CERTIFICATE OF CONFORMITY

Emissions – Pellet Heater

EPA 40 CFR Part 60, Subpart AAA, ASTM E2779-10 (2017), ASTM E2515-11 (2017), CSA B415.1-10 (R2020)

WHI22 – 21514322

Organization

Stove Builder International
250 de Copenhauge
St Augustin de Desmaures, QC G3A 2H3
Canada

Product: 25-CB120, 55-SHPCB120, 55-TRPCB120

Catalytic: No
Maximum Output: 23,466 Btu/hr
Weighted Average Emissions: 1.37
Weighted Average Annual Delivered Efficiency (HHV): 75.9%
Test Fuel Type: Premium Grade Wood Pellets
Weighted Average CO Emissions Rate (g/min): 16.25
Conformance: Complies with 2020 particulate emissions standard
Product Evaluation No.: 104671974MID-001
Product Evaluation No.: 105096672MID-001c
Test Report No.: 102448975MID-002R3

Certification Body: Intertek Testing Services NA, Inc.
Registered Address: 545 E. Algonquin Rd., Arlington Heights, IL 60005, USA
Initial Issue Date: 14-Jun-22
Date of Expiry: 04-Oct-26
Issue Status: 1

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

Jean-Philippe Kayl Vice President – Global Certification		14-Jun-22
Name	Signature	Date

Certificate of Conformity WHI22-21514322
Appendix A

Certificate of Conformity #:		Certificate of Conformity Issue Date:	
WHI22-21514322		June 14, 2022	
REVISION #	**REVISION DATE**	**REPORT PAGES**	**REVISION**
0	June 14, 2022	N/A	Original Report Issue. Ownership transferred from England's Stove Works to Stove Builder International. Previous CoC WHI15-208507003.

Revised Report #:		Report Issue Date:	
102448975MID-002		April 26, 2016	
REVISION #	**REVISION DATE**	**REPORT PAGES**	**REVISION**
0	April 26, 2016	N/A	Original Report Issue
1	June 3, 2016	15	Added similar models 55-SHPCB120 and 55-TRPCB120 to conclusion of report.
2	October 4, 2021	All	Updated report for 5-year renewal.
		5	Section II.A, updated conditioning burn information.
		9	Section III.C, updated test fuel information.
		10	Section IV.A, updated dilution tunnel depiction.
		2	Supplemental Audit Form (page 2) was updated to note the correct air intake pipe dimensions, which includes a drawing in the audit form.
3	June 14, 2022	7	Added note for not measuring ambient particulates.
		16	Added Appendices

TEST REPORT

REPORT NUMBER: 102448975MID-002R3
REPORT DATE: April 26, 2016
REVISED REPORT DATE: June 3, 2016
REVISED REPORT DATE: October 4, 2021
REVISED REPORT DATE: June 14, 2022

EVALUATION CENTER
Intertek Testing Services NA Inc.
8431 Murphy Drive
Middleton, WI 53562

RENDERED TO
England's Stove Works, Inc.
589 S. Five Forks Road
Monroe, VA 24574

PRODUCT EVALUATED:

MODEL 25-CB120 PELLET FUEL ROOM HEATER

Report of Testing Model 25-CB120 Pellet Fuel Room Heater for compliance as an "Affected Wood Heater" with the applicable requirements of the following criteria: EPA 40 CFR Part 60 "Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces", March 16, 2015.

Contents

REVISION SUMMARY

DATE	SUMMARY
June 3, 2016	Added similar models 55-SHPCB120 and 55-TRPCB120 to conclusion of report.
October 4, 2021	Updated report for 5-year renewal. Section II.A on page 5, updated conditioning burn information. Section III.C on page 8, updated test fuel information. Section IV.A on page 10, updated dilution tunnel depiction.
June 14, 2022	Page 7 Added note for not measuring ambient particulates. Page 16 added Appendices.

I. INTRODUCTION

Intertek Testing Services NA (Intertek) has conducted testing for England's Stove Works, on model 25-CB120 Pellet Burning Room Heater to evaluate all applicable performance requirements included in "Determination of particulate matter emissions from wood heaters."

I.A PURPOSE OF TEST

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 April 19, 2016. The following test methods were applicable:

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

ASTM E2779-10 - Standard Test Method for Determining Particulate Matter Emissions from Pellet Heaters

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

I.B LABORATORY

The tests on the model 25-CB120 Pellet Burning Heater were conducted at the Intertek testing Services Laboratory located at 8431 Murphy Drive, Middleton, WI, 53562. The laboratory is accredited by the U.S. EPA, Certificate Number 3. The test was conducted by Ken Slater and was observed by the client.

I.C DESCRIPTION OF UNIT

The model 25-CB120 Pellet Fuel Room Heater is constructed of sheet steel with a cast iron outer shell. The outer dimensions are 27.5-inches deep, 35.5-inches high, and 24.5-inches wide. The unit has a door located on the front with a viewing glass.

(See product drawings.)

Proprietary drawings and manufacturing methods are on file at Intertek in (Intertek location)

I.D REPORT ORGANIZATION

This report includes summaries of all data necessary to determine compliance with the regulations. Raw data, calibration records, intermediate calculations, drawings, specifications and other supporting information are contained in appendices to this report.

II. SUMMARY

II.A PRETEST INFORMATION

A sample was submitted to Intertek directly from the client. The sample was not independently selected for testing. The test unit was received at Intertek in Middleton, WI on April 12, 2016 and was shipped via the client. 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 unit was operated for a minimum of 48 hours at high-to-medium burn rates to break in the stove. This break-in period was performed by the Client and documents including the data is in the final report. The unit was found to be operating satisfactory during this break-in. The 48 plus hours of pre-burning was conducted between January 18, 2016 and February 18, 2016. The fuel used for the break-in process was wood pellets.

The unit's chimney system and laboratory dilution tunnels were cleaned using standard wire brush chimney cleaning equipment. On April 19, 2016 the unit was set-up for testing.

II.B INFORMATION LOG

II.B(1) TEST STANDARD

On April 19, 2016, the unit was tested for EPA emissions. For pellet stoves, the test was conducted in accordance with ASTM E2779-10. The fuel used for the test run was premium-Grade Pellets (Marthwood).

The applicable EPA regulatory limits are:

Step 1 – 2015 – 4.5 grams per hour.

Step 2 – 2020 – 2.0 grams per hour.

II.B(2) Deviation from Standard Method

No deviations from the standards were performed, however, only the applicable sections from each standard were used during all testing.

II.C SUMMARY OF TEST RESULTS

The appliance tests resulted in the following performance:

Particulate Emissions: 1.37 g/hr

Carbon Monoxide Emissions: 16.25 g/hr

Heating Efficiency: 75.9% (Higher Heating Value Basis)

II.D DESCRIPTION OF TEST RUNS

RUN #1 (April 19, 2016): The test for pellet heaters is a continuous test with three separate burn rates. At 7:45 the unit was started and operated for a minimum of 1 hour for the pretest operation. At 8:46 the unit was set to the maximum feed rate (level 5) with a burn rate of 1.72 kg/hr (dry), the scale was tared and a 50-lb weight was added to the scale to determine feed rate of the fuel, and the sampling system was started. At 9:46, the unit was set to ≤50% feed rate (level 2) with a burn rate of 0.82 kg/hr. At 11:46, the heater was changed to the minimum feed rate (level 1) with a burn rate of 0.78 kg/hr. At 15:46, testing was completed. The total burn time was 360 minutes.

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

No attempt was made to collect the ambient background particulate during testing. Any collection that would have been made, would subtract from the particulate collected in the dilution tunnel. The particulate collected in the dilution tunnel has been deemed worst case.

II.D SUMMARY OF OTHER DATA

TABLE 1. - EMISSIONS

Run Number	Test Date	Burn Rates (kg/hr)(Dry)		Particulate Emission Rate (g/hr)	**1st Hour Emissions (g)**	CO Emissions (g/hr)	Heating Efficiency (% HHV)
1	**4/19/16**	**H***	**1.72**	**1.37**	**1.07**	**16.25**	**75.9**
		M*	**0.88**				
		L*	**0.78**				
		OA*	**0.97**				

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

TABLE 2. - TEST FACILITY CONDITIONS

Run	Room Temp. °F before	Room Temp °F after	Baro. Pres. In. Hg before	Baro. Pres. In. Hg after	R.H.% before	R.H.% after	Air Vel. Ft/min before	Air Vel. Ft/min after
1	**62**	**68**	**29.23**	**29.21**	**31.0**	**31.0**	**0**	**0**

TABLE 3. - DILUTION TUNNEL FLOW RATE MEASUREMENTS AND SAMPLING DATA

Run No.	Burn Time (min)	Velocity (ft/sec)	Volumetric Flow Rate (dscf/min)	Ave. Temp. (^oR)	Sample Volume (DSCF)		Particulate Catch (mg)	
					1	2	1	2
1	**360**	**22.54**	**248.93**	**538.78**	**83.28**	**83.80**	**7.30**	**8.00**

TABLE 4. - DILUTION TUNNEL DUAL TRAIN PRECISION

Run No.	Sample Ratios		Total Emissions (g)		% Deviation	g/kg Deviation
	Train 1	Train 2	Train 1	Train 2		
1	**1076.11**	**1069.42**	**7.86**	**8.56**	**4.26%**	**0.114**

TABLE 5. - GENERAL SUMMARY OF RESULTS

Run No.	Burn Rate (kg/hr)(Dry) (Overall)	Initial Draft (in/H_2O)	Run Time (min)	Average Draft (in/H_2O)
1	**0.97**	**0.023**	**360**	**0.018**

TABLE 6. – CSA B415.1 RESULTS

Burn Rate (kg/hr)(Dry)	CO Emissions (g/hr)	Heating Efficiency (% HHV)	Heat Output (Btu/hr)
High – 1.72	**18.81**	**72.5**	**23,466**
Medium – 0.88	**32.30**	**69.4**	**11,501**
Low – 0.78	**5.44**	**81.2**	**11,993**
Overall – 0.97	**16.25**	**75.9**	**13,886**

III. PROCESS DESCRIPTION

III.A TEST SET-UP DESCRIPTON

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

III.B AIR SUPPLY SYSTEM

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

III.C TEST FUEL PROPERTIES

Wood pellets used for the testing were Marth premium grade hardwood pellets, with a majority of the wood species consisting of oak and maple. The pellets have a measured heating value of 8528 Btu/lb (19836 kJ/kg) and a moisture content of 6.82% on a dry basis and 6.38% on a wet basis.

IV. SAMPLING SYSTEMS

IV.A. SAMPLING LOCATIONS

Particulate samples are collected from the dilution tunnel at a 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 6 inch diameter pipe straight over its entire length. Tunnel velocity pressure is determined by a standard Pitot tube located 60 inches from the beginning of the sampling section. The dry bulb thermocouple is located six inches downstream from the Pitot tube. Tunnel samplers are located 60 inches downstream of the Pitot tube and 36 inches upstream from the end of this section. (See Figure 1.)

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

IV.A.(1) DILUTION TUNNEL

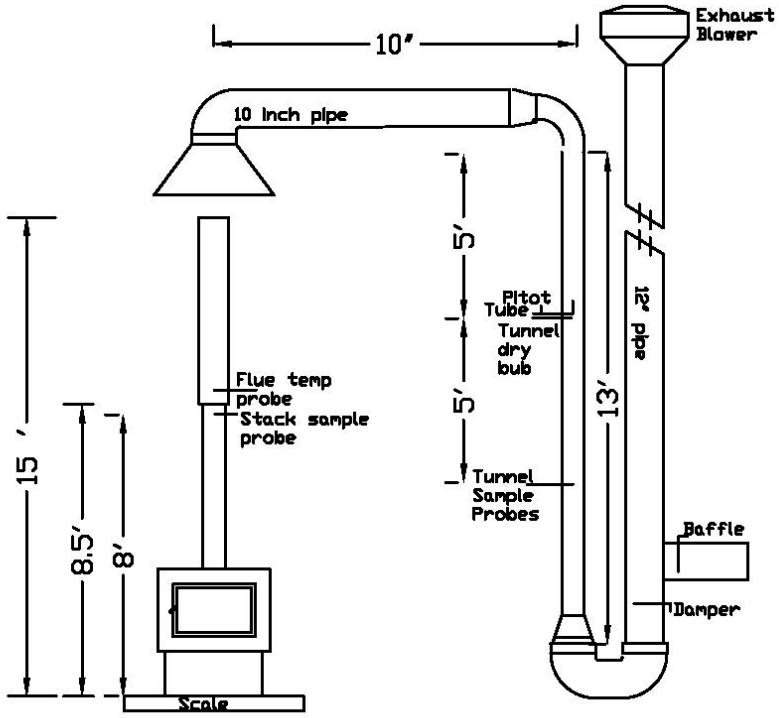
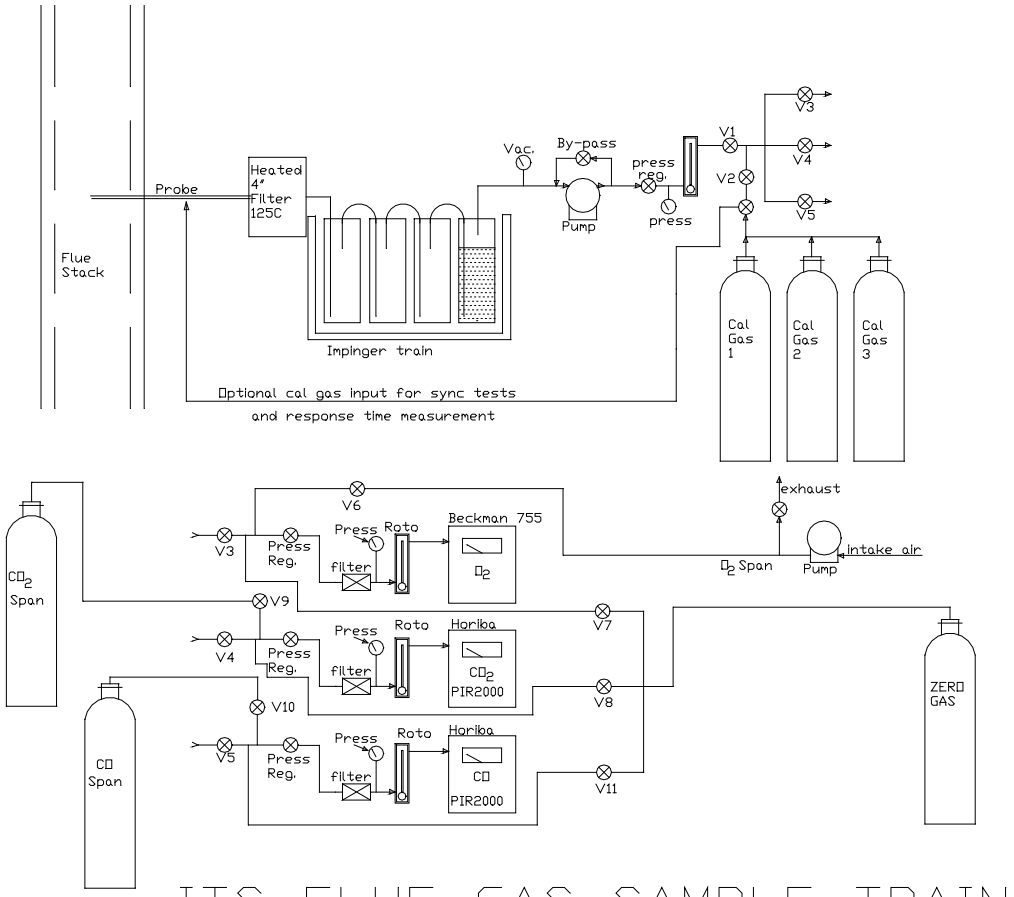


FIGURE 1

IV.B. OPERATIONAL DRAWINGS

IV.B.(1) STACK GAS SAMPLE TRAIN



ITS FLUE GAS SAMPLE TRAIN

FIGURE 2

IV.B.(2). DILUTION TUNNEL SAMPLE SYSTEMS

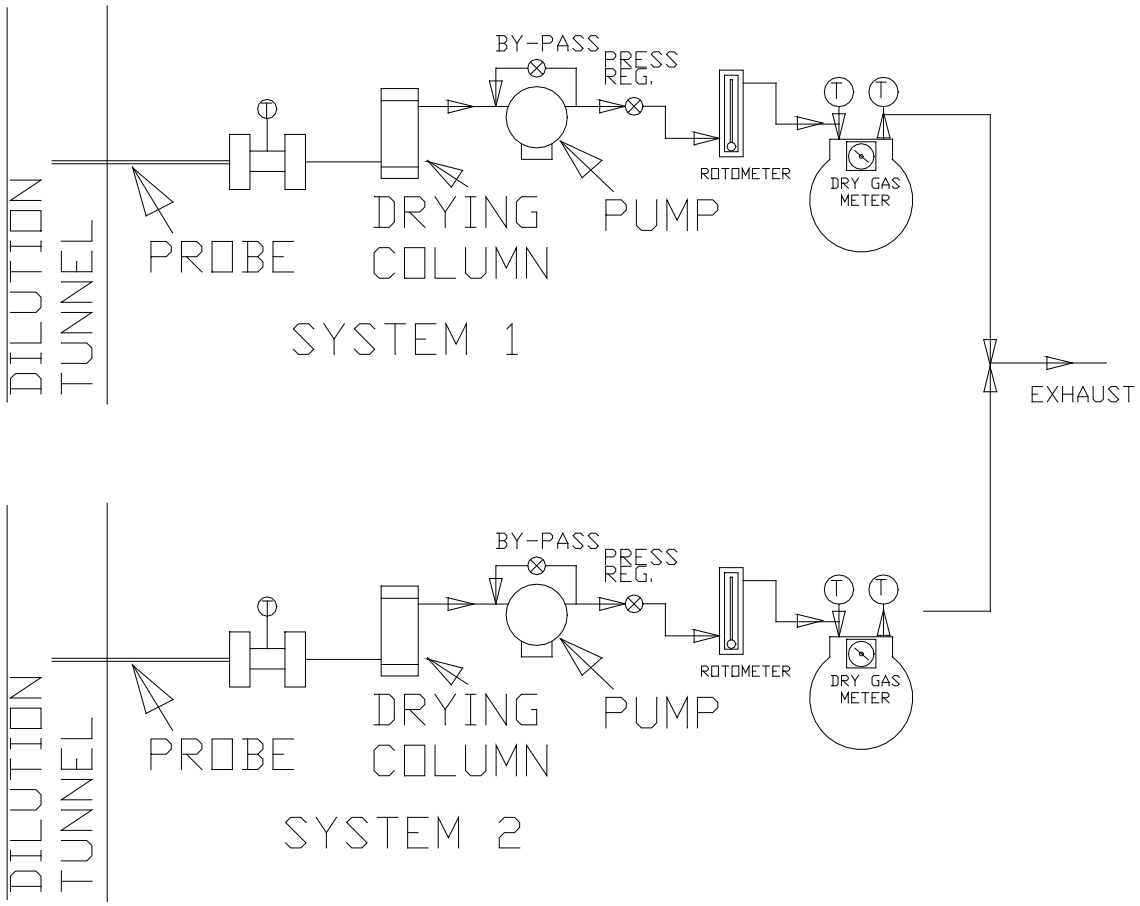


Figure 3

V. SAMPLING METHODS

V.A. PARTICULATE SAMPLING

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 analyzed individually to determine the first hour and total emissions rate.

VI. QUALITY ASSURANCE

VI.A. INSTRUMENT CALIBRATION

VI.A. (1). DRY GAS METERS

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 D.

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.

VI.A.(2). STACK SAMPLE ROTAMETER

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

VI.A.(3). GAS ANALYZERS

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

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

VI.B. TEST METHOD PROCEDURES

VI.B.(1). 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.

VI.B.(2). 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.

VI.B.(3). PM SAMPLING PROPORTIONALITY

Proportionality was calculated in accordance with ASTM E2515-11. The data and results are included in Appendix C.

VII. CONCLUSION

This test demonstrates that this unit is an affected facility under the definition given in the regulation. The emission rate of 1.368 g/hr meets the EPA requirements for the Step 2 limits.

Similar models 55-SHPCB120 and 55-TRPCB120 are identical to the model 25-CB120, therefore, are deemed to be compliant with these requirements as well.

INTERTEK TESTING SERVICES NA

Evaluated by: _____

Brian Ziegler
Lead Engineer - Hearth

Reviewed by: Ken Slater _____

Ken Slater
Associate Engineer - Hearth

The following are Appendices to this report:

Appendix A – Laboratory Operating Procedure

Appendix B – Data and Calculation Forms

Appendix C – Calibration Documents

Appendix D – Unit Drawings and Installation Manual (CBI), Installation Manual (Non-CBI)

Appendix E – Dry Gas Meter Calibration Data

Appendix F – Unit Preburn Documentation

Appendix G - Pictures

INTRODUCTION

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

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

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

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

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

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

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

1. ASTM E2779
2. ASTM E2515

I. APPLIANCE INSPECTION AND SET-UP

A. Incoming Inspection

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

B. Unit Set-Up

1. All units must be operated by the manufacturer or Intertek for a break-in period of 50 hours at a medium burn rate. NOTE: Inserts are tested as if they are freestanding stoves.
2. Once break-in is completed, allow unit to cool then clean unit thoroughly.
3. Prior to placing unit on scale, the scale must be turned on and allowed to warm up for 1-hour minimum.
4. Place unit on scale and align so chimney will be centered in hood. Record the weight of the unit and all accessories. (Do not weigh with chimney attached.)
5. Chimney and connector should be cleaned with a wire brush prior to mounting. Attach chimney and connector then seal all joints. Be sure the single wall stove pipe terminates and insulated pipe starts at proper level above scale platform. Chimney must be supported from scale so that it does not touch test enclosure or hood walls.
6. Plug thermocouples into data acquisition system jacks and verify that all instrumentation is working properly.
7. Dilution tunnel must be cleaned prior to each certification test series, and at anytime a higher burn rate follows a lower burn rate.

II. SAMPLING SYSTEMS SET-UP

A. Gas Analysis

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

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

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

Calibrate analyzers as follows:

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

3. Response time synchronization check.

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

4. Sample clean-up train.

a. Load a new filter in 4-inch glass filter holder.
b. Load four Impingers as follows:
   #1: 100 ml. distilled water
   #2: 100 ml. distilled water
   #3: Empty
   #4: 200-300 grams Drierite.

c. Place Impingers in container and connect with greased "U TUBES". (Grease carefully on bottom half of ball joint so that grease will not get into tubes.)
d. Connect filter to impinger #1 and sample line to impinger #4.
e. Connect stack probe to filter.
f. Leak check system as follows:

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

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

B. Dilution Tunnel Sample Train Set-Up:

1. Filters and holders.
   a. Clean probes and filter holder front housings carefully and desiccate to a constant weight prior to use.
   b. Filters and filter probe combinations should be numbered and labeled prior to use.
   c. Weigh desiccated filters and probe filter units on analytical balance. Record the weights on the appropriate form. Note that the probe and front half of the front filter holder is to be weighed as a unit.
   d. Carefully assemble the filter holder units and connect to sampling systems.
   e. System #1 (Filter set #1) will have one filter set and System #2 (Filter set #2 and #3) will have two filter sets. Filter set #2 will be changed 1-hour into the test.
   e. Change desiccate columns with dry absorbent before each test series.

2. Leak checking.

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

d. Calculate leakage rate as follows.

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

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

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

III. TEST CONDUCT

A. Pre-Test Fuel Load

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

B. Test Fuel Load

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

C. Unit Start-Up

1. With all doors and air controls closed, zero draft Magnehelic using screw located at bottom of meter.
2. Before lighting a fire turn on dilution tunnel and set flow rate to 140 scfm (approximately 715 fpm) if burn rate is to be less than 3 kg/hr. For higher burn rates set flow for a 150:1 air fuel ratio (see chart for approximate values).
3. Check draft imposed on cold stove. All inlets must be closed and a draft gauge in the chimney. If draft is greater than 0.005 inches water column, adjust tunnel to stack gap until draft is less than 0.005 inches water column.
4. With hot wire anemometer check for ambient airflow around unit (must be less than 50 ft/min).

5. Tare scale and start fire by turning the unit on per manufacturer's instructions. (Make sure stack sample probe is on the unit.)
6. Once fuel is burning well, operate at high fire for sufficient time to get the fuel burning well. Then adjust settings to intended test run levels.
7. Perform the dilution tunnel traverse as prescribed in ASTM E2515, Section 9.3.2 (Pitot tube should be carefully cleaned prior to each test.)
8. Pretest must burn for a minimum of 1 hour. Record room and flue temperatures.

D. Test Run

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

IV. POST TEST PROCEDURES

A. Leak Checks

1. Dilution Tunnel
   a. Remove sample probes from tunnel and plug with rubber stopper.
   b. Turn on sample system and set vacuum to 10" mercury or to the highest value reached during the test.
   c. At a convenient value start stopwatch and record the DGM starting value.
   d. After 1 minute stop sample system and record ending DGM value.
   e. Calculate leakage rate per pre-test description (see II.B.2.c.).

2. Gas Analyzers

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

B. Particulate Sample Recovery

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

V. DISPOSITION OF TESTED UNIT.

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

1) Applying tamper-indicating tape to the firebox door, ash pan door, and the air controls.

2) Totally covering the unit with stretch wrap and stamping the stretch wrap with our WHI logo at various locations.
3) Strapping the door and ash pan closed with plastic banding so that the banding goes both around the unit laterally and from top to bottom. The banding is then stamped with our WHI logo so that the banding can't be simply replaced.
4) The certificate is then placed on the top of the unit and a second layer of stretch wrap is applied and stamped with our WHI logo.
5) The unit is placed on a pallet and strapped down with additional strapping to keep it on the pallet. It is then shipped back to the manufacturer.

Intertek

Manufacturer: England Stove | Model: 25-SSP02 | Date 4-15-16

Job #G102448975 | Run 1 | Tech KS

Emissions Testing Initial Stove Check Out

Date received: 4-12-16 Carrier:

Shipping damage? ✓ No _____ Yes Describe damage

If damaged, repairable? N No _____ Yes

Repairs affected by: _____ Date:

Client notified about
irreparable damage by: _____ Date:

Disposition:

Safety Certified by: _____ Safety Control#

Overall Unit Dimensions: High 35.5" Wide 24.5 Deep 27.5

Comments:

Sample ID - MID1604121128-001

Initialed: _____

Manufacturer: England Stove Model: 25-SSP02 Date 4-15-16

Job #G102448975 Run____ Tech KS

EMISSIONS TESTING UNIT PREPARATION

Unit description (check all that apply)

X Stove	____Top Vent	____Manual Draft
____Insert	X Rear Vent	____Bimetal Spring
____Catalytic	____Grate	____Remote Thermostat
____Non-catalytic	____Ashpan	X Blower or Fans
____Other:		

Unit received with all parts: X Yes____No
Manual: X Yes ____No
Drawings: X Yes ____No
Specifications: X Yes____No
Materials of construction: Steel
Air introduction: Rear
Control mechanism:

Unit net weight with all components: 335 lbs.____Kg.
Thermocouples attached: Yes Attached by: KS (attach T/C map)

Unit conditioned prior to test

X 10 hours at medium burn rate (non-catalytic) (attach burn log)

____ 50 hours at medium burn rate (attach burn log)

Date started:____ Date completed:
Catalyst manufacturer:
Serial number:____Dimensions:____Cell size:____cells/in.^{2}
Unit ready for testing (date):____Initialed:

Intertek

Manufacturer: England Stove
Job #G102448975

Model: 25-CB120
Run 1

Date 4-19-16
Tech KS

PRETEST DILUTION TUNNEL TRAVERSE RUN

Barometric pressure (P_{bar}) _____ (inches Hg.) Static pressure (P_q) .193 (inches w.c.)
Inside diameter: Port A ____in Port B ___in Tunnel cross sectional area: ____Ft^2
Pitot tube type: Standard

Traverse Point	Position (inches)	Velocity Head Δ_p (inches H_2O)	Tunnel Temperature (°F)	$\sqrt{\Delta p}$
A-Centroid	3.00	.071		
B-Centroid	3.00	.092		
A-1	0.50	.065		
A-2	1.50	.073		
A-3	4.50	.074		
A-4	5.50	.051		
B-1	0.50	.074		
B-2	1.50	.095		
B-3	4.50	.092		
B-4	5.50	.069		
		AVERAGE		

Adjustment factor application

Pitot correction .9614

Where,
C_p = Pitot tube coefficient = 0.99 for standard pitot
Δ_p = manometer reading (inches H_2O)
T_s = average absolute dilution tunnel temperature (°F + 460)
P_s = absolute dilution tunnel gas pressure or Pbar + P_g

P_g = static pressure $\frac{inches H_2O}{13.6}$

M_s = 28.56, wet molecular weight of stack gas (alternatively, it may be measured)

Adjustment factor for alternative Pitot tube placement:

$$V_s = K_p C_p F_p \left(\sqrt{\Delta_p}\right) AVG \sqrt{\frac{T_s}{P_s M_s}} \qquad V_s = K_p C_p \left(\sqrt{\Delta_p}\right) avg. \sqrt{\frac{T_s}{P_s M_s}} \qquad F_p = \frac{\left(\sqrt{\Delta_p}\right) avg}{\left(\sqrt{\Delta_p}\right) centroid}$$

K_p = 85.49 Pitot tube constant, (conversion factor for English units)

$\left(\sqrt{\Delta_p}\right) avg.$ = Average of the square roots of the velocity heads (Δ_p) measured at each traverse point.

$\left(\sqrt{\Delta_p}\right) centroid$ = Average of the square roots of the velocity heads measured at the tunnel centroid (inches of H_2O)

Intertek

Manufacturer : England Stoves
Job #G102448975

Model:25-CB120
Run 1

Date 4-19-16
Tech PS

Pre/Post Checks

Moisture Meter Calibration Check:

Time:	X:	Y:	12:	22:

	Pre-Test	Post-Test
Facility Conditions:		
Air Velocity	0 fpm	0 fpm
Smoke Capture Check	✓	✓
Wood Heater Conditions:		
Date Wood Heater Stack Cleaned	4-15-16	
Date Dilution Tunnel Cleaned	4-15-16	
Induced Draft Check	✓	✓
Tunnel Velocity	0.119	0.124
Pitot Leak Check:		
Side A	✓	✓
Side B	✓	✓
Temperature System:		
Ambient (65°- 90°F)	67.6 °F	
Proportional Checks:		
CO Analyzer Drift Check	✓	
CO_2 Analyzer Check	✓	
O_2 Analyzer Check	✓	
Thermocouple check	✓	

Sampling Train ID Numbers:	Train 1	Train 2	Train 3
Probe	1	2	3
Filter Front	25	27	29
Filter Back	26	28	30
Filter Thermocouple			
Filter 5G-3 (<90°F)			

Thermocouple Identification Number

Flue 1	Room 2	Dilution Tunnel Dry Bulb 3
Dilution Tunnel Wet Bulb 4	Unit Top 5	Unit Back 6
Unit Right Side` 7	Unit Left Side 8	Unit Bottom 9
Catalyst/Combustion Chamber 10		

Manufacturer: England Stove
Job #G102448975

Model: 25-CB120
Run 1

Date 4-18-14
Tech FS

Pre-Test Scale Audit

Scale Type	Audit Weight	Measured Weight
Platform	25.00 lbs., Class F	25.00 lbs.
Wood	10.00 lbs., Class F	10.00 lbs.
Analytical	100.00 mg, Class S	100.00 mg.

LIMITS OF WEIGHT RANGES

ANALYTICAL SCALE: ..... 50%-150% of dry filter weight, ± 0.1 mg
PLATFORM SCALE ..... 20%-80% of ideal test load weight, ± 0.1 lbs. or 1%
WOOD SCALE..... 20%-80% of ideal test load weight, ± 0.1 lbs. or 1%

Intertek

Manufacturer : England Stoves
Job #G102448975

Model:25-CB120
Run 1

Date 4-19-16
Tech KS

SAMPLING EQUIPMENT CHECK OUT

Leakage Checks Tunnel Samplers

	SAMPLE 1		SAMPLE 2		SAMPLE 3	
Unplugged Flow Rate = .25cfm	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-test	Post Test
Vacuum (inches Hg.)	10"	10"	10"	10"	10"	10"
Final 1 minute DGM (ft^3)	299.955	386.528	318.710	405.025	952.380	957.648
Initial 1 minute DGM (ft^3)	299.955	386.528	318.710	405.025	952.380	957.648
Change (C) (ft^3)	0	0	0	0	0	0
Allowable leakage .04 x Sample rate or .02cfm	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100
Check OK	✓	✓	✓	✓	✓	✓

Leakage Checks Flue Gas Sampler

Plugged Probe	Pre Test	Post Test
Vacuum (inches Hg.)	10"	10"
Rotometer Reading (mm)	0	0
Flow Rate (CFM)	0	0
Allowable (.04 x Sample Rate)		
Check OK	✓	✓

Intertek

Manufacturer : England Stoves
Job #G102448975

Model:25-CB120
Run 1

Page 7 of 12
Date 4-19-14
Tech KS

TEST DATA LOG

RAW DRY GAS METER READINGS

	System 1	System 2	System 3
Final (ft^3)	386.498	405.013	957.434
Initial (ft^3)	299.955	318.710	952.380

AMBIENT CONDITIONS

	Start	End
Barometer. (inches Hg)	29.23	29.21
Dry Bulb (°F)	70.8	77.7
Humidity (%)	31 %	31 %

Manufacturer: England Stove
Job #G102448975

Model: 25-CB120
Run 1

Date 4-19-16
Tech KS

CONTINUOUS ANALYZERS

Pre-Test (Adjust and Record)

	ZERO		SPAN		CAL. (Record Only)	
CO_2	~~0~~	~~0~~	24.55	24.55	4.88	5.00
CO	~~0~~	~~0~~	9.20	9.195	1.00	0.998
O_2	~~0~~	~~0~~	22.00	22.00	4.97	5.00
	Actual	Should Be	Actual	Should Be	Actual	Should Be

Post Test (Record Only)

	Zero	Span	Cal.	Zero Drift	Span Drift	Cal. Drift	OK?	Not OK*
CO_2	0	24.44	4.84	0	~~24.~~ KS .11	.04	✓	
CO	-.02	9.14	0.96	.02	.04	.04	✓	
O_2	-.02	22.00	4.97	.02	0	0	✓	

* Greater than ± 5% of the range used.

Intertek

Page 9 of 12

Manufacturer: England Stove
Job #G102448975

Model: 25-CB120
Run 1

Date 4-19-16
Tech PS

READING #	REAL TIME	ELAPSED TIME	DGM 1	ROTOMETER 1	DGM 2	ROTOMETER 2	DGM 3	ROTOMETER 3	DRAFT	MAX DGM PRESSURE
0	8:46	0	299.955	120	318.710	120	952.380	120	.023	50.00
1		10	302.4		~~302.4~~ 321.1		953.2		.022	
2		20	304.9		323.6		954.1		.023	
3		30	307.3		326.0		955.0		.023	
4		40	309.8		328.5		955.9		.023	
5		50	312.2		330.9		956.8		.023	
6		60	314.7		333.3		957.634		.023	
7		70	317.1		335.7		—		.023	
8		80	319.5		338.1		—		.020	
9		90	322.0		340.5		—		.020	
10		100	324.4		342.9				.020	
11		110	326.8		345.3				.019	
12		120	329.2		347.7				.019	
13		130	331.5		350.1				.019	
14		140	333.9		352.5				.019	
15		150	336.3		354.9				.019	
16		160	338.8		357.3				.019	
17		170	341.1		359.6				.019	
18		180	343.5		362.0				.019	
19		190	345.9		364.4				.015	
20		200	348.3		366.8				.015	
21		210	350.7		369.2				.015	
22		220	353.1		371.6				.015	
23		230	355.5		374.0				.015	
24		240	357.9		376.4				.015	
25		250	360.3		378.8				.015	
26		260	362.7		381.2				.015	
27		270	365.0		383.5				.015	
28		280	367.4		385.9				.015	
29		290	369.8		388.3				.015	
30		300	372.1		390.7				.015	
31		310	374.5		393.0				.015	
32		320	376.9		395.4				.015	
33		330	379.2		397.8				.015	
34		340	381.6		400.2				.015	
35		350	384.0		402.6				.015	
36		360	386.498		405.013				.015	

High Level (m9)

Med Level (m2)

Low Level (m1)

Manufacturer: England Stove
Job #G102448975

Model: 25-CB120
Run 1

Date 4-19-16
Tech PS

COMMENTS

7:45 Am, Pre Test Started

8:46 Am, Scale Zeroed, 50 lb Test weight added
Test Started, Unit Set to High level (M9)

9:46 Am Unit Adjusted To Med Level (M2)

11:46 Am Unit Adjusted To Low level (M1)

Intertek

Manufacturer: ENGLAND STOVES
Job # 4102448975

Model: 25-CB120
Run 1

Page 2 of 12
Date 4-19-14
Tech KS

DILUTION TUNNEL PARTICULATE SAMPLER DATA

FILTER TYPE: Gelman 47mm A/E

Pre-test Weight Record		SYSTEM 1			SYSTEM 2			SYSTEM 3				
Date	Time	Probe & Housing Number	Front Filter + gasket Number	Back Filter + gasket Number	Probe & Housing Number	Front Filter + gasket Number	Back Filter + gasket Number	Probe & Housing Number	Front Filter + gasket Number	Back Filter + gasket Number	Temp	Humidity
		1	25	26	2	27	28	3	29	30	°F	%
4-6			3.2325	3.2285		3.3122	3.3166		3.3236	3.3056		
4-19		91.3723	3.2323	3.2285	91.5746	3.3120	3.3160	93.0482	3.3233	3.3054		
		Total:	6.4608		Total:	6.628		Total:	6.6287			

Post-test Weight Record		SYSTEM 1		SYSTEM 2		SYSTEM 3			
Date	Time	Probe & Housing Number	Combined Filter/gasket Number	Probe & Housing Number	Combined Filter/gasket Number	Probe & Housing Number	Combined Filter/gasket Number	Temp	Humidity
		1	25+26	2	27+28	3	29+30	°F	%
4-19		91.3739	6.4684	91.5757	6.6364	93.0483	6.6299		
4-20		91.3726	6.4678	91.5746	6.6340	93.0482	6.4297		
4-21		91.3726	6.4678	—	6.6340	—	6.4297		

Dry Down Weight

Date	Time	P1	F1	P2	F2	P3	F3	Gr/hr	Lb/MMbtu
4-19		1.6	7.6	1.1	8.4	.1	1.2	1.672	
4-20		.3	7.0	0	8.0	0	1.0	1.368	
4-21		.3	7.0	0	8.0	0	1.0		

Timber Products Inspection, Inc.

