TEST REPORT

SCOPE: EMISSIONS, EFFICIENCY AND OUTPUT

FUEL: CORDWOOD

TEST STANDARD: EPA

MODEL: ST. CLAIR 3000

Certificate of Conformity

Emissions – Adjustable burn rate wood burning heater

ASTM E3053-17, ASTM E2515-11, CSA B415.1-10

Certificate number: WHI19 – 21514314

This is a certificate of conformity to certify that the bearer has successfully completed the requirements of the above scheme which include the testing of products, the initial assessment, and are subject to continuing annual assessments of their compliance and testing of samples of products taken from production (as applicable to the scheme) and has been registered within the scheme for the products detailed.

Organization:

Company Name: Stove Builder International inc.
Address: 250 de Copenhague
City, State: St-Augustin-de-Desmaures
Zip Code: G3A 2H3
Country: Canada

Product: Model Everest II Series (Everest II, HE300 II, HE325, St. Clair 3000).

Maximum Output: 49 654 Btu/hour
Weighted Average Emissions Rate: 0.99 g/hr
Weighted Average CO Emissions Rate: 0.83 g/min
Weighted Average Efficiency: 65.7% HHV

Certification body: Intertek Testing Services NA, Inc.
Initial registration: November 06-2019
Date of expiry: No expiry date
Issue status: 1

Charles Meyers Director, Product Certification		11/15/2019
Name	Signature	Date

Registered address:
Intertek Testing Services NA, Inc. 545 E. Algonquin Rd. Arlington Heights, IL 60005 USA

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STOVE BUILDER INTERNATIONAL INC.
TEST REPORT

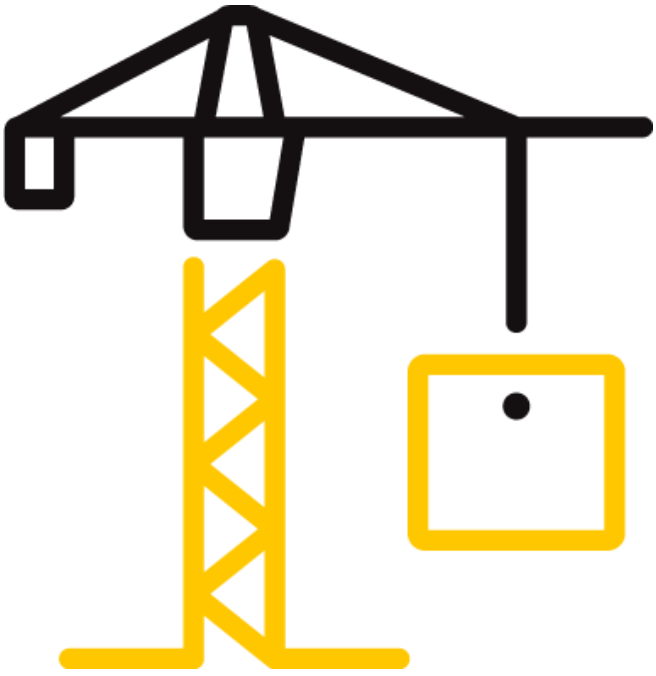
SCOPE OF WORK
EPA EMISSIONS TESTING/EVEREST II SERIES (EVEREST II, HE300 II, HE325, ST. CLAIR 3000)/ WOOD FUEL ROOM HEATER

REPORT NUMBER
104070904MTL-001
TEST DATE(S)
09/23/19 - 09/26/19

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TEST REPORT FOR STOVE BUILDER INTERNATIONAL INC.
Report No.: 104070904MTL-001
Date: 11/04/19

REPORT ISSUED TO

STOVE BUILDER INTERNATIONAL, INC.
250 de Copenhague
ST-Augustin-de-Desmaures, Qc, G3A 2H3

SECTION 1

SCOPE

Intertek Testing Services NA (Intertek) has conducted testing for Stove Builder International Inc., on model Everest II Wood Burning Room Heater to evaluate all applicable performance requirements included in "Determination of particulate matter emissions from wood heaters." Everest II is a representative model of the Everest II Series. This series includes the following models: HE300, HE325, St. Clair 3000 and Everest II. See PEV # 104070904MTL-002 for more details.

The test was conducted to determine if the unit is in accordance with U.S EPA requirements under EPA 40 CFR Part 60 "Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces". This evaluation was conducted on Sept. 23rd to Sept. 26th, 2019. The following test methods were applicable:

ASTM E2515-11- Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel

ASTM E3053-17 - Standard Test Method for Determining Particulate Matter Emissions from Wood Heaters using Cordwood Test Fuel. It is based on the ALT-125 send by EPA on February 28th, 2018.

CSA B415.1-10 - Performance Testing of Solid-Fuel-Burning Heating Appliances

Testing was performed by the undersigned at client's facility.

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

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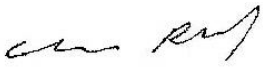
TEST REPORT FOR STOVE BUILDER INTERNATIONAL INC.
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SECTION 2
SUMMARY OF TEST RESULTS

The appliance tests resulted in the following performance:

Particulate Emissions: 0.99 g/hr
Carbon Monoxide Emissions: 0.83 g/min
Heating Efficiency: 66% (Higher Heating Value Basis)

For INTERTEK B&C:

COMPLETED BY:	Claude Pelland, P.E.	**REVIEWED BY:**	Brian Ziegler
TITLE:	Manager B&C, Intertek, Quebec	**TITLE:**	Technical Team Leader - Hearth
SIGNATURE:		**SIGNATURE:**	
DATE:	11/04/19	**DATE:**	11/04/19

aaa:bbb

SECTION 3
TEST METHOD(S)

The specimen was evaluated in accordance with the following:
ASTM E2515-11- Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel

ASTM E3053-17 - Standard Test Method for Determining Particulate Matter Emissions from Wood Heaters using Cordwood Test Fuel. It is based on the ALT-125 send by EPA on February 28th, 2018.

CSA B415.1-10 - Performance Testing of Solid-Fuel-Burning Heating Appliances

SECTION 4
MATERIAL SOURCE

A sample was submitted to Intertek directly from the client. The sample was not independently selected for testing. The test unit was handed to the Intertek representative at client's facility in St-Augustin-de-Desmaures, Quebec. The unit was inspected upon receipt 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 medium burn rates to break-in the stove. The unit was found to be operating satisfactory during this break-in. The 50 plus hours

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of pre-burning were conducted from Sept. 16st to Sept. 19th, 2019. The fuel used for the break-in process was beech cordwood.

Following the pre-burn break-in process the unit was allowed to cool and ash and residue were removed from the firebox. The unit's chimney system and laboratory dilution tunnels were cleaned using standard wire brush chimney cleaning equipment. On Sept. 20th, 2019, the unit was set-up for testing.

SECTION 5
EQUIPMENT

Equipment	INV Number	Calibration Due	MU
Handheld Thermocouple Thermometer	SBI-132	February 22, 2020	±0.5°F
Floor scale	SBI-014	March 31, 2020	± 0.020 kg
DGM system 1	SBI-046	November 22, 2019	±2% F.S.
DGM System 2	SBI-047	November 21, 2019	±2% F.S.
Reference DGM	SBI-103	October 26, 2019	±2% F.S.
5 kg weight	SBI-190	October 02, 2023	±0.2 g
Temperature acquisition	SBI-197	October 26, 2019	±0.5°F
Pitot tube type S	SBI-239	December 14, 2019	±0.00023 in H_2O
Analytical scale	SBI-206	March 31, 2020	±0.13 mg
Table scale	SBI-222	March 31, 2020	±0.88 g
100 mg weight	SBI-237	October 09, 2023	±0.0025 mg
10 g weight	SBI-238	October 09, 2023	±0.012 mg
Anemometer	SBI-241	December 6, 2019	±0.15 m/s
Magnesense (tunnel)	SBI-250	March 18, 2020	±0.00015" H_2O
Magnesense (draft)	SBI-254	October 10, 2019	±0.00015" H_2O
DGM system 3	SBI-276	November 25, 2019	±2% F.S.
Pressure transmitter	SBI-300	December 7, 2019	±4.5e-003 psi
Pressure transmitter	SBI-298	October 15, 2019	±9.5e-003 psi
Vacuum transmitter	SBI-309	December 11, 2019	±6.4e-003 in.Hg
Vacuum transmitter	SBI-305	October 12, 2019	±6.1e-003 in.Hg

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Relative humidity temperature meter	SBI-310	November 19, 2019	±3%
200 g weight	SBI-312	October 09, 2023	±0.06 mg

SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Guillaume Thibodeau-Fortin	Stove Builder International inc.
Claude Paré	Stove Builder International inc.
Claude Pelland, P.E.	Intertek B&C

SECTION 7
TEST PROCEDURE

From Sept 23rd to Sept 26th, 2019, the unit was tested for EPA emissions. The test was conducted in accordance with ASTM E3053-17 and ASTM E2515-11. The fuel used for the test run was beech cordwood.

The applicable EPA regulatory limits are:

Step 1 – 2015 – 4.5 grams per hour.

Step 2 – 2020 – 2.0 grams per hour with crib, 2.5 grams per hour with cordwood.

MANUFACTURER LOADING PROCEDURE

Kindling (13.5 lbs) - Split the start-up fuel log into 8 pieces. Crisscross the 8 pieces on the brick, leaving some space between each wood pieces (3 in the bottom, 3 in the middle, 2 on the top). Crisscross the kindling on the top of the start-up fuel. The kindling is made of between 10-12 finly split piece of wood that are 10% of moisture content. Place crumbled newspaper on top of the kindling (5 full sheets). Light up the paper and let the door ajar at 90° until the flue temperature reaches 450°F, then close the door. The fan is always OFF.

Low&Medium Pre-load (high fire) (27.0 lbs) - When there is coal bed of 3.5 lbs left, break ashes and level coal bed, then add pre-load. Place the two smallest pieces on the coal bed in a V shape pointing the rear brick. Then put the other piece in an East-West orientation. Leave tree inches or air space between the rear bricks and one inch between all the pieces column. Let the door ajar until flue temperature is around 500°F. Close the door and let burn until the weight is down to target. At 6.7 lbs, slightly level the coal bed. Let the door ajar by one inch for one minute. There should be approximately 6.4 lbs of coal bed.

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Low fire load (32.0 lbs) - Place the two smallest pieces on the coal bed in a V shape pointing the rear brick. Then put the other piece in an East-West orientation. Leave tree inches or air space between the rear bricks and one inch between all the pieces column. Let the door ajar until flue temperature is around 700°F. Close the door and let burn until the weight is down to initial coal bed weight. When the oxygen falls below 5%, close the primary air control to 50%. Close the primary air control completely at 16 min from beginning. Start the fan at minimum speed at 30 minutes.

Medium fire load (32 lbs) - Same as for low fire load but close the primary air control on a rod of 7/32" of outside diameter at 16 min. Remove the rod. Start the fan at minimum speed at 30 minutes.

High fire load (27.0 lbs) – Same as Low&Medium Pre-load. Stop the test when 90% of the high fire load has been consumed.

TEST SET-UP DESCRIPTON

A 6" flue is connected to a standard 6" diameter vertical single wall pipe and insulated chimney system was installed to 15' above floor level. The single wall pipe extended to 8 feet above the floor and insulated chimney extended the remaining height.

AIR SUPPLY SYSTEM

Combustion air enters at the bottom of the heater, which is directed to the firebox. All gases exit through the 6" flue located on top of the heater.

TEST FUEL PROPERTIES

The species of fuel used was beech. The fuel was split cordwood of nominal length of 16 inches. The fuel was dried in air to an average moisture content between 18% and 28% on a dry basis. Cordwood fuel was loaded from side to side into the firebox per manufacturer's instructions.

SAMPLING LOCATIONS

Particulate samples are collected from the dilution tunnel at point 20 feet from the tunnel entrance. The tunnel has two elbows and two mixing baffles in the system ahead of the sampling section. (See Figure 3.) The sampling section is a continuous 13-foot section of 8-inch diameter pipe straight over its entire length. Tunnel velocity pressure is determined by a type "S" Pitot tube located 100 inches from the beginning of the sampling section. The dry bulb thermocouple is located on the pitot tube. Tunnel samplers are located 48 inches downstream of the Pitot tube and 36 inches upstream from the end of this section. (See Figure 1.)

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Stack gas samples are collected from the steel chimney section 8 feet ± 6 inches above the scale platform.

FIGURE 1 – DILUTION TUNNEL

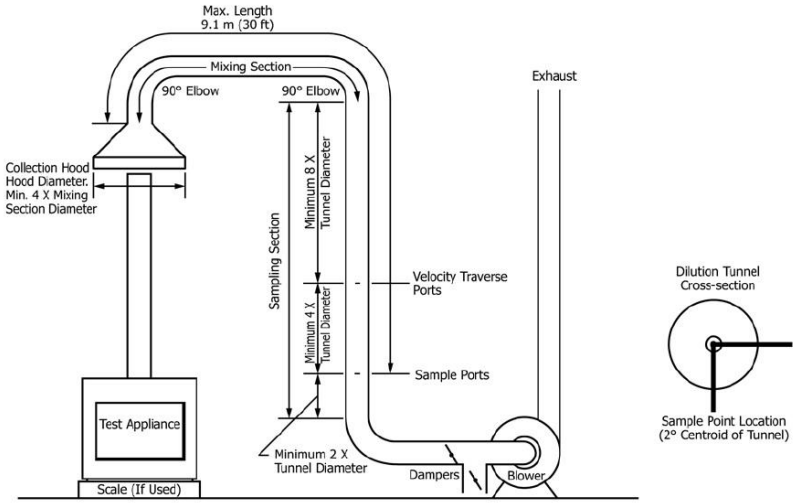


FIGURE 2 – STACK GAS SAMPLE TRAIN

SAMPLING METHODS

PARTICULATE SAMPLING

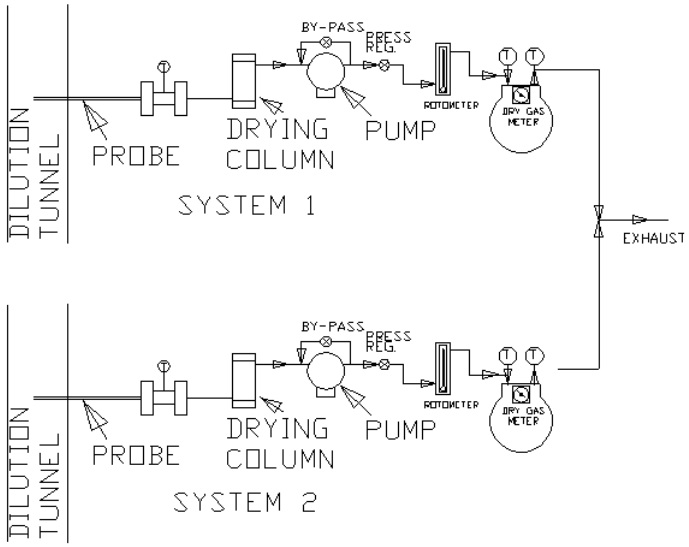


Figure 2

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Particulates were sampled in strict accordance with ASTM E2515-2011. This method uses two identical sampling systems with Gelman A/E 61631 binder free, 47-mm diameter 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 one hour into the test run, the filter sets are changed in one of the two sample trains. The two filter sets used for this train are analysed individually to determine the first hour and total emissions rate.

At the conclusion of each test program the dry gas meters are checked against our standard dry gas meter. Three runs are made on each dry gas meter used during the test program. The average calibration factors obtained are then compared with the six-month calibration factor and, if within 5%, the six-month factor is used to calculate standard volumes. Results of this calibration are contained in Appendix E.

An integral part of the post-test calibration procedure is a leak check of the pressure side by plugging the system exhaust and pressurizing the system to 10" W.C. The system is judged to be leak free if it retains the pressure for at least 10 minutes.

The standard dry gas meter is calibrated every 6 months using a Spirometer designed by the EPA Emissions Measurement Branch. The process involves sampling the train operation for 1 cubic foot of volume. With readings made to .001 ft^3, the resolution is .1%, giving an accuracy higher than the ±2% required by the standard.

STACK SAMPLE ROTAMETER

The stack sample rotameter is checked by running three tests at each flow rate used during the test program. The flow rate is checked by running the rotameter in series with one of the dry gas meters for 10 minutes with the rotameter 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 analyser 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 E2515-11. The data and results are included in Appendix B.

DEVIATIONS FROM STANDARD METHOD:

The following deviations were requested by EPA:

Changes to ASTM E3053-17 are:

1. Coal bed conditions prior to loading test fuel: The coal bed should be a level plane without valleys or ridges for all test runs in the high fire, low and medium burn rate categories.

Changes to ASTM E2515-11 must be as followed:

1. The filter temperature must be maintained between 80 and 90 Degrees F during testing.
2. Filters must be weighed in pairs to reduce weighing error propagation.
3. Sample filters must be Pall TX-40 or equivalent Teflon coated glass fiber, and of 47 mm,90mm, 100mm of 110mm in diameter.
4. Only one point is allowed outside the +/- 10% proportionality range per test run.

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SECTION 8
TEST CALCULATIONS

Weight of test fuel load, dry basis ASTM E3053

$$M_{Fldb} = \Sigma((M_{FLnwb})(100)/(100+MC_{FLn}))$$

where:

M_{FLdb} = weight of test fuel load, dry basis, lb (kg);
M_{FLnwb} = weight of each test fuel piece, *n*, in test fuel load per 8.4.1, wet basis, lb (kg);
MC_{FLn} = average fuel moisture of test fuel piece, *n*, in test fuel load, % dry basis; and
n = individual test fuel pieces that comprise the test fuel load, as applicable.

Weighted Average Determination ASTM E3053

$$Vi_{WA} = 0.4(Vi_{LAve)} + 0.4(Vi_{MAve}) + 0.2(Vi_{HAve})$$

where:

Vi_{WA} = Weighted average for variable *i*;
Vi = Test result variable (Particulate Matter: g/h, g/kg, lb/MMBtu; % Overall Efficiency: HHV, LHV; Carbon Monoxide: g/h, etc.)
Vi_{LAve} = Arithmetic average for variable *Vi* for all test runs (except per 8.6.13 or 8.9) that are included in the low fire burn rate category
Vi_{MAve} = Arithmetic average for variable *Vi* for all test runs (except per 8.6.13 or 8.9) that are included in the medium fire burn rate category;
Vi_{HAve} = Arithmetic average for variable *Vi* for all test runs (except per 8.9) that are included in the high fire burn rate category.

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.
$F_p = V_{stravv}/V_{scent}$

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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.

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

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).

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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.

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

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.

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Date: 11/04/19

TOTAL PARTICULATE WEIGHT – ASTM E2515

$$M_n = m_p + m_f + m_g$$

PARTICULATE CONCENTRATION – ASTM E2515

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

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

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

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.

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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}

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

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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

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:

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

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)

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 from the Everest II Series Wood Fuel Room Heater is constructed of sheet steel. The outer dimensions are 24 9/16-inches deep, 39 1/8-inches high, and 36 9/16-inches wide. The unit has a door located on the front with a viewing glass.

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SECTION 10
TEST RESULTS

DESCRIPTION OF TEST RUNS:

RUN #1 (Sept. 23rd, 2019) - Invalid test run. Air control set at the targeted burn rate for low burn rate. Let the door ajar for 3 minutes, and then closed. Door was reopened within a minute due to poor combustion. Door was finally closed 4 minutes after loading. 15% of test fuel load was consumed after 10 minutes (from loading). The air control was set to lowest burn rate from there. Fire quit at 20 minutes. Sampling system (#3-first hour) pump bypass was adjusted until maximum. Filter clogged at 50 minutes run time. Proportionality was violated as per "Only one point is allowed outside the +/- 10% proportionality range per test run". Sampling flow rate dropped from 1.7 cfm to 1.0 cfm. Proportionality dropped to 65 %. Pump stopped at 60 minutes.

RUN #2 (Sept. 24th, 2019) - Air control set at the lowest burn rate, burn time was 480 minutes with a category "Low burn rate" of 1.44 kg/hr. Let the door ajar for 2 minutes, and then closed. The air control was opened for 14 minutes after loading time, and then set at the lowest burn rate. The fan was turned on at low speed at 50 minutes. At 441 minutes run time, the load was stirred for 30 seconds due to slow combustion. After 480min. the test ended due to slow combustion. There was a remainder fuel of 1.43 lbs. (dry).

RUN #3 (Sept. 25th, 2019) - Air control set at the targeted burn rate, burn time was 480 minutes with a category "Medium burn rate" of 1.52 kg/hr. Let the door ajar for 3 minutes, and then closed. The air control was opened for 12 minutes and then set at the targeted burn rate (7/32" open). The fan was turned on at medium speed at 30 minutes.

RUN #4 (Sept. 26th, 2019) - Air control set fully opened, burn time was 200 minutes with a category High burn rate of 4.1 kg/hr. The door was open for 3 minutes after kindling, then closed. Loading occurred at 62 minutes. Door was open for 3 minutes. The air control was fully opened. Start the fan at full speed 30 minutes after loading.

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*	Sept 23th 2019	10.2*	108.19*	**119.303***	-	-
2	Sept 24th 2019	1.44	0.93	**3.80**	**0.9**	67%
3	Sept 25th 2019	1.52	0.79	**5.20**	**0.6**	65%
4	Sept 26th 2019	4.07	1.51	**4.12**	**1.0**	65%

*Invalid test run.

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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	81	-	29.6	-	45	-	0	-
2	84	91	29.7	29.9	35	24	0	0
3	92	89	29.9	29.8	24	25	0	0
4	74	84	29.7	29.6	46	35	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	70	17.81	323.88	589	8.373	8.514	47.4	46.6
2	480	18.40	351.38	565	61.799	62.596	2.7	2.8
3	480	19.90	377.27	570	60.658	59.886	2.0	2.2
4	200	19.80	360.00	590	24.193	24.329	1.7	1.7

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	2708	2663	128.340	124.095	1.68%	0.42%
2	2729	2694	7.369	7.545	1.18%	0.29%
3	2985	3024	5.971	6.653	5.40%	1.35%
4	2976	2959	5.059	5.031	0.28%	0.07%

TABLE 5 - GENERAL SUMMARY OF RESULTS

RUN #	BURN RATE (kg/hr)(dry) (OVERALL)	Change in Surface Temp (^{O}F)	INITIAL DRAFT (in/H_2O)	RUN TIME (min)	AVERAGE DRAFT (in/H_2O)
2	1.44	346	0.070	480	0.055
3	1.52	310	0.066	480	0.058
4	4.1	345	0.003	200	0.073

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TABLE 6 - CSA B415.1 RESULTS

BURN RATE (kg/hr)(dry)	CO EMISSIONS (g/min)	HEATING EFFICIENCY (% HHV)	Heating Efficiency (% LHV)	HEAT OUTPUT (Btu/hr)
Low – 1.44	0.9	67%	72%	18,057
Medium – 1.52	0.6	65%	71%	18,818
High – 4.07	1.0	65%	70%	49,654

TABLE 7 – WEIGHTED AVERAGE CALCULATION

Test No.	Burn Rate	(E) Average Emission Rate g/hr	(CO) Average Emission Rate g/hr	Heat Output (Btu/hr)	HHV	LHV	(K) Weighting Factor	(KxE) g/hr	(K x CO) g/hr	(K x CO) g/min	(K x HHV)	(K x LHV)
2	1.44	0.93	57	18057	67	72	40%	0.37	22.7	0.38	26.6	28.7
3	1.52	0.79	39	18818	65	71	40%	0.32	15.5	0.26	26.2	28.2
4	4.1	1.51	59	49654	65	70	20%	0.30	11.9	0.20	12.9	13.9
TOTALS:							**100%**	**0.99**	**50.1**	**0.83**	**65.7**	**70.8**

SECTION 11
CONCLUSION

This test demonstrates that this unit is an affected facility under the definition given in the regulation. The emission rate of 0.99 g/hr. meets the EPA requirements for the Step 2 limits.

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SECTION 12
PHOTOGRAPHS



Photo No. 1
Front view of unit



Photo No. 2
Typical load

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SECTION 13
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	11/04/19	N/A	Original Report Issue

Unit break-in period

Total conditionning time (h)	51.62

Model tested: Everest II Series

Identification number: Everest II - Proto certif

Date	Burn cycle	Test run (#)	Duration (min)	Av. Flue (°F)	Av. Room (°F)	Av. Tunnel (°F)	Load type (-)	Fuel added (lbs)	Moisture (%)
2019-09-16	Preload	NA	202	788.2	70.2	135.3	Kindling & SUF	13.48	14.8
	Condition		-	-	-	-	High fire	27.00	21.3
	Load		611	437.4	73.1	96.2	Medium fire	31.45	21.4
2019-09-17	Preload	NA	200	844.4	71.3	139.3	Kindling & SUF	13.36	15.5
	Condition		-	-	-	-	High fire	26.33	20.5
	Load		561	443.5	69.7	95.2	Medium fire	32.74	20.5
2019-09-18	Preload	NA	165	955.2	71.9	153.6	Kindling & SUF	13.53	14.5
	Condition		-	-	-	-	High fire	27.08	21.7
	Load		591	443.0	73.1	98.9	Medium fire	31.37	21.1
2019-09-19	Preload	NA	216	825.6	77.3	142.2	Kindling & SUF	13.50	14.5
	Condition		-	-	-	-	High fire	27.32	21.2
	Load		551	502.1	78.7	109.3	Medium fire	30.68	20.6
	Preload	NA					Kindling & SUF		
	Condition						High fire		
	Load						Medium fire		
	Preload	NA					Kindling & SUF		
	Condition						High fire		
	Load						Medium fire		

ID Certificat de Calibration
CA0003-013-031319-ACC-USI

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CALIBRATION CERT #1902.01

ISO 9001 Registered
ANSI/NCSL Z540-1 Accredited

Certificat de Calibration de Précision

Accuracy Calibration Certificate

Client

Compagnie:	SBI Fabricant De Poeles		
Adresse:	250 Rue de Copenhague		
Ville:	Saint-Augustin-De-Desmaures	**Contact:**	N/D
Zip/Code Postal:	G3A 2H3		
État/Province:	Quebec		

Weighing Device

Manufacturier:	Weigh-Tronix	**Type d'Instrument:**	Weighing Instrument
Modèle:	DSL 4848-05	**# Outil:**	SBI-014 FLOOR SCALE
No. Série:	B00927386KL	**Modèle Indicateur:**	N/D
Building:	N/D	**Terminal Serial No.:**	N/D
Floor:	N/D	**Terminal Asset No.:**	N/D
Room:	N/D		

Plage	Capacité Max	Lisibilité (d)
1	500 kg	0.02 kg

Procedure

Instruction de Calibration:	EURAMET cg-18 v. 4.0 (11/2015)
Instruction de travail METTLER TOLEDO:	30260953

Ce certificat de calibration contient des mesures pour les calibrations Tel que Trouvé et Tel que Laissé.

The sensitivity/span of the weighing instrument was adjusted before As Left calibration with an external weight.

The calibration was agreed with the user below the maximum capacity of the balance.

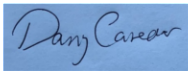
	Temperature	
Tel que Trouvé	Start: 21.0 °C	End: 21.0 °C
Tel que Laissé	Start: 20.0 °C	End: 20.0 °C

Environmental conditions have been verified to ensure the accuracy of the calibration.

This certificate is issued in accordance with the conditions of accreditation granted by A2LA, which is based on ISO/IEC 17025. A2LA has assessed the measurement capability of the laboratory and its traceability to recognized national standards.

Date calibration Tel que Trouvé:	13-Mar-2019
Date calibration Tel que Laissé:	13-Mar-2019
Date d'Émission:	13-Mar-2019
Requested Next Calibration Date:	31-Mar-2020

Authorized A2LA Signatory:



Dany Careau

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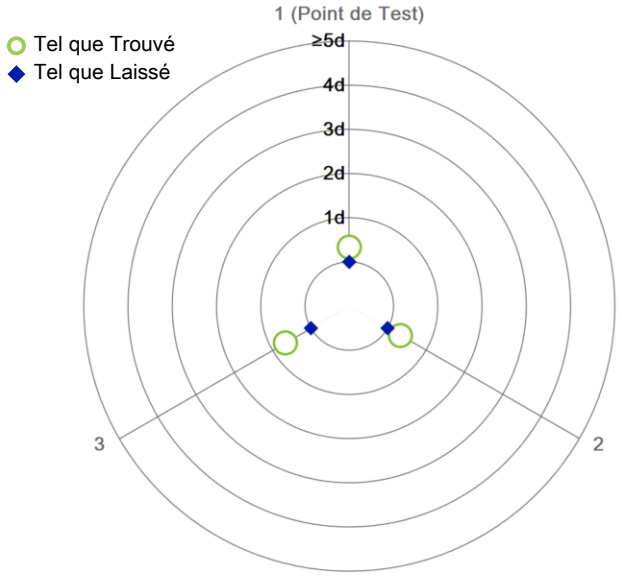
Résultats de Mesure

Répétabilité

Charge de Test: 100 kg

	Tel que Trouvé	Tel que Laissé
1	99.96 kg	100.00 kg
2	99.96 kg	100.00 kg
3	99.98 kg	100.00 kg

Écart Type	**0.012 kg**	**0.000 kg**



The "d" in the graph represents the readability of the range/interval in which the test was performed.

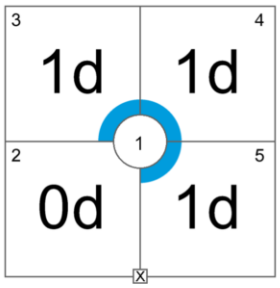
The results of this graph are based upon the absolute values of the differences from the mean value.

Excentricité

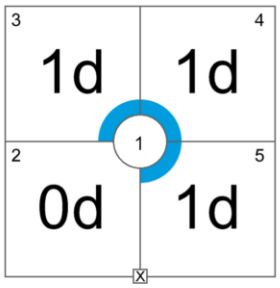
Charge de Test: 100 kg

Position	Tel que Trouvé	Tel que Laissé
1	99.94 kg	100.00 kg
2	99.94 kg	100.00 kg
3	99.96 kg	100.02 kg
4	99.92 kg	99.98 kg
5	99.92 kg	99.98 kg

Déviation Maximale	**0.02 kg**	**0.02 kg**



Tel que Trouvé



Tel que Laissé

The "d" in the graph represents the readability of the range/interval in which the test was performed.

Erreur d'indication

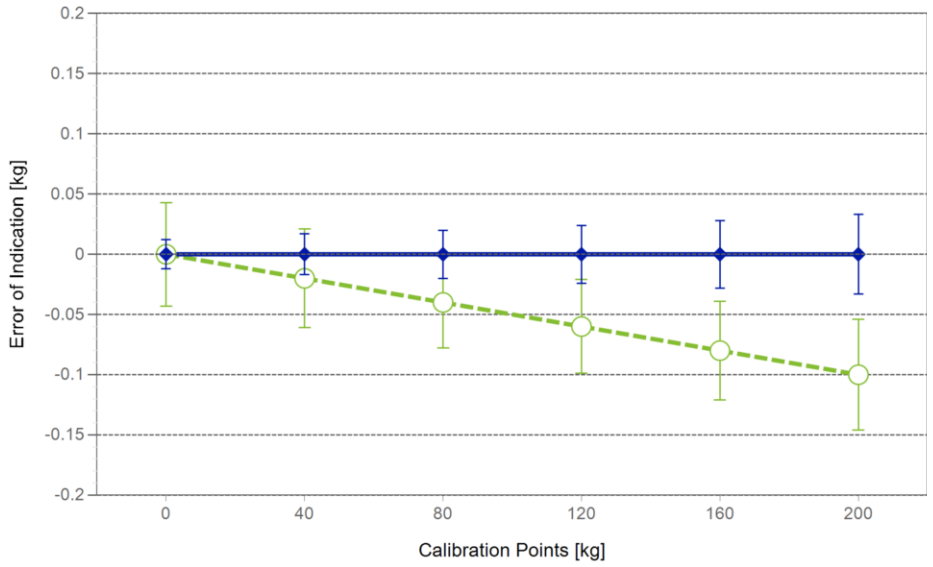
Tel que Trouvé

	Reference Value	Indication	Erreur d'indication	Incertitude Élargie	k
1	0 kg	0.00 kg	0.00 kg	0.043 kg	3.31
2	40 kg	39.98 kg	-0.02 kg	0.041 kg	2.87
3	80 kg	79.96 kg	-0.04 kg	0.038 kg	2.52
4	120 kg	119.94 kg	-0.06 kg	0.039 kg	2.37
5	160 kg	159.92 kg	-0.08 kg	0.041 kg	2.28
6	200 kg	199.90 kg	-0.10 kg	0.046 kg	2.28

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Tel que Laissé

	Reference Value	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



Tel que Trouvé

Tel que Laissé

For improved legibility of the graphics only increasing measurement points are shown and measurement points close to zero are not displayed.

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 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.

Test Equipment

Tous les poids utilisés pour le contrôle métrologique sont retraçables aux étalons Nationaux et Internationaux. Les poids ont été calibrés et certifiés par un laboratoire de calibration accrédité.

Jeu de Poids 1: OIML M1

Weight Set Number:	Q	Date d'Émission:	27-Feb-2019
# Certificat:	1406972	Date de Calibration Due:	27-Feb-2020

Remarques

N/D

End of Accredited Section

The information below and any attachments to this calibration certificate are not part of the accredited calibration.

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Incertitude de Mesure du dispositif de pesage en opération

Stated is the expanded uncertainty with k=2 in use. The formula shall be used for the estimation of the uncertainty under consideration of the errors of indication. The value R represents the net load indication in the unit of measure of the device.

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

Plage d'opération sur le site pour l'évaluation de l'incertitude de mesure en opération: 10 K

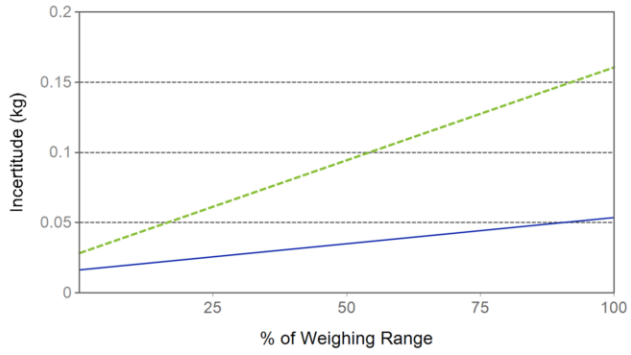
Linéarisation de l'Équation d'Incertitude

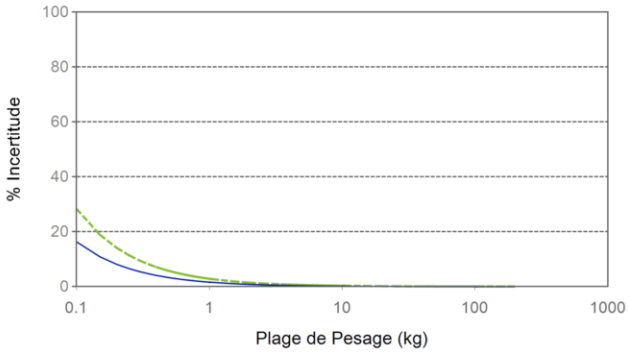
Plage		Tel que Trouvé	Tel que Laissé
1	0 kg - 500 kg	U_1 = 28 g + 0.662 g/kg · R	U_1 = 16 g + 0.186 g/kg · R

To optimize the stability of the linearization, besides of the zero load only increasing measurement points with a test load of 5% of the measurement range or larger are taken for the calculation of the linear equation.

Absolute and Relative Measurement Uncertainty in Use for Various Net Indications (Examples)

Indication Net	Tel que Trouvé		Tel que Laissé	
0.20 kg	0.028 kg	14%	0.016 kg	8.0%
2.00 kg	0.029 kg	1.5%	0.016 kg	0.80%
20.00 kg	0.041 kg	0.21%	0.020 kg	0.10%
100.00 kg	0.094 kg	0.094%	0.035 kg	0.035%
200.00 kg	0.16 kg	0.080%	0.053 kg	0.027%





Tel que Trouvé Tel que Laissé

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Certificate

No Pass/Fail statement is possible because one or more of the process requirements are not specified.

Tests Performed: ☑ ☑

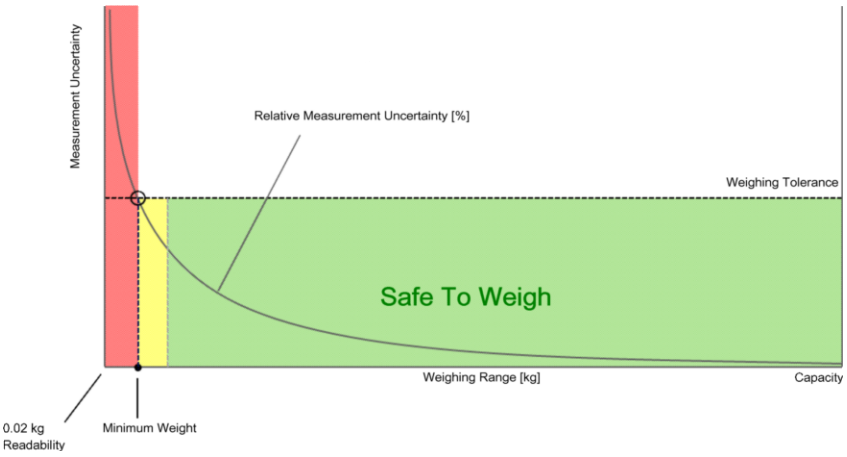
Process Requirements

Weighing Tolerance: **Not Specified**

Smallest Net Weight: **Not Specified**

Facteur de Sécurité: ***Not specified, default = 2**

Safe Weighing Range



Since the weighing tolerance is not specified, only a generic behavior curve is shown.

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Poids Minimum

As Found Minimum Weight Table

Poids minimum pour différentes tolérances de pesage et facteurs de sécurité					
	Facteur de Sécurité				
Tolérance	**1**	**2**	**3**	**5**	**10**
0.1%	83.646 kg	N/D	N/D	N/D	N/D
0.2%	21.137 kg	83.646 kg	N/D	N/D	N/D
0.5%	6.520 kg	15.387 kg	28.149 kg	83.646 kg	N/D
1%	3.029 kg	6.520 kg	10.588 kg	21.137 kg	83.646 kg
2%	1.463 kg	3.029 kg	4.710 kg	8.473 kg	21.137 kg
5%	0.573 kg	1.162 kg	1.767 kg	3.029 kg	6.520 kg

As Left Minimum Weight Table

Poids minimum pour différentes tolérances de pesage et facteurs de sécurité					
	Facteur de Sécurité				
Tolérance	**1**	**2**	**3**	**5**	**10**
0.1%	20.073 kg	52.084 kg	111.191 kg	N/D	N/D
0.2%	9.004 kg	20.073 kg	34.007 kg	76.476 kg	N/D
0.5%	3.393 kg	7.058 kg	11.032 kg	20.073 kg	52.084 kg
1%	1.664 kg	3.393 kg	5.189 kg	9.004 kg	20.073 kg
2%	0.824 kg	1.664 kg	2.520 kg	4.282 kg	9.004 kg
5%	0.328 kg	0.658 kg	0.991 kg	1.664 kg	3.393 kg

À ces valeurs de poids net minimum, l'incertitude de mesure du dispositif est égale ou inférieure à 1/1 (pas de facteur de sécurité), 1/2, 1/3, 1/5 ou 1/10 de la tolérance requise. Ces valeurs sont calculées avec k=2 et basées sur la formule linéaire de l'incertitude de mesure du dispositif de pesage en opération.

The safety factor for As Found is always 1. This implies no safety factor. As Found testing looks at the behavior of the instrument from the past until test occurred. For the past, it is necessary to know that the tolerance was met, but not the safety factor. The safety factor is a proactive measure to apply for future measurements.

Notes on minimum weight values in above table:

1. If "N/A" is shown above, no appropriate value could be calculated.
2. METTLER TOLEDO is not responsible for the definition of the process requirements.

Résultats de Mesure

Results Summary

	Répétabilité	Excentricité	Erreur d'indication
As Found	N/D	N/D	N/D
As Left	N/D	N/D	N/D

✔ = Passed

✘ = Failed

⚠ = Safety Factor not met

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Répétabilité

Charge de Test: 100 kg

		Tel que Trouvé		Tel que Laissé	
Tolérance	Control Limit	Std. Deviation	Result	Std. Deviation	Result
0.1%	N/D	0.012 kg	N/D	0.000 kg*	N/D
0.2%	N/D		N/D		N/D
0.5%	N/D		N/D		N/D
1%	N/D		N/D		N/D
2%	N/D		N/D		N/D
5%	N/D		N/D		N/D

An assessment cannot be made because the smallest net weight is not defined.

*The calculated standard deviation is below the rounding error of the balance. The 0.41*d rule is used for the assessment of this repeatability test.

The weighing tolerance is met if the standard deviation is less than or equal to the corresponding control limit.

Excentricité

Charge de Test: 100 kg

		Tel que Trouvé		Tel que Laissé	
Tolérance	Control Limit	Deviation	Result	Deviation	Result
0.1%	0.05 kg	0.02 kg	✓	0.02 kg	⚠
0.2%	0.10 kg		✓		✓
0.5%	0.25 kg		✓		✓
1%	0.50 kg		✓		✓
2%	1.00 kg		✓		✓
5%	2.50 kg		✓		✓

The weighing tolerance is met if the deviation is less than or equal to the corresponding control limit.

Erreur d'indication

Tel que Trouvé

		Control limits for various weighing tolerances					
Reference Value	Error	0.1%	0.2%	0.5%	1%	2%	5%
0 kg	0.00 kg	N/D	N/D	N/D	N/D	N/D	N/D
40 kg	-0.02 kg	0.02 kg	0.04 kg	0.10 kg	0.20 kg	0.40 kg	1.00 kg
80 kg	-0.04 kg	0.04 kg	0.08 kg	0.20 kg	0.40 kg	0.80 kg	2.00 kg
120 kg	-0.06 kg	0.06 kg	0.12 kg	0.30 kg	0.60 kg	1.20 kg	3.00 kg
160 kg	-0.08 kg	0.08 kg	0.16 kg	0.40 kg	0.80 kg	1.60 kg	4.00 kg
200 kg	-0.10 kg	0.10 kg	0.20 kg	0.50 kg	1.00 kg	2.00 kg	5.00 kg
Result		✓	✓	✓	✓	✓	✓

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Tel que Laissé

		Control limits for various weighing tolerances					
Reference Value	Error	0.1%	0.2%	0.5%	1%	2%	5%
0 kg	0.00 kg	N/D	N/D	N/D	N/D	N/D	N/D
40 kg	0.00 kg	0.02 kg	0.04 kg	0.10 kg	0.20 kg	0.40 kg	1.00 kg
80 kg	0.00 kg	0.04 kg	0.08 kg	0.20 kg	0.40 kg	0.80 kg	2.00 kg
120 kg	0.00 kg	0.06 kg	0.12 kg	0.30 kg	0.60 kg	1.20 kg	3.00 kg
160 kg	0.00 kg	0.08 kg	0.16 kg	0.40 kg	0.80 kg	1.60 kg	4.00 kg
200 kg	0.00 kg	0.10 kg	0.20 kg	0.50 kg	1.00 kg	2.00 kg	5.00 kg
Result		✓	✓	✓	✓	✓	✓

The weighing tolerance is met if the error (of indication) for each test point is less than or equal to the corresponding control limit for that particular weighing tolerance. Results at or close to the zero point cannot be assessed.

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Handbook 44 Tolerance Assessment (Entretien)

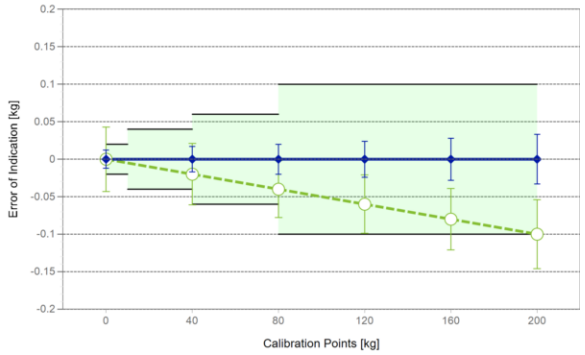
Les mesures du certificat de calibration joint ont été évaluées selon les tolérances définies par NIST HB44.

	él que Trouv	él que Laiss
Global	✓	✓

✓ = Passed
✗ = Failed

Weighing Device

Range	Max. Capacity	Readability (d)	Verification Scale Interval (e)	Class
1	500 kg	0.02 kg	0.02 kg	III



Tolerances according to NIST Handbook 44

Test Load		Tolérance
From	To	
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

○ Tel que Trouvé
◆ Tel que Laissé
— Tolérance

Eccentricity and Repeatability

Test	Test Load	Tolérance	As Found		As Left	
			Max. Error / Range	Result	Max. Error / Range	Result
xcentricité (Maximum Erro	100 kg	0.10 kg	0.08 kg	✓	0.02 kg	✓
Excentricité (Plage)	100 kg	0.1 kg	0.04 kg	✓	0.04 kg	✓
épétabilité (Maximum Erro	100 kg	0.1 kg	0.04 kg	✓	0.00 kg	✓
Répétabilité (Plage)	100 kg	0.10 kg	0.02 kg	✓	0.00 kg	✓

Max. Error: Maximum of the absolute values of the individual errors.
Range: Difference between largest and smallest measurement value.

Error of Indication

	Reference Value	Tolérance	As Found		As Left	
			Error of Indication	Result	Error of Indication	Result
1	0 kg	0.02 kg	0.00 kg	✓	0.00 kg	✓
2	40 kg	0.04 kg	-0.02 kg	✓	0.00 kg	✓
3	80 kg	0.06 kg	-0.04 kg	✓	0.00 kg	✓
4	120 kg	0.10 kg	-0.06 kg	✓	0.00 kg	✓
5	160 kg	0.10 kg	-0.08 kg	✓	0.00 kg	✓
6	200 kg	0.10 kg	-0.10 kg	✓	0.00 kg	✓

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Date: 2019-02-20

Equipment: SBI-132 (T1) Temperature: 75 °F

Accuracy: 0.1 °F R.H.: 20.6%

Reference: SBI-096

S.D.	0.0025	%	
R.M.U.	0.14	%	
O.M.U	**0.40**	**%**	
	Ave A.D.	0.14	%
Standard	Reading	A.D.	
70	69.9	0.14	
70	69.9	0.14	
70	69.9	0.14	

S.D.	0.0026	%	
R.M.U.	0.05	%	
O.M.U	**0.32**	**%**	
	Ave A.D.	0.15	%
Standard	Reading	A.D.	
200	199.7	0.15	
200	199.7	0.15	
200	199.7	0.15	

S.D.	0.0000	%	
R.M.U.	0.02	%	
O.M.U	**0.03**	**%**	
	Ave A.D.	0.00	%
Standard	Reading	A.D.	
600	600	0.00	
600	600	0.00	
600	600	0.00	

S.D.	0.0035	%	
R.M.U.	0.01	%	
O.M.U	**0.40**	**%**	
	Ave A.D.	0.20	%
Standard	Reading	A.D.	
1000	998	0.20	
1000	998	0.20	
1000	998	0.20	

S.D.	0.0012	%	
R.M.U.	0.01	%	
O.M.U	**0.14**	**%**	
	Ave A.D.	0.07	%
Standard	Reading	A.D.	
1400	1401	0.07	
1400	1401	0.07	
1400	1401	0.07	

Technician: Claude Paré

Date: 2019-02-22

Equipment: SBI-132 (T2) Temperature: 70.5 °F
Accuracy: 0.1 R.H.: 30.8%
Reference: SBI-096

S.D.	0.00	%	
R.M.U.	0.14	%	
O.M.U	**0.90**	**%**	
	Ave A.D.	0.43	%
Standard	Reading	A.D.	
70	69.7	0.43	
70	69.7	0.43	
70	69.7	0.43	

S.D.	0.00	%	
R.M.U.	0.05	%	
O.M.U	**0.44**	**%**	
	Ave A.D.	0.22	%
Standard	Reading	A.D.	
200	199.7	0.15	
200	199.5	0.25	
200	199.5	0.25	

S.D.	0.00	%	
R.M.U.	0.02	%	
O.M.U	**0.03**	**%**	
	Ave A.D.	0.00	%
Standard	Reading	A.D.	
600	600	0.00	
600	600	0.00	
600	600	0.00	

S.D.	0.00	%	
R.M.U.	0.01	%	
O.M.U	**0.40**	**%**	
	Ave A.D.	0.20	%
Standard	Reading	A.D.	
1000	998	0.20	
1000	998	0.20	
1000	998	0.20	

S.D.	0.00	%	
R.M.U.	0.01	%	
O.M.U	**0.14**	**%**	
	Ave A.D.	0.07	%
Standard	Reading	A.D.	
1400	1401	0.07	
1400	1401	0.07	
1400	1401	0.07	

Technician: Claude Paré

Date: 2018-10-31

Equipment: SBI-153 Temperature: 73.5°F
Accuracy: 0.001 1 R.H.: 31.6%
Reference: SBI-194

S.D.	0.00	%	
R.M.U.	0.09	%	
O.M.U	**0.75**	**%**	
	Ave A.D.	0.36	%
Standard	Reading	A.D.	
MΩ			
1.100	1.096	0.36	

S.D.	0.00	%	
R.M.U.	0.83	%	
O.M.U	**1.67**	**%**	
	Ave A.D.	0.00	%
Standard	Reading	A.D.	
MΩ			
120	120	0.00	

Technician: Claude Paré

Trescal
26 Automatic Road, Unit 4
Brampton, ON, L6S 5N7
Tel. (905) 790-9400 Fax. (905) 790-9266
www.dmm.ca // service@dmm.ca

ACCREDITED
CERTIFICATE #4692.01

ISO 17025
ACCREDITED LAB
Cert #: 4692.01
Calibration, Testing & Inspection

CALIBRATION CERTIFICATE

Description:	WEIGHT SET	**Calibration Date:**	Apr 16, 2018 **Certificate:** 91965
Asset Number:	SBI-191	**Property of:**	SBI ST-AUGUSTIN
Serial/Model Number:	N / A	**Address:**	250, rue de Copenhague, Doors 10-12
Manufacturer:	TROEMNER	**City/Prov/PC:**	St-Augustin-de-Desmaures QC G3A 2H3
Instrument Capacity:	10 kg	**Country:**	Canada
Procedure:	CP34G	**Method Used:**	COMPARISON
Room Humidity:	43 % **Room Temp:** 20.3 °C	**Conformance Stds:**	ISO/IEC 17025: 2005

CALIBRATION DATA

Units: kg

Range	Std/Nominal	As Found	As Left	Min	Max	Tolerance In	Tolerance Out	Uncertainty
	10	10.0006	10.0006	9.999	10.001	✔		± 0.22 g

Remarks:

Inspected, cleaned and tested using the mfgr's specs and procedures, customer's, national or international standards, or new procedure design. Measurement uncertainty is not considered when deciding compliance to the tolerance or specs. It is up to the user to make a judgment of conformity to the limits shown.

CALIBRATION STANDARD(S) USED

Traceable No.	Asset Number	Calibration Date	Date Due
90159	DMML-2356075	Jan 17, 2018	Sep 29, 2018
W-046636-25724	DMML-21701	Jan 08, 2018	Jan 08, 2020

Received Condition:
In tolerance.

Weights are accurate to class F tolerance.

Estimated measurement uncertainty is, at minimum, an accuracy ratio of 4:1, unless otherwise stated.

Reported uncertainties represent a 95 % confidence level assuming a normal distribution, with a coverage factor of k=2.

This calibration was performed in the lab and is traceable to the International System of Units (SI Units) through NIST or NRC. This report is covered by our accreditation.

Calibration of the instrument expires on Apr 16, 2023

The results shown above relate to the above calibrated instrument/equipment only. Copyright of this Certificate is owned by the issuing laboratory and may not be reproduced other than in full except with the prior written approval of the issuing laboratory.

CALIBRATED BY Chris Riddle — Christopher Riddle

Q.A. APPROVAL Kwame Koranteng-Obeng — Kwame Koranteng-Obeng

END OF REPORT

ACCREDITATION 17025 ISO/IEC

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Date: 2018-10-26

Equipment: SBI-197
Ambiant
Accuracy: 0.01
Reference: SBI-096

Temperature: 65.8 F
R.H.: 30%
P.B.: 101.6 kPa

S.D.	0.01	%	
R.M.U.	0.01	%	
O.M.U	**1.29**	**%**	
	Ave A.D.	0.64	%
Standard	Reading	A.D.	
°F	°F		
70.0	69.55	0.64	

S.D.	0.00	%	
R.M.U.	0.01	%	
O.M.U	**0.49**	**%**	
	Ave A.D.	0.25	%
Standard	Reading	A.D.	
°F	°F		
200.0	199.51	0.25	

S.D.	0.00	%	
R.M.U.	0.00	%	
O.M.U	**0.11**	**%**	
	Ave A.D.	0.05	%
Standard	Reading	A.D.	
°F	°F		
600.0	599.68	0.05	

S.D.	0.00	%	
R.M.U.	0.00	%	
O.M.U	**0.04**	**%**	
	Ave A.D.	0.02	%
Standard	Reading	A.D.	
°F	°F		
1000.0	999.82	0.02	

S.D.	0.00	%	
R.M.U.	0.00	%	
O.M.U	**0.03**	**%**	
	Ave A.D.	0.01	%
Standard	Reading	A.D.	
°F	°F		
1400.0	1399.80	0.01	

Claude Paré

ID Certificat de Calibration
CA0003-010-031319-ACC-USL

Mettler Toledo
Service Business Unit Industrial
1900 Polaris Parkway
Columbus, OH 43240
1-800-METTLER

Accredited by the American Association for Laboratory Accreditation (A2LA)
CALIBRATION CERT #1788.01
ISO 17025 Accredited
ANSI/NCSL Z540-1 Accredited

Certificat de Calibration de Précision

Accuracy Calibration Certificate

Client

Compagnie:	SBI Fabricant De Poeles		
Adresse:	250 Rue de Copenhague		
Ville:	Saint-Augustin-De-Desmaures	**Contact:**	N/D
Zip/Code Postal:	G3A 2H3		
État/Province:	Quebec		

Weighing Device

Manufacturier:	SARTORIUS	**Type d'Instrument:**	Weighing Instrument
Modèle:	TE214S	**# Outil:**	SBI-206 BAL. ANALYTIQUE
No. Série:	25851066	**Modèle Indicateur:**	N/D
Building:	N/D	**Terminal Serial No.:**	N/D
Floor:	N/D	**Terminal Asset No.:**	N/D
Room:	N/D		

Plage	Capacité Max	Lisibilité (d)
1	210 g	0.0001 g

Procedure

Instruction de Calibration:	EURAMET cg-18 v. 4.0 (11/2015)
Instruction de travail METTLER TOLEDO:	30260953

Ce certificat de calibration contient des mesures pour les calibrations Tel que Trouvé et Tel que Laissé.

