AUSTRALIAN SOLID FUEL TESTING
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PREPARED FOR

JETMASTER (VIC) PTY LTD

THERMAL CLEARANCE TESTING OF THE VISIONLINE TAURUS FREE-STANDING APPLIANCE

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By:
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The results of the tests, calibrations and/ or measurements included in this document are traceable to Australian/National Standards

Accreditation # 20042

Report Distribution

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ASFT Report Archive

Revision Details

Revision	Date	Comments
0	20/02/2020	Preliminary report – awaiting payment and engineering drawings of appliance
1	28/05/2020	Issue of NATA endorsed test report

THERMAL CLEARANCE TESTING OF THE VISIONLINE TAURUS FREE-STANDING APPLIANCE

Report

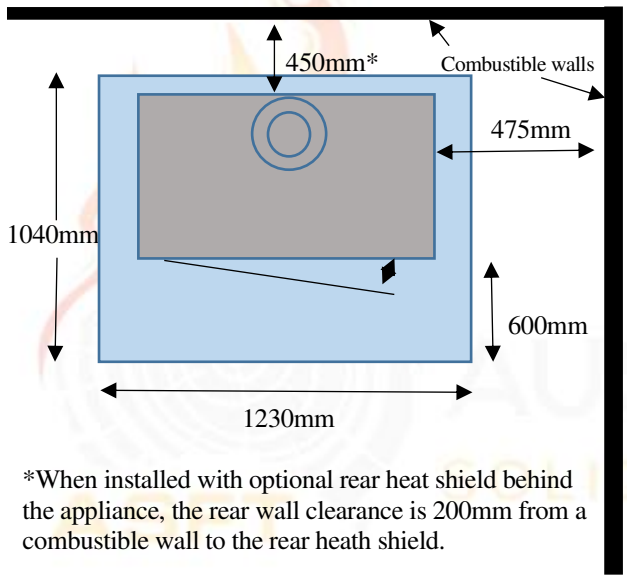
The VisionLINE Taurus Free-Standing appliance installed with a Wildcat 6" triple flue kit with 8" solid casing was tested in one position in a manner conforming to joint Australian/New Zealand Standard 2918:2018, Appendix B.

A minimum 440mm deep x 1040mm wide x 100mm thick floor protector (Hebel Block) must be used under the appliance, 1230mm wide x 600mm deep x 42mm thick floor protector (compressed board) must be used in front of the appliance base when installing the appliance (see joint AS/NZS 2918:2018 3.3.2). The floor protector should extend 600mm in front of the appliance door and be placed centrally in the 1230mm width. The Thermal resistivity of the floor protector is 0.26m².K/W for 150mm thick Hebel blocks and 0.08m².K/W for 6mm thick compressed cement sheets.

The VisionLINE Taurus Free-Standing solid fuel appliance installed with a Wildcat 6" triple flue kit with 8" solid casing conforms to the requirements of the joint AS/NZS 2918:2018 Standard, Appendix B.

The appliance and flue system were tested at the following clearances:

Position A – Parallel position



*When installed with optional rear heat shield behind the appliance, the rear wall clearance is 200mm from a combustible wall to the rear heath shield.

Figure 1 – Clearance Diagram

Signed		**Approved**	
Name	Garry W. Mooney	**Name**	Steve Marland
Title	*Technical Officer*	**Title**	*Managing Director – Australian Solid Fuel Testing*
Date	28/05/2020	**Date**	28/05/2020

1. INTRODUCTION

Thermal Clearance testing of the VisionLINE Taurus appliance and flue system took place on 19 February 2020 at the Australian Solid Fuel Testing Laboratory located at 3 Garden Street, Morwell, Victoria. The testing was performed by Mr G.W. Mooney and Mr S. Marland.

2. PROCEDURE

Testing was conducted as per Appendix B of AS/NZS2918;2018, Hot sites were located with the aid of an infra-red thermometer. Thermocouple tips were stapled onto the test surfaces, with black tape over the first 100 mm to facilitate consistent and accurate recording of temperatures. Thermocouple positions are shown in the table below:

