

ALERT J4X.ec™

Breath Alcohol Tester

Safety and Precautions

Breath alcohol testers (BATs) are designed for easy and safe operation. The following precautions should be followed:

- Do not open the BAT case. Doing so will void the warranty and potentially damage the components within.
- Avoid exposing BAT to direct sunlight for extended periods of time.
- If any liquid is spilled on the BAT, remove all excess fluid with a cloth and allow the BAT to dry thoroughly before attempting to powering on.
- Keep all strong magnets and transmitting devices (such as cell phones) away from the BAT to ensure minimal RF interference.

Warranty

All ACS products are warranted to be free of defects in workmanship and materials for a period of one year from the date of shipment.

ACS agrees to replace or repair any defective BAT, provided the defect was not caused by misuse or mishandling.

BATs being returned for warranty repairs must be properly packaged and shipped prepaid to the authorized service facility.

Maintenance

BATs are made for field use, making them susceptible to dirt and debris. The BAT should be cleaned with a damp cloth and mild soap. Do not use abrasive cleaners or solvents.

Periodic maintenance and calibration is required. Contact ACS for more information.

Contact Information

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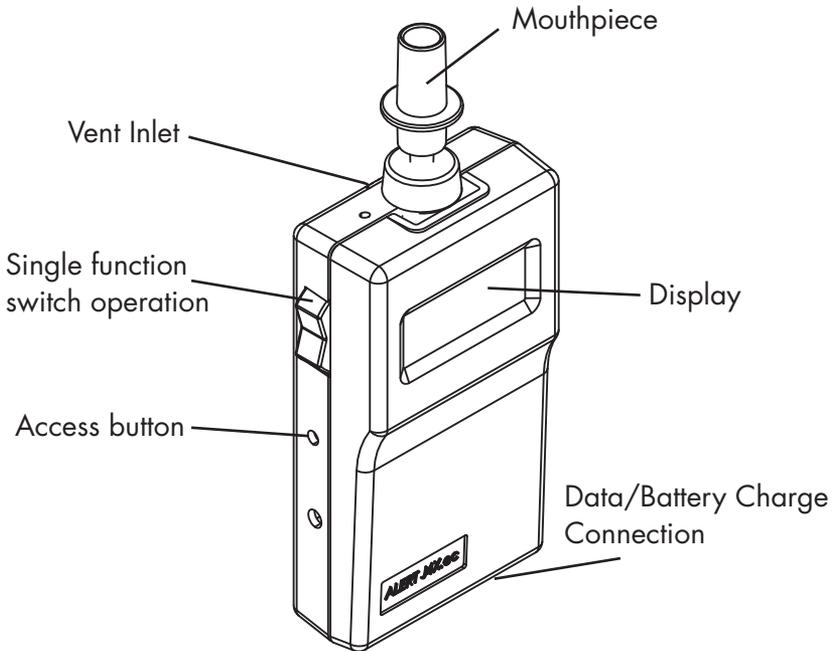
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ALERT J4X.ec

A portable breath alcohol tester (BAT) approved for evidentiary breath analysis.

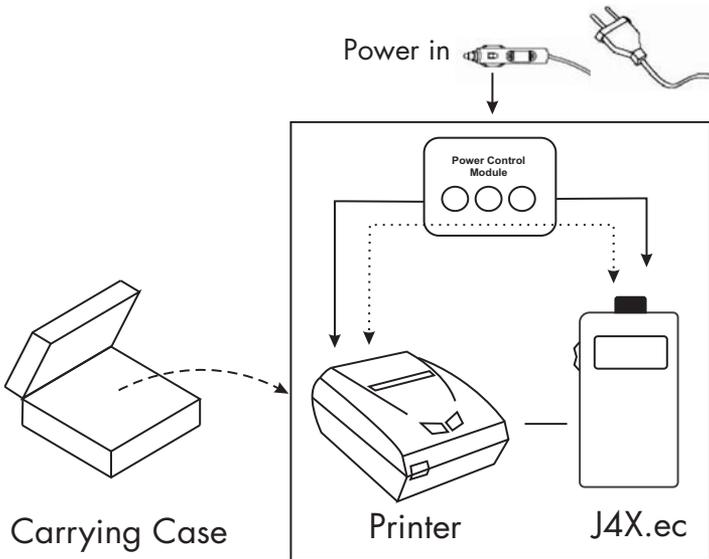


ALERT J4X.ec conducts direct breath tests (pg.5) and optional passive breath tests (pg. 7). The results are logged for recalling and printing as evidentiary material (pg.8). The J4X.ec connects to a PC using the optional PCTalk software (pg.10).

