alcohawk™
DIGITAL ALCOHOL DETECTOR

Alcohawk™ ABI

Owner's Manual

Overview

The AlcoHawk™ ABI is a breath alcohol screening device designed to test for the presence of alcohol in the blood. This device is intended to be used in all populations with lung capacity capable of producing at least 1.5 liters of expired air. The AlcoHawk™ ABI is powered by a 9 volt battery that generally lasts between 200-300 tests when using an alkaline battery.

Alcohol Testing Theory

Ethyl alcohol is detectable in the breath because it is absorbed from the mouth, throat, stomach and intestines into the bloodstream. When blood flows through the lungs, some of the alcohol passes across the membranes of tiny lung air sacs (alveoli) into the air. The concentration of the alcohol in the alveolar air is proportional to the alcohol in the blood. As the alcohol in the alveolar air is exhaled, it can be screened by a breath alcohol testing device. Rather than drawing a subject's blood to test for alcohol level, a subject's breath can be tested using a breath alcohol testing device. Because breath alcohol concentration (BAC) is related to the percentage of alcohol in the individual's blood, the BAC can be calculated by measuring alcohol content on the breath. The ratio of breath alcohol to blood alcohol is 2,100:1. This means that 2100 milliliters of alveolar air will contain the same amount of alcohol as 1 millimeter of blood. This concept is well established by Henry's Law, which states that the concentration of a volatile substance in the air above a fluid is proportional to the concentration of the volatile substance in the fluid.

When performing a breath alcohol test, it is necessary to analyze an alveolar or deep lung air sample. If the test sample is not based on a deep lung sample, the sample analyzed could be diluted with breath of a lower alcohol concentration from the upper respiratory tract. This would result in a lower than optimum test result. As a result, breath alcohol testers listed on the Department of Transportation (DOT), National Highway Traffic Safety Administration's (NHTSA) Conforming Products List of Screening Devices To Measure Alcohol in Bodily Fluids, typically have protocols which require the subject to deliver at least 1.5 liters, or continuous blowing into the unit for least five (5) seconds.[1] Otherwise, the testing can be aborted or marked as unacceptable.

[1]Federal Register: May 4, 2001 (Volume 66, Number 87)

Dose-Specific Effects of Alcohol Intoxication

The effects of alcohol intoxication are greatly influenced by individual variations among users, as well as other factors such as altitude and air temperature. The following are general dose-specifics effects of alcohol, although some users may become intoxicated at a much lower Blood Alcohol Concentration (BAC) than shown below. Because a safe reading on a breath alcohol screener does not mean that a driver's reaction times can respond to any emergency encountered, do not drink alcohol and drive.

Some states prohibit driving with a .08 or above reading and can be prosecuted for driving under the influence at any level.

Some states also prohibit driving commercial vehicles or any vessel with .04 or more. There is no safe way to drive under the influence. Even one drink can make you unsafe.

BAC	Dose-Specific Effects[2]
0.02-0.03%[3]	Generally no loss of coordination, slight euphoria or loss of shyness. Depressant effects are not apparent.
0.04-0.06%	General feeling of well-being, relaxation, lower inhibitions, sensation of warmth. Euphoria. Some minor impairment of reasoning and memory, lowering of caution. Driving skills may be impaired at this level of intoxication.
0.07-0.09%	Slight impairment of balance, speech, vision, reaction time, and hearing. Euphoria. Judgment and self-control are reduced, and caution, reason and memory are impaired. Driving skills are always impaired at this level of intoxication.
0.10-0.125%	**Significant impairment of motor coordination** and loss of good judgment. Speech may be slurred; balance, vision, reaction time and hearing will be impaired. Euphoria.
0.13-0.15%	**Gross motor impairment and lack of physical control.** Blurred vision and major loss of balance. Euphoria is reduced and dysphoria is beginning to appear.
0.16-0.20%	Dysphoria (anxiety, restlessness) predominates, nausea may appear. The drinker has the appearance of a "sloppy drunk."
0.25%-0.29%	Needs assistance in walking; total mental confusion. Dysphoria with nausea and some vomiting.
0.30%-0.39%	Loss of consciousness.
0.40% +	Onset of coma, possible death due to respiratory arrest.

[2] Bailey, William J., Drug Use in American Society, 3rd ed., Minneapolis: Burgess, 1993.

[3] Some individuals may experience impairment at BAC levels at .03% or even lower.