CERTIFICATE OF QUALIFICATION

This is to signify that

MARTH WOOD SHAVING SUPPLY, INC.

6752 State Highway 107 North
Marathon, WI 54448

Is hereby qualified as registration #16006
May 30, 2014

Marth Wood Shaving Supply, Inc. is compliant with the PFI Standards Program as audited by Timber Products Inspection and accredited by the American Lumber Standards Committee. In order to maintain compliance, the producer agrees to:

- Maintain complete and up to date Densified Fuel production records
- Produce and market quality products, which conform to PFI & ALSC program documents
- Apply the quality mark only to products which have been proven through applicable monitoring

Chris Wiberg, Densified Fuel Program Manager
Timber Products Inspection, Inc.
1641 Sigman Road, Conyers GA 30012 770.922.8000

Intertek Pharmaceutical Services
P.O. Box 470
Salem Industrial Park Bldg. #5
Whitehouse, NJ 08888
Phone 908.534.4445
Fax 908.534.1054

Analytical Report

Report Number: 186096
Report Status: *Interim*

Brian Ziegler
Intertek
8431 Murphy Dr.
Middleton, WI 53562

Sample: Marth wood pellets

C	H	N	O
46.87 %	6.41 %	0.06 %	To Follow.

ROI	LOD
< 0.1 %	4.32 %

This document has been electronically approved by Michael Stecker, Research Chemist on 10/25/2021 at 2:40:47 PM.
File name:1635187237.186096.pdf

Intertek Pharmaceutical Services
P.O. Box 470
Salem Industrial Park Bldg. #5
Whitehouse, NJ 08888
Phone 908.534.4445
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Analytical Report

Report Number: 186096
Report Status: *Interim*

Brian Ziegler
Intertek
8431 Murphy Dr.
Middleton, WI 53562

non-GMP Statement

All experimental work at Intertek Whitehouse is conducted under the auspices of a rigorous Quality Management System; however, the data presented in this report was generated using procedures that have not been validated in accordance with 21 CFR, parts 210 and 211.

Intertek makes no claims to the applicability of the data and the Client is solely responsible for determining whether the information provided in this report is suitable for the intended application.

This document has been electronically approved by Michael Stecker, Research Chemist on 10/25/2021 at 2:40:47 PM.
File name:1635187237.186096.pdf

Certificate Number
A2089758
Issue Date: 02/02/16

Certificate of Calibration

Customer: INTERTEK MIDDLETON
8431 MURPHY DR.
MIDDLETON, WI, 53562
608-824-7422

P.O. Number:
ID Number: 008

Description: SCALE
Manufacturer: GSE
Model Number: 450
Serial Number: 101722
Technician: RICHARD PANKEY
On-Site Calibration: ☑
Comments:

Calibration Date: 01/28/2016
Calibration Due: 01/28/2017
Procedure: TMI-SCALES
Rev: 5/13/2014
Temperature: 68 F
Humidity: 20 % RH
As Found Condition: IN TOLERANCE
Calibration Results: IN TOLERANCE

Limiting Attribute:

This instrument has been calibrated using standards traceable to the National Institute of Standards and Technology, derived from natural physical constants, ratio measurements or compared to consensus standards. Unless otherwise noted, the method of calibration is direct comparison to a known standard.

Reported uncertainties are expressed as expanded uncertainty values at an approximately 95% confidence level using a coverage factor of K=2. Statements of compliance are based on test results falling within specified limits with no reduction by the uncertainty of the measurement.

TMI's Quality System is accredited to ISO/IEC 17025 and ANSI/NCSL Z540-1 by A2LA. ISO/IEC 17025 is written in a language relevant to laboratory operations, meeting the principles of ISO 9001 and aligned with its pertinent requirements. This calibration is within the current A2LA Scope of Accreditation and complies with the requirements of ISO/IEC 17025 and TMI's Quality Manual, QM-1.

Results contained in this document relate only to the item calibrated. Calibration due dates appearing on the certificate or label are determined by the client for administrative purposes and do not imply continued conformance to specifications.

Measurements not currently on TMI's Scope of Accreditation are identified with an asterisk.

ANTHONY ROGERS, BRANCH MANAGER

JACK SHULER, QUALITY MANAGER

Calibration Standards

Asset Number	Manufacturer	Model Number	Date Calibrated	Cal Due
RFD-500LBSET	RICE LAKE	500LBS	8/13/2014	8/13/2016
RFD-WT-2	RICE LAKE	RFD-WT-2	9/28/2015	11/28/2016

TMI Technical Maintenance, Inc.
3248 FOREST VIEW ROAD, ROCKFORD, IL 61109
Phone: 779-774-3877 Fax 779-774-3884
www.tmicalibration.com

ilac-MRA A2LA ACCREDITED
ISO/IEC 17025:2005

Certificate of Calibration

Data Sheet

Parameter	Nominal	Minimum	Maximum	As Found	As Left	Uncertainty	Unit	ADJ/FAIL
Weight Accuracy	25.00	24.90	25.10	25.00	25.00	27.0027 Grams	lbs	
Weight Accuracy	50.00	49.90	50.10	50.00	50.00	27.06 Grams	lbs	
Weight Accuracy	75.00	74.90	75.10	75.00	75.00	27.06 Grams	lbs	
Weight Accuracy	100.00	99.90	100.10	99.99	99.99	27.06 Grams	lbs	

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Phone: 779-774-3877 Fax 779-774-3884
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ilac-MRA A2LA ACCREDITED
ISO/IEC 17025:2005

Calibration Date: 3/28/2016 Calibration By: KS Calibration Due: 9/28/2016

Using:
Use Procedure: WI-L-AMER-Cali-992
Description: **Audit Weights**
Serial: 39392

Model: Ainsworth
Asset #: 29

Weight (G)	Scale reading	Deviation G	Deviation %
0.003	0.003	0.0000	0.00%
0.01	0.0099	-0.0001	-1.00%
0.02	0.02	0.0000	0.00%
0.03	0.03	0.0000	0.00%
0.05	0.05	0.0000	0.00%
0.1	0.1001	0.0001	0.10%
0.2	0.2	0.0000	0.00%
0.3	0.2999	-0.0001	-0.03%
0.5	0.5	0.0000	0.00%
1	1	0.0000	0.00%
2	2.0001	0.0001	0.01%
3	3.0002	0.0002	0.01%
5	5.0002	0.0002	0.00%
10	10.0002	0.0002	0.00%
20	20.0002	0.0002	0.00%
30	30.0003	0.0003	0.00%
50	50.0002	0.0002	0.00%
100	99.9999	-0.0001	0.00%

Average Deviation:	0.0000667
Standard Deviation:	0.000123669

Scale accuracy	0.0001
Total Uncertainty:	0.000344897

Reviewed by: RL Date: 3/28/16

Measurement Uncertainty is calculated using the following formula:

$O.M.U. = k*\text{sqrt}((A.D.)^2 + (S.D.)^2 + (R.M.U./2)^2)$

O.M.U. = Overall Measurement Uncertainty

A.D. = Average Deviation of the difference of all measured results compared to the reference value.

Intertek

Calibration Date: 4/8/2016 Calibration By: KS Calibration Due: 10/8/2016

Using: Ice bath and boiling water in beakers

Use Procedure: WI-L-AMER-MID-CALI-BP-845

Description: E&E Thermocouple System Model: N/A

Serial: N/A Asset #: 500

Room Temp: 71.7 Baro: 28.38

Today's boiling point of water: 210.11 F°

Thermocouple # and location	Boiling Water	Ice Bath	
1) Flue Gas	212.0	31.8	
2) Room Temperature	212.3	32.5	
3) Dry Bulb (Tunnel)	212.4	30.8	
4) Unused	212.3	31.0	
5) Unit Top	212.3	30.9	
6) Unit Back	213.4	31.4	
7) Unit Right Side	212.5	30.9	
8) Unit Left Side	212.1	31.0	
9) Unit Bottom	213.8	31.2	
10) Catalyst Downstream	214.0	31.7	
11) Catalyst Center	212.9	32.2	
12) aux	213.0	32.6	
12) aux	213.1	32.7	
14) aux	213.2	32.6	
15) aux	212.8	31.7	
16) aux	213.0	32.0	
17) DGM (in train 1)	213.1	32.1	
18) DGM (out train 1)	213.0	31.7	
19) Filter (train 1)	212.9	31.9	
20) Filter (train 1)	213.4	32.2	
21) DGM (in train 2)	213.1	32.3	
22) DGM (out train 2)	212.9	31.6	
Average Deviation:	2.8	-0.2	1.3
Standard Deviation:	0.5	0.6	0.6
Overall MU at 95% CL:		6	

Reviewed by: Paul Pratt Date: 4/8/16

Measurement Uncertainty is calculated using the following formula:

O.M.U. = k*sqrt $((A.D.)^2 + (S.D.)^2 + (R.M.U./2)^2)$

O.M.U. = Overall Measurement Uncertainty

A.D. = Average Deviation of the difference of all measured results compared to the reference value.

S.D. = Standard Deviation of the difference of all measured results compared to the reference value.

k = Confidence Factor (2 for 95% confidence)

R.M.U. = Standard Measurement Uncertainty of Reference Measurement Equipment. R.M.U. is considered as the measurement uncertainty as stated on calibration certificates of equipment, or the tolerance listed in the calibration standard of the test equipment.

Certificate Number
A2089458
Issue Date: 02/01/16

Certificate of Calibration

Customer: INTERTEK MIDDLETON
8431 MURPHY DR.
MIDDLETON, WI, 53562
608-824-7422

P.O. Number:
ID Number: 713

Description:	SCALE	Calibration Date:	01/28/2016
Manufacturer:	OHAUS	Calibration Due:	01/28/2017
Model Number:	E12140	Procedure:	TMI-SCALES Rev: 5/13/2014
Serial Number:	B258010639	Temperature:	70 F
Technician:	ANDREW DAVIS	Humidity:	26 % RH
On-Site Calibration:	☑	**As Found Condition:**	**IN TOLERANCE**
Comments:		**Calibration Results:**	**IN TOLERANCE**

Limiting Attribute:

This instrument has been calibrated using standards traceable to the National Institute of Standards and Technology, derived from natural physical constants, ratio measurements or compared to consensus standards. Unless otherwise noted, the method of calibration is direct comparison to a known standard.

Reported uncertainties and "test uncertainty ratios" (TUR's) are expressed as expanded uncertainty values at approximately 95% confidence level using a coverage factor of K=2. A TUR of 4:1 is routinely observed unless otherwise noted on the certificate. Statements of compliance are based on test results falling within specified limits with no reduction by the uncertainty of the measurement.

TMI's Quality System is accredited to ISO/IEC 17025 and ANSI/NCSL Z540-1. ISO/IEC17025 is written in a language relevant to laboratory operations, meeting the principles of ISO 9001 and aligned with its pertinent requirements. The instrument listed on this certificate has been calibrated to the requirements of ANSI/NCSL Z540-1 and TMI's Quality Manual, QM-1.

Results contained in this document relate only to the item calibrated. Calibration due dates appearing on the certificate or label are determined by the client for administrative purposes and do not imply continued conformance to specifications.

ANTHONY ROGERS, BRANCH MANAGER

JACK SHULER, QUALITY MANAGER

Calibration Standards

Asset Number	Manufacturer	Model Number	Date Calibrated	Cal Due
RFD-WT-1	RICE LAKE	RFD-WT-1	9/28/2015	10/28/2016

TMI Technical Maintenance, Inc.
3248 FOREST VIEW ROAD, ROCKFORD, IL 61109
Phone: 779-774-3877 Fax 779-774-3884
www.tmicalibration.com

ANSI/NCSL Z540-1-1994

Certificate of Calibration

Data Sheet

Parameter	Nominal	Minimum	Maximum	As Found	As Left	Unit	ADJ/FAIL
Weight Accuracy	10.0000	9.9900	10.0100	10.0018	10.0018	Grams	
Weight Accuracy	50.0000	49.9900	50.0100	50.0037	50.0037	Grams	
Weight Accuracy	100.0000	99.9900	100.0100	100.0066	100.0066	Grams	
Weight Accuracy	150.0000	149.9900	150.0100	150.0061	150.0061	Grams	
Weight Accuracy	200.0000	199.9900	200.0100	200.0039	200.0039	Grams	

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Phone: 779-774-3877 Fax 779-774-3884
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ANSI/NCSL Z540-1-1994

Intertek

Calibration Date: 4/8/2016 Calibration By: KS Calibration Due: 10/8/2016

Using: Omega - Model CL23A Calibrator #1240
Use Procedure: WI-L-AMER-Cali-1257
Description: Omega (Data acquisition system) Model: OMB DAQ-56
Serial: E10706227003 Asset #: 986

All measurements are in °F

Calibrator	Computer	Deviation	Calibrator	Computer	Deviation
50.00	49.49	0.51	650.00	647.26	2.74
100.00	100.29	0.29	700.00	697.45	2.55
150.00	150.12	0.12	750.00	747.26	2.74
200.00	200.86	0.86	800.00	797.42	2.58
250.00	250.73	0.73	850.00	847.22	2.78
300.00	300.06	0.06	900.00	897.38	2.62
350.00	351.02	1.02	950.00	947.09	2.91
400.00	400.95	0.95	1000.00	997.29	2.71
450.00	450.25	0.25	1050.00	1047.60	2.4
500.00	499.73	0.27	1100.00	1097.65	2.35
550.00	549.18	0.82	1150.00	1147.53	2.47
600.00	598.65	1.35	1200.00	1197.96	2.04
				Average Deviation:	1.59
				Standard Deviation:	1.06

Uncertainty of Readings of #1240 at 95% CL	
Total Uncertainty:	3.82

Reviewed by: Paul Pratt Date: 4/8/16

Measurement Uncertainty is calculated using the following formula:
O.M.U. = k*sqrt ((A.D.)^2 + (S.D.)^2 + (R.M.U./2)^2)
O.M.U. = Overall Measurement Uncertainty
A.D. = Average Deviation of the difference of all measured results compared to the reference value.
S.D. = Standard Deviation of the difference of all measured results compared to the reference value.
k = Confidence Factor (2 for 95% confidence)

R.M.U. = Standard Measurement Uncertainty of Reference Measurement Equipment. R.M.U. is considered as the measurement uncertainty as stated on calibration certificates of equipment, or the tolerance listed in the calibration standard of the test equipment.

Gas Analyzers

Channel	Analyzer		Zero Gas	Span Gas	Cal Gas
26	CO	DAS	0.01	9.19	1
		Meter	0	9.16	0.99
		Deviation	-0.10%	-0.33%	-1.01%
27	CO_2	DAS	0.01	24.56	4.97
		Meter	0.01	24.55	4.95
		Deviation	1.00%	-0.04%	-0.40%
28	O_2	DAS	0.01	22.03	5.01
		Meter		22.01	4.99
		Deviation	-0.10%	-0.09%	-0.40%

CO Stdev	0.004736339
CO_2 Stdev	0.007287486
O_2 Stdev	0.001763632

Certificate Number
A2157377
Issue Date: 04/26/16

Certificate of Calibration

Customer: INTERTEK MIDDLETON
8431 MURPHY DR.
MIDDLETON, WI, 53562
608-824-7422

P.O. Number:
ID Number: 1134

Description: SCALE
Manufacturer: RICE LAKE
Model Number: 520-1A
Serial Number: 1494600044
Technician: RICHARD PANKEY
On-Site Calibration: þ
Comments:

Calibration Date: 04/07/2016
Calibration Due: 10/07/2016
Procedure: TMI-SCALES
Rev: 5/13/2014
Temperature: 67 F
Humidity: 31 % RH
As Found Condition: IN TOLERANCE
Calibration Results: IN TOLERANCE

Limiting Attribute:

This instrument has been calibrated using standards traceable to the National Institute of Standards and Technology, derived from natural physical constants, ratio measurements or compared to consensus standards. Unless otherwise noted, the method of calibration is direct comparison to a known standard.

Reported uncertainties are expressed as expanded uncertainty values at an approximately 95% confidence level using a coverage factor of K=2. Statements of compliance are based on test results falling within specified limits with no reduction by the uncertainty of the measurement.

TMI's Quality System is accredited to ISO/IEC 17025:2005 and ANSI/NCSL Z540-1-1994. ISO/IEC 17025:2005 is written in a language relevant to laboratory operations, meeting the principles of ISO 9001 and aligned with its pertinent requirements. This calibration is within the current A2LA Scope of Accreditation and complies with the requirements of ISO/IEC 17025:2005 and TMI's Quality Manual, QM-1.

Results contained in this document relate only to the item calibrated. Calibration due dates appearing on the certificate or label are determined by the client for administrative purposes and do not imply continued conformance to specifications.

This certificate shall not be reproduced, except in full, without the written permission of Technical Maintenance, Inc.

Measurements not currently on TMI's Scope of Accreditation are identified with an asterisk.

ANTHONY ROGERS, BRANCH MANAGER

Scott Chamberlain, QUALITY MANAGER

Calibration Standards

Asset Number	Manufacturer	Model Number	Date Calibrated	Cal Due
RFD-500LBSET	RICE LAKE	500LBS	8/13/2014	8/13/2016

Technical Maintenance, Inc.
3248 FOREST VIEW ROAD, ROCKFORD, IL 61109
Phone: 779-774-3877 Fax 779-774-3884
www.tmicalibration.com

ISO/IEC 17025:2005

Certificate of Calibration

Data Sheet

Parameter	Nominal	Minimum	Maximum	As Found	As Left	Uncertainty	Unit	ADJ/FAIL
Weight Accuracy	100.0	99.7	100.3	100.0	100.0	27.0027 Grams	lbs	
Weight Accuracy	200.0	199.7	200.3	199.9	199.9	27.0027 Grams	lbs	
Weight Accuracy	300.0	299.7	300.3	299.9	299.9	27.0027 Grams	lbs	
Weight Accuracy	400.0	399.7	400.3	399.9	399.9	27.0027 Grams	lbs	
Weight Accuracy	500.0	499.7	500.3	499.9	499.9	27.0027 Grams	lbs	
Weight Accuracy	1000.0	999.7	1000.3	999.9	999.9	27.0027 Grams	lbs	
Shift Test RF	100.0	99.7	100.3	100.0	100.0	27.0027 Grams	lbs	
Shift Test LF	100.0	99.7	100.3	100.0	100.0	27.0027 Grams	Lbs	
Shift Test RR	100.0	99.7	100.3	99.9	99.9	27.0027 Grams	lbs	
Shift Test LR	100.0	99.7	100.3	100.0	100.0	27.0027 Grams	lbs	
Shift Test Center	100.0	99.7	100.3	100.0	100.0	27.0027 Grams	lbs	

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ACCREDITED
ISO/IEC 17025:2005

Certificate Number
A2150101
Issue Date: 04/15/16

Certificate of Calibration

Customer: INTERTEK MIDDLETON
8431 MURPHY DR.
MIDDLETON, WI, 53562
608-824-7422

P.O. Number:
ID Number: 001212

Description:	TIMER
Manufacturer:	COLE PARMER
Model Number:	94440-10
Serial Number:	NSN
Technician:	CHASE LOVETTE
On-Site Calibration:	þ
Comments:	

Calibration Date:	04/06/2016
Calibration Due:	04/06/2017
Procedure:	NIST SP 960-12 Rev: 1/1/2009
Temperature:	73 F
Humidity:	28 % RH
As Found Condition:	**IN TOLERANCE**
Calibration Results:	**IN TOLERANCE**

Limiting Attribute:

This instrument has been calibrated using standards traceable to the National Institute of Standards and Technology, derived from natural physical constants, ratio measurements or compared to consensus standards. Unless otherwise noted, the method of calibration is direct comparison to a known standard.

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Measurements not currently on TMI's Scope of Accreditation are identified with an asterisk.

ANTHONY ROGERS, BRANCH MANAGER

Scott Chamberlain, QUALITY MANAGER

Calibration Standards

Asset Number	Manufacturer	Model Number	Date Calibrated	Cal Due
KR91200846	HEWLETT PACKARD	53131A	5/7/2015	5/7/2016

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Phone: 779-774-3877 Fax 779-774-3884
www.tmicalibration.com

ISO/IEC 17025:2005

Certificate of Calibration

Data Sheet

Parameter	Nominal	Minimum	Maximum	As Found	As Left	Uncertainty	Unit	ADJ/FAIL
Timer Accuracy	60	59	61	60	60	0.3	sec	
Timer Accuracy	300	299	301	300	300	0.3	sec	
Timer Accuracy	1800	1799	1801	1800	1800	0.3	sec	

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Phone: 779-774-3877 Fax 779-774-3884
www.tmicalibration.com

Certificate Number
A2150095
Issue Date: 04/15/16

Certificate of Calibration

Customer: INTERTEK MIDDLETON
8431 MURPHY DR.
MIDDLETON, WI, 53562
608-824-7422

P.O. Number:
ID Number: 001213

Description:	TIMER
Manufacturer:	COLE PARMER
Model Number:	94440-10
Serial Number:	NSN
Technician:	CHASE LOVETTE
On-Site Calibration:	þ
Comments:	

Calibration Date:	04/06/2016
Calibration Due:	04/06/2017
Procedure:	NIST SP 960-12 Rev: 1/1/2009
Temperature:	73 F
Humidity:	28 % RH
As Found Condition:	**IN TOLERANCE**
Calibration Results:	**IN TOLERANCE**

Limiting Attribute:

This instrument has been calibrated using standards traceable to the National Institute of Standards and Technology, derived from natural physical constants, ratio measurements or compared to consensus standards. Unless otherwise noted, the method of calibration is direct comparison to a known standard.

Reported uncertainties are expressed as expanded uncertainty values at an approximately 95% confidence level using a coverage factor of K=2. Statements of compliance are based on test results falling within specified limits with no reduction by the uncertainty of the measurement.

TMI's Quality System is accredited to ISO/IEC 17025:2005 and ANSI/NCSL Z540-1-1994. ISO/IEC 17025:2005 is written in a language relevant to laboratory operations, meeting the principles of ISO 9001 and aligned with its pertinent requirements. This calibration is within the current A2LA Scope of Accreditation and complies with the requirements of ISO/IEC 17025:2005 and TMI's Quality Manual, QM-1.

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ANTHONY ROGERS, BRANCH MANAGER

Scott Chamberlain, QUALITY MANAGER

Calibration Standards

Asset Number	Manufacturer	Model Number	Date Calibrated	Cal Due
KR91200846	HEWLETT PACKARD	53131A	5/7/2015	5/7/2016

Technical Maintenance, Inc.
3248 FOREST VIEW ROAD, ROCKFORD, IL 61109
Phone: 779-774-3877 Fax 779-774-3884
www.tmicalibration.com

ISO/IEC 17025:2005

Certificate of Calibration

Data Sheet

Parameter	Nominal	Minimum	Maximum	As Found	As Left	Uncertainty	Unit	ADJ/FAIL
Timer Accuracy	60	59	61	60	60	0.3	sec	
Timer Accuracy	300	299	301	300	300	0.3	sec	
Timer Accuracy	1800	1799	1801	1800	1800	0.3	sec	

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Phone: 779-774-3877 Fax 779-774-3884
www.tmicalibration.com

ACCREDITED
ISO/IEC 17025:2005

Certificate Number
A1992943
Issue Date: 09/21/15

Certificate of Calibration

Customer: INTERTEK MIDDLETON
8431 MURPHY DR.
MIDDLETON, WI, 53562
608-824-7422

P.O. Number:
ID Number: 1340

Description: PRECISION PSYCHROMETER
Manufacturer: EXTECH
Model Number: RH390
Serial Number: 13018340
Technician: RICHARD PANKEY
On-Site Calibration: ☐
~~Comments: Salts were useed as an intrinsic standard~~

Calibration Date: 09/21/2015
Calibration Due: 09/21/2016
Procedure: TMI-M-HYGROTHERMOGRAPHS
Rev: 2/22/2011
Temperature: 67 F
Humidity: 35 % RH
As Found Condition: IN TOLERANCE
Calibration Results: IN TOLERANCE

Limiting Attribute:

This instrument has been calibrated using standards traceable to the National Institute of Standards and Technology, derived from natural physical constants, ratio measurements or compared to consensus standards. Unless otherwise noted, the method of calibration is direct comparison to a known standard.

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ANTHONY ROGERS, BRANCH MANAGER

JACK SHULER, QUALITY MANAGER

Calibration Standards

Asset Number	Manufacturer	Model Number	Date Calibrated	Cal Due
Y3530060/Y4030007	VAISALA	HMP46/HMI41	9/4/2014	10/11/2015
RKFD100	FLUKE	9103	6/26/2015	2/26/2017

Technical Maintenance, Inc.
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Phone: 779-774-3877 Fax 779-774-3884
www.tmicalibration.com

ANSI/NCSL Z540-1-1994

Certificate Number
A1992943
Issue Date: 09/21/15

Certificate of Calibration

Data Sheet

Parameter	Nominal	Minimum	Maximum	As Found	As Left	Unit	ADJ/FAIL
Temperature Accuracy, °F	80.0	78.2	81.8	79.8	79.8	°F	
Temperature Accuracy, °F	70.0	68.2	71.8	69.7	69.7	°F	
Temperature Accuracy, °F	60.0	58.2	61.8	59.6	59.6	°F	
Humidity Accuracy, (10-90% RH range)	11.0	9.0	13.0	11.6	11.6	%RH	
Humidity Accuracy, (10-90% RH range)	33.0	31.0	35.0	33.3	33.3	%RH	
Humidity Accuracy, (10-90% RH range)	75.0	73.0	77.0	75.8	75.8	%RH	

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Phone: 779-774-3877 Fax 779-774-3884
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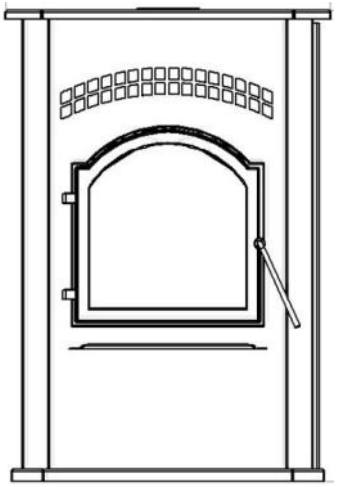
ANSI/NCSL Z540-1-1994

INSTALLATION & OPERATION MANUAL

25-CB120
55-SHPCB120
55-TRPCB120



Manufactured By:
Stove Builder International inc.
PO Box 206
Monroe, VA 24574

www.englander-stoves.com
Support: (877) 356-6663
Email: tech@sbi-international.com

CAUTION

PLEASE READ THIS ENTIRE MANUAL BEFORE INSTALLATION AND USE OF THIS PELLET FUEL-BURNING APPLIANCE. KEEP CHILDREN, FURNITURE, AND ALL COMBUSTIBLES AWAY FROM ANY HEATING APPLIANCE.

SAFETY NOTICE

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN PROPERTY DAMAGE, BODILY INJURY OR EVEN DEATH. FOR YOUR SAFETY AND PROTECTION, FOLLOW THE INSTALLATION INSTRUCTIONS OUTLINED IN THIS MANUAL. CONTACT YOUR LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS (INCLUDING PERMITS) IN YOUR AREA.

THIS WOOD HEATER NEEDS PERIODIC INSPECTION AND REPAIR FOR PROPER OPERATION. CONSULT THE OWNER'S MANUAL FOR FURTHER INFORMATION. IT IS AGAINST FEDERAL REGULATIONS TO OPERATE THIS WOOD HEATER IN A MANNER INCONSISTENT WITH THE OPERATING INSTRUCTIONS IN THE OWNER'S MANUAL.

SAVE THESE INSTRUCTIONS

46312A
2022-06-14

IMPORTANT: IF YOU HAVE A PROBLEM WITH THIS UNIT, DO NOT RETURN IT TO THE DEALER. CONTACT TECHNICAL SUPPORT @ 1-877-356-6663

Tamper Warning:
This wood heater has a manufacturer-set minimum low burn rate that must not be altered. It is against federal regulations to alter this setting or otherwise operate this wood heater in a manner inconsistent with operating instructions in this manual.

Mobile Home Use:
This freestanding pellet unit is approved for mobile home or doublewide installation with the outside combustion air hook-up See the "Installation" section of this manual for details pertaining to mobile home installations. Mobile home installation must be in accordance with the Manufactured Home and Safety Standard (HUD), CFR 3280, Part 24.

WARNING:
USE OF OUTSIDE COMBUSTION AIR IS MANDATORY WITH THIS UNIT.
DO NOT OPERATE WITH THE HOPPER OPEN; LID MUST BE SHUT AND TIGHTLY LATCHED DURING OPERATION. DO NOT OVER-FIRE YOUR UNIT.

Note: England's Stove Works does not recommend using a pellet stove as your only source of heat.

Retain for your files

Model Number_____

Date of Purchase_____

Date of Manufacture_____

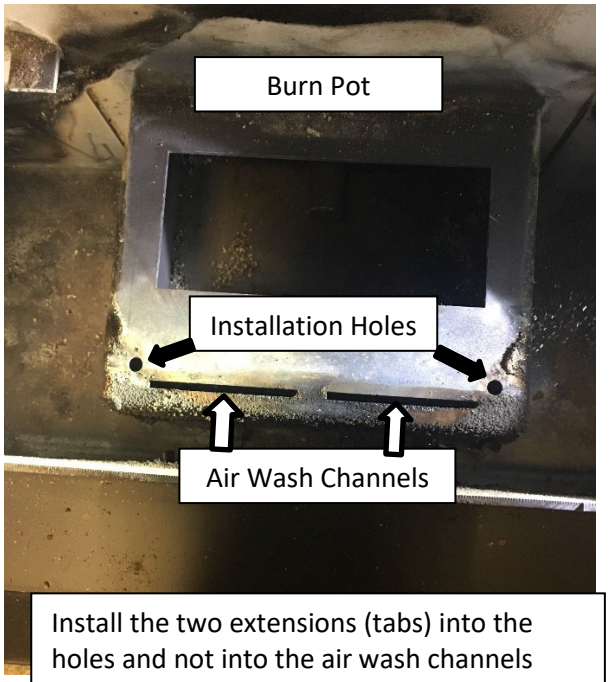
Serial Number_____

Welcome!

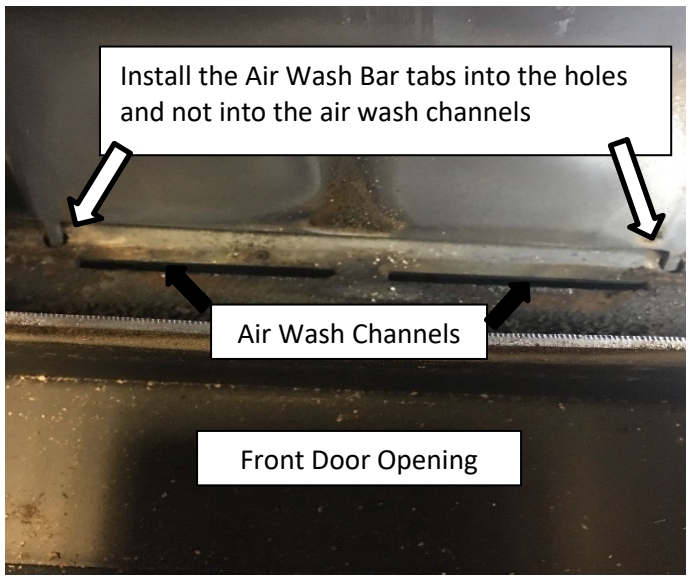
AIR WASH BAR PLACEMENT

CAUTION: The Air Wash Bar may become jarred loose during shipping.

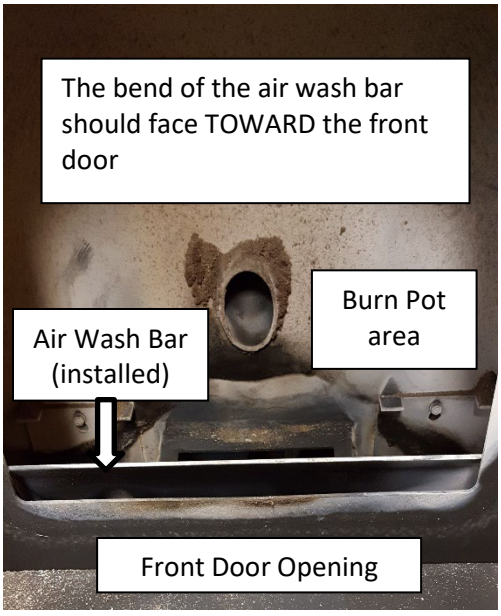
BE SURE that the Air Wash Bar is installed properly before each fire, including after cleaning and maintenance.



Install the two extensions (tabs) into the holes and not into the air wash channels



- The Air Wash Bar should fit into the two installation holes and 'lean forward' on the front wall of the stove.
- The bend in the bar should bend toward the front door opening, and not backward toward the burn pot.



MAINTENANCE VIDEOS - NOTE: Please visit youtube.com/heatredefined and see the Playlist for this model for videos on maintenance, parts replacement and more!

INTRODUCTION

Thank you for purchasing this fine product from England's Stove Works!
England's Stove Works was started, and is still owned by, a family that believes strongly in a "Do It Yourself" spirit; that's one reason you found this product at your favorite "Do It Yourself" store.
We intentionally design and build our stoves so that any homeowner can maintain their stove with basic tools, and we're always more than happy to help you do the job as easily and as inexpensively as possible. However, while remaining simple, our stoves are designed to perform extremely efficiently, helping deliver more heat from less fuel.
Please look at the extensive Help section on our website and call our Technical Support Department at (877) 356-6663 if you need any help with your stove. We are nearly always able to "walk you through" any installation issues, repairs, problems or other questions that you may have.

Wishing you years of efficient, quality and "comfy" heating,
Everyone at England's Stove Works

Please Note: While information obtained from our web site and through our Technical Support line is always free of charge, there will be a service charge incurred with any "on-site" repairs or maintenance that we may arrange.

This manual encompasses all versions of the 25-CB120, including the 55-SHPCB120 and the 55-TRPCB120. However, for simplicity of description, the stove will be referred to by the generic 25-CB120 designation.

