Initial Operation of a Lonestar® 3.0 with ATLAS™ Sampling Module 2.x

Issue/Version	Date	Author	Details
AAA	20/11/2015	Céline Lainé	New document
AAB	05/01/2016	Andrew Pauza	Edited with comments - to tie in with OQ procedure etc
AAC	18/02/2016	Céline Lainé	Separated cleanliness check in the 90-0579 document, removed pressure test and baseline check to create a troubleshooting document, removed flow diagram for clarity, removed OQ reference to make this document independent.
AAD	15/3/2016	Andrew Pauza	Changed configuration information to "Default...-slow", adjusted some nomenclature, added information about connecting HCB and resetting trip, referred to leak test document to ensure smaller leaks detected.
001	04/04/2016	Céline Lainé	Replaced configuration picture, added picture to reset trip temperature.

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Notices

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The supplied system is in compliance with international regulations. If this system is used in a manner not specified by Owlstone Ltd, the protection provided by the system could be impaired.

Warning Labels

This symbol is used to highlight a section explaining particularly important safety considerations

This warning label indicates danger of electrical shock hazard

This warning label indicates parts of the product that will become hot during use. Please take care.

Introduction

This document details the steps to turn the Lonestar® and ATLAS™ Sampling Module system on after the complete installation and to demonstrate the instrument is received as designed and specified.

For further details on how to install the Lonestar® system, please consult the documentation below:

CC-900550-PR – Installation of Lonestar 3.0 with an ATLAS 2.x

Set up and Components

Please ensure that you are familiar with the hardware naming before generating the system blank.

Figure 1 shows the final setup of the Lonestar® when used with an ATLAS™ sampling system.

Figure 2 details the Sampling Module Assembly part of the ATLAS™.

