

INTOXILYZER 8000

Quality Assurance Specialist

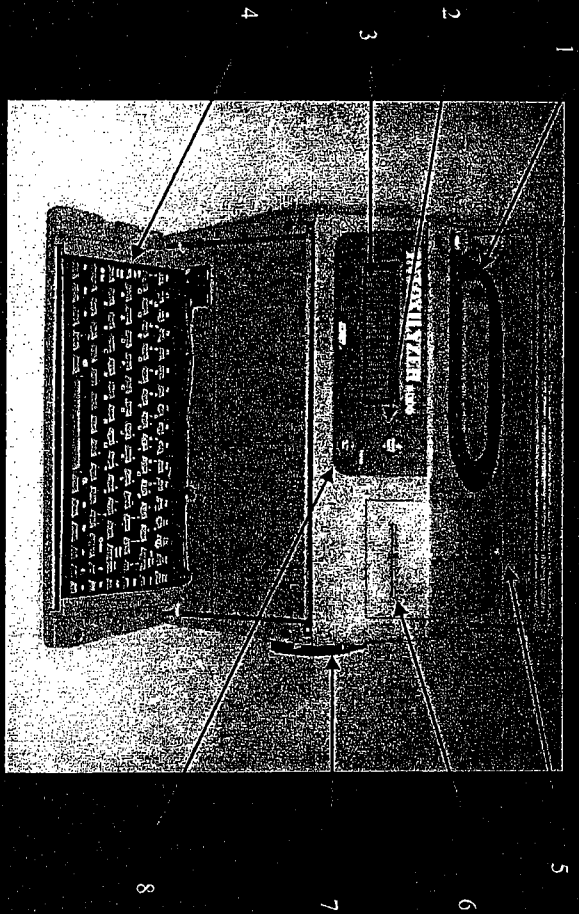
Intoxilyzer 8000

Parts and Controls

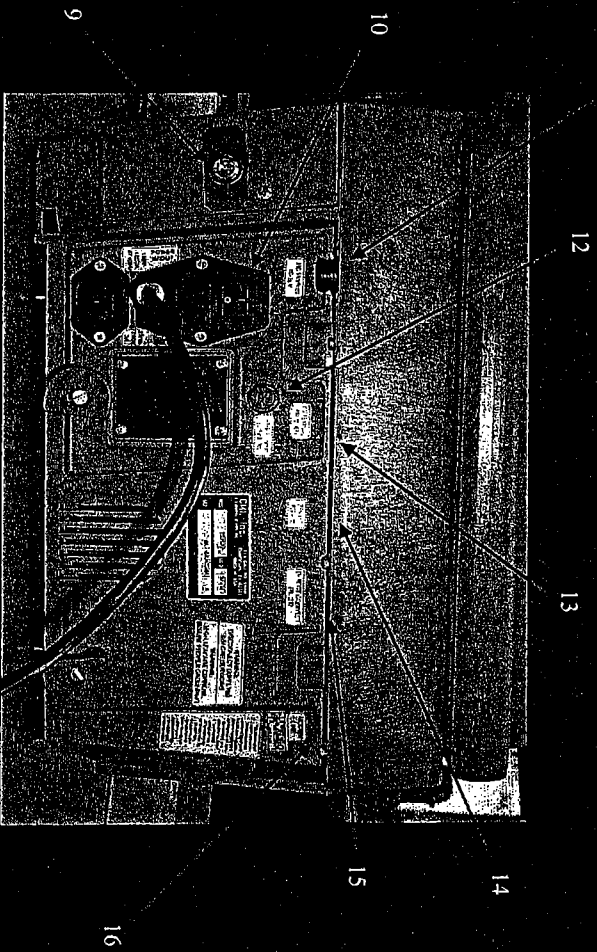
To familiarize yourself with the parts and controls of the Intoxilyzer 8000 breath analysis instrument, refer to the illustration and the cross-referenced explanation below.