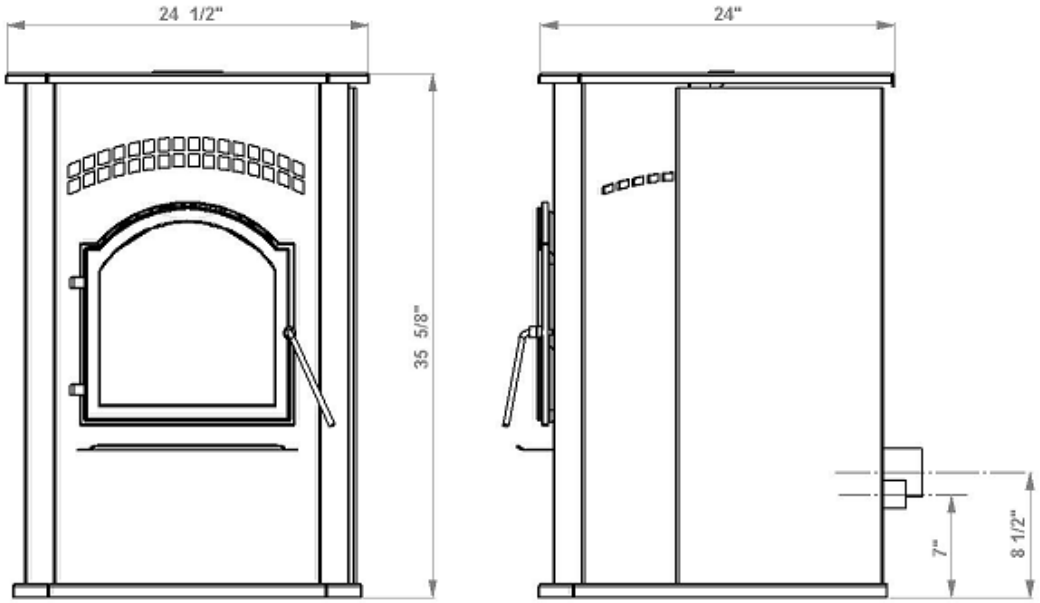
CAUTION: Stove is heavy.
In addition, when handling any sheet metal products, be aware that there may be sharp edges or burrs. Although we make every effort to eliminate any sharp edges, please use caution when handling any metal parts. Remember to disconnect (unplug) the stove from the power source and allow it to completely cool down before performing any maintenance.

SPECIFICATIONS

Heating Specifications

- Approximate Pellet Burn Rate**……0.78 to 1.72 kg/hr (1.72 to 3.8 lbs/hr)
- Maximum Burn Time**……..72 hours
- Approximate Square Footage Heated***…….up to 2,200 sq. ft.
- Hopper Capacity……..120 pounds

Dimensions



EPA and Safety Compliance Specifications

- EPA Compliance Status …….. Certified to comply with 2020 particulate emission standards using pellet fuel.
- U.S. Test Standard: US EPA 40 CFR Part 60, Subpart 60.536
- Heat output range****…….11,993 BTU/h to 23,466 BTU/h (3.51 kW to 6.88 kW)
- Particulate Emissions …… 1.37 grams/hr
- CO Emissions …… 16.25 grams/hr
- Efficiency…… 75.9% (HHV)
- Tested To ASTM E 1509, ASTM E2779, ASTM E2515, CSA B415.1 & ULC S627

Notes for this unit: Product may vary slightly from diagram. Clearances are the minimum for **this unit** and may need to be increased in the rear to have proper vent clearances. **Follow all venting manufacturer clearances and local codes.**

*- As tested per ASTM 2779

** - Heat output, burn rate and maximum burn time are heavily dependent on the type of pellets burned in the stove; as such, these numbers may vary.

*** - The maximum heating capacity of this unit can vary greatly based on climate, construction style, insulation and a myriad of other factors. Use this information in conjunction with a BTU loss calculation for your home to determine if this unit will be sufficient for your needs.

**** - As measured per CSA B415.1-10 stack loss method.

INSTALLATION

Installation Overview

When choosing a location for your new stove, there are a multitude of factors that should be taken into account before beginning the installation.

1. Traffic Patterns – To help prevent accidents, the stove should be placed in a location where it is out of the way of normal travel through the home.

2. Heat Flow and Efficiency – When deciding on a location for the stove, consider the way heat moves throughout your home. Install the stove where you need the heat; basement installations often do not allow sufficient heat to flow to the upper floors and a top floor installation will not allow any heat to reach the floors below. Always consider that heat rises and will take the path of least resistance while it is still hot.

3. Exhaust Location – Outside walls are generally the best place to install a stove, since they allow easy exhaust and intake air installation (using our Dura Vent AC-3000 Kit, AC-33000 if Canada). If there is not a feasible way to install the stove on an outside wall, there are methods for venting the stove up through the roof, but they tend to be more costly because they involve the use of more pellet vent pipe and can often make outside air installation more difficult.

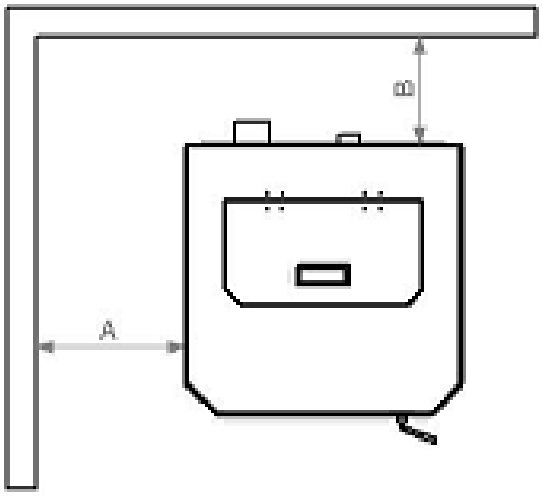
4. Wall Construction – Locating the stove so that the exhaust system can pass between studs will simplify the installation and eliminate the need to reframe any sections of the wall to accommodate the wall thimble.

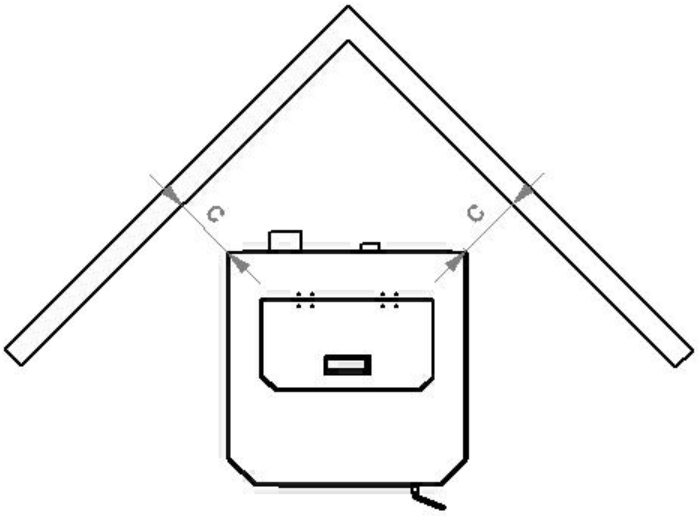
Warning

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- Do Not Over fire – If any external part starts to glow, you are over firing. Reduce feed rate. Over firing will void your warranty.
- Comply with all minimum clearances to combustibles as specified. Failure to comply may result in a house fire.
- Tested and approved for **wood pellets only**. Burning any other fuel will void your warranty.
- For use with Premium grade wood pellets only.

INSTALLATION

Clearances to Combustibles





Unit to Side Wall (A)	Unit to Rear Wall (B)	Unit to Corner (C)
10 in.	0 in.	10 in.
254 mm	0 mm	254 mm

CAUTION

- Unit can be very HOT while in operation. Keep children away.
- Supervise children in the same room as this appliance.
- Alert children and adults to the hazards of high temperatures.
- Do NOT operate with protective barriers open or removed.
- Keep clothing, furniture, draperies and other combustibles away.
- Installation MUST comply with local, regional, state and national codes and regulations.
- Consult local building, fire officials or authorities having jurisdiction about restrictions, installation inspection, and permits.

DO NOT CONNECT TO ANY AIR DISTRIBUTION DUCT OR SYSTEM

INSTALLATION

Venting Introduction

This pellet stove operates on a negative draft system, which pulls combustion air through the burn pot and pushes the exhaust air through the vent pipe and out of the building. This unit must be installed in accordance with the following detailed descriptions of venting techniques; not installing the stove in accordance with the details listed here can result in poor stove performance, property damage, bodily injury or death. England's Stove Works is not responsible for any damage incurred due to a poor or unsafe installation.

If questions arise pertaining to the safe installation of the stove, our Technical Support line (877-356-6663) is available. Contact your local code official to be certain your installation meets local and national fire codes and if you're uncertain about how to safely install the stove, we strongly recommend contacting a local NFI certified installer to perform the installation.

Venting Guidelines

- WARNING - INSTALL VENT AT CLEARANCES SPECIFIED BY THE VENT MANUFACTURER**.**
- **ALWAYS** install vent pipe in strict adherence with the instructions and clearances included with your venting system.
- **DO NOT** connect this pellet stove to a chimney flue which also serves another appliance.
- **DO NOT** install a flue pipe damper or any other restrictive device in the exhaust venting system of this unit.
- **USE** an approved wall thimble when passing through a wall and a ceiling support/fire stop when passing through a ceiling.
- **ONLY** use 3.0" or 4.0" Type L or Type PL pipe approved for pellet stove venting; **DO NOT** use galvanized or B-Vent pipe.
- **SEAL** each joint of pellet vent with high temperature silicone (Part # AC-RTV3) to prevent smoke spillage into the home.
- **AVOID** excessive horizontal runs and elbows, as both will reduce the draft of the venting system and will result in poor stove performance.
- **INCLUDE** as much vertical pipe as possible to prevent smoke from the unit from entering your home in the event of a power outage.
- **INSPECT** your venting system often, to be certain it is clear of fly-ash and other restrictions.
- **CLEAN** the venting system as detailed in the maintenance section of this manual.

WARNING

- **INSTALL VENT AT CLEARANCES SPECIFIED BY THE VENT MANUFACTURER.**
- **HOT! Do not touch! Severe burns or clothing ignition may result.**
- **Glass and other surfaces are hot during operation.**
- **Do not attempt to touch or open the front or side panels during operation. This could result in severe burns or injury.**

INSTALLATION

Additional Venting Information

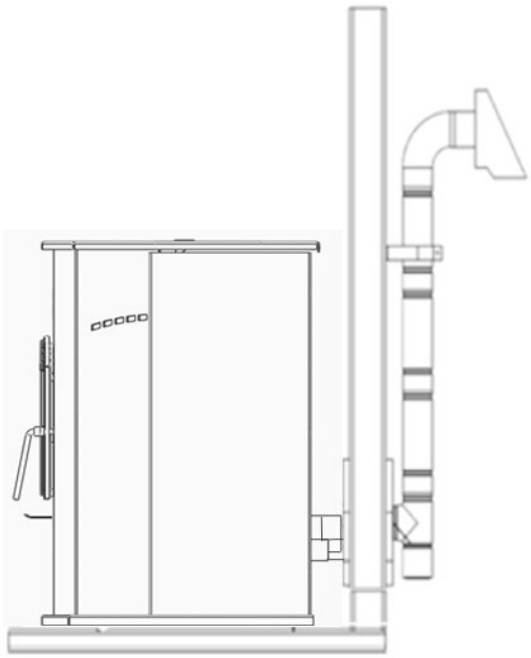
- Do not mix and match components from different pipe manufacturers when assembling your venting system (i.e. Do **NOT** use venting pipe from one manufacturer and a thimble from another).
- We **require** a minimum vertical rise of 36 in. (3 ft.) of pipe to create natural draft in the system. This helps evacuate smoke from the stove in the event of a power failure or combustion blower failure.
- Venting systems 15.0 ft. or shorter may be composed entirely of 3.0 in. pellet pipe; to reduce frictional losses, venting systems longer than 15.0 ft. should be composed of 4.0 in. pellet pipe.
- Do not terminate the venting system directly beneath any combustible structure such as a porch or deck.
- Follow NFPA 211 rules listed below for venting system termination location relative to windows and other openings in the dwelling.
    - NFPA 211 (2006 ed.) Section 10.4 Termination: 10.4.5
      (1) The exit terminal of a mechanical draft system other than direct vent appliances (sealed combustion system appliances) shall be located in accordance with the following:
        - (a) Not less than 3 ft. (.91 m) above any forced air inlet located within 10 ft. (3.0m).
        - (b) Not less than 4 ft. (1.2 m) below, 4 ft. (1.2 m) horizontally from or 1 ft. (305 mm) above any door, window or gravity air inlet into any building.
        - (c) Not less than 2 ft. (0.61 m) from an adjacent building and not less than 7 ft. (2.1 m) above grade when located adjacent to public walkways.
- Distance between the termination opening and grade should be a minimum of 2 ft. (24 in.) contingent on the grade surface below the termination. When determining the termination height above grade, consider snow drift lines and combustibles such as grass or leaf accumulation. In areas where significant snowfall is possible, the termination height must be sufficiently high to keep the termination free of snow accumulation.
- Do not use makeshift compromises during installation or install any component of the unit or venting system in such a manner that could result in a hazardous installation.
- A chimney connector shall not pass through an attic or roof space, closet or similar concealed space, or a floor, or ceiling.
- Where passage through a wall or partition of combustible material is desired, the installation shall conform to CAN/CSA-B365.

WARNING:
Venting system surfaces get HOT, and can cause burns if touched.
Noncombustible shielding or guards may be required.

INSTALLATION

Approved Venting Method 1: Through the Wall

For high altitude installations (above 4,000 ft.), the vent pipe should be increased from 3-inch (3") to four-inch (4").



- Generally the simplest installation method, venting through the wall using our AC-3000 kit, AC-33000 if Canada (or similar venting system) is also the preferred venting method. It minimizes horizontal pipe, allows the stove to be installed close to the wall and keeps the clean-out tee on the outside of the house, for ease of cleaning.
- When installing any venting system, **Type L** or **Type PL** pipe must be used and all clearances to combustibles (listed by the pipe manufacturer) must be strictly adhered to.
- Use the pipe manufacturer's approved thimble for passing through a combustible wall, and maintain at least the minimum clearances to combustibles.
- Use an appliance collar where the pellet vent connects to the exhaust output of the pellet stove and attach the appliance collar to the exhaust blower output using three sheet metal screws.
- Secure the pellet vent to the outside of the house using a wall strap just below the 90 degree elbow.
- Seal each pipe connection joint with high temperature RTV Silicone, to ensure the system is leak free (Check with the specific venting system manufacturer's instructions before doing so).
- If the pellet vent pipe being used is not a "Twist Lock" system, three (3) sheet metal screws are required at each pipe joint.
- Connect the pellet stove to outside combustion air using the kit included with your stove or using an alternative method, as described in the "Outside Air" section, on page 16.

This installation type can be modified for basement **(Basement installations should always be performed by a professional installer)** or other installations wherein the tee and vertical section of the pipe would be inside the home and the venting system would simply pass horizontally through the thimble and then terminate.

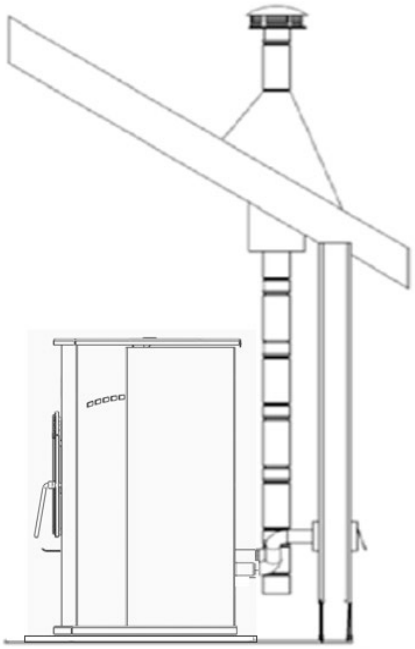
Please Note:

Installation diagrams are for reference purposes only and are not drawn to scale, nor meant to be used as plans for each individual installation. Please follow all venting system requirements, maintain the required clearances to combustibles, and follow all local codes.

INSTALLATION

For high altitude installations (above 4,000 ft.), the vent pipe should be increased from 3-inch (3") to four-inch (4").

Approved Venting Method 2: Through the Ceiling



- Venting through the ceiling/roof may be the only feasible venting option in some cases and is a factory recommended installation.
- When installing any venting system, **Type L** or **Type PL** pipe must be used and all clearances to combustibles listed by the pipe manufacturer must be strictly adhered to.
- Use the pipe manufacturer's approved ceiling support for passing through a combustible ceiling, as well as the required fire stops, radiation shields, flashing and storm collar.
- Be certain to follow the manufacturer's required height of termination above the roof line, and maintain at least the minimum clearances to combustibles.
- Use an appliance collar where the pellet vent connects to the exhaust output of the pellet stove and attach the appliance collar to the exhaust blower output using three sheet metal screws.
- Seal each pipe connection joint with high temperature RTV Silicone, to ensure the system is leak free (Check with the specific pipe manufacturer's instructions before doing so).
- If the pellet vent pipe being used is not a "Twist Lock" system, three (3) sheet metal screws are required at each pipe joint.
- Connect the pellet stove to outside combustion air using the kit included with your stove or using an alternative method, as described in the "Outside Air" section, on page 16.
- This venting method can also be modified so that the venting system runs horizontally through the wall from the stove, then transitions to vertical and terminates above the roofline. When using this modified version of this installation be certain to carefully follow the venting system manufacturer's instructions diligently.

Please Note:

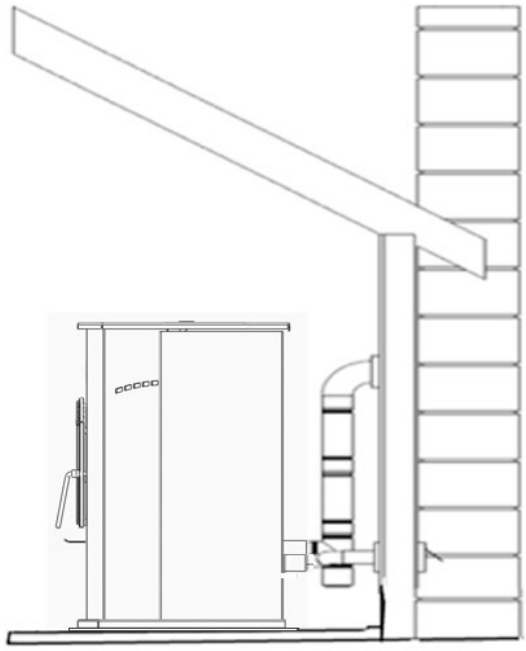
Installation diagrams are for reference purposes only and are not drawn to scale, nor meant to be used as plans for each individual installation. Please follow all venting system requirements, maintain the required clearances to combustibles, and follow all local codes.

INSTALLATION

For high altitude installations (above 4,000 ft.), the vent pipe should be increased from 3-inch (3") to four-inch (4").

Approved Venting Method 3: Existing Chimney System

- Using an existing masonry or factory built chimney for venting is the only other acceptable method for venting this pellet unit.



- Use **Type L** or **Type PL** venting pipe until entering the existing chimney. Use the appropriately sized adapter when transitioning from the pellet vent pipe to the masonry or factory built thimble and be certain that the adapter is sealed tightly to both the pellet venting system and the existing chimney.
- Before using an existing chimney, be certain it is in good condition (A chimney sweep inspection is highly recommended). Also, make sure the chimney meets the minimum standards listed in NFPA 211 (A chimney professional can confirm this upon inspection).
- If connecting this stove to a factory built chimney, it may **ONLY** be a 6" flue, UL103 HT venting system (ULC S629 if Canada). Connection to any other factory built chimney may result in a poorly operating or dangerous stove installation.

- When connecting to an existing masonry chimney, the cross-sectional area of the flue must be considered. A chimney with a flue larger than 6" round (28.27 sq. in.) may require relining with an approved pellet stove chimney lining system.
- Use an appliance collar where the pellet vent connects to the exhaust output of the pellet stove and attach the appliance collar to the exhaust blower output using three sheet metal screws.
- Seal each pipe connection joint with high temperature RTV Silicone, to ensure the system is leak free (Check with the specific pipe manufacturer's instructions before doing so).
- If the pellet vent pipe being used is not a "Twist Lock" system, three (3) sheet metal screws are required at each pipe joint.
- Connect the pellet stove to outside combustion air using the kit included with your stove or using an alternative method, as described in the "Outside Air" section, on page 16.

Please Note:

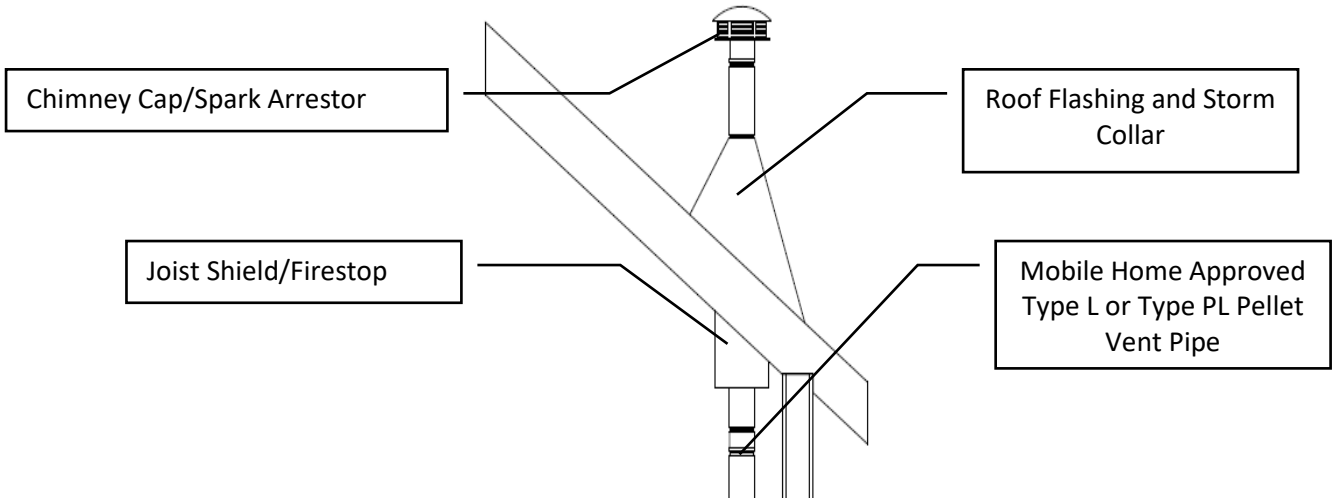
Installation diagrams are for reference purposes only and are not drawn to scale, nor meant to be used as plans for each individual installation. Please follow all venting system requirements, maintain the required clearances to combustibles, and follow all local codes.

INSTALLATION

For high altitude installations (above 4,000 ft.), the vent pipe should be increased from 3-inch (3") to four-inch (4").

Mobile Home Installation

- The England's Stove Works, Inc. outside air kit **MUST** be used for installation of this unit in a mobile home. Please see the "Outside Air" section on page 16 for more information regarding outside air connections.
- The outside air inlet must be kept clear of leaves, ice and other debris. Keeping the outside air inlet free of restriction is crucial to preventing air starvation and smoke spillage.
- The pellet stove **MUST** be secured to the floor of the mobile home using lag bolts and the holes provided in the bottom of the base for this purpose. Outdoor-aired space heaters must be attached to the structure.
- The pellet stove **MUST** be grounded with #8 solid copper grounding wire (or equivalent), terminated at each end with an NEC approved grounded device.
- Carefully follow all clearances listed in the appropriate section of this manual AND follow the venting manufacturer's minimum clearance requirements. Similarly, be certain the venting system used is approved for mobile home use.
- Installation must be in accordance with Manufacturers Home & Safety Standard (HUD) CFR 3280, Part 24 as well as any applicable local codes.
- Use silicone to create an effective vapor barrier at the location where the chimney or outside air ducting passes through to the exterior of the structure.



CAUTION

THE STRUCTURAL INTEGRITY OF THE MANUFACTURED HOME FLOOR, WALL AND CEILING/ROOF MUST BE MAINTAINED. DO NOT CUT THROUGH FLOOR JOISTS, WALL STUDS, CEILING TRUSSES OR ANY OTHER SUPPORTING MATERIAL WHICH COULD BE DETRIMENTAL TO THE STRUCTURAL INTEGRITY OF THE HOME.

WARNING: DO NOT INSTALL IN A SLEEPING ROOM.

VENT TERMINATION CLEARANCES

A) Min. 4-ft clearance below or beside any door or window that opens.

B) Min. 1-ft clearance above any door or window that opens.

C) Min. 2-ft clearance from any adjacent building.

D) Min. 7-ft clearance from any grade when adjacent to public walkways.

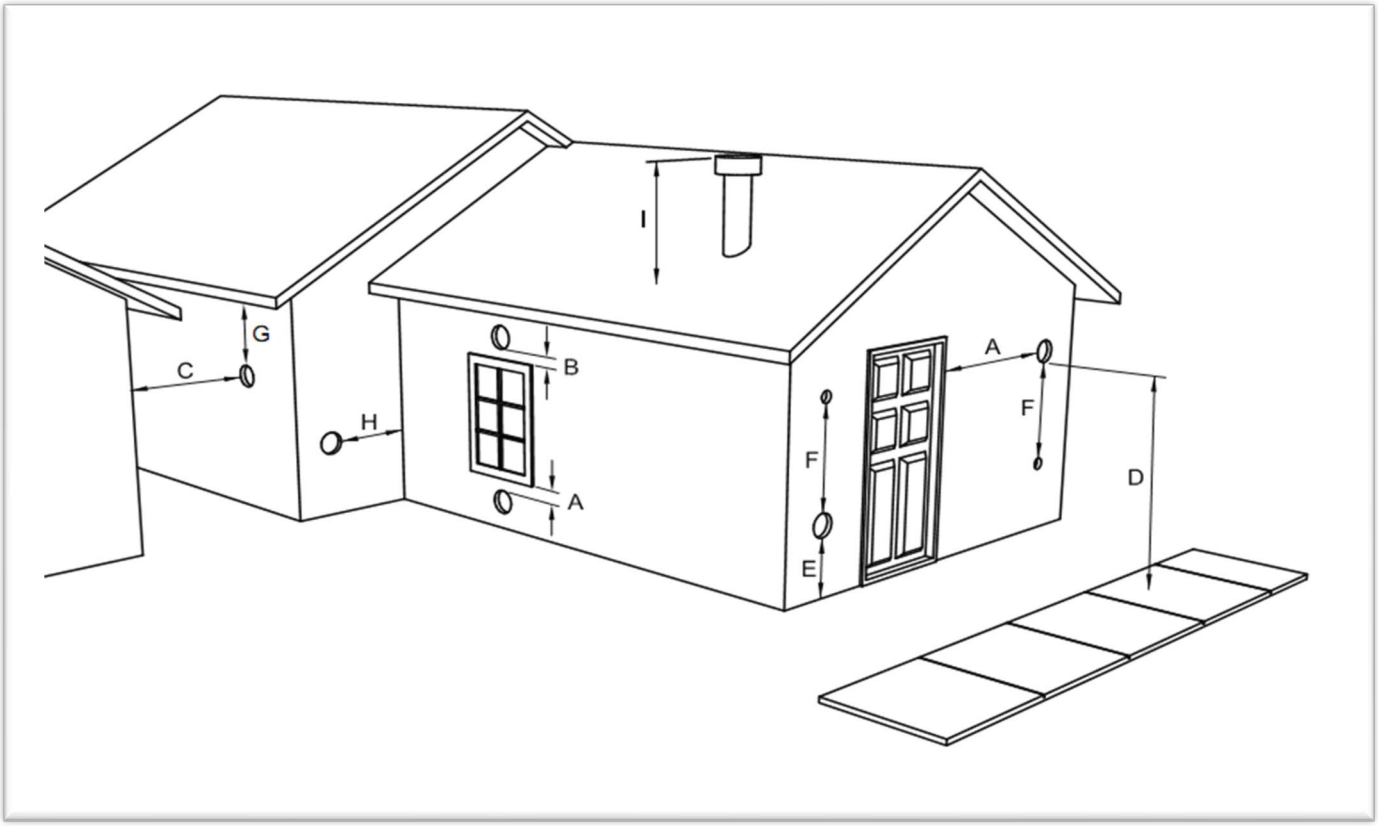
E) Min. 2-ft clearance above any grass, plants, or other combustible materials.

F) Min. 3-ft clearance from a forced air intake of any appliance.

G) Min. 2-ft clearance below eaves or overhang.

H) Min. 1-ft clearance horizontally from combustible wall.

I) Vents installed with mechanical exhausters shall terminate not less than 12 in. (305mm) above the highest point where they pass through the roof surface.



Notes on termination of Pellet Vent Pipe from NFPA 211 (2006 ed.) Section 10.4 Termination: 10.4.5
(See also "INSTALLATION" section of manual AND additional notes above):

- Not less than three (3) feet above any forced air inlet located within ten (10) feet.
- Not less than four (4) feet below, four (4) feet horizontally from, or one (1) foot above any door, window or gravity air inlet into any building.
- Not less than two (2) feet from an adjacent building, and not less than seven (7) feet above grade where located adjacent to public walkways.

The exhaust exit shall be arranged so that the flue gases are not directed so that it will affect people, overheat combustible structures, or enter buildings. Forced draft systems and all parts of induced draft systems under positive pressure during operation shall be installed gastight or to prevent leakage of combustion products into a building. Through-the-wall vents shall not terminate over public walkways, or where condensate or vapor could create hazards or a nuisance.

Be sure to follow local codes and all manufacturer's instructions (including exhaust pipe).
Consult a professional installer and/or call Technical Support if you have any questions.

OUTSIDE AIR HOOK-UP

- The use of outside combustion air is **mandatory** on this pellet stove.
- The outside air connection pipe protrudes from the lower rear center of the stove; use the included outside air kit to attach your stove to outside combustion air. Instructions and all the parts needed to make the outside air connection to your pellet stove are included with the outside air kit.
- If it is not feasible to use the included outside air hookup kit in your stove installation, other materials may be used, provided the following rules are followed:
    - The pipe used for outside air hookup must be metal, with a minimum thickness of .0209 in. (25 gauge mild steel) or greater and an inside diameter of approximately 2.0 in.
    - All pipe joints and connections should be sealed with pipe clamps or other mechanical means, to insure a leak free outside air connection.
    - Long runs of pipe and excessive elbows for outside air should be avoided. Due to frictional resistance in pipe, any excessive outside air piping can result in poor stove performance.
    - A screen or other protection device must be fitted over the outside air termination point to prevent rain, debris and nuisance animals from entering the piping system.
    - Increase the outside air pipe size to 3.0 in. diameter pipe if the outside air connection is more than 6 ft. in length, more than two (2) elbows are used or if the stove is installed in a basement.
- The outside air connection system should be inspected at least annually to be certain it is free from blockage.

Caution

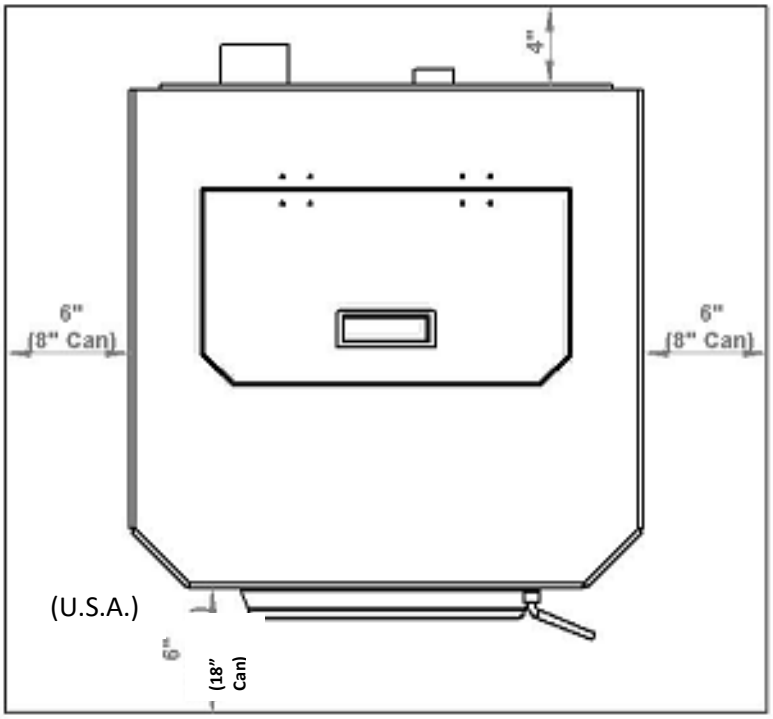
NEVER draw outside combustion air from:

1. Wall, floor or ceiling cavity.

2. Enclosed space such as an attic, garage or crawl space.

FLOOR PROTECTION

- This pellet stove requires a non-combustible floor protector if the stove is to be installed on a combustible floor. If the floor the stove is to be installed on is already non-combustible (i.e. a concrete floor in a basement) and has an R value equal to or higher than .2, no floor protection is needed (although a decorative floor protector can still be used for aesthetic reasons).
- Prefabricated floor protectors which are UL listed (ULC if Canada) or equivalent can be purchased or a floor protector can be built from standard materials: two sheets of .5" thick cement board covered with ceramic tile would be a suitable floor protector which meets the .2 R-value requirement.
- When using any floor protector, consider that this stove is not only heavy but will induce heating and cooling cycles on the floor protector which can damage tile and loosen mortar and grout joints. A hearth rug is **NOT** an approved substitute for a proper hearth pad.
- **For the US**: The floor protector must extend at least 6 in. (152.4 mm) from the front & sides and 4 in. (101.6 mm) from the rear.
- **For Canada**: The floor protector must extend at least 18.0 in. (457.2 mm) from the front of the unit, 8.0 in. (203.2 mm) from the sides of the unit and 4.0 in. (101.6 mm) from the rear.
- **In Canada**, it is required that the non-combustible floor protector is underneath and extends 2 in. (50.8 mm.) on either side of any horizontal venting runs **AND/OR** is directly underneath any vertical venting pipe.



DAILY OPERATION

Getting Started

- Check to see that the hopper is clean and free from foreign materials. Be sure to connect this unit to a working outlet; we recommend using a surge protector to help protect the electronic components from damage.
- **BEFORE** your first fire, dry run your unit (**no** pellet fuel in the hopper) for twenty minutes; pressing the "ON" button with the unit plugged in will initiate the dry run.
    - When the "ON" button is pressed, the board will scroll the message "DID YOU CLEAN BURN POT BEFORE STARTING? HOLD ON TO CONFIRM". Press and hold the "ON" button for **3 seconds** to start the unit.
    - Once the unit starts, you should immediately hear the exhaust blower start and operate continuously. The board will display the last setting it was set to for the duration of its operation, or until the setting is adjusted.
    - After about three to five minutes, look for the red glow of the igniter in the igniter port of the burn pot to be certain it is operating normally.
    - Hold the hopper lid switch (See "Illustrated Parts Diagram" pg. 50) down with your finger and check to see that the auger is turning. Release the hopper lid switch and be certain that the auger stops turning. **DO NOT PUT YOUR FINGERS IN THE HOPPER OR NEAR THE ROTATING AUGER**. Please Note: If the lid switch is left disengaged (not pressed down) for 60 seconds, the unit will shut down with an error message of "HOPPER LEFT OPEN. SHUTTING DOWN" – if this happens, the unit must be allowed to shut down and the dry run would then need to be repeated from the beginning.
    - Note that the front door must be closed for the auger to cycle (the board will not give a vacuum loss error, as the board does not look for this until proof of fire is met, but the auger will not cycle if the door is open).
    - After approximately twenty minutes, the control board should display "FAILED TO START SHUTTING DOWN" several times, and then it will continue to display "FAILED TO START". To clear the error message simply press the "OFF" button. At this point, the dry run is complete and your pellet heating appliance is ready for normal operation.

Lighting a Fire

- In order for this stove to operate, the hopper must first be filled with pellet fuel. Lift the hopper lid using the flush-mount handle and pour the pellet fuel directly into the hopper. Of course, your stove should be connected to your venting system at this point.
    - ❖ We recommend using only pellets manufactured by PFI Certified facilities, since pellets bearing the PFI stamp of approval will be low in ash and moisture, high in BTU's, and uniform in size and quality.
- This pellet stove will perform equally well using softwood and hardwood pellets, and although the ash may differ slightly in appearance or texture, both types of pellets will burn cleanly and efficiently in this stove.
    - This pellet stove is equipped with an automatic pellet ignition system. Simply press the "ON" button; when the "ON" button is pressed, the board will scroll the message "DID YOU CLEAN BURN POT BEFORE STARTING? HOLD ON TO CONFIRM". Press and hold the "ON" button for **3 seconds** to start the unit.
- After initiating the start-up as described above, the most recent setting will appear in the window of the control board. This indicates the stove has entered the start-up sequence and is operating normally.
- The fuel feed rate and combustion air during start-up is determined by the control board, so the stove may be started on any heat range.

- After approximately fifteen minutes, the fire should be burning brightly. At this point, the stove has begun normal operation and the display windows on the control board will display your setting, unless the board is adjusted.
- It is normal for the unit to smoke during the first fire, as paints and oils cure. This should dissipate within the first hour. Open a door and/or window during the first fire to ventilate the area.

Daily Operation Notes

- Only high quality, Premium Grade ¼" (.25 in.) diameter wood pellets should be used in this stove. Using low grade wood pellets with high ash content OR wood pellets with a high moisture content can cause the burn pot to fill with ash at a more rapid pace and can cause intervals between periodic maintenance to become significantly shorter. Please read the "Maintenance" section of this manual thoroughly to understand how fuel selection affects stove operation, maintenance and cleaning.

- Variation in the flame height is normal; not all wood pellet fuel is uniform in size, which can affect the way pellets are fed into the burn pot. Although the flame height may increase and decrease during operation, there is no loss of efficiency.

