Vermont Department of Health Laboratory
Procedure Approval History

Procedure Title: **DataMaster DMT Power-Up Procedure**

Document Number: **P-ALCI-116**

Supercedes Doc. No. _____

Revision No.	No. of pages	Date Effective	Document Authored or Prepared By	Program Chief / Supervisor		Director / Administrator	
				Date	Signature	Date	Signature
0	4	12/10/08	Amanda Bolduc	12/12/08	[illegible]	12/22/08	[illegible]
1	4	7/11/11	K. Kimball	7/14/11	[illegible]	7/14/11	[illegible]

1.0 Purpose and Scope

1.1. The purpose of this procedure is to describe the process used by Vermont Department of Health Laboratory staff for the initial power-up of the DataMaster DMT infrared breath alcohol analysis instruments designated for use as evidentiary breath testing devices. The goal is to ensure the hardware and software are in proper working order prior to calibration and certification. Once an instrument is calibrated and certified it may be used for in-house testing or installed at a police agency for field use.

1.2. The scope of this procedure is applicable for new and repaired instruments. Any instrument which is new or has had repairs affecting the analytical portion of the instrument will be powered-up by trained laboratory staff before being Calibrated, Certified and Installed in any location for evidentiary testing.

2.0 Responsibility

2.1. It is the responsibility of staff performing this task to follow the procedure as written, to note any omissions, errors or unclear instructions in the procedure and bring them to the attention of the Organic Chemistry Program Chief.

2.2. This procedure will be reviewed periodically by organic program staff using this procedure. Revisions of the procedure will be made when a need is identified.

3.0 Precautions

3.1. Appropriate caution must be taken to avoid electrical shock when working with or using any electrically charged equipment.

3.2. Once the Power-Up procedure is complete, the instrument must be Calibrated (P-Alc-117) and Certified (P-Alc-118) prior to Installation (P-Alc-119) into any location for evidentiary testing.

4.0 Procedure Steps

4.1. Materials and supplies are located in room 124.

4.1.1. DataMaster DMT Instrument.

4.2. Setup Instrument

4.2.1. Plug the power cord into an outlet and keyboard into a USB port on back of the instrument.

4.2.2. Insert the breath tube and its power plug into their corresponding ports.

4.3. Instrument Internal Check

4.3.1. Open the instrument cover and visually check that the general conditions are clean and there is nothing loose. Correct as needed.

4.3.2. Inspect the tubing for kinks, damage and tightness of connections including the tubing located inside the simulator tower and the main body of the instrument. Check wiring for properly seated connections and cable tie attachments where appropriate. Check that all screws are present and snug; this will require the removal of the side pieces to allow access. Correct as needed.

4.7.2. The instrument should read 1.5L +/- 0.2L. If the instrument is out of range, adjust the distance between the "T" fittings on the breath exhaust tubing.

4.7.3. Retest as needed until the volume reads appropriately.

4.8. Once all the TECH settings are correct, re-save every setting. Exit the TECH screen.

4.9. Close the instrument.

4.9.1. Put Torx T10 security screws on the top four holes.

4.9.2. Attach the stylus to the DMT, using a security screw in the center right screw hole nearest the simulator tower.

4.9.3. Attach the keyboard to the top of the instrument using sticky back Velcro.

4.9.4. Wrap a small piece of Velcro around the top of the stylus and affix the other side to the front of the instrument so the stylus can rest on the front of the unit.

5.0 Emergency or High Priority Situations

5.1. The Laboratory Director or Organic Chemistry Program Chief may designate any DataMaster DMT Power-Up to be a high priority and request Power-Up as soon as possible.

6.0 Quality Criteria and Corrective Action

6.1. If any of the hardware components do not meet the acceptable conditions as outlined in this procedure, corrective action must be taken. The action taken will vary depending on the specific problem.

6.2. The standard approach to correct a problem is to consult the in-house service manual or ask for technical support from another Organic Chemistry staff member. Correct the problem and document the event on a Technical Support Inquiry worksheet (Alc 626). File this form in the instrument's folder in rm. 114 for that instrument and also file an electronic copy in the instrument DMT folder in the VDH allshare\lab\alcohol folder.

6.3. If an instrument is new from the manufacturer and it fails Power-Up, the unit should be returned to NPAS for repair. This procedure will be repeated when the problem is resolved.

6.4. This power-up procedure will be documented in the re-deployment excel sheet and placed in the instrument paper folder and the electronic re-deployment excel sheet in the folder in the VDH allshare/lab/alcohol.

7.0 Backup Procedures

7.1. If a problem is encountered that cannot be resolved by Organic Chemistry staff, the instrument manufacturer, National Patent Analytical Systems, Inc. will be contacted for technical support.

7.2. If an agency's instrument cannot be Powered-Up in a timely manner, a replacement instrument will be given to that site.

Vermont Department of Health Laboratory
Procedure and Document Review Coversheet

Document Title: DataMaster DMT Power-Up Procedure	
Document #: P-ALC-116	Revision #: 1
File Name: DataMaster DMT Power-Up Procedure	
Author or Editor: Kirk Kimball	Owner: Organic Chemistry Program Chief
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Name and Title of Reviewers	Signature	Comments? Y/N *	Date of Signature	Control Copy #
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		☐		
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* (√) in checkbox indicates reviewer comments have been discussed and incorporated if applicable.

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1.1. The purpose of this procedure is to describe the process used by Vermont Department of Health Laboratory staff for the initial power-up of the DataMaster DMT infrared breath alcohol analysis instruments designated for use as evidentiary breath testing devices. The goal is to ensure the hardware and software are in proper working order prior to calibration and certification. Once an instrument is calibrated and certified it may be used for in-house testing or installed at a police agency for field use.

1.2. The scope of this procedure is applicable for new and repaired instruments. Any instrument which is new or has had repairs affecting the analytical portion of the instrument will be powered-up by trained laboratory staff before being Calibrated, Certified and Installed in any location for evidentiary testing.

2.0 Responsibility

2.1. It is the responsibility of staff performing this task to follow the procedure as written, to note any omissions, errors or unclear instructions in the procedure and bring them to the attention of the Organic Chemistry Program Chief.

2.2. This procedure will be reviewed periodically by organic program staff using this procedure. Revisions of the procedure will be made when a need is identified.

3.0 Precautions

3.1. Appropriate caution must be taken to avoid electrical shock when working with or using any electrically charged equipment.

3.2. Once the Power-Up procedure is complete, the instrument must be Calibrated (P-Alc-117) and Certified (P-Alc-118) prior to Installation (P-Alc-119) into any location for evidentiary testing.

4.0 Procedure Steps

4.1. Materials and supplies are located in room 124.

4.1.1. DataMaster DMT Instrument.

4.2. Setup Instrument

4.2.1. Plug the power cord into an outlet and keyboard into a USB port on back of the instrument.

4.2.2. Insert the breath tube and its power plug into their corresponding ports.

4.3. Instrument Internal Check

4.3.1. Open the instrument cover and visually check that the general conditions are clean and there is nothing loose. Correct as needed.

4.3.2. Inspect the tubing for kinks, damage and tightness of connections including the tubing located inside the simulator tower and the main body of the instrument. Check wiring for properly seated connections and cable tie attachments where appropriate. Check that all screws are present and snug; this will require the removal of the side pieces to allow access. Correct as needed.

4.3.3. Ensure that tubing connections are zip-tied or tie-wrapped as necessary.
4.3.4. Ensure that the one-way valve on the exhaust port is vertical and tie-wrap in place.
4.3.5. Inspect the filter wheel movement. Using one finger, gently turn the filter wheel. Ensure that the stepper motor is moving in concert with the filter wheel and the quartz wheel is not interfering with the filter wheel movement.
4.3.6. If anything looks questionable, seek technical support.
4.3.7. Turn the instrument on.

4.4. Instrument Software Setup

4.4.1. The instrument should come from the manufacturer with the most current version of field ready software installed. To check the version of software, a technician can perform a Diagnostic check or can look in the Setup menu under Settings.
4.4.2. Access the TECH screen. Scroll through all of the filters to ensure the filter wheel is activating properly.

4.5. Detector Setup per National Patent Analytical Systems, Inc. (NPAS).

4.5.1. Manually manipulate the detector position to get the detector voltage as low as possible.
4.5.2. Determine the type of detector in the instrument and adjust the bias voltage per current NPAS instructions.
4.5.3. Adjust the cooler and lamp voltage settings so that the detector voltage displayed is approximately 0.000V +/-0.100V. Note the initial noise of the detector voltage once unit has had a minute to adjust to the adjusted voltages. The manufacture's specification for noise tolerance is +/-0.003 V on a detector over a 10 sec. interval.
4.5.4. Save the voltage settings.
4.5.5. Allow the instrument to stabilize for at least 1.5 hours.
4.5.6. After the stabilization is complete, return to the technician screen and recheck the noise level of the detector.
4.5.7. If necessary, readjust the detector voltage to read 0.000V with a tolerance of +/- 0.100V.

4.6. Set RFI Sensitivity.

4.6.1. While still in the TECH screen, press SET in the RF Sensitivity box to automatically set the RF sensitivity level.
4.6.2. Confirm the setting by keying a handheld radio near the instrument the instrument should beep when RF is detected. Adjust sensitivity as needed using the + or – sensitivity buttons.
4.6.3. Press SAVE to save the settings.

4.7. Set Volume.

4.7.1. Using the large syringe, push 1.5L of air into the breath tube. Monitor the volume of air displayed on the TECH screen.
4.7.2. The instrument should read 1.5L +/- 0.2L. If the instrument is out of range, adjust the distance between the "T" fittings on the breath exhaust tubing.

4.7.3. Retest as needed until the volume reads appropriately.

4.8. Once all the TECH settings are correct, re-save every setting. Exit the TECH screen.

4.9. Close the instrument.

4.9.1. Put Torx T10 security screws on the top four holes.

4.9.2. Attach the stylus to the DMT, using a security screw in the center right screw hole nearest the simulator tower.

4.9.3. Attach the keyboard to the top of the instrument using sticky back Velcro.

4.9.4. Wrap a small piece of Velcro around the top of the stylus and affix the other side to the front of the instrument so the stylus can rest on the front of the unit.

