rise for each foot of horizontal run. Furthermore, the total vertical rise is at least 3-feet high.



<u>WARNING:</u> To reduce the risk of smoke spillage there should always be at least one foot of vertical rise for each foot of horizontal run. In all cases, at least 3 feet of vertical rise is needed.

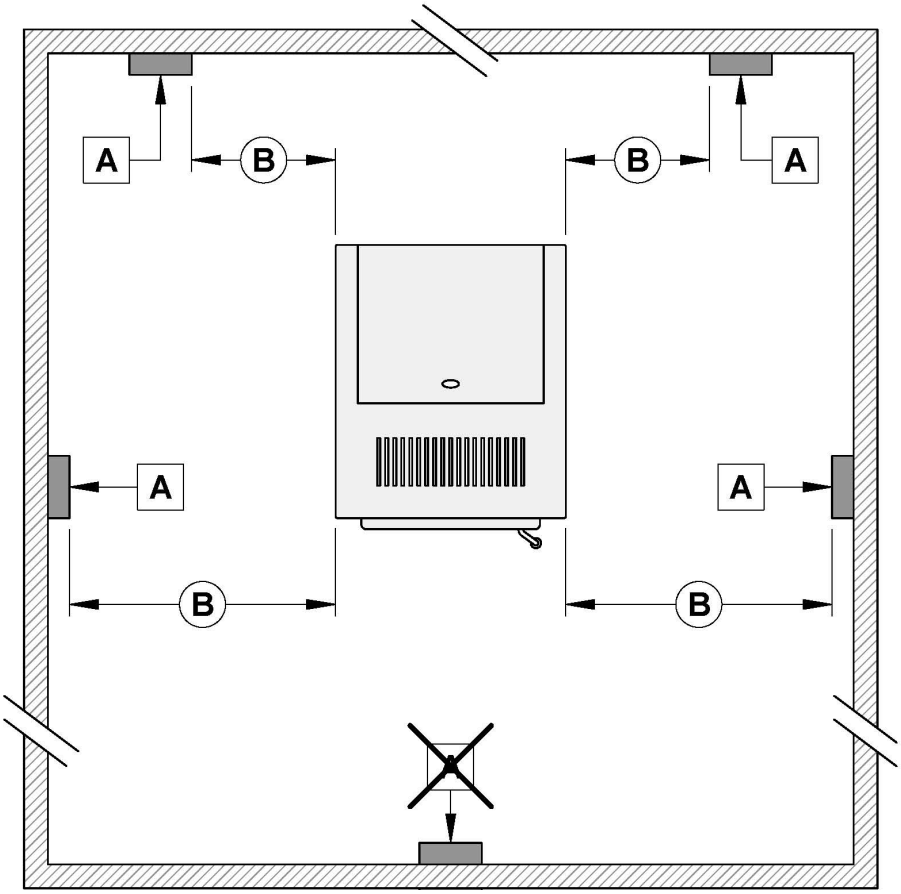
APPENDIX B: INSTALLING A THERMOSTAT (AC05558)

Using a thermostat will help you maintain a constant temperature throughout the house. A low voltage thermostat (24 volts) is required. A fixed wall mount or hand held model can be used.

Note: Thermostat manufacturer's instructions always override the information published in the following section.

Thermostat location

Location of the thermostat is very important to obtain comfort and efficiency from your stove. Locate the thermostat 4 to 5 feet above the floor in accordance with applicable building codes. Install the thermostat in a location that provides good airflow characteristics and avoid areas behind doors, near corners, air vents, direct sunlight or heat generating devices. If the thermostat is installed in the same room as the stove, it should also be located at least 15 to 20 feet from the stove. To prevent cycling, you should avoid installing the thermostat on a poorly insulated outside wall or directly in front of the stove.

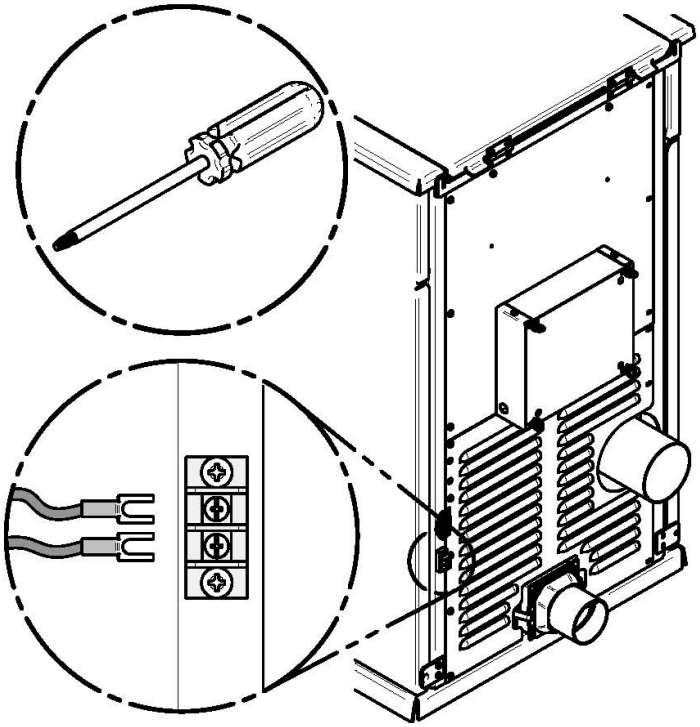


A	THERMOSTAT
B	MINIMUM 15'

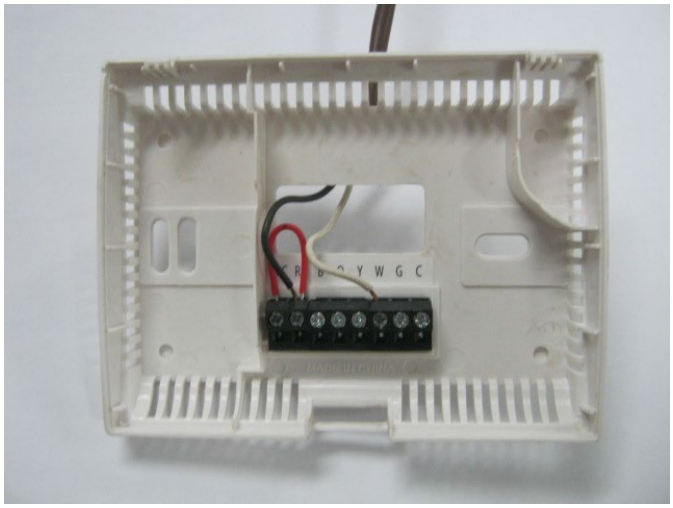
Wired thermostat

Before installing the thermostat, unplug the power cord from the power outlet.

First, connect the two thermostat wires to the terminal block located at the rear on the right hand side of the stove when facing it. Loosen the two middle screws and insert the wires in the terminals. Tighten the two screws. Open the thermostat and connect the wires as per the manufacturer's instructions.



Here is an example of what your thermostat could look like:

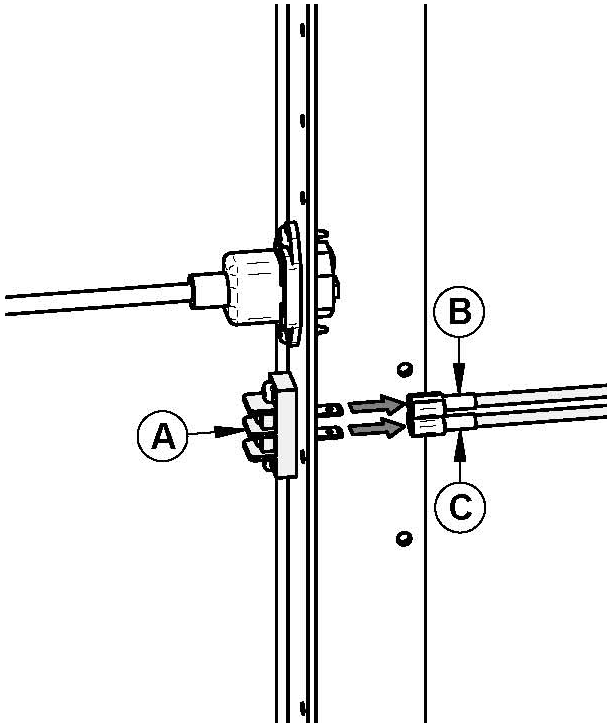


Connect one wire on "RH" and the other wire on "W". Red wire jumper can remain installed. For further information refer to the manufacturer's instructions.

Wireless thermostat

If you are using a wireless thermostat or a hand held thermostatic remote control, connect the two thermostat wires to the terminal block located at the rear on the right hand side of the stove while facing it. If the receiver wires are equipped with quick-connect terminals you can connect them directly to the stove's wiring harness.

To do so, open the right hand side decorative panels and disconnect wires (B) and (C) attached to the rear of the terminal block (A) and connect them to the receiver.

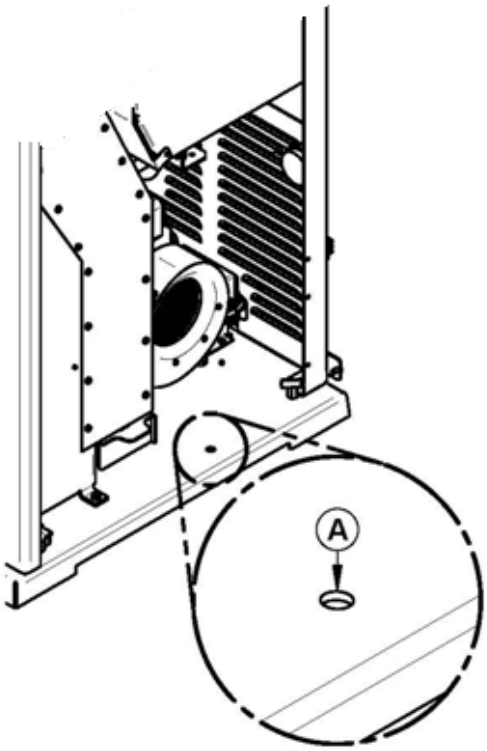


APPENDIX C: MOBILE HOME INSTALLATION

Anchor the stove

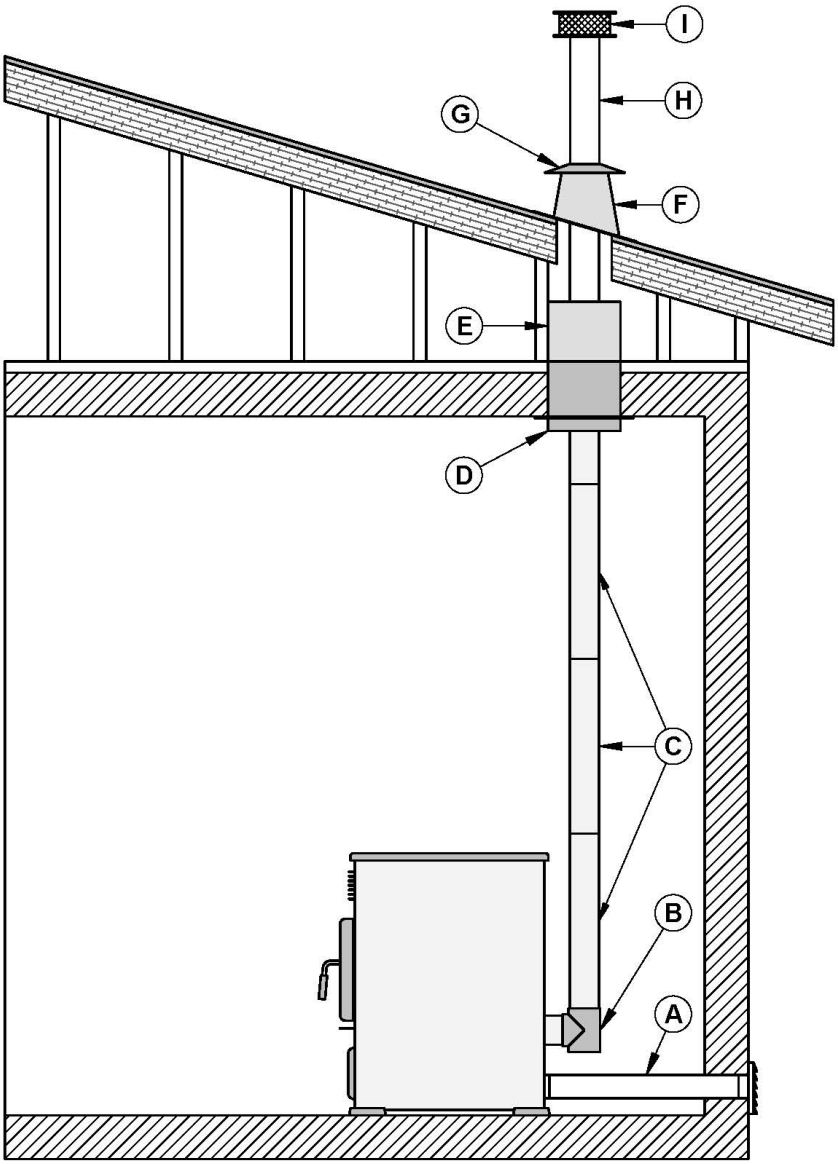
WARNING: FOR MOBILE HOME INSTALLATION, IT IS MANDATORY TO CONNECT THE STOVE TO AN OUTSIDE COMBUSTION AIR SOURCE. (SEE APPENDIX D: COMBUSTION AIR SUPPLY).

When installed in a mobile home, the stove must be anchored to the floor with two screws. Use the two anchoring holes **(A)** located for this purpose on each side of the pedestal, as shown on the following image.



For use in a mobile home in Canada, this pellet stove must be connected to a vent system certified according to the standard or ULC/ORD-C441 CAN/ULC-S609. A vent system meeting the requirements of ULC S629M can also be used.

For use in a manufactured home in the United States, this pellet stove must be connected to a venting system that meets the requirements of UL 641 standard. A vent system that meets the requirements of UL 103 standard may also be used.

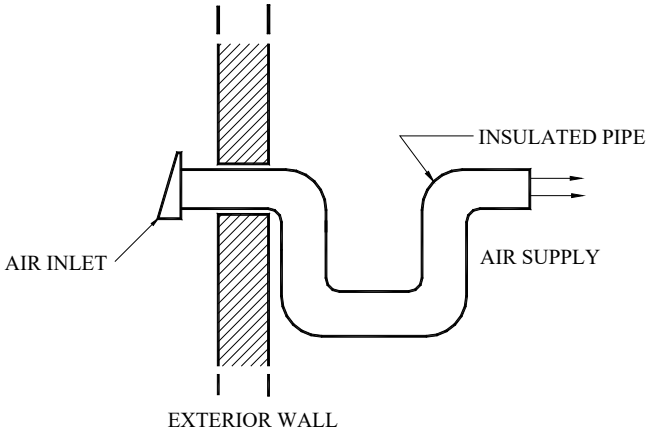


A	Fresh air intake
B	Tee
C	Pellet pipe length and/or slip section
D	Ceiling support
E	Attic insulation shield
F	Roof flashing
G	Storm collar
H	Pellet pipe length
I	Vertical rain cap

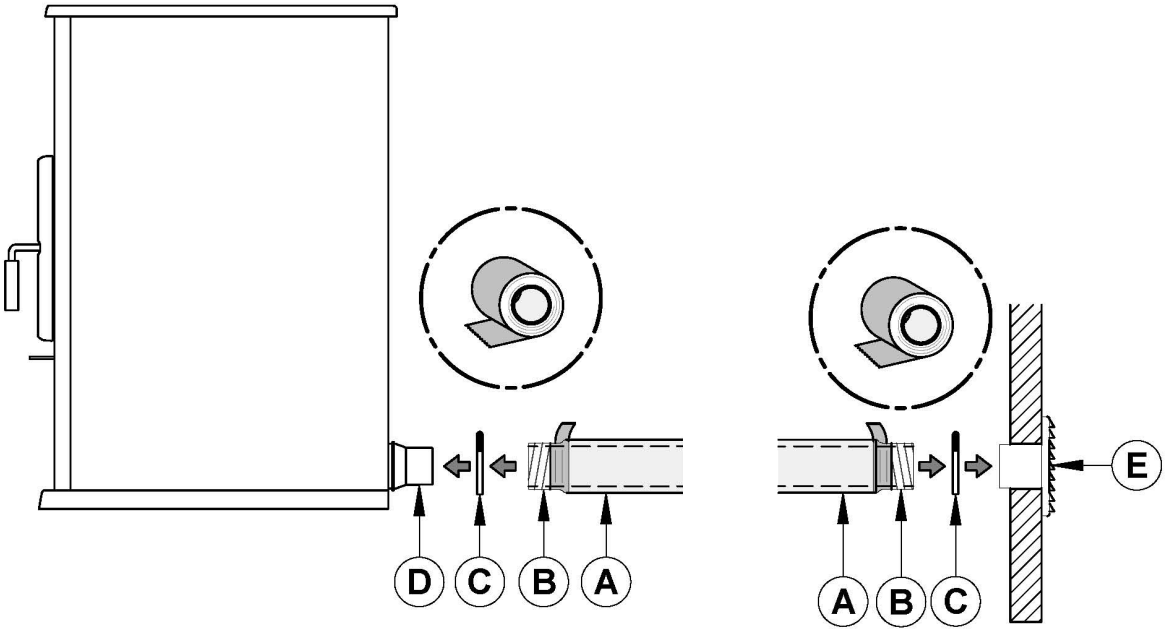
APPENDIX D: COMBUSTION AIR SUPPLY

WARNING: FOR MOBILE HOME INSTALLATION, IT IS MANDATORY TO CONNECT THE STOVE TO AN OUTSIDE COMBUSTION AIR SOURCE. INSULATED PIPE SHOULD NEVER EXCEED 10 FEET.

It is recommended to install an outside air inlet in or near the room where the stove is installed. When doing so, it is preferable to choose a wall which is not exposed to dominant winds, depending on the conditions surrounding your house.



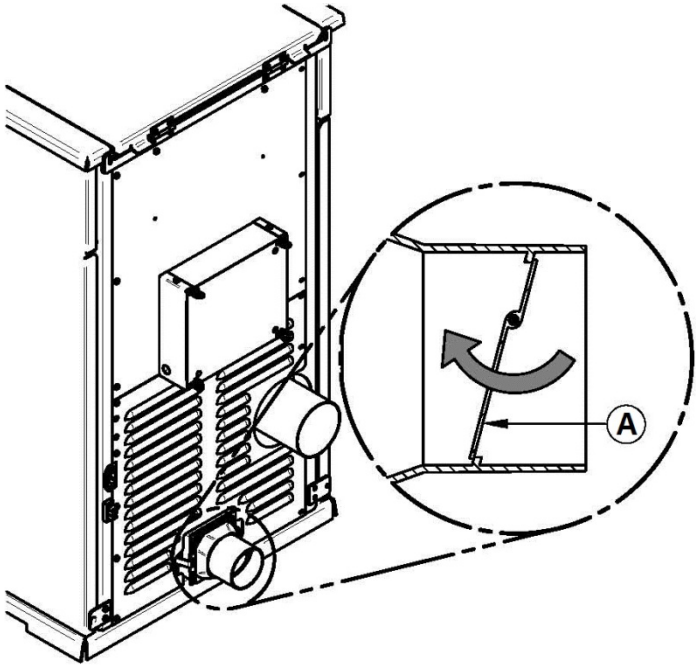
An insulated 3” inside diameter metallic pipe, either flexible or rigid, must be attached to the fresh air intake (D).



To complete the installation, make a hole of1/4" to 1/2" (6 mm à 13 mm) bigger than the insulate pipe diameter in the outside wall of the house at the chosen location. From outside, place the outside air inlet cap (E) in the hole (open side down) and fasten the register to the wall, with screw. Place the insulated pipe (A) over the register tube and over the fireplace outside air connector (D). At each end, carefully pull back the insulation and plastic cover, exposing the flexible pipe. Attach the flexible pipe using pipe clamps(C). For a better seal, you may also use aluminum tape. Wrap the tape around the joint between the flexible pipe and the air inlets. Carefully push the insulation and plastic cover back over the pipe. Fix the plastic in place using aluminum tape.

A rodent guard (minimum 1/4” wire mesh) must be used at the termination. All connections must be secured and airtight by either using the appropriately sized hose clamp and/or UL-181-AP foil tape.

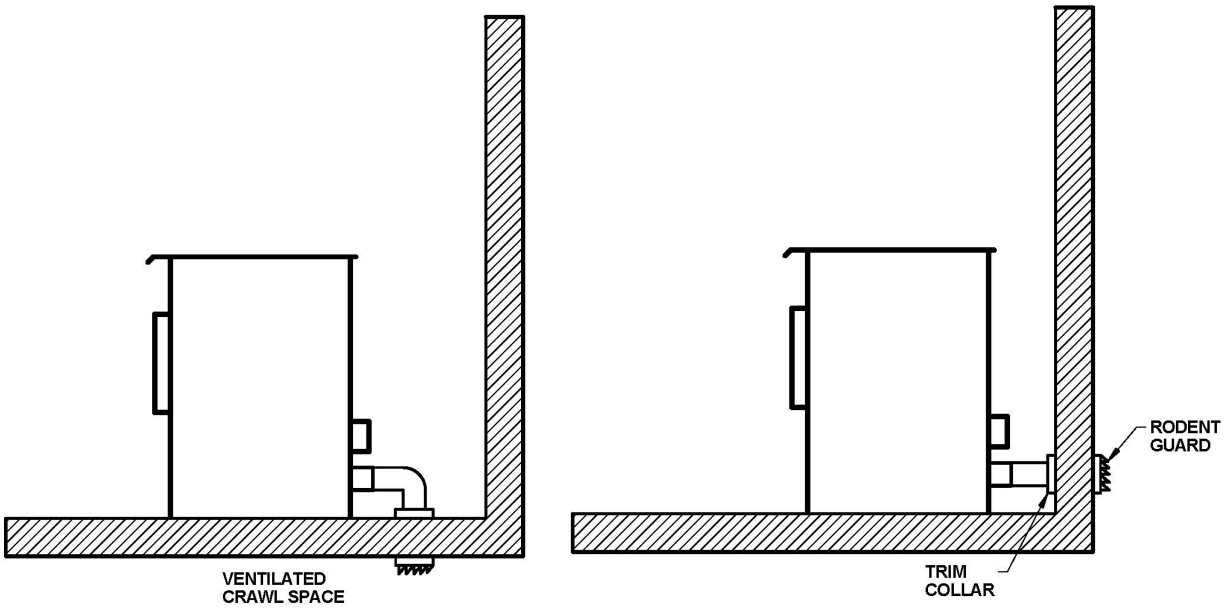
Make sure that the fresh air intake back draft shutter **(A)** functions freely. The fresh air intake back draft shutter is located in the back of the stove.



Sources of Outside Combustion Air

WARNING: IT IS FORBIDDEN TO DRAW COMBUSTION AIR FROM A BASEMENT, AN ATTIC, A GARAGE OR ANY CONFINED SPACE.

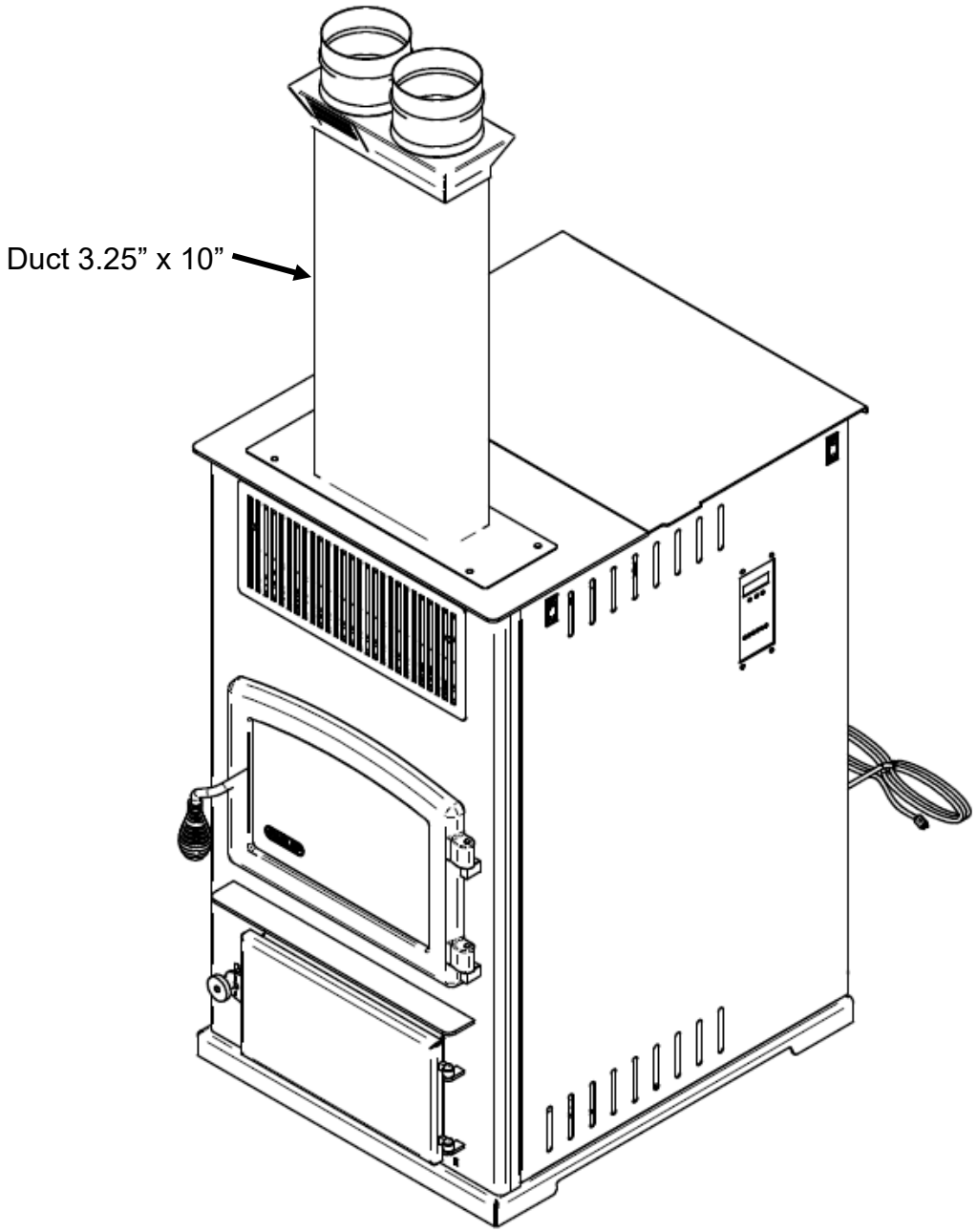
- You can draw air from a ventilated crawl space underneath the floor.
- You can draw air directly from an outside wall, behind the stove.



APPENDIX E: OPTIONAL HOT AIR PLENUM KIT (AC01330)

The hot air plenum kit AC01330 is available at your local dealer.

Please note that the 3.25” x 10” duct is sold separately.

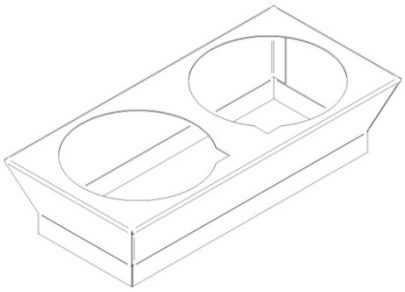


This hot air plenum kit contains the following parts:

(A)-49068

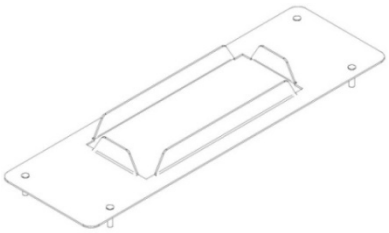
2x

(B)-PL62444



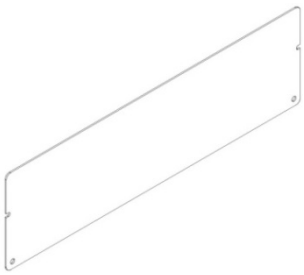
1x

(C)-SE62443



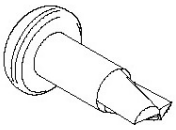
1x

(D)-PL62446 (5” x 17.5”)



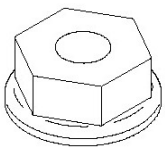
1x

(E)-30153



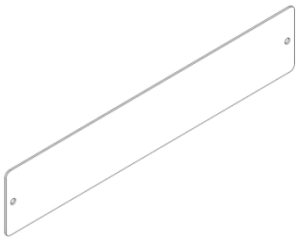
8x

(F)-30220



6x

(G)PL67179 (DP00061) (3” x 16”)



1X

DROLET LIMITED LIFETIME WARRANTY

The warranty of the manufacturer extends only to the original retail purchaser and is not transferable. This warranty covers brand new products only, which have not been altered, modified nor repaired since shipment from factory. Proof of purchase (dated bill of sale), model name and serial number must be supplied when making any warranty claim to your DROLET dealer.

This warranty applies to normal residential use only. Damages caused by misuse, abuse, improper installation, lack of maintenance, over firing, negligence or accident during transportation, power failures, downdrafts, venting problems or under-estimated heating area are not covered by this warranty. The recommended heated area for a given appliance is defined by the manufacturer as its capacity to maintain a minimum acceptable temperature considering that the space configuration and the presence of heat distribution systems have a significant impact in making heat circulation optimum.

This warranty does not cover any scratch, corrosion, distortion, or discoloration. Any defect or damage caused by the use of unauthorized or other than original parts voids this warranty. An authorized qualified technician must perform the installation in accordance with the instructions supplied with this product and all local and national building codes. Any service call related to an improper installation is not covered by this warranty.

The manufacturer may require that defective products be returned or that digital pictures be provided to support the claim. Returned products are to be shipped prepaid to the manufacturer for investigation. Transportation fees to ship the product back to the purchaser will be paid by the manufacturer. Repair work covered by the warranty, executed at the purchaser's domicile by an authorized qualified technician requires the prior approval of the manufacturer. All parts and labour costs covered by this warranty are limited according to the table below.

The manufacturer, at its discretion, may decide to repair or replace any part or unit after inspection and investigation of the defect. The manufacturer may, at its discretion, fully discharge all obligations with respect to this warranty by refunding the wholesale price of any warranted but defective parts. The manufacturer shall, in no event, be responsible for any uncommon, indirect, consequential damages of any nature, which are in excess of the original purchase price of the product. A one-time replacement limit applies to all parts benefiting from lifetime coverage. This warranty applies to products purchased after March 1st, 2015.

DESCRIPTION	WARRANTY APPLICATION*	
	PARTS	LABOUR
Combustion chamber (welds only**), heat exchanger (welds only**), and cast iron door frame.	Lifetime	3 years
Surrounds, heat shields, ash drawer, legs, pedestal, trims (aluminum extrusions), and plating (defective manufacture**).	5 years	3 years
Removable stainless steel components, burn pot, deflectors, and supports.	3 years	N/A
Glass retainers, handle assembly, cleaning rod, air control mechanism, and auger.	3 years	1 year
Blowers, auger motor, PC board, igniter, heat sensors, switches, wiring, rheostat, and other controls.	1 year	1 year
Ceramic glass (thermal breakage only**), paint (peeling**), gaskets, insulation, ceramic fibre blankets, ceramic logs, masonry-like panels and other options.	1 year	N/A
All parts replaced under the warranty.	90 days	N/A

Subject to limitations above.** ***Picture required.

Labour cost and repair work to the account of the manufacturer are based on a predetermined rate schedule and must not exceed the wholesale price of the replacement part.

Shall your unit or a components be defective, contact immediately your **DROLET** dealer. To accelerate processing of your warranty claim, make sure to have on hand the following information when calling:

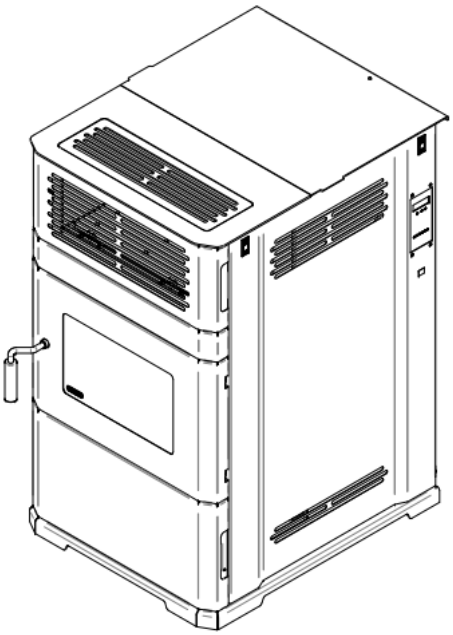
- Your name, address and telephone number;
- Bill of sale and dealer's name;
- Installation configuration;
- Serial number and model name as indicated on the nameplate fixed to the back of your unit;
- Nature of the defect and any relevant information.

Before shipping your unit or defective component to our plant, you must obtain an Authorization Number from your DROLET dealer. Any merchandise shipped to our plant without authorization will be refused automatically and returned to sender.

Manuel d'installation et d'utilisation

ECO-65R

(Modèle DP00061)



Essai de sécurité fait conformément aux normes ULC S627, UL 1482 et ASTM E1509 par un laboratoire accrédité

approuvé MAISON MOBILE

Poêle à granule homologué conformément à la phase II de l'agence de protection de l'environnement EPA et certifié conforme à la norme 2020 utilisant des granules de bois

EPA ≤ 2.0 g/h

Fabricant de poêles international inc.

250, rue de Copenhague, St-Augustin-de-Desmaures (Québec) Canada G3A 2H3

Service après-vente : 418-908-8002

Courriel : tech@sbi-international.com

www.drolet.ca

CONTACTEZ VOTRE SERVICE MUNICIPAL DU BÂTIMENT OU DES INCENDIES POUR CONNAÎTRE LES RESTRICTIONS ET LES EXIGENCES D'INSPECTION ET D'INSTALLATION DANS VOTRE RÉGION.

LISEZ CE MANUEL AU COMPLET AVANT D'INSTALLER ET D'UTILISER VOTRE NOUVEAU POÊLE. IL EST IMPORTANT DE RESPECTER INTÉGRALEMENT LES DIRECTIVES D'INSTALLATION. SI LE POÊLE N'EST PAS INSTALLE CORRECTEMENT, IL PEUT EN RÉSULTER UN INCENDIE, DES BLESSURES CORPORELLES OU MÊME LE DÉCÈS.

L'INSTALLATION PAR UN PROFESSIONNEL FORTEMENT RECOMMANDÉE

LIRE LE PRÉSENT MANUEL ET LE CONSERVER POUR CONSULTATION

46377F

Imprimé au Canada

2023-12-18

MERCI D'AVOIR CHOISI CE POÊLE À GRANULES DROLET

Fabricant de poêles international est l'un des plus importants et des plus réputés fabricants de poêles à bois, de foyers et de poêles à granules en Amérique du Nord et est fier de la qualité et du rendement de tous ses produits. Nous désirons que vous soyez le plus satisfait possible lors de l'usage de ce produit.

Dans les pages qui suivent, vous trouverez des conseils d'ordre général sur le chauffage aux granules, des instructions détaillées pour une installation sûre et efficace et des indications sur la façon d'obtenir le meilleur rendement de ce poêle lorsque vous l'utilisez et en faites l'entretien.

Nous recommandons fortement que nos produits de chauffage soient installés par des professionnels certifiés aux États-Unis par le NFI (National Fireplace Institute®) ou au Canada par WETT (Wood Energy Technology Transfer) ou au Québec par l'APC (Association des Professionnels du Chauffage).

Félicitations d'avoir fait un achat aussi avisé.

ENREGISTRER VOTRE GARANTIE EN LIGNE

Pour être complètement couvert par la garantie, il vous faudra prouver à quelle date vous avez acheté votre poêle. Conservez votre facture. Nous vous recommandons également d'enregistrer votre garantie en ligne au http://www.drolet.ca/fr/services-support/enregistrement-garanties
Le fait d'enregistrer votre garantie en ligne nous aidera à trouver rapidement les renseignements dont nous avons besoin à propos de votre poêle.

Table des matières

1 Renseignements généraux du ECO-65R (DP00061)

1.1 Le chauffage aux granules

Les appareils à granules présentent des améliorations importantes en ce qui a trait à l'aisance de chauffer avec des combustibles solides. Les granules de bois sont entreposés dans des sacs et sont donc facilement et proprement entreposables. Un seul chargement dans un appareil peut fournir de longues heures de chaleur. Les appareils à granules fournissent également un confort spécial associé au chauffage au bois. La combinaison des ventilateurs procurant des courants d'air chaud et le confort direct relié à la chaleur radiante fournit une satisfaction spéciale lors d'une journée froide d'hiver. La chaleur dispensée est égale et constante due à l'alimentation automatique du combustible répondant à la configuration du propriétaire de l'appareil. Les appareils à granules offrent aussi des avantages au point de vue environnemental; les granules réduisent non seulement la dépendance à l'égard des combustibles fossiles comme l'huile et le gaz, mais ils sont constituées de matériaux qui aggraveraient autrement inutilement à nos problèmes coûteux d'entreposage de déchets.

De plus, les appareils à granules brûlent très proprement et présentent les émissions polluantes les plus faibles de tous les appareils de chauffage à combustibles solides.

1.1.1 Les 10 meilleures raisons d'acheter un appareil à granules

- Le combustible est relativement bon marché, facilement manipulable et entreposable.
- L'installation est relativement peu coûteuse et flexible.
- L'appareil peut être contrôlé par un thermostat.
- L'appareil peut fonctionner de longues heures sans intervention humaine.
- La chaleur dégagée est égale et l'alimentation en combustible est régulée.
- L'appareil fournit une chaleur par convection puissante.
- Les appareils à granules présentent les plus faibles émissions polluantes de tous les appareils à combustibles solides.
- Les appareils à granules réduisent notre dépendance aux combustibles fossiles.
- Les granules constituent un combustible renouvelable.
- Les granules de bois sont constituées à 100 % de matières résiduelles (sciure de bois). Ceci donne une valeur ajoutée à ces rebus qui seraient autrement acheminés dans un dépotoir.

1.2 Performance de l'appareil(1)

Combustible	Granules de bois (qualité Premium ou supérieure)(†)	
Superficie de chauffage recommandée[*]	800 à 2,600 pi² (74 à 242 m²)	
Capacité de trémie	125 lb (57 kg)	
Temps de combustion maximal[*]	105 h	
Puissance thermique d'entrée maximale(2)	40,000 BTU/h (11.7 kW)	
Puissance thermique globale (min. à max.)(3)	6,966 BTU/h à 28,526 BTU/h (2.04 kW à 8.36 kW)	
Rendement moyen global(3)	76.7 % (PCS(4))	84.4 % (PCI(5))
Rendement optimal(6)	84.4%	
Taux de combustion	1.12 lb/h à 4.63 lb/h (0.51 kg/h à 2.10 kg/h)	
Taux moyen d'émission de particules(7)	0.77 g/h (EPA / CSA B415.1-10)(8)	
Taux moyen de CO(9)	13.2 g/h	
Consommation électrique moyenne(10)	3.7A (360W) en cycle d'allumage 2.15A (258W) min. / 2.9A (348W) max. en régime de combustion	

[*] La superficie de chauffage recommandée et le temps de combustion maximal peuvent varier selon la localisation de l'appareil dans l'habitation, la qualité du tirage de la cheminée, le climat, les facteurs de perte de chaleur, le type de combustible utilisé, le débit d'alimentation, le niveau de granules et d'autres variables. La superficie de chauffage recommandée pour un appareil est définie par le manufacturier comme sa capacité à conserver une température minimale acceptable considérant que la configuration de l'espace ou la présence de système de distribution d'air ont un impact important sur la distribution optimale de la chaleur.

(†) Niveau de qualité déterminé par des organismes tels que Pellet Fuels Institute (PFI), ENplus ou CANplus.

(1) Valeurs telles qu'obtenues en test, à l'exception de la superficie de chauffage recommandée, la capacité de trémie, le temps de combustion maximal et la puissance thermique d'entrée maximale. Les résultats peuvent varier en fonction de la qualité, la densité, la longueur et le diamètre la granule utilisée.

(2) Basé sur le taux de combustion maximal et un pouvoir calorifique de la granule sèche de 8,600 BTU/lb.

(3) Telle que mesurée selon la méthode CSA B415.1-10.

(4) Pouvoir Calorifique Supérieur du combustible.

(5) Pouvoir Calorifique Inférieur du combustible.

(6) Rendement optimal à un taux de combustion donné (PCI).

(7) Cet appareil est officiellement testé et certifié par un organisme indépendant.

(8) Testé et certifié selon EPA 40 CFR Part 60, ASTM E2515-11, ASTM E2779-10 and CSA B415.1-10.

(9) Monoxyde de carbone.

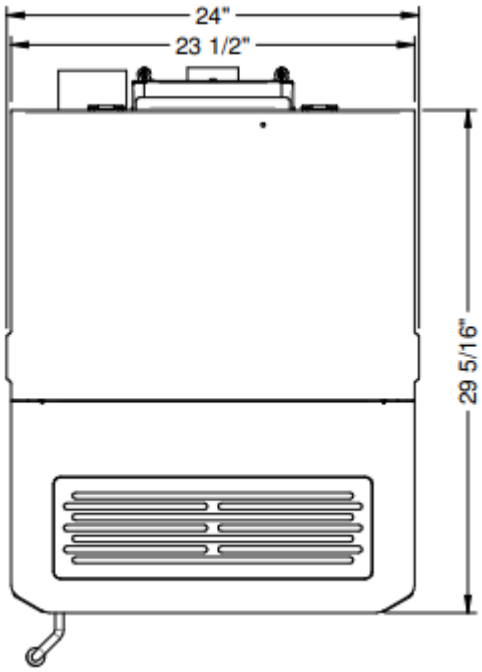
(10) Sauf indication contraire, les mesures ont été prises à la source d'alimentation de courant principale et incluent toutes les composantes électriques de l'appareil.

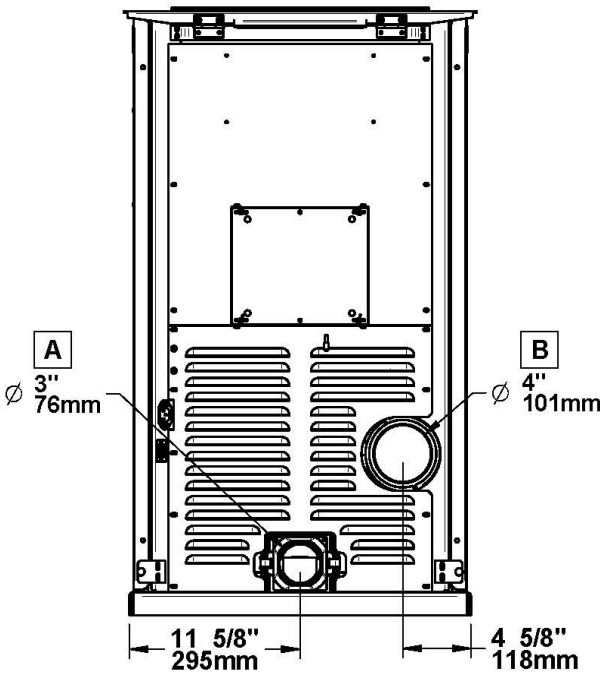
1.3 Caractéristiques générales

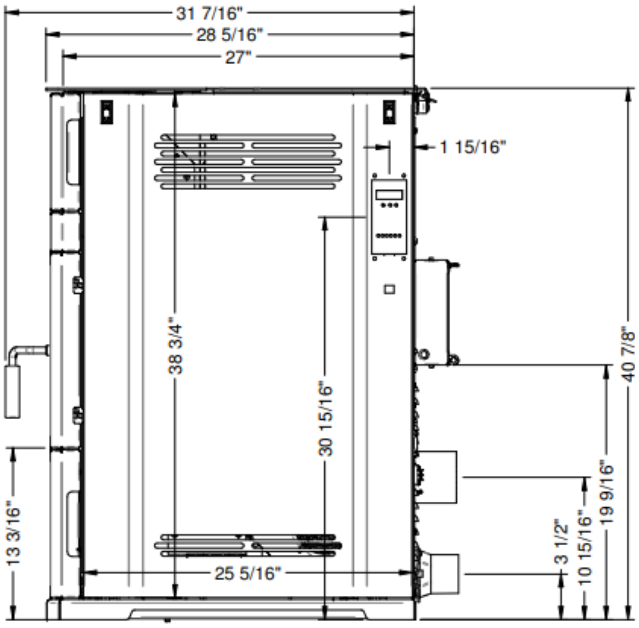
Diamètre de la cheminée recommandé	4 po (voir Section 4.3 Longueur d'évent équivalente)
Diamètre de la buse de raccordement	4 po (100 mm)
Type de cheminée	ULC/ORD-C441, CAN/ULC S609, UL 641 (TYPE L)
Matériau du coupe-feu	Acier inoxydable
Approuvé pour installation en alcôve	Non approuvé
Approuvé pour installation en maison mobile‡	Oui
Poids à l'expédition (sans option)	440 lb (200 kg)
Poids de l'appareil (sans option)	371 lb (168 kg)
Type de porte	Simple, vitrée, avec cadre en fonte
Type de vitre	Verre céramique
Ventilateur	Inclus (jusqu'à 500 PCM)
Normes d'émissions de particules	EPA / CSA B415.1-10
Norme américaine (sécurité)	ASTM E1509 et UL 1482
Norme canadienne (sécurité)	ULC S627
Niveau de bruit à 6 pieds	Min: 53 dBa (+/- 3 dBa) − Max: 59 dBa (+/- 3 dBa)
Spécifications électriques	Tension et fréquence: 120VAC et 60 Hz Ampérage : 2.15A/120VAC – 3.7A/120VAC
Fusibles du panneau de contrôle	-Principale : 7.5A-250V réaction rapide -Ventilateur de convection : 5A-250V réaction rapide -Ventilateur de combustion : 3A-250V réaction rapide -Ventilateur d'évacuation : 3A-250V réaction rapide -Moteur de vis 1 : 3A-250V réaction rapide -Moteur de vis 2 : 3A-250V réaction rapide -Allumeur : 5A-250V réaction rapide

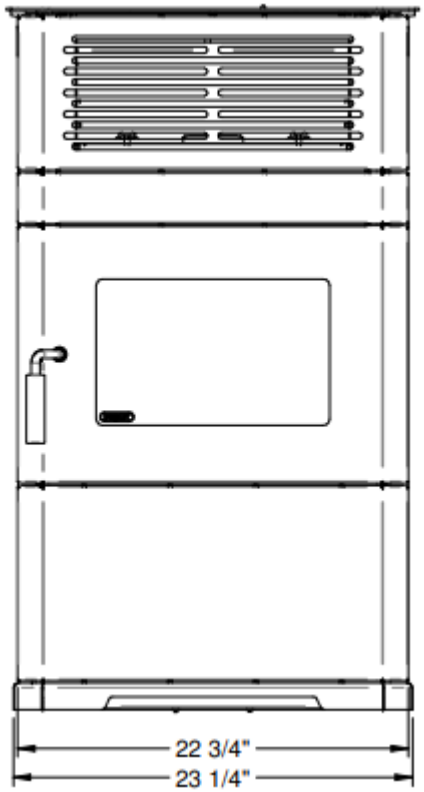
‡ *Maison mobile (Canada) ou maison préfabriquée (É.-U.) : Le département américain du logement et du développement urbain décrit «maisons préfabriquées» mieux connues pour «maisons mobiles» comme suit ; bâtiments construits sur des roues fixes et ceux transportés sur des roues/essieux temporaires installées sur une fondation permanente. Au Canada, une maison mobile est une habitation dont l'assemblage de chaque composante est achevé ou achevé en grande partie avant le déplacement de celle-ci jusqu'à un emplacement pour y être placée sur des fondations, raccordé à des installations de service et qui rencontre la norme CAN/CSA-Z240 MH.*

1.4 Dimensions extérieures hors tout









A	ENTRÉE D'AIR FRAIS
B	BUSE DE RACCORDEMENT

PARTIE A – INSTALLATION

2 Consignes de sécurité

2.1 Avertissements, mises en garde et recommandations

- **L'INSTALLATION PAR UN PROFESSIONNEL EST FORTEMENT RECOMMANDÉE.**
- **L'OBTENTION D'UN PERMIS POURRAIT ÊTRE NÉCESSAIRE POUR L'INSTALLATION DE CE POÊLE AINSI QUE DE SON SYSTÈME D'ÉVENT. COMMUNIQUEZ AVEC VOTRE SERVICE MUNICIPAL DU BÂTIMENT OU DES INCENDIES AVANT L'INSTALLATION POUR DÉTERMINER LA NÉCESSITE DE VOUS EN PROCURER UN. NOUS VOUS RECOMMANDONS ÉGALEMENT D'INFORMER VOTRE COMPAGNIE D'ASSURANCE HABITATION POUR SAVOIR SI VOTRE POLICE D'ASSURANCE SERA AFFECTÉE.**
- **CE POÊLE DOIT ÊTRE BRANCHÉ DANS UNE PRISE STANDARD DE 120V, 60HZ, AVEC MISE À LA TERRE. NE PAS UTILISER D'ADAPTATEUR ÉLECTRIQUE. NE PAS ENDOMMAGER OU ENLEVER LA MISE À LA TERRE. NE FAITES JAMAIS PASSER LE CORDON D'ALIMENTATION ÉLECTRIQUE EN AVANT, AU-DESSUS OU EN DESSOUS DU POÊLE.**
- **L'INSTALLATION INADÉQUATE DE VOTRE APPAREIL POURRAIT CAUSER UN INCENDIE. POUR RÉDUIRE LES RISQUES, SUIVEZ LES INSTRUCTIONS D'INSTALLATION.**
- **BRÛLER DES COMBUSTIBLES SOLIDES GÉNÈRE DU MONOXYDE DE CARBONE EN FAIBLE CONCENTRATION. CES GAZ SONT EXPULSÉS PAR LE SYSTÈME D'ÉVACUATION. DES CONCENTRATIONS PLUS ÉLEVÉES EN MONOXYDE DE CARBONE SONT TOXIQUES ET PEUVENT CAUSER LA MORT. AFIN D'ÉVITER UN EMPOISONNEMENT, ASSUREZ-VOUS QUE VOTRE SYSTÈME D'ÉVENT EST ÉTANCHE.**
- **CE POÊLE EST APPROUVÉ MAISON MOBILE ET REQUIERT L'INSTALLATION D'UN ENSEMBLE D'ENTRÉES D'AIR FRAIS, VENDU SÉPARÉMENT. LE POÊLE DOIT ÊTRE FIXÉ À LA STRUCTURE DE LA MAISON MOBILE ET L'INTÉGRITÉ STRUCTURALE DU PLANCHER, DES MURS, DU PLAFOND ET DU TOIT DE LA MAISON MOBILE DOIT ÊTRE MAINTENUE. IL EST INTERDIT D'INSTALLER CE POÊLE DANS UNE CHAMBRE À COUCHER D'UNE MAISON MOBILE.**
- **IL EST FORTEMENT DÉCONSEILLÉ D'INSTALLER CE POÊLE DANS UNE CHAMBRE À COUCHER.**
- **CE POÊLE A ÉTÉ CONÇU ET DÉVELOPPÉ POUR ÊTRE UTILISÉ COMME CHAUFFAGE D'APPOINT RÉSIDENTIEL. UN USAGE COMMERCIAL OU INDUSTRIEL EST INTERDIT ET ANNULERA LA GARANTIE.**
- **LES INFORMATIONS INSCRITES SUR LA PLAQUE D'HOMOLOGATION DE L'APPAREIL ONT TOUJOURS PRÉSÉANCE SUR LES INFORMATIONS CONTENUES DANS TOUT AUTRE MÉDIA PUBLIÉ (MANUELS, CATALOGUES, CIRCULAIRES, REVUES ET/OU SITES WEB).**

- **RACCORDER LE POÊLE SEULEMENT À UN SYSTÈME D’ÉVENT HOMOLOGUÉ POUR UTILISATION AVEC DU COMBUSTIBLE SOLIDE OU À UNE CHEMINÉE CONFORME AUX CODES DU BÂTIMENT NATIONAL ET LOCAL.**
- **NE PAS INSTALLER DE REGISTRE SUR LE SYSTÈME D’ÉVACUATION DE CET APPAREIL.**
- **NE JAMAIS RACCORDER CE POÊLE À TOUT AUTRE SYSTÈME D’ÉVENT SERVANT UN AUTRE APPAREIL.**
- **NE PAS RACCORDER À UN SYSTÈME OU À UN CONDUIT DE DISTRIBUTION D'AIR.**
- **AFIN D’ASSURER UNE PERFORMANCE CONSTANTE ET ÉVITER LES REFOULEMENTS DE FUMÉE ET DE CENDRES, LES JOINTS DU SYSTÈME D’ÉVENT DOIVENT ÊTRE SCELLÉS HERMÉTIQUEMENT ET INSTALLÉS CORRECTEMENT SELON LES INSTRUCTIONS DU MANUFACTURIER DU SYSTÈME D’ÉVENT.**
- **LE SYSTÈME D’ÉVENT DEVRAIT ÊTRE INSPECTÉ AU MOINS DEUX FOIS PAR ANNÉE POUR PRÉVENIR TOUTE ACCUMULATION DE SUIE OU DE CRÉOSOTE.**
- **NE JAMAIS BLOQUER LES LOUVRES DU POÊLE.**
- **UN ENSEMBLE D’ENTRÉE D’AIR FRAIS PEUT-ÊTRE INSTALLÉ AFIN D’APPROVISIONNER LA PIÈCE OU L’ESPACE EN AIR DE COMBUSTION, SI NÉCESSAIRE. (VOIR ANNEXE D: *APPORT D’AIR DE COMBUSTION*).**
- **L’UTILISATION DE COMPOSANTS PROVENANT D'AUTRES APPAREILS ET/OU LA MODIFICATION DES COMPOSANTS ACTUELS DU POÊLE EST INTERDITE ET ANNULERA LA GARANTIE.**
- **TOUTE MODIFICATION DE L’APPAREIL QUI N’A PAS ÉTÉ APPROUVÉE PAR ÉCRIT PAR L'AUTORITÉ D’HOMOLOGATION OU LE MANUFACTURIER EST INTERDITE ET VIOLE LES NORMES CSA B365 (CANADA) ET ANSI NFPA 211 (É.-U.).**
- **CET APPAREIL DE CHAUFFAGE AU BOIS NÉCESSITE DES INSPECTIONS ET RÉPARATIONS PÉRIODIQUES POUR UNE UTILISATION OPTIMALE. IL EST CONTRE LA RÉGLEMENTATION FÉDÉRALE D’UTILISER CET APPAREIL DE FAÇON INCOHÉRENTE AVEC LES INSTRUCTIONS DE CE MANUEL.**
- **LE TAUX DE COMBUSTION MINIMUM DE CET APPAREIL DE CHAUFFAGE AU BOIS A ÉTÉ DÉFINI PAR LE FABRICANT ET NE DOIT PAS ÊTRE MODIFIÉ. IL EST CONTRE LA RÉGLEMENTATION FÉDÉRALE DE MODIFIER CE RÉGLAGE OU D’UTILISER CET APPAREIL DE CHAUFFAGE AU BOIS D’UNE MANIÈRE NON CONFORME AUX INSTRUCTIONS DE CE MANUEL.**
- **SBI - FABRICANT DE POÊLES INTERNATIONAL INC. N’ASSUME AUCUNE GARANTIE IMPLICITE OU EXPLICITE LIÉE À LA MAUVAISE INSTALLATION OU AU MANQUE D’ENTRETIEN DU POÊLE ET N’ASSUME AUCUNE RESPONSABILITÉ POUR TOUT DOMMAGE QUI EN RÉSULTERAIT.**

2.2 Règlements régissant l’installation d’un poêle à granules

Lorsqu’il est installé et utilisé tel que décrit dans les présentes instructions, ce poêle à granules convient comme appareil de chauffage d’appoint pour installation résidentielle.

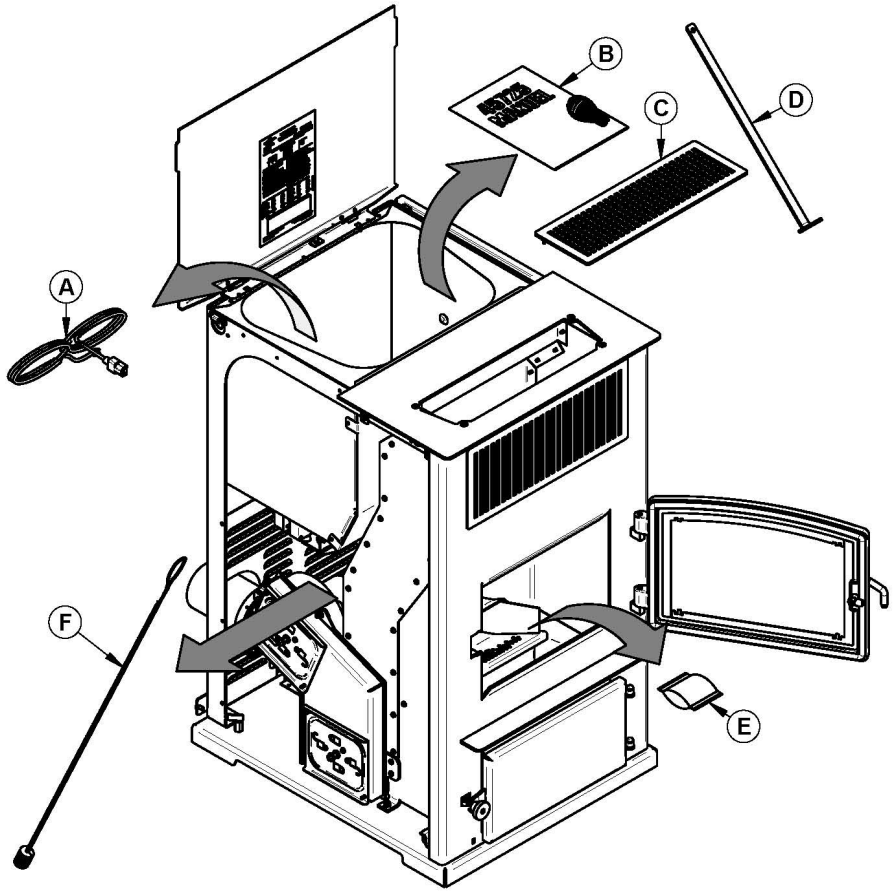
Au Canada, il faut respecter le CSA B365 Installation des appareils de chauffage à combustible solide et du matériel connexe et le CSA C22.1 Code canadien de l'électricité en l'absence de code local. Aux États-Unis, il faut suivre le ANSI NFPA 211 Standard for Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances et le ANSI NFPA 70 National Electrical Code en l'absence de code local.