Position A – Parallel Position

Thermocouple No.	Position	**Thermocouple No.**	Position
1	Floor - 1300mm in front of centre	16	Floor – 150mm RHS of centre
2	Floor – 1200mm in front of centre	17	Floor – 300mm RHS of centre
3	Floor - 1050mm in front of centre	18	Floor – 450mm RHS of centre
4	Floor – 900mm in front of centre	19	Ceiling Ring – Inner front
5	Floor – 750mm in front of centre	20	Ceiling Ring – 25mm in front
6	Floor – 600mm in front of centre	21	Ceiling Ring – Inner side
7	Floor – 450mm in front of centre	22	Ceiling Ring – 25mm to side
8	Floor – 300mm in front of centre	23	Rear wall – 867mm from corner, 1237mm above the floor
9	Floor – 150mm in front of centre	24	Rear wall – 875mm from corner, 490mm above the floor
10	Floor – Centre of flue	25	Rear wall – 1013mm from corner, 834mm above the floor
11	Floor – 150mm behind centre	26	RHS wall, 1070mm from corner, 484mm above the floor
12	Floor – 300mm behind centre	27	RHS wall, 506mm from corner, 623mm above the floor
13	Floor – 450mm LHS of centre	28	RHS wall, 381mm from corner, 812mm above the floor
14	Floor – 300mm LHS of centre	29	Rear wall – 997mm from corner, 907mm above the floor
15	Floor – 150mm LHS of centre	30	Ambient temperature

TABLE 1

3. TEST FUEL

Testing was conducted with Pinus Radiata as the test fuel which had a moisture content of 12.0% moisture. Each firewood piece was 300mm x 80mm x 40mm.

4. FLUE SYSTEM

The flue system used during testing was a Wildcat 6" triple flue kit with 8" solid casing was supplied by Wildcat Industries Pty Ltd. This flue system has not been tested to joint AS/NZS 2918:2018, Appendix F. The flue height was 4.6 ± 0.1m from the floor protector. Appendix 1 shows details of the flue system.

5. RESULTS

5.1 High Fire Test

The appliance was fired in accordance with Section B9.1 of AS/NZS2918;2018. The level of fuel was maintained between 50-75% of the full volume level of the fuel chamber during the High Fire test.

The average fuel load for initiating the High Fire tests was 9.6kg with an average refuelling rate of 1.3kg/10 minutes.

During High Fire testing it was found that the highest surface temperatures occurred when the primary air control of the appliance was fully open.

5.2 Flash Fire Test

Immediately after the High Fire test was completed, sufficient embers were removed to bring the fire bed to a level of 15-25% of the fuel chamber volume. The appliance was then fired in accordance with Section B9.2 of AS/NZS2918;2018.

The average fuel load for initiating the Flash Fire tests was 7.2kg.

The highest temperature rises were achieved by leaving the main door resting against the door catch with the primary air fully open.

5.3 Ambient and Test Surface Temperatures

The Tables below show the Ambient temperatures and test surfaces temperatures during testing of the appliance and flue combination:

Ambient Temperature Range ℃

Position	High Fire	Flash Fire
A	14.5 – 21.9	18.7 – 22.1

Maximum Surface Temperature Rise above Ambient - Position A

Position	Thermocouple Number	High Fire Test (°C)	Thermocouple Number	Flash Fire Test (°C)
Floor	7	62.4	7	61.3
Ceiling	19	38.7	19	37.6
Rear Wall	29	63.0	29	62.2
Side Wall	26	61.2	26	61.7

5.4 Uncertainty of Measurement Statement

5.5.1 The uncertainty of distance measurement for determining clearance distances was not greater than ± 3mm.

5.5.2 The uncertainty of temperature measurement during the entire test period was a maximum of ± 2°C at a 95% confidence level.

6. APPLIANCE CONSTRUCTION DETAILS

The test results reported directly relate to the appliance/flue system tested. The details of the appliance given in this section include features which may affect safety clearances. Any change in the design/construction of this appliance or flue may invalidate this report. Below are the constructions details of the appliance:

Appliance Model Name: **VisionLINE Taurus** Serial No: **H01343**
Manufacturer: **Jetmaster**
Overall Height: **560mm** Overall Depth: **440mm** Overall Width: **1040mm**
Top Plate Width: **1040mm** Top Plate Depth: **440mm** Top Plate Thickness: **6mm**
Usable Firebox Height: **290-322mm** Width: **721-913mm** Depth: **244mm**
Usable Firebox Volume: **80.53 Litres**
Firebox Material Type/Seam Fully Welded: **Fully welded 5mm steel**
Firebrick Type: **20-25mm Ceramic**
Main Door Opening Height: **285mm** Width: **830mm**
Door Height: **520mm** Width: **1000mm** Depth: **35mm**
Door glass Height: **280mm** Width: **800mm**
Primary Air Location: **Inside firebox: Rear 28×6mm holes at 25mm from base of firebox (these were blocked during testing) Front base of firebox 6 slots 54×4mm plus air wash (40 x 4mm dia holes added to rear of airwash chamber)**
Dimension of Primary Air: **2 triangle slots at 60 x 12-22mm + 2 rectangle slots @ 60 x 9mm**
Area of Primary (mm^2): **3264mm^2**
Secondary/Tertiary Air Location: **Rear of firebox below baffle**
Dimension of Secondary/Tertiary Air: **89 holes @ 4.0mm diameter fed by 2 slots with 5600mm^2 in total**
Area of Secondary/Tertiary Air (mm^2): **1118.6mm^2**
Baffle Plate size: **680-895×268×30mm in two pieces**
Flue Dimensions: **152mm**
Spigot Dimensions: OD: **146mm** ID: **139mm**
Spigot to Rear of Appliance: **123mm**
Rear Internal to External Heat Shield: **16mm**
Side Internal to External Heat Shield: **15-145mm**
Heat Shield Material Type: **Rear 1.5mm, Side 6mm steel**
Optional Rear Heat Shield: **1047×560×1.2mm, 60mm from rear of appliance**
Water Heater Fitted: **N/A**
Fan Location/Speeds: **N/A**
Catalytic Combustor fitted: **N/A**
Grate: **N/A**
NOTE: Accuracy of measurement is ±5% of the measured value