5.0 Emergency or High Priority Situations

5.1. The Laboratory Director or Organic Chemistry Program Chief may designate any DataMaster DMT Power-Up to be a high priority and request Power-Up as soon as possible.

6.0 Quality Criteria and Corrective Action

6.1. If any of the hardware components do not meet the acceptable conditions as outlined in this procedure, corrective action must be taken. The action taken will vary depending on the specific problem.

6.2. The standard approach to correct a problem is to consult the in-house service manual or ask for technical support from another Organic Chemistry staff member. Correct the problem and document the event on a Technical Support Inquiry worksheet (Alc 626). File this form in the instrument's folder in rm. 114 for that instrument and also file an electronic copy in the instrument DMT folder in the VDH allshare\lab\alcohol folder.

6.3. If an instrument is new from the manufacturer and it fails Power-Up, the unit should be returned to NPAS for repair. This procedure will be repeated when the problem is resolved.

6.4. This power-up procedure will be documented in the pre-deployment excel sheet and placed in the instrument paper folder and the electronic pre-deployment excel sheet in the folder in the VDH allshare/lab/alcohol.

7.0 Backup Procedures

7.1. If a problem is encountered that cannot be resolved by Organic Chemistry staff, the instrument manufacturer, National Patent Analytical Systems, Inc. will be contacted for technical support.

7.2. If an agency's instrument cannot be Powered-Up in a timely manner, a replacement instrument will be given to that site.

8.0 References

8.1. VDHL Safety Manual (D-AD-016).
8.2. DataMaster DMT Field Service Manual.
8.3. DataMaster DMT Calibration Procedure (P-Alc-117).
8.4. DataMaster DMT Certification Procedure (P-Alc-118).
8.5. DataMaster DMT Installation Procedure (P-Alc-119).
8.6. Technical Service Inquiry (Alc 626).
8.7. ~~Pre~~-Deployment ~~Excel~~ Worksheet (Alc. ~~Xxx~~) 642
DataMaster DMT Re-Deployment
2011

1.0 Purpose and Scope

1.1. The purpose of this procedure is to describe the process used by Vermont Department of Health Laboratory staff for the initial power-up of the DataMaster DMT infrared breath alcohol analysis instruments designated for use as evidentiary breath testing devices. The goal is to ensure the hardware and software are in proper working order prior to calibration and certification. Once an instrument is calibrated and certified it may be used for in-house testing or installed at a police agency for field use.

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2.2. This procedure will be reviewed periodically by organic program staff using this procedure. Revisions of the procedure will be made when a need is identified.

3.0 Precautions

3.1. Appropriate caution must be taken to avoid electrical shock when working with or using any electrically charged equipment.

3.2. Once the Power-Up procedure is complete, the instrument must be Calibrated (P-Alc-117) and Certified (P-Alc-118) prior to Installation (P-Alc-119) into any location for evidentiary testing.

4.0 Procedure Steps

4.1. Materials and supplies are located in room 124.

4.1.1. DataMaster DMT Instrument.

4.1.2. Wet Bath Simulators.

4.1.3. NIST ~~Certified~~ Traceable Thermometer. – this does not appear to be used in this procedure

4.2. Setup Instrument

4.2.1. Plug the power cord into an outlet and keyboard into a USB port on back of the instrument.

4.2.2. Insert the breath tube and its power plug into their corresponding ports.

4.3. Instrument Internal Check

4.3.1. Open the instrument cover and visually check that the general conditions are clean and there is nothing loose. what do you do if the conditions are not clean or if loose? continue on with 4.3.2? – not clear

4.3.2. Inspect the tubing for kinks, damage and tightness of connections including the tubing located inside the simulator tower and the main body of the instrument. Check wiring for properly seated connections and cable tie attachments where

appropriate. Check that all screws are present and snug; this will require the removal of the side pieces to allow access. Correct as needed.

4.3.3. Ensure that tubing connections are zip-tied or tie-wrapped as necessary.

4.3.4. Ensure that the one-way valve on the exhaust port is vertical and tie-wrap in place.

4.3.5. Inspect the filter wheel movement. Using one finger, gently turn the filter wheel. Ensure that the stepper motor is moving in concert with the filter wheel and the quartz wheel is not interfering with the filter wheel movement.

4.3.6. If anything looks questionable, seek technical support.

4.3.7. Turn the instrument on.

4.4. Instrument Software Setup

4.4.1. The instrument should come from the manufacturer with the correct version of software installed. To check the version of software, a technician can perform a Diagnostic check or can look in the Setup menu under Settings. is it can or should? should it verify the correct version?

4.4.2. Access the TECH screen. Scroll through all of the filters to ensure the filter wheel is activating properly.

4.5. Detector Setup per National Patent Analytical Systems, Inc. (NPAS).

4.5.1. Manually manipulate the detector position to get the detector voltage as low as possible.

4.5.2. Determine the type of detector in the instrument and adjust the bias voltage per current NPAS instructions. where are current instructions located?

4.5.3. Adjust the cooler and lamp voltage settings so that the detector voltage displayed is approximately 0.000V +/-0.100V. Note the initial noise of the detector voltage once unit has had a minute to adjust to the adjusted voltages. The manufacturer's specification for noise tolerance is +/-0.003 V on a detector over a 10 sec. interval..

4.5.4. Save the voltage settings.

4.5.5. Allow the instrument to stabilize for at least 1.5 hours.

4.5.6. After the stabilization is complete, return to the technician screen and recheck the noise level of the detector.

4.5.7. If necessary, readjust the detector voltage to read 0.000V with a tolerance of +/-0.100V.

4.6. Set RFI Sensitivity.

4.6.1. While still in the TECH screen, press SET in the RF Sensitivity box to automatically set the RF sensitivity level.

4.6.2. Confirm the setting by keying a handheld radio near the instrument the instrument should beep when RF is detected. Adjust sensitivity as needed using the + or – sensitivity buttons.

4.6.3. Press SAVE to save the settings.

4.7. Set Volume.

4.7.1. Using the large syringe, push 1.5L of air into the breath tube. Monitor the volume of air displayed on the TECH screen.

4.7.2. The instrument should read 1.5L +/- 0.2L. If the instrument is out of range, adjust the distance between the "T" fittings on the breath exhaust tubing.

4.7.3. Retest as needed until the volume reads appropriately.

4.8. Once all the TECH settings are correct, re-save every setting. Exit the TECH screen.

4.9. Close the instrument.

4.9.1. Put Torx T10 security screws on the top four holes.

4.9.2. Attach the stylus to the DMT using a security screw in the center right screw hole nearest the simulator tower.

4.9.3. Attach the keyboard to the top of the instrument using sticky back Velcro.

4.9.4. Wrap a small piece of Velcro around the top of the stylus and affix the other side to the front of the instrument so the stylus can rest on the front of the unit.

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6.2. The standard approach to correct a problem is to consult the in-house service manual or ask for technical support from another Organic Chemistry staff member. Correct the problem and document the event on a Technical Support Inquiry worksheet (Alc 626). File this form in the instrument's folder in rm. 114 for that instrument and also file an electronic copy in the instrument DMT folder ~~on~~ the VDH~~X~~ ~~server.~~ ~~Share folder~~ All Share\Lab\Alcohol folder

6.3. If an instrument is new from the manufacturer and it fails Power-Up, the unit should be returned to NPAS for repair. This procedure may be repeated when the problem is resolved at NPAS and received back at the laboratory. should unit?

7.0 Backup Procedures

7.1. If a problem is encountered that cannot be resolved by Organic Chemistry staff, the instrument manufacturer, National Patent Analytical Systems, Inc. will be contacted for technical support.

define → days?

7.2. If an agency's instrument cannot be Powered-Up in a timely manner, a replacement instrument will be given to that site.

8.0 References

8.1. VDHL ~~Chemical Hygiene Plan and Laboratory~~ Safety Manual (D-AD-~~003~~ 016).

8.2. DataMaster DMT Field Service Manual.
8.3. DataMaster DMT Calibration Procedure (P-Alc-117).
8.4. DataMaster DMT Certification Procedure (P-Alc-118).
8.5. DataMaster DMT Installation Procedure (P-Alc-119).
8.6. Technical Service Inquiry (Alc 626).

this procedure needs to include documentation that this procedure was completed. (E)

1.0 Purpose and Scope

1.1. The purpose of this procedure is to describe the process used by Vermont Department of Health Laboratory staff for the initial power-up of the DataMaster DMT infrared breath alcohol analysis instruments designated for use as evidentiary breath testing devices. The goal is to ensure the hardware and software are in proper working order prior to calibration and certification. Once an instrument is calibrated and certified it may be used for in-house testing or installed at a police agency for field use.

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4.0 Procedure Steps

4.1. Materials and supplies are located in room 124.

4.1.1. DataMaster DMT Instrument.
4.1.2. Wet Bath Simulators.
4.1.3. NIST Certified Thermometer.

4.2. Setup Instrument

4.2.1. Plug the power cord into an outlet and keyboard into a USB port on back of the instrument.
4.2.2. Insert the breath tube and its power plug into their corresponding ports.

4.3. Instrument Internal Check

4.3.1. Open the instrument cover and visually check that the general conditions are clean and there is nothing loose.
4.3.2. Inspect the tubing for kinks, damage and tightness of connections including the tubing located inside the simulator tower and the main body of the instrument. Check wiring for properly seated connections and cable tie attachments where

appropriate. Check that all screws are present and snug; this will require the removal of the side pieces to allow access. Correct as needed.

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4.3.7. Turn the instrument on.

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4.4.1. The instrument should come from the manufacture with the correct version of software installed. To check the version of software, a technician can perform a Diagnostic check or can look in the Setup menu under Settings.

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4.5. Detector Setup per National Patent Analytical Systems, Inc. (NPAS).

4.5.1. Manually manipulate the detector position to get the detector voltage as low as possible.

4.5.2. Determine the type of detector in the instrument and adjust the bias voltage per current NPAS instructions.

4.5.3. Adjust the cooler and lamp voltage settings so that the detector voltage displayed is approximately 0.000V +/-0.100V. Note the initial noise of the detector voltage once unit has had a minute to adjust to the adjusted voltages. The manufacture's specification for noise tolerance is +/-0.003 V on a detector over a 30 sec. interval

4.5.4. Save the voltage settings.

4.5.5. Allow the instrument to stabilize for at least 1.5 hours.

4.5.6. After the stabilization is complete, return to the technician screen and recheck the noise level of the detector.

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6.3. If an instrument is new from the manufacture and it fails Power-Up, the unit should be returned to NPAS for repair. This procedure may be repeated when the problem is resolved.