Features

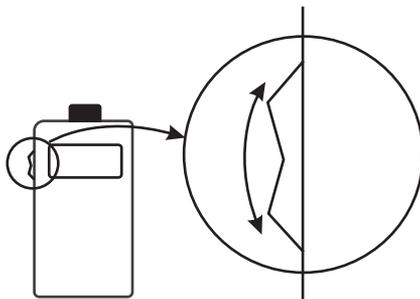
Carrying Case

The carrying case holds the BAT and printer. Included in the kit is an AC power cable and DC car charger which both plug directly to the case. The Power Control Module within the case charges the BAT and printer batteries simultaneously and provides the connection to communicate to the printer.



Function Switch Operation

ALERT J4X.ec is operated by a single function switch, located on the left side of the BAT.



- Push the function switch **upwards** to turn the BAT **on**
- Push and hold the function switch **downwards** to turn the BAT **off**

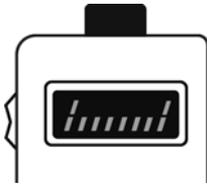
BAC Format

The blood alcohol concentration (BAC) format is customizable at the factory and available in four formats; %mg, mg/L, %BAC and Promille. A BrAC format is available in units of mg/210L.

$$0.08 \%BAC = 80 \text{ mg}\% = 0.80\% \text{ Promille}$$

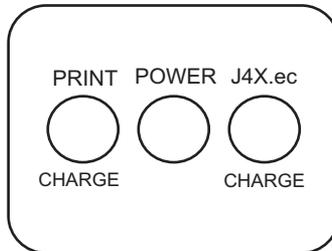
Batteries

The BAT and printer both have internal, rechargeable battery packs. The BAT battery pack is not user replaceable; it can be replaced by an authorized service provider.



The BAT battery level is indicated during initialization. A full set of bars indicates a full battery charge (see figure).

To charge, connect the BAT and printer to the Power Control module with the 7 pin coiled cable and round jack cable. The Power Control Module provides power to both the BAT and the printer, and the charging is indicated by the lights on the top of the module (see below).



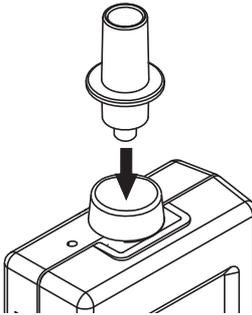
Automatic Shut down

The BAT is equipped with an automatic shut down feature to preserve battery life. Power is automatically shut down after 45 seconds of inactivity.

To manually shut down the BAT, push and hold the function switch **downwards** for 3 seconds.

Direct testing requires the test subject to blow directly into the breath alcohol tester (BAT) through a mouthpiece. Passive testing places the BAT in front of the test subject's mouth and captures the sample through the vent on the rear of the BAT.

Conducting a Direct test



1. Remove the sterile mouthpiece from the plastic wrapping and insert into the port at the top of the BAT.

2. Push the function switch **upwards** briefly to power the BAT on. The BAT begins initialization. Displayed is:

8888

Current date (month:day)

Current time (hh:mm)

Battery level

Ambient temperature (Celsius)

bln_ (Alcohol sensor is being cleared)

0.00 (Alcohol sensor is cleared)

On_

blo (BAT is ready for test)



3. With the **blo** message on the display, instruct the test subject to blow moderately and continuously into the mouthpiece. A constant tone indicates the breath sample is being properly provided and - - - - is on the display.

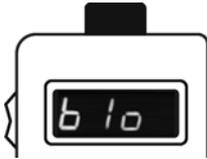
Note! Ensure the test subject has had nothing to eat, drink or smoke 15 minutes prior to the test. The breath sample may become contaminated.