The sensitivity/span of the weighing instrument was adjusted before As Left calibration with an external weight.

In accordance with EURAMET cg-18 (11/2015), the test loads were selected to reflect the specific use of the weighing device or to accommodate specific calibration conditions.

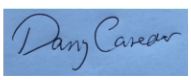
	Temperature	
Tel que Trouvé	Start: 71.2 °F	End: 71.2 °F
Tel que Laissé	Start: 71.2 °F	End: 71.2 °F

Environmental conditions have been verified to ensure the accuracy of the calibration.

This certificate is issued in accordance with the conditions of accreditation granted by A2LA, which is based on ISO/IEC 17025. A2LA has assessed the measurement capability of the laboratory and its traceability to recognized national standards.

Date calibration Tel que Trouvé:	13-Mar-2019
Date calibration Tel que Laissé:	13-Mar-2019
Date d'Émission:	13-Mar-2019
Requested Next Calibration Date:	31-Mar-2020

Authorized A2LA Signatory:



Dany Careau

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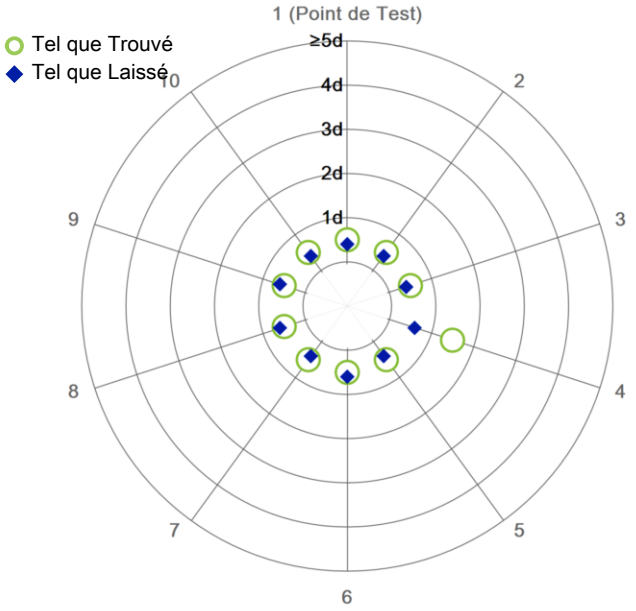
Résultats de Mesure

Répétabilité

Charge de Test: 10 g

	Tel que Trouvé	Tel que Laissé
1	10.0000 g	10.0000 g
2	10.0000 g	10.0000 g
3	10.0000 g	10.0000 g
4	10.0002 g	9.9999 g
5	10.0001 g	10.0000 g
6	10.0000 g	9.9999 g
7	10.0001 g	10.0000 g
8	10.0000 g	9.9999 g
9	10.0001 g	9.9999 g
10	10.0000 g	10.0000 g

Écart Type	**0.00007 g**	**0.00005 g**



The "d" in the graph represents the readability of the range/interval in which the test was performed.

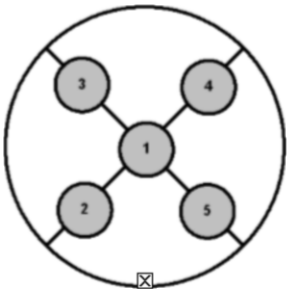
The results of this graph are based upon the absolute values of the differences from the mean value.

Excentricité

Charge de Test: 100 g

Position	Tel que Trouvé	Tel que Laissé
1	99.9998 g	100.0000 g
2	99.9999 g	100.0001 g
3	99.9998 g	99.9999 g
4	99.9999 g	100.0000 g
5	99.9999 g	100.0001 g

Déviation Maximale	**0.0001 g**	**0.0001 g**



Erreur d'indication

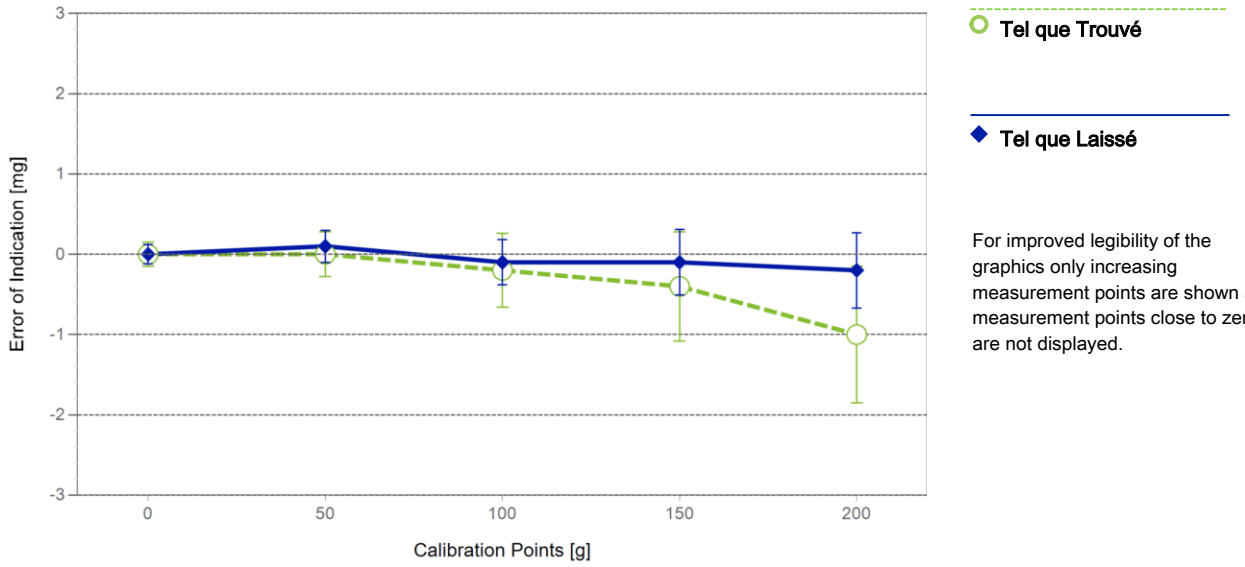
Tel que Trouvé

	Reference Value	Indication	Erreur d'indication	Incertitude Élargie	k
1	0.0000 g	0.0000 g	0.0000 g	0.15 mg	2
2	50.0000 g	50.0000 g	0.0000 g	0.28 mg	2
3	100.0001 g	99.9999 g	-0.0002 g	0.46 mg	2
4	150.0001 g	149.9997 g	-0.0004 g	0.68 mg	2
5	200.0001 g	199.9991 g	-0.0010 g	0.85 mg	2

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Tel que Laissé

	Reference Value	Indication	Erreur d'indication	Incertitude Élargie	k
1	0.0000 g	0.0000 g	0.0000 g	0.12 mg	2
2	50.0000 g	50.0001 g	0.0001 g	0.20 mg	2
3	100.0001 g	100.0000 g	-0.0001 g	0.28 mg	2
4	150.0001 g	150.0000 g	-0.0001 g	0.41 mg	2
5	200.0001 g	199.9999 g	-0.0002 g	0.47 mg	2



For improved legibility of the graphics only increasing measurement points are shown and measurement points close to zero are not displayed.

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 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.

Test Equipment

Tous les poids utilisés pour le contrôle métrologique sont retraçables aux étalons Nationaux et Internationaux. Les poids ont été calibrés et certifiés par un laboratoire de calibration accrédité.

Jeu de Poids 1: OIML E2

Weight Set Number:	510	Date d'Émission:	19-Feb-2019
# Certificat:	01060642-1	Date de Calibration Due:	29-Feb-2020

Remarques

N/D

End of Accredited Section

The information below and any attachments to this calibration certificate are not part of the accredited calibration.

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Incertitude de Mesure du dispositif de pesage en opération

Stated is the expanded uncertainty with k=2 in use. The formula shall be used for the estimation of the uncertainty under consideration of the errors of indication. The value R represents the net load indication in the unit of measure of the device.

Coefficient de température pour l'évaluation de l'incertitude de mesure en opération: $3.0 \cdot 10^{-6}$ / K

Plage d'opération sur le site pour l'évaluation de l'incertitude de mesure en opération: 7 °F

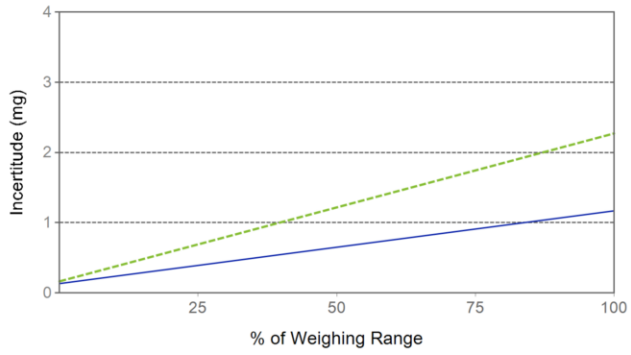
Linéarisation de l'Équation d'Incertitude

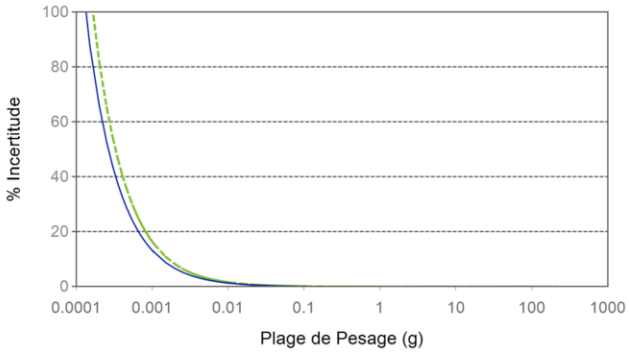
Plage		Tel que Trouvé	Tel que Laissé
1	0 g - 210 g	U_1 = 0.16 mg + 0.0100 mg/g · R	U_1 = 0.13 mg + 0.00494 mg/g · R

To optimize the stability of the linearization, besides of the zero load only increasing measurement points with a test load of 5% of the measurement range or larger are taken for the calculation of the linear equation.

Absolute and Relative Measurement Uncertainty in Use for Various Net Indications (Examples)

Indication Net	Tel que Trouvé		Tel que Laissé	
0.0210 g	0.16 mg	0.76%	0.13 mg	0.62%
0.2100 g	0.16 mg	0.076%	0.13 mg	0.062%
2.1000 g	0.18 mg	0.0086%	0.14 mg	0.0067%
21.0000 g	0.37 mg	0.0018%	0.23 mg	0.0011%
210.0000 g	2.3 mg	0.0011%	1.2 mg	0.00056%





Tel que Trouvé Tel que Laissé

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Certificate

No Pass/Fail statement is possible because one or more of the process requirements are not specified.

Tests Performed: ☑ ☑

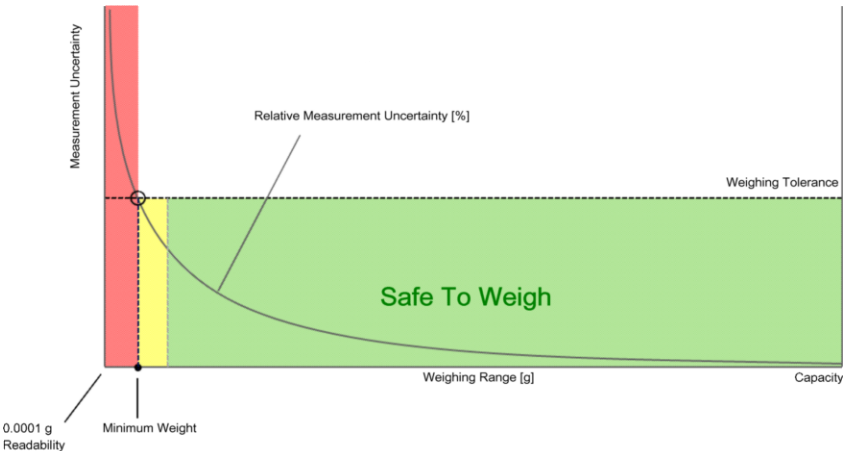
Process Requirements

Weighing Tolerance: **Not Specified**

Smallest Net Weight: **Not Specified**

Facteur de Sécurité: ***Not specified, default = 2**

Safe Weighing Range



Since the weighing tolerance is not specified, only a generic behavior curve is shown.

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Poids Minimum

As Found Minimum Weight Table

Poids minimum pour différentes tolérances de pesage et facteurs de sécurité					
	Facteur de Sécurité				
Tolérance	**1**	**2**	**3**	**5**	**10**
0.1%	0.16496 g	0.33329 g	0.50511 g	0.85964 g	1.81521 g
0.2%	0.08206 g	0.16496 g	0.24869 g	0.41876 g	0.85964 g
0.5%	0.03273 g	0.06558 g	0.09857 g	0.16496 g	0.33329 g
1%	0.01635 g	0.03273 g	0.04914 g	0.08206 g	0.16496 g
2%	0.00817 g	0.01635 g	0.02453 g	0.04093 g	0.08206 g
5%	0.00327 g	0.00653 g	0.00980 g	0.01635 g	0.03273 g

As Left Minimum Weight Table

Poids minimum pour différentes tolérances de pesage et facteurs de sécurité					
	Facteur de Sécurité				
Tolérance	**1**	**2**	**3**	**5**	**10**
0.1%	0.13231 g	0.26594 g	0.40090 g	0.67494 g	1.38492 g
0.2%	0.06599 g	0.13231 g	0.19896 g	0.33325 g	0.67494 g
0.5%	0.02636 g	0.05277 g	0.07923 g	0.13231 g	0.26594 g
1%	0.01317 g	0.02636 g	0.03956 g	0.06599 g	0.13231 g
2%	0.00658 g	0.01317 g	0.01976 g	0.03295 g	0.06599 g
5%	0.00263 g	0.00527 g	0.00790 g	0.01317 g	0.02636 g

À ces valeurs de poids net minimum, l'incertitude de mesure du dispositif est égale ou inférieure à 1/1 (pas de facteur de sécurité), 1/2, 1/3, 1/5 ou 1/10 de la tolérance requise. Ces valeurs sont calculées avec k=2 et basées sur la formule linéaire de l'incertitude de mesure du dispositif de pesage en opération.

The safety factor for As Found is always 1. This implies no safety factor. As Found testing looks at the behavior of the instrument from the past until test occurred. For the past, it is necessary to know that the tolerance was met, but not the safety factor. The safety factor is a proactive measure to apply for future measurements.

Notes on minimum weight values in above table:

1. If "N/A" is shown above, no appropriate value could be calculated.
2. METTLER TOLEDO is not responsible for the definition of the process requirements.

Résultats de Mesure

Results Summary

	Répétabilité	Excentricité	Erreur d'indication
As Found	N/D	N/D	N/D
As Left	N/D	N/D	N/D

✔ = Passed

✘ = Failed

⚠ = Safety Factor not met

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Répétabilité

Charge de Test: 10 g

		Tel que Trouvé		Tel que Laissé	
Tolérance	Control Limit	Std. Deviation	Result	Std. Deviation	Result
0.1%	N/D	0.00007 g	N/D	0.00005 g	N/D
0.2%	N/D		N/D		N/D
0.5%	N/D		N/D		N/D
1%	N/D		N/D		N/D
2%	N/D		N/D		N/D
5%	N/D		N/D		N/D

An assessment cannot be made because the smallest net weight is not defined.

The weighing tolerance is met if the standard deviation is less than or equal to the corresponding control limit.

Excentricité

Charge de Test: 100 g

		Tel que Trouvé		Tel que Laissé	
Tolérance	Control Limit	Deviation	Result	Deviation	Result
0.1%	0.0500 g	0.0001 g	✓	0.0001 g	✓
0.2%	0.1000 g		✓		✓
0.5%	0.2500 g		✓		✓
1%	0.5000 g		✓		✓
2%	1.0000 g		✓		✓
5%	2.5000 g		✓		✓

The weighing tolerance is met if the deviation is less than or equal to the corresponding control limit.

Erreur d'indication

Tel que Trouvé

		Control limits for various weighing tolerances					
Reference Value	Error	0.1%	0.2%	0.5%	1%	2%	5%
0.0000 g	0.0000 g	N/D	N/D	N/D	N/D	N/D	N/D
50.0000 g	0.0000 g	0.0250 g	0.0500 g	0.1250 g	0.2500 g	0.5000 g	1.2500 g
100.0001 g	-0.0002 g	0.0500 g	0.1000 g	0.2500 g	0.5000 g	1.0000 g	2.5000 g
150.0001 g	-0.0004 g	0.0750 g	0.1500 g	0.3750 g	0.7500 g	1.5000 g	3.7500 g
200.0001 g	-0.0010 g	0.1000 g	0.2000 g	0.5000 g	1.0000 g	2.0000 g	5.0000 g
Result		✓	✓	✓	✓	✓	✓

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Tel que Laissé

		Control limits for various weighing tolerances					
Reference Value	Error	0.1%	0.2%	0.5%	1%	2%	5%
0.0000 g	0.0000 g	N/D	N/D	N/D	N/D	N/D	N/D
50.0000 g	0.0001 g	0.0250 g	0.0500 g	0.1250 g	0.2500 g	0.5000 g	1.2500 g
100.0001 g	-0.0001 g	0.0500 g	0.1000 g	0.2500 g	0.5000 g	1.0000 g	2.5000 g
150.0001 g	-0.0001 g	0.0750 g	0.1500 g	0.3750 g	0.7500 g	1.5000 g	3.7500 g
200.0001 g	-0.0002 g	0.1000 g	0.2000 g	0.5000 g	1.0000 g	2.0000 g	5.0000 g
Result		✓	✓	✓	✓	✓	✓

The weighing tolerance is met if the error (of indication) for each test point is less than or equal to the corresponding control limit for that particular weighing tolerance. Results at or close to the zero point cannot be assessed.

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Handbook 44 Tolerance Assessment (Entretien)

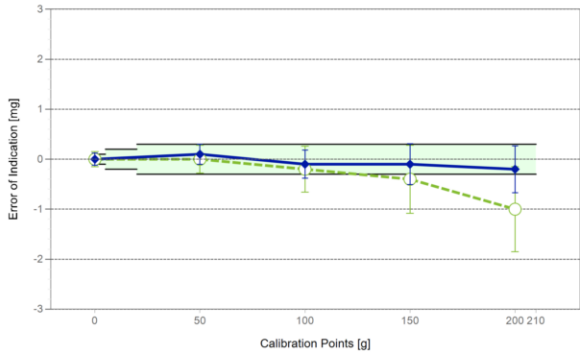
Les mesures du certificat de calibration joint ont été évaluées selon les tolérances définies par NIST HB44.

	el que Trou	el que Laiss
Global	✗	✓

✓ = Passed
✗ = Failed

Weighing Device

Range	Max. Capacity	Readability (d)	Verification Scale Interval (e)	Class
1	210 g	0.0001 g	0.0001 g	I



Tolerances according to NIST Handbook 44

Test Load		Tolérance
From	To	
0.0000 g	0.0000 g	0.000025 g
0.0001 g	5.0000 g	0.0001 g
5.0001 g	20.0000 g	0.0002 g
20.0001 g	210.0000 g	0.0003 g

Tel que Trouvé
Tel que Laissé
Tolérance

Eccentricity and Repeatability

Test	Test Load	Tolérance	As Found		As Left	
			Max. Error / Range	Result	Max. Error / Range	Result
xcentricité (Maximum Erro	100 g	0.0003 g	0.0003 g	✓	0.0002 g	✓
Excentricité (Plage)	100 g	0.0003 g	0.0001 g	✓	0.0002 g	✓
épétabilité (Maximum Erro	10 g	0.0002 g	0.0002 g	✓	0.0001 g	✓
Répétabilité (Plage)	10 g	0.0002 g	0.0002 g	✓	0.0001 g	✓

Max. Error: Maximum of the absolute values of the individual errors.
Range: Difference between largest and smallest measurement value.

Error of Indication

	Reference Value	Tolérance	As Found		As Left	
			Error of Indication	Result	Error of Indication	Result
1	0.0000 g	0.0001 g	0.0000 g	✓	0.0000 g	✓
2	50.0000 g	0.0003 g	0.0000 g	✓	0.0001 g	✓
3	100.0001 g	0.0003 g	-0.0002 g	✓	-0.0001 g	✓
4	150.0001 g	0.0003 g	-0.0004 g	✗	-0.0001 g	✓
5	200.0001 g	0.0003 g	-0.0010 g	✗	-0.0002 g	✓

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ID Certificat de Calibration
CA0003-011-031319-ACC-USI

Mettler Toledo
Service Business Unit Industrial
1900 Polaris Parkway
Columbus, OH 43240
1-800-METTLER

Accredited by the American Association for Laboratory Accreditation (A2LA)
CALIBRATION CERT #1902.01

ISO 9001 Registered
ANSI/NCSL Z540-1 Accredited

Certificat de Calibration de Précision

Accuracy Calibration Certificate

Client

Compagnie:	SBI Fabricant De Poeles		
Adresse:	250 Rue de Copenhague		
Ville:	Saint-Augustin-De-Desmaures	**Contact:**	N/D
Zip/Code Postal:	G3A 2H3		
État/Province:	Quebec		

Weighing Device

Manufacturier:	Ohaus	**Type d'Instrument:**	Weighing Instrument
Modèle:	FD15	**# Outil:**	SBI-222 BALANCE BENCH
No. Série:	B144397174	**Modèle Indicateur:**	N/D
Building:	N/D	**Terminal Serial No.:**	N/D
Floor:	N/D	**Terminal Asset No.:**	N/D
Room:	N/D		

Plage	Capacité Max	Lisibilité (d)
1	15000 g	1 g

Procedure

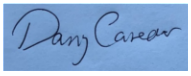
Instruction de Calibration:	EURAMET cg-18 v. 4.0 (11/2015)
Instruction de travail METTLER TOLEDO:	30260953

Ce certificat de calibration contient des mesures pour la calibration Tel que Trouvé. Aucune calibration Tel que Laissé n'a été effectuée puisque l'appareil n'a pas été modifié suite à la calibration Tel que Trouvé. Par conséquent, les résultats Tel que Laissé correspondent aux résultats Tel que Trouvé.

	Temperature	
Tel que Trouvé	Start: 21.0 °C	End: 21.0 °C

Environmental conditions have been verified to ensure the accuracy of the calibration.

This certificate is issued in accordance with the conditions of accreditation granted by A2LA, which is based on ISO/IEC 17025. A2LA has assessed the measurement capability of the laboratory and its traceability to recognized national standards.

Date calibration Tel que Trouvé:	13-Mar-2019	**Authorized A2LA Signatory:**	
Date calibration Tel que Laissé:	N/D		Dany Careau
Date d'Émission:	13-Mar-2019		
Requested Next Calibration Date:	31-Mar-2020		

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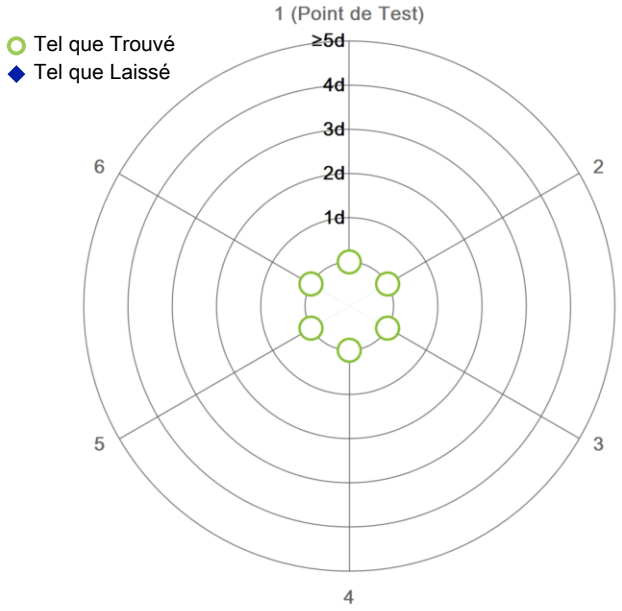
Résultats de Mesure

Répétabilité

Charge de Test: 5000 g

	Tel que Trouvé	Tel que Laissé
1	5000 g	N/D
2	5000 g	N/D
3	5000 g	N/D
4	5000 g	N/D
5	5000 g	N/D
6	5000 g	N/D

Écart Type	**0.0 g**	**N/D**



The "d" in the graph represents the readability of the range/interval in which the test was performed.

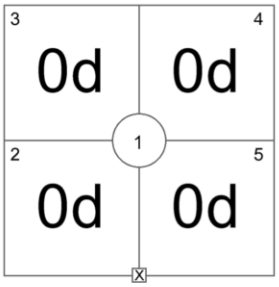
The results of this graph are based upon the absolute values of the differences from the mean value.

Excentricité

Charge de Test: 5000 g

Position	Tel que Trouvé	Tel que Laissé
1	5000 g	N/D
2	5000 g	N/D
3	5000 g	N/D
4	5000 g	N/D
5	5000 g	N/D

Déviation Maximale	**0 g**	**N/A**



Tel que Trouvé

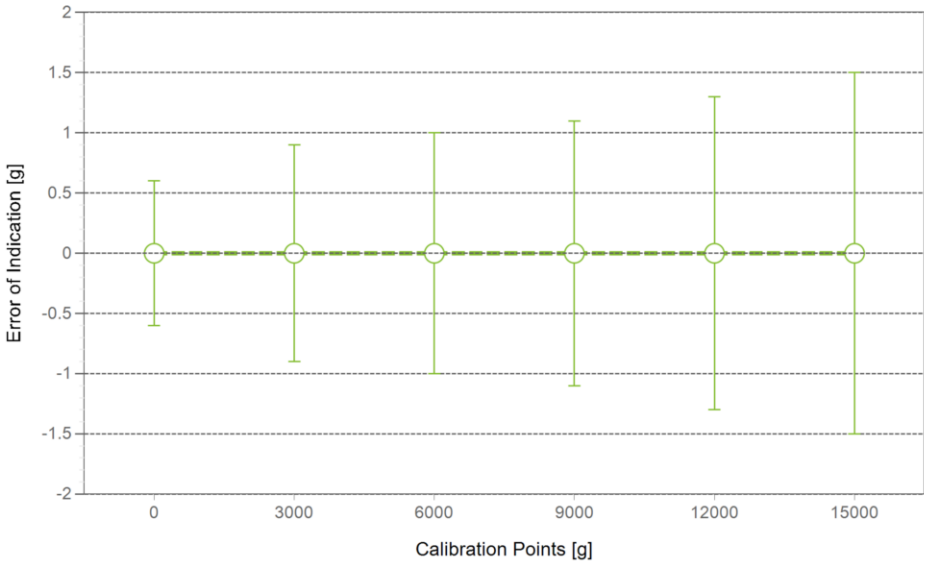
The "d" in the graph represents the readability of the range/interval in which the test was performed.

Erreur d'indication

Tel que Trouvé

	Reference Value	Indication	Erreur d'indication	Incertitude Élargie	k
1	0 g	0 g	0 g	0.6 g	2
2	3000 g	3000 g	0 g	0.9 g	2
3	6000 g	6000 g	0 g	1.0 g	2
4	9000 g	9000 g	0 g	1.1 g	2
5	12000 g	12000 g	0 g	1.3 g	2
6	15000 g	15000 g	0 g	1.5 g	2

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Tel que Trouvé

Tel que Laissé

For improved legibility of the graphics only increasing measurement points are shown and measurement points close to zero are not displayed.

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 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.

Test Equipment

Tous les poids utilisés pour le contrôle métrologique sont retraçables aux étalons Nationaux et Internationaux. Les poids ont été calibrés et certifiés par un laboratoire de calibration accrédité.

Jeu de Poids 1: OIML M1

Weight Set Number:	42260	Date d'Émission:	24-Aug-2018
# Certificat:	M18-0321	Date de Calibration Due:	24-Aug-2019

Remarques

N/D

End of Accredited Section

The information below and any attachments to this calibration certificate are not part of the accredited calibration.

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Incertitude de Mesure du dispositif de pesage en opération

Stated is the expanded uncertainty with k=2 in use. The formula shall be used for the estimation of the uncertainty under consideration of the errors of indication. The value R represents the net load indication in the unit of measure of the device.

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

Plage d'opération sur le site pour l'évaluation de l'incertitude de mesure en opération: 10 K

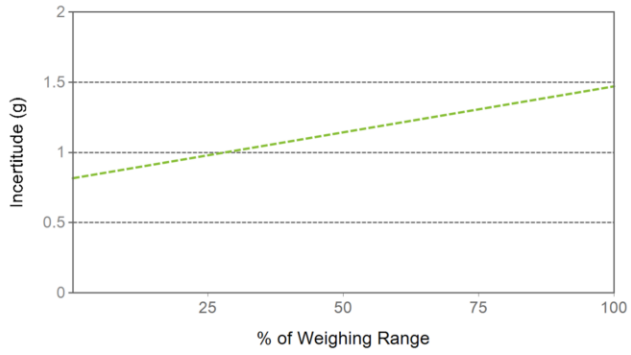
Linéarisation de l'Équation d'Incertitude

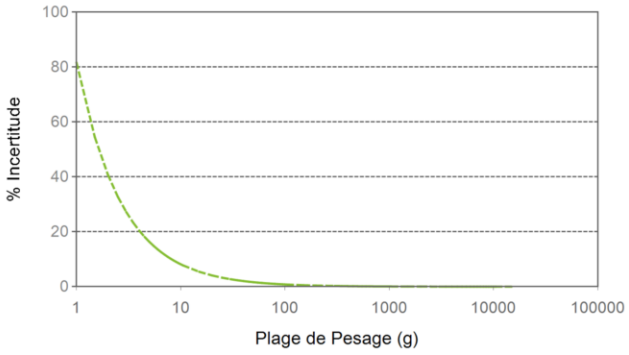
Plage		Tel que Trouvé	Tel que Laissé
1	0 g - 15000 g	U_1 = 816 mg + 0.0436 mg/g · R	N/A

To optimize the stability of the linearization, besides of the zero load only increasing measurement points with a test load of 5% of the measurement range or larger are taken for the calculation of the linear equation.

Absolute and Relative Measurement Uncertainty in Use for Various Net Indications (Examples)

Indication Net	Tel que Trouvé		Tel que Laissé	
15 g	0.82 g	5.3%	N/A	N/A
150 g	0.82 g	0.53%	N/A	N/A
1500 g	0.88 g	0.060%	N/A	N/A
7500 g	1.1 g	0.015%	N/A	N/A
15000 g	1.5 g	0.010%	N/A	N/A





Tel que Trouvé Tel que Laissé

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No Pass/Fail statement is possible because one or more of the process requirements are not specified.

Tests Performed: ☑ ☐ ☑ No adjustments/modifications made. As Left results correspond to As Found.

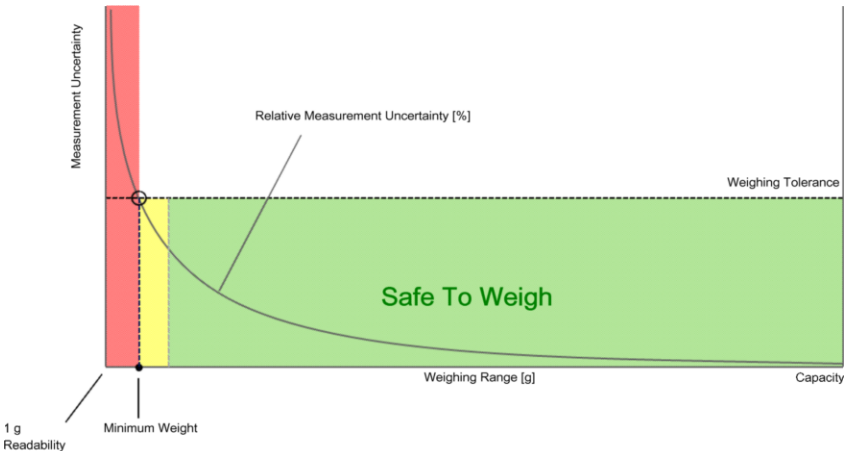
Process Requirements

Weighing Tolerance: **Not Specified**

Smallest Net Weight: **Not Specified**

Facteur de Sécurité: ***Not specified, default = 2**

Safe Weighing Range



Since the weighing tolerance is not specified, only a generic behavior curve is shown.

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Poids Minimum

As Found Minimum Weight Table

Poids minimum pour différentes tolérances de pesage et facteurs de sécurité					
	Facteur de Sécurité				
Tolérance	**1**	**2**	**3**	**5**	**10**
0.1%	853.8 g	1789.2 g	2818.6 g	5222.2 g	14489.6 g
0.2%	417.4 g	853.8 g	1310.6 g	2291.3 g	5222.2 g
0.5%	164.7 g	332.4 g	503.1 g	853.8 g	1789.2 g
1%	82.0 g	164.7 g	248.2 g	417.4 g	853.8 g
2%	40.9 g	82.0 g	123.3 g	206.4 g	417.4 g
5%	16.3 g	32.7 g	49.1 g	82.0 g	164.7 g

As Left Minimum Weight Table

Poids minimum pour différentes tolérances de pesage et facteurs de sécurité					
	Facteur de Sécurité				
Tolérance	**1**	**2**	**3**	**5**	**10**
0.1%	853.8 g	1789.2 g	2818.6 g	5222.2 g	14489.6 g
0.2%	417.4 g	853.8 g	1310.6 g	2291.3 g	5222.2 g
0.5%	164.7 g	332.4 g	503.1 g	853.8 g	1789.2 g
1%	82.0 g	164.7 g	248.2 g	417.4 g	853.8 g
2%	40.9 g	82.0 g	123.3 g	206.4 g	417.4 g
5%	16.3 g	32.7 g	49.1 g	82.0 g	164.7 g

À ces valeurs de poids net minimum, l'incertitude de mesure du dispositif est égale ou inférieure à 1/1 (pas de facteur de sécurité), 1/2, 1/3, 1/5 ou 1/10 de la tolérance requise. Ces valeurs sont calculées avec k=2 et basées sur la formule linéaire de l'incertitude de mesure du dispositif de pesage en opération.

The safety factor for As Found is always 1. This implies no safety factor. As Found testing looks at the behavior of the instrument from the past until test occurred. For the past, it is necessary to know that the tolerance was met, but not the safety factor. The safety factor is a proactive measure to apply for future measurements.

Notes on minimum weight values in above table:

1. If "N/A" is shown above, no appropriate value could be calculated.
2. METTLER TOLEDO is not responsible for the definition of the process requirements.

Résultats de Mesure

Results Summary

	Répétabilité	Excentricité	Erreur d'indication
As Found	N/D	N/D	N/D
As Left	N/D	N/D	N/D

✔ = Passed

✘ = Failed

⚠ = Safety Factor not met

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Répétabilité

Charge de Test: 5000 g

		Tel que Trouvé		Tel que Laissé	
Tolérance	Control Limit	Std. Deviation	Result	Std. Deviation	Result
0.1%	N/D	0.0 g*	N/D	0.0 g*	N/D
0.2%	N/D		N/D		N/D
0.5%	N/D		N/D		N/D
1%	N/D		N/D		N/D
2%	N/D		N/D		N/D
5%	N/D		N/D		N/D

An assessment cannot be made because the smallest net weight is not defined.

*The calculated standard deviation is below the rounding error of the balance. The 0.41*d rule is used for the assessment of this repeatability test.

The weighing tolerance is met if the standard deviation is less than or equal to the corresponding control limit.

Excentricité

Charge de Test: 5000 g

		Tel que Trouvé		Tel que Laissé	
Tolérance	Control Limit	Deviation	Result	Deviation	Result
0.1%	3 g	0 g	✓	0 g	✓
0.2%	5 g		✓		✓
0.5%	13 g		✓		✓
1%	25 g		✓		✓
2%	50 g		✓		✓
5%	125 g		✓		✓

The weighing tolerance is met if the deviation is less than or equal to the corresponding control limit.

Erreur d'indication

Tel que Trouvé

		Control limits for various weighing tolerances					
Reference Value	Error	0.1%	0.2%	0.5%	1%	2%	5%
0 g	0 g	N/D	N/D	N/D	N/D	N/D	N/D
3000 g	0 g	2 g	3 g	8 g	15 g	30 g	75 g
6000 g	0 g	3 g	6 g	15 g	30 g	60 g	150 g
9000 g	0 g	5 g	9 g	23 g	45 g	90 g	225 g
12000 g	0 g	6 g	12 g	30 g	60 g	120 g	300 g
15000 g	0 g	8 g	15 g	38 g	75 g	150 g	375 g
Result		✓	✓	✓	✓	✓	✓

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Tel que Laissé

		Control limits for various weighing tolerances					
Reference Value	Error	0.1%	0.2%	0.5%	1%	2%	5%
0 g	0 g	N/D	N/D	N/D	N/D	N/D	N/D
3000 g	0 g	2 g	3 g	8 g	15 g	30 g	75 g
6000 g	0 g	3 g	6 g	15 g	30 g	60 g	150 g
9000 g	0 g	5 g	9 g	23 g	45 g	90 g	225 g
12000 g	0 g	6 g	12 g	30 g	60 g	120 g	300 g
15000 g	0 g	8 g	15 g	38 g	75 g	150 g	375 g
Result		✓	✓	✓	✓	✓	✓

The weighing tolerance is met if the error (of indication) for each test point is less than or equal to the corresponding control limit for that particular weighing tolerance. Results at or close to the zero point cannot be assessed.

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Handbook 44 Tolerance Assessment (Entretien)

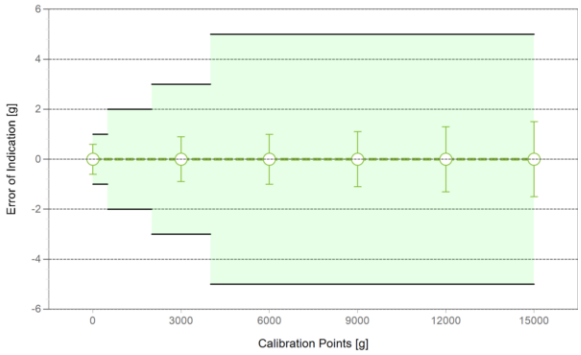
Les mesures du certificat de calibration joint ont été évaluées selon les tolérances définies par NIST HB44.

	el que Trouv	el que Laiss
Global	✓	N/D

✓ = Passed
✗ = Failed

Weighing Device

Range	Max. Capacity	Readability (d)	Verification Scale Interval (e)	Class
1	15000 g	1 g	1 g	III



Tolerances according to NIST Handbook 44

Test Load		Tolérance
From	To	
0 g	0 g	0.25 g
1 g	500 g	1 g
501 g	2000 g	2 g
2001 g	4000 g	3 g
4001 g	15000 g	5 g

○ Tel que Trouvé
◆ Tel que Laissé
— Tolérance

Eccentricity and Repeatability

Test	Test Load	Tolérance	As Found		As Left	
			Max. Error / Range	Result	Max. Error / Range	Result
xcentricité (Maximum Erro	5000 g	5 g	0 g	✓	N/D	N/D
Excentricité (Plage)	5000 g	5 g	0 g	✓	N/D	N/D
épétabilité (Maximum Erro	5000 g	5 g	0 g	✓	N/D	N/D
Répétabilité (Plage)	5000 g	5 g	0 g	✓	N/D	N/D

Max. Error: Maximum of the absolute values of the individual errors.
Range: Difference between largest and smallest measurement value.

Error of Indication

	Reference Value	Tolérance	As Found		As Left	
			Error of Indication	Result	Error of Indication	Result
1	0 g	1 g	0 g	✓	0 g	✓
2	3000 g	3 g	0 g	✓	0 g	✓
3	6000 g	5 g	0 g	✓	0 g	✓
4	9000 g	5 g	0 g	✓	0 g	✓
5	12000 g	5 g	0 g	✓	0 g	✓
6	15000 g	5 g	0 g	✓	0 g	✓

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Certificate No: 01037944A-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 de Copenhauge St.-Augustin-de-Desmaures	*State / Province:*	QC
Purchase Order:	220309982	*Zip / Postal Code:*	G3A 2H3

Measurement and Test Equipment Identification

Serial Number:	B316238717	*Date Received:*	03-OCT-2018
Manufacturer:	Mettler Toledo	*Condition:*	Good
Asset Number:	SBI-237	*Tolerance Class:*	OIML R111 Class E2

Environmental Conditions

Temperature: 21.51 °C *Barometric Pressure:* 770.05 mm Hg *Relative Humidity:* 50 %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 684/289871-17.

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.

This certificate may not be partially reproduced, except with prior written permission of the issuing laboratory. This certificate must not be used by the customer to claim product endorsement by NIST, NVLAP, or any other agency of the U.S. government.

Calibration Date:	09-OCT-2018	*Next Calibration Due:*	09-OCT-2023
Calibration Technician:	Robotic Calibration	*Signature:*	Joseph Moran, Metrology Manager Approved Signatory 10-OCT-2018

16280500A

Certificate No: 01037944A-1

As Found Data

Nominal Value&Suffix	Serial Number	True Mass (g)	Conv. Mass (g)	Uncertainty (mg, k = 2)	Tolerance (mg)	Density (g/cm³)
100 mg	B316238717	0.0999983	0.0999983	0.0025	0.0160	8.00

16280500A

Certificate No: 01037944A-1

As Left Data

Nominal Value&Suffix	Serial Number	True Mass (g)	Conv. Mass (g)	Uncertainty (mg, k = 2)	Tolerance (mg)	Density (g/cm³)
100 mg	B316238717	0.0999983	0.0999983	0.0025	0.0160	8.00

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Certificate No: 01037944A-1

Standards and Comparators Used

Nominal Value&Suffix	Serial Number	Standard Set No.	Cal Due	Comparator Used		Cal Due	Procedure Used
100 mg	B316238717	A031	07/01/19	A5XL	131	01/01/19	Multi A-B

Comments

No remarks

1 As Found / 1 Total

16280500A

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: 01037944B-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 de Copenhauge St.-Augustin-de-Desmaures	*State / Province:*	QC
Purchase Order:	220309982	*Zip / Postal Code:*	G3A 2H3

Measurement and Test Equipment Identification

Serial Number:	B316238717	*Date Received:*	03-OCT-2018
Manufacturer:	Mettler Toledo	*Condition:*	Good
Asset Number:	SBI-238	*Tolerance Class:*	OIML R111 Class F1

Environmental Conditions

Temperature: 21.29 °C *Barometric Pressure:* 770.34 mm Hg *Relative Humidity:* 52 %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 684/289871-17.

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.

This certificate may not be partially reproduced, except with prior written permission of the issuing laboratory. This certificate must not be used by the customer to claim product endorsement by NIST, NVLAP, or any other agency of the U.S. government.

Calibration Date:	09-OCT-2018	*Next Calibration Due:*	09-OCT-2023
Calibration Technician:	Robotic Calibration	*Signature:*	

Joseph Moran, Metrology Manager
Approved Signatory 10-OCT-2018

16280500A

Certificate No: 01037944B-1

As Found Data

Nominal Value&Suffix	Serial Number	True Mass (g)	Conv. Mass (g)	Uncertainty (mg, k = 2)	Tolerance (mg)	Density (g/cm³)
10 g	B316238717	10.000070	10.000060	0.012	0.200	7.95

16280500A

Certificate No: 01037944B-1

As Left Data

Nominal Value&Suffix	Serial Number	True Mass (g)	Conv. Mass (g)	Uncertainty (mg, k = 2)	Tolerance (mg)	Density (g/cm³)
10 g	B316238717	10.000070	10.000060	0.012	0.200	7.95

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otion Service

Certificate No: 01037944B-1

Standards and Comparators Used

Nominal Value&Suffix	Serial Number	Standard Set No.	Cal Due	Comparator Used		Cal Due	Procedure Used
10 g	B316238717	MS002	08/01/19	A200XXL	132	01/01/19	Multi A-B

Comments

No remarks

1 As Found / 1 Total

16280500A

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.

16280500A

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

AC-1969.00

Certificate of Calibration

Date: Dec 14, 2018 **Cert No. 551220082720188**

Customer:

STOVE BUILDERS INTERNATIONAL INC.

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

		Work Order #:	SAC-70098951
		Purchase Order #:	58121
MPC Control #:	DA0649	Serial Number:	160S-24A20W
Asset ID:	SBI-239	Department:	N/A
Gage Type:	PITOT STATIC TUBE	Performed By:	JACK WERTZ III
Manufacturer:	DWYER INSTRUMENTS INC.	Received Condition:	IN TOLERANCE
Model Number:	160S-24	Returned Condition:	IN TOLERANCE
Size:	N/A	Cal. Date:	December 14, 2018
Temp/RH:	20.0°C / 40.0%	Cal. Interval:	12 MONTHS
Location:	Calibration performed at MPC facility	Cal. Due Date:	December 14, 2019

Calibration Notes:

See attached datasheet (1 page)

Standards Used to Calibrate Equipment

I.D.	Description.	Model	Serial	Manufacturer	Cal. Due Date	Traceability #
AW3587	TIMER	N/A	N/A	SPORTLINE	Oct 31, 2019	551220081639165
AW4419	MULTI-FUNCTION PRESSURE INDICATOR	DPI 145	14501283	DRUCK INC	Mar 31, 2020	512200813309719

Procedures Used in this Event

Procedure Name	Description
MPC-00062	Pressure and Vacuum, General, June-23-2016 rev04

Calibrating Technician: Jack A. Wertz III

JACK WERTZ III

QC Approval:

JULES PHILIPPE AGPANGAN

Statements of Pass or Fail Conformance: The uncertainty of measurement has been taken into account when determining compliance with specification, as per ILAC-G8:03/2009. 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;

FAIL - Not compliant with specification.

Fail[F] - 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.

Pass[E] - The measured value is within acceptance limits. However, a portion of the expanded uncertainty of measurement at 95% exceeds the specified tolerance.

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 Method 6-Guard Bands based on Test Uncertainty Ratio. 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 6)

MICRO PRECISION

Calibration Report of Dwyer Instruments 160S-24 Pitot Static Tube

MPC Control #:	DA0649	Serial Number:	160S-24A20W
Asset ID:	SBI-239	Calibration Date:	December 14, 2018

Velocity Pressure Accuracy

Function Tested	Nominal	Lower Limit	As Found	As Left	Upper Limit	Result	Uncertainty (±)
Pressure	0.100 inH_2O	0.090 inH_2O	0.100 inH_2O	0.100 inH_2O	0.110 inH_2O	PASS	0.00023 inH_2O
Pressure	0.200 inH_2O	0.190 inH_2O	0.201 inH_2O	0.201 inH_2O	0.210 inH_2O	PASS	0.00023 inH_2O
Pressure	0.300 inH_2O	0.290 inH_2O	0.301 inH_2O	0.301 inH_2O	0.310 inH_2O	PASS	0.00023 inH_2O
Pressure	0.400 inH_2O	0.390 inH_2O	0.402 inH_2O	0.402 inH_2O	0.410 inH_2O	PASS	0.00023 inH_2O

Statements of Pass or Fail Conformance

The uncertainty of measurement has been taken into account when determining compliance with specification, as per ILAC-G8:03/2009.
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
FAIL - Not compliant with specification.
FAIL[2] - 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.
PASS[2] - The measured value is within acceptance limits. However, a portion of the expanded uncertainty of measurement at 95% exceeds the specified tolerance.

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 Method 6-Guard Bands based on Test Uncertainty Ratio.

- End of Calibration Report -

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

AC-1969.00

Certificate of Calibration

Date: Dec 6, 2018 **Cert No. 551220081711146**

Customer:

STOVE BUILDERS INTERNATIONAL INC.

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

		Work Order #:	SAC-70098951
		Purchase Order #:	58121
MPC Control #:	DA0650	Serial Number:	16425450039
Asset ID:	SBI-241	Department:	N/A
Gage Type:	DIGITAL VANE/HOT-WIRE ANEMOMETER	Performed By:	JACK WERTZ III
Manufacturer:	TPI, INC.	Received Condition:	IN TOLERANCE
Model Number:	575	Returned Condition:	IN TOLERANCE
Size:	N/A	Cal. Date:	December 06, 2018
Temp/RH:	68.0°F / 40.0%	Cal. Interval:	12 MONTHS
Location:	Calibration performed at MPC facility	Cal. Due Date:	December 06, 2019

Calibration Notes:

See attached datasheet (1 page)

Standards Used to Calibrate Equipment

I.D.	Description.	Model	Serial	Manufacturer	Cal. Due Date	Traceability #
CJ5100	WIND TUNNEL WITH CONTROLLER	JS-500	375/305	INTERACTIVE INSTRUMENTS	Oct 31, 2019	512200813087847
AE2821	ANEMOMETER	AM-4822	N272316	LANDTEK	Aug 31, 2019	551220081527382
AV5000	ENVIRONMENTAL CHAMBER	BTX-475	0612421	ESPEC	May 16, 2019	551220081370992
DA8367	PRECISION PLATINUM RESISTANCE THERMOMETER SPRT W/ CASE	8167-25	180322	LEEDS & NORTHRUP CO.	Aug 31, 2019	551220081559793

Procedures Used in this Event

Procedure Name	Description
MPC-AIR-001	Air Velocity, Temperature and Flow Meters, General, June-1-2017, rev00

Calibrating Technician: Jack R Wertz III

JACK WERTZ III

QC Approval:

JULES PHILIPPE AGPANGAN

Statements of Pass or Fail Conformance: The uncertainty of measurement has been taken into account when determining compliance with specification, as per ILAC-G8:03/2009. 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;

FAIL - Not compliant with specification.

Fail² - 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.

Pass² - The measured value is within acceptance limits. However, a portion of the expanded uncertainty of measurement at 95% exceeds the specified tolerance.

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 Method 6-Guard Bands based on Test Uncertainty Ratio. 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 6)

MICRO PRECISION

Calibration Report of TPI 575 Vane/Hotwire Air Velocity Meter

MPC Control #:	DA0650	Serial Number:	16425450039
Asset ID:	SBI-241	Calibration Date:	December 06, 2018

Velocity Measurement

Hot Wire

Range	Nominal	Lower Limit	As Found	As Left	Upper Limit	Result	Uncertainty (±)
0.2 to 20 m/s	5.0 m/s	4.7 m/s	4.9 m/s	4.9 m/s	5.3 m/s	PASS	0.15 m/s
	10.0 m/s	9.7 m/s	10.0 m/s	10.0 m/s	10.4 m/s	PASS	0.29 m/s
	15.0 m/s	14.6 m/s	15.1 m/s	15.1 m/s	15.4 m/s	PASS[Z]	0.44 m/s
	19.0 m/s	18.6 m/s	19.1 m/s	19.1 m/s	19.4 m/s	PASS[Z]	0.38 m/s

Vane

Range	Nominal	Lower Limit	As Found	As Left	Upper Limit	Result	Uncertainty (±)
0.4 to 25 m/s	6.3 m/s	5.8 m/s	6.2 m/s	6.2 m/s	6.7 m/s	PASS	0.18 m/s
	12.5 m/s	12.0 m/s	12.4 m/s	12.4 m/s	13.1 m/s	PASS	0.36 m/s
	18.8 m/s	18.1 m/s	18.9 m/s	18.9 m/s	19.4 m/s	PASS	0.38 m/s
	23.8 m/s	23.0 m/s	23.9 m/s	23.9 m/s	24.5 m/s	PASS	0.48 m/s

Temperature Measurement

Range	Nominal	Lower Limit	As Found	As Left	Upper Limit	Result	Uncertainty (±)
-20°C to 80°C	20.0 °C	19.3 °C	20.2 °C	20.2 °C	20.7 °C	PASS	0.0090 °C
	40.0 °C	39.1 °C	40.2 °C	40.2 °C	40.9 °C	PASS	0.0090 °C
	60.0 °C	58.9 °C	60.1 °C	60.1 °C	61.1 °C	PASS	0.0090 °C
	76.0 °C	74.7 °C	76.2 °C	76.2 °C	77.3 °C	PASS	0.0090 °C

Statements of Pass or Fail Conformance

The uncertainty of measurement has been taken into account when determining compliance with specification, as per ILAC-G8:03/2009.
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
FAIL - Not compliant with specification.
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.
PASS[Z] - The measured value is within acceptance limits. However, a portion of the expanded uncertainty of measurement at 95% exceeds the specified tolerance.

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 Method 6-Guard Bands based on Test Uncertainty Ratio.

- End of Calibration Report -

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CERTIFICATE OF CALIBRATION

ACCREDITED
CALIBRATION
CERT #2260.01

Certificate Number: 2019001677

Manufacturer:	Dwyer Instruments Inc.	***RMA:***	AC19031162
Model:	MS-121-LCD	***Workorder:***	2019001677
Description:	Digital Pressure Gauge	***Barcode:***	AL0015070-P
Serial:	E52U0100523	***Received Conditions:***	In Tolerance
ID:	SBI-250	***Calibration Date:***	18-Mar-2019
Customer:	STOVE BUILDER INTERNATIONAL INC. 250 RUE DE COPENHAGUE ST-AUGUSTIN-DE-DESMAURES QC G3A 2H3	***Calibration Due:***	18-Mar-2020
		Temperature:	23.31°C
		Humidity:	16.8%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-17025:2005 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.