7.0 Backup Procedures

7.1. If a problem is encountered that cannot be resolved by Organic Chemistry staff, the instrument manufacturer, National Patent Analytical Systems, Inc. will be contacted for technical support.

7.2. If an agency's instrument cannot be Powered-Up in a timely manner, a replacement instrument will be given to that site.

8.0 References

8.1. VDHL Chemical Hygiene Plan and Laboratory Safety Manual (D-AD-003).

8.2. DataMaster DMT Field Service Manual.
8.3. DataMaster DMT Calibration Procedure (P-Alc-117).
8.4. DataMaster DMT Certification Procedure (P-Alc-118).
8.5. DataMaster DMT Installation Procedure (P-Alc-119).
8.6. Technical Service Inquiry (Alc 626).

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1.1. The purpose of this procedure is to describe the process used by Vermont Department of Health Laboratory staff for the initial power-up of the DataMaster DMT infrared breath alcohol analysis instruments designated for use as evidentiary breath testing devices. The goal is to ensure the hardware and software are in proper working order prior to calibration and certification. Once an instrument is calibrated and certified, it may be used for in-house testing or installed at a police agency for field use.

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4.0 Procedure Steps

4.1. Materials and supplies are located in room 124.

4.1.1. DataMaster DMT Instrument.

4.1.2. ~~Guth 34CNP Simulator~~. Wet Bath Simulators

4.1.3. NIST ~~Traceable~~ Certified Thermometer.

4.2. Setup Instrument

4.2.1. Plug the power cord and keyboard. into what?

4.2.2. Insert the breath tube and its power plug into their corresponding ports.

4.3. Instrument Internal Check

4.3.1. Open the instrument cover and visually check that the general conditions are clean and there is nothing loose.

4.3.2. Inspect the tubing for kinks, damage and tightness of connections including the tubing located inside the simulator tower and the main body of the instrument. Check wiring for properly seated connections and cable tie attachments where

appropriate. Check that all screws are present and snug; this will require the removal of the side pieces to allow access. Correct as needed.

4.3.3. Ensure that tubing connections are zip-tied or tie-wrapped as necessary.

4.3.4. Ensure that the one-way valve on the exhaust port is vertical and zip-tied in place.

4.3.5. Inspect the filter wheel movement. Using one finger, gently turn the filter wheel. Ensure that the stepper motor is moving in concert with the filter wheel and the quartz wheel is not interfering with the filter wheel movement.

4.3.6. If anything looks questionable, seek technical support.

4.3.7. Turn the instrument on.

how does one know if it is the correct version?

4.4. Instrument Software Setup

4.4.1. The instrument should come from the manufacture with the correct version of ~~the~~ latest version? software installed. To check the version of software, a technician can perform a Diagnostic check or can look in the Setup menu under Settings. ~~To remove, install, upgrade or download an instrument's software, refer to P-Alc-121 DataMaster DMT Software Procedure.~~ Is it the what if it is the wrong version?

4.4.2. Access the SETUP menu.

4.4.3. On the MISC tab, type "State of Vermont" in the NAME field.

4.4.4. In the EXPLORE box, highlight STYLUS and press the OK button to activate the stylus settings. Recalibrate the stylus by following the instructions on the screen.

4.4.5. Once complete, exit the SETUP menu by pressing the OK button to save the settings. If you exit the SETUP menu using the CANCEL button, none of the changes will be saved.

4.4.6. Access the TECH screen. Scroll through all of the filter locations to ensure the filter wheel is activating properly.

All wrong

4.5. Detector Setup per National Patent Analytical Systems, Inc. (NPAS).

4.5.1. Manually manipulate the detector position to get the detector voltage as low as possible.

4.5.2. Determine the type of detector in the instrument and adjust the bias voltage per current NPAS instructions.

4.5.3. Adjust the ~~cooler and~~ lamp voltage settings so that the detector voltage displayed is approximately 0.000V +/-0.100V. Note the initial noise of the detector voltage once unit has had a minute to adjust to the adjusted voltages. The manufacture's specification for noise tolerance is +/-0.003 V on a detector.

4.5.4. Save the voltage settings.

4.5.5. Allow the instrument to stabilize for at least 1.5 hours.

4.5.6. After the stabilization is complete, return to the technician screen and recheck the noise level of the detector. Ensure 0.000V, readjust as necessary

~~4.5.7. Readjust the detector voltage to read 0.000V with a tolerance of +/- 0.100V.~~

Ensure detector has been properly burned in prior to use!

4.6. Set RFI Sensitivity.

4.6.1. While still in the TECH screen, press SET in the RF Sensitivity box to automatically set the RF sensitivity level.

4.6.2. Confirm the setting by keying a handheld radio ~~within two feet of~~ near the instrument. Adjust sensitivity as needed using the + or – sensitivity buttons.

4.6.3. Press SAVE to save the settings.

The DMT should beep to signal RF detected.

4.7. Set Volume.

4.7.1. Using the large syringe, push 1.5L of air into the breath tube. Monitor the volume of air displayed on the TECH screen.

4.7.2. The instrument should read 1.5L +/- 0.2L. If the instrument is out of range, adjust the distance between the "T" fittings on the breath exhaust tubing.

4.7.3. Retest as needed until the volume reads appropriately.

4.8. Once all the TECH settings are correct, re-save every setting. Exit the TECH screen.

4.9. Close the instrument.

4.9.1. Put Torx T10 security screws on the top four holes.

4.9.2. Attach the stylus to the DMT using a security screw in the center right screw hole nearest the simulator tower.

4.9.3. Attach the keyboard to the top of the instrument using sticky back Velcro.

4.9.4. Wrap a small piece of Velcro around the top of the stylus and affix the other side to the front of the instrument, so the stylus can rest on the front of the unit.

4.10. Assigning a Simulator.

4.10.1. If the instrument is continuing on to Calibration, Certification and Installation, a simulator must be assigned to the DMT.

4.10.2. Retrieve a Guth 34CNP simulator.

4.10.3. Fill the simulator jar with water and allow it to come to temperature.

4.10.4. Check the temperature of the simulator using a NIST traceable thermometer. Adjust simulator temperature as needed.

4.10.5. Attach the temperature cable of the DMT to the BNC connector on the simulator.

4.10.6. Adjust the two-wire temperature emitter on the simulator until the DMT displays the same temperature as the NIST thermometer.

4.10.7. Label this simulator as "Assigned to DMT serial #".

done after cert.

5.0 Emergency or High Priority Situations

5.1. The Laboratory Director or Organic Chemistry Program Chief may designate any DataMaster DMT Power-Up to be a high priority and request Power-Up as soon as possible.

6.0 Quality Criteria and Corrective Action

6.1. If any of the hardware components do not meet the acceptable conditions as outlined in this procedure, corrective action must be taken. The action taken will vary depending on the specific problem.

6.2. The standard approach to correct a problem is to consult the in-house service manual or ask for technical support from another Organic Chemistry staff member. ~~Try to correct the problem and document the event in the maintenance notebook for that instrument.~~ all work on a TST

6.3. ~~If the problem is not correctable without some major repair or technical evaluation, a~~ DataMaster Technical Support Inquiry worksheet (Alc 626) must be completed and placed in the instrument's file.* If an instrument is ~~brand~~ new from the manufacture and it fails Power-Up, the unit should be returned to NPAS for repair. This procedure may be repeated when the problem is resolved.

* For all work done beyond what is listed in this procedure

7.0 Backup Procedures

7.1. If a problem is encountered that cannot be resolved by Organic Chemistry staff, the instrument manufacturer, National Patent Analytical Systems, Inc. will be contacted for technical support.

7.2. If an agency's instrument cannot be Powered-Up in a timely manner, a replacement instrument will be given to that site.

8.0 References

8.1. VDHL Chemical Hygiene Plan and Laboratory Safety Manual (D-AD-003).
8.2. DataMaster DMT Field Service Manual.
8.3. DataMaster DMT Calibration Procedure (P-Alc-117).
8.4. DataMaster DMT Certification Procedure (P-Alc-118).
8.5. DataMaster DMT Installation Procedure (P-Alc-119).
8.6. Technical Service Inquiry (Alc 626).

1.0 Purpose and Scope

1.1. The purpose of this procedure is to describe the process used by Vermont Department of Health Laboratory staff for the initial power-up of the DataMaster DMT infrared breath alcohol analysis instruments designated for use as evidentiary breath testing devices. The goal is to ensure the hardware and software are in proper working order prior to calibration and certification. Once an instrument is calibrated and certified it may be used for in-house testing or installed at a police agency for field use.

1.2. The scope of this procedure is applicable for new and repaired instruments. Any instrument which is new or has had repairs affecting the analytical portion of the instrument will be powered-up by trained laboratory staff before being Calibrated, Certified and Installed in any location for evidentiary testing.

2.0 Responsibility

2.1. It is the responsibility of staff performing this task to follow the procedure as written, to note any omissions, errors or unclear instructions in the procedure and bring them to the attention of the Organic Chemistry Program Chief.

2.2. This procedure will be reviewed periodically by toxicology staff using this procedure. Revisions of the procedure will be made when a need is identified.

3.0 Precautions

3.1. Appropriate caution must be taken to avoid electrical shock when working with or using any electrically charged equipment.

3.2. Once the Power-Up procedure is complete, the instrument must be Calibrated (P-Alc-117) and Certified (P-Alc-118) prior to Installation (P-Alc-119) into any location for evidentiary testing.

4.0 Procedure Steps

4.1. Materials and supplies are located in room 124.

4.1.1. DataMaster DMT Instrument.
4.1.2. Guth 34CNP Simulator.
4.1.3. NIST Traceable Thermometer.

4.2. Setup Instrument

4.2.1. Plug the power cord, and keyboard ~~and the USB connection to the printer~~ into the instrument.
4.2.2. Insert the breath tube and its power plug into their corresponding ports.