Ce poêle à granules doit être raccordé à un système d’évent conforme aux exigences de système d’évent pour appareil à granules de bois dans la norme pour cheminées préfabriquées de type résidentiel et appareils de chauffage de bâtiment, UL 103, UL 641, ULC S629M, CAN/ULC S609 et ULC/ORD C441 ou à une cheminée de maçonnerie approuvée selon le code avec une gaine de cheminée en acier inoxydable.

Avant de faire fonctionner le poêle

Avant d'utiliser le poêle, des ajustements mineurs ainsi que le montage de certaines pièces sont nécessaires :

- La poignée et la porte doivent être ajustées; (Voir **Section 7.1.10 :** ***Ajustement de porte***)
- Le poêle doit être mis au niveau à l'aide des boulons élévateurs;
- Vérifier que le clapet anti-retour d'entrée d'air frais fonctionne librement.
- Assurez-vous de retirer tous les outils et autres accessoires qui ont été logés dans votre appareil pour le transport (voir illustration suivante.)



A	CORDON ALIMENTATION
B	MANUEL INSTRUCTIONS
C	GRILLE SUPÉRIEURE
D	GRATTOIR
E	DESSICANT (agent desséchant)
F	BROSSE DE RAMONAGE (Couper l'attache autobloquante)

3 Dégagements aux matériaux combustibles

Les dégagements donnés dans la présente section ont été établis à partir d'essais conformément aux procédures décrites dans les normes ULC S627 (Canada) et ASTM E1509 (USA). Lorsque les dégagements minimums indiqués sont respectés, les surfaces combustibles ne surchaufferont pas en usage normal et même en usage anormal.

AVERTISSEMENT : AUCUNE PARTIE DU POÊLE NE PEUT ÊTRE PLACÉE PLUS PRÈS DES MATÉRIAUX COMBUSTIBLES QUE LES DÉGAGEMENTS MINIMUMS INDIQUÉS SUR LA PLAQUE D'HOMOLOGATION.

AVERTISSEMENT : AUCUNE PARTIE DU SYSTÈME D'ÉVENT NE PEUT ÊTRE PLACÉE PLUS PRÈS DES MATÉRIAUX COMBUSTIBLES QUE LES DÉGAGEMENTS MINIMUMS INDIQUÉS PAR LE MANUFACTURIER DU SYSTÈME D'ÉVENT.

MISE EN GARDE : N'UTILISEZ PAS DE MATÉRIAUX DE FORTUNE ET NE FAITES PAS DE COMPROMIS LORSQUE VOUS INSTALLEZ LE POÊLE.

3.1 Localisation de la plaque d'homologation

Puisque les informations inscrites sur la plaque d'homologation de l'appareil ont toujours préséance sur les informations contenues dans tout autre média publié (manuels, catalogues, circulaires, revues et/ou sites web) il est important de vous y référer afin d'avoir une installation sécuritaire et conforme. De plus, vous y trouverez des informations importantes concernant votre appareil (modèle, numéro de série, etc.) Vous trouverez la plaque d'homologation à l'intérieur du panneau de la trémie.

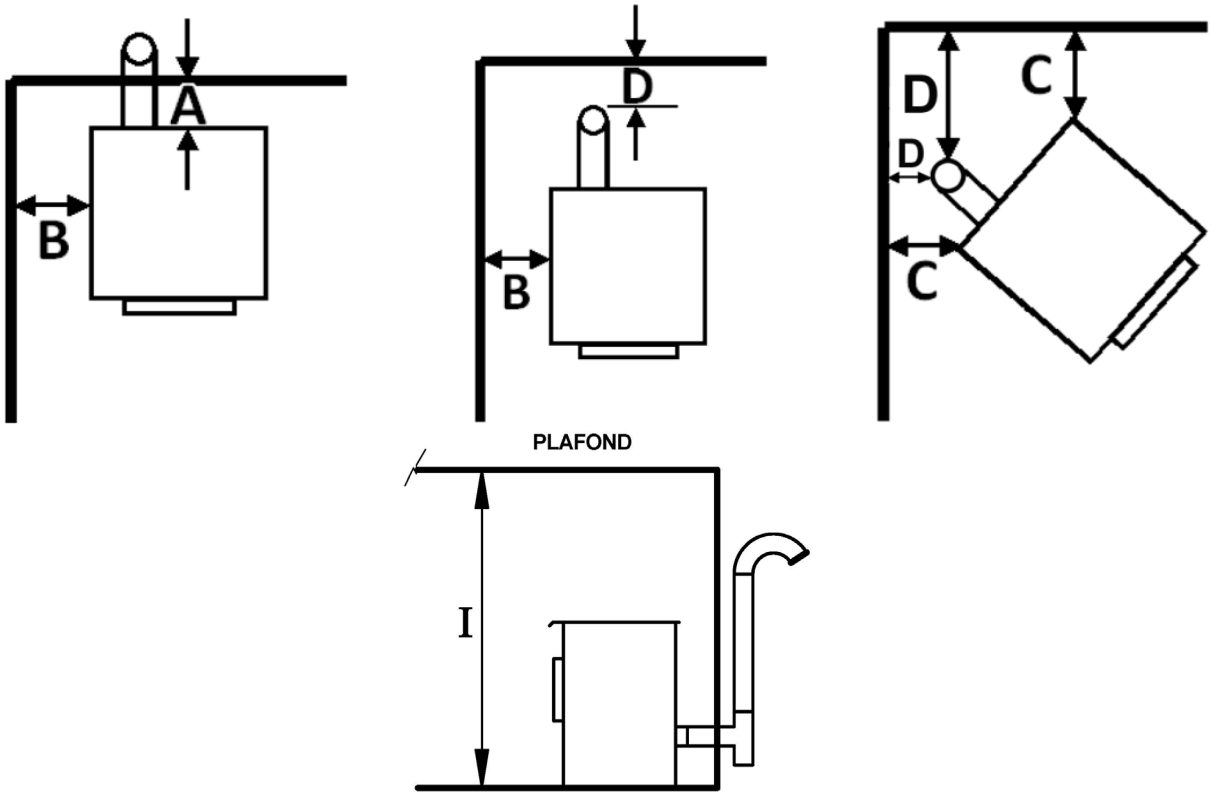
3.2 Dégagements minimums de l'appareil aux matériaux combustibles

LETTRE	DÉGAGEMENTS MINIMUM	
	CANADA	É-U.
A*	3″ (76 mm)	3″ (76 mm)
B	6″ (152 mm)	6″ (152 mm)
C	3″ (76 mm)	3″ (76 mm)
D	Se référer aux instructions du manufacturier du système d'évent	Se référer aux instructions du manufacturier du système d'évent
I**	72″ (1 829 mm)	72″ (1 829 mm)

Note : Nous recommandons de laisser une distance de 24" de chaque côté de l'appareil ainsi que de 12" à l'arrière afin de faciliter l'accès pour l'entretien.

** À partir de la prise d'entrée d'air frais.*

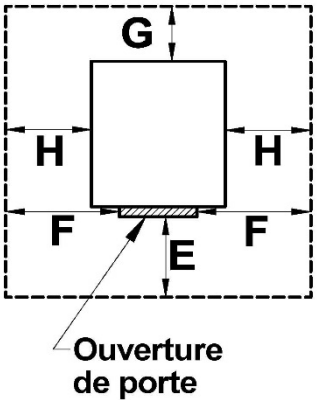
*** Mesuré à partir de la plateforme sur laquelle le produit est déposé.*



3.3 Protection de plancher

Pour la protection de plancher, vous référer au tableau suivant :

LETTRE	PROTECTION DE PLANCHER	
	CANADA	É-U.
E	18″ (460 mm)**	6″ (155 mm)
F	N/A (É-U. seulement)	6″ (155 mm)
G	8″ (205 mm)	N/A (Canada seulement)
H	8″ (205 mm)	N/A (Canada seulement)



<u>AVERTISSEMENT</u>: LE POÊLE DOIT ÊTRE PLACÉ SUR UNE SURFACE INCOMBUSTIBLE CONTINUE TELLE QUE DE LA CÉRAMIQUE*, UN PANNEAU DE BÉTON, DE LA BRIQUE, UN PANNEAU D'AGGLOMÉRÉ INCOMBUSTIBLE OU TOUT AUTRE MATÉRIEL ÉQUIVALENT, APPROUVÉ COMME PROTECTION DE PLANCHER.

**La céramique doit être placée sur un panneau incombustible continu afin d'éviter que des tisons puissent être mis en contact avec le plancher à travers des fissures ou des manques dans le coulis de la céramique, ceci inclut la protection de plancher pour les âtres de foyers déjà existants. Vérifier le code local pour les alternatives approuvées.*

***Au Canada, vous pouvez utiliser la dimension (E) de la protection de plancher permise aux États-Unis SEULEMENT si vous acceptez d'attendre que l'unité soit complètement éteinte, c'est-à-dire qu'il n'y ait plus de feu dans le pot de combustion et que les ventilateurs soient éteints, avant d'ouvrir la porte de l'unité ou d'enlever le tiroir à cendres.*

4 Système d'évent

4.1 Général

Même si le tirage de la cheminée est mécanique, la bonne configuration du système d'évent assurera un tirage naturel qui permettra d'éviter un épanchement de fumée dans la maison, surtout si une panne de courant survient. De plus, une bonne configuration du système d'évent aidera à obtenir un meilleur rendement de votre poêle lorsqu'il est installé en conformité avec la LEE requise (voir **Section 4.3 : *Longueurs d'évent équivalent (LEE)***).

Le meilleur des poêles ne fonctionnera pas de façon sécuritaire et efficace s'il n'est pas connecté à un système d'évent approprié.

4.2 Recommandations

Au Canada, nous recommandons l'usage d'un système d'évent répondant aux exigences des normes CAN/ULC S609 ou ULC/ORD-C441. Un système d'évent répondant aux exigences des normes ULC S629M peut aussi être utilisé.

Aux États-Unis, nous recommandons l'usage d'un système d'évent répondant aux exigences de la norme UL-641. Un système d'évent répondant aux exigences des normes UL 103 peut aussi être utilisé.

Ce poêle peut également être raccordé à une cheminée existante à l'aide d'une gaine en acier inoxydable, si la cheminée a plus de 4" de diamètre. Au Canada, cette gaine doit répondre aux exigences des normes ULC S635 CAN/ULC S640 et aux États-Unis à la norme UL 1777. Référez-vous aux instructions fournies par le manufacturier du système d'évent, et ce, spécialement lorsqu'il s'agit de passer au travers un mur, un plafond ou le toit.

4.3 Longueur d'évent équivalent (LEE)

Le diamètre intérieur de tuyau d'évacuation recommandée est de 4".

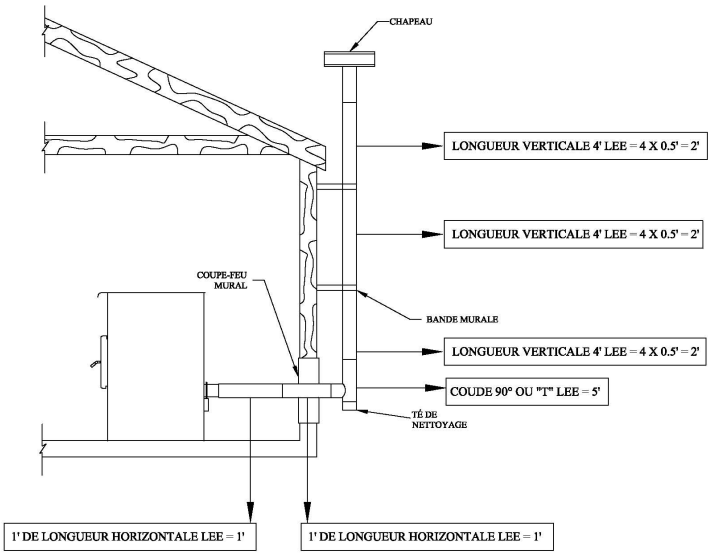
Pour calculer la LEE de votre installation, utilisez les conversions suivantes:

Qté	Type de tuyau	Longueur équivalente (LEE)
1	Coude 90° ou "T"	5 pieds
1	Coude de 45°	3 pieds
1 pied	Tuyau à l'horizontale	1 pied
1 pied	Tuyau vertical	0.5 pied

<u>NOTE</u> : Les longueurs de tuyau horizontales ne doivent pas dépasser 9 pieds.

<u>NOTE</u> : Ne jamais dépasser 30 pieds de LEE.

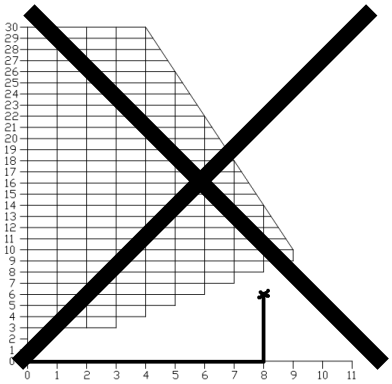
Voici un exemple pour vous aider à calculer la longueur de l'évent équivalente. L'installation sur la figure suivante se calcule comme suit :



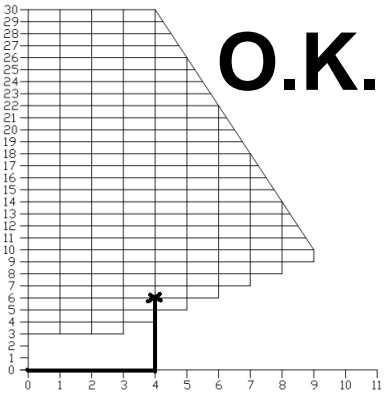
- 2 longueurs verticales de 4' = (3 X 4') X 0.5' = 6' de LEE
- coude 90° ou "T" = 5' LEE
- 3 longueurs horizontales de 1' = 2' LEE
- Total de LEE = (6' + 5' + 2') = 13'.

<u>Note</u> : Ne calculez pas la terminaison murale extérieure dans le calcul de la LEE (Coude à 45° et la terminaison).

Imaginons une installation dont la sortie arrière consiste en un parcours horizontal de 8 pieds, suivie d'un raccord en « T » et d'un parcours vertical de 6 pieds. Ce type d'installation ne serait pas conforme. En effet, la terminaison murale se situe clairement à l'extérieur de la zone recommandée sur la charte puisqu'elle **<u>ne comporte pas au moins un pied de longueur verticale pour chaque pied de longueur horizontal</u>**.



Par contre, si l'installation consiste en un parcours horizontal de 4 pieds, suivi d'un raccord en « T » et d'un parcours vertical de 6 pieds, elle est adéquate. L'installation se termine clairement à l'intérieur de la zone recommandée sur le graphique puisqu'elle comporte au moins un pied de longueur verticale pour chaque pied de longueur horizontal. De plus, la totalité du parcours vertical n'est pas inférieure à 3 pieds.

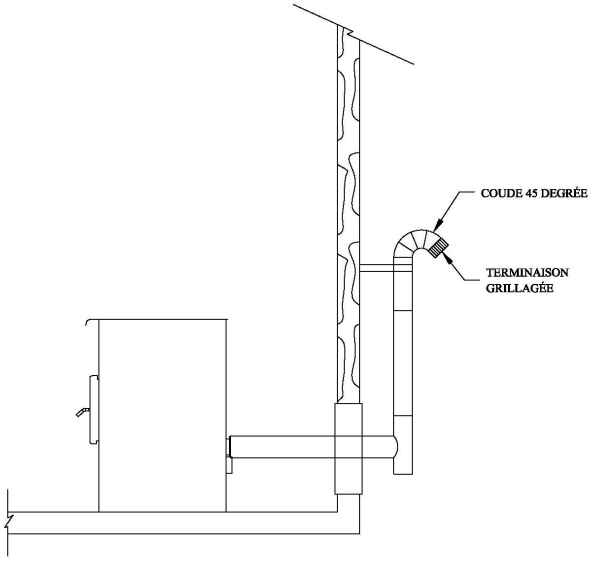


<u>ATTENTION</u> : pour réduire le risque de refoulement de fumée, ne jamais terminer avec une course horizontale. Si votre système termine avec une course horizontale, ajoutez un minimum de trois pieds de course verticale.

4.4 Emplacement de la terminaison

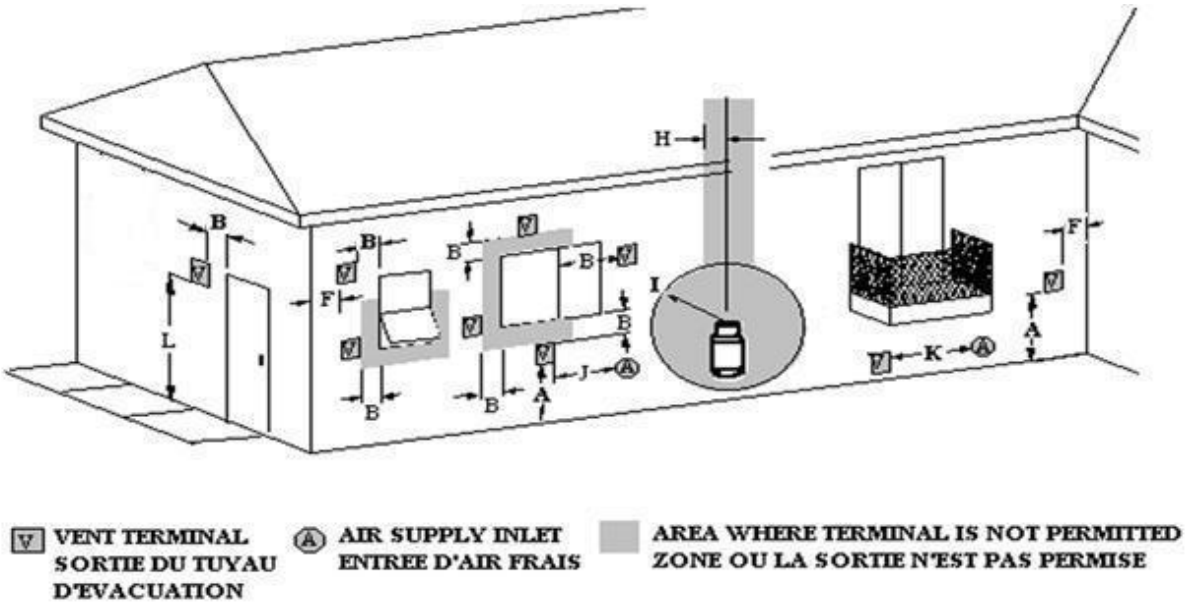
La terminaison ne devrait pas être localisée dans un endroit où les gaz d'échappement peuvent présenter un danger. Les gaz d'échappement peuvent atteindre 500 °F (260°C) et peuvent causer des brûlures sérieuses.

ATTENTION: L'INSTALLATION D'UN GRILLAGE PARE-ÉTINCELLES SUR LA TERMINAISON DE L'ÉVENT EST OBLIGATOIRE.



4.4.1 Localisations permises d'une terminaison

Consultez la norme NFPA 211 ou CSA B365 (Canada) pour en apprendre davantage sur les règlements relatifs à la distance de la terminaison murale par rapport aux fenêtres et aux portes. La terminaison murale d'un système doté d'un tirage mécanique, autre qu'un appareil à évacuation directe doit être située conformément aux spécifications suivantes.



Canada:

Lettre	Dégagement min.	Description
A	12'' (30 cm)	Dégagement au-dessus du niveau du sol ou de toute surface adjacente pouvant supporter la neige, la glace ou les débris
B	39'' (100 cm)	Dégagement autour d'une fenêtre ou d'une porte qui peut s'ouvrir.
F	39'' (100 cm)	Dégagement d'un coin ou d'un mur adjacent
H	39'' (100 cm)	Dégagement de chaque côté à partir du centre d'un régulateur/compteur à gaz et se prolongeant verticalement à 15 pi.
I	72'' (183 cm)	Dégagement de la sortie de l'évent d'un régulateur à gaz ou 39'' (100 cm) de l'évent ou de l'orifice de remplissage d'un réservoir d'huile.
J	39'' (100 cm)	Dégagement de l'entrée d'air de combustion d'un autre appareil.
K	72'' (183 cm)	Dégagement d'une entrée d'air mécanique.
L	84'' (213 cm)	Dégagement au-dessus d'un trottoir revêtu ou d'une entrée revêtue située sur une propriété publique. Une sortie ne doit pas être installée au-dessus d'un trottoir ou d'une entrée revêtue située entre deux maisons unifamiliales et utilisée par les deux habitations.
	39'' (100 cm)	Dégagement par rapport à la limite de la propriété.
		Aucune terminaison murale ne peut se trouver en dessous d'une véranda, d'un patio ou d'un balcon

Aux États-Unis :

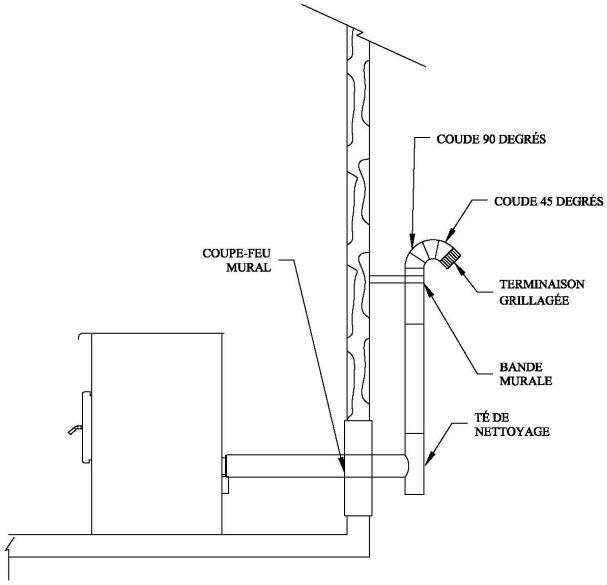
- Pas moins 36'' (91 cm) au-dessus de toute prise d'air forcé située à moins de 120'' (305 cm).
- Pas moins de 48'' (122 cm), horizontalement et en dessous, ou 12'' (30 cm) au-dessus d'une fenêtre, porte, ou toute autre prise d'air fonctionnant par gravité.
- Pas moins de 24'' (61 cm) d'une bâtisse adjacente et au moins 84'' (213 cm) au-dessus du trottoir si la terminaison est adjacente à une voie publique.
- À plus de 12 pouces (30 cm) au-dessus du niveau du sol.
- La terminaison ne peut être située au-dessus d'un compteur de gaz/régulateur dans un rayon de 3 pieds (91 cm) de la ligne centrale du régulateur.
- À plus de 6 pieds (1,8 m) de la sortie d'évent d'un régulateur de gaz.
- D'autres restrictions peuvent s'appliquer. Voir NFPA 211 pour plus d'information.

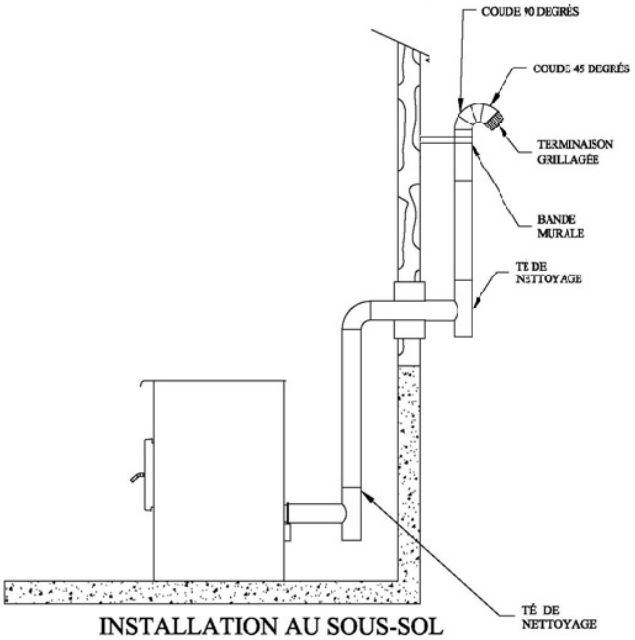
4.5 Configurations d’installation

4.5.1 Rappel des avertissements, mise en garde et recommandations

- **L’INSTALLATION PROFESSIONNELLE EST FORTEMENT RECOMMANDÉE.**
- **CE POÊLE UTILISE UN SYSTÈME D'ÉVACUATION SOUS PRESSION. TOUS LES JOINTS DOIVENT ÊTRE SCELLÉS ET ATTACHÉS. CONSULTEZ LES INSTRUCTIONS DU FABRICANT DU SYSTÈME D’ÉVENT POUR ASSURER UNE BONNE INSTALLATION, UNE PERFORMANCE CONSTANTE ET POUR ÉVITER L’ÉPANCHEMENT DE FUMÉE ET DE CENDRES.**
- **UTILISEZ DE LA SILICONE RTV (VULCANISATION A TEMPERATURE AMBIANTE), DU RUBAN MÉTALLIQUE ET UN MINIMUM DE TROIS VIS AUTO-TARAUDEUSES A TOUTES LES CONNEXIONS D’ÉVACUATION POUR ASSURER L’ÉTANCHÉITÉ DES JOINTS.**
- **LE CONNECTEUR DE CHEMINÉE NE DOIT PAS TRAVERSER UN GRENIER, UN ESPACE DE TOIT, UN PLACARD OU TOUT ESPACE CONFINE SEMBLABLE, LES PLANCHERS OU LE PLAFOND.**
- **INSTALLER LE SYSTÈME D'ÉVACUATION SELON LES DÉGAGEMENTS INDIQUÉS PAR LE MANUFACTURIER DU SYSTÈME D’ÉVENT.**
- **L’INSTALLATION D’UN GRILLAGE PARE-ÉTINCELLES SUR LA TERMINAISON DU SYSTÈME D’ÉVENT EST OBLIGATOIRE.**

4.5.2 Installation à travers un mur (Rez-de-chaussée ou sous-sol)





1. Positionnez le poêle en respectant les dégagements mentionnés à la **Section 3 : *Dégagements aux matériaux combustibles*** ainsi que ceux fournis par le manufacturier du système d'évent. Marquez la position de la buse de raccordement au mur derrière.

2. Installez le coupe-feu mural selon les instructions du manufacturier.

3. Raccordez suffisamment de sections pour faire dépasser le tuyau horizontal d'environ 6 pouces par rapport au mur extérieur.

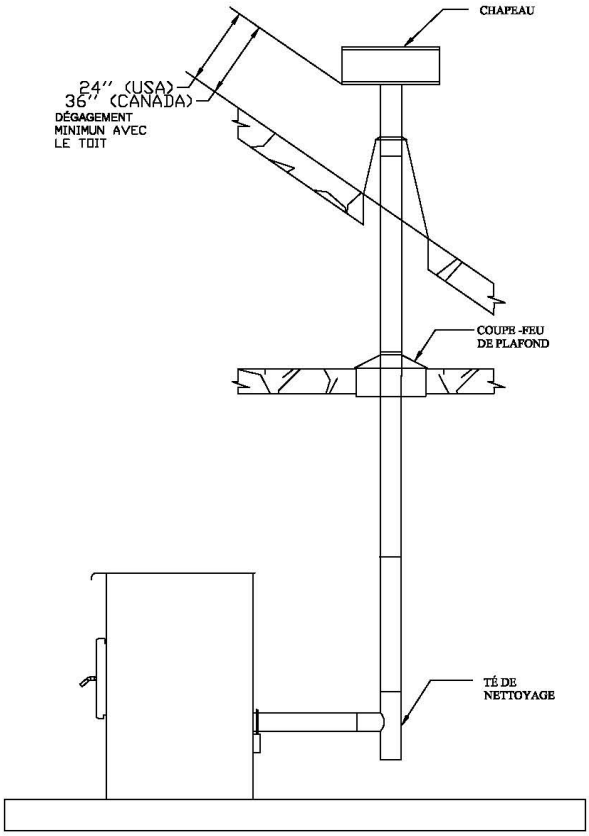
4. Fixez et scellez le chapeau et le coupe-feu mural extérieur à l'aide d'un adhésif flexible (silicone) haute-température résistant à l'eau.

<u>ATTENTION</u> : POUR RÉDUIRE LE RISQUE DE REFOULEMENT DE FUMÉE, NE JAMAIS <u>TERMINER</u> AVEC UNE COURSE HORIZONTALE. POUR CHAQUE LONGUEUR HORIZONTALE DE TUYAU DE 12'' (30 CM), IL DEVRAIT Y AVOIR UNE LONGUEUR VERTICALE DE TUYAU DE 12'' (30 CM). DANS TOUS LES CAS, UN MINIMUM DE 36'' (91 CM) DE LONGUEUR VERTICALE DE TUYAU EST NÉCESSAIRE COMME TERMINAISON.

<u>AVERTISSEMENT</u> : LA TERMINAISON NE DOIT PAS ÊTRE SITUÉE À UN ENDROIT OÙ LES GAZ D'ÉCHAPPEMENT POURRAIENT ÊTRE UN RISQUE, CAR LEURS TEMPÉRATURES PEUVENT ATTEINDRE JUSQU'À 500°F (260°C) ET AINSI CAUSER DES BRÛLURES. VOIR SECTION 4.4.1 : *LOCALISATIONS PERMISE D'UNE TERMINAISON*.

4.5.3 Installation à travers le toit

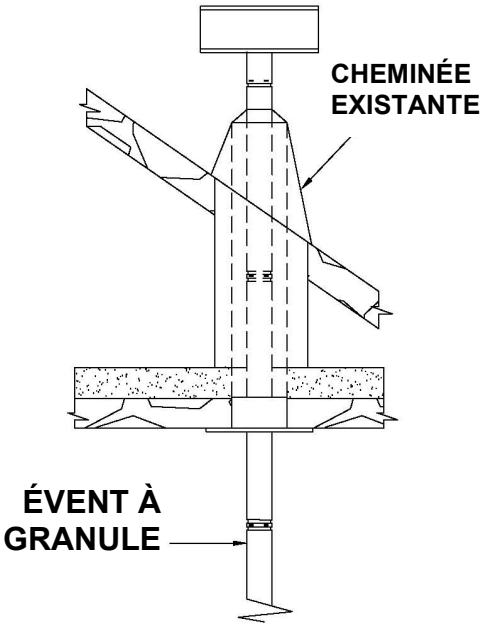
1. Positionnez le poêle en suivant les dégagements de la **Section 3.2 : *Dégagements minimums de l'appareil aux matériaux combustibles*** ainsi que ceux fournis par le manufacturier du système d'évent.
2. Installer un « té » de nettoyage à la buse de raccordement. Au besoin, utiliser une longueur additionnelle horizontale entre la buse et le « té ». Si vous désirez centrer la partie verticale du système d'évent avec l'appareil, un coude 45 et un « té » peuvent être utilisés pour dévier le tuyau de la sortie d'évacuation vers le centre arrière du poêle.
3. Placez le fil à plomb au-dessus du centre de l'orifice de sortie du té et placez un point au plafond. Installez le support de plafond et le tuyau d'évacuation en suivant les instructions du fabricant.
4. Toujours respecter les dégagements du manufacturier du système d'évent par rapport aux matériaux combustibles lorsque vous passez par le plancher ou le plafond. Utilisez toujours un coupe-feu.
5. Après avoir localisé le trou dans le toit, découpez un trou dans le toit. Insérez le solin de toit dans le trou. Fixez le solin à l'aide de clous. Scellez les trous à l'aide d'une silicone conçue pour l'extérieur.
6. Appliquez une silicone extérieure haute température sur le joint entre le solin et la cheminée. Descendez le collet de solin jusqu'à ce qu'il soit bien assis sur le solin. Scellez le contour avec la cheminée à l'aide d'une silicone extérieure haute température.



7. Installez le chapeau de cheminée. Si nécessaire, installez et scellez un collet de solin.

4.5.4 Installation à travers une cheminée préfabriquée

Pour faire une installation au travers une cheminée préfabriquée, faire passer une gaine de 4" à l'intérieur de cheminée préfabriquée.



1. Positionnez le poêle en suivant les dégagements de la **Section 3.2 : *Dégagements minimums de l'appareil aux matériaux combustibles*** ainsi que les instructions du manufacturier du système d'évent.

2. Installer un « té » de nettoyage à la buse de raccordement. Au besoin, utiliser une longueur additionnelle horizontale entre la buse et le « té ». Si vous désirez centrer la partie verticale du système d'évent avec l'appareil, un coude 45 et un « té » peuvent être utilisés pour dévier le tuyau de la sortie d'évacuation vers le centre arrière du poêle.

3. Raccordez le tuyau d'évacuation à la gaine en acier inoxydable conformément aux instructions du manufacturier du système d'évent.

4. Installez le chapeau de cheminée. Si nécessaire, installez et scellez un collet de solin.

<u>MISE EN GARDE</u> : AUX ÉTATS-UNIS, L'UTILISATION D'UNE GAINE EN ACIER INOXYDABLE EST OBLIGATOIRE. AU CANADA, ELLE N'EST PAS OBLIGATOIRE, MAIS EST FORTEMENT RECOMMANDÉE.

<u>NOTE</u> : FAIRE L'ÉVACUATION DIRECTEMENT DANS UNE CHEMINÉE SURDIMENSIONNÉE EN OMETTANT L'UTILISATION D'UNE GAINE EN ACIER INOXYDABLE PEUT AFFECTER LE TIRAGE ET DIMINUER LA PERFORMANCE DU POÊLE.

4.5.5 Installation à travers foyer de maçonnerie existant

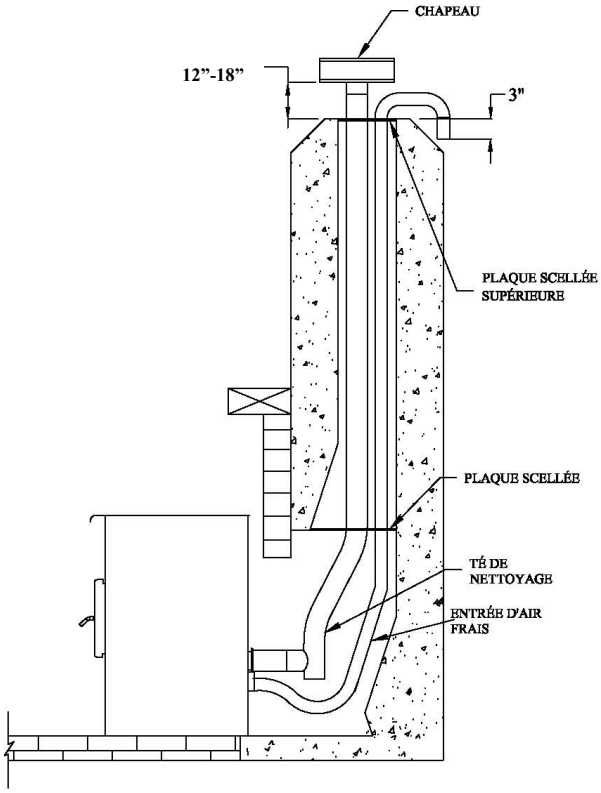
1. Positionnez le poêle en suivant les dégagements de la **Section 3.2 : *Dégagements minimums de l'appareil aux matériaux combustibles*** ainsi que les instructions du manufacturier du système d'évent.

2. Fabriquez et installez une plaque d'étanchéité à l'intérieur de la cheminée pour sceller le registre du foyer. L'utilisation d'une plaque et des vis en acier inoxydable est recommandée. Faire un trou pour le tuyau d'évacuation dans la plaque. Si nécessaire, faire aussi un trou pour le tuyau d'entrée d'air frais. (Voir **Annexe D: *Apport d'air de combustion***).

3. Installez la section de tuyau arrière et le "té" de nettoyage à la buse de raccordement. Assurez-vous que le « té » est centré dans la cheminée.

4. Installez un solin au-dessus de la cheminée. Une plaque et des vis en acier inoxydable sont idéales. Coupez un trou pour le tuyau d'évacuation. Si nécessaire, coupez un second trou pour le tuyau de prise d'air extérieur. Scellez tous les joints avec du silicone haute température résistant à l'eau.

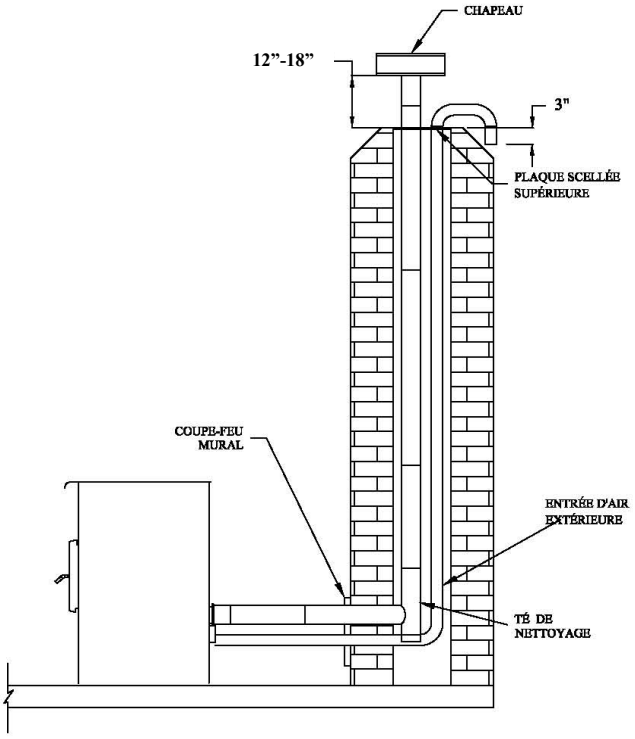
5. Installez le chapeau de cheminée. Si nécessaire, installez et scellez un collet de solin.



<u>NOTE</u>: LA CONDITION STRUCTURELLE DE LA CHEMINÉE DE MAÇONNERIE DOIT TOUT D'ABORD ÊTRE INSPECTÉE PAR UN RAMONEUR OU UN INSTALLATEUR QUALIFIÉ.

<u>NOTE</u>: VOUS AUREZ BESOIN D'UNE LONGUEUR DE TUYAU ÉGALE À LA LONGUEUR DE LA CHEMINÉE, À PARTIR DU FOYER. SI VOUS DEVEZ UTILISER UN CONDUIT D'APPORT D'AIR, VOUS AUREZ BESOIN D'UNE LONGUEUR DE TUYAU SUPÉRIEUR DE 12'' À 18" (30 À 46 CM) DE LA CHEMINÉE POUR ASSURER UN BON FONCTIONNEMENT DE L'APPAREIL.

4.5.6 Installation à travers une cheminée de maçonnerie



1. Positionnez le poêle en suivant les dégagements de la **Section 3.2 : *Dégagements minimums de l'appareil aux matériaux combustibles*** ainsi que les instructions du manufacturier du système d'évent.

2. Faites une marque à l'endroit où le tuyau entrera dans la maçonnerie.

3. Il est nécessaire de faire un trou dans la maçonnerie d'un pouce de diamètre de plus que le diamètre d'évent utilisé.

4. Mesurez et fabriquez un solin pour mettre au-dessus de la cheminée. Une plaque et des vis en acier inoxydable sont idéales. Coupez un trou pour le tuyau d'évacuation. Si nécessaire, coupez un second trou pour le tuyau de prise d'air extérieur. Scellez les joints avec du silicone haute température résistant à l'eau.

5. Installez un "té" de nettoyage dans la partie inférieure du tuyau d'évacuation jusqu'à ce que le centre de la buse de raccordement du "té" soit aligné avec le centre du trou dans la maçonnerie.

6. Installez et scellez le solin avec de la silicone haute température résistante à l'eau.

7. Installez le chapeau de cheminée. Si nécessaire, installez et scellez un collet de solin.

8. Raccordez la section horizontale du tuyau d'évacuation en l'alignant avec la buse de raccordement du "té". Poussez le tuyau horizontal à travers le trou de maçonnerie en le tournant pour bien le raccorder au "té" de la gaine.

9. Une fois le tuyau horizontal en place, vous pouvez sceller le joint dans la maçonnerie avec du mortier.

10. Si désiré, installez un collet décoratif et utilisez la longueur horizontale nécessaire pour raccorder l'appareil à la cheminée.

<u>NOTE</u>: VOUS AUREZ BESOIN D'UNE LONGUEUR DE TUYAU ÉGALE À LA LONGUEUR DE LA CHEMINÉE, À PARTIR DU FOYER. SI VOUS DEVEZ UTILISER UN CONDUIT D'APPORT D'AIR, VOUS AUREZ BESOIN D'UNE LONGUEUR DE TUYAU SUPÉRIEUR DE 12'' À 18" (30 À 46 CM) DE LA CHEMINÉE POUR ASSURER UN BON FONCTIONNEMENT DE L'APPAREIL.

PARTIE B – UTILISATION

4.6 Information générale

4.7 Mises en garde et avertissements concernant l'utilisation et l'entretien

- **CONSERVEZ CE MANUEL POUR RÉFÉRENCE.**
- **IL EST FORTEMENT RECOMMANDÉ QUE L'UTILISATEUR ACHÈTE CE PRODUIT CHEZ UN DÉTAILLANT POUVANT FOURNIR DES CONSEILS SUR SON INSTALLATION ET ENTRETIEN.**
- **DURANT LES PREMIERS FEUX, VOTRE POÊLE DÉGAGERA UNE ODEUR DÉSAGRÉABLE ACCOMPAGNÉE D'UNE MINCE FUMÉE. CECI EST LIÉ AU PROCESSUS DE DURCISSEMENT DE LA PEINTURE. LA PEINTURE CHAUFFE, DURCIT ET ADHÈRE AU MÉTAL. L'ODEUR ET LA FUMÉE DISPARAÎTRONT LORSQUE LE POÊLE AURA CHAUFFÉ SUFFISAMMENT PENDANT QUELQUES HEURES. AUGMENTEZ L'INTENSITÉ DU FEU GRADUELLEMENT. OUVREZ UNE FENÊTRE. SORTEZ DE LA PIÈCE AU BESOIN. BIEN QUE LA FUMÉE ET SON ODEUR SOIENT DÉSAGRÉABLES, ELLES NE SONT PAS TOXIQUES.**
- **CHAUD LORSQU'EN FONCTION, TENIR LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS. TOUT CONTACT AVEC LA PEAU PEUT CAUSER DES BRÛLURES. DES GANTS PEUVENT ÊTRE NÉCESSAIRES POUR CHAUFFER LE POÊLE.**
- **CET APPAREIL DOIT ÊTRE UTILISÉ COMME CHAUFFAGE D'APPOINT. EN CAS DE BRIS, UNE SOURCE DE CHAUFFAGE ALTERNATIVE DOIT ÊTRE DISPONIBLE DANS LA RÉSIDENCE. LE MANUFACTURIER NE PEUT ÊTRE TENU RESPONSABLE DES COÛTS DE CHAUFFAGE ADDITIONNELS POUVANT ÊTRE ENGENDRÉS PAR L'UTILISATION D'UNE SOURCE DE CHAUFFAGE ALTERNATIVE.**
- **L'UTILISATION D'UN POÊLE AVEC DES COMPOSANTS FISSURÉS OU BRISÉS, COMME LA VITRE OU LE COUPE-FEU POURRAIT CAUSER UNE SITUATION DANGEREUSE ET POURRAIT ENDOMMAGER LE POÊLE.**
- **NE JAMAIS UTILISER D'ESSENCE, D'HUILE, D'ALCOOL OU TOUT AUTRE LIQUIDE SIMILAIRE POUR DÉMARRER OU ACTIVER LE FEU DANS LE POÊLE. GARDEZ TOUS CES LIQUIDES OU AÉROSOLS DANS UN ENDROIT ÉLOIGNÉ DU POÊLE.**
- **NE PAS ENTREPOSER D'ESSENCE EN DEÇÀ DES DÉGAGEMENTS MINIMUMS DE L'APPAREIL DE CHAUFFAGE.**
- **L'APPAREIL DOIT ÊTRE ENTRETENU ET UTILISÉ EN TOUT TEMPS CONFORMÉMENT AUX PRÉSENTES DIRECTIVES. IL EST RECOMMANDÉ D'INSTALLER UN DÉTECTEUR DE FUMÉE, UN MONITEUR DE MONOXYDE DE CARBONE ET UN EXTINCTEUR DANS UN ENDROIT APPROPRIÉ.**
- **LA PORTE DU POÊLE DOIT DEMEURER FERMÉE ET ENCLENCHÉE PENDANT L'UTILISATION. LE PANNEAU D'ACCÈS DU TIROIR À CENDRES DOIT ÉGALEMENT ÊTRE FERMÉ PENDANT L'UTILISATION.**
- **NE JAMAIS TENTER DE RÉPARER OU DE REMPLACER UNE PIÈCE DU POÊLE, À MOINS QUE DES INSTRUCTIONS SOIENT FOURNIES PAR LE MANUFACTURIER. TOUTE AUTRE RÉPARATION DEVRAIT ÊTRE EFFECTUÉE PAR UN TECHNICIEN QUALIFIÉ.**
- **CESSEZ D'OPÉRER LE POÊLE SI LA FLAMME DEVIENT FONCÉE ET QUE LA VITRE SE SALIT TRÈS RAPIDEMENT OU SI LE POT DE COMBUSTION DÉBORDE DE**

GRANULES. ÉTEIGNEZ-LE, INSPECTEZ-LE, ET CONTACTEZ VOTRE DÉTAILLANT AU BESOIN.

- **ÉTEINDRE LE POÊLE NE COUPE PAS LE COURANT À L'APPAREIL. TOUJOURS, DÉBRANCHEZ LE CORDON D'ALIMENTATION ÉLECTRIQUE AVANT D'EFFECTUER TOUT ENTRETIEN OU REMPLACEMENT DE PIÈCE SUR LE POÊLE.**
- **ASSUREZ-VOUS QUE LE POÊLE A REFROIDI AVANT DE PROCÉDER À TOUTE RÉPARATION OU TOUT ENTRETIEN. LES CENDRES DOIVENT ÊTRE MISES DANS UN CONTENANT MÉTALLIQUE AVEC UN COUVERCLE ÉTANCHE. CE CONTENANT FERMÉ DEVRAIT ÊTRE DÉPOSÉ SUR UNE SURFACE NON COMBUSTIBLE, LOIN DE TOUT MATÉRIAU POUVANT PRENDRE FEU. SI LES CENDRES SONT DESTINÉES À ÊTRE ENTERRÉES OU LOCALEMENT DISPERSÉES, ELLES DEVRAIENT ÊTRE MAINTENUES DANS LE RÉCIPIENT FERMÉ JUSQU'À CE QU'ELLES SOIENT COMPLÈTEMENT REFROIDIES.**
- **N'UTILISEZ PAS VOTRE POÊLE SI VOUS SENTEZ ET VOYEZ DE LA FUMÉE. ÉTEIGNEZ-LE, SURVEILLEZ-LE ET CONTACTEZ VOTRE DÉTAILLANT. N'OUVREZ PAS LA PORTE ET NE LE DÉBRANCHEZ PAS.**
- **L'ALIMENTATION ÉLECTRIQUE DE L'APPAREIL DEVRAIT ÊTRE COUPÉE LORSQUE L'APPAREIL EST INUTILISÉ DURANT UNE LONGUE PÉRIODE (EXEMPLE : L'ÉTÉ). CERTAINES SONDES ACTIVÉES PAR LA CHALEUR POURRAIENT ACTIVER LES VENTILATEURS MÊME SI L'APPAREIL N'EST PAS EN MARCHE.**
- **VOTRE POÊLE REQUIERT UN ENTRETIEN RÉGULIER. NÉGLIGER DE SUIVRE LE CALENDRIER D'ENTRETIEN (VOIR SECTION 7.1.1 : *FRÉQUENCE D'ENTRETIEN RECOMMANDÉ*) RÉDUIRA LA PERFORMANCE DE L'APPAREIL ET POURRAIT ÉVENTUELLEMENT L'ENDOMMAGER. CELA POURRAIT AUSSI CONDUIRE À DES ÉPANCHEMENTS DE FUMÉE DANS LA MAISON.**
- **CE POÊLE EST CONÇU ET APPROUVÉ POUR BRÛLER SEULEMENT DE LA GRANULE DE BOIS. L'UTILISATION DE TOUT AUTRE TYPE DE COMBUSTIBLE ANNULERA VOTRE GARANTIE.**
- **LA TRÉMIE NE DEVRAIT CONTENIR QUE DES GRANULES. LA TRÉMIE DOIT ÊTRE EXEMPTE DE TOUT OBJET ÉTRANGER EN TOUT TEMPS POUR ÉVITER TOUT DOMMAGE AU POÊLE.**
- **LE POÊLE NE FONCTIONNE PAS SANS ÉLECTRICITÉ. SI UNE PANNE ÉLECTRIQUE SE PRODUIT, VÉRIFIEZ SI DE LA FUMÉE S'ÉCHAPPE DU POÊLE. OUVRIR UNE FENÊTRE PRÉVIENDRA UNE PRESSION NÉGATIVE ET UN ÉPANCHEMENT DE FUMÉE DANS LA MAISON.**
- **NE PAS DÉBRANCHER LE POÊLE SI VOUS CROYEZ QU'IL EST EN DÉFAUT. ÉTEIGNEZ-LE, INSPECTEZ-LE, ET CONTACTEZ VOTRE DÉTAILLANT.**
- **CE POÊLE EST CONÇU POUR UTILISER UN RATIO AIR /COMBUSTIBLE OPTIMAL AFIN DE BRÛLER SANS FUMÉE ET SANS SUIE. TOUT BLOCAGE DU SYSTÈME D'ÉVENT OU DE L'APPORT D'AIR CONDUIRA À UNE DIMINUTION DES PERFORMANCES ET SERA FACILEMENT IDENTIFIABLE PAR DE LA FUMÉE QUI SORTIRA DU SYSTÈME D'ÉVENT ET QUI NOIRCIRA LA VITRE DE L'APPAREIL AINSI QUE LES MURS EXTÉRIEURS. POUR UN FONCTIONNEMENT OPTIMAL, LA TENEUR EN CENDRES DE LA GRANULE DEVRAIT ÊTRE INFÉRIEURE À 1 % ET SA VALEUR CALORIFIQUE DEVRAIT ÊTRE D'ENVIRON 8,500 BTU/LB. UN COMBUSTIBLE AVEC**

UN TAUX DE CENDRES PLUS ÉLEVÉ NÉCESSITERA UNE MAINTENANCE ET UN NETTOYAGE PLUS RÉGULER.

- **CE POÊLE NE FONCTIONNE PAS AVEC UN TIRAGE NATUREL NI SANS SOURCE DE COURANT POUR ACTIVER LES VENTILATEURS ET LE SYSTÈME D'ALIMENTATION DE GRANULES.**
- **SBI - FABRICANT DE POÊLES INTERNATIONAL INC. N'ASSUME AUCUNE GARANTIE IMPLICITE OU EXPLICITE LIÉE À UNE MAUVAISE INSTALLATION ET À UN MANQUE D'ENTRETIEN DE VOTRE POÊLE ET N'ASSUME AUCUNE RESPONSABILITÉ POUR TOUT DOMMAGE QUI EN RÉSULTERAIT.**
- **SI VOUS REMARQUEZ UN FEU QUI COUVE (POT DE COMBUSTION PLEIN, MAIS SANS FLAMME VISIBLE) ET UNE ACCUMULATION DE FUMÉE DANS LA CHAMBRE À COMBUSTION, ÉTEIGNEZ IMMÉDIATEMENT LE POÊLE, MAIS NE LE DÉBRANCHEZ PAS. NE PAS OUVRIR LA PORTE NI LE PANNEAU DE LA TRÉMIE. S'ASSURER QUE LE VOLET D'ENTRÉE D'AIR FRAIS FONCTIONNE LIBREMENT. ATTENDEZ QUE LA FUMÉE À L'INTÉRIEUR DE LA CHAMBRE À COMBUSTION SE DISSIPE ET QUE LES VENTILATEURS S'ÉTEIGNENT. SUIVEZ LES INSTRUCTIONS INDIQUÉES DANS « DÉMARRAGE QUOTIDIEN » PUIS ESSAYEZ DE REDÉMARRER LE POÊLE. SI LE PROBLÈME PERSISTE, CONTACTEZ VOTRE DÉTAILLANT. NOTEZ QUE DE L'ACCUMULATION DE FUMÉE PENDANT L'ALLUMAGE PEUT SE PRODUIRE. LA FUMÉE PEUT S'ACCUMULER DANS LA CHAMBRE À COMBUSTION POUR QUELQUES SECONDES JUSTE AVANT QUE L'ALLUMEUR SOIT SUFFISAMMENT CHAUD POUR ALLUMER LES GRANULES. CECI EST NORMAL. DÈS QU'IL Y A DU FEU DANS LE POT DE COMBUSTION, LA FUMÉE DISPARAÎTRA.**
- **ASSUREZ UNE VENTILATION ADÉQUATE. IL EST IMPORTANT QU'UNE QUANTITÉ D'OXYGÈNE SUFFISANTE SOIT APPORTÉE AU FEU POUR UNE BONNE COMBUSTION. DURANT LA SAISON HIVERNALE, S'ASSURER QUE LA PRISE D'AIR FRAIS N'EST PAS OBSTRUÉE (GLACE, NEIGE, ETC.), CAR CELA PRIVERA LE FEU D'AIR ET EMPÊCHERA LE BON FONCTIONNEMENT DU POÊLE. S'ASSURER QUE LE VOLET ANTIRETOUR D'ADMISSION D'AIR FRAIS FONCTIONNE LIBREMENT.**
- **L'UTILISATION DE VOTRE POÊLE À INTENSITÉ MAXIMUM PENDANT UNE LONGUE PÉRIODE DE TEMPS PEUT RÉDUIRE L'ESPÉRANCE DE VIE DU POÊLE ET DE SES COMPOSANTES.**

AVERTISSEMENT: Ce produit peut vous exposer à des agents chimiques, y compris du monoxyde de carbone, identifiés par l'État de la Californie comme pouvant causer le cancer ou des malformations congénitales et autres troubles de l'appareil reproducteur. Pour de plus amples informations, prière de consulter le www.P65warnings.ca.gov/

4.7.1 Le chauffage par zone et comment vous pouvez en profiter.

Votre nouveau poêle à granules sert au chauffage localisé, ce qui signifie qu'il est prévu pour chauffer le secteur où il est installé, de même que les pièces qui y sont reliées, bien qu'à une température inférieure. Cela s'appelle le chauffage par zone et c'est une façon de plus en plus répandue de chauffer des résidences ou des espaces à l'intérieur des résidences.

Le chauffage par zone peut être utilisé comme appoint pour un autre système de chauffage, en chauffant un espace de la résidence en particulier, comme une salle familiale au sous-sol ou un agrandissement qui n'a pas d'autre système de chauffage.

Bien que le poêle soit capable de chauffer les secteurs principaux de votre maison à une température adéquate, ce poêle doit être utilisé comme chauffage d'appoint. Vous devriez avoir un système de chauffage conventionnel au mazout, au gaz ou à l'électricité. Le manufacturier ne peut être tenu responsable des coûts additionnels reliés à l'utilisation d'une source de chauffage alternative en cas de panne de courant.

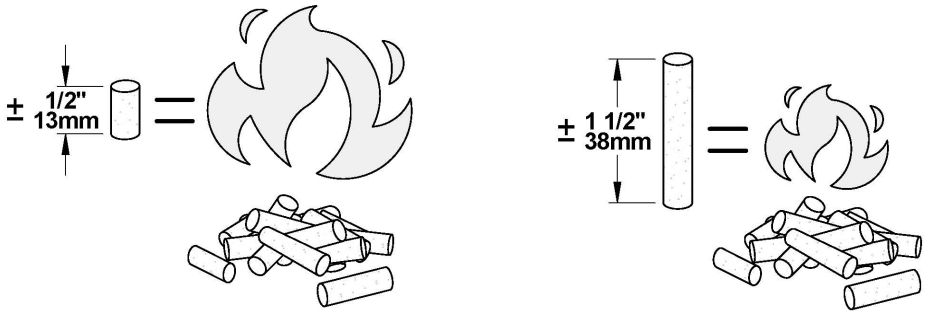
Plusieurs facteurs feront en sorte que le chauffage par zone vous réussira, y compris le bon emplacement et la bonne grosseur du poêle, la dimension, la disposition et l'âge de votre résidence, de même que votre zone climatique.

4.8 Combustible

4.8.1 Types de granules recommandés

Chaque type de granules a ses propriétés et brûlera différemment. La quantité de cendres produites peut varier grandement. Les granules conventionnelles sont celles de 1/4" ou 5/16" de diamètre d'une longueur maximale de 1". Des granules plus longs et plus gros peuvent affecter la constance de l'alimentation en granules**.**

Par exemple, si les granules sont très courtes, ils auront une facilité à s'entasser dans les vis d'alimentation. Ainsi, le volume de granule sera plus dense ce qui entraine une augmentation du BTU. À l'inverse, de longues granules s'entasseront moins bien donc le BTU sera plus faible.



Le système de combustion « à alimentation par le bas » de cet appareil a été conçu et testé spécialement pour l'utilisation de granules de bois.