1. Breath Tube – Heated, flexible tubing through which the subject blows into the sample chamber.
2. Start Test Button – a green push button used to initiate a breath test
3. Digital Display – A two line readout which shows the status of the instrument, alerts the operator to required actions, and expresses results of breath tests.
4. Keyboard – attached keyboard used for data entry
5. Magnetic Card Reader – reader for operator card and drivers' license swipes, enters data into the instrument without the need for manual entry
6. Printer – thermal printer which prints multi-copy records of a breath test, including date, model, serial number, QAS and operator information, gas or wet bath standard information, and results of the breath test sequence
7. Simulator ports – connection ports for wet bath and dry gas standards
8. Paper Feed Button – a black push button that advances the paper in the thermal printer
9. Dry Gas Power – port to connect regulator to instrument in order to automatically monitor dry gas levels in the tank
10. On/Off Switch – turns instrument on or off
11. DC Power port – plug to allow instrument to run off 12 V power supply
12. Fuse – 6.3 A fuse
13. External Printer port – connection port to attach external printer to instrument
14. Spare RS-232 port – spare port to attach additional features, if needed
15. Direct Connect RS-232 port – allows direct connect to the instrument for downloading information
16. Modem port – allow remote connect to the instrument via the internal modem for downloading information

Operational Controls



Operational Controls



Vitals for the Intoxilyzer 8000

- Uses infrared light at 3 and 9 micron wavelengths
 - Interferent detection is accomplished using the separation of these two readings
- Uses dry gas to perform calibration checks
- Has no moving parts under normal conditions (cooling fan comes on under high temperatures)
- Powered by either 110VAC, 220VAC or 12VDC (range from 10-16VDC for mobile use)
- Instrument casing made of ABS plastic
- Sample chamber volume of 29 ml (about 1/3 the size of the 5000)
- Sample chamber heated to 47+/- 0.2 degrees Celcius
- Range of 0.000 to 0.600 grams per 210 liters

Dry Gas Calibration Standard

- No simulator depletion over time – dry gas value remains constant
- Can be used over a wide range of temperatures
- Less time to complete calibration check
- Pressure dependant – Intoxilyzer 8000 has internal barometric pressure sensor to adjust for elevation differences

Glossary

Absorption -	The process by which a drug enters the bloodstream
Accuracy -	Closeness to the true value
Acetone -	Produced by some uncontrolled diabetics. A volatile substance with a sweet smell. Used in nail polish removers.
Alcohol -	Class of chemical compounds all containing a hydroxyl (OH) group.
Alcohol Concentration (AC) -	= g/100 ml (blood) or g/210L (breath) (BAC = Blood Alcohol Concentration BrAC = Breath Alcohol Concentration)
Alveoli; Alveolar -	Air sacs in lungs where carbon dioxide and oxygen exchange takes place; air (breath) which is in equilibrium with blood
Central Nervous System -	The portion of the vertebrate nervous system consisting of the brain and spinal cord.
Congeners -	Ingredients in packaged beer and liquor, other than alcohol and water, that cause distinct smell, flavor, and color.
Department of Health Services (DHS) -	The agency which regulates breath testing in Arizona
Depressant -	A drug which slows down the central nervous system.
Deprivation Period -	A 15-minute period immediately prior to a quantitative duplicate breath test during which the subject has not ingested any alcoholic beverages or other fluids, vomited, eaten, smoked or placed any foreign object in the mouth.
Diffusion (passive diffusion) -	A physical process of mixing
Distribution -	The manner in which drugs are moved throughout the body tissues and compartments
Divided Attention -	The ability to divide one's attention between different tasks, or the different components of a complex task, such as driving.

Duplicate Tests -	Two consecutive breath tests, immediately following a deprivation period, which agree within a .020 alcohol concentration.
Elimination -	Process which rids the body of a drug
Ethyl Alcohol; Ethanol -	The alcohol legal for human consumption.
Equilibrium -	A state of balance.
Fermentation -	A natural process which produces ethyl alcohol from certain plant materials containing carbohydrates.
Henry' s Law -	The law governing the relationship of alcohol concentration between blood and breath. The basis of all breath testing
Horizontal Gaze Nystagmus (HGN) -	An involuntary jerking of the eyeball (as the eye follows an object horizontally across the field of vision).
Infrared -	A wavelength (type) of light just beyond the visible red region.
Intoxilyzer -	An approved breath testing instrument.
Mouth Alcohol -	Residual alcohol in the mouth.
Pharmacology -	The medical science dealing with the interactions between drugs and living systems.
Precision -	Reproducibility or repeatability.
Retrograde -	An estimate of alcohol concentration at a time earlier than the alcohol concentration test.
Tolerance -	A reduction in the degree of drug effects due to repeated exposure to the drug. (Tolerance to alcohol is limited)

Duplicate Breath Testing

Background

1979 Arizona case law (Baca) requires the state to provide a defendant with their own breath sample, by which they may refute the state's evidence. Problems associated with the resulting silica gel method of breath alcohol preservation are widely known and well documented.