4.3. Instrument Internal Check

4.3.1. Open the instrument cover and visually check that the general conditions are clean and there is nothing loose.
4.3.2. Inspect the tubing for kinks, damage and tightness of connections including the tubing located inside the simulator tower and the main body of the instrument. Check wiring for properly seated connections and cable tie attachments where

appropriate. Check that all screws are present and snug; this will require the removal of the side pieces to allow access. Correct as needed.

4.3.3. Ensure that tubing connections ~~are zip-tied or~~ tie-wrapped as necessary. tie-wrapped

4.3.4. Ensure that the one-way valve on the exhaust port is vertical and ~~zip-tied~~ in place.

4.3.5. Inspect the filter wheel movement. Using one finger, gently turn the filter wheel. Ensure that the stepper motor is moving in concert with the filter wheel and the quartz wheel is not interfering with the filter wheel movement.

4.3.6. If anything looks questionable, seek technical support.

4.3.7. Turn the instrument on.

4.4. Instrument Software Setup

4.4.1. The instrument should come from the manufacture with the correct version of software installed. To check the version of software, a technician can perform a Diagnostic check or can look in the Setup menu under Settings. To remove, install, upgrade or download an instrument's software, refer to P-Alc-121 DataMaster DMT Software Procedure.

Not need in Repair

4.4.2. Access the SETUP menu.

4.4.3. On the MISC tab, type "State of Vermont" in the NAME field.

4.4.4. In the EXPLORE box, highlight STYLUS and press the OK button to activate the stylus settings. Recalibrate the stylus by following the instructions on the screen.

4.4.5. Once complete, exit the SETUP menu by pressing the OK button to save the settings. If you exit the SETUP menu using the CANCEL button, none of the changes will be saved.

4.4.6. Access the TECH screen. Scroll through all of the filter locations to ensure the filter wheel is activating properly.

4.5. Detector ~~Burn-in per National Patent Analytical Systems, Inc. (NPAS).~~ Set up

4.5.~~1~~.2 Determine the type of detector in the instrument and adjust the cooler and bias voltages per Figure 1.

Set Cooler + Lamp Voltage Per NPAS Instruction & Current To Attaine 4.5.3 Results

Detector Type	Cooler Voltage	Bias Voltage
Hamamatsu	1.7V ± 0.1	80V ± 5
Judson	Per tag on detector ± 0.1	120V ± 5
Other	Call NPAS	Call NPAS

4.5.~~2~~.1 Manually manipulate the detector position to get the detector voltage as low as possible.

4.5.3. Adjust the lamp voltage setting so that the detector voltage displayed is approximately 0.000V +/-0.100V. Note the initial noise of the detector voltage once unit has had a minute to adjust to the adjusted voltages. The manufacture's specification for noise tolerance is +/-0.003 V on a detector.

4.5.4. Save the voltage settings.

~~4.5.5. Allow the instrument to remain powered for four (4) days. Having the instrument in the technician screen during the entire four days is not necessary.~~

Not Messesary

4.5.5 Allow Voltage To Stabalize for at least 1 hr

~~4.5.6. After the burn-in period is complete, return to the technician screen and recheck the noise level of the detector.~~

~~4.5.7. Adjust the detector voltage to read 0.000V with a tolerance of +/- 0.100V.~~

4.6. Set RFI Sensitivity.

4.6.1. While ~~still~~ in the TECH screen, press SET in the RF Sensitivity box to automatically set the RF sensitivity level.

4.6.2. Confirm the setting by keying a handheld radio within two feet of the instrument. Adjust sensitivity as needed using the + or – sensitivity buttons.

4.6.3. Press SAVE to save the settings.

4.7. Set Volume.

4.7.1. Using the large syringe, push 1.5L of air into the breath tube. Monitor the volume of air displayed on the TECH screen.

4.7.2. The instrument should read 1.5L +/- 0.2L. If the instrument is out of range, adjust the distance between the "T" fittings on the breath exhaust tubing.

4.7.3. Retest as needed until the volume reads appropriately.

Does not need To be Bold

4.8. Once all the TECH settings are correct, re-save every setting. Exit the TECH screen.

4.9. Ensure that the dip switches on the embedded pc are correctly toggled.

NOT USED

4.9.1. Counting from the back of the instrument to front, dip switches one, two and three must be up and four must be down. Dip switch five controls the screen, if the image on the screen appears to 'wobble', change dip switch 5 to the opposite position to correct the problem.

4.9.2. Ensure that when a switch is toggled that it latches into place. A click sound should be heard.

4.10. Close the instrument.

4.10.1. Put Torx T10 security screws on the top four holes.

4.10.2. Attach the stylus to the DMT using a security screw in the center right screw hole nearest the simulator tower.

4.10.3. Attach the keyboard to the top of the instrument using sticky back Velcro.

4.10.4. Wrap a small piece of Velcro around the top of the stylus and affix the other side to the front of the instrument so the stylus can rest on the front of the unit.

4.11. Assigning a Simulator.

See Sim Assignment Apendix

4.11.1. If the instrument is continuing on to Calibration, Certification and Installation, a simulator must be assigned to the DMT.

4.11.2. Retrieve a Guth 34CNP simulator.

4.11.3. Fill the simulator jar with water and allow it to come to temperature.

4.11.4. Check the temperature of the simulator using a NIST traceable thermometer. Adjust simulator temperature as needed.

4.11.5. Attach the temperature cable of the DMT to the BNC connector on the simulator.

4.11.6. Adjust the two-wire temperature emitter on the simulator until the DMT displays the same temperature as the NIST thermometer.
4.11.7. Label this simulator as "Assigned to DMT serial #".

5.0 Emergency or High Priority Situations

5.1. The Laboratory Director or Organic Chemistry Program Chief may designate any DataMaster DMT Power-Up to be a high priority and request Power-Up as soon as possible.

6.0 Quality Criteria and Corrective Action

6.1. If any of the hardware components do not meet the acceptable conditions as outlined in this procedure, corrective action must be taken. The action taken will vary depending on the specific problem.

6.2. The standard approach to correct a problem is to consult the in-house service manual or ask for technical support from another Organic Chemistry staff member. Try to correct the problem and document the event in the maintenance notebook for that instrument.

6.3. If the problem is not correctable without some major repair or technical evaluation, a DataMaster Technical Support Inquiry worksheet (Alc 626) must be completed and placed in the instrument's file. If an instrument is brand new from the manufacture and it fails Power-Up, the unit should be returned to NPAS for repair. This procedure may be repeated when the problem is resolved.

7.0 Backup Procedures

7.1. If a problem is encountered that cannot be resolved by Organic Chemistry staff, the instrument manufacturer, National Patent Analytical Systems, Inc. will be contacted for technical support.

7.2. If an agency's instrument cannot be Powered-Up in a timely manner, a replacement instrument will be given to that site.

8.0 References

8.1. VDHL Chemical Hygiene Plan and Laboratory Safety Manual (D-AD-003).
8.2. DataMaster DMT Field Service Manual.
8.3. DataMaster DMT Calibration Procedure (P-Alc-117).
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8.5. DataMaster DMT Installation Procedure (P-Alc-119).
8.6. Technical Service Inquiry (Alc 626).

Bryce-Parrott, Cara

From: Celotti, Stella
Sent: Monday, July 11, 2011 9:22 AM
To: Kimball, Kirk
Cc: Bryce-Parrott, Cara
Subject: Procedure Approved

Hello, P-ALC-116, Rev 1, DataMaster DMT Power-up Procedure, has been approved and can be moved to Document Control. Thanks, Stella.

Mary (Stella) Celotti
Laboratory Director
Vermont Department of Health Laboratory
195 Colchester Avenue
Burlington, Vermont 05401
802-863-7570
(Fax) 802-863-7632
Stella.Celotti@ahs.state.vt.us

1.0 Purpose and Scope

1.1. The purpose of this procedure is to describe the process used by Vermont Department of Health Laboratory staff for the initial power-up of the DataMaster DMT infrared breath alcohol analysis instruments designated for use as evidentiary breath testing devices. The goal is to ensure the hardware and software are in proper working order prior to calibration and certification. Once an instrument is calibrated and certified it may be used for in-house testing or installed at a police agency for field use.

1.2. The scope of this procedure is applicable for new and repaired instruments. Any instrument which is new or has had repairs affecting the analytical portion of the instrument will be powered-up by trained laboratory staff before being Calibrated, Certified and Installed in any location for evidentiary testing.

2.0 Responsibility

2.1. It is the responsibility of staff performing this task to follow the procedure as written, to note any omissions, errors or unclear instructions in the procedure and bring them to the attention of the Toxicology Program Chief.

2.2. This procedure will be reviewed periodically by toxicology staff using this procedure. Revisions of the procedure will be made when a need is identified.

3.0 Precautions

3.1. Appropriate caution must be taken to avoid electrical shock when working with or using any electrically charged equipment.

3.2. Once the Power-Up procedure is complete, the instrument must be Calibrated (P-Alc-117) and Certified (P-Alc-118) prior to Installation (P-Alc-119) into any location for evidentiary testing.

4.0 Procedure Steps

4.1. Materials and supplies are located in room 124.

4.1.1. DataMaster DMT Instrument.
4.1.2. Guth 34CNP Simulator.
4.1.3. NIST Traceable Thermometer.

4.2. Setup Instrument

4.2.1. Plug the power cord, keyboard and the USB connection to the printer into the instrument.
4.2.2. Insert the breath tube and its power plug into their corresponding ports.

4.3. Instrument Internal Check

4.3.1. Open the instrument cover and visually check that the general conditions are clean and there is nothing loose.
4.3.2. Inspect the tubing for kinks, damage and tightness of connections including the tubing located inside the simulator tower and the main body of the instrument. Check wiring for properly seated connections and cable tie attachments where

appropriate. Check that all screws are present and snug; this will require the removal of the side pieces to allow access. Correct as needed.

4.3.3. Ensure that tubing connections are zip-tied or tie-wrapped as necessary.

4.3.4. Ensure that the one-way valve on the exhaust port is vertical and zip-tied in place.

4.3.5. Inspect the filter wheel movement. Using one finger, gently turn the filter wheel. Ensure that the stepper motor is moving in concert with the filter wheel and the quartz wheel is not interfering with the filter wheel movement.