4. Instruct the test subject to stop blowing when the tone stops and a click sound is heard. This indicates the sampling process is complete.
5. The analyzing process is indicated by **IIII** on the display and takes a few seconds. If the test is being performed outdoors in cold weather the time may increase slightly.
6. The BAT beeps and displays the result. The BAC is displayed for 10 seconds followed by the print option **Prn**.
7. If the printer is on and connected, push the function switch **downward** to print the result. See the **Printing** section for more information.

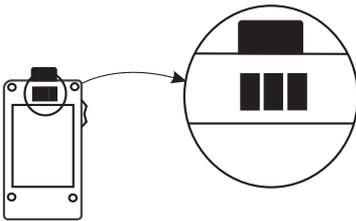
Note! In the event of any problems, refer to the Troubleshooting section.

Conducting a Passive test (optional)

1. Push the function switch **upwards** briefly to power the BAT on. The BAT initializes.



2. With the **blo** message on the display, push the function switch **downward** to enter passive test mode.



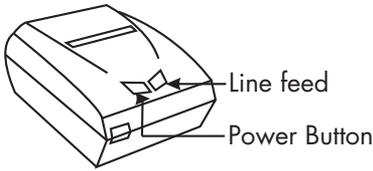
3. On the rear of the BAT is a small vent (see figure) which is placed directly in front of the test subject's mouth.

Note! Ensure the test subject has had nothing to eat, drink or smoke 15 minutes prior to the test. The breath sample may become contaminated.

4. Instruct the test subject to count to 20 aloud. Push the function switch **downward** to activate the BAT. A constant tone indicates the breath sample is being captured and - - - is on the display.
5. The tone stops and a clicking sound indicates the sampling process is complete. Instruct the test subject to stop counting.
6. The analyzing process is indicated by **IIII** on the display and takes a few seconds. If the test is being performed outdoors in cold weather the time may increase slightly.
7. The BAT beeps and displays the result. The BAC is displayed for 10 seconds followed by the print option **Prn**.
8. If the printer is on and connected, push the function switch **downward** to print the result. See the **Printing** section for more information.

Note: In the event of any problems, refer to the Troubleshooting section.

Printing



ALERT J4X.ec comes equipped with a portable printer enabling on site printing of BAC results. The printer operates with a rechargeable battery pack and is connected serially to the BAT by the Power Control Module.

Print a Test

1. With the BAC result on the display, push the function switch **downward** briefly to enable the print function. Alternately, wait 10 seconds after the result is displayed to automatically enter the print function **Prn**.
2. Connect the BAT to the 7 pin coiled cable and turn the printer power on.
3. Push the function switch **downward** again to begin printing. If the display flashes **Prn**, verify the printer is powered on and connected to the Power Control Module. For any other errors refer to **Troubleshooting** section.

Print a Recalled Test

1. Connect the BAT to the 7 pin coiled cable and turn the printer power on.
2. Push the function switch **upward** to turn the BAT power on.
3. At any time during the initialization sequence, push the function switch **downward** briefly to recall the last BAC result.
4. Push the function switch **downward** again to begin printing. If the display flashes **Prn**, verify the printer is powered on and connected to the Power Control Module. For any other errors refer to the **Troubleshooting** section.

ALERT J4X.ec has the capability of communicating with a PC using the PCTalk™ software (optional). The program allows the user to manage test logs, configure BAT options and perform calibration.

PCTalk

The PCTalk program is optional with the purchase of the ALERT J4X.ec and comes with an installation CD and BAT serial cable.