- Always store wood pellet fuel in a dry location; storing wood pellet fuel in a dry location ensures the fuel will remain pelletized and low in moisture content. Also, be certain that all wood pellet fuel is stored at a safe distance from the pellet heater; storing fuel in close proximity to the stove can result in a fire. **Do not install or operate this unit outside, in a greenhouse, or in any area that is high in moisture.**

- This pellet burning room heater is equipped with a specially designed burn pot which comes preinstalled from the factory. This burn pot elevates the burning pellets and delivers air at the precisely-required locations. Pellets must only be burned in the factory burn pot; no modifications should be made to this burn pot and no additional grates or other fire elevators should be used.

- The circuit board is equipped with "Reminder Messages" which will pop up and scroll on the display at various times.

- As noted above, the control board will ask the user if they have cleaned out the burn pot prior to every start with "HOLD ON TO CONFIRM".

- "Daily cleaning reminder" - After the unit has run for 46 consecutive hours of burn time, the board will display a reminder to shut the unit down and perform daily cleaning with "PLEASE SHUT DOWN AND CLEAN BURN POT". This reminder code does NOT shut the unit down, but WILL scroll until the unit is completely shut down by the user. Control of the stove is not affected by the

scrolling message; the user can adjust the control board and it will display the adjustment and then revert back to the scrolling message until the user shuts the unit down.

- "Weekly maintenance reminder" - After 7 days of cumulative run time, the control board will display a scrolling reminder message to confirm the user has performed the weekly maintenance required with "DID YOU PERFORM WEEKLY MAINTENANCE? HOLD ON BUTTON TO CONFIRM". Again, the message does not affect the unit's operation, and in this case can be cleared by holding the "ON" button for 3 seconds, at which time the board status will return to its previous state.

CAUTION

NEVER USE GASOLINE, GASOLINE-TYPE LANTERN FUEL, KEROSENE, CHARCOAL LIGHTER FLUID, OR SIMILAR LIQUIDS TO START OR "FRESHEN UP" A FIRE IN THIS HEATER. KEEP ALL SUCH LIQUIDS WELL AWAY FROM THE HEATER WHILE IN USE. ADDITIONALLY, NEVER APPLY FIRE-STARTER TO ANY HOT SURFACE OR EMBERS IN THE STOVE. DO NOT USE CHEMICALS OR FLUIDS TO START THE FIRE.

DO NOT BURN FLAMMABLE FLUIDS SUCH AS GASOLINE, NAPHTHA OR ENGINE OIL.

DO NOT BURN GARBAGE; LAWN CLIPPINGS OR YARD WASTE; MATERIALS CONTAINING RUBBER, INCLUDING TIRES; MATERIALS CONTAINING PLASTIC; WASTE PETROLEUM PRODUCTS, PAINT OR PAINT THINNERS, OR ASPHALT PRODUCTS; MATERIALS CONTAINING ASBESTOS; CONSTRUCTION OR DEMOLITION DEBRIS; RAILROAD TIES OR PRESSURE-TREATED WOOD; MANURE OR ANIMAL REMAINS; PAPER PRODUCTS, CARDBOARD, PLYWOOD OR PARTICLEBOARD. THE PROHIBITION AGAINST BURNING THESE MATERIALS DOES NOT PROHIBIT THE USE OF FIRESTARTERS MADE FROM PAPER, CARDBOARD, SAWDUST, 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.

CONTROL BOARD SETTINGS Manual/Automatic Mode

Automatic Mode

Your stove will arrive from the factory programmed in automatic mode. First, make sure the thermocouple wire is resting loosely outside the back of the stove (so that it is reading the air temperature) in a safe location where it can't be damaged. It should not rest directly on the floor, or it will pick up the floor temperature. The thermocouple wire is the "room temperature heat sensor" whereby the control board will read the room temperature.

In this mode, after initiating the startup sequence, you select the desired room temperature (ranging from 60 to 90 degrees F) by pressing the Up or Down arrows, and the stove will operate the auger feed and blower speed according to the temperature you have selected.

The stove will heat to whichever temperature you set the stove at until the call for heat leaves, at which point the stove will adjust itself higher or lower as needed, depending on the room temperature readings supplied by the room heat sensor.
To turn the stove off completely, press the OFF button on the control board.

Manual Mode

Your stove can be changed to run in manual mode, if desired. In manual mode, after pressing the ON button, the stove will run continuously, based on desired heat range and blower speed settings. The heat range settings will be 1 through 9 (the Up arrow will increase the heat range and the Down arrow will decrease the heat range), with 1 being the lowest auger feed setting and 9 being the highest. The blower speed range will match the heat range that you have set.

Since the stove runs continuously at the selected heat range in this mode, it is generally recommended for stoves installed in less-insulated areas of the home and extremely cold climate regions.
To turn the stove off completely, press the OFF button on the control board.

Setting Stove in Manual Mode

- To set the stove in Manual Mode: With the stove turned On, press the down arrow and the up arrow button simultaneously. This will toggle your stove to Manual Mode.
- While in Manual Mode, the stove board will display M1 (the lowest setting) and can be adjusted with the up and down arrows.

Setting Stove in Automatic Mode

- To set the stove back into automatic mode, press the down arrow and the up arrow button simultaneously. This will toggle the stove to Automatic Mode.
- While in Automatic Mode, the stove board will display the Set Temperature.

The control board on this stove allows the user to adjust the heat output and convection blower speed, turn the unit on and off, and test components for function (more on diagnostic mode later).

CAUTION

This unit is meant to operate only with door closed. Smoke spillage and an inefficient, lazy burn will result from attempting to operate the stove with the door open.
In addition, using fuel other than wood pellets can create an unsafe situation and can also generate excess carbon monoxide. Carbon monoxide is an odorless, colorless gas which can be deadly. Be sure to burn only wood pellets.
The use of a carbon monoxide detector is strongly recommended.

ERROR CODES

Error messages will appear and scroll across the display of the control board if the unit experiences an abnormal condition. When these errors occur, the unit will proceed to a shutdown cycle, during which time the control board will not permit the unit to be restarted. At the end of the shutdown cycle, the control board will allow the code to be cleared and/or the unit to be restarted. In the event an error message appears, however, it is recommended to refer to the troubleshooting section of the manual (or call Tech. Support if needed), to determine and correct the underlying cause of the message's appearance.

NOTE: See next section for information on Troubleshooting the Error Codes

Failed to start

- If the unit does not reach its minimum operating (or "Proof of Fire") temperature by the end of the allotted startup time, the control board display will scroll "FAILED TO START SHUTTING DOWN", at which time the unit will initiate a shutdown cycle. The message will continue to scroll during this time until the unit shuts completely off. During this time, the stove cannot be restarted; if the "ON" button is pressed during this shutdown, the unit will scroll "STOVE MUST SHUT DOWN TO CLEAR ERROR" once, before reverting to the previous message.

- Once the unit has shut down completely, the display will continue to scroll "FAILED TO START". At this point the stove can be restarted in its normal sequence by pressing the "ON" button, or the code can be cleared by pressing the "OFF" button.

Failed on Over Temp

- If, at any time while the unit is in operation and the firebox sensor reads too high of a temperature, the unit will display the following message: "FAILED ON OVER TEMP SHUTTING DOWN". The unit will then initiate a shutdown cycle, and the message will continue to scroll during this time until the unit shuts completely off. During this shutdown, the stove cannot be restarted; if the "ON" button is pressed during shutdown the unit will scroll "STOVE MUST SHUT DOWN TO CLEAR ERROR" once, before reverting to the previous message.

- Once the unit has shut down completely, the display will scroll "FAILED ON OVER TEMP". At this point the stove can be restarted in its normal sequence by pressing the "ON" button, or the code can be cleared by pressing the "OFF" button.

Vacuum Loss

- This unit is equipped with a vacuum actuated "Door Ajar" safety switch. If this switch is sensed as being open for a period of 30 continuous seconds, the control board will scroll

"FAILED ON VACUUM LOSS SHUTTING DOWN". The unit will then initiate a shutdown cycle, and the message will continue to scroll during this time until the unit shuts completely off. During this shutdown, the stove cannot be restarted; if the "ON" button is pressed during shutdown the unit will scroll "STOVE MUST SHUT DOWN TO CLEAR ERROR" once, before reverting to the previous message.

- Once the unit has shut down completely the control board will scroll "FAILED ON VACUUM LOSS". At this point the stove can be restarted in its normal sequence by pressing the "ON" button, or the code can be cleared by pressing the "OFF" button.

Hopper Left Open

- This unit is also equipped with a hopper lid safety switch that is actuated by a tab which is part of the hopper lid. The switch is a required safety device, which prevents the auger from cycling when the lid is open. An error message is triggered if the lid is left open for 60 continuous seconds - if this occurs, the control board will scroll "HOPPER LEFT OPEN SHUTTING DOWN". The unit will then initiate a shutdown cycle, and the message will continue to scroll during this time until the unit shuts completely off. During this shutdown, the stove cannot be restarted; if the "ON" button is pressed during shutdown the unit will scroll "STOVE MUST SHUT DOWN TO CLEAR ERROR" once, before reverting to the previous message.

- Once the unit has shut down completely the control board will scroll "HOPPER LEFT OPEN". At this point the stove can be restarted in its normal sequence by pressing the "ON" button, or the code can be cleared by pressing the "OFF" button.

If an error code continues to display, if the error code seems unexplainable, or if you have any other questions about error codes and what they mean, please contact Technical Support at (877) 356-6663.

ERROR MESSAGE TROUBLESHOOTING

NOTE: In some cases it will be recommended that you run "Diagnostic Mode" while Troubleshooting. See the section immediately following this section for information on running the Diagnostic Mode for your stove.

Failed to start

Each time the unit is powered up it should be clean; the burn pot should be empty; fuel should be already loaded into the hopper and both the loading door (hopper lid) and the front door **must** be closed. When powered up, the unit will start the draft (exhaust) blower and begin delivering fuel through the feed system. The igniter will begin to heat up, as well. Once the fuel has reached the level of the igniter hole in the burn pot, the heat from the igniter should quickly begin igniting the fuel. Once lit and burning, the unit will continue in this state until the firebox heat sensor recognizes "proof of fire," at which point the unit should exit the startup sequence and begin heating at the setting that was chosen by the user. If the unit does not reach the operating "proof of fire" temperature, a Failed to start error will appear.

Potential causes:

- Draft (exhaust) blower not running - if the draft blower is stuck, defective or plugged up and is unable to run, the unit will not feed. The airflow generated by the draft blower activates a vacuum switch that tells the control board the front door is closed and the draft blower is pulling sufficient air through the burn pot to support the fire.
    - Solution: Clean the stove and flue system. Clean out the draft blower and check to ensure the impellor rotates freely. Check wire connections at the blower; test in diagnostic mode. If the draft blower still does not run, replace the draft (exhaust) blower.

- Draft (exhaust) blower running but no fuel being fed (auger not turning) - This would indicate one of the following issues: Clogged auger or defective auger motor; Vacuum switch circuit open; Improper venting method; Hopper lid switch circuit open.
    - Clogged auger or defective auger motor - clear hopper and feed system. Check for "play" in auger. Test in diagnostic mode.
    - Defective auger motor - if auger is clear but will not run in diagnostic mode, replace the auger motor.
    - Vacuum switch open circuit - ensure the door closes tightly. Next, inspect the vacuum port (in the right rear wall of burn chamber to the right of the burn pot cradle) for blockage. To clean this vacuum port, insert a toothpick or similar implement into the mouth of the port and (gently) swirl it around while sliding it back out to ream out the opening. This port should not be vacuumed out aggressively (i.e. with any type of vaccum), as it could damage the switch. Next, clean the heat exchange areas and flue system. Test in diagnostic mode; if the circuit still shows 'open,' check the wire connections both at the switch and the control board. Test again in diagnostic mode; if still open replace vacuum switch.

- Improper venting method - as stated above, one of the key requirements for proper operation is proper airflow through the entire system. Venting systems with excessive elbows and/or long horizontal runs can restrict the flow of air to the point that the vacuum switch may not receive enough pressure to hold it closed. This would prevent feed, as the control board would assume the front door is open. A dirty flue system can restrict airflow in the same manner, even if installed correctly. Refer to the installation guide to determine if the installation is within specifications.
- Hopper lid switch circuit open - ensure the hopper lid is closing enough to engage the switch. Test in diagnostic mode. Ensure the switch can be pushed manually with hopper open. Check wires at switch and control board; test again in diagnostic mode. If the circuit still shows 'open,' replace the hopper lid switch.

- Feeds but doesn't light - Test igniter in diagnostic mode; remove the burn pot for observation. After energizing the ignitor circuit, allow approximately 4 minutes for the cartridge to fully heat up and observe the igniter sleeve. Check wires at igniter. Replace igniter.

- Stove lights but still has error - Test firebox sensor in diagnostic mode. Check connection at control board. Verify mounting screw for sensor on exhaust coupler is tight. Replace firebox heat sensor.

Over Temp

An over temp error message will appear when the firebox heat sensor reads too high of a temperature. The unit can produce a large amount of heat, which is convected out into the room by a convection (room air) blower that runs at a rate determined by the control board. If the stove is unable to shed the generated heat, the unit itself will retain a higher percentage of this heat and eventually will shut down.

Potential causes:

- Room air blower not running or dirty - test in diagnostic mode. If the blower does not run, remove side panels and verify the "squirrel cage" fans rotate freely. Clean out the fans. Check wire connections. Replace room air blower.

- Excessive ash buildup or improper venting - remove cleanout covers and clean the heat exchange.

- Improper venting method / Clean flue system - as stated above, one of the key requirements for proper operation is proper airflow through the system. Venting systems with excessive elbows and/or long horizontal runs can restrict the flow of air, causing a buildup of fuel in the burn pot and higher exhaust temperatures. Also, a dirty vent system does not allow as much heat transfer, causing excessive heat to be wasted through the exhaust, where the firebox heat sensor is located.

- Confined space - If the unit is installed in a small room or alcove which does not allow proper circulation of heat, the unit itself could simply get too hot. Refer to the installation guide to determine if the installation is within specifications.

- Burning improper fuels - this unit is designed and approved to burn only premium grade wood pellets. Burning other fuels such as cherry pits, shelled corn, or pea/rice coal is not only prohibited, the practice can lead to significant damage done to the unit in a relatively short time.

- Defective firebox sensor - test in diagnostic mode; the display should read "firebox 87F" (or higher). If the sensor's temperature is below 87F, it will display "FIRE SENSOR UNPLUGGED OR COLD". Use a lighter to heat up the firebox sensor briefly and observe the display for a change in the sensor's reading. If the reading does not change, or - in the case of an over temp error is reading an extremely high number when the sensor is obviously cold - replace the sensor.

Vacuum loss:

When the stove is running, a vacuum sensor is monitoring the amount of airflow through the burn chamber. This device will stop feed if this flow is interrupted, and resume feeding when the flow is reestablished. If the airflow is interrupted for more than 30 seconds, the unit will shut down with a vacuum loss error.

Potential causes:

- Front door open/gasket leaking - the front door must remain closed to allow pressure to be registered by the vacuum switch. Also, the gasket that seals the door should make a relatively airtight seal to the face of the unit. Inspect this seal using a "dollar bill test": With the stove off and cool, fold a dollar bill in half long-ways and insert it between the open door and the stove face, then close and latch the door. Pull on the dollar bill and note there should be resistance to the bill, caused by being pinched between the gasket and the stove face. Repeat this process in several places around the door. If the bill will slip out with no resistance, the gasket should be replaced.

- Draft (exhaust) blower not running - if the draft blower is stuck, defective or plugged up and is unable to run, the unit will not feed. The airflow generated by the draft blower activates a vacuum switch that tells the control board the front door is closed and the draft blower is pulling sufficient air through the burn pot to support the fire.
    - Solution: Clean the stove and flue system. Clean out the draft blower and check to ensure the impellor rotates freely. Check wire connections at the blower; test in diagnostic mode. If the draft blower still does not run, replace the draft (exhaust) blower.

- Improper venting method - as stated above, one of the key requirements for proper operation is proper airflow through the system. Venting systems with excessive elbows and/or long horizontal runs can restrict the flow of air to the point that the vacuum switch may not receive enough pressure to hold it closed. This would prevent feed, as the control board would assume the front door is open. Refer to the installation guide to determine if the installation is within specifications.

- Blocked flue/excessive ash buildup in stove - for airflow to be sufficient to supply enough pressure to the vacuum switch, the flue and the stove itself must be clear of blockage or excessive buildup. This situation can reduce the amount of airflow to the extent that it causes the vacuum switch to open. Proper cleaning of both the flue system and the stove must be performed on schedule to ensure the required airflow can be maintained.

- Plugged vacuum port - the vacuum pressure that is read by the switch is pulled at a small port located in the back wall of the burn chamber, to the right of the burn pot cradle. This port can become restricted or blocked by ash buildup in the mouth of the port, causing the switch to either open, or not close fully, while the stove is running. To clear this port insert a toothpick or similar implement into the mouth of the port and (gently) swirl it around while sliding it back out to ream out the opening. This port should not be vacuumed out aggressively (i.e. with any type of vaccum) as it could damage the switch.

- Defective vacuum switch - rarely does this switch fail, so all of the above issues should be ruled out before replacing this switch. The switch can be tested in diagnostic mode.

Hopper left open:

This unit has a safety switch inside the hopper that prevents the auger from running when the hopper lid is open. If the lid is left open for more than 60 seconds, the unit will shut down with this error.

Potential causes:

- Ensure the hopper lid is closing enough to engage the switch. Test in diagnostic mode; the switch can be pushed manually with the hopper open. Check the wires at the switch and control board. Test again in diagnostic; if the circuit still shows open, replace the hopper lid switch.

Diagnostic Mode for 25-CB120 Scrolling Board

To enter Diagnostic Mode, the unit must be off and completely shut down.

- Press the UP , DOWN and ON buttons simultaneously, and release.
- The unit will scroll “DIAGNOSTIC MODE” followed by “REV 3.1”, for example (or whatever revision is present on the board at the time).
    - NOTE: If the board is not loaded with a “PRO” file to operate the unit, the display will show “REV 3.0”, and will need to be uploaded with this file to operate properly.
- Press the ON button.
    - The board will flash the LED’s of the display. This is to test that all LED’s are functional.
- Press the ON button.
    - The board will scroll “AUGER OFF” at this point. To test the auger motor, press the UP arrow. The board will then scroll “AUGER ON” and the auger motor should run continuously. To stop the auger, press the DOWN arrow, and the board will revert to scrolling “AUGER OFF” and the motor will stop. (It is recommended the burn pot be installed during this portion of the test to prevent pellets from dropping into the cradle below the burn pot).
- Press the ON button.
    - The board will scroll “DRAFT OFF” at this point. To test the draft (exhaust) blower, press the UP arrow. The board will then scroll” DRAFT ON” and the draft blower will run at its highest output. To stop the draft blower, press the DOWN arrow, and the board will revert to scrolling “DRAFT OFF” and the blower will stop.
    - NOTE: the draft blower must be running to test the vacuum circuit later in the test, so, to leave it running, simply leave the board in the “DRAFT ON” configuration. Do not press the DOWN arrow; instead press ON button to skip to the next step leaving the draft blower running.
- Having pressed the ON button:
    - The board will scroll “ROOM AIR OFF” at this point. To test the room air (convection) blower, press the UP arrow. The board will scroll “ROOM AIR ON” and the room air blower will start running at its highest output. To stop the room air blower, press the DOWN arrow, and the board will revert to scrolling “ROOM AIR OFF” and the blower will stop.
- Press the ON button.
    - The board will scroll “IGNITER OFF”. To test the igniter, press the UP arrow. The board will then scroll “IGNITER ON” and the ignitor will energize and begin to heat up. After 3 to 4 minutes, the igniter should be at its full temperature and the glow from it should be visible in the mouth of the ignitor tube (it is recommended that the burn pot be removed during this part of the test (USE CAUTION AND NECESSARY PROTECTIVE GLOVES, GEAR, ETC.), especially if the burn pot has fuel in it from testing the auger. Also, the draft blower is running to pull air through the ignitor sleeve if all steps above were followed). To power down the igniter, press the DOWN arrow. The board will revert to scrolling “IGNITER OFF” and the ignitor will power down.

- Press the ON button.
    - The board will scroll “FIRE 087F”, or whatever temperature the firebox sensor is reading at this point. The heat sensor can be tested using a lighter (or other heat producing device) to warm the sensor, and as the sensor is warmed the display will adjust to display the temperature at the sensor as it changes. If the firebox sensor is disconnected or reading below its scale, the board will scroll “FIRE SENSOR UNPLUGGED OR COLD”.
- Press the ON button.
    - The board will scroll “ROOM 67F”, or whatever temperature the room sensor is reading at this point. The room sensor can be tested by simply holding the bulb at the end of the wire in your hand, allowing body heat to warm it. As the bulb warms up, the scrolling display will indicate a higher temperature number. If the room temp. sensor is unplugged or defective, the display will scroll “CONNECT ROOM TEMP SENSOR”.
- Press the ON button.
    - The board will scroll “H1” or “H0”, “T1”, “V1” or “V0”, depending on the position of the hopper lid and front door.
    - The “H” indicates the status of the hopper lid switch, with “H1” meaning the lid is closed and “H0” meaning the lid is open.
    - The “T1” should always read as such, since that circuit is jumped closed and is not used on this model.
    - The “V” indicates the status of the vacuum switch, with “V1” meaning the door is closed and “V0” meaning the door is open.
    - (NOTE: the draft (exhaust) blower must be running to test this circuit).
    - To properly perform this portion of the diagnostic, read the codes as they scroll with both the front door and hopper lid closed. Then, open each, and note the scrolling readout to see if the board reflects the proper status of each switch.
- To cycle the board back to the beginning of the diagnostic mode press the ON button; this allows the user to cycle back around to turn the draft blower off or to re-run the test, if desired.
- To exit the test simply press the OFF button. Exiting the test can be done by pressing OFF at any point during the test. The user does not need to cycle to the end to exit, but it is recommended to cycle through and ensure each component test is set to the “OFF” status before exiting the diagnostic mode.

POWER FAILURE

If the power to the unit is interrupted for approximately three minutes or less, the unit will resume operation when power is restored according to the following table:

Unit's State Before Power Loss	State When Power Returns
ON	Warmup
Warmup	Warmup
Shut-Down	Shut-Down
OFF	OFF

- If the power is interrupted for more than (approximately) three minutes, the unit will be "OFF" when power returns.
- **IMPORTANT** – Do **NOT** open the hopper lid or the door to the unit during power outage. Open the closest outside door and a window to reduce the chance of any combustion byproducts entering the home from the stove.

Wait for the power to be restored and then press the "ON" button to restart the unit, if necessary.

Smoke Detectors

England's Stove Works, Inc. highly recommends the use of smoke detectors in every room of the house. However, locating a smoke detector directly above this unit can result in nuisance alarms.

Caution – Shock Hazard

Press the "Off" button and let the appliance completely cool BEFORE unplugging the appliance and beginning any maintenance or component replacement.

Risk of shock if appliance is not unplugged before service

Failure to properly clean your stove can cause poor performance and possibly a burn back!

DAILY MAINTENANCE

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

Important Notes

- As with any maintenance concerning this unit, be sure the unit is "OFF" and has completed the Shut-Down cycle **BEFORE** beginning.
- Be aware that metal parts in the firebox can remain **HOT** long after the fire has gone out and **EVEN** after the Shut-Down cycle is complete. Always use extreme caution when handling potentially hot stove parts, even if you think they should be cold.
- Ashes should only be removed when the stove has been shutdown and has been allowed to cool thoroughly. Hot embers can remain under ashes long after the fire has gone out, so always be extra careful when handling any ashes from this (or any) stove.
- Different pellets will generate varying amounts of ash and burn pot deposits. Carefully monitor the ash build up in the stove when first operating the unit, as well as whenever a different brand of pellets is burned.
- While the amount of ashes generated by this unit is not excessive compared to a traditional log-burning woodstove, keeping the unit clean and free of ash is ESSENTIAL for peak performance and maximum efficiency. Ash build-up hampers airflow, reduces efficiency, and can cause a smoke back.
- England's Stove Works® is not responsible for any damages incurred due to a poorly maintained and/or dirty stove. This pellet stove is a highly efficient machine and, as such, requires sufficient maintenance to keep it operating at its peak.

Ash Removal and Disposal

- Press the "Off" button and allow the stove to complete the shutdown cycle and cool completely.

- Because of the open design of the firebox, the majority of the ash will be on either side of the cradle. Open the door of the stove and use an old paint brush or putty knife to move ash from around the burn pot and into the open areas beside the cradle.
- Using the cleaning tool provided, remove any deposits left in the burn pot, being careful to remove them from the burn pot and not allow them to filter down into the cradle area. Excessive ash build-up in the cradle can cause poor stove performance (See "Cleaning the Burn pot," below).

  WARNING: Use caution when using the cleaning tool, as it has a sharp point and may have some sharp edges (as with any metal tool). As we recommend with any maintenance, use gloves, safety glasses and any necessary safety apparel when handling the cleaning tool.

Cleaning the Burn Pot

Along with removing ashes from the stove, cleaning the burn pot is the other essential part of daily maintenance that will keep the stove operating at its peak. Pellets contain varying amounts of impurities and fusible material that will accumulate in the burn pot over time. Some pellets will contain much higher amounts of these fusible impurities, therefore extra vigilance may be required to maintain a clean burn pot. Allowing impurities to build up in the burn pot can restrict the air flow to the fire, resulting in a dirty, inefficient burn and can shorten the life of the burn pot.

NOTE: The burn pot should be cleaned out **before each start-up** (before pressing the ON button), and daily.

- Always allow the stove to finish the shut-down cycle and cool completely before performing any maintenance inside the firebox.
- Open the front door and remove the burn pot by lifting it straight up and out of the cradle. **WARNING** – The burn pot can remain HOT long after the fire has gone out, so wear protective gloves whenever handling a potentially hot burn pot.
- Once the burn pot is out of the stove, use the cleaning tool to remove any deposits from the inside of the burn pot.
- **Be certain all air holes are clear and unrestricted** by fusible ash matter; the cleaning tool provided is designed to fit these holes and will be useful in removing stubborn deposits from these holes.
- Remove any ash material from the bottom of the cradle and brush any ash from the top of the cradle into the sides of the firebox. Keeping the top of cradle free of ash is crucial in allowing the burn pot to seat properly in the cradle.
- Insert the burn pot back into the cradle using the reverse of the procedure detailed above.

WEEKLY MAINTENANCE

Baffle Removal

- As with any maintenance concerning this unit, be sure the unit is "OFF," has completed the Shut-Down cycle, and is completely cool **BEFORE** beginning. Be aware that metal parts in the firebox can remain **HOT** long after the fire has gone out and **EVEN** after the Shut-Down cycle is complete. Always use extreme caution when handling potentially hot stove parts, even if you think they should be cold.
- Weekly maintenance should include the steps listed in this section **AS WELL AS** the steps listed in the "Daily Maintenance" section.
- Remove the top baffle (inside the firebox, above the door) by lifting it up and pulling it forward, then tilting it sideways to remove it from the stove. The part number for the top baffle is AC-CBTB.
- Remove any ash that has accumulated behind the baffle in the stove.
- The use of a utility vacuum is highly recommended because it will prevent fly-ash from falling through the exhaust holes and into the exhaust chamber.
- Replace the baffle by reversing the above steps. Be sure the tabs in the baffle fit into the matching holes in the firebox wall of the stove. The top of the baffle will rest against the front wall of the stove when it is properly installed.

Clean-Out Covers

- Remove the exhaust chamber clean-out port covers (lower left and right, on either side of the burn pot). Use a 5/16" socket wrench to loosen the screw on each cover, then pull the cover upwards to remove it from the screw.
- BEFORE vacuuming the chamber out, observe the type and quantity of ash build-up. The ash deposited in the exhaust chamber should be light, fluffy, grey or white in color, and should be no higher than half way up the clean-out port.
- Using a utility type vacuum cleaner, vacuum the fly ash out of the exhaust chamber. A short piece of hose can be attached to the end of the utility vacuum line and can be useful in reaching the ash. Replace the clean-out port covers when finished.
- A specially designed ash vacuum and pellet stove cleaning kit is available from the England's Stove Works website; please see: Englander-stoves.com .

MONTHLY MAINTENANCE

- NOTE: As with any maintenance concerning this unit, be sure the unit is "OFF," has completed the Shut-Down cycle, and is completely cool **BEFORE** beginning.

MONTHLY MAINTENANCE

- Be aware that metal parts in the firebox can remain **HOT** long after the fire has gone out and **EVEN** after the Shut-Down cycle is complete. Always use extreme caution when handling potentially hot stove parts, even if you think they should be cold.
- Monthly maintenance should include the steps listed in this section **AS WELL AS** the steps listed in the "Daily Maintenance" and "Weekly Maintenance" section.
- Intervals between monthly cleanings will depend on the duration that the stove is burning on a daily basis. A stove which is operated continuously will need more frequent monthly cleanings than a stove which is used periodically as supplemental heat.
- A good rule of thumb for monthly maintenance is that it should be done each time an entire ton of pellets is burned **OR** once per month, whichever comes first.
- If excess ash accumulation is found in the exhaust chamber or venting system during monthly maintenance, the interval between cleanings should be reduced to eliminate the possibility of poor stove performance due to ash accumulation.
- A specially designed ash vacuum and pellet stove cleaning kit is available from the England's Stove Works website; please see: Englander-stoves.com

Venting Pipe Cleaning

- Low spots and direction changes in the venting system (such as tees and elbows) are areas for potential fly-ash and creosote accumulation. **INSPECT** these areas diligently to keep the venting system in safe operating condition.
- Depending on the specific type of venting system your stove is connected to, it may be possible to remove the clean-out tee cover and simply run a pipe brush up the pipe to remove any fly-ash accumulation.
- Horizontal runs of pipe, such as from the exhaust connection on the stove to the vertical transition, will accumulate fly ash and should be inspected carefully and brushed clean.
- Check the termination cap to be certain it is not clogged or restricted by any fly-ash accumulation.
- After thoroughly cleaning the venting system, reseal any disassembled seams with high temperature silicone (Part # AC-RTV3) if applicable to your venting system.
- Inspect seams that were not disassembled to be certain a smoke-tight seal is still being made.
- After prolonged use, leaks in the venting system can usually be found by searching for fly-ash deposits on the outside of the pipe. Carefully check for leaks in the venting system and seal them accordingly.
- Although most pellet venting systems are designed to last a lifetime, pellet fly-ash can be corrosive under certain conditions. When cleaning your venting system, examine the pipe carefully for any signs of deterioration and replace sections that show excessive wear. It is unlikely that this will ever be a concern, but maintaining your venting system in safe operating condition is crucial to safe stove operation.

YEARLY MAINTENANCE

Important Notes

- As with any maintenance concerning this unit, be sure the unit is "OFF," has completed the Shut-Down cycle, and is completely cool BEFORE beginning.
- Be aware that metal parts in the firebox can remain HOT long after the fire has gone out and EVEN after the Shut-Down cycle is complete. Always use extreme caution when handling potentially hot stove parts, even if you think they should be cold.
- Yearly (or end of season) maintenance should include the steps listed in this section AS WELL AS the steps listed in the "Daily Maintenance," "Weekly Maintenance" and "Monthly Maintenance" sections of this manual.
- Yearly maintenance should be performed at the end of the burning season. Leaving ash and other build-up in the stove during the non-heating months can lead to premature metal degradation in the stove and venting system. Using extra attention to detail and being certain to be very thorough in the end of season cleaning will help increase the operating life of the stove and venting system.
- The unit should be unplugged during the summer months (and periods of non-use), to help protect against the possibility of damage due to lightning strikes and other power disruptions.

SOOT AND FLY ASH: FORMATION AND NEED FOR REMOVAL

The products of combustion will contain small particles of fly ash. The fly ash will collect in the exhaust venting system and restrict the flow of the flue gases. Incomplete combustion, such as that which occurs during startup, shutdown or incorrect operation of the room heater will lead to some soot formation which will collect in the exhaust venting system. The exhaust venting system should be inspected at least once every year to determine if cleaning is necessary.

Caution – Shock Hazard

Press the "Off" button and let the appliance completely cool BEFORE unplugging the appliance and beginning any maintenance or component replacement.

Risk of shock if appliance is not unplugged before service.

YEARLY MAINTENANCE

Exhaust Blower Cleaning

Although the exhaust blower and blower housing were designed to minimize ash build-up, some fly-ash will still accumulate there throughout the burning season. The amount and type of ash will depend on the type of pellets and venting system, but generally this accumulation will be mild. If, when cleaning the exhaust blower, a large accumulation of fly-ash is found, cleaning the exhaust blower and housing should be performed monthly or bimonthly to prevent this excess buildup.

Instructions

- Before beginning the exhaust blower cleaning procedure, be certain the unit is unplugged and thoroughly cooled down.
- Remove the panel to the left (if facing the stove). See page 49 for panel removal instructions.
- Once the panel is off, the exhaust blower will be clearly visible.
- Disconnect the venting system from the exhaust blower just enough that you will be able to remove the exhaust blower from the stove (the rear panel will also need to be removed).
- Unplug the two wires which connect the stove wiring harness to the exhaust blower, using the quick connect plugs. Disconnect the heat sensor that is mounted (with a screw) to the exhaust blower.
- Loosen the five (5) $^{5}/_{16}$" self-drilling screws which hold the exhaust blower to the exhaust blower tube.
- Lift the exhaust blower up and out of the stove. The gasket which seals the exhaust blower to the exhaust blower tube is fragile, so take extra care when removing the blower. Even when being careful, though, it is easy to tear this fragile gasket, and since an airtight seal is crucial here, it is best to replace this gasket (Part # - PU-CBMG) every time the exhaust blower is removed.
- With the exhaust blower removed, use a utility vacuum to remove any ash accumulation in the exhaust blower tube.
- Use a soft paint brush and carefully remove any ash accumulation from the inside of the exhaust blower, and from the exhaust blower fan blade.
- Inspect the exhaust blower motor for dust accumulation and carefully remove it, ensuring that all air cooling holes into the motor are open and free of dust deposits.
- Install the blower in the reverse order as described above. Remember to check the condition of the exhaust blower gasket and to replace the heat sensor onto the exhaust blower.
- Reinstall the venting system and panels.

Convection Blower Cleaning

As always, be certain the stove is cool and **unplugged** before servicing any components within the unit. Since the convection blower does not handle any by-products of combustion, it does not require serious cleaning like the exhaust blower. However, dust from the home and other debris in the air can accumulate on the blades of the convection blower. The convection blower is located in the middle of the stove. Any dust

that has built up on the fan blades can usually be easily removed with a vacuum or a soft paint brush. Remove (4) $^5/_{16}$" screws that hold the bracket in place to remove the blower.

YEARLY MAINTENANCE

Cleaning Pellet Fines from the Hopper and Auger

Depending on the type and quality of pellets burned in the stove, some accumulation of pellet fines and dust is possible in the hopper. The lowest part of the auger, near the back of the stove, is where most fines will accumulate. With the stove off, **unplugged**, completely cool and with the hopper empty, use a utility vacuum to remove the fines from the auger tube. If the fines cannot be removed from the top of the hopper:

- Remove the back panel, using a $^5/_{16}$" socket to remove the screws.
- Locate the auger motor assembly at the middle rear of the stove, and once it is found, find the two set screws on either side of the cast iron mounting collar.
- Using a $^1/_8$" allen wrench, loosen the set screw on either side of the auger mounting collar.
- With a utility vacuum in hand, let the auger assembly slide out of the auger tube just enough so that the vacuum can be used to remove any fines from this area.
- Reinstall the auger assembly and tighten the two set screws; reinstall the back panel, being certain to tighten the retaining screws on the rear of the stove.

Cleaning Pellet Fines Inside Auger Tube

- Remove the auger cover plate (located above the auger at the bottom of the hopper) by removing the (8) 5/16" screws that hold it in place. Using a utility vacuum remove any excess dust or fines that have collected in the auger tube around the auger.
- Re-install auger cover plate in reverse method.

Checking Gaskets

An airtight seal at the door opening is crucial to proper stove performance. Any air leaks in this area can not only cause a dirty, inefficient burn but can also pose a serious safety threat. Because of this, the door gasket should always be maintained in good condition, and replaced annually or sooner if necessary. Gasket tightness can be checked using the "dollar-bill" method:

- Place a dollar bill between the gasket and the stove body (at the location where the gasket meets the stove).
- Close the door tightly and attempt to pull the dollar bill out. If the dollar bill slides in and out easily, the gasket needs to be replaced. This test should be repeated around the entire gasket perimeter, as gaskets will sometimes seal tightly on one side, but will be worn and seal poorly on another side.

Trouble-Shooting Guide

WARNING: To avoid **ELECTRICAL SHOCK** always *disconnect* the unit from the power source **BEFORE** attempting any repair. If this guide does not correct the problem, call your local dealer or Technical Support at 1-877-356-6663.