USES OF BREATH ALCOHOL SCREENING DEVICES

Breath alcohol screeners are used in a wide variety of applications. For example, law enforcement officials use breath alcohol screeners on the roadside to determine if a subject should be further tested on an evidential alcohol test (a test given to determine an exact blood alcohol concentration). In addition, breath alcohol screeners are also used in a wide range of professions and industries to screen for the presence of alcohol before an individual performs certain job functions. Since the presence of alcohol in a person's body can impair numerous activities of an individual, a simple breath alcohol screening device that can determine the presence of alcohol in a individual's system can be of great value.

COMPONENTS DIAGRAM

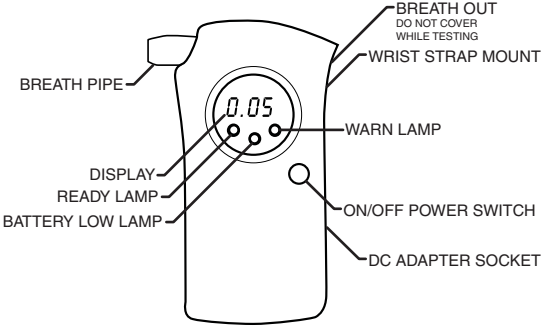
PREPARING THE ALCOHAWK™ ABI FOR USE

Note: Read these instructions before testing your alcohol level.

1. Install the included 9-volt battery. Apply a small amount of pressure on the indentation of the battery compartment cover and then push down and away from the unit simultaneously in order to release the cover. Install the battery and replace the battery compartment cover. (See the following diagram).

2. The tester comes with one replaceable plastic mouthpiece already mounted over the breath pipe. You may wish to replace the mouthpiece for use by another person for sanitary reasons. To change the mouthpieces, align the slot in the mouthpiece with the slot on the BREATH PIPE.

AlcoHawk™ ABI



Operating Instructions

BE SURE TO WAIT AT LEAST 20 MINUTES
AFTER CONSUMING ALCOHOL TO TAKE A TEST.

If you do not wait 20 minutes before testing, the reading will measure alcohol in the mouth, which does not accurately indicate a subject's blood alcohol level. Additionally, not waiting the required time could damage the sensor and cause all future readings to be inaccurate.

1) Press the ON/OFF power switch. The detector will start to count down from 200 to 000 on the DISPLAY. This warm-up process prepares the sensor and circuit for testing.

2) When you hear a BEEP and the green READY light comes on, take a deep breath, then blow steadily and continuously into the BREATH PIPE until you hear another BEEP. You will be blowing for up to 5 seconds. Your lips should be sealed around the mouthpiece while blowing. Be careful not to cover the BREATH OUT opening on the unit. If you don't blow within 30 seconds, the unit automatically displays "OFF". Press the ON/OFF power switch to turn the unit off and repeat step 1).

3) After the red and green display lights blink for 4 seconds, the test result will be displayed by 3 digits for 15 seconds. This number is your Blood Alcohol Concentration (%BAC).

- If the BAC reading is over 0.05%, the red WARN lamp will flash along with a BEEP sound.

- If the BAC reading is over 0.40%, the display will read " HOT" and the red WARN lamp will flash along with a BEEP sound. This can also occur if a subject blows alcohol from their saliva into the tester.

- If you consumed very little alcohol, your actual concentration may be below 0.01%BAC (Blood Alcohol Concentration), and the reading may not be activated. However, the display will show 0.00%.

4) Finally, the unit will display "OFF" for turn-off, along with a BEEP sound. Press the ON/OFF power switch to turn the unit off.

5) For subsequent testing, repeat steps 1) – 4). Space tests at least 2 minutes apart.

Precautions

1. After drinking, smoking and eating, users should **wait at least 20 minutes** before testing. This is because it can take up to 20 minutes for residual alcohol remaining in the mouth to dissipate.
2. Avoid testing in strong winds, in a closed room with a heavy amount of smoke, or where a lot of alcohol is being consumed.

3. When the battery low light is glowing, replace the 9V alkaline battery.

4. Do not blow cigarette smoke, food or liquid into the instrument because this may damage the sensor.

5. The AlcoHawk™ ABI is designed to be used in a temperature range of 10– 40 (C) or 50-104 (F). Operation of the unit in temperature ranges above or below this range may affect the accuracy of results.

6. Do not leave the AlcoHawk™ ABI connected to the car ac/dc adapter when the unit is not in use.

7. Avoid testing in the presence of any substances that contain methyl alcohol, isopropyl alcohol or acetone. These substances may interfere with the results of the test.

8. Conditions that increase the amount of ketones on the breath, such as diabetes and low caloric intake, may cause a false positive test.