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STANDARDS USED

Description	***Model***	***ID***	***Cal Date***	***Due Date***
Low Pressure Calibrator	Ruska 7250LP	PRE-CAL-06	30-Oct-2018	30-Oct-2019

Notes: None

Performed by: Suresh Patel
(digitally signed on 18-Mar-2019)

QA Reviewed by: Slava Peciurov
(digitally signed on 25-Mar-2019)

Procedure: Dwyer MS-121-LCD 0 to 0.1;0.25 InH2O/7520Ip 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							
PRESSURE TEST							
Display Reading						-0.0010	
Output @ 0.0000 inH2O, mA						3.946	
0.0000 inH2O	0.0000 inH2O	-0.0010 inH2O	±0.0025 inH2O	-0.0025 inH2O	0.0025 inH2O	Pass	0.00015 inH2O
Display Reading						0.0630	
Output @ 0.0625 inH2O, mA						8.06	
0.0625 inH2O	0.0625 inH2O	0.0630 inH2O	±0.0025 inH2O	0.0600 inH2O	0.0650 inH2O	Pass	0.00015 inH2O
Display Reading						0.1255	
Output @ 0.1250 inH2O, mA						12.03	
0.1250 inH2O	0.1250 inH2O	0.1255 inH2O	±0.0025 inH2O	0.1225 inH2O	0.1275 inH2O	Pass	0.00015 inH2O
Display Reading						0.1888	
Output @ 0.1875 inH2O, mA						16.03	
0.1875 inH2O	0.1875 inH2O	0.1877 inH2O	±0.0025 inH2O	0.1850 inH2O	0.1900 inH2O	Pass	0.00015 inH2O
Display Reading						0.2522	
Output @ 0.2500 inH2O, mA						20.18	
0.2500 inH2O	0.2500 inH2O	0.2522 inH2O	±0.0025 inH2O	0.2475 inH2O	0.2525 inH2O	Pass	0.00015 inH2O
Display Reading						0.1882	
Output @ 0.1875 inH2O, mA						16.08	
0.1875 inH2O	0.1875 inH2O	0.1882 inH2O	±0.0025 inH2O	0.1850 inH2O	0.1900 inH2O	Pass	0.00015 inH2O
Display Reading						0.1267	
Output @ 0.1250 inH2O, mA						12.13	
0.1250 inH2O	0.1250 inH2O	0.1267 inH2O	±0.0025 inH2O	0.1225 inH2O	0.1275 inH2O	Pass	0.00015 inH2O
Display Reading						0.642	
Output @ 0.0625 inH2O, mA						8.15	
0.0625 inH2O	0.0625 inH2O	0.0642 inH2O	±0.0025 inH2O	0.0600 inH2O	0.0650 inH2O	Pass	0.00015 inH2O
Display Reading						0.0002	
Output @ 0.0000 inH2O, mA						4.01	
0.0000 inH2O	0.0000 inH2O	0.0002 inH2O	±0.0025 inH2O	-0.0025 inH2O	0.0025 inH2O	Pass	0.00015 inH2O

END OF CERTIFICATE

CERTIFICATE OF CALIBRATION

ACCREDITED
CALIBRATION
CERT #2260.01

Certificate Number: 2018006288

Manufacturer:	Dwyer Instruments Inc.	***RMA:***	AC18091585
Model:	MS-121-LCD	***Workorder:***	2018006288
Description:	Digital Pressure Gauge	***Barcode:***	AL0015074-P
Serial:	E52U01007512	***Received Conditions:***	In Tolerance
ID:	SBI-254	***Calibration Date:***	10-Oct-2018
Customer:	STOVE BUILDER INTERNATIONAL INC. 250 RUE DE COPENHAGUE ST-AUGUSTIN-DE-DESMAURES QC G3A 2H3	***Calibration Due:***	10-Oct-2019
		Temperature:	22.07°C
		Humidity:	61.2%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-17025:2005 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.

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STANDARDS USED

Description	***Model***	***ID***	***Cal Date***	***Due Date***
Multimeter	Fluke 8845A	ELC-MTR-04	08-Jan-2018	08-Jan-2019
Low Pressure Calibrator	Ruska 7250LP	PRE-CAL-06	16-Oct-2017	16-Oct-2018

Notes: Unit was calibrated in vertical position.

Performed by: Roy Mathew (digitally signed)

Reviewed by: Slava Peciurov (digitally signed)

Form: ROC101 Rev 9.1

Procedure: Dwyer MS-121-LCD 0 to 0.1;0.5 inH2O/7520Ip 8845A (1.0.A) **Found / Left (Pass)**

Test Description	True Value	Test Results	Tolerance	Lower Limit	Upper Limit	Status	Uncertainty
Range: 0 to 0.5 inH2O							
Output signal: 4 to 20 mA							
PRESSURE TEST							
Display Reading						0	
Output @ 0.0000 inH2O, mA						4.0141	
0.0000 inH2O	0.0000 inH2O	0.0040 inH2O	±0.0050 inH2O	-0.0050 inH2O	0.0050 inH2O	Pass	0.00015 inH2O
Display Reading						0.1245	
Output @ 0.1250 inH2O, mA						7.9852	
0.1250 inH2O	0.1250 inH2O	0.1245 inH2O	±0.0050 inH2O	0.1200 inH2O	0.1300 inH2O	Pass	0.00015 inH2O
Display Reading						0.2505	
Output @ 0.2500 inH2O, mA						12.0045	
0.2500 inH2O	0.2500 inH2O	0.2501 inH2O	±0.0050 inH2O	0.2450 inH2O	0.2550 inH2O	Pass	0.00015 inH2O
Display Reading						0.3770	
Output @ 0.3750 inH2O, mA						16.058	
0.3750 inH2O	0.3750 inH2O	0.3768 inH2O	±0.0050 inH2O	0.3700 inH2O	0.3800 inH2O	Pass	0.00015 inH2O
Display Reading						0.5002	
Output @ 0.5000 inH2O, mA						19.9790	
0.5000 inH2O	0.5000 inH2O	0.4993 inH2O	±0.0050 inH2O	0.4950 inH2O	0.5050 inH2O	Pass	0.00015 inH2O
Display Reading						0.3784	
Output @ 0.3750 inH2O, mA						16.079	
0.3750 inH2O	0.3750 inH2O	0.3775 inH2O	±0.0050 inH2O	0.3700 inH2O	0.3800 inH2O	Pass	0.00015 inH2O
Display Reading						0.2515	
Output @ 0.2500 inH2O, mA						12.050	
0.2500 inH2O	0.2500 inH2O	0.2516 inH2O	±0.0050 inH2O	0.2450 inH2O	0.2550 inH2O	Pass	0.00015 inH2O
Display Reading						0.1265	
Output @ 0.1250 inH2O, mA						8.0369	
0.1250 inH2O	0.1250 inH2O	0.1262 inH2O	±0.0050 inH2O	0.1200 inH2O	0.1300 inH2O	Pass	0.00015 inH2O
Display Reading						0.0002	
Output @ 0.0000 inH2O, mA						4.0139	
0.000 inH2O	0.0000 inH2O	0.0004 inH2O	±0.0050 inH2O	-0.0050 inH2O	0.0050 inH2O	Pass	0.00015 inH2O

END OF CERTIFICATE

CERTIFICATE OF CALIBRATION

ACCREDITED
CALIBRATION
CERT #2260.01

Certificate Number: 2018006291

Manufacturer:	Dwyer Instruments Inc.	***RMA:***	AC18091585
Model:	626-06-GH-PA-E1-S1	***Workorder:***	2018006291
Description:	Pressure Transmitter	***Barcode:***	AL00023736-P
Serial:	N/A	***Received Conditions:***	In Tolerance
ID:	SBI-298	***Calibration Date:***	15-Oct-2018
Customer:	STOVE BUILDER INTERNATIONAL INC. 250 RUE DE COPENHAGUE ST-AUGUSTIN-DE-DESMAURES QC G3A 2H3	***Calibration Due:***	15-Oct-2019
		Temperature:	22.09°C
		Humidity:	47.7%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-17025:2005 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.

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STANDARDS USED

Description	*Model*	*ID*	*Cal Date*	*Due Date*
Multimeter	Fluke 8845A	ELC-MTR-04	08-Jan-2018	08-Jan-2019
Pressure Controller/Calibrator	DH Instruments PPC3	PRE-CAL-04	21-May-2018	21-May-2019

Notes: Unit was calibrated in vertical position.

Performed by: Roy Mathew (digitally signed)

Reviewed by: Lauren Lazar (digitally signed)

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=4.074 mA							
0.0000 psi	0.0000 psi	0.023 psi	±0.0300 psi	-0.030 psi	0.030 psi	Pass	4.6e-003 psi
Output=8.075 mA							
1.2500 psi	1.2500 psi	1.273 psi	±0.0300 psi	1.220 psi	1.280 psi	Pass	5.8e-003 psi
Output=12.045 mA							
2.5000 psi	2.5000 psi	2.515 psi	±0.0300 psi	2.470 psi	2.530 psi	Pass	7.0e-003 psi
Output=16.041 mA							
3.7500 psi	3.7500 psi	3.763 psi	±0.0300 psi	3.720 psi	3.780 psi	Pass	8.2e-003 psi
Output=20.074 mA							
5.0000 psi	5.0000 psi	5.023 psi	±0.0300 psi	4.970 psi	5.030 psi	Pass	9.5e-003 psi
Output=16.058 mA							
3.7500 psi	3.7500 psi	3.768 psi	±0.0300 psi	3.720 psi	3.780 psi	Pass	8.2e-003 psi
Output=12.054 mA							
2.5000 psi	2.5000 psi	2.517 psi	±0.0300 psi	2.470 psi	2.530 psi	Pass	7.0e-003 psi
Output=8.058 mA							
1.2500 psi	1.2500 psi	1.268 psi	±0.0300 psi	1.220 psi	1.280 psi	Pass	5.8e-003 psi
Output=4.074 mA							
0.0000 psi	0.0000 psi	0.023 psi	±0.0300 psi	-0.030 psi	0.030 psi	Pass	4.6e-003 psi

END OF CERTIFICATE

CERTIFICATE OF CALIBRATION

ACCREDITED
CALIBRATION
CERT #2260.01

Certificate Number: 2018007683

Manufacturer:	Dwyer Instruments Inc.	***RMA:***	AC18101712
Model:	626-06-GH-P1-E1-S1	***Workorder:***	2018007683
Description:	Pressure Transmitter	***Barcode:***	AL00024179-P
Serial:	N/A	***Received Conditions:***	In Tolerance
ID:	SBI-300	***Calibration Date:***	07-Dec-2018
Customer:	STOVE BUILDER INTERNATIONAL INC. 250 RUE DE COPENHAGUE ST-AUGUSTIN-DE-DESMAURES QC G3A 2H3	***Calibration Due:***	07-Dec-2019
		Temperature:	20.79°C
		Humidity:	16.9%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-17025:2005 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.

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STANDARDS USED

Description	***Model***	***ID***	***Cal Date***	***Due Date***
Multimeter	Fluke 8845A	ELC-MTR-04	08-Jan-2018	08-Jan-2019
Pressure Controller/Calibrator	DH Instruments PPC3	PRE-CAL-04	21-May-2018	21-May-2019

Notes: None

Performed by: Suresh Patel (digitally signed)

Reviewed by: Slava Peciurov (digitally signed)

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=4.025 mA							
0.0000 psi	0.0000 psi	0.008 psi	±0.0300 psi	-0.030 psi	0.030 psi	Pass	4.5e-003 psi
Output=7.992 mA							
1.2500 psi	1.2500 psi	1.247 psi	±0.0300 psi	1.220 psi	1.280 psi	Pass	5.7e-003 psi
Output=11.994 mA							
2.5000 psi	2.5000 psi	2.498 psi	±0.0300 psi	2.470 psi	2.530 psi	Pass	7.0e-003 psi
Output=16.016 mA							
3.7500 psi	3.7500 psi	3.755 psi	±0.0300 psi	3.720 psi	3.780 psi	Pass	8.2e-003 psi
Output=20.078 mA							
5.0000 psi	5.0000 psi	5.024 psi	±0.0300 psi	4.970 psi	5.030 psi	Pass	9.5e-003 psi
Output=16.032 mA							
3.7500 psi	3.7500 psi	3.760 psi	±0.0300 psi	3.720 psi	3.780 psi	Pass	8.2e-003 psi
Output=11.999 mA							
2.5000 psi	2.5000 psi	2.499 psi	±0.0300 psi	2.470 psi	2.530 psi	Pass	7.0e-003 psi
Output=7.994 mA							
1.2500 psi	1.2500 psi	1.248 psi	±0.0300 psi	1.220 psi	1.280 psi	Pass	5.7e-003 psi
Output=4.026 mA							
0.0000 psi	0.0000 psi	0.008 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: 2018006292

Manufacturer:	Dwyer Instruments Inc.	***RMA:***	AC18091585
Model:	628-00C-GH-P1-E1-S1	***Workorder:***	2018006292
Description:	Pressure Transmitter	***Barcode:***	AL00023737-P
Serial:	N/A	***Received Conditions:***	In Tolerance
ID:	SBI-305	***Calibration Date:***	12-Oct-2018
Customer:	STOVE BUILDER INTERNATIONAL INC. 250 RUE DE COPENHAGUE ST-AUGUSTIN-DE-DESMAURES QC G3A 2H3	***Calibration Due:***	12-Oct-2019
		Temperature:	20.42°C
		Humidity:	31.8%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-17025:2005 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.

STANDARDS USED

Description	*Model*	*ID*	*Cal Date*	*Due Date*
Pressure Controller/Calibrator	DH Instruments PPC3	PRE-CAL-04	21-May-2018	21-May-2019
Reference Pressure Monitor	Fluke RPM4	PRE-MTR-04	18-May-2018	18-May-2019

Notes: Unit was calibrated in vertical position.

Performed by: Roy Mathew (digitally signed)

Reviewed by: Slava Peciurov (digitally signed)

Form: ROC101 Rev 9.1

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

Test Description	True Value	Test Results	Tolerance	Lower Limit	Upper Limit	Status	Uncertainty
VACUUM TEST							
MEASUREMENT UNITS: inHg							
OUT = 4.9087 mA							
-28.400	-28.400	-28.30	±0.300	-28.70	-28.10	Pass	6.1e-003
OUT = 8.049 mA							
-22.500	-22.500	-22.41	±0.300	-22.80	-22.20	Pass	6.1e-003
OUT = 12.056 mA							
-15.000	-15.000	-14.90	±0.300	-15.30	-14.70	Pass	6.1e-003
OUT = 16.087 mA							
-7.500	-7.500	-7.34	±0.300	-7.80	-7.20	Pass	6.1e-003
OUT = 20.098 mA							
0.000	0.000	0.18	±0.300	-0.30	0.30	Pass	6.1e-003
OUT = 16.119 mA							
-7.500	-7.500	-7.28	±0.300	-7.80	-7.20	Pass	6.1e-003
OUT = 12.125 mA							
-15.000	-15.000	-14.77	±0.300	-15.30	-14.70	Pass	6.1e-003
OUT = 8.126 mA							
-22.500	-22.500	-22.26	±0.300	-22.80	-22.20	Pass	6.1e-003
OUT = 4.907 mA							
-28.400	-28.400	-28.30	±0.300	-28.70	-28.10	Pass	6.1e-003

END OF CERTIFICATE

CERTIFICATE OF CALIBRATION

ACCREDITED
CALIBRATION
CERT #2260.01

Certificate Number: 2018007682

Manufacturer:	Dwyer Instruments Inc.	***RMA:***	AC18101712
Model:	628-00C-GH-P1-E1-S1	***Workorder:***	2018007682
Description:	Pressure Transmitter	***Barcode:***	AL00024177-P
Serial:	N/A	***Received Conditions:***	In Tolerance
ID:	SBI-309	***Calibration Date:***	11-Dec-2018
Customer:	STOVE BUILDER INTERNATIONAL INC. 250 RUE DE COPENHAGUE ST-AUGUSTIN-DE-DESMAURES QC G3A 2H3	***Calibration Due:***	11-Dec-2019
		Temperature:	20.95°C
		Humidity:	21.3%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-17025:2005 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.

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STANDARDS USED

Description	***Model***	***ID***	***Cal Date***	***Due Date***
Multimeter	Fluke 8845A	ELC-MTR-04	08-Jan-2018	08-Jan-2019
Pressure Controller/Calibrator	DH Instruments PPC3	PRE-CAL-04	21-May-2018	21-May-2019
Reference Pressure Monitor	Fluke RPM4	PRE-MTR-04	18-May-2018	18-May-2019

Notes: Tolerance specified by customer.
Unit was calibrated in vertical position.

Performed by: Anthony Morra (digitally signed)

Reviewed by: Slava Peciurov (digitally signed)

Form: ROC101 Rev 9.1

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

Test Description	True Value	Test Results	Tolerance	Lower Limit	Upper Limit	Status	Uncertainty
PRESSURE TEST							
MEASUREMENT UNITS: inHg							
OUT = 4.935 mA							
-28.000	-28.000	-28.25	±0.450	-28.45	-27.55	Pass	6.4e-003
OUT = 7.854 mA							
-22.500	-22.500	-22.77	±0.450	-22.95	-22.05	Pass	6.4e-003
OUT = 11.856 mA							
-15.000	-15.000	-15.27	±0.450	-15.45	-14.55	Pass	6.4e-003
OUT = 15.857 mA							
-7.500	-7.500	-7.77	±0.450	-7.95	-7.05	Pass	6.4e-003
OUT = 19.87 mA							
0.000	0.000	-0.24	±0.450	-0.45	0.45	Pass	6.4e-003
OUT = 15.855 mA							
-7.500	-7.500	-7.77	±0.450	-7.95	-7.05	Pass	6.4e-003
OUT = 11.869 mA							
-15.000	-15.000	-15.25	±0.450	-15.45	-14.55	Pass	6.4e-003
OUT = 7.855 mA							
-22.500	-22.500	-22.77	±0.450	-22.95	-22.05	Pass	6.4e-003
OUT = 4.94 mA							
-28.000	-28.000	-28.24	±0.450	-28.45	-27.55	Pass	6.4e-003

END OF CERTIFICATE

Ulrich Métrologie inc.
Ulrich Metrology Inc.
9900, Côte-de-Liesse
Montréal (Québec) H8T 1A1

Tél. (514) 631-6653
Fax (514) 631-6122
info@ulrich.ca
www.ulrich.ca

ACCREDITATION ISO 17025 TM
SCC Scope Number 220

CALIBRATION CERTIFICATE

Certificate no.:	670312	**Calibration date:**	November 19, 2018
Identification:	SBI-310	**Certificate issued:**	November 19, 2018
Description:	THERMO-HYGROMETER, AMPROBE TH-3	**Interval:**	12 months
Manufacturer:	AMPROBE	**Due date:**	November 19, 2019
Model no.:	TH-3	**Procedure no.:**	MET/CAL
Serial no.:	170201693	**Environment:**	CLAS Type 2 Laboratory
		Temperature:	23 ± 2°C
		Humidity:	35 - 55% RH
		Metrologist:	NIN

Property of: SBI
250 RUE DE COPENHAGUE
ST-AUGUSTIN-DE-DESMAURES, QC G3A 2H3

Approved by: David Llorens, Quality Manager

This calibration certificate is issued in accordance with the applicable requirements of ISO/IEC 17025 and Ulrich Metrology's quality manual QM-09 Revision 9. Measurement results provided are traceable to either the National Research Council Canada (NRC), the National Institute of Standards and Technology (NIST), a national laboratory of another country signatory to the CIPM Mutual Recognition Arrangement (MRA), or a calibration laboratory accredited by an accrediting body with which Canada has an equivalence agreement.

CALIBRATION STANDARDS

See notes below.

MEASUREMENT UNCERTAINTY

The above listed instrument meets or exceeds all specifications as stated in the reference procedure, unless noted otherwise. For measurement results associated with the conformance to a tolerance, the uncertainty in the measurement system did not exceed 25% (4:1 test uncertainty ratio) of the acceptable tolerance for each characteristic calibrated, unless otherwise noted in the report.

CALIBRATION DATA

See next page for measurement results.

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.

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273881 P

ULRICH
DIVISION - ETALONNAGE CANADA

Ulrich Métrologie Inc.
Ulrich Metrology Inc.
9900, Côte-de-Liesse
Montréal (Québec) H8T 1A1

Tél. (514) 631-6653
Fax (514) 631-6122
info@ulrich.ca
www.ulrich.ca

CALIBRATION DATA

Certificate no.: 670312
Identification: SBI-310
Description: THERMO-HYGROMETER
Serial no.: 170201693
Procedure: Amprobe TH-3: 2500ST-LT-M

Result: PASS
Condition: FOUND-LEFT

CALIBRATION STANDARDS

Identification	Description	Manufacturer	Model no.	Cal. Date	Due Date
1304953	HUMIDITY GENERATOR	THUNDER SCIENTIFIC	2500ST-LT	2018/07/25	2019/07/31

MEASUREMENT RESULTS (Per MET/CAL)

PARAMETER	TRUE VALUE	TEST RESULT	ACCEPTANCE LIMITS LOW	HIGH	PASS/ FAIL	TUR
TEMPERATURE CALIBRATION						
23°C						
23.06degC		22.90	22.26	23.86	PASS	
RELATIVE HUMIDITY CALIBRATION AT 23°C						
20% RH						
20.00%		19.00	17.00	23.00	PASS	
50% RH						
50.00%		50.20	47.00	53.00	PASS	
80% RH						
80.00%		78.50	77.00	83.00	PASS	

End of Test Data

Certificate No: 01037944-1

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 de Copenhauge St.-Augustin-de-Desmaures	*State / Province:*	QC
Purchase Order:	220309982	*Zip / Postal Code:*	G3A 2H3

Measurement and Test Equipment Identification

Serial Number:	B739752165	*Date Received:*	03-OCT-2018
Manufacturer:	Mettler Toledo	*Condition:*	Good
Asset Number:	SBI-312	*Tolerance Class:*	OIML R111 Class E2

Environmental Conditions

Temperature: 21.07 °C *Barometric Pressure:* 769.28 mm Hg *Relative Humidity:* 52 %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 684/289871-17.

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.

This certificate may not be partially reproduced, except with prior written permission of the issuing laboratory. This certificate must not be used by the customer to claim product endorsement by NIST, NVLAP, or any other agency of the U.S. government.

Calibration Date:	09-OCT-2018	*Next Calibration Due:*	09-OCT-2023
Calibration Technician:	Robotic Calibration	*Signature:*	Joseph Moran, Metrology Manager Approved Signatory 10-OCT-2018

16280500A

Certificate No: 01037944-1

As Found Data

Nominal Value&Suffix	Serial Number	True Mass (g)	Conv. Mass (g)	Uncertainty (mg, k = 2)	Tolerance (mg)	Density (g/cm³)
200 g	B739752165	200.00009	200.00009	0.06	0.30	8.00

1 As Found / 1 Total

16280500A

Certificate No: 01037944-1

As Left Data

Nominal Value&Suffix	Serial Number	True Mass (g)	Conv. Mass (g)	Uncertainty (mg, k = 2)	Tolerance (mg)	Density (g/cm³)
200 g	B739752165	200.00009	200.00009	0.06	0.30	8.00

1 As Found / 1 Total

16280500A

Certificate No: 01037944-1

Standards and Comparators Used

Nominal Value&Suffix	Serial Number	Standard Set No.	Cal Due	Comparator Used		Cal Due	Procedure Used
200 g	B739752165	MS002	08/01/19	A200XXL	132	01/01/19	Multi A-B

Comments

1 As Found / 1 Total

16280500A

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.

1628C500A

POLYCONTROLS
INTEGRATION • CALIBRATION • INSTRUMENTATION

CLAS 2009-02

Conseil canadien des normes
Laboratoire accrédité
Portée d'accréditation 655

CERTIFICAT D'ÉTALONNAGE # 8719

Date d'étalonnage : 2018-10-26
Date d'émission du certificat : 2018-10-26

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

Étalonnage d'un
Débitmètre volumétrique American Meter Company DTM-200A S/N : 07J264834

CONFORMITÉ AU PROGRAMME DE QUALITÉ

Tous les étalonnages sont effectués conformément au manuel d'assurance qualité de Polycontrols qui est conforme à la norme ISO/IEC 17025 – 2005, à la norme ISO 9001 – 2015 ainsi qu'à tout autre exigences de qualité définies dans la description d'achat des clients.

TRAÇABILITÉ

La traçabilité des étalons de débit au National Institute of Standards and Technology, NIST, est maintenue par les laboratoires de Fluke Corporation de Phoenix, Arizona et est conforme aux normes ISO/IEC 17025, AINSI/NCSL Z540-1-1994, ISO-10012-1, MIL-STD 45662A.

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 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.

APTITUDE EN MATIÈRE DE MESURE ET D'ÉTALONNAGE - CMC

Les références utilisées pour l'étalonnage de débit ont une incertitude de ±0.2% de la lecture pour les mesures entre 5 SCCM à 10 SLPM, ±0.3% de la lecture pour les mesures entre 10 SLPM à 30 SLPM, ±0.2% de la lecture pour les mesures entre 30 SLPM à 3000 SLPM, ±0.3% de la lecture pour les mesures supérieures à 3000 SLPM jusqu'à 6000 SLPM et ±0.5% pour les mesures inférieures à 5 SCCM jusqu'à concurrence de 1 SCCM, équivalent air ou azote. Les incertitudes exprimées sont élargies avec un facteur d'élargissement k = 2, et ce, pour un niveau de confiance d'environ 95 %, dans l'hypothèse d'une distribution normale incluant la résolution de l'instrument. Le rapport d'incertitude des essais (RIE) de cet étalonnage respecte un ratio de 4:1 à moins d'indication contraire.

SOMMAIRE DES CONDITIONS DE L'INSTRUMENT EN TEST

Conditions initiales	En bon état - vitre légèrement brisée à la réception
Travail Effectué	Étalonnage de l'instrument
	Lectures Initiales = Lectures finales, aucun ajustement
Résultats	Lectures finales dans les tolérances
Remarques	Fréquence d'étalonnage aux 12 mois

Métrologiste

Responsable du laboratoire

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Tel: (450) 444-3600 Fax: (450) 444-1088 www.polycontrols.com

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CLAS 2009-02

Conseil canadien des normes
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ISO/IEC 17025-2005

Certificat d'étalonnage # 8719

Numéro de série:	07J264834	Station de mesure:	3
Date d'étalonnage:	2018-10-26	Procédure:	POS-CAL-005
Identification de l'instrument:	SBI-103		

Instrument de mesure de référence utilisé pour l'étalonnage final

Description	Modèle	# Série	Traçabilité	Date dû
DHI molbloc (30 slpm)	3E4-VCR-V-Q	2403	1500237464	2019-04-26
DHI molbox1	Molbox1	755	1500237197	2019-04-25
RTD Mist	M22	2208102	2018002234	2019-04-11
Module 44.5 PSI avec Baro 163671	Module 30	160659	2018002180	2019-04-12

Spécifications finales de l'appareil

Gaz	Air
Température d'opération	
Pression à l'entrée	
Pression à la sortie	
Température de référence	
Pression de référence	
Étendue d'échelle	0-200 ACFH
Signaux Entrée/Sortie	-
Alimentation	
Tolérance	±2 %F.S.

Condition d'étalonnage

Gaz	Air
Température ambiante	21 °C
Pression ambiante	1017.99 mbar
Orientation	Horizontale
Élastomère	Viton
Valve	Viton

Lectures finales

Débit du test ACFH	Instrument en test ft³	Valeurs mesurées Pression PSIA	Température °C	Référence ft³	Référence calculée ft³	Erreur calculée ft³	Tolérance acceptable ft³	TUR
5.0526	0.8500	14.7758	21.56	0.8451	0.8418	0.0082	0.6665	>4
9.9963	1.6780	14.7774	21.51	1.6716	1.6646	0.0134	0.6661	>4
15.1919	2.5580	14.7782	21.47	2.5427	2.5316	0.0264	0.6666	>4
25.0425	4.2230	14.7815	21.41	4.1908	4.1707	0.0523	0.6662	>4
40.0833	6.7640	14.7872	21.40	6.7048	6.6700	0.0940	0.6656	>4

Bernard Poirier
Métrologiste

Signature

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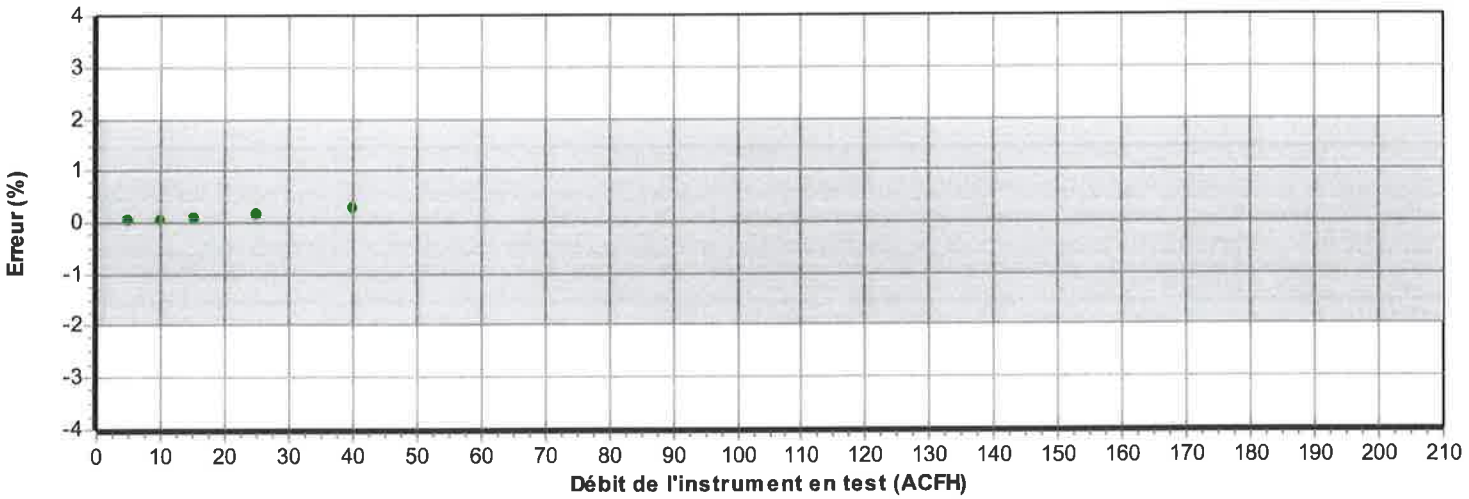
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ISO/IEC 17025-2005

Certificat d'étalonnage # 8719

Numéro de série:	07J264834	Station de mesure:	3
Date d'étalonnage:	2018-10-26	Procédure:	POS-CAL-005
Identification de l'instrument:	SBI-103		

Résultats finaux



- La mesure (et son incertitude) se situe dans les tolérances
- La mesure (et son incertitude) se situe hors tolérance
- La mesure (et son incertitude) ne rencontre pas la marge de sécurité tel que spécifié dans le document G-8 de l'ILAC

Bernard Poirier
Métrologiste

Signature

Thermal Metering System Calibration
Y factor for Method 5G sampling

Manufacturer:	American Meter Company
Model:	DTM-200A
Serial Number:	SBI-046 (90R054300)

Previous Calibration Comparision

Date	2018-10-10	Acceptable	
		Deviation (5%)	Deviation
y Factor	1.013	0.05065	0.005
Acceptance	Acceptable		

Average Gas Meter y Factor

1.008

Calibration Date:	05-24-19
Calibrated by:	Claude Paré
Calibration Frequency:	6-month
Next Calibration Due:	11-22-19
Instrument Range:	1.000 cfm
Standard Temp.:	72.5 oF
Standard Press.:	29.92 "Hg
Barometric Press.:	29.9 "Hg
Signature/Date:	2019-05-24

Current Calibration

Acceptable y Deviation	0.050
Maximum y Deviation	0.005
Acceptance	Acceptable

Reference Standard *			
Standard Calibrator	Model	Standard Test Meter	
	S/N	07J264834	
	Calib. Date	26-oct-18	
	Calib. Value	0.992	y factor (ref)

Calibration Parameters	Run 1	Run 2	Run 3
Vacuum ("Hg)	0.00	0.00	0.00
dH ("H2O)	0.00	0.00	0.00
Initial Reference Meter	999.6	1005.1	1011.9
Final Reference Meter	1004.703	1011.464	1018.046
Initial DGM	780.23	785.675	792.365
Final DGM	785.266	791.923	798.369
Temp. Ref. Meter (°F), Tr	71.6	71.8	71.6
Temperature DGM (°F), Td	70.1	70.4	70.4
Time (Minutes)	43.0	39.0	31.0
Net Volume Ref. Meter, Vr	5.103	6.364	6.146
Net Volume DGM, Vd	5.036	6.248	6.004
Gas Meter y Factor =	**1.002**	**1.008**	**1.013**
Gas Meter y Factor Deviation (from avg.)	0.005	0.000	0.005
Orifice dH@	**0.00**	**0.00**	**0.00**
Orifice dH@ Deviation (from avg.)	0.000	0.000	0.000

where: 0.117116279

1. Deviation = |Average value for all runs - current run value|
2. y = [Vr x (y factor (ref)) x (Pb) x (Td + 460) / [Vd x (Pb + (dH / 13.6)) x (Tr + 460]
3. dH@ = 0.0317 x dH / (Pb (Td + 460)) x [(Tr + 460) x time) / Vr]^2

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

Thermal Metering System Calibration
Y factor for Method 5G sampling

Manufacturer:	American Meter Company
Model:	DTM-200A
Serial Number:	SBI-047 (98Z332226)

Previous Calibration Comparision

Date	2018-10-10	Acceptable	
		Deviation (5%)	Deviation
y Factor	1.012	0.0506	0.008
Acceptance	Acceptable		

Average Gas Meter y Factor
1.004

Calibration Date:	05-23-19
Calibrated by:	Claude Paré
Calibration Frequency:	6-month
Next Calibration Due:	11-21-19
Instrument Range:	1.000 cfm
Standard Temp.:	74.8 oF
Standard Press.:	29.92 "Hg
Barometric Press.:	30 "Hg
Signature/Date:	2019-05-23

Current Calibration

Acceptable y Deviation	0.050
Maximum y Deviation	0.007
Acceptance	Acceptable

Reference Standard *			
Standard	Model	Standard Test Meter	
Calibrator	S/N	07J264834	
	Calib. Date	26-oct-18	
	Calib. Value	0.992	y factor (ref)

Calibration Parameters	Run 1	Run 2	Run 3
Vacuum ("Hg)	0.00	0.00	0.00
dH ("H2O)	0.00	0.00	0.00
Initial Reference Meter	979.6	985.1	990.8
Final Reference Meter	984.685	990.234	995.808
Initial DGM	897.544	903.012	908.652
Final DGM	902.582	908.077	913.551
Temp. Ref. Meter (°F), Tr	74.6	75.0	75.0
Temperature DGM (°F), Td	73.7	73.5	73.5
Time (Minutes)	41.0	32.0	25.0
Net Volume Ref. Meter, Vr	5.085	5.134	5.008
Net Volume DGM, Vd	5.038	5.065	4.899
Gas Meter y Factor =	**1.000**	**1.003**	**1.011**
Gas Meter y Factor Deviation (from avg.)	0.005	0.002	0.007
Orifice dH@	**0.00**	**0.00**	**0.00**
Orifice dH@ Deviation (from avg.)	0.000	0.000	0.000

where: 0.122878049

1. Deviation = |Average value for all runs - current run value|
2. y = [Vr x (y factor (ref)) x (Pb) x (Td + 460) / [Vd x (Pb + (dH / 13.6)) x (Tr + 460]
3. dH@ = 0.0317 x dH / (Pb (Td + 460)) x [(Tr + 460) x time) / Vr]^2

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

Thermal Metering System Calibration
Y factor for Method 5G sampling

Manufacturer:	Rockwell International
Model:	S-275
Serial Number:	9388
Asset No.	SBI-276

Average Gas Meter y Factor
1.000

Calibration Date:	05-27-19
Calibrated by:	Claude Paré
Calibration Frequency:	6-month
Next Calibration Due:	11-25-19
Instrument Range:	1.000 cfm
Standard Temp.:	71.5 oF
Standard Press.:	29.92 "Hg
Barometric Press.:	30 "Hg
Signature/Date:	2019-05-27

Previous Calibration Comparision

Date	2019-04-09	Acceptable Deviation (5%)	Deviation
y Factor	0.995	0.04975	0.005
Acceptance	Acceptable		

Current Calibration

Acceptable y Deviation	0.020
Maximum y Deviation	0.001
Acceptance	Acceptable

Reference Standard *			
Standard Calibrator	Model	Standard Test Meter	
	S/N	07J264834	
	Calib. Date	26-oct-18	
	Calib. Value	0.992	y factor (ref)

Calibration Parameters	Run 1	Run 2	Run 3
Vacuum ("Hg)	0.00	0.00	0.00
dH ("H2O)	0.00	0.00	0.00
Initial Reference Meter	19.700	25.100	30.700
Final Reference Meter	24.753	30.169	35.877
Initial DGM	957.530	962.910	968.503
Final DGM	962.535	967.940	973.648
Temp. Ref. Meter (°F), Tr	71.5	71.9	72.3
Temperature DGM (°F), Td	71.5	72.2	72.9
Time (Minutes)	59.0	36.0	27.0
Net Volume Ref. Meter, Vr	5.053	5.069	5.177
Net Volume DGM, Vd	5.005	5.03	5.145
Gas Meter y Factor =	**1.002**	**1.000**	**0.999**
Gas Meter y Factor Deviation (from avg.)	0.001	0.000	0.001
Orifice dH@	**0.00**	**0.00**	**0.00**
Orifice dH@ Deviation (from avg.)	0.000	0.000	0.000

where: 0.084830508

1. Deviation = |Average value for all runs - current run value|
2. y = [Vr x (y factor (ref)) x (Pb) x (Td + 460) / [Vd x (Pb + (dH / 13.6)) x (Tr + 460]
3. dH@ = 0.0317 x dH / (Pb (Td + 460)) x [(Tr + 460) x time) / Vr]^2

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

Thermal Metering System Calibration
Y factor for Method 5G sampling

Manufacturer:	American Meter Company
Model:	DTM-200A
Serial Number:	SBI-046 (90R054300)

Previous Calibration Comparision

Date	2019-05-24	Acceptable	
		Deviation (5%)	Deviation
y Factor	1.008	0.0504	0.003
Acceptance	Acceptable		

Average Gas Meter y Factor	**1.005**

Current Calibration

Acceptable y Deviation	0.050
Maximum y Deviation	0.001
Acceptance	Acceptable

Calibration Date:	10-11-19		
Calibrated by:	Claude Paré		
Calibration Frequency:	Post test calibration		
Next Calibration Due:			
Instrument Range:	1.000	cfm	
Standard Temp.:	70.6	oF	
Standard Press.:	29.92	"Hg	
Barometric Press.:	30.5	"Hg	
Signature/Date:		2019-10-11	

Reference Standard *			
Standard Calibrator	Model	Standard Test Meter	
	S/N	07J264834	
	Calib. Date	26-oct-18	
	Calib. Value	0.992	y factor (ref)

Calibration Parameters	Run 1	Run 2	Run 3
Vacuum ("Hg)	0.00	0.00	0.00
dH ("H2O)	0.00	0.00	0.00
Initial Reference Meter	44.800	50.100	55.400
Final Reference Meter	49.815	55.176	60.596
Initial DGM	544.984	550.202	555.428
Final DGM	549.92	555.207	560.551
Temp. Ref. Meter (°F), Tr	68.9	69.4	69.8
Temperature DGM (°F), Td	68.2	68.7	69.3
Time (Minutes)	41.0	42.0	43.0
Net Volume Ref. Meter, Vr	5.015	5.076	5.196
Net Volume DGM, Vd	4.936	5.005	5.123
Gas Meter y Factor =	**1.007**	**1.005**	**1.005**
Gas Meter y Factor Deviation (from avg.)	0.001	0.001	0.000
Orifice dH@	**0.00**	**0.00**	**0.00**
Orifice dH@ Deviation (from avg.)	0.000	0.000	0.000

where: 0.120390244

1. Deviation = |Average value for all runs - current run value|
2. y = [Vr x (y factor (ref)) x (Pb) x (Td + 460) / [Vd x (Pb + (dH / 13.6)) x (Tr + 460]
3. dH@ = 0.0317 x dH / (Pb (Td + 460)) x [(Tr + 460) x time) / Vr]^2

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

Thermal Metering System Calibration
Y factor for Method 5G sampling

Manufacturer:	American Meter Company
Model:	DTM-200A
Serial Number:	SBI-047 (98Z332226)

Previous Calibration Comparision

Date	2019-05-23	Acceptable	
		Deviation (5%)	Deviation
y Factor	1.004	0.0502	0.007
Acceptance	Acceptable		

Average Gas Meter y Factor
1.011

Calibration Date:	10-07-19
Calibrated by:	Claude Paré
Calibration Frequency:	Post test calibration
Next Calibration Due:	
Instrument Range:	1.000 cfm
Standard Temp.:	73.3 oF
Standard Press.:	29.92 "Hg
Barometric Press.:	30.1 "Hg
Signature/Date:	2019-10-07

Current Calibration

Acceptable y Deviation	0.050
Maximum y Deviation	0.002
Acceptance	Acceptable

Reference Standard *			
Standard	Model	Standard Test Meter	
Calibrator	S/N	07J264834	
	Calib. Date	26-oct-18	
	Calib. Value	0.992	y factor (ref)

Calibration Parameters	Run 1	Run 2	Run 3
Vacuum ("Hg)	0.00	0.00	0.00
dH ("H2O)	0.00	0.00	0.00
Initial Reference Meter	10.300	15.700	21.300
Final Reference Meter	15.48	20.797	26.373
Initial DGM	639.947	645.234	650.741
Final DGM	645.018	650.238	655.712
Temp. Ref. Meter (°F), Tr	71.4	72.2	72.9
Temperature DGM (°F), Td	71.1	71.6	72.2
Time (Minutes)	41.0	41.0	40.0
Net Volume Ref. Meter, Vr	5.180	5.097	5.073
Net Volume DGM, Vd	5.071	5.004	4.971
Gas Meter y Factor =	**1.013**	**1.009**	**1.011**
Gas Meter y Factor Deviation (from avg.)	0.002	0.002	0.000
Orifice dH@	**0.00**	**0.00**	**0.00**
Orifice dH@ Deviation (from avg.)	0.000	0.000	0.000

where: 0.123682927

1. Deviation = |Average value for all runs - current run value|
2. y = [Vr x (y factor (ref)) x (Pb) x (Td + 460) / [Vd x (Pb + (dH / 13.6)) x (Tr + 460]
3. dH@ = 0.0317 x dH / (Pb (Td + 460)) x [(Tr + 460) x time) / Vr]^2

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

Thermal Metering System Calibration
Y factor for Method 5G sampling

Manufacturer:	Rockwell International
Model:	S-275
Serial Number:	9388
Asset No.	SBI-276

Average Gas Meter y Factor
1.000

Calibration Date:	10-07-19
Calibrated by:	Claude Paré
Calibration Frequency:	Post test calibration
Next Calibration Due:	
Instrument Range:	1.000 cfm
Standard Temp.:	69.6 oF
Standard Press.:	29.92 "Hg
Barometric Press.:	30.1 "Hg
Signature/Date:	2019-10-07

Previous Calibration Comparision

Date	2019-05-27	Acceptable	
		Deviation (5%)	Deviation
y Factor	1	0.05	0.000
Acceptance	Acceptable		

Current Calibration

Acceptable y Deviation	0.020
Maximum y Deviation	0.001
Acceptance	Acceptable

Reference Standard *			
Standard	Model	Standard Test Meter	
Calibrator	S/N	07J264834	
	Calib. Date	26-oct-18	
	Calib. Value	0.992	y factor (ref)

Calibration Parameters	Run 1	Run 2	Run 3
Vacuum ("Hg)	0.00	0.00	0.00
dH ("H2O)	0.00	0.00	0.00
Initial Reference Meter	975.200	980.700	986.000
Final Reference Meter	980.457	985.816	991.372
Initial DGM	903.128	908.593	913.863
Final DGM	908.353	913.670	919.188
Temp. Ref. Meter (°F), Tr	68.5	69.4	69.9
Temperature DGM (°F), Td	68.7	69.5	70.0
Time (Minutes)	42.0	41.0	43.0
Net Volume Ref. Meter, Vr	5.257	5.116	5.372
Net Volume DGM, Vd	5.225	5.0775	5.325
Gas Meter y Factor =	**0.998**	**1.000**	**1.001**
Gas Meter y Factor Deviation (from avg.)	0.001	0.000	0.001
Orifice dH@	**0.00**	**0.00**	**0.00**
Orifice dH@ Deviation (from avg.)	0.000	0.000	0.000

where: 0.124404762

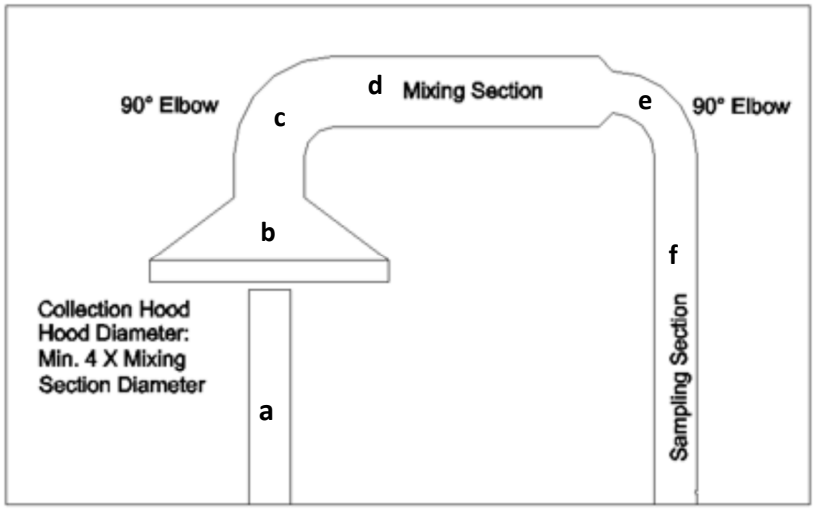
1. Deviation = |Average value for all runs - current run value|
2. y = [Vr x (y factor (ref)) x (Pb) x (Td + 460) / [Vd x (Pb + (dH / 13.6)) x (Tr + 460]
3. dH@ = 0.0317 x dH / (Pb (Td + 460)) x [(Tr + 460) x time) / Vr]^2

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

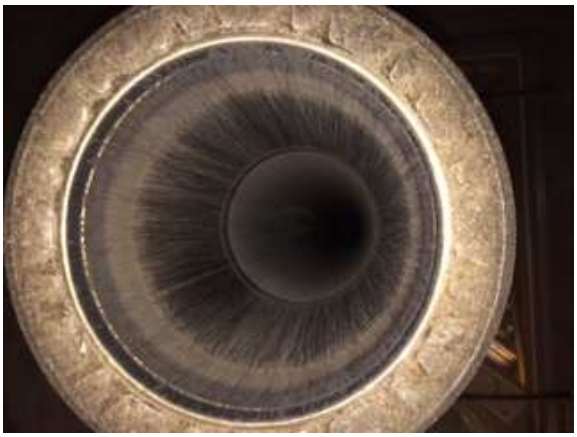
Appendix H

Tunnel cleaning and test load photograph

1. Tunnel cleaning pictures



a. Picture of the chimney



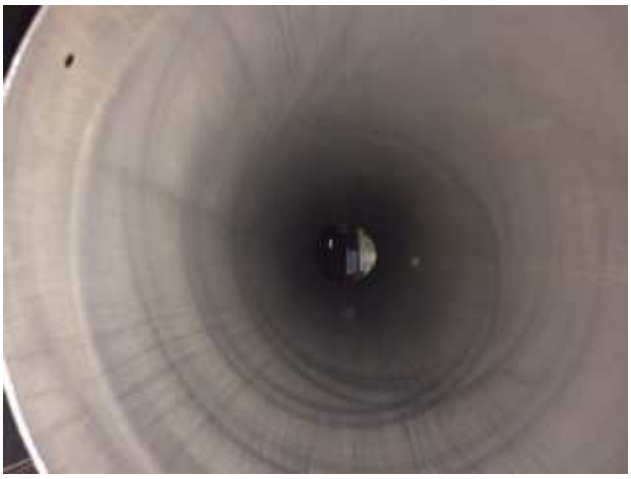
b. Picture of the collecting hood



c. Picture of the first elbow



d. Picture of the mixing section



e. Picture of the second elbow



f. Picture of the sampling section



2. Identification pictures

a. Front view



b. Iso view



c. Rear view

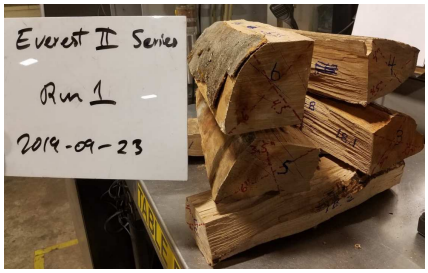


3. Test run pictures

a. Run #1

i. Picture of the load with all dimensions



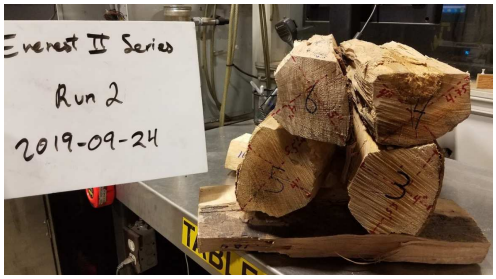


ii. Picture after loading



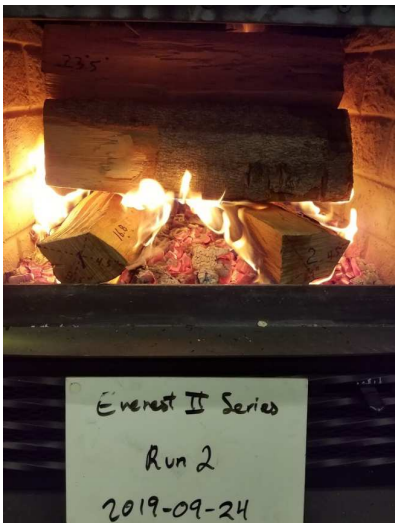
b. Run #2

i. Picture of the load with all dimensions





ii. Picture after loading



iii. Picture before ranking

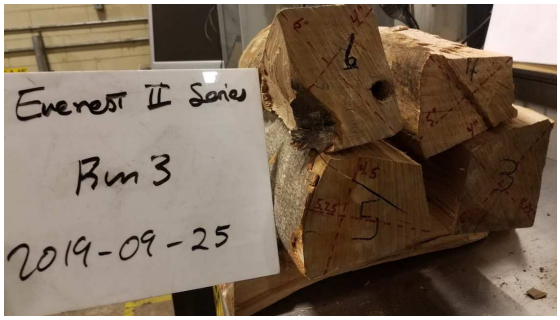


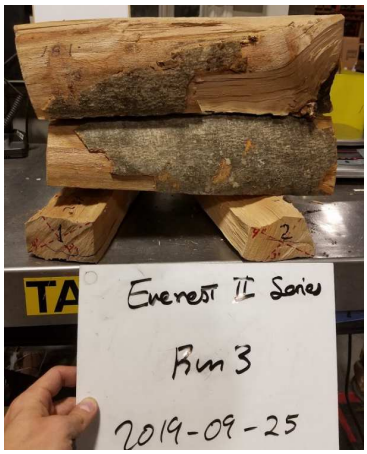
iv. Picture after ranking



c. Run #3

i. Picture of the load with all dimensions





ii. Picture after loading



iii. Picture before ranking

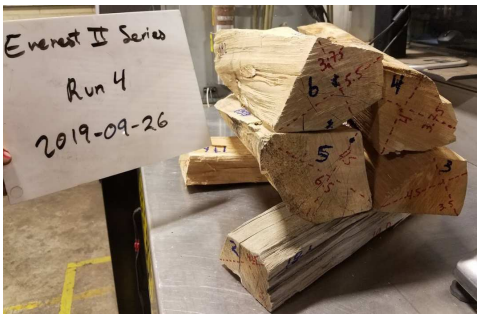


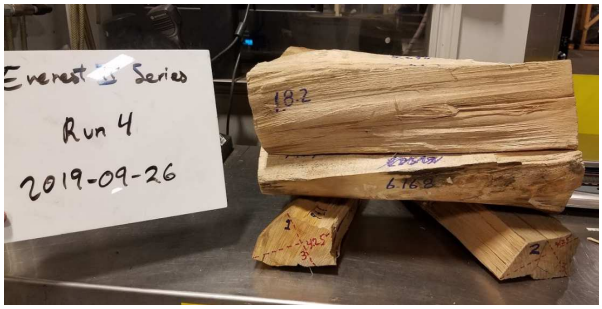
iv. Picture after ranking



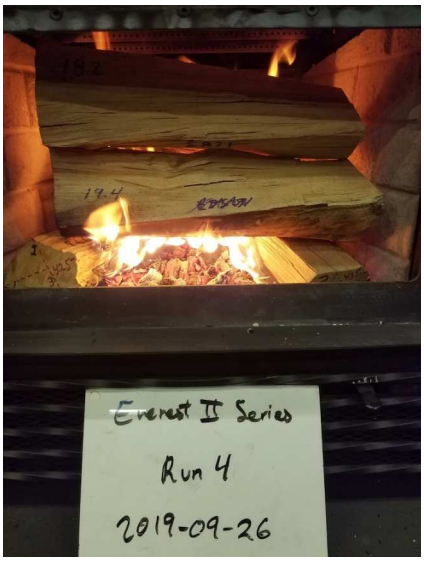
d. Run #4

i. Picture of the load with all dimensions





ii. Picture after loading



4. Picture of the sealed unit

a. Front view



b. Rear View



c. Iso view



Signature : _____

Date : _____

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

FEB 2 8 2018

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

Mr. Justin White
Hearthstone QHPP, Inc.
#17 Stafford Ave.
Morrisville, VT 05661

Dear Mr. White,

I am writing in response to your letter dated January 12, 2018, regarding wood heaters manufactured by Hearthstone QHPP, Inc. (Hearthstone). This response, dated February 28, 2018, supercedes our previous response (dated February 26, 2018) to correct an inaccuracy regarding required changes to ASTM E3053-17.