*See ERROR CODES section earlier in this manual for information on troubleshooting Error Codes

Problem	Cause	Solution
Auger not turning	1. Bad auger motor. 2. Foreign matter jamming auger. 3. Vacuum sensor.	1. Replace auger motor. 2. Remove pellets and object. 3. Check exhaust blower.
Smoke smell or dust in house	1. Improper exhaust connection.	1. Check exhaust connections for leaks, especially the exhaust blower connect. Seal leaks with silicone, aluminum tape or a hose clamp.
Room blower not operating	1. Loose thermal sensor. 2. Blower speed set higher than heat range, causing stove to cool and blower to cycle. 3. Loose connection.	1. Tighten connection on sensor. 2. Lower blower speed. 3. Check control board connection.
Exhaust blower not operating	1. Loose connection. 2. Bad blower. 3. Bad vacuum sensor.	1. Check control board connection. 2. Replace blower. 3. Replace vacuum sensor.
Lazy Fire	1. Bad exhaust blower. 2. Excessive pellet moisture. 3. Excessive ash build-up. 4. Low quality pellets.	1. Inspect and replace blower. 2. Keep pellets dry. 3. Thoroughly clean unit. 4. Use only **PFI** premium pellets.
Blown Fuse	1. Power surge. 2. Exposed wire. 3. Electrical component shorting.	1. Replace fuse; use surge protector. 2. Check for exposed or frayed wire and loose connections. 3. Check motors and blowers for obstructions or short circuits.
High Pellet Consumption	1. Low quality or non-uniformly sized pellets.	1. Use premium pellets or try another pellet brand.
Squeaking Noise	1. Obstruction in auger tube. 2. Blower Noise.	1. Check auger tube for foreign objects. 2. Remove, clean, and oil blower.
Pinging or Rattling Noise	1. Foreign material in blower.	1. Check both blowers for material.
	2. Loose exhaust fan set screw.	2. Check set screw for tightness.

Unit Shuts Down in 15-20 minutes with an "FS" code on control board. (Failed Start)	1. Loose thermal sensor.	1. Check both sides of thermal sensor connection (exhaust blower and control board).
	2. Control board settings.	2. Start stove on minimum Heat Range 5 to ensure a good fire is started.
	3. Failure to light pellets.	3. Check igniter for buildup or failure.
"OT" Code on Control Board (OverTemp)	1. Convection (Room Air) blower failure.	1. Check convection blower for proper function, replace if necessary.
	2. Partially blocked flue.	2. Check flue for obstructions.
	3. Using fuel other than premium wood pellets.	3. Use ONLY premium wood pellets in this stove.

Notes:

1. Whenever instructed to check/replace the vacuum sensor, also check for loose or cracked vacuum hose. Also, be certain the vacuum measurement port in the firebox is kept clean (clean with a pipe cleaner or brush, **do not use a vacuum** to clean this port).

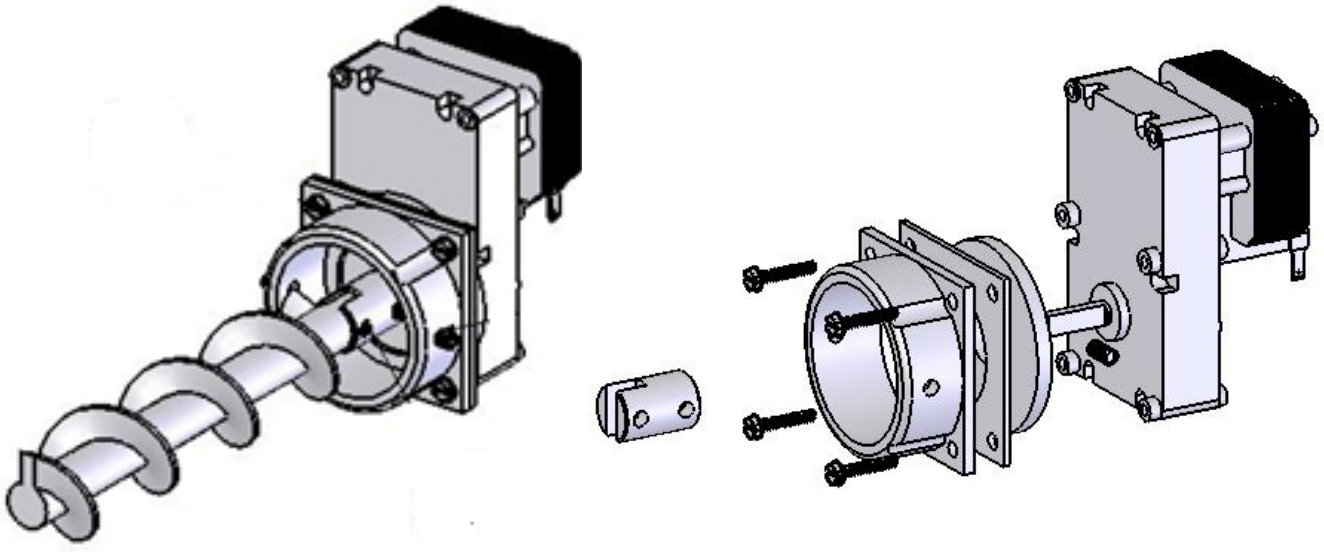
2. To restart and clear an error code displayed on the control board, push the "ON" button and the unit should reset the error and restart.

3. If you are uncertain about the meaning of an error code or have any questions at all, **PLEASE** contact Technical Support at (877) 356-6663.

REPLACING COMPONENTS

Auger Motor

- Before beginning any component replacement, be certain the unit is unplugged and thoroughly cooled down. Also, make sure the hopper is empty before attempting to remove or replace the auger motor assembly.
- Remove the back panel of the unit, using a $^{5}/_{16}$" wrench. Before loosening any auger motor bolts, detach the wiring harness from the auger motor.
- Locate the auger motor assembly at the rear of the stove, and begin by loosening the (2) $^{1}/_{8}$" allen set screws on either side of the cast iron auger motor coupler.
- Slide the auger assembly out of the tube.
- Remove the (4) screws which hold the cast iron auger motor coupler to the auger motor, using a $^{5}/_{16}$" wrench. Slide the cast iron auger motor coupler and the steel spacer plate off of the auger motor.
- Loosen the $^{1}/_{8}$" allen set screw which holds the steel auger coupler to the auger motor output shaft, and remove the steel auger coupler, as well as the rubber vibration dampener.
- Reinstall the parts in reverse order on the new auger motor, being careful not to over-tighten the bolts which hold the cast iron auger coupler to the auger motor.



REPLACING COMPONENTS

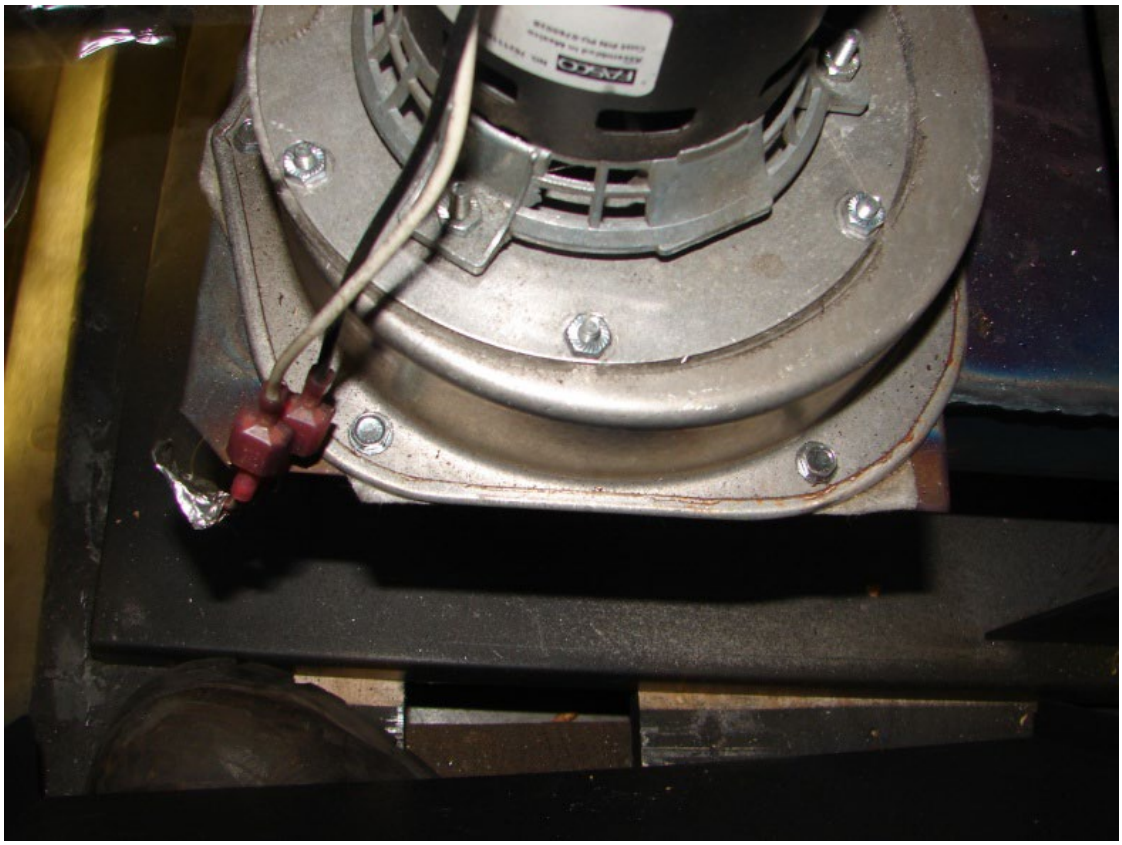
Convection Blower

- Before beginning any component replacement, be certain the unit is unplugged and thoroughly cooled down.
- Remove the rear panel (using a $^{5}/_{16}$" wrench) and locate the convection blower.
- Detach the convection blower from the wiring harness before going any further.
- Loosen and remove the (4) $^{5}/_{16}$" screws which hold the blower assembly to the stove; remove the blower assembly from the stove.
- Installation of the new blower is performed in reverse of removal; remember to reconnect the new blower to the wiring harness. (When installing the new blower, place the blower motor opening pointing UP, towards the top of the stove.)

REPLACING COMPONENTS

Combustion Blower

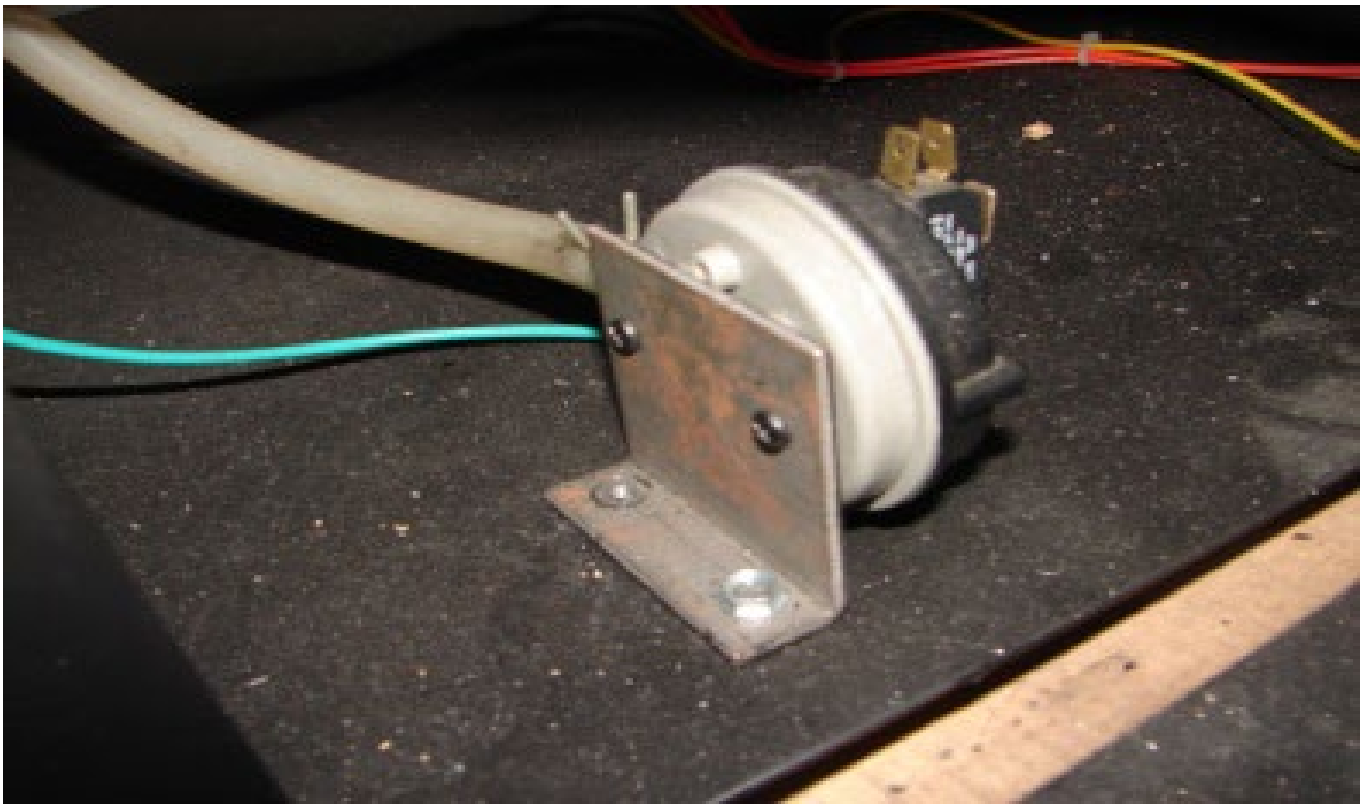
- Before beginning any component replacement, be certain the unit is unplugged and thoroughly cooled down.
- Remove the left side panel and locate the combustion blower.
- Disconnect the venting system from the exhaust blower, and disconnect the exhaust blower from the stove wiring harness. To remove the venting pipe, removal of the rear panel (using a $^{5}/_{16}$" wrench) may be necessary.
- Remove all (5) screws which hold the exhaust blower to the exhaust blower tube. Remove the heat sensor which is connected (with a screw) to the exhaust blower. Once the screws have been removed, the blower can be lifted up and out of the stove.
- Reinstallation is the exact opposite of the steps above; however, be certain to check the condition of the exhaust blower gasket and replace if necessary.



REPLACING COMPONENTS

Vacuum Switch

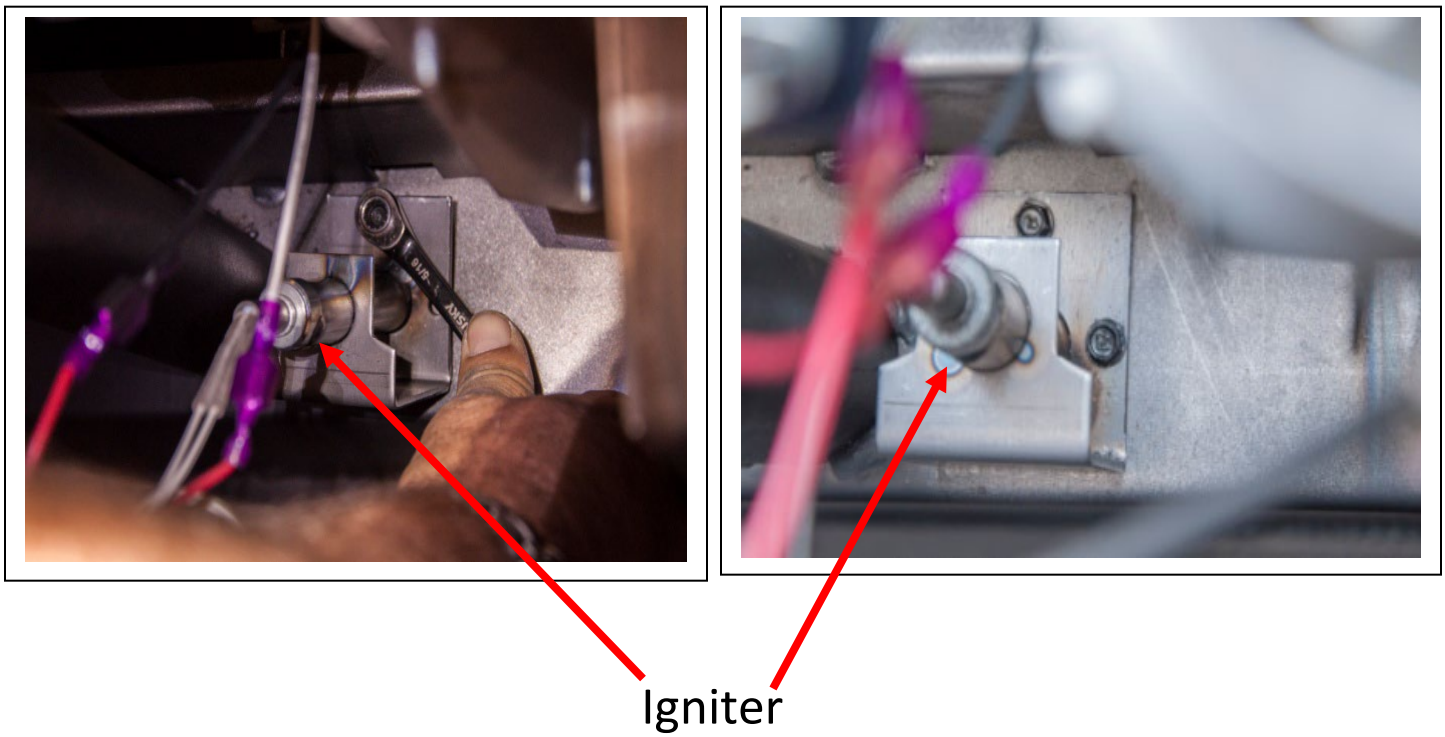
- Before beginning any component replacement, be certain the unit is unplugged and thoroughly cooled down.
- Remove the right side panel (see p. 42 for panel instructions).
- Locate the vacuum switch as shown in the diagram below.
- Disconnect the stove wiring harness and vacuum hose from the vacuum switch, *taking note of where connections were made*.
- Remove the (2) screws which hold the vacuum switch to the vacuum switch bracket, using a Phillips screw driver.
- Installation is the reverse of removal; be absolutely certain the wires and vacuum hose are connected as they previously were (and according to the wiring diagram in this manual).



REPLACING COMPONENTS

Igniter

- Before beginning any component replacement, be certain the unit is unplugged and thoroughly cooled down.
- Remove the rear panel of the unit, using a $^{5}/_{16}$" wrench.
- Locate the igniter as shown in the diagram below.
- Disconnect the igniter wiring from the control board and use a $^{5}/_{16}$" wrench to remove the two igniter retaining screws that fasten the assembly to the stove. Remove the assembly from the stove.
- Loosen the Allen set screw ($^{1}/_{8}$" Allen wrench) from the igniter tube and remove the old igniter cartridge.
- Install the new igniter in the igniter tube, retighten the set screw and reinstall the assembly into the stove (remember to reconnect the wiring).
- Reinstall the rear panel.



REPLACING COMPONENTS

IMPROPER GASKET MAINTENANCE, INCLUDING FAILURE TO REPLACE GASKETS,
CAN CAUSE AIR LEAKS RESULTING IN SMOKE-BACKS.

Gaskets

1. Door
   - This unit comes with a ¾" rope gasket in the channel around the door opening that should be replaced at least once every year. To replace the door gasket (Part # AC-DGKHD), the old gasket must first be removed entirely — prior to adding the new adhesive, you may have to scrape the old cement from the channel. Once the cement and gasket have been added, the door should be closed and latched for twenty-four hours to allow the cement to harden. See next page for more info.

2. Window
   - If you are replacing the window gasket (Part # AC-GGK), the new gasket will already have adhesive on one side. Remove the paper on the adhesive side and place the gasket around the outside edge of the glass, centered over the edge. Fold the gasket edges over on the glass, forming a "U" shape.

3. Combustion Blower
   - The Combustion Blower Gasket (Part # PU-CBMG) should be inspected whenever you remove or clean the Combustion Blower, and replaced if necessary.

4. Combustion Blower Motor
   - The combustion blower motor gasket (Part # PU-CBMG) generally does not need replacement, as it is not normally removed from the unit. However, if the exhaust blower is cleaned by removing the motor, rather than the entire blower assembly, this gasket must be inspected and replaced as necessary.

REPLACING COMPONENTS

Glass

This unit has one ceramic glass panel (Part # AC-G60) in the door; self adhesive window gasket is included with replacement windows purchased directly from England's Stove Works. Never replace ceramic glass with tempered or any other type of glass and never operate this unit with cracked or broken glass. Surface scratches are acceptable and normal, but if this glass becomes cracked in any area, the unit should be shut down and the glass replaced with this high-temperature ceramic glass.

Ceramic Glass Specifications

- Glass Size: 13 in. (330.20 mm) x 12.5 in. (317.50 mm)
- Glass Type: 5mm Ceramic Glass (Keralite Pyroceram)
- Glass Manufacturer: Eurokera

Glass Precautions

- Never replace ceramic glass with tempered or any other type of glass.
- Never operate this unit with cracked or broken glass.
- Do not slam the door or strike the glass with any objects.

Glass Cleaning

1. Be certain the stove **and** the glass are completely cool.
2. The build-up on the glass will generally be light and water is normally sufficient to remove the deposits. If stubborn soot persists, use a cleaner made specifically for this purpose. Do not scrape the glass or use abrasive cleaners.
3. Rinse the glass with clean water and dry the glass before resuming normal operation.

Glass Replacement *(includes Door Gasket replacement instructions)*

1. Remove the door from the stove and rest it face-down on a firm work surface.

2. Remove the door gasket using a pair of pliers to pull it out of the channel.

3. Using a $^{5}/_{16}$" wrench, remove the (4) screws that hold the glass tabs in place on the door.

4. Lift the old glass panel out and discard (be especially careful if the old glass is broken or cracked).

5. The new glass panel must be wrapped with a self-adhesive fiberglass tape gasket (Part # AC-GGK). This gasket serves to cushion the glass from the steel door and brackets.

6. Reinstall the glass tabs using the screws previously removed. Do not over-tighten the screws.

7. Install the new door gasket (Part# AC-DGKHD) using the provided high temperature adhesive.

8. Hang the door back on the stove and close tightly and allow 24 hours for adhesive to cure.

See diagram on page 50 for door assembly.

REPLACING COMPONENTS

Control Board

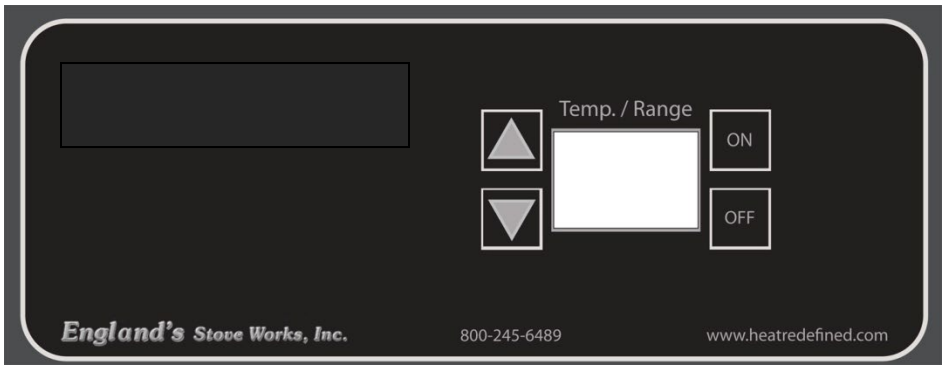
BEFORE REPLACING THE CONTROL BOARD BE SURE THE UNIT IS COOLED COMPLETELY AND UNPLUGGED.

The Control Board (Part # PU-CB14) is a digital read-out board. To replace the control board, first unplug the power cord from the wall outlet. Remove the front face of the control board by pulling it forward. Once the board is apart, use a pair of needle nose pliers to disconnect the wiring harness, room sensor, heat sensor, hopper lid and vacuum switch connectors.

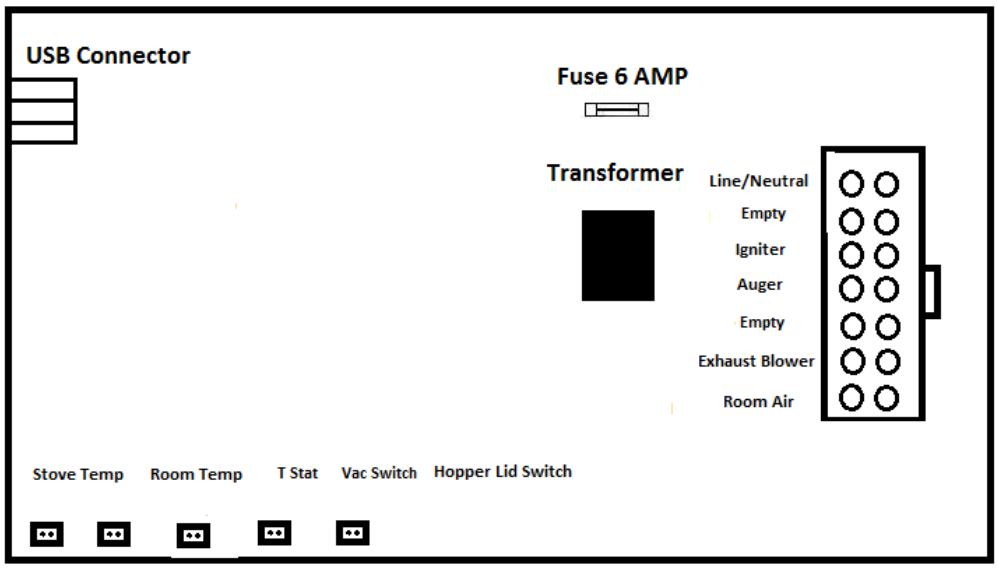
When connecting the new board, reconnect the components mentioned above and snap the front face of the control panel back into place. Reconnect power when ready to use the unit.

Recommended Heat Ranges (For Manual Mode):		
Low Burn:	Heat Range setting: 1	Room Air Blower setting: 1
Medium Low:	Heat Range setting: 2 – 3	Room Air Blower setting: *
Medium High:	Heat Range setting: 4 – 8	Room Air Blower setting: *
High Burn:	Heat Range setting: 9	Room Air Blower setting: 9

* *NOTE*: Blower Speed will automatically be adjusted to the desired Heat Range that you select.



Note: The overlay on your unit may vary in appearance.



Wire Colors

Line Wire- Black
Neutral Wire-White
Igniter- White
Auger- Yellow/Black
Exhaust Blower- Orange
Room Air- Red

WIRING DIAGRAM

Caution – Shock Hazard

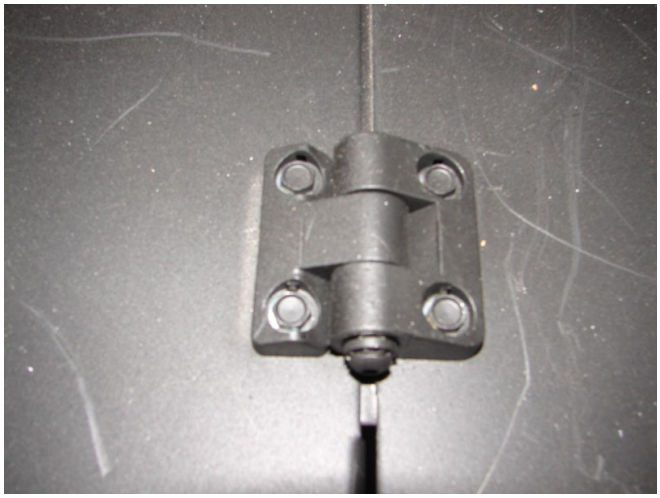
- Press the “Off” button and let the appliance completely cool BEFORE unplugging the appliance and beginning any maintenance or component replacement.
- Risk of shock if appliance is not unplugged before service.

HOPPER LID HINGES

The hopper lid is attached to the top of the stove by two removable hinges.

To remove the hopper lid hinges:

- Remove the (4) screws that hold each hinge in place, using a $^{5}/_{16}$" socket.
- Re-Install hinges in the reverse method.



HOPPER LID HANDLE

The hopper lid handle snaps into place in the opening in the hopper lid.

To remove the hopper lid handle:

- Lift the hopper lid up (in the open position).
- Press up on the bottom of the handle and it will pop out of place.
- To install new handle, insert at the top of the hopper lid and press down until handle snaps into place.

SIDE PANELS

The side panels are designed to hang onto the sides of the stove and can easily be removed to perform regular cleaning (and any maintenance that may need to be done in the back of the stove).

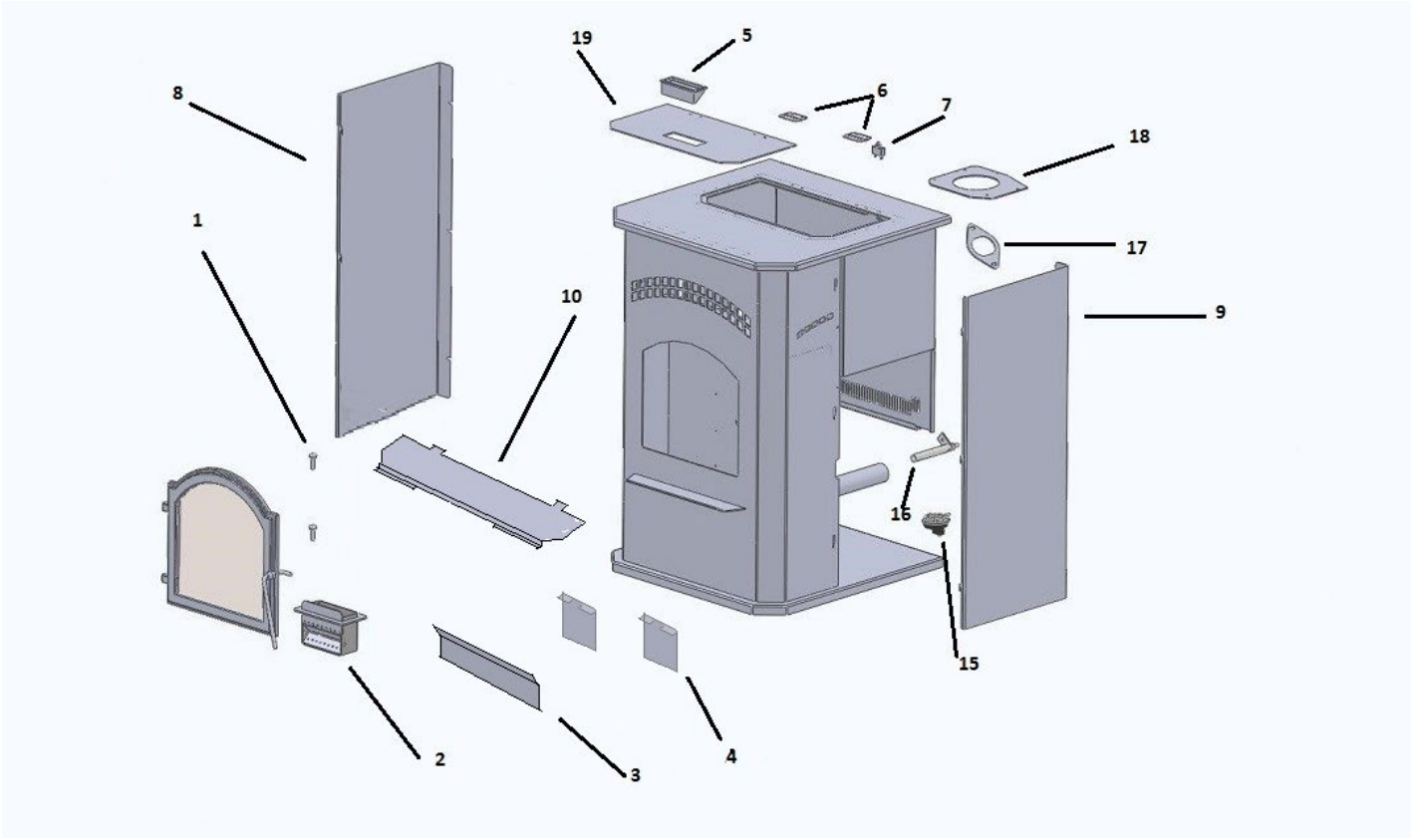
To remove side panels:

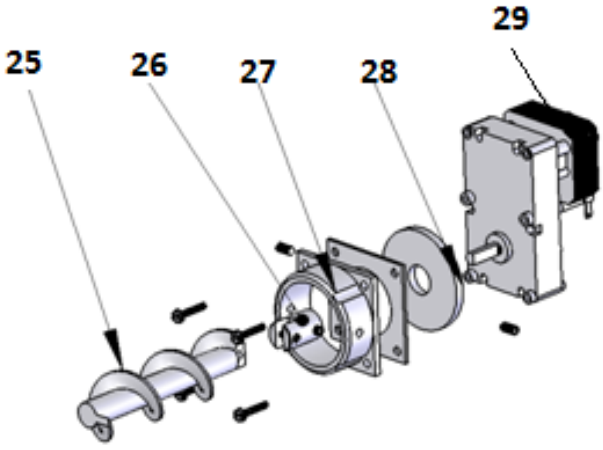
- Loosen (DO NOT REMOVE) the (2) 5/16" screws that hold the side panel to rear of the stove.
- Grasp the panel and lift straight up until the tabs are removed from the side tracks and pull the panel towards you.
- Re-install the side panels using the reverse of this method.

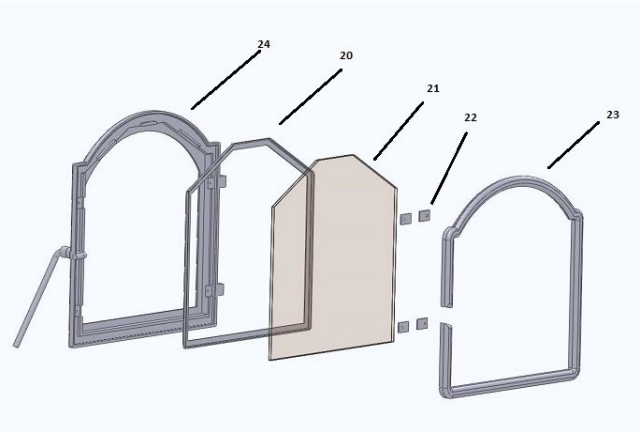
FINISH

This new unit has been painted with High-Temperature paint that should retain its original look for years. If the unit should get wet and rust spots appear, the spots can be sanded with fine steel wool and repainted. It is crucial that only High-Temperature Spray Paint is used (Part# AC-MBSP), as others may not adhere to the surface or withstand the high temperatures. Similarly, some brands of paint will not adhere to different brands of paint, so we highly recommend using our proprietary High-Temperature Spray Paint.

ILLUSTRATED PARTS DIAGRAM







IMPORTANT! READ AND FOLLOW **ALL** INSTALLATION AND MAINTENANCE INSTRUCTIONS, INCLUDING CLEANING THE UNIT AS SPECIFIED, AND REPLACING GASKETS ANNUALLY, AND PARTS AS NEEDED.

ENGLAND'S STOVE WORKS IS NOT RESPONSIBLE FOR ANY DAMAGE OR INJURY INCURRED DUE TO NEGLECT, OR DUE TO UNSAFE INSTALLATION OR USAGE OF THIS PRODUCT. CALL TECHNICAL SUPPORT WITH ANY QUESTIONS.