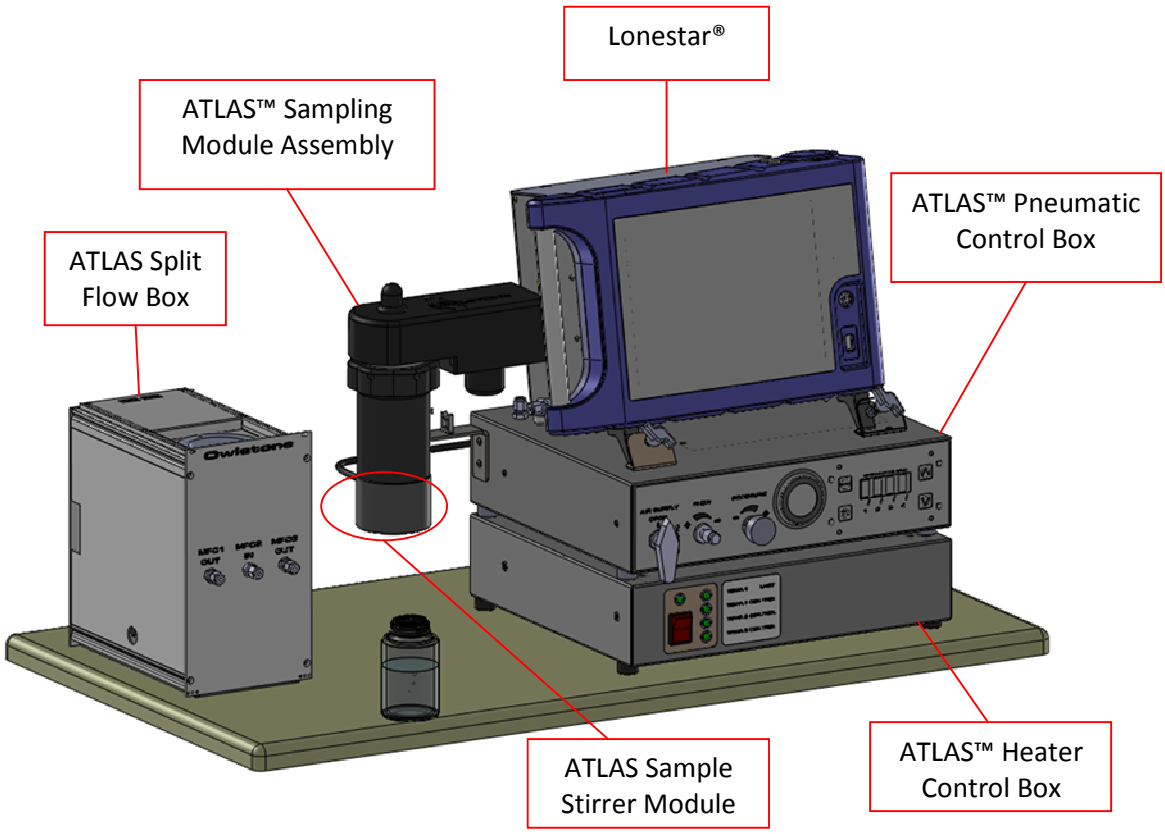


Figure 1 Lonestar® ATLAS™ Split Flow Box installation

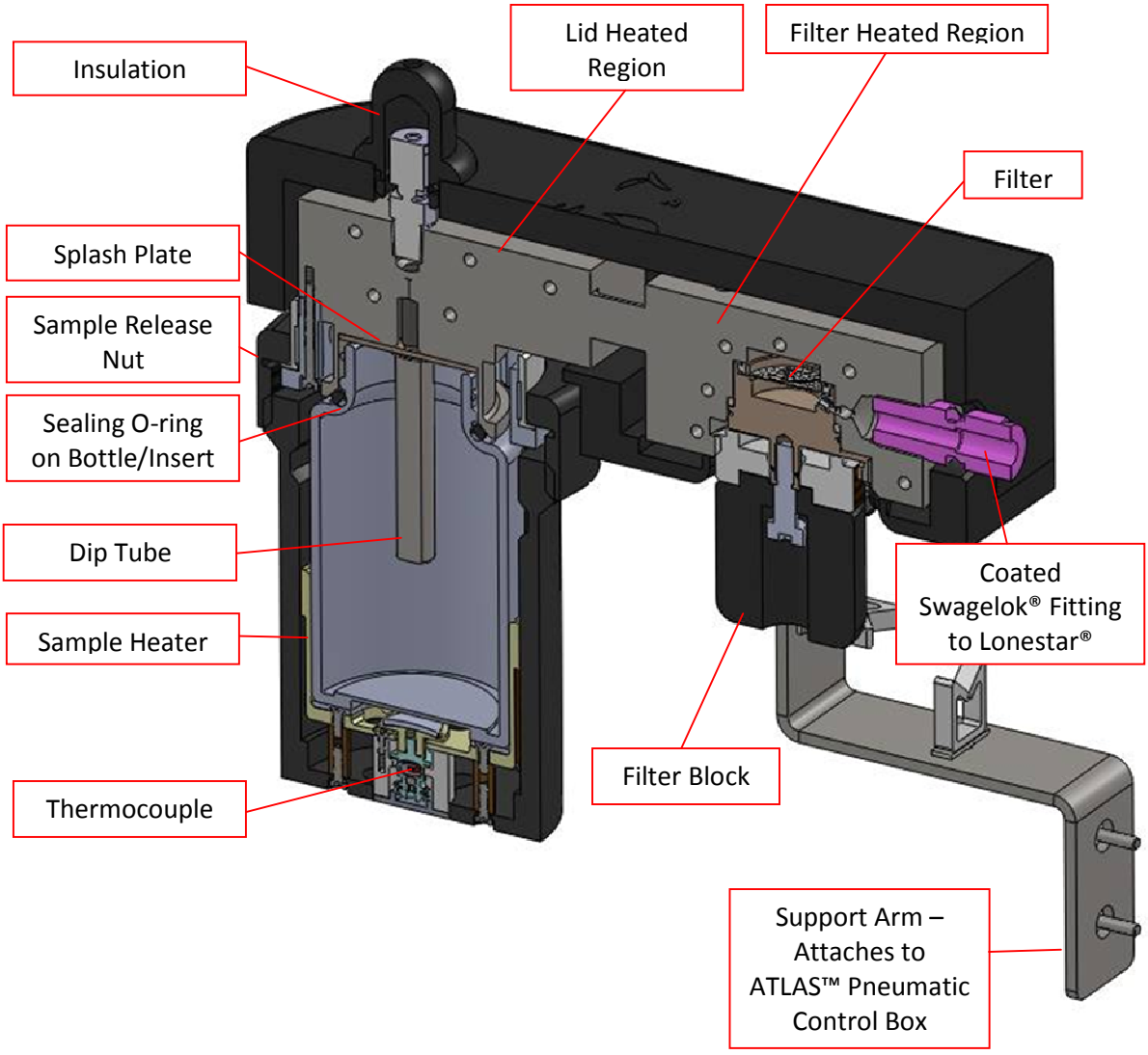
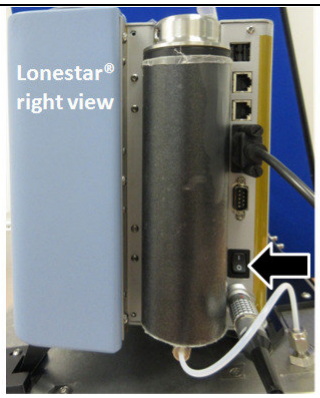
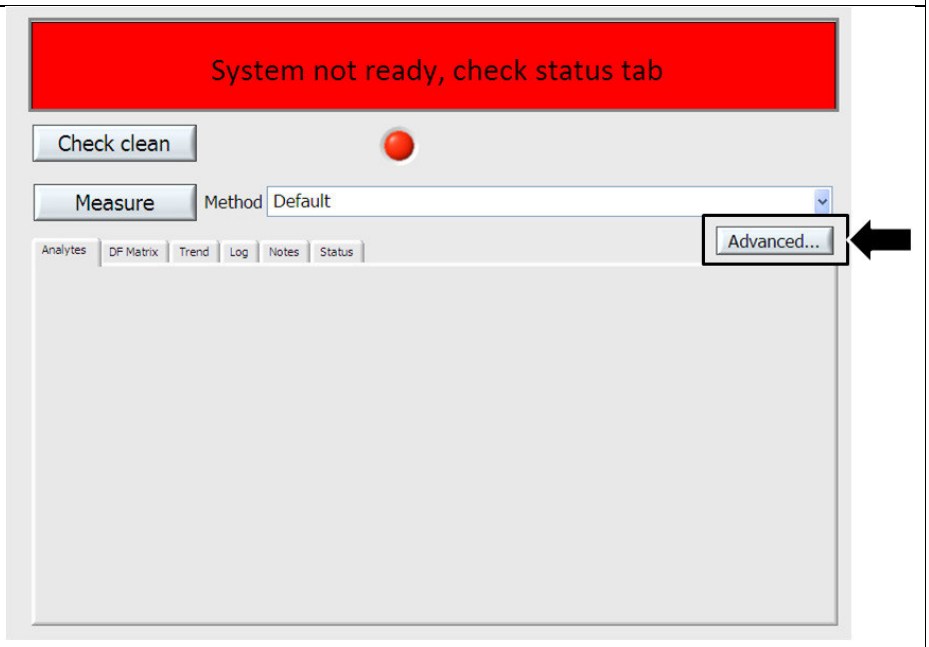