You are requesting to use an alternative test method, using cord wood, as referenced in section 60.532(c) of 40 CFR part 60, Subpart AAA, Standards of Performance for New Residential Wood Heaters (Subpart AAA) to meet the 2020 cord wood alternative compliance option. The 2020 cord wood alternative compliance option states that each affected wood heater manufactured or sold at retail for use in the United States on or after May 15, 2020, must not discharge into the atmosphere any gases that contain particulate matter in excess of 2.5 g/hr. Compliance must be determined by a cord wood test method approved by the Administrator along with the procedures in 40 CFR 60.534. You have requested approval to use the procedures and specifications found in ASTM Method E3053-17, a cord wood test method titled, "Standard Test Method for Determining Particulate Matter Emissions from Wood Heaters using Cordwood Test Fuel," in conjunction with ASTM E2515-11 and Canadian Standards Administration (CSA) Method CSA-B415.1-10, which are specified in 40 CFR 60.534.

We understand that Hearthstone is also requesting that the alternative method proposed above be approved to apply broadly to all wood heaters manufactured by Hearthstone meeting the requirements of Subpart AAA, from the approval date of this request until such time that Subpart AAA is revised or replaced to require a different cord wood certification method, providing all requirements of section 60.533 of Subpart AAA are met.

With the caveats set forth below, we approve your alternative test method request for certifying wood heaters using ASTM E3053-17 in conjunction with section 60.534 of Subpart AAA to meet the 2020 cord wood compliance option until such time that Subpart AAA is revised or replaced to require a different cord wood certification method. We also approve application of this alternative method to all wood heaters manufactured by Hearthstone meeting the requirements of Subpart AAA.

As required in Subpart AAA, section 60.354(d), you or your approved test laboratory must also measure the first hour of particulate matter emissions for each test run using a separate filter in one of the two parallel sampling trains. These results must be reported separately and also included in the total particulate matter emissions per run. Also, as required by Subpart AAA, section 60.534(e), you must have your approved laboratory measure the efficiency, heat output, and carbon monoxide emissions of the tested wood heater using CSA-B415.1-10. For measurement of particulate matter emission concentrations, ASTM 2515-11 must be used.

The following change to ASTM E3053-17 must be followed:

1. Coal bed conditions prior to loading test fuel. The coal bed shall be a level plane without valleys or ridges for all test runs in the high, low, and medium burn rate categories.

The following changes to ASTM E2515-11 must be followed:

1. The filter temperature must be maintained between 80 and 90 degrees F during testing.

2. Filters must be weighed in pairs to reduce weighing error propagation; see ASTM 2515-11, Section 10.2.1 Analytical Procedure.

3. Sample filters must be Pall TX-40 or equivalent Teflon-coated glass fiber, and of 47 mm, 90 mm, 100 mm, or 110 mm in diameter.

4. Only one point is allowed outside the +/- 10 percent proportionality range per test run.

A copy of this letter must be included in each certification test report where this alternative test method is utilized.

It is reasonable that this alternative test method approval be broadly applicable to all wood heaters subject to the requirements of 40 CFR part 60, Subpart AAA. For this reason, we will post this letter as ALT-125 on our website at *http://www3.epa.gov/ttn/emc/approalt.html* for use by other interested parties. As noted earlier in this letter, this alternative method approval is valid until such time that Subpart AAA is revised or replaced to require a different cord wood certification method, and at such time, this alternative will be reconsidered and possibly withdrawn.

If you have additional questions regarding this approval, please contact Michael Toney of my staff at 919-541-5247 or toney.mike@epa.gov.

Sincerely,

Steffan M. Johnson, Group Leader
Measurement Technology Group

cc: Amanda Aldridge, EPA/OAQPS/OID
Adam Baumgart-Getz, EPA/OAQPS/OID
Rafael Sanchez, EPA/OECA
Michael Toney, EPA/OAQPS/AQAD

Fabricant de poêles international inc.
Stove Builder International Inc.

Notre passion devient source d'énergie
We Turn passion Into Energy

October 22nd, 2019

Air Branch/Wood Heater Program Lead
Monitoring, Assistance, and Media Programs Division
Office of Compliance
U.S. EPA
1200 Pennsylvania Ave., NW
MS:2227A
Washington, DC 20004
Attn: EPA Administrator

Subject: Compliance Statements and Acknowledgements

Dear Administrator,
As stated in the application for certificate of compliance, Stove Builder International Inc (SBI) states and acknowledges the 13 items below.

1. SBI provided all engineering drawing (including specifications for each component listed in paragraphs (k)(2), (3) and (4) of 60.533(b) and 60.5475(b) available in Intertek Test Report 104070904MTL-001 at Appendix D. Tolerances are identified on all part draft and cannot reasonably be anticipated to cause wood heater in the model line to exceed the applicable emission limits. The user's manual shows how to replace and inspect emission-critical part such as the secondary tubes.
2. SBI confirm that the firebox or any firebox component (including the materials listed in paragraph (k)(3) of 60.533(b) and 60.5475(b) will be composed of material similar from the material used for the firebox or firebox component in the wood heater on which certification testing was performed. Individual brick size and color may vary but the specification of the material remains the same. The inner firebox brick coverage remains also always the same. If other differences occur over time, a description of any such differences and demonstration that any such differences may not reasonably be anticipated to adversely affect emissions or efficiency will be communicate with Residential Wood Heater Compliance Program Lead.
3. SBI will provide to Residential Wood Heater Compliance Program Lead the Confidential Business Information (CBI) report including all test data and drawings by e-mail to Sanchez.Rafael@epa.gov.
4. SBI provided all documentation that proves that the certification tests were valid. Raw data sheets, laboratory technician notes, calculations and test results were provided to Residential Wood Heater Compliance Program Lead in the appendix of Intertek Test Report 104070904MTL-001. SBI confirms that the burn rate for the low burn rate category is no greater than the rate that an operator can achieve in home use and no greater than is advertised by the manufacturer or retailer.
5. SBI provided in Appendix D of Intertek Test Report 104070904MTL-001 a copy of the warranty that stated: "This warranty is void if the unit is used to burn materials other than cordwood (for which the unit is not certified by the EPA) and void if not operated according to the owner's manual. 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 in the designated area in case of a power failure."

6. SBI, with the help of the certification laboratory, Intertek, built a Quality Assurance Program. A quality control is performed for each unit produced and 4 times a year, Intertek audits our production line to make sure that the models in production comply with the certification unit.
7. SBI confirms that the certification model was sealed by Intertek as per picture of Appendix H. Permanent straps holds the unit on a wooden palette and prevent the door from opening. Intertek logo is painted over the unit and the strap as a protection. The sealed unit will be store at SBI laboratory as long as the unit is in production, but a least for 5 years after certification test.
8. SBI states that the units produce under this certificate will be:
    a. Similar in all material respects that would affect emissions as defined in § 60.531 to the wood heater submitted for certification testing, and labeled as prescribed in § 60.536 and 60.5478.
    b. Accompanied by an owner's manual that meets the requirements in § 60.536 and 60.5478. A copy of the owner's manual was submitted to the Administrator and will be available to the public on the manufacturer's web site at production launch.
9. SBI has entered into contracts with an approved laboratory and third-party certifier which is Intertek. Intertek Montreal is the approved laboratory and the third-party certifier is the Middleton chapter of Intertek.
10. SBI allows the approved laboratory and approved third-party certifier to submit information to Residential Wood Heater Compliance Program Lead on behalf of SBI, including any claimed to be CBI.
11. SBI will place a copy of the certification test report, summary and all non-CBI on the manufacturer's web site available to the public within 30 days after the Administrator issues a certificate of compliance.
12. SBI acknowledges that the certificate of compliance cannot be transferred to another manufacturer or model line without written approval by the Administrator.
13. SBI acknowledges that it is unlawful to sell, distribute or offer to sell or distribute an affected wood heater without a valid certificate of compliance.

Print name and title : Guillaume Thibodeau-Fortin Ing. Date : 10/22/2019

Signature of responsible representative of the manufacturer certifying the accuracy of the above statements:

The authorized or responsible party whose signature is above is certifying that the manufacturer has complied with and will continue to comply with all requirements of the 2015 CAA Standards for compliance certification and that the manufacturer remains responsible for compliance regardless of any error by the test laboratory or third-party certifier.

United States
Environmental Protection
Agency

OMB Control No. 2060-0161
Approval expires 3/31/2019

OMB Control No. 2060-0693
Approval expires 3/31/2019

EPA Form 6400-03

RESIDENTIAL WOOD HEATER CERTIFICATE OF COMPLIANCE APPLICATION

INSTRUCTIONS

Pursuant to the 2015 Clean Air Act Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces, 40 CFR Part 60 Subparts AAA and QQQQ (2015 Wood Heater Rule), any manufacturer of an affected residential wood heater must apply to the EPA for a certificate of compliance for each model line. Without applying for and obtaining a certificate of compliance, a manufacturer may not manufacture, advertise for sale, offer for sale, or sell affected residential wood heaters in the United States.

Under Subpart AAA, affected residential wood-burning room heaters currently include, but are not limited to, adjustable burn rate stoves, catalytic adjustable burn rate stoves; hybrid adjustable burn rate stoves; single burn rate stoves; and pellet stoves.

Under Subpart QQQQ, affected residential wood-burning central heaters currently include, but are not limited to, indoor hydronic heaters ("wood boilers"); outdoor hydronic heaters ("outdoor wood boilers"); and forced-air furnaces ("warm air furnaces").

By completing and submitting this application to EPA, you will satisfy the requirement to apply for a certificate of compliance. To submit a complete application, this application must include the following:

(1) Certification test report prepared by an EPA-approved test laboratory
(2) Certification of conformity by an EPA-approved third party certifier
(3) Quality assurance plan
(4) All required supporting documentation and manufacturer statements pursuant to the 2015 Wood Heater Rule (Sections 60.533 or 60.5475)

This application must be signed by a responsible representative of the manufacturer or an authorized representative. Once completed with all required information/documentation included, this application must be submitted to WoodHeaterReports@epa.gov.

The public reporting and recordkeeping burden for this collection of information is estimated to average 8 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 (EPA) (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed application 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 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, Residential Wood Heater Compliance Program Lead, or via email at sanchez.rafael@epa.gov.

MANUFACTURER INFORMATION

Manufacturer's Name: Stove Builder International

Manufacturer's Physical Address:
250 rue de Copenhague
Saint-Augustin-de-Desmaures,
Canada, G3A 2H3

Manufacturer's Mailing Address (if different from physical address):

Name and Title of Manufacturer's Responsible/Authorized Representative Submitting this Application:
Guillaume Thibodeau-Fortin

Manufacturer's Contact E-mail: gthibodeaufortin@sbi-international.com

Manufacturer's Phone Number: 1-418-878-3040 x5224

Manufacturer's Website Address:
www.sbi-international.com

Manufacturer's Website Address where the test report and owner's manual will be posted, if known:
http://www.occanada.com/
https://www.osburn-mfg.com/
https://www.empirestove.com/

AFFECTED WOOD HEATER MODEL INFORMATION

Model Name(s) (as appearing on the certification test report). Please note: the model name and design number must clearly distinguish one model from another. The name and design number cannot include the EPA symbol or logo or name or derivatives such as "EPA": Everest II series

Model Number(s) (as appearing on the certification test report): HE300 II, HE325, Everest II, St. Clair 3000

Heater Type Check one):	☒Adjustable Burn Rate Wood Stover		☐Pellet Stove	☐Single Burn Rate Wood Stove	☐Hydronic Heater	☐Forced-Air Furnace (FAF)
Hydronic Heater Type (Check one):	☐Full Storage		☐Partial Storage	☐Indoor	☐Outdoor	
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:
Certification Step:	☐2015	☐2016 (FAFs only)	☐2017 (FAFs only)	☒2020 (ALL HEATERS)		

Was this heater tested using an EPA-approved Alternative Test Method (ATM)? ☒Yes ☐No

If yes, provide date of EPA approval and attach copy of EPA approved ATM letter):
2/28/2018

If not, what Test Method(s) did the test laboratory use for the certification test? (List all applicable test methods):

Heater equipped with a catalytic combustor? ☐Yes ☒No

Date of submission of 30-Day Notice to the EPA:8/23/2019 **What was the proposed date(s) of testing? 09/23/2019** **What was the actual date(s) of testing? 09/23/2019** **Was the compliance test postponed or suspended? ☐Y ☒N If yes, date of EPA notification of postponement or suspension:** **Explain reason for postponing or suspending the certification test:**		
EPA-APPROVED TEST LABORATORY		
Name of EPA-Approved Test Laboratory: Intertek		
Name(s) of Person(s) Authorized and/or Responsible for Conducting Certification Test: Claude Pelland, Eng.		
Position/Title: Project Engineer		
Address: 1829, 32nd avenue		
City: Lachine	**State: Québec**	**ZIP Code: H8T 3J1**
Phone: 1-514-631-3100 x277	**Email: claude.pellant@intertek.com**	
EPA-APPROVED THIRD PARTY CERTIFIER		
Name of EPA-Approved Third-Party Certifier: Intertek		
Name(s) of Person(s) Authorized and/or Responsible for Reviewing Test Report and/or Issuing Certification of Conformity: Brian Ziegler		
Position/Title: Technical Team Leader		
Address: 8431 Murphy Drive		
City: Middleton	**State: WI**	**ZIP Code: 53562**
Phone: 608-824-7425	**Email: brian.ziegler@intertek.com**	

REQUIRED SUPPORTING DOCUMENTATION/MANUFACTURER STATEMENTS

NOTE: TO COMPLETE THIS APPLICATION, ALL REQUIRED DOCUMENTATION AND MANUFACTURER STATEMENTS MUST ACCOMPANY THIS APPLICATION.

1. Engineering Drawings

Engineering drawings and specifications of components that may affect emissions (including specifications for each component listed in paragraphs (k)(2), (3) and (4) of 60.533(b) and 60.5475(b). Manufacturers may use assembly or design drawings that have been prepared for other purposes, but must designate on the drawings the dimensions of each component listed in paragraph (k) of this section. Manufacturers must identify tolerances of components listed in paragraph (k)(2) of 60.533(b) and 60.5475(b) that are different from those specified in that paragraph, and show that such tolerances cannot reasonably be anticipated to cause wood heaters in the model line to exceed the applicable emission limits. The drawings must identify how the emission-critical parts, such as air tubes and catalyst, can be readily inspected and replaced.

2. Firebox Statement Requirement

A statement whether the firebox or any firebox component (including the materials listed in paragraph (k)(3) of 60.533(b) and 60.5475(b) will be composed of material different from the material used for the firebox or firebox component in the wood heater on which certification testing was performed, a description of any such differences and demonstration that any such differences may not reasonably be anticipated to adversely affect emissions or efficiency.

3. Confidential Business Information

Clear identification of any claimed confidential business information (CBI). Submit such information under separate cover to the EPA CBI Office; Attn: Residential Wood Heater Compliance Program Lead, 1200 Pennsylvania Ave., NW, Room 7149-D, MS:2227A, Washington, DC 20460. **Note that all emissions data, including all information necessary to determine emission rates in the format of the standard, cannot be claimed as CBI.**

4. All Documentation Pertaining to a Valid Certification Test

All documentation pertaining to a valid certification test including the complete test report and, for all test runs: Raw data sheets, laboratory technician notes, calculations and test results. Documentation must include the items specified in the applicable test methods. Documentation must include discussion of each test run and its appropriateness and validity, and must include detailed discussion of all anomalies, whether all burn rate categories were achieved, any data not used in the calculations and, for any test runs not completed, the data collected during the test run and the reason(s) that the test run was not completed and why. The burn rate for the low burn rate category must be no greater than the rate that an operator can achieve in home use and no greater than is advertised by the manufacturer or retailer. The test report must include a summary table that clearly presents the individual and overall emission rates, efficiencies and heat outputs. Submit the test report and all associated required information, according to the procedures for electronic reporting specified in § 60.537(f) and 60.5475(f).

5. Warranties

A copy of the warranties for the model line, which must include a statement that the warranties are void if the unit is used to burn materials for which the unit is not certified by the EPA and void if not operated according to the owner's manual.

6. Quality Assurance Program Statement

A statement that the manufacturer will conduct a quality assurance program for the model line that satisfies the requirements of § 60.533(m).

7. Laboratory Sealing of Unit

A statement describing how the tested unit was sealed by the laboratory after the completion of certification testing and asserting that such unit will be stored by the manufacturer in the sealed state until 5 years after the certification test.

8. Statements that the Wood Heaters Manufactured under this Certificate will be:

(i) Similar in all material respects that would affect emissions as defined in § 60.531 to the wood heater submitted for certification testing, and

(ii) Labeled as prescribed in § 60.536 and 60.5478, and

(iii) Accompanied by an owner's manual that meets the requirements in § 60.536 and 60.5478. In addition, a copy of the owner's manual must be submitted to the EPA and be available to the public on the manufacturer's web site.

9. Third Party Certification Statement

A statement that the manufacturer has entered into contracts with an approved laboratory and an approved third-party certifier that satisfy the requirements of § 60.533(f).

10. Approved Laboratory/Third Party Statement

A statement that the approved laboratory and approved third-party certifier are allowed to submit information on behalf of the manufacturer, including any claimed to be CBI.

11. Manufacturer's Website Certification Test Reports Availability Statement

A statement that the manufacturer will place a copy of the certification test report and summary on the manufacturer's web site available to the public within 30 days after the EPA issues a certificate of compliance.

12. Transferability Acknowledgement Statement

A statement of acknowledgment that the certificate of compliance cannot be transferred to another manufacturer or model line without written approval by the EPA.

13. Statement about Selling Wood Heaters without an EPA Certificate
A statement acknowledging that it is unlawful to sell, distribute or offer to sell or distribute an affected wood heater without a valid certificate of compliance.

PLEASE ACKNOWLEDGE THAT ALL REQUIRED SUPPORTING DOCUMENTATION AND MANUFACTURER STATEMENTS ACCOMPANY THIS APPLICATION.

Initials _____

SIGNATURE OF RESPONSIBLE OFFICER OR AUTHORIZED REPRESENTATIVE OF THE MANUFACTURER CERTIFYING THE ACCURACY AND COMPLETENESS OF THIS APPLICATION:

Signature: _____ Ing.

Print Name: Guillaume Thibodeau-Fortin

Title: Lab. Engineer.

Date: Oct. 22nd, 2019

The responsible officer or authorized representative of the manufacturer whose signature is above is certifying that the manufacturer has complied with all requirements of the 2015 Wood Heater Rule for compliance certification and will continue to do so. The manufacturer remains responsible for compliance regardless of any error by the EPA-approved test laboratory or third-party certifier.

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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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): Everest Series						
Model Number(s) (as will appear on test report): These are preliminary names subject to change. Official names will be on Test Report : Everest II, HE300R, HE200R						
Equipped with a catalytic combustor? ☐Yes ☒No						

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Mailing Address: Same as street address		
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: Claude Pelland, Project Engineer		
Company: Intertek		
Phone: 1-514-631-3100 x277	**E-mail:** **claude.pelland@intertek.com**	**Fax: 1-514-631-1133**

United States Environmental Protection Agency

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City: Lachine	**State: Québec**	**ZIP Code: H8T 3J1**
EPA APPROVED THIRD-PARTY CERTIFIER		
Name and Title of Authorized Representative: Brian Ziegler		
Company: Intertek		
Phone: 608-824-7425	**E-mail:** brian.ziegler@intertek.com	**Fax:**
City: Middleton	**State: WI**	**ZIP Code: 53562**
COMPLIANCE TEST INFORMATION		
Test Method(s): ASTM E3053-17 as per letter the Broadly Applicable Alternative Test Method from EPA of 2/28/2018 (Alt-125)		
Date(s) of Proposed Test: September 23rd, 2019		

United States
Environmental Protection
Agency

OMB Control No. 2060-0161
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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
08-23-2019
_____
Date
1-418-878-3040 x 5224
Telephone Number: _____
gthibodeaufortin@sbi-international.com
Email Address: _____

Remarks:

v1

Intertek Testing Services

Manufacturer:	**SBI**			RESULTS			
Model:	**Everest II**			**Average emission rate:(gr/hr)**			**0.932**
Date:	**9-24-19**			Burn Rate (Dry kg/hr):			1.438
Run:	**2**						
Project #:	**G104070904**						
Test Duration: (minutes)	**480**						
PRESSURE FACTOR:	0.99599			BAROMETRIC PRESSURE			
						Average:	29.8
TEMPERATURE FACTORS						Start:	29.7
DGM #1:	0.98799					End:	29.9
DGM #2:	0.98836						
				DRY GAS METER VALUES			
VOLUMES SAMPLED					DGM #1	Final:	552.990
DGM #1:	61.79928					Initial:	490.438
DGM #2:	62.59552						
					DGM #2	Final:	458.780
TOTAL TUNNEL VOLUME (scf):	168662					Initial:	395.697
SAMPLE RATIOS				TEMPERATURES (DEG. RANKIN)			
Sample Train 1:	2729.194					DGM #1:	534.417
Sample Train 2:	2694.478					DGM #2:	534.218
TOTAL EMISSIONS				CALIBRATION FACTORS			
Sample Train 1 (g):	**7.369**					DGM #1:	1.0040
Sample Train 2 (g):	**7.545**					DGM #2:	1.0080
EMISSION RATES				TUNNEL FLOW RATE:			351.380
Sample Train 1 (g/hr):	**0.92**						
Sample Train 2 (g/hr):	**0.94**			PARTICULATE CATCH (mg)			
						Total Sample Train 1:	2.7
						Total Sample Train 2:	2.8
						Filter and seal Sample Train 1:	2.2
MAX Allowed	7.50%					Filter and seal Sample Train 2:	2.2
						Probe Sample Train 1:	0.5
DEVIATION:	1.18%					Probe Sample Train 2:	0.6

Intertek Testing Services

Manufacturer:	**SBI**			RESULTS			
Model:	**Everest II**			**Average emission rate:(gr/hr)**			**#DIV/0!**
Date:	**9-24-19**			Burn Rate (Dry kg/hr):			11.505
Run:	**2 - First hour**						
Project #:	**G104070904**						
Test Duration: (minutes)	**60**						
	PRESSURE FACTOR:	0.99599		BAROMETRIC PRESSURE			
						Average:	29.8
	TEMPERATURE FACTORS					Start:	29.7
	DGM #1:	0.98929				End:	29.9
	DGM #2:	1.14783					
				DRY GAS METER VALUES			
VOLUMES SAMPLED					DGM #1	Final:	885.741
	DGM #1:	7.70130				Initial:	877.925
	DGM #2:	0.00000					
					DGM #2	Final:	0.000
TOTAL TUNNEL VOLUME (scf):		19495				Initial:	0.000
SAMPLE RATIOS				TEMPERATURES (DEG. RANKIN)			
	Sample Train 1:	2531.326				DGM #1:	533.714
	Sample Train 2:	#DIV/0!				DGM #2:	460.000
TOTAL EMISSIONS				CALIBRATION FACTORS			
	Sample Train 1 (g):	**3.797**				DGM #1:	1.0000
	Sample Train 2 (g):	**#DIV/0!**				DGM #2:	0.0000
EMISSION RATES				TUNNEL FLOW RATE:			324.909
	Sample Train 1 (g/hr):	**3.80**					
	Sample Train 2 (g/hr):	**#DIV/0!**		PARTICULATE CATCH (mg)			
						Total Sample Train 1:	1.5
						Total Sample Train 2:	0
						Filter and seal Sample Train 1:	1
	MAX Allowed	7.50%				Filter and seal Sample Train 2:	
						Probe Sample Train 1:	0.5
	DEVIATION:	#DIV/0!				Probe Sample Train 2:	

Intertek Testing Services

Manufacturer:	**SBI**			RESULTS			
Model:	**Everest II**			**Average emission rate:(gr/hr)**			**0.789**
Date:	**9-25-19**			Burn Rate (Dry kg/hr):			1.524
Run:	**3**						
Project #:	**G104070904**						
Test Duration: (minutes)	**480**						
PRESSURE FACTOR:	0.99766			BAROMETRIC PRESSURE			
						Average:	29.85
TEMPERATURE FACTORS						Start:	29.9
DGM #1:	0.98772					End:	29.8
DGM #2:	0.98782						
				DRY GAS METER VALUES			
VOLUMES SAMPLED					DGM #1	Final:	614.550
DGM #1:	60.65779					Initial:	553.239
DGM #2:	59.88645						
					DGM #2	Final:	519.443
TOTAL TUNNEL VOLUME (scf):	181089					Initial:	459.158
SAMPLE RATIOS				TEMPERATURES (DEG. RANKIN)			
Sample Train 1:	2985.414					DGM #1:	534.567
Sample Train 2:	3023.866					DGM #2:	534.513
TOTAL EMISSIONS				CALIBRATION FACTORS			
Sample Train 1 (g):	**5.971**					DGM #1:	1.0040
Sample Train 2 (g):	**6.653**					DGM #2:	1.0080
EMISSION RATES				TUNNEL FLOW RATE:			377.268
Sample Train 1 (g/hr):	**0.75**						
Sample Train 2 (g/hr):	**0.83**			PARTICULATE CATCH (mg)			
				Total Sample Train 1:			2
				Total Sample Train 2:			2.2
				Filter and seal Sample Train 1:			1.6
MAX Allowed	7.50%			Filter and seal Sample Train 2:			1.7
				Probe Sample Train 1:			0.4
DEVIATION:	5.40%			Probe Sample Train 2:			0.5

Intertek Testing Services

Manufacturer:	**SBI**			RESULTS			
Model:	**Everest II**			**Average emission rate:(gr/hr)**			**#DIV/0!**
Date:	**9-25-19**			Burn Rate (Dry kg/hr):			12.193
Run:	**3**						
Project #:	**G104070904**						
Test Duration: (minutes)	**60**						
PRESSURE FACTOR:	0.99766			BAROMETRIC PRESSURE			
						Average:	29.85
TEMPERATURE FACTORS						Start:	29.9
DGM #1:	0.98876					End:	29.8
DGM #2:	1.14783						
				DRY GAS METER VALUES			
VOLUMES SAMPLED					DGM #1	Final:	893.319
DGM #1:	7.47749					Initial:	885.769
DGM #2:	0.00000						
					DGM #2	Final:	0.000
TOTAL TUNNEL VOLUME (scf):	21590					Initial:	0.000
SAMPLE RATIOS				TEMPERATURES (DEG. RANKIN)			
Sample Train 1:	2887.374					DGM #1:	534.000
Sample Train 2:	#DIV/0!					DGM #2:	460.000
TOTAL EMISSIONS				CALIBRATION FACTORS			
Sample Train 1 (g):	**5.197**					DGM #1:	1.0040
Sample Train 2 (g):	**#DIV/0!**					DGM #2:	1.0080
EMISSION RATES				TUNNEL FLOW RATE:			359.839
Sample Train 1 (g/hr):	**5.20**						
Sample Train 2 (g/hr):	**#DIV/0!**			PARTICULATE CATCH (mg)			
				Total Sample Train 1:			1.8
				Total Sample Train 2:			0
				Filter and seal Sample Train 1:			1.4
MAX Allowed	7.50%			Filter and seal Sample Train 2:			
				Probe Sample Train 1:			0.4
DEVIATION:	#DIV/0!			Probe Sample Train 2:			

Intertek Testing Services

Manufacturer:	**SBI**
Model:	**3.3 series**
Date:	**9-26-19**
Run:	**4**
Project #:	**G104070904**
Test Duration: (minutes)	**200**

RESULTS

Average emission rate:(gr/hr) **1.514**

Burn Rate (Dry kg/hr): 2.786

PRESSURE FACTOR:	0.99098

TEMPERATURE FACTORS

DGM #1:	0.98942
DGM #2:	0.98949

VOLUMES SAMPLED

DGM #1:	24.19301
DGM #2:	24.32853
TOTAL TUNNEL VOLUME (scf):	72000

SAMPLE RATIOS

Sample Train 1:	2976.047
Sample Train 2:	2959.469

TOTAL EMISSIONS

Sample Train 1 (g):	**5.059**
Sample Train 2 (g):	**5.031**

EMISSION RATES

Sample Train 1 (g/hr):	**1.52**
Sample Train 2 (g/hr):	**1.51**
MAX Allowed	7.50%
DEVIATION:	0.28%

BAROMETRIC PRESSURE

Average:	29.65
Start:	29.7
End:	29.6

DRY GAS METER VALUES

DGM #1	Final:	639.203
	Initial:	614.627
DGM #2	Final:	544.091
	Initial:	519.477

TEMPERATURES (DEG. RANKIN)

DGM #1:	533.645
DGM #2:	533.610

CALIBRATION FACTORS

DGM #1:	1.0040
DGM #2:	1.0080

TUNNEL FLOW RATE: 359.998

PARTICULATE CATCH (mg)

Total Sample Train 1:	1.7
Total Sample Train 2:	1.7
Filter and seal Sample Train 1:	1.5
Filter and seal Sample Train 2:	1.5
Probe Sample Train 1:	0.2
Probe Sample Train 2:	0.2

Intertek Testing Services

Manufacturer:	**SBI**			RESULTS			
Model:	**3.3 series**			**Average emission rate:(gr/hr)**			**#DIV/0!**
Date:	**9-26-19**			Burn Rate (Dry kg/hr):			15.754
Run:	**4 - first hour**						
Project #:	**G104070904**						
Test Duration: (minutes)	**60**						
PRESSURE FACTOR:	0.99098			BAROMETRIC PRESSURE			
						Average:	29.65
TEMPERATURE FACTORS						Start:	29.7
DGM #1:	0.99062					End:	29.6
DGM #2:	1.14783						
				DRY GAS METER VALUES			
VOLUMES SAMPLED					DGM #1	Final:	901.027
DGM #1:	7.52948					Initial:	893.357
DGM #2:	0.00000						
					DGM #2	Final:	0.000
TOTAL TUNNEL VOLUME (scf):	22148					Initial:	0.000
SAMPLE RATIOS				TEMPERATURES (DEG. RANKIN)			
Sample Train 1:	2941.517					DGM #1:	533.000
Sample Train 2:	#DIV/0!					DGM #2:	460.000
TOTAL EMISSIONS				CALIBRATION FACTORS			
Sample Train 1 (g):	**4.118**					DGM #1:	1.0000
Sample Train 2 (g):	**#DIV/0!**					DGM #2:	0.0000
EMISSION RATES				TUNNEL FLOW RATE:			369.135
Sample Train 1 (g/hr):	**4.12**						
Sample Train 2 (g/hr):	**#DIV/0!**			PARTICULATE CATCH (mg)			
						Total Sample Train 1:	1.4
						Total Sample Train 2:	0
						Filter and seal Sample Train 1:	1
MAX Allowed	7.50%					Filter and seal Sample Train 2:	
						Probe Sample Train 1:	0.4
DEVIATION:	#DIV/0!					Probe Sample Train 2:	

Stove Builder International Inc.

Manufacturer:	SBI
Model:	Everest II
Date:	09-24-19
Run:	2
Control #:	G104070904
Test Duration:	480
Output Category:	Low

Technicians: _____

_____

_____

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	66.5%	71.7%
Combustion Efficiency	97.3%	97.3%
Heat Transfer Efficiency	68%	73.6%

Output Rate (kJ/h)	19,035	18,057	**(Btu/h)**
Burn Rate (kg/h)	1.44	3.17	**(lb/h)**
Input (kJ/h)	28,606	27,135	**(Btu/h)**

Test Load Weight (dry kg)	11.51	25.36	**dry lb**
MC wet (%)	16.3		
MC dry (%)	19.47		
Particulate (g)	7.457		
CO (g)	453		
Test Duration (h)	8.00		

Emissions	Particulate	CO
g/MJ Output	0.05	2.98
g/kg Dry Fuel	0.65	39.40
g/h	0.93	56.67
lb/MM Btu Output	0.11	6.92

Air/Fuel Ratio (A/F)	12.34

VERSION: **2.4** **2010-04-15**

Stove Builder International Inc.

Manufacturer:	SBI
Model:	Everest II
Date:	09-25-19
Run:	3
Control #:	G104070904
Test Duration:	480
Output Category:	Medium

Technicians: _____

_____

_____

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	65.4%	70.5%
Combustion Efficiency	98.4%	98.4%
Heat Transfer Efficiency	67%	71.6%

Output Rate (kJ/h)	19,837	18,818	**(Btu/h)**
Burn Rate (kg/h)	1.52	3.36	**(lb/h)**
Input (kJ/h)	30,317	28,759	**(Btu/h)**

Test Load Weight (dry kg)	12.20	26.88	**dry lb**
MC wet (%)	16.848		
MC dry (%)	20.26		
Particulate (g)	6.312		
CO (g)	311		
Test Duration (h)	8.00		

Emissions	**Particulate**	**CO**
g/MJ Output	0.04	1.96
g/kg Dry Fuel	0.52	25.48
g/h	0.79	38.84
lb/MM Btu Output	0.09	4.55

Air/Fuel Ratio (A/F)	12.79

VERSION: **2.4** **2010-04-15**

Stove Builder International Inc.

Manufacturer:	SBI
Model:	Everest II
Date:	09-26-19
Run:	4
Control #:	G104070904
Test Duration:	137
Output Category:	High

Technicians: _____

_____

_____

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	64.7%	69.7%
Combustion Efficiency	99.0%	99.0%
Heat Transfer Efficiency	65%	70.4%

Output Rate (kJ/h)	52,344	49,654	**(Btu/h)**
Burn Rate (kg/h)	4.07	8.97	**(lb/h)**
Input (kJ/h)	80,903	76,746	**(Btu/h)**

Test Load Weight (dry kg)	9.29	20.47	**dry lb**
MC wet (%)	16.002		
MC dry (%)	19.05		
Particulate (g)	-		
CO (g)	136		
Test Duration (h)	2.28		

Emissions	**Particulate**	**CO**
g/MJ Output	#VALEUR!	1.14
g/kg Dry Fuel	#VALEUR!	14.62
g/h	#VALEUR!	59.47
lb/MM Btu Output	#VALEUR!	2.64

Air/Fuel Ratio (A/F)	8.00

VERSION: **2.4** **2010-04-15**

Intertek

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 CSA B415.1-10
Certified to/Certifié selon ASTM E2515-11 (R2017)
Certified to/Certifié selon ASTM E3053-17
Control number: 4002461

LISTED FACTORY BUILT FIREPLACE
FOYER PRÉFABRIQUÉ HOMOLOGUÉ

MODEL / MODÈLE: EVEREST II

FOR USE WITH WOOD ONLY — POUR UTILISATION AVEC BOIS SEULEMENT

CONTACT LOCAL BUILDING OFFICIALS ABOUT THE RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.
COMMUNIQUER AVEC LES AUTORITÉS LOCALES DU BÂTIMENT ET DE LA PRÉVENTION DES INCENDIES AU SUJET DES RESTRICTIONS D'INSTALLATION DANS VOTRE SECTEUR.

Serial Number / No. de Série: 1

INSTALL AND USE ONLY IN ACCORDANCE WITH SBI STOVE BUILDER INTERNATIONAL INSTALLATION AND OPERATION INSTRUCTIONS.
L'INSTALLATION ET L'OPERATION DOIT SE FAIRE SELON LES INSTRUCTIONS D'INSTALLATION ET D'UTILISATION DE SBI FABRICANT DE POÊLES IN. 'RNATIONAL.

PREVENT HOUSE FIRES

- Use solid fuel only.

For safety, keep screen doors or glass doors tightly closed.

- Do not overfire unit.
- Replace with only ceramic glass 4mm thick.
- Use only with listed factory-built chimney as per manufacturer's instructions.
- A non-combustible hearth extension must be installed in front of unit extending 16 in (406 mm) in front and 8 in (203 mm) on each side of door opening.
-
- Do not use a fireplace insert or other products not specified for use with this product.

Areas of the fireplace incorporating warm or cold air ducts shall be enclosed in accordance with manufacturer's instructions.
WARNING: This fireplace has not been tested with an unvented gas log set. To reduce risk of fire or injury, do not install an unvented gas log set into fireplace.
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

- Utiliser du combustible à base de bois seulement.

Pour votre sécurité, maintenir les portes de grillages ou de vitres fermées de façon étanche.

- Ne pas surchauffer le foyer.
- Remplacer la vitre seulement avec un verre céramique de 4mm d'épaisseur.
- Pour utilisation seulement avec une cheminée préfabriquée homologuée tel que spécifié selon les instructions du manufacturier.
- Une protection de plancher incombustible doit être installée à l'avant du foyer excédant de 16 po (406 mm) à l'avant et 8 po (203 mm) de chaque côté de l'ouverture de porte.
-
- Ne pas utiliser de foyer encastrable ou autres produits qui ne sont pas conçus précisément pour être utilisés avec le présent foyer.

Les zones du foyer intégrant des conduits d'air chaud ou froid doivent être installées en accord avec les instructions du manufacturier.
ATTENTION: Ce foyer n'a pas été mis à l'essai avec un ensemble de bûches décoratives à gaz non ventilé. Pour réduire les risques de feu ou de blessures, ne pas installer d'ensemble de bûches décoratives à gaz non ventilé dans ce foyer.
Cet appareil 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 (USA).

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS / DÉGAGEMENTS MINIMUM AUX MATÉRIAUX COMBUSTIBLES

Sidewall / Mur latéral [1] :	21 in (533 mm)	Side facing / Parement latéral [2] :	0 in (0 mm)
Combustible shelf (from floor) / Tablette combustible (du sol) [2][3] :	48 in (1219 mm)	Ceiling (from floor) / Plafond (à partir du plancher) [3] :	84 in. (2134 mm)

[1] From door opening. / À partir de l'ouverture de la porte.
[2] Subject to a maximum protrusion (consult owner's manual). / Sujet à une saillie maximale (consultez le manuel d'instructions).
[3] If the fireplace is elevated, the clearances to the combustible shelf and ceiling must be increased by an equivalent value. / Si le foyer est surélevé, les dégagements à la tablette combustible et au plafond doivent être augmentés d'une valeur équivalente.

Blower / Ventilateur: (115V, 0.8A, 60Hz)

PROCEDURE TO FOLLOW IN CASE OF RUN-AWAY FIRE	EN CAS D'INCENDIE DE CHEMINÉE
1) Keep doors closed	1) Maintenir les portes fermées
2) Close all combustion air controls	2) Fermer tous les dispositifs d'admission d'air

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cord wood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.U. (EPA). Conforme aux normes d'émission de particules de 2020 avec bûche de bois.
Weighted average emission rate / Moyenne pondérée des émissions: 0.99 g/h
When tested in accordance with / Lorsque testé selon: CSA B415.1-10
Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1(ii)).

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.
- THIS FIREPLACE NEEDS AIR FOR GOOD OPERATION.
- WHEN A FIRE IS BURNING IN THE FIREPLACE, FRESH AIR MUST BE SUPPLIED TO THE ROOM WHERE THE FIREPLACE IS LOCATED, FAILURE TO PROVIDE THIS MAY STARVE OTHER FUEL BURNING APPLIANCE FROM AN ADEQUATE AIR SUPPLY.

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.
- CE FOYER A BESOIN D'AIR POUR SON BON FONCTIONNEMENT.
- LORSQUE LE FOYER BRÛLE, UN APPORT D'AIR SUPPLÉMENTAIRE DOIT ÊTRE PRÉVU DANS LA PIÈCE, UN MANQUE D'AIR D'APPOINT POURRAIT PRIVER LES AUTRES APPAREILS DE COMBUSTION D'UNE ALIMENTATION D'AIR ADÉQUATE.

Made in La Guadeloupe (Qc), Canada
21/10/2019 (# test)

SBI
Fabricant de poêles international
Stove Builder International

Fabriqué à La Guadeloupe (Qc), Canada
21/10/2019 (# test)
27819

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

STANDARDS / NORMES D'ESSAI:

Certified to / Certifié selon CSA B415.1-10
Certified to/Certifié selon ASTM E2515-11 (R2017)
Certified to/Certifié selon ASTM E3053-17
Control number: 4002461

MODEL / MODÈLE: HE300 II

Serial Number / No. de Série: 1

LISTED FACTORY BUILT FIREPLACE
FOYER PRÉFABRIQUÉ HOMOLOGUÉ

FOR USE WITH WOOD ONLY — POUR UTILISATION AVEC BOIS SEULEMENT

CONTACT LOCAL BUILDING OFFICIALS ABOUT THE RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.
COMMUNIQUER AVEC LES AUTORITÉS LOCALES DU BÂTIMENT ET DE LA PRÉVENTION DES INCENDIES AU SUJET DES RESTRICTIONS D'INSTALLATION DANS VOTRE SECTEUR.

INSTALL AND USE ONLY IN ACCORDANCE WITH SBI STOVE BUILDER INTERNATIONAL INSTALLATION AND OPERATION INSTRUCTIONS.
L'INSTALLATION ET L'OPERATION DOIT SE FAIRE SELON LES INSTRUCTIONS D'INSTALLATION ET D'UTILISATION DE SBI FABRICANT DE POÊLES INTERNATIONAL.

PREVENT HOUSE FIRES

- Use solid fuel only.

For safety, keep screen doors or glass doors tightly closed.

- Do not overfire unit.
- Replace with only ceramic glass 4mm thick.
- Use only with listed factory-built chimney as per manufacturer's instructions.
- A non-combustible hearth extension must be installed in front of unit extending 16 in (406 mm) in front and 8 in (203 mm) on each side of door opening.
-
- Do not use a fireplace insert or other products not specified for use with this product.

Areas of the fireplace incorporating warm or cold air ducts shall be enclosed in accordance with manufacturer's instructions.
WARNING: This fireplace has not been tested with an unvented gas log set. To reduce risk of fire or injury, do not install an unvented gas log set into fireplace.
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

- Utiliser du combustible à base de bois seulement.

Pour votre sécurité, maintenir les portes de grillages ou de vitres fermées de façon étanche.

- Ne pas surchauffer le foyer.
- Remplacer la vitre seulement avec un verre céramique de 4mm d'épaisseur.
- Pour utilisation seulement avec une cheminée préfabriquée homologuée tel que spécifié selon les instructions du manufacturier.
- Une protection de plancher incombustible doit être installée à l'avant du foyer excédant de 16 po (406 mm) à l'avant et 8 po (203 mm) de chaque côté de l'ouverture de porte.
-
- Ne pas utiliser de foyer encastrable ou autres produits qui ne sont pas conçus précisément pour être utilisés avec le présent foyer.

Les zones du foyer intégrant des conduits d'air chaud ou froid doivent être installées en accord avec les instructions du manufacturier.
ATTENTION: Ce foyer n'a pas été mis à l'essai avec un ensemble de bûches décoratives à gaz non ventilé. Pour réduire les risques de feu ou de blessures, ne pas installer d'ensemble de bûches décoratives à gaz non ventilé dans ce foyer.
Cet appareil 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 (USA).

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS / DÉGAGEMENTS MINIMUM AUX MATÉRIAUX COMBUSTIBLES

Sidewall / Mur latéral [1] :	**21 in (533 mm)**	**Side facing / Parement latéral** [2] :	**0 in (0 mm)**
Combustible shelf (from floor) / Tablette combustible (du sol) [2][3] :	**48 in (1219 mm)**	**Ceiling (from floor) / Plafond (à partir du plancher)** [3] :	**84 in. (2134 mm)**

[1] From door opening. / À partir de l'ouverture de la porte.
[2] Subject to a maximum protrusion (consult owner's manual). / Sujet à une saillie maximale (consultez le manuel d'instructions).
[3] If the fireplace is elevated, the clearances to the combustible shelf and ceiling must be increased by an equivalent value. / Si le foyer est surélevé, les dégagements à la tablette combustible et au plafond doivent être augmentés d'une valeur équivalente.

Blower / Ventilateur: (115V, 0.8A, 60Hz)

PROCEDURE TO FOLLOW IN CASE OF RUN-AWAY FIRE	EN CAS D'INCENDIE DE CHEMINÉE
1) Keep doors closed	1) Maintenir les portes fermées
2) Close all combustion air controls	2) Fermer tous les dispositifs d'admission d'air

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cord wood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.U. (EPA). Conforme aux normes d'émission de particules de 2020 avec bûche de bois.
Weighted average emission rate / Moyenne pondérée des émissions: 0.99 g/h
When tested in accordance with / Lorsque testé selon: CSA B415.1-10
Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1(ii)).

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.
- THIS FIREPLACE NEEDS AIR FOR GOOD OPERATION.
- WHEN A FIRE IS BURNING IN THE FIREPLACE, FRESH AIR MUST BE SUPPLIED TO THE ROOM WHERE THE FIREPLACE IS LOCATED, FAILURE TO PROVIDE THIS MAY STARVE OTHER FUEL BURNING APPLIANCE FROM AN ADEQUATE AIR SUPPLY.

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.
- CE FOYER A BESOIN D'AIR POUR SON BON FONCTIONNEMENT.
- LORSQUE LE FOYER BRÛLE, UN APPORT D'AIR SUPPLÉMENTAIRE DOIT ÊTRE PRÉVU DANS LA PIÈCE, UN MANQUE D'AIR D'APPOINT POURRAIT PRIVER LES AUTRES APPAREILS DE COMBUSTION D'UNE ALIMENTATION D'AIR ADÉQUATE.

Made in La Guadeloupe (Qc), Canada
04/11/2019 (# test)

VENTIS®

Fabriqué à La Guadeloupe (Qc), Canada
04/11/2019 (# test)
27821

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

STANDARDS / NORMES D'ESSAI:

Certified to / Certifié selon CSA B415.1-10
Certified to/Certifié selon ASTM E2515-11 (R2017)
Certified to/Certifié selon ASTM E3053-17
Control number: 4002461

LISTED FACTORY BUILT FIREPLACE
FOYER PRÉFABRIQUÉ HOMOLOGUÉ

MODEL / MODÈLE: HE325

FOR USE WITH WOOD ONLY — POUR UTILISATION AVEC BOIS SEULEMENT

CONTACT LOCAL BUILDING OFFICIALS ABOUT THE RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.
COMMUNIQUER AVEC LES AUTORITÉS LOCALES DU BÂTIMENT ET DE LA PRÉVENTION DES INCENDIES AU SUJET DES RESTRICTIONS D'INSTALLATION DANS VOTRE SECTEUR.

Serial Number / No. de Série: 1

INSTALL AND USE ONLY IN ACCORDANCE WITH SBI STOVE BUILDER INTERNATIONAL INSTALLATION AND OPERATION INSTRUCTIONS.
L'INSTALLATION ET L'OPERATION DOIT SE FAIRE SELON LES INSTRUCTIONS D'INSTALLATION ET D'UTILISATION DE SBI FABRICANT DE POÊLES INTERNATIONAL.

PREVENT HOUSE FIRES

- Use solid fuel only.

For safety, keep screen doors or glass doors tightly closed.

- Do not overfire unit.
- Replace with only ceramic glass 4mm thick.
- Use only with listed factory-built chimney as per manufacturer's instructions.
- A non-combustible hearth extension must be installed in front of unit extending 16 in (406 mm) in front and 8 in (203 mm) on each side of door opening.
-
- Do not use a fireplace insert or other products not specified for use with this product.

Areas of the fireplace incorporating warm or cold air ducts shall be enclosed in accordance with manufacturer's instructions.
WARNING: This fireplace has not been tested with an unvented gas log set. To reduce risk of fire or injury, do not install an unvented gas log set into fireplace.
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

- Utiliser du combustible à base de bois seulement.

Pour votre sécurité, maintenir les portes de grillages ou de vitres fermées de façon étanche.

- Ne pas surchauffer le foyer.
- Remplacer la vitre seulement avec un verre céramique de 4mm d'épaisseur.
- Pour utilisation seulement avec une cheminée préfabriquée homologuée tel que spécifié selon les instructions du manufacturier.
- Une protection de plancher incombustible doit être installée à l'avant du foyer excédant de 16 po (406 mm) à l'avant et 8 po (203 mm) de chaque côté de l'ouverture de porte.
-
- Ne pas utiliser de foyer encastrable ou autres produits qui ne sont pas conçus précisément pour être utilisés avec le présent foyer.

Les zones du foyer intégrant des conduits d'air chaud ou froid doivent être installées en accord avec les instructions du manufacturier.
ATTENTION: Ce foyer n'a pas été mis à l'essai avec un ensemble de bûches décoratives à gaz non ventilé. Pour réduire les risques de feu ou de blessures, ne pas installer d'ensemble de bûches décoratives à gaz non ventilé dans ce foyer.
Cet appareil 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 (USA).

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS / DÉGAGEMENTS MINIMUM AUX MATÉRIAUX COMBUSTIBLES

Sidewall / Mur latéral [1] :	**21 in (533 mm)**	**Side facing / Parement latéral** [2] :	**0 in (0 mm)**
Combustible shelf (from floor) / Tablette combustible (du sol) [2][3] :	**48 in (1219 mm)**	**Ceiling (from floor) / Plafond (à partir du plancher)** [3] :	**84 in. (2134 mm)**

[1] From door opening. / À partir de l'ouverture de la porte.
[2] Subject to a maximum protrusion (consult owner's manual). / Sujet à une saillie maximale (consultez le manuel d'instructions).
[3] If the fireplace is elevated, the clearances to the combustible shelf and ceiling must be increased by an equivalent value. / Si le foyer est surélevé, les dégagements à la tablette combustible et au plafond doivent être augmentés d'une valeur équivalente.

Blower / Ventilateur: (115V, 0.8A, 60Hz)

PROCEDURE TO FOLLOW IN CASE OF RUN-AWAY FIRE	EN CAS D'INCENDIE DE CHEMINÉE
1) Keep doors closed	1) Maintenir les portes fermées
2) Close all combustion air controls	2) Fermer tous les dispositifs d'admission d'air

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cord wood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.U. (EPA). Conforme aux normes d'émission de particules de 2020 avec bûche de bois.
Weighted average emission rate / Moyenne pondérée des émissions: 0.99 g/h
When tested in accordance with / Lorsque testé selon: CSA B415.1-10
Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1(ii)).

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.
- THIS FIREPLACE NEEDS AIR FOR GOOD OPERATION.
- WHEN A FIRE IS BURNING IN THE FIREPLACE, FRESH AIR MUST BE SUPPLIED TO THE ROOM WHERE THE FIREPLACE IS LOCATED, FAILURE TO PROVIDE THIS MAY STARVE OTHER FUEL BURNING APPLIANCE FROM AN ADEQUATE AIR SUPPLY.

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.
- CE FOYER A BESOIN D'AIR POUR SON BON FONCTIONNEMENT.
- LORSQUE LE FOYER BRÛLE, UN APPORT D'AIR SUPPLÉMENTAIRE DOIT ÊTRE PRÉVU DANS LA PIÈCE, UN MANQUE D'AIR D'APPOINT POURRAIT PRIVER LES AUTRES APPAREILS DE COMBUSTION D'UNE ALIMENTATION D'AIR ADÉQUATE.

Made in La Guadeloupe (Qc), Canada
21/10/2019 (# test)

VENTIS

Fabriqué à La Guadeloupe (Qc), Canada
21/10/2019 (# test)
27818

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

STANDARDS / NORMES D'ESSAI:

Certified to / Certifié selon CSA B415.1-10
Certified to/Certifié selon ASTM E2515-11 (R2017)
Certified to/Certifié selon ASTM E3053-17
Control number: 4002461

LISTED FACTORY BUILT FIREPLACE
FOYER PRÉFABRIQUÉ HOMOLOGUÉ

MODEL / MODÈLE:
St. Clair 3000

FOR USE WITH WOOD ONLY — POUR UTILISATION AVEC BOIS SEULEMENT

CONTACT LOCAL BUILDING OFFICIALS ABOUT THE RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.
COMMUNIQUER AVEC LES AUTORITÉS LOCALES DU BÂTIMENT ET DE LA PRÉVENTION DES INCENDIES AU SUJET DES RESTRICTIONS D'INSTALLATION DANS VOTRE SECTEUR.

Serial Number / No. de Série: 1

INSTALL AND USE ONLY IN ACCORDANCE WITH SBI STOVE BUILDER INTERNATIONAL INSTALLATION AND OPERATION INSTRUCTIONS.
L'INSTALLATION ET L'OPERATION DOIT SE FAIRE SELON LES INSTRUCTIONS D'INSTALLATION ET D'UTILISATION DE SBI FABRICANT DE POÊLES INTERNATIONAL.

PREVENT HOUSE FIRES

- Use solid fuel only.

For safety, keep screen doors or glass doors tightly closed.

- Do not overfire unit.
- Replace with only ceramic glass 4mm thick.
- Use only with listed factory-built chimney as per manufacturer's instructions.
- A non-combustible hearth extension must be installed in front of unit extending 16 in (406 mm) in front and 8 in (203 mm) on each side of door opening.
-
- Do not use a fireplace insert or other products not specified for use with this product.

Areas of the fireplace incorporating warm or cold air ducts shall be enclosed in accordance with manufacturer's instructions.
WARNING: This fireplace has not been tested with an unvented gas log set. To reduce risk of fire or injury, do not install an unvented gas log set into fireplace.
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

- Utiliser du combustible à base de bois seulement.

Pour votre sécurité, maintenir les portes de grillages ou de vitres fermées de façon étanche.