Installing PCTalk

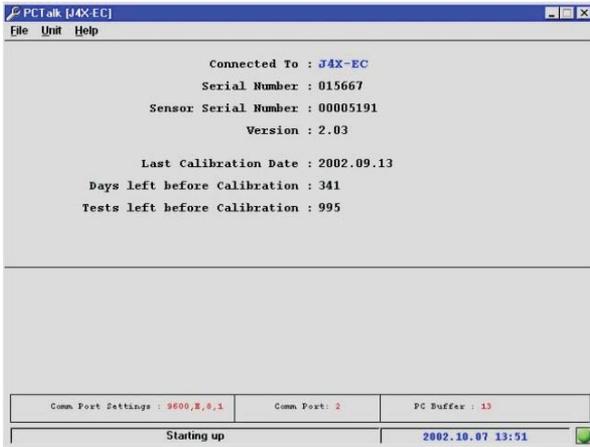
Note! Before installing, verify there are NO existing versions of PCTalk on the PC. Re-installing the program with this method will overwrite any saved logs. Refer to the Reinstall PCTalk procedure.

1. Insert the installation CD, and open the **Install/Disk1** folder.
2. Select **Setup.exe**. The installation welcome screen appears.
3. Click **OK**. Confirm the folder to install the program.
4. Click the button in the top left corner to complete the installation. A message confirms the installation is complete.

Connecting to the BAT

1. Open the **PCTalk** program.
2. Connect the cable provided from the BAT to the serial port of the PC.
3. Log into PCTalk by selecting **File>Login**. Enter the username and password and click **OK** to begin. The **Waiting to connect** message appears.

4. Turn the BAT on by pushing the function switch **upward**. PCTalk loads the BAT information including the serial number, software version and calibration information. This is the startup screen (see figure).



Viewing the BAT current state

1. With the BAT connected, press **F1** to enter the configuration screen.
2. Click on the **Unit Current State** tab. The calibration information and the number of tests the BAT has completed is displayed.



Read and save logs

1. From the startup screen, press **F1** to enter the configuration screen.
2. Click on the **Read & Save Log** button. A window opens containing all the BAC test results stored (logs).

- The status bar at the bottom of the window indicates the Position or log number. Each log has a six digit test record number, and fields to enter the client's information.(See figure)

- Click on the **Save** button to save any new changes to the client's information.

Viewing the saved logs

- From the configuration screen, click on the **Calibration and Log reports** tab.



- Click on **View saved logs**. The Saved Records window appears. There are different sorting options, the default option sorts the logs by BAT serial number.
- Select the BAT serial number and click on **View saved log**.
- Click on **Return** when finished.

Note! This function can be performed with the BAT offline.

Print the log

1. From within the log to be printed, enter any incomplete client information and click on the **Save** button.
2. Click on the **Print** button. The print screen appears.
3. Follow the prompts and click the **Close** button when finished.

Clear the log

1. From the configuration screen, click on the **Calibration and Log Reports** tab.
2. After reading and saving the log, click on the **Clear Log** button.
3. Click **Yes** to confirm the log is to be cleared.

Note: The log must be read and saved before it can be cleared.

Set Date and Time

1. From the configuration screen, click on the **Calibration and Log Reports** tab.
2. After reading, saving and clearing the log, click on the **Set Date & Time** button. The **Unit Date/Time** for the BAT at the bottom right of the window is updated to the PC's current date and time.

Note! The log must be cleared before the date and time can be reset.

Changing the number of print copies

1. From the configuration screen, click the **Calibration and Log Reports** tab.
2. Select the number of copies and click on **Set Print Copies**.

Continuous testing option

The continuous testing option enables the user to conduct multiple tests one after another, as opposed to the BAT shutting down after each test.

1. From the configuration screen, click on the **Calibration and Log Reports** tab.
2. To enable continuous testing, click on the box to select and click on **Set Testing Mode**.

Closing PCTalk

1. Return to the startup screen by clicking the **Return** button in the Configuration screen or pressing **Esc** on the keyboard.
2. Select **File>Exit**.

Uninstalling PCTalk

1. From the Start menu, select **Control Panel**.
2. Select **Add/Remove Programs**. Locate PCTalk in the program list.
3. Click the **Add/Remove** button. The uninstall program starts and asks for confirmation of the uninstall.
4. When prompted, click the **Remove All** button to removed all shared files. A Program Installation Removed message box confirms the uninstall is successful and PCTalk has been removed.

Reinstalling PCTalk

PCTalk may need to be reinstalled if files are missing or the program returns any unexpected errors. Be sure to uninstall the program successfully before reinstalling. The saved logs will not be erased by using this method.