<u>AVERTISSEMENT</u> : LA COMBUSTION D'AUTRES TYPES DE GRANULES DANS CET APPAREIL N'EST PAS PERMISE. CELA EST UNE VIOLATION DES CODES DU BÂTIMENT POUR LEQUEL CE POÊLE A ÉTÉ APPROUVÉ ET ANNULERA LA GARANTIE.

NE PAS BRÛLER :

- **DU CHARBON ET DES ORDURES;**
- **DE LA PELOUSE OU DES DÉCHETS DE JARDIN;**
- **DES MATÉRIAUX CONTENANT DU CAOUTCHOUC, Y COMPRIS LES PNEUS;**
- **DES MATERIAUX CONTENANT DU PLASTIQUE;**
- **DES DÉCHETS CONTENANT DU PÉTROLE, DE LA PEINTURE, DU DILUANTS À PEINTURE OU DES PRODUITS À BASE D'ASPHALTE;**
- **DES MATÉRIAUX CONTENANT DE L'AMIANTE;**
- **DES DÉBRIS DE CONSTRUCTION OU DE DÉMOLITION;**
- **DES TRAVERS DE CHEMIN DE FER OU DU BOIS TRAITÉ;**
- **DU FUMIER OU DES CARCASSES D'ANIMAUX;**
- **DU BOIS D'ÉPAVE OU AUTRE MATÉRIAUX SATURÉS A L'EAU SALÉE;**
- **DU BOIS VERT; OU DES PRODUITS DU PAPIER, DU CARTON, DU CONTREPLAQUÉ OU DES PANNEAUX DE PARTICULES. L'INTERDICTION DE BRÛLER CES MATÉRIAUX N'INTERDIT PAS L'UTILISATION D'ALLUME-FEU FABRIQUÉ À PARTIR DE PAPIER, DE CARTON, DE SCIURE DE BOIS, DE CIRE ET DE SUBSTANCES SIMILAIRES POUR ALLUMER UN FEU.**
- **BRÛLER CES MATÉRIAUX POURRAIT PRODUIRE UNE ÉMANATION DE FUMÉE TOXIQUE, RENDRE L'APPAREIL INEFFICACE ET CAUSER DE LA FUMÉE.**

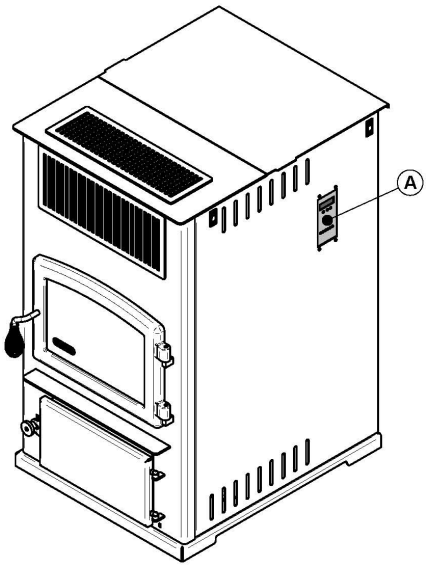
4.8.2 Où remiser les sacs de granules

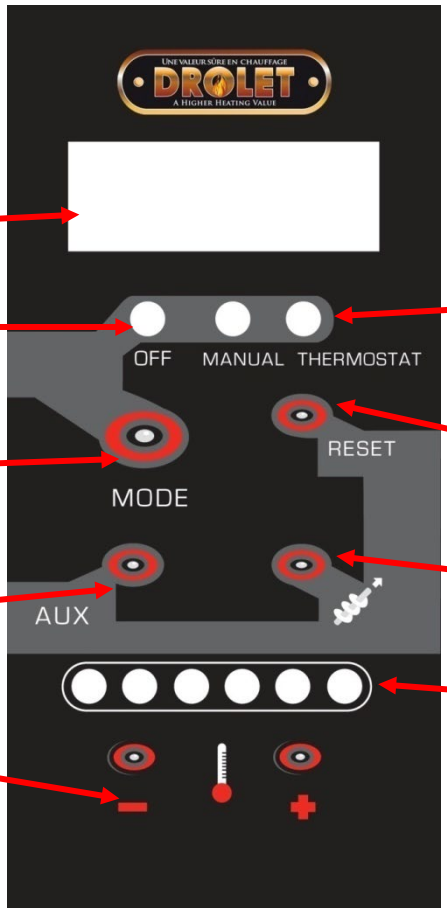
Nous vous recommandons de remiser vos sacs de granules dans un endroit sec et bien aéré, si possible. L'utilisation des granules secs augmentera les performances de votre poêle. Vous voudriez peut-être avoir un sac ou deux dans la même pièce que votre poêle pour le ravitaillement, mais veillez à respecter les distances minimales pour les matériaux combustibles ainsi que l'espace requis pour remplir la trémie ainsi que pour l'enlèvement des cendres.

5 Contrôles du poêle

5.1 Panneau de contrôle

Les ventilateurs et le système d'alimentation automatique en granule sont contrôlés par le panneau de contrôle du poêle (A) situé sur le côté droit de l'ECO-65R. Les diverses fonctions du panneau de contrôle sont les suivantes :





Écran d'affichage

Mode d'opération
OFF = Arrêt
MANUAL = Manuel

Bouton permettant de changer de mode

Bouton permettant de changer la vitesse du ventilateur de convection

Bouton + et – permettant de modifier la quantité de granules

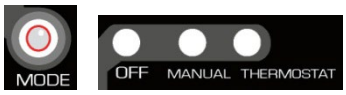
THERMOSTAT=Contrôle thermostatique (en option)

Bouton permettant d'effacer la plupart des messages d'erreurs

Bouton permettant de remplir et démarrer suite à un manque de granule

Indicateur du taux de combustion de granule

5.1.1 Bouton mode



Le bouton MODE sert à mettre le poêle en marche en opération manuel (MANUAL) ou thermostatique (THERMOSTAT). Lorsque vous appuierez sur le bouton « Mode », le poêle s'allumera automatiquement. Si le mode manuel est sélectionné, le niveau d'intensité d'alimentation en granules restera constant au niveau sélectionné. Si le mode thermostat est sélectionné, le poêle modulera entre le niveau d'alimentation sélectionné et le niveau le plus bas afin de maintenir la pièce à la température programmée sur le thermostat. Pour modifier le temps du pilote, référez vous à la **Section *6.6. 1 : Sélection du mode pilote*.** Aucun allume-feu n'est nécessaire pour démarrer l'appareil. La vis à granules alimentera le pot et l'allumeur électrique démarrera. Si le poêle ne démarre pas à l'intérieur de 12 minutes, l'appareil commencera un autre cycle d'allumage. Si l'allumage échoue une seconde fois, un message d'avertissement apparaîtra sur le panneau de contrôle.

Le niveau d'intensité peut être sélectionné pendant le cycle d'allumage. Cependant, la vis à granules alimentera le poêle selon le niveau d'intensité choisi seulement lorsque le capteur de température à l'intérieur du poêle aura reçu un signal lui indiquant que l'allumage a fonctionné. Ceci peut prendre entre 10 et 15 minutes.

5.1.2 Bouton d’alimentation en granules

Lorsque vous appuyez sur le bouton d’alimentation en granules, la vis à granule alimente le poêle pendant 1 minute puis le cycle de démarrage débute. Le message «Feed and Start » apparaitra sur l’écran.

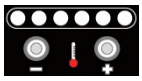
Utilisez cette option lorsque vous démarrez le poêle pour la première fois de la saison ou lorsque le poêle a manqué de granule, i.e. que la trémie est vide. La vis sans fin tournera, puis le poêle démarrera automatiquement un cycle d'allumage.

ATTENTION : CETTE FONCTION PEUT SEULEMENT ÊTRE UTILISÉE LORSQUE LE POÊLE EST EN MODE « ARRÊT » (OFF) ET LE POÊLE DOIT ÊTRE FROID. LE BOUTON D’ALIMENTATION EN GRANULES SERT À REMPLIR LA VIS DE COMBUSTIBLE LORSQUE CETTE DERNIÈRE EST VIDE.

5.1.3 Contrôle de la vitesse du ventilateur de convection

Le ventilateur de convection peut être ajusté selon 9 vitesses prédéterminées. En appuyant sur AUX, le message FAN suivit d’un chiffre de 1 à 9 apparaitra sur l’écran. En appuyant sur le + ou le -, il est possible de modifier la vitesse du ventilateur. Notez que seulement une certaine plage d’ajustement est disponible dépendamment du taux de combustion. La plage varie d’un taux de combustion à l’autre.

5.1.4 Niveau d’intensité



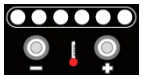
En appuyant sur les boutons “+” ou “-”, vous êtes en mesure d’augmenter ou de réduire la vitesse de l’alimentation en granules, et par le fait même, le niveau d’intensité du poêle. Chaque changement du niveau d’intensité peut être visualisé grâce à la DEL qui indique le niveau atteint de 1 à 6.

5.1.5 Redémarrage

Le bouton “reset” doit être utilisé pour effacer la majorité des messages d’avertissement sur le panneau de contrôles et ainsi redémarrer le poêle (voir **Section 6.6 :** ***Opération du poêle en utilisant un thermostat*** et **Section 8.3 :** ***Tableau des codes d’erreurs, leur causes et solutions***).

5.2 Ajustement

5.2.1 Réglage du niveau de combustion (production de chaleur)

La puissance à l’entrée du poêle varie de 10,500 BTU/h à 65,000 BTU/h. Pour modifier le niveau de combustion, sélectionnez le bouton + ou -  lorsque le poêle est en fonction.

REMARQUE : La puissance d’entrée peut varier selon le type de granule utilisé.

Même si votre poêle peut brûler une grande variété de granules de bois, pour obtenir des performances maximales nous vous recommandons fortement l'utilisation de granules de haute qualité (voir **Section 4.8.1 : *Types de granules recommandés***).

REMARQUE: Pour obtenir des résultats optimaux, assurez-vous que le système d’évent, l’échangeur de chaleur et les canalisations d'évacuation sont nettoyés avant d'effectuer tout changement de réglage.

5.2.2 Ajustement de la vitesse du ventilateur de convection

Vous pouvez ajuster la vitesse du ventilateur de convection de votre appareil pour chaque niveau de combustion sélectionné. Ainsi, une plage d’ajustement vous est offerte afin de réduire ou augmenter la distribution d’air dans la pièce. Notez que seulement une portion de la plage disponible est débloquée pour ajustement et qu’elle est dépendante du niveau de combustion. Ainsi, si vous utilisez votre poêle dans les bas niveaux de combustion, vous ne pourrez pas mettre le ventilateur de convection au maximum. À l’inverse, pour les niveaux de combustion élevé, les basses vitesses de convection sont bloquées.

En cas de surchauffe (code F-160), le ventilateur de convection se mettra à son réglage le plus élevé jusqu'à ce que le poêle ait atteint une température sécuritaire. Le message F-160 apparaitra sur l’écran. Lorsque le poêle aura atteint cette température, il retournera à la vitesse précédemment sélectionnée.

6 Fonctionnement du poêle

6.1 Premier allumage

Avant de démarrer le poêle, assurez-vous que le pot de combustion, le coupe-feu et les panneaux d'accès sont correctement installés. Veillez à ce que le poêle ait été vidé de tous ses outils et accessoires (voir **Section 2.3 : *Avant de faire fonctionner le poêle***). De plus, assurez-vous que toutes les portes et le couvercle de le trémie sont fermés et que le système d'évent est correctement scellé. Assurez-vous que la trémie est pleine. Appuyez sur le bouton de la vis sans fin .

Si le feu n'allume pas dans les 20 minutes qui suivent le démarrage, un code d'avertissement E apparaîtra. Reportez-vous à la section de dépannage pour plus de détails.

<u>ATTENTION</u>: NE JAMAIS UTILISER UNE GRILLE OU AUTRE MOYEN POUR SUPPORTER LE COMBUSTIBLE. UTILISEZ UNIQUEMENT LE POT À COMBUSTION APPROUVÉ POUR CE POÊLE.

6.2 Démarrage quotidien

Avant de démarrer le poêle, assurez-vous qu'il y ait suffisamment de granules dans la trémie et que l'entretien recommandé selon le calendrier est été effectué (voir **Section 7.1.1 : *Fréquence d'entretien recommandé*).** Appuyez sur l'icône MODE jusqu'à la position MANUEL ou THERMOSTAT.

6.3 Manque de granules

Si votre poêle manque de granules, le feu va tranquillement s'éteindre. Le ventilateur de convection restera en fonction jusqu'à ce que la sonde de chaleur sur le ventilateur d'évacuation lise 115 °F. Le cycle de refroidissement prendra quelques minutes avant que tous les autres moteurs s'arrêtent. Lorsque cette température est atteinte, un message d'avertissement affichera E.

Pour redémarrer le poêle, attendre que toutes les composantes arrêtent de fonctionner (généralement 10 minutes après que le message d'avertissement a été affiché). Appuyez sur le bouton RESET, remplissez la trémie, et appuyez sur l'icône vis sans fin.

6.4 Remplissage

Lorsque le poêle est en marche, vous avez jusqu'à 3 minutes pour remplir la trémie de granules. Notez que l'ouverture du couvercle de la trémie arrêtera la vis sans fin d'alimenter le poêle en granules. Si le couvercle de la trémie est laissé ouvert plus de 3 minutes, un code d'avertissement 

apparaîtra sur l'écran. Pour redémarrer le poêle, fermer le couvercle, appuyez sur le bouton 

, puis appuyez sur 

jusqu'à la position MANUEL ou THERMOSTAT.

<u>NOTE:</u> Gardez le couvercle de la trémie fermé en tout temps, sauf lors du remplissage. Ne surchargez pas la trémie.

6.5 Procédure d'arrêt

Pour éteindre votre poêle, appuyez sur 

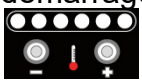
jusqu'à la position OFF. Le cycle de refroidissement s'échelonnera sur quelques minutes et les ventilateurs continueront de fonctionner pendant que le poêle se refroidit.

IMPORTANT : NE JAMAIS DÉBRANCHER LE CORDON D'ALIMENTATION POUR ÉTEINDRE LE POÊLE.

6.6 Opération du poêle utilisant un thermostat

Un thermostat vous aidera à conserver une température stable de façon automatique dans la pièce (Voir **ANNEXE B:** ***Installation d'un thermostat (AC05558)***). Un thermostat bas voltage est nécessaire. Une unité murale ou un contrôle à distance peuvent être utilisés.

Afin d'utiliser le mode thermostat, appuyez sur 

jusqu'à la position "Thermostat" au démarrage de l'appareil. Le niveau d'intensité est ensuite sélectionné en utilisant les boutons 
. En mode thermostatique, le poêle fonctionnera au niveau d'intensité sélectionnée jusqu'à ce que la température de la pièce ait atteint le niveau programmé sur le thermostat. Lorsque la température est atteinte, le poêle se met automatiquement à son niveau d'intensité le plus faible (#1) jusqu'à ce que le thermostat exige à nouveau de la chaleur. Le ventilateur de convection fonctionnera aussi à son niveau le plus faible. Lorsque le thermostat exige à nouveau de la chaleur, le poêle revient au niveau d'intensité sélectionnée par l'utilisateur.

Si la température de la pièce demeure stable et que le thermostat ne requiert pas de chaleur pendant 45 minutes, le poêle s'éteint. L'appareil démarrera un nouveau cycle d'allumage et opérera au niveau d'intensité programmée seulement lorsque de la chaleur sera à nouveau demandée par le thermostat.

6.6.1 Sélection du mode pilote

Il est possible de changer le réglage de votre appareil afin que celui-ci demeure en mode PILOTE après ces 45 minutes où le thermostat n'effectuait pas de demande de chauffage. L'appareil demeurera au réglage de chaleur le plus faible (#1), mais ne s'éteindra pas (ceci est

lorsque le mode PILOTE est activé). L'appareil demeurera au réglage de chaleur le plus faible jusqu'à tant que le thermostat effectue une autre demande de chauffage. Il est aussi possible que l'appareil s'éteigne dès que le thermostat cesse d'effectuer une demande de chauffage. Ce mode se nomme "PILOT OFF". Si vous préférez que votre appareil fonctionne suivant une de ces logiques, vous devez changer le réglage à PILOT ON ou PILOT OFF en appuyant simultanément sur ces deux boutons du panneau de contrôle pendant quelques secondes :

 et 

Lorsque vous aurez effectué cette procédure, les lettres P, I, L, O, T, O, N apparaîtront sur le panneau de contrôle afin de vous informer que vous avez activé le mode « PILOTE ON ». En appuyant de nouveau sur les deux boutons, les lettres P, I, L, O, T, O, F, F apparaîtront sur le panneau de contrôle afin de vous informer que vous avez activé le mode « PILOTE OFF ». Si vous désirez réactiver les paramètres par défaut du mode thermostatique de l'appareil (c'est-à-dire que l'appareil s'éteint après 45 minutes lorsque le thermostat n'effectue pas de demande de chauffage), appuyez simplement sur les mêmes boutons pendant quelques secondes. Les lettres P, I, L, O, T, A, U, T, O apparaîtront sur l'interface électronique afin de vous informer que vous avez activé le mode « PILOTE AUTO ».

6.7 Les signes de surchauffe du poêle

Lors de conditions normales, la flamme doit avoir une couleur jaune vif et être très active, mais stable. Si vous voyez la flamme devenir paresseuse, très élevée et orange, c'est un signe de mauvais fonctionnement. Les causes les plus souvent liées à la surchauffe d'un poêle sont les suivantes: système d'évent trop restrictif, l'échangeur de chaleur est bloqué ou le manque d'air de combustion.

Dans cette éventualité, le poêle deviendra très chaud. Si le poêle devient trop chaud, le code  apparaîtra sur l'écran. Avant de redémarrer le poêle, assurez-vous que l'entretien recommandé a été fait correctement. Appuyez sur le bouton 

et 

simultanément pour 2 secondes pour remettre l'appareil en marche. Si un code de surchauffe se produit deux fois, appelez votre détaillant. Il sera en mesure de vous donner quelques conseils pour que ce code ne s'affiche plus.

<u>AVERTISSEMENT</u>: SI VOUS CHOISISSEZ UN POÊLE QUI EST TROP PETIT POUR VOTRE MAISON ET QUE VOUS DEVEZ LE FAIRE FONCTIONNER AU RÉGLAGE MAXIMUM PENDANT UNE LONGUE PÉRIODE DE TEMPS, VOUS RISQUEZ DE SURCHAUFFER LE POÊLE. L'ESPÉRANCE DE VIE DES COMPOSANTS AINSI QUE CELLE DU POÊLE EN SERONT RÉDUITES.

<u>AVERTISSEMENT</u>: SI VOUS APERCEVEZ DES LUEURS ROUGEÂTRES SUR LES COMPOSANTS EXTERNES DU POÊLE, LE POÊLE SURCHAUFFE. ÉTEIGNEZ-LE IMMÉDIATEMENT. NE LE DÉBRANCHEZ PAS ET N'OUVREZ PAS LA PORTE. DÉBRANCHER LE POÊLE DÉSACTIVERA TOUS LES ÉLÉMENTS DE SÉCURITÉ DU POÊLE.

DANGER : UN APPAREIL QUI SURCHAUFFE PEUT MENER À UN INCENDIE. CHAQUE CODE H DOIT ÊTRE SUIVI PAR UN ENTRETIEN DE L'APPAREIL ET UNE VÉRIFICATION DU SYSTÈME D'ÉVENT.

7 Entretien

7.1 Entretien du poêle

7.1.1 Fréquence d'entretien recommandé

Utiliser ce tableau comme référence dans des conditions d'utilisation normale.

Composantes	Hebdomadaire ou après **± 250 livres**	Biannuel ou après **± 1 tonne**	Annuellement ou **après ± 2 tonnes**
Coupe-feu	**Aspirer**		
Entrée d'air du bas du système autonettoyant de la vitre	**Aspirer**		
Pot de combustion	**Gratter / Aspirer**		
Vitre	**Nettoyer**		
Tiroir à cendres	**Vider / Aspirer**		
Parois de la chambre à combustion	**Aspirer**	**Brosser / Aspirer ***	
Tubes de l'échangeur de chaleur	**Brosser**	**Gratter et aspirer ***	
Canalisation d'évacuation (à travers les panneaux d'accès)		**Aspirer ***	
Ventilateur d'évacuation		**Aspirer ***	
Ventilateur de combustion		**Inspecter ***	
Ventilateur de convection		**Aspirer ***	
Système d'évent		**Inspecter et ramoner***	**Nettoyer et ramoner**
Joints d'étanchéité		**Inspecter**	
Trémie			**Vider / Aspirer**

*La fréquence de nettoyage peut varier selon le type de carburant utilisé. Un carburant avec une teneur en cendres plus élevée augmentera la fréquence de nettoyage. Voir la ***Section 4.8.1 : Types de granules recommandés*** pour les combustibles recommandés.

AVERTISSEMENT: NÉGLIGER LE NETTOYAGE ET L'ENTRETIEN RECOMMANDÉ DE VOTRE POÊLE POURRAIT ENTRAÎNER DE MAUVAISES PERFORMANCES ET ÊTRE UN DANGER POUR VOTRE SÉCURITÉ.

AVERTISSEMENT: NE JAMAIS NETTOYER LE POÊLE LORSQU'IL EST CHAUD.

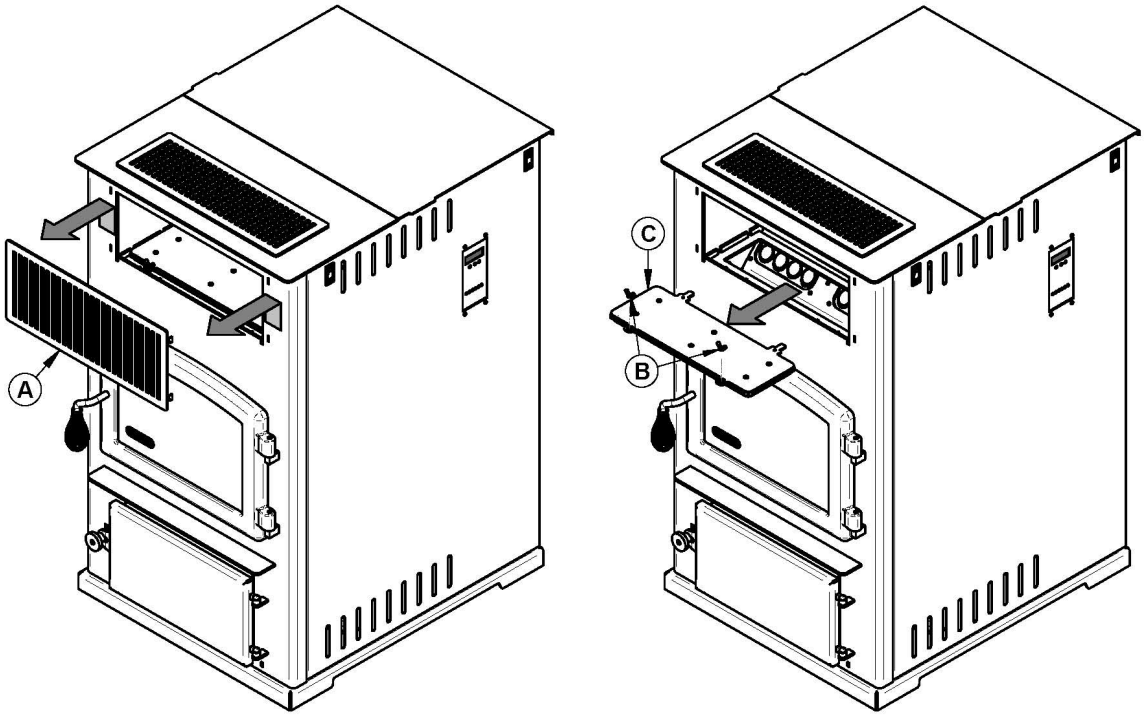
AVERTISSEMENT: L'UTILISATION D'UN ASPIRATEUR DOMESTIQUE, CENTRAL OU COMMERCIAL POUR EFFECTUER L'ENTRETIEN DE VOTRE POÊLE EST DÉCONSEILLÉE. LES PARTICULES DE CENDRES PEUVENT ENDOMMAGER LES

MOTEURS DE L'APPAREIL. DE PLUS, LES TISONS ENCORE CHAUDS POURRAIENT METTRE LE FEU AU CONTENU DE VOTRE ASPIRATEUR. L'UTILISATION D'UN ASPIRATEUR À CENDRES EST FORTEMENT RECOMMANDÉE.

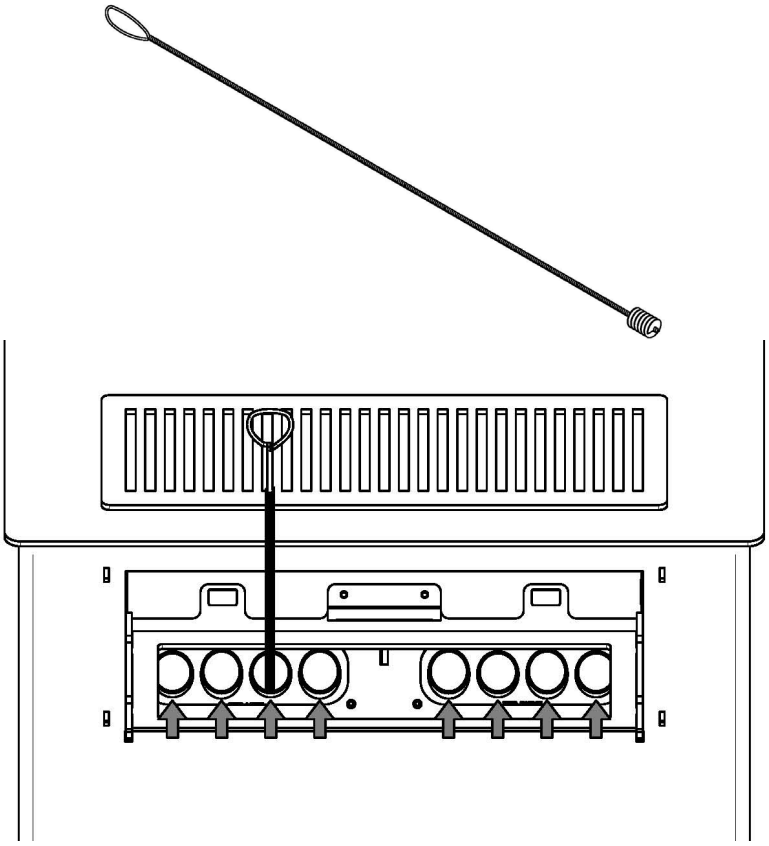
AVERTISSEMENT : LES CENDRES DOIVENT ÊTRE MISES DANS UN CONTENANT MÉTALLIQUE AVEC UN COUVERCLE ÉTANCHE. CE CONTENANT FERMÉ DEVRAIT ÊTRE DÉPOSÉ SUR UNE SURFACE NON COMBUSTIBLE, LOIN DE TOUT MATÉRIAU POUVANT PRENDRE FEU. SI LES CENDRES SONT DESTINÉES À ÊTRE ENTERRÉES OU LOCALEMENT DISPERSÉES, ELLES DEVRAIENT ÊTRE MAINTENUES DANS LE RÉCIPIENT FERMÉ JUSQU'À CE QU'ELLES SOIENT COMPLÈTEMENT REFROIDIES.

7.1.2 Nettoyage du coupe-feu, de l'échangeur de chaleur et de la chambre à combustion.

Le nettoyage de l'échangeur de chaleur doit se faire régulièrement (voir **Section 7.1.1 : *Fréquence d'entretien recommandé***). Vous devez tout d'abord soulever la grille décorative (A) vers le haut puis la tirer vers vous. Vous devez ensuite dévisser les deux écrous papillon (B) et retirer la plaque d'accès (C) de la chambre à combustion. Faites attention au cordon d'étanchéité lorsque vous mettez la plaque d'accès de côté. Prenez la brosse fournie avec le poêle et faites un aller-retour complet à l'intérieur de chaque tube**. IL EST IMPORTANT DE PASSER LA BROSSE JUSQU'AU FOND. CE SERA TRÈS DIFFICILE DE RETIRER LA BROSSE SI ELLE EST ARRÊTÉE À MI-CHEMIN DANS L'UN DES TUBES**. Il est recommandé d'utiliser un aspirateur à cendres pour aspirer les poussières qui s'échappent des tubes lors de l'utilisation de la brosse.



À l’aide de la brosse de ramonage fournie, brossez de haut en bas chaque canalisation. Assurez-vous d’aller jusqu’en bas de la canalisation.

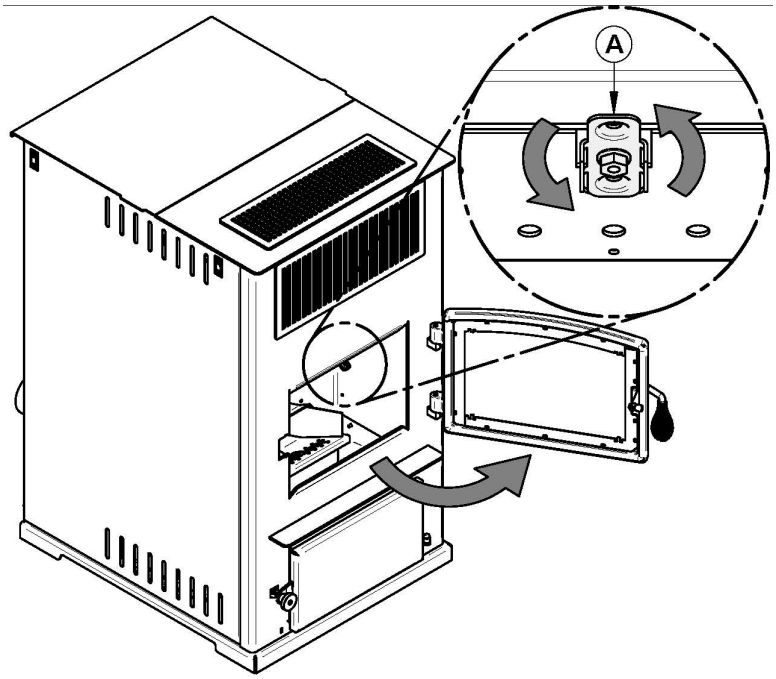


Réinstallez la plaque d’accès à la chambre à combustion et serrez les écrous papillon**.**

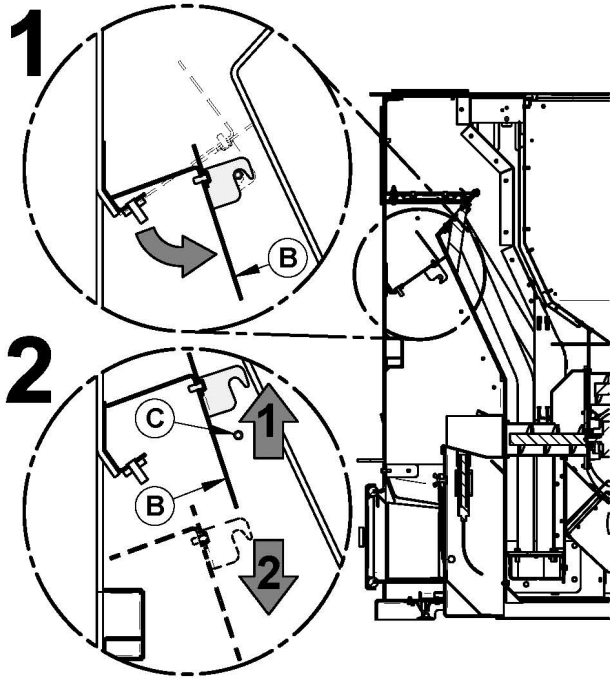
NE PAS UTILISER DE PINCE OU D’AUTRES OUTILS POUR SERRER LES ÉCROUS.

Pour le nettoyage du coupe-feu, pivotez la barrure de 90°. La barrure se trouve au dessus de la porte de la chambre à combustion. Le coupe-feu pivotera et fera tomber les cendres volantes accumulées. Nettoyer et réinstaller le coupe-feu en place.

Pour retirez le coupe-feu (dans le cas d’un remplacement), pivotez la barrure de 90°. Lorsque le coupe-feu aura pivoté, replacer la barrure dans son état barré. Soulevez le coupe-feu au dessus de ses pivots et descendez-le en le tirant légèrement vers vous. Pour le sortir de la porte, vous devez le pivotez lentement vers vous afin d’éviter d’accrocher les parois de la chambre à combustion.

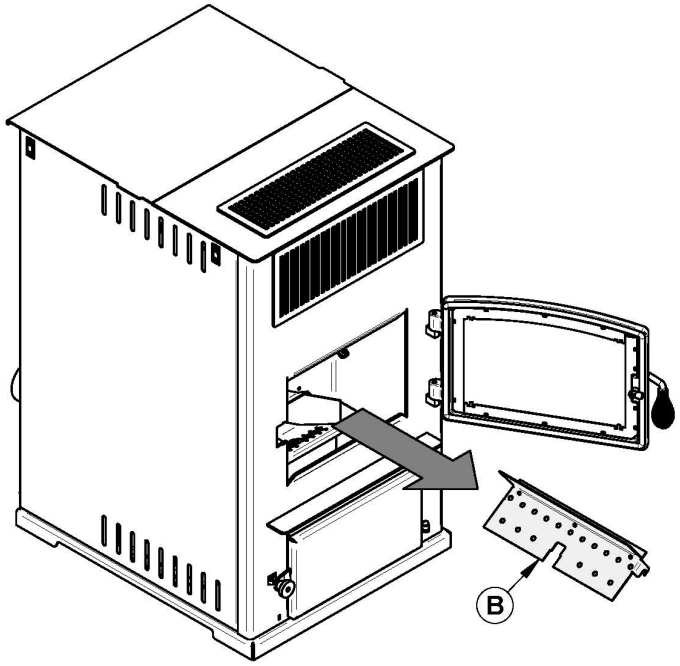


1) Ouvrir la porte et tourner la barrure (A) qui se trouve au dessus de l’ouverture de porte.



2) Le Coupe-feu (B) va pivoter automatiquement vers le bas une fois débarré.

3) Soulever le Coupe-feu (B) de ses pivots (C). Descendre le coupe-feu.



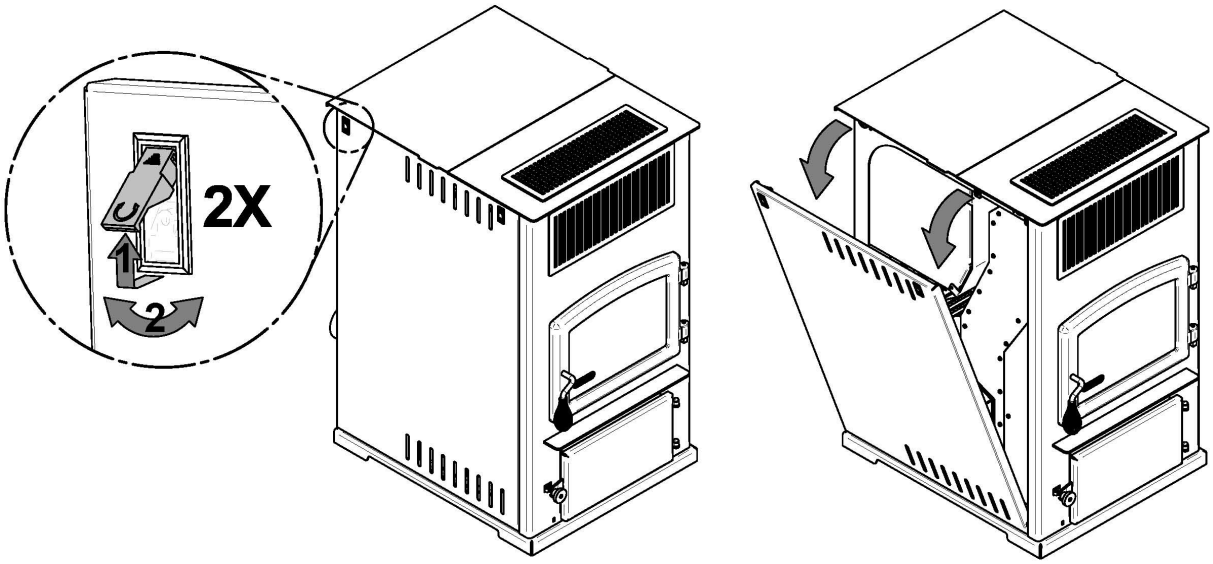
4) Sortir le coupe-feu (B) de la chambre à combustion.

IL EST FORTEMENT SUGGÉRER DE NETTOYER LA CANALISATION D’ÉVACUATION (VOIR SECTION 7.1.3 : ENTRETIEN DES CANALISATIONS D’ÉVACUATION ET DU VENTILATEUR D’ÉVACUATION) IMMÉDIATEMENT APRÈS AVOIR NETTOYÉ L’ÉCHANGEUR.

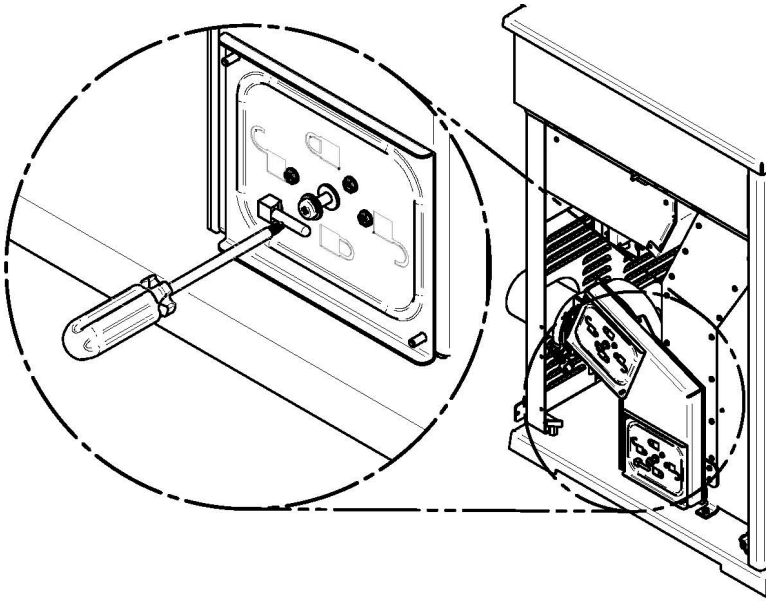
7.1.3 Entretien des canalisations d’évacuation et du ventilateur d’évacuation.

Les canalisations ainsi que le ventilateur d’évacuation sont situés sur le côté gauche du poêle. Voici comment effectuer l'inspection et le nettoyage.

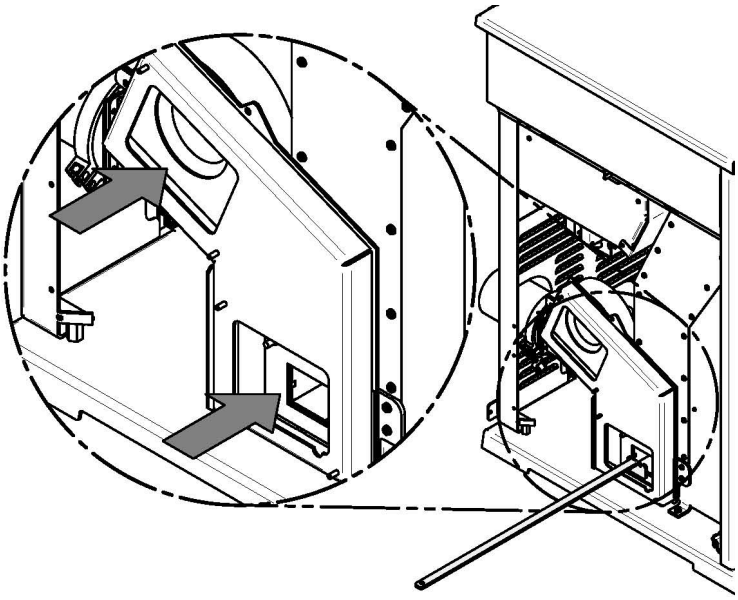
Pour accéder aux canalisations d’évacuation, ouvrir le panneau décoratif qui est situé sur le côté gauche du poêle en lui faisant face. Retirez-le.



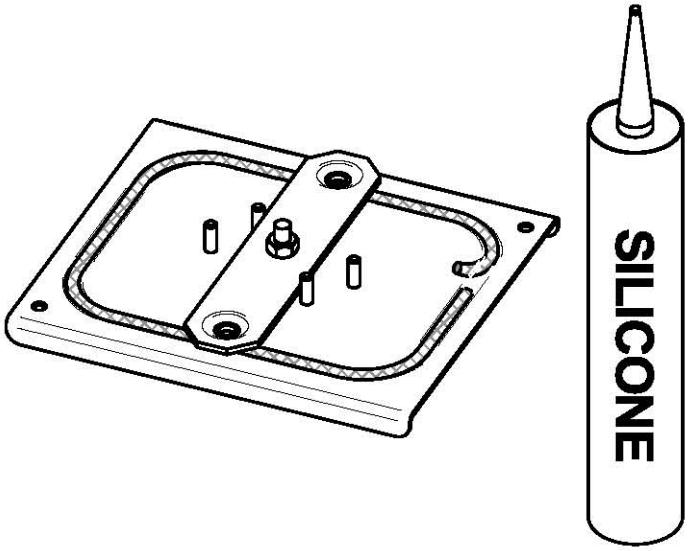
Pour retirer les deux panneaux d'accès, il faut pousser et tourner dans le sens antihoraire sur la vis centrale avec un tournevis carré ou cruciforme.



Repérez les deux ouvertures. Nettoyez toute saleté ou accumulation de cendres dans les deux canalisations d’évacuation en utilisant le grattoir fourni avec le poêle. Utilisez un aspirateur à cendres pour compléter le nettoyage.



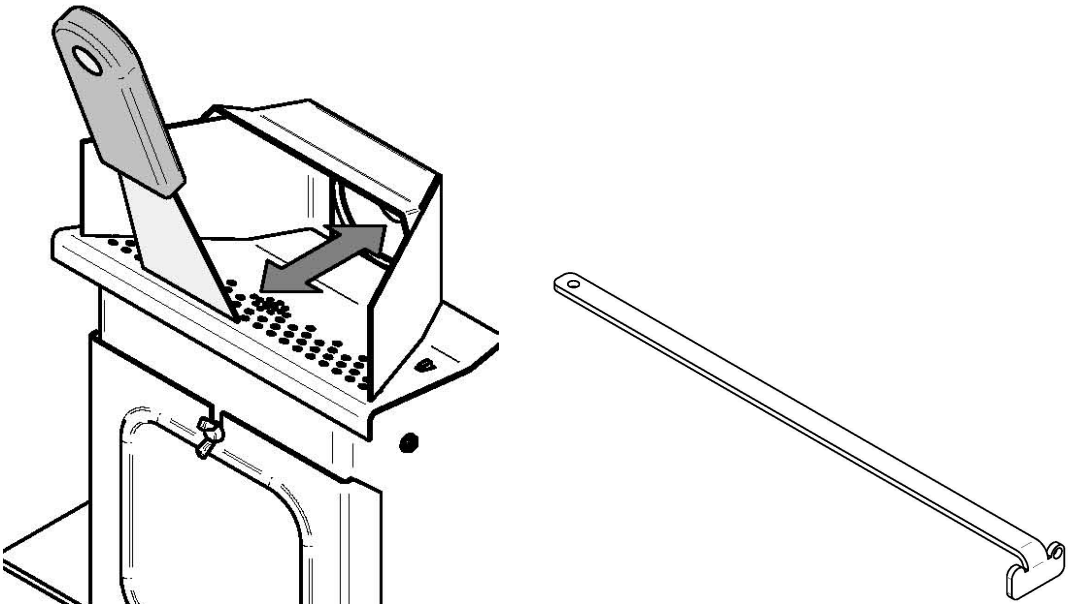
Vérifiez que les joints d'étanchéité des panneaux soient encore en bon état, les remplacer au besoin.



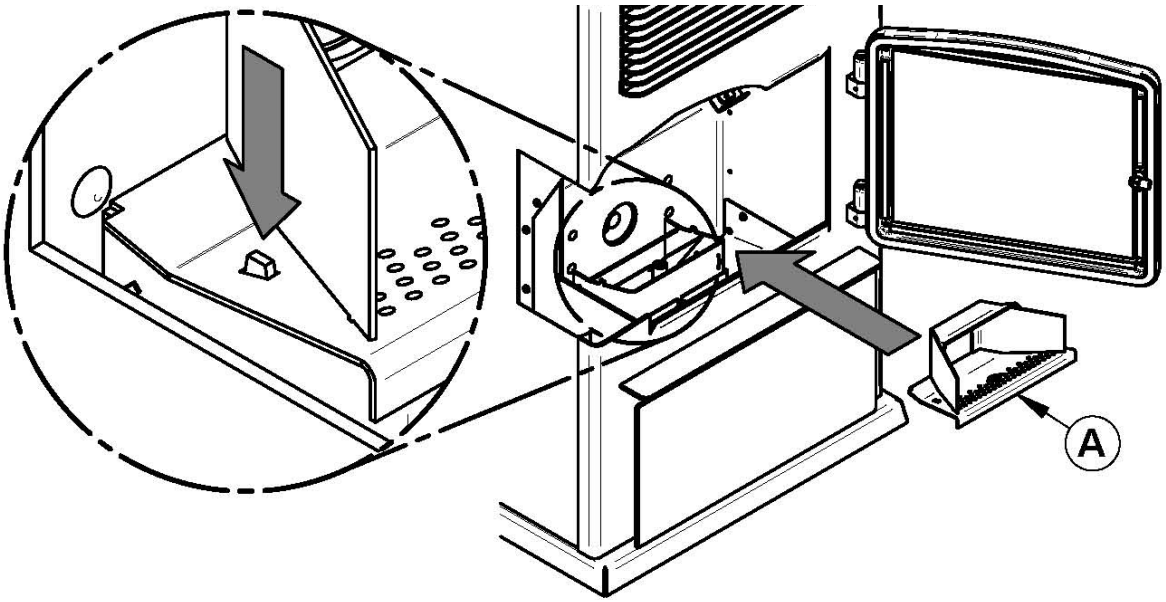
7.1.4 Nettoyage du pot de combustion

Le pot de combustion doit rester propre et les trous ne doivent pas être obstrués par des résidus de combustion. (Cendres, scorie)

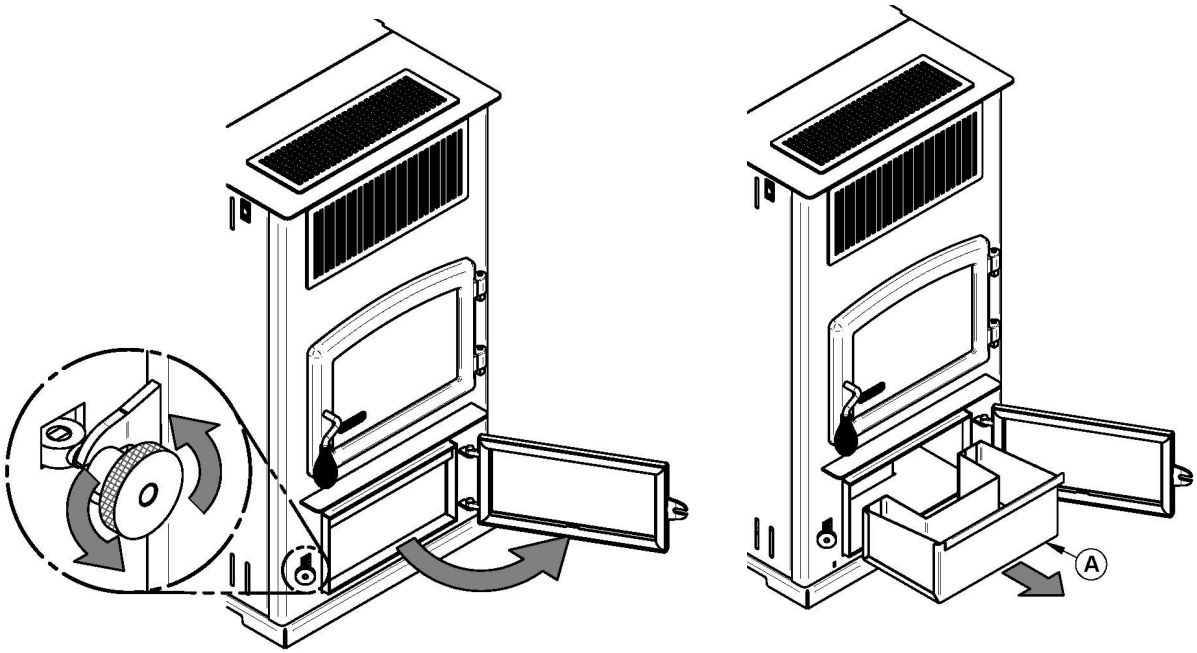
1. Nettoyez le pot de combustion en utilisant le grattoir fourni avec le poêle ou un plus petit.



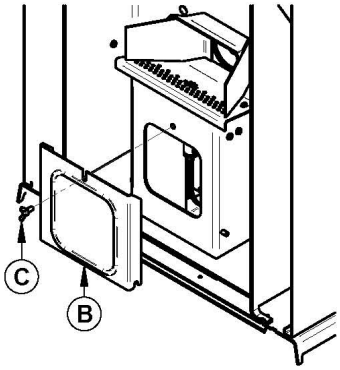
2. Le pot de combustion est simplement déposé sur la canalisation d’entrée d’air, vous devez donc le soulever pour le retirer du poêle. Deux petits tenons guident le pot en place, assurez-vous qu’il est bien appuyé avant de mettre en marche le poêle.



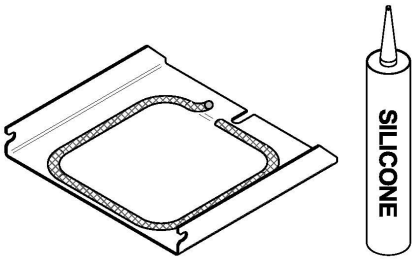
3. Si nécessaire, nettoyez la canalisation d’entrée d’air. Pour l’atteindre, vous devez ouvrir la porte d’accès du tiroir à cendres et enlever le tiroir à cendres (A).



Ensuite, dévisser l'écrou papillon (C) pour ouvrir la trappe d’accès (B). Aspirez les résidus de combustion.

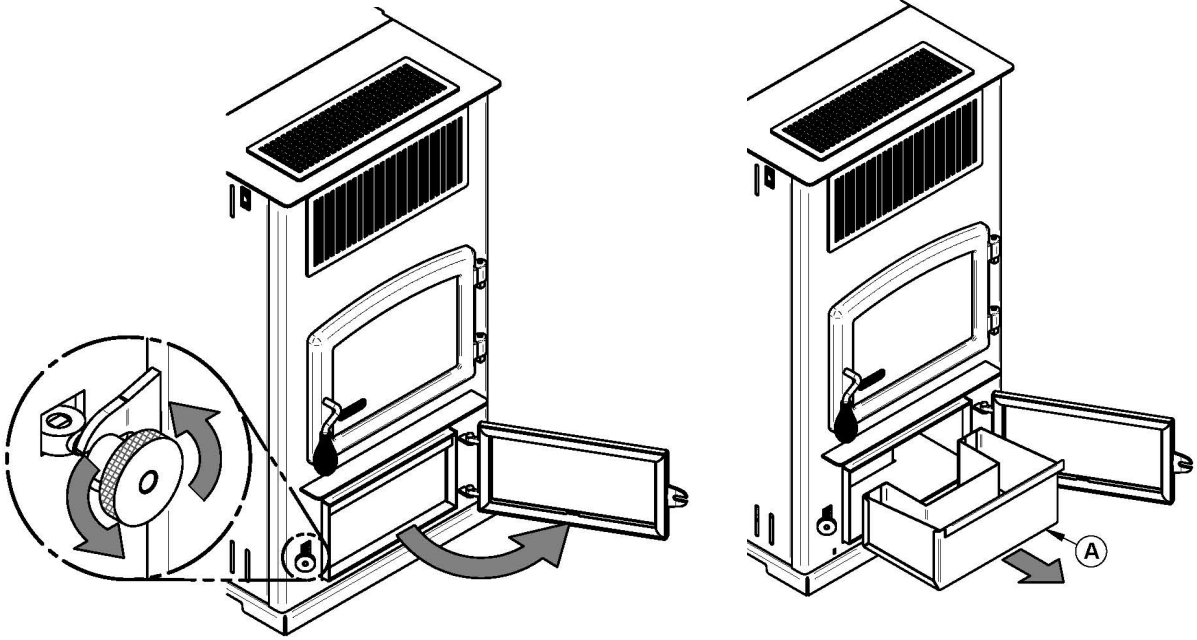


4. Vérifiez que le joint d'étanchéité de la trappe d'accès est en bonne condition, sinon remplacez-le (cordon rond 3/16" noir, AC06815).



7.1.5 Enlèvement des cendres

1. Pour vider le tiroir à cendres (A) de son contenu, ouvrez la porte d'accès du tiroir à cendres.

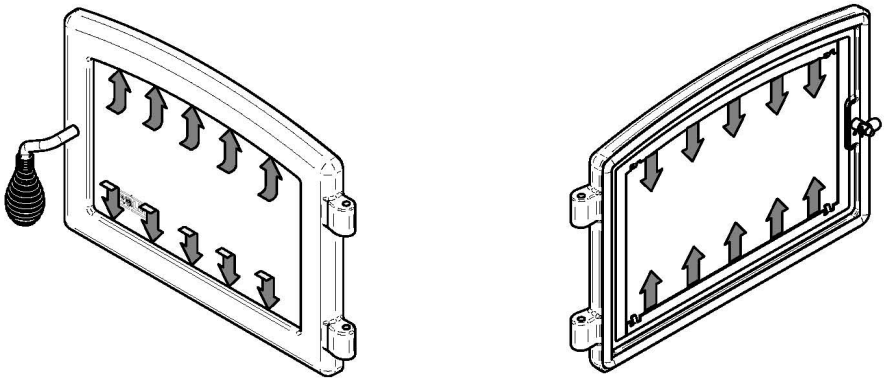


2. Videz le tiroir à cendres, aspirez autour du tiroir ainsi que le fond de la chambre à combustion.

<u>AVERTISSEMENT</u>: LE TIROIR À CENDRE DOIT ÊTRE EN PLACE ET LA PORTE D'ACCÈS DOIT ÊTRE MAINTENUE FERMÉE EN TOUT TEMPS LORSQUE LE POÊLE EST EN FONCTION.

7.1.6 Nettoyage de l'entrée d'air du système autonettoyant de la vitre.

Aspirez les cendres qui se sont accumulées dans la fente d'entrée d'air du système autonettoyant entre la fixation de la vitre et la vitre. Cela permettra un écoulement d'air optimal le long de la partie intérieure de la vitre et l'empêchera de noircir.



7.1.7 Entretien de la vitre

Nettoyer la vitre de la porte au besoin. L'utilisation d'un nettoyant spécialement conçu pour les poêles à combustibles solides est recommandée. Un produit nettoyant pour les fenêtres n'enlèvera pas la suie ou créosote.

ATTENTION: NE JAMAIS UTILISER DE NETTOYANTS ABRASIFS SUR LA VITRE OU SUR UNE PIÈCE PLAQUÉE.

ATTENTION: NE PAS NETTOYER LA VITRE LORSQU'ELLE EST CHAUDE.

ATTENTION: NE PAS FORCER, FRAPPER, CLAQUER OU ADOPTER TOUT AUTRE COMPORTEMENT QUI POURRAIT FRAGILISER LA PORTE VITRÉE.

ATTENTION: NE PAS UTILISER LE POÊLE SI LA VITRE EST MANQUANTE, FISSURÉE OU CASSÉE.

7.1.8 Remplacement d'une vitre de porte cassée

Retirez délicatement les morceaux de vitre du cadre de porte. Disposez de tous les débris de verre correctement.

Une vitre cassée doit être remplacé par un ROBAX identique (vitre céramique) 5 mm d'épaisseur avec les dimensions: 10" 5/32 x 14" 21/32''. Référez-vous à la **Section 14 : *Vues explosées et pièces de remplacement*** des pièces de remplacements.

AVERTISSEMENT: TOUJOURS PORTER DES GANTS APPROPRIÉS PENDANT LA MANIPULATION DE VERRE BRISÉ.

AVERTISSEMENT: LA VITRE DE REMPLACEMENT DEVRAIT ÊTRE ACHETÉE SEULEMENT CHEZ UN DÉTAILLANT AUTORISÉ (VOIR SECTION 14 : *VUES EXPLOSÉES ET PIÈCES DE REMPLACEMENT*). LE VERRE TREMPÉ OU ORDINAIRE N'EST PAS ADAPTÉ POUR LES TEMPÉRATURES ÉLEVÉES DU POÊLE.

AVERTISSEMENT: SI VOUS DEVEZ CHANGER LA VITRE, ASSUREZ-VOUS QUE LES JOINTS D'ÉTANCHÉITÉ DU VERRE SONT AUX MÊMES ENDROITS QUE LES ORIGINAUX AFIN DE MAINTENIR LE BON FONCTIONNEMENT DU SYSTÈME AUTONETTOYANT DE LA VITRE.

7.1.9 Entretien du cordon de porte

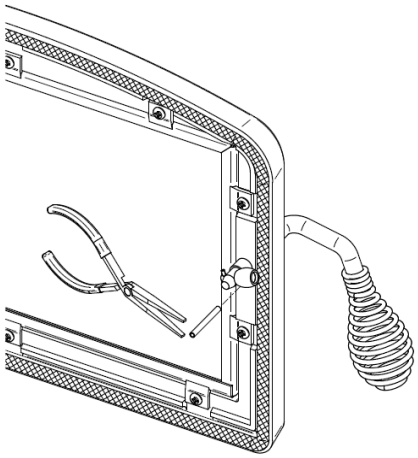
Il est important de garder le cordon de la porte en bon état. Après un certain temps, le cordon s'use et se compresse. Un ajustement de la porte peut alors être nécessaire (voir section suivante). Si l'ajustement de la porte n'est pas suffisant, remplacer le cordon de porte avec une pièce d'origine. Si la porte du poêle n'est pas scellée correctement, il sera difficile de garder la vitre de la porte propre et les gaz de combustion pourraient fuir dans la pièce.