- Ne pas surchauffer le foyer.
- Remplacer la vitre seulement avec un verre céramique de 4mm d'épaisseur.
- Pour utilisation seulement avec une cheminée préfabriquée homologuée tel que spécifié selon les instructions du manufacturier.
- Une protection de plancher incombustible doit être installée à l'avant du foyer excédant de 16 po (406 mm) à l'avant et 8 po (203 mm) de chaque côté de l'ouverture de porte.
-
- Ne pas utiliser de foyer encastrable ou autres produits qui ne sont pas conçus précisément pour être utilisés avec le présent foyer.

Les zones du foyer intégrant des conduits d'air chaud ou froid doivent être installées en accord avec les instructions du manufacturier.
ATTENTION: Ce foyer n'a pas été mis à l'essai avec un ensemble de bûches décoratives à gaz non ventilé. Pour réduire les risques de feu ou de blessures, ne pas installer d'ensemble de bûches décoratives à gaz non ventilé dans ce foyer.
Cet appareil 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 (USA).

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS / DÉGAGEMENTS MINIMUM AUX MATÉRIAUX COMBUSTIBLES

Sidewall / Mur latéral [1] :	21 in (533 mm)	Side facing / Parement latéral [2] :	0 in (0 mm)
Combustible shelf (from floor) / Tablette combustible (du sol) [2][3] :	48 in (1219 mm)	Ceiling (from floor) / Plafond (à partir du plancher) [3] :	84 in. (2134 mm)

[1] From door opening. / À partir de l'ouverture de la porte.
[2] Subject to a maximum protrusion (consult owner's manual). / Sujet à une saillie maximale (consultez le manuel d'instructions).
[3] If the fireplace is elevated, the clearances to the combustible shelf and ceiling must be increased by an equivalent value. / Si le foyer est surélevé, les dégagements à la tablette combustible et au plafond doivent être augmentés d'une valeur équivalente.

Blower / Ventilateur: (115V, 0.8A, 60Hz)

PROCEDURE TO FOLLOW IN CASE OF RUN-AWAY FIRE	EN CAS D'INCENDIE DE CHEMINÉE
1) Keep doors closed 2) Close all combustion air controls	1) Maintenir les portes fermées 2) Fermer tous les dispositifs d'admission d'air

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cord wood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.U. (EPA). Conforme aux normes d'émission de particules de 2020 avec bûche de bois.
Weighted average emission rate / Moyenne pondérée des émissions: 0.99 g/h
When tested in accordance with / Lorsque testé selon: CSA B415.1-10
Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1(ii)).

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.
- THIS FIREPLACE NEEDS AIR FOR GOOD OPERATION.
- WHEN A FIRE IS BURNING IN THE FIREPLACE, FRESH AIR MUST BE SUPPLIED TO THE ROOM WHERE THE FIREPLACE IS LOCATED, FAILURE TO PROVIDE THIS MAY STARVE OTHER FUEL BURNING APPLIANCE FROM AN ADEQUATE AIR SUPPLY.

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.
- CE FOYER A BESOIN D'AIR POUR SON BON FONCTIONNEMENT.
- LORSQUE LE FOYER BRÛLE, UN APPORT D'AIR SUPPLÉMENTAIRE DOIT ÊTRE PRÉVU DANS LA PIÈCE, UN MANQUE D'AIR D'APPOINT POURRAIT PRIVER LES AUTRES APPAREILS DE COMBUSTION D'UNE ALIMENTATION D'AIR ADÉQUATE.

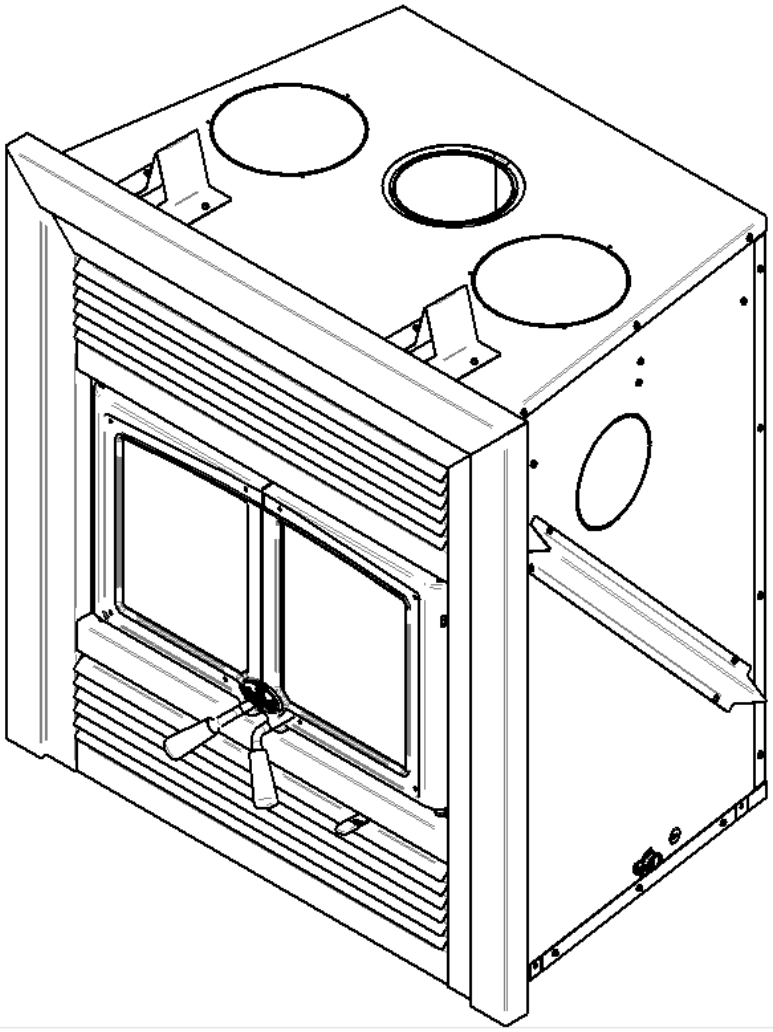
Made in La Guadeloupe (Qc), Canada
21/10/2019 (# test)

EMPIRE
SINCE 1932

Fabriqué à La Guadeloupe (Qc), Canada
21/10/2019 (# test)
27820

Installation and Operation Manual

Everest II
HE325
St. Clair 3000
HE300 II



US Environmental Protection Agency phase II certified 2020 cord wood fireplace.

EPA ≤2.5 g/h

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

READ THIS ENTIRE MANUAL BEFORE INSTALLATION AND USE OF THIS WOOD FIREPLACE. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN PROPERTY DAMAGE, BODILY INJURY OR EVEN DEATH.

READ AND KEEP THIS MANUAL FOR REFERENCE

2019-10-22

Printed in Canada

CERTIFICATION_A

CERTIFICATION PLATE HE325

Intertek

REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

LISTED FACTORY BUILT FIREPLACE
FOYER PRÉFABRIQUÉ HOMOLOGUÉ

STANDARDS / NORMES D'ESSAI:

Certified to / Certifié selon CSA B415.1-10
Certified to/Certifié selon ASTM E2515-11 (R2017)
Certified to/Certifié selon ASTM E3053-17
Control number: 4002461

MODEL / MODÈLE:
HE325

Serial Number
No. de Série 1

FOR USE WITH WOOD ONLY — POUR UTILISATION AVEC BOIS SEULEMENT

CONTACT LOCAL BUILDING OFFICIALS ABOUT THE RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.
COMMUNIQUER AVEC LES AUTORITÉS LOCALES DU BÂTIMENT ET DE LA PRÉVENTION DES INCENDIES AU SUJET DES RESTRICTIONS D'INSTALLATION DANS VOTRE SECTEUR.

INSTALL AND USE ONLY IN ACCORDANCE WITH SBI STOVE BUILDER INTERNATIONAL INSTALLATION AND OPERATION INSTRUCTIONS.
L'INSTALLATION ET L'OPERATION DOIT SE FAIRE SELON LES INSTRUCTIONS D'INSTALLATION ET D'UTILISATION DE SBI FABRICANT DE POÊLES INTERNATIONAL.

PREVENT HOUSE FIRES

- Use solid fuel only.

For safety, keep screen doors or glass doors tightly closed.

- Do not overfire unit.
- Replace with only ceramic glass 4mm thick.
- Use only with listed factory-built chimney as per manufacturer's instructions.
- A non-combustible hearth extension must be installed in front of unit extending 16 in (406 mm) in front and 8 in (203 mm) on each side of door opening.
-
- Do not use a fireplace insert or other products not specified for use with this product.

Areas of the fireplace incorporating warm or cold air ducts shall be enclosed in accordance with manufacturer's instructions.
WARNING: This fireplace has not been tested with an unvented gas log set. To reduce risk of fire or injury, do not install an unvented gas log set into fireplace.
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

- Utiliser du combustible à base de bois seulement.

Pour votre sécurité, maintenir les portes de grillages ou de vitres fermées de façon étanche.

- Ne pas surchauffer le foyer.
- Remplacer la vitre seulement avec un verre céramique de 4mm d'épaisseur.
- Pour utilisation seulement avec une cheminée préfabriquée homologuée tel que spécifié selon les instructions du manufacturier.
- Une protection de plancher incombustible doit être installée à l'avant du foyer excédant de 16 po (406 mm) à l'avant et 8 po (203 mm) de chaque côté de l'ouverture de porte.
-
- Ne pas utiliser de foyer encastrable ou autres produits qui ne sont pas conçus précisément pour être utilisés avec le présent foyer.

Les zones du foyer intégrant des conduits d'air chaud ou froid doivent être installées en accord avec les instructions du manufacturier.
ATTENTION: Ce foyer n'a pas été mis à l'essai avec un ensemble de bûches décoratives à gaz non ventilé. Pour réduire les risques de feu ou de blessures, ne pas installer d'ensemble de bûches décoratives à gaz non ventilé dans ce foyer.
Cet appareil 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 (USA).

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS / DÉGAGEMENTS MINIMUM AUX MATÉRIAUX COMBUSTIBLES

Sidewall / Mur latéral [1] :	**21 in (533 mm)**	**Side facing / Parement latéral** [2] :	**0 in (0 mm)**
Combustible shelf (from floor) / Tablette combustible (du sol) [2][3] :	**48 in (1219 mm)**	**Ceiling (from floor) / Plafond (à partir du plancher)** [3] :	**84 in. (2134 mm)**

[1] From door opening. / À partir de l'ouverture de la porte.
[2] Subject to a maximum protrusion (consult owner's manual). / Sujet à une saillie maximale (consultez le manuel d'instructions).
[3] If the fireplace is elevated, the clearances to the combustible shelf and ceiling must be increased by an equivalent value. / Si le foyer est surélevé, les dégagements à la tablette combustible et au plafond doivent être augmentés d'une valeur équivalente.

Blower / Ventilateur: (115V, 0.8A, 60Hz)

PROCEDURE TO FOLLOW IN CASE OF RUN-AWAY FIRE	EN CAS D'INCENDIE DE CHEMINÉE
1) Keep doors closed	1) Maintenir les portes fermées
2) Close all combustion air controls	2) Fermer tous les dispositifs d'admission d'air

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cord wood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.U. (EPA). Conforme aux normes d'émission de particules de 2020 avec bûche de bois.
Weighted average emission rate / Moyenne pondérée des émissions: 0.99 g/h
When tested in accordance with / Lorsque testé selon: CSA B415.1-10
Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1(ii)).

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.
- THIS FIREPLACE NEEDS AIR FOR GOOD OPERATION.
- WHEN A FIRE IS BURNING IN THE FIREPLACE, FRESH AIR MUST BE SUPPLIED TO THE ROOM WHERE THE FIREPLACE IS LOCATED, FAILURE TO PROVIDE THIS MAY STARVE OTHER FUEL BURNING APPLIANCE FROM AN ADEQUATE AIR SUPPLY.

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.
- CE FOYER A BESOIN D'AIR POUR SON BON FONCTIONNEMENT.
- LORSQUE LE FOYER BRÛLE, UN APPORT D'AIR SUPPLÉMENTAIRE DOIT ÊTRE PRÉVU DANS LA PIÈCE, UN MANQUE D'AIR D'APPOINT POURRAIT PRIVER LES AUTRES APPAREILS DE COMBUSTION D'UNE ALIMENTATION D'AIR ADÉQUATE.

Made in La Guadeloupe (Qc), Canada
21/10/2019 (# test)

VENTIS

Fabriqué à La Guadeloupe (Qc), Canada
21/10/2019 (# test)
27818

CERTIFICATION PLATE HE300 II

Intertek

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 CSA B415.1-10
Certified to/Certifié selon ASTM E2515-11 (R2017)
Certified to/Certifié selon ASTM E3053-17
Control number: 4002461

LISTED FACTORY BUILT FIREPLACE
FOYER PRÉFABRIQUÉ HOMOLOGUÉ

MODEL / MODÈLE:
HE300 II

FOR USE WITH WOOD ONLY — POUR UTILISATION AVEC BOIS SEULEMENT

CONTACT LOCAL BUILDING OFFICIALS ABOUT THE RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.
COMMUNIQUER AVEC LES AUTORITÉS LOCALES DU BÂTIMENT ET DE LA PRÉVENTION DES INCENDIES AU SUJET DES RESTRICTIONS D'INSTALLATION DANS VOTRE SECTEUR.

Serial Number / No. de Série: 1

INSTALL AND USE ONLY IN ACCORDANCE WITH SBI STOVE BUILDER INTERNATIONAL INSTALLATION AND OPERATION INSTRUCTIONS.
L'INSTALLATION ET L'OPERATION DOIT SE FAIRE SELON LES INSTRUCTIONS D'INSTALLATION ET D'UTILISATION DE SBI FABRICANT DE POÊLES INTERNATIONAL.

PREVENT HOUSE FIRES

- Use solid fuel only.

For safety, keep screen doors or glass doors tightly closed.

- Do not overfire unit.
- Replace with only ceramic glass 4mm thick.
- Use only with listed factory-built chimney as per manufacturer's instructions.
- A non-combustible hearth extension must be installed in front of unit extending 16 in (406 mm) in front and 8 in (203 mm) on each side of door opening.
-
- Do not use a fireplace insert or other products not specified for use with this product.

Areas of the fireplace incorporating warm or cold air ducts shall be enclosed in accordance with manufacturer's instructions.
WARNING: This fireplace has not been tested with an unvented gas log set. To reduce risk of fire or injury, do not install an unvented gas log set into fireplace.
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

- Utiliser du combustible à base de bois seulement.

Pour votre sécurité, maintenir les portes de grillages ou de vitres fermées de façon étanche.

- Ne pas surchauffer le foyer.
- Remplacer la vitre seulement avec un verre céramique de 4mm d'épaisseur.
- Pour utilisation seulement avec une cheminée préfabriquée homologuée tel que spécifié selon les instructions du manufacturier.
- Une protection de plancher incombustible doit être installée à l'avant du foyer excédant de 16 po (406 mm) à l'avant et 8 po (203 mm) de chaque côté de l'ouverture de porte.
-
- Ne pas utiliser de foyer encastrable ou autres produits qui ne sont pas conçus précisément pour être utilisés avec le présent foyer.

Les zones du foyer intégrant des conduits d'air chaud ou froid doivent être installées en accord avec les instructions du manufacturier.
ATTENTION: Ce foyer n'a pas été mis à l'essai avec un ensemble de bûches décoratives à gaz non ventilé. Pour réduire les risques de feu ou de blessures, ne pas installer d'ensemble de bûches décoratives à gaz non ventilé dans ce foyer.
Cet appareil 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 (USA).

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS / DÉGAGEMENTS MINIMUM AUX MATÉRIAUX COMBUSTIBLES

Sidewall / Mur latéral [1] :	**21 in (533 mm)**	**Side facing / Parement latéral** [2] :	**0 in (0 mm)**
Combustible shelf (from floor) / Tablette combustible (du sol) [2][3] :	**48 in (1219 mm)**	**Ceiling (from floor) / Plafond (à partir du plancher)** [3] :	**84 in. (2134 mm)**

[1] From door opening. / À partir de l'ouverture de la porte.
[2] Subject to a maximum protrusion (consult owner's manual). / Sujet à une saillie maximale (consultez le manuel d'instructions).
[3] If the fireplace is elevated, the clearances to the combustible shelf and ceiling must be increased by an equivalent value. / Si le foyer est surélevé, les dégagements à la tablette combustible et au plafond doivent être augmentés d'une valeur équivalente.

Blower / Ventilateur: (115V, 0.8A, 60Hz)

PROCEDURE TO FOLLOW IN CASE OF RUN-AWAY FIRE	EN CAS D'INCENDIE DE CHEMINÉE
1) Keep doors closed	1) Maintenir les portes fermées
2) Close all combustion air controls	2) Fermer tous les dispositifs d'admission d'air

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cord wood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.U. (EPA). Conforme aux normes d'émission de particules de 2020 avec bûche de bois.
Weighted average emission rate / Moyenne pondérée des émissions: 0.99 g/h
When tested in accordance with / Lorsque testé selon: CSA B415.1-10
Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1(ii)).

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.
- THIS FIREPLACE NEEDS AIR FOR GOOD OPERATION.
- WHEN A FIRE IS BURNING IN THE FIREPLACE, FRESH AIR MUST BE SUPPLIED TO THE ROOM WHERE THE FIREPLACE IS LOCATED, FAILURE TO PROVIDE THIS MAY STARVE OTHER FUEL BURNING APPLIANCE FROM AN ADEQUATE AIR SUPPLY.

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.
- CE FOYER A BESOIN D'AIR POUR SON BON FONCTIONNEMENT.
- LORSQUE LE FOYER BRÛLE, UN APPORT D'AIR SUPPLÉMENTAIRE DOIT ÊTRE PRÉVU DANS LA PIÈCE, UN MANQUE D'AIR D'APPOINT POURRAIT PRIVER LES AUTRES APPAREILS DE COMBUSTION D'UNE ALIMENTATION D'AIR ADÉQUATE.

Made in La Guadeloupe (Qc), Canada
04/11/2019 (# test)

VENTIS®

Fabriqué à La Guadeloupe (Qc), Canada
04/11/2019 (# test)

27821

CERTIFICATION PLATE ST. CLAIR 3000

Intertek

REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

LISTED FACTORY BUILT FIREPLACE
FOYER PRÉFABRIQUÉ HOMOLOGUÉ

STANDARDS / NORMES D'ESSAI:

Certified to / Certifié selon CSA B415.1-10
Certified to/Certifié selon ASTM E2515-11 (R2017)
Certified to/Certifié selon ASTM E3053-17
Control number: 4002461

MODEL / MODÈLE:
St. Clair 3000

FOR USE WITH WOOD ONLY — POUR UTILISATION AVEC BOIS SEULEMENT

CONTACT LOCAL BUILDING OFFICIALS ABOUT THE RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.
COMMUNIQUER AVEC LES AUTORITÉS LOCALES DU BÂTIMENT ET DE LA PRÉVENTION DES INCENDIES AU SUJET DES RESTRICTIONS D'INSTALLATION DANS VOTRE SECTEUR.

Serial Number / No. de Série: 1

INSTALL AND USE ONLY IN ACCORDANCE WITH SBI STOVE BUILDER INTERNATIONAL INSTALLATION AND OPERATION INSTRUCTIONS.
L'INSTALLATION ET L'OPERATION DOIT SE FAIRE SELON LES INSTRUCTIONS D'INSTALLATION ET D'UTILISATION DE SBI FABRICANT DE POÊLES INTERNATIONAL.

PREVENT HOUSE FIRES

- Use solid fuel only.

For safety, keep screen doors or glass doors tightly closed.

- Do not overfire unit.
- Replace with only ceramic glass 4mm thick.
- Use only with listed factory-built chimney as per manufacturer's instructions.
- A non-combustible hearth extension must be installed in front of unit extending 16 in (406 mm) in front and 8 in (203 mm) on each side of door opening.
-
- Do not use a fireplace insert or other products not specified for use with this product.

Areas of the fireplace incorporating warm or cold air ducts shall be enclosed in accordance with manufacturer's instructions.
WARNING: This fireplace has not been tested with an unvented gas log set. To reduce risk of fire or injury, do not install an unvented gas log set into fireplace.
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

- Utiliser du combustible à base de bois seulement.

Pour votre sécurité, maintenir les portes de grillages ou de vitres fermées de façon étanche.

- Ne pas surchauffer le foyer.
- Remplacer la vitre seulement avec un verre céramique de 4mm d'épaisseur.
- Pour utilisation seulement avec une cheminée préfabriquée homologuée tel que spécifié selon les instructions du manufacturier.
- Une protection de plancher incombustible doit être installée à l'avant du foyer excédant de 16 po (406 mm) à l'avant et 8 po (203 mm) de chaque côté de l'ouverture de porte.
-
- Ne pas utiliser de foyer encastrable ou autres produits qui ne sont pas conçus précisément pour être utilisés avec le présent foyer.

Les zones du foyer intégrant des conduits d'air chaud ou froid doivent être installées en accord avec les instructions du manufacturier.
ATTENTION: Ce foyer n'a pas été mis à l'essai avec un ensemble de bûches décoratives à gaz non ventilé. Pour réduire les risques de feu ou de blessures, ne pas installer d'ensemble de bûches décoratives à gaz non ventilé dans ce foyer.
Cet appareil 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 (USA).

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS / DÉGAGEMENTS MINIMUM AUX MATÉRIAUX COMBUSTIBLES

Sidewall / Mur latéral [1] :	21 in (533 mm)	Side facing / Parement latéral [2] :	0 in (0 mm)
Combustible shelf (from floor) / Tablette combustible (du sol) [2][3] :	48 in (1219 mm)	Ceiling (from floor) / Plafond (à partir du plancher) [3] :	84 in. (2134 mm)

[1] From door opening. / À partir de l'ouverture de la porte.
[2] Subject to a maximum protrusion (consult owner's manual). / Sujet à une saillie maximale (consultez le manuel d'instructions).
[3] If the fireplace is elevated, the clearances to the combustible shelf and ceiling must be increased by an equivalent value. / Si le foyer est surélevé, les dégagements à la tablette combustible et au plafond doivent être augmentés d'une valeur équivalente.

Blower / Ventilateur: (115V, 0.8A, 60Hz)

PROCEDURE TO FOLLOW IN CASE OF RUN-AWAY FIRE	EN CAS D'INCENDIE DE CHEMINÉE
1) Keep doors closed 2) Close all combustion air controls	1) Maintenir les portes fermées 2) Fermer tous les dispositifs d'admission d'air

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cord wood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.U. (EPA). Conforme aux normes d'émission de particules de 2020 avec bûche de bois.
Weighted average emission rate / Moyenne pondérée des émissions: 0.99 g/h
When tested in accordance with / Lorsque testé selon: CSA B415.1-10
Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1(ii)).

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.
- THIS FIREPLACE NEEDS AIR FOR GOOD OPERATION.
- WHEN A FIRE IS BURNING IN THE FIREPLACE, FRESH AIR MUST BE SUPPLIED TO THE ROOM WHERE THE FIREPLACE IS LOCATED, FAILURE TO PROVIDE THIS MAY STARVE OTHER FUEL BURNING APPLIANCE FROM AN ADEQUATE AIR SUPPLY.

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.
- CE FOYER A BESOIN D'AIR POUR SON BON FONCTIONNEMENT.
- LORSQUE LE FOYER BRÛLE, UN APPORT D'AIR SUPPLÉMENTAIRE DOIT ÊTRE PRÉVU DANS LA PIÈCE, UN MANQUE D'AIR D'APPOINT POURRAIT PRIVER LES AUTRES APPAREILS DE COMBUSTION D'UNE ALIMENTATION D'AIR ADÉQUATE.

Made in La Guadeloupe (Qc), Canada
21/10/2019 (# test)

EMPIRE COMFORT SYSTEMS
SINCE 1932

Fabriqué à La Guadeloupe (Qc), Canada
21/10/2019 (# test)
27820

CERTIFICATION PLATE EVEREST II

Intertek

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 CSA B415.1-10
Certified to/Certifié selon ASTM E2515-11 (R2017)
Certified to/Certifié selon ASTM E3053-17
Control number: 4002461

LISTED FACTORY BUILT FIREPLACE
FOYER PRÉFABRIQUÉ HOMOLOGUÉ

MODEL / MODÈLE:
EVEREST II

FOR USE WITH WOOD ONLY — POUR UTILISATION AVEC BOIS SEULEMENT

CONTACT LOCAL BUILDING OFFICIALS ABOUT THE RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.
COMMUNIQUER AVEC LES AUTORITÉS LOCALES DU BÂTIMENT ET DE LA PRÉVENTION DES INCENDIES AU SUJET DES RESTRICTIONS D'INSTALLATION DANS VOTRE SECTEUR.

Serial Number / No. de Série: 1

INSTALL AND USE ONLY IN ACCORDANCE WITH SBI STOVE BUILDER INTERNATIONAL INSTALLATION AND OPERATION INSTRUCTIONS.
L'INSTALLATION ET L'OPERATION DOIT SE FAIRE SELON LES INSTRUCTIONS D'INSTALLATION ET D'UTILISATION DE SBI FABRICANT DE POÊLES IN. :RNATIONAL.

PREVENT HOUSE FIRES

- Use solid fuel only.

For safety, keep screen doors or glass doors tightly closed.

- Do not overfire unit.
- Replace with only ceramic glass 4mm thick.
- Use only with listed factory-built chimney as per manufacturer's instructions.
- A non-combustible hearth extension must be installed in front of unit extending 16 in (406 mm) in front and 8 in (203 mm) on each side of door opening.
-
- Do not use a fireplace insert or other products not specified for use with this product.

Areas of the fireplace incorporating warm or cold air ducts shall be enclosed in accordance with manufacturer's instructions.
WARNING: This fireplace has not been tested with an unvented gas log set. To reduce risk of fire or injury, do not install an unvented gas log set into fireplace.
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

- Utiliser du combustible à base de bois seulement.

Pour votre sécurité, maintenir les portes de grillages ou de vitres fermées de façon étanche.

- Ne pas surchauffer le foyer.
- Remplacer la vitre seulement avec un verre céramique de 4mm d'épaisseur.
- Pour utilisation seulement avec une cheminée préfabriquée homologuée tel que spécifié selon les instructions du manufacturier.
- Une protection de plancher incombustible doit être installée à l'avant du foyer excédant de 16 po (406 mm) à l'avant et 8 po (203 mm) de chaque côté de l'ouverture de porte.
-
- Ne pas utiliser de foyer encastrable ou autres produits qui ne sont pas conçus précisément pour être utilisés avec le présent foyer.

Les zones du foyer intégrant des conduits d'air chaud ou froid doivent être installées en accord avec les instructions du manufacturier.
ATTENTION: Ce foyer n'a pas été mis à l'essai avec un ensemble de bûches décoratives à gaz non ventilé. Pour réduire les risques de feu ou de blessures, ne pas installer d'ensemble de bûches décoratives à gaz non ventilé dans ce foyer.
Cet appareil 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 (USA).

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS / DÉGAGEMENTS MINIMUM AUX MATÉRIAUX COMBUSTIBLES

Sidewall / Mur latéral [1] :	21 In (533 mm)	Side facing / Parement latéral [2] :	0 In (0 mm)
Combustible shelf (from floor) / Tablette combustible (du sol) [2][3] :	48 In (1219 mm)	Ceiling (from floor) / Plafond (à partir du plancher) [3] :	84 in. (2134 mm)

[1] From door opening. / À partir de l'ouverture de la porte.
[2] Subject to a maximum protrusion (consult owner's manual). / Sujet à une saillie maximale (consultez le manuel d'instructions).
[3] If the fireplace is elevated, the clearances to the combustible shelf and ceiling must be increased by an equivalent value. / Si le foyer est surélevé, les dégagements à la tablette combustible et au plafond doivent être augmentés d'une valeur équivalente.

Blower / Ventilateur: (115V, 0.8A, 60Hz)

PROCEDURE TO FOLLOW IN CASE OF RUN-AWAY FIRE	EN CAS D'INCENDIE DE CHEMINÉE
1) Keep doors closed	1) Maintenir les portes fermées
2) Close all combustion air controls	2) Fermer tous les dispositifs d'admission d'air

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cord wood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.U. (EPA). Conforme aux normes d'émission de particules de 2020 avec bûche de bois.
Weighted average emission rate / Moyenne pondérée des émissions: 0.99 g/h
When tested in accordance with / Lorsque testé selon: CSA B415.1-10
Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1(ii)).

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.
- THIS FIREPLACE NEEDS AIR FOR GOOD OPERATION.
- WHEN A FIRE IS BURNING IN THE FIREPLACE, FRESH AIR MUST BE SUPPLIED TO THE ROOM WHERE THE FIREPLACE IS LOCATED, FAILURE TO PROVIDE THIS MAY STARVE OTHER FUEL BURNING APPLIANCE FROM AN ADEQUATE AIR SUPPLY.

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.
- CE FOYER A BESOIN D'AIR POUR SON BON FONCTIONNEMENT.
- LORSQUE LE FOYER BRÛLE, UN APPORT D'AIR SUPPLÉMENTAIRE DOIT ÊTRE PRÉVU DANS LA PIÈCE, UN MANQUE D'AIR D'APPOINT POURRAIT PRIVER LES AUTRES APPAREILS DE COMBUSTION D'UNE ALIMENTATION D'AIR ADÉQUATE.

Made in La Guadeloupe (Qc), Canada
21/10/2019 (# test)

SBI
Fabricant de poêles international
Stove Builder International

Fabriqué à La Guadeloupe (Qc), Canada
21/10/2019 (# test)
27819

THANK YOU FOR CHOOSING THIS WOOD FIREPLACE.

If this fireplace is not installed properly, combustible materials near it may overheat and catch fire.

To reduce the risk of fire, follow the installation instructions in this manual.

The following pages provide general advice on wood heating, detailed instructions for safe and effective installation, and guidance on how to get the best performance from this fireplace.

It is highly recommended that this wood burning hearth product be installed and serviced by professionals who are certified by NFI (National Fireplace Institute®) or CSIA (Chimney Safety Institude of America) in the United States or in Canada by WETT (Wood Energy Technology Transfer) or in Quebec by APC (Association des Professionnels du Chauffage).

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

A building permit might be required for the installation of this fireplace and the chimney that it is connected to. It is also recommended to inform your home insurance company.

Please read this entire manual before installing and using this fireplace.

A primary alternative heat source should be available in the home. This heating unit may serve as a supplementary heat source. The manufacturer cannot be responsible for additional heating costs associated with the use of an alternative heat source.

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PART A - OPERATION AND MAINTENANCE

1. Safety Information

- This fireplace has been tested for use with an open door in conjunction with a fire screen, sold separately. The door may be opened, or fire screen removed only during lighting procedures or reloading. Always close the door or put back on the fire screen after ignition. Do not leave the fireplace unattended when the door is opened with or without a fire screen.

- **WARNING : OPERATE ONLY WITH THE DOOR FULLY CLOSED OR FULLY OPEN WITH THE FIRE SCREEN IN PLACE. IF THE DOOR IS LEFT PARTLY OPEN, GAS AND FLAME MAY BE DRAWN OUT OF THE OPENING, CREATING RISKS FROM BOTH FIRE AND SMOKE.**

- **HOT WHILE IN OPERATION, KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. GLOVES MAY BE NEEDED FOR FIREPLACE OPERATION.**

- Using a fireplace with cracked or broken components, such as glass, firebricks or baffle may produce an unsafe condition and may damage the fireplace.

- **NEVER USE GASOLINE, LANTERN FUEL (NAPHTHA), FUEL OIL, MOTOR OIL, KEROSENE, CHARCOAL LIGHTER FLUID, OR SIMILAR LIQUIDS OR AEROSOLS TO START A FIRE IN THIS FIREPLACE. KEEP ALL SUCH LIQUIDS OR AEROSOLS WELL AWAY FROM THE FIREPLACE WHILE IT IS IN USE.**

- Do not store fuel within heater minimum installation clearances.

- Burn only seasoned natural firewood.

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

- Do not obstruct air intlets. This fireplace needs air for its good operation.

- Do not block the hot air vents to the fireplace as this will cause the fireplace to overheat.

- A smoke detector, a carbon monoxide detector and a fire extinguisher should be installed in the house. Location of detectors should be chosen wisely to avoid false alarm when reloading the appliance. The location of the fire extinguisher should be known by all family members.

- Do not use makeshift materials or make any compromises when installing this fireplace.



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/

2. General Information

2.1 Performances

Values are as measured per test method except for maximum heat output.

Models	Everest II, HE325, St. Clair 3000, HE300 II	
Fuel Type	Dry Cordwood	
Combustion Technology	Non-Catalytic	
Maximum heat output (dry cordwood)[1]	80,000 BTU/h (23.5 kW)	
Overall heat output rate (min. to max.)[1] [2]	18,000 BTU/h to 49,600 BTU/h (5.28 kW to 14.5 kW)	
Average overall efficiency[2] Dry cordwood	66 % (HHV)[3]	71 % (LHV)[4]
Optimum efficiency[5]	72 %	
Average particulate emissions rate[6]	0.99 g/h (EPA / CSA B415.1-10)[7]	
Average CO[8]	50.1 g/h	

Specifications

Flue outlet diameter	6" (150 mm)
Type of chimney	CAN/ULC S629, UL 103 HT
Particulate emission standard	EPA / CSA B415.1-10[7]
USA Standard (Safety)	UL 127
Canada Standard (Safety)	ULC-S610

[1] The maximum heat output (dry cordwood) is based on a loading density varying between 15 lb/ft^3 and 20 lb/ft^3. Other performances are based on a fuel load prescribed by the standard. The specified loading density varies between 7 lb/ft^3 and 12 lb/ft^3. The moisture content is between 19% and 25%.

[2] As measured per CSA B415.1-10 stack loss method.

[3] Higher Heating Value of the fuel.

[4] Lower Heating Value of the fuel.

[5] Optimum overall efficiency at a specific burn rate (LHV).

[6] This appliance is officially tested and certified by an independent agency.

[7] Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1(ii) and ASTM E3053-17 (ALT-125)

[8] Carbon Monoxide.

2.2 Zone Heating

This fireplace 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, a family room or an addition that lacks another heat source.

Houses of moderate size and relatively new construction can be heated with a properly sized and located wood fireplace. Whole house zone heating works best when the fireplace is in the part of the house where the family spends most of its time. This is normally the main living area where the kitchen, dining and living rooms are located.

Locating the fireplace in this area will give the maximum benefit of the heat it produces and will achieve the highest possible heating efficiency and comfort. The space where the most time is spent will be warmest, while bedrooms and basement (if there is one) will stay cooler. In this way, less wood is burned than with other forms of heating.

The success of zone heating will depend on several factors, including the correct sizing and location of the fireplace, the size, layout and age of the home and the climate zone. Three-season vacation homes can usually be heated with smaller fireplaces than houses that are heated all winter.

3. Fuel

Good firewood has been cut to the correct length for the fireplace, split to a range of sizes and stacked in the open until its moisture content is down to 15% to 20%.

DO NOT BURN:

- **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 PARTICLEBOARD. THE PROHIBITION AGAINST BURNING THESE MATERIALS DOES NOT PROHIBIT THE USE OF FIRE STARTERS MADE FROM PAPER, CARDBOARD, SAW DUST, WAX AND SIMILAR SUBSTANCES FOR THE PURPOSE OF STARTING A FIRE IN AN AFFECTED WOOD HEATER.**

BURNING THESE MATERIALS MAY RESULT IN RELEASE OF TOXIC FUMES OR RENDER THE HEATER INEFFECTIVE AND CAUSE SMOKE.

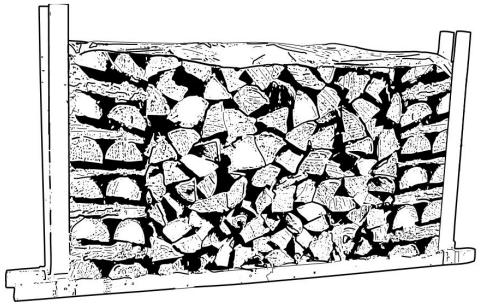
3.1 Tree Species

The tree species the firewood is produced from is less important than its moisture content. Softer woods make good fuel for mild weather in spring and fall because they light quickly and produce less heat. Softwoods are not as dense as hardwoods so a given volume of wood contains less energy. Using softwoods avoids overheating the house, which can be a common problem with wood heating in moderate weather. Harder woods are best for colder winter weather when more heat and longer burn cycles are desirable.

3.2 Drying Time

Firewood that is not dry enough to burn is the cause of most complaints about wood appliances. Continually burning green or unseasoned wood produces more creosote and involves lack of heat and dirty glass door. Firewood with a moisture content between 15% and 20% will allow the fireplace to produce its highest possible efficiency.

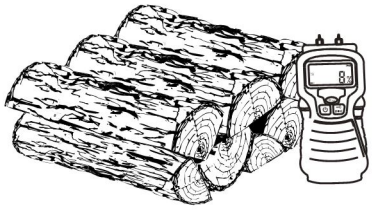
Here are some facts to consider in estimating drying time:



- Firewood bought from a dealer is rarely dry enough to burn, so it is advisable to buy the wood in spring and dry it yourself;
- Split pieces dry more quickly than unsplit rounds;
- Softwoods like pine, spruce, poplar, and aspen take less time to dry than hardwoods. they can be dry enough to burn after being stacked to air dry only for the summer months;
- Hardwoods like oak, maple and ash can take one, or even two years to dry fully, especially if the pieces are big;
- Firewood dries more quickly when stacked outside in a location exposed to sun and wind; it takes much longer to dry when stacked in a wood shed;

Use these guidelines to find out if the firewood is dry enough to burn:

- Cracks form at the ends of logs as they dry;
- The wood turns from white or cream colored to grey or yellow;
- Two pieces of wood struck together sounds hollow;
- Dry wood is much lighter in weight than wet wood,
- The face of a fresh cut feels warm and dry;



4. Operating the Fireplace

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.

4.1 Fire Screen

This fireplace has been tested for use with an open door in conjunction with a fire screen, sold separately. The fire screen must be properly secured on the fireplace to avoid any risk of sparks damaging the flooring. When the fire screen is in use, do not leave the fireplace unattended to respond promptly in the event of smoke spillage into the room.

4.2 Blower

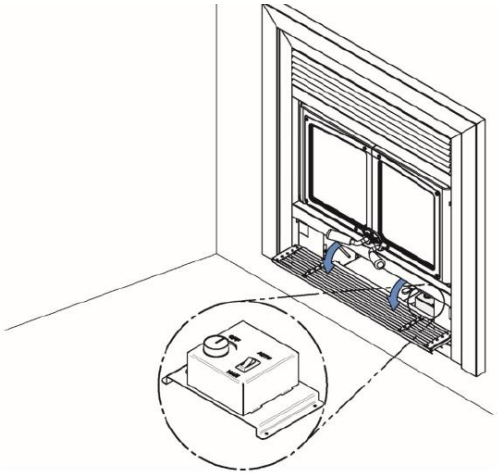


Figure 1: Blower location

A blower is already installed in the fireplace. It is located behind the faceplace, at the bottom of the fireplace. Its function is to increase airflow around the fireplace air jacket and improve hot air circulation in the room. When used regularly, the blower can provide a small increase in efficiency, up to 2%. However, the use of a blower should not be used as a way to gain more output from a fireplace that is undersized for the space it is intended to heat.

5. Burning Wood Efficiently

5.1 First Use

Two things happen when burning the first few fires; the paint cures and the internal components are conditioned. As the paint cures, some of the chemicals vaporize. The vapors are not poisonous, but they smell bad. Fresh paint fumes can also trigger false alarms in smoke detectors. When lighting the heater for the first few times, it may be wise to open doors and windows to ventilate the house.

5.2 Lighting Fires

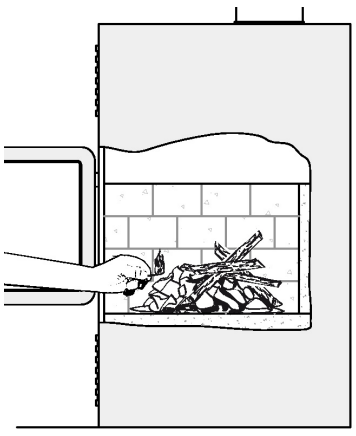
The goal should be to have a hot fire burning, quickly. A fire that ignites fast produces less smoke and deposits less creosote in the chimney.

Never use gasoline, gasoline-type lantern fuel (naphtha), fuel oil, motor oil, kerosene, charcoal lighter fluid, or similar liquids or aerosols to start or 'freshen up' a fire in this wood fireplace. Keep all such liquids well away from the fireplace while it is in use.

Here are three popular and effective ways to ignite wood fires.

5.2.1 Conventional Method

The conventional method to build a wood fire is to crumple 5 to 10 sheets of newspaper and place them in the firebox and hold them in place with ten pieces of kindling wood. The kindling should be placed on and behind the newspaper.



Then add two or three small pieces of firewood. Open the air intake control completely and ignite the newspaper. Leave the door slightly ajar.Once the fire has ignited, the door can be closed with the air control still fully open. When the kindling is almost completely burned, standard firewood pieces can be added.

5.2.2 The Top Down Method

The down fire method has two advantages over the traditional method: first, the fire does not collapse on itself, and it is not necessary to add wood gradually since the combustion chamber is full before the fire is lit. This method is the opposite of the conventional method and only works properly if well-seasoned wood is used.

Place three or four small, split, dry logs in the firebox. Arrange the kindling wood on the logs in two layers at right angles and place a dozen finely split kindling on the second row. Use four or five sheets of paper tied together and put them on top and around the kindling. Open the air intake control completely, ignite the paper and close the door.

5.2.3 Two Parallel Logs Method

Two spit logs are placed in the firebox with a few sheets of twisted newspapers in between the logs. Fine kindling is added across the two logs and some larger kindling across those, log cabin style. Newspaper is lit.

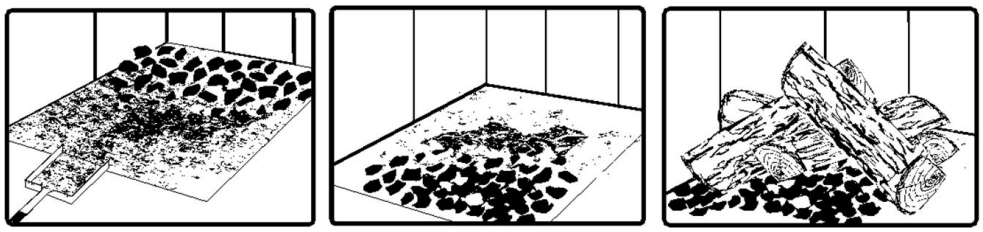
5.3 Combustion Cycles

Wood burns best in cycles. A cycle starts when a new load of wood is ignited by hot coals and ends when that load has been consumed down to a bed of charcoal about the same size as it was when the wood was loaded.

Trying to produce a steady heat output by placing a single log on the fire at regular intervals is not recommended. Always place at least three, and preferably more pieces on the fire at a time so that the heat radiated from one piece helps to ignite the pieces next to it. Each load of wood should provide several hours of heating. The size of each load may vary depending on the amount of heat required.

5.4 Rekindling a Fire

When the temperature of the room is lower and all that remains is embers, it is time to reload. Remove excess ash from the front of the firebox and bring the ashes forward. Place a new load of wood on, and at the back of the embers. Open the air control completely and close the door.



Raking the coals is useful for two reasons. First, it brings them near where most of the combustion air enters the firebox. This will ignite the new load quickly. Secondly, the charcoal will not be smothered by the new load of wood. When the embers are simply spread inside the combustion chamber, the new load smoulder for a long time before igniting. Close the air control only when the firebox is full of bright turbulent flames, the wood is charred, and its edges are glowing.

The heater should not be left unattended during ignition and the fire should not burn at full intensity for more than a few minutes.

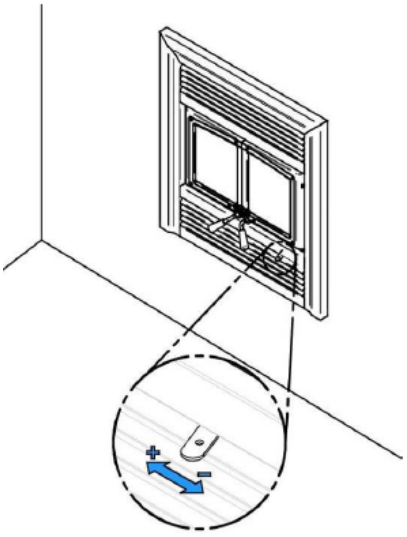
5.5 Removing Ashes

Ash should be removed from the firebox every two to three days of full time heating. Ash should not accumulate excessively in the firebox since it will affect the proper operation of the appliance.The best time to remove ash is in the morning, after an overnight fire when the fireplace is relatively cold, but there is still a little chimney draft to draw the ash dust into the fireplace and prevent going out into the room.

Ashes almost always contain live embers that can stay hot for days and which release carbon monoxide gas. *Ashes should be placed in a tightly covered metal container. The container must be placed on a non-combustible floor or on the ground well away from all combustible materials. If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be kept in a closed metal container until they are completely cooled. No other waste should be placed in this container.*

5.6 Air Intake Control

Once the firewood, firebox and chimney are hot, air intake can be reduced to achieve a steady burn.



As the air intake is reduced, the burn rate decreases. This has the effect of distributing the thermal energy of the fuel over a longer period of time. In addition, the flow rate of exhaust through the appliance and flue pipe slows down, which increases the duration of the energy transfer of the exhaust gases. As the air intake is reduced, the flame slows down.

If the flames diminish to the point of disappearing, the air intake has been reduced too early in the combustion cycle or the wood used is too wet. If the wood is dry and the air control is used properly, the flames should decrease, but remain bright and stable.

On the other hand, too much air can make the fire uncontrollable, creating very high temperatures in the unit as well as in the chimney and seriously damaging them. A reddish glow on the unit and on the chimney components indicates overheating. Excessive temperatures can cause a chimney fire.

5.7 Fire Types

Using the air intake control is not the only way to match the fireplace heat output to the desired temperature in the house. A house will need far less heating in October than in January to maintain a comfortable temperature. Filling the firebox full in fall weather will overheat the space. Otherwise, the combustion rate will have to be reduced to a minimum and the fire will be smoky and inefficient. Here are some suggestions for building fires suitable for different heating needs.

5.7.1 Flash Fire

To build a small fire that will produce a low heat output, use small pieces of firewood and load them crisscross in the firebox. The pieces should only be 3" (76 mm) to 4" (102 mm) in diameter. After raking the coals, lay two pieces parallel to each other diagonally in the firebox and lay two more across them in the other direction. Open the air control fully and only reduce the air after the wood is fully flaming.

This kind of fire is good for mild weather and should provide enough heat for up to four hours. Small fires like this are a good time to use softer wood species and avoid overheating the house.

5.7.2 Low and Long Output Fires

For a fire that will last up to eight hours but will not produce intense heat, use soft wood and place the logs compactly in the firebox. Before reducing the air intake, the load will have to burn at full heat for long enough for charring the surface of the logs. The flame must be bright before letting the fire burn by itself.

5.7.3 High Output Fires

When heating needs are high during cold weather, the fire should burn steadily and brightly. This is the time to use larger pieces of hardwood. Place the biggest pieces at the back of the firebox and place the rest of the pieces compactly. A densely built fire like this will produce the longest combustion this fireplace is capable of. Special attention must be paid when building fires like this since if the air intake is reduced too quickly, the fire could smoulder. The wood must be flaming brightly before leaving the fire to burn.

5.7.4 Carbon Monoxide

When there is no more flame in the firebox and there are still some unburned logs, check outside if there is smoke coming out of the chimney. If this is the case, it means that the fire is out of air to burn properly. In this situation, the level of CO increases and it is important to react. Open the door slightly and move the logs with a poker. Create a passage for the air below by making a trench with the ember bed. Add small pieces of wood to restart the combustion.

6. Maintenance

This heater will give many years of reliable service if used and maintained properly. Internal components of the firebox such as firebricks or refractory panels, baffle and air tubes will wear over time. Defective parts should always be replaced with original parts. To avoid premature deterioration, follow the lighting and reloading procedures in section «5. Burning Wood Efficiently» and also avoid letting the heater run with the air intake fully open for entire burn cycles.

6.1 Fireplace

6.1.1 Refractory Material and Baffle

Inspect the firebricks or the refractory panels and the baffle for damage periodically and replace anything that is cracked or broken.

Operation of the heater with a cracked or missing baffle may cause unsafe temperatures and hazardous conditions and will void the warranty.

6.2 Glass Door

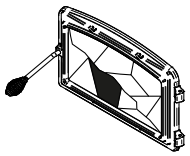
6.2.1 Cleaning

Under normal conditions, the door glass should stay relatively clear. If the firewood is dry enough and the operating instructions in this manual are followed, a whitish, dusty deposit will form on the inner surface of the glass after a week or so of use. This is normal and can be easily removed when the heater is cold by wiping with a damp cloth or paper towel and then drying.

When the fireplace runs at a low combustion rate, light brown stains may form, especially in the lower corners of the glass. This indicates that the fire has been smoky and some of the smoke has condensed on the glass. It also indicates incomplete combustion of the wood, which also means more smoke emissions and faster formation of creosote in the chimney.

The deposits that form on the glass are the best indication of the fuel quality and success in properly using the fireplace. These stains can be cleaned with a special wood fireplace glass cleaner. **Do not use abrasive products to clean the glass.**

The goal should be having a clear glass with no brown stains. If brown stains appear regularly on the glass, something about the fuel or the operating procedure needs to be changed. When brown streaks are coming from the edge of the glass, it is time to replace the gasket around the glass. Always replace the gasket with a genuine one.



Do not clean the glass when the fireplace is hot.

Do not abuse the glass door by striking or slamming shut.

Do not use the fireplace if the glass is broken.

6.2.2 Replacement

The glass used is a ceramic glass, 5/32" (4 mm) thick, 24 ⅜" x 12 ⅝" (620 mm x 321 mm), tested to reach temperatures up to 1400° F. If the glass breaks, it must be replaced with one having the same specification. **Tempered glass or ordinary glass will not withstand the high temperatures of this unit.**

To remove or replace the glass:

1. Remove the door from its hinges and lay it on a soft, flat surface.
2. Remove the gasket, the screws, the retainers and the metal frames.
3. Remove the glass. If it is damaged install a new one in place. The replacement glass must have a gasket all around (see procedure below).
4. Reinstall the glass, being careful to centre the glass in the door and not to over-tightening the retaining screw.

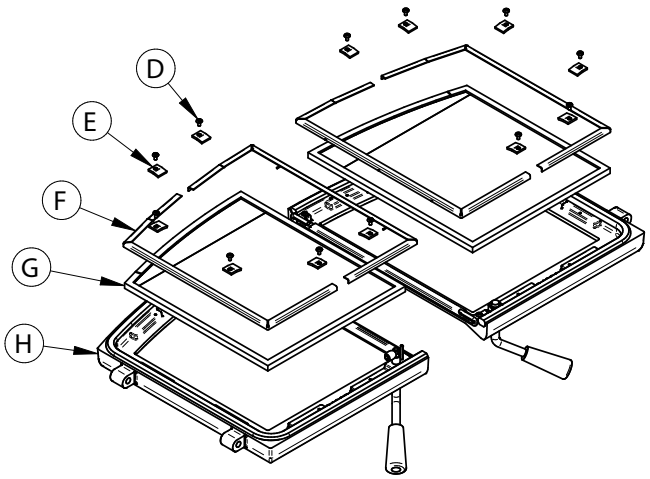
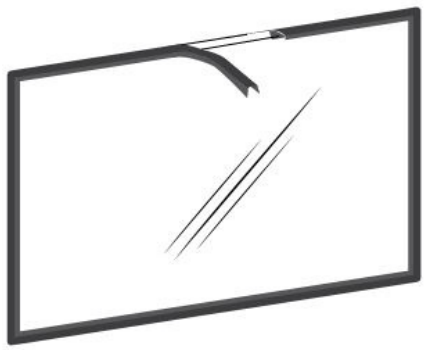


Figure 2: Double door

The two main causes of broken door glass are uneven placement in the door and over-tightening the retaining screws.

6.2.3 Gasket

The glass gasket is flat, adhesive-backed, woven fibreglass. The gasket must be centred on the edge of the glass.



1. Follow the first three steps of the previous section to remove the glass.
2. Remove the old gasket and clean the glass thoroughly.
3. Peel back a section of the paper covering the adhesive and place the gasket on a table with the adhesive side up.
4. Stick the end of the gasket to the middle of one edge, then press the edge of the glass down onto the gasket, taking care that it is perfectly centred on the gasket.
5. Peel off more of the backing and rotate the glass. The gasket must not be stretched during installation.
6. Cut the gasket to the required length and pinch the gasket onto the glass in a U shape, all around the glass.

6.3 Door

6.3.1 Gasket

It is important to replace the gasket with another having the same diameter and density to maintain a good seal.

1. Remove the door and place it face-down on something soft like a cushion of rags or a piece of carpet.
2. Remove the old gasket from the door. Use a screwdriver to scrape the old gasket adhesive from the door gasket groove.
3. Apply a bead of approximately 3/16" (5 mm) of high temperature silicone in the door gasket groove. Starting from the middle, hinges side, press the gasket into the groove. The gasket must not be stretched during installation.
4. Leave about ½" (10 mm) long of the gasket when cutting and press the end into the groove. Tuck any loose fibers under the gasket and into the silicone.
5. Close the door. Do not use the fireplace for 24 hours.

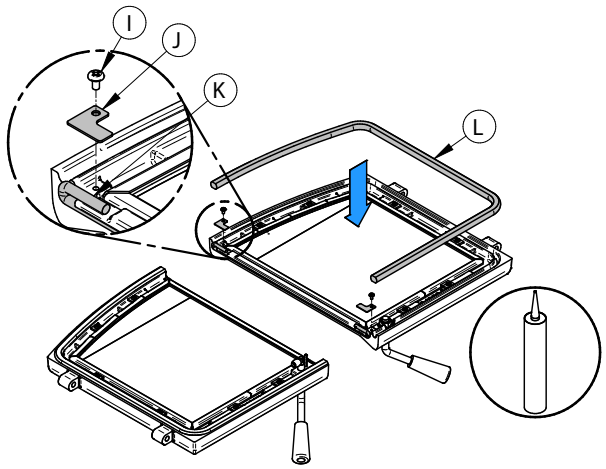


Figure 3: Double door

6.4 Exhaust System

Wood smoke can condense inside the chimney, forming a inflammable deposit called creosote. If creosote builds up in the system, it can ignite when a hot fire is burned in the fireplace. A very hot fire can progress to the top of the chimney. Severe chimney fires can damage even the best chimneys. Smouldering, smoky fires can quickly cause a thick layer of creosote to form. When the fireplace is operated properly, the exhaust from the chimney is mostly clear and creosote builds up more slowly.