1. Insert the installation CD, and open the **Reinstall/Disk1** folder.

Note! Do not use the reinstall if PCTalk has not been installed on the computer before. Refer to the Install PCTalk procedure.

2. Select **Setup.exe**. The installation welcome screen appears.
3. Click **OK**. Confirm the folder to install the program.
4. Click the button in the top left corner to complete the installation. A message confirms the installation is complete.

Upgrading versions of PCTalk

Program upgrades may become available, be sure to uninstall the program successfully before reinstalling the upgraded version. The saved logs will not be erased by using this method.

1. Insert the upgrade installation CD, and open the **Reinstall/Disk1** folder.

Note! Do not use the reinstall if PCTalk has not been installed on the computer before. Refer to the Install PCTalk procedure.

2. Select **Setup.exe**. The installation welcome screen appears.
3. Click **OK**. Confirm the folder to install the program.
4. Click the button in the top left corner to complete the installation. A message confirms the installation is complete.

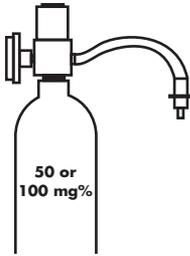
CALIBRATION

Routine calibration and verification checks on the ALERT J4X.ec are required to maintain optimum accuracy. This is important for equipment being used for evidential purposes. It is performed with either a gas or liquid alcohol reference standard.

- Verification is performed monthly. The test either passes or fails, with a failure indicating calibration is required.
- Recalibration is performed every **3 months, 500 tests**, or if a verification fails. The calibration factor is updated.

If the BAT is not calibrated within 12 months or 1000 tests, no further tests may be conducted and the error codes Err17 or Err18 is displayed (see **Troubleshooting** section). This expiry period can be customized at the factory, contact ACS for more information.

Dry Gas Standard Verification



Equipment

- Ethanol alcohol gas reference standard with a concentration of 100 mg% (1.00g/L) 130PPM, ACS part number #95-000430
(A 260PPM standard can also be used, but is not supplied by ACS.)

- Flow control valve with vinyl delivery tube (15 Liters/minute flow rate) part number #58-000100

- Mouthpiece ACS part number #95-000140

Compressed Gas Safety

- Never remove or alter canister labels.
- Remove the valve and install the protective cap on cylinders when not in use.
- Store cylinders in a cool, well ventilated area, away from sources of heat.
- Attach the control valve carefully, and in a safe location.

Procedure

1. Open the **PCTalk** program and connect the BAT to be calibrated. Refer to the **Connecting to the BAT** procedure in this section.
2. Push the function switch **upwards** briefly to power the BAT on. The BAT goes through the initialization process.

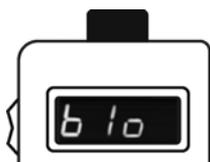


3. With the **blo** message on the display, press the **access button** on the side of the BAT **four times** to enter gas calibration mode (**GVEr**).

- Attach mouthpiece to the vinyl delivery tube and into the port at the top of the BAT.
- In PCTalk, from the configuration screen, click on the **Calibration and Log reports** tab.



- Select **Verification dry** from the drop down **Calibration Type** menu. Click the **Calibrate Unit** button to begin. The BAT resets and goes through initialization again.



- Wait for **blo** to appear on the display.

- Press and hold the valve down to release the gas. After 3-5 seconds press the function switch **downward** until a tone sounds and **----** is displayed indicating the gas is being sampled.
- Continue holding the value down until the BAT beeps and a click sound is heard indicating the sampling is complete. The analyzing process is indicated by **IIII** on the display and takes a few seconds.
- The BAT beeps and displays the result.
 - upas** indicates no calibration is required.
 - Err13** or **Err14** (refer to **Troubleshooting** section) indicates calibration is required. Go to **Calibration** procedures in this section.