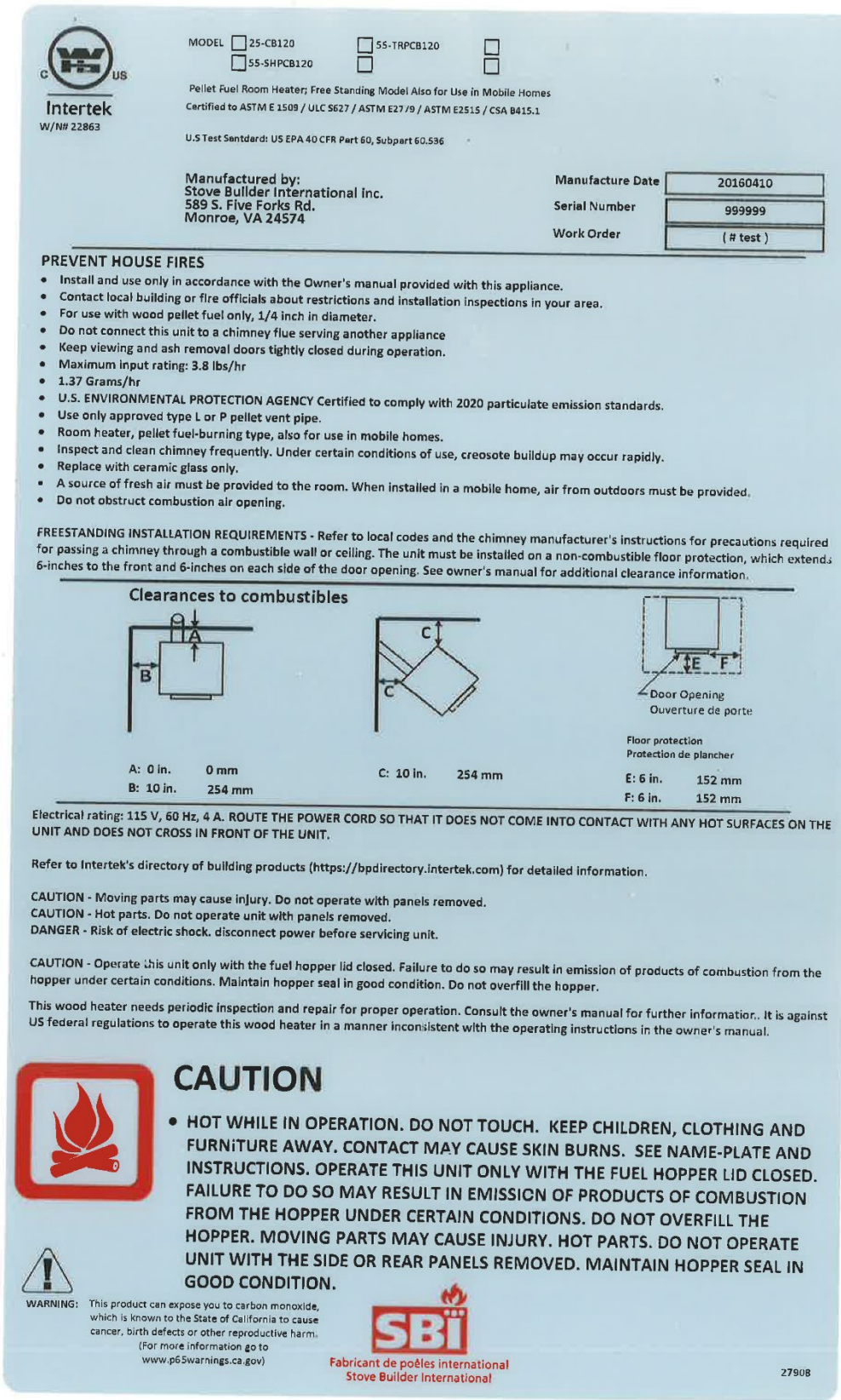
REPLACEMENT PARTS LIST

Part No	Description	From Diagram
BM-1288	Room Air Blower	Not Shown
CU-047042	2.4 RPM Auger motor CW Rotation	29
PU-076002B	Combustion Exhaust Blower(Neg)	Not Shown
AC-DGKHD	¾" HD Door Gasket	23
PU-HLSB	Hopper Lid Safety Switch	7
CU-VS	.05 Vacuum Switch	15
PU-CB14	Control Board	Not Shown
R-WIRE-SSP01	Control Board Wiring Harness	Not Shown
AC-HPS	Hinge Pin (qty. 2)	1
AC-MBSP	Stove Paint	Not Shown
AC-SHN	Nickel Spring Handle (for door)	Not Shown
AC-SH3N	3/8" Nickel Spring Handle	Not Shown
CA-AC	Auger Coupler	26
CA-AMPP	Auger Mounting Plate	27
PU-AFS	Steel Auger	25
AC-CHSS	Igniter Assembly	16
PU-IH	Hopper Lid Hinge	6
PU-VH	Vacuum Hose	Not Shown
AC-GGK	Glass Gasket	20
AC-G60	Door Glass	21
AC-SSGT	Glass Tabs	Not shown
AC-HLH	Hopper Lid Handle	5
AC-CBTB	Top Baffle	10
AC-SSDTG	Drop Tube Gasket	17
CA-SSD	Cast Iron Door	24
PU-SSBP	Burn Pot	2
PU-CBMG	Combustion Blower & Motor Gasket	18
PU-SSTCW	Thermocouple Wire	Not Shown
PU-SSACP	Auger Cover Plate	Not Shown
PU-SSCBHS	Heat Sensor for Control Board	Not Shown
PU-ECPCB120	Heat Exchange Cleanout Plate (Qty. 2)	4
PU-RABMP	Room Air Blower Mounting Plate	Not Shown

CU-RG	Rubber Vibration Dampener	28
PU-RSP	Right Side Panel	9
PU-LSP	Left Side Panel	8
PU-SSHL	Hopper Lid	19
PU-CBAWB	Air Wash Bar	3
PU-SSRP	Rear Panel	Not Shown
AC-CT	Cleaning Tool	Not shown
AC-CMB	Control Board Mounting Box	Not Shown

You may write your unit's Manufacture Date and Serial Number in the blank spaces on this sample tag (next page), for future reference.

This sample tag also shows the safety info such as UL/ULC testing standard, etc. for your local officials, or anyone else who may need it for reference information.



MODEL ☐ 25-CB120 ☐ 55-TRPCB120 ☐
☐ 55-SHPCB120 ☐ ☐

Intertek
W/N# 22863

Pellet Fuel Room Heater; Free Standing Model Also for Use in Mobile Homes
Certified to ASTM E 1509 / ULC S627 / ASTM E2779 / ASTM E2515 / CSA B415.1

U.S Test Sentdard: US EPA 40 CFR Part 60, Subpart 60.536

Manufactured by:
Stove Builder International Inc.
589 S. Five Forks Rd.
Monroe, VA 24574

Manufacture Date	20160410
Serial Number	999999
Work Order	(# test)

PREVENT HOUSE FIRES

- Install and use only in accordance with the Owner's manual provided with this appliance.
- Contact local building or fire officials about restrictions and installation inspections in your area.
- For use with wood pellet fuel only, 1/4 inch in diameter.
- Do not connect this unit to a chimney flue serving another appliance
- Keep viewing and ash removal doors tightly closed during operation.
- Maximum input rating: 3.8 lbs/hr
- 1.37 Grams/hr
- U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards.
- Use only approved type L or P pellet vent pipe.
- Room heater, pellet fuel-burning type, also for use in mobile homes.
- Inspect and clean chimney frequently. Under certain conditions of use, creosote buildup may occur rapidly.
- Replace with ceramic glass only.
- A source of fresh air must be provided to the room. When installed in a mobile home, air from outdoors must be provided.
- Do not obstruct combustion air opening.

FREESTANDING INSTALLATION REQUIREMENTS - Refer to local codes and the chimney manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling. The unit must be installed on a non-combustible floor protection, which extends 6-inches to the front and 6-inches on each side of the door opening. See owner's manual for additional clearance information.

Clearances to combustibles

A: 0 in.	0 mm	C: 10 in.	254 mm	E: 6 in.	152 mm
B: 10 in.	254 mm			F: 6 in.	152 mm

Electrical rating: 115 V, 60 Hz, 4 A. ROUTE THE POWER CORD SO THAT IT DOES NOT COME INTO CONTACT WITH ANY HOT SURFACES ON THE UNIT AND DOES NOT CROSS IN FRONT OF THE UNIT.

Refer to Intertek's directory of building products (https://bpdirectory.intertek.com) for detailed information.

CAUTION - Moving parts may cause injury. Do not operate with panels removed.
CAUTION - Hot parts. Do not operate unit with panels removed.
DANGER - Risk of electric shock. disconnect power before servicing unit.

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

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.

CAUTION

- HOT WHILE IN OPERATION. DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS. OPERATE THIS UNIT ONLY WITH THE FUEL HOPPER LID CLOSED. FAILURE TO DO SO MAY RESULT IN EMISSION OF PRODUCTS OF COMBUSTION FROM THE HOPPER UNDER CERTAIN CONDITIONS. DO NOT OVERFILL THE HOPPER. MOVING PARTS MAY CAUSE INJURY. HOT PARTS. DO NOT OPERATE UNIT WITH THE SIDE OR REAR PANELS REMOVED. MAINTAIN HOPPER SEAL IN GOOD CONDITION.

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)

SBI
Fabricant de poêles international
Stove Builder International

27908

IMPORTANT! READ AND FOLLOW **ALL** INSTALLATION AND MAINTENANCE INSTRUCTIONS, INCLUDING CLEANING THE UNIT AS SPECIFIED, AND REPLACING GASKETS ANNUALLY, AND PARTS AS NEEDED.

ENGLAND'S STOVE WORKS IS NOT RESPONSIBLE FOR ANY DAMAGE OR INJURY INCURRED DUE TO NEGLECT, OR DUE TO UNSAFE INSTALLATION OR USAGE OF THIS PRODUCT. CALL TECHNICAL SUPPORT WITH ANY QUESTIONS.

LIMITED FIVE (5) YEAR WARRANTY

From the date of purchase to the original owner.

Model Numbers 25-CB120 / 55-SHPCB120 / 55-TRPCB120

The manufacturer extends the following warranties:

Five Year Period:

1. Carbon steel and welded seams in the firebox are covered for five (5) years against splitting.
2. The steel door and hinges are covered for five (5) years against cracking.

One Year Period:

1. Component parts such as the hopper, auger, burn-pot, auger shaft and fasteners are covered for one (1) year against cracking, breakage and welded seam separation.
2. Electrical components, accessory items, glass and the painted surface of the stove are covered for one (1) year from the date of purchase.

Conditions and Exclusions

1. Damage resulting from over-firing will void your warranty.
2. This warranty does not apply if damage occurs because of an accident, improper handling, improper installation, improper operation, abuse or unauthorized repair made or attempted to be made.
3. The manufacturer is not liable for indirect, incidental, or consequential damages in connection with the product including any cost or expense, providing substitute equipment or service during periods of malfunction or non-use.*
4. All liability for any consequential damage for breach of any written or implied warranty is disclaimed and excluded.
5. This unit is EPA certified using high quality, Premium Grade pellet fuel. Warranty is void if the unit is used to burn materials for which the unit is not certified by the EPA. Warranty is void if unit is not used according to the owner's manual.

*Some states do not allow the exclusion of limitations of incidental or consequential damages, so the above may not apply to you

Procedure

Purchaser must give notice of claim of defect within the warranty period and pay transportation to and from a service center designated by the manufacturer. The dealer from which the unit was purchased or the factory, at our option, will perform the warranty service.

Other Rights

This warranty gives you specific legal rights; you may also have other rights, which may vary from state to state.

To submit a Warranty Claim, call (877) 356-6663 to speak with our Technical Support department. You may also file a Warranty Claim at www.englander-stoves.com

For parts, warranty replacement procedures may be found at our parts store site: englander-stoves.com

Important Notice

This registration information **MUST** be on file for this warranty to be valid. Please send this information within thirty (30) days from the original date of purchase.

Use any of these three easy ways to send your warranty information in!

Mailing Address

Stove Builder International inc.

250, rue de Copenhague

St-Augustin-de-Desmaures

(Québec) Canada G3A 2H3

Please Note: This warranty is null and void if the attached warranty registration AND a copy of the sales receipt is not returned within thirty (30) days from the date of purchase.

Warranty is not transferable.

Fax Number

(418) 878-3001 – Twenty-four hours a day

Online Registration

To register online, visit our warranty registration website at:

http://www.englander-stoves.com

WARRANTY REGISTRATION for England's Stove Works®

Purchaser Information*

I. Purchased By (Name)_____

II. Address_____

III. City_____State_____Zip Code_____

IV. Telephone Number_____

V. Email Address_____

Dealer Information*

VI. Purchased From_____

VII. Address_____

VIII. City_____ State_____ Zip Code_____

Unit Information*

IX. Model Number_____ Purchase Date_____

X. Purchase Price _____

XI. Serial Number_____ Mfg. Date_____

Purchase Questions

How did you first hear about our product? (Please check one)

Word of Mouth _____Burn Trailer Demonstration_____Internet____

Other:_____

Where did you receive information about our product?

Via Telephone_____Dealer (Name of dealer) _____Internet____

Other: _____

*** Required Information**

Intertek
W/N# 22863

MODEL ☐ 25-CB120 ☐ 55-TRPCB120 ☐
☐ 55-SHPCB120 ☐ ☐

Pellet Fuel Room Heater; Free Standing Model Also for Use in Mobile Homes
Certified to ASTM E 1509 / ULC S627 / ASTM E27 /9 / ASTM E2515 / CSA B415.1

U.S Test Santdard: US EPA 40 CFR Part 60, Subpart 60.536

Manufactured by:
Stove Builder International inc.
589 S. Five Forks Rd.
Monroe, VA 24574

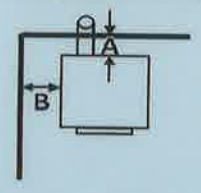
Manufacture Date	20160410
Serial Number	999999
Work Order	(# test)

PREVENT HOUSE FIRES

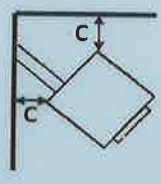
- Install and use only in accordance with the Owner's manual provided with this appliance.
- Contact local building or fire officials about restrictions and installation inspections in your area.
- For use with wood pellet fuel only, 1/4 inch in diameter.
- Do not connect this unit to a chimney flue serving another appliance
- Keep viewing and ash removal doors tightly closed during operation.
- Maximum input rating: 3.8 lbs/hr
- 1.37 Grams/hr
- U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards.
- Use only approved type L or P pellet vent pipe.
- Room heater, pellet fuel-burning type, also for use in mobile homes.
- Inspect and clean chimney frequently. Under certain conditions of use, creosote buildup may occur rapidly.
- Replace with ceramic glass only.
- A source of fresh air must be provided to the room. When installed in a mobile home, air from outdoors must be provided.
- Do not obstruct combustion air opening.

FREESTANDING INSTALLATION REQUIREMENTS - Refer to local codes and the chimney manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling. The unit must be installed on a non-combustible floor protection, which extends 6-inches to the front and 6-inches on each side of the door opening. See owner's manual for additional clearance information.

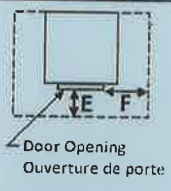
Clearances to combustibles



A: 0 in. 0 mm
B: 10 in. 254 mm



C: 10 in. 254 mm



Floor protection
Protection de plancher

E: 6 in. 152 mm
F: 6 in. 152 mm

Electrical rating: 115 V, 60 Hz, 4 A. ROUTE THE POWER CORD SO THAT IT DOES NOT COME INTO CONTACT WITH ANY HOT SURFACES ON THE UNIT AND DOES NOT CROSS IN FRONT OF THE UNIT.

Refer to Intertek's directory of building products (https://bpdirectory.intertek.com) for detailed information.

CAUTION - Moving parts may cause injury. Do not operate with panels removed.
CAUTION - Hot parts. Do not operate unit with panels removed.
DANGER - Risk of electric shock. disconnect power before servicing unit.

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

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.

CAUTION

- HOT WHILE IN OPERATION. DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS. OPERATE THIS UNIT ONLY WITH THE FUEL HOPPER LID CLOSED. FAILURE TO DO SO MAY RESULT IN EMISSION OF PRODUCTS OF COMBUSTION FROM THE HOPPER UNDER CERTAIN CONDITIONS. DO NOT OVERFILL THE HOPPER. MOVING PARTS MAY CAUSE INJURY. HOT PARTS. DO NOT OPERATE UNIT WITH THE SIDE OR REAR PANELS REMOVED. MAINTAIN HOPPER SEAL IN GOOD CONDITION.

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)

SBI
Fabricant de poêles international
Stove Builder International

27908

Pellet Stoves
Wood Stoves
Gas Stoves
Multi-Fuel Stoves

P.O. Box 206 Monroe, VA 24574 www.englanderstoves.com Phone: (800) 516-3636 Fax: (434) 929-4810

Attention Intertek lab:

Enclosed in this folder you will find a copy of the following: manual, k-list, product markings, a proposed copy of the serial tag, the EPA window tag, a copy of the directional flow of the air through the stove and dimensions or specifications of all the parts and components of the unit to be tested.

Please test this unit in accordance to ASTM E2779-10. The unit is to be fired on settings of **9,9** for the 1 hour pre burn. Leave the settings on **9,9** for 1 hour during the beginning of the test, after 1 hour has expired change the settings on the stove to **2,2** for 120 minutes. After 120 minutes change the settings to **1,1** for 180 minutes to finish the test.

Sincerely,

R & D Team
England's Stove Works, Inc.

Intertek

Calibration Date: 3/28/2016 Calibration By: KS Calibration Due: **9/28/2016**

Using:
Use Procedure: WI-L-AMER-Cali-1141
Description:
Serial:

Model: Rockwell
WHI#: 12

Run Number	Meter Initial	Barometric Pressure	Spirometer Temperature	Vapor Pressure of H_2O (Hg)	Meter Temperature	Meter Pressure	Measurement Inches	Spirometer Volumn	Meter Final	Y
1	195.142	29.04	69.7	0.7245	72.0	0.3	22.7500	1.0341	196.165	0.9899
2	198.211	29.06	70.8	0.7520	72.4	0.3	22.6250	1.0284	199.227	0.9890
3	199.227	29.06	70.5	0.7445	72.4	0.3	22.5000	1.0227	200.240	0.9873
								#VALUE!	AVERAGE	0.9887
								#VALUE!	STDEV.	0.0013
									M.U of Y	0.0029

Reviewed by: Date: 3/28/16

0.739

Measurement Uncertainty is calculated using the following formula:
C.M.U. = k*sqrt ((A.D.)2 + (S.D.)2 + (R.M.U./2)2)
C.M.U. = Overall Measurement Uncertainty
A.D. = Average Deviation of the difference of all measured results compared to the reference value.
S.D. = Standard Deviation of the difference of all measured results compared to the reference value.
k = Confidence Factor (2 for 95% confidence)
R.M.U. = Standard Measurement Uncertainty of Reference Measurement Equipment. R.M.U. is considered as the measurement uncertainty as stated on calibration certificates of equipment, or the tolerance listed in th

Intertek

Calibration Date: 3/28/2016 Calibration By: KS Calibration Due: **9/28/2016**

Using:
Use Procedure: WI-L-AMER-Cali-1141
Description:
Serial:

Model: Rockwell
WHI#: 13

Run Number	Meter Initial	Barometric Pressure	Spirometer Temperature	Vapor Pressure of H_2O (Hg)	Meter Temperature	Meter Pressure	Measurement Inches	Spirometer Volumn	Meter Final	Y
1	216.350	29.06	70.5	0.7445	71.6	0.3	22.7500	1.0341	217.366	0.9938
2	217.367	29.06	70.5	0.7445	71.8	0.3	22.6875	1.0313	218.382	0.9924
3	218.382	29.06	70.7	0.7495	72.0	0.3	22.7500	1.0341	219.390	1.0019
								0.8529	AVERAGE	0.9960
								0.3121	STDEV.	0.0051
									MU of Y	0.0103

Reviewed by: Date: 3/28/16

0.739

Measurement Uncertainty is calculated using the following formula:
O.M.U. = k*sqrt ((A.D.)2 + (S.D.)2 + (R.M.U./2)2)
O.M.U. = Overall Measurement Uncertainty
A.D. = Average Deviation of the difference of all measured results compared to the reference value.
S.D. = Standard Deviation of the difference of all measured results compared to the reference value.
k = Confidence Factor (2 for 95% confidence)
R.M.U. = Standard Measurement Uncertainty of Reference Measurement Equipment. R.M.U. is considered as the measurement uncertainty as stated on calibration certificates of equipment, or the tolerance listed in th

Date	RecNum	TestTime	StkTemp	Scale
2016-01-18	0	0	0	0
2016-01-18	1	1	339	37.3
2016-01-18	2	2	341	37.25
2016-01-18	3	3	346	37.2
2016-01-18	4	4	346	37.15
2016-01-18	5	0	344	41.65
2016-01-18	6	1	344	41.6
2016-01-18	7	2	347	41.55
2016-01-18	8	3	344	41.5
2016-01-18	9	4	343	41.45
2016-01-18	10	5	345	41.45
2016-01-18	11	6	345	41.4
2016-01-18	12	7	345	41.35
2016-01-18	13	8	347	41.3
2016-01-18	14	9	347	41.3
2016-01-18	15	10	348	41.25
2016-01-18	16	11	348	41.2
2016-01-18	17	12	350	41.15
2016-01-18	18	13	348	41.1
2016-01-18	19	14	352	41.05
2016-01-18	20	15	353	41.05
2016-01-18	21	16	350	41
2016-01-18	22	17	351	40.95
2016-01-18	23	18	351	40.9
2016-01-18	24	19	351	40.85
2016-01-18	25	20	351	40.8
2016-01-18	26	21	351	40.75
2016-01-18	27	22	351	40.75
2016-01-18	28	23	352	40.65
2016-01-18	29	24	349	40.65
2016-01-18	30	25	349	40.6
2016-01-18	31	26	354	40.55
2016-01-18	32	27	350	40.5
2016-01-18	33	28	350	40.45
2016-01-18	34	29	352	40.45
2016-01-18	35	30	351	40.4
2016-01-18	36	31	354	40.35
2016-01-18	37	32	352	40.3
2016-01-18	38	33	352	40.25
2016-01-18	39	34	352	40.2
2016-01-18	40	35	351	40.15
2016-01-18	41	36	353	40.15
2016-01-18	42	37	353	40.1
2016-01-18	43	38	351	40.1
2016-01-18	44	39	351	40
2016-01-18	45	40	349	39.95

2016-01-18	46	41	355	39.95
2016-01-18	47	42	356	39.9
2016-01-18	48	43	354	39.9
2016-01-18	49	44	356	39.8
2016-01-18	50	45	356	39.8
2016-01-18	51	46	356	39.7
2016-01-18	52	47	356	39.7
2016-01-18	53	48	357	39.65
2016-01-18	54	49	356	39.6
2016-01-18	55	50	356	39.55
2016-01-18	56	51	354	39.5
2016-01-18	57	52	357	39.5
2016-01-18	58	53	357	39.4
2016-01-18	59	54	357	39.35
2016-01-18	60	55	357	39.35
2016-01-18	61	56	357	39.35
2016-01-18	62	57	357	39.3
2016-01-18	63	58	355	39.2
2016-01-18	64	59	357	39.15
2016-01-18	65	60	357	39.1
2016-01-18	66	61	353	39.1
2016-01-18	67	62	355	39.05
2016-01-18	68	63	356	39
2016-01-18	69	64	356	38.95
2016-01-18	70	65	354	38.9
2016-01-18	71	66	352	38.85
2016-01-18	72	67	354	38.85
2016-01-18	73	68	354	38.8
2016-01-18	74	69	352	38.75
2016-01-18	75	70	354	38.75
2016-01-18	76	71	355	38.7
2016-01-18	77	72	355	38.65
2016-01-18	78	73	357	38.6
2016-01-18	79	74	355	38.55
2016-01-18	80	75	355	38.5
2016-01-18	81	76	355	38.45
2016-01-18	82	77	356	38.45
2016-01-18	83	78	358	38.4
2016-01-18	84	79	358	38.35
2016-01-18	85	80	358	38.3
2016-01-18	86	81	358	38.25
2016-01-18	87	82	358	38.2
2016-01-18	88	83	360	38.15
2016-01-18	89	84	358	38.1
2016-01-18	90	85	359	38.1
2016-01-18	91	86	353	38.05
2016-01-18	92	87	348	38

2016-01-18	93	88	348	37.95
2016-01-18	94	89	346	37.95
2016-01-18	95	90	348	37.9
2016-01-18	96	91	350	37.9
2016-01-18	97	92	349	37.8
2016-01-18	98	93	353	37.8
2016-01-18	99	94	356	37.75
2016-01-18	100	95	351	37.65
2016-01-18	101	96	349	37.65
2016-01-18	102	97	349	37.55
2016-01-18	103	98	350	37.55
2016-01-18	104	99	350	37.55
2016-01-18	105	100	352	37.5
2016-01-18	106	101	350	37.5
2016-01-18	107	102	353	37.4
2016-01-18	108	103	353	37.35
2016-01-18	109	104	353	37.3
2016-01-18	110	105	349	37.25
2016-01-18	111	106	351	37.2
2016-01-18	112	107	349	37.2
2016-01-18	113	108	349	37.1
2016-01-18	114	109	356	37.15
2016-01-18	115	110	352	37.05
2016-01-18	116	111	352	37.1
2016-01-18	117	112	352	36.95
2016-01-18	118	113	354	36.9
2016-01-18	119	114	356	36.95
2016-01-18	120	115	354	36.85
2016-01-18	121	116	352	36.8
2016-01-18	122	117	352	36.75
2016-01-18	123	118	357	36.75
2016-01-18	124	119	357	36.7
2016-01-18	125	120	357	36.65

Date	RecNum	TestTime	StkTemp	Scale
2016-01-18	0	0	0	0
2016-01-18	1	1	262	31.8
2016-01-18	2	0	253	31.75
2016-01-18	3	1	248	36.3
2016-01-18	4	2	240	36.3
2016-01-18	5	3	239	36.25
2016-01-18	6	4	235	36.25
2016-01-18	7	5	233	36.25
2016-01-18	8	6	229	36.2
2016-01-18	9	7	229	36.2
2016-01-18	10	8	227	36.2
2016-01-18	11	9	225	36.15
2016-01-18	12	10	224	36.15
2016-01-18	13	11	224	36.15
2016-01-18	14	12	221	36.1
2016-01-18	15	13	219	36.1
2016-01-18	16	14	220	36.1
2016-01-18	17	15	217	36.1
2016-01-18	18	16	217	36.05
2016-01-18	19	17	216	36.05
2016-01-18	20	18	218	36
2016-01-18	21	19	218	36
2016-01-18	22	20	216	36
2016-01-18	23	21	214	36
2016-01-18	24	22	214	35.95
2016-01-18	25	23	212	35.95
2016-01-18	26	24	212	35.95
2016-01-18	27	25	214	35.9
2016-01-18	28	26	212	35.9
2016-01-18	29	27	212	35.85
2016-01-18	30	28	212	35.85
2016-01-18	31	29	212	35.85
2016-01-18	32	30	212	35.85
2016-01-18	33	31	212	35.8
2016-01-18	34	32	215	35.8
2016-01-18	35	33	212	35.75
2016-01-18	36	34	213	35.75
2016-01-18	37	35	211	35.75
2016-01-18	38	36	211	35.75
2016-01-18	39	37	211	35.7
2016-01-18	40	38	213	35.7
2016-01-18	41	39	208	35.7
2016-01-18	42	40	211	35.65
2016-01-18	43	41	209	35.65
2016-01-18	44	42	206	35.65
2016-01-18	45	43	207	35.6

2016-01-18	46	44	209	35.6
2016-01-18	47	45	209	35.6
2016-01-18	48	46	209	35.6
2016-01-18	49	47	207	35.55
2016-01-18	50	48	207	35.55
2016-01-18	51	49	207	35.5
2016-01-18	52	50	210	35.5
2016-01-18	53	51	212	35.5
2016-01-18	54	52	210	35.45
2016-01-18	55	53	212	35.45
2016-01-18	56	54	214	35.45
2016-01-18	57	55	212	35.4
2016-01-18	58	56	212	35.4
2016-01-18	59	57	212	35.4
2016-01-18	60	58	212	35.35
2016-01-18	61	59	212	35.35
2016-01-18	62	60	212	35.35
2016-01-18	63	61	213	35.3
2016-01-18	64	62	211	35.3
2016-01-18	65	63	211	35.3
2016-01-18	66	64	211	35.25
2016-01-18	67	65	210	35.25
2016-01-18	68	66	213	35.25
2016-01-18	69	67	213	35.25
2016-01-18	70	68	213	35.2
2016-01-18	71	69	213	35.2
2016-01-18	72	70	212	35.2
2016-01-18	73	71	211	35.15
2016-01-18	74	72	212	35.15
2016-01-18	75	73	212	35.15
2016-01-18	76	74	212	35.1
2016-01-18	77	75	212	35.1
2016-01-18	78	76	212	35.1
2016-01-18	79	77	213	35.05
2016-01-18	80	78	213	35.05
2016-01-18	81	79	215	35.05
2016-01-18	82	80	215	35
2016-01-18	83	81	215	35
2016-01-18	84	82	215	35
2016-01-18	85	83	216	34.95
2016-01-18	86	84	216	34.95
2016-01-18	87	85	216	34.95
2016-01-18	88	86	214	34.95
2016-01-18	89	87	214	34.9
2016-01-18	90	88	214	34.9
2016-01-18	91	89	214	34.85
2016-01-18	92	90	215	34.85

2016-01-18	93	91	215	34.85
2016-01-18	94	92	217	34.8
2016-01-18	95	93	217	34.8
2016-01-18	96	94	217	34.8
2016-01-18	97	95	220	34.75
2016-01-18	98	96	219	34.75
2016-01-18	99	97	220	34.7
2016-01-18	100	98	218	34.7
2016-01-18	101	99	220	34.7
2016-01-18	102	100	220	34.7
2016-01-18	103	101	220	34.65
2016-01-18	104	102	221	34.65
2016-01-18	105	103	220	34.65
2016-01-18	106	104	221	34.6
2016-01-18	107	105	221	34.6
2016-01-18	108	106	221	34.55
2016-01-18	109	107	219	34.55
2016-01-18	110	108	221	34.55
2016-01-18	111	109	221	34.5
2016-01-18	112	110	221	34.5
2016-01-18	113	111	220	34.45
2016-01-18	114	112	220	34.45
2016-01-18	115	113	217	34.45
2016-01-18	116	114	219	34.4
2016-01-18	117	115	220	34.4
2016-01-18	118	116	220	34.4
2016-01-18	119	117	220	34.35
2016-01-18	120	118	220	34.35
2016-01-18	121	119	220	34.35
2016-01-18	122	120	220	34.3

Date	RecNum	TestTime	StkTemp	Scale
2016-01-18	0	0	0	0
2016-01-18	1	1	208	29.6
2016-01-18	2	2	208	29.6
2016-01-18	3	0	206	29.55
2016-01-18	4	1	206	34.1
2016-01-18	5	2	204	34.05
2016-01-18	6	3	203	34.05
2016-01-18	7	4	205	34.05
2016-01-18	8	5	203	34.05
2016-01-18	9	6	203	34
2016-01-18	10	7	203	34
2016-01-18	11	8	203	34
2016-01-18	12	9	203	33.95
2016-01-18	13	10	206	33.95
2016-01-18	14	11	201	33.95
2016-01-18	15	12	203	33.9
2016-01-18	16	13	206	33.9
2016-01-18	17	14	205	33.9
2016-01-18	18	15	203	33.9
2016-01-18	19	16	203	33.85
2016-01-18	20	17	203	33.85
2016-01-18	21	18	201	33.85
2016-01-18	22	19	201	33.8
2016-01-18	23	20	201	33.8
2016-01-18	24	21	201	33.8
2016-01-18	25	22	201	33.75
2016-01-18	26	23	200	33.8
2016-01-18	27	24	201	33.75
2016-01-18	28	25	203	33.75
2016-01-18	29	26	203	33.7
2016-01-18	30	27	203	33.75
2016-01-18	31	28	203	33.7
2016-01-18	32	29	202	33.7
2016-01-18	33	30	205	33.65
2016-01-18	34	31	202	33.65
2016-01-18	35	32	202	33.65
2016-01-18	36	33	200	33.6
2016-01-18	37	34	200	33.6
2016-01-18	38	35	201	33.6
2016-01-18	39	36	200	33.55
2016-01-18	40	37	199	33.55
2016-01-18	41	38	199	33.55
2016-01-18	42	39	197	33.55
2016-01-18	43	40	195	33.5
2016-01-18	44	41	195	33.5
2016-01-18	45	42	197	33.5

2016-01-18	46	43	194	33.45
2016-01-18	47	44	194	33.45
2016-01-18	48	45	197	33.45
2016-01-18	49	46	194	33.45
2016-01-18	50	47	194	33.4
2016-01-18	51	48	194	33.4
2016-01-18	52	49	194	33.4
2016-01-18	53	50	194	33.35
2016-01-18	54	51	194	33.35
2016-01-18	55	52	196	33.35
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2016-01-18	57	54	196	33.35
2016-01-18	58	55	195	33.3
2016-01-18	59	56	197	33.3
2016-01-18	60	57	197	33.3
2016-01-18	61	58	197	33.25
2016-01-18	62	59	199	33.3
2016-01-18	63	60	195	33.25
2016-01-18	64	61	199	33.2
2016-01-18	65	62	197	33.2
2016-01-18	66	63	199	33.2
2016-01-18	67	64	199	33.2
2016-01-18	68	65	199	33.2
2016-01-18	69	66	197	33.15
2016-01-18	70	67	199	33.15
2016-01-18	71	68	198	33.15
2016-01-18	72	69	196	33.1
2016-01-18	73	70	194	33.1
2016-01-18	74	71	194	33.1
2016-01-18	75	72	196	33.1
2016-01-18	76	73	194	33.1
2016-01-18	77	74	194	33.1
2016-01-18	78	75	192	33
2016-01-18	79	76	196	33.05
2016-01-18	80	77	192	33
2016-01-18	81	78	195	33
2016-01-18	82	79	193	32.95
2016-01-18	83	80	195	32.95
2016-01-18	84	81	193	33
2016-01-18	85	82	193	32.95
2016-01-18	86	83	195	32.95
2016-01-18	87	84	195	32.95
2016-01-18	88	85	196	32.95
2016-01-18	89	86	194	32.9
2016-01-18	90	87	196	32.9
2016-01-18	91	88	194	32.85
2016-01-18	92	89	196	32.9

2016-01-18	93	90	198	32.85
2016-01-18	94	91	199	32.9
2016-01-18	95	92	199	32.85
2016-01-18	96	93	199	32.85
2016-01-18	97	94	199	32.85
2016-01-18	98	95	197	32.8
2016-01-18	99	96	199	32.75
2016-01-18	100	97	197	32.7
2016-01-18	101	98	197	32.75
2016-01-18	102	99	195	32.7
2016-01-18	103	100	198	32.65
2016-01-18	104	101	196	32.65
2016-01-18	105	102	196	32.65
2016-01-18	106	103	194	32.65
2016-01-18	107	104	198	32.65
2016-01-18	108	105	196	32.6
2016-01-18	109	106	196	32.6
2016-01-18	110	107	196	32.6
2016-01-18	111	108	195	32.55
2016-01-18	112	109	195	32.5
2016-01-18	113	110	198	32.5
2016-01-18	114	111	195	32.5
2016-01-18	115	112	196	32.5
2016-01-18	116	113	193	32.5
2016-01-18	117	114	195	32.45
2016-01-18	118	115	197	32.45
2016-01-18	119	116	196	32.45
2016-01-18	120	117	194	32.45
2016-01-18	121	118	193	32.4
2016-01-18	122	119	193	32.45
2016-01-18	123	120	195	32.35

Date	RecNum	TestTime	StkTemp	Scale
2016-01-19	0	0	0	0
2016-01-19	1	1	71	44.4
2016-01-19	2	2	71	44.4
2016-01-19	3	3	71	44.4
2016-01-19	4	4	73	44.4
2016-01-19	5	5	73	44.4
2016-01-19	6	6	82	44.4
2016-01-19	7	7	118	44.35
2016-01-19	8	8	154	44.35
2016-01-19	9	9	191	44.3
2016-01-19	10	10	180	44.25
2016-01-19	11	11	180	44.25
2016-01-19	12	12	182	44.15
2016-01-19	13	13	184	44.05
2016-01-19	14	14	190	44.05
2016-01-19	15	15	205	44.1
2016-01-19	16	16	241	44.05
2016-01-19	17	17	261	44.05
2016-01-19	18	18	276	44
2016-01-19	19	19	290	43.95
2016-01-19	20	20	300	43.9
2016-01-19	21	21	311	43.85
2016-01-19	22	22	315	43.85
2016-01-19	23	23	320	43.8
2016-01-19	24	24	328	43.75
2016-01-19	25	25	330	43.7
2016-01-19	26	26	335	43.65
2016-01-19	27	27	335	43.6
2016-01-19	28	28	339	43.6
2016-01-19	29	29	339	43.5
2016-01-19	30	30	343	43.5
2016-01-19	31	31	341	43.45
2016-01-19	32	32	343	43.4
2016-01-19	33	33	342	43.35
2016-01-19	34	34	344	43.3
2016-01-19	35	35	344	43.25
2016-01-19	36	36	346	43.2
2016-01-19	37	37	346	43.15
2016-01-19	38	38	346	43.1
2016-01-19	39	39	346	43.05
2016-01-19	40	40	346	43
2016-01-19	41	41	347	43
2016-01-19	42	42	347	42.95
2016-01-19	43	43	349	42.85
2016-01-19	44	44	354	42.85
2016-01-19	45	45	354	42.8