1993 The Arizona Supreme Court denied review of the test case (Moss) regarding the constitutionality of ARS 28-1381 L and M. Therefore, the Arizona Appellate Court decision, upholding ARS 28-1381 L and M as constitutional, is now law.

ARS 28-1381 L

If a law enforcement officer administers a duplicate breath test and the person tested is given a reasonable opportunity to arrange for an additional test pursuant to subsection M of this section, a sample of the person's breath does not have to be collected or preserved.

ARS 28-1381 M

The person tested shall be given a reasonable opportunity to arrange for any physician, registered nurse or other qualified person of his own choosing to administer a test or tests in addition to any administered at the direction of a law enforcement officer. The failure or inability to obtain an additional test by a person shall not preclude the admission of evidence relating to the test or tests taken at the direction of a law enforcement officer.

**EXHIBIT 1
OPERATIONAL CHECKLIST**

ARIZONA DEPARTMENT OF HEALTH SERVICES

**STANDARD OPERATIONAL PROCEDURE
INTOXILYZER MODEL 8000**

DUPLICATE TEST

AGENCY _____
NAME OF SUBJECT _____ DATE _____
INSTRUMENT SERIAL NO. _____ LOCATION OF TEST _____
OPERATOR _____
TEST RESULTS 0. _____ AC TIME _____
0. _____
0. _____

Immediately preceding the administration of the tests, the subject underwent a 15-minute deprivation period from _____ to _____ by _____

- () 1. Display reads "PUSH BUTTON TO START". Ensure breath tube is warm to touch.
- () 2. Push Start Test button
- () 3. Follow automated instructions on instrument display
- () 4. If test record reads "Successfully Completed Test Sequence" go to step 5

OR

If test record reads "Not a Successfully Completed Test Sequence", and subject will be tested again, remove test record and go to step 1

OR

If test record reads "Not a Successfully Completed Test Sequence", and subject will not be tested again, go to step 5

- () 5. Remove test record.

Note: Duplicate tests shall be administered at intervals of not less than 5 minutes nor more than 10 minutes apart. Two consecutive tests shall agree within 0.020 alcohol concentration.

DUPLICATE BREATH TEST ADVISORY

AFTER COMPLETING THE TESTS OF YOUR BREATH, YOU WILL BE GIVEN A REASONABLE OPPORTUNITY TO ARRANGE FOR ANY PHYSICIAN, REGISTERED NURSE OR OTHER QUALIFIED PERSON OF YOUR OWN CHOOSING TO OBTAIN AN INDEPENDENT TEST OR TESTS IN ADDITION TO ANY ADMINISTERED BY A LAW ENFORCEMENT OFFICER.

ACKNOWLEDGMENT

I UNDERSTAND THAT I HAVE THE RIGHT TO A REASONABLE OPPORTUNITY TO ARRANGE FOR AN INDEPENDENT TEST OF MY BLOOD, BREATH OR OTHER BODILY SUBSTANCE.

SUBJECT (please sign)

DATE/TIME

OFFICER (please sign) BADGE #

DATE/TIME

DEPRIVATION PERIOD

DEPRIVATION PERIOD MEANS A 15-MINUTE PERIOD IMMEDIATELY
PRIOR TO A QUANTITATIVE DUPLICATE BREATH TEST
DURING WHICH PERIOD THE SUBJECT HAS NOT INGESTED
ANY ALCOHOLIC BEVERAGES OR OTHER FLUIDS, VOMITED,
EATEN, SMOKED OR PLACED ANY FOREIGN OBJECT IN THE
MOUTH.

DHS REGULATIONS
CHAPTER 14, ARTICLE 4, SECTION R9-14-401.8

DUPLICATE TESTING PROCEDURES

DUPLICATE QUANTITATIVE BREATH TESTS SHALL BE ADMINISTERED AT INTERVALS OF NOT LESS THAN 5 MINUTES NOR MORE THAN 10 MINUTES. THE RESULTS OF BOTH TESTS SHALL BE WITHIN .020 ALCOHOL CONCENTRATION OF EACH OTHER.

IF THE SECOND TEST IS NOT WITHIN .020 ALCOHOL CONCENTRATION OF THE FIRST TEST, ADDITIONAL TESTS SHALL BE ADMINISTERED UNTIL THE RESULTS OF TWO CONSECUTIVE TESTS ARE WITHIN .020 ALCOHOL CONCENTRATION.