Breath Alcohol Simulator (Wet Bath) Verification



Equipment:

- Toxitest breath alcohol simulator ACS part number #94-000140 (110V), #94-000150 (220V)
 - Plastic tubing (2)
 - Liquid trap mouthpiece ACS part number #75-001957
- Ethyl alcohol standard 100mg% ACS part number #95-000310

Note! The ethyl alcohol solution is good for 25 tests or 5 days, whichever comes first. Using expired solution may result in negligible calibration results.

Note! The ACS Calibration station may be used as an air pump source, but it does NOT track the number of tests performed with the ethyl alcohol standard solution.

Toxitest setup

The Toxitest is a breath alcohol simulator which utilizes a known water alcohol solution to produce an air to alcohol vapor which is thermostatically controlled to a temperature of 34°C to simulate breath temperature. The result is an accurate method of recreating a known breath alcohol concentration.

CAUTION! Make sure the Toxitest is unplugged before assembling or disassembling. Failure to do so results in damage to the heater element and risk of electric shock.

- 1 Visually inspect the unit and verify the solution container is clean and free of any cracks.
2. Remove the top housing by holding the solution container and turning the large knob until it is released.

3. Lift up the top housing and check the mercury column on the thermostat and thermometer for no separation. In the case of separation, refer to the troubleshooting section of this document.



Fill
line

4. Set the top housing aside upright on its feet. Fill the solution container with a new **100 mg%** ethyl alcohol standard. Retain the container for referencing the lot and bottle number later in the calibration procedure. **Do not fill past the fill line.**

5. Place the top housing assembly back into the solution container. Lift the solution container to meet the top housing and turn the knob to tighten. Do not over tighten as this will result in cracking the solution container.
6. Check for leaks in the seal by connecting the tube with the mouthpiece to the **AIR IN** port and blowing into the Toxitest with the **VAPOR OUT** port covered. No air should bubble through the solution. In the case of a leak, refer to the troubleshooting section of this document. Remove the tube and mouthpiece when the test is complete.
7. Plug in the Toxitest power cable and switch to the **ON** position. The mixing propeller begins to rotate as power is being supplied to the heating element. Set the Toxitest aside to warm up. It takes approximately 15-20 minutes for the alcohol solution to heat to 34°C. The ready light is located on the top housing beside the thermometer and indicates when the temperature has been reached. If the Toxitest does not reach or maintain this temperature, refer to the troubleshooting section of this document.

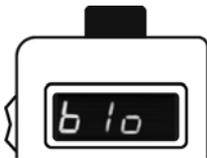
Procedure

1. Open the **PCTalk** program and connect the BAT to be calibrated. Refer to the **Connecting to the BAT** procedure in this section.
2. Push the function switch **upwards** briefly to power the BAT on. The BAT goes through the initialization process.



3. With the **blo** message on the display, press the **access button** on the side of the BAT **three times** to enter calibration mode (**VEr**).

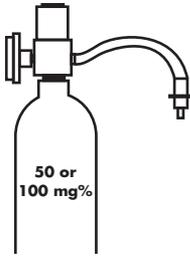
4. Connect the plastic tube from the Toxitest **Vapor out** to the handset.
5. In PCTalk, from the configuration screen, click on the **Calibration and Log reports** tab.
6. Select **Verification wet** from the drop down **Calibration Type** menu. Click the **Calibrate Unit** button to begin. The BAT resets and goes through initialization again.



7. Wait for **blo** to appear on the display. Turn the air source on. A tone sounds and - - - is displayed indicating proper air flow.

8. The BAT beeps and a click sound is heard indicating the sampling is complete. Turn the air source off.
9. The analyzing process is indicated by **IIII** on the display and takes a few seconds.
10. The BAT beeps and displays the result.
 - **upas** indicates no calibration is required.
 - **Err13** or **Err14** (refer to **Troubleshooting** section) indicates calibration is required. Go to **Calibration** procedures in this section.

Dry Gas Standard Calibration



Equipment

- Ethanol alcohol gas reference standard with a concentration of 100 mg% (1.00g/L) 130PPM, ACS part number #95-000430
(A 260PPM standard can also be used, but is not supplied by ACS.)