«Creosote - Formation and Need to Removal

When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cooler chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited this creosote makes an extremely hot fire.

The chimney connector and chimney should be inspected at least once every two months during the heating season to determine if a creosote buildup has occurred.

If a significant layer of creosote has accumulated (1/8" [3mm] or more) it should be removed to reduce the risk of a chimney fire.»

6.4.1 Sweeping the Chimney

The chimney should be checked regularly for creosote build-up. Inspection and cleaning of the chimney can be facilitated by removing the baffle.



6.4.2 Cleaning Frequency

It is not possible to predict how much or how quickly creosote will form in the chimney. It is important, therefore, to check the build-up in the chimney monthly until the rate of creosote formation is determined. Even if creosote forms slowly in the system, the chimney should be cleaned and inspected at least once each year.

Establish a routine for the fuel, wood burner and firing technique. Check daily for creosote build-up until experience shows how often you need to clean to be safe. Be aware that the hotter the fire, the less creosote is deposited. Frequent cleaning may be necessary in mild weather even though less frequent cleaning may be enough in the coldest months. Contact your local municipal or provincial fire authority for information on how to handle a chimney fire. Have a clearly understood plan to handle a chimney fire.

6.4.3 Chimney Fire

Regular chimney maintenance and inspection can prevent chimney fires. If you have a chimney fire, follow these steps:

1. Close the fireplace door and the air intake control;
2. Alert the occupants of the house of the possible danger;
3. If you require assistance, alert the fire department;
4. If possible, use a dry chemical fire extinguisher, baking soda or sand to control the fire. *Do not use water* as it may cause a dangerous steam explosion.

Do not use the appliance again until the fireplace and its chimney have been inspected by a qualified chimney sweep or a fire department inspector.

PART B – INSTALLATION

Install the fireplace only as described in these instructions and using only components from the chimney manufacturers listed in table 3.

- Fireplace;
- Faceplate;
- Overlay;
- Refractory bricks or panels;
- Insulated chimney made by the manufacturers listed in table 3, with the corresponding specifications:
  - Chimney lengths;
  - Elbows (where necessary);
  - Associated components as per these installation instructions.

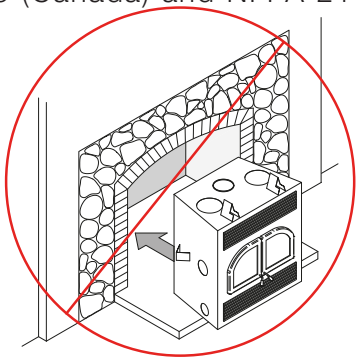
Additional Equipment (optional)

- Forced air distribution kit;
- Gravity air distribution kit;
- Fresh air kit.

7. Safety Information and Standards

7.1 Safety

- The fireplace and chimney must be in an enclosure up to the attic.
- This fireplace has not been tested with an unvented or vented gas log set.
- **CAUTION: DO NOT ATTEMPT TO MODIFY OR ALTER THE CONSTRUCTION OF THE FIREPLACE OR ITS COMPONENTS. ANY MODIFICATION OR ALTERATION OF CONSTRUCTION MAY VOID THE WARRANTY, LISTINGS AND APPROVALS OF THIS SYSTEM. IN THAT CASE, STOVE BUILDER INTERNATIONAL (SBI) WILL NOT BE RESPONSIBLE FOR DAMAGES. INSTALL THE FIREPLACE ONLY AS DESCRIBED IN THESE INSTRUCTIONS.**
- Mixing of appliance components from different sources or modifying components is prohibited and will void the warranty. Any modification of the fireplace that has not been approved in writing by the testing authority is prohibited and violates CSA B365 (Canada) and NFPA 211 (USA) standards.



- The manufacturer grants no warranty, implied or stated, for the poor installation or lack of maintenance of the fireplace and assumes no responsibility of any consequential damages.
- This fireplace must always be used with the original andirons
- Do not use a fireplace insert and other products not specified for use with this fireplace.
- Do not install in a mobile home (Canada) or manufactured home (USA).
- Do not use materials other than those listed in the replacement parts section during installation as they may be safety hazards and a fire could result.

7.2 Standards

When installed and operated as described in these instructions, this wood fireplace is suitable for use 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 fireplace is not approved for use with a so-called "positive flue connection" to the clay tile of a masonry chimney.

8. Fireplace Installation



Before installing the fireplace, it is mandatory to install the standoffs on the top, sides and back of the fireplace.

8.1 Location

The best location for the fireplace should consider the location of windows, doors, and circulation in the room. There must be enough space in front of the fireplace for the hearth extension and mantel and on the sides or back for the different heat distribution system, for the fresh air intake and for the chimney. Ideally, the chimney must be able to pass through the house without the need to cut floor joists or roof trusses.

9. The Venting System

The venting system, acts as the engine that drives your wood heating system. Even the best fireplace will not function safely and efficiently as intended if it is not connected to a suitable chimney. The heat in the flue gases that pass from the fireplace into the chimney is not waste heat. This heat is what the chimney uses to make the draft that draws in combustion air, keeps smoke inside the fireplace and safely vents exhaust to outside. Heat in the flue gas can be seen as the fuel the chimney uses to make draft.

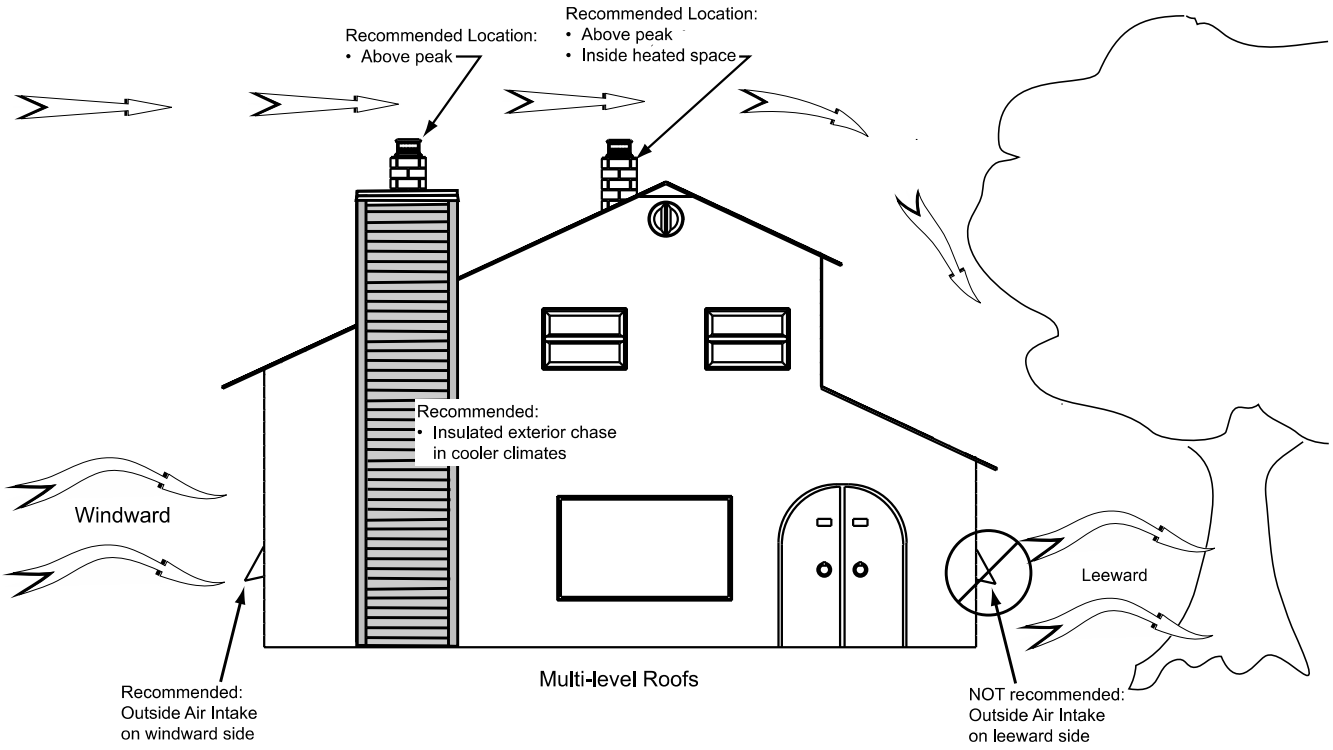
9.1 Location

The location of the chimney is crucial for the proper functioning of the appliance. The chimney should be installed within the house rather than up an outside wall and should rise straight up through the tallest part of the house. This installation benefits from being enclosed within the warm house environment, produce stronger draft, accumulate fewer creosote deposits and will be unaffected by cold temperatures or harsh winds. Outside chimneys will lead to cold back drafting when there is no fire in the fireplace, slow kindling of new fires, and smoke roll-out when the door is open for loading.

On the other hand, excessive draft will make the fire uncontrollable, creating very high temperatures in the unit as well as in the chimney and seriously damaging them. A reddish glow on the unit and on the chimney components indicates overheating. Excessive temperatures can cause a chimney fire.

9.2 Supply of Combustion Air

The safest and most reliable supply of combustion air for a fireplace is from the room in which it is installed. Room air is already preheated so it will not chill the fire, and its availability is not affected by wind pressures on the house. The only case in which the fireplace may not have adequate access to combustion air is if the operation of a powerful exhaust device (such as a kitchen range exhaust) causes the pressure in the house to become negative relative to outdoors.



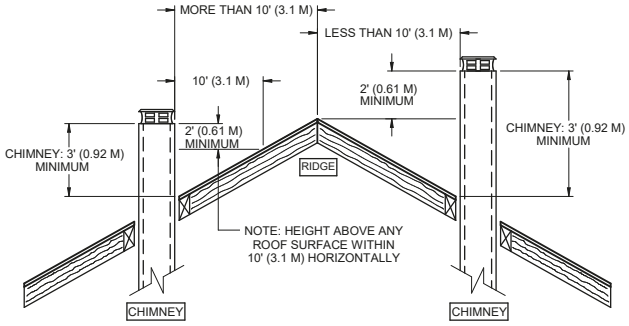
9.3 Installation

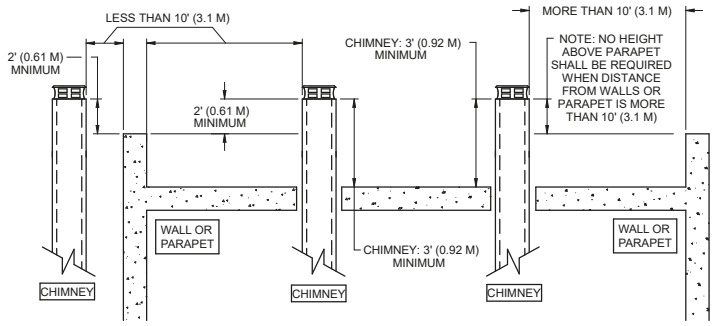
The chimney manufacturer's installation manual takes precedence over the following installation instructions. To ensure a safe installation, please refer to it. Some non-illustrated parts may be required.

9.3.1 General Advices

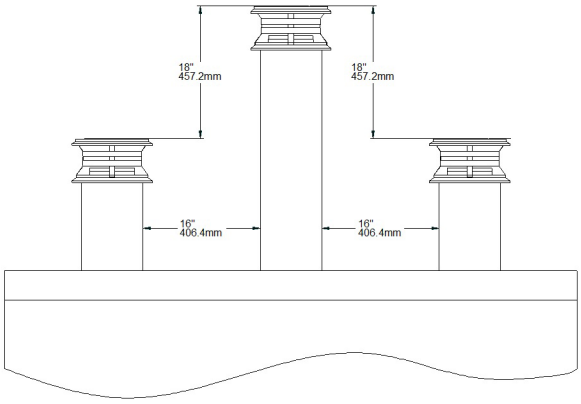
- This wood burning fireplace has optimum performance and efficiency when connected to a chimney with a 6" (150 mm) diameter flue, only the chimneys listed in the table can be used.
- To insure a good draft, it is recommended to have a length of 18" (457 mm) from the top of the unit to the first offset. However, starting using a 30° or 45° (Canada Only) elbow is also approved.
- **A CHIMNEY VENTING A FIREPLACE SHALL NOT VENT ANY OTHER APPLIANCE.**
- The minimum height of the chimney system is 15 feet (4.6 m) from the base of the appliance to the chimney cap. If only the minimum height of the chimney system is installed, the operating conditions must be optimal (interior chimney, minimum height of 18" (457 mm) before any deviation, etc.).

- The chimney must have at least one support. The maximum chimney length that should be supported by the fireplace is 9 feet (2.75 m) for 2" Solid Pack chimney (5 cm) and 12 feet (3.7 m) for 1" Solid Pack chimney.
- The chimney must extend at least 3 ft. (92 cm) above its point of contact with the roof and at least 2 ft. (61 cm) higher than any wall, roof or building within 10 ft. (3.1 m) of it. .



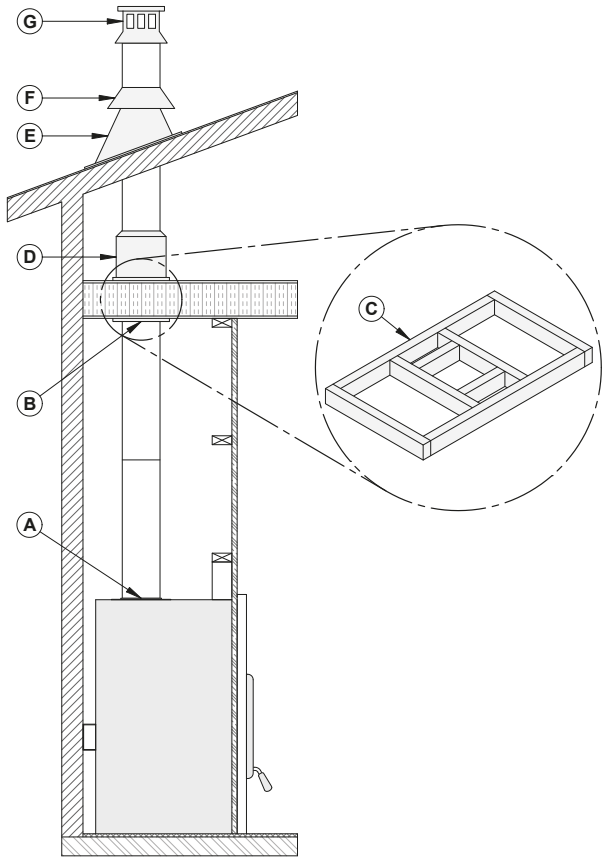


- Avoid deviations as much as possible, especially the sharp ones. Each deviation adds restriction to the system and can lead to draft problems.
- If the chimney extends higher than 5 ft. (1.5 m) above its point of contact with the roof, it must be secured using a roof brace.
- A rain cap must be installed on top of the chimney
- For installations where more than one chimney is located in the same non-chase or within the same area, their terminations must be separated by at least 16" (410 mm) horizontally, and 18" (460 mm) vertically. This separation is to prevent smoke migrating from one chimney to another.



- Cut and frame square holes in all floors, ceilings, and roof that the chimney will go through to provide a 2" (50 mm) minimum clearance between the chimney and any combustible materials. Do not fill this 2" space with insulation or any other combustible material.

9.3.2 Ceiling Supported Installation



A : Anchor plate

B: Ceiling support

C: Framing opening

D: Attic insulation shield

E: Roof flashing

F: Storm collar

G: Chimney cap

1. Cut and frame square openings **(C)** in the ceiling, floor and roof where the chimney will pass. A 2" clearance must be maintained between the chimney and any combustible materials. The 2" space must remain empty, without insulation or any other combustible material. The size of the floor and ceiling holes must be in accordance with the chimney manufacturer's instructions.

2. From underneath the ceiling, install a ceiling support **(B)** in each floor where the chimney will pass. In the attic, install an attic radiation shield from above **(D)**.

3. Install an anchor plate **(A)** and a first chimney section on the fireplace. Install the number of chimney sections needed, making sure to lock each section in place.

4. When the desired height of the chimney is reached, install a roof support (not illustrated).

5. Put the roof flashing **(E)** in place and seal the joint between the roof and the flashing with roof sealant. For sloping roofs, place the flashing under the upper shingles and on top of the lower shingles. Nail the flashing to the roof, using roofing nails.

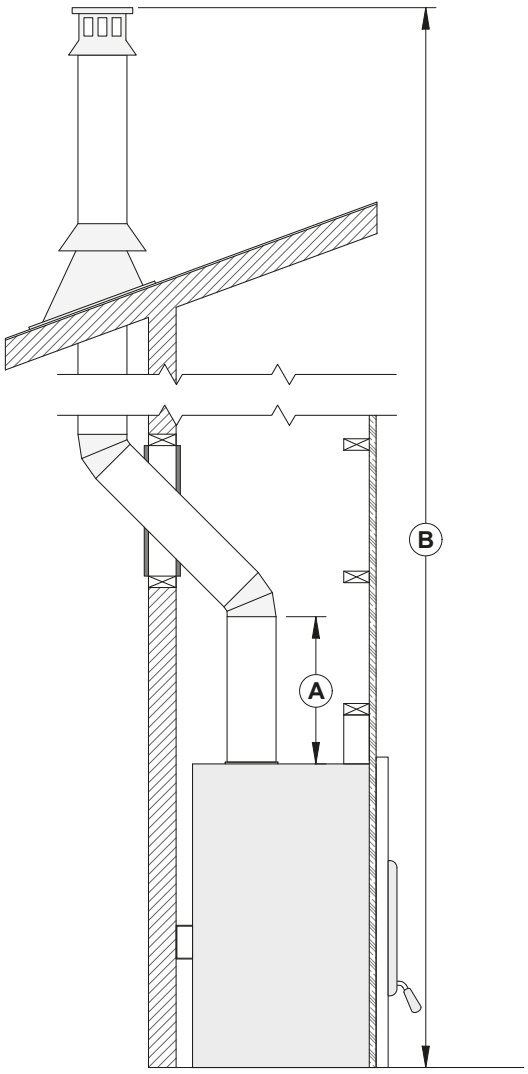
   When a ventilated roof flashing is installed, precautions are to be taken not to caulk or seal the ventilating openings.

6. Place the storm collar **(F)** on the roof flashing and and tighten it with the bolt. Seal the joint between the storm collar and the chimney, using silicone sealant.

7. Install the chimney cap **(G)**.

9.3.3 Offset Installation

To insure a good draft, it is recommended to have a length of 18" (457 mm) from the top of the unit to the first offset **(A)**. However, starting using a 30° or 45° (Canada only) elbow is also approved.



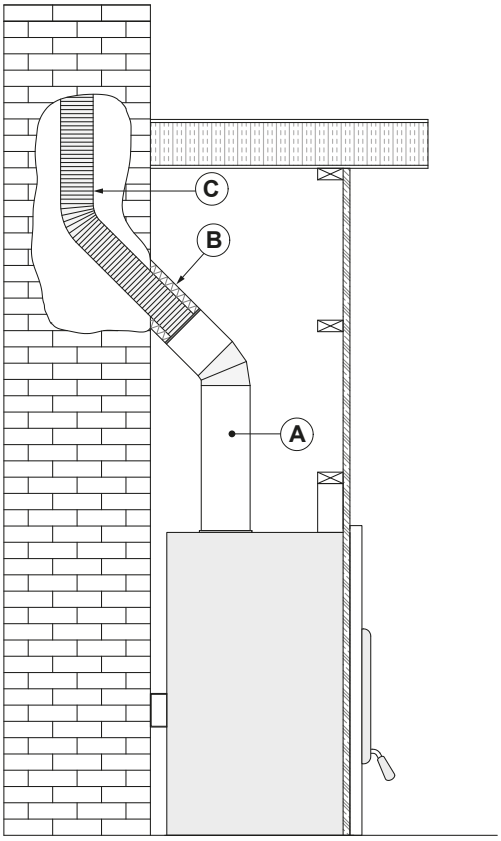
1. Follow the instructions for a ceiling supported installation until the first elbow.
2. Install and turn the elbow in the right direction. Attach to the chimney using three ½"(12 mm) metal screws.
3. Install the appropriate number of chimney sections to obtain the necessary deviation. Secure the chimney sections together with three ½" (12 mm) screws. If the offset section has two or more chimney sections, a bracket must be installed. If the chimney go through a wall, install a wall thimble.
4. Install another elbow to bring the chimney back in a vertical position.
5. Continue the installation following the instructions of the ceiling supported installation.

Table 1 : Minimum system height when using elbows

Chimney model	See table XX
Vertical Installation	15 ft (4,6 m)
Two (2) elbows	15 ft(4,6 m)
Four (4) elbows	17 ft (5,2 m)

9.3.4 Masonry Chimney Installation

The masonry chimney must meet the minimum requirements of the local building code or equivalent for a safe installation. Contact a building inspector to learn about the requirements in the area. Before starting the installation, the masonry chimney should be inspected for cracks, crumbling mortar, creosote layers, obstructions or other signs of deterioration. If signs of deterioration are noted, the chimney should be repaired and cleaned before installation.



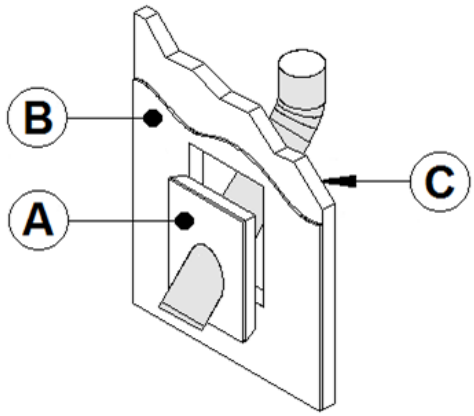
1. Position the fireplace in its location. Temporarily install the elbow or chimney section (A) on the top of the fireplace and, using a level, mark with an oval the location where the flue liner will enter the masonry chimney.
2. Mark where the flue will pass through the masonry chimney. Drill a hole in the masonry chimney to insert an insulated liner adapter (B)
3. Lower the liner (C) into the chimney to the level of the hole.
4. Slide an insulated 45° or 30° liner adapter and connect it to the liner.
5. Seal the opening around the liner with high temperature refractory cement
6. Then, follow the chimney manufacturer's instructions to connect the extended liner section to the special chimney connector.

The liner must extend at least 12" (30 cm) above the masonry chimney.

9.4 Angled Wall Pass-Thru Installation

When passing through a combustible wall with the chimney at a 30° or 45° angle (Canada only), an angled wall pass-thru must be installed. Follow the chimney manufacturer's installation instructions.

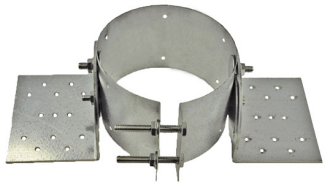
In cold climate locations, it is recommended to use the insulated wall pass-thru to maintain the home's thermal barrier.



A	Wall pass-thru
B	Interior wall
C	Exterior wall

9.5 Chimney Support Installation

9.5.1 Roof Support



The universal roof support can be used on

- a roof to support the chimney
- a floor, ceiling, or roof over an offset to support the chimney or
- as additional support

Always follow the manufacturer's instructions for the maximum chimney height that can be supported by the support.

9.5.2 Offset Support



This support is used above a chimney offset. When the offset of the chimney pass though a wall, this support can be installed on the wall to support the chimney.

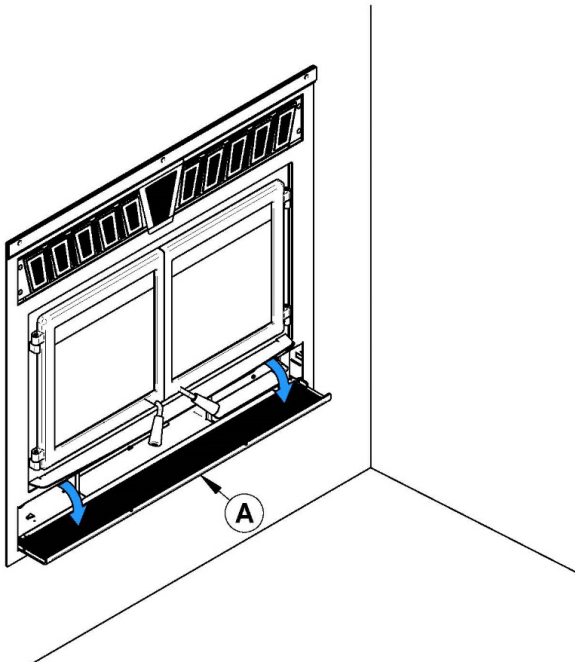
9.6 Approved Chimneys

Table 2 : Approved Chimneys

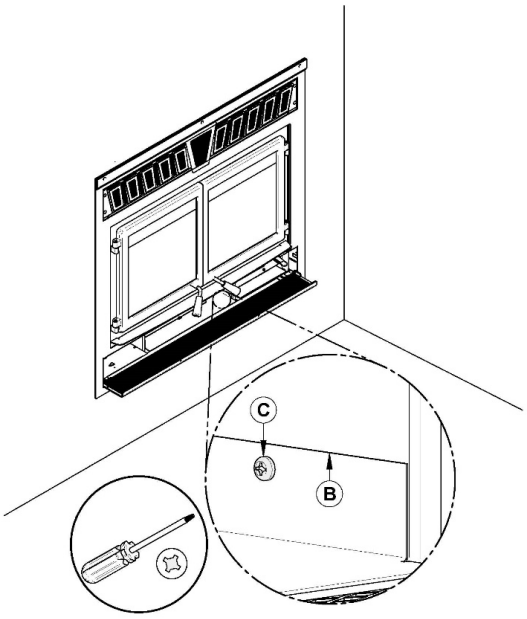
Chimney manufacturer	Model	Type	Diameter
Olympia Chimney SBI Division Venting	Ventis	1" Solid Pack	6" (15 cm)
SBI Division Venting	Nexvent	1" Solid Pack	6" (15 cm)
Olympia Chimney	Champion Chimney System	1" Solid Pack	6" (15 cm)
Rockford Chimney	Rock-Vent	1" Solid Pack	6" (15 cm)
Selkirk	Ultra-Temp (UT)	1" Solid Pack	6" (15 cm)
Selkirk	Super Pro (SPR)	1" Solid Pack	6" (15 cm)
Selkirk	Super Vent (JSC)	1" Solid Pack	6" (15 cm)
Selkirk	Hart & Cooley (TLC)	1" Solid Pack	6" (15 cm)
Selkirk	Sure-Temp (ST)	1" Solid Pack	6" (15 cm)
Selkirk	CF Sentinel (CF)	2" Solid Pack	6" (15 cm)
Selkirk	Super Pro 2100 (ALT)	2" Solid Pack	6" (15 cm)
Selkirk	Super Vent 2100 (JM)	2" Solid Pack	6" (15 cm)
Selkirk	UltimateOne	1" Solid Pack	6" (15 cm)
Security Chimney	ASHT	1" Solid Pack	6" (15 cm)
Security Chimney	S-2100	2" Solid Pack	6" (15 cm)
DuraVent	Dura Tech	1" Solid Pack	6" (15 cm)
DuraVent	Dura Tech Canada DTC	1" Solid Pack	6" (15 cm)
DuraVent	Dura Tech Premium	2" Solid Pack	6" (15 cm)
DuraVent	Dura Plus	AC Triple Wall	6" (15 cm)
ICC	Excel 2100	1" Solid Pack	6" (15 cm)
Metal Fab	Temp Guard	1" Solid Pack	6" (15 cm)
American Metal	HSS	AC Triple Wall	6" (15 cm)
American Metal	HS	AC Triple Wall	6" (15 cm)

APPENDIX 1: BLOWER MAINTENANCE OR REPLACEMENT

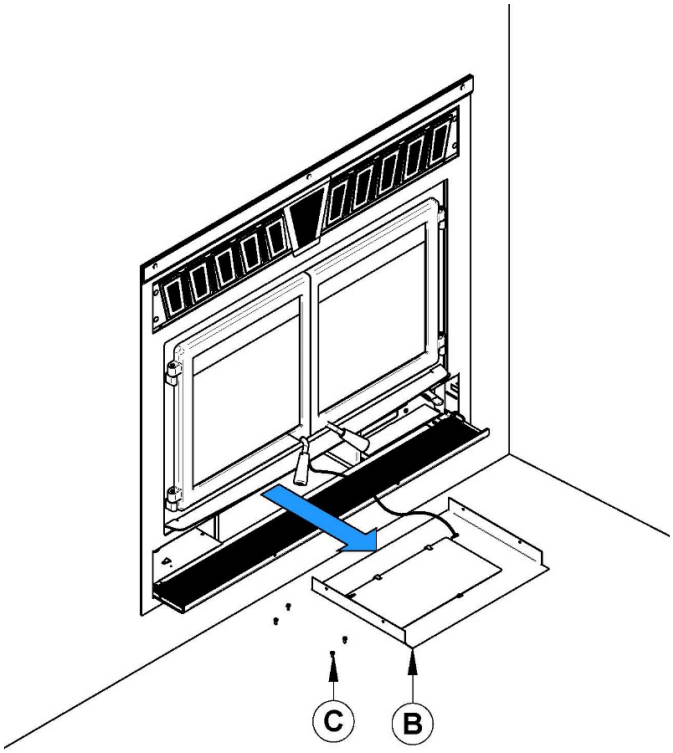
1. Open the bottom louver (A).



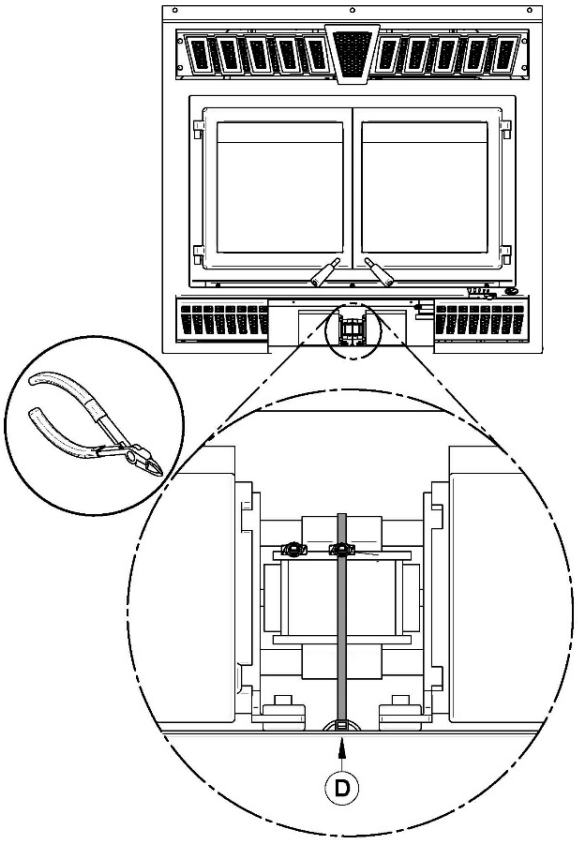
2. With a short square head screwdriver, remove the 4 screws (C) holding in place the heat shield (B).



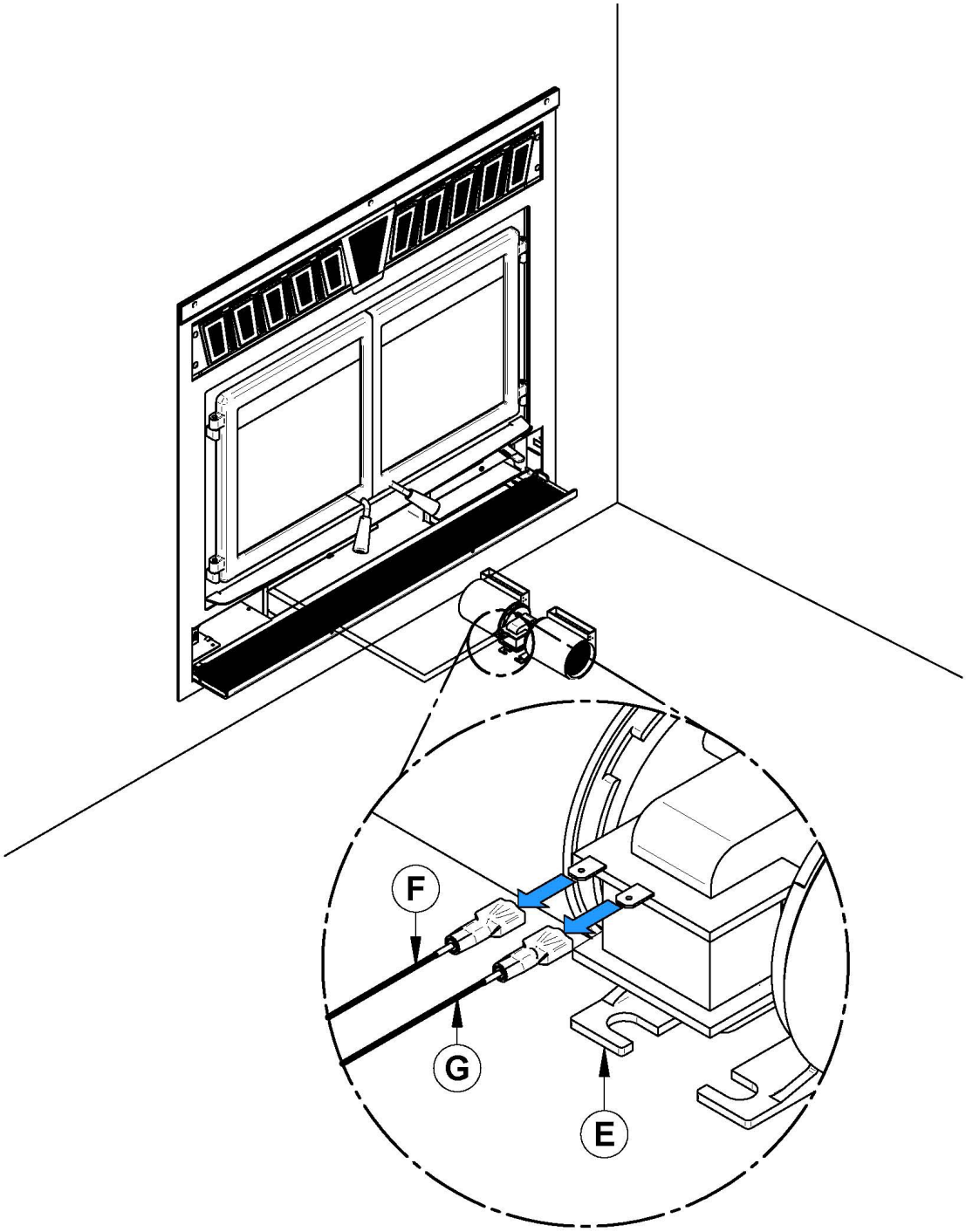
3. Remove and keep the heat shield (B) and the 4 screws (C).



4. Cut the Tie wrap (D).



5. Unplug the blower's electric wires (F) and (G).
6. Lift the blower (E) located under the firebox towards the back.
7. Turn 90° to pull out.
8. Repeat the steps in reverse order to reinstall the fan.

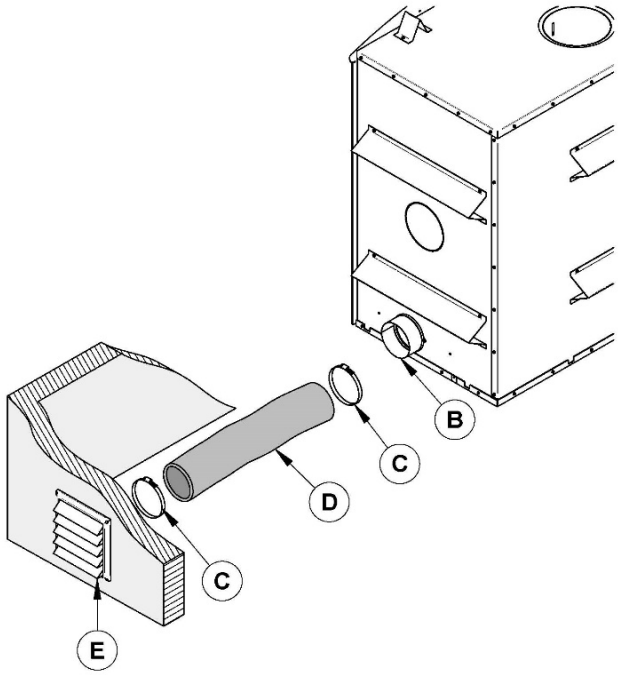


APPENDIX 2: FRESH AIR INTAKE INSTALLATION

During operation, the fireplace requires fresh air for combustion and draws air out of the house. It may starve other fuel burning appliances such as gas or oil furnaces. As well, exhaust fans may compete for air, causing negative pressure in the house, resulting in smoke entering the house from the fireplace. This situation is aggravated in modern airtight houses. To overcome this problem, we strongly recommend that you bring fresh air to the fireplace. Check with local authorities having jurisdiction in your area, it may be mandatory.

Follow these instructions to install a fresh air intake kit

- The insulated flexible pipe length (D) should be sufficient and have a configuration to avoid condensation.
- The outside wall termination (E) must not be installed:
  - At more than 50% of the total height of the chimney;
  - At more than 10 ft. (3 m) above the base of the fireplace;
  - At more than 3 ft. Below the base of the fireplace.
- The fresh air must come from outside the house. The air intake must not draw air from the attic, from the basement, or from a garage.
- The outside wall termination should be installed where it is not likely to be blocked by snow or exposed to extreme wind and away from automobile exhaust fumes, gas meter and other vents.

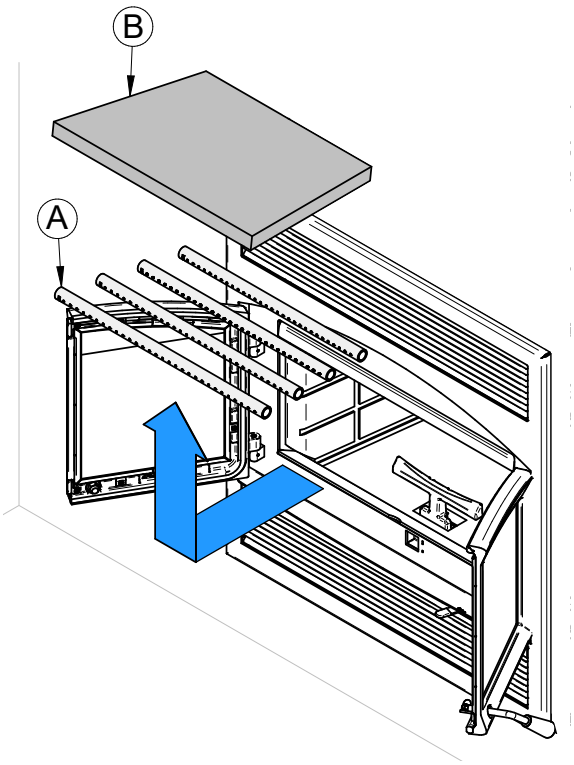


- The insulated flexible pipe and the outside wall termination can be installed over or under the floor level.
- The fresh air intake kit included with the fireplace contains the following components:
  - One (1) 5» adaptor;
  - One (1) air inlet block-off plate;
  - Four (4) screws.
- The following components are not included:
  - A 5” insulated flexible pipe (D) (This HVAC type pipe must comply to ULC S110 and/or UL 181, Class 0 or Class 1 Standards and must withstand temperatures up to 250 °F.
  - The outside wall termination (E).
  - Adjustable clamps (2X) (C).

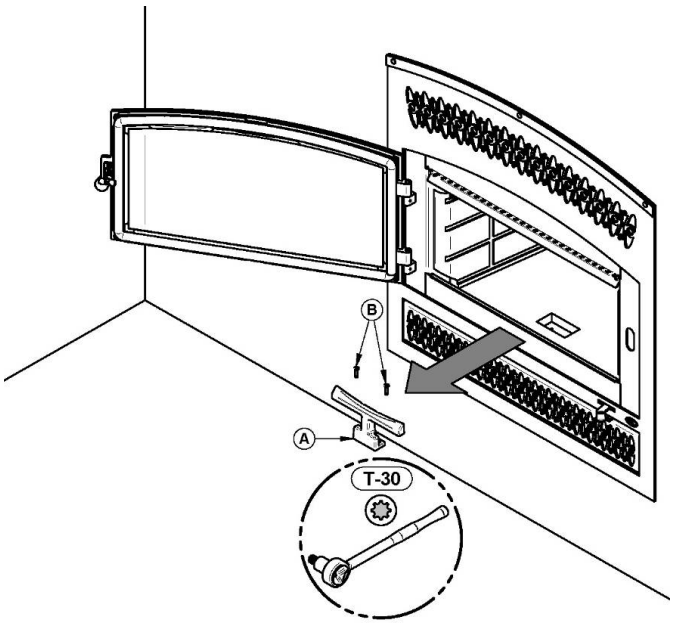
Note: Only remove the knock-out that will be connected to the fresh air inlet.

APPENDIX 3: AIR TUBES AND BAFFLE INSTALLATION

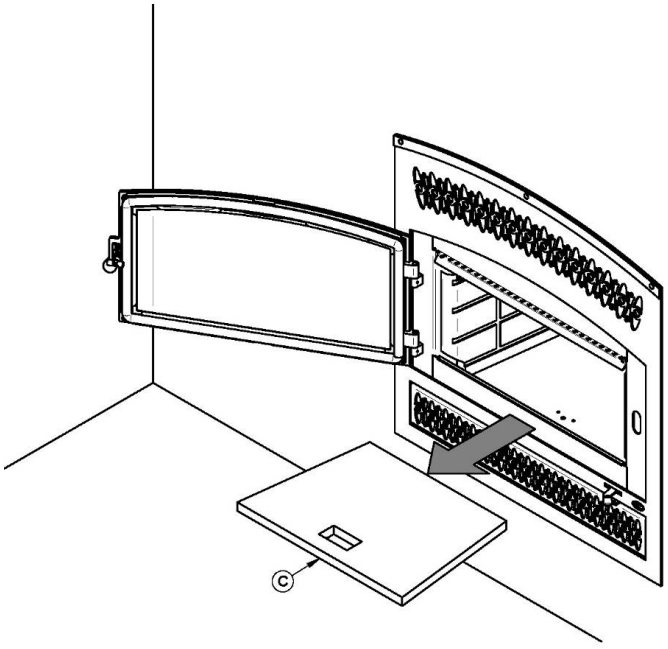
Removable parts	
A	C-cast baffle (x1)
B	Air tubes (x4)



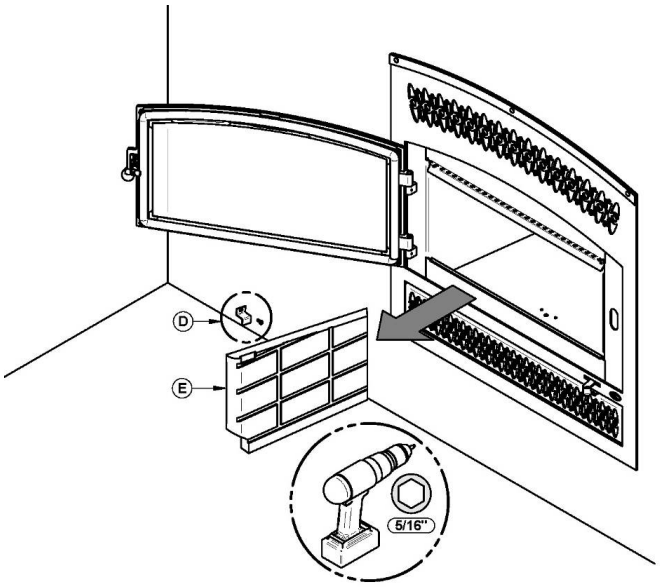
1. Using a ratchet key and a Torx (T-30), unscrew the two Torx screws (B) holding up the andiron (A).



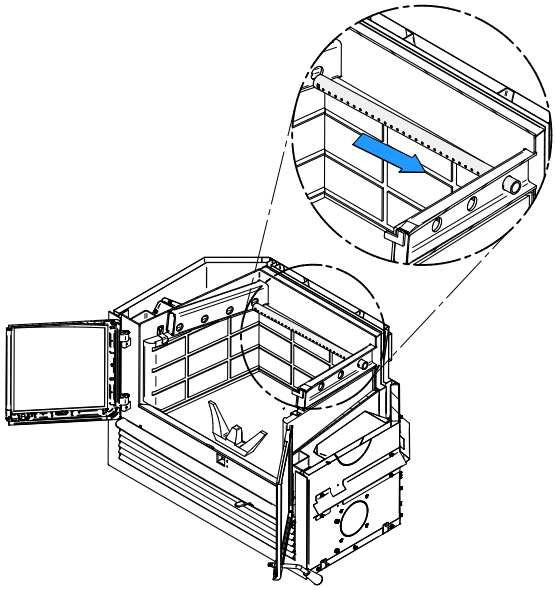
2. Remove the floor refractory slab (C).



3. Using a power screwdriver and hex tip 5/16», remove the slab holder (D) and the left refractory slab (E).

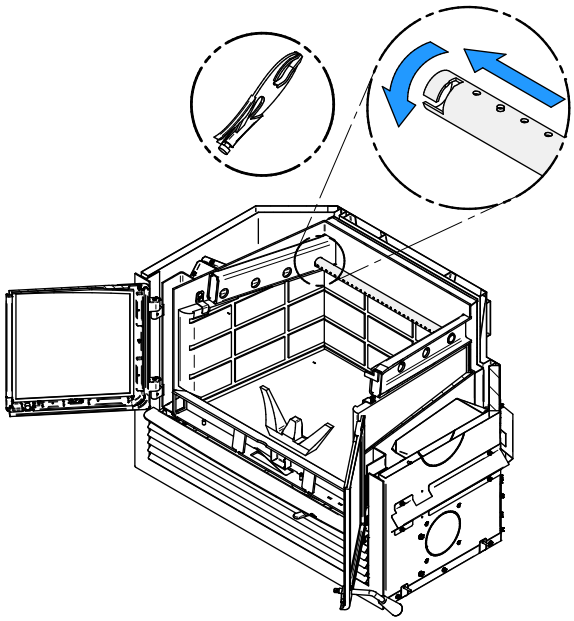


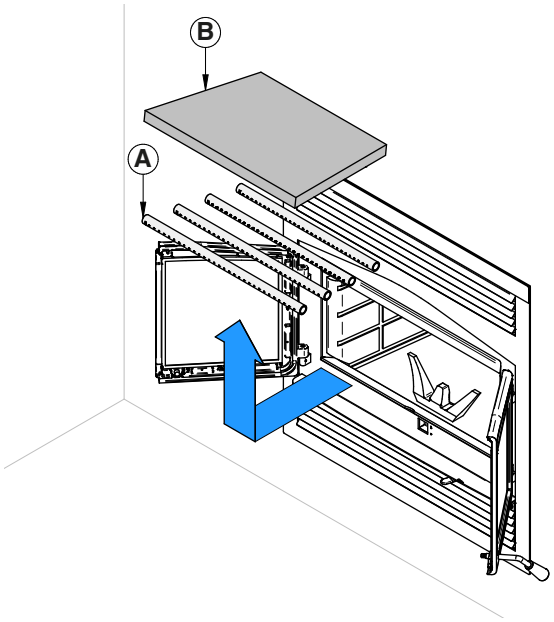
4. Starting with the rear tube, lean and insert the right end of the secondary air tube into the rear right channel hole. Then lift and insert the left end of the tube into the rear left channel.



5. Align the notch in the left end of the tube with the key of the left air channel hole. Using a «Wise grip» hold the tube and lock it in place by turning the tube as shown. Make sure the notch reaches the end of the key way.

6. Repeat for center back tube.
7. Put the baffle in place.
8. Repeat steps 1 and 2 for the two front tubes.
9. To remove the tubes use the above steps in reverse order.





Note that secondary air tubes **(A)** *can be replaced without removing the baffle board* **(B)**.

SBI 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 the factory. Proof of purchase (dated bill of sale), model name and serial number must be supplied when making any warranty claim to the dealer.

This warranty applies to normal residential use only. This warranty is void if the unit is used to burn material other than cordwood (for which the unit is not certified by EPA) and void if not operated according to the owner's manual. Damages caused by misuse, abuse, improper installation, lack of maintenance, over firing, negligence or accident during transportation, power failures, downdrafts, venting problems or underestimated 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 in the designated area in case of a power failure.

This warranty does not cover any scratch, corrosion, distortion, or discoloration. Any defect or damage caused by the use of unauthorized or other than the 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 2019.

DESCRIPTION	**WARRANTY APPLICATION***	
	PARTS	**LABOUR**
Combustion chamber (welds only) and cast iron door frame.	Lifetime	5 years
Ceramic glass**, plating (manufacturing defect**) and convector air mate.	Lifetime	N/A
Surrounds, heat shields, ash drawer, steel legs, pedestal, trims (aluminum extrusions), C-Cast baffle**, vermiculite baffle**, secondary air tubes**, removable stainless steel combustion chamber, deflectors and supports.	7 years	N/A
Handle assembly, glass retainers and air control mechanism.	5 years	3 years
Removable carbon steel combustion chamber components.	5 years	N/A
Standard and optional blower, heat sensors, switches, rheostat, wiring and electronics.	2 years	1 year
Paint (peeling**), gaskets, insulation, ceramic fiber blankets, firebricks 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 parts.

Shall your unit or a component be defective, contact immediately your 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.

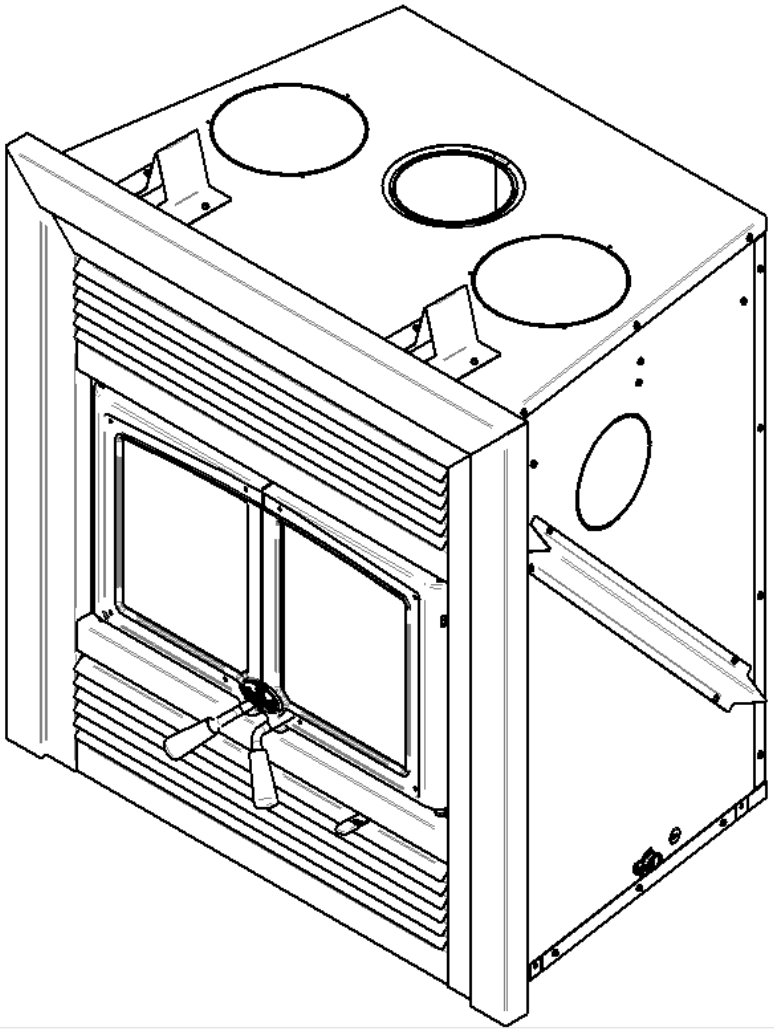
Before shipping your unit or defective component to our plant, you must obtain an Authorization Number from your dealer. Any merchandise shipped to our plant without authorization will be refused automatically and returned to the sender.

This document is available for free download on the manufacturer's website. It is a copyrighted document. Resale is strictly prohibited. The manufacturer may update this document from time to time and cannot be responsible for problems, injuries, or damages arising out of the use of information contained in any document obtained from unauthorized sources.

Stove Builder International inc.
250, rue de Copenhague,
St-Augustin-de-Desmaures
(Québec) Canada
G3A 2H3
418-908-8002

Manuel d’installation et d’utilisation

Everest II
HE325
St. Clair 3000
HE300 II



Foyer à bois approuvé selon les exigences de l’agence de protection de l’environnement américaine EPA 2020 avec bois de corde.

EPA ≤2.5 g/h

CONSULTER LE CODE DU BÂTIMENT LOCAL OU CONTACTER LE SERVICE MUNICIPAL DES INCENDIES POUR CONNAÎTRE LES RESTRICTIONS ET LES EXIGENCES D’INSPECTION ET D’INSTALLATION DE LA RÉGION.

LIRE CE MANUEL AU COMPLET AVANT L’INSTALLATION DE CE FOYER. IL EST IMPORTANT DE RESPECTER INTÉGRALEMENT LES DIRECTIVES D’INSTALLATION. SI LE FOYER N’EST PAS INSTALLÉ CORRECTEMENT, IL PEUT EN RÉSULTER UN INCENDIE, DES BLESSURES CORPORELLES OU MÊME LE DÉCÈS.