DHS REGULATIONS
CHAPTER 14, ARTICLE 4, SECTION R9-14-404.C

Display Messages

- Standby or Ready Mode
 - Push Button to Start
- Evidentiary Test?
- Please Swipe Operator ID Card
 - (shows officer name, badge, and agency)
- Is Info Correct?
- AZ Mag License Y/N?
- Edit info Y/N?
- 15 Min Deprivation?
- Air Blank – about 20 secs.
- Diagnostics
- Air Blank
- Reference
- Control Test
- Air Blank
- Please Blow Until Tone Stops
- Air Blank
- Wait
 - (countdown timer)

Additional Messages (Diagnostics During Warmup)

- Not Ready Mode
- Ready in
- Air Blank
- Volt/Current Test
- RAM Test
- EEPROM Test
- RTC Test
- DSP Test
- Analytical Test
- Int Print Test
- Modem Test
- Temp Reg Test

If any of these diagnostics fail, attempt a second test.

If exception repeats – leave instrument ON and place
OUT OF SERVICE sign on it.

Displayed Exception Messages

- Calibration check out of tolerance
 - calibration check too high or too low
- Sequence aborted
 - start test button pressed at wrong time
- Improper sample
 - subject blew at wrong time
- Inhibited RFI
 - radio frequency interference
- Invalid sample
 - mouth alcohol present in subject's sample – drop of more than 0.006 g/210 L
- Ambient fail
 - volatile substances detected during air blank – readings during air blank unable to drop below 0.019 g/210 L
- Purge fail –
 - readings during an air blank after an analytical measurement do not fall below 0.012 g/210 L
- Range exceeded
 - alcohol concentration exceeds testing limits of the instrument
- Deficient sample
 - subject failed to deliver a valid breath sample within three minutes

Standard Calibration Check Procedure

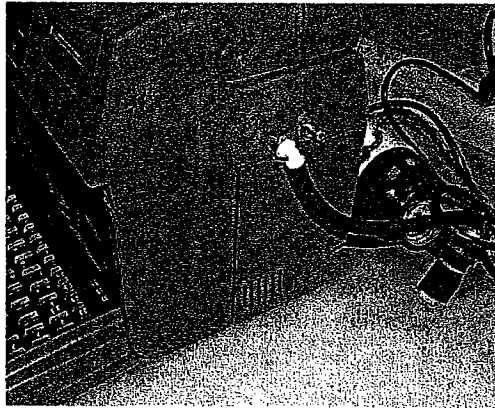
- Performed every 31 days
- Consists of a check of a known standard
- Follows approved checklist

Check of Known Gas Standard

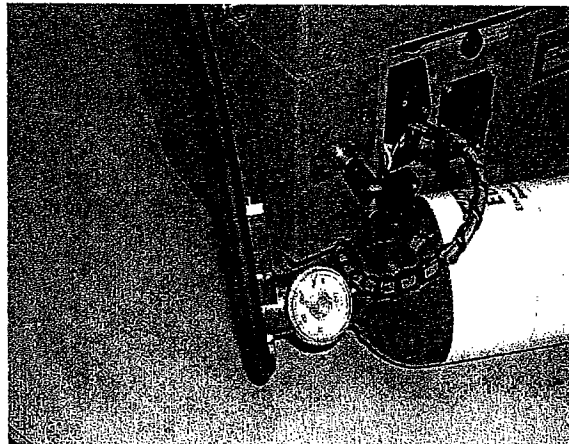
- If using dry gas standard
 - Ensure tank is attached to instrument and is labeled with the value for the known alcohol standard
 - Check tank pressure on regulator– if pressure is approaching 25 psi, replace tank (instrument shuts down at 25 psi until tank is replaced)

To change gas standard:

- Unscrew old tank from regulator
- Screw new tank onto regulator, hand tighten
- Attach hose to side simulator port.