7. CONCLUSION

The VisionLINE Taurus Free-Standing appliance installed with a Wildcat 6" triple flue kit with 8" solid casing, conforms to the requirements of Australian/New Zealand Standard 2918:2018, with respect to floor, ceiling, side wall and rear wall surface temperatures, when tested in the test positions shown in Figure 1 of this report in accordance with Appendix B of AS/NZS2918;2018.

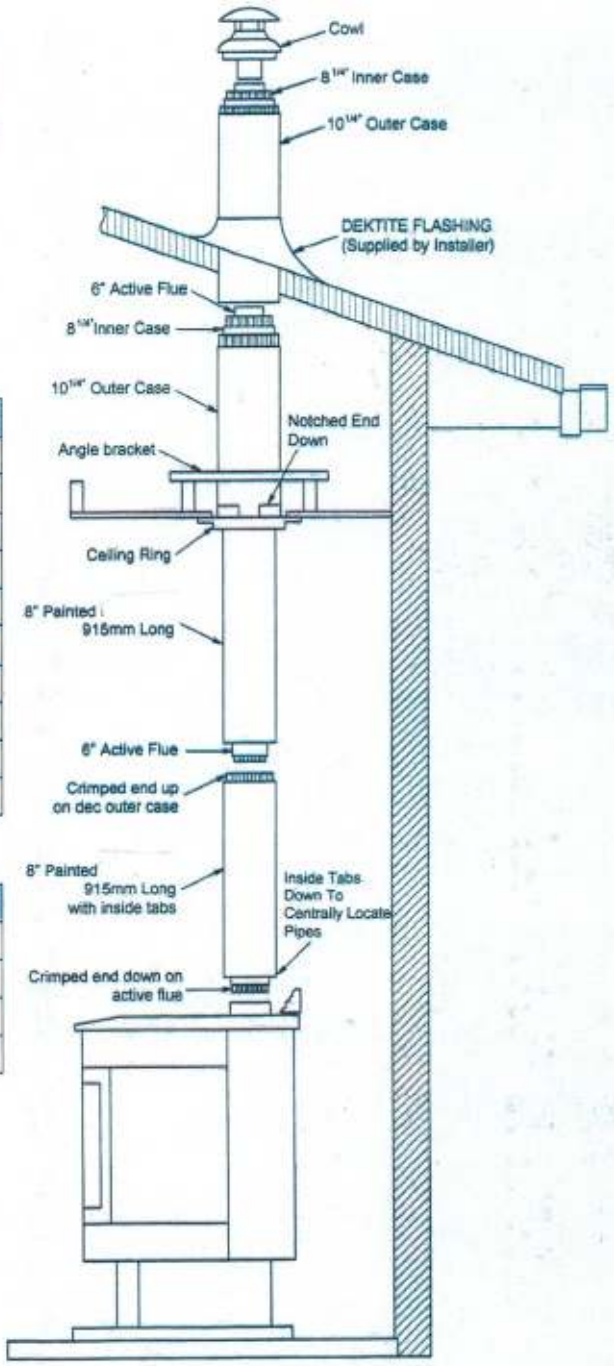
APPENDIX 1:

Wildcat INDUSTRIES (Aust) P/L

Freestanding Triple Skin Flue Kit 6" - 8" - 10" System

QTY	DESCRIPTION
4	6" Stainless Steel Inner Flue 915mm Long
1	7¼" Painted 915mm Long
1	7¼" Painted 915mm Long with in-tabs
2	8" Galvanized Inner Flue Casing 915mm Long
1	10" Galvanized Notched Outer Flue Casing 915mm Long
1	10" Galvanized Outer Flue Casing 915mm Long
1	Cowl
1	Ceiling Ring
2	75 x 25 Angles 915mm Long
1	Installation Guide

CARTON SPECIFICATIONS	
Height	460mm
Width	460mm
Length	1150mm
Weight	32kg



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MUST ONLY BE INSTALLED BY AN AUTHORISED PERSON IN COMPLIANCE WITH AS 2918

Freestanding 10 Triple Skin Instruction page