4.3.6. If anything looks questionable, seek technical support.

4.3.7. Turn the instrument on.

4.4. Instrument Software Setup

4.4.1. The instrument should come from the manufacture with the correct version of software installed. To check the version of software, a technician can perform a Diagnostic check or can look in the Setup menu under Settings. To remove, install, upgrade or download an instrument's software, refer to P-Alc-121 DataMaster DMT Software Procedure.

4.4.2. Access the SETUP menu.

4.4.3. On the MISC tab, type "State of Vermont" in the NAME field.

4.4.4. In the EXPLORE box, highlight STYLUS and press the OK button to activate the stylus settings. Recalibrate the stylus by following the instructions on the screen.

4.4.5. Once complete, exit the SETUP menu by pressing the OK button to save the settings. If you exit the SETUP menu using the CANCEL button, none of the changes will be saved.

4.4.6. Access the TECH screen. Scroll through all of the filter locations to ensure the filter wheel is activating properly.

4.5. Detector Burn-in per National Patent Analytical Systems, Inc. (NPAS).

4.5.1. Determine the type of detector in the instrument and adjust the cooler and bias voltages per Figure 1.

Detector Type	Cooler Voltage	Bias Voltage
Hamamatsu	1.7V ± 0.1	80V ± 5
Judson	Per tag on detector ± 0.1	120V ± 5
Other	Call NPAS	Call NPAS

4.5.2. Manually manipulate the detector position to get the detector voltage as low as possible.

4.5.3. Adjust the lamp voltage setting so that the detector voltage displayed is approximately 0.000V +/-0.100V. Note the initial noise of the detector voltage once unit has had a minute to adjust to the adjusted voltages. The manufacture's specification for noise tolerance is +/-0.003 on a detector.

4.5.4. Save the voltage settings.

4.5.5. Allow the instrument to remain powered for four (4) days. Having the instrument in the technician screen during the entire four days is not necessary.

4.5.6. After the burn-in period is complete, return to the technician screen and recheck the noise level of the detector.

4.5.7. Adjust the detector voltage to read 0.000V with a tolerance of +/- 0.100V.

4.6. Set RFI Sensitivity.

4.6.1. While still in the TECH screen, press SET in the RF Sensitivity box to automatically set the RF sensitivity level.

4.6.2. Confirm the setting by keying a handheld radio within two feet of the instrument. Adjust sensitivity as needed using the + or – sensitivity buttons.

4.6.3. Press SAVE to save the settings.

4.7. Set Volume.

4.7.1. Using the large syringe, push 1.5L of air into the breath tube. Monitor the volume of air displayed on the TECH screen.

4.7.2. The instrument should read 1.5L +/- 0.2L. If the instrument is out of range, adjust the distance between the "T" fittings on the breath exhaust tubing.

4.7.3. Retest as needed until the volume reads appropriately.

4.8. Once all the TECH settings are correct, re-save every setting. Exit the TECH screen.

4.9. Ensure that the dip switches on the embedded pc are correctly toggled.

4.9.1. Counting from the back of the instrument to front, dip switches one, two and three must be up and four must be down. Dip switch five controls the screen, if the image on the screen appears to 'wobble', change dip switch 5 to the opposite position to correct the problem.

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4.11.3. Fill the simulator jar with water and allow it to come to temperature.

4.11.4. Check the temperature of the simulator using a NIST traceable thermometer. Adjust simulator temperature as needed.

4.11.5. Attach the temperature cable of the DMT to the BNC connector on the simulator.

4.11.6. Adjust the two-wire temperature emitter on the simulator until the DMT displays the same temperature as the NIST thermometer.

4.11.7. Label this simulator as "Assigned to DMT serial #".

5.0 Emergency or High Priority Situations

5.1. The Laboratory Director or Toxicology Program Chief may designate any DataMaster DMT Power-Up to be a high priority and request Power-Up as soon as possible.

6.0 Quality Criteria and Corrective Action

6.1. If any of the hardware components do not meet the acceptable conditions as outlined in this procedure, corrective action must be taken. The action taken will vary depending on the specific problem.

6.2. The standard approach to correct a problem is to consult the in-house service manual or ask for technical support from another toxicology staff member. Try to correct the problem and document the event in the maintenance notebook for that instrument.

6.3. If the problem is not correctable without some major repair or technical evaluation, a DataMaster Technical Support Inquiry worksheet (Alc 626) must be completed and placed in the instrument's file. If an instrument is brand new from the manufacture and it fails Power-Up, the unit should be returned to NPAS for repair. This procedure may be repeated when the problem is resolved.

7.0 Backup Procedures

7.1. If a problem is encountered that cannot be resolved by toxicology staff, the instrument manufacturer, National Patent Analytical Systems, Inc. will be contacted for technical support.

7.2. If an agency's instrument cannot be Powered-Up in a timely manner, a replacement instrument will be given to that site.

8.0 References

8.1. VDHL Chemical Hygiene Plan and Laboratory Safety Manual (D-AD-003).
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8.5. DataMaster DMT Installation Procedure (P-Alc-119).
8.6. Technical Service Inquiry (Alc 626).

Vermont Department of Health Laboratory
Procedure and Document Review Coversheet

Document Title: DataMaster DMT Power-Up Procedure	
Document #:P-Alc-116	Revision #:0
File Name:	
Author or Editor: A. Bolduc	Owner: Toxicology Program Chief
Start Date:11/19/08	Due Date:

Name and Title of Reviewers	Signature	Comments? Y/N *	Date of Signature	Control Copy #
Robert Drawbaugh Tox Chief	[illegible]	N ☐	11/21/08	
Darcy Richardson Chemist	[illegible]	Y ☑	12/2/08	
Steven Harnois Technician	Steven Harnois	Y ☑	12/4/08	
Ed Luce QC Officer	Edmond P. Luce	Y ☑	12/8/08	
Mary Celloti Lab Director	Mary Celloti	Y ☑	12/8/08	
		☐	OLM.C. 12/10/08	
FOR FINAL REVIEW TO ENSURE DOCUMENT CONTAINS ALL PREVIOUSLY MENTIONED COMMENTS.				
		☐		
		☐		

Mary - This is ready for final approval. Corrections & comments have been considered & incorporated. The e-file is being provided to Carol. Thanks, BL

* (√) in checkbox indicates reviewer comments have been discussed and incorporated if applicable.

QA Audit Checklist for Procedure Final Approval

Procedure: DataMaster DMT Power-Up Procedure
Reviewed by: EC Date: 12/5/08
P-AD-001 version in effect: _____

Accepted? (Yes) No See comments

Criteria for All Procedures page ___ of ___	Y	N	N/A
1. Section 1, Purpose and Scope			
1a. Purpose of procedure is clear.	✓		
1b. Scope includes extent of activity, range of operation. (Corresponds to flow chart) N/A	✓		
1c. Review schedule included.	periodically		
2. Section 2, Responsibilities			
2a. Procedure responsibilities identified by job title and clear. (Corresponds to flow chart) N/A	✓		
3. Section 3, Precautions and Safety Directives			
3a. Special considerations for use of procedure identified.	✓		
3b. Safety concerns identified.	✓		
4. Section 4, Procedure			
4a. Procedure steps in text match flow chart.			✓
4b. Lines of communication identified and clear (refer to flow chart) - no flow chart	✓		
4c. Turn around times are stated.			✓
4d. Applicable standards, instrumentation, equipment manuals, reference data listed with their locations.	Im # 124		
4e. All forms, worksheets used in procedure referenced ~~and appended~~. referenced only	✓		
5. Section 5, Emergency or High Priority Situations			
5a. Emergency or high priority situations defined, procedures and communications clear.	✓		
6. Section 6, Quality Control and Corrective Action			
6a. Criteria for acceptable work are stated.	✓		
6b. Quality control materials and procedures defined.	✓		
6c. Corrective action to be taken when quality measurements fail to meet the criteria of acceptability.	✓		

Criteria for All Procedures page ___ of ___	Y	N	N/A
7. Section 7, Preventive Maintenance and Backup			
7a. Preventive maintenance activities and schedules are defined or referenced.			✓
7b. Backup procedures defined.	✓		
8. References			
8a. Literature references, as needed.	✓		
9. Header and Format			
9a. Header contains effective date, document code and revision, owner initials, typed name, and date, name of author, due date of next approval cycle, correct number of pages.			

N/A

Comments: noted on coversheet

* section 6.2 - where to document as needed

Form # ADMIN 703a rev. 1 (8/95)

1.0 Purpose and Scope

1.1. The purpose of this procedure is to describe the process used by Vermont Department of Health Laboratory staff for the initial power-up of the DataMaster DMT infrared breath alcohol analysis instruments designated for use as evidentiary breath testing devices. The goal is to ensure the hardware and software are in proper working order prior to calibration and certification. Once an instrument is calibrated and certified it may be used for in-house testing or installed at a police agency for field use.

1.2. The scope of this procedure is applicable for new and repaired instruments. Any instrument which is new or has had repairs affecting the analytical portion of the instrument will be powered-up by trained laboratory staff before being Calibrated, Certified and Installed in any location for evidentiary testing.

2.0 Responsibility

2.1. It is the responsibility of staff performing this task to follow the procedure as written, to note any omissions, errors or unclear instructions in the procedure and bring them to the attention of the Toxicology Program Chief.

2.2. This procedure will be reviewed periodically by toxicology staff using this procedure. Revisions of the procedure will be made when a need is identified.

3.0 Precautions

3.1. Appropriate caution must be taken to avoid electrical shock when working with or using any electrically charged equipment.

3.2. Once the Power-Up procedure is complete, the instrument must be Calibrated (P-Alc-117) and Certified (P-Alc-118) prior to Installation (P-Alc-119) into any location for evidentiary testing.

4.0 Procedure Steps

4.1. Materials and supplies are located in room 124.

4.1.1. DataMaster DMT Instrument.
4.1.2. Guth 34CNP Simulator.
4.1.3. NIST Traceable Thermometer.

4.2. Setup Instrument

4.2.1. Plug the power cord, keyboard and the USB connection to the printer into the instrument.
4.2.2. Insert the breath tube and its power plug into their corresponding ports.

4.3. Instrument Internal Check

4.3.1. Open the instrument cover and visually check that the general conditions are clean and there is nothing loose.
4.3.2. Inspect the tubing for kinks, damage and tightness of connections including the tubing located inside the simulator tower and the main body of the instrument. Check wiring for properly seated connections and cable tie attachments where

appropriate. Check that all screws are present and snug; this will require the removal of the side pieces to allow access. Correct as needed.