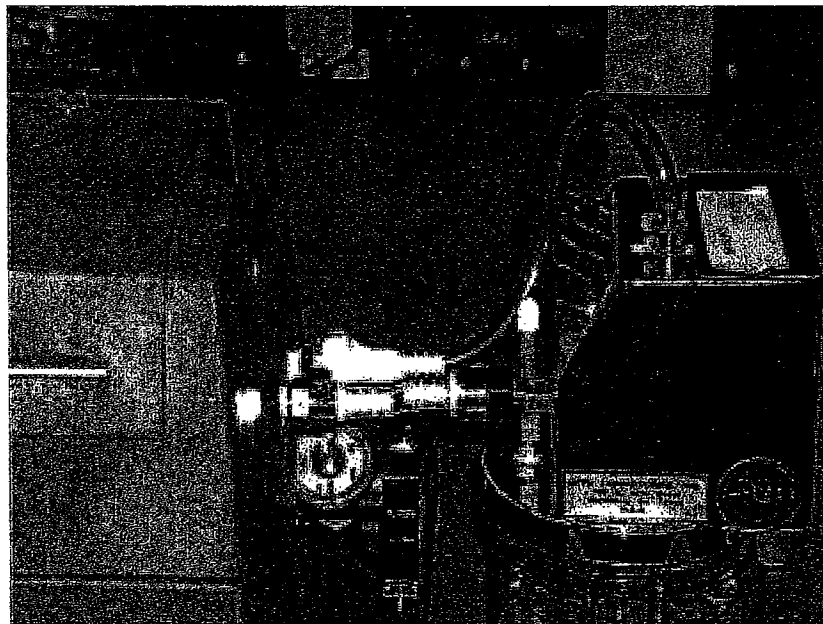
- Plug gas pressure monitor into back port



- Hit 'ESC' twice and swipe Class II Operator card
- Select 'M' for Maintenance menu
- Select 'S' for Standard Change
- For "Select Cal (D/W)", pick 'D'
- For "Enter Target Value:", enter the value given on the side of the gas tank
- For "Enter Control Lot#:", enter lot number given on side of the gas tank
- For "Enter Exp Date:", enter expiration date given on side of gas tank
- For "Edit Info Y/N?", enter 'Y' to review info or 'N' to continue
- For "Update Std Info?", enter 'Y'

Check of Known Wet Bath Standard

- If using wet bath simulator standard
 - Ensure simulator is on and at a temperature of $34^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$.
 - Ensure simulator contains standard calibration solution of a known value
 - Ensure simulator is attached correctly – hooking up the simulator backwards can flood the chamber



To change wet bath standard:

- Hit 'ESC' twice and swipe Class II Operator card
- Select 'M' for Maintenance menu
- Select 'S' for Standard Change
- For "Select Cal (D/W)", pick 'W'
- For "Enter Target Value:", enter the value given on the side of the solution bottle
- For "Enter Control Lot#:", enter lot number given on side of the solution bottle
- For "Enter Exp Date:", enter expiration date given on side of solution bottle
- For "Edit Info Y/N?", enter 'Y' to review info or 'N' to continue
- For "Update Std Info?", enter 'Y'

Performing a Standard Calibration Check Procedure

Logging a Standard Calibration Check Procedure

- Go to the “Maintenance” menu and hit ‘Enter’
- Go to “Preventative Maint” and hit ‘Enter’
- Enter operator first name, last name, badge number, and agency
- At “Edit Info Y/N?”, select ‘Y’ to review or ‘N’ to continue and hit ‘Enter’
- At “PM performed?”, enter ‘Y’ and hit ‘Enter’

Performing the Procedure

- Follow approved checklist and check off each step as it is completed
- Ensure tank or simulator is attached and ready for use
- Make sure instrument reads “Push Button to Start”
- Hit ‘ESC’ twice on the keyboard
- Swipe your Class II Operator card

- Go to the “M - Maintenance” menu and hit ‘Enter’
- Go to the “T - Control Testing” menu and hit ‘Enter’
- Select “D” for dry gas or “W” for wet bath and hit ‘Enter’
- Instrument will perform the calibration check
- Enter value of calibration check on checklist
- Attach printout to calibration check checklist and sign checklist
- Hit ‘ESC’ until the display reads “Ready Mode”

Standard Quality Assurance Procedure (SQAP)

- Performed every 90 days
- Use approved checklist
- Consists of:
 - Visual Inspection
 - Time and Date Check
 - Alcohol-free subject test
 - Error recognition
 - Push Start Test button at wrong time
 - Blow at wrong time
 - RFI
 - Proper sample recognition checks
 - Deficient sample
 - Mouth alcohol
 - Calibration check

Visual Inspection

■ Breath tube check

- Check to ensure tubing is warm to touch
- Look for any damage on tubing

■ Keyboard check

- Ensure keyboard is clean and free of dust

■ Tubing for known standard

- Make sure connections between tubing and instrument are sound
- Look for any damage on tubing

■ External printer (if applicable)

- Make sure connections between printer and instrument are sound
- Replace toner or add paper, if needed