2016-01-19	46	46	352	42.75
2016-01-19	47	47	351	42.7
2016-01-19	48	48	351	42.7
2016-01-19	49	49	351	42.6
2016-01-19	50	50	349	42.55
2016-01-19	51	51	347	42.5
2016-01-19	52	52	346	42.5
2016-01-19	53	53	346	42.45
2016-01-19	54	54	349	42.4
2016-01-19	55	55	346	42.35
2016-01-19	56	56	345	42.3
2016-01-19	57	57	347	42.25
2016-01-19	58	58	344	42.2
2016-01-19	59	59	346	42.15
2016-01-19	60	60	348	42.15
2016-01-19	61	61	348	42.2
2016-01-19	62	62	350	42.15
2016-01-19	63	0	350	42
2016-01-19	64	1	348	46.5
2016-01-19	65	2	346	46.45
2016-01-19	66	3	348	46.45
2016-01-19	67	4	348	46.4
2016-01-19	68	5	348	46.4
2016-01-19	69	6	352	46.35
2016-01-19	70	7	350	46.3
2016-01-19	71	8	348	46.25
2016-01-19	72	9	348	46.2
2016-01-19	73	10	351	46.15
2016-01-19	74	11	346	46.1
2016-01-19	75	12	346	46.05
2016-01-19	76	13	348	46
2016-01-19	77	14	348	45.95
2016-01-19	78	15	352	46
2016-01-19	79	16	350	45.9
2016-01-19	80	17	352	45.9
2016-01-19	81	18	350	45.8
2016-01-19	82	19	348	45.8
2016-01-19	83	20	350	45.7
2016-01-19	84	21	350	45.65
2016-01-19	85	22	350	45.7
2016-01-19	86	23	350	45.6
2016-01-19	87	24	348	45.55
2016-01-19	88	25	348	45.5
2016-01-19	89	26	345	45.45
2016-01-19	90	27	348	45.45
2016-01-19	91	28	348	45.4
2016-01-19	92	29	350	45.4

2016-01-19	93	30	350	45.35
2016-01-19	94	31	350	45.3
2016-01-19	95	32	352	45.25
2016-01-19	96	33	350	45.2
2016-01-19	97	34	353	45.2
2016-01-19	98	35	355	45.15
2016-01-19	99	36	353	45.05
2016-01-19	100	37	355	45.05
2016-01-19	101	38	353	45
2016-01-19	102	39	353	45
2016-01-19	103	40	356	44.95
2016-01-19	104	41	356	44.9
2016-01-19	105	42	351	44.8
2016-01-19	106	43	350	44.75
2016-01-19	107	44	352	44.7
2016-01-19	108	45	352	44.65
2016-01-19	109	46	352	44.65
2016-01-19	110	47	352	44.6
2016-01-19	111	48	352	44.6
2016-01-19	112	49	354	44.55
2016-01-19	113	50	354	44.5
2016-01-19	114	51	354	44.45
2016-01-19	115	52	356	44.4
2016-01-19	116	53	354	44.35
2016-01-19	117	54	356	44.35
2016-01-19	118	55	352	44.25
2016-01-19	119	56	350	44.2
2016-01-19	120	57	350	44.15
2016-01-19	121	58	352	44.15
2016-01-19	122	59	350	44.1
2016-01-19	123	60	352	44.05

Date	RecNum	TestTime	StkTemp	Scale
2016-01-20	0	0	0	0
2016-01-20	1	1	207	43.9
2016-01-20	2	2	213	43.9
2016-01-20	3	3	231	43.85
2016-01-20	4	4	243	43.8
2016-01-20	5	5	257	43.75
2016-01-20	6	6	267	43.75
2016-01-20	7	7	280	43.65
2016-01-20	8	8	288	43.65
2016-01-20	9	9	292	43.6
2016-01-20	10	10	297	43.55
2016-01-20	11	11	304	43.5
2016-01-20	12	12	310	43.5
2016-01-20	13	13	312	43.45
2016-01-20	14	14	317	43.4
2016-01-20	15	15	321	43.35
2016-01-20	16	16	324	43.3
2016-01-20	17	17	326	43.25
2016-01-20	18	18	330	43.2
2016-01-20	19	19	332	43.15
2016-01-20	20	20	332	43.15
2016-01-20	21	21	337	43.1
2016-01-20	22	22	337	43.05
2016-01-20	23	23	335	43
2016-01-20	24	24	337	43
2016-01-20	25	25	339	42.95
2016-01-20	26	26	340	42.9
2016-01-20	27	27	337	42.85
2016-01-20	28	28	342	42.8
2016-01-20	29	29	342	42.75
2016-01-20	30	30	342	42.75
2016-01-20	31	31	342	42.7
2016-01-20	32	32	340	42.65
2016-01-20	33	33	340	42.6
2016-01-20	34	34	340	42.55
2016-01-20	35	35	340	42.5
2016-01-20	36	36	343	42.5
2016-01-20	37	37	345	42.45
2016-01-20	38	38	347	42.4
2016-01-20	39	0	340	42.35
2016-01-20	40	1	342	46.85
2016-01-20	41	2	343	46.8
2016-01-20	42	3	343	46.8
2016-01-20	43	4	343	46.75
2016-01-20	44	5	341	46.7
2016-01-20	45	6	341	46.65

2016-01-20	46	7	346	46.65
2016-01-20	47	8	345	46.55
2016-01-20	48	9	343	46.55
2016-01-20	49	10	346	46.5
2016-01-20	50	11	350	46.45
2016-01-20	51	12	348	46.4
2016-01-20	52	13	348	46.35
2016-01-20	53	14	348	46.3
2016-01-20	54	15	351	46.3
2016-01-20	55	16	351	46.25
2016-01-20	56	17	349	46.2
2016-01-20	57	18	349	46.15
2016-01-20	58	19	349	46.1
2016-01-20	59	20	349	46.05
2016-01-20	60	21	349	46
2016-01-20	61	22	349	46
2016-01-20	62	23	349	45.95
2016-01-20	63	24	347	45.9
2016-01-20	64	25	349	45.85
2016-01-20	65	26	352	45.8
2016-01-20	66	27	349	45.75
2016-01-20	67	28	350	45.7
2016-01-20	68	29	350	45.7
2016-01-20	69	30	350	45.65
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2016-01-20	72	33	350	45.5
2016-01-20	73	34	350	45.45
2016-01-20	74	35	347	45.45
2016-01-20	75	36	346	45.4
2016-01-20	76	37	346	45.35
2016-01-20	77	38	348	45.3
2016-01-20	78	39	348	45.3
2016-01-20	79	40	350	45.25
2016-01-20	80	41	351	45.2
2016-01-20	81	42	351	45.15
2016-01-20	82	43	351	45.1
2016-01-20	83	44	351	45.05
2016-01-20	84	45	351	45.05
2016-01-20	85	46	351	45
2016-01-20	86	47	351	44.95
2016-01-20	87	48	351	44.9
2016-01-20	88	49	353	44.85
2016-01-20	89	50	354	44.8
2016-01-20	90	51	353	44.75
2016-01-20	91	52	352	44.7
2016-01-20	92	53	352	44.7

2016-01-20	93	54	352	44.65
2016-01-20	94	55	350	44.6
2016-01-20	95	56	352	44.55
2016-01-20	96	57	354	44.5
2016-01-20	97	58	352	44.45
2016-01-20	98	59	352	44.45
2016-01-20	99	60	352	44.4
2016-01-20	100	61	353	44.35
2016-01-20	101	62	353	44.3
2016-01-20	102	63	348	44.25
2016-01-20	103	64	344	44.2
2016-01-20	104	65	340	44.2
2016-01-20	105	66	335	44.15
2016-01-20	106	67	329	44.15
2016-01-20	107	68	320	44.1
2016-01-20	108	69	312	44.1
2016-01-20	109	70	303	44.1
2016-01-20	110	71	299	44.05
2016-01-20	111	72	290	44.05
2016-01-20	112	73	286	44.05
2016-01-20	113	74	288	44
2016-01-20	114	75	284	44
2016-01-20	115	76	282	44
2016-01-20	116	77	275	43.95
2016-01-20	117	78	276	43.95
2016-01-20	118	79	273	43.95
2016-01-20	119	80	260	43.9
2016-01-20	120	81	245	43.9
2016-01-20	121	82	233	43.9
2016-01-20	122	83	231	43.85
2016-01-20	123	84	227	43.85
2016-01-20	124	85	224	43.85
2016-01-20	125	86	220	43.8
2016-01-20	126	87	220	43.8
2016-01-20	127	88	223	43.8
2016-01-20	128	89	221	43.75
2016-01-20	129	90	221	43.75
2016-01-20	130	91	217	43.75
2016-01-20	131	92	222	43.7
2016-01-20	132	93	224	43.7
2016-01-20	133	94	220	43.7
2016-01-20	134	95	222	43.65
2016-01-20	135	96	222	43.65
2016-01-20	136	97	222	43.65
2016-01-20	137	98	222	43.6
2016-01-20	138	99	224	43.6
2016-01-20	139	100	222	43.6

2016-01-20	140	101	220	43.55
2016-01-20	141	102	222	43.55
2016-01-20	142	103	222	43.55
2016-01-20	143	104	218	43.5
2016-01-20	144	105	225	43.5
2016-01-20	145	106	223	43.5
2016-01-20	146	107	223	43.45
2016-01-20	147	108	225	43.45
2016-01-20	148	109	223	43.45
2016-01-20	149	110	225	43.4
2016-01-20	150	111	223	43.45
2016-01-20	151	112	225	43.35
2016-01-20	152	113	227	43.35
2016-01-20	153	114	227	43.3
2016-01-20	154	115	228	43.3
2016-01-20	155	116	228	43.3
2016-01-20	156	117	228	43.25
2016-01-20	157	118	230	43.3
2016-01-20	158	119	228	43.25
2016-01-20	159	120	230	43.25
2016-01-20	160	121	230	43.25
2016-01-20	161	122	232	43.2
2016-01-20	162	123	233	43.2
2016-01-20	163	124	233	43.2
2016-01-20	164	125	230	43.15
2016-01-20	165	126	228	43.15
2016-01-20	166	127	228	43.15
2016-01-20	167	128	228	43.1
2016-01-20	168	129	228	43.1
2016-01-20	169	130	228	43.1
2016-01-20	170	131	227	43.05
2016-01-20	171	132	229	43.05
2016-01-20	172	133	228	43
2016-01-20	173	134	229	43
2016-01-20	174	135	229	43
2016-01-20	175	136	228	42.95
2016-01-20	176	137	235	42.95
2016-01-20	177	138	252	42.95
2016-01-20	178	139	261	42.95
2016-01-20	179	140	270	42.9
2016-01-20	180	141	272	42.9
2016-01-20	181	142	270	42.85
2016-01-20	182	143	268	42.85
2016-01-20	183	144	268	42.85
2016-01-20	184	145	272	42.85
2016-01-20	185	146	274	42.8
2016-01-20	186	147	272	42.8

2016-01-20	187	148	272	42.75
2016-01-20	188	149	270	42.75
2016-01-20	189	150	268	42.75
2016-01-20	190	151	268	42.7
2016-01-20	191	152	270	42.7
2016-01-20	192	153	270	42.7
2016-01-20	193	154	272	42.65
2016-01-20	194	155	272	42.65
2016-01-20	195	156	270	42.6
2016-01-20	196	157	272	42.6
2016-01-20	197	158	270	42.55
2016-01-20	198	159	272	42.55
2016-01-20	199	160	268	42.55
2016-01-20	200	161	270	42.5
2016-01-20	201	162	270	42.5
2016-01-20	202	163	270	42.5
2016-01-20	203	164	270	42.45
2016-01-20	204	165	270	42.45
2016-01-20	205	166	270	42.45
2016-01-20	206	167	270	42.4
2016-01-20	207	168	270	42.4
2016-01-20	208	169	272	42.4
2016-01-20	209	170	272	42.35
2016-01-20	210	171	272	42.35
2016-01-20	211	172	272	42.3
2016-01-20	212	173	272	42.3
2016-01-20	213	174	270	42.3
2016-01-20	214	175	268	42.3
2016-01-20	215	176	268	42.25
2016-01-20	216	177	268	42.25
2016-01-20	217	178	273	42.2
2016-01-20	218	179	270	42.2
2016-01-20	219	180	275	42.2
2016-01-20	220	181	273	42.15
2016-01-20	221	182	268	42.15
2016-01-20	222	183	264	42.1
2016-01-20	223	184	262	42.1
2016-01-20	224	185	262	42.1
2016-01-20	225	186	262	42.05
2016-01-20	226	187	259	42.05
2016-01-20	227	188	260	42.05
2016-01-20	228	189	258	42.05
2016-01-20	229	190	255	42
2016-01-20	230	191	245	42
2016-01-20	231	192	234	42
2016-01-20	232	193	227	41.95
2016-01-20	233	194	223	41.95

2016-01-20	234	195	221	41.95
2016-01-20	235	196	219	41.9
2016-01-20	236	197	217	41.9
2016-01-20	237	198	215	41.9
2016-01-20	238	199	217	41.9
2016-01-20	239	200	215	41.85
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2016-01-20	242	203	211	41.85
2016-01-20	243	204	208	41.8
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2016-01-20	245	206	211	41.8
2016-01-20	246	207	211	41.75
2016-01-20	247	208	213	41.75
2016-01-20	248	209	211	41.75
2016-01-20	249	210	212	41.7
2016-01-20	250	211	211	41.7
2016-01-20	251	212	208	41.7
2016-01-20	252	213	208	41.65
2016-01-20	253	214	208	41.65
2016-01-20	254	215	209	41.65
2016-01-20	255	216	211	41.65
2016-01-20	256	217	211	41.65
2016-01-20	257	218	214	41.6
2016-01-20	258	219	212	41.6
2016-01-20	259	220	214	41.6
2016-01-20	270	231	216	41.45
2016-01-20	271	232	214	41.4
2016-01-20	272	233	214	41.4
2016-01-20	273	234	211	41.4
2016-01-20	274	235	214	41.35
2016-01-20	275	236	214	41.35
2016-01-20	276	237	212	41.35
2016-01-20	277	238	214	41.3
2016-01-20	278	239	212	41.3
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2016-01-20	296	257	216	41.05
2016-01-20	297	258	213	41.05
2016-01-20	298	259	216	41
2016-01-20	299	260	215	41
2016-01-20	310	271	205	40.8

2016-01-20	311	272	205	40.8
2016-01-20	312	273	202	40.8
2016-01-20	313	274	205	40.75
2016-01-20	314	275	205	40.75
2016-01-20	315	276	205	40.75
2016-01-20	316	277	202	40.7
2016-01-20	317	278	202	40.7
2016-01-20	318	279	202	40.7
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2016-01-20	332	293	199	40.5
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2016-01-20	334	295	201	40.45
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2016-01-20	338	299	201	40.4
2016-01-20	339	300	204	40.4
2016-01-20	350	311	213	40.25
2016-01-20	351	312	211	40.2
2016-01-20	352	313	211	40.2
2016-01-20	353	314	211	40.2
2016-01-20	354	315	209	40.2
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2016-01-20	377	338	201	39.8
2016-01-20	378	339	201	39.8
2016-01-20	379	340	203	39.8
2016-01-20	390	351	208	39.65
2016-01-20	391	352	206	39.6
2016-01-20	392	353	208	39.6
2016-01-20	393	354	210	39.6
2016-01-20	394	355	208	39.6
2016-01-20	395	356	208	39.55
2016-01-20	396	357	208	39.55
2016-01-20	397	358	210	39.55

2016-01-20	398	359	208	39.5
2016-01-20	399	360	210	39.5
2016-01-20	260	221	212	41.55
2016-01-20	261	222	212	41.55
2016-01-20	262	223	214	41.55
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2016-01-20	265	226	211	41.5
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2016-01-20	267	228	211	41.5
2016-01-20	268	229	213	41.45
2016-01-20	269	230	213	41.45
2016-01-20	280	241	212	41.3
2016-01-20	281	242	214	41.25
2016-01-20	282	243	210	41.25
2016-01-20	283	244	214	41.25
2016-01-20	284	245	214	41.25
2016-01-20	285	246	212	41.2
2016-01-20	286	247	214	41.2
2016-01-20	287	248	214	41.2
2016-01-20	288	249	215	41.15
2016-01-20	289	250	215	41.15
2016-01-20	300	261	215	41
2016-01-20	301	262	216	40.95
2016-01-20	302	263	215	40.95
2016-01-20	303	264	212	40.9
2016-01-20	304	265	212	40.9
2016-01-20	305	266	212	40.9
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2016-01-20	307	268	207	40.85
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2016-01-20	329	290	201	40.5
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2016-01-20	341	302	206	40.35
2016-01-20	342	303	206	40.35
2016-01-20	343	304	209	40.35
2016-01-20	344	305	209	40.3

2016-01-20	345	306	211	40.3
2016-01-20	346	307	211	40.3
2016-01-20	347	308	211	40.25
2016-01-20	348	309	213	40.25
2016-01-20	349	310	211	40.25
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2016-01-20	362	323	207	40.05
2016-01-20	363	324	207	40.05
2016-01-20	364	325	207	40.05
2016-01-20	365	326	211	40
2016-01-20	366	327	209	40
2016-01-20	367	328	209	40
2016-01-20	368	329	212	39.95
2016-01-20	369	330	207	39.95
2016-01-20	380	341	204	39.8
2016-01-20	381	342	204	39.75
2016-01-20	382	343	206	39.75
2016-01-20	383	344	207	39.75
2016-01-20	384	345	209	39.7
2016-01-20	385	346	209	39.7
2016-01-20	386	347	207	39.7
2016-01-20	387	348	207	39.65
2016-01-20	388	349	207	39.65
2016-01-20	389	350	208	39.65

Date	RecNum	TestTime	StkTemp	Scale
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2016-01-26	3	3	306	51.15
2016-01-26	4	4	311	51.1
2016-01-26	5	5	317	51.05
2016-01-26	6	6	318	51
2016-01-26	7	7	322	50.95
2016-01-26	8	8	324	50.95
2016-01-26	9	9	326	50.9
2016-01-26	10	10	331	50.85
2016-01-26	11	11	331	50.8
2016-01-26	12	12	333	50.75
2016-01-26	13	13	333	50.7
2016-01-26	14	14	335	50.7
2016-01-26	15	15	335	50.65
2016-01-26	16	16	335	50.6
2016-01-26	17	17	338	50.55
2016-01-26	18	18	337	50.5
2016-01-26	19	19	338	50.45
2016-01-26	20	20	338	50.4
2016-01-26	21	21	335	50.35
2016-01-26	22	22	335	50.35
2016-01-26	23	23	335	50.3
2016-01-26	24	24	337	50.25
2016-01-26	25	25	335	50.2
2016-01-26	26	26	335	50.15
2016-01-26	27	27	333	50.1
2016-01-26	28	28	333	50.1
2016-01-26	29	29	331	50.05
2016-01-26	30	30	333	50
2016-01-26	31	31	332	49.95
2016-01-26	32	32	329	49.95
2016-01-26	33	33	334	49.9
2016-01-26	34	34	331	49.85
2016-01-26	35	35	331	49.8
2016-01-26	36	36	331	49.8
2016-01-26	37	37	331	49.75
2016-01-26	38	38	333	49.7
2016-01-26	39	39	332	49.65
2016-01-26	40	40	332	49.65
2016-01-26	41	41	332	49.6
2016-01-26	42	42	329	49.55
2016-01-26	43	43	332	49.5
2016-01-26	44	44	330	49.5
2016-01-26	45	45	332	49.45

2016-01-26	46	46	332	49.4
2016-01-26	47	47	330	49.35
2016-01-26	48	48	330	49.3
2016-01-26	49	49	332	49.3
2016-01-26	50	50	332	49.25
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2016-01-26	54	54	332	49.1
2016-01-26	55	55	332	49.05
2016-01-26	56	56	332	49
2016-01-26	57	57	331	48.95
2016-01-26	58	58	331	48.9
2016-01-26	59	0	333	48.85
2016-01-26	60	1	333	53.4
2016-01-26	61	2	335	53.35
2016-01-26	62	3	337	53.3
2016-01-26	63	4	337	53.25
2016-01-26	64	5	335	53.2
2016-01-26	65	6	337	53.15
2016-01-26	66	7	337	53.15
2016-01-26	67	8	335	53.1
2016-01-26	68	9	337	53.05
2016-01-26	69	10	335	53
2016-01-26	70	11	338	53
2016-01-26	71	12	335	52.95
2016-01-26	72	13	336	52.9
2016-01-26	73	14	335	52.85
2016-01-26	74	15	338	52.8
2016-01-26	75	16	338	52.75
2016-01-26	76	17	336	52.75
2016-01-26	77	18	336	52.7
2016-01-26	78	19	340	52.65
2016-01-26	79	20	340	52.6
2016-01-26	80	21	338	52.55
2016-01-26	81	22	340	52.5
2016-01-26	82	23	338	52.5
2016-01-26	83	24	340	52.45
2016-01-26	84	25	340	52.4
2016-01-26	85	26	340	52.35
2016-01-26	86	27	340	52.3
2016-01-26	87	28	338	52.25
2016-01-26	88	29	338	52.25
2016-01-26	89	30	338	52.15
2016-01-26	90	31	340	52.15
2016-01-26	91	32	340	52.1
2016-01-26	92	33	340	52.05

2016-01-26	93	34	342	52
2016-01-26	94	35	340	51.95
2016-01-26	95	36	340	51.9
2016-01-26	96	37	340	51.9
2016-01-26	97	38	342	51.85
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2016-01-26	100	41	340	51.7
2016-01-26	101	42	337	51.7
2016-01-26	102	43	339	51.65
2016-01-26	103	44	338	51.6
2016-01-26	104	45	337	51.55
2016-01-26	105	46	337	51.5
2016-01-26	106	47	337	51.5
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2016-01-26	112	53	339	51.25
2016-01-26	113	54	335	51.2
2016-01-26	114	55	335	51.15
2016-01-26	115	56	337	51.1
2016-01-26	116	57	337	51.05
2016-01-26	117	58	339	51.05
2016-01-26	118	59	339	51
2016-01-26	119	60	337	50.95
2016-01-26	120	61	337	50.9
2016-01-26	121	62	334	50.85
2016-01-26	122	63	334	50.8
2016-01-26	123	64	329	50.75
2016-01-26	124	65	323	50.75
2016-01-26	125	66	321	50.7
2016-01-26	126	67	316	50.7
2016-01-26	127	68	311	50.65
2016-01-26	128	69	306	50.65
2016-01-26	129	70	299	50.65
2016-01-26	130	71	290	50.65
2016-01-26	131	72	288	50.6
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2016-01-26	136	77	269	50.55
2016-01-26	137	78	269	50.5
2016-01-26	138	79	269	50.5
2016-01-26	139	80	266	50.45

2016-01-26	140	81	266	50.45
2016-01-26	141	82	266	50.45
2016-01-26	142	83	266	50.4
2016-01-26	143	84	266	50.4
2016-01-26	144	85	264	50.4
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2016-01-26	147	88	266	50.35
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2016-01-26	163	104	260	50.05
2016-01-26	164	105	260	50.05
2016-01-26	165	106	258	50
2016-01-26	166	107	256	50
2016-01-26	167	108	256	50
2016-01-26	168	109	260	49.95
2016-01-26	169	110	258	49.95
2016-01-26	170	111	252	49.95
2016-01-26	171	112	252	49.9
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2016-01-26	174	115	258	49.9
2016-01-26	175	116	258	49.85
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2016-01-26	178	119	258	49.8
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2016-01-26	183	124	263	49.7
2016-01-26	184	125	265	49.7
2016-01-26	185	126	263	49.65
2016-01-26	186	127	262	49.65

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2016-01-26	188	129	261	49.6
2016-01-26	189	130	265	49.6
2016-01-26	190	131	261	49.6
2016-01-26	191	132	261	49.55
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2016-01-26	212	153	257	49.2
2016-01-26	213	154	260	49.15
2016-01-26	214	155	260	49.15
2016-01-26	215	156	260	49.15
2016-01-26	216	157	260	49.1
2016-01-26	217	158	258	49.1
2016-01-26	218	159	260	49.1
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2016-01-26	220	161	256	49.05
2016-01-26	221	162	258	49.05
2016-01-26	222	163	260	49
2016-01-26	223	164	260	49
2016-01-26	224	165	260	49
2016-01-26	225	166	262	48.95
2016-01-26	226	167	256	48.95
2016-01-26	227	168	260	48.9
2016-01-26	228	169	258	48.9
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2016-01-26	230	171	260	48.9
2016-01-26	231	172	258	48.85
2016-01-26	232	173	258	48.85
2016-01-26	233	174	254	48.85

2016-01-26	234	175	256	48.8
2016-01-26	235	176	258	48.8
2016-01-26	236	177	256	48.8
2016-01-26	237	178	259	48.75
2016-01-26	238	179	259	48.75
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2016-01-26	258	199	235	48.4
2016-01-26	259	200	233	48.4
2016-01-26	270	211	235	48.25
2016-01-26	271	212	235	48.25
2016-01-26	272	213	235	48.25
2016-01-26	273	214	237	48.2
2016-01-26	274	215	235	48.2
2016-01-26	275	216	235	48.15
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2016-01-26	299	240	239	47.8
2016-01-26	310	251	229	47.65

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2016-01-26	312	253	228	47.6
2016-01-26	313	254	233	47.6
2016-01-26	314	255	236	47.6
2016-01-26	315	256	235	47.6
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2016-01-26	350	291	238	47.05
2016-01-26	351	292	237	47.05
2016-01-26	352	293	242	47
2016-01-26	353	294	246	47
2016-01-26	354	295	246	47
2016-01-26	355	296	248	46.95
2016-01-26	356	297	246	46.95
2016-01-26	357	298	244	46.9
2016-01-26	358	299	246	46.9
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2016-01-26	371	312	246	46.7
2016-01-26	372	313	244	46.7
2016-01-26	373	314	242	46.65
2016-01-26	374	315	242	46.65
2016-01-26	375	316	244	46.65
2016-01-26	376	317	240	46.65
2016-01-26	377	318	240	46.6
2016-01-26	378	319	238	46.6
2016-01-26	379	320	240	46.6
2016-01-26	390	331	236	46.45
2016-01-26	391	332	241	46.4
2016-01-26	392	333	238	46.4
2016-01-26	393	334	243	46.4
2016-01-26	394	335	243	46.35
2016-01-26	395	336	243	46.35
2016-01-26	396	337	243	46.35
2016-01-26	397	338	238	46.3

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2016-01-26	399	340	240	46.3
2016-01-26	260	201	230	48.4
2016-01-26	261	202	230	48.35
2016-01-26	262	203	230	48.35
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2016-01-26	284	225	238	48.05
2016-01-26	285	226	243	48.05
2016-01-26	286	227	243	48
2016-01-26	287	228	237	48
2016-01-26	288	229	236	48
2016-01-26	289	230	237	47.95
2016-01-26	300	241	242	47.8
2016-01-26	301	242	237	47.8
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2016-01-26	306	247	233	47.7
2016-01-26	307	248	233	47.7
2016-01-26	308	249	235	47.65
2016-01-26	309	250	235	47.65
2016-01-26	320	261	236	47.5
2016-01-26	321	262	240	47.5
2016-01-26	322	263	242	47.45
2016-01-26	323	264	238	47.45
2016-01-26	324	265	236	47.45
2016-01-26	325	266	238	47.45
2016-01-26	326	267	238	47.4
2016-01-26	327	268	238	47.4
2016-01-26	328	269	237	47.4
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2016-01-26	340	281	243	47.2
2016-01-26	341	282	244	47.2
2016-01-26	342	283	243	47.15
2016-01-26	343	284	246	47.15
2016-01-26	344	285	239	47.15

2016-01-26	345	286	244	47.1
2016-01-26	346	287	243	47.1
2016-01-26	347	288	243	47.1
2016-01-26	348	289	241	47.05
2016-01-26	349	290	244	47.05
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2016-01-26	401	342	243	46.25
2016-01-26	402	343	241	46.25
2016-01-26	403	344	245	46.25
2016-01-26	404	345	239	46.2
2016-01-26	405	346	241	46.2
2016-01-26	406	347	241	46.2
2016-01-26	407	348	245	46.15
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2016-01-26	415	356	243	46.05
2016-01-26	416	357	241	46.05
2016-01-26	417	358	241	46
2016-01-26	418	359	243	46
2016-01-26	419	360	245	46

Date	RecNum	TestTime	StkTemp	Scale
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2016-01-27	9	9	180	48.05
2016-01-27	10	10	186	47.6
2016-01-27	11	11	208	47.3
2016-01-27	12	12	234	47.45
2016-01-27	13	13	256	47.8
2016-01-27	14	14	277	48.25
2016-01-27	15	15	290	48.5
2016-01-27	16	16	299	48.6
2016-01-27	17	17	307	50.35
2016-01-27	18	18	316	50.35
2016-01-27	19	19	320	50.25
2016-01-27	20	20	319	50.15
2016-01-27	21	21	326	50.2
2016-01-27	22	22	330	50.15
2016-01-27	23	23	335	50.1
2016-01-27	24	24	337	50.05
2016-01-27	25	25	339	50
2016-01-27	26	26	339	49.95
2016-01-27	27	27	341	49.95
2016-01-27	28	28	343	49.9
2016-01-27	29	29	343	49.8
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2016-01-27	31	31	350	49.8
2016-01-27	32	32	347	49.75
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2016-01-27	36	36	350	49.45
2016-01-27	37	37	352	49.45
2016-01-27	38	38	348	49.35
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2016-01-27	41	41	347	49.35
2016-01-27	42	42	345	49.25
2016-01-27	43	43	345	49
2016-01-27	44	44	347	49
2016-01-27	45	45	352	49.1

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2016-01-27	47	47	353	48.85
2016-01-27	48	48	350	48.85
2016-01-27	49	49	353	49
2016-01-27	50	50	353	48.9
2016-01-27	51	51	351	49
2016-01-27	52	0	354	48.95
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2016-01-27	57	5	354	53.05
2016-01-27	58	6	356	53.15
2016-01-27	59	7	357	53
2016-01-27	60	8	359	53.05
2016-01-27	61	9	359	53
2016-01-27	62	10	356	52.95
2016-01-27	63	11	359	52.8
2016-01-27	64	12	359	52.75
2016-01-27	65	13	359	52.65
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2016-01-27	67	15	362	52.6
2016-01-27	68	16	362	52.6
2016-01-27	69	17	362	52.6
2016-01-27	70	18	362	52.55
2016-01-27	71	19	357	52.35
2016-01-27	72	20	360	52.45
2016-01-27	73	21	359	52.4
2016-01-27	74	22	357	52.35
2016-01-27	75	23	362	52.4
2016-01-27	76	24	360	52.35
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2016-01-27	79	27	360	52.15
2016-01-27	80	28	362	52.15
2016-01-27	81	29	360	52
2016-01-27	82	30	360	51.95
2016-01-27	83	31	361	51.9
2016-01-27	84	32	365	52
2016-01-27	85	33	365	51.9
2016-01-27	86	34	363	51.7
2016-01-27	87	35	363	51.75
2016-01-27	88	36	363	51.75
2016-01-27	89	37	363	51.6
2016-01-27	90	38	363	51.55
2016-01-27	91	39	365	51.55
2016-01-27	92	40	363	51.55

2016-01-27	93	41	363	51.45
2016-01-27	94	42	361	51.35
2016-01-27	95	43	361	51.4
2016-01-27	96	44	361	51.25
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2016-01-27	112	60	358	50.55
2016-01-27	113	61	360	50.7
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2016-01-27	116	64	350	50.45
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2016-01-27	123	71	263	50.25
2016-01-27	124	72	256	50.25
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2016-01-27	128	76	238	50.2
2016-01-27	129	77	234	50.3
2016-01-27	130	78	236	50.25
2016-01-27	131	79	232	50.1
2016-01-27	132	80	229	50.05
2016-01-27	133	81	227	50.05
2016-01-27	134	82	225	50.15
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2016-01-27	136	84	225	50.1
2016-01-27	137	85	222	50.05
2016-01-27	138	86	222	50
2016-01-27	139	87	220	50

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2016-01-27	141	89	218	49.95
2016-01-27	142	90	213	49.95
2016-01-27	143	91	213	49.9
2016-01-27	144	92	213	49.95
2016-01-27	145	93	211	49.9
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2016-01-27	149	97	211	49.85
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2016-01-27	151	99	206	49.85
2016-01-27	152	100	206	49.9
2016-01-27	153	101	206	50
2016-01-27	154	102	205	49.9
2016-01-27	155	103	208	49.95
2016-01-27	156	104	208	49.8
2016-01-27	157	105	206	49.75
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2016-01-27	166	114	208	49.75
2016-01-27	167	115	208	49.8
2016-01-27	168	116	210	49.65
2016-01-27	169	117	208	49.7
2016-01-27	170	118	210	49.55
2016-01-27	171	119	211	49.65
2016-01-27	172	120	211	49.5
2016-01-27	173	121	211	49.45
2016-01-27	174	122	209	49.4
2016-01-27	175	123	211	49.45
2016-01-27	176	124	211	49.6
2016-01-27	177	125	214	49.55
2016-01-27	178	126	211	49.6
2016-01-27	179	127	211	49.4
2016-01-27	180	128	211	49.5
2016-01-27	181	129	210	49.45
2016-01-27	182	130	210	49.4
2016-01-27	183	131	209	49.4
2016-01-27	184	132	209	49.35
2016-01-27	185	133	210	49.45
2016-01-27	186	134	210	49.25

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2016-01-27	188	136	210	49.35
2016-01-27	189	137	208	49.4
2016-01-27	190	138	208	49.35
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2016-01-27	193	141	204	49.2
2016-01-27	194	142	206	49.25
2016-01-27	195	143	206	49.15
2016-01-27	196	144	206	49.25
2016-01-27	197	145	206	49.2
2016-01-27	198	146	206	49.2
2016-01-27	199	147	206	49.15
2016-01-27	200	148	208	49.2
2016-01-27	201	149	208	49.2
2016-01-27	202	150	211	49.05
2016-01-27	203	151	209	49.05
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2016-01-27	206	154	209	49.05
2016-01-27	207	155	207	49.05
2016-01-27	208	156	209	49
2016-01-27	209	157	209	49.05
2016-01-27	210	158	209	49.1
2016-01-27	211	159	209	49
2016-01-27	212	160	211	49
2016-01-27	213	161	209	48.85
2016-01-27	214	162	211	48.8
2016-01-27	215	163	212	48.75
2016-01-27	216	164	209	48.75
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2016-01-27	230	178	212	48.7
2016-01-27	231	179	212	48.6
2016-01-27	232	180	212	48.55
2016-01-27	233	181	210	48.7

2016-01-27	234	182	210	48.6
2016-01-27	235	183	208	48.45
2016-01-27	236	184	206	48.45
2016-01-27	237	185	203	48.4
2016-01-27	238	186	203	48.5
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2016-01-27	246	194	199	48.4
2016-01-27	247	195	199	48.2
2016-01-27	248	196	199	48.25
2016-01-27	249	197	201	48.4
2016-01-27	250	198	202	48.35
2016-01-27	251	199	199	48.25
2016-01-27	252	200	199	48.2
2016-01-27	253	201	196	48.2
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2016-01-27	257	205	193	48.3
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2016-01-27	270	218	188	48.05
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2016-01-27	272	220	189	48
2016-01-27	273	221	191	47.85
2016-01-27	274	222	187	47.9
2016-01-27	275	223	186	47.85
2016-01-27	276	224	186	47.9
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2016-01-27	297	245	183	47.55
2016-01-27	298	246	185	47.65
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2016-01-27	312	260	178	47.65
2016-01-27	313	261	178	47.45
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2016-01-27	315	263	181	47.3
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2016-01-27	335	283	178	47.15
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2016-01-27	337	285	180	47
2016-01-27	338	286	179	47.1
2016-01-27	339	287	180	47.1
2016-01-27	350	298	178	47.1
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2016-01-27	394	342	178	46.35
2016-01-27	395	343	180	46.3
2016-01-27	396	344	183	46.3
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2016-01-27	399	347	182	46.15
2016-01-27	260	208	191	48.1
2016-01-27	261	209	191	48.25
2016-01-27	262	210	191	48.15
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2016-01-27	280	228	184	47.8
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2016-01-27	282	230	186	47.95
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2016-01-27	284	232	188	47.85
2016-01-27	285	233	187	47.9
2016-01-27	286	234	187	47.7
2016-01-27	287	235	187	47.7
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2016-01-27	324	272	181	47.35
2016-01-27	325	273	181	47.4
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2016-01-27	327	275	181	47.4
2016-01-27	328	276	179	47.25
2016-01-27	329	277	181	47.15
2016-01-27	340	288	180	47.2
2016-01-27	341	289	179	47.25
2016-01-27	342	290	182	47.1
2016-01-27	343	291	182	47.2
2016-01-27	344	292	180	47.05