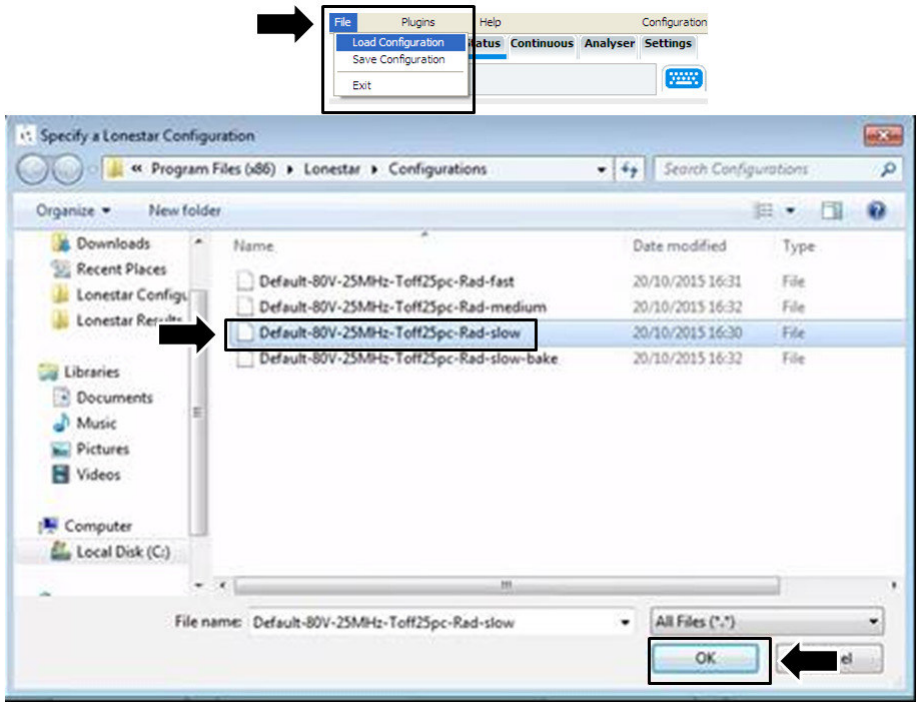
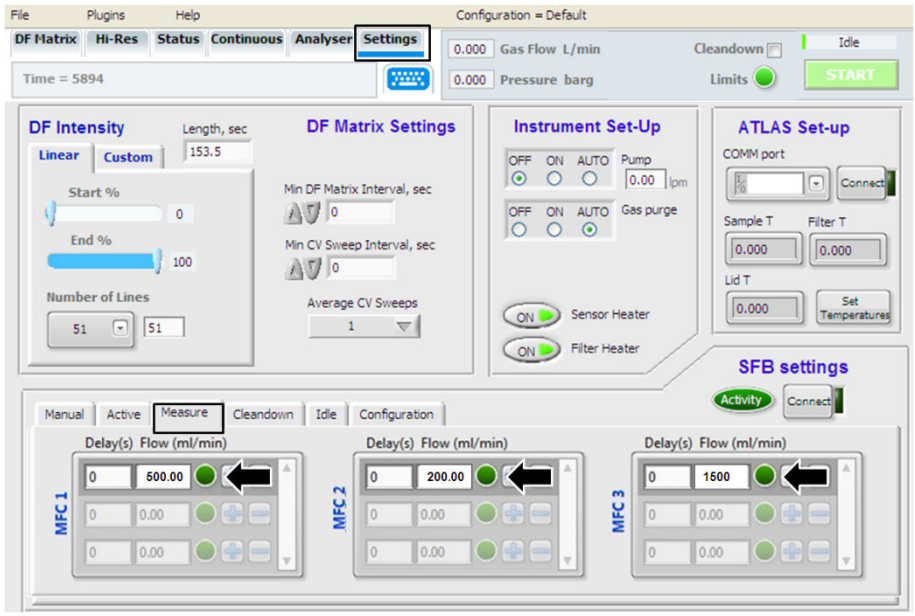
Figure 2 Diagram of components of the ATLAS™ Sampling Module Assembly