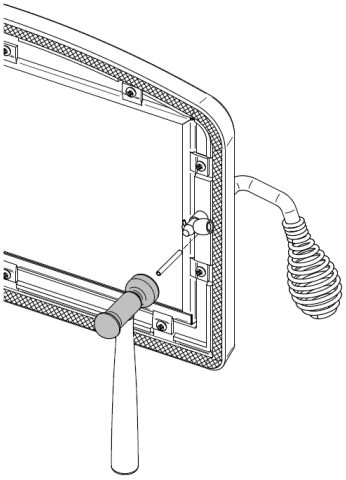
7.1.10 Ajustement de porte

Pour que la combustion de votre poêle soit à un rendement optimal, la porte doit être parfaitement étanche avec la chambre à combustion. Le joint d'étanchéité doit donc être inspecté périodiquement afin d'obtenir un ajustement hermétique. L'étanchéité peut être améliorée avec un ajustement simple du mécanisme de verrouillage. Procédez de la façon suivante:

Enlevez la goupille de retenue en tirant et tournant à l'aide de pince et tournez la poignée un tour dans le sens contraire des aiguilles d'une montre afin d'augmenter la pression entre le cadrage de la porte et la structure du poêle.

Réinstallez la goupille de retenue en utilisant un marteau.





7.1.11 Joint d'étanchéité

Il est important de remplacer le joint d'étanchéité avec un autre ayant le même diamètre et la même densité afin de conserver une bonne étanchéité.

1. Retirer le vieux joint d'étanchéité. Utiliser un tournevis pour gratter la vieille colle à joint qui se trouve dans la rainure.

2. Appliquer un cordon d'environ 3/16" (5 mm) de silicone haute température dans la rainure. Le joint ne doit pas être étiré lors de l'installation.

3. Laisser environ ½" (10 mm) de joint dépasser au moment de le couper et pousser l’extrémité dans la rainure. Repousser les fibres qui dépassent sous le joint vers le silicone.

4. Fermer la porte ou la trappe. Ne pas utiliser le poêle pendant 24 heures.

7.2 Entretien du système d’évent

ATTENTION : INSPECTER RÉGULIÈREMENT LE SYSTÈME D’ÉVENT, LES JOINTS ET AUTRES PIÈCES D’ÉTANCHÉITÉ POUR S’ASSURER QUE LA FUMÉE ET LES GAZ DE COMBUSTION NE SONT PAS ASPIRÉS PAR LE VENTILATEUR DE CONVECTION.

La méthode la plus efficace pour ramoner le système d’évent est d'utiliser une brosse de 4" dépendamment de votre installation. Brosser vers le bas, de sorte que les résidus de cendres, de suie et de créosote se détachent de la surface intérieure et tombent au fond du système d’évent où ils peuvent être enlevés facilement. Le système d’évent doit être maintenu en bon état et bien entretenu.

AVERTISSEMENT: SI UNE COUCHE IMPORTANTE DE CRÉOSOTE S’EST ACCUMULÉE (3 MM / 1/8" OU PLUS), ELLE DOIT ÊTRE ENLEVÉE IMMÉDIATEMENT POUR ÉLIMINER LES RISQUES DE FEU DE CHEMINÉE.

7.2.1 Faire face à un feu de cheminée

L'inspection et l’entretien régulier de votre système d’évent peuvent empêcher les feux de cheminée. Si vous avez un feu de cheminée, suivez ces étapes:

1. Alertez votre famille du danger possible.
2. Si vous avez besoin d'aide, appelez le service d'incendie.
3. Si possible, utilisez un extincteur chimique, du bicarbonate de soude ou du sable pour maîtriser l'incendie. Ne pas utiliser de l'eau, car cela pourrait provoquer des explosions de vapeur dangereuses.
4. Vérifiez à l'extérieur pour vous assurer que les étincelles et les braises chaudes qui sortent de la cheminée n’enflamment pas de la matière combustible qui se trouve près;
5. Ne pas utiliser le poêle jusqu'à ce que la cheminée ainsi que le poêle aient été inspectés par un ramoneur qualifié ou un inspecteur du service d'incendie;

ATTENTION: LE NETTOYAGE DU POÊLE AINSI QUE DU SYSTÈME D’ÉVENT EST PARTICULIÈREMENT IMPORTANT À LA FIN DE LA SAISON DE CHAUFFAGE POUR MINIMISER LA CORROSION DURANT LES MOIS D’ÉTÉ, PROVOQUÉE PAR LES CENDRES ACCUMULÉES.

7.2.2 Cendres volantes et suie

Les produits de combustion contiennent de petites particules de cendres volantes. Des cendres volantes peuvent s'accumuler particulièrement dans les sections horizontales de tuyau d'évacuation et restreindre la circulation des gaz de combustion. La combustion incomplète produite lors du démarrage, de l’arrêt ou la mauvaise utilisation du poêle, entraînera une formation de suie qui peut s'accumuler dans le système d'évacuation. Le système d’évent doit être inspecté au moins deux fois par an afin de déterminer si le ramonage est nécessaire.

8 Dépannage

Lorsque vous avez des problèmes avec votre poêle, votre première réaction peut être d'appeler l'assistance technique. Cette section vous aidera à économiser temps et argent en vous permettant de résoudre des problèmes simples par vous-même.

Les problèmes les plus courants sont généralement causés par les cinq facteurs suivants :

1. Mauvaise utilisation ou un entretien inadéquat;
2. Mauvaise installation;
3. Combustible de mauvaise qualité;
4. Composante défectueuse;
5. Défaut de fabrication.

Le poêle est équipé d'une carte électronique qui permet au poêle de fournir un diagnostic lorsque survient un problème. Il est donc important de ne pas débrancher le poêle lorsqu'il est en marche. Débrancher le poêle désactive toutes les fonctions de sécurité vous ne serez pas en mesure de voir le code d'erreur donnée par le poêle afin de comprendre quel est le problème. Il est donc important de bien lire cette section avant de téléphoner au service à la clientèle.

Les pages suivantes contiennent des informations sur les codes d'erreur que votre appareil vous donnera lorsqu'il rencontrera une situation problématique. Des pistes de solutions sont aussi données pour vous aider à comprendre pourquoi cette situation s'est produite.

NOTE : SI VOUS DEVEZ CONTACTER VOTRE DÉTAILLANT OU LE FABRICANT, AYEZ EN MAIN LE NUMÉRO DE MODÈLE DE VOTRE POÊLE, AINSI QUE LE NUMÉRO DE SÉRIE À PORTÉE DE LA MAIN. CECI VOUS AIDERA À OBTENIR UN SERVICE PLUS RAPIDE. (VOUS POUVEZ LES TROUVER SUR LA PLAQUE D'HOMOLOGATION À L'INTÉRIEUR DU PANNEAU DE LA TRÉMIE).

8.1 Liste des composantes électriques

- Composants électroniques (puissance électrique faible):
  - F-160 (capteur thermique de sécurité)
  - L-250 (capteur thermique de sécurité)
  - Capteur de pression (capteur de sécurité)
  - Interrupteur de trémie (capteur de sécurité mécanique)
  - Thermostat (capteur de demande de chauffage)

- Composants électriques (puissance électrique moyenne à haute) :
  - Allumeur (élément chauffant)
  - Ventilateur de combustion (alimentation du feu en air)
  - Ventilateur de convection (distribution de l'air chaud dans la pièce)
  - Ventilateur d'évacuation (extraction des gaz et fumées résiduelles)
  - Moteur de vis 1 (situé sous la trémie)
  - Moteur de vis 2 (alimentation du pot à combustion)

ATTENTION : RISQUE DE DÉCHARGE ÉLECTRIQUE. SI VOUS DEVEZ TESTER MANUELLEMENT, MANIPULER OU REMPLACER UNE COMPOSANTE, LE POÊLE DOIT ÊTRE DÉBRANCHÉ DE LA PRISE MURALE.

8.2 Vérifier une composante

Si vous soupçonnez qu'une composante électrique est défectueuse, vous pouvez la tester en suivant la procédure plus bas.

Notez que vous serez en mesure de tester les composantes seulement lorsque le poêle est éteint et que les composantes ne fonctionnent plus. (*Prenez note que les versions du logiciel donner plus bas est a titre d'exemple seulement et peux différer de votre modèle.)*

Branchez l'unité et lire la version du logiciel de la carte alphanumérique	
Afin de démarrer le mode test, pressez en même temps sur les icônes suivantes :	AUX
Les segments des afficheurs s'allument l'un après l'autre. Appuyez sur une touche pour continuer.	
À tour de rôle, chaque afficheur s'allume intégralement. Appuyez sur une touche pour continuer	
Chaque DEL s'allume à tour de rôle (de « OFF » à « vitesse 6 ». Appuyez sur une touche pour continuer	OFF MANUAL THERMOSTAT
Tous les afficheurs ainsi que les DEL s'allument simultanément. Appuyez sur une touche pour continuer	OFF MANUAL THERMOSTAT
Test des boutons. Appuyez sur le bouton MODE pour continuer.	
Appuyez sur le bouton RESET pour continuer.	
Appuyez sur le bouton AUX pour continuer.	
Appuyez sur le bouton pour continuer.	
Appuyez sur le bouton pour continuer.	

Appuyez sur le bouton pour continuer.	
La fréquence de la source électrique est affichée. Appuyez sur une touche pour continuer	
Le voltage de la source électrique est affiché. Appuyez sur une touche pour continuer	
Affiche si la polarité est positive ou négative. Appuyez sur une touche pour continuer	
La version du logiciel de la carte I/O est affichée. Appuyez sur une touche pour continuer	
Affiche la position des entrées et sorties. DEL OFF : Interrupteur de pression DEL MANUAL : Interrupteur de trémie DEL THERMOSTAT : Entrée thermostat VITESSE1 : (non utilisé) VITESSE2 : F160 VITESSE3 : L250 VITESSE4 : (non utilisé) VITESSE5 : Fusible de Vis2 VITESSE6 : Fusible d’allumeur Note : - Une lumière correspond à un circuit ouvert - Fusible défectueux = DEL ON Appuyez sur une touche pour continuer	
Démarrage de test pour la sortie SPARE. (SORTIE NON UTILISÉE ACTUELLEMENT). Appuyez sur une touche pour continuer.	
Test du « zero current » utilisé par la carte électronique. Appuyez sur une touche pour continuer.	

Affiche la température lue par la thermistance. Appuyez sur une touche pour continuer.	
Test du ventilateur de convection. Appuyez sur MODE pour continuer.	
Test du ventilateur de combustion. Appuyez sur MODE pour continuer.	
Test du ventilateur de d'évacuation. Appuyez sur MODE pour continuer.	
Test de l'allumeur. Appuyez sur MODE pour continuer.	
Test du moteur de vis1. Appuyez sur MODE pour continuer.	
Test du moteur de vis2. Appuyez sur MODE pour continuer.	
Valide la présence ou non d'une carte SD dans le port de reprogrammation. Appuyez sur une touche pour continuer	
Valide la fonctionnalité de l'EEPROM de la carte électronique. Appuyez sur une touche pour continuer	
Fin de la séquence du mode test. L'unité redémarre d'elle-même.	

8.3 Tableau des codes d’erreurs, leur causes et solutions

<u>ATTENTION</u> : RISQUE DE DÉCHARGE ÉLECTRIQUE. SI VOUS DEVEZ TESTER MANUELLEMENT, MANIPULER OU REMPLACER UNE COMPOSANTE, LE CORDON D’ALIMENTATION DOIT ÊTRE DÉBRANCHÉ DE LA PRISE MURALE.

Cette section contient les principaux codes d'erreur, les causes possibles et plusieurs pistes de solutions pour vous aider à les résoudre. Après avoir donné un code d'erreur, votre poêle s’arrêtera par lui-même et commencera un cycle de refroidissement. Si vous voulez repartir votre poêle, vous devrez appuyer sur le bouton, 

et ensuite sur le bouton 

. Votre poêle ne redémarrera que lorsque le cycle de refroidissement sera complété.

<u>NOTE</u> : SI, APRÈS AVOIR ESSAYÉ TOUTES LES SOLUTIONS POSSIBLES MENTIONNÉES DANS LA SECTION SUIVANTE, VOUS EXPÉRIMENTEZ TOUJOURS DES PROBLÈMES AVEC VOTRE POÊLE, CONTACTEZ VOTRE DÉTAILLANT LOCAL OU LE SOUTIEN TECHNIQUE AU 418-908-8002. VOUS POUVEZ AUSSI ENVOYER UN COURRIEL À tech@sbi-international.com. TOUS LES COURRIELS REÇUS SONT RÉPONDUS DANS UN DÉLAI DE 24 HEURES.

<u>NOTE</u> : SI VOUS DEVEZ CONTACTER VOTRE DÉTAILLANT OU LE FABRICANT, AYEZ EN MAIN LE NUMÉRO DE MODÈLE DE VOTRE POÊLE, AINSI QUE LE NUMÉRO DE SÉRIE À PORTÉE DE LA MAIN. CECI VOUS AIDERA À OBTENIR UN SERVICE PLUS RAPIDE. (LE NUMÉRO DE SÉRIE EST SITUÉ À L’INTÉRIEUR DU PANNEAU DE LA TRÉMIE).

CHARTE DES CODES D’AVERTISSEMENT	
MESSAGE	**AVERTISSEMENT CORRESPONDANT**
P	Avertissement engendré par le capteur de pression.
H	Avertissement engendré par le capteur de température L-250 automatique situé sur le boîtier de la vis.
E	Trémie vide.
L	Erreur d’allumage.
d	Avertissement engendré par l’ouverture du couvercle de la trémie pendant plus de 3 minutes.
N	Polarité inversée dans la prise de courant.
C	Avertissement engendré par une panne électrique.
I	Le fusible de l’allumeur sur le panneau de contrôle a brûlé.
A	Le fusible de la vis à granules a brûlé

8.3.1 Code P

LE POÊLE S'ÉTEINT ET LE CODE P APPARAÎT SUR LE PANNEAU DE CONTRÔLE	
Causes probables :	**Solutions possibles :** (débranchez d'abord le poêle)
1. Le tube du capteur de pression ou le connecteur du capteur de pression (situé sur le ventilateur d'évacuation) est obstrué.	Enlevez le tube d'air du connecteur de la cage du ventilateur d'évacuation et de la borne négative (blanche) du connecteur du capteur de pression. **Attention : Le tube doit absolument être débranché du capteur de pression afin de ne pas l'endommagé.** Soufflez dans le tube d'air. Si l'air passe normalement, le tube n'est pas obstrué. Si l'air ne passe pas, utilisez une mince tige d'acier pour débloquer le tube.
2. Le système d'évent est bloqué ou a besoin d'être nettoyé.	Une des composantes suivantes est obstruée ou bloquée par de la cendre ou par tout autre matériel : le clapet antiretour d'entrée d'air, le ventilateur de combustion, le pot de combustion, les échangeurs de chaleurs et les canalisations d'évacuation, le ventilateur d'évacuation et/ou le système d'évent. Référez-vous à la section de l'entretien.
3. Le tuyau d'évacuation n'est pas installé correctement.	Assurez-vous que l'installation du système d'évent est conforme à la section de l'installation de ce manuel ainsi qu'aux instructions d'installation du manufacturier du système d'évent.
4. Un retour d'air s'est produit dans le système d'évent.	Ceci peut se produire lors de journée avec de très grands vents ou si le système d'évent n'a pas la terminaison appropriée.
5. Les connexions du capteur de pression sont défectueuses ou débranchées.	Assurez-vous que les fils électriques du capteur de pression ne créent pas un court circuit et qu'ils ne sont pas débranchés. Remplacer ou rebrancher les fils au besoin.
6. Le tube d'air du capteur de pression est débranché.	Assurez-vous que le tube d'air est bien branché sur le connecteur de la cage du ventilateur d'évacuation et sur la borne négative (blanche) du connecteur du capteur de pression. Rebranchez-le au besoin.

7. Le ventilateur d'évacuation ou de combustion est défectueux.	Voir **Section 8.2 : Vérifier *une composante*** et testez le ventilateur d'évacuation et le ventilateur de combustion indépendamment. S'il l'un d'eux ne fonctionne pas, assurez-vous que le courant se rende bien aux ventilateurs en vérifiant les connexions. Si les connexions sont adéquates, et que les ventilateurs ne fonctionnent toujours pas, vérifiez les fusibles F4 et F5 sur le panneau de contrôle. Un fusible défectueux sera noirci ou aura le filament sectionné. Si les fusibles sont intacts, le ventilateur de combustion ou d'évacuation est probablement défectueux, remplacez-le.
8. Le capteur de pression est défectueux (très rare).	Même si cette situation est peu probable, il se peut que le capteur de pression soit défectueux. Afin de tester le capteur de pression, vous devrez débrancher l'extrémité du tube d'air qui est branché sur le connecteur de la cage du ventilateur. Conservez l'autre extrémité du tube d'air branché au capteur de pression. **Aspirez** délicatement dans l'extrémité du tube d'air. Si vous entendez un « clic », le capteur de pression fonctionne. **Soyez prudent de ne pas aspirer trop fort. Cela pourrait endommager le capteur de pression.**

8.3.2 Code H

LE POÊLE CESSE D'ALIMENTER LE POT EN GRANULES ET LE CODE H APPARAÎT SUR LE PANNEAU DE CONTRÔLE. AVANT DE RÉINITILISER VEUILLEZ LIRE LES CAUSES POSSIBLE ET ENSUITE APPUYER SUR RESET ET MODE EN MÊME TEMPS POUR 2 SECONDES.	
Causes possibles :	**Solutions possibles :**
1. Un combustible non approprié est utilisé.	Retirez le pot de combustion, assurez-vous que toutes les ouvertures sont dégagées et vérifiez qu'il n'y a pas de cendre dans le tube autour de l'allumeur. Reportez-vous à la section entretien (voir la **Section 4.8.1 : *Types de granules recommandés***.)

2. Le système d’évent est mal installé.	Assurez-vous que le système d’évent est conforme aux critères de la **Section 4 : *Système d’évent*** ainsi qu’aux instructions du fabricant du système d’évent.
3. Le système d’évent est bloqué ou a besoin de nettoyage.	L'un des éléments suivants est obstrué ou bloqué; adaptateur d'entrée d'air, le ventilateur de combustion, le pot de combustion, les échangeurs et canalisations d’évacuation, le ventilateur d'évacuation et/ou le système d’évent. Reportez-vous à la **Section 7 : *Entretien***.
4. Le poêle a besoin d’entretien.	Reportez-vous à la **Section 7 : *Entretien***.
5. Le pot de combustion n'est pas installé correctement.	Assurez-vous que le pot de combustion est bien installé (voir **Section 7.1.4 : *Nettoyage du pot de combustion***.)
6. Le coupe-feu n’est pas installé correctement ou est bouché.	Assurez-vous que le coupe-feu soit bien installé et barré en place. Assurez-vous que les trous sont dégagés. (voir **Section 7.1.2 : *Nettoyage du coupe-feu, des échangeurs de chaleur et la chambre à combustion.)***
7. Le ventilateur de convection est défectueux.	Voir **Section 8.2 : *Vérifier une composante*** et tester le ventilateur de convection.
8. Le ventilateur de convection a besoin d'entretien.	Nettoyez soigneusement la cage du ventilateur et assurez-vous que les pales du ventilateur ne sont pas bloquées.
9. Le ventilateur d’évacuation est défectueux.	Voir **Section 8.2 *Vérifier une composante*** et tester le ventilateur d’évacuation.

<u>NOTE</u>: SI LE CODE S'AFFICHE PLUS DE TROIS FOIS, LE CODE D'ERREUR SE VERROUILLERA.

CE POÊLE EST ÉQUIPÉ DE PLUSIEURS DISPOSITIFS QUI ASSURENT VOTRE SÉCURITÉ. SI LES ALERTES DE CODE D'ERREUR ARRÊTENT VOTRE POÊLE DE FONCTIONNER À PLUSIEURS REPRISES, IL Y A DE FORTES CHANCES QUE L'ÉVACUATION NE SE FAIT PAS CORRECTEMENT.

<u>Avant de réinitialiser votre carte électronique qui affiche un code d'erreur faite l'entretien COMPLET du poêle tel que décrit dans ce manuel.</u>

<u>Pour un code de surchauffe</u>

- **Faite l'entretien du poêle COMPLET tel que décrit dans ce manuel. Reportez-vous à la Section 7 : *Entretien*.**
- **Vérifier au complet le système d'évent.**

<u>UNE FOIS L'ENTRETIEN EFFECTUÉ ET LE SYSTÈME D'ÉVENT VÉRIFIÉS, SUIVRE CES INDICATIONS</u>

Appuyer sur les boutons suivant dans la séquence donner (un seul bouton à la fois).

« Reset » 

ensuite « Mode » 

ensuite « + » 
ensuite « - » 
et garder appuyer le bouton « Auxiliaire » 

pendant 3 secondes. L'appareil se réinitialisera.

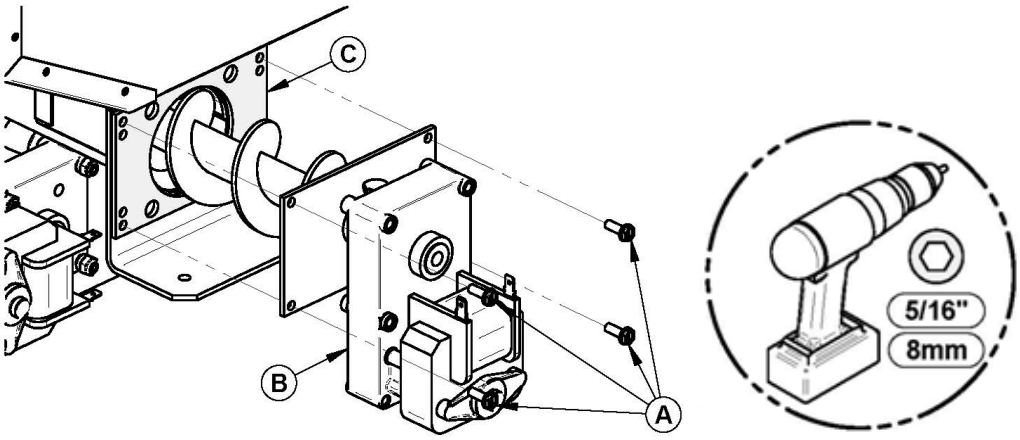
8.3.3 Code E

LE POÊLE S'ÉTEINT ET LE CODE E APPARAÎT SUR LE PANNEAU DE CONTRÔLE	
Causes possibles :	**Solutions possibles :** (Débranchez d'abord le poêle lorsque possible)
1. Le poêle à manquer de granule.	Remplir la trémie. Effacer le code d'erreur et appuyer sur le bouton vis sans fin (voir **Section 5.1.2 : *Bouton d'alimentation en granules***).
2. Les trous du pot de combustion sont bouchés.	Retirez le pot de combustion et nettoyez-le. Référez-vous à la section de l'entretien de ce manuel.
3. L'entrée d'air, les conduits internes de la chambre à combustion ou le système d'évacuation sont partiellement bloqués.	Suivre les instructions de nettoyage contenues dans ce manuel.
4. Une ou les deux vis sans fin sont coincées ou un des moteurs de vis sans fin est défectueux.	Voir **section 8.2 : *Vérifier une composante*** et testez les moteurs de vis indépendamment. Assurez-vous que le panneau de la trémie est fermé. Si un des moteurs ne semble pas fonctionner, vérifiez si le moteur est défectueux ou si la vis est coincée. Si le moteur de la vis semble défectueux, vérifiez les connexions électriques et assurez-vous que les fusibles F2 et F6 sur le panneau de contrôle ne sont pas endommagés. Un fusible défectueux sera noirci ou aura le filament sectionné. Si les fusibles sont intacts, la vis pourrait être coincée par un objet quelconque. Si la vis est coincée, retirez-la de son tube (voir dessin plus bas). **NOTE : SI LA DÉFECTUOSITÉ PROVIENT DU MOTEUR OU DE LA VIS DE LA TRÉMIE, AFIN D'ÉVITER UN DÉVERSEMENT DE GRANULES, VIDEZ LA TRÉMIE DE SON CONTENU.** Pour ce faire, débranchez la connexion électrique du moteur et dévissez les quatre vis du moteur. Pour avoir un accès plus facile, enlevez le panneau arrière du poêle. Sortez la vis de son tube. Lorsque la vis est enlevée, assurez-vous qu'elle est droite et que sa surface n'est pas endommagée, qu'il n'y a pas de bavures ou de soudures brisées. Enlevez tout objet qui aurait pu causer le blocage de la vis. Vérifiez le tube de la vis afin de détecter la présence de dommages comme des bavures, des aspérités ou des rainures dans l'acier. Bien nettoyer le tube et s'assurer d'enlever toute la poussière de granules.

5. Le thermistor ne fonctionne plus.	Le thermistor est situé sur la cage d'évacuation du ventilateur de combustion/évacuation. Son rôle est de s'assurer que le poêle s'est correctement allumé en mesurant la température des gaz d'évacuation. Le poêle n'alimentera pas le pot en granules selon le niveau d'intensité sélectionné tant que le thermistor n'aura pas été activé. Si le thermistor ne fonctionne pas, le poêle cessera de fonctionner après le cycle d'allumage. Pour afficher la température lu par le thermistor appuyer sur le + et vis sans fin pour 3 secondes. Valider que la température affichée est une valeur équivalente à la température ambiante dans la pièce où est installé l'appareil. Si c'est le cas, mettez en marche le poêle et vérifiez cette même température. Si après 10 minutes, la valeur n'a pas augmenté malgré que l'appareil est en fonction, cela signifie que la sonde de température est débranchée ou défectueuse. Si la température monte, la problématique peut venir de la vitesse de l'alimentation ou du mode pilote. Compte tenu de plusieurs facteurs (température ambiante, qualité du combustible, etc.), la chaleur produite par le poêle peut ne pas être suffisante pour garder la température à l'évacuation assez haute. Pour régler cette situation, augmenter la vitesse de l'alimentation (voir **Section 5.2.1 : *Réglage du niveau de combustion (production de chaleur)***).

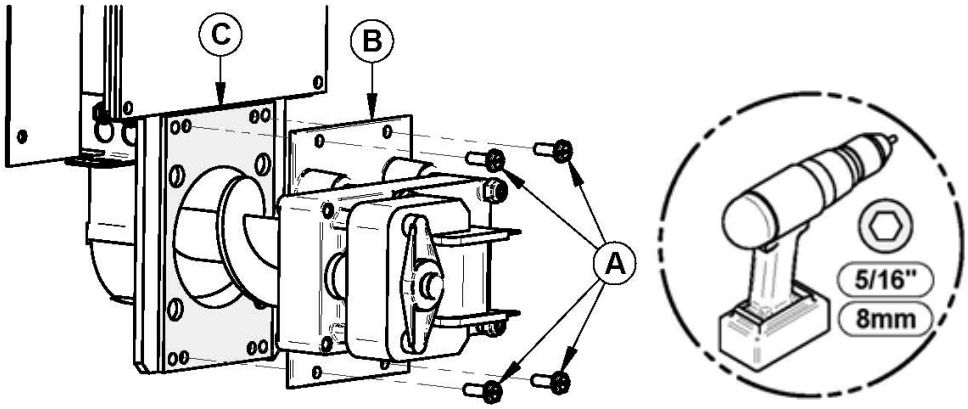
NOTE : SI LA DÉFECTUOSITÉ PROVIENT DU MOTEUR OU DE LA VIS DE LA TRÉMIE, AFIN D'ÉVITER UN DÉVERSEMENT DE GRANULES, VIDEZ LA TRÉMIE DE SON CONTENU.

VIS DE TRÉMIE



A	Vis
B	Assemblage du moteur et de la vis sans fin
C	Joint d’étanchéité

VIS DU POT



A	Vis
B	Assemblage du moteur et de la vis sans fin
C	Joint d’étanchéité

8.3.4 Code L

LE POÊLE ALIMENTE LE POT EN GRANULES, MAIS N'ALLUME PAS. UN CODE L APPARAÎT SUR LE PANNEAU DE CONTRÔLE	
Causes possibles	**Solutions possibles**
1. Le combustible utilisé est de mauvaise qualité.	Retirez le pot de combustion et nettoyez-le. Assurez-vous que les trous ne sont pas obstrués et que le tube autour de l'allumeur n'est pas rempli de cendres. Référez-vous à la section de l'entretien de ce manuel. De plus, assurez-vous que le combustible utilisé est de bonne qualité. Référez-vous à la **Section 4.8.1 : *Types de granules recommandés***.
2. L'allumeur est défectueux.	Voir **Section 8.2 : *Vérifier une composante*** et testez l'allumeur. S'il fonctionne correctement, en moins de deux minutes, l'extrémité devrait devenir rouge. Sinon, vérifiez les connexions et le fusible F3. Si tout semble correct, débranchez l'allumeur et vérifiez sa résistance (ohm, Ω) avec un multimètre. Si la valeur est près de zéro, remplacez l'allumeur.
3. Le thermistor ne fonctionne plus.	Le thermistor est situé sur la cage d'évacuation du ventilateur de combustion/évacuation. Son rôle est de s'assurer que le poêle s'est correctement allumé en mesurant la température des gaz d'évacuation. Le poêle n'alimentera pas le pot en granules selon le niveau d'intensité sélectionné tant que le thermistor n'aura pas été activé. Si le thermistor ne fonctionne pas, le poêle cessera de fonctionner après le cycle d'allumage. Pour afficher la température lu par le thermistor appuyer sur le + et vis sans fin pour 3 secondes. Valider que la température affichée est une valeur équivalente à la température ambiante dans la pièce où est installé l'appareil. Si c'est le cas, mettez en marche le poêle et vérifiez cette même température. Si après 10 minutes, la valeur n'a pas augmenté malgré que l'appareil est en fonction, cela signifie que la sonde de température est débranchée ou défectueuse. Si la température monte, la problématique peut venir de la vitesse de l'alimentation ou du mode pilote. Compte tenu de plusieurs facteurs (température ambiante, qualité du combustible, etc.), la chaleur produite par le poêle peut ne pas être suffisante pour garder la température à l'évacuation assez haute. Pour régler cette situation, augmenter la vitesse de l'alimentation (voir **Section 5.2.2 : *Ajustement de la vitesse du ventilateur de convection***).

8.3.5 Code d

LE POÊLE CESSE D'ALIMENTER LE POT EN GRANULES ET LE CODE d APPARAÎT SUR LE PANNEAU DE CONTRÔLE	
Causes possibles :	**Solutions possibles :**
1. Le couvercle de la trémie est demeuré ouvert pendant plus de 3 minutes.	Une protection est programmée dans le panneau de contrôle afin d'empêcher la vis à granules de tourner dès que le couvercle de la trémie s'ouvre. La vis se remet à tourner dès que le couvercle est fermé. Cependant, si le couvercle demeure ouvert pendant plus de 3 minutes continues, le poêle cessera de fonctionner et le code « d » apparaîtra sur le panneau de contrôle. Fermez le couvercle. Appuyez sur « reset » et démarrez l'appareil.
2. L'interrupteur du couvercle de la trémie est défectueux ou mal connecté.	Assurez-vous que l'interrupteur est correctement connecté. Si c'est le cas, l'interrupteur de la trémie est peut-être défectueux. Vérifiez la fonctionnalité de l'interrupteur (voir **Section 8.2 : *Vérifier une composante***.) Remplacez-le si nécessaire.

8.3.6 Code N

LE POÊLE FONCTIONNE MAIS DONNE LE CODE N SUR LE PANNEAU DE CONTRÔLE	
Causes possibles :	**Solutions possibles :**
1. Le raccordement de la prise électrique murale ou sur le même circuit électrique est inversé donnant une polarité inversée.	Tester et faire le raccordement adéquat.
2. Mise à la terre (ground) inexistante ou non branché dans la prise électrique murale.	Tester et faire le raccordement adéquat du fils d'alimentation et/ou corriger le branchement de la mise à terre de l'appareil.

8.3.7 Code C

LE POÊLE FONCTIONNE, MAIS AFFICHE LE CODE D'ERREUR C	
Cause possible :	**Solution possible :**
Erreur produit par une panne de courant alors que le poêle était en fonction.	Le poêle redémarre sur le réglage initial une fois qu'il se refroidit. Appuyez sur « reset » pour effacer le code d'erreur. Note : Pour une panne de courant de courte durée (moins de 5 secondes), le poêle continuera à fonctionner à la vitesse sélectionnée.

8.3.8 Code I

LE POÊLE ALIMENTE LE POT EN GRANULES, MAIS N'ALLUME PAS. LE CODE APPARAÎT SUR LE PANNEAU DE CONTRÔLE. I	
Causes possibles	**Solutions possibles**
1. Le fusible de l'allumeur sur le panneau de contrôle a brûlé car l'allumeur est défectueux.	Vérifiez que vous mesurez une résistance (ohm, Ω) avec un multimètre. Si la valeur est près de zéro remplacez l'allumeur et le fusible F3.
2. Il y a eu un court-circuit dans les connexions du harnais.	Vérifiez le câblage électrique et faites remplacer les fils ou les connecteurs défectueux. Assurez-vous que les fils ne créent pas un court-circuit avec la structure du poêle. Remplacez le fusible F3. Voir **Section 8.2 : *Vérifier une composante*** et testez l'allumeur. S'il fonctionne correctement, en moins de deux minutes, l'extrémité devrait devenir rouge.

8.3.9 Code A

LE POÊLE DÉMARRE, MAIS N'ALIMENTE PAS DE GRANULE. LE CODE A APPARAÎT SUR LE PANNEAU DE CONTRÔLE.	
Causes possibles	**Solutions possibles**
1. Une vis sans fin est coincée ou un moteur de vis sans fin est défectueux.	Voir **Section 8.2 : *Vérifier une composante*** et testez les moteurs de vis indépendamment. Assurez-vous que le panneau de la trémie est fermé. Si un des moteurs ne semble pas fonctionner, vérifiez si le moteur est défectueux ou si la vis est coincée. Si le moteur de la vis semble défectueux, vérifiez les connexions électriques et assurez-vous que les fusibles F2 et F6 sur le panneau de contrôle ne sont pas endommagés. Un fusible défectueux sera noirci ou aura le filament sectionné. Si les fusibles sont intacts, la vis pourrait être coincée par un objet quelconque. Si la vis est coincée, retirez-la de son tube (voir dessin **Section 8.3.3 : *Code E***). **NOTE : SI LA DÉFECTUOSITÉ PROVIENT DU MOTEUR OU DE LA VIS DE LA TRÉMIE, AFIN D'ÉVITER UN DÉVERSEMENT DE GRANULES, VIDEZ LA TRÉMIE DE SON CONTENU.** Pour ce faire, débranchez la connexion électrique du moteur et dévissez les quatre vis du moteur. Pour avoir un accès plus facile, enlevez le panneau arrière du poêle. Sortez la vis de son tube. Lorsque la vis est enlevée, assurez-vous qu'elle est droite et que sa surface n'est pas endommagée, qu'il n'y a pas de bavures ou de soudures brisées. Enlevez tout objet qui aurait pu causer le blocage de la vis. Vérifiez le tube de la vis afin de détecter la présence de dommages comme des bavures, des aspérités ou des rainures dans l'acier. Bien nettoyer le tube et s'assurer d'enlever toute la poussière de granules.
2. Il y a eu un court-circuit dans les connexions du harnais.	Vérifiez le câblage électrique et faites remplacer les fils ou les connecteurs défectueux. Assurez-vous que les fils ne créent pas un court-circuit.

8.3.10 Odeur de fumée

UNE ODEUR DE FUMÉE EST PRÉSENTE DANS LA PIÈCE	
Causes possibles :	**Solutions possibles :**
1. Il y a une fuite dans le système d'évacuation.	Le système d'évent est pressurisé. Inspectez toutes les connexions du système d'évent et assurez-vous que tous les joints sont scellés et attachés conformément aux instructions du fabricant du système d'évent. Ceci assurera une performance constante et évitera que la fumée fuie dans la pièce (voir **Section 4.5.1 :** ***Rappel des avertissements, mise en garde et recommandations***).
2. Joints d'étanchéités usés.	Un joint est peut-être endommagé (Portes, couvercle d'accès pour nettoyage, etc). Assurez-vous que tous les joints sont en bon état et les remplacer par des pièces d'origine si nécessaire. Assurez-vous que toutes les portes sont bien ajustées (voir **Section 7.1.10 :** ***Ajustement de porte***).
3. La pression négative.	Une faible odeur de bois lors de l'allumage ou l'arrêt est normale. Toutefois, si cette odeur est de plus en plus forte ou si vous remarquez une accumulation de suie inhabituelle sur les murs ou meubles, vérifiez votre système d'évent avec soin pour détecter les fuites et assurez-vous que tous les joints sont étanches. Le ventilateur d'évacuation produit une pression négative dans la pièce. Il aspire l'air de l'intérieur vers l'extérieur. De la même manière, d'autres appareils peuvent également créer une plus grande pression négative. Dans le cas où l'air s'écoule naturellement du point de haute pression vers le point de basse pression, l'impact d'une pression négative plus grande peut tirer la fumée de l'intérieur du poêle vers la pièce. D'autres appareils de ventilation mécanique peuvent également générer une pression négative et affecter le poêle ce qui provoque le même effet élaboré précédemment. L'utilisation d'un apport d'air frais permettra de prévenir et/ou minimiser l'impacte d'une pression négative (voir **Annexe D:** ***Apport d'air de combustion***.) De plus, assurez-vous que le calendrier d'entretien recommandé a été suivi.

8.3.11 Moteur de vis arrête pour un instant

LE MOTEUR DE VIS CESSE D'ALIMENTER LE POT EN GRANULES ET SE REMET À FONCTIONNER.	
Causes possibles :	**Solutions possibles :**
1. Le moteur de vis surchauffe et active le protecteur thermique intégré au moteur.	Il est possible que une des vis à granule est coincée. Retirez-la de son tube (voir dessin **Section 8.3.3 : *Code E***). **NOTE : SI LA DÉFECTUOSITÉ PROVIENT DU MOTEUR OU DE LA VIS DE LA TRÉMIE, AFIN D'ÉVITER UN DÉVERSEMENT DE GRANULES, VIDEZ LA TRÉMIE DE SON CONTENU.** Pour ce faire, débranchez la connexion électrique du moteur et dévissez les quatre vis du moteur. Pour avoir un accès plus facile, enlevez le panneau arrière du poêle. Sortez la vis de son tube. Lorsque la vis est enlevée, assurez-vous qu'elle est droite et que sa surface n'est pas endommagée, qu'il n'y a pas de bavures ou de soudures brisées. Enlevez tout objet qui aurait pu causer le blocage de la vis. Vérifiez le tube de la vis afin de détecter la présence de dommages comme des bavures, des aspérités ou des rainures dans l'acier. Bien nettoyer le tube et s'assurer d'enlever toute la poussière de granules.

8.3.12 Brule mal ou la vitre noirci

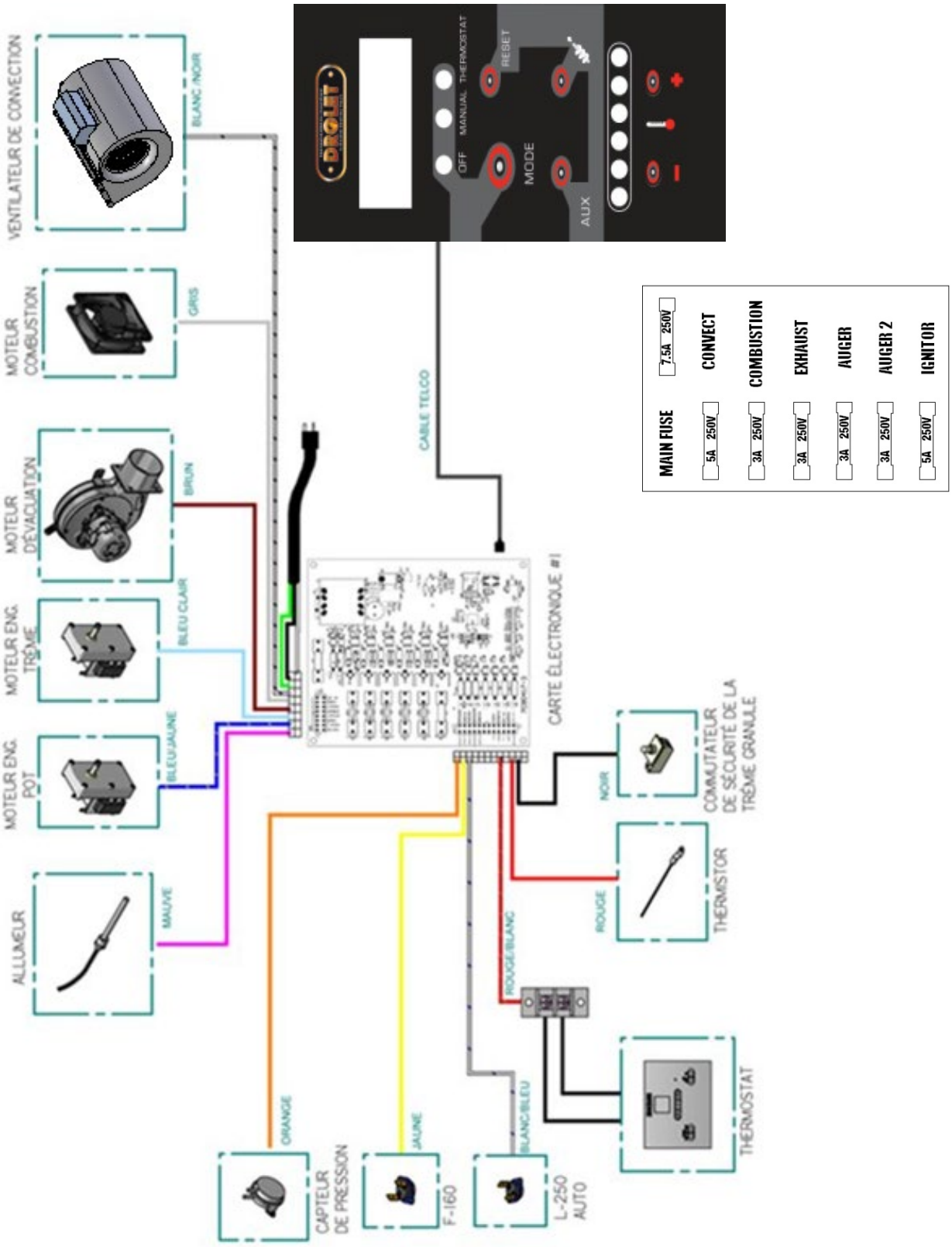
• **LA VITRE SE SALI RAPIDEMENT** • **LA FLAMME EST MOLLE, FONCÉE ET FUMEUSE** • **LE POT DÉBORDE RAPIDEMENT APRÈS QUE LE POÊLE AIT FONCTIONNÉ QUELQUE TEMPS**	
Causes possibles :	**Solutions possibles :**
1. Le système d'évent n'est pas installé correctement.	Reportez-vous à la **Section 7 : *Entretien***.
2. Le système d'évent n'est pas installé correctement.	Assurez-vous que le système d'évent est conforme aux critères de la section d'installation de ce manuel ainsi que les instructions du fabricant.
3. Un combustible non approprié est utilisé.	Retirez le pot de combustion, assurez-vous que toutes les ouvertures sont non obstruées et vérifiez qu'il n'y a pas de cendre dans le tube autour de l'allumeur. Reportez-vous à la **Section 7 : *Entretien*** (voir aussi **Section 4.8.1 : *Types de granules recommandés***).

4. Le canal d'entrée d'air est bouché.	Inspectez visuellement la canalisation d'admission d'air qui conduit au pot de combustion et voyez à ce qu'aucune matière étrangère ne s'y trouve. Assurez-vous que le clapet anti-retour d'admission d'air est fonctionnel et libre de toute obstruction.
5. Le ventilateur de combustion ou d'évacuation est défectueux.	Voir **Section 8.2 : *Vérifier une composante*** et testez les ventilateurs de combustion et d'évacuation indépendamment. S'il l'un d'eux ne fonctionne pas, assurez-vous que le courant se rende bien aux ventilateurs en vérifiant les connexions. Si les connexions sont adéquates, et que les ventilateurs ne fonctionnent toujours pas, vérifiez les fusibles F4 et F5 sur le panneau de contrôle. Un fusible défectueux sera noirci ou aura le filament sectionné. Si les fusibles sont intacts, le ventilateur de combustion ou d'évacuation est probablement défectueux, remplacez-le.

8.3.13 Pas d'affichage

• **Le panneau d'affichage n'indique aucune information.**	
Causes possibles :	**Solutions possibles :**
1. Il n'y a pas de courant alimentant le poêle.	Vérifiez si le poêle est branché et s'il y a du courant dans la prise murale. Vérifiez si le fusible F7 est bon. Remplacez-le si nécessaire.
2. Le fil TELCO est défectueux ou n'est pas correctement branché.	Les ventilateurs de convection, de combustion et d'évacuation ainsi que le moteur de vis au niveau du pot de combustion vont démarrer, mais le poêle émettra un bip continu. Vérifiez la connexion en le panneau de contrôle et la carte électronique. Remplacer le fil si nécessaire.

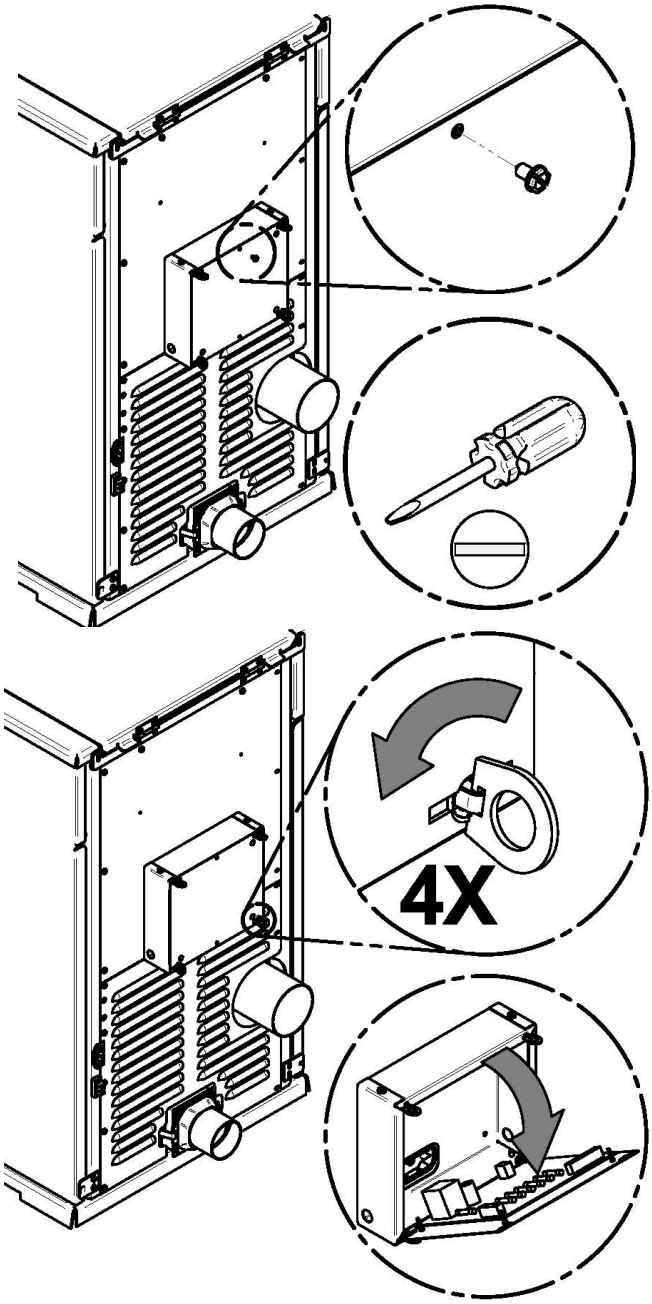
9 Schéma électrique

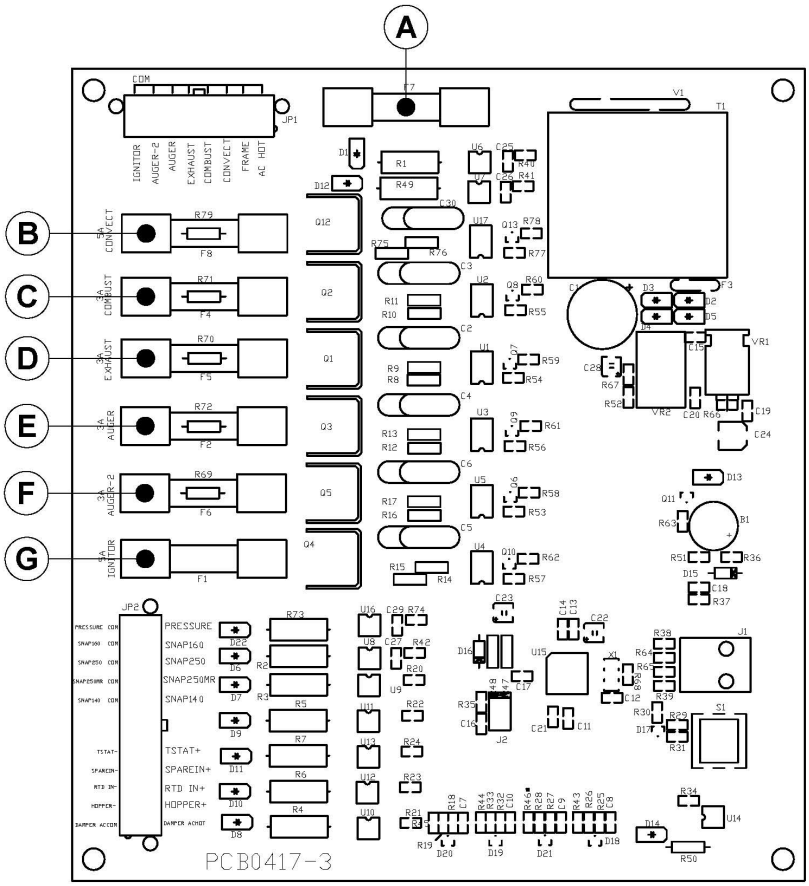


10 Accès aux fusibles

AVERTISSEMENT : **DÉBRANCHEZ LE POÊLE AVANT DE CHANGER LES FUSIBLES**.

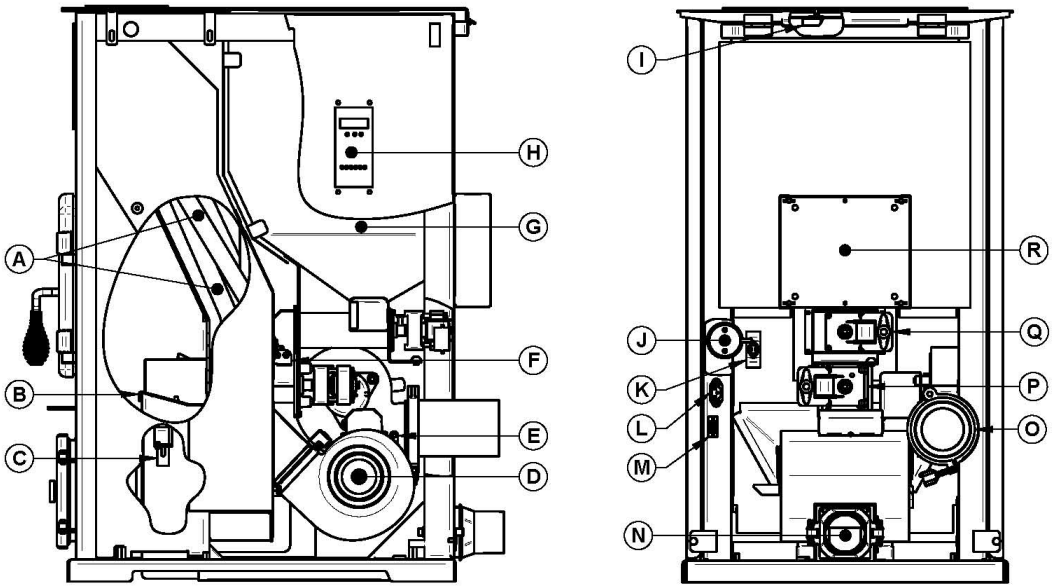
Tous les fusibles sont situés à l'intérieur du boîtier de la carte électronique, le boîtier est situé à l'arrière de votre poêle. Débranchez votre poêle, dévisser la vis et tournez les quatre (4) attaches à ressort pour ouvrir le boîtier.





LETTRE	FONCTION DU FUSIBLE	AMPÉRAGE
A	FUSIBLE PRINCIPAL DE LA CARTE	7.5A
B	VENTILATEUR DE CONVECTION	5A
C	VENTILATEUR DE COMBUSTION	3A
D	VENTILATEUR D’ÉVACUATION	3A
E	VIS SANS FIN DU HAUT #1	3A
F	VIS SANS FIN DU BAS #2	3A
G	ALLUMEUR	5A

11 Localisation des composantes

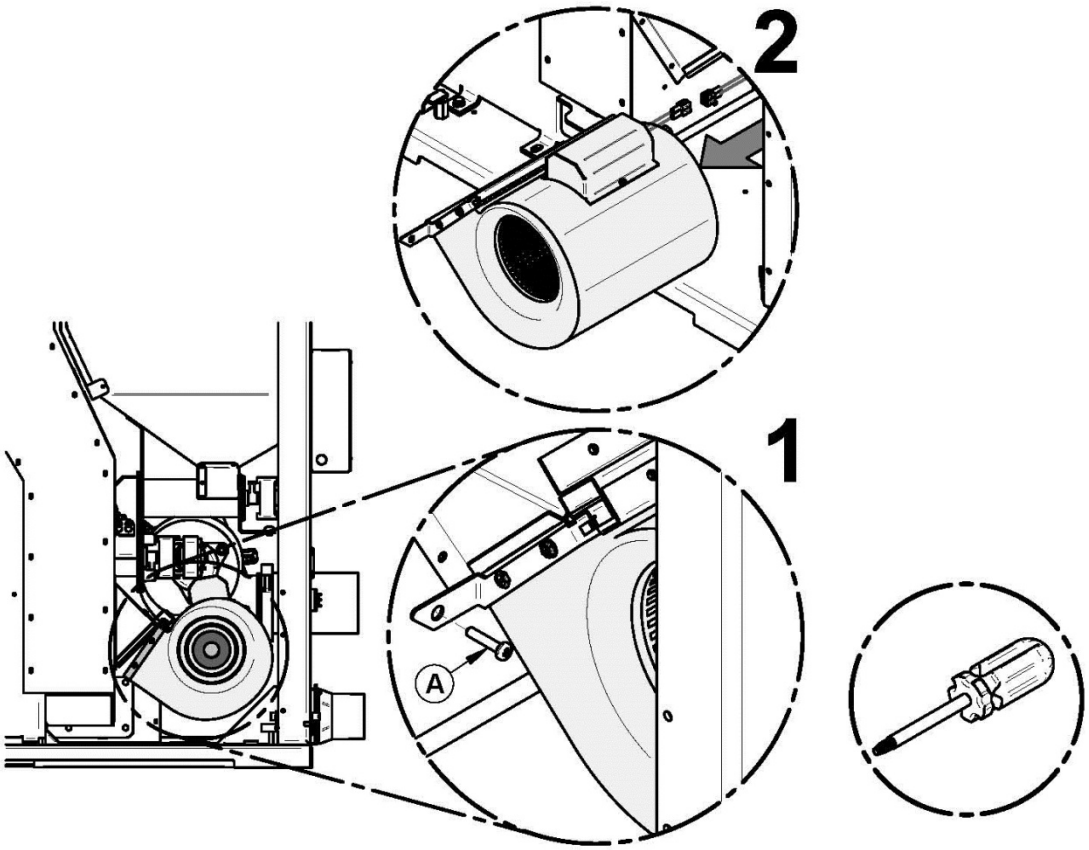


LETTRE	COMPOSANTE
A	TUBES D’ÉCHANGEUR DE CHALEUR
B	POT À COMBUSTION
C	ALLUMEUR
D	VENTILATEUR DE CONVECTION
E	THERMISTOR
F	INTERRUPTEUR THERMIQUE L-250
G	TRÉMIE
H	PANNEAU DE CONTRÔLE
I	BOUTON DE SÉCURITÉ À TRÉMIE
J	CAPTEUR DE PRESSION
K	INTERRUPTEUR THERMIQUE F-160
L	PRISE POUR CORDON D’ALIMENTATION
M	BORNIER DU THERMOSTAT
N	ENTRÉE D’AIR FRAIS/VENTILATEUR DE COMBUSTION
O	VENTILATEUR D’ÉVACUATION
P	VIS SANS FIN DU BAS #2
Q	VIS SANS FIN DU HAUT #1
R	CARTE ÉLECTRONIQUE

12 Remplacement des ventilateurs

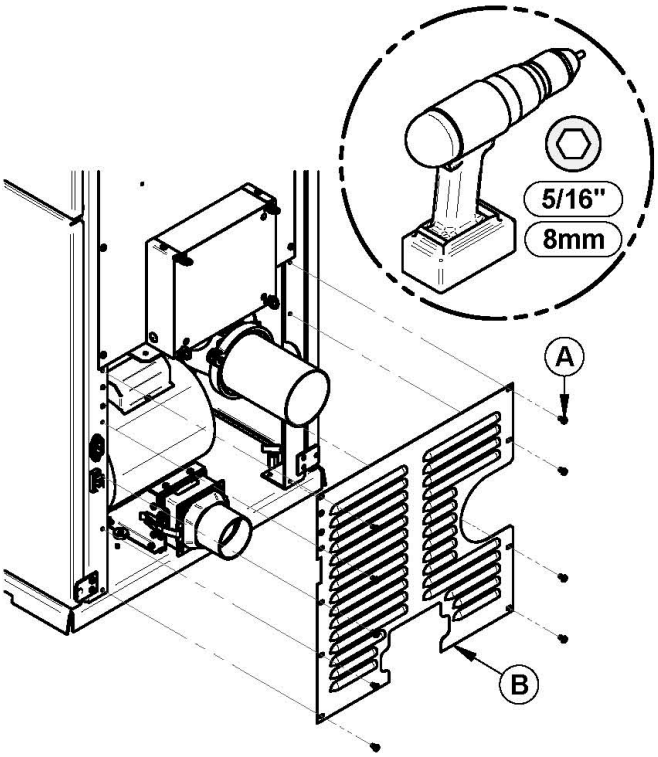
VENTILATEUR DE CONVECTION

Dévissez la vis A **(1)**, pivotez légèrement le ventilateur vers le haut et glissez le partiellement **(2)**. Déconnectez le ventilateur de l’harnais puis retirez le complètement.