LIRE LE PRÉSENT MANUEL ET LE CONSERVER POUR CONSULTATION

2019-10-22

Imprimé au Canada

CERTIFICATION_F

PLAQUE D'HOMOLOGATION HE325

Intertek

REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

LISTED FACTORY BUILT FIREPLACE
FOYER PRÉFABRIQUÉ HOMOLOGUÉ

STANDARDS / NORMES D'ESSAI:

Certified to / Certifié selon CSA B415.1-10
Certified to/Certifié selon ASTM E2515-11 (R2017)
Certified to/Certifié selon ASTM E3053-17
Control number: 4002461

MODEL / MODÈLE:
HE325

Serial Number / No. de Série 1

FOR USE WITH WOOD ONLY — POUR UTILISATION AVEC BOIS SEULEMENT

CONTACT LOCAL BUILDING OFFICIALS ABOUT THE RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.
COMMUNIQUER AVEC LES AUTORITÉS LOCALES DU BÂTIMENT ET DE LA PRÉVENTION DES INCENDIES AU SUJET DES RESTRICTIONS D'INSTALLATION DANS VOTRE SECTEUR.

INSTALL AND USE ONLY IN ACCORDANCE WITH SBI STOVE BUILDER INTERNATIONAL INSTALLATION AND OPERATION INSTRUCTIONS.
L'INSTALLATION ET L'OPERATION DOIT SE FAIRE SELON LES INSTRUCTIONS D'INSTALLATION ET D'UTILISATION DE SBI FABRICANT DE POÊLES INTERNATIONAL.

PREVENT HOUSE FIRES

- Use solid fuel only.

For safety, keep screen doors or glass doors tightly closed.

- Do not overfire unit.
- Replace with only ceramic glass 4mm thick.
- Use only with listed factory-built chimney as per manufacturer's instructions.
- A non-combustible hearth extension must be installed in front of unit extending 16 in (406 mm) in front and 8 in (203 mm) on each side of door opening.
-
- Do not use a fireplace insert or other products not specified for use with this product.

Areas of the fireplace incorporating warm or cold air ducts shall be enclosed in accordance with manufacturer's instructions.
WARNING: This fireplace has not been tested with an unvented gas log set. To reduce risk of fire or injury, do not install an unvented gas log set into fireplace.
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

- Utiliser du combustible à base de bois seulement.

Pour votre sécurité, maintenir les portes de grillages ou de vitres fermées de façon étanche.

- Ne pas surchauffer le foyer.
- Remplacer la vitre seulement avec un verre céramique de 4mm d'épaisseur.
- Pour utilisation seulement avec une cheminée préfabriquée homologuée tel que spécifié selon les instructions du manufacturier.
- Une protection de plancher incombustible doit être installée à l'avant du foyer excédant de 16 po (406 mm) à l'avant et 8 po (203 mm) de chaque côté de l'ouverture de porte.
-
- Ne pas utiliser de foyer encastrable ou autres produits qui ne sont pas conçus précisément pour être utilisés avec le présent foyer.

Les zones du foyer intégrant des conduits d'air chaud ou froid doivent être installées en accord avec les instructions du manufacturier.
ATTENTION: Ce foyer n'a pas été mis à l'essai avec un ensemble de bûches décoratives à gaz non ventilé. Pour réduire les risques de feu ou de blessures, ne pas installer d'ensemble de bûches décoratives à gaz non ventilé dans ce foyer.
Cet appareil 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 (USA).

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS / DÉGAGEMENTS MINIMUM AUX MATÉRIAUX COMBUSTIBLES

Sidewall / Mur latéral [1] :	**21 in (533 mm)**	**Side facing / Parement latéral** [2] :	**0 in (0 mm)**
Combustible shelf (from floor) / Tablette combustible (du sol) [2][3] :	**48 in (1219 mm)**	**Ceiling (from floor) / Plafond (à partir du plancher)** [3] :	**84 in. (2134 mm)**

[1] From door opening. / À partir de l'ouverture de la porte.
[2] Subject to a maximum protrusion (consult owner's manual). / Sujet à une saillie maximale (consultez le manuel d'instructions).
[3] if the fireplace is elevated, the clearances to the combustible shelf and ceiling must be increased by an equivalent value. / Si le foyer est surélevé, les dégagements à la tablette combustible et au plafond doivent être augmentés d'une valeur équivalente.

Blower / Ventilateur: (115V, 0.8A, 60Hz)

PROCEDURE TO FOLLOW IN CASE OF RUN-AWAY FIRE	EN CAS D'INCENDIE DE CHEMINÉE
1) Keep doors closed	1) Maintenir les portes fermées
2) Close all combustion air controls	2) Fermer tous les dispositifs d'admission d'air

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cord wood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.U. (EPA). Conforme aux normes d'émission de particules de 2020 avec bûche de bois.
Weighted average emission rate / Moyenne pondérée des émissions: 0.99 g/h
When tested in accordance with / Lorsque testé selon: CSA B415.1-10
Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1(ii)).

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.
- THIS FIREPLACE NEEDS AIR FOR GOOD OPERATION.
- WHEN A FIRE IS BURNING IN THE FIREPLACE, FRESH AIR MUST BE SUPPLIED TO THE ROOM WHERE THE FIREPLACE IS LOCATED, FAILURE TO PROVIDE THIS MAY STARVE OTHER FUEL BURNING APPLIANCE FROM AN ADEQUATE AIR SUPPLY.

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.
- CE FOYER A BESOIN D'AIR POUR SON BON FONCTIONNEMENT.
- LORSQUE LE FOYER BRÛLE, UN APPORT D'AIR SUPPLÉMENTAIRE DOIT ÊTRE PRÉVU DANS LA PIÈCE, UN MANQUE D'AIR D'APPOINT POURRAIT PRIVER LES AUTRES APPAREILS DE COMBUSTION D'UNE ALIMENTATION D'AIR ADÉQUATE.

Made in La Guadeloupe (Qc), Canada
21/10/2019 (# test)

VENTIS

Fabriqué à La Guadeloupe (Qc), Canada
21/10/2019 (# test)
27818

PLAQUE D'HOMOLOGATION HE300 II

Intertek

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 CSA B415.1-10
Certified to/Certifié selon ASTM E2515-11 (R2017)
Certified to/Certifié selon ASTM E3053-17
Control number: 4002461

LISTED FACTORY BUILT FIREPLACE
FOYER PRÉFABRIQUÉ HOMOLOGUÉ

MODEL / MODÈLE:
HE300 II

FOR USE WITH WOOD ONLY — POUR UTILISATION AVEC BOIS SEULEMENT

CONTACT LOCAL BUILDING OFFICIALS ABOUT THE RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.
COMMUNIQUER AVEC LES AUTORITÉS LOCALES DU BÂTIMENT ET DE LA PRÉVENTION DES INCENDIES AU SUJET DES RESTRICTIONS D'INSTALLATION DANS VOTRE SECTEUR.

Serial Number / No. de Série: 1

INSTALL AND USE ONLY IN ACCORDANCE WITH SBI STOVE BUILDER INTERNATIONAL INSTALLATION AND OPERATION INSTRUCTIONS.
L'INSTALLATION ET L'OPERATION DOIT SE FAIRE SELON LES INSTRUCTIONS D'INSTALLATION ET D'UTILISATION DE SBI FABRICANT DE POÊLES INTERNATIONAL.

PREVENT HOUSE FIRES

- Use solid fuel only.

For safety, keep screen doors or glass doors tightly closed.

- Do not overfire unit.
- Replace with only ceramic glass 4mm thick.
- Use only with listed factory-built chimney as per manufacturer's instructions.
- A non-combustible hearth extension must be installed in front of unit extending 16 in (406 mm) in front and 8 in (203 mm) on each side of door opening.
-
- Do not use a fireplace insert or other products not specified for use with this product.

Areas of the fireplace incorporating warm or cold air ducts shall be enclosed in accordance with manufacturer's instructions.
WARNING: This fireplace has not been tested with an unvented gas log set. To reduce risk of fire or injury, do not install an unvented gas log set into fireplace.
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

- Utiliser du combustible à base de bois seulement.

Pour votre sécurité, maintenir les portes de grillages ou de vitres fermées de façon étanche.

- Ne pas surchauffer le foyer.
- Remplacer la vitre seulement avec un verre céramique de 4mm d'épaisseur.
- Pour utilisation seulement avec une cheminée préfabriquée homologuée tel que spécifié selon les instructions du manufacturier.
- Une protection de plancher incombustible doit être installée à l'avant du foyer excédant de 16 po (406 mm) à l'avant et 8 po (203 mm) de chaque côté de l'ouverture de porte.
-
- Ne pas utiliser de foyer encastrable ou autres produits qui ne sont pas conçus précisément pour être utilisés avec le présent foyer.

Les zones du foyer intégrant des conduits d'air chaud ou froid doivent être installées en accord avec les instructions du manufacturier.
ATTENTION: Ce foyer n'a pas été mis à l'essai avec un ensemble de bûches décoratives à gaz non ventilé. Pour réduire les risques de feu ou de blessures, ne pas installer d'ensemble de bûches décoratives à gaz non ventilé dans ce foyer.
Cet appareil 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 (USA).

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Blower / Ventilateur: (115V, 0.8A, 60Hz)

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U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cord wood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.U. (EPA). Conforme aux normes d'émission de particules de 2020 avec bûche de bois.
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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

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Made in La Guadeloupe (Qc), Canada
04/11/2019 (# test)

VENTIS

Fabriqué à La Guadeloupe (Qc), Canada
04/11/2019 (# test)

27821

PLAQUE D'HOMOLOGATION ST CLAIR 3000

Intertek

REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

LISTED FACTORY BUILT FIREPLACE
FOYER PRÉFABRIQUÉ HOMOLOGUÉ

STANDARDS / NORMES D'ESSAI:

Certified to / Certifié selon CSA B415.1-10
Certified to/Certifié selon ASTM E2515-11 (R2017)
Certified to/Certifié selon ASTM E3053-17
Control number: 4002461

MODEL / MODÈLE:
St. Clair 3000

FOR USE WITH WOOD ONLY — POUR UTILISATION AVEC BOIS SEULEMENT

CONTACT LOCAL BUILDING OFFICIALS ABOUT THE RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.
COMMUNIQUER AVEC LES AUTORITÉS LOCALES DU BÂTIMENT ET DE LA PRÉVENTION DES INCENDIES AU SUJET DES RESTRICTIONS D'INSTALLATION DANS VOTRE SECTEUR.

Serial Number / No. de Série: 1

INSTALL AND USE ONLY IN ACCORDANCE WITH SBI STOVE BUILDER INTERNATIONAL INSTALLATION AND OPERATION INSTRUCTIONS.
L'INSTALLATION ET L'OPERATION DOIT SE FAIRE SELON LES INSTRUCTIONS D'INSTALLATION ET D'UTILISATION DE SBI FABRICANT DE POÊLES INTERNATIONAL.

PREVENT HOUSE FIRES

- Use solid fuel only.

For safety, keep screen doors or glass doors tightly closed.

- Do not overfire unit.
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-
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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

- Utiliser du combustible à base de bois seulement.

Pour votre sécurité, maintenir les portes de grillages ou de vitres fermées de façon étanche.

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Combustible shelf (from floor) / Tablette combustible (du sol) [2][3] :	48 in (1219 mm)	Ceiling (from floor) / Plafond (à partir du plancher) [3] :	84 in. (2134 mm)

[1] From door opening. / À partir de l'ouverture de la porte.
[2] Subject to a maximum protrusion (consult owner's manual). / Sujet à une saillie maximale (consultez le manuel d'instructions).
[3] If the fireplace is elevated, the clearances to the combustible shelf and ceiling must be increased by an equivalent value. / Si le foyer est surélevé, les dégagements à la tablette combustible et au plafond doivent être augmentés d'une valeur équivalente.

Blower / Ventilateur: (115V, 0.8A, 60Hz)

PROCEDURE TO FOLLOW IN CASE OF RUN-AWAY FIRE	EN CAS D'INCENDIE DE CHEMINÉE
1) Keep doors closed 2) Close all combustion air controls	1) Maintenir les portes fermées 2) Fermer tous les dispositifs d'admission d'air

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cord wood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.U. (EPA). Conforme aux normes d'émission de particules de 2020 avec bûche de bois.
Weighted average emission rate / Moyenne pondérée des émissions: 0.99 g/h
When tested in accordance with / Lorsque testé selon: CSA B415.1-10
Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1(ii)).

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.
- THIS FIREPLACE NEEDS AIR FOR GOOD OPERATION.
- WHEN A FIRE IS BURNING IN THE FIREPLACE, FRESH AIR MUST BE SUPPLIED TO THE ROOM WHERE THE FIREPLACE IS LOCATED, FAILURE TO PROVIDE THIS MAY STARVE OTHER FUEL BURNING APPLIANCE FROM AN ADEQUATE AIR SUPPLY.

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.
- CE FOYER A BESOIN D'AIR POUR SON BON FONCTIONNEMENT.
- LORSQUE LE FOYER BRÛLE, UN APPORT D'AIR SUPPLÉMENTAIRE DOIT ÊTRE PRÉVU DANS LA PIÈCE, UN MANQUE D'AIR D'APPOINT POURRAIT PRIVER LES AUTRES APPAREILS DE COMBUSTION D'UNE ALIMENTATION D'AIR ADÉQUATE.

Made in La Guadeloupe (Qc), Canada
21/10/2019 (# test)

EMPIRE COMFORT SYSTEMS
SINCE 1932

Fabriqué à La Guadeloupe (Qc), Canada
21/10/2019 (# test)
27820

PLAQUE D'HOMOLOGATION EVEREST II

Intertek

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 CSA B415.1-10
Certified to/Certifié selon ASTM E2515-11 (R2017)
Certified to/Certifié selon ASTM E3053-17
Control number: 4002461

LISTED FACTORY BUILT FIREPLACE
FOYER PRÉFABRIQUÉ HOMOLOGUÉ

MODEL / MODÈLE:
EVEREST II

FOR USE WITH WOOD ONLY — POUR UTILISATION AVEC BOIS SEULEMENT

CONTACT LOCAL BUILDING OFFICIALS ABOUT THE RESTRICTIONS AND INSTALLATION INSPECTION IN YOUR AREA.
COMMUNIQUER AVEC LES AUTORITÉS LOCALES DU BÂTIMENT ET DE LA PRÉVENTION DES INCENDIES AU SUJET DES RESTRICTIONS D'INSTALLATION DANS VOTRE SECTEUR.

Serial Number / No. de Série: 1

INSTALL AND USE ONLY IN ACCORDANCE WITH SBI STOVE BUILDER INTERNATIONAL INSTALLATION AND OPERATION INSTRUCTIONS.
L'INSTALLATION ET L'OPERATION DOIT SE FAIRE SELON LES INSTRUCTIONS D'INSTALLATION ET D'UTILISATION DE SBI FABRICANT DE POÊLES IN. :RNATIONAL.

PREVENT HOUSE FIRES

- Use solid fuel only.

For safety, keep screen doors or glass doors tightly closed.

- Do not overfire unit.
- Replace with only ceramic glass 4mm thick.
- Use only with listed factory-built chimney as per manufacturer's instructions.
- A non-combustible hearth extension must be installed in front of unit extending 16 in (406 mm) in front and 8 in (203 mm) on each side of door opening.
-
- Do not use a fireplace insert or other products not specified for use with this product.

Areas of the fireplace incorporating warm or cold air ducts shall be enclosed in accordance with manufacturer's instructions.
WARNING: This fireplace has not been tested with an unvented gas log set. To reduce risk of fire or injury, do not install an unvented gas log set into fireplace.
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

- Utiliser du combustible à base de bois seulement.

Pour votre sécurité, maintenir les portes de grillages ou de vitres fermées de façon étanche.

- Ne pas surchauffer le foyer.
- Remplacer la vitre seulement avec un verre céramique de 4mm d'épaisseur.
- Pour utilisation seulement avec une cheminée préfabriquée homologuée tel que spécifié selon les instructions du manufacturier.
- Une protection de plancher incombustible doit être installée à l'avant du foyer excédant de 16 po (406 mm) à l'avant et 8 po (203 mm) de chaque côté de l'ouverture de porte.
-
- Ne pas utiliser de foyer encastrable ou autres produits qui ne sont pas conçus précisément pour être utilisés avec le présent foyer.

Les zones du foyer intégrant des conduits d'air chaud ou froid doivent être installées en accord avec les instructions du manufacturier.
ATTENTION: Ce foyer n'a pas été mis à l'essai avec un ensemble de bûches décoratives à gaz non ventilé. Pour réduire les risques de feu ou de blessures, ne pas installer d'ensemble de bûches décoratives à gaz non ventilé dans ce foyer.
Cet appareil 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 (USA).

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS / DÉGAGEMENTS MINIMUM AUX MATÉRIAUX COMBUSTIBLES

Sidewall / Mur latéral [1] :	21 in (533 mm)	Side facing / Parement latéral [2] :	0 in (0 mm)
Combustible shelf (from floor) / Tablette combustible (du sol) [2][3] :	48 in (1219 mm)	Ceiling (from floor) / Plafond (à partir du plancher) [3] :	84 in. (2134 mm)

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Blower / Ventilateur: (115V, 0.8A, 60Hz)

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1) Keep doors closed	1) Maintenir les portes fermées
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AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.U. (EPA). Conforme aux normes d'émission de particules de 2020 avec bûche de bois.
Weighted average emission rate / Moyenne pondérée des émissions: 0.99 g/h
When tested in accordance with / Lorsque testé selon: CSA B415.1-10
Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1(ii)).

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



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Made in La Guadeloupe (Qc), Canada
21/10/2019 (# test)

SBI
Fabricant de poêles international
Stove Builder International

Fabriqué à La Guadeloupe (Qc), Canada
21/10/2019 (# test)
27819

MERCI D'AVOIR CHOISI CE FOYER À BOIS.

Lorsque l'appareil n'est pas installé correctement, les matériaux combustibles à proximité peuvent surchauffer et s'enflammer.

Pour réduire les risques d'incendie, suivre les instructions d'installation de ce manuel.

Dans les pages qui suivent se trouvent des conseils d'ordre général sur le chauffage au bois, des instructions détaillées pour une installation sûre et efficace et des indications sur la façon d'obtenir le meilleur rendement de ce foyer.

Il est fortement recommandé que cet appareil de chauffage au bois soit installé et entretenu par des professionnels certifiés par le NFI (National Fireplace Institute®) ou CSIA (Chimney Safety Institude of America) aux États-Unis, au Canada par WETT (Wood Energy Technology Transfer) ou au Québec par l'APC (Association des Professionnels du Chauffage).

Consulter le code du bâtiment local ou contacter le service des incendies pour connaître les restrictions et les exigences d'inspection et d'installation de la région. Il se peut qu'un permis soit requis pour l'installation du foyer et de la cheminée à laquelle il est branché. Il est également recommandé d'aviser sa compagnie d'assurance habitation.

Lire ce manuel au complet avant l'installation et l'utilisation de ce foyer.

Une source de chauffage primaire doit être disponible dans la résidence. Cet appareil de chauffage doit être utilisé comme chauffage d'appoint. En cas de bris, le manufacturier ne peut être tenu responsable des coûts de chauffage additionnels pouvant être engendrés par une source de chauffage alternative.

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PARTIE A – UTILISATION ET ENTRETIEN

1. Sécurité

- Ce foyer a été mis à l'essai pour être utilisé la porte ouverte avec un pare-étincelles, vendu séparément. La porte peut être ouverte ou le pare-étincelles retiré seulement pour allumer et recharger le foyer. Toujours fermer la porte ou remettre le pare-étincelles après l'allumage. Ne pas laisser le foyer sans surveillance lorsque la porte est ouverte, avec ou sans pare-étincelles.

- **AVERTISSEMENT : UTILISER CET APPAREIL EN MAINTENANT LA PORTE SOIT COMPLÈTEMENT FERMÉE OU COMPLÈTEMENT OUVERTE AVEC LE PARE-ÉTINCELLES EN PLACE. LORSQUE LA PORTE EST PARTIELLEMENT OUVERTE, DES FLAMMES OU DES GAZ PEUVENT S'ÉCHAPPER CRÉANT DES RISQUES ASSOCIÉS À LA FOIS À LA FUMÉE ET AU FEU.**

- **BRÛLANT LORSQU'EN FONCTION, ÉLOIGNER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES. TOUT CONTACT AVEC LA PEAU PEUT CAUSER DES BRÛLURES. DES GANTS PEUVENT ÊTRE NÉCESSAIRES LORS DE L'UTILISATION DU FOYER.**

- Le fait d'utiliser un foyer dont des éléments comme la vitre, les briques réfractaires ou le coupe-feu sont fissurés ou brisés peut être dangereux et peut endommager le foyer.

- **NE JAMAIS UTILISER D'ESSENCE, DE COMBUSTIBLE À LANTERNE (NAPHTA), DE MAZOUT, D'HUILE À MOTEUR, DE KÉROSÈNE, DE LIQUIDE D'ALLUMAGE POUR CHARBON DE BOIS, DE LIQUIDES SIMILAIRES OU D'AÉROSOLS POUR ALLUMER UN FEU DANS LE FOYER. GARDER TOUS CES LIQUIDES OU AÉROSOLS LOIN DU FOYER LORSQU'IL EST EN FONCTION.**

- Ne pas entreposer de carburant en deçà des dégagements minimums de l'appareil.

- Brûler seulement du bois de chauffage naturel sec.

- Cet appareil de chauffage necessite des inspections et réparations périodique pour une utilisation optimale. Il est contre la réglementation fédérale d'utiliser cet appareil de façon incohérente avec les instructions de ce manuel.

- Ne pas obstruer les entrées d'air. Ce foyer a besoin d'air pour son bon fonctionnement.

- Ne pas obstruer les grilles de circulation d'air chaud autour du foyer car cela pourrait le faire surchauffer.

- Un détecteur de fumée, un détecteur de monoxyde de carbone et un extincteur doivent être installés dans la maison. L'emplacement des détecteurs doit être choisi judicieusement pour éviter les fausses alertes lors du rechargement de l'appareil. L'emplacement de l'extincteur doit être connu de tous les membres de la famille.
- Ne pas utiliser de matériaux de fortune et ne faites aucun compromis lors de l'installation de ce foyer.



Ce produit peut vous exposer à des agents chimiques, y compris du monoxyde de carbone, identifié 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/

2. Informations générales

2.1 Performances

Valeurs telles qu'obtenues en test à l'exception de la puissance thermique maximale.

Modèles	Everest II, HE325, St. Clair 3000, HE300 II	
Type de combustible	Bûches de bois sec	
Technologie de combustion	Non-catalytique	
Puissance thermique maximale (bûches de bois sec)[1]	80,000 BTU/h (23.5 kW)	
Puissance thermique globale (min. à max.)[1] [2]	18,000 BTU/h à 49,600 BTU/h (5.28 kW à 14.5 kW)	
Rendement moyen global[2] Bûches de bois sec	66 % (HHV)[3]	71 % (LHV)[4]
Rendement optimal[5]	72 %	
Taux moyen d'émission de particules[6]	0.99 g/h (EPA / CSA B415.1-10)[7]	
Taux moyen de CO[8]	50.1 g/h	

2.2 Spécifications

Diamètre de la buse de raccordement	6 po (150 mm)
Type de cheminée	CAN/ULC S629, UL 103 HT
Normes d'émissions de particules	EPA / CSA B415.1-10[7]
Norme américaine (sécurité)	UL 127
Norme canadienne (sécurité)	ULC-S610

[1] La puissance thermique maximale (bûches de bois sec) tient compte d'une densité de chargement variant entre 15 lb/pi^3 et 20 lb/pi^3. Les autres données de performance sont basées sur une charge d'essai prescrite par la norme. La densité de chargement spécifiée varie entre 7 lb/pi^3 et 12 lb/pi^3. L'humidité varie entre 19% et 25%.

[2] Telle que mesurée selon CSA B415.1-10.

[3] Pouvoir calorifique supérieur du combustible.

[4] Pouvoir calorifique inférieur du combustible.

[5] Rendement optimal à un taux de combustion donné (PCI).

[6] Cet appareil est officiellement testé et certifié par un organisme indépendant.

[7] Testé et certifié selon CFR 40 part 60, subpart AAA, section 60.534(a)(1(ii) et ASTM E3053-17 (ALT-125)

[8] Monoxyde de carbone.

2.3 Chauffage par zone

Ce foyer au bois sert au chauffage local, 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.

Les maisons de grandeur moyenne et relativement neuve peuvent être chauffées à l'aide d'un foyer au bois bien situé et de la bonne grosseur. Le chauffage par zone de toute une maison fonctionne mieux lorsque le foyer est placé dans la partie de la maison où la famille passe le plus de temps. Il s'agit généralement du secteur principal où se trouvent la cuisine, la salle à manger et le salon.

En plaçant le foyer dans ce secteur, il sera possible de profiter au maximum de la chaleur qu'il produit, de retirer le maximum de confort et d'obtenir le rendement énergétique le plus élevé. La pièce la plus occupée sera plus chaude, alors que les chambres et le sous-sol (s'il y en a un) resteront plus frais. De cette façon, moins de bois est brûlé qu'avec les autres formes de chauffage.

Plusieurs facteurs feront en sorte que le chauffage par zone réussira, y compris le bon emplacement et la bonne grosseur du foyer, la dimension, la disposition et l'âge de la résidence, de même que la zone climatique. Les résidences secondaires utilisées trois saisons par année peuvent généralement être chauffées par des foyers plus petits que les maisons qui sont chauffées tout l'hiver.

3. Combustibles

NE PAS BRÛLER:

- **DES ORDURES;**
- **DE LA PELOUSE OU DES DÉCHETS DE JARDIN;**
- **DES MATÉRIAUX CONTENANT DU CAOUTCHOUC, Y COMPRIS LES PNEUS;**
- **DES MATÉRIAUX CONTENANT DU PLASTIQUE;**
- **DES DÉCHETS CONTENANT DU PÉTROLE, DE LA PEINTURE, DU DILUANT 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 AUTRES 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.

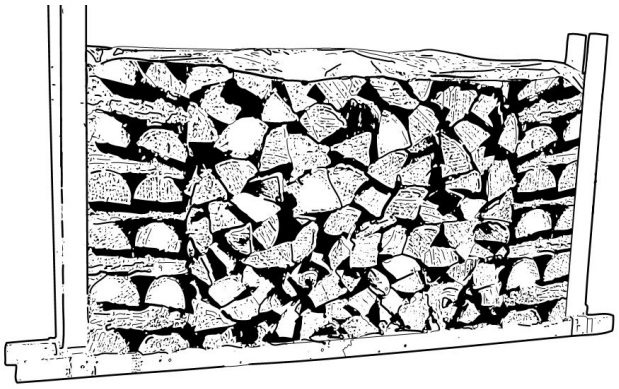
3.1 Essences d'arbres

Les essences d'arbres d'où provient le bois de chauffage sont moins importantes que sa teneur en humidité. Le bois mou est un bon combustible par temps relativement doux parce qu'il s'enflamme rapidement et produit moins de chaleur. Le bois mou n'est pas aussi dense que le bois franc, de sorte qu'un volume donné de bois contient moins d'énergie. L'utilisation du bois mou évite de surchauffer la maison, ce qui peut être un problème répandu avec le chauffage au bois par temps doux. Le bois franc est meilleur pour les temps froids d'hiver lorsqu'il faut plus de chaleur et un cycle de combustion plus long.

3.2 Séchage du bois

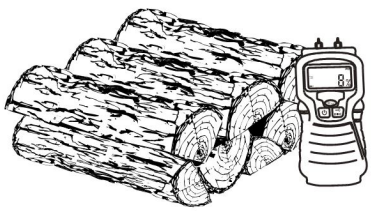
Le bois de chauffage qui n'est pas suffisamment sec est la cause de la plupart des plaintes concernant les appareils de chauffage au bois. Brûler constamment du bois vert produit plus de créosote et implique généralement un manque de chaleur et des vitres de porte sales. Du bois de chauffage avec une teneur en humidité de 15% à 20% permettra au foyer d'atteindre son rendement le plus élevé.

Voici quelques faits à retenir sur le processus de séchage du bois:



- Le bois de chauffage acheté d'un vendeur est rarement suffisamment sec pour être brûlé, il est donc conseillé d'acheter le bois au printemps et de le faire sécher soi-même;
- Les bûches fendues sèchent plus rapidement que le bois rond;
- Le bois mou comme le pin, l'épinette, le peuplier et le tremble sèche plus rapidement que le bois franc. Il peut être suffisamment sec pour faire du feu après avoir été cordé à l'extérieur seulement pendant les mois d'été;
- Le bois franc comme le chêne, l'érable et le frêne peut mettre un ou même deux ans à sécher complètement, surtout s'il s'agit de grosses bûches;
- Le bois de chauffage sèche plus rapidement lorsqu'il est cordé à l'extérieur où il est exposé au soleil et au vent; il prend beaucoup plus de temps à sécher lorsqu'il est cordé dans une remise à bois;

Le bois de chauffage est suffisamment sec pour brûler, lorsque :



- des fissures apparaissent à l'extrémité des bûches;
- le bois passe d'une coloration blanche ou crémeuse à gris ou jaune;
- deux morceaux de bois frappés ensemble sonnent creux;
- la face mise à jour d'une bûche fraîchement coupée semble chaude et sèche au toucher;

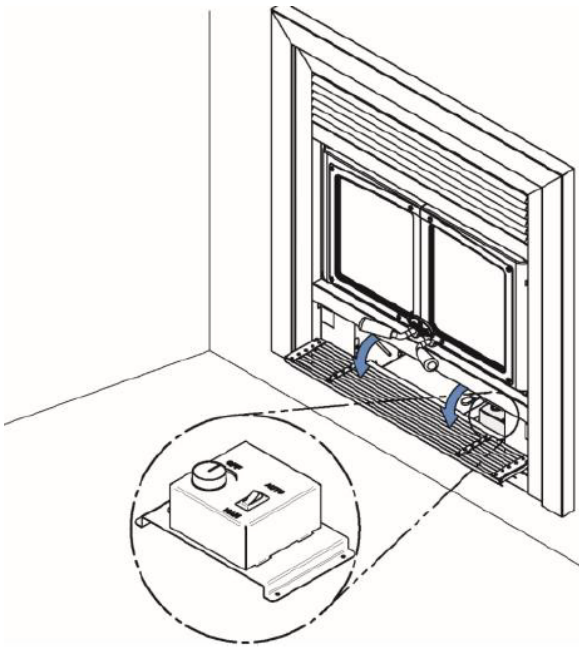
4. Utilisation du foyer

Le taux de combustion minimum de cet appareil à 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 au bois d'une manière non conforme aux instructions d'utilisation de ce manuel.

4.1 Utilisation d'un pare-étincelles

Ce foyer a été mis à l'essai pour être utilisé la porte ouverte avec un pare-étincelles, vendu séparément. Le pare-étincelles doit être bien fixé à l'appareil pour éviter que des étincelles endommagent le revêtement de sol. Lorsque le pare-étincelles est utilisé, il est important de ne pas laisser le foyer sans surveillance afin de pouvoir réagir promptement dans l'éventualité d'un retour de fumée dans la pièce.

4.2 Fonctionnement du ventilateur



Un ventilateur est déjà installé sur ce foyer. Il est situé sous le foyer, à l'arrière de la façade. Le ventilateur accroît la circulation d'air dans la chambre d'air autour du foyer et améliore la circulation d'air chaud dans la pièce. S'il est utilisé sur une base régulière, le ventilateur peut accroître le rendement jusqu'à 2%. Cependant, le ventilateur ne doit pas servir à augmenter le rendement d'un foyer trop petit pour l'espace à chauffer.

Le ventilateur peut fonctionner en mode automatique ou en mode manuel. Pour choisir le mode, il suffit d'appuyer sur le bouton de droite et choisir « AUTO » pour le mode automatique et « MAN » pour le mode manuel.

Mode automatique : Appuyez sur le bouton de droite et choisir le mode « AUTO ». Choisir la vitesse de fonctionnement du ventilateur avec le bouton de gauche. Le ventilateur démarrera automatiquement lorsque le foyer sera chaud et s'arrêtera automatiquement lorsque le foyer sera froid.

Mode manuel : Appuyez sur le bouton de droite et choisir le mode « MAN ». Choisir la vitesse de fonctionnement du ventilateur avec le bouton de gauche. Le ventilateur se mettra en marche immédiatement. L'arrêt du ventilateur se fait manuellement, soit avec le bouton de gauche ou en changeant le mode avec le bouton de droite.

OFF : Pour fermer complètement le ventilateur, tournez le bouton de gauche dans le sens antihoraire jusqu'à ce qu'il se déclenche.

5. Combustion efficace du bois

5.1 Première utilisation

Deux choses se produisent lors des premières attisées: la peinture durcit et les composantes intérieures se conditionnent. Au fur et à mesure que la peinture durcit, certains éléments chimiques se vaporisent. Les vapeurs ne sont pas nocives, mais elles sentent mauvais. Les vapeurs de peinture fraîche peuvent aussi déclencher de fausses alarmes dans les détecteurs de fumée. Par conséquent, lors du premier allumage, il peut être judicieux d'ouvrir les portes et les fenêtres pour ventiler la maison.

5.2 Allumer un feu

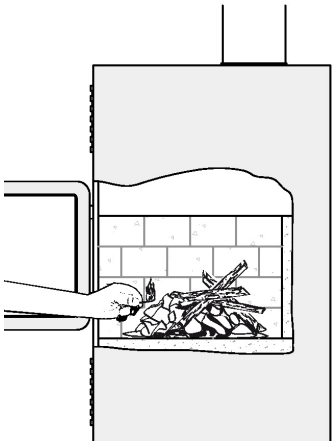
Le but devrait être d'avoir un feu chaud, rapidement. Un feu qui prend rapidement produit moins de fumée et crée moins de créosote dans la cheminée.

Ne pas utiliser de liquides inflammables comme l'essence, le naphte, le mazout, l'huile à moteur ou des aérosols pour allumer ou raviver le feu. Tous ces liquides doivent être conservés à l'écart du foyer pendant son utilisation.

Voici trois façons répandues et efficaces pour faire un bon feu de bois.

5.2.1 Méthode traditionnelle

La méthode traditionnelle pour faire un feu de bois est de chiffonner 5 à 10 feuilles de papier journal, les placer dans la chambre à combustion et les maintenir en place avec une dizaine de morceaux de bois d'allumage. Le bois d'allumage devrait être placé sur et derrière le papier journal.



Ajouter ensuite deux ou trois petits morceaux de bois de chauffage. Ouvrir le contrôle d'admission d'air complètement et allumer le papier journal. Laisser la porte légèrement entrouverte. Lorsque le feu est allumé, fermer la porte en conservant le contrôle d'admission d'air ouvert. Lorsque le bois d'allumage est presque entièrement brûlé, ajouter des morceaux de bois jusqu'à ce que le feu soit bien parti.

5.2.2 Méthode du feu descendant

La méthode du feu descendant présente deux avantages par rapport à la méthode traditionnelle: tout d'abord, le feu ne s'effondre pas sur lui-même, et il n'est pas nécessaire de grossir le feu graduellement puisque la chambre à combustion est pleine avant que le feu soit allumé. Cette méthode procède à l'inverse de la méthode traditionnelle et ne fonctionne que si du bois très sec est utilisé.

Placer trois ou quatre petites bûches fendues et sèches dans la chambre à combustion. Disposer le bois d'allumage sur les bûches en deux couches à angles droits et placer une dizaine d'éclats fins sur la deuxième rangée. Ouvrir complètement le contrôle d'admission d'air, mettre le feu au papier et refermer la porte.

5.2.3 Deux bûches parallèles

Placer deux bûches fendues dans la chambre à combustion, avec quelques feuilles de papier journal tordu entre les bûches. Placer quelques éclats fins de travers sur les bûches et des éclats plus gros par-dessus, comme une cabane en bois rond. Allumer le papier journal.

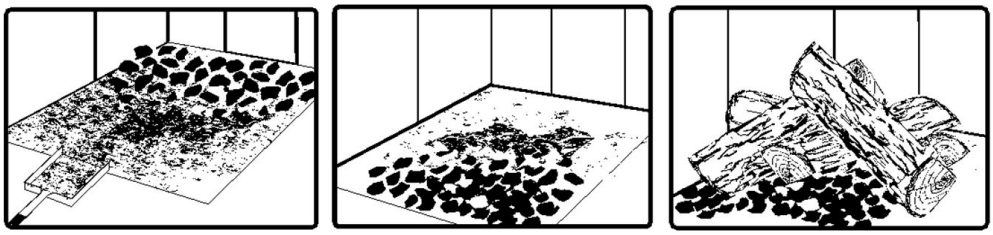
5.3 Cycle de combustion

Le bois brûle mieux en cycles. Un cycle commence lorsqu'une nouvelle charge de bois est allumée par les braises chaudes et se termine lorsque celle-ci est consumée et qu'il n'en reste que des braises de la grosseur de celles qui se trouvaient dans le feu lorsque le bois a été rajouté.

Il est déconseillé d'essayer d'obtenir un dégagement de chaleur stable en plaçant une seule bûche dans le feu à intervalles réguliers. Mettre au moins trois bûches à la fois et plus de préférence, de sorte que la chaleur produite par une bûche aide à allumer ses voisines. Chaque charge de bois devrait fournir plusieurs heures de chauffage. La grosseur de chaque charge peut varier selon la quantité de chaleur nécessaire.

5.4 Raviver un feu

Lorsque la température de la pièce est plus basse et qu'il ne reste que des braises, il est temps de remettre du bois. Retirer l'excès de cendres situé à l'avant de la chambre de combustion et avancer les braises. Placer une nouvelle charge de bois sur et à l'arrière des braises. Ouvrir complètement le contrôle d'air et fermer la porte.



Le déplacement des braises est utile pour deux raisons. Tout d'abord, cela les rassemble près de l'endroit où la plus grande partie de l'air entre dans la chambre à combustion. Elles peuvent enflammer la nouvelle charge rapidement. Deuxièmement, les braises ne seront pas étouffées par la nouvelle charge de bois. Lorsque les braises sont simplement étalées, la nouvelle charge brûle en amortissant longtemps avant de s'enflammer. Fermer le contrôle d'air seulement lorsque les flammes envahissent toute la chambre à combustion, que le bois est noirci et que ses rebords sont rougeoyants.

Le foyer ne doit pas être laissé sans surveillance lors de l'allumage et le feu ne devrait pas brûler à pleine intensité plus de quelques minutes.

5.5 Retirer la cendre

La cendre doit être retirée de la chambre à combustion tous les deux ou trois jours environ en période de chauffage à temps plein. La cendre ne doit pas s'accumuler de façon excessive dans la chambre à combustion puisqu'elle nuira au bon fonctionnement du foyer.

Le meilleur moment pour retirer la cendre est le matin, après avoir chauffé toute la nuit lorsque le foyer est relativement froid, mais qu'il y a encore un peu de tirage pour aspirer la poussière de cendres vers l'intérieur du foyer et l'empêcher de sortir dans la pièce.

Les cendres contiennent presque toujours des braises qui peuvent rester chaudes pendant des jours et qui libèrent du monoxyde de carbone. *Les cendres doivent être placées dans un récipient en métal bien fermé. Le contenant doit être placé sur un plancher non combustible ou sur le sol, à l'écart de tout matériau combustible.Si les cendres sont enfouies dans le sol ou dispersées localement, elles doivent être conservées dans un récipient en métal fermé jusqu'à ce qu'elles soient complètement refroidies. Aucun autre déchet ne doit être placé dans ce contenant.*

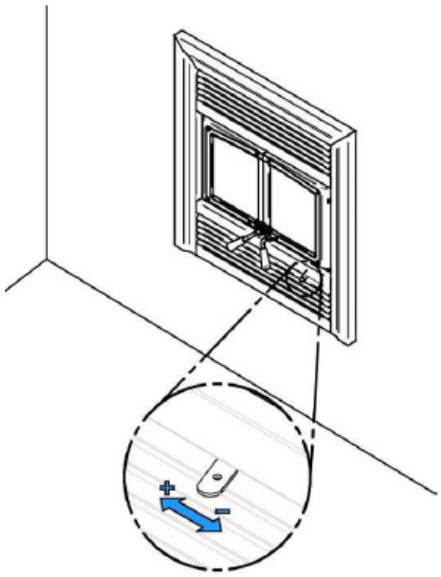
5.6 Contrôle de l'admission d'air

Lorsque le bois de chauffage, la chambre à combustion et la cheminée sont chauds, l'admission d'air peut être réduite pour obtenir une combustion stable.

Lorsque l'admission d'air est réduite, le taux de combustion diminue. Ceci a pour effet de répartir l'énergie thermique du combustible sur une plus grande période de temps. De plus, le taux d'évacuation du foyer et de la cheminée ralentit, ce qui augmente la durée du transfert d'énergie des gaz évacués. Plus l'admission d'air est réduite, plus les flammes diminuent.

Si les flammes diminuent au point de disparaître, c'est que l'air a été réduit trop tôt dans le cycle de combustion ou que le bois utilisé est trop humide. Si le bois est sec et que le contrôle d'air est utilisé correctement, les flammes devraient diminuer, mais rester vives et stables.

D'autre part, trop d'air peut rendre le feu incontrôlable, créant des températures très élevées dans l'appareil ainsi que dans la cheminée et les endommager sérieusement. Une lueur rougeâtre sur l'appareil et sur les composants de la cheminée indique une surchauffe. Des températures excessives peuvent provoquer un feu de cheminée.



5.7 Types de feux

L'utilisation du contrôle de l'admission d'air n'est pas la seule façon de synchroniser le rendement thermique du foyer et les besoins en chauffage. Une maison nécessite beaucoup moins de chauffage en octobre qu'en janvier pour conserver une température confortable. Une chambre à combustion remplie en automne surchauffera la pièce. Sinon, la combustion devra être réduite au minimum et le feu brûlera en amortissant et sera inefficace.

Voici quelques suggestions pour faire des feux convenant à différents besoins de chauffage.

5.7.1 Feu éclair

Pour faire un petit feu qui produira peu de chaleur et qui chassera l'humidité de la maison, utiliser de petits morceaux de bois, placés en croisé dans la chambre à combustion. Les morceaux ne devraient avoir que 3" (76 mm) ou 4" (102 mm) de diamètre. Lorsque les braises sont ramenées à l'avant, placer deux morceaux l'un à côté de l'autre, en diagonale dans la chambre à combustion, puis deux autres par-dessus en croisé. Ouvrir le contrôle d'air complètement et ne réduire l'air qu'une fois le bois totalement enflammé.

Ce type de feu est bon pour les températures modérées et devrait fournir suffisamment de chaleur pendant environ quatre heures. C'est le bon moment pour utiliser du bois mou et éviter de surchauffer la maison.

5.7.2 Feu de longue durée

Pour avoir un feu qui durera jusqu'à huit heures, mais qui ne produira pas de chaleur intense, utiliser du bois mou et placer les bûches de façon compacte dans la chambre à combustion. Avant de réduire l'admission d'air, la charge devra brûler à pleine chaleur pendant assez longtemps pour que la surface des bûches devienne complètement noircie. La flamme doit être vive avant de laisser le feu brûler par lui-même.

5.7.3 Feu pour temps froids

Lorsque les besoins de chauffage sont élevés par temps froid, le feu devra être stable et vif. C'est le temps de brûler de grosses bûches de bois franc. Placer les plus grosses bûches au fond de la chambre à combustion et placer le reste des bûches de façon compacte.

Un feu aussi dense produira la combustion la plus longue que le foyer peut donner. Une attention particulière doit être apportée en faisant ce type de feu, puisque si l'admission d'air est réduite trop vite, le feu brûlera en amortissant. La flamme doit être vive avant de laisser le feu brûler par lui-même.

5.7.4 Monoxyde de carbone

Lorsqu'il n'y a plus de flamme dans la chambre à combustion et qu'il ne reste que quelques bûches non brûlées, vérifier à l'extérieur s'il y a de la fumée qui s'échappe de la cheminée. Si c'est le cas, cela signifie que le feu manque d'air pour brûler correctement. Dans cette situation, le taux de CO augmente et il est important de réagir. Ouvrir légèrement la porte et déplacer les bûches avec un tisonnier. Créer un passage pour l'air en dessous en faisant une tranchée avec le lit de braises. Ajouter de petits morceaux de bois pour redémarrer la combustion.

6. Entretien

Ce foyer donnera de nombreuses années de bon service s'il est utilisé et entretenu correctement. Les composants internes de la chambre à combustion comme les briques ou pierres réfractaires, le coupe-feu et les tubes d'air s'useront avec le temps. Les pièces défectueuses devraient toujours être remplacées par des pièces d'origine. Pour éviter la détérioration prématurée du foyer, suivre les directives d'allumage et de recharge présentée à la section «5. Combustion efficace du bois» et éviter de faire fonctionner le foyer avec le contrôle d'air complètement ouvert durant des cycles de combustion complets.

6.1 Foyer

6.1.1 Matériaux réfractaires et coupe-feu

Inspecter les briques ou les pierres réfractaires et le coupe-feu périodiquement. Remplacer ce qui est cassé ou endommagé.

L'utilisation du foyer avec un coupe-feu endommagé ou manquant pourrait créer des températures et des conditions dangereuses et annulera la garantie.

6.2 Vitre

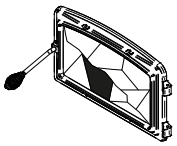
6.2.1 Nettoyage

Dans des conditions normales, la vitre devrait rester relativement propre. Si le bois de chauffage est suffisamment sec et que les instructions d'utilisation de ce manuel sont suivies, il se formera un dépôt blanchâtre et poussiéreux sur la surface intérieure de la vitre après environ une semaine d'utilisation. Cela est normal et s'enlève facilement lorsque le foyer est froid, en essuyant la vitre à l'aide d'un linge humide ou d'un essuie-tout, puis en l'asséchant.

Lorsque le foyer fonctionne à bas régime, il se peut qu'il se forme des taches brun pâle, surtout dans les coins inférieurs de la vitre. Cela indique que le bois brûle en fumant et qu'une partie de la fumée s'est condensée sur la vitre. Ces taches indiquent aussi une combustion incomplète du bois, ce qui signifie aussi plus de rejets de fumée et une formation plus rapide de créosote dans la cheminée.

Les dépôts qui se forment sur la vitre sont la meilleure indication de la qualité du combustible et de la réussite à bien utiliser le foyer. Ces taches peuvent être nettoyées à l'aide d'un nettoyant spécial pour vitre de foyer à bois. **Ne pas utiliser de produits abrasifs pour nettoyer la vitre.**

Le but devrait être d'avoir une vitre propre, sans taches brunes. Si des taches brunes se forment régulièrement sur la vitre, quelque chose doit être changé soit dans la façon d'opérer le foyer soit dans le combustible. Lorsque les traces brunes proviennent du rebord de la vitre, il est temps de changer le joint d'étanchéité autour de la vitre. Toujours remplacer le joint d'étanchéité par un autre d'origine.



Ne pas nettoyer la vitre lorsque le foyer est chaud.

Ne jamais faire un usage abusif de la porte en la frappant ou en la claquant.

Ne pas utiliser l'appareil si la vitre est craquée ou brisée.

6.2.2 Remplacement

La vitre utilisée est un verre céramique de 5/32" (4 mm) d'épaisseur, 24 ⅜" x 12 ⅝" (620 mm x 321 mm) testé pour des températures pouvant atteindre 1400 °F. Si la vitre se brise, il faudra la remplacer avec un verre céramique ayant les mêmes spécifications. **Le verre trempé ou le verre ordinaire ne supportera pas les températures élevées de cet appareil.**

Pour retirer ou remplacer la vitre:

1. Soulever la porte pour la retirer de ses pentures et la déposer sur une surface douce et plane.
2. Retirer le joint d'étanchéité, les vis, les reteneurs et les cadres en métal qui maintiennent la vitre en place.
3. Retirer la vitre. Si elle est endommagée, installer une nouvelle vitre. La nouvelle vitre doit avoir un joint d'étanchéité. Voir la procédure d'installation.
4. Réinstaller la nouvelle vitre, en prenant soin de bien la centrer et de ne pas trop serrer les vis.

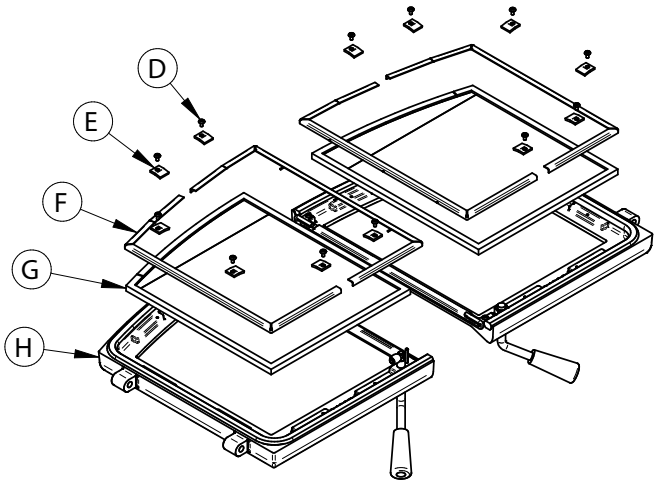
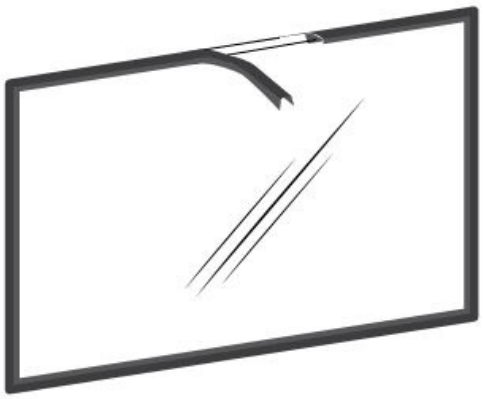


Figure 1: Porte double

Les deux principales causes de bris de vitre sont un placement inégal de la vitre dans la porte et un serrage excessif des vis.

6.2.3 Joint d'étanchéité

Le joint est plat, encollé et est fait de fibre de verre tressée. Le joint doit être centré sur l'épaisseur du verre.



1. Retirer la vitre de la porte en suivant les trois premières étapes de la section précédente.
2. Retirer le joint et laver la vitre soigneusement.
3. Retirer une partie du papier qui recouvre l'adhésif et placer le joint sur une table, adhésif vers le haut.
4. Coller l'extrémité du joint au milieu d'un des côtés de la vitre, puis presser la vitre sur le joint, en prenant soin de bien la centrer sur le joint.
5. Retirer une autre partie du papier qui recouvre l'adhésif et faire tourner la vitre. Le joint ne doit pas être étiré durant l'installation.
6. Couper le joint à la longueur nécessaire. Pincer le joint sur la vitre en faisant chevaucher le rebord.

6.3 Porte

6.3.1 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 la porte et la placer face vers le bas sur une surface douce comme un torchon ou un morceau de tapis.
2. Retirer le vieux joint d'étanchéité de la porte. Utiliser un tournevis pour gratter la vieille colle à joint qui se trouve dans la rainure de la porte.

3. Appliquer un cordon d'environ 3/16" (5 mm) de silicone haute température dans la rainure de la porte. En partant du centre, côté charnières, installer le joint dans la rainure. Le joint ne doit pas être étiré lors de l'installation.
4. 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.
5. Fermer la porte. Ne pas utiliser le foyer pendant 24 heures.

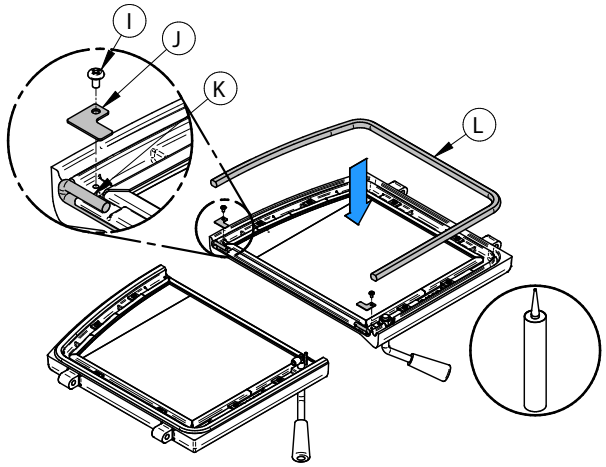


Figure 2: Porte double

6.4 Système d'évacuation

La fumée de bois se condense à l'intérieur de la cheminée, formant un dépôt inflammable appelé créosote. Lorsque la créosote s'accumule dans le système d'évacuation, elle peut s'enflammer lorsqu'un feu très chaud est fait dans le foyer. Un feu extrêmement chaud peut progresser jusqu'à l'extrémité de la cheminée. De graves feux de cheminée peuvent endommager même les meilleures cheminées. Des feux fumants peuvent rapidement causer la formation d'une épaisse couche de créosote. Lors d'une bonne combustion, les gaz sortant de la cheminée sont presque transparents, donc la créosote se forme plus lentement.

«Créosote - Formation et nécessité de la retirer

Lorsque le bois brûle lentement, il produit du goudron et d'autres vapeurs organiques qui se combinent à la vapeur d'eau évacuée pour former de la créosote. Ces vapeurs se condensent dans un conduit de cheminée relativement froid d'un appareil qui brûle lentement. Par conséquent, les résidus de créosote s'accumule dans le conduit. Lorsqu'elle prend feu, la créosote produit un feu extrêmement chaud.

Le raccord de cheminée et la cheminée doivent être inspectés au moins une fois tous les deux mois pendant la saison de chauffage pour déterminer si une accumulation de créosote s'est produite.

Si la créosote s'est accumulée (1/8" [3mm] ou plus), il faut l'enlever pour réduire le risque de feu de cheminée »

6.4.1 Ramonage de la cheminée

La cheminée devrait être vérifiée régulièrement afin d'éviter une accumulation de créosote. L'inspection et le nettoyage de la cheminée peuvent être facilités en retirant le coupe-feu.