4.3.3. Ensure that tubing connections are zip-tied or tie-wrapped as necessary.

4.3.4. Ensure that the one-way valve on the exhaust port is vertical and zip-tied in place.

4.3.5. Inspect the filter wheel movement. Using one finger, gently turn the filter wheel. Ensure that the stepper motor is moving in concert with the filter wheel and the quartz wheel is not interfering with the filter wheel movement.

4.3.6. If anything looks questionable, seek technical support.

4.3.7. Turn the instrument on.

4.4. Instrument Software Setup

4.4.1. The instrument should come from the manufacture with the correct version of software installed. To check the version of software, a technician can perform a Diagnostic check or can look in the Setup menu under Settings. To remove, install, upgrade or download an instrument's software, refer to P-Alc-121 DataMaster DMT Software Procedure.

4.4.2. Access the SETUP menu.

4.4.3. On the MISC tab, type "State of Vermont" in the NAME field.

4.4.4. In the EXPLORE box, highlight STYLUS and press the OK button to activate the stylus settings. Recalibrate the stylus by following the instructions on the screen.

4.4.5. Once complete, exit the SETUP menu by pressing the OK button to save the settings. If you exit the SETUP menu using the CANCEL button, none of the changes will be saved.

4.4.6. Access the TECH screen. Scroll through all of the filter locations to ensure the filter wheel is activating properly.

4.5. Detector Burn-in per National Patent Analytical Systems, Inc. (NPAS).

4.5.1. Determine the type of detector in the instrument and adjust the cooler and bias voltages per Figure 1.

Detector Type	Cooler Voltage	Bias Voltage
Hamamatsu	1.7V ± 0.1	80V ± 5
Judson	Per tag on detector ± 0.1	120V ± 5
Other	Call NPAS	Call NPAS

4.5.2. Manually manipulate the detector position to get the detector voltage as low as possible.

4.5.3. Adjust the lamp voltage setting so that the detector voltage displayed is approximately 0.000V +/-0.100V. Note the initial noise of the detector voltage once unit has had a minute to adjust to the adjusted voltages. The manufacture's specification for noise tolerance is +/-0.003 on a detector.

4.5.4. Save the voltage settings.

4.5.5. Allow the instrument to remain powered for four (4) days. Having the instrument in the technician screen during the entire four days is not necessary.

4.5.6. After the burn-in period is complete, return to the technician screen and recheck the noise level of the detector.

4.5.7. Adjust the detector voltage to read 0.000V with a tolerance of +/- 0.100V.

4.6. Set RFI Sensitivity.

4.6.1. While still in the TECH screen, press SET in the RF Sensitivity box to automatically set the RF sensitivity level.

4.6.2. Confirm the setting by keying a handheld radio within two feet of the instrument. Adjust sensitivity as needed using the + or – sensitivity buttons.

4.6.3. Press SAVE to save the settings.

4.7. Set Volume.

4.7.1. Using the large syringe, push 1.5L of air into the breath tube. Monitor the volume of air displayed on the TECH screen.

4.7.2. The instrument should read 1.5L +/- 0.2L. If the instrument is out of range, adjust the distance between the "T" fittings on the breath exhaust tubing.

4.7.3. Retest as needed until the volume reads appropriately.

4.8. Once all the TECH settings are correct, re-save every setting. Exit the TECH screen.

4.9. Ensure that the dip switches on the embedded pc are correctly toggled.

4.9.1. Counting from the back of the instrument to front, dip switches one, two and three must be up and four must be down. Dip switch five controls the screen, if the image on the screen appears to 'wobble', change dip switch 5 to the opposite position to correct the problem.

4.9.2. Ensure that when a switch is toggled that it latches into place. A click sound should be heard.

4.10. Close the instrument.

4.10.1. Put Torx T10 security screws on the top four holes.

4.10.2. Attach the stylus to the DMT using a security screw in the center right screw hole nearest the simulator tower.

4.10.3. Attach the keyboard to the top of the instrument using sticky back Velcro.

4.10.4. Wrap a small piece of Velcro around the top of the stylus and affix the other side to the front of the instrument so the stylus can rest on the front of the unit.

4.11. Assigning a Simulator.

4.11.1. If the instrument is continuing on to Calibration, Certification and Installation, a simulator must be assigned to the DMT.

4.11.2. Retrieve a Guth 34CNP simulator.

4.11.3. Fill the simulator jar with water and allow it to come to temperature.

4.11.4. Check the temperature of the simulator using a NIST traceable thermometer. Adjust simulator temperature as needed.

4.11.5. Attach the temperature cable of the DMT to the BNC connector on the simulator.

4.11.6. Adjust the two-wire temperature emitter on the simulator until the DMT displays the same temperature as the NIST thermometer.

4.11.7. Label this simulator as "Assigned to DMT serial #".

5.0 Emergency or High Priority Situations

5.1. The Laboratory Director or Toxicology Program Chief may designate any DataMaster DMT Power-Up to be a high priority and request Power-Up as soon as possible.

6.0 Quality Criteria and Corrective Action

6.1. If any of the hardware components do not meet the acceptable conditions as outlined in this procedure, corrective action must be taken. The action taken will vary depending on the specific problem.

6.2. The standard approach to correct a problem is to consult the in-house service manual or ask for technical support from another toxicology staff member. Try to correct the problem and document the event in the maintenance notebook for that instrument.

6.3. If the problem is not correctable without some major repair or technical evaluation, a DataMaster Technical Support Inquiry worksheet (Alc 626) must be completed and placed in the instrument's file. If an instrument is brand new from the manufacture and it fails Power-Up, the unit should be returned to NPAS for repair. This procedure may be repeated when the problem is resolved.

7.0 Backup Procedures

7.1. If a problem is encountered that cannot be resolved by toxicology staff, the instrument manufacturer, National Patent Analytical Systems, Inc. will be contacted for technical support.

7.2. If an agency's instrument cannot be Powered-Up in a timely manner, a replacement instrument will be given to that site.

8.0 References

8.1. VDHL Chemical Hygiene Plan and Laboratory Safety Manual (D-AD-003).
8.2. DataMaster DMT Field Service Manual.
8.3. DataMaster DMT Calibration Procedure (P-Alc-117).
8.4. DataMaster DMT Certification Procedure (P-Alc-118).
8.5. DataMaster DMT Installation Procedure (P-Alc-119).
8.6. Technical Service Inquiry (Alc 626).

1.0 Purpose and Scope

1.1. The purpose of this procedure is to describe the process used by Vermont Department of Health Laboratory staff for the Initial power-up of the DataMaster DMT infrared breath alcohol analysis instruments designated for use as evidentiary breath testing devices. The goal is to ensure the hardware and software are in proper working order prior to Calibration and Certification. Once an instrument is Calibrated and Certified it may be used for in-house testing or Installed ~~at a police agency~~ is applicable to for field use.

Some instruments are not @ PDs

use of caps here

and include set-up, internal check, software set-up, detector burn in

OK M.L.

1.2. The scope of this procedure ~~includes~~ new and repaired instruments. Any instrument which is new or has had repairs affecting the analytical portion of the instrument will be powered-up by trained laboratory staff before being Calibrated, Certified and Installed in any location for evidentiary testing.

2.0 Responsibility

2.1. It is the responsibility of staff performing this task to follow the procedure as written, to note any omissions, errors or unclear instructions in the procedure and bring them to the attention of the Toxicology Program Chief.

2.2. This procedure will be reviewed periodically by toxicology staff using this procedure. Revisions of the procedure will be made when a need is identified.

3.0 Precautions

3.1. Appropriate caution must be taken to avoid electrical shock when working with or using any electrically charged equipment.

3.2. Once the Power-Up procedure is complete, the instrument must be Calibrated (P-Alc-117) and Certified (P-Alc-118) prior to Installation (P-Alc-119) into any location for evidentiary testing.

4.0 Procedure Steps

4.1. Materials and supplies are located in room 124.

4.1.1. DataMaster DMT Instrument.

4.1.2. Guth 34CNP Simulator.

4.1.3. NIST Traceable Thermometer.

4.2. Setup Instrument

4.2.1. Plug the power cord, keyboard and the USB connection to the printer into the instrument.

4.2.2. Insert the breath tube and its power plug into their corresponding ports.

4.3. Instrument Internal Check

4.3.1. Open the instrument cover and visually check that the general conditions are clean and there is nothing loose.

4.3.2. Inspect the tubing for kinks, damage and tightness of connections. Check wiring (including in Sim tower and main body of unit) for properly seated connections and cable tie attachments where appropriate. Check that all screws are present and snug; this will require the removal of the side pieces to allow ~~the technician~~ access. Correct as needed.

4.3.3. Ensure that tubing connections are zip-tied (Ty or Tie wrapped) as necessary.

4.3.4. Ensure that the one-way valve on the exhaust port is vertical and zip-tied in place.

4.3.5. Inspect the filter wheel movement. Using one finger, gently turn the filter wheel. Ensure that the stepper motor is moving in concert with the filter wheel and the quartz wheel is not interfering with the filter wheel movement.

Turn Instrument ON

4.3.6. If anything looks questionable, seek technical support.

4.4. Instrument Software Setup

4.4.1. The instrument should come from the manufacture with the correct version of software installed. To check the version of software, a technician can perform a Diagnostic check or can look in the Setup menu under Settings. To remove, install, upgrade or download an instrument's software, refer to P-Alc-121 DataMaster DMT Software Procedure.

After the Software is Set up

4.4.2. ~~Access~~ Go to the SETUP menu.

4.4.3. On the MISC tab, type "State of Vermont" in the NAME field.

4.4.4. In the EXPLORE box, highlight STYLUS and press the OK button to activate the stylus settings. Recalibrate the stylus by following the instructions on the screen.

4.4.5. Once complete, exit the SETUP menu by pressing the OK button to save the settings. If you exit the SETUP menu using the CANCEL button, none of the changes will be saved.

4.4.6. ~~Enter~~ Go to the TECH screen. Scroll through all of the filter locations to ensure the filter wheel is activating properly.