- Flow control valve with vinyl delivery tube (15 Liters/minute flow rate) part number #58-000100

- Mouthpiece ACS part number #95-000140

Compressed Gas Safety

- Never remove or alter canister labels.
- Remove the valve and install the protective cap on cylinders when not in use.
- Store cylinders in a cool, well ventilated area, away from sources of heat.
- Attach the flow control valve carefully, and in a safe location.

Procedure

- 1 Examine the canister and valve for any damage, and the expiration date on the label. Observe all cautions and safety warnings found on the canister.
2. Remove the protective cap and insert the flow control valve with vinyl delivery tube to the canister.
3. Open the **PCTalk** program and connect the BAT to be calibrated. Refer to the **Connecting to the BAT** procedure in this section.
4. Push the function switch **upwards** briefly to power the BAT on. The BAT goes through the initialization process.



5. With the **blo** message on the display, press the **access button** on the side of the BAT **twice** to enter gas calibration mode (**GCAL**).

6. Attach mouthpiece to the vinyl delivery tube and into the port at the top of the BAT.
7. In PCTalk, from the configuration screen, click on the **Calibration and Log reports** tab.
8. Select **Calibration dry** from the drop down **Calibration Type** menu. Click the **Calibrate Unit** button to begin. The BAT resets and goes through initialization again.



9. Wait for **blo** to appear on the display. Press and hold the valve down to release the gas.

10. After 3-5 seconds press the function switch **downward** until a tone sounds and **----** is displayed indicating the gas is being sampled.
11. Continue holding the valve down until the BAT beeps and a click sound is heard indicating the sampling is complete.
12. The analyzing process is indicated by **IIII** on the display and takes a few seconds.
13. The BAT beeps and displays the result.
 - If the result is between 95 and 105 mg% (0.95-1.05g/L), the calibration has passed.
 - **Err 8** or **Err9**. If the result is out of this range, another calibration is required. Wait 5 minutes before recalibrating.

Note: If the calibration is being performed at a high altitude, the concentration of the alcohol gas reference standard changes. The canister label lists the altitude correction factors. Multiply the BAT reading by the correction factor for the most accurate result.

Breath Alcohol Simulator (Wet Bath) Calibration



Equipment:

- Toxitest breath alcohol simulator ACS part number #94-000140 (110V), #94-000150 (220V)
 - Plastic tubing (2)
 - Liquid trap mouthpiece ACS part number #75-001957
- Ethyl alcohol standard 100mg% ACS part number #95-000310

Note: The ethyl alcohol solution is good for 25 tests or 5 days, whichever comes first. Using expired solution may result in negligible calibration results.

Note: The ACS Calibration station may be used as an air pump source, but it does NOT track the number of tests performed with the ethyl alcohol standard solution.

Refer to Verification section for Toxitest setup instructions.

Procedure

1. Open the **PCTalk** program and connect the BAT to be calibrated. Refer to the **Connecting to the BAT** procedure in this section.
2. Push the function switch **upwards** briefly to power the BAT on. The BAT goes through the initialization process.



3. With the **blo** message on the display, press the **access button** on the side of the BAT **once** to enter calibration mode (**CAL**).

4. Connect the plastic tube from the Toxitest Vapor out to the handset.

5. In PCTalk, from the configuration screen, click on the **Calibration and Log reports** tab.
6. Select **Calibration wet** from the drop down **Calibration Type** menu. Click the **Calibrate Unit** button to begin. The BAT resets and goes through initialization again.



7. Wait for **blo** to appear on the display. Turn the air source on. A tone sounds and - - - is displayed indicating proper air flow.

8. The BAT beeps and a click sound is heard indicating the sampling is complete. Turn the air source off.
9. The analyzing process is indicated by **||||** on the display and takes a few seconds.
10. The BAT beeps and displays the result.
 - If the result is between 95 and 105 mg% (0.95-1.05g/L), the calibration has passed.
 - **Err8** or **Err9**. If the result is out of this range, another calibration is required. Wait 5 minutes before recalibrating.

Refer to the Troubleshooting section for any other errors.