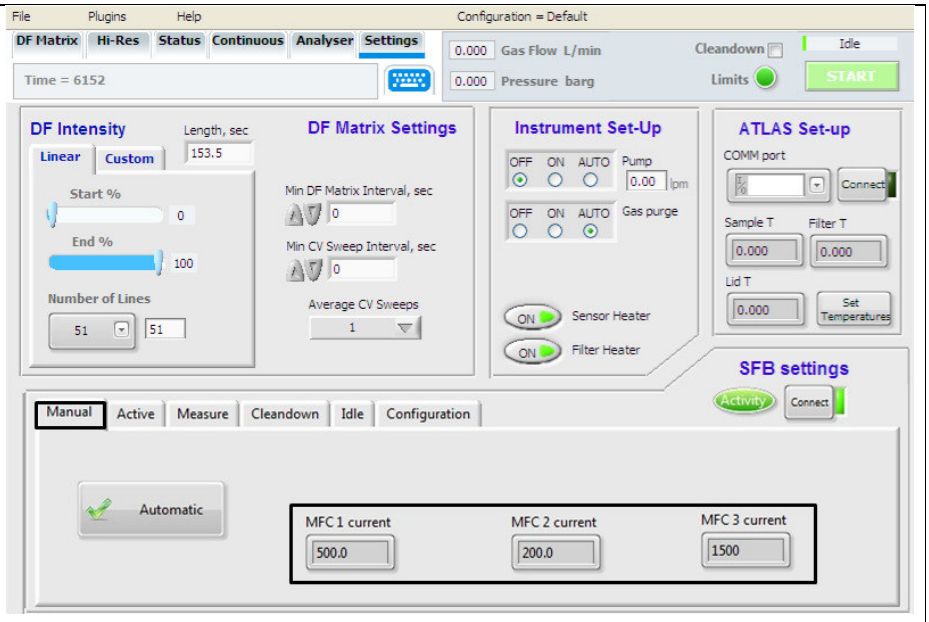
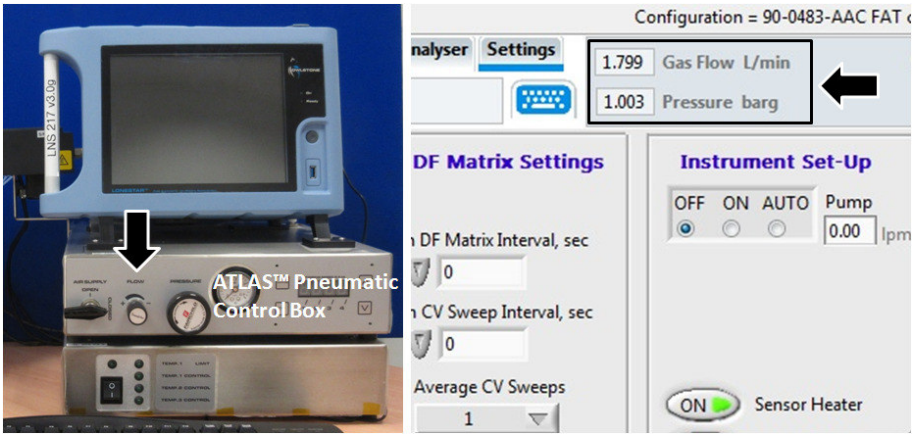
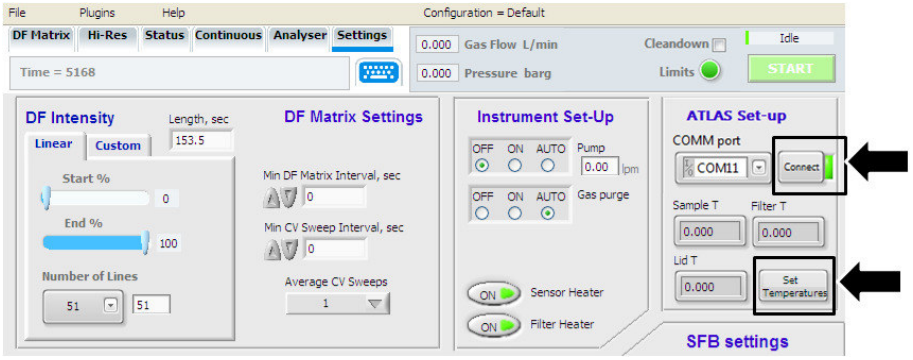
Instructions

