C. Administering the Subject Test

Display: **"TIMED PURGE"**:

Note: If there is a strong odor of alcohol from the subject, remove him from the immediate test area until this cycle is completed. Excessive alcohol purged into the DataMaster from the ambient air will cause an "Ambient Failure."

All chambers and internal plumbing are cleansed of any residual substances by ambient (surrounding) air which is pulled through the inlet (Breath) tube and pumped throughout the instrument by an internal pump. **".00" or ".000"** will appear on the display if the chamber is clear. **CAUTION**: Be sure the breath tube is not lying in a position on the table top where it will suck in dust. Avoid blocking the intake area of the breath tube as restricting the air flow will cause a "pump error" condition.

Display: **"AMBIENT ZEROING"**

After the pump stops, the DataMaster determines zero references based on ambient air in the Sample Chamber. Different filters with known Infrared wavelengths are used to establish ratios enabling the instrument to be specific for ethanol. During this cycle all filters are inserted into the Infrared path to establish zero references at each wavelength.

Display: **"BLANK TEST"**

A measurement is taken after the **"Ambient Zeroing"**. **".000"** will appear on the display if no contaminant was detected. A **"Blank"** test is conducted prior to any subject or simulator test.

Display: **"INTERNAL STANDARD CHECK".** This indicates the internal standard was verified.

During this cycle a quartz plate is inserted into the Infrared path to assure that the accuracy of the DataMaster has not changed since it was last calibrated. Each DataMaster stores in memory the exact Infrared absorption value of this quartz standard at the time of calibration. The instrument measures the absorption of the quartz plate and compares this measured value with the value obtained at calibration. The two values must agree within prescribed limits or the operation will be aborted .

Display: **"PLEASE BLOW"**: **".00" or ".000"** will appear below center. A beeping signal indicates the DataMaster is ready to accept a subject sample. There is approximately a 2 minute window of time in which to complete the sample. A running total of delivered sample volume will appear at lower right if this feature is turned on in the software.

Step 6: Insert a mouthpiece into the Breath Tube. Each mouthpiece is individually wrapped and can be removed from the plastic wrapper without touching it by pushing one end of the mouthpiece partially through the plastic bag. Check the opening of the mouthpiece for any plastic residue from the plastic bag. Use the plastic bag to avoid touching the mouthpiece as you insert the mouthpiece into the Breath Tube.

Step 7: It may be more convenient to position the subject on the same side as the breath tube. Communicate with the person taking the test. Give clear instructions so that the subject will understand how to provide an adequate breath sample. **Do not tell the subject to blow "hard".**

The operator should advise the subject as follows: "Take a normal breath, place your mouth on the mouthpiece and blow long and steady into the tube until I tell you to stop."

Once the subject starts to blow through the Breath Tube, the instrument's beeping tone will change to a steady tone which indicates that the instrument is receiving an adequate breath flow. During this time the instrument will also display a screen (optional, if selected) which will depict the subject's blowing pattern (thin blue line) and he subject's alcohol concentration (thicker black line) in a graphic representation. You may tell the subject to stop blowing when you hear a single "Beep". If an acceptable sample is not provided within the allotted time. the DataMaster will display the message "Subject Refuse?"

Display: **"DID THE SUBJECT REFUSE? <Y/N>"**: Touch "No" if the subject is not refusing to take the test and you wish to restart the sequence. The DataMaster will begin another purge and continue into a test cycle. Touch "Yes" if the subject is refusing to take the test and the instrument will complete the sequence by printing a ticket with a notation that the test has been refused. (Note: This sequence may vary with software for any individual state.)

Display: **"TEST RESULTS"**
"ALCOHOL .XX":

The display will show the results of the subject's first test, if the test was completed. After the results are displayed momentarily, the instrument will automatically continue the test sequence in preparation for a second test if your software is so designed.