4.5. Detector Burn-in per National Patent Analytical Systems, Inc. (NPAS).

See Back of Sheet

4.5.1. If the unit ~~employs~~ has a Hamamatsu detector: Adjust the cooler voltage setting to 1.70Vdc +/-0.10.

4.5.2. If the unit ~~employs~~ has a Judson detector adjust the cooler voltage setting to the designated voltage written on a tag attached to the detector wire.

4.5.3. Manually manipulate the detector position to get the detector voltage as low as possible.

4.5.4. Adjust the lamp voltage setting so that the detector voltage displayed is approximately 0.000 +/-0.100V. Note the initial noise of the detector voltage once unit has had a minute to adjust to the adjusted voltages. The manufacture's specification for noise tolerance is +/-0.003 on a detector.

4.5.5. Save the voltage settings.

4.5.6. Allow the instrument to remain powered for four (4) days. ~~Having the instrument in the technician screen during the entire four days is not necessary.~~ Time exit the technician Screen

If the detector is New

4.5.1. Determine the type of detector used ~~with this instrument~~ and ~~can~~ and adjust the detector cooler voltage per the chart below

Detector Type	Cooler V	Bias V
Ham....	1.7V +/- .1	80 +/- 5
Judson	Per tag +/- .1	120 +/- 5
Other	Call NPAS	Call NPAS

4.5.7. After the burn-in period is complete, return to the technician screen and recheck the noise level of the detector.

4.5.8. Adjust the detector voltage to read 0.000V with a tolerance of +/- 0.100V. ~~Correct as needed.~~

4.6. Set RFI Sensitivity.

4.6.1. While still in the TECH screen, press SET in the RF Sensitivity box to automatically set the RF sensitivity level. Portable or Hand held

4.6.2. Confirm the setting by keying a radio within two feet of the instrument. Adjust sensitivity as needed using the + or – sensitivity buttons.

4.6.3. Press SAVE to save the settings.

4.7. Set Volume.

4.7.1. Using the large syringe, push 1.5L of air into the breath tube. Monitor the volume of air displayed on the TECH screen.

4.7.2. The instrument should read 1.5L +/- 0.2L. If the instrument is out of range, adjust the distance between the "T" fittings on the breath exhaust tubing.

4.7.3. Retest as needed until the volume reads appropriately.

4.8. Once all the TECH settings are correct, re-save every setting. Exit the TECH screen.

Should we do this prior to software

4.9. Ensure that the dip switches on the embedded pc are correctly toggled.

4.9.1. Counting from the back of the instrument to front, dip switches one, two and three must be up and four must be down. Dip switch five controls the screen, if the image on the screen appears to 'wobble', change dip switch 5 to the opposite position to correct the problem.

4.9.2. Ensure that when a switch is toggled that it latches into place. A click sound should be heard.

4.10. Close ~~up~~ the instrument. Torx T10 Security

4.10.1. Put ~~locking~~ screws on the top four holes. Security

4.10.2. Attach the stylus to the DMT using a ~~locking~~ screw ~~in the center right~~ screw hole nearest the simulator tower.

4.10.3. Attach the keyboard to the top of the instrument using sticky back Velcro.

4.10.4. Wrap a small piece of Velcro around the top of the stylus and affix the other side to the front of the instrument so the stylus can rest on the front of the unit.

Why would we not do this??

4.11. Assigning a Simulator.

4.11.1. If the instrument is continuing on to Calibration, Certification and Installation, a simulator must be assigned to the DMT. Fits or Mates up to the Datamaster

4.11.2. Retrieve a Guth 34CNP simulator that ~~has been adjusted to 34.0º C using a NIST traceable thermometer~~.

Check Temp with NIST thermometer

4.11.3. Fill the simulator jar with water and allow it to come to temperature.

4.11.4. Attach the temperature cable of the DMT to the BNC connector on the simulator.

Two Wire Temprature Emiter

4.11.5. Adjust the ~~signal out~~ on the simulator until the DMT displays the same temperature as the NIST thermometer.

4.11.6. Label this simulator as "Assigned to DMT serial #".

5.0 Emergency or High Priority Situations

5.1. The Laboratory Director or Toxicology Program Chief may designate any DataMaster DMT Power-Up to be a high priority and request Power-Up as soon as possible.

6.0 Quality Criteria and Corrective Action

6.1. If any of the hardware components do not meet the acceptable conditions as outlined in this procedure, corrective action must be taken. The action taken will vary depending on the specific problem.

6.2. The standard approach to correct a problem is to consult the in-house service manual or ask for technical support from another toxicology staff member. Try to correct the problem and document the event. document where?

6.3. If the problem is not correctable without some major repair or technical evaluation, a DataMaster Technical Support Inquiry worksheet (Alc 626) must be completed and placed in the instrument's file. If an instrument is brand new from the manufacture and it fails Power-Up, the unit should be returned to NPAS for repair. This procedure may be (begun again) when the problem is resolved.
repeated

7.0 Backup Procedures

7.1. If a problem is encountered that cannot be resolved by toxicology staff, the instrument manufacturer, National Patent Analytical Systems, Inc. will be contacted for technical support.

7.2. If an agencies instrument cannot be Powered-Up in a timely manner, a replacement instrument will be given to that site.
agency's

8.0 References

8.1. VDHL Chemical Hygiene Plan and Laboratory Safety Manual (D-AD-003).

8.2. DataMaster DMT Field Service Manual.

8.3. DataMaster DMT Calibration Procedure (P-Alc-117).

8.4. DataMaster DMT Certification Procedure (P-Alc-118).

8.5. DataMaster DMT Installation Procedure (P-Alc-119).

8.6. Technical Service Inquiry (Alc 626).

1.0 Purpose and Scope

1.1 The purpose of this procedure is to describe the process used by Vermont Department of Health Laboratory staff for the power up of the DataMaster DMT infrared breath alcohol analysis instruments designated for use as evidentiary breath testing devices. The goal is to ins

1.2 The scope of this procedure includes new and repaired instruments. Any instrument which is new or has had repairs affecting the analytical portion of the instrument will be powered up by trained laboratory staff before being Calibrated, Certified and Installed in any location for evidentiary testing.

2.0 Responsibility

2.1 It is the responsibility of staff performing this task to follow the procedure as written, to note any omissions, errors or unclear instructions in the procedure and bring them to the attention of the Toxicology Program Chief.

2.2 This procedure will be reviewed ~~annually~~ periodically by Toxicology staff using this procedure. Revisions of the procedure will be made when a need is ~~expressed.~~ identified.

3.0 Precautions

3.1 Appropriate caution must be taken to avoid electrical shock when working with or using any electrically charged equipment.

3.2 Once the Power-Up procedure is complete, the instrument must be Calibrated SOP and Certified SOP prior to Installation SOP into any location for evidentiary testing.

4.0 Procedure Steps

4.1 Materials and Supplies are all located in Room 124.

4.1.1 DataMaster DMT Instrument.

4.1.2 Guth 34CNP ~~Calibration Simulator~~. Sim.

~~4.1.3 Guth 2100 Simulator containing water.~~ Tools

Attach keyboard, breath tube pwr T

4.2 Instrument Internal Check

4.2.1 Open the instrument cover and visually check that the general conditions are clean and there is nothing loose.

4.2.2 Inspect the tubing for kinks, damage and tightness of connections. Check wiring for properly seated connections and cable tie attachments where appropriate. Check that all screws are present and snug; this will require the removal of the side pieces to allow the technician access. Correct as needed.

4.2.3 Ensure that tubing connections are zip-tied as necessary. Ensure that the one-way valve on the exhaust port is vertical and zip-tied in place.

4.2.4 Inspect the filter wheel movement. Using one finger, gently turn the filter wheel. Ensure that the stepper motor is moving in concert with the filter wheel and the quartz wheel is not interfering with the filter wheel movement.

4.2.5 If anything looks questionable, ask for technical support.

4.3 Instrument Software Setup

4.3.1 Access the SETUP menu.

4.3.2 On the MISC tab, type "State of Vermont" in the NAME field.

4.3.3 In the EXPLORE box, highlight STYLUS and press the OK button to activate the stylus settings. Recalibrate the stylus by following the instructions on the screen.

4.3.4 Once complete, exit the SETUP menu by pressing the OK button to save the settings. If you exit the SETUP menu using the CANCEL button, none of the changes will be saved.

4.3.5 Enter the TECH screen. Scroll through all of the filter settings to ensure the filter wheel is activating properly.

4.3.6 Detector Burn-in Procedure per NPAS (Spellout)

4.3.6.1 If the unit employs a Hamamatsu detector: Adjust the cooler voltage setting to 1.70Vdc +/-0.10.

4.3.6.2 If the unit employs a Judson detector adjust the cooler voltage setting to manufacture's designated voltage written on a tag attached to the detector wire.

4.3.7 Manually manipulate the detector position to get the detector voltage as low as possible.

4.3.8 Adjust the Lamp voltage setting so that the detector voltage displayed is approximately +0.000 +/-0.100. Note the initial noise of the detector voltage once unit has had a minute to adjust to the adjusted voltages. The manufacture's specification for noise tolerance is +/-0.003 on a detector.

4.3.9 Save the voltage settings.

4.3.10 Allow the instrument to remain powered for four (4) days. Having the instrument in the technician screen during the entire four days is not necessary.

4.3.11 After the burn-in period is complete, return to the technician screen and recheck the noise level of the detector.

4.3.12 Adjust the detector voltage to the desired level and proceed with testing as needed. The detector voltage must read 0.000V with a tolerance of +/- 0.100V. Correct as needed.

4.3.13 With instrument cover open, activate the TECH screen using the Technician level password. Adjust lamp and cooler voltages to optimize system. Adjust lamp, detector and mirror positions as needed. The final detector voltage should be within [0.100]mV.

4.3.14 ~~4.3.5~~ After adjusting voltages, ~~allow instrument~~ to stabilize ~~for one hour~~ before attempting calibration.

4.3.15 While still in the TECH screen, press SET in the RF Sensitivity box to automatically set the RF sensitivity level. Press SAVE to save the settings. Confirm the setting by keying a radio near ~~the~~ instrument. ~~Correct as~~ Adjust sensitivity needed. within 2 feet

4.3.16 Using the large syringe, push 1.5L of air into the breath tube. Monitor the volume of air displayed on the TECH screen. The instrument should read 1.5L +/- 0.2L. If the instrument is out of range, adjust the distance between the "T" fittings on the breath exhaust tubing. Retest until the volume reads appropriately.