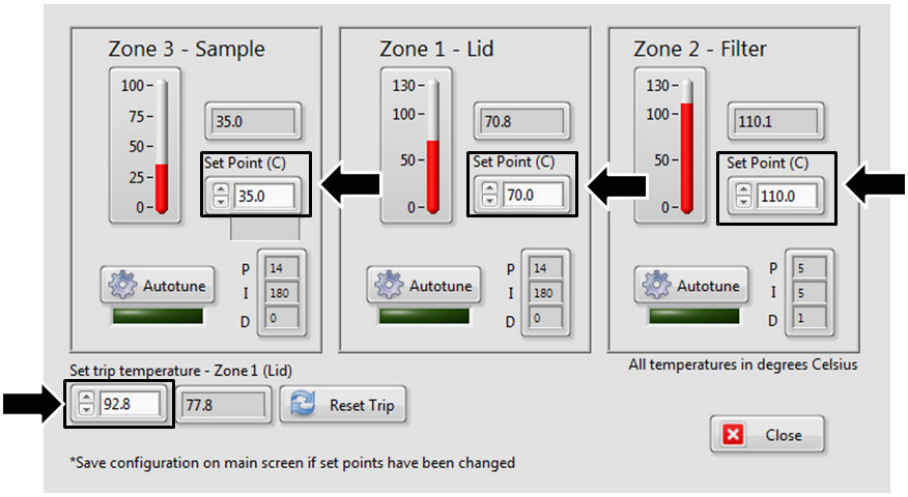
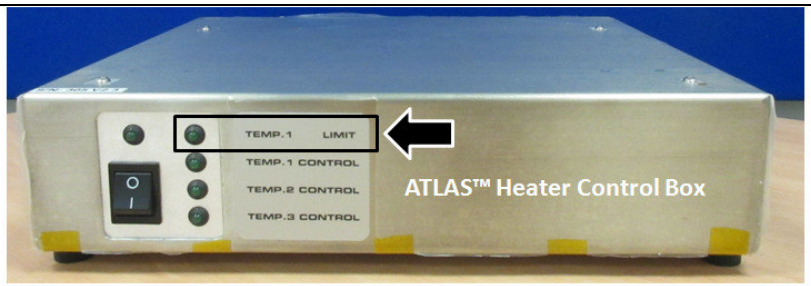
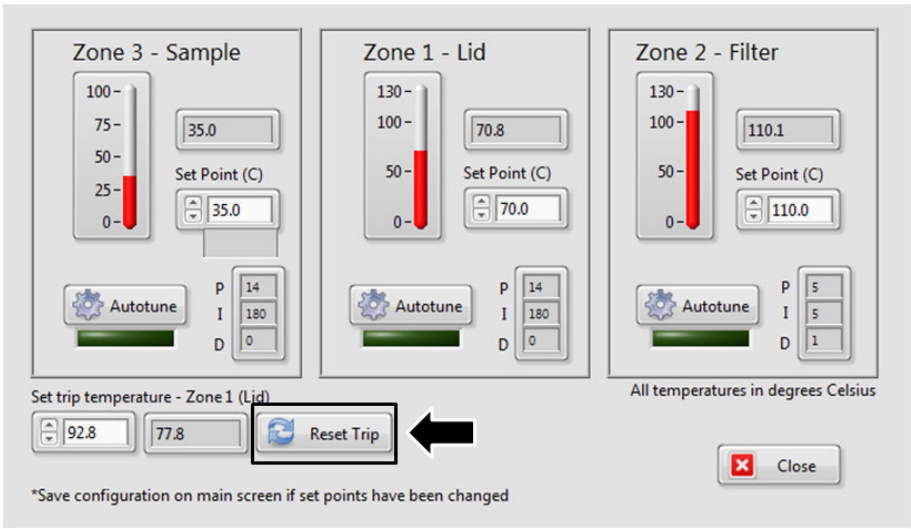
Once the Lonestar® and ATLAS™ Sampling Module system is fully installed, following the document instructions CC-900550-PR, please proceed with the instructions below to qualify the system initial operation.