6.4.2 Fréquence de nettoyage

Il n'est pas possible de prédire en combien de temps ou combien de créosote se formera dans la cheminée. Il est important, par conséquent, de vérifier mensuellement s'il y a des dépôts dans la cheminée, jusqu'à ce que le taux de formation de la créosote soit connu. Même si la créosote se forme lentement dans le système, la cheminée devrait être inspectée et nettoyée au moins une fois par année.

Établir une routine pour le bois, le foyer à bois et la technique d'allumage. Vérifier quotidiennement l'accumulation de créosote jusqu'à ce que l'expérience montre à quelle fréquence le nettoyage doit être fait. Plus le feu est chaud, moins de créosote est déposée. Un nettoyage fréquent peut être nécessaire par temps doux, bien qu'un nettoyage moins fréquent puisse être suffisant pendant les mois les plus froids. Contacter les services d'incendie municipaux ou provinciaux de la région pour savoir comment gérer un feu de cheminée. Avoir un plan bien compris pour gérer un feu de cheminée.

6.4.3 Feu de cheminée

L'entretien et l'inspection régulière du système de cheminée peuvent éviter les feux de cheminée. Si un feu de cheminée se déclare, procéder comme suit :

1. Fermer la porte et le contrôle d'admission d'air du foyer;
2. Alerter les occupants de la maison du danger;
3. Si vous avez besoin d'aide, appeler le service d'incendies;
4. Si possible, utiliser un extincteur chimique à poudre, du soda à pâte ou du sable pour maîtriser le feu. *Ne pas utiliser d'eau*, car il pourrait se produire une explosion de vapeur.

L'inspection et le nettoyage du foyer par un ramoneur qualifié ou le service des incendies sont obligatoires avant la remise en service de l'appareil.

PARTIE B – INSTALLATION

Installer le foyer uniquement de la façon décrite dans ce manuel en utilisant uniquement les composants provenant des fabricants de cheminées énumérées au Tableau 3.

- Foyer;
- Façade;
- Revêtement de porte;
- Briques ou panneaux réfractaires;
- Cheminée préfabriquée :
  - Sections de cheminée;
  - Coudes (si nécessaire);
  - Autres composants prévus dans les instructions d'installation.

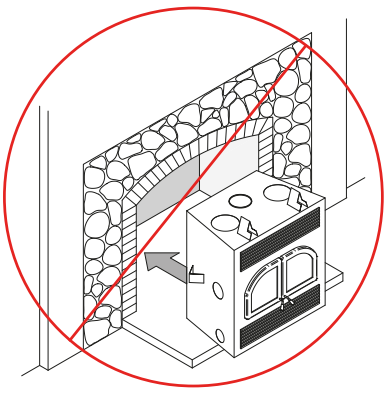
Équipement additionnel (optionnel)

- Ensemble de distribution par air forcé;
- Ensemble de distribution d'air par gravité;
- Ensemble d'entrée d'air frais.

7. Sécurité et normes

7.1 Sécurité

- Le foyer et la cheminée doivent être dans une enceinte jusqu'au grenier.
- Ce foyer n'a pas été approuvé avec un ensemble de fausses bûches à gaz, ventilé ou non. Pour réduire les risques d'incendie ou de blessures, ne pas installer d'ensemble de bûches à gaz non ventilé dans ce foyer.
- **MÉLANGER DES COMPOSANTS PROVENANT DE DIFFÉRENTES SOURCES OU MODIFIER DES COMPOSANTS DE L'APPAREIL PEUT AMENER DES SITUATIONS DANGEUREUSES ET ANNULERA LA GARANTIE. TOUTE MODIFICATION DU FOYER QUI N'A PAS ÉTÉ APPROUVÉE PAR ÉCRIT PAR L'AUTORITÉ D'HOMOLOGATION OU LE MANUFACTURIER EST INTERDITE ET CONTREVIENT AUX NORMES CSA B365 (CANADA) ET NFPA 211 (ÉTATS-UNIS).**
- Le fabricant n'accorde aucune garantie, implicite ou explicite, pour la mauvaise installation ou le manque d'entretien du foyer et n'assume aucune responsabilité pour les dommages qui pourraient en résulter.
- Ce foyer doit toujours être utilisé avec les chenets d'origine.
- Ce foyer n'a pas été testé pour être installé à l'intérieur d'un foyer de maçonnerie.
- Ne pas installer dans une maison mobile (Canada) ou une maison préfabriquée (États-Unis).
- Ne pas utiliser de matériaux autres que ceux mentionnés dans la liste des pièces de remplacement au cours de l'installation étant donné qu'ils peuvent compromettre la sécurité et qu'un incendie pourrait en résulter.



7.2 Normes

Lorsqu'il est installé et utilisé tel que décrit dans les présentes instructions, ce foyer à bois convient comme appareil de chauffage autonome pour installation résidentielle.

Au Canada, il faut respecter la norme CSA B365 «Installation des appareils de chauffage à combustible solide et du matériel connexe» et la norme 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 foyer n'est pas homologué pour une utilisation avec un soi-disant «raccordement de tuyau positif» à la tuile d'argile d'une cheminée de maçonnerie.

8. Installation du foyer



Avant de faire l'installation du foyer, il est obligatoire d'installer les cales d'espacement sur le dessus, les côtés et au dos du foyer.

8.1 Emplacement

Le meilleur emplacement pour installer le foyer doit tenir compte de l'emplacement des fenêtres, des portes et de la circulation dans la pièce. Il doit y avoir suffisamment d'espace en avant du foyer pour l'extension de l'âtre et le manteau et sur les côtés ou à l'arrière pour les différents système de distribution de la chaleur, pour l'entrée d'air frais et pour la cheminée. Idéalement, la cheminée doit pouvoir traverser la maison sans avoir besoin de couper des solives de plancher ou des fermes de toit.

9. Le système d'évacuation

Le système d'évacuation agit comme le moteur qui entraîne le système de chauffage au bois. Même le meilleur des foyers ne fonctionnera pas de façon aussi sécuritaire et efficace s'il n'est pas raccordé à une cheminée adéquate.

La chaleur contenue dans les gaz d'évacuation qui passent du foyer à la cheminée n'est pas de la chaleur perdue. Cette chaleur est utilisée par la cheminée pour créer le tirage qui aspire l'air de combustion, garde la fumée dans le foyer et évacue les gaz de façon sécuritaire vers l'air libre. La chaleur contenue dans les gaz d'évacuation peut être vue comme le combustible dont se sert la cheminée pour créer le tirage.

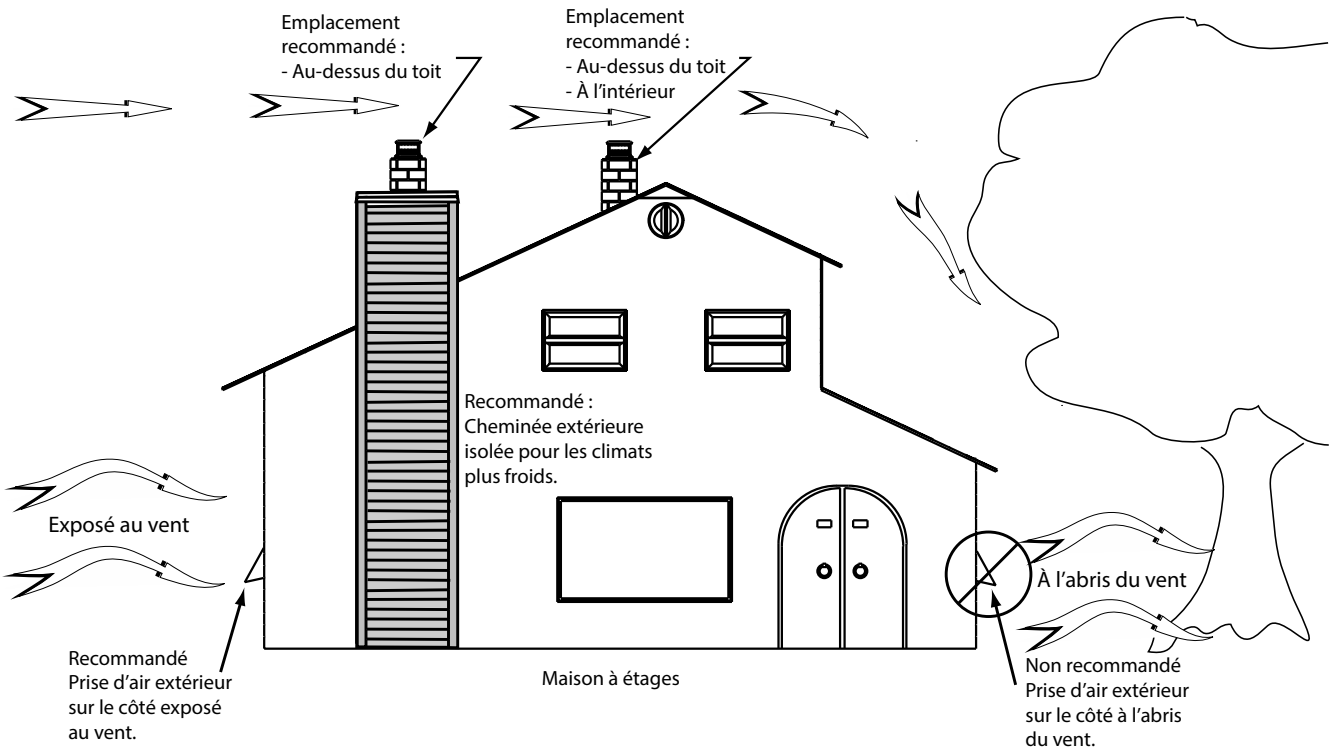
9.1 Emplacement

L'emplacement de la cheminée est crucial pour le bon fonctionnement de l'appareil. La cheminée doit être installée à l'intérieur plutôt que sur un mur extérieur et doit monter directement à travers la partie la plus haute de la maison. Cette installation profite de l'environnement chaud pour produire une tire plus puissante, accumule moins de dépôts de créosote et ne sera pas affectée par les températures froides ou les vents violents. Les cheminées extérieures conduiront à des courants d'air froids lorsqu'il n'y a pas de feu dans le foyer, à l'allumage lent des nouveaux feu et au dégagement de fumée lorsque la porte est ouverte pour le chargement.

D’un autre côté, un tirage excessif peut rendre le feu incontrôlable, créant des températures très élevées dans l’appareil ainsi que dans la cheminée et les endommager gravement. Une lueur rougeâtre sur l’appareil et sur les composants de la cheminée indique une surchauffe. Des températures excessives peuvent provoquer un feu de cheminée.

9.2 Apport d’air de combustion

L’apport d’air de combustion le plus sûr et le plus fiable pour le foyer provient de la pièce dans laquelle il est installé. L’air de la pièce est déjà préchauffé de sorte qu’il ne refroidira pas le feu et sa disponibilité n’est pas affectée par la pression du vent sur la maison. Le foyer peut ne pas avoir suffisamment d’apport d’air de combustion lorsqu’un puissant appareil de ventilation (comme une hotte de cuisinière) rend la pression d’air de la maison négative par rapport à l’air extérieur.



9.3 Installation

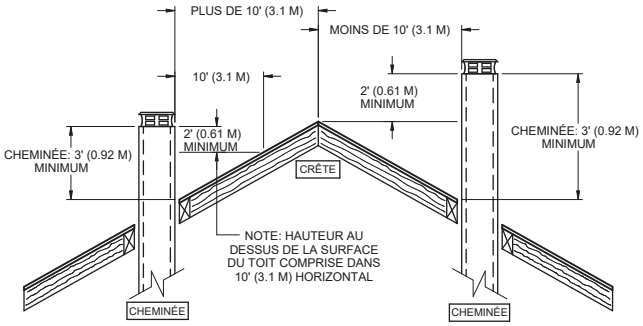
Le manuel d’installation du manufacturier de la cheminée a préséance sur les instructions d’installation suivantes. Afin de garantir une installation sécuritaire, bien vouloir s’y référer. Certaines pièces non illustrées peuvent être requises.

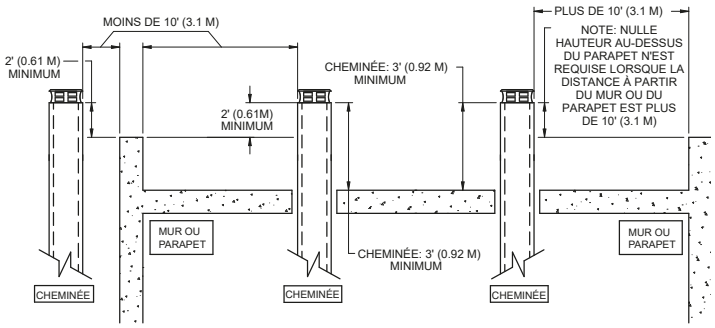
9.3.1 Conseils généraux

- Ce foyer à bois a une performance et une efficacité optimale lorsqu’il est raccordé à une **cheminée** ayant un conduit de fumée de **6" (150 mm) de diamètre**. Seules les cheminées énumérées dans le tableau peuvent être utilisées.

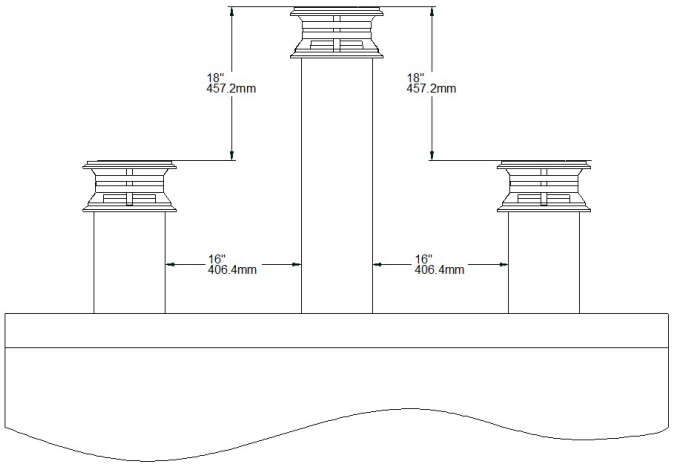
- Pour assurer un bon tirage, il est recommandé d’avoir une longueur de 18" à partir du dessus de l’appareil jusqu’au départ de la première déviation. Cependant, un départ utilisant un coude de 30° ou 45° (Canada seulement) est aussi homologué.

- **UNE CHEMINÉE QUI SERT UN FOYER NE DOIT SERVIR À AUCUN AUTRE APPAREIL.**
- La **hauteur minimale** du système de **cheminée** est de **15 pieds (4,6 m)**, de la base de l'appareil jusqu'au chapeau de cheminée. Si seulement la hauteur minimale du système de cheminée est installée, les conditions de fonctionnement doivent être optimales (cheminée intérieure, hauteur minimale de 18" avant toute déviation, etc.).
- La cheminée doit comporter **au moins un support**. La longueur maximum de cheminée qui devrait être supportée par le foyer est de 9 pieds (2,75 m) pour les cheminées Solid Pack de 2" (5 cm) et 12 pieds (3,7 m) pour les cheminées Solid Pack de 1".
- La cheminée doit dépasser d'au moins 3 pieds (92 cm) au-dessus de son point de sortie du toit et d'au moins 2 pieds (61 cm) tout mur, toit ou édifice situé à moins de 10 pieds (3,1 m).



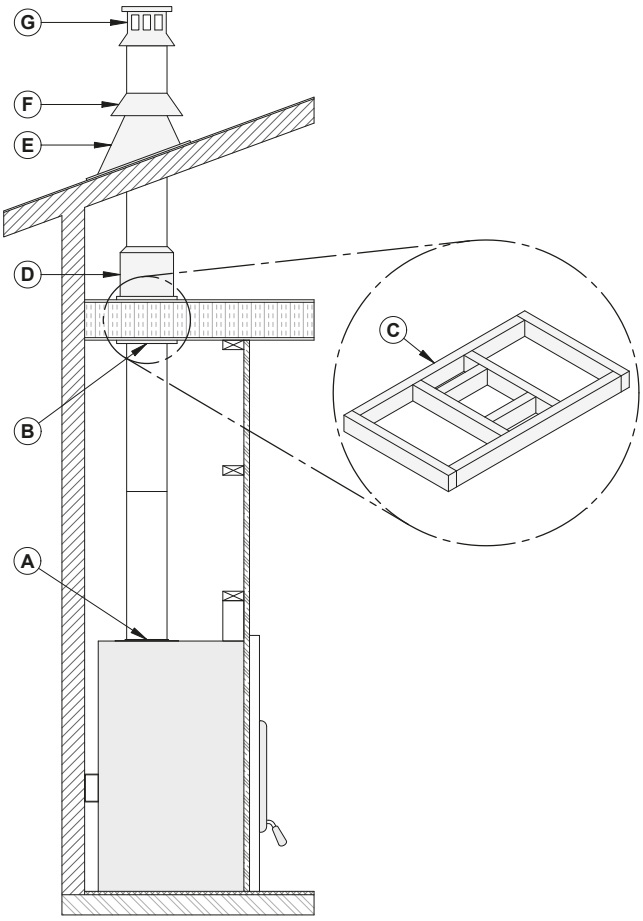


- Éviter autant que possible les déviations, surtout les plus prononcées. Chaque déviation ajoute de la restriction au système et peut mener à des problèmes de tirage.
- Si la cheminée dépasse de plus de 5 pieds (1,5 m) au-dessus de son point de sortie du toit, elle doit être fixée à l'aide d'une bride de toit.
- Un chapeau doit être installé sur la cheminée.
- Lorsqu'il y a plus d'une cheminée sur le même tablier ou dans le même secteur, éloigner les extrémités d'au moins 16" (410 mm) horizontalement et 18" (460 mm) verticalement pour éviter que la fumée ne passe d'une cheminée à l'autre.



- Un dégagement de 2" (50 mm) entre la cheminée et tout matériau combustible est requis. Cet espace doit rester libre, sans isolant ni autre matériau combustible. Les parties de la cheminée qui passent dans des espaces habités doivent être enfermées dans une enceinte.

9.3.2 Installation supportée par le toit



A : Plaque d'ancrage

B: Coupe-feu

C: Ouverture pour la cheminée

D: Coupe-feu de grenier

E: Solin de toit

F: Collet de solin

G: Chapeau de cheminée

1. Couper des ouvertures carrées **(C)** dans tous les planchers traversés par la cheminée et dans le toit et fabriquer un cadre pour conserver un dégagement de 2" (50 mm) entre la cheminée et tout matériau combustible. L'espace doit rester libre, sans isolant ni autre matériau combustible. La dimension des trous dans les planchers et les plafonds doit être conforme aux instructions du fabricant de la cheminée.

2. En se positionnant sous le plafond, installer un support de plafond **(B)** à chaque étage où passera la cheminée. Dans le grenier, installer un coupe-feu de grenier **(D)**.

3. Installer une plaque d'ancrage **(A)** et une première section de cheminée sur le foyer. Installer le nombre de sections de cheminée nécessaires, en s'assurant de verrouiller chaque section en place.

4. Lorsque la hauteur de la cheminée désirée est atteinte, installer un support de toit.

5. Installer ensuite le solin de toit **(E)** et sceller le joint entre le toit et le solin avec du goudron à toiture. Sur un toit en pente, insérer le solin sous le bardeau supérieur et par-dessus les bardeaux inférieurs. Clouer le solin en utilisant du clou à bardeau.

   Si le solin de toit est ventilé, ne pas obstruer ou mettre du calfeutrage dans les ouvertures de ventilation.

6. Placer le collier de solin **(F)** par-dessus le solin et serrer avec le boulon fourni. Sceller le joint entre le collier de solin et la cheminée en utilisant un produit de calfeutrage à base de silicone.

7. Installer le chapeau de cheminée **(G)**.

9.3.3 Installation déviée

Pour assurer un bon tirage, il est recommandé d'avoir une longueur de 18" **(A)** à partir du dessus de l'appareil avant la première déviation.

1. Suivre les instructions pour une installation droite, jusqu'àu premier coude.
2. Installer et tourner le coude dans la bonne direction. Fixer à la cheminée à l'aide de trois vis à métal de ½" (12 mm).
3. Installer le nombre de sections de cheminée approprié pour obtenir la déviation nécessaire. Fixer les sections de cheminée ensemble avec trois vis de ½" (12 mm). Si la section décalée comporte deux sections de cheminée ou plus, un support de déviation doit être installé. Si la cheminée traverse un mur, installer un coupe-feu mural à angle.
4. Installer un autre coude pour ramener la cheminée à la verticale.
5. Continuer l'installation en suivant les instructions de l'installation droite.

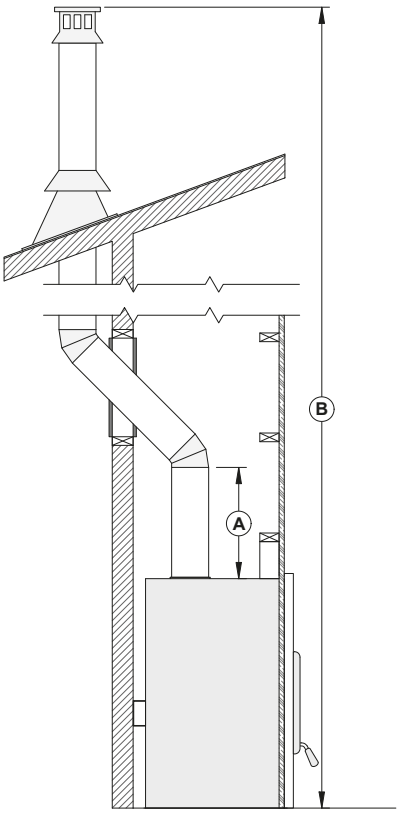


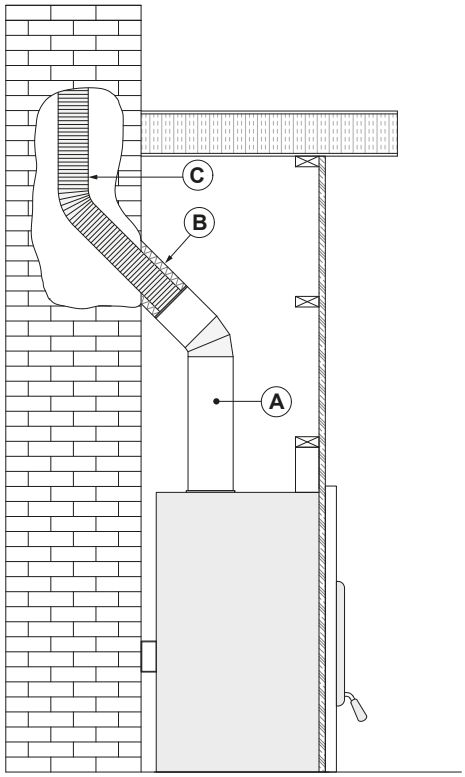
Tableau 1 : Hauteur minimum d'une cheminée munie de coude

Modèles de cheminée	Tous les modèles du tableau
Installation verticale	15 pieds (4,6 m)
Deux (2) coudes	15 pieds (4,6 m)
Quatre (4) coudes	17 pieds (5,2 m)

9.3.4 Installation avec une cheminée de maçonnerie

Avant de commencer l'installation, la cheminée de maçonnerie doit être inspectée afin de déterminer la présence de fissures, de mortier qui s'effrite, de couches de créosote, d'obstructions ou tout autre signes de détérioration. Si des signes de détérioration sont notés, la cheminée doit être réparée et nettoyée avant l'installation.

De plus, la cheminée de maçonnerie doit répondre aux exigences minimales du code du bâtiment local ou l'équivalent afin d'obtenir une installation sécuritaire. Contacter un inspecteur du bâtiment pour prendre connaissance des exigences en vigueur dans la région.



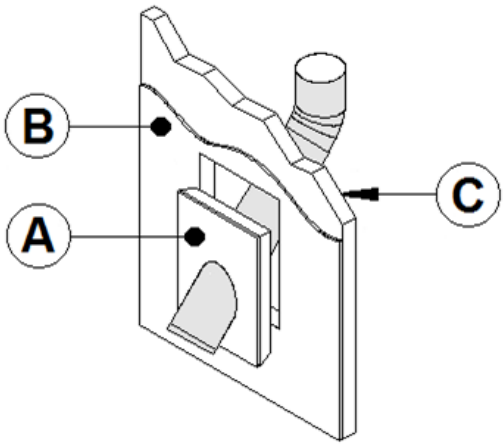
1. Placer le foyer à l'endroit désiré. Installer un coude ou une section de cheminée **(A)** temporairement sur le dessus du foyer. Marquer l'endroit où le conduit de fumée traversera dans la cheminée de maçonnerie.
2. Percer un trou dans la cheminée de maçonnerie pour pouvoir y insérer un adaptateur isolé pour gaine **(B)**.
3. Descendre la gaine **(C)** dans la cheminée jusqu'au niveau du trou.
4. Glissez un adaptateur isolé pour gaine à 45° ou 30° et raccordez-le à la gaine.
5. Scellez l'ouverture autour de la gaine à l'aide de mortier réfractaire à haute température.
6. Ensuite, suivez les instructions du fabricant de la cheminée pour raccorder la section de gaine rallongée au raccord spécial de cheminée.

La gaine doit dépasser d'au moins 12" (30 cm) le dessus de la cheminée de maçonnerie.

9.4 Installation d'un coupe-feu mural à angle

Lorsque la cheminée traverse un mur inflammable à un angle de 30° ou 45° (Canada seulement), un coupe-feu mural à angle doit être installé.

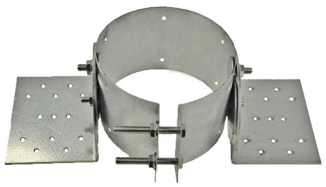
Dans les régions froides, il est recommandé d'utiliser un coupe-feu mural isolé pour conserver l'intégrité thermique de la maison.



A	Coupe-feu mural
B	Mur intérieur
C	Mur extérieur

9.5 Installation d'un support de cheminée

9.5.1 Support de toit



Le support de toit universel peut être utilisé sur

- un toit pour supporter la cheminée,
- un plancher, un plafond ou un toit au-dessus d'un décalage pour supporter la cheminée ou
- comme support additionnel.

Toujours respecter les instructions du fabricant quant à la hauteur maximum de cheminée qui peut être supportée par le support.

9.5.2 Support de déviation



Ce support est utilisé au dessus d'un décalage de cheminée. Lorsque le décalage de la cheminée traverse un mur, ce support peut être installé sur le mur pour supporter la cheminée.

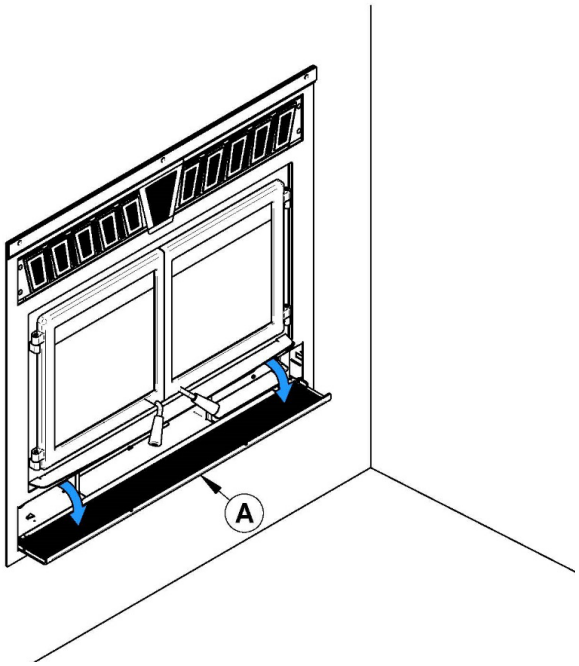
9.6 Cheminées homologuées

Tableau 2 : Cheminées homologuées

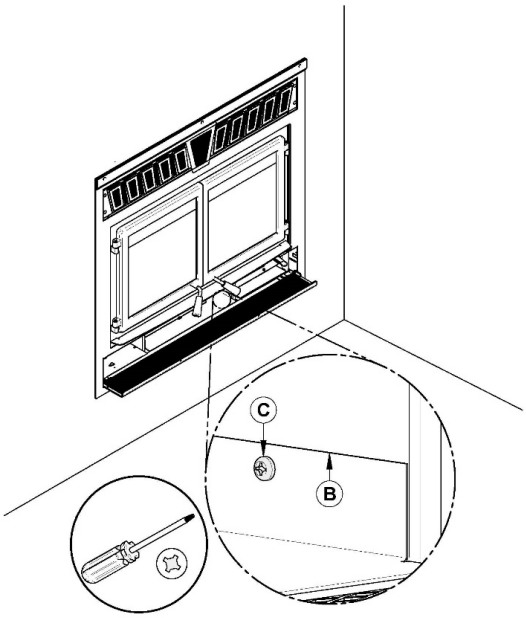
Fabricant de cheminée	Marque	Type	Diamètre
Olympia Chimney SBI Division Venting	Ventis	1" Solid Pack	6" (15 cm)
SBI Division Venting	Nexvent	1" Solid Pack	6" (15 cm)
Olympia Chimney	Champion Chimney System	1" Solid Pack	6" (15 cm)
Rockford Chimney	Rock-Vent	1" Solid Pack	6" (15 cm)
Selkirk	Ultra-Temp (UT)	1" Solid Pack	6" (15 cm)
Selkirk	Super Pro (SPR)	1" Solid Pack	6" (15 cm)
Selkirk	Super Vent (JSC)	1" Solid Pack	6" (15 cm)
Selkirk	Hart & Cooley (TLC)	1" Solid Pack	6" (15 cm)
Selkirk	Sure-Temp (ST)	1" Solid Pack	6" (15 cm)
Selkirk	CF Sentinel (CF)	2" Solid Pack	6" (15 cm)
Selkirk	Super Pro 2100 (ALT)	2" Solid Pack	6" (15 cm)
Selkirk	Super Vent 2100 (JM)	2" Solid Pack	6" (15 cm)
Selkirk	UltimateOne	1" Solid Pack	6" (15 cm)
Security Chimney	ASHT	1" Solid Pack	6" (15 cm)
Security Chimney	S-2100	2" Solid Pack	6" (15 cm)
DuraVent	Dura Tech	1" Solid Pack	6" (15 cm)
DuraVent	Dura Tech Canada DTC	1" Solid Pack	6" (15 cm)
DuraVent	Dura Tech Premium	2" Solid Pack	6" (15 cm)
DuraVent	Dura Plus	AC Triple Wall	6" (15 cm)
ICC	Excel 2100	1" Solid Pack	6" (15 cm)
Metal Fab	Temp Guard	1" Solid Pack	6" (15 cm)
American Metal	HSS	AC Triple Wall	6" (15 cm)
American Metal	HS	AC Triple Wall	6" (15 cm)

ANNEXE 1: ENTRETIEN OU REMPLACEMENT DU VENTILATEUR

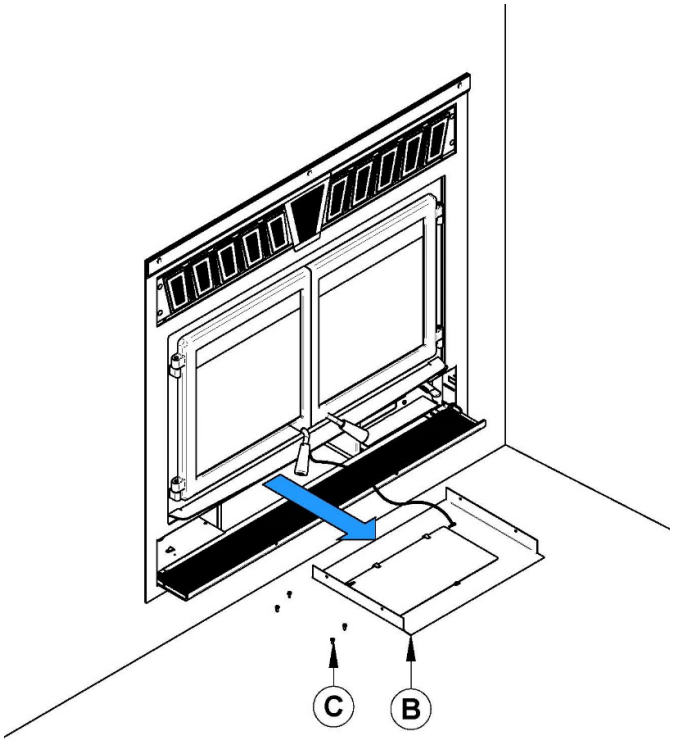
1. Ouvrez la louvre inférieure (A).



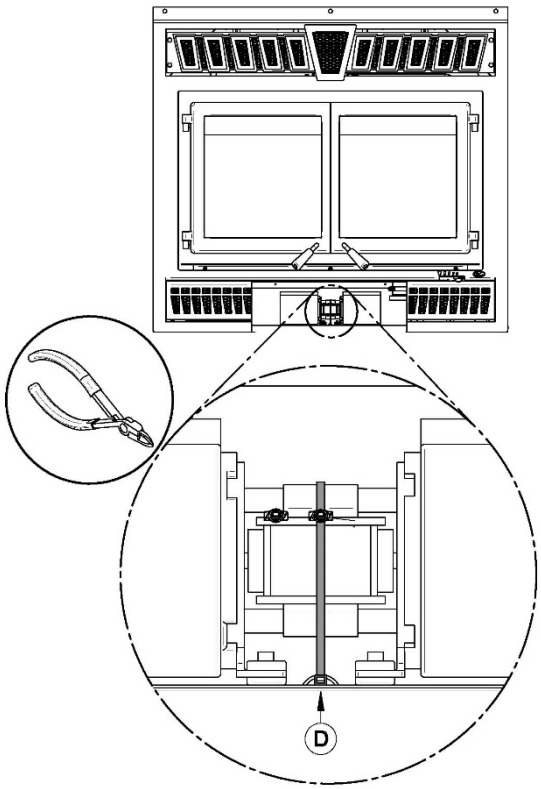
2. À l'aide d'un tournevis carré court, dévissez les 4 vis (C) retenant le coupe-chaleur (B) en place.



3. Sortez et conservez le coupe-chaleur (B) et les 4 vis (C).

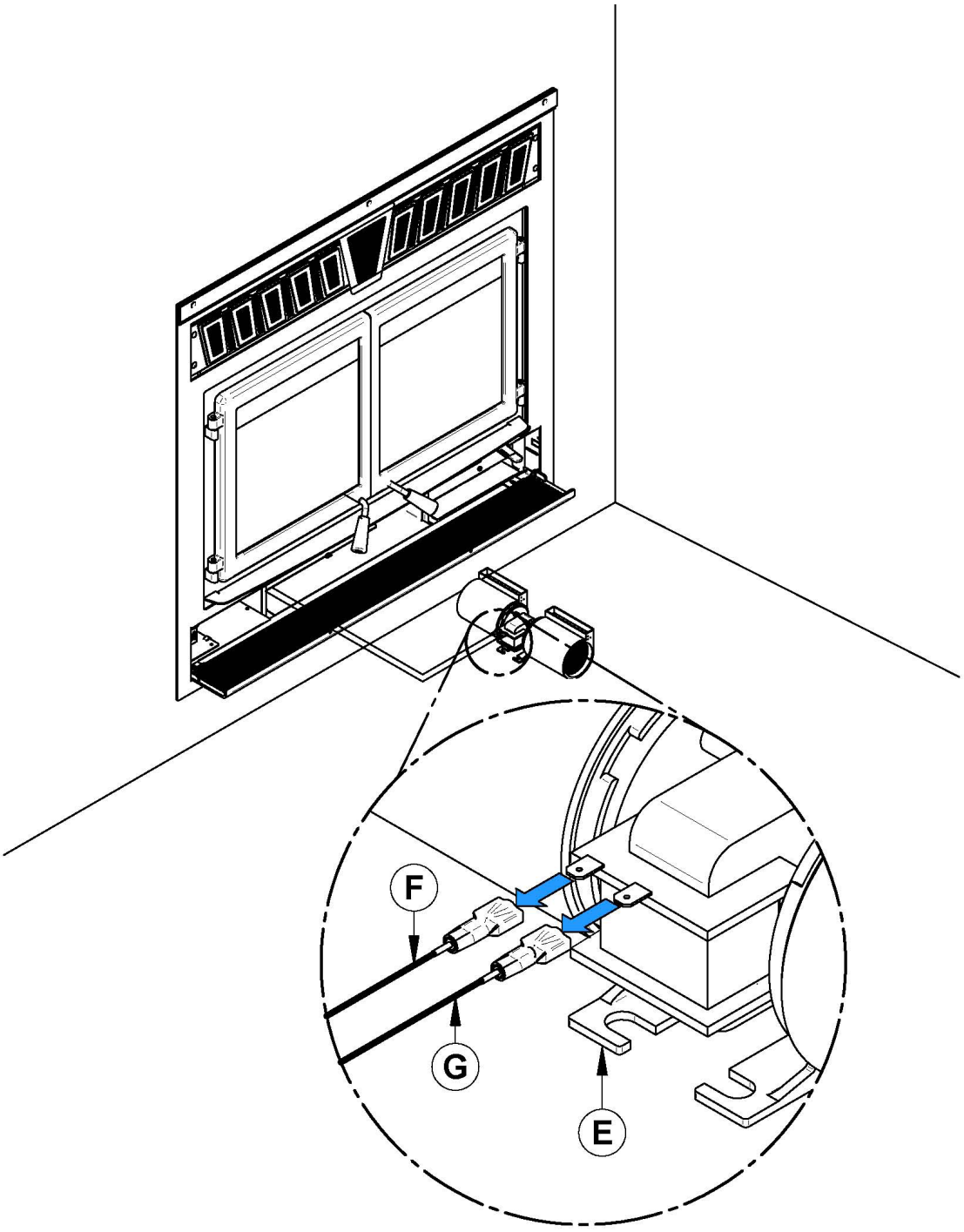


4. Coupez l'attache autobloquante (D).



5. Débranchez les fils électriques (F) et (G) qui alimentent le ventilateur.
6. Soulevez le ventilateur (E) situé sous la chambre à combustion à l'arrière.
7. Faites pivoter le ventilateur à 90° afin de le sortir.

Répétez les étapes dans le sens inverse pour la réinstallation du ventilateur.



ANNEXE 2: INSTALLATION D'UNE ENTRÉE D'AIR FRAIS

Pour chauffer, le foyer a besoin d'air frais et il tire cet air de la maison. Il peut ainsi priver d'air certains appareils à combustion comme les fournaises au gaz ou à l'huile. De même, les hottes peuvent aussi tirer de l'air, ce qui donne une pression négative dans la maison et y attire la fumée du foyer. La situation est pire dans les maisons modernes étanches. Pour résoudre ce problème, nous recommandons fortement de raccorder le foyer à une prise d'air frais. Vérifiez auprès des autorités locales, il se peut que cela soit obligatoire.

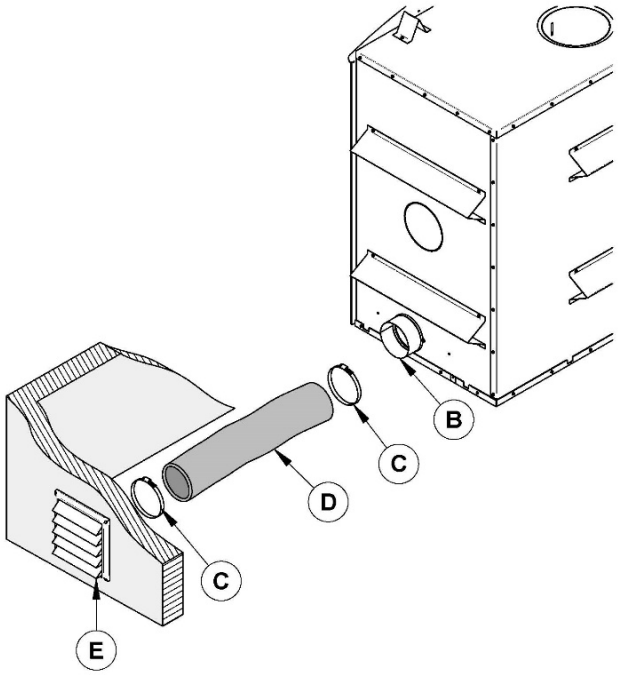
Si une entrée d'air extérieur ne suffit pas (maison trop étanche ou conduit excédant 10 pi. ou 3 m), il est permis d'installer deux entrées d'air séparées, doublant ainsi la quantité d'air comburant disponible; le diamètre des conduits peut aussi être augmenté en utilisant un adaptateur de 3 à 4 pouces, ce qui augmentera également le volume d'air comburant disponible.

Le conduit isolé devrait être d'une longueur suffisante et d'une configuration permétant d'éviter la condensation.

Le registre mural extérieur ne doit pas être installé à plus de 50% de la hauteur totale de la cheminée et au plus 10 pieds (3 m) au dessus de la base du foyer.

L'air frais doit provenir de l'extérieur de la maison. La prise d'air ne doit pas prendre son air dans le grenier, le sous-sol ou un garage.

La prise d'air devrait être installée pour que la neige ne la bloque pas et qu'elle soit à l'abri du vent violent et loin des gaz d'échappement des automobiles, d'un compteur de gaz ou autres sorties d'air.



L'ensemble d'entrée d'air frais inclus avec votre appareil contient les éléments suivants :

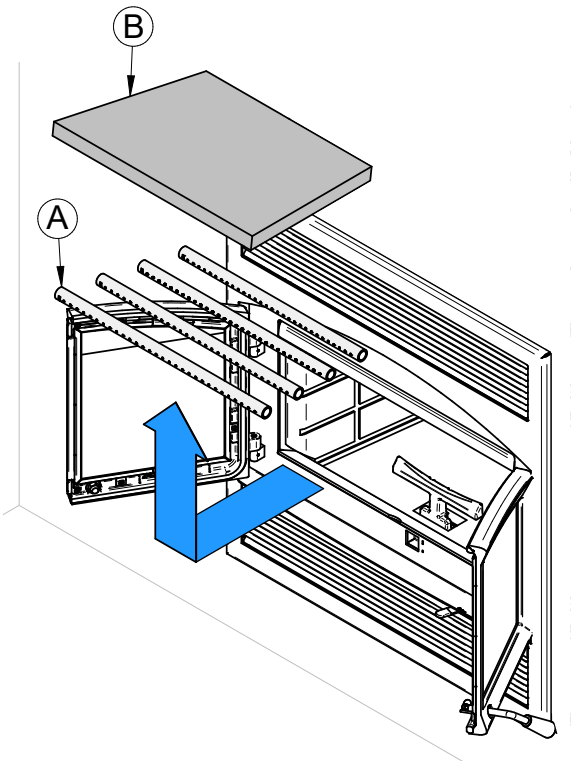
- Un (1) adaptateur de 3" (76 mm);
- Une (1) plaque d'obstruction arrivée d'air;
- Six (6) vis;
- Un (1) réducteur 3" à 4".

Les éléments suivants ne sont pas inclus :

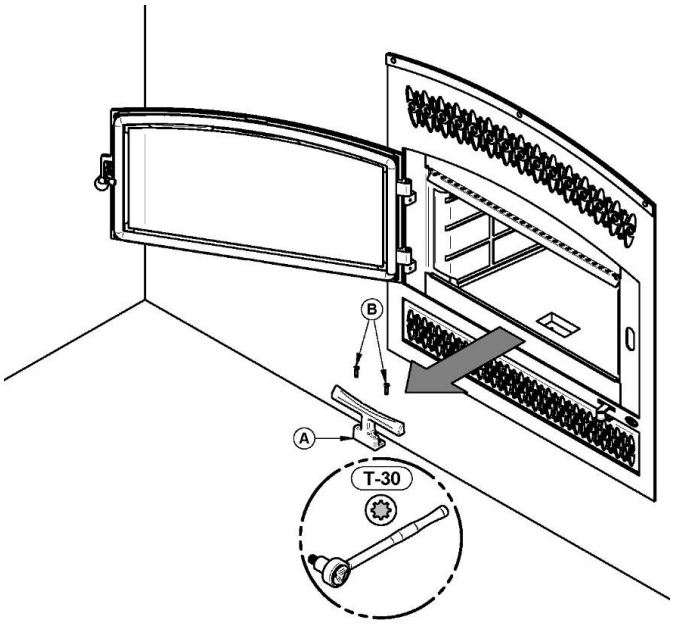
- La bouche d'air extérieure;
- Les deux (2) attaches ajustables;
- Longueur de tuyau flexible isolé 3" ou 4". (Ce tuyau de type HVAC doit être conforme aux normes ULC S110 et/ou UL 181, classe 0 ou classe 1 et doit résister à des températures allant jusqu'à 250 °F).

ANNEXE 3: INSTALLATION DES TUBES D'AIR ET DU COUPE-FEU

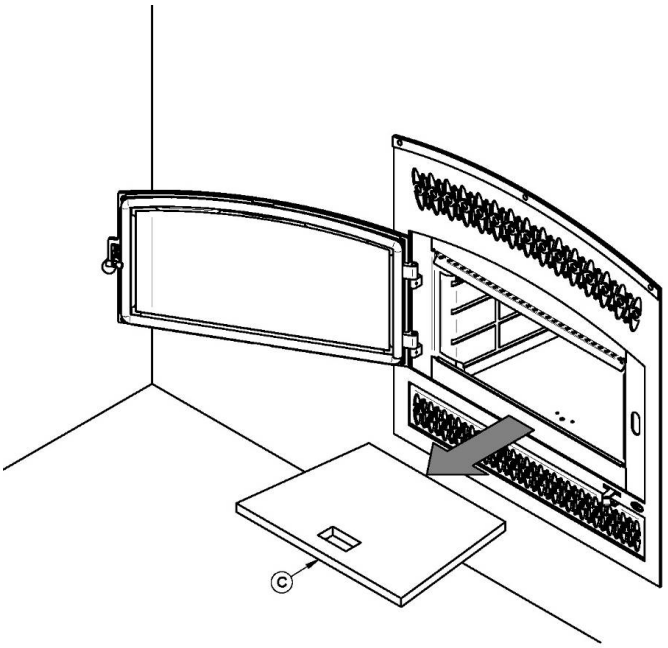
Pièces amovibles	
A	Coupe-feu de C-Cast (x1)
B	Tubes d'air secondaire (x4)



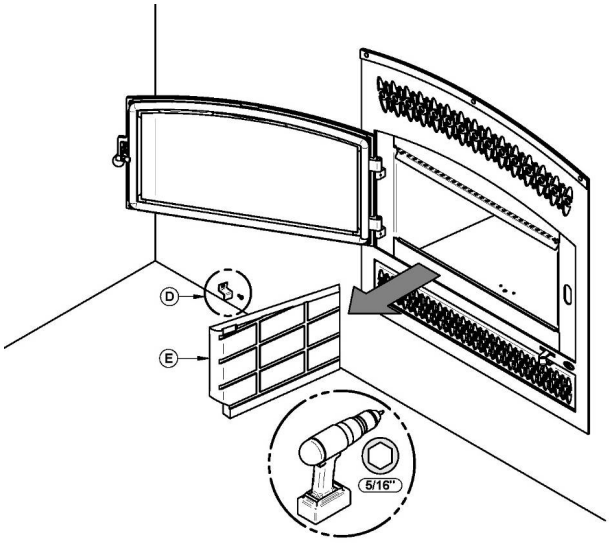
1. À l'aide d'une clef à rochet et d'un embout Torx (T-30), dévisser les 2 vis Torx (B) et retirer l'andiron (A).



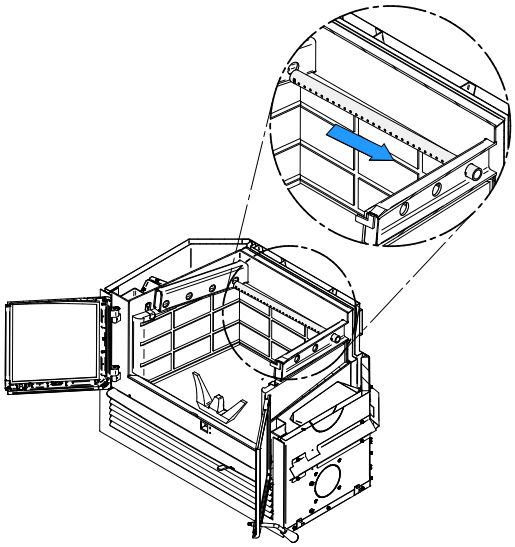
2. Retirer la pierre de fond (C).



3. À l'aide d'une visseuse électrique et d'un embout hexagonal 5/16", retirer le support de pierre (D) et la pierre latérale gauche (E).

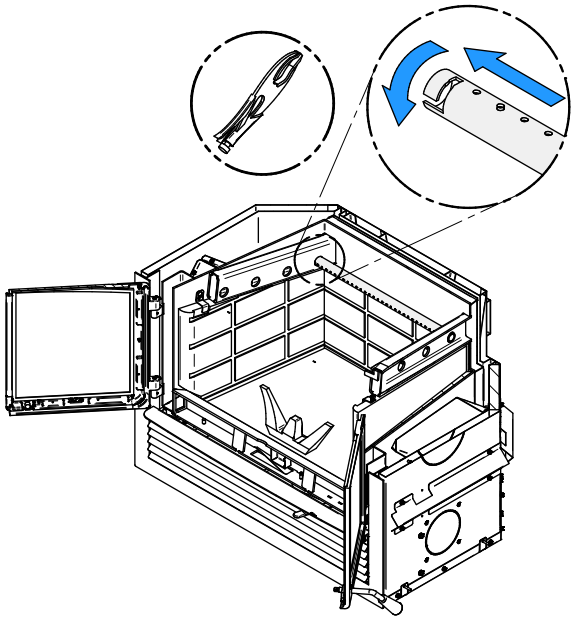


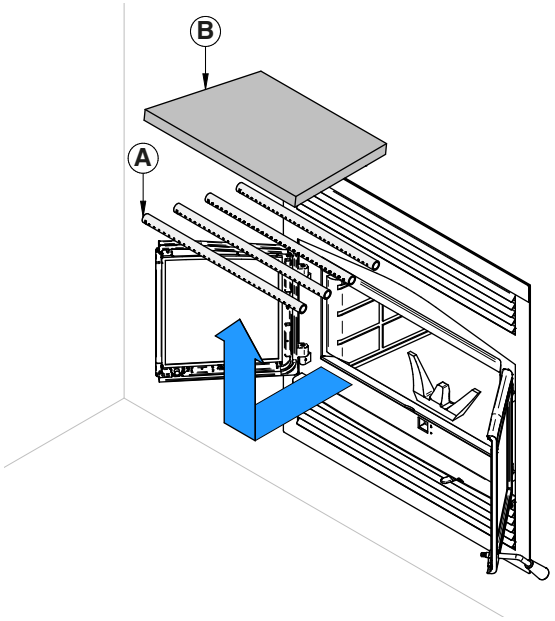
4. En commençant vers l'arrière, incliner et insérer le tube d'air secondaire arrière dans le trou du fond de la canalisation droite. Ensuite, lever et pousser le tube vers la gauche dans le trou correspondant de la canalisation de gauche.



5. Aligner le chemin du tube et la dent dans le trou de la canalisation. Tenir le tube à l'aide d'une pince de serrage et suivre le mouvement décrit dans la figure ci-contre pour le sécuriser en place. S'assurer que la dent touche le fond du chemin du tube.

6. Répéter pour le tube centre-arrière.
7. Installer le coupe-feu
8. Répéter les étapes 1 et 2 pour les deux tubes avant.
9. Retirer dans l'ordre inverse.





Prenez note que n'importe quel tube peut être remplacé sans retirer le coupe-feu. Pour l'ordre d'installation se référer à la vue explosée.

GARANTIE À VIE LIMITÉE SBI

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 lors d'une réclamation sous garantie.

La présente garantie ne s'applique que pour un usage résidentiel normal. Cette garantie devient invalide si l'appareil est utilisé pour brûler du matériel autre que du bois de chauffage (pour lequel l'appareil n'est pas certifié par l'EPA) et s'il n'est pas utilisé conformément aux instructions du manuel d'utilisation. 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 dans l'espace désigné en cas de panne de courant.

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 2019.

DESCRIPTION	**APPLICATION DE LA GARANTIE***	
	PIÈCES	**MAIN-D'OEUVRE**
Chambre à combustion (soudures seulement) et cadrage de porte en acier coulé (fonte).	À vie	5 ans
Verre céramique (bris thermique seulement**), placage (défaut de fabrication**) et échangeur de chaleur supérieur.	À vie	S.O.
Habillage, écran coupe-chaleur, tiroir à cendres, pattes en acier, piédestal, moulures décoratives (extrusions), coupe-feu en C-Cast**, coupe-feu en vermiculite**, tubes d'air secondaire**, déflecteurs et supports amovibles de la chambre à combustion en acier inoxydable.	7 ans	S.O.
Ensemble de poignée, moulures de vitre et mécanisme de contrôle d'air.	5 ans	3 ans
Pièces amovibles de la chambre à combustion en acier.	5 ans	S.O.
Ventilateur standard ou optionnel, capteurs thermiques, interrupteurs, rhéostats, câblage et électroniques.	2 ans	1 an
Peinture (écaillage**), joints d'étanchéité, isolants, laines céramiques, briques réfractaires 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. S.O. Sans Objet

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. 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. Toute marchandise expédiée sans autorisation sera automatiquement refusée et retournée à l'expéditeur.

NOTES :

Ce manuel peut être téléchargé gratuitement à partir du site web du manufacturier. Il s'agit d'un document dont les droits d'auteur sont protégés. La revente de ce manuel est formellement interdite. Le manufacturier se réserve le droit de modifier ce manuel de temps à autre et ne peut être tenu responsable de tous problèmes, blessures ou dommages subis suite à l'utilisation d'information contenue dans tout manuel obtenu de sources non autorisées.

Fabricant de poêles International inc.
250, rue de Copenhague,
St-Augustin-de-Desmaures (Québec) Canada
G3A 2H3
418-908-8002