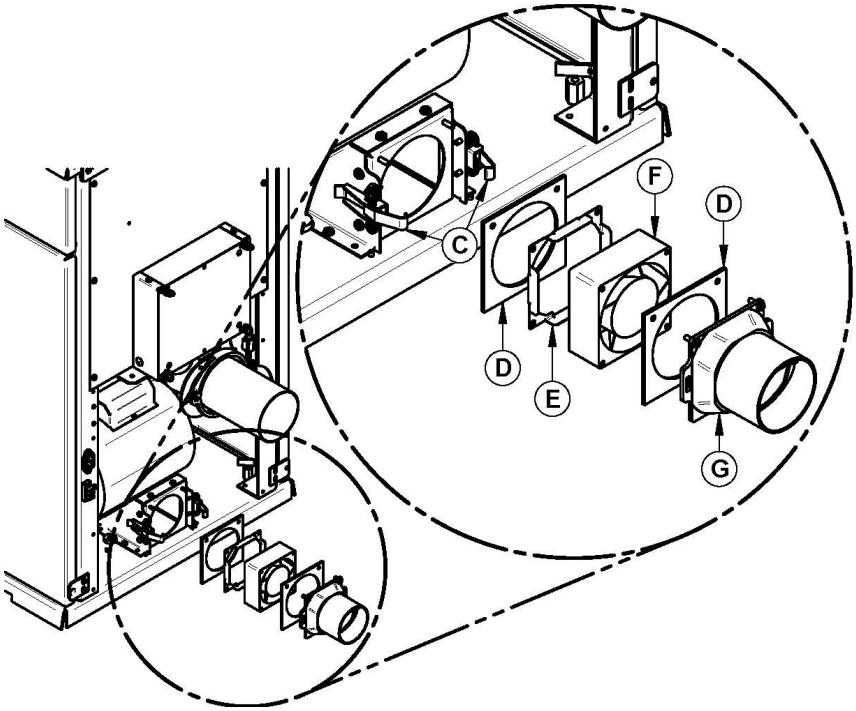


VENTILATEUR DE COMBUSTION

Retirez les 9 vis **(A)** et la grille du dos **(B).**

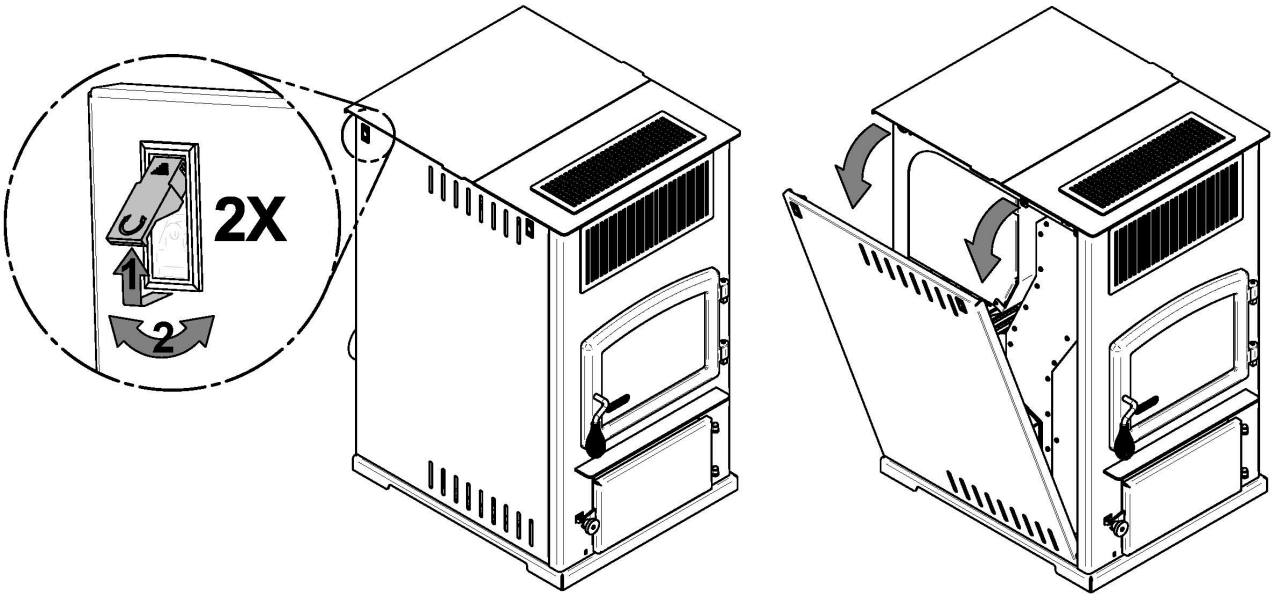


Par la suite, déclenchez les attaches à tension **(C)**. Décrochez le clapet anti-retour **(G)** puis le joint d'étanchéité **(D).** Vous pouvez ensuite retirez le ventilateur de combustion **(F)** et le débrancher du harnais. Finalement, retirez le bouchon **(E)** du ventilateur.

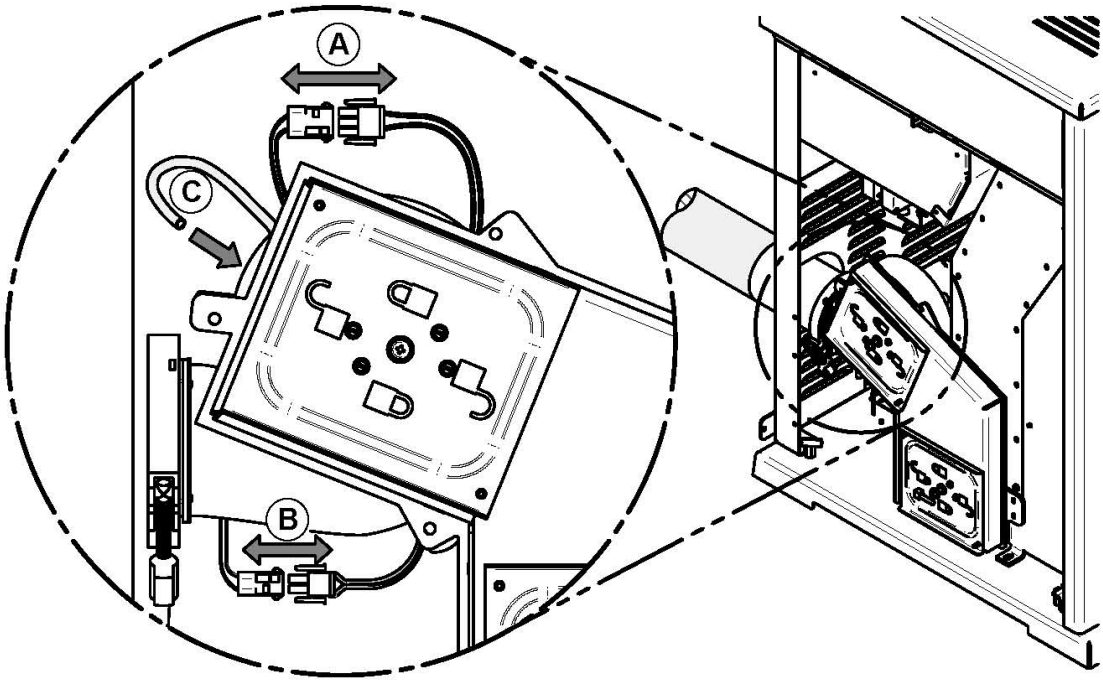


VENTILATEUR D’ÉVACUATION

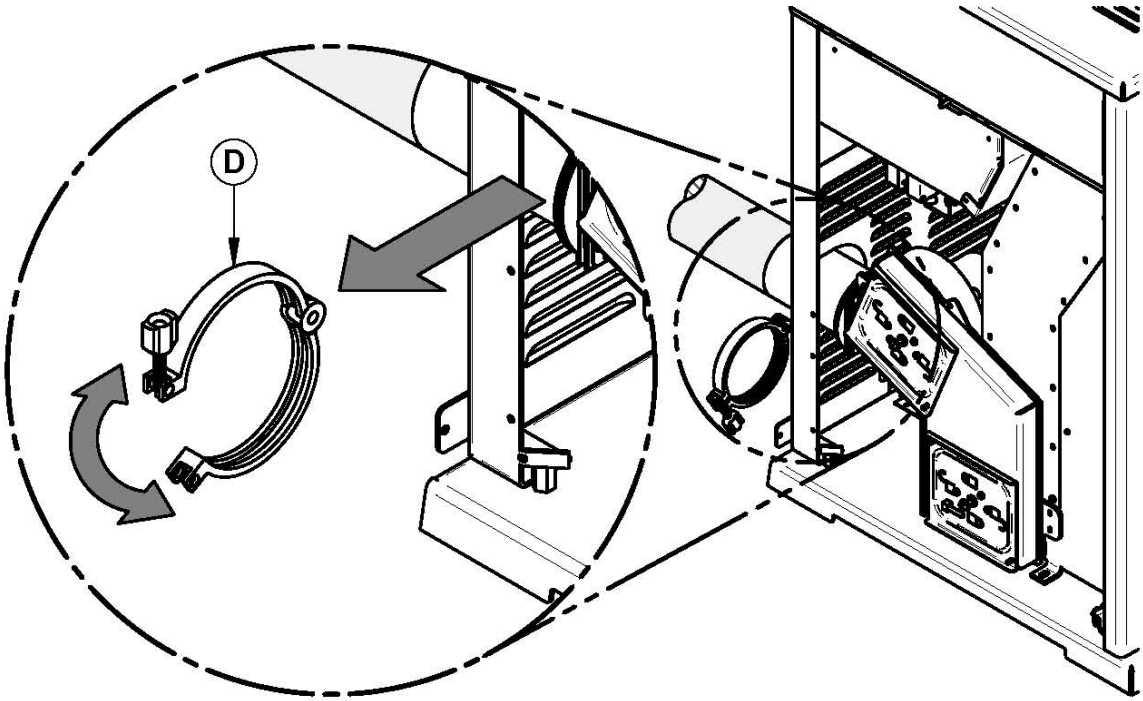
Retirer panneau gauche.



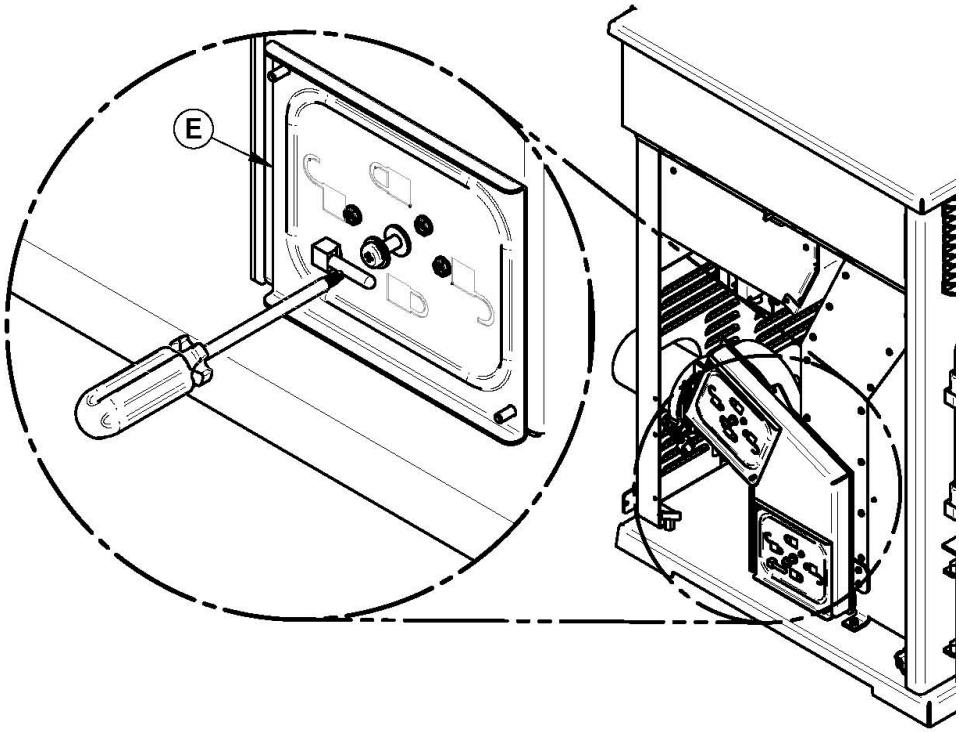
Débrancher les connexions **(A)** et **(B).** Débrancher le tube de silicone **(C).**



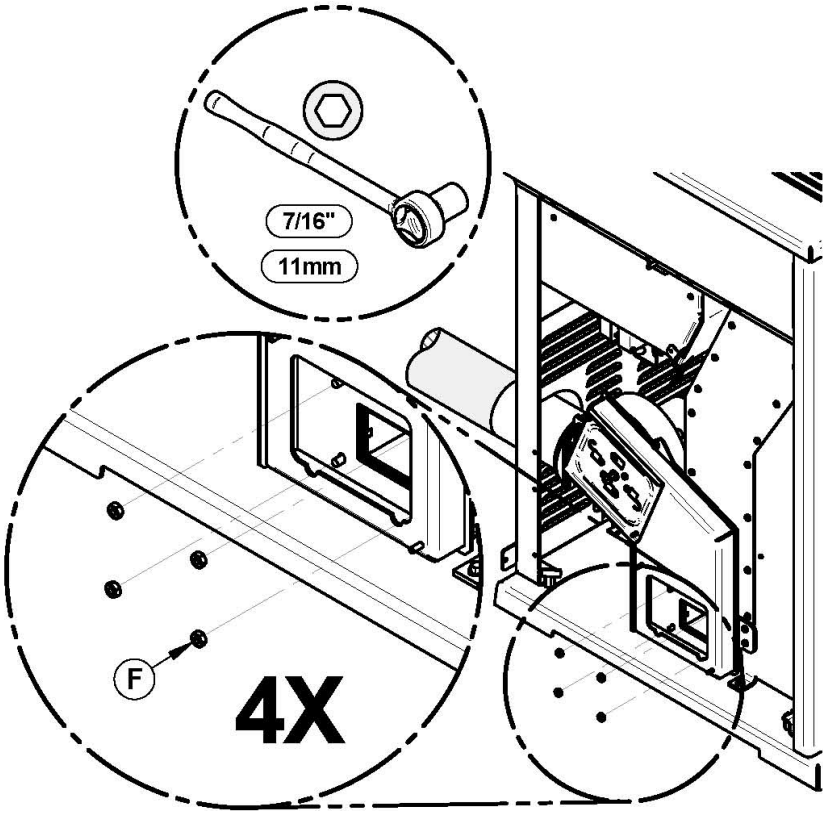
Enlever l’attache **(D).**



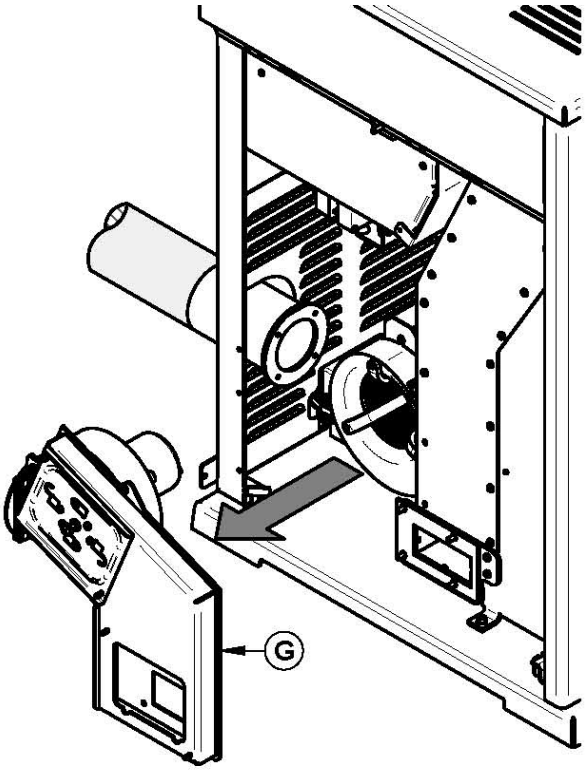
Débarrer et retirer la plaque d’accès **(E)** à l’aide d’un tournevis étoile.



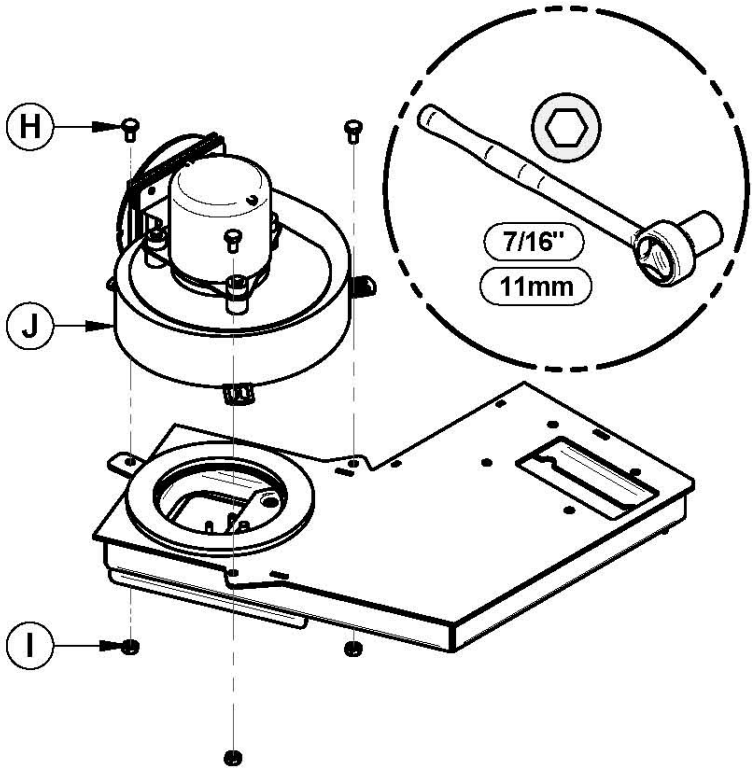
Enlever les écrous **(F)** dans l’ouverture de la trappe d’accès.



Enlever la canalisation assemblée **(G).**



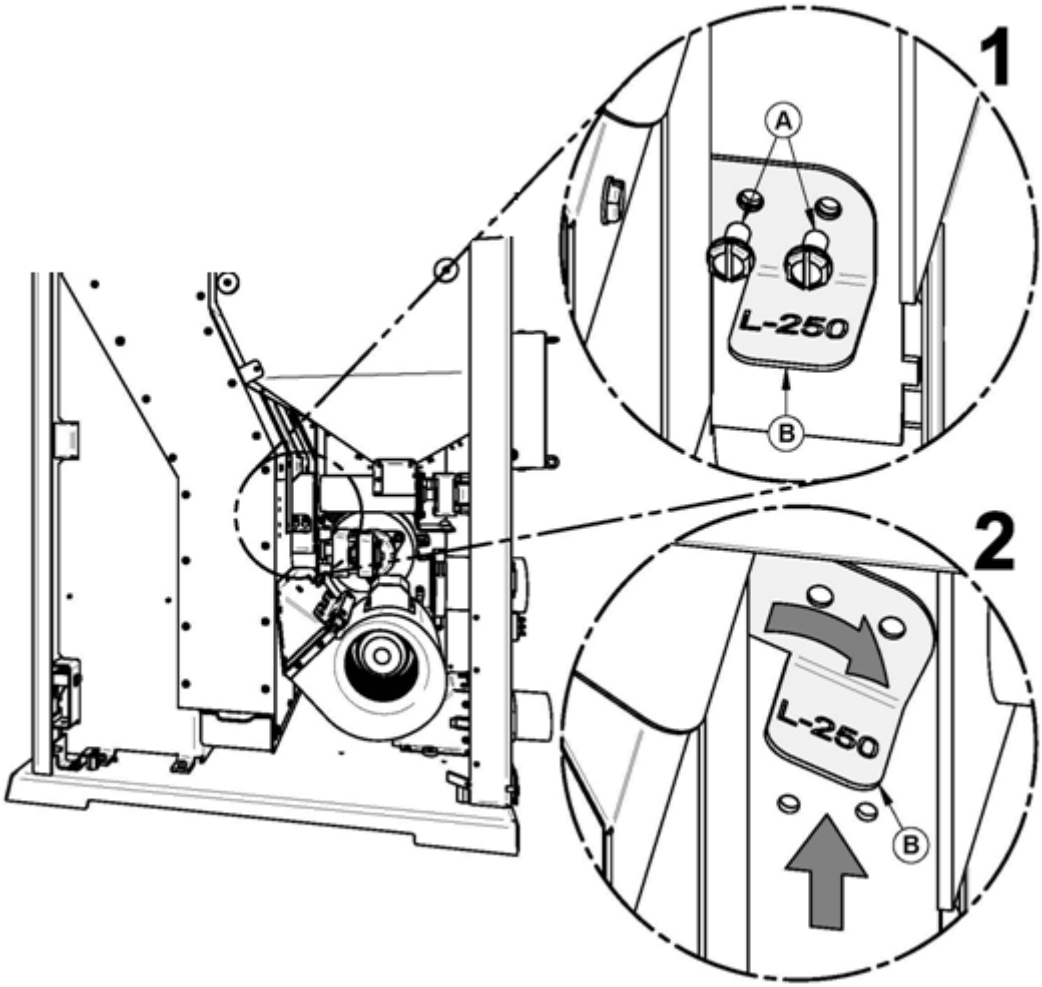
Enlever les boulons **(H)** et les écrous **(I)** pour sortir moteur d’évacuation **(J).**



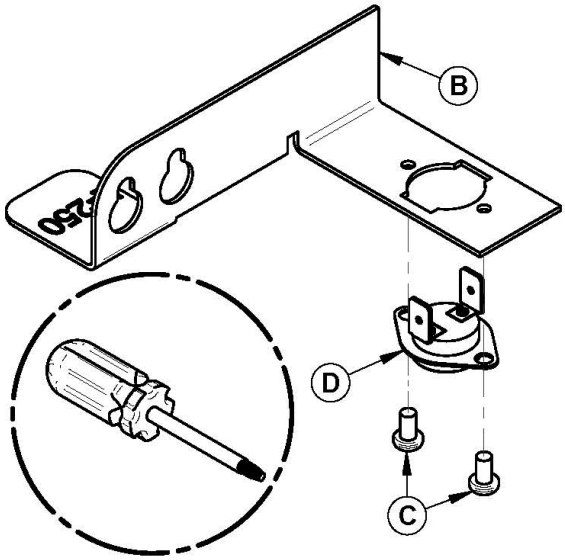
13 Remplacement des interrupteurs thermiques L-250 et F-160

L-250

1. Retirez les deux vis **(A)** qui retiennent l’équerre de support de l’interrupteur thermique **(B)**.
2. Soulever le support vers le haut. Pivoter le support de 90° dans le sens des aiguilles d’un montre et tirer le support vers vous.

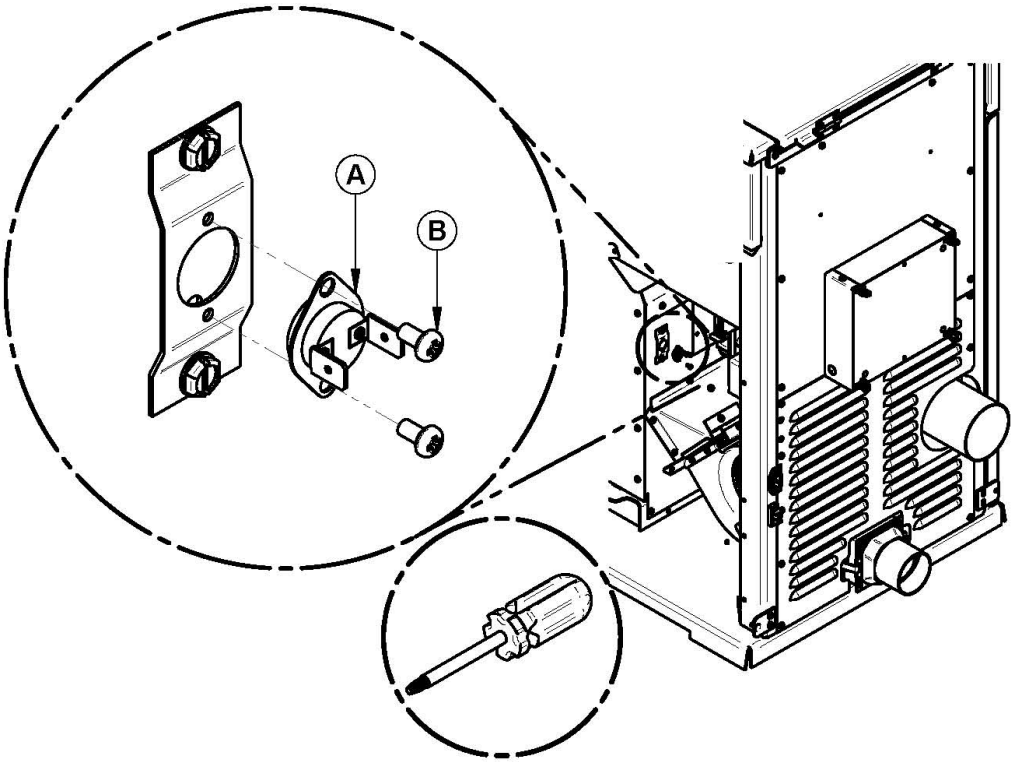


Retirez l'interrupteur thermique défectueux. Installez le nouveau **(D)** par le dessous de l'équerre de support **(B)** à l'aide des deux vis **(C).**

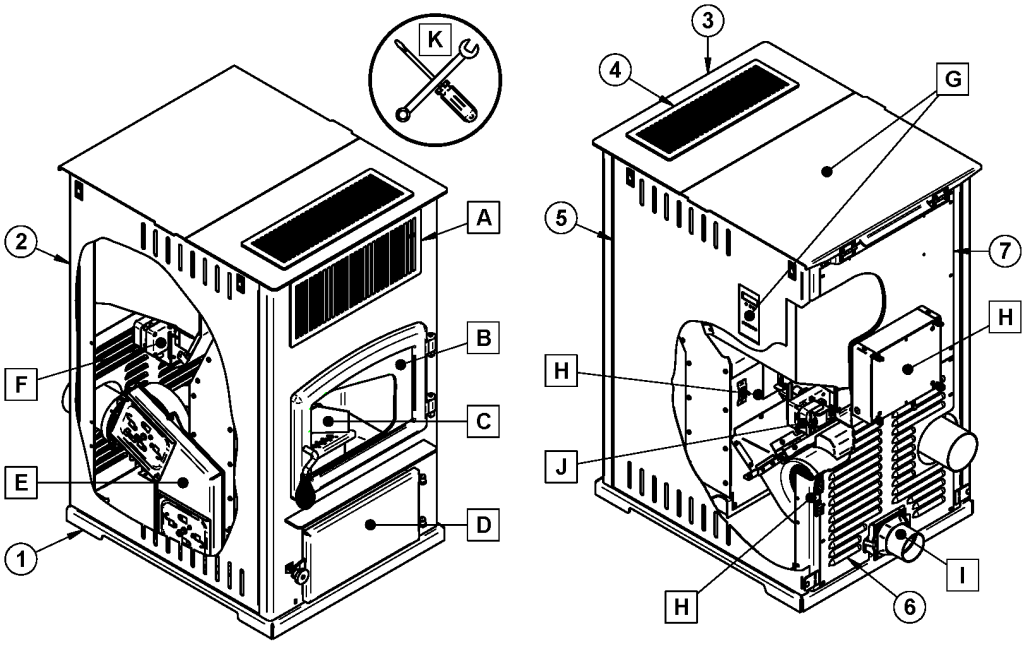


F-160

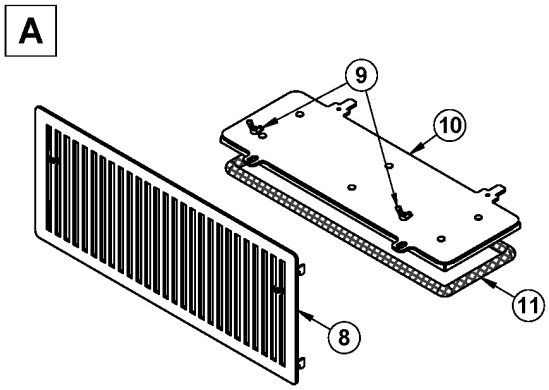
Dévissez les deux vis **(B)**, puis retirez l'interrupteur thermique F-160 **(A).**



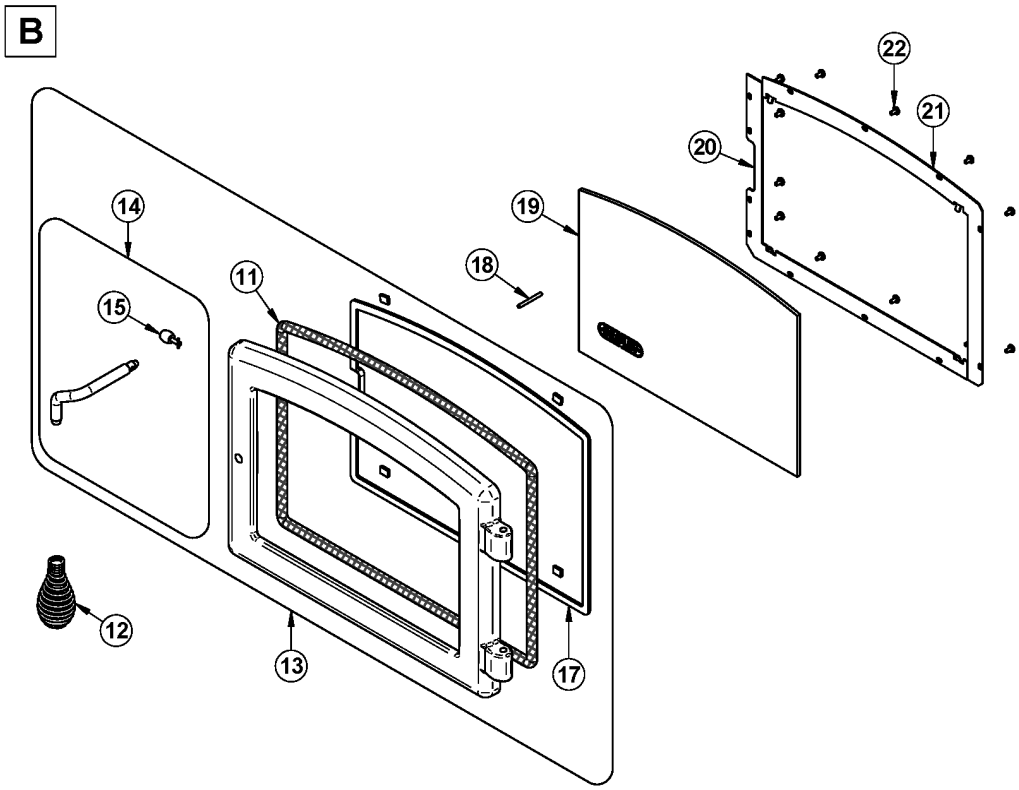
14 Vues explosées et pièces de remplacement



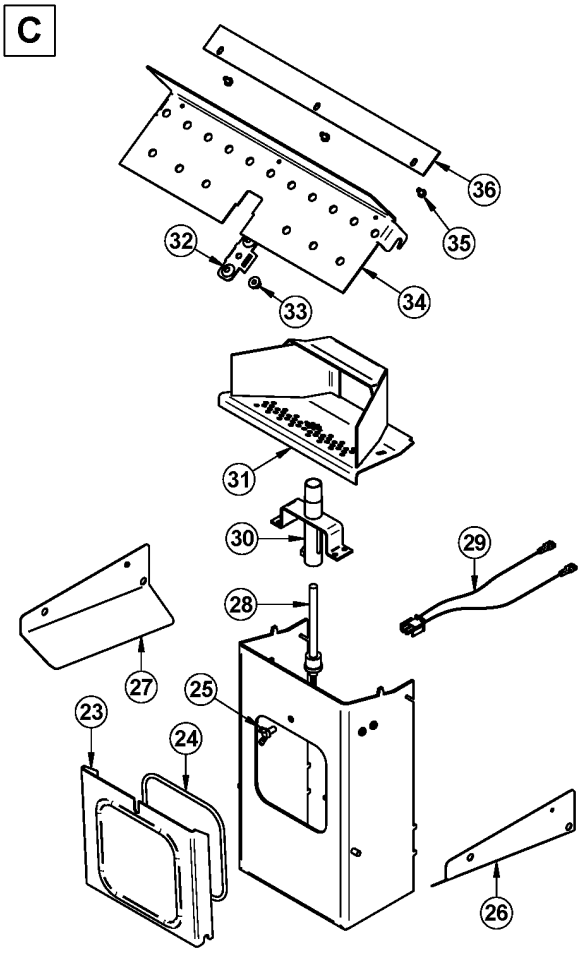
SECTION A



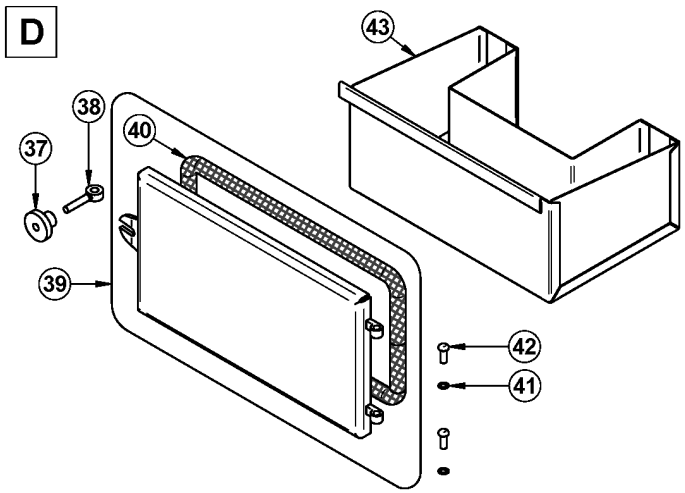
SECTION B



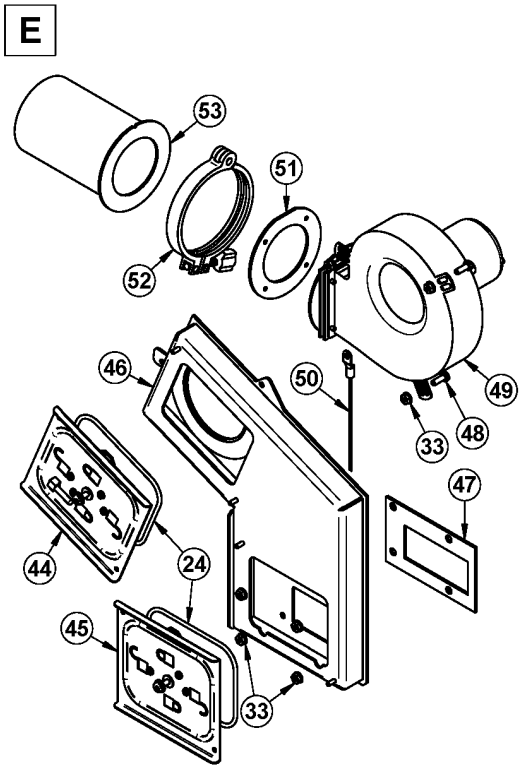
SECTION C



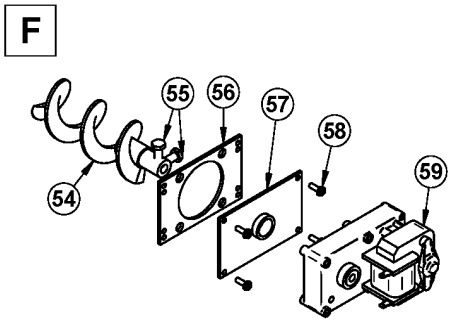
SECTION D



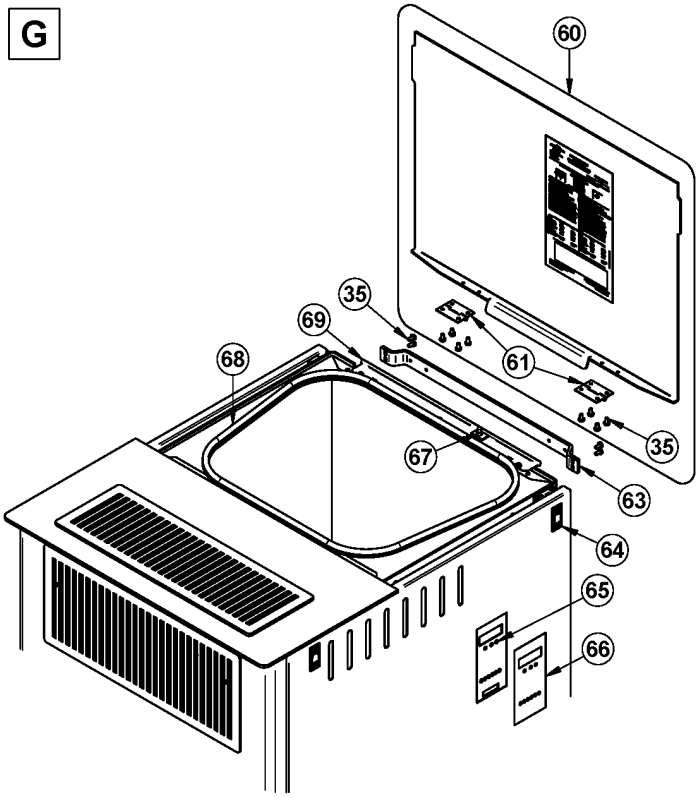
SECTION E



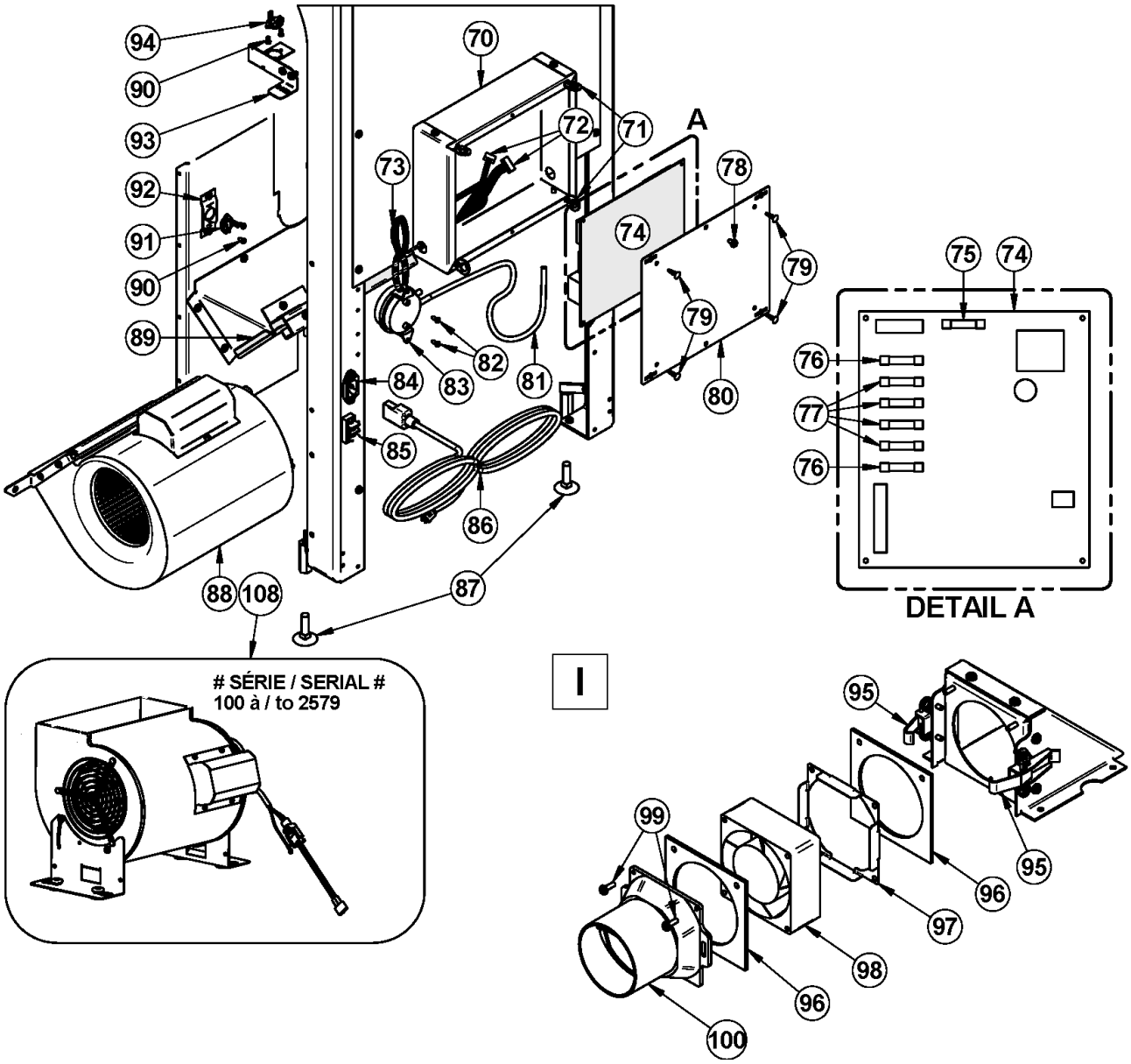
SECTION F



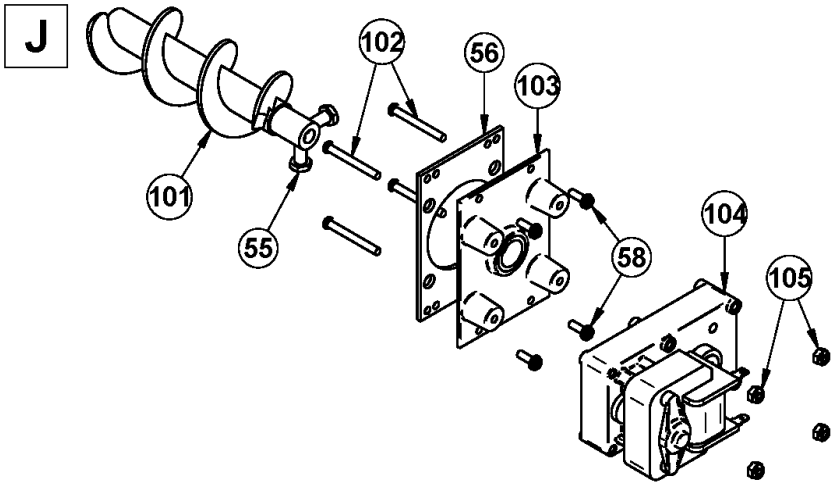
SECTION G



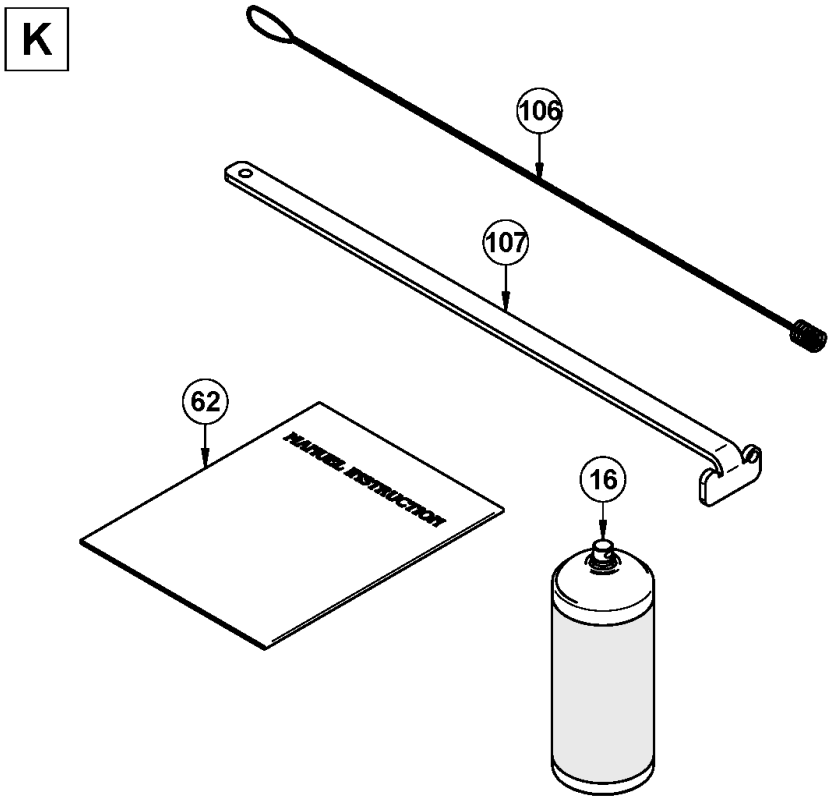
SECTION H ET I



SECTION J



SECTION K



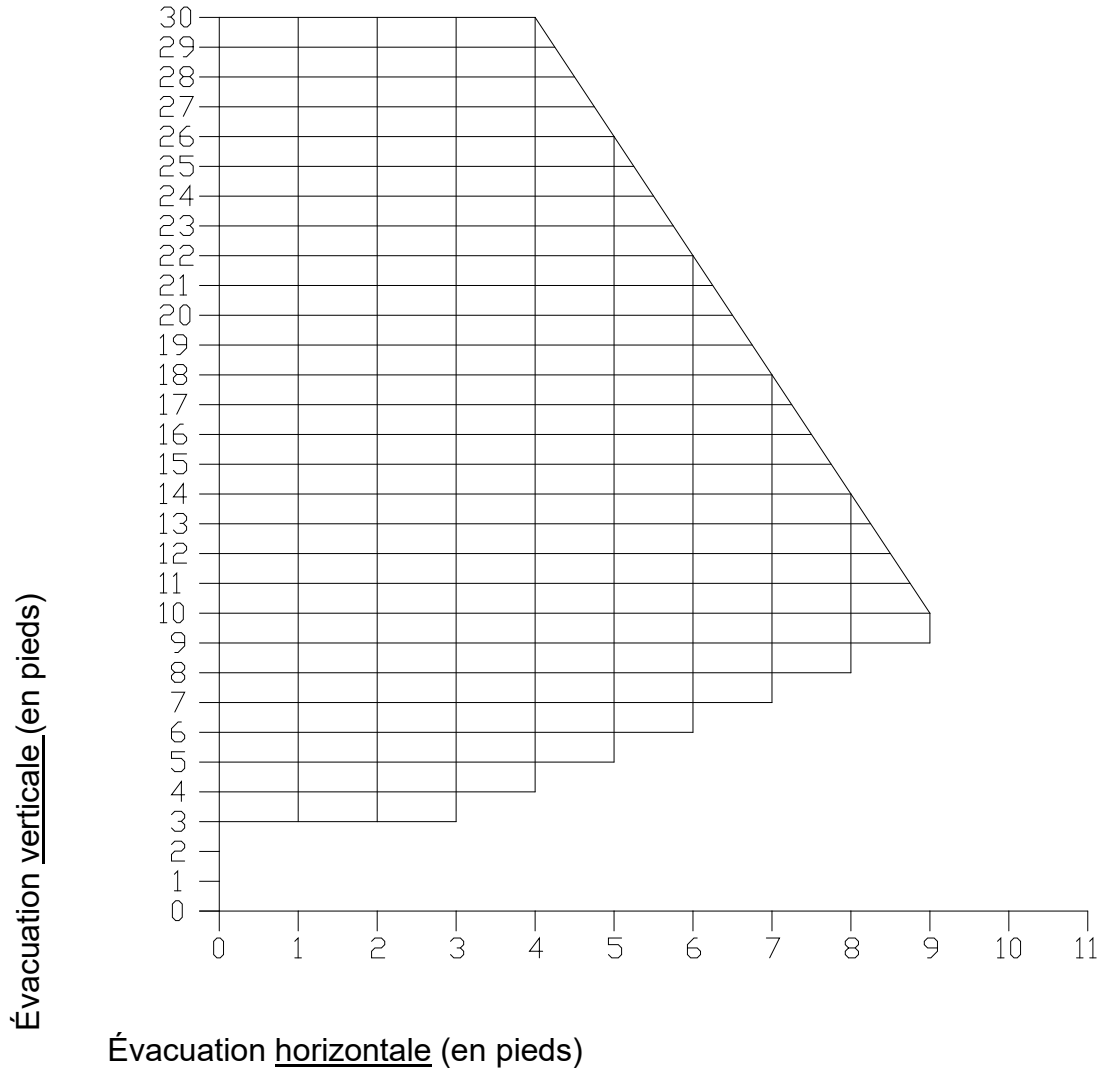
IMPORTANT: Il s'agit d'informations actualisées. Lors de la demande de service ou de pièces de remplacement pour votre poêle, s'il vous plaît fournir le numéro de modèle et le numéro de série. Nous nous réservons le droit de modifier les pièces en raison de mise à niveau technologique ou de disponibilité. Contactez un revendeur autorisé pour obtenir une de ces pièces. Ne jamais utiliser des matériaux de substitution. L'utilisation de pièces non approuvées peut entraîner de mauvaises performances, des risques pour votre sécurité et annulera votre garantie.

#	Item	Description	Qté
1	99999	FABRICATION SUR COMMANDE	1
2	SE67093	PANNEAU DÉCORATIF GAUCHE	1
3	SE67094	DESSUS	1
4	SE62389	GRILLE DÉCORATIVE DU DESSUS	1
5	SE67082	PANNEAU DÉCORATIF DROIT	1
6	PL67035	GRILLE DU DOS	1
7	PL67078	TÔLE SUPÉRIEUR ARRIÈRE	1
8	SE67089	GRILLE DÉCORATIVE DE FAÇADE	1
9	30484	ÉCROU PAPILLON 1/4-20 X 1/2''	2
10	SE67097	TRAPPE D'ACCÈS POUR ENTRETIEN	1
11	AC06900	CORDON NOIR ROND 1/2'' X 9' AVEC ADHÉSIF	1
12	AC07867	POIGNÉE SPIRALE 1/2" PLAQUÉE CHROME	1
13	SE24219	PORTE DE FONTE AVEC CORDON, POIGNÉE ET BARRURE	1
14	AC09155	ENSEMBLE DE POIGNÉE ET BARRURE	1
15	AC09185	KIT DE BARRURE DE PORTE	1
16	AC05963	PEINTURE POUR POÊLE NOIR MÉTALLIQUE - 85 g (3oz) AÉROSOL	1
17	AC06810	CORDON NOIR PRÉ-ENCOLLÉ 1/8" X 3/8" X 6'	1
18	30101	GOUPILLE TENDEUSE À RESSORT 5/32"Ø X 1 1/2"L	1
19	PL62417	VITRE DE REMPLACEMENT ARQUÉE	1
20	PL62415	MOULURE DE VITRE INFÉRIEURE	1
21	PL62416	MOULURE DE VITRE DU SUPÉRIEURE	1
22	30124	VIS #8 - 32 X 5/16" TRUSS QUADREX ZINC	12
23	SE67033	TRAPPE DE NETTOYAGE RÉCEPTACLE DU POT À COMBUSTION	1
24	AC06815	CORDON NOIR 3/16'' X 5' ET SILICONE	1
25	30485	BOULON PAPILLON 1/4-20 X 1/2'' EN ACIER PLAQUÉ ZINC	1
26	PL67104	DÉFLECTEUR À CENDRE DROIT	1
27	PL67103	DÉFLECTEUR À CENDRE GAUCHE	1
28	SE44132	ALLUMEUR GRANULES 120V-300W ASSEMBLÉ	1
29	60360	RALLONGE DU FIL DE L'ALLUMEUR AVEC CONNECTEUR (23.375")	1
30	44146	TUBE DE L'ALLUMEUR	1
31	SE67101	POT DE COMBUSTION	1
32	PL67175	BARRURE DE COUPE-FEU	1
33	30220	ÉCROU INDÉVISSABLE À ÉPAULEMENT 1/4-20	1
34	PL67172	COUPE-FEU	1

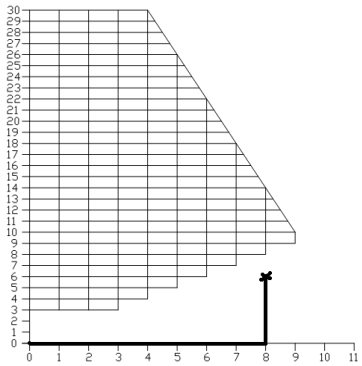
#	Item	Description	Qté
35	30029	VIS À FILETAGE COUPANT 10-24 TYPE "F" X 3/8" RONDELLE HEXAGONALE	15
36	PL67173	EXTENSION COUPE-FEU	1
37	30799	POIGNÉE FILETÉ RONDE 3/8"-16	1
38	30800	BOULON À OEILLET 3/8"-16	1
39	SE67151	PORTE D'ACCÈS DU TIROIR À CENDRES	1
40	AC06725	COLLE ET CORDON BLANC 3/4" X 7' POUR PORTE	1
41	30055	BAGUE DE RETENUE POUR RIVET 5/16" DI X 0.512" DE	2
42	30167	RIVET DE PENTURE 5/16"Ø X 3/4"L	2
43	SE67025	TIROIR À CENDRES	1
44	SE64378	TRAPPE DE NETTOYAGE CANALISATION D'ÉVACUATION	1
45	SE67154	TRAPPE INFÉRIEUR DE NETTOYAGE CANALISATION D'ÉVACUATION	1
46	SE67003	CANALISATION D'ÉVACUATION	1
47	21401	JOINT D'ÉTANCHÉITÉ CANALISATION D'ÉVACUATION	1
48	30093	BOULON 1/4-20 X 3/4" HEX GRADE 5	3
49	SE44193	VENTILATEUR D'ÉVACUATION AVEC JOINTS D'ÉTANCHÉITÉ	1
50	SE44095	THERMISTOR ASSEMBLÉ	1
51	21392	JOINT D'ÉTANCHÉITÉ DE L'ADAPTATEUR D'ÉVACUATION	1
52	30762	COLLET D'ATTACHE DE L'ADAPTATEUR D'ÉVENT	1
53	SE67018	ADAPTATEUR DE TUYAU D'ÉVACUATION	1
54	24030	VIS SANS FIN	1
55	30092	BOULON 5/16 - 18 X 3/4" HEX GRADE 5	4
56	21193	JOINT D'ÉTANCHÉITÉ DU SUPPORT DE VIS SANS FIN	2
57	PL62281	PLAQUE DE BAGUE POUR VIS SANS FIN	1
58	30026	VIS À FILETAGE COUPANT 10-24 F 5/8" TÊTE HEXAGONALE	4
59	44106	MOTEUR À ENGRENAGE POUR VIS À GRANULES 1.5 RPM	1
60	SE67095	PANNEAU DE TRÉMIE ASSEMBLÉ	1
61	30013	PENTURE 2" X 1 1/2"	2
62	SE45725	KIT MANUEL D'INSTRUCTION ECO 65	1
63	PL67141	SUPPORT DE TRÉMIE	1
64	30572	POIGNÉE BARRURE RÉTRACTABLE (NOIR)	4
65	SE62332	BOÎTIER DE CARTE ÉLECTRONIQUE DE LA MEMBRANE DE COMMANDE	1
66	SE44139	MEMBRANE ASSEMBLÉE SUR COUVERCLE	1
67	44098	INTERRUPTEUR DE SÉCURITÉ DE TRÉMIE	1
68	AC06820	JOINT D'ÉTANCHÉITÉ EPDM 3/8 X 3/8 X 37/64 (5')	1
69	PL67155	SUPPORT DE L'INTERRUPTEUR	1
70	SE64494	BOITIER DE LA CARTE MAÎTRESSE	1
71	30710	ATTACHE À RESSORT	4
72	60342	HARNAIS PRINCIPAL CARTE CONTRÔLE	1
73	60327	FIL DE JONCTION CARTE CONTRÔLE ET LCD	1
74	PL64357	CARTE ÉLECTRONIQUE MAÎTRESSE 6 SORTIES	1
75	44013	FUSIBLE 7.5A / 250V / 1/4"Ø X 1 1/4''L	1

#	Item	Description	Qté
76	44015	FUSIBLE 5A / 250V / 1/4"Ø X 1 1/4''L	2
77	44016	FUSIBLE 3A / 250V / 1/4"Ø X 1 1/4''L	4
78	30132	VIS #10 X 3/8" HEX WASHER ZINC GR 5 TYPE "A"	1
79	30408	ATTACHE DE CARTE ÉLECTRONIQUE	4
80	PL64459	COUVERCLE DU BOÎTIER DE LA CARTE MAÎTRESSE	1
81	49006	TUBE DE SILICONE 3/8" X 24'' (TROU INT. 0.156''1/16"Ø +/- 0.010'')	1
82	30138	VIS À MÉTAL #6 X 3/8" QUADREX Type"A" NOIRE (52-011-120)	2
83	44029	INTERRUPTEUR À PRESSION	1
84	60196	RÉCEPTACLE DU CORDON D'ALIMENTATION	1
85	60036	BORNIER DU THERMOSTAT	1
86	60331	CORDON D'ALIMENTATION 6'	1
87	30050	BOULON DE NIVELAGE 3/8-16 X 1 1/2"	4
88	SE67137	VENTILATEUR DE CONVECTION (500 PCM, 115v, 60Hz, 1100 TPM)	1
89	40042	JOINT D'ÉTANCHÉITÉ EPDM 13/64 X 3/8 X 37/64	2.13
90	30080	VIS À MÉTAL #6 X 1/4 TYPE B PAN PHILLIPS	4
91	44058	THERMODISQUE 36T12 F160	1
92	PL62343	SUPPORT POUR F-160	1
93	PL67149	SUPPORT POUR L250-25 AUTOMATIQUE	1
94	44059	THERMODISQUE 36T11 L250-25 AUTOMATIQUE	1
95	30439	ATTACHE À RESSORT PLAQUE ZINC CHROMATE	2
96	21400	JOINT D'ÉTANCHÉITÉ VENTILATEUR DE COMBUSTION	2
97	PL64359	CADRE DU JOINT D'ÉTANCHÉITÉ VENTILATEUR DE COMBUSTION	1
98	44195	VENTILATEUR AXIAL 115V 9W 92 X 92 X 38 (HÉLICE EN PLASTIQUE)	1
99	30502	VIS À FILETAGE COUPANT #8 - 32 X 1/2" TYPE F HEX TÊTE PLATE	2
100	30777	CLAPET ANTIRETOUR EN PLASTIQUE ASSEMBLÉ	1
101	24031	VIS SANS FIN	1
102	30232	VIS MÉCANIQUE 10-32 x 1-3/4'' PAN QUADREX ZINC	4
103	SE24233	SUPPORT DE MOTEUR ENGRENAGE AVEC ISOLANT	1
104	44126	MOTEUR À ENGRENAGE POUR VIS À GRANULES 2.4 RPM	1
105	30233	ÉCROU INDÉVISSABLE NYLON HEX 10-32 ZINC	4
106	30798	BROSSE ENTRETIEN ÉCHANGEUR Ø1 1/8'' - 42''	1
107	PL67171	GRATTOIR	1
108	SE44108	VENTILATEUR AVEC CONDENSATEUR (500 PCM, 115v, 60Hz, 1100 TPM)	1

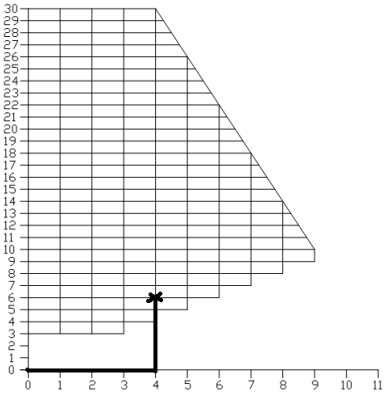
ANNEXE A: CHARTE DU SYSTÈME D'ÉVENT



Imaginons une installation dont la sortie arrière consiste en un parcours horizontal de 8 pieds, suivie d'un raccord en « T » et d'un parcours vertical de 6 pieds. Ce type d'installation ne serait pas conforme. En effet, la terminaison murale se situe clairement à l'extérieur de la zone recommandée sur la charte puisqu'elle **ne comporte pas au moins un pied de longueur verticale pour chaque pied de longueur horizontal**.