Step 8. Remove the mouthpiece from the Breath Tube and discard it before the "PURGE" cycle begins. **Failure to remove the mouthpiece can result in a "Blank Error" as a result of alcohol condensate in the mouthpiece being drawn into the instrument during the purge.**

The DataMaster will repeat the automatic sequence in preparation for the second test if your software requires such while the operator will repeat steps 6 thru 8.

During the subject test cycle the information/results regarding the test will be displayed on the screen as each step of the test is concluded. The exception is during the time the subject is expected to introduce a breath sample into the instrument. The graphing screen will then be displayed.

This concludes the subject test portion of this Guide.

DATAMASTER DMT STATUS CODES

If any of these messages appear on the display do not take the DataMaster out of service. Contact your supervisor and / or seek advise from DataMaster service personnel by calling 1-800-800-8143. They will advise a course of action. Note: this is not a complete listing of Status Codes, and not all are applicable to all models of the DataMaster.

FILTER (1, 2 OR 3) WON'T ZERO Instrument is unable to zero detector voltage at filter noted.

TEMPERATURE LOW Sample cell temperature fails to reach or falls below 45°C.

TEMPERATURE HIGH Sample cell temperature rises to 55°C or above.

RADIO INTERFERENCE Radio frequencies of excessive strength have been detected.

CALIBRATION ERROR Internal standard is not within Tolerance.

PUMP ERROR Flow detector does not detect pump operation.

BLANK ERROR The instrument obtains a reading greater than .003 during blank test.

DETECTOR OVERFLOW The detector output exceeds that readable by the instrument.

FILTER WHEEL ERROR The filter wheel is not activating properly.

INVALID SAMPLE A downward slope detected in alcohol profile.

SIMULATOR OUT OF RANGE The simulator reading is outside acceptable limits (limits set by user).

SIMULATOR TEMPERATURE (Optional, if installed) Simulator temperature is outside acceptable limits (limits set by user).
INTERFERENCE DETECTED The expected ratio between the filters has been exceeded.

AMBIENT FAIL Ethanol or other absorbing vapor detected in the ambient air during the purge.

STANARD ACQUISITION External Simulator Standard was not accepted within the 30 second time window allowed.

SOLUTION CHANGE RECORD (SC) Contains information collected during solution change.

DIAGNOSTIC RECORD (AR) Contains information collected during diagnostic test.

Additional Considerations

1. **TWO MINUTE TIME-OUT:** When the display **"PLEASE BLOW"** and the graph screen appears, the subject has two (2) minutes to provide a breath sample. If no sample is completed, the test will terminate. **Depending on software, the DataMaster will either print "INCOMPLETE TEST" on the test report, or ask if "SUBJECT REFUSED? <Y/N>"** Touch "YES" or "NO" as appropriate. If "YES" (subject refuses to take test again) the test report will automatically be printed, documenting the refusal for that test. If **"NO"**, the instrument will automatically repurge itself and display: **"PLEASE BLOW" (flashing)** The subject may now provide another breath sample.

2. **INVALID SAMPLE** This message is seen only during a subject or simulator test if conducted during the subject test mode. The instrument has detected a negative going value during the test that is inconsistent with the expected test progression. This can be caused by any number of conditions, and is only an indication that the test did not fit the expected sample profile. Usually a retest of the subject after a short waiting period will result in a valid test. See "Invalid Sample" section..

3. **INTERFERENCE DETECTED**: If the expected ratio between the filters is exceeded the instrument will display and printout **"INTERFERENCE"**. Depending on your software, the test may or may not be aborted and a print of the results may or may not be done.

4. **RADIO INTERFERENCE** The RF Detection circuit has been activated. The instrument only "looks" for RF when the detector output is being monitored by the A to D converter. Whether or not the test results will be printed may be software dependent, but generally if the RF was not activated until after the completion of the subject blow, a valid test result will be returned and "Radio Interference" will be printed on the test report after the subject test. The RF circuit is not designed to detect all RF signals that may be generated, only those that are of sufficient strength.

Technical Assisstance:
National Patent Analytical Systems, Inc.
1-800-800-8143 (Toll Free)
1-419-526-67277 (Phone)
1-419-626---9446 (Fax)