4.3.17 Once all the TECH settings are correct as needed re-save every setting. Exit the TECH screen.

4.4 Ensure that the dip switches on the embedded pc are correctly toggled and have latched in place. Counting from the back of the instrument to front, dip switches one, two and three must be up and four must

be down. Dip switch five controls the screen, if the image on the screen appears to 'wobble', change ~~the~~ dip switch 5 to the opposite position to correct the problem.

4.5 Close up the instrument using locking screws on the top four holes. Attach the stylus to the DMT using a locking screw in the center right screw hole nearest the simulator tower. Attach the keyboard to the top of the instrument using sticky back velcro. Wrap a small piece of velcro around the top of the stylus and affix the other side to the front of the instrument so the stylus can rest on the front of the unit.

List

34CNP

4.6 Retrieve a Guth simulator that has been ~~calibrated~~ adjusted to 34.0° C ~~and verified~~ using a NIST traceable thermometer. Fill w/ H2O Allow the simulator to come to ~~temperature~~ equilibrium, ~~approximately 30 minutes.~~ Attach the temperature cable of the DMT to the BNC connector on the simulator. Adjust the signal out on the simulator until the DMT displays the same temperature as the NIST thermometer. Label this simulator as "Assigned to DMT serial #".

5.0 Emergency or High Priority Situations

5.1 The Laboratory Director or Toxicology Program Chief may designate any DataMaster DMT Power-Up to be a high priority and request Power-Up as soon as possible.

6.0 Quality Criteria and Corrective Action

6.1 If any of the hardware components ~~are outside the manufacture recommended specification~~ do not meet the acceptable conditions as outlined in this procedure, corrective action must be taken. The action taken will vary depending on the specific problem.

Install Software

6.2 The standard approach to correct a problem ~~would be~~ is to consult the in-house service manual or ask for technical support from another toxicology staff member. Try to correct the problem and document the event.

Brand-new + fails Pwr↑ RTV.

6.3 If the problem is not correctable without some major repair or technical evaluation, a DataMaster Technical Support Inquiry worksheet (Alc 626) must be completed and placed in the instrument's file. This procedure may be begun again when the problem is resolved.

7.0 Backup Procedures

7.1 If a problem is encountered that cannot be resolved by Toxicology staff, the instrument manufacturer, National Patent Analytical Systems, Inc. will be contacted for technical support.

7.2 If an agencies instrument cannot be Powered-Up in a timely manner, a replacement instrument will be given to that site.

8.0 References

8.1 Chemical Hygiene Plan and Safety Manual (D-AD-003).

8.2 DataMaster DMT ~~Field~~ In-house Service Manual.

8.3 DataMaster DMT Calibration Procedure (P-Alc-xxx).

8.4 DataMaster DMT Certification Procedure (P-Alc-xxx).

8.5 TSI Install (P-ALC-119)

1.0 Purpose and Scope

1.1 The purpose of this procedure is to describe the process used by Vermont Department of Health Laboratory staff for the power up of the DataMaster DMT infrared breath alcohol analysis instruments designated for use as evidentiary breath testing devices.

1.2 The scope of this procedure includes new and repaired instruments. Any instrument which is new or has had repairs affecting the analytical portion of the instrument will be powered up by trained laboratory staff before being Calibrated, Certified and Installed in any location for evidentiary testing.

2.0 Responsibility

2.1 It is the responsibility of staff performing this task to follow the procedure as written, to note any omissions, errors or unclear instructions in the procedure and bring them to the attention of the Toxicology Program Chief.

2.2 This procedure will be reviewed annually by Toxicology staff. Revisions of the procedure will be made when a need is expressed.

3.0 Precautions

3.1 Appropriate caution must be taken to avoid electrical shock when working with or using any electrically charged equipment.

3.2 Once the Power-Up procedure is complete, the instrument must be Calibrated and Certified prior to Installation into any location for evidentiary testing.

4.0 Procedure Steps

4.1 Materials and Supplies are all located in Room 124.

- 4.1.1 DataMaster DMT Instrument.
- 4.1.2 Guth 34CNP Calibration Simulator.
- 4.1.3 Guth 2100 Simulator containing water.

4.2 Instrument Internal Check

- 4.2.1 Open the instrument cover and visually check that the general conditions are clean and there is nothing loose.
- 4.2.2 Inspect the tubing for kinks, damage and tightness of connections. Check wiring for properly seated connections and cable tie attachments where appropriate. Check that all screws are present and snug; this will require the removal of the side pieces to allow the technician access. Correct as needed.
- 4.2.3 Ensure that tubing connections are zip-tied as necessary. Ensure that the one-way valve on the exhaust port is vertical and zip-tied in place.
- 4.2.3 Inspect the filter wheel movement. Using one finger, gently turn the filter wheel. Ensure that the stepper motor is moving in concert with the filter wheel and the quartz wheel is not interfering with the filter wheel movement
- 4.2.4 If anything looks questionable, ask for technical support

4.3 Instrument Software Setup

- 4.3.1 Access the SETUP menu.
- 4.3.2 On the MISC tab, type "State of Vermont" in the NAME field.

4.3.3 In the EXPLORE box, highlight STYLUS and press the OK button to activate the stylus settings. Recalibrate the stylus by following the instructions on the screen.

4.3.4 Once complete, exit the SETUP menu by pressing the OK button to save the settings. If you exit the SETUP menu using the CANCEL button, none of the changes will be saved.

4.3.5 Enter the TECH screen. Scroll through all of the filter settings to ensure the filter wheel is activating properly.

4.3.6 Detector Burn-in Procedure per NPAS

4.3.6.1 If the unit employs a Hamamatsu detector: Adjust the cooler voltage setting to 1.70Vdc +/-0.10.

4.3.6.2 If the unit employs a Judson detector adjust the cooler voltage setting to manufacture's designated voltage written on a tag attached to the detector wire.

4.3.7 Manually manipulate the detector position to get the detector voltage as low as possible.

4.3.8 Adjust the Lamp voltage setting so that the detector voltage displayed is approximately +0.000 +/-0.100. Note the initial noise of the detector voltage once unit has had a minute to adjust to the adjusted voltages. The manufacture's specification for noise tolerance is +/-0.003 on a detector.

4.3.9 Save the voltage settings.

4.3.10 Allow the instrument to remain powered for four (4) days. Having the instrument in the technician screen during the entire four days is not necessary.

4.3.11 -After the burn-in-period is complete, return to the technician screen and recheck the noise level of the detector.

4.3.12 Adjust the detector voltage to the desired level and proceed with testing as needed. The detector voltage must read 0.000V with a tolerance of +/- 0.100V. Correct as needed.

4.3.13 With instrument cover open, activate the TECH screen using the Technician level password. Adjust lamp and cooler voltages to optimize system. Adjust lamp, detector and mirror positions as needed. The final detector voltage should be within [0.100]mV.

4.3.14 4.3.5 After adjusting voltages, allow instrument to stabilize for one hour before attempting calibration.

4.3.15 While still in the TECH screen, press SET in the RF Sensitivity box to automatically set the RF sensitivity level. Press SAVE to save the settings. Confirm the setting by keying a radio near the instrument. Correct as needed.

4.3.16 Using the large syringe, push 1.5L of air into the breath tube. Monitor the volume of air displayed on the TECH screen. The instrument should read 1.5L +/- 0.2L. If the instrument is out of range, adjust the distance between the "T" fittings on the breath exhaust tubing. Retest until the volume reads appropriately.

4.3.17 Once all the TECH settings are correct re-save every setting. Exit the TECH screen.

4.4 Ensure that the dip switches on the embedded pc are correctly toggled. Counting from the back of the instrument to front, dip switches one, two and three must be up and four must

be down. Dip switch five controls the screen, if the image on the screen appears to 'wobble', change the dip switch to the opposite position to correct the problem.

4.5 Close up the instrument using locking screws on the top four holes. Attach the stylus to the DMT using a locking screw in the center right screw hole nearest the simulator tower. Attach the keyboard to the top of the instrument using sticky back velcro. Wrap a small piece of velcro around the top of the stylus and affix the other side to the front of the instrument so the stylus can rest on the front of the unit.

4.6 Retrieve a Guth simulator that has been calibrated to 34.0° C and verified using a NIST traceable thermometer. Allow the simulator to come to temperature, approximately 30 minutes. Attach the temperature cable of the DMT to the BNC connector on the simulator. Adjust the signal out on the simulator until the DMT displays the same temperature as the NIST thermometer. Label this simulator as "Assigned to DMT serial #".

5.0 Emergency or High Priority Situations

5.1 The Laboratory Director or Toxicology Program Chief may designate any DataMaster DMT Power-Up to be a high priority and request Power-Up as soon as possible.

6.0 Quality Criteria and Corrective Action

6.1 If any of the hardware components are outside the manufacture recommended specification, corrective action must be taken. The action taken will vary depending on the specific problem.

6.2 The standard approach to correct a problem would be consult the in-house service manual or ask for technical support from another toxicology staff member. Try to correct the problem and document the event.

6.3 If the problem is not correctable without some major repair or technical evaluation, a DataMaster Technical Support Inquiry worksheet (Alc 626) must be completed and placed in the instrument's file. This procedure may be begun again when the problem is resolved.

7.0 Backup Procedures

7.1 If a problem is encountered that cannot be resolved by Toxicology staff, the instrument manufacturer, National Patent Analytical Systems, Inc. will be contacted for technical support.

7.2 If an agencies instrument cannot be Powered-Up in a timely manner, a replacement instrument will be given to that site.

8.0 References

8.1 Chemical Hygiene Plan and Safety Manual (D-AD-003).

8.2 DataMaster DMT Field Service Manual.

8.3 DataMaster DMT Calibration Procedure (P-Alc-xxx).

8.4 DataMaster DMT Certification Procedure (P-Alc-xxx).

Bryce-Parrott, Cara

From: Celotti, Stella
Sent: Wednesday, December 10, 2008 3:27 PM
To: Bolduc, Amanda; Drawbaugh, Bob
Cc: Bryce-Parrott, Cara
Subject: Procedure Approved

Hello, P-Alc-116, Rev 0, DataMaster DMT Power-up Procedure, has been approved and can be moved to Document Control. Thanks, Stella.

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