Par contre, si l’installation consiste en un parcours horizontal de 4 pieds, suivi d’un raccord en « T » et d’un parcours vertical de 6 pieds, elle est adéquate. L’installation se termine clairement à l’intérieur de la zone recommandée sur le graphique puisqu’elle comporte au moins un pied de longueur verticale pour chaque pied de longueur horizontal. De plus, la totalité du parcours vertical n’est pas inférieure à 3 pieds.



<u>ATTENTION</u> : pour réduire le risque de refoulement de fumée, ne jamais terminer avec une course horizontale. Si votre système termine avec une course horizontale, ajoutez un minimum de trois pieds de course verticale.

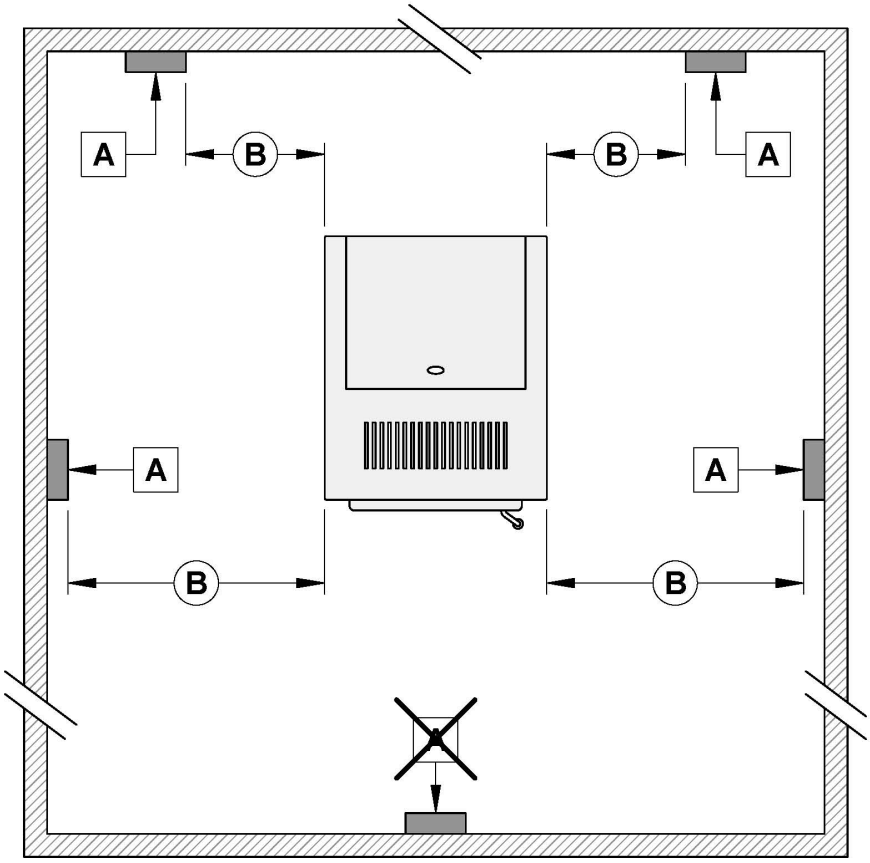
ANNEXE B: INSTALLATION D’UN THERMOSTAT (AC05558)

L'utilisation d'un thermostat vous aidera à maintenir une température plus constante dans la maison. Un thermostat à bas voltage (24 volts) est nécessaire. Un thermostat mural fixe ou télécommandé peut être utilisé.

Note: Les instructions du fabricant du thermostat ont toujours préséance sur les informations publiées dans la section suivante.

Localisation du thermostat

Localisation du thermostat est très importante afin d'obtenir le confort et l'efficacité de votre poêle. Placez le thermostat 4 à 5 pieds au-dessus du sol ou en conformité avec les codes du bâtiment applicables. Installez le thermostat dans un endroit qui offre une bonne circulation d’air et éviter les zones derrière les portes, près des coins, des bouches d'aération, des systèmes d’éclairage, du soleil direct ou tous dispositifs générateurs de chaleur. Si vous installez le thermostat dans la même pièce que le poêle, il devrait également être situé à au moins 15 à 20 pieds du poêle. Pour éviter le cyclage, vous devriez éviter d'installer le thermostat sur un mur extérieur mal isolé ou directement en face du poêle.

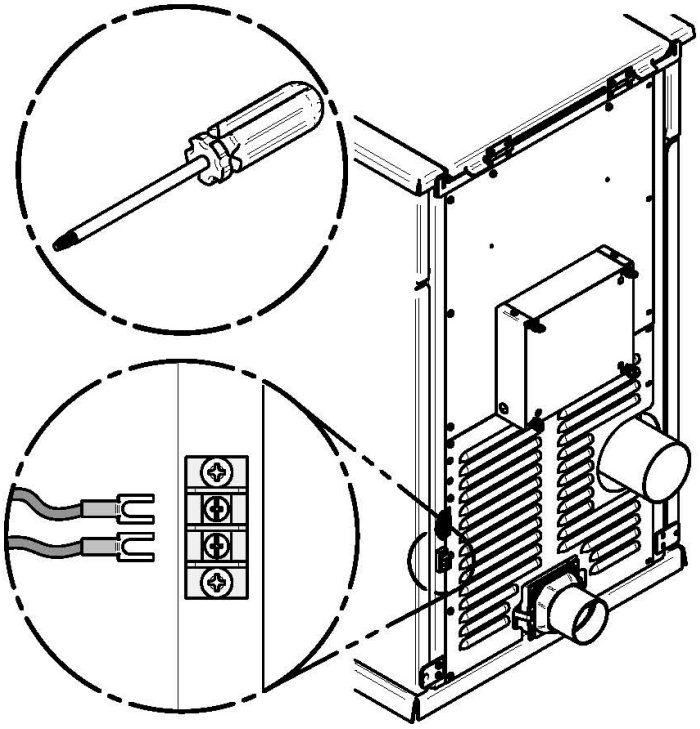


A	THERMOSTAT
B	15’ MINIMUM

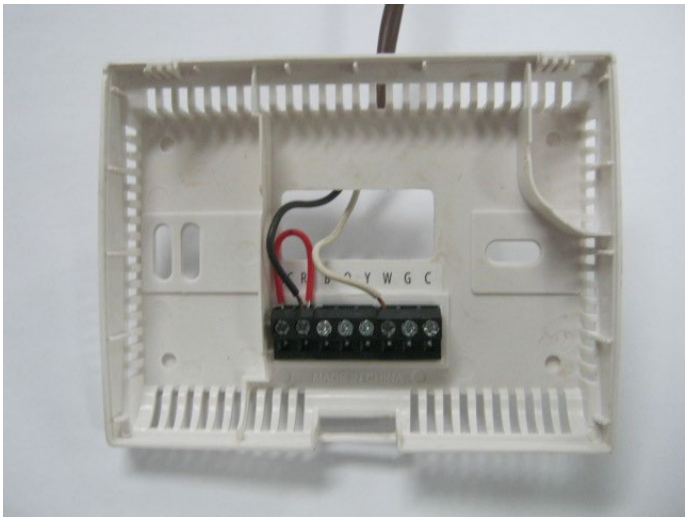
Thermostat fixe

Avant d'installer le thermostat, débrancher le cordon d’alimentation de la prise de courant.

Tout d'abord, connectez les deux fils du thermostat à la borne située à l'arrière sur le côté droit du poêle en lui faisant face. Pour ce faire, desserrez les deux vis du milieu du bornier et insérez les fils dans les bornes. Serrez les deux vis. Ensuite, ouvrez le boîtier du thermostat et branchez les fils en suivant les instructions du fabricant.



Voici un exemple de connexion au thermostat:

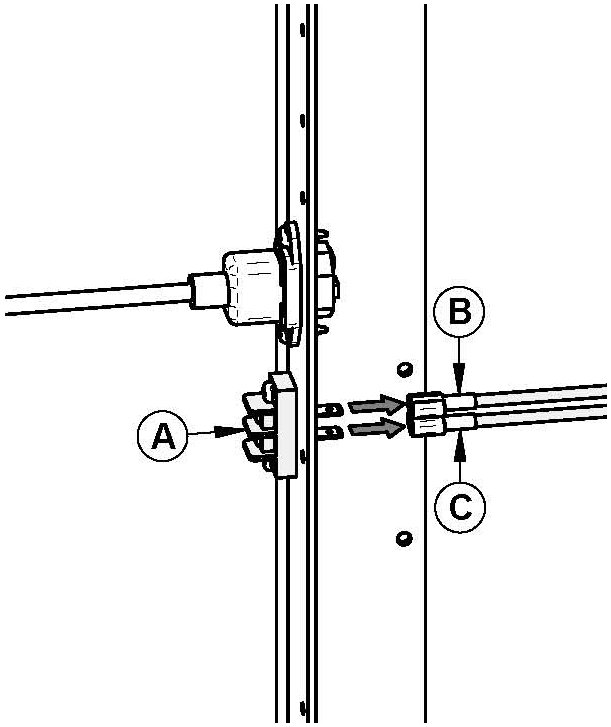


Raccorder un fil sur "RH" et l'autre fil sur "W". Le cavalier rouge peut être laissé en place. Pour de plus amples informations, se référer aux instructions du fabricant du thermostat.

Thermostat sans fil

Si vous utilisez un thermostat sans fil ou une télécommande, branchez les deux fils du récepteur à la borne située à l'arrière sur le côté droit du poêle en lui faisant face. Si les fils du récepteur sont équipés de bornes à connexion rapide, vous pouvez les connecter directement au harnais de câblage situé à l’intérieur du poêle.

Pour ce faire, ouvrir le panneau latéral décoratif droit et débrancher les deux (2) câbles **(B)** et **(C)** du harnais attachés à l'arrière du bornier **(A)** et les relier aux fils du récepteur.

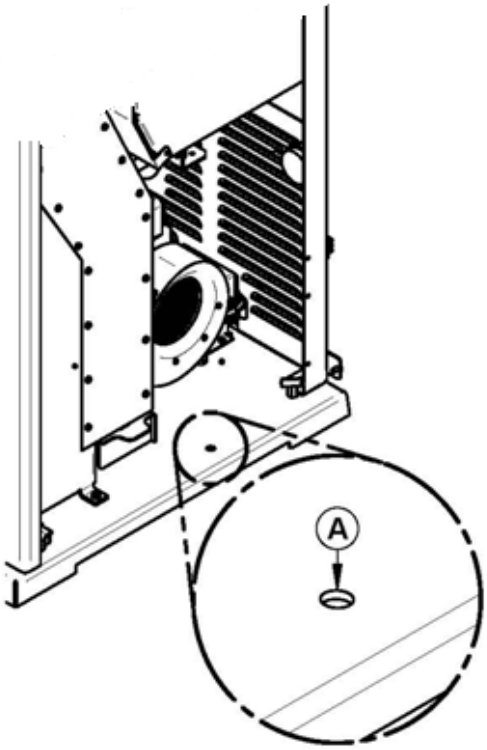


ANNEXE C: INSTALLATION MAISON MOBILE

Ancrage du poêle

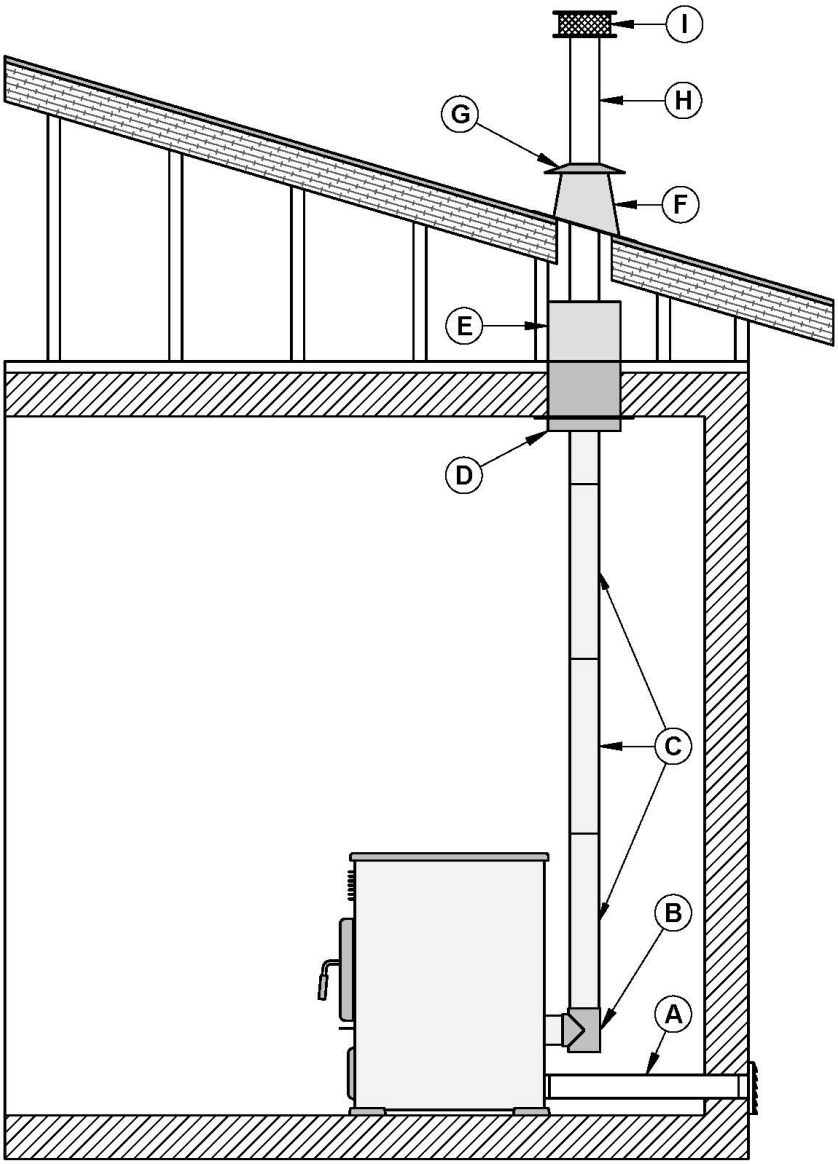
AVERTISSEMENT : POUR INSTALLATION EN MAISON MOBILE, IL EST IMPÉRATIF DE RELIER LE POÊLE À UNE SOURCE D'AIR DE COMBUSTION EXTÉRIEUR (VOIR ANNEXE D: APPORT D'AIR DE COMBUSTION).

Lorsqu'installé dans une maison mobile, ce poêle doit être ancré au sol avec des vis. Utilisez les deux trous d'ancrage (A) situés de chaque côté du socle.



Pour une utilisation dans une maison mobile au Canada, ce poêle à granules doit être raccordé à un système d'évent homologué selon la norme ULC/ORD C441 ou CAN/ULC S609. Un système d'évent répondant aux exigences des normes ULC S629M peut aussi être utilisé.

Pour une utilisation dans une maison mobile aux États-Unis, ce poêle à granules doit être raccordé à un système d'évent répondant aux exigences de la norme UL 641. Un système d'évent répondant aux exigences de la norme UL 103 peut aussi être utilisé.

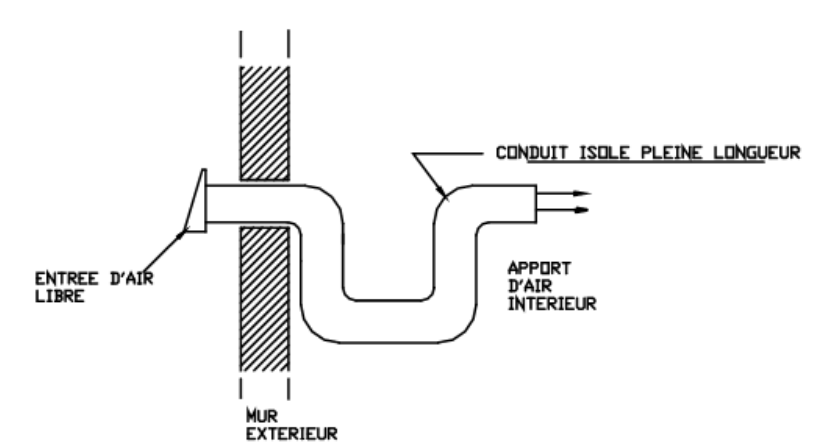


A	Entrée d’air frais
B	Té
C	Longueur de tuyau à granules et/ou section coulissante
D	Support de plafond
E	Coupe-feu radiant
F	Solin pour toit
G	Collet de solin
H	Longueur de tuyau à granules
I	Chapeau de pluie vertical

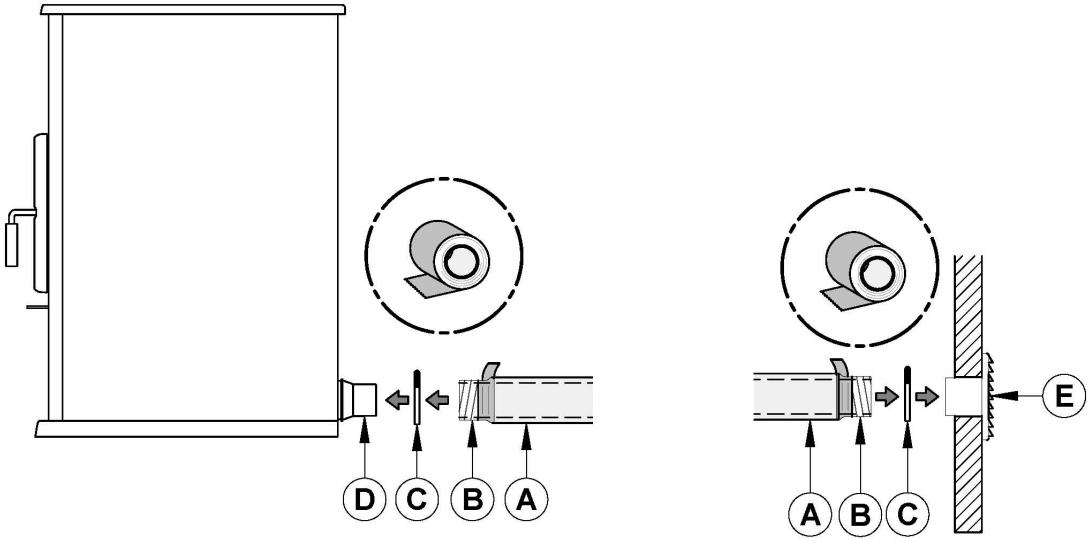
ANNEXE D: APPORT D'AIR DE COMBUSTION

<u>AVERTISSEMENT:</u> POUR L'INSTALLATION DANS UNE MAISON MOBILE, IL EST OBLIGATOIRE DE RELIER LE POÊLE A UNE SOURCE D'AIR DE COMBUSTION EXTÉRIEUR. LE TUYAU ISOLE NE DEVRAIT JAMAIS DÉPASSER 10 PIEDS.

Il est recommandé d'installer une entrée d'air extérieur dans ou à proximité de la pièce où est installé le poêle. Ce faisant, il est préférable de choisir un mur qui n'est pas exposé aux vents dominants adaptés aux conditions entourant votre maison.



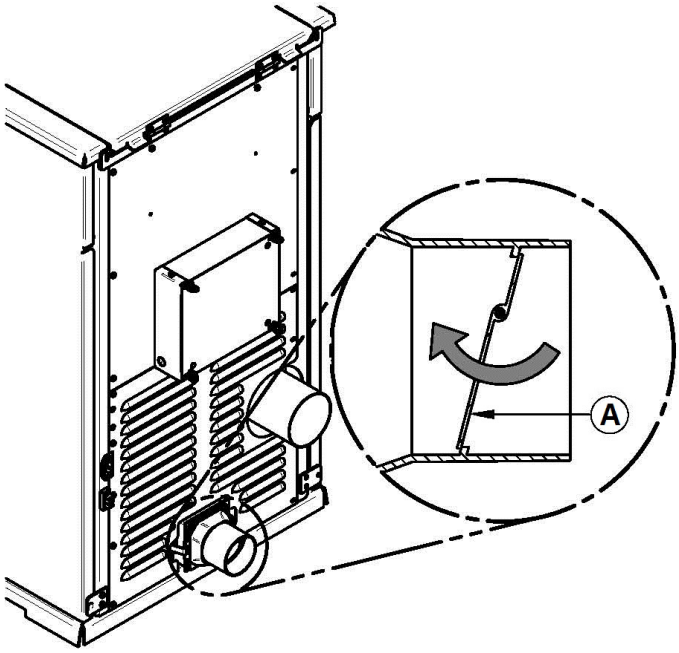
Un tuyau métallique isolé de 3" de diamètre intérieur, souple ou rigide, doit être relié à l'adaptateur d'air frais (D).



Pour compléter l'installation, faites un trou de 1/4" à 1/2" (6 mm à 13 mm) de plus que le diamètre de tuyau dans le mur extérieur de la maison à l'endroit choisi. De l'extérieur, placez la bouche d'air extérieure (E) dans le trou (la face ouverte vers le bas) et fixez la bouche au mur à l'aide de vis. Posez le tuyau isolé (A) sur le tube de la bouche et sur le raccord d'air extérieur du foyer (D). À chaque extrémité, retirez délicatement l'isolant et l'enveloppe de plastique, pour exposer le tuyau flexible. Fixez le tuyau flexible à l'aide de collets de serrage (C). Si vous désirez un joint plus étanche, utilisez du ruban d'aluminium. Collez le ruban autour du joint entre le tuyau flexible et les prises d'air. Replacez délicatement l'isolant et l'enveloppe de plastique sur le tuyau. Fixez le plastique à l'aide de ruban d'aluminium.

Une protection contre les rongeurs, fabriqué d'un treillis métallique de minimum 1/4" doit être installée à la terminaison (E). Toutes les connexions doivent être scellées, soit en utilisant le collet de serrage de taille appropriée et/ou de ruban métallique UL-181-AP.

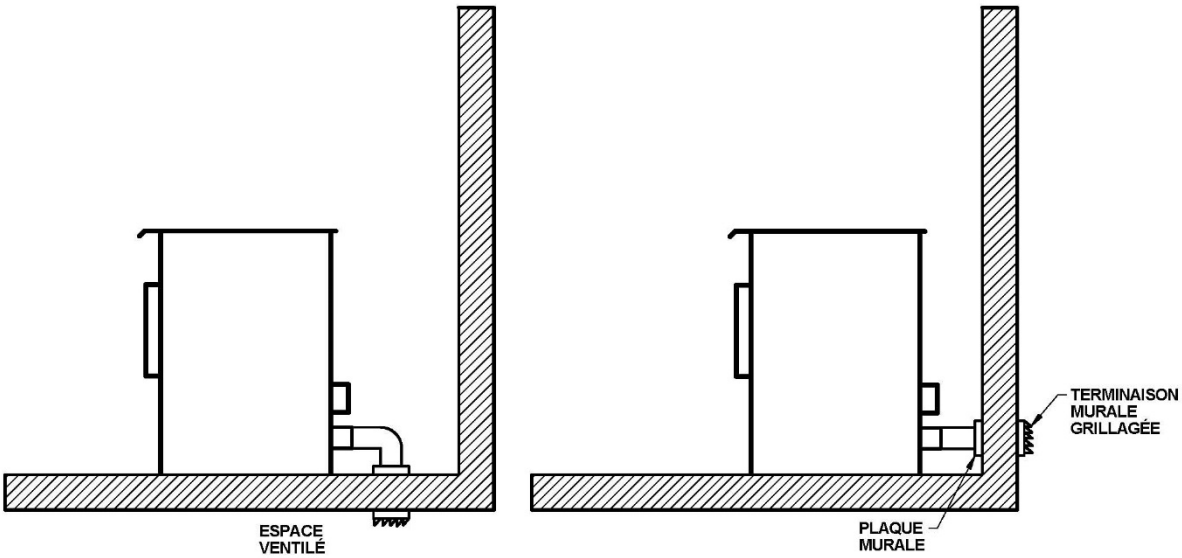
Assurez-vous également que le volet antiretour d'air frais fonctionne librement. Le volet anti-retour est situé à l'arrière du poêle.



Sources d'air de combustion extérieur

AVERTISSEMENT: IL EST INTERDIT DE PUISER L'AIR DE COMBUSTION DU SOUS-SOL, DU GRENIER, D'UN GARAGE OU DE TOUT ESPACE CLOS.

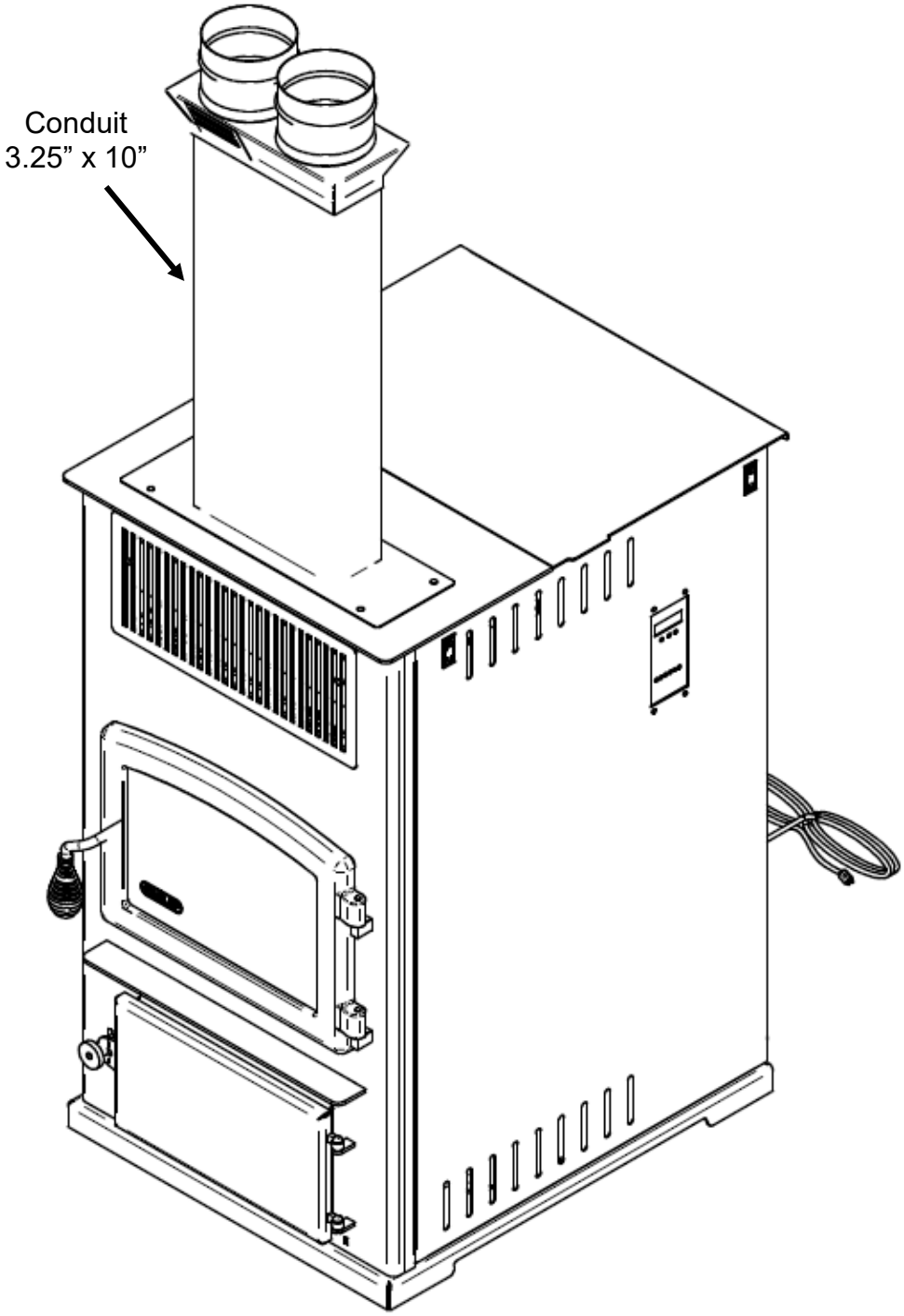
- Vous pouvez tirer l'air à partir d'un vide sanitaire ventilé sous le plancher.
- Vous pouvez tirer l'air directement à partir d'un mur extérieur, derrière le poêle.



ANNEXE E: ENSEMBLE DE PLÉNUM À AIR CHAUD OPTIONNEL (AC01330)

L’ensemble de plenum à air chaud AC01330 est disponible chez votre détaillant.

Notez que le conduit 3.25’’ x 10’’ est vendu séparément.

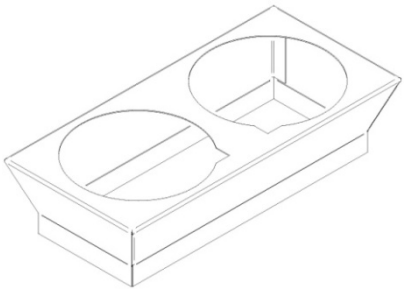


Cet ensemble de plenum à air chaud contient les pièces suivantes :

(A)-49068

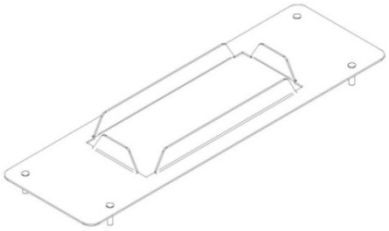
2x

(B)-PL62444



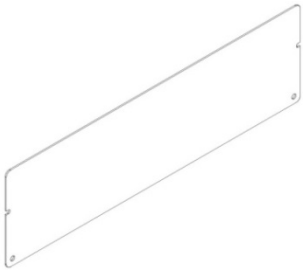
1x

(C)-SE62443



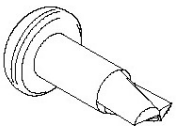
1x

(D)-PL62446 (5” x 17.5”)



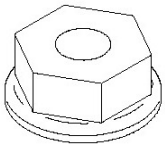
1x

(E)-30153



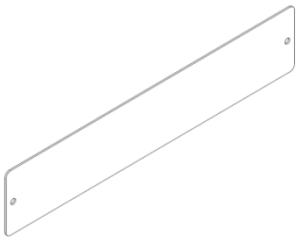
8x

(F)-30220



6x

(G)-PL67179 (DP00061) (3” x 16”)



1X

GARANTIE À VIE LIMITÉE DROLET

La garantie du fabricant ne s'applique qu'à l'acheteur au détail original et n'est pas transférable. La présente garantie ne couvre que les produits neufs qui n'ont pas été modifiés, altérés ou réparés depuis leur expédition de l'usine. Il faut fournir une preuve d'achat (facture datée), le nom du modèle et le numéro de série au détaillant DROLET lors d'une réclamation sous garantie.

La présente garantie ne s'applique que pour un usage résidentiel normal. Les dommages provenant d'une mauvaise utilisation, d'un usage abusif, d'une mauvaise installation, d'un manque d'entretien, d'une surchauffe, d'une négligence, d'un accident pendant le transport, d'une panne de courant, d'un manque de tirage, d'un retour de fumée ou d'une sous-évaluation de la surface de chauffage ne sont pas couverts par la présente garantie. La surface de chauffage recommandée pour un appareil est définie par le manufacturier comme sa capacité à conserver une température minimale acceptable considérant que la configuration de l'espace ou la présence de système de distribution d'air ont un impact important sur la distribution optimale de la chaleur.

La présente garantie ne couvre pas les égratignures, la corrosion, la déformation ou la décoloration. Tout défaut ou dommage provenant de l'utilisation de pièces non autorisées ou autres que des pièces originales, annule la garantie. Un technicien qualifié autorisé doit procéder à l'installation en conformité avec les instructions fournies avec le produit et avec les codes du bâtiment locaux et nationaux. Tout appel de service relié à une mauvaise installation n'est pas couvert par la présente garantie.

Le fabricant peut exiger que les produits défectueux lui soient retournés ou que des photos numériques lui soient fournies pour appuyer la réclamation. Les produits retournés doivent être expédiés port payé au fabricant pour étude. Les frais de transport pour le retour du produit à l'acheteur seront payés par le manufacturier. Tout travail de réparation couvert par la garantie et fait au domicile de l'acheteur par un technicien qualifié autorisé doit d'abord être approuvé par le fabricant. Tous les frais de pièces et main-d'œuvre couverts par la présente garantie sont limités au tableau ci-dessous.

Le fabricant peut, à sa discrétion, décider de réparer ou remplacer toute pièce ou unité après inspection et étude du défaut. Le fabricant peut, à sa discrétion, se décharger de toutes ses obligations en ce qui concerne la présente garantie en remboursant le prix de gros de toute pièce défectueuse garantie. Le fabricant ne peut, en aucun cas, être tenu responsable de tout dommage extraordinaire, indirect ou consécutif, quelle qu'en soit la nature, qui dépasserait le prix d'achat original du produit. Les pièces couvertes par une garantie à vie sont sujettes à une limite d'un seul remplacement sur la durée de vie utile du produit. Cette garantie s'applique aux produits achetés après le 1er mars 2015.

DESCRIPTION	APPLICATION DE LA GARANTIE*	
	PIÈCES	MAIN-D'ŒUVRE
Chambre à combustion (soudures seulement**), échangeur de chaleur (soudures seulement**) et cadrage de porte en acier coulé (fonte).	À vie	3 ans
Habillage, écran coupe-chaleur, tiroir à cendres, pattes, piédestal, moulures décoratives (extrusions) et placage (défaut de fabrication**).	5 ans	3 ans
Pièces amovibles en acier inoxydable, pot de combustion**, déflecteurs et supports.	3 ans	s.o.
Moulures de vitre, ensemble de poignée, tige de nettoyage, mécanisme de contrôle d'air et vis sans fin.	3 ans	1 an
Ventilateurs, moteur de vis, carte électronique, allumeur, capteurs thermiques, interrupteurs, câblage, rhéostats et autres commandes.	1 an	1 an
Verre céramique (bris thermique seulement**), peinture (écaillage**), joints d'étanchéité, isolants, laines céramiques, bûches décoratives** panneaux d'imitation de maçonnerie** et autres options.	1 an	s.o.
Toutes les pièces remplacées au titre de la garantie.	90 jours	s.o.

***Sous réserve des limitations ci-dessus.** ***Photos exigées.**

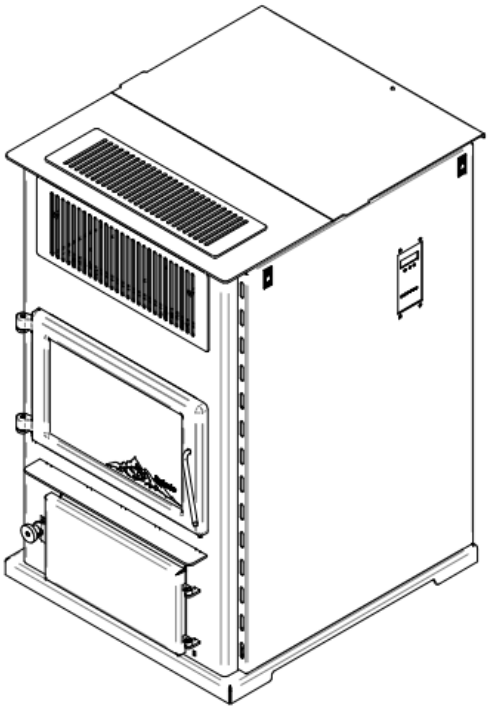
Les frais de main-d'œuvre et de réparation portés au compte du fabricant sont basés sur une liste de taux prédéterminés et ne doivent pas dépasser le prix de gros de la pièce de rechange.

Si votre appareil ou une pièce sont défectueux, communiquez immédiatement avec votre détaillant DROLET. Avant d'appeler, ayez en main les renseignements suivants pour le traitement de votre réclamation sous garantie :

- Votre nom, adresse et numéro de téléphone;
- La facture et le nom du détaillant;
- La configuration de l'installation;
- Le numéro de série et le nom du modèle tel qu'indiqué sur la plaque signalétique de l'appareil;
- La nature du défaut et tout renseignement important.

Avant d'expédier votre appareil ou une pièce défectueuse à notre usine, vous devez obtenir un numéro d'autorisation de votre détaillant DROLET. Toute marchandise expédiée à notre usine sans autorisation sera automatiquement refusée et retournée à l'expéditeur.

Installation and Operation Manual
P120
(ESW0029 model)



Safety tested according to ULC S627, UL1482 and ASTM E1509 by an accredited laboratory

MOBILE HOME approved

INSTALLATION BY A PROFESSIONAL IS STRONGLY RECOMMENDED

Fabricant de poêles international inc.

250, rue de Copenhague, St-Augustin-de-Desmaures (Québec) Canada G3A 2H3
After-sale service: 1-877-356-6663

E-mail: tech@sbi-international.com

https://www.englander-stoves.com/

CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA.

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

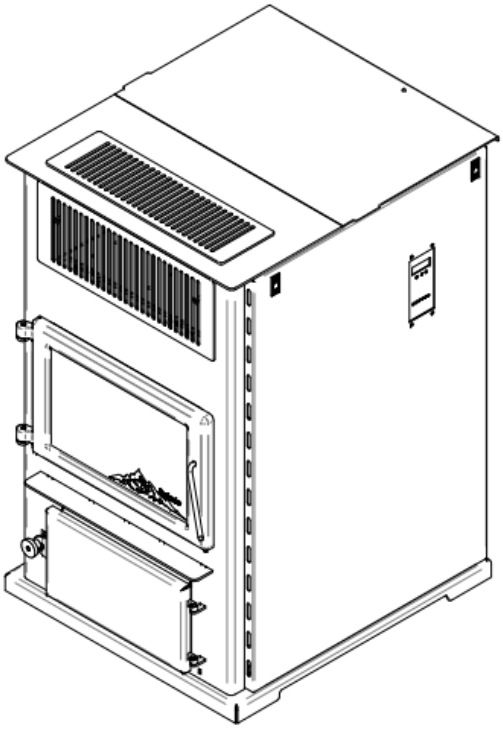
READ AND KEEP THIS MANUAL FOR REFERENCE

46XXXA
Printed in Canada
2023-12-05

Manuel d'installation et d'utilisation

P120

(Modèle ESW0029)



Essai de sécurité fait conformément aux normes ULC S627, UL 1482 et ASTM E1509 par un laboratoire accrédité

approuvé MAISON MOBILE

L'INSTALLATION PAR UN PROFESSIONNEL FORTEMENT RECOMMANDÉE

Fabricant de poêles international inc.

250, rue de Copenhague, St-Augustin-de-Desmaures (Québec) Canada G3A 2H3

Service après-vente : 1-877-356-6663

Courriel : tech@sbi-international.com

https://www.englander-stoves.com/

CONTACTEZ VOTRE SERVICE MUNICIPAL DU BÂTIMENT OU DES INCENDIES POUR CONNAÎTRE LES RESTRICTIONS ET LES EXIGENCES D'INSPECTION ET D'INSTALLATION DANS VOTRE RÉGION.

LISEZ CE MANUEL AU COMPLET AVANT D'INSTALLER ET D'UTILISER VOTRE NOUVEAU POÊLE. IL EST IMPORTANT DE RESPECTER INTÉGRALEMENT LES DIRECTIVES D'INSTALLATION. SI LE POÊLE N'EST PAS INSTALLE CORRECTEMENT, IL PEUT EN RÉSULTER UN INCENDIE, DES BLESSURES CORPORELLES OU MÊME LE DÉCÈS.

LIRE LE PRÉSENT MANUEL ET LE CONSERVER POUR CONSULTATION

46XXXF

Imprimé au Canada

2023-12-05

REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

Intertek
Control Number(SA) : 4002461
Oct. 2014

STANDARDS / NORMES D'ESSAI:
Certified to/Certifié selon ASTM E1509
Certified to/Certifié selon ULC S627
Certified to/Certifié selon UL 1482
Certified to/Certifié selon ASTM E2515
Certified to/Certifié selon ASTM E2779
Certified to/Certifié selon CSA B415.1

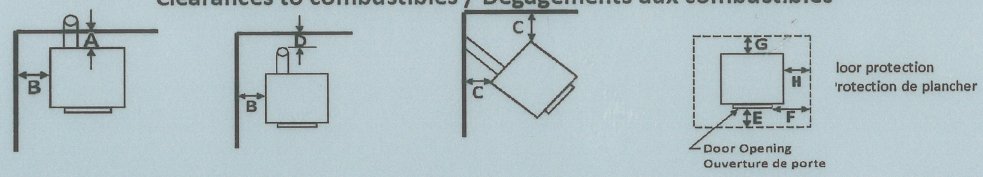
LISTED PELLET FUEL BURNING APPLIANCE

POÊLE À GRANULÉS DE BOIS HOMOLOGUÉ

MODEL / MODÈLE : ECO-65R

Serial Number
No. de Série: 1

Clearances to combustibles / Dégagements aux combustibles



A: 3 in./po. (76 mm) C: 3 in./po. (76 mm) E: 6 in./po. (152 mm) USA F: 6 in./po. (152 mm) USA H: 8 in./po.
B: 6 in./po. (152 mm) D: See Vent manufacturer 18 in./po. (457 mm) CANADA G: 8 in./po. (203 mm) CANADA (203 mm) CANADA

Electrical rating / Alimentation électrique: 115 V, 60 Hz, 2.9 amp.
Maximum input rating / Régime maximal: 7.6 lbs/hr

Minimum floor to ceiling distance: 72 in. (183 cm.)
Distance minimale plafond-plancher: 72 po. (183 cm.)

PREVENT HOUSE FIRES

- Install with a four (4) inches diameter exhaust venting system listed to UL103/ULC S629 or UL641/ULC S609.
- In case of an exhaust system passing through a combustible wall, follow manufacturer's instructions and refer to local building codes.
- Keep viewing and ash removal doors tightly closed during operation.
- Room heater, pellet fuel-burning type, also for use in mobile homes.
- Install and use only in accordance with manufacturer's instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- For use with premium grade wood pellets or better as determined by organizations such as Pellet Fuels Institute (PFI), Enplus and CANplus. Burning other types of pellets is not permitted. See owner's manual for more details.
- Do not connect to a chimney flue serving another appliance.
- Inspect and clean chimney frequently. Under certain conditions of use, creosote buildup may occur rapidly.
- Replace with ceramic glass only.
- In the USA, the unit must be installed on a non-combustible floor pad extending at least 6 inches (152 mm) in front of the door opening and at least 6 inches (152 mm) on each side of the door opening. In Canada, the unit must be installed on a non-combustible floor pad extending at least 18 inches (457 mm) in front of the door opening and at least 8 inches (203 mm) at the back and on each side of the unit. The floor pad must have a thickness of at least 0.015" (0.38mm). Consult owner's manual for more details.
- A source of fresh air must be provided to the room. When installed in a mobile home, air from outdoors must be provided.
- Do not obstruct combustion air opening.

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

PRÉVENEZ LES INCENDIES

- Installer avec un tuyau d'évacuation de quatre (4) pouces homologué selon la norme UL 103/ULC S629 ou UL 641/ULC S609.
- Si le tuyau d'évacuation doit traverser un mur combustible, suivre les instructions du fabricant et se référer aux codes du bâtiment locaux.
- Garder la porte du poêle et celle du cendrier fermées pendant l'opération.
- L'unité de chauffage aux granules peut aussi être installée dans une maison mobile.
- Observer les directives du fabricant pour l'installation et l'utilisation du poêle.
- Contacter les autorités locales pour les restrictions d'installation dans votre secteur.
- Pour utilisation avec granules de bois de qualité premium ou mieux tel que déterminée par des organismes tels que Pellet Fuels Institute (PFI), Enplus ou CANplus. Brûler d'autres types de granules n'est pas permis. Voir manuel d'instruction pour plus de détails.
- Ne pas raccorder à un conduit de fumée servant déjà pour un autre appareil.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, la formation de créosote peut être rapide.
- Remplacer par un verre céramique seulement.
- Aux É.-U., l'appareil doit être installé sur une plaque incombustible qui excède le devant de l'ouverture de porte d'au moins 6 pouces (152 mm) ainsi que chaque côté de l'ouverture de porte d'au moins 6 pouces (152 mm). Au Canada, l'appareil doit être installé sur une plaque incombustible qui excède le devant de l'ouverture de porte d'au moins 18 pouces (457 mm) ainsi que l'arrière et chaque côté de l'appareil d'au moins 8 pouces (203 mm). La plaque incombustible doit posséder une épaisseur minimale de 0.015" (0.38 mm). Consultez le manuel d'instructions pour plus de détails.
- Il doit y avoir un apport d'air frais dans la pièce. Lorsqu'installé dans une maison mobile, un apport d'air extérieur doit être installé.
- Ne pas obstruer les ouvertures d'air de combustion.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistente par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (É.-U.).

Made in St-Augustin-de-Desmaures, (Qc), Canada
14/12/2023 (# 999999)

SBI
Fabricant de poêles international
Stove Builder International

Fabriqué à St-Augustin-de-Desmaures, (Qc), Canada
14/12/2023 (# 999999)

27969

Intertek
Control Number(SA) : 4002461
Oct. 2014

REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:
Certified to/Certifié selon ASTM E1509
Certified to/Certifié selon ULC S627
Certified to/Certifié selon UL 1482
Certified to/Certifié selon ASTM E2515
Certified to/Certifié selon ASTM E2779
Certified to/Certifié selon CSA B415.1

LISTED PELLET FUEL BURNING APPLIANCE

POÊLE À GRANULÉS DE BOIS HOMOLOGUÉ

MODEL / MODÈLE : ECO-65R

Serial Number / No. de Série: 1

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using pellet fuel.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.U. (EPA). Conforme aux normes d'émission de particules de 2020 utilisant du combustible à granulés.
Weighted average emission rate / Moyenne pondérée des émissions: 0.77 g/h

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm.
(For more information go to www.p65warnings.ca.gov)

CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.
- 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 THE HOPPER.
- MOVING PARTS MAY CAUSE INJURY.
- HOT PARTS. DO NOT OPERATE UNIT WITH THE SIDE OR REAR PANELS REMOVED.
- MAINTAIN HOPPER SEAL IN GOOD CONDITION.

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.
- OPÉRER CET APPAREIL SEULEMENT AVEC LE COUVERCLE DE LA TRÉMIE FERMÉ. DES ÉMISSIONS DE COMBUSTION PEUVENT SE PROPAGER PAR LA TRÉMIE SOUS CERTAINES CONDITIONS.
- NE PAS SURCHARGER LA TRÉMIE.
- DES PIÈCES EN MOUVEMENT PEUVENT CAUSER DES BLESSURES.
- PIÈCES CHAUDES. NE PAS UTILISER SI LES PANNEAUX DE CÔTÉS OU ARRIÈRES SONT ENLEVÉS.
- CONSERVER LE JOINT D'ÉTANCHÉITÉ DE LA TRÉMIE EN BONNES CONDITIONS.

DANGER

- DISCONNECT POWER BEFORE SERVICING UNIT.
- RISK OF ELECTRICAL SHOCK.

DANGER

- DÉBRANCHER POUR L'ENTRETIEN.
- RISQUE DE CHOCS ÉLECTRIQUES.

Made in St-Augustin-de-Desmaures, (Qc), Canada
14/12/2023 (# 999999)

SBI
Fabricant de poêles international
Stove Builder International

Fabriqué à St-Augustin-de-Desmaures, (Qc), Canada
14/12/2023 (# 999999)

27970

REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

C ETL LISTED US

Intertek

Control Number(MH) : 4009383
Oct. 2014

STANDARDS / NORMES D'ESSAI:
Certified to/Certifié selon ASTM E1509
Certified to/Certifié selon ULC S627
Certified to/Certifié selon UL 1482
Certified to/Certifié selon ASTM E2515
Certified to/Certifié selon ASTM E2779
Certified to/Certifié selon CSA B415.1

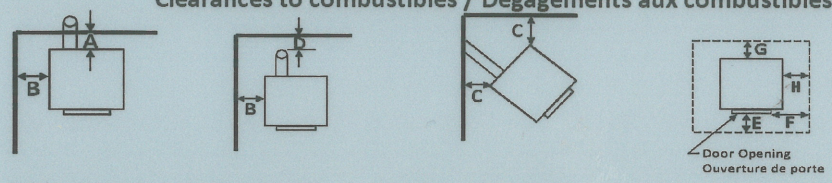
LISTED PELLET FUEL BURNING APPLIANCE

POÊLE À GRANULÉS DE BOIS HOMOLOGUÉ

MODEL / MODÈLE : P120

Serial Number
No. de Série: 1

Clearances to combustibles / Dégagements aux combustibles



loor protection
'rotection de plancher

A: 3 in./po. (76 mm) C: 3 in./po. (76 mm) E: 6 in./po. (152 mm) USA F: 6 in./po. (152 mm) USA H: 8 in./po.
B: 6 in./po. (152 mm) D: See Vent manufacturer 18 in./po. (457 mm) CANADA G: 8 in./po. (203 mm) CANADA (203 mm) CANADA

Electrical rating / Alimentation électrique: 115 V, 60 Hz, 2.9 amp.
Maximum input rating / Régime maximal: 7.6 lbs/hr

Minimum floor to ceiling distance: 72 in. (183 cm.)
Distance minimale plafond-plancher: 72 po. (183 cm.)

PREVENT HOUSE FIRES

- Install with a four (4) inches diameter exhaust venting system listed to UL103/ULC S629 or UL641/ULC S609.
- In case of an exhaust system passing through a combustible wall, follow manufacturer's instructions and refer to local building codes.
- Keep viewing and ash removal doors tightly closed during operation.
- Room heater, pellet fuel-burning type, also for use in mobile homes.
- Install and use only in accordance with manufacturer's instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- For use with premium grade wood pellets or better as determined by organizations such as Pellet Fuels Institute (PFI), Enplus and CANplus. Burning other types of pellets is not permitted. See owner's manual for more details.
- Do not connect to a chimney flue serving another appliance.
- Inspect and clean chimney frequently. Under certain conditions of use, creosote buildup may occur rapidly.
- Replace with ceramic glass only.
- In the USA, the unit must be installed on a non-combustible floor pad extending at least 6 inches (152 mm) in front of the door opening and at least 6 inches (152 mm) on each side of the door opening. In Canada, the unit must be installed on a non-combustible floor pad extending at least 18 inches (457 mm) in front of the door opening and at least 8 inches (203 mm) at the back and on each side of the unit. The floor pad must have a thickness of at least 0.015" (0.38mm). Consult owner's manual for more details.
- A source of fresh air must be provided to the room. When installed in a mobile home, air from outdoors must be provided.
- Do not obstruct combustion air opening.

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

PRÉVENEZ LES INCENDIES

- Installer avec un tuyau d'évacuation de quatre (4) pouces homologué selon la norme UL 103/ULC S629 ou UL 641/ULC S609.
- Si le tuyau d'évacuation doit traverser un mur combustible, suivre les instructions du fabricant et se référer aux codes du bâtiment locaux.
- Garder la porte du poêle et celle du cendrier fermées pendant l'opération.
- L'unité de chauffage aux granules peut aussi être installée dans une maison mobile.
- Observer les directives du fabricant pour l'installation et l'utilisation du poêle.
- Contacter les autorités locales pour les restrictions d'installation dans votre secteur.
- Pour utilisation avec granules de bois de qualité premium ou mieux tel que déterminée par des organismes tels que Pellet Fuels Institute (PFI), Enplus ou CANplus. Brûler d'autres types de granules n'est pas permis. Voir manuel d'instruction pour plus de détails.
- Ne pas raccorder à un conduit de fumée servant déjà pour un autre appareil.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, la formation de créosote peut être rapide.
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- Il doit y avoir un apport d'air frais dans la pièce. Lorsqu'installé dans une maison mobile, un apport d'air extérieur doit être installé.
- Ne pas obstruer les ouvertures d'air de combustion.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistente par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (É.-U.).

Made in Madison Height, (VA), USA
14/12/2023 (# 999999)

SBI
Fabricant de poêles international
Stove Builder International

Fabriqué à Madison Height, (VA), USA
14/12/2023 (# 999999)

Intertek

Control Number(MH) : 4009383
Oct. 2014

REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:
Certified to/Certifié selon ASTM E1509
Certified to/Certifié selon ULC S627
Certified to/Certifié selon UL 1482
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Certified to/Certifié selon ASTM E2779
Certified to/Certifié selon CSA B415.1

LISTED PELLET FUEL BURNING APPLIANCE

POÊLE À GRANULÉS DE BOIS HOMOLOGUÉ

MODEL / MODÈLE : P120

Serial Number / No. de Série: 1

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using pellet fuel.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.U. (EPA). Conforme aux normes d'émission de particules de 2020 utilisant du combustible à granulés.
Weighted average emission rate / Moyenne pondérée des émissions: 0.77 g/h

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm. (For more information go to www.p65warnings.ca.gov)

CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.
- 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 THE HOPPER.
- MOVING PARTS MAY CAUSE INJURY.
- HOT PARTS. DO NOT OPERATE UNIT WITH THE SIDE OR REAR PANELS REMOVED.
- MAINTAIN HOPPER SEAL IN GOOD CONDITION.

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
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- CONSERVER LE JOINT D'ÉTANCHÉITÉ DE LA TRÉMIE EN BONNES CONDITIONS.

DANGER

- DISCONNECT POWER BEFORE SERVICING UNIT.
- RISK OF ELECTRICAL SHOCK.

DANGER

- DÉBRANCHER POUR L'ENTRETIEN.
- RISQUE DE CHOCS ÉLECTRIQUES.