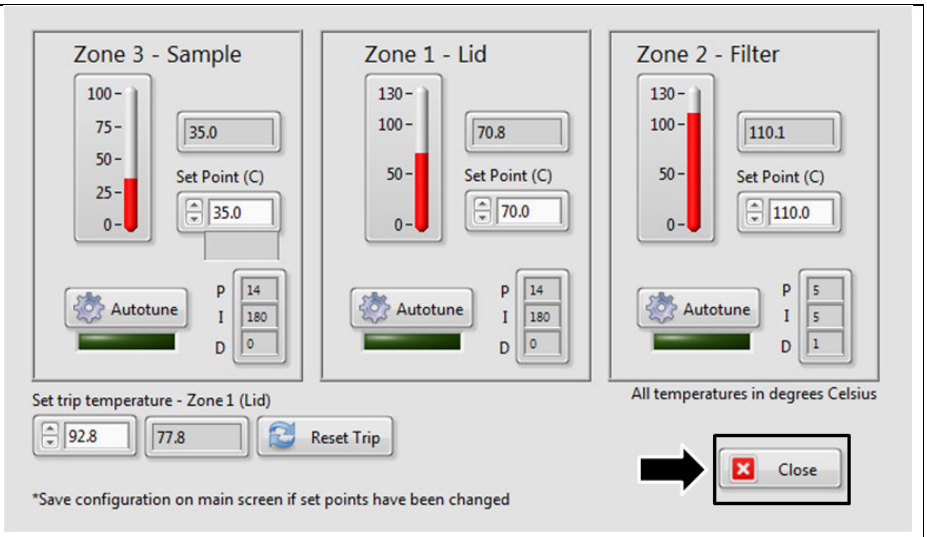
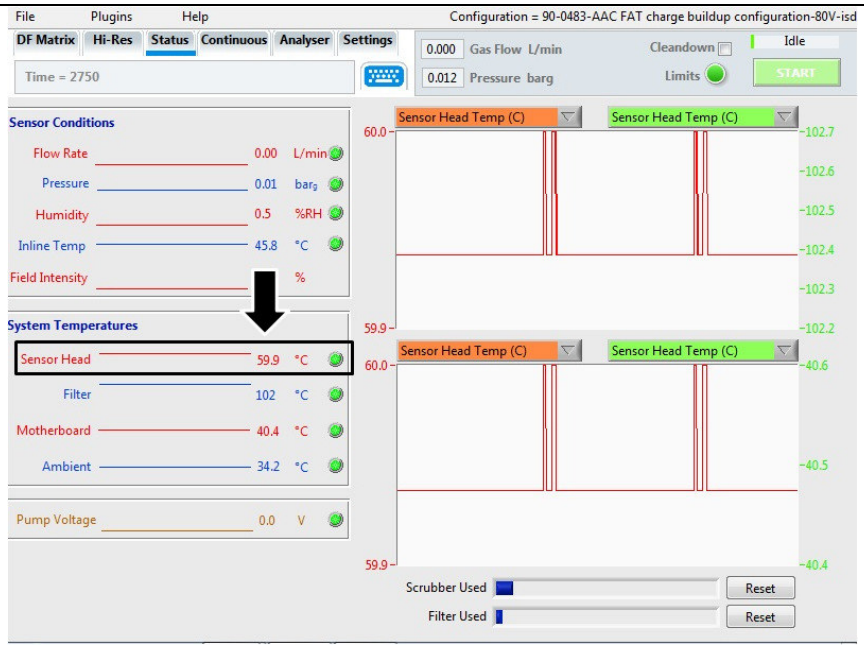
Step #	Instructions	Pictures
1	Turn on the Lonestar® by using both the switch on the right hand side and the power button at the front of the Lonestar®.	 
2	Turn on the ATLAS™ Heater Control Box by using the switch at the front of the box.	
3	Turn on the ATLAS™ Split Flow Box by using the switch at the back of the box.	