2016-01-27	345	293	180	47.15
2016-01-27	346	294	180	47.1
2016-01-27	347	295	181	47.1
2016-01-27	348	296	178	47
2016-01-27	349	297	179	47
2016-01-27	360	308	180	46.7
2016-01-27	361	309	179	46.75
2016-01-27	362	310	179	46.65
2016-01-27	363	311	181	46.8
2016-01-27	364	312	181	46.65
2016-01-27	365	313	181	46.8
2016-01-27	366	314	180	46.65
2016-01-27	367	315	182	46.7
2016-01-27	368	316	180	46.7
2016-01-27	369	317	180	46.6
2016-01-27	380	328	179	46.4
2016-01-27	381	329	179	46.55
2016-01-27	382	330	178	46.5
2016-01-27	383	331	179	46.65
2016-01-27	384	332	179	46.45
2016-01-27	385	333	178	46.5
2016-01-27	386	334	179	46.4
2016-01-27	387	335	179	46.35
2016-01-27	388	336	181	46.4
2016-01-27	389	337	178	46.3
2016-01-27	400	348	180	46.1
2016-01-27	401	349	182	46.1
2016-01-27	402	350	180	46.1
2016-01-27	403	351	182	46.35
2016-01-27	404	352	180	46.25
2016-01-27	405	353	182	46.2
2016-01-27	406	354	180	46.15
2016-01-27	407	355	180	46.2
2016-01-27	408	356	182	46.25
2016-01-27	409	357	182	46.2
2016-01-27	410	358	182	46.25
2016-01-27	411	359	182	46.05
2016-01-27	412	360	180	46.1

Date	RecNum	TestTime	StkTemp	Scale
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2016-02-09	2	2	245	46.3
2016-02-09	3	3	256	46.1
2016-02-09	4	4	261	46
2016-02-09	5	5	265	46.1
2016-02-09	6	6	271	46.25
2016-02-09	7	7	279	46.15
2016-02-09	8	8	283	46.4
2016-02-09	9	9	289	46.1
2016-02-09	10	10	289	45.8
2016-02-09	11	11	291	45.75
2016-02-09	12	12	296	46
2016-02-09	13	13	296	45.65
2016-02-09	14	14	298	45.8
2016-02-09	15	15	298	45.7
2016-02-09	16	16	302	45.9
2016-02-09	17	17	302	45.55
2016-02-09	18	18	302	45.45
2016-02-09	19	19	304	45.45
2016-02-09	20	20	302	45.55
2016-02-09	21	21	304	45.65
2016-02-09	22	22	307	45.7
2016-02-09	23	23	307	45.5
2016-02-09	24	24	307	45.25
2016-02-09	25	25	304	45.25
2016-02-09	26	26	306	45.55
2016-02-09	27	27	311	45.55
2016-02-09	28	28	309	45.1
2016-02-09	29	0	306	45.05
2016-02-09	30	1	307	49.8
2016-02-09	31	2	311	49.65
2016-02-09	32	3	311	49.65
2016-02-09	33	4	309	49.6
2016-02-09	34	5	313	49.6
2016-02-09	35	6	313	49.55
2016-02-09	36	7	315	49.5
2016-02-09	37	8	311	49.45
2016-02-09	38	9	311	49.45
2016-02-09	39	10	313	49.45
2016-02-09	40	11	311	49.4
2016-02-09	41	12	313	49.4
2016-02-09	42	13	315	49.35
2016-02-09	43	14	317	49.3
2016-02-09	44	15	313	49.3
2016-02-09	45	16	315	49.25

2016-02-09	46	17	317	49.2
2016-02-09	47	18	315	49.15
2016-02-09	48	19	315	49.15
2016-02-09	49	20	313	49.1
2016-02-09	50	21	315	49.1
2016-02-09	51	22	315	49.05
2016-02-09	52	23	315	49.05
2016-02-09	53	24	319	49
2016-02-09	54	25	317	48.95
2016-02-09	55	26	317	48.9
2016-02-09	56	27	319	48.9
2016-02-09	57	28	315	48.85
2016-02-09	58	29	315	48.8
2016-02-09	59	30	314	48.8
2016-02-09	60	31	313	48.75
2016-02-09	61	32	311	48.75
2016-02-09	62	33	314	48.75
2016-02-09	63	34	317	48.7
2016-02-09	64	35	315	48.65
2016-02-09	65	36	315	48.6
2016-02-09	66	37	315	48.6
2016-02-09	67	38	313	48.55
2016-02-09	68	39	315	48.55
2016-02-09	69	40	316	48.5
2016-02-09	70	41	316	48.5
2016-02-09	71	42	315	48.45
2016-02-09	72	43	313	48.4
2016-02-09	73	44	311	48.4
2016-02-09	74	45	313	48.35
2016-02-09	75	46	316	48.3
2016-02-09	76	47	311	48.3
2016-02-09	77	48	314	48.25
2016-02-09	78	49	314	48.25
2016-02-09	79	50	316	48.2
2016-02-09	80	51	317	48.2
2016-02-09	81	52	315	48.15
2016-02-09	82	53	310	48.1
2016-02-09	83	54	313	48.1
2016-02-09	84	55	313	48.05
2016-02-09	85	56	313	48
2016-02-09	86	57	313	48
2016-02-09	87	58	316	47.95
2016-02-09	88	59	318	47.95
2016-02-09	89	60	318	47.9
2016-02-09	90	61	318	47.85
2016-02-09	91	62	320	47.85
2016-02-09	92	63	322	47.8

2016-02-09	93	64	320	47.75
2016-02-09	94	65	316	47.75
2016-02-09	95	66	314	47.7
2016-02-09	96	67	309	47.7
2016-02-09	97	68	306	47.65
2016-02-09	98	69	297	47.65
2016-02-09	99	70	292	47.65
2016-02-09	100	71	290	47.6
2016-02-09	101	72	288	47.6
2016-02-09	102	73	286	47.55
2016-02-09	103	74	282	47.55
2016-02-09	104	75	280	47.55
2016-02-09	105	76	280	47.5
2016-02-09	106	77	276	47.5
2016-02-09	107	78	276	47.45
2016-02-09	108	79	274	47.45
2016-02-09	109	80	267	47.4
2016-02-09	110	81	263	47.4
2016-02-09	111	82	261	47.4
2016-02-09	112	83	263	47.4
2016-02-09	113	84	263	47.35
2016-02-09	114	85	263	47.3
2016-02-09	115	86	265	47.3
2016-02-09	116	87	270	47.3
2016-02-09	117	88	274	47.3
2016-02-09	118	89	272	47.25
2016-02-09	119	90	270	47.2
2016-02-09	120	91	272	47.2
2016-02-09	121	92	274	47.2
2016-02-09	122	93	275	47.2
2016-02-09	123	94	275	47.15
2016-02-09	124	95	274	47.15
2016-02-09	125	96	276	47.1
2016-02-09	126	97	274	47.1
2016-02-09	127	98	276	47.05
2016-02-09	128	99	277	47.05
2016-02-09	129	100	276	47
2016-02-09	130	101	279	47
2016-02-09	131	102	279	46.95
2016-02-09	132	103	279	46.95
2016-02-09	133	104	279	46.95
2016-02-09	134	105	281	46.95
2016-02-09	135	106	281	46.9
2016-02-09	136	107	279	46.9
2016-02-09	137	108	279	46.9
2016-02-09	138	109	277	46.85
2016-02-09	139	110	275	46.85

2016-02-09	140	111	275	46.8
2016-02-09	141	112	275	46.8
2016-02-09	142	113	273	46.8
2016-02-09	143	114	273	46.75
2016-02-09	144	115	271	46.7
2016-02-09	145	116	270	46.7
2016-02-09	146	117	273	46.65
2016-02-09	147	118	271	46.65
2016-02-09	148	119	271	46.65
2016-02-09	149	120	273	46.6
2016-02-09	150	121	275	46.6
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2016-02-09	152	123	272	46.55
2016-02-09	153	124	274	46.5
2016-02-09	154	125	277	46.5
2016-02-09	155	126	279	46.45
2016-02-09	156	127	277	46.45
2016-02-09	157	128	277	46.45
2016-02-09	158	129	279	46.4
2016-02-09	159	130	279	46.4
2016-02-09	160	131	276	46.35
2016-02-09	161	132	277	46.35
2016-02-09	162	133	276	46.3
2016-02-09	163	134	275	46.3
2016-02-09	164	135	277	46.3
2016-02-09	165	136	279	46.25
2016-02-09	166	137	279	46.25
2016-02-09	167	138	277	46.2
2016-02-09	168	139	277	46.2
2016-02-09	169	140	279	46.2
2016-02-09	170	141	281	46.15
2016-02-09	171	142	281	46.15
2016-02-09	172	143	282	46.15
2016-02-09	173	144	279	46.1
2016-02-09	174	145	275	46.1
2016-02-09	175	146	275	46.1
2016-02-09	176	147	271	46.05
2016-02-09	177	148	273	46.05
2016-02-09	178	149	273	46
2016-02-09	179	150	275	46
2016-02-09	180	151	276	45.95
2016-02-09	181	152	273	45.9
2016-02-09	182	153	278	45.9
2016-02-09	183	154	275	45.85
2016-02-09	184	155	273	45.85
2016-02-09	185	156	273	45.85
2016-02-09	186	157	276	45.8

2016-02-09	187	158	274	45.8
2016-02-09	188	159	274	45.8
2016-02-09	189	160	276	45.75
2016-02-09	190	161	275	45.75
2016-02-09	191	162	276	45.7
2016-02-09	192	163	278	45.7
2016-02-09	193	164	274	45.65
2016-02-09	194	165	274	45.65
2016-02-09	195	166	274	45.65
2016-02-09	196	167	272	45.6
2016-02-09	197	168	272	45.6
2016-02-09	198	169	274	45.6
2016-02-09	199	170	276	45.55
2016-02-09	200	171	274	45.55
2016-02-09	201	172	277	45.5
2016-02-09	202	173	279	45.5
2016-02-09	203	174	279	45.45
2016-02-09	204	175	279	45.45
2016-02-09	205	176	279	45.45
2016-02-09	206	177	277	45.4
2016-02-09	207	178	277	45.4
2016-02-09	208	179	277	45.35
2016-02-09	209	180	277	45.35
2016-02-09	210	181	282	45.35
2016-02-09	211	182	282	45.3
2016-02-09	212	183	282	45.3
2016-02-09	213	184	276	45.25
2016-02-09	214	185	276	45.25
2016-02-09	215	186	269	45.2
2016-02-09	216	187	268	45.2
2016-02-09	217	188	270	45.2
2016-02-09	218	189	268	45.15
2016-02-09	219	190	265	45.1
2016-02-09	220	191	265	45.1
2016-02-09	221	192	263	45.1
2016-02-09	222	193	268	45.1
2016-02-09	223	194	268	45.05
2016-02-09	224	195	268	45
2016-02-09	225	196	266	45
2016-02-09	226	197	264	45
2016-02-09	227	198	268	45
2016-02-09	228	199	266	44.95
2016-02-09	229	200	264	44.95
2016-02-09	230	201	264	44.9
2016-02-09	231	202	266	44.9
2016-02-09	232	203	266	44.9
2016-02-09	233	204	266	44.85

2016-02-09	234	205	264	44.85
2016-02-09	235	206	264	44.85
2016-02-09	236	207	264	44.8
2016-02-09	237	208	269	44.8
2016-02-09	238	209	269	44.8
2016-02-09	239	210	264	44.75
2016-02-09	240	211	262	44.75
2016-02-09	241	212	264	44.75
2016-02-09	242	213	265	44.7
2016-02-09	243	214	267	44.7
2016-02-09	244	215	265	44.65
2016-02-09	245	216	269	44.65
2016-02-09	246	217	269	44.6
2016-02-09	247	218	267	44.6
2016-02-09	248	219	269	44.6
2016-02-09	249	220	269	44.55
2016-02-09	250	221	267	44.55
2016-02-09	251	222	265	44.5
2016-02-09	252	223	265	44.5
2016-02-09	253	224	267	44.5
2016-02-09	254	225	267	44.45
2016-02-09	255	226	270	44.45
2016-02-09	256	227	267	44.45
2016-02-09	257	228	268	44.4
2016-02-09	258	229	270	44.4
2016-02-09	259	230	268	44.35
2016-02-09	270	241	268	44.2
2016-02-09	271	242	269	44.15
2016-02-09	272	243	266	44.15
2016-02-09	273	244	264	44.1
2016-02-09	274	245	261	44.1
2016-02-09	275	246	261	44.05
2016-02-09	276	247	265	44.1
2016-02-09	277	248	266	44.05
2016-02-09	278	249	264	44.05
2016-02-09	279	250	267	44
2016-02-09	290	261	272	43.8
2016-02-09	291	262	272	43.8
2016-02-09	292	263	270	43.75
2016-02-09	293	264	270	43.75
2016-02-09	294	265	270	43.75
2016-02-09	295	266	268	43.7
2016-02-09	296	267	270	43.65
2016-02-09	297	268	272	43.65
2016-02-09	298	269	270	43.65
2016-02-09	299	270	272	43.6
2016-02-09	310	281	260	43.4

2016-02-09	311	282	258	43.35
2016-02-09	312	283	258	43.35
2016-02-09	313	284	253	43.35
2016-02-09	314	285	251	43.35
2016-02-09	315	286	253	43.35
2016-02-09	316	287	250	43.3
2016-02-09	317	288	252	43.3
2016-02-09	318	289	250	43.25
2016-02-09	319	290	248	43.25
2016-02-09	330	301	245	43.05
2016-02-09	331	302	247	43.05
2016-02-09	332	303	251	43.05
2016-02-09	333	304	249	43
2016-02-09	334	305	243	42.95
2016-02-09	335	306	245	42.95
2016-02-09	336	307	249	42.95
2016-02-09	337	308	249	42.95
2016-02-09	338	309	249	42.9
2016-02-09	339	310	249	42.9
2016-02-09	350	321	245	42.7
2016-02-09	351	322	245	42.65
2016-02-09	352	323	245	42.65
2016-02-09	353	324	242	42.65
2016-02-09	354	325	240	42.6
2016-02-09	355	326	243	42.6
2016-02-09	356	327	245	42.6
2016-02-09	357	328	247	42.55
2016-02-09	358	329	244	42.55
2016-02-09	359	330	242	42.55
2016-02-09	370	341	232	42.35
2016-02-09	371	342	235	42.35
2016-02-09	372	343	239	42.35
2016-02-09	373	344	237	42.3
2016-02-09	374	345	237	42.3
2016-02-09	375	346	239	42.25
2016-02-09	376	347	241	42.25
2016-02-09	377	348	241	42.2
2016-02-09	378	349	243	42.2
2016-02-09	379	350	243	42.2
2016-02-09	260	231	268	44.35
2016-02-09	261	232	266	44.35
2016-02-09	262	233	266	44.3
2016-02-09	263	234	266	44.3
2016-02-09	264	235	268	44.3
2016-02-09	265	236	266	44.25
2016-02-09	266	237	264	44.25
2016-02-09	267	238	266	44.25

2016-02-09	268	239	270	44.25
2016-02-09	269	240	268	44.2
2016-02-09	280	251	267	44
2016-02-09	281	252	267	44
2016-02-09	282	253	265	43.95
2016-02-09	283	254	272	43.95
2016-02-09	284	255	274	43.95
2016-02-09	285	256	272	43.9
2016-02-09	286	257	270	43.9
2016-02-09	287	258	270	43.85
2016-02-09	288	259	272	43.85
2016-02-09	289	260	272	43.8
2016-02-09	300	271	267	43.6
2016-02-09	301	272	270	43.6
2016-02-09	302	273	267	43.55
2016-02-09	303	274	265	43.55
2016-02-09	304	275	263	43.55
2016-02-09	305	276	263	43.5
2016-02-09	306	277	260	43.5
2016-02-09	307	278	260	43.45
2016-02-09	308	279	261	43.45
2016-02-09	309	280	259	43.4
2016-02-09	320	291	252	43.25
2016-02-09	321	292	252	43.2
2016-02-09	322	293	252	43.2
2016-02-09	323	294	249	43.15
2016-02-09	324	295	247	43.15
2016-02-09	325	296	247	43.15
2016-02-09	326	297	246	43.15
2016-02-09	327	298	246	43.1
2016-02-09	328	299	243	43.1
2016-02-09	329	300	245	43.05
2016-02-09	340	311	249	42.9
2016-02-09	341	312	250	42.85
2016-02-09	342	313	248	42.85
2016-02-09	343	314	250	42.8
2016-02-09	344	315	248	42.8
2016-02-09	345	316	244	42.75
2016-02-09	346	317	241	42.75
2016-02-09	347	318	243	42.75
2016-02-09	348	319	245	42.75
2016-02-09	349	320	243	42.7
2016-02-09	360	331	238	42.5
2016-02-09	361	332	240	42.5
2016-02-09	362	333	242	42.5
2016-02-09	363	334	238	42.45
2016-02-09	364	335	241	42.45

2016-02-09	365	336	246	42.45
2016-02-09	366	337	241	42.4
2016-02-09	367	338	241	42.4
2016-02-09	368	339	239	42.35
2016-02-09	369	340	234	42.35
2016-02-09	380	351	245	42.15
2016-02-09	381	352	242	42.15
2016-02-09	382	353	240	42.15
2016-02-09	383	354	236	42.1
2016-02-09	384	355	234	42.1
2016-02-09	385	356	236	42.1
2016-02-09	386	357	238	42.05
2016-02-09	387	358	238	42.05
2016-02-09	388	359	240	42.05
2016-02-09	389	360	244	42

Date	RecNum	TestTime	StkTemp	Scale
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2016-02-10	2	2	302	35.75
2016-02-10	3	3	307	35.7
2016-02-10	4	4	307	35.65
2016-02-10	5	0	303	35.6
2016-02-10	6	1	301	40.1
2016-02-10	7	2	301	40.1
2016-02-10	8	3	301	40.05
2016-02-10	9	4	303	40.05
2016-02-10	10	5	307	40
2016-02-10	11	6	310	39.95
2016-02-10	12	7	305	39.95
2016-02-10	13	8	303	39.9
2016-02-10	14	9	303	39.85
2016-02-10	15	10	305	39.85
2016-02-10	16	11	305	39.8
2016-02-10	17	12	301	39.8
2016-02-10	18	13	301	39.75
2016-02-10	19	14	299	39.75
2016-02-10	20	15	297	39.7
2016-02-10	21	16	297	39.7
2016-02-10	22	17	299	39.65
2016-02-10	23	18	303	39.65
2016-02-10	24	19	301	39.6
2016-02-10	25	20	302	39.55
2016-02-10	26	21	302	39.55
2016-02-10	27	22	302	39.5
2016-02-10	28	23	304	39.5
2016-02-10	29	24	304	39.45
2016-02-10	30	25	302	39.4
2016-02-10	31	26	300	39.4
2016-02-10	32	27	300	39.35
2016-02-10	33	28	304	39.35
2016-02-10	34	29	306	39.3
2016-02-10	35	30	308	39.25
2016-02-10	36	31	304	39.25
2016-02-10	37	32	302	39.2
2016-02-10	38	33	298	39.2
2016-02-10	39	34	298	39.15
2016-02-10	40	35	300	39.15
2016-02-10	41	36	298	39.1
2016-02-10	42	37	298	39.1
2016-02-10	43	38	300	39.05
2016-02-10	44	39	302	39.05
2016-02-10	45	40	302	38.95

2016-02-10	46	41	302	38.95
2016-02-10	47	42	302	38.9
2016-02-10	48	43	300	38.9
2016-02-10	49	44	300	38.9
2016-02-10	50	45	300	38.85
2016-02-10	51	46	298	38.8
2016-02-10	52	47	298	38.8
2016-02-10	53	48	298	38.75
2016-02-10	54	49	302	38.75
2016-02-10	55	50	307	38.7
2016-02-10	56	51	307	38.65
2016-02-10	57	52	304	38.6
2016-02-10	58	53	304	38.6
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2016-02-10	61	56	300	38.5
2016-02-10	62	57	301	38.5
2016-02-10	63	58	303	38.45
2016-02-10	64	59	305	38.45
2016-02-10	65	60	303	38.4
2016-02-10	66	61	300	38.35
2016-02-10	67	62	301	38.35
2016-02-10	68	63	301	38.35
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2016-02-10	71	66	296	38.25
2016-02-10	72	67	292	38.2
2016-02-10	73	68	285	38.15
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2016-02-10	79	74	229	38.05
2016-02-10	80	75	225	38.05
2016-02-10	81	76	220	38
2016-02-10	82	77	218	38
2016-02-10	83	78	214	38
2016-02-10	84	79	210	38
2016-02-10	85	80	210	37.95
2016-02-10	86	81	205	37.95
2016-02-10	87	82	205	37.95
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2016-02-10	89	84	203	37.9
2016-02-10	90	85	203	37.9
2016-02-10	91	86	201	37.85
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2016-02-10	95	90	203	37.8
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2016-02-10	139	134	199	37.05

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2016-02-10	183	178	197	36.3
2016-02-10	184	179	197	36.3
2016-02-10	185	180	195	36.25
2016-02-10	186	181	195	36.25

2016-02-10	187	182	197	36.25
2016-02-10	188	183	200	36.2
2016-02-10	189	184	199	36.2
2016-02-10	190	185	200	36.2
2016-02-10	191	186	200	36.15
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2016-02-10	230	225	187	35.6
2016-02-10	231	226	184	35.6
2016-02-10	232	227	187	35.6
2016-02-10	233	228	187	35.6

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2016-02-10	235	230	189	35.55
2016-02-10	236	231	189	35.55
2016-02-10	237	232	187	35.5
2016-02-10	238	233	187	35.5
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2016-02-10	292	287	187	34.75
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2016-02-10	295	290	187	34.7
2016-02-10	296	291	185	34.7
2016-02-10	297	292	185	34.7
2016-02-10	298	293	185	34.65
2016-02-10	299	294	185	34.65
2016-02-10	310	305	184	34.5

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2016-02-10	312	307	187	34.45
2016-02-10	313	308	185	34.45
2016-02-10	314	309	187	34.45
2016-02-10	315	310	187	34.45
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2016-02-10	317	312	186	34.4
2016-02-10	318	313	184	34.4
2016-02-10	319	314	184	34.35
2016-02-10	330	325	184	34.2
2016-02-10	331	326	187	34.2
2016-02-10	332	327	189	34.2
2016-02-10	333	328	189	34.15
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2016-02-10	356	351	182	33.85
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2016-02-10	261	256	186	35.2
2016-02-10	262	257	187	35.2
2016-02-10	263	258	187	35.15
2016-02-10	264	259	187	35.15
2016-02-10	265	260	185	35.15
2016-02-10	266	261	185	35.15
2016-02-10	267	262	185	35.1
2016-02-10	268	263	187	35.1
2016-02-10	269	264	187	35.05
2016-02-10	280	275	189	34.9
2016-02-10	281	276	189	34.9
2016-02-10	282	277	192	34.9
2016-02-10	283	278	191	34.9
2016-02-10	284	279	191	34.85
2016-02-10	285	280	191	34.85
2016-02-10	286	281	189	34.85
2016-02-10	287	282	189	34.8

2016-02-10	288	283	187	34.8
2016-02-10	289	284	189	34.8
2016-02-10	300	295	185	34.65
2016-02-10	301	296	185	34.6
2016-02-10	302	297	185	34.6
2016-02-10	303	298	187	34.6
2016-02-10	304	299	187	34.6
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2016-02-10	325	320	187	34.25
2016-02-10	326	321	184	34.3
2016-02-10	327	322	187	34.25
2016-02-10	328	323	185	34.25
2016-02-10	329	324	187	34.2
2016-02-10	340	335	185	34.05
2016-02-10	341	336	184	34.05
2016-02-10	342	337	184	34.05
2016-02-10	343	338	187	34.05
2016-02-10	344	339	187	34
2016-02-10	345	340	185	34
2016-02-10	346	341	187	34
2016-02-10	347	342	187	34
2016-02-10	348	343	187	33.95
2016-02-10	349	344	185	33.95
2016-02-10	360	355	184	33.8
2016-02-10	361	356	182	33.75
2016-02-10	362	357	185	33.75
2016-02-10	363	358	187	33.75
2016-02-10	364	359	185	33.75
2016-02-10	365	360	185	33.7

Date	RecNum	TestTime	StkTemp	Scale
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2016-02-11	2	2	82	48.05
2016-02-11	3	3	80	48.05
2016-02-11	4	4	80	48.05
2016-02-11	5	5	80	48
2016-02-11	6	6	101	48.05
2016-02-11	7	7	127	48
2016-02-11	8	8	137	48
2016-02-11	9	9	137	47.95
2016-02-11	10	10	148	47.95
2016-02-11	11	11	178	47.85
2016-02-11	12	12	204	47.8
2016-02-11	13	13	224	47.75
2016-02-11	14	14	235	47.75
2016-02-11	15	15	241	47.7
2016-02-11	16	16	250	47.7
2016-02-11	17	17	255	47.65
2016-02-11	18	18	261	47.6
2016-02-11	19	19	263	47.6
2016-02-11	20	20	265	47.55
2016-02-11	21	21	268	47.55
2016-02-11	22	22	270	47.5
2016-02-11	23	23	272	47.45
2016-02-11	24	24	275	47.45
2016-02-11	25	25	275	47.4
2016-02-11	26	26	275	47.4
2016-02-11	27	27	277	47.35
2016-02-11	28	28	281	47.35
2016-02-11	29	29	281	47.3
2016-02-11	30	30	284	47.25
2016-02-11	31	31	284	47.2
2016-02-11	32	32	286	47.2
2016-02-11	33	33	286	47.15
2016-02-11	34	34	284	47.15
2016-02-11	35	35	282	47.1
2016-02-11	36	36	284	47.1
2016-02-11	37	37	286	47.05
2016-02-11	38	38	286	47.05
2016-02-11	39	39	286	47
2016-02-11	40	40	286	46.95
2016-02-11	41	41	286	46.95
2016-02-11	42	42	284	46.9
2016-02-11	43	43	286	46.9
2016-02-11	44	44	287	46.85
2016-02-11	45	45	287	46.85

2016-02-11	46	46	287	46.8
2016-02-11	47	47	287	46.75
2016-02-11	48	48	285	46.75
2016-02-11	49	49	285	46.7
2016-02-11	50	50	285	46.7
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2016-02-11	55	4	285	51.05
2016-02-11	56	5	290	51.05
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2016-02-11	58	7	288	50.95
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2016-02-11	60	9	290	50.95
2016-02-11	61	10	290	50.9
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2016-02-11	67	16	288	50.7
2016-02-11	68	17	290	50.7
2016-02-11	69	18	290	50.65
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2016-02-11	85	34	291	50.2
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2016-02-11	89	38	289	50.05
2016-02-11	90	39	289	50.05
2016-02-11	91	40	292	50
2016-02-11	92	41	294	50

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2016-02-11	94	43	290	49.9
2016-02-11	95	44	289	49.9
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2016-02-11	115	64	290	49.3
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2016-02-11	129	78	202	49.05
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2016-02-11	131	80	198	49
2016-02-11	132	81	198	49
2016-02-11	133	82	196	49
2016-02-11	134	83	196	49
2016-02-11	135	84	196	48.95
2016-02-11	136	85	196	48.95
2016-02-11	137	86	196	48.95
2016-02-11	138	87	196	48.9
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2016-02-11	141	90	194	48.85
2016-02-11	142	91	195	48.85
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2016-02-11	168	117	184	48.4
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2016-02-11	172	121	184	48.35
2016-02-11	173	122	186	48.35
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2016-02-11	258	207	185	47
2016-02-11	259	208	185	47
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2016-02-11	297	246	180	46.45
2016-02-11	298	247	183	46.45
2016-02-11	299	248	182	46.45
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2016-02-11	315	264	178	46.25
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2016-02-11	319	268	178	46.2
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2016-02-11	332	281	183	46
2016-02-11	333	282	183	46
2016-02-11	334	283	182	46
2016-02-11	335	284	183	45.95
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2016-02-11	394	343	183	45.15
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2016-02-11	396	345	183	45.15
2016-02-11	397	346	183	45.1

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2016-02-11	399	348	183	45.1
2016-02-11	260	209	185	47
2016-02-11	261	210	183	46.95
2016-02-11	262	211	183	46.95
2016-02-11	263	212	181	46.95
2016-02-11	264	213	182	46.95
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2016-02-11	288	237	182	46.6
2016-02-11	289	238	180	46.6
2016-02-11	300	249	182	46.45
2016-02-11	301	250	180	46.4
2016-02-11	302	251	182	46.4
2016-02-11	303	252	183	46.4
2016-02-11	304	253	178	46.4
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2016-02-11	320	269	178	46.2
2016-02-11	321	270	178	46.15
2016-02-11	322	271	178	46.15
2016-02-11	323	272	176	46.15
2016-02-11	324	273	178	46.1
2016-02-11	325	274	178	46.1
2016-02-11	326	275	180	46.1
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2016-02-11	341	290	182	45.9
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2016-02-11	343	292	184	45.85
2016-02-11	344	293	184	45.85

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2016-02-11	346	295	184	45.8
2016-02-11	347	296	184	45.8
2016-02-11	348	297	187	45.8
2016-02-11	349	298	184	45.75
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2016-02-11	401	350	185	45.05
2016-02-11	402	351	183	45.05
2016-02-11	403	352	183	45
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2016-02-11	405	354	183	45
2016-02-11	406	355	183	45
2016-02-11	407	356	183	44.95
2016-02-11	408	357	183	44.95
2016-02-11	409	358	183	44.95
2016-02-11	410	359	183	44.9
2016-02-11	411	360	183	44.9

Date	RecNum	TestTime	StkTemp	Scale
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2016-02-18	3	3	302	37.15
2016-02-18	4	4	302	37.15
2016-02-18	5	5	304	37.1
2016-02-18	6	6	306	37.05
2016-02-18	7	7	307	37
2016-02-18	8	0	304	36.95
2016-02-18	9	1	304	41.45
2016-02-18	10	2	307	41.45
2016-02-18	11	3	305	41.4
2016-02-18	12	4	303	41.35
2016-02-18	13	5	301	41.35
2016-02-18	14	6	303	41.3
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2016-02-18	16	8	303	41.2
2016-02-18	17	9	300	41.2
2016-02-18	18	10	298	41.15
2016-02-18	19	11	296	41.1
2016-02-18	20	12	298	41.05
2016-02-18	21	13	294	41.05
2016-02-18	22	14	289	41
2016-02-18	23	15	294	40.95
2016-02-18	24	16	298	40.95
2016-02-18	25	17	300	40.9
2016-02-18	26	18	298	40.85
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2016-02-18	30	22	298	40.7
2016-02-18	31	23	295	40.7
2016-02-18	32	24	293	40.65
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2016-02-18	34	26	295	40.55
2016-02-18	35	27	295	40.55
2016-02-18	36	28	293	40.5
2016-02-18	37	29	295	40.45
2016-02-18	38	30	300	40.45
2016-02-18	39	31	302	40.4
2016-02-18	40	32	302	40.35
2016-02-18	41	33	300	40.3
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2016-02-18	43	35	295	40.25
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2016-02-18	45	37	296	40.2

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2016-02-18	47	39	296	40.1
2016-02-18	48	40	293	40.1
2016-02-18	49	41	296	40.05
2016-02-18	50	42	294	40.05
2016-02-18	51	43	296	40
2016-02-18	52	44	296	39.95
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2016-02-18	59	51	300	39.7
2016-02-18	60	52	298	39.65
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2016-02-18	62	54	300	39.6
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2016-02-18	76	68	299	39.45
2016-02-18	77	69	299	39.05
2016-02-18	78	70	299	39
2016-02-18	79	71	299	39
2016-02-18	80	72	294	38.95
2016-02-18	81	73	281	38.95
2016-02-18	82	74	268	38.9
2016-02-18	83	75	260	38.7
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2016-02-18	88	80	225	37.15
2016-02-18	89	81	223	37.3
2016-02-18	90	82	218	37.05
2016-02-18	91	83	218	36.85
2016-02-18	92	84	212	36.7

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2016-02-18	184	176	187	34.15
2016-02-18	185	177	187	34.1
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2016-02-18	189	181	186	37.5
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2016-02-18	191	183	184	37.25
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2016-02-18	230	222	188	36.65
2016-02-18	231	223	190	36.65
2016-02-18	232	224	192	36.6
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2016-02-18	240	232	193	36.5
2016-02-18	241	233	195	36.5
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2016-02-18	247	239	195	36.4
2016-02-18	248	240	193	36.4
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2016-02-18	251	243	193	36.35
2016-02-18	252	244	193	36.35
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2016-02-18	255	247	193	36.3
2016-02-18	256	248	191	36.25
2016-02-18	257	249	191	36.25
2016-02-18	258	250	191	36.25
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2016-02-18	271	263	189	36.05
2016-02-18	272	264	187	36.05
2016-02-18	273	265	189	36.05
2016-02-18	274	266	187	36
2016-02-18	275	267	188	36
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2016-02-18	277	269	188	35.95
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2016-02-18	291	283	192	35.75
2016-02-18	292	284	190	35.75
2016-02-18	293	285	192	35.75
2016-02-18	294	286	194	35.7
2016-02-18	295	287	192	35.7
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2016-02-18	297	289	190	35.65
2016-02-18	298	290	190	35.65
2016-02-18	299	291	188	35.65
2016-02-18	310	302	190	35.5

2016-02-18	311	303	191	35.5
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2016-02-18	308	300	190	35.5
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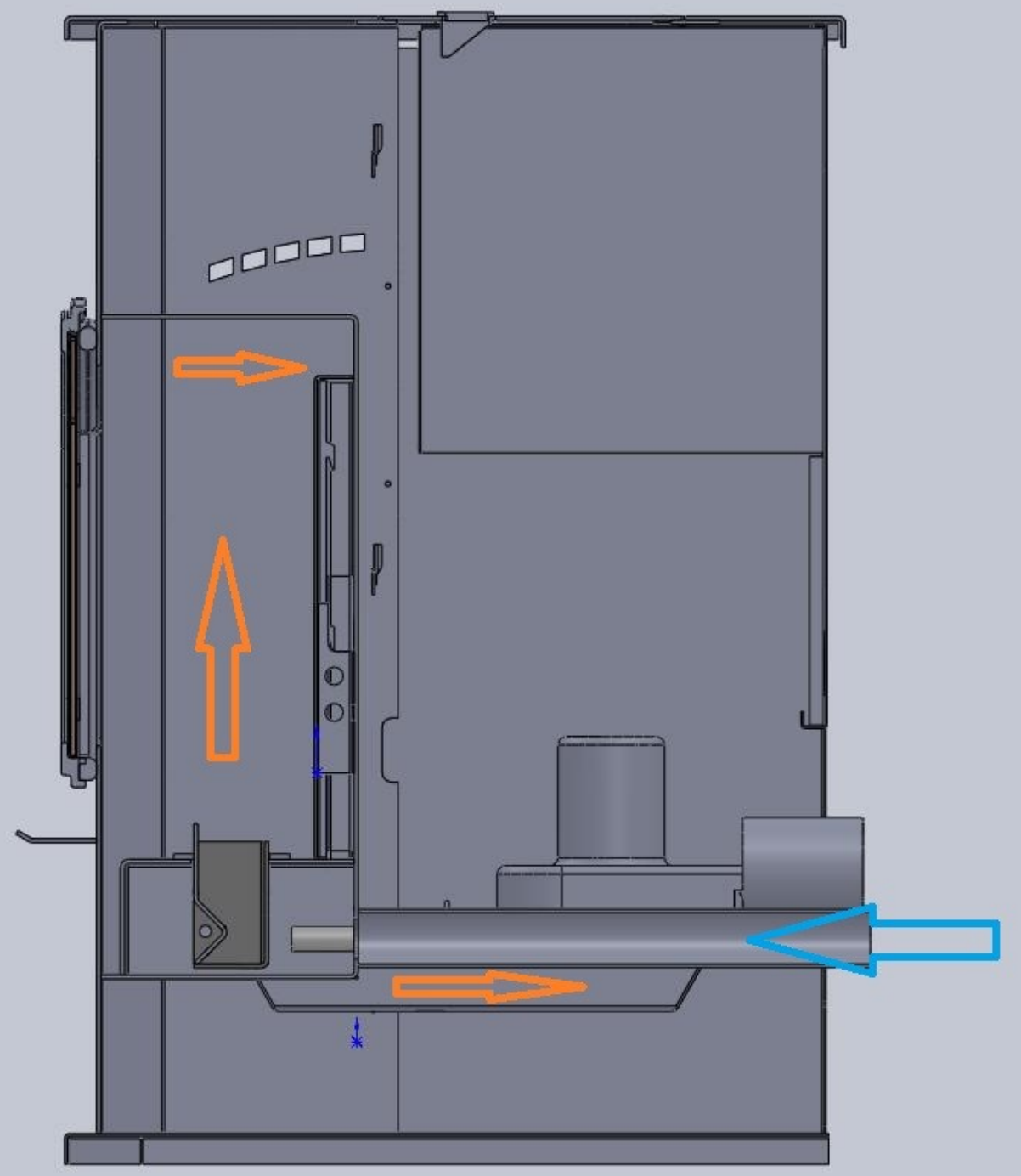


ENGLAND STOVES
Project# G-11245975
Model: 25-CB120
4/17/16
ASTM E2779
Run 1
MARTH
Marth Wood Fuel Pellets
100% Renewable
Wood Resource
Net Wt. 40 LB / 18.1 kg
HARD WOOD FUEL PELLETS
RICE LAKE RoughDeck