Made in Madison Height, (VA), USA
14/12/2023 (# 999999)

SBI
Fabricant de poêles international
Stove Builder International

Fabriqué à Madison Height, (VA), USA
14/12/2023 (# 999999)

Summary					
Date	Run time	Fuel added	Burn rate	Average Flue	Average Ambiant
	(Hour)	(Lbs)	(lbs/hr wet basis)	(F°)	(F°)
2023-11-09	2.00	4.42	2.21	174.51	67.89
2023-11-08	2.00	4.32	2.16	230.69	69.44
2023-10-24	2.00	4.88	2.44	197.34	83.31
2023-10-20	2.00	5.05	2.53	204.08	85.27
2023-10-19	2.00	6.05	3.02	220.00	87.50
2023-10-17	2.00	4.22	2.11	186.48	83.69
2023-10-16	2.00	4.02	2.01	178.91	82.04
2023-10-12	2.00	3.96	1.98	180.74	82.23
2023-09-28	2.00	5.10	2.55	200.84	83.24
2023-09-27	2.00	4.94	2.47	204.74	83.11
2023-09-25	2.00	4.70	2.35	179.97	81.65
2023-09-22	2.00	4.99	2.49	193.13	86.00
2023-09-21	2.00	4.88	2.44	193.61	87.54
2023-09-20	2.00	4.28	2.14	179.15	81.48
2023-09-14	2.00	5.33	2.67	216.05	86.27
2023-09-13	2.00	5.01	2.51	200.92	87.72
2023-09-07	2.00	5.06	2.53	206.50	94.01
2023-09-05	2.00	4.98	2.53	202.35	92.26
2023-09-01	2.00	4.79	2.40	192.58	88.71
2023-08-29	2.00	4.58	2.29	186.40	85.57
2023-08-10	2.00	4.94	2.47	197.29	87.79
2023-08-08	2.00	4.79	2.40	192.23	83.39
2023-08-07	2.00	5.23	2.61	201.36	85.77
2023-07-27	2.00	4.70	2.35	188.96	84.90
2023-07-26	2.00	4.81	2.41	173.12	87.76
2023-07-26	2.00	4.54	2.27	150.53	87.95
2023-07-25	2.00	4.90	2.45	208.41	87.59

Total pre burn	Average Fuel added	Average Burn rate	Average flue temp	Average ambiant temp
(Hour)	(Lbs)	(lbs/hr wet basis)	(F°)	(F°)
54.00	4.80	2.40	194.11	84.60

All conditionning hours were done using Energex Wood Pellet tested at 5.41 % MC (wet basis)

2024-04-19

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:W223-0613-01
Issue No: 1

Client: Stove Builder International
250 Rue de Copenhague
Saint-Augustin-de-Desmaures, QC G3A 2H3
Attention: Guillaume Thibodeau-Fortin

PO No:

Signed: Katy Jahr
Katy Jahr
Chemistry Lab Supervisor
Date of Issue: 11/27/2023

Sample Details

Sample Log No:	W223-0613-01	**Sample Date:**	
Sample Designation:	Pellets	**Sample Time:**	
Sample Recognized As:	Wood Pellets	**Arrival Date:**	11/6/2023

Test Results

	METHOD	UNITS	MOISTURE FREE	AS RECEIVED
Moisture Total	ASTM E871	wt. %		5.41
Ash	ASTM D1102	wt. %	0.47	0.44
Volatile Matter	ASTM D3175	wt. %		
Fixed Carbon by Difference	ASTM D3172	wt. %		
Sulfur	ASTM D4239	wt. %	0.061	0.057
SO_2	Calculated	lb/mmbtu		0.140
Net Cal. Value at Const. Pressure	ISO 1928	GJ/tonne	18.32	17.20
Gross Cal. Value at Const. Vol.	ASTM E711	Btu/lb	8672	8203
Carbon	ASTM D5373	wt. %	47.52	44.95
Hydrogen*	ASTM D5373	wt. %	8.56	8.10
Nitrogen	ASTM D5373	wt. %	< 0.20	< 0.19
Oxygen*	ASTM D3176	wt. %	> 43.18	> 40.85

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

Chlorine	ASTM D6721	mg/kg		
Fluorine	ASTM D3761	mg/kg		
Mercury	ASTM D6722	mg/kg		
Bulk Density	ASTM E873	lbs/ft^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		

Comments:

Accreditation #60243

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	8.37	282.39	67.57
1	8.26	268.45	67.92
2	8.18	260.48	67.77
3	8.10	256.81	68.01
4	8.03	252.13	68.04
5	7.99	247.25	67.89
6	7.95	242.19	68.03
7	7.89	236.04	67.77
8	7.86	229.69	67.89
9	7.84	224.47	68.04
10	7.79	219.26	68.03
11	7.76	213.70	68.24
12	7.74	208.61	68.26
13	7.67	204.03	68.29
14	7.64	199.00	68.19
15	7.62	196.23	68.06
16	7.58	193.79	67.92
17	7.56	190.53	68.08
18	7.51	187.62	68.01
19	7.50	185.66	68.16
20	7.47	182.98	68.21
21	7.41	181.13	68.32
22	7.39	180.84	68.17
23	7.36	179.37	68.27
24	7.33	177.59	68.36
25	7.28	175.51	68.27
26	7.25	174.61	68.35
27	7.19	174.36	68.25
28	7.17	174.62	67.98
29	7.15	174.73	67.97
30	7.09	174.55	68.01
31	7.07	174.14	67.83
32	7.03	173.45	67.79
33	7.00	171.60	68.04
34	6.98	169.70	67.80
35	6.97	169.12	67.88
36	6.91	167.65	67.97
37	6.87	167.63	67.88
38	6.83	167.94	67.67
39	6.79	167.48	67.40
40	6.78	166.52	67.82
41	6.73	166.48	67.95
42	6.69	166.27	67.92
43	6.67	166.42	68.00
44	6.62	166.43	67.68

45	6.59	165.72	67.69
46	6.54	165.13	67.67
47	6.50	166.07	67.71
48	6.46	166.78	67.83
49	6.43	166.42	68.09
50	6.42	165.27	68.05
51	6.37	164.94	68.00
52	6.36	164.10	68.02
53	6.32	162.67	67.87
54	6.29	161.51	67.75
55	6.25	161.73	67.77
56	6.20	163.51	67.75
57	6.18	164.06	67.66
58	6.14	164.07	67.70
59	6.10	162.99	67.66
60	6.07	162.99	67.83
61	6.03	162.56	67.56
62	6.00	161.75	67.64
63	5.99	161.62	67.80
64	5.94	161.05	67.41
65	5.91	160.14	67.66
66	5.88	159.62	67.47
67	5.85	158.80	67.72
68	5.81	158.56	67.45
69	5.77	158.54	67.27
70	5.74	158.96	67.32
71	5.70	158.63	67.39
72	5.66	158.88	67.32
73	5.65	158.67	67.67
74	5.60	158.79	67.76
75	5.58	159.04	67.60
76	5.57	159.16	67.65
77	5.50	158.97	67.68
78	5.47	159.86	67.70
79	5.44	160.96	67.86
80	5.39	161.92	67.54
81	5.34	162.80	67.48
82	5.29	163.95	67.63
83	5.28	164.12	67.64
84	5.25	164.91	67.53
85	5.17	163.97	67.69
86	5.17	163.22	67.76
87	5.13	162.78	67.91
88	5.10	162.04	67.96
89	5.08	160.66	67.87
90	5.04	158.99	68.10
91	5.04	157.42	68.03

92	4.99	157.18	67.92
93	4.95	157.66	68.16
94	4.91	158.59	68.08
95	4.89	158.90	68.27
96	4.85	159.13	68.22
97	4.81	159.23	67.98
98	4.77	159.71	68.04
99	4.77	158.55	68.00
100	4.74	158.20	68.04
101	4.69	157.83	68.10
102	4.64	158.60	67.99
103	4.58	160.99	68.13
104	4.55	162.34	68.07
105	4.52	163.68	68.21
106	4.46	164.53	68.25
107	4.41	166.01	68.14
108	4.38	165.97	68.00
109	4.34	165.19	68.08
110	4.32	164.93	68.01
111	4.29	165.43	68.07
112	4.25	164.81	68.05
113	4.23	163.48	67.87
114	4.18	163.25	67.80
115	4.13	162.85	67.79
116	4.10	163.33	67.89
117	4.07	164.86	68.02
118	4.04	165.19	67.90
119	4.02	164.29	67.71
120	3.95	162.72	67.75

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	8.39	266.35	68.65
1	8.32	266.44	68.61
2	8.22	268.19	68.73
3	8.18	267.07	68.70
4	8.12	267.44	68.76
5	8.08	267.56	68.87
6	8.05	267.25	68.79
7	8.00	267.01	68.84
8	7.96	268.45	68.86
9	7.95	267.77	68.77
10	7.90	269.51	68.85
11	7.89	269.62	68.90
12	7.85	269.93	68.83
13	7.83	271.30	68.92
14	7.80	274.15	68.78
15	7.75	273.36	68.83
16	7.71	272.00	69.00
17	7.68	271.31	68.99
18	7.65	269.48	69.09
19	7.61	270.28	68.84
20	7.58	272.39	68.98
21	7.54	274.37	69.08
22	7.51	275.98	69.03
23	7.47	277.93	69.28
24	7.44	276.69	69.12
25	7.40	277.05	69.15
26	7.38	275.96	69.15
27	7.38	276.34	69.21
28	7.33	277.80	69.18
29	7.30	279.01	69.26
30	7.27	277.13	69.23
31	7.24	274.56	69.27
32	7.19	273.63	69.29
33	7.17	276.43	69.33
34	7.13	276.17	69.27
35	7.09	275.39	69.26
36	7.06	276.27	69.23
37	7.01	276.85	69.35
38	6.99	277.31	69.43
39	6.94	276.41	69.36
40	6.88	276.81	69.39
41	6.88	277.16	69.37
42	6.82	278.82	69.45
43	6.78	278.47	69.49
44	6.75	277.79	69.44

45	6.71	276.00	69.37
46	6.68	275.53	69.46
47	6.66	275.47	69.52
48	6.63	277.06	69.54
49	6.59	280.30	69.50
50	6.56	280.68	69.49
51	6.50	280.92	69.54
52	6.48	281.87	69.57
53	6.46	283.40	69.64
54	6.41	285.14	69.51
55	6.39	284.55	69.56
56	6.34	285.41	69.49
57	6.29	285.21	69.53
58	6.26	283.95	69.42
59	6.24	283.92	69.55
60	6.20	273.15	69.54
61	6.15	264.60	69.51
62	6.11	260.01	69.60
63	6.06	255.76	69.66
64	6.05	250.50	69.47
65	6.03	244.05	69.61
66	5.98	237.69	69.51
67	5.95	231.54	69.56
68	5.92	225.68	69.58
69	5.87	219.35	69.66
70	5.82	213.99	69.60
71	5.80	208.73	69.43
72	5.76	203.72	69.57
73	5.71	198.56	69.68
74	5.68	194.98	69.59
75	5.65	193.43	69.59
76	5.61	191.30	69.56
77	5.59	188.39	69.56
78	5.55	186.29	69.60
79	5.53	184.51	69.68
80	5.48	182.88	69.59
81	5.44	181.15	69.60
82	5.41	179.35	69.64
83	5.38	177.97	69.62
84	5.34	176.71	69.78
85	5.30	176.58	69.59
86	5.26	175.27	69.66
87	5.22	172.89	69.74
88	5.19	170.82	69.76
89	5.16	169.62	69.68
90	5.13	167.70	69.89
91	5.09	166.56	69.77

92	5.06	166.85	69.79
93	5.01	166.62	69.71
94	4.98	167.69	69.69
95	4.95	168.89	69.62
96	4.93	169.14	69.58
97	4.89	168.38	69.87
98	4.85	169.35	69.83
99	4.81	169.69	69.89
100	4.79	170.56	69.81
101	4.73	171.29	69.84
102	4.71	171.33	69.70
103	4.66	169.98	69.95
104	4.63	170.08	69.83
105	4.56	168.89	69.65
106	4.53	167.73	69.65
107	4.49	166.76	69.73
108	4.46	166.87	69.77
109	4.44	166.75	69.78
110	4.40	166.36	69.92
111	4.36	166.35	69.81
112	4.32	166.98	69.92
113	4.29	167.02	69.75
114	4.27	167.08	69.96
115	4.22	166.43	69.79
116	4.19	166.55	69.70
117	4.15	167.01	69.82
118	4.11	168.00	69.81
119	4.10	167.48	69.86
120	4.06	167.44	69.89

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	9.40	296.35	78.95
1	9.30	291.95	79.67
2	9.18	288.36	77.88
3	9.09	285.52	79.41
4	9.02	281.45	81.09
5	8.98	276.44	79.19
6	8.93	270.59	79.90
7	8.91	264.30	79.26
8	8.88	259.29	80.43
9	8.85	253.32	85.16
10	8.82	248.01	83.88
11	8.78	243.04	83.24
12	8.73	238.23	81.79
13	8.72	233.86	83.98
14	8.68	229.82	82.95
15	8.62	226.63	84.14
16	8.60	223.00	83.12
17	8.57	219.78	83.32
18	8.52	217.24	84.23
19	8.47	216.66	83.98
20	8.40	216.43	83.50
21	8.38	215.12	84.23
22	8.34	213.15	86.77
23	8.29	211.04	83.91
24	8.27	208.26	83.84
25	8.23	205.87	84.78
26	8.20	204.35	84.90
27	8.15	203.24	87.69
28	8.12	202.23	85.05
29	8.08	200.31	86.19
30	8.05	199.14	84.52
31	8.00	198.16	83.17
32	7.97	196.51	84.31
33	7.92	195.86	84.77
34	7.86	195.53	83.84
35	7.83	194.69	83.82
36	7.81	194.00	83.76
37	7.78	193.39	84.41
38	7.74	191.72	83.90
39	7.68	190.85	84.55
40	7.65	190.52	84.05
41	7.62	190.56	84.62
42	7.59	190.49	84.07
43	7.57	189.67	82.92
44	7.54	188.75	82.81

45	7.53	188.30	83.41
46	7.48	187.38	84.41
47	7.44	186.55	84.41
48	7.36	186.32	83.78
49	7.35	186.10	83.23
50	7.31	186.55	83.06
51	7.25	187.80	83.58
52	7.23	188.64	82.98
53	7.19	188.54	84.85
54	7.13	188.68	85.06
55	7.10	188.22	83.47
56	7.04	187.40	82.71
57	7.03	186.40	82.88
58	6.97	187.01	83.42
59	6.95	185.82	82.58
60	6.94	183.38	83.00
61	6.89	181.58	83.22
62	6.84	180.04	83.34
63	6.79	179.56	83.05
64	6.79	179.30	83.23
65	6.72	179.03	82.84
66	6.68	178.96	82.70
67	6.64	180.08	84.59
68	6.59	181.07	82.47
69	6.57	181.83	82.18
70	6.51	182.60	82.56
71	6.48	183.14	82.89
72	6.44	183.45	83.69
73	6.40	183.24	83.92
74	6.34	182.95	83.28
75	6.30	182.57	83.67
76	6.24	181.30	83.41
77	6.23	179.74	83.05
78	6.19	178.87	82.82
79	6.15	178.72	82.52
80	6.11	178.33	82.64
81	6.06	178.29	82.55
82	6.01	179.27	82.47
83	5.96	180.95	82.23
84	5.94	181.37	82.92
85	5.88	181.55	82.43
86	5.86	181.30	84.61
87	5.81	180.21	82.30
88	5.78	179.42	82.41
89	5.75	178.93	82.19
90	5.73	179.49	83.08
91	5.69	180.57	84.48

92	5.63	181.84	82.95
93	5.59	182.64	83.25
94	5.56	181.97	85.08
95	5.54	180.63	84.44
96	5.51	178.97	83.47
97	5.48	177.19	83.47
98	5.42	177.29	82.83
99	5.37	178.66	83.32
100	5.35	180.37	82.95
101	5.28	181.51	83.10
102	5.26	182.01	83.75
103	5.20	182.17	82.92
104	5.15	182.50	83.18
105	5.11	182.48	83.11
106	5.08	183.11	84.24
107	5.02	183.59	82.96
108	4.99	183.92	83.89
109	4.95	183.16	82.66
110	4.94	181.79	84.04
111	4.88	180.92	84.39
112	4.87	179.90	84.48
113	4.82	178.97	84.12
114	4.79	178.48	83.60
115	4.74	178.43	83.99
116	4.70	178.98	83.17
117	4.67	179.07	83.58
118	4.61	180.03	83.88
119	4.57	181.31	83.16
120	4.52	181.73	84.03

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	8.91	305.44	84.34
1	8.81	300.83	81.94
2	8.73	295.71	89.20
3	8.60	291.74	82.81
4	8.52	287.87	84.29
5	8.50	284.47	87.17
6	8.42	280.24	87.31
7	8.38	273.54	85.71
8	8.35	267.50	86.03
9	8.28	261.97	86.53
10	8.27	256.47	86.01
11	8.23	250.36	84.45
12	8.21	245.97	86.52
13	8.15	242.28	85.43
14	8.12	239.29	86.70
15	8.07	235.98	84.86
16	8.03	232.70	84.28
17	8.01	228.88	85.80
18	7.96	225.44	84.91
19	7.92	222.39	84.52
20	7.90	219.44	84.05
21	7.86	217.11	84.29
22	7.81	216.33	85.31
23	7.75	214.89	83.89
24	7.71	213.22	83.95
25	7.68	211.24	84.73
26	7.67	208.86	84.57
27	7.61	207.99	83.56
28	7.56	207.20	85.48
29	7.52	206.24	84.80
30	7.48	205.22	84.35
31	7.42	205.56	84.51
32	7.38	205.67	84.64
33	7.33	205.30	85.17
34	7.28	205.22	85.11
35	7.25	204.95	84.61
36	7.19	204.37	84.01
37	7.14	203.08	84.81
38	7.10	202.93	84.80
39	7.05	202.46	84.02
40	6.99	202.30	84.83
41	6.98	201.86	84.38
42	6.94	201.17	85.17
43	6.89	200.33	85.35
44	6.85	199.41	84.61

45	6.79	198.57	85.47
46	6.75	197.93	85.68
47	6.70	197.95	83.91
48	6.66	197.99	84.96
49	6.61	197.36	84.93
50	6.53	197.34	84.95
51	6.51	197.25	83.54
52	6.48	196.89	84.22
53	6.41	196.47	83.91
54	6.39	196.56	83.90
55	6.32	196.26	85.32
56	6.27	196.22	84.39
57	6.26	196.08	84.48
58	6.20	195.03	84.15
59	6.17	194.43	84.71
60	6.14	194.10	84.65
61	6.09	193.36	84.31
62	6.04	193.38	84.42
63	5.99	193.07	84.39
64	5.95	193.57	84.10
65	5.90	193.38	84.55
66	5.86	193.23	84.92
67	5.81	194.38	85.04
68	5.77	195.04	84.71
69	5.74	194.07	85.28
70	5.70	193.80	85.15
71	5.66	194.40	85.44
72	5.61	194.52	84.77
73	5.58	193.34	84.94
74	5.52	192.19	85.87
75	5.48	191.80	84.70
76	5.45	191.23	85.31
77	5.42	190.74	84.88
78	5.37	189.68	84.60
79	5.36	188.27	84.96
80	5.31	186.65	84.79
81	5.28	184.86	85.16
82	5.26	182.96	85.40
83	5.23	181.72	85.74
84	5.18	180.92	84.97
85	5.13	181.17	84.57
86	5.10	181.83	85.19
87	5.05	183.00	85.28
88	5.02	183.37	85.86
89	4.98	183.22	86.00
90	4.93	183.26	84.93
91	4.91	182.60	86.17

92	4.87	182.92	85.52
93	4.83	183.43	85.66
94	4.79	184.09	85.56
95	4.76	183.86	85.78
96	4.70	183.96	86.33
97	4.67	184.16	85.77
98	4.64	183.68	85.49
99	4.59	182.95	85.31
100	4.56	182.48	85.45
101	4.53	182.66	85.95
102	4.49	183.02	86.73
103	4.43	183.46	86.80
104	4.40	184.69	86.21
105	4.38	184.68	86.57
106	4.34	183.87	87.11
107	4.31	182.37	87.77
108	4.29	180.90	86.17
109	4.25	179.80	86.06
110	4.22	180.35	86.54
111	4.18	179.79	85.99
112	4.15	179.45	86.23
113	4.11	179.59	88.15
114	4.05	180.51	86.72
115	4.02	181.63	86.68
116	3.99	181.96	87.70
117	3.95	182.23	86.54
118	3.90	182.46	86.56
119	3.86	181.73	86.38
120	3.85	180.58	86.26

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	6.05	315.63	94.50
1	5.95	310.45	103.76
2	5.86	305.94	94.87
3	5.75	302.24	85.64
4	5.70	297.73	90.27
5	5.63	291.71	95.09
6	5.56	286.35	86.71
7	5.51	281.80	87.48
8	5.47	277.69	89.73
9	5.41	273.42	90.54
10	5.35	269.47	87.63
11	5.30	265.20	84.87
12	5.26	261.60	86.22
13	5.23	257.47	87.26
14	5.18	253.66	85.56
15	5.11	249.89	85.56
16	5.07	246.24	84.18
17	5.04	243.18	84.71
18	5.00	240.05	84.98
19	4.96	236.79	87.13
20	4.91	233.06	86.19
21	4.87	229.71	83.94
22	4.84	227.50	85.14
23	4.79	225.60	85.25
24	4.72	224.22	85.28
25	4.68	223.25	85.62
26	4.67	222.12	89.21
27	4.61	222.37	89.52
28	4.54	222.52	88.24
29	4.50	221.18	86.06
30	4.43	219.91	84.83
31	4.40	218.89	84.97
32	4.37	217.68	91.93
33	4.33	216.53	88.49
34	4.28	214.30	88.45
35	4.22	212.62	87.89
36	4.17	212.42	88.98
37	4.13	212.27	86.02
38	4.07	212.02	86.82
39	3.99	212.48	89.84
40	3.98	213.12	86.24
41	3.92	214.13	87.24
42	3.86	214.42	88.18
43	3.81	214.63	86.73
44	3.74	213.80	84.52

45	3.70	212.16	84.67
46	3.67	210.68	86.69
47	3.63	209.57	86.48
48	3.58	208.84	85.56
49	3.53	207.98	88.75
50	3.48	207.09	84.41
51	3.44	205.77	85.85
52	3.40	205.42	86.44
53	3.33	206.52	87.45
54	3.27	207.20	86.37
55	3.22	207.46	85.15
56	3.18	208.05	85.66
57	3.14	207.10	85.65
58	3.08	207.11	88.33
59	3.03	206.83	85.69
60	2.98	206.88	85.81
61	2.90	207.66	85.39
62	2.88	208.02	86.00
63	2.83	208.61	86.38
64	2.75	209.66	85.75
65	2.71	211.71	85.81
66	2.65	212.68	88.37
67	2.60	212.68	89.32
68	2.55	212.49	87.78
69	2.49	213.05	87.40
70	2.45	212.56	88.40
71	2.39	211.31	87.81
72	2.35	209.64	89.54
73	2.30	208.42	88.02
74	2.24	206.83	87.27
75	2.20	205.30	87.23
76	2.16	203.96	85.66
77	2.13	203.26	87.28
78	2.08	203.43	87.20
79	2.03	202.70	87.20
80	1.99	203.33	87.57
81	1.92	203.40	87.66
82	1.90	202.14	87.68
83	1.85	201.67	87.43
84	1.79	201.48	87.88
85	1.75	202.57	87.88
86	1.69	204.46	87.53
87	1.62	205.07	87.66
88	1.60	204.15	87.83
89	1.53	203.46	86.96
90	1.49	203.40	90.01
91	1.44	203.60	88.12

92	1.40	203.22	87.44
93	1.34	203.19	87.55
94	1.29	204.14	90.90
95	1.25	204.11	88.61
96	1.19	204.15	86.09
97	1.17	203.22	88.91
98	1.14	203.04	88.56
99	1.06	204.14	87.49
100	1.03	205.06	87.35
101	0.96	204.44	87.16
102	0.94	204.11	87.20
103	0.89	204.14	87.73
104	0.82	205.10	88.08
105	0.76	205.78	88.42
106	0.71	205.99	88.21
107	0.69	205.97	87.58
108	0.64	204.28	86.61
109	0.61	203.13	87.28
110	0.53	202.25	87.34
111	0.48	203.79	87.58
112	0.42	205.52	86.11
113	0.37	207.09	87.45
114	0.32	207.19	88.08
115	0.28	206.51	87.72
116	0.21	206.35	87.08
117	0.15	207.48	85.76
118	0.08	209.32	86.94
119	0.03	211.07	88.82
120	0.00	211.93	90.27

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	8.47	294.27	86.71
1	8.40	280.58	82.54
2	8.31	271.13	84.52
3	8.26	263.79	84.11
4	8.19	257.64	83.95
5	8.15	251.28	83.65
6	8.14	244.23	83.74
7	8.09	237.46	84.10
8	8.07	231.80	83.02
9	8.01	227.65	83.72
10	7.99	224.04	83.24
11	7.96	219.33	84.37
12	7.96	214.09	83.14
13	7.89	209.39	83.44
14	7.90	205.49	83.83
15	7.87	202.00	84.98
16	7.82	200.28	84.04
17	7.81	198.77	83.63
18	7.76	196.83	84.01
19	7.74	195.86	84.06
20	7.71	195.32	83.80
21	7.67	194.11	84.25
22	7.66	192.11	84.34
23	7.61	190.09	84.35
24	7.58	189.16	84.19
25	7.56	188.00	85.94
26	7.55	187.13	84.30
27	7.49	185.79	84.40
28	7.48	185.06	83.72
29	7.44	184.67	84.02
30	7.43	184.08	85.04
31	7.39	183.36	83.77
32	7.36	182.62	83.56
33	7.33	182.07	83.02
34	7.27	181.21	83.27
35	7.26	180.63	83.20
36	7.22	179.59	84.12
37	7.19	178.80	83.49
38	7.16	177.80	85.79
39	7.11	177.86	84.53
40	7.09	178.11	83.02
41	7.05	178.23	84.47
42	7.02	178.41	83.85
43	6.98	178.93	84.23
44	6.93	180.13	82.75

45	6.88	181.66	83.55
46	6.85	183.03	84.34
47	6.83	182.42	83.44
48	6.80	180.91	83.49
49	6.75	178.75	84.33
50	6.73	177.17	84.02
51	6.69	176.71	83.73
52	6.66	176.88	83.51
53	6.62	177.06	83.36
54	6.57	177.59	83.32
55	6.53	177.27	83.10
56	6.51	176.42	83.16
57	6.46	176.73	83.25
58	6.43	176.62	83.95
59	6.40	176.81	83.79
60	6.35	176.40	84.23
61	6.34	176.38	83.11
62	6.28	176.32	83.60
63	6.25	177.46	83.82
64	6.20	178.22	83.03
65	6.17	178.23	83.17
66	6.13	178.40	83.40
67	6.07	179.73	83.49
68	6.04	180.04	82.93
69	6.01	178.81	83.47
70	5.96	177.97	83.45
71	5.93	176.91	82.69
72	5.89	176.34	82.66
73	5.87	175.65	83.23
74	5.84	175.18	83.18
75	5.81	174.38	82.91
76	5.77	174.24	83.91
77	5.72	174.73	82.91
78	5.69	175.00	83.75
79	5.66	174.55	82.93
80	5.64	174.27	84.72
81	5.60	173.28	84.37
82	5.57	172.02	83.00
83	5.54	172.02	82.52
84	5.49	172.77	82.73
85	5.46	173.01	82.93
86	5.41	173.01	83.81
87	5.40	172.60	83.24
88	5.36	171.60	82.94
89	5.32	170.85	83.21
90	5.28	170.63	83.07
91	5.24	171.66	83.15

92	5.19	173.14	82.96
93	5.14	174.07	83.26
94	5.12	174.06	83.26
95	5.08	173.82	83.10
96	5.04	173.41	83.53
97	5.02	174.00	83.04
98	4.95	175.25	83.58
99	4.91	176.08	83.01
100	4.86	176.31	83.97
101	4.85	176.76	84.12
102	4.80	176.76	84.14
103	4.79	176.17	84.85
104	4.76	175.33	83.81
105	4.73	175.03	83.84
106	4.67	174.71	83.62
107	4.65	174.35	83.79
108	4.62	173.81	84.22
109	4.56	173.71	84.59
110	4.51	175.30	84.25
111	4.48	176.18	83.65
112	4.45	175.49	84.73
113	4.42	174.53	84.08
114	4.40	174.22	83.96
115	4.34	174.47	83.37
116	4.29	175.11	83.69
117	4.27	175.09	83.46
118	4.28	175.01	83.35
119	4.27	172.86	82.18
120	4.25	170.67	83.31

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	8.11	269.58	82.46
1	8.04	257.84	81.24
2	7.98	250.46	80.91
3	7.94	243.84	81.59
4	7.89	237.91	81.00
5	7.87	232.08	81.86
6	7.82	226.61	82.98
7	7.81	221.75	82.23
8	7.78	216.61	80.45
9	7.75	211.42	82.18
10	7.72	207.30	81.47
11	7.69	204.58	82.11
12	7.65	202.74	81.97
13	7.65	199.85	82.13
14	7.64	197.10	81.62
15	7.61	193.59	81.26
16	7.57	190.28	82.22
17	7.55	188.18	81.12
18	7.54	185.51	81.50
19	7.50	183.62	81.19
20	7.49	182.42	81.20
21	7.47	181.20	81.57
22	7.41	180.35	82.01
23	7.38	179.49	81.99
24	7.36	179.21	81.30
25	7.31	178.65	82.35
26	7.29	178.08	82.03
27	7.26	177.06	82.01
28	7.23	177.28	82.35
29	7.18	177.42	81.39
30	7.16	177.19	81.92
31	7.11	176.58	81.80
32	7.08	175.96	81.96
33	7.05	175.50	81.79
34	7.02	174.91	81.24
35	7.02	174.44	82.20
36	6.97	174.37	82.84
37	6.93	174.23	82.56
38	6.91	173.96	81.79
39	6.88	174.43	81.83
40	6.81	175.19	81.77
41	6.78	174.95	81.64
42	6.78	173.98	82.29
43	6.74	173.81	81.79
44	6.70	174.51	81.95

45	6.66	175.37	81.91
46	6.62	175.41	82.22
47	6.59	174.51	81.57
48	6.56	173.66	82.14
49	6.52	172.58	82.10
50	6.50	171.42	81.56
51	6.45	171.44	81.90
52	6.44	171.53	81.86
53	6.36	171.02	82.15
54	6.36	170.40	81.73
55	6.32	170.56	81.60
56	6.27	171.01	82.07
57	6.24	171.30	82.03
58	6.21	171.50	81.75
59	6.18	171.10	81.75
60	6.15	170.30	81.98
61	6.12	169.25	81.71
62	6.07	169.59	81.88
63	6.03	170.51	81.89
64	6.00	171.45	81.89
65	5.95	171.98	81.87
66	5.90	172.70	82.34
67	5.88	172.54	82.56
68	5.86	172.65	82.03
69	5.81	172.22	82.33
70	5.76	171.07	81.49
71	5.74	170.33	82.00
72	5.71	170.40	82.05
73	5.67	170.17	81.87
74	5.63	169.79	81.77
75	5.61	169.45	81.76
76	5.57	169.53	81.69
77	5.50	170.32	81.76
78	5.48	171.47	82.15
79	5.46	171.54	81.30
80	5.41	171.15	81.76
81	5.39	171.14	83.14
82	5.36	170.92	81.70
83	5.32	171.06	83.04
84	5.29	171.41	83.79
85	5.26	171.02	82.90
86	5.21	170.04	82.93
87	5.19	169.37	82.73
88	5.15	169.04	82.49
89	5.10	168.87	82.66
90	5.08	168.59	82.15
91	5.03	168.38	82.74

92	5.00	168.44	82.12
93	4.96	168.44	82.40
94	4.94	167.50	82.12
95	4.91	166.71	82.12
96	4.86	166.88	81.85
97	4.84	166.29	83.26
98	4.84	164.90	82.74
99	4.80	164.07	82.43
100	4.76	164.19	82.19
101	4.72	163.81	82.39
102	4.69	163.76	82.15
103	4.65	164.44	82.47
104	4.60	166.23	82.45
105	4.57	167.44	82.70
106	4.51	168.42	82.49
107	4.46	170.37	82.71
108	4.42	173.07	82.76
109	4.36	173.57	82.90
110	4.33	174.46	82.95
111	4.32	174.22	82.80
112	4.28	173.21	82.67
113	4.25	171.86	82.30
114	4.21	170.11	81.97
115	4.18	169.13	80.90
116	4.18	168.03	81.43
117	4.15	167.18	82.00
118	4.12	165.41	82.11
119	4.07	165.20	81.82
120	4.09	163.75	81.27

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	8.05	284.24	80.13
1	7.99	271.25	80.93
2	7.93	262.01	81.16
3	7.86	255.02	81.70
4	7.83	248.86	84.83
5	7.79	242.80	81.45
6	7.75	237.04	82.57
7	7.74	231.44	82.92
8	7.70	226.03	82.44
9	7.68	220.87	82.48
10	7.66	216.02	81.58
11	7.63	211.09	81.20
12	7.64	207.27	81.93
13	7.60	203.70	82.49
14	7.58	200.29	82.26
15	7.54	198.09	82.89
16	7.49	196.24	81.29
17	7.47	194.87	80.70
18	7.43	192.16	82.24
19	7.44	188.96	81.56
20	7.40	186.60	81.31
21	7.38	184.89	81.77
22	7.35	183.78	81.56
23	7.31	182.93	81.49
24	7.28	182.69	81.96
25	7.24	182.30	80.50
26	7.23	181.72	82.13
27	7.18	181.09	81.46
28	7.14	180.25	81.30
29	7.11	180.05	81.51
30	7.07	178.96	81.68
31	7.05	177.71	81.63
32	7.01	177.32	81.17
33	6.99	176.54	82.09
34	6.97	175.40	81.99
35	6.94	174.16	82.10
36	6.90	174.11	81.69
37	6.85	174.39	81.40
38	6.82	174.42	80.93
39	6.79	173.88	80.99
40	6.77	174.02	81.57
41	6.71	174.46	81.72
42	6.68	174.73	82.57
43	6.65	174.39	82.13
44	6.61	174.56	82.19

45	6.59	175.59	81.41
46	6.52	175.92	82.08
47	6.51	175.22	82.34
48	6.48	174.12	83.03
49	6.46	173.72	82.37
50	6.42	172.94	82.41
51	6.40	172.15	82.80
52	6.35	171.77	82.99
53	6.31	171.77	81.89
54	6.29	172.17	82.78
55	6.25	171.66	82.58
56	6.23	171.09	82.77
57	6.19	170.53	82.56
58	6.16	169.96	82.29
59	6.13	169.57	81.90
60	6.08	169.46	82.55
61	6.05	169.76	82.47
62	6.02	170.23	82.63
63	5.99	170.25	82.65
64	5.95	170.49	82.03
65	5.92	170.48	82.34
66	5.88	170.82	82.72
67	5.84	171.32	82.33
68	5.80	171.82	82.48
69	5.78	171.80	82.55
70	5.73	171.43	82.64
71	5.71	171.31	82.47
72	5.64	171.06	82.12
73	5.64	171.00	82.21
74	5.58	171.10	82.99
75	5.55	171.74	84.22
76	5.52	172.16	83.21
77	5.47	172.37	83.19
78	5.44	172.01	82.08
79	5.39	172.11	82.80
80	5.36	171.68	82.97
81	5.34	170.96	82.79
82	5.30	170.59	82.44
83	5.27	170.74	82.49
84	5.24	169.88	82.53
85	5.20	168.54	82.35
86	5.18	167.78	82.64
87	5.15	167.34	82.20
88	5.13	166.55	82.07
89	5.07	166.67	81.74
90	5.04	167.97	82.69
91	4.99	169.25	81.96

92	4.95	170.59	81.88
93	4.90	171.74	81.84
94	4.87	172.00	82.04
95	4.84	171.94	82.34
96	4.81	171.02	82.05
97	4.77	171.23	82.63
98	4.74	170.86	82.57
99	4.70	169.52	82.32
100	4.68	168.01	82.48
101	4.65	167.60	82.66
102	4.60	168.23	82.40
103	4.57	168.55	82.76
104	4.53	168.75	82.83
105	4.48	169.84	82.22
106	4.45	170.63	82.74
107	4.44	170.05	82.65
108	4.42	168.78	82.30
109	4.38	167.78	82.25
110	4.34	167.08	82.99
111	4.30	167.02	82.22
112	4.29	167.34	82.28
113	4.24	167.62	82.50
114	4.21	167.62	82.64
115	4.18	166.95	82.88
116	4.16	165.94	83.01
117	4.13	165.97	83.18
118	4.09	165.48	83.11
119	4.07	164.79	82.89
120	4.09	163.57	81.76

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	10.22	296.15	86.80
1	10.10	288.69	87.89
2	10.02	282.25	82.83
3	10.01	276.50	87.49
4	9.93	271.75	84.91
5	9.89	265.70	83.67
6	9.87	258.96	85.68
7	9.83	253.08	86.08
8	9.78	248.49	84.38
9	9.74	243.81	84.79
10	9.72	239.36	84.36
11	9.68	236.42	84.66
12	9.64	234.42	82.95
13	9.60	231.43	84.56
14	9.55	228.43	83.36
15	9.52	225.47	83.04
16	9.47	222.98	83.07
17	9.45	221.01	83.38
18	9.39	219.00	83.88
19	9.36	216.82	83.85
20	9.30	215.53	83.19
21	9.27	213.84	84.12
22	9.26	210.98	83.44
23	9.21	208.36	82.84
24	9.16	207.06	82.46
25	9.12	206.25	83.05
26	9.08	205.48	83.85
27	9.04	204.28	83.10
28	8.98	202.27	82.08
29	8.96	200.78	82.29
30	8.92	199.70	83.46
31	8.88	198.52	83.79
32	8.83	197.94	83.60
33	8.80	197.18	83.58
34	8.76	196.42	81.95
35	8.71	194.88	83.11
36	8.70	193.72	82.96
37	8.64	192.53	83.26
38	8.60	192.23	81.88
39	8.54	191.92	81.78
40	8.50	191.57	81.85
41	8.45	191.09	82.48
42	8.42	190.98	81.41
43	8.36	191.54	82.34
44	8.33	190.92	81.88

45	8.26	188.91	82.13
46	8.26	186.90	81.93
47	8.22	185.92	82.90
48	8.19	186.53	82.21
49	8.12	187.54	82.27
50	8.09	188.19	82.41
51	8.04	188.32	81.68
52	8.00	187.58	82.27
53	7.97	187.62	82.96
54	7.90	188.53	82.95
55	7.88	190.01	82.73
56	7.80	191.73	82.03
57	7.76	192.54	82.80
58	7.72	194.13	83.39
59	7.67	195.18	81.74
60	7.63	195.52	82.92
61	7.57	195.29	83.45
62	7.52	195.10	83.07
63	7.47	195.64	83.01
64	7.45	195.73	83.24
65	7.38	195.63	82.69
66	7.37	195.08	83.09
67	7.31	194.15	83.72
68	7.28	193.23	85.39
69	7.26	192.06	84.47
70	7.22	190.08	83.79
71	7.19	188.49	84.23
72	7.14	187.38	84.26
73	7.10	187.71	83.71
74	7.05	187.59	82.22
75	7.01	187.43	83.14
76	6.97	187.79	83.23
77	6.92	187.26	82.24
78	6.90	186.95	82.79
79	6.82	187.64	81.63
80	6.80	188.60	82.08
81	6.74	189.05	82.62
82	6.69	188.93	82.31
83	6.66	189.05	82.38
84	6.59	190.58	82.41
85	6.53	192.35	83.19
86	6.51	192.32	83.21
87	6.47	191.39	82.65
88	6.44	189.36	83.07
89	6.41	187.84	83.16
90	6.37	186.11	83.96
91	6.34	184.88	83.79

92	6.29	184.52	83.52
93	6.25	184.05	83.56
94	6.20	184.22	82.81
95	6.18	184.60	82.84
96	6.11	184.31	82.78
97	6.09	184.69	83.92
98	6.02	186.53	83.75
99	5.98	189.26	82.49
100	5.95	189.85	83.40
101	5.91	187.74	83.12
102	5.87	186.70	82.92
103	5.83	185.62	82.66
104	5.79	184.76	82.36
105	5.78	183.40	82.82
106	5.71	182.55	81.87
107	5.67	183.76	83.29
108	5.60	185.64	82.76
109	5.58	187.19	83.63
110	5.50	188.13	83.77
111	5.46	189.40	83.56
112	5.41	189.48	84.25
113	5.37	189.42	83.71
114	5.34	189.65	83.71
115	5.29	189.88	82.59
116	5.25	189.55	82.80
117	5.21	188.39	82.93
118	5.17	188.65	83.63
119	5.13	188.94	83.25
120	5.13	188.14	84.42

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	10.23	313.03	82.61
1	10.13	304.59	85.24
2	10.03	298.94	89.39
3	9.93	295.59	92.16
4	9.83	291.63	83.18
5	9.75	286.65	82.15
6	9.72	280.35	85.12
7	9.70	273.46	84.04
8	9.67	266.48	82.66
9	9.66	260.41	85.65
10	9.60	254.98	85.20
11	9.56	249.41	84.54
12	9.54	244.95	84.24
13	9.52	241.21	83.90
14	9.49	237.34	83.06
15	9.47	233.43	82.52
16	9.46	229.10	83.48
17	9.39	224.56	83.29
18	9.37	220.79	83.08
19	9.34	218.23	81.61
20	9.27	215.81	82.43
21	9.25	214.87	81.97
22	9.19	214.68	80.95
23	9.16	213.68	82.95
24	9.11	212.46	82.82
25	9.05	211.36	82.33
26	9.03	210.15	82.65
27	8.97	209.37	86.22
28	8.94	208.64	83.29
29	8.92	206.92	85.65
30	8.85	204.77	83.12
31	8.83	203.07	83.10
32	8.81	202.01	83.11
33	8.77	201.31	82.55
34	8.74	200.33	82.96
35	8.71	199.51	82.15
36	8.68	199.40	82.48
37	8.64	199.20	82.78
38	8.59	199.97	82.76
39	8.54	201.03	82.19
40	8.52	201.97	82.53
41	8.47	201.87	83.97
42	8.41	201.91	82.61
43	8.39	201.55	83.46
44	8.38	201.03	85.22

45	8.28	200.92	84.69
46	8.27	199.55	84.03
47	8.23	197.70	83.10
48	8.19	195.96	82.40
49	8.18	194.46	82.42
50	8.13	192.59	83.13
51	8.11	191.12	82.25
52	8.09	190.56	81.57
53	8.04	190.68	82.31
54	7.99	191.35	82.58
55	7.96	191.72	82.27
56	7.92	192.20	81.81
57	7.88	192.71	82.41
58	7.84	193.08	82.13
59	7.79	193.47	82.45
60	7.75	194.28	82.35
61	7.71	194.26	82.00
62	7.66	193.78	83.05
63	7.61	192.29	82.61
64	7.60	190.80	82.05
65	7.56	190.61	81.93
66	7.53	190.44	81.90
67	7.48	189.08	82.31
68	7.45	188.40	82.17
69	7.42	188.45	81.84
70	7.37	188.79	82.21
71	7.33	187.86	82.38
72	7.29	186.72	82.68
73	7.26	186.94	82.88
74	7.21	187.42	81.83
75	7.16	188.31	82.60
76	7.14	188.71	82.23
77	7.07	189.39	82.41
78	7.03	190.36	81.94
79	7.00	190.62	81.69
80	6.97	189.46	84.53
81	6.92	188.33	82.63
82	6.87	187.84	83.63
83	6.85	187.74	81.94
84	6.80	187.48	83.06
85	6.75	186.72	85.21
86	6.71	186.85	83.02
87	6.67	187.05	84.04
88	6.63	186.56	82.57
89	6.60	185.61	82.90
90	6.60	184.14	82.71
91	6.56	182.77	82.23

92	6.52	181.55	82.35
93	6.47	181.88	82.16
94	6.43	182.40	82.24
95	6.40	182.65	82.50
96	6.33	182.87	82.21
97	6.31	183.44	82.55
98	6.25	184.77	82.57
99	6.21	186.84	83.02
100	6.15	187.71	82.72
101	6.11	188.21	82.41
102	6.05	188.74	82.90
103	6.02	188.37	82.79
104	5.98	188.18	83.05
105	5.93	187.76	83.23
106	5.88	187.88	84.24
107	5.85	188.48	83.11
108	5.77	189.82	83.63
109	5.73	190.70	82.87
110	5.68	190.69	83.43
111	5.64	190.70	83.94
112	5.62	190.81	83.43
113	5.57	190.96	82.65
114	5.53	191.31	83.33
115	5.47	192.54	83.39
116	5.44	192.94	83.79
117	5.38	192.64	82.98
118	5.35	192.51	82.79
119	5.31	192.91	83.95
120	5.29	194.65	85.24

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	4.70	278.69	84.57
1	4.58	272.43	87.73
2	4.51	267.02	88.35
3	4.48	261.84	90.76
4	4.43	256.34	93.94
5	4.35	251.21	96.33
6	4.31	246.74	95.93
7	4.28	240.83	93.92
8	4.23	234.10	92.25
9	4.18	228.06	92.73
10	4.13	222.20	87.91
11	4.09	217.67	91.27
12	4.05	213.47	89.97
13	4.01	210.30	90.24
14	3.98	207.29	85.00
15	3.93	205.04	84.17
16	3.89	202.85	87.73
17	3.85	201.18	82.27
18	3.82	199.06	81.66
19	3.78	196.44	80.69
20	3.77	193.83	85.68
21	3.71	191.33	82.63
22	3.70	188.80	84.03
23	3.65	187.07	82.14
24	3.60	186.05	81.71
25	3.57	184.75	81.25
26	3.53	183.67	77.83
27	3.49	182.74	81.24
28	3.45	182.48	80.38
29	3.42	180.92	81.25
30	3.38	179.15	80.78
31	3.35	177.58	80.57
32	3.30	176.73	79.33
33	3.27	175.69	79.76
34	3.23	175.01	80.65
35	3.18	174.26	79.92
36	3.16	173.67	80.79
37	3.12	173.87	79.05
38	3.06	173.63	79.30
39	3.02	173.55	79.82
40	3.00	173.07	79.67
41	2.98	171.24	81.11
42	2.94	169.48	80.75
43	2.92	168.32	80.40
44	2.87	167.53	80.57

45	2.83	167.78	80.05
46	2.81	167.89	80.21
47	2.77	167.63	80.12
48	2.74	166.88	79.57
49	2.69	166.76	78.68
50	2.68	167.19	79.36
51	2.64	166.93	79.65
52	2.62	165.98	79.85
53	2.58	165.31	79.05
54	2.54	165.95	80.47
55	2.52	166.15	80.94
56	2.47	166.16	77.80
57	2.45	165.76	79.47
58	2.41	165.33	80.07
59	2.36	165.55	81.42
60	2.32	166.00	81.62
61	2.27	166.11	81.93
62	2.22	167.04	80.31
63	2.19	166.75	79.63
64	2.16	165.39	80.28
65	2.15	164.26	79.60
66	2.11	163.79	79.82
67	2.08	163.22	79.60
68	2.05	162.95	80.51
69	2.00	162.58	79.41
70	1.97	162.60	79.25
71	1.90	163.49	78.27
72	1.88	165.81	79.63
73	1.83	167.32	80.52
74	1.79	167.97	79.48
75	1.73	168.38	78.76
76	1.70	167.87	79.81
77	1.69	167.43	81.20
78	1.64	166.49	79.88
79	1.61	165.72	80.27
80	1.58	166.16	80.37
81	1.55	166.68	80.16
82	1.49	167.39	80.72
83	1.45	168.17	79.73
84	1.42	168.17	80.06
85	1.40	167.35	80.79
86	1.36	166.14	79.77
87	1.32	164.85	80.02
88	1.31	164.30	79.99
89	1.26	163.93	80.29
90	1.24	162.71	80.08
91	1.20	161.59	79.63

92	1.14	161.50	79.26
93	1.11	163.23	80.17
94	1.06	165.54	79.66
95	1.01	167.70	79.06
96	0.97	169.12	79.74
97	0.94	169.91	80.16
98	0.90	169.22	79.73
99	0.85	170.02	80.46
100	0.80	171.02	81.12
101	0.75	172.23	80.55
102	0.72	172.45	80.80
103	0.69	171.62	80.35
104	0.66	169.58	80.21
105	0.62	168.70	80.92
106	0.55	169.08	78.71
107	0.51	170.24	78.76
108	0.48	170.15	79.30
109	0.46	169.70	80.64
110	0.38	168.86	80.53
111	0.37	169.37	81.21
112	0.32	169.46	80.54
113	0.28	169.87	80.82
114	0.26	169.81	80.53
115	0.20	169.55	79.95
116	0.18	169.69	80.26
117	0.12	168.60	78.93
118	0.09	168.14	80.42
119	0.05	169.17	81.17
120	0.00	170.28	79.30

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	4.99	285.92	91.09
1	4.91	279.26	84.98
2	4.85	273.60	83.96
3	4.80	268.17	85.74
4	4.73	262.50	84.75
5	4.68	256.76	87.05
6	4.64	251.03	84.90
7	4.59	244.98	83.54
8	4.59	239.34	85.00
9	4.53	233.77	82.74
10	4.51	228.93	80.23
11	4.49	223.79	84.09
12	4.47	218.86	82.37
13	4.44	214.75	79.88
14	4.39	211.60	83.10
15	4.37	208.88	82.58
16	4.31	206.54	81.47
17	4.28	205.20	81.93
18	4.26	203.08	85.56
19	4.23	201.13	87.08
20	4.17	200.34	87.39
21	4.12	199.13	87.27
22	4.09	197.35	88.99
23	4.02	196.08	89.07
24	3.95	195.45	88.84
25	3.91	195.10	89.08
26	3.86	195.70	90.65
27	3.82	196.60	88.69
28	3.78	196.08	89.33
29	3.74	194.56	87.56
30	3.73	192.53	89.56
31	3.68	190.77	89.44
32	3.65	188.92	90.94
33	3.64	187.29	89.15
34	3.58	186.22	89.51
35	3.53	185.61	86.55
36	3.52	185.12	87.76
37	3.47	184.17	89.96
38	3.43	183.79	87.95
39	3.37	184.14	85.73
40	3.36	184.33	87.37
41	3.31	183.90	86.61
42	3.26	184.69	88.03
43	3.20	185.86	87.68
44	3.16	186.40	86.24

45	3.14	187.07	88.42
46	3.10	187.35	88.19
47	3.06	186.36	88.65
48	3.03	184.99	88.32
49	3.00	182.74	88.48
50	2.96	182.30	88.22
51	2.91	181.80	88.41
52	2.86	181.46	87.55
53	2.81	181.74	88.03
54	2.78	182.92	87.76
55	2.74	183.12	87.69
56	2.69	183.73	87.32
57	2.67	183.55	88.24
58	2.63	183.23	85.95
59	2.60	181.86	87.81
60	2.56	181.51	88.62
61	2.52	181.67	88.38
62	2.50	182.53	88.45
63	2.42	182.99	86.98
64	2.39	183.85	88.61
65	2.33	184.09	88.25
66	2.29	184.01	89.06
67	2.22	183.96	89.74
68	2.20	183.46	88.90
69	2.18	182.77	88.14
70	2.12	182.35	87.70
71	2.09	182.47	87.36
72	2.04	182.05	87.43
73	2.02	181.21	87.03
74	1.98	180.49	85.66
75	1.96	179.78	88.10
76	1.93	179.50	87.46
77	1.88	180.11	88.37
78	1.83	180.72	87.66
79	1.79	181.17	85.26
80	1.72	182.60	84.41
81	1.69	183.58	86.99
82	1.65	183.23	84.83
83	1.58	183.35	82.17
84	1.52	183.33	82.67
85	1.50	182.68	82.74
86	1.44	181.74	82.64
87	1.39	182.21	83.11
88	1.34	182.55	82.93
89	1.30	182.70	83.73
90	1.25	182.44	81.16
91	1.20	182.45	83.10

92	1.17	182.33	83.51
93	1.13	181.93	84.36
94	1.07	182.91	82.25
95	1.05	182.97	84.69
96	0.99	183.32	84.64
97	0.93	183.64	85.02
98	0.90	183.96	85.04
99	0.86	184.33	84.62
100	0.81	184.33	83.84
101	0.75	184.23	84.47
102	0.73	183.86	84.18
103	0.68	183.41	84.27
104	0.63	184.30	83.74
105	0.59	184.49	83.63
106	0.53	183.90	82.99
107	0.51	183.19	84.18
108	0.47	182.64	83.58
109	0.44	182.47	83.93
110	0.39	181.79	84.64
111	0.35	181.83	83.82
112	0.31	181.47	83.04
113	0.26	181.59	83.13
114	0.21	181.37	83.13
115	0.16	181.63	82.17
116	0.14	182.30	85.05
117	0.08	183.01	85.53
118	0.04	182.88	84.28
119	0.01	181.55	84.62
120	0.00	181.08	85.26

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	4.88	300.47	106.49
1	4.80	293.70	108.91
2	4.70	289.33	107.53
3	4.60	285.34	109.49
4	4.55	281.20	111.16
5	4.49	275.40	103.32
6	4.46	268.68	108.81
7	4.41	262.70	107.31
8	4.37	256.52	105.91
9	4.34	250.58	103.70
10	4.30	245.87	102.72
11	4.25	240.99	94.25
12	4.24	235.76	97.34
13	4.17	230.97	98.05
14	4.16	226.90	93.09
15	4.15	223.62	89.04
16	4.12	220.28	89.33
17	4.07	217.58	88.33
18	4.06	214.47	90.25
19	4.03	211.81	85.72
20	4.01	208.90	84.75
21	3.96	206.78	84.93
22	3.91	204.60	84.07
23	3.89	202.70	83.24
24	3.85	200.43	83.78
25	3.80	198.63	83.73
26	3.76	198.39	84.18
27	3.70	198.09	83.35
28	3.67	197.44	82.57
29	3.65	196.82	83.18
30	3.59	195.07	83.34
31	3.56	192.92	83.64
32	3.54	191.46	83.43
33	3.50	190.20	84.77
34	3.44	189.99	83.99
35	3.42	189.65	86.55
36	3.37	188.68	87.63
37	3.32	187.35	86.42
38	3.26	187.72	82.83
39	3.23	188.01	82.71
40	3.20	187.23	85.07
41	3.17	185.88	83.75
42	3.12	184.71	82.99
43	3.09	184.62	86.06
44	3.03	184.84	83.54

45	3.00	184.91	84.72
46	2.95	184.59	84.83
47	2.91	184.16	83.90
48	2.88	183.55	84.39
49	2.83	183.21	83.33
50	2.79	183.40	82.36
51	2.76	183.59	85.01
52	2.71	183.59	84.82
53	2.67	182.91	84.21
54	2.63	181.98	84.42
55	2.60	181.28	83.13
56	2.55	181.39	84.32
57	2.52	180.82	82.63
58	2.48	180.14	84.35
59	2.43	179.14	85.08
60	2.40	178.89	84.06
61	2.38	179.12	85.96
62	2.35	178.95	87.41
63	2.28	179.61	87.99
64	2.25	180.23	87.75
65	2.20	179.49	87.47
66	2.16	179.08	88.68
67	2.12	178.63	86.96
68	2.08	178.61	85.29
69	2.03	178.38	83.98
70	2.01	177.25	83.87
71	1.98	176.03	84.65
72	1.96	175.50	85.92
73	1.90	175.75	85.27
74	1.88	175.55	85.01
75	1.86	175.24	86.60
76	1.80	175.79	86.33
77	1.77	175.29	83.46
78	1.75	174.62	83.34
79	1.70	174.74	84.73
80	1.66	174.66	86.08
81	1.62	175.69	83.82
82	1.57	177.48	85.38
83	1.51	178.24	82.70
84	1.49	177.81	84.47
85	1.45	176.99	83.57
86	1.41	175.72	84.29
87	1.38	175.66	83.82
88	1.33	175.75	83.67
89	1.30	175.17	82.87
90	1.28	175.27	84.50
91	1.21	175.78	84.28

92	1.16	177.14	86.32
93	1.11	178.34	85.02
94	1.08	179.24	84.07
95	1.02	180.20	83.72
96	0.99	180.19	86.51
97	0.95	180.54	85.16
98	0.91	180.58	85.75
99	0.88	179.11	83.44
100	0.85	177.64	84.57
101	0.83	176.46	87.18
102	0.77	175.77	86.35
103	0.75	176.04	86.30
104	0.71	176.83	87.43
105	0.65	177.25	86.90
106	0.58	178.97	86.75
107	0.55	178.74	83.78
108	0.50	178.33	84.75
109	0.49	177.34	86.83
110	0.45	176.76	87.01
111	0.41	176.37	84.45
112	0.38	175.46	86.50
113	0.33	174.58	87.88
114	0.29	174.41	87.81
115	0.24	175.01	86.90
116	0.19	176.30	87.63
117	0.13	177.59	87.83
118	0.09	178.56	88.37
119	0.03	180.03	87.70
120	0.00	180.43	88.55

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	4.28	272.63	86.19
1	4.22	265.01	82.15
2	4.15	259.49	82.86
3	4.09	254.40	83.76
4	4.08	248.42	82.95
5	4.03	242.69	81.60
6	3.98	237.39	80.44
7	3.95	231.99	81.96
8	3.92	226.78	81.38
9	3.87	222.60	80.10
10	3.87	218.45	81.02
11	3.83	214.72	82.87
12	3.79	212.02	80.61
13	3.76	208.50	81.10
14	3.71	205.45	78.63
15	3.70	201.66	82.83
16	3.69	198.63	82.13
17	3.67	196.14	82.21
18	3.64	193.12	80.88
19	3.60	190.81	80.35
20	3.59	187.73	81.14
21	3.57	185.02	81.90
22	3.54	182.73	81.07
23	3.52	180.69	81.53
24	3.46	180.34	79.34
25	3.42	180.32	79.12
26	3.41	180.14	81.63
27	3.36	179.22	79.68
28	3.34	177.94	79.27
29	3.29	177.63	81.42
30	3.26	177.60	81.53
31	3.23	177.19	81.06
32	3.22	176.04	81.65
33	3.15	175.15	79.79
34	3.09	175.16	81.91
35	3.09	174.55	80.87
36	3.07	173.92	81.09
37	3.01	173.29	79.94
38	2.97	172.57	79.39
39	2.94	172.35	79.28
40	2.91	172.67	80.91
41	2.86	172.29	80.65
42	2.84	172.11	79.86
43	2.79	171.83	79.51
44	2.75	170.81	79.30