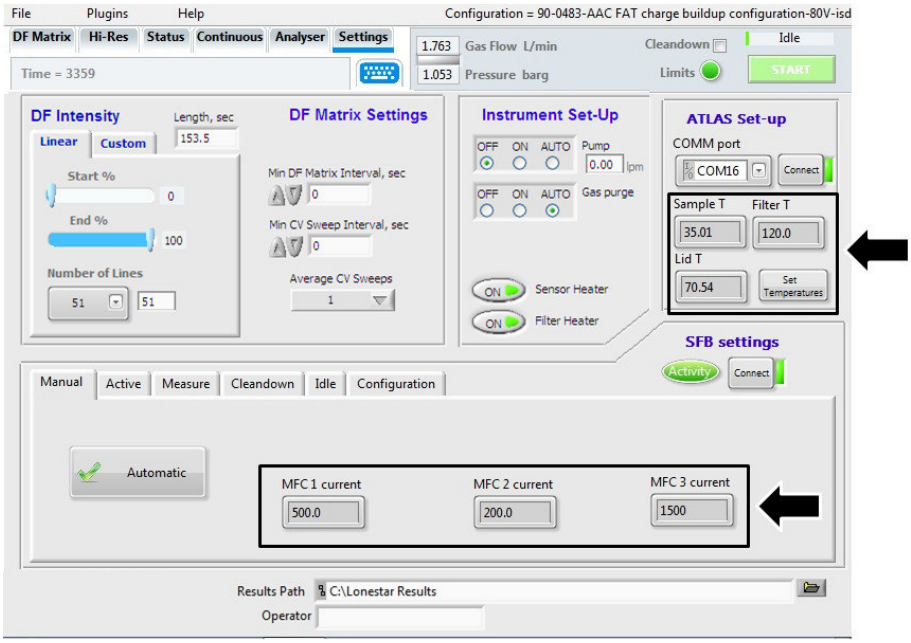
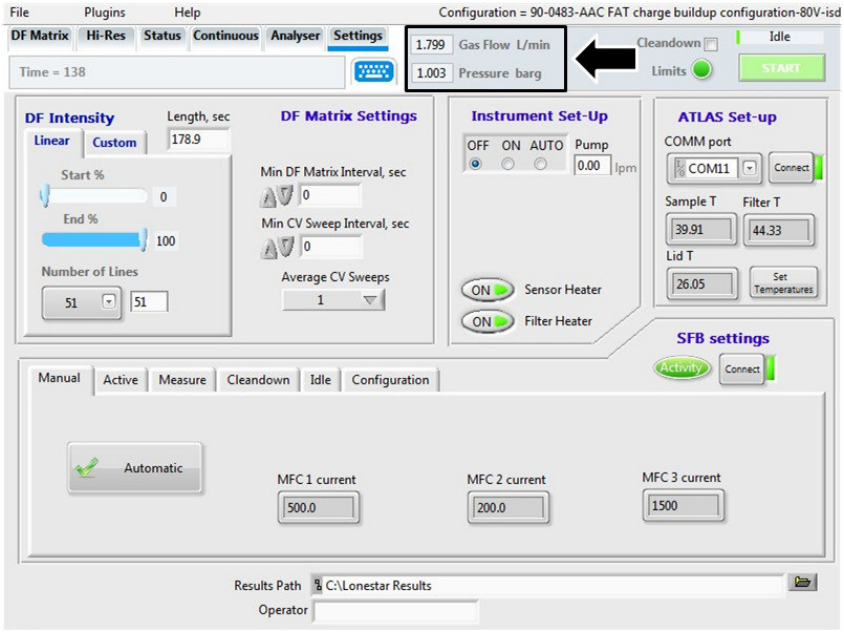
4	Turn on the on-site air regulator up to 0.4 MPa (4 bar_g) to supply the Lonestar® system.	
5	Turn the air supply valve on the ATLAS™ Pneumatic Control Box to the open position. Verify that the ATLAS™ Pneumatic Control Box pressure gauge indicates 0.4 MPa.	
6	The Lonestar® software opens with the Analyser Mode screen. To proceed with the following steps, use the Advanced button to access to the software options.	

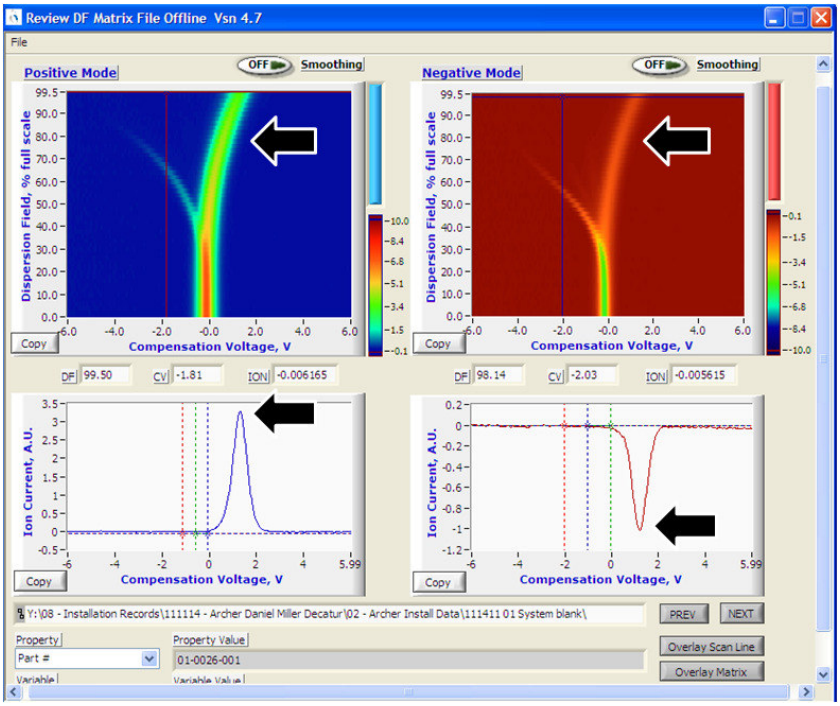
7	Load the Lonestar® software "Default...-slow" configuration saved on the system disk. In the top task bar of the Lonestar® software, select File/Load Configuration. This opens a separate window named Specify a Lonestar® Configuration. Select the "Default... -slow" configuration saved on the Lonestar® disk and press OK.	
8	The Lonestar® "Default...-slow" configuration contains most of the parameters already set at the value for initial operation. The instructions below are to verify that the Lonestar® system operates according to these parameters and adjust them if needed.	
9	In the Lonestar® software set the flows of the mass flow controllers (MFC) in the ATLAS™ Split Flow Box (SFB), by selecting the Settings tab. In the Measure Tab of the SFB Settings, double click on the Flow (mL/min) box and type the system blank flow values using the external keyboard: 500 mL/min - MFC1 200 mL/min – MFC2 1500 mL/min – MFC3	