9. DO NOT USE THE ALCOHAWK™ ABI AS A TOOL TO DETERMINE WHETHER YOU SHOULD OPERATE ANY MOTOR VEHICLE OR MACHINERY.

10. DO NOT DRINK AND DRIVE. ALWAYS HAVE A DESIGNATED DRIVER WHEN YOU DRINK ALCOHOL.

AlcoHawk™ ABI Specifications

Dimensions	120 x 60 x 25 mm/4.7 x 2.4 x 1”
Battery	9V Alkaline
Sensor	Highly Selective Oxide Semi-Conductor Sensor
Response Time	3.0 Seconds
Calibration	BAC Simulator
Weight	200 grams/1.5 oz
Operating Temp	10 - 40C/50 - 104F
Warm-Up Time	20 Seconds
Accuracy	±0.01% BAC at 0.10% BAC
Calibration Interval	Every 6 ~ 12 Months

Verification and Calibration Overview

Verification is a procedure using an advanced Alcohol Breath Test Simulator that verifies whether the unit is displaying the specific BAC level. If the verification procedure determines that the BAC is not consistent with actual BAC levels, calibration of the device is performed by using an advanced Alcohol Breath Test Simulator. A breath alcohol screening device can start to drift or become contaminated after 6 – 12 months, depending on frequency of use and whether alcohol or other substances penetrate the sensor.

Calibration Procedure

If your device is providing inconsistent, unusually high or low readings, or no readings at all, your device may need to be re-calibrated. **In addition, the Alcohawk ABI should be re-calibrated at least every 6-12 months. More frequent calibrations may be required depending on frequency of use.**

For detailed information on how to have the device re-calibrated, including the location of the service center, please visit us online at www.q3i.com/calibration.html.

For additional information on calibration or technical support, please visit www.q3i.com.

1 – YEAR WARRANTY

The manufacturer warrants the Alcohawk™ ABI to be free from defects in workmanship or material (excluding calibration) under normal use for one year from the date of purchase. Manufacturer's obligations under this limited warranty are limited to replacing, adjusting, or repairing the unit if returned along with the proof of purchase. This warranty is void if the unit has been tampered with, maliciously damaged, or physically abused.

The enforceability of this warranty is limited to the original consumer purchaser and is not transferable to, or enforceable by, any subsequent owner. In the event of a defect, malfunction or other failure to conform to this warranty, Q3 Innovations, LLC, (Q3I), will, at its sole discretion, repair or replace the unit at no charge. You are responsible for all shipping cost in connection with warranty service. This warranty commences on the date of retail purchase and shall be effective for a period of one year.

THERE ARE NO EXPRESS WARRANTIES COVERING THE UNIT OTHER THAN THOSE SET FORTH IN THIS WARRANTY. ALL IMPLIED WARRANTIES ARE LIMITED TO THE PERIOD OF THIS WARRANTY AND NO WARRANTIES, EXPRESS OR IMPLIED, EXTEND BEYOND THIS PERIOD. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

Q3I will in no event be liable for any consequential, incidental, indirect or special damages (including, but not limited to, lost profits) arising out of or in connection with the use, misuse or function of the unit. Some states do not allow exclusion of limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

If you feel your detector is not functioning properly please review this manual, particularly the instructions. If you still feel warranty service is required, please follow the instructions below:

1. To obtain service during the warranty period, please call 888-399-1687 or email service@q3i.com to obtain an RA number and shipping instructions. Remember to return your detector postage paid, insured and in suitable packaging.

2. For your own protection, obtain a proof of delivery receipt. Shipping costs are your responsibility.

3. You must enclose with your unit the following information:

   a. Your name, complete return address and written description of the problem. (No PO Box please.)

   b. A telephone number where you can be reached during normal business hours.

   c. A copy of your dated sales receipt or invoice.

DISCLAIMER

Q3 Innovations, LLC ("Q3I") makes no warranties, expressed or implied, as to the ability of this device to determine whether a person is intoxicated, and Q3I expressly disclaims any liability for incidental, special, or consequential damages of any nature. Decisions and/or actions based upon the reading of this device shall be at such person's own risk. Q3I assumes no responsibility for consequences of subjects who test negative when using this device and later show that they are

under the influence of alcohol or their judgment has been impaired by alcohol. This device should only be used as a screening device and may only give an indication of the possible presence of alcohol in the blood of the test subject. Correlation between breath alcohol content and blood alcohol concentration depends on many variables, including temperature and health conditions. A safe or low BAC reading on a breath alcohol screener does not mean that the driver's reaction times can respond to any emergency encountered. The exact concentration of alcohol in the blood of the test subject cannot be exactly determined by using a breath alcohol screening device.

DO NOT DRINK ALCOHOL AND DRIVE

ALWAYS USE A DESIGNATED DRIVER AFTER DRINKING ALCOHOL

BE SAFE AND DRINK RESPONSIBLY

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