TROUBLESHOOTING

Error Codes

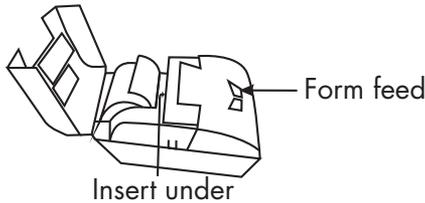
Error Code	Meaning	Action
Err 1	Low battery indication	Charge the BAT battery
Err 2	AC adaptor voltage high	Return the AC adaptor to ACS for service
Err 3	Battery voltage low	Return to ACS for service (battery)
Err 4	Baseline signal too high	Return to ACS for service (sensor)
Err 5	Baseline signal too low	Return to ACS for service (sensor)
Err 6	Sensor heater open	Return to ACS for service (sensor)
Err 7	Test memory log full	Connect BAT to PC and clear log (pg.17)
Err 8	Calibration range low	Return to ACS for service (sensor)
Err 9	Calibration range high	Return to ACS for service (sensor)
Err10	Calibration recall	12 mths/1000 test expired, perform calibration
Err11	Pressure signal too low	Return to ACS for service (pump)
Err12	Pressure signal too high	Return to ACS for service (pump)
Err13	Verification test result is too low	
Err14	Verification test result is too high	
Err15	Verification tests too low and calibration is locked out	
Err16	Verification tests too high and calibration is locked out	
Err17	The maximum number of days since last calibration has been exceeded	
Err18	The maximum number of tests since last calibration has been exceeded	
Err19	The baseline signal was rising during breath sampling	

Troubleshooting Table

If the BAT..	What to do..	Refer to...
Will not turn on	Charge the battery	4
Displaying an error code	Refer to Error Code table	25
Cannot print using serial connection	Check that the printer is on Check the cable connection Check the printer is not charging	42,43
Is displaying irregular results	Change the mouthpiece Verify the test subject has not had anything to drink or smoke Check the calibration due date	9
Mouthpiece is clogged or dirty	Replace the mouthpiece	5,9
Printer is out of paper	Order from ACS part number #95-000174	28
Requires service	Contact ACS for return procedure	ii

Loading the printer paper

1. Open the top cover by pushing up on either side of the printer.
2. Pull the tab to the right and insert the paper roll. Release the tab and the paper roll is aligned in place.
3. Feed the paper into the slot between the roller and ribbon cassette.



4. Turn the printer power on, and push the right line feed button until the paper feeds smoothly through the printer.
5. Close the top cover.

Replacement paper rolls are ordered from ACS. Reference part number #95-000174

Inserting/charging the printer battery

1. Align the power terminals and push the battery pack into the bottom of the printer.
2. If not already connected, plug the round power cable from the Power Control Module to the underside of the printer.
3. Plug the AC or DC car charger to the jack at the rear of the case.
4. The Print charge light on the Power Control Module lights red. The left power button on the printer lights red indicating the battery is charging. Allow the battery to charge for 12-16 hours initially.
5. When the battery has finished charging both red lights turn off. Unplug the power to the case.

Note! It is recommended to remove the battery when the printer is not in use and to let the battery fully drain before recharging.

Calibration Troubleshooting

In the event of a calibration failure, first check the common causes of errors:

- Plastic tubing has not been overused, nor has condensation present.
- The alcohol standard solution value is NOT 100mg% BAC.
- The alcohol standard solution is not expired, or has been in the Toxitest for more than 5 days.
- All connections to and from the Toxitest are secure.

Toxitest

If the Toxitest...	Action
Mercury is separated in the thermostat or thermometer	There may be a separation in the mercury column of either the thermometer or thermostat. Remove the top housing and spray an aerosol "chiller" solution onto the bulb of the thermostat or thermometer. Alternatively, place the assembly in the freezer for 2 hours. The mercury column will shrink within the bulb and rejoin.
Has a leak in the seal	The rubber "O" ring seal is damaged or misaligned. Remove the top housing and reposition the seal. Replace the seal if it is worn or damaged.
Does not reach or maintain 34°C temperature	The thermostat or heating element may be defective, and the Toxitest must be sent for service.
Has condensation in the plastic tubing	Fit the plastic tubing on an aquarium air pump or similar setup for drying.

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