10	Select the Manual Tab of the SFB Settings to check if the mass flow controllers in the ATLAS™ Split Flow Box deliver the flows that just have been set at.	
11	On the front of the ATLAS™ Pneumatic Control Box, adjust the main system pressure by turning the flow valve until 1.0 bar_g pressure is read on the Lonestar® software. Please allow time between large adjustments for the flows to adjust.	
12	In the Settings tab of the Lonestar® software, set the ATLAS™ Sampling Module Assembly temperatures by using the Set Temperatures button. Please make sure the indicator next to the Connect button is light green first. If not, press Connect.	

13	In the open window, check the ATLAS™ Sampling Module Assembly temperatures with a double click on the Set Point (°C) box. Type the system blank temperatures with the external keyboard: 35°C - Sample 70°C - Lid 120°C - Filter 93°C - Trip (Lid)	
14	On the ATLAS™ Heater Control Box, verify that the LIMIT LED is on. If the green LIMIT LED on the ATLAS™ Heater Box is off, press the Reset Trip button to turn it on.	 

15	When all temperatures are set, close the window by using the Close button.	
16	**Leave the Lonestar® system to warm up for more than two hours.** All Lonestar® system temperatures will stablise at the values that have been set. The next steps are to verify that no power or communication cables have been damaged during transportation or installation.	
17	After two hours, verify that the sensor head temperature has reached the operating temperature of 60°C. To do so, select the Status tab in the Lonestar® software to read the Sensor Head value at 60-62°C.	

18	In the Settings tab, verify that the ATLAS™ Sampling Module Assembly temperatures have reached the temperatures set at: 35°C - Sample 70°C - Lid 120°C - Filter Verify that the ATLAS™ Split Flow Box mass flow controllers deliver the flows set at: 500 mL/min - MFC1 200 mL/min – MFC2 1500 mL/min – MFC3	
19	Make sure the Lonestar® system is air-tight. No significant leak has been observed when gas flow still reads 1.80 ± 0.04 L/min. Leaks should be checked for by following the procedure detailed in the document **CC-90-0577-PR - Leak Testing of a Lonestar 3.0 with ATLAS 2.x**.	

20	Once the set temperatures have been reached, the DF Matrix should show typical contamination levels due to the time the system has been off during storage and transportation. This contamination is characterised by a high ion current (A.U.) of the right hand side sweeping curve in both positive and negative modes.	
21	**Leave the Lonestar® system to clean down overnight.** This is necessary to let the system remove any residual contamination located in the flow path before usage for chemical detection. To complete the operational verification of the Lonestar® system, please refer to the document below to generate a Lonestar® cleanliness check: **CC-900579-PR – Operational and cleanliness verification of a Lonestar 3.0 with ATLAS Sampling Module 2.x.**	

About Owlstone

Owlstone develops and commercializes innovative new technologies to address the critical need for compact, dependable and cost-effective chemical and biological detection solutions for a wide range of markets.

Owlstone was formed through the recognition of the opportunities created by the application of micro- and nano- technology to develop improved sensing solutions.

Owlstone is focused on the innovation of detection technologies to address unmet needs, developing solutions that are flexible enough to target a range of markets with the potential for growth by enabling new application opportunities.

From homeland security to home safety, Owlstone is working with leading manufacturers and integrators across a range of markets to develop products incorporating our microchip chemical sensing solution.

Owlstone is headquartered in the United States and has laboratory facilities in the United Kingdom. Owlstone Ltd was founded in 2003 with a seed investment of two million dollars from Advance Nanotech, Inc., a New York based company specializing in the investment in and commercialization of nanotechnologies.