45	2.72	169.65	79.93
46	2.68	169.35	78.66
47	2.65	169.40	79.76
48	2.63	169.18	79.80
49	2.57	168.64	79.33
50	2.55	168.21	80.37
51	2.51	167.66	79.79
52	2.50	166.73	80.96
53	2.43	166.22	80.51
54	2.41	165.63	80.81
55	2.39	165.36	80.99
56	2.32	165.75	80.87
57	2.30	166.28	81.21
58	2.28	166.11	81.51
59	2.24	166.11	81.35
60	2.20	166.66	81.25
61	2.15	166.68	80.28
62	2.13	166.53	80.30
63	2.08	166.04	81.32
64	2.06	166.27	80.15
65	2.02	166.56	81.21
66	1.98	166.84	81.81
67	1.93	166.90	81.18
68	1.89	166.30	79.73
69	1.87	165.61	80.87
70	1.81	165.11	80.17
71	1.79	165.24	81.72
72	1.76	165.20	81.67
73	1.70	165.25	80.92
74	1.68	166.30	82.10
75	1.62	166.70	80.60
76	1.60	166.90	81.85
77	1.55	167.82	81.15
78	1.50	168.61	81.72
79	1.47	169.28	82.58
80	1.43	169.34	81.68
81	1.40	168.93	81.35
82	1.37	168.25	82.27
83	1.34	167.46	82.03
84	1.31	167.22	82.83
85	1.27	167.03	82.14
86	1.23	166.47	82.35
87	1.20	165.73	81.91
88	1.16	165.47	82.44
89	1.13	165.19	82.76
90	1.09	165.16	83.13
91	1.08	165.39	82.19

92	1.02	166.13	83.54
93	0.98	167.10	81.91
94	0.93	167.91	83.00
95	0.91	168.32	82.98
96	0.87	168.13	82.59
97	0.81	168.58	83.62
98	0.78	169.03	83.29
99	0.75	169.89	83.01
100	0.69	170.97	81.97
101	0.66	170.72	82.00
102	0.63	170.20	82.75
103	0.60	169.50	83.22
104	0.55	169.91	83.43
105	0.53	170.35	83.47
106	0.49	170.25	83.59
107	0.47	170.31	83.61
108	0.43	170.18	82.81
109	0.39	169.39	81.98
110	0.37	169.24	81.84
111	0.33	168.91	81.78
112	0.29	168.94	82.91
113	0.26	168.71	81.95
114	0.22	168.46	81.20
115	0.17	169.24	82.55
116	0.12	170.28	82.00
117	0.08	170.82	80.23
118	0.05	170.79	82.79
119	0.02	170.83	82.62
120	0.00	170.88	82.69

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	10.41	303.59	91.81
1	10.36	300.05	88.52
2	10.19	297.48	90.10
3	10.13	295.96	93.27
4	10.10	292.42	91.75
5	10.02	288.60	90.02
6	9.98	284.09	94.00
7	9.95	279.90	89.45
8	9.91	275.59	85.52
9	9.87	271.47	91.18
10	9.81	266.68	87.91
11	9.76	263.22	85.42
12	9.72	259.80	86.42
13	9.70	256.06	90.00
14	9.67	252.17	87.08
15	9.61	249.04	87.34
16	9.59	246.60	87.80
17	9.54	245.03	88.81
18	9.49	242.91	88.62
19	9.46	239.77	86.92
20	9.42	235.90	87.35
21	9.39	232.58	85.17
22	9.33	229.71	86.88
23	9.29	227.19	88.30
24	9.25	225.27	85.91
25	9.19	224.15	86.19
26	9.18	223.02	84.98
27	9.12	221.65	86.58
28	9.08	221.24	86.19
29	9.01	220.45	86.44
30	8.97	219.49	85.95
31	8.93	218.50	85.66
32	8.87	216.71	85.90
33	8.83	215.81	85.01
34	8.80	214.65	86.22
35	8.76	213.32	86.84
36	8.71	212.05	87.31
37	8.66	212.27	86.24
38	8.62	213.41	85.33
39	8.56	213.60	86.69
40	8.52	212.56	86.89
41	8.49	211.73	83.96
42	8.43	210.80	84.42
43	8.40	209.32	85.06
44	8.34	208.00	86.43

45	8.30	208.00	86.11
46	8.23	208.39	85.07
47	8.18	209.62	84.86
48	8.13	210.92	86.32
49	8.08	209.89	86.07
50	8.06	206.83	86.10
51	8.01	204.45	85.71
52	7.97	204.22	85.23
53	7.92	204.09	85.35
54	7.87	204.57	85.42
55	7.82	205.73	85.79
56	7.78	205.80	87.10
57	7.74	204.97	85.40
58	7.70	203.73	86.14
59	7.68	202.39	86.38
60	7.62	200.99	85.40
61	7.59	200.34	85.96
62	7.57	199.40	85.83
63	7.53	197.12	85.75
64	7.50	195.46	86.58
65	7.47	194.93	86.41
66	7.41	196.32	85.84
67	7.34	198.81	86.62
68	7.29	200.05	86.30
69	7.27	199.93	85.76
70	7.23	199.37	86.70
71	7.18	199.10	86.88
72	7.14	198.84	86.29
73	7.10	197.92	85.86
74	7.06	197.08	85.58
75	7.02	197.03	85.21
76	6.96	198.07	85.08
77	6.91	199.22	85.15
78	6.86	200.29	85.52
79	6.82	201.55	84.72
80	6.76	202.42	84.07
81	6.73	202.09	84.94
82	6.68	200.41	85.18
83	6.65	198.98	85.22
84	6.61	198.14	84.07
85	6.57	198.76	84.68
86	6.53	198.68	84.23
87	6.48	197.13	84.43
88	6.47	195.94	83.20
89	6.40	195.75	85.66
90	6.35	197.00	83.86
91	6.29	199.47	85.37

92	6.24	202.74	86.62
93	6.18	204.80	84.02
94	6.14	204.84	85.26
95	6.11	202.62	85.20
96	6.08	200.66	84.62
97	6.03	199.50	84.54
98	5.96	199.80	86.39
99	5.93	200.14	85.78
100	5.89	200.67	85.34
101	5.84	201.86	85.43
102	5.79	202.46	85.77
103	5.73	203.07	85.68
104	5.69	203.43	85.81
105	5.64	202.73	85.76
106	5.62	201.07	86.78
107	5.59	200.13	85.30
108	5.54	199.20	86.47
109	5.50	198.49	85.87
110	5.46	198.60	86.04
111	5.42	198.83	85.97
112	5.38	198.89	85.53
113	5.34	198.68	84.30
114	5.29	198.32	85.91
115	5.26	198.38	85.14
116	5.20	198.35	85.86
117	5.17	198.62	86.39
118	5.12	199.73	86.41
119	5.08	200.52	86.15
120	5.07	200.71	87.59

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	5.01	294.84	90.91
1	4.93	289.06	91.02
2	4.86	284.62	96.40
3	4.75	282.40	92.23
4	4.73	280.02	94.48
5	4.65	276.71	96.68
6	4.60	271.87	95.50
7	4.57	267.28	98.80
8	4.54	261.96	95.45
9	4.46	257.33	92.95
10	4.43	252.29	93.41
11	4.40	247.86	93.89
12	4.36	244.37	94.20
13	4.31	240.66	93.87
14	4.30	236.34	93.96
15	4.26	232.91	93.42
16	4.24	230.42	95.24
17	4.21	228.08	93.74
18	4.14	225.47	91.79
19	4.14	221.95	92.21
20	4.08	218.39	91.65
21	4.09	215.12	90.44
22	4.04	212.55	90.51
23	4.00	209.81	89.45
24	3.95	208.33	89.93
25	3.90	207.49	89.92
26	3.85	206.85	88.12
27	3.84	205.18	89.16
28	3.78	204.44	88.58
29	3.73	204.09	88.29
30	3.70	204.29	88.58
31	3.64	202.98	88.58
32	3.62	200.99	89.33
33	3.58	198.94	87.83
34	3.54	196.26	87.88
35	3.49	194.98	87.05
36	3.48	194.26	86.99
37	3.42	193.40	87.37
38	3.39	192.52	86.68
39	3.33	192.34	87.40
40	3.29	193.03	86.98
41	3.24	193.89	87.97
42	3.17	194.81	86.90
43	3.14	195.36	87.70
44	3.10	194.55	86.18

45	3.07	193.22	86.99
46	3.02	192.29	86.01
47	3.00	192.21	87.19
48	2.93	191.98	86.73
49	2.88	191.90	86.82
50	2.86	191.95	85.06
51	2.83	191.74	85.45
52	2.78	190.67	86.11
53	2.75	189.33	86.81
54	2.71	188.34	86.91
55	2.68	187.34	85.55
56	2.62	186.65	86.26
57	2.60	185.98	85.93
58	2.54	185.66	85.87
59	2.48	186.19	86.39
60	2.47	186.78	86.28
61	2.42	186.42	86.76
62	2.38	186.00	86.55
63	2.35	186.05	86.95
64	2.29	185.99	86.03
65	2.26	186.19	87.20
66	2.22	186.41	85.94
67	2.17	186.51	85.86
68	2.13	186.61	85.58
69	2.09	186.70	86.64
70	2.04	187.25	86.46
71	1.97	188.55	85.87
72	1.93	189.24	87.12
73	1.89	188.82	86.02
74	1.86	188.30	86.54
75	1.82	187.53	85.70
76	1.78	187.48	85.47
77	1.75	186.82	85.51
78	1.71	185.89	86.27
79	1.67	185.18	86.09
80	1.63	185.16	86.25
81	1.58	185.08	86.93
82	1.56	185.14	85.84
83	1.49	184.97	84.42
84	1.47	184.73	86.00
85	1.43	184.99	85.74
86	1.39	185.91	85.73
87	1.33	186.91	85.21
88	1.29	187.25	85.22
89	1.25	187.24	85.23
90	1.20	186.91	85.69
91	1.16	187.10	85.09

92	1.11	186.52	85.26
93	1.07	186.26	84.93
94	1.02	187.00	85.40
95	0.97	187.66	85.66
96	0.92	188.02	85.29
97	0.88	187.59	85.61
98	0.84	187.46	86.17
99	0.79	187.08	85.29
100	0.76	186.74	86.10
101	0.71	186.95	86.09
102	0.69	187.24	85.37
103	0.63	187.37	85.45
104	0.59	187.25	85.29
105	0.55	186.67	84.88
106	0.52	185.66	84.89
107	0.48	183.91	85.84
108	0.47	181.39	84.62
109	0.44	179.41	85.54
110	0.41	177.62	85.02
111	0.36	176.97	85.56
112	0.33	177.47	85.32
113	0.27	177.99	85.56
114	0.22	179.56	85.73
115	0.17	181.35	85.66
116	0.12	182.81	85.62
117	0.08	182.63	85.54
118	0.05	182.48	85.37
119	0.02	182.69	85.11
120	0.00	182.77	85.47

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	5.06	303.12	98.29
1	4.99	295.36	99.23
2	4.91	289.37	97.40
3	4.83	284.49	99.23
4	4.77	280.98	98.98
5	4.70	277.58	96.90
6	4.66	273.30	100.35
7	4.60	268.70	98.92
8	4.56	263.70	98.92
9	4.50	259.23	97.78
10	4.48	253.86	96.91
11	4.44	248.69	97.80
12	4.41	244.73	97.32
13	4.37	240.29	94.93
14	4.35	236.16	95.75
15	4.29	232.30	97.17
16	4.25	229.80	97.94
17	4.20	228.68	98.42
18	4.15	227.29	97.35
19	4.10	226.38	97.27
20	4.06	224.73	97.85
21	4.04	222.01	96.71
22	3.98	219.64	97.06
23	3.97	217.70	96.96
24	3.92	215.89	96.77
25	3.89	213.77	97.32
26	3.84	212.72	98.06
27	3.81	211.62	98.04
28	3.76	210.84	96.59
29	3.71	210.91	99.35
30	3.66	209.79	96.53
31	3.65	207.95	96.73
32	3.59	206.51	95.74
33	3.55	205.90	93.49
34	3.50	205.16	93.34
35	3.48	204.63	93.71
36	3.43	204.44	93.32
37	3.40	204.93	93.10
38	3.33	205.27	93.76
39	3.28	205.77	92.27
40	3.23	206.00	92.54
41	3.22	205.01	92.14
42	3.16	203.39	92.08
43	3.12	203.12	92.22
44	3.06	202.98	93.98

45	3.03	202.70	92.15
46	3.00	201.34	91.28
47	2.95	199.57	92.98
48	2.93	197.88	92.47
49	2.90	196.04	92.46
50	2.85	195.36	92.87
51	2.81	195.71	92.77
52	2.74	195.98	92.88
53	2.73	195.66	91.95
54	2.70	193.99	93.54
55	2.65	192.90	91.65
56	2.61	192.36	92.15
57	2.58	191.18	92.01
58	2.53	190.55	91.43
59	2.48	190.73	90.83
60	2.45	190.62	91.45
61	2.40	190.57	91.45
62	2.36	190.53	91.23
63	2.32	191.28	91.02
64	2.27	192.13	92.05
65	2.21	192.89	92.10
66	2.17	193.68	92.71
67	2.14	194.27	92.76
68	2.09	195.10	92.58
69	2.06	195.21	92.64
70	2.01	195.15	92.98
71	1.96	194.68	93.38
72	1.92	193.65	93.13
73	1.89	192.21	92.39
74	1.87	191.55	92.63
75	1.82	191.68	92.39
76	1.79	191.51	91.57
77	1.75	191.33	91.71
78	1.71	190.98	92.46
79	1.67	190.38	92.61
80	1.63	190.33	92.65
81	1.56	190.16	92.74
82	1.55	190.48	92.37
83	1.48	191.15	92.57
84	1.42	191.87	93.21
85	1.39	191.84	92.05
86	1.35	192.39	92.30
87	1.31	192.32	92.55
88	1.28	192.54	91.65
89	1.24	191.93	92.54
90	1.20	190.86	92.83
91	1.15	189.74	92.25

92	1.12	189.45	92.51
93	1.08	189.22	92.32
94	1.04	188.46	92.92
95	1.02	187.45	92.34
96	0.98	187.63	92.44
97	0.95	187.59	93.62
98	0.90	187.10	93.11
99	0.84	187.35	93.24
100	0.80	188.35	93.31
101	0.74	189.91	94.17
102	0.70	191.25	92.93
103	0.65	192.69	93.88
104	0.59	193.64	93.97
105	0.57	193.05	92.43
106	0.55	191.44	92.52
107	0.48	190.27	91.75
108	0.46	189.65	93.51
109	0.41	189.80	93.51
110	0.36	190.22	93.32
111	0.32	190.81	93.76
112	0.29	191.35	93.37
113	0.26	191.28	93.77
114	0.20	191.00	92.85
115	0.17	189.83	94.00
116	0.13	189.29	92.97
117	0.09	189.41	92.70
118	0.07	189.29	93.36
119	0.00	189.10	93.45
120	0.00	189.16	92.79

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	4.98	307.64	93.85
1	4.90	298.31	94.36
2	4.82	290.92	93.42
3	4.73	286.35	91.41
4	4.66	282.90	91.77
5	4.60	278.65	93.08
6	4.53	274.26	93.30
7	4.51	268.78	91.92
8	4.49	263.08	95.91
9	4.44	256.09	94.11
10	4.40	250.51	94.31
11	4.37	246.04	93.74
12	4.31	242.01	93.96
13	4.28	238.22	93.74
14	4.24	234.90	95.07
15	4.20	232.71	94.21
16	4.17	229.70	93.02
17	4.11	226.93	92.64
18	4.08	223.74	93.64
19	4.06	221.17	94.68
20	3.99	218.13	91.87
21	3.98	216.10	92.98
22	3.92	213.67	93.44
23	3.90	211.60	92.18
24	3.84	210.63	93.82
25	3.78	209.16	92.60
26	3.75	207.57	92.67
27	3.72	205.82	92.34
28	3.68	204.40	91.57
29	3.63	202.99	91.99
30	3.59	201.94	91.96
31	3.56	201.05	91.82
32	3.52	199.64	92.43
33	3.47	198.66	92.25
34	3.41	197.98	91.69
35	3.38	197.95	91.41
36	3.34	196.97	91.68
37	3.29	195.93	91.44
38	3.25	195.29	90.44
39	3.21	195.56	91.05
40	3.17	195.55	91.68
41	3.12	194.89	91.15
42	3.08	194.08	91.51
43	3.05	193.51	91.76
44	3.01	192.85	92.50

45	2.95	192.32	92.01
46	2.92	192.13	92.08
47	2.87	192.04	92.97
48	2.84	192.14	92.14
49	2.79	192.80	92.05
50	2.77	193.39	91.97
51	2.71	193.45	91.40
52	2.66	193.48	91.83
53	2.64	192.60	91.59
54	2.59	191.98	91.95
55	2.54	191.54	92.39
56	2.50	191.04	92.12
57	2.46	190.90	91.39
58	2.40	190.60	91.60
59	2.39	190.91	93.17
60	2.36	190.29	92.92
61	2.32	189.55	92.12
62	2.28	188.13	91.85
63	2.24	187.81	91.30
64	2.20	187.95	91.32
65	2.15	188.50	92.36
66	2.12	189.24	92.57
67	2.06	189.85	91.85
68	2.03	189.60	92.48
69	1.97	189.68	92.41
70	1.95	189.06	93.01
71	1.90	189.48	92.20
72	1.88	188.20	92.08
73	1.84	186.48	92.38
74	1.81	185.58	92.20
75	1.78	184.99	92.09
76	1.70	185.78	91.62
77	1.67	186.68	94.65
78	1.65	187.26	93.03
79	1.60	186.80	93.38
80	1.57	186.85	93.33
81	1.53	186.82	92.27
82	1.49	187.02	91.85
83	1.45	186.78	92.10
84	1.42	185.58	91.81
85	1.38	184.70	91.95
86	1.35	183.90	90.58
87	1.32	183.68	90.92
88	1.27	184.04	91.12
89	1.23	184.50	90.60
90	1.19	185.01	90.93
91	1.17	185.02	92.53

92	1.14	184.99	91.59
93	1.09	185.15	91.07
94	1.05	184.64	91.39
95	1.03	183.72	90.69
96	1.00	182.69	91.27
97	0.95	181.81	91.89
98	0.93	180.99	90.70
99	0.89	181.38	90.31
100	0.85	182.75	90.45
101	0.79	185.32	90.52
102	0.73	188.67	92.39
103	0.66	191.07	93.87
104	0.62	191.32	94.48
105	0.59	190.78	92.68
106	0.56	189.59	92.24
107	0.54	187.95	91.56
108	0.51	186.54	92.34
109	0.46	185.77	91.33
110	0.43	185.47	91.23
111	0.38	186.88	93.00
112	0.33	187.29	92.14
113	0.30	187.24	91.95
114	0.26	186.02	91.12
115	0.22	186.16	91.27
116	0.17	187.67	91.54
117	0.13	189.69	93.44
118	0.08	190.23	91.96
119	0.04	190.80	92.22
120	0.00	191.28	91.77

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	4.79	301.50	98.23
1	4.73	292.09	96.43
2	4.63	284.82	96.30
3	4.53	280.03	95.24
4	4.49	273.45	94.53
5	4.47	266.58	97.48
6	4.42	260.41	96.58
7	4.38	254.80	97.41
8	4.32	249.86	94.22
9	4.30	244.93	91.18
10	4.23	239.93	97.99
11	4.23	235.47	98.17
12	4.21	231.26	92.22
13	4.16	226.70	91.52
14	4.14	222.61	90.79
15	4.10	219.54	89.65
16	4.06	216.77	88.90
17	4.01	213.30	85.86
18	3.99	209.78	85.92
19	3.98	206.86	86.99
20	3.92	205.21	89.20
21	3.89	203.30	87.84
22	3.85	201.30	88.04
23	3.82	199.61	89.25
24	3.77	198.26	88.47
25	3.73	196.10	84.73
26	3.69	194.88	84.11
27	3.64	194.52	85.08
28	3.61	193.87	85.63
29	3.57	193.18	87.22
30	3.54	192.52	86.98
31	3.50	191.11	87.39
32	3.46	189.77	87.34
33	3.42	187.95	87.63
34	3.40	186.76	87.74
35	3.36	186.15	87.40
36	3.33	185.09	88.59
37	3.31	183.46	87.67
38	3.28	182.50	87.68
39	3.23	182.00	88.33
40	3.20	181.91	89.25
41	3.15	182.02	89.10
42	3.11	182.77	88.99
43	3.07	182.98	88.74
44	3.01	183.13	88.73

45	2.96	183.56	88.46
46	2.93	183.76	88.92
47	2.89	183.73	88.40
48	2.86	183.40	88.84
49	2.81	182.86	88.77
50	2.77	183.07	89.00
51	2.75	182.78	88.91
52	2.69	182.57	89.16
53	2.66	182.51	91.61
54	2.62	183.08	89.52
55	2.55	183.83	89.51
56	2.51	184.64	89.21
57	2.47	184.55	89.37
58	2.43	184.24	88.86
59	2.38	184.08	88.91
60	2.36	184.08	88.14
61	2.32	183.89	88.68
62	2.28	183.66	88.92
63	2.24	182.81	89.16
64	2.20	183.05	88.43
65	2.16	182.59	88.47
66	2.11	182.34	88.18
67	2.11	181.47	88.16
68	2.06	181.14	88.88
69	2.00	180.90	88.87
70	1.96	180.74	88.03
71	1.92	180.44	88.06
72	1.88	179.67	87.68
73	1.84	178.49	87.53
74	1.80	178.13	88.43
75	1.77	178.31	88.59
76	1.74	178.71	88.95
77	1.70	178.34	88.27
78	1.65	178.67	87.90
79	1.61	178.93	88.37
80	1.58	178.78	88.18
81	1.55	178.44	87.18
82	1.49	178.33	88.15
83	1.46	178.87	87.63
84	1.41	179.69	87.67
85	1.35	179.80	87.63
86	1.30	180.22	87.39
87	1.28	180.06	88.08
88	1.23	179.52	87.91
89	1.18	178.92	87.00
90	1.14	178.63	87.21
91	1.11	178.45	87.25

92	1.09	177.35	87.39
93	1.05	176.05	87.54
94	1.00	175.25	86.65
95	0.96	174.52	87.04
96	0.94	173.86	87.25
97	0.92	173.92	86.71
98	0.87	173.86	86.14
99	0.84	173.76	86.62
100	0.81	173.95	86.53
101	0.76	173.96	86.63
102	0.72	174.34	86.94
103	0.67	174.35	86.88
104	0.63	174.13	86.16
105	0.60	174.07	86.37
106	0.54	174.36	86.98
107	0.52	175.26	87.25
108	0.46	175.50	87.22
109	0.43	176.70	86.75
110	0.39	177.51	87.04
111	0.35	176.77	87.32
112	0.31	176.42	86.77
113	0.26	176.29	87.10
114	0.22	176.55	86.64
115	0.20	176.68	86.83
116	0.14	177.41	86.83
117	0.08	178.10	87.76
118	0.06	178.29	87.21
119	0.01	177.32	87.46
120	0.00	176.19	86.79

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	4.58	292.03	88.20
1	4.49	281.01	85.60
2	4.41	273.01	84.01
3	4.37	266.94	91.23
4	4.30	260.18	88.36
5	4.23	253.41	87.29
6	4.18	247.66	86.43
7	4.12	242.44	86.05
8	4.09	237.72	86.09
9	4.07	233.02	87.54
10	3.99	228.50	85.09
11	3.97	223.97	85.90
12	3.93	218.88	85.88
13	3.89	214.03	85.69
14	3.85	209.59	85.55
15	3.80	205.76	85.94
16	3.77	202.47	85.25
17	3.72	199.50	83.84
18	3.71	197.82	86.11
19	3.66	195.81	84.67
20	3.61	193.88	83.89
21	3.58	192.41	84.92
22	3.55	190.63	85.83
23	3.50	189.67	84.54
24	3.46	188.46	83.97
25	3.46	187.26	84.41
26	3.42	185.43	84.55
27	3.41	184.44	85.45
28	3.34	183.73	83.98
29	3.33	182.77	84.35
30	3.29	181.85	84.39
31	3.26	181.29	84.27
32	3.22	181.11	84.26
33	3.17	181.70	85.81
34	3.15	182.25	85.58
35	3.11	182.03	83.88
36	3.08	181.27	84.66
37	3.05	180.03	83.23
38	3.03	179.33	85.47
39	2.98	178.72	84.40
40	2.96	178.13	84.81
41	2.92	178.11	84.70
42	2.88	178.45	85.21
43	2.85	178.78	84.50
44	2.82	178.30	84.30

45	2.78	178.27	84.19
46	2.75	178.20	85.34
47	2.72	178.53	85.09
48	2.67	177.92	85.35
49	2.64	176.68	85.04
50	2.61	175.41	85.62
51	2.57	174.38	84.51
52	2.54	173.68	84.73
53	2.51	173.78	84.27
54	2.48	174.45	85.36
55	2.42	175.01	85.68
56	2.37	175.96	85.35
57	2.35	176.26	85.40
58	2.32	176.23	85.22
59	2.29	175.99	85.34
60	2.25	175.19	85.33
61	2.22	174.03	85.56
62	2.20	173.04	86.50
63	2.16	172.73	85.44
64	2.11	172.46	85.51
65	2.08	171.80	85.29
66	2.05	170.98	85.38
67	2.02	170.77	86.02
68	1.99	170.08	86.05
69	1.95	169.35	86.06
70	1.91	169.59	85.38
71	1.88	170.70	85.71
72	1.83	172.31	85.94
73	1.80	172.96	86.45
74	1.75	173.86	85.52
75	1.71	174.70	85.98
76	1.68	175.61	86.59
77	1.62	176.09	85.48
78	1.57	176.38	85.71
79	1.52	177.10	84.35
80	1.50	177.79	86.11
81	1.46	177.61	86.58
82	1.41	177.47	85.76
83	1.37	177.35	86.14
84	1.32	177.40	84.88
85	1.29	177.01	85.78
86	1.24	176.70	85.60
87	1.20	176.59	85.76
88	1.16	176.41	86.15
89	1.12	176.04	86.52
90	1.08	176.43	85.69
91	1.03	176.52	85.86

92	1.01	176.39	85.12
93	0.97	175.62	86.30
94	0.93	174.86	86.01
95	0.90	173.79	85.54
96	0.88	173.21	85.37
97	0.83	173.14	85.02
98	0.81	172.99	85.85
99	0.78	173.27	86.63
100	0.74	173.45	86.63
101	0.70	173.41	85.23
102	0.68	172.78	85.39
103	0.65	172.20	85.62
104	0.60	172.35	85.74
105	0.57	172.95	85.71
106	0.52	174.44	86.50
107	0.49	176.40	86.51
108	0.44	176.80	87.14
109	0.39	175.96	86.61
110	0.37	175.40	86.82
111	0.33	174.59	86.31
112	0.29	173.94	85.83
113	0.27	173.77	86.65
114	0.22	173.92	85.76
115	0.19	174.64	85.94
116	0.13	176.10	86.07
117	0.11	176.67	84.94
118	0.06	177.45	84.48
119	0.02	178.10	85.86
120	0.00	178.13	86.46

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	4.94	297.84	95.62
1	4.86	287.27	92.98
2	4.78	279.81	92.28
3	4.68	275.43	92.75
4	4.61	270.74	92.32
5	4.57	266.03	92.25
6	4.53	260.86	94.90
7	4.46	255.78	90.63
8	4.45	250.25	87.57
9	4.39	244.88	88.53
10	4.33	239.34	87.33
11	4.30	234.33	88.31
12	4.28	229.38	88.65
13	4.23	224.98	88.31
14	4.19	220.70	86.02
15	4.13	217.37	86.22
16	4.08	215.25	85.85
17	4.05	213.65	86.89
18	3.99	211.80	85.45
19	3.96	209.78	85.54
20	3.91	207.38	85.43
21	3.88	204.75	86.66
22	3.82	202.74	85.57
23	3.80	200.60	85.99
24	3.76	199.03	85.75
25	3.71	198.47	87.32
26	3.65	197.89	86.73
27	3.62	197.08	86.77
28	3.58	195.91	86.58
29	3.55	194.69	86.27
30	3.51	193.38	86.70
31	3.47	192.00	86.07
32	3.45	190.81	86.68
33	3.42	189.72	85.71
34	3.40	187.87	86.80
35	3.36	186.85	87.94
36	3.32	186.81	86.41
37	3.30	186.79	87.77
38	3.26	186.61	86.63
39	3.21	186.20	87.46
40	3.18	185.98	88.09
41	3.14	186.86	87.38
42	3.10	186.82	86.82
43	3.06	186.68	87.39
44	3.02	186.52	87.83

45	2.99	186.57	87.61
46	2.96	186.57	86.67
47	2.92	185.60	86.71
48	2.87	185.85	86.87
49	2.84	186.27	86.75
50	2.80	186.82	87.18
51	2.76	186.86	87.08
52	2.73	186.57	86.14
53	2.69	185.71	87.55
54	2.64	186.32	86.55
55	2.57	188.44	86.52
56	2.53	190.43	87.77
57	2.50	190.45	88.69
58	2.46	189.53	86.18
59	2.43	188.63	87.58
60	2.41	187.51	88.12
61	2.36	186.91	87.11
62	2.32	187.07	88.53
63	2.27	187.20	88.55
64	2.25	186.47	88.96
65	2.19	186.55	87.70
66	2.16	186.52	87.47
67	2.11	186.15	85.83
68	2.07	185.86	86.48
69	2.04	185.48	87.53
70	1.99	184.66	86.67
71	1.97	184.20	87.40
72	1.92	184.45	86.96
73	1.86	185.12	86.97
74	1.83	184.88	87.20
75	1.79	184.21	88.02
76	1.75	183.89	86.50
77	1.71	183.89	87.83
78	1.68	184.03	88.88
79	1.63	185.07	88.44
80	1.58	186.06	87.83
81	1.54	186.76	87.67
82	1.51	187.41	88.66
83	1.45	187.83	86.92
84	1.41	187.14	87.62
85	1.37	186.75	87.80
86	1.32	185.99	86.91
87	1.28	185.18	86.98
88	1.25	184.44	88.34
89	1.20	184.80	87.17
90	1.16	185.43	87.15
91	1.12	187.09	87.22

92	1.07	187.73	87.05
93	1.03	188.78	87.78
94	1.00	188.60	86.43
95	0.96	187.11	86.69
96	0.93	185.69	87.55
97	0.90	184.95	87.40
98	0.85	184.24	88.02
99	0.80	184.58	87.94
100	0.76	185.06	88.23
101	0.71	185.48	88.84
102	0.70	185.27	89.13
103	0.65	184.28	88.65
104	0.62	183.29	88.72
105	0.57	183.43	88.85
106	0.53	184.04	88.98
107	0.47	185.79	87.21
108	0.42	188.32	88.11
109	0.38	189.35	88.35
110	0.34	188.84	88.08
111	0.30	188.05	88.24
112	0.26	187.21	87.38
113	0.24	186.45	88.75
114	0.21	185.49	88.80
115	0.17	185.06	87.95
116	0.13	184.75	87.74
117	0.10	185.16	88.11
118	0.06	185.20	90.01
119	0.01	185.32	90.66
120	0.00	184.95	88.27

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	4.79	301.10	90.52
1	4.73	301.77	95.62
2	4.65	292.41	95.10
3	4.55	283.91	92.67
4	4.47	277.33	92.91
5	4.39	270.51	88.55
6	4.34	263.66	92.28
7	4.29	256.31	89.35
8	4.27	250.03	88.77
9	4.24	243.46	87.44
10	4.18	238.25	85.86
11	4.14	233.78	85.23
12	4.10	228.82	84.08
13	4.05	224.50	83.79
14	4.01	220.45	84.64
15	3.97	217.21	82.77
16	3.89	214.83	82.52
17	3.86	213.14	81.74
18	3.80	211.09	82.51
19	3.78	207.90	82.47
20	3.75	205.23	81.57
21	3.71	202.77	81.57
22	3.68	200.22	81.12
23	3.65	198.59	81.75
24	3.62	197.36	81.22
25	3.57	195.24	81.36
26	3.54	193.26	81.16
27	3.51	191.83	80.73
28	3.48	190.46	81.87
29	3.43	188.93	80.91
30	3.40	187.72	80.86
31	3.37	186.37	81.22
32	3.35	184.67	80.62
33	3.30	183.53	80.92
34	3.27	183.72	80.76
35	3.23	183.34	81.74
36	3.19	183.34	81.60
37	3.17	182.40	83.64
38	3.13	181.15	83.36
39	3.10	180.34	83.34
40	3.06	179.92	83.08
41	3.01	180.14	85.45
42	2.96	180.82	83.54
43	2.93	180.50	82.82
44	2.89	180.48	84.58

45	2.83	181.45	82.72
46	2.81	181.54	84.12
47	2.78	181.51	82.53
48	2.74	180.67	83.86
49	2.67	180.57	82.66
50	2.63	180.67	82.68
51	2.59	181.09	83.58
52	2.58	181.23	85.93
53	2.54	181.09	83.25
54	2.50	180.33	82.38
55	2.44	179.98	81.78
56	2.42	179.92	83.12
57	2.40	178.80	81.16
58	2.37	178.66	83.86
59	2.31	179.11	84.60
60	2.26	179.62	82.63
61	2.22	179.04	82.92
62	2.19	179.41	83.13
63	2.16	178.91	82.41
64	2.12	178.09	83.17
65	2.11	177.43	83.96
66	2.06	176.40	83.82
67	2.03	175.12	82.62
68	1.99	174.33	82.24
69	1.95	174.99	82.89
70	1.89	176.06	83.48
71	1.84	177.98	82.25
72	1.79	180.27	82.95
73	1.74	182.01	83.96
74	1.68	182.37	84.20
75	1.66	182.52	83.99
76	1.61	182.52	83.05
77	1.57	182.45	83.06
78	1.54	182.67	82.37
79	1.49	182.63	84.17
80	1.45	182.08	82.66
81	1.42	181.45	84.59
82	1.38	181.09	82.98
83	1.34	179.96	83.76
84	1.29	179.60	83.02
85	1.25	179.63	84.48
86	1.22	179.63	83.56
87	1.17	179.91	82.84
88	1.15	180.31	83.30
89	1.11	180.53	82.30
90	1.07	180.94	83.42
91	1.01	181.52	83.16

92	0.97	182.63	82.71
93	0.93	182.83	82.47
94	0.87	182.56	82.17
95	0.85	182.21	82.77
96	0.80	181.91	82.71
97	0.76	181.52	81.41
98	0.73	181.91	81.11
99	0.69	181.13	80.85
100	0.67	180.20	80.89
101	0.64	178.84	83.08
102	0.61	177.52	82.09
103	0.58	176.27	81.86
104	0.55	175.81	83.21
105	0.50	175.36	82.43
106	0.48	175.19	81.70
107	0.42	175.15	81.47
108	0.40	175.76	82.54
109	0.36	175.83	82.98
110	0.31	176.32	81.28
111	0.27	176.05	82.74
112	0.24	175.27	82.55
113	0.21	174.35	81.64
114	0.17	173.68	80.97
115	0.14	174.13	82.11
116	0.11	175.10	81.69
117	0.05	175.30	80.39
118	0.04	175.48	80.83
119	0.00	175.39	83.25
120	0.00	175.41	83.60

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	5.23	326.78	99.60
1	5.14	313.66	97.73
2	5.02	303.24	90.04
3	4.96	295.57	93.84
4	4.91	287.85	95.51
5	4.86	279.59	93.44
6	4.82	270.85	90.90
7	4.75	263.44	90.06
8	4.73	256.38	91.43
9	4.69	250.51	89.13
10	4.64	244.89	88.65
11	4.58	239.60	86.51
12	4.53	235.36	86.71
13	4.46	231.71	85.54
14	4.41	228.11	85.61
15	4.37	224.80	84.93
16	4.35	221.67	86.64
17	4.28	218.91	86.83
18	4.22	216.53	86.63
19	4.17	214.40	84.83
20	4.11	212.21	84.88
21	4.07	210.52	83.92
22	4.05	208.34	85.45
23	3.98	206.63	84.92
24	3.92	205.37	83.03
25	3.88	204.13	85.18
26	3.86	202.02	83.93
27	3.81	200.48	83.65
28	3.75	199.98	83.67
29	3.73	199.31	85.32
30	3.68	198.19	84.46
31	3.63	197.44	84.78
32	3.59	196.84	84.17
33	3.56	196.32	82.75
34	3.52	196.08	83.98
35	3.49	195.42	85.30
36	3.45	194.78	84.09
37	3.42	194.44	83.70
38	3.36	194.81	83.84
39	3.32	194.33	83.40
40	3.29	193.19	83.43
41	3.25	192.44	83.72
42	3.19	192.56	83.04
43	3.16	193.00	84.01
44	3.10	192.91	83.51

45	3.06	192.25	84.19
46	3.02	191.76	85.06
47	2.96	191.71	84.82
48	2.94	191.84	85.94
49	2.89	191.24	85.45
50	2.83	190.76	84.16
51	2.80	190.15	84.20
52	2.75	189.55	84.47
53	2.70	189.76	84.97
54	2.66	190.11	83.61
55	2.62	189.60	85.05
56	2.59	189.14	85.28
57	2.56	188.84	84.42
58	2.51	188.76	84.85
59	2.49	187.97	84.12
60	2.45	186.94	85.22
61	2.41	186.75	85.25
62	2.37	187.15	85.14
63	2.33	187.04	84.32
64	2.29	187.24	84.78
65	2.24	187.23	84.79
66	2.21	186.70	85.48
67	2.18	186.47	85.24
68	2.13	186.80	84.42
69	2.10	186.17	85.45
70	2.05	185.76	85.14
71	2.01	185.57	84.88
72	1.96	186.29	84.52
73	1.91	187.81	85.54
74	1.88	188.37	85.07
75	1.83	187.43	85.09
76	1.78	187.93	85.60
77	1.72	188.52	85.82
78	1.69	189.13	85.36
79	1.64	188.61	85.67
80	1.60	188.24	86.10
81	1.53	188.56	86.56
82	1.50	188.81	86.13
83	1.46	188.90	86.23
84	1.42	188.32	87.10
85	1.36	187.60	86.56
86	1.32	187.36	85.28
87	1.28	187.02	86.94
88	1.25	186.83	85.89
89	1.19	187.25	85.32
90	1.16	188.17	85.27
91	1.12	188.66	85.46

92	1.08	188.35	85.40
93	1.03	188.57	85.92
94	0.98	188.66	86.38
95	0.95	188.96	86.17
96	0.89	188.48	84.82
97	0.87	187.46	85.82
98	0.83	186.94	85.92
99	0.79	186.64	85.12
100	0.75	186.84	84.91
101	0.71	186.94	86.94
102	0.67	186.81	85.78
103	0.62	186.31	85.83
104	0.59	186.16	86.96
105	0.56	186.77	85.65
106	0.52	186.45	85.11
107	0.48	185.79	85.34
108	0.44	185.22	85.47
109	0.40	185.50	85.27
110	0.37	186.01	85.08
111	0.33	186.02	85.08
112	0.29	185.90	84.27
113	0.26	186.49	84.49
114	0.22	186.62	85.45
115	0.17	186.39	84.12
116	0.14	185.98	85.10
117	0.11	186.36	84.09
118	0.06	186.41	84.51
119	0.02	186.66	85.56
120	0.00	186.62	85.08

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	4.70	292.65	87.08
1	4.65	282.98	88.59
2	4.57	276.09	88.28
3	4.49	271.04	86.70
4	4.42	265.99	86.93
5	4.38	260.18	87.96
6	4.33	253.97	85.83
7	4.28	249.11	86.73
8	4.25	244.31	88.95
9	4.20	238.95	88.94
10	4.20	234.12	87.95
11	4.11	230.15	86.48
12	4.06	227.13	85.28
13	4.01	224.38	85.40
14	4.02	220.70	87.28
15	3.99	216.78	86.12
16	3.94	213.73	86.99
17	3.91	211.42	85.98
18	3.87	209.65	86.77
19	3.83	207.58	88.26
20	3.82	205.05	88.06
21	3.75	203.09	86.87
22	3.71	201.51	85.26
23	3.68	199.72	84.91
24	3.65	198.05	86.55
25	3.61	196.58	85.95
26	3.58	194.82	86.56
27	3.55	193.55	86.29
28	3.51	192.11	85.77
29	3.44	190.55	85.00
30	3.42	189.50	85.44
31	3.37	188.89	84.89
32	3.34	187.92	85.20
33	3.30	187.32	84.93
34	3.25	186.37	85.50
35	3.22	185.56	84.96
36	3.19	184.95	84.70
37	3.15	183.79	85.05
38	3.12	182.56	84.27
39	3.09	182.10	84.96
40	3.04	181.52	84.08
41	2.99	181.82	83.82
42	2.96	181.87	84.35
43	2.94	181.73	84.37
44	2.89	181.84	84.93

45	2.86	181.83	84.98
46	2.84	181.44	85.55
47	2.78	180.85	84.69
48	2.76	179.64	84.68
49	2.72	178.81	85.01
50	2.68	178.46	84.73
51	2.63	178.10	84.34
52	2.62	177.28	85.09
53	2.57	176.82	85.07
54	2.56	176.48	84.77
55	2.50	176.02	84.99
56	2.47	175.35	84.55
57	2.44	174.95	84.67
58	2.41	174.29	84.31
59	2.36	174.03	83.82
60	2.34	174.03	85.21
61	2.28	174.57	82.63
62	2.25	174.90	83.23
63	2.21	175.07	83.42
64	2.18	174.63	83.90
65	2.15	173.27	84.41
66	2.10	172.17	84.41
67	2.06	171.21	84.33
68	2.01	171.51	84.34
69	1.95	172.02	83.26
70	1.91	173.23	83.22
71	1.88	173.67	83.79
72	1.84	173.40	83.48
73	1.80	173.01	83.32
74	1.77	173.03	83.40
75	1.73	173.40	83.90
76	1.69	173.87	83.82
77	1.63	174.22	83.88
78	1.60	173.35	83.81
79	1.58	173.00	84.13
80	1.52	173.06	84.76
81	1.49	173.11	84.09
82	1.45	172.98	84.28
83	1.40	173.51	84.23
84	1.36	173.79	84.03
85	1.33	174.02	83.49
86	1.29	174.55	84.28
87	1.24	174.25	84.51
88	1.20	173.93	83.97
89	1.19	173.39	84.37
90	1.14	172.88	84.49
91	1.09	172.79	84.69

92	1.05	171.99	84.52
93	1.02	171.53	83.56
94	1.01	171.79	83.98
95	0.97	172.28	84.68
96	0.93	172.40	84.47
97	0.89	173.02	84.01
98	0.85	174.05	84.14
99	0.81	175.11	83.52
100	0.76	175.68	83.84
101	0.72	175.67	84.38
102	0.68	176.30	82.97
103	0.66	177.07	83.50
104	0.65	176.94	83.77
105	0.62	176.91	83.63
106	0.58	176.52	82.57
107	0.54	175.51	84.10
108	0.48	174.72	83.83
109	0.45	174.85	83.18
110	0.41	174.70	83.55
111	0.37	174.86	83.81
112	0.33	174.77	84.18
113	0.28	175.52	84.17
114	0.25	176.12	84.52
115	0.19	176.41	84.83
116	0.14	176.06	84.25
117	0.10	176.25	84.47
118	0.07	176.27	84.82
119	0.03	176.39	85.74
120	0.00	176.56	85.95

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	4.81	167.10	87.73
1	4.78	167.09	88.63
2	4.75	167.02	88.11
3	4.71	166.76	87.45
4	4.67	166.81	87.25
5	4.63	166.85	87.11
6	4.60	167.72	87.93
7	4.56	168.37	87.45
8	4.52	168.72	87.38
9	4.47	169.25	87.76
10	4.43	169.92	88.03
11	4.39	170.51	88.12
12	4.35	170.77	87.26
13	4.31	171.60	87.71
14	4.28	171.76	88.63
15	4.22	172.04	87.52
16	4.20	172.14	87.53
17	4.17	172.16	87.44
18	4.12	172.16	87.54
19	4.06	172.32	87.18
20	4.02	172.81	87.59
21	3.99	173.30	87.66
22	3.94	173.92	88.57
23	3.90	174.15	88.12
24	3.86	173.57	87.70
25	3.83	173.08	87.66
26	3.79	172.88	87.28
27	3.75	172.92	88.02
28	3.71	173.51	87.61
29	3.67	173.60	88.24
30	3.63	173.72	87.91
31	3.59	173.86	87.38
32	3.56	173.77	87.38
33	3.51	173.24	87.45
34	3.48	172.96	87.63
35	3.45	173.01	87.51
36	3.40	173.07	87.49
37	3.36	173.69	87.65
38	3.30	174.23	87.41
39	3.28	174.12	87.69
40	3.25	173.20	88.01
41	3.21	172.53	88.48
42	3.16	171.69	87.92
43	3.13	170.81	87.58
44	3.10	171.01	87.63

45	3.08	171.35	87.56
46	3.03	170.98	86.01
47	2.97	170.35	87.15
48	2.89	170.40	86.35
49	2.84	170.64	86.33
50	2.80	170.91	86.63
51	2.78	171.56	86.96
52	2.73	172.04	86.94
53	2.70	172.58	87.23
54	2.66	172.82	87.31
55	2.61	173.12	87.25
56	2.58	173.24	87.03
57	2.55	173.55	87.48
58	2.50	173.60	87.43
59	2.47	173.85	87.47
60	2.44	173.96	88.39
61	2.39	173.65	87.68
62	2.34	173.92	88.20
63	2.31	173.83	87.56
64	2.27	173.43	87.69
65	2.22	173.64	87.48
66	2.18	174.18	88.52
67	2.13	174.43	87.90
68	2.08	174.93	87.74
69	2.05	175.88	87.58
70	2.00	176.77	87.76
71	1.96	176.62	87.60
72	1.93	176.54	87.75
73	1.88	176.50	87.85
74	1.85	176.63	87.68
75	1.79	176.43	87.72
76	1.77	175.75	88.34
77	1.72	175.30	87.92
78	1.70	175.22	88.56
79	1.65	175.15	88.24
80	1.62	174.66	88.04
81	1.58	174.28	87.92
82	1.54	174.12	87.77
83	1.51	173.91	87.73
84	1.47	173.93	87.63
85	1.40	174.14	88.64
86	1.36	174.73	88.32
87	1.32	175.41	88.14
88	1.27	176.27	88.29
89	1.22	176.34	88.39
90	1.19	176.19	88.00
91	1.14	175.82	87.76

92	1.12	175.66	88.06
93	1.06	175.64	88.57
94	1.02	175.29	88.19
95	0.98	175.44	88.02
96	0.94	176.05	88.61
97	0.90	175.91	87.59
98	0.83	175.28	87.65
99	0.80	174.67	86.80
100	0.77	174.28	87.33
101	0.72	173.90	88.23
102	0.69	173.87	87.86
103	0.63	174.32	87.70
104	0.61	174.75	88.01
105	0.57	175.09	87.84
106	0.54	175.34	87.89
107	0.51	174.69	87.85
108	0.48	173.40	88.09
109	0.44	172.61	87.91
110	0.41	172.09	87.81
111	0.38	171.85	88.21
112	0.33	171.73	88.20
113	0.29	172.35	88.64
114	0.24	172.57	88.14
115	0.20	172.80	88.03
116	0.15	172.90	88.08
117	0.12	173.03	88.14
118	0.07	173.06	88.70
119	0.03	173.00	88.22
120	0.00	173.27	87.88

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	4.54	157.32	89.14
1	4.52	156.56	88.83
2	4.48	155.90	88.60
3	4.44	155.41	90.12
4	4.38	155.01	89.70
5	4.35	154.75	88.98
6	4.31	154.40	89.74
7	4.28	154.17	91.04
8	4.24	154.04	89.32
9	4.21	153.89	88.15
10	4.17	153.48	88.62
11	4.13	153.17	87.89
12	4.09	152.78	88.27
13	4.04	152.57	87.78
14	3.99	152.31	88.66
15	3.95	152.12	88.64
16	3.91	151.67	87.77
17	3.86	151.59	88.62
18	3.83	151.59	87.61
19	3.80	151.45	87.81
20	3.73	151.40	87.24
21	3.71	151.50	87.49
22	3.67	151.42	87.42
23	3.62	151.38	87.69
24	3.61	151.28	87.41
25	3.56	151.27	87.30
26	3.52	151.24	88.36
27	3.49	150.62	87.19
28	3.45	150.01	87.88
29	3.40	149.80	87.16
30	3.35	149.82	87.52
31	3.33	149.77	87.01
32	3.27	149.72	87.54
33	3.24	149.58	87.73
34	3.20	149.64	87.05
35	3.16	149.89	87.47
36	3.11	149.97	87.65
37	3.08	150.17	87.10
38	3.03	150.21	86.91
39	3.00	150.34	87.56
40	2.97	150.44	87.28
41	2.93	150.19	87.32
42	2.90	150.06	87.21
43	2.86	149.90	87.75
44	2.82	149.71	87.32

45	2.79	149.46	88.00
46	2.75	149.28	87.08
47	2.73	149.35	87.22
48	2.66	149.33	86.73
49	2.64	149.30	87.18
50	2.58	149.41	86.99
51	2.56	149.38	87.14
52	2.52	149.24	86.49
53	2.47	149.13	86.14
54	2.44	149.19	86.56
55	2.38	149.23	86.38
56	2.35	149.32	87.95
57	2.32	149.37	88.80
58	2.29	149.30	89.52
59	2.26	149.30	88.20
60	2.22	149.51	87.50
61	2.18	149.64	87.09
62	2.16	149.58	87.18
63	2.11	149.33	87.87
64	2.07	149.31	86.95
65	2.03	149.44	86.87
66	2.00	149.60	86.90
67	1.98	149.56	89.57
68	1.93	149.55	87.48
69	1.90	149.73	87.21
70	1.87	149.63	86.95
71	1.83	149.52	86.83
72	1.80	149.53	86.92
73	1.75	149.29	86.95
74	1.72	149.40	86.88
75	1.68	149.37	86.79
76	1.64	149.46	86.76
77	1.61	149.37	86.95
78	1.57	149.40	86.86
79	1.53	149.30	87.05
80	1.49	149.06	86.85
81	1.45	149.23	86.87
82	1.41	149.49	86.89
83	1.36	149.83	87.49
84	1.32	149.97	86.83
85	1.29	150.15	86.86
86	1.25	150.36	86.98
87	1.22	150.67	86.77
88	1.16	150.85	86.85
89	1.13	151.17	89.38
90	1.08	151.26	92.02
91	1.06	151.21	88.96

92	1.01	151.35	90.22
93	0.98	151.37	93.45
94	0.95	151.44	92.01
95	0.91	151.13	91.80
96	0.86	150.75	92.73
97	0.83	150.69	90.09
98	0.80	150.70	89.03
99	0.76	150.63	88.94
100	0.72	150.45	88.24
101	0.69	150.40	88.37
102	0.65	150.33	87.49
103	0.61	150.15	87.82
104	0.57	150.05	87.74
105	0.54	149.74	87.72
106	0.50	149.55	88.67
107	0.46	149.62	90.32
108	0.42	149.69	90.19
109	0.40	149.48	88.52
110	0.35	149.46	87.79
111	0.32	149.21	87.85
112	0.28	148.99	87.53
113	0.24	148.90	87.49
114	0.20	148.93	87.14
115	0.17	148.89	87.54
116	0.13	148.79	87.79
117	0.07	149.11	87.18
118	0.04	149.36	87.06
119	0.00	149.56	87.11
120	0.00	149.57	87.09

Run time (min)	Scale (Lbs)	Flue (F°)	Ambiant (F°)
0	9.54	303.83	102.94
1	9.44	300.82	109.05
2	9.35	298.40	109.96
3	9.29	296.72	112.44
4	9.24	293.76	106.26
5	9.23	289.49	103.86
6	9.17	284.21	103.10
7	9.11	278.05	103.02
8	9.09	270.66	101.46
9	9.07	263.88	99.44
10	9.04	259.10	100.97
11	9.02	254.70	100.67
12	9.00	249.26	97.47
13	8.97	244.02	95.81
14	8.94	239.95	96.40
15	8.90	235.97	94.84
16	8.84	234.11	93.94
17	8.81	231.47	92.17
18	8.77	228.03	92.19
19	8.74	224.54	92.08
20	8.69	222.27	91.64
21	8.68	219.09	89.35
22	8.63	216.02	89.69
23	8.60	215.39	88.58
24	8.57	213.09	87.52
25	8.53	210.55	88.83
26	8.48	210.58	88.58
27	8.42	212.24	88.03
28	8.40	212.00	87.86
29	8.35	210.56	87.47
30	8.32	208.96	87.33
31	8.25	208.04	87.51
32	8.24	208.19	86.90
33	8.20	207.04	88.39
34	8.15	207.30	87.86
35	8.10	205.93	86.65
36	8.03	203.86	86.58
37	8.04	203.26	87.91
38	7.98	200.85	87.40
39	7.94	201.22	86.14
40	7.87	201.95	86.37
41	7.84	201.08	85.32
42	7.83	198.56	86.51
43	7.79	197.64	84.93
44	7.73	195.80	84.86

45	7.68	195.79	84.51
46	7.63	197.45	84.49
47	7.57	198.53	84.29
48	7.54	198.68	85.05
49	7.49	197.46	84.59
50	7.46	197.11	85.64
51	7.43	196.14	84.43
52	7.38	194.40	83.87
53	7.32	195.36	84.26
54	7.29	195.58	84.96
55	7.25	195.20	85.03
56	7.22	193.07	83.96
57	7.17	192.12	84.36
58	7.14	191.46	83.91
59	7.07	192.99	84.09
60	7.04	194.96	84.49
61	6.98	196.86	84.61
62	6.94	196.60	84.40
63	6.91	196.73	84.23
64	6.88	195.92	84.06
65	6.83	195.31	84.10
66	6.78	195.62	83.92
67	6.75	195.06	83.48
68	6.70	194.78	83.79
69	6.67	193.78	83.91
70	6.62	195.16	83.58
71	6.57	195.20	83.98
72	6.55	194.26	83.54
73	6.50	193.44	83.85
74	6.48	193.41	83.90
75	6.42	193.48	85.60
76	6.39	192.50	84.14
77	6.36	190.85	84.24
78	6.31	190.35	84.35
79	6.27	191.49	84.35
80	6.24	191.79	83.93
81	6.19	191.62	83.89
82	6.14	192.39	83.80
83	6.09	194.23	83.38
84	6.07	194.88	83.35
85	6.02	195.01	84.45
86	5.97	194.09	84.61
87	5.94	193.26	84.14
88	5.90	192.65	84.28
89	5.86	193.45	84.14
90	5.82	193.73	83.91
91	5.77	194.69	84.58

92	5.73	195.55	84.58
93	5.69	193.51	84.30
94	5.65	192.71	83.98
95	5.61	193.87	83.81
96	5.56	194.80	84.75
97	5.53	194.93	84.38
98	5.50	193.87	83.80
99	5.45	194.00	83.71
100	5.42	194.55	83.96
101	5.37	194.09	84.74
102	5.33	194.66	83.65
103	5.30	193.89	83.79
104	5.27	192.69	83.76
105	5.21	191.95	83.91
106	5.18	191.40	83.35
107	5.15	191.06	83.61
108	5.11	189.48	83.85
109	5.06	191.10	84.96
110	5.03	191.86	85.09
111	4.99	191.46	84.24
112	4.95	191.84	84.11
113	4.90	193.11	84.04
114	4.86	193.94	83.88
115	4.81	194.00	85.01
116	4.75	195.48	84.79
117	4.75	195.12	84.83
118	4.69	195.22	84.57
119	4.66	193.38	85.08
120	4.65	192.41	85.30

United States Environmental Protection Agency

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Office of Enforcement and Compliance Assurance

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: Stove Builder International						
Heater Type Check 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): 65 Series						
Model Number(s) (as will appear on test report): TBD						
Equipped with a catalytic combustor? ☐Yes ☒No						
Mailing Address: Same as street address						

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

EPA Form 6400-05

Office of Enforcement and Compliance Assurance

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.

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Street Address: 250 rue de Copenhague		
City: Saint-Augustin-de-Desmaures	**State: Québec**	**ZIP Code: G3A 2H3**
Phone:1-418-878-3040 x5224	**Fax: 1-418-878-3001**	**Web Site:** www.sbi-international.com
Address of Manufacturer: **Same as above.**		
City:	**State**	**ZIP Code:**
EPA APPROVED TEST LABORATORY		
Name and Title of Authorized Representative: Brian Ziegler, Technical Team Leader - Hearth		
Company: Intertek Testing Services NA, Inc.		
Phone: 608-836-4400 ext. 7425	**E-mail:** **brian.ziegler@intertek.com**	**Fax:**
City: Middleton	**State: WI**	**ZIP Code: 53562**
EPA APPROVED THIRD-PARTY CERTIFIER		

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Name and Title of Authorized Representative: Jean-Philippe Kayl, Product Certification		
Company: Intertek Testing Services NA, Inc.		
Phone: 312-906-7783	**E-mail: jpkayl@intertek.com**	**Fax:**
City: Arlington Heights	**State: IL**	**ZIP Code: 60005**
COMPLIANCE TEST INFORMATION		
Test Method(s): ASTM E2779		
Date(s) of Proposed Test: November 15, 2023		
Testing Location (Name and Address): Stove Builder International Laboratory 250 rue de Copenhague, Saint-Augustin-de-Desmaures, Québec, Canada, G3A 2H3		
Contact Name: Guillaume Thibodeau-Fortin	**Title: Engineer**	
Phone Number: 1-418-878-3040 x5224	**Email Address:** gthibodeaufortin@sbi-international.com	

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Guillaume Thibodeau-Fortin

Print Name and Title of Authorized Official

Signature

2023-09-28

Date

Telephone Number: 1-418-878-3040 x 5224

Email Address: gthibodeaufortin@sbi-international.com

Remarks:

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