

ACCURACY CHECK PROCEDURE
Clinical Alco-Sensor & Alco-Sensor III

(For previous Versions, serial # 0-1099999; does NOT have a red ejection button)

New Alco-Sensors should be checked for accuracy once a week for the first month, and once a month thereafter. Programs that use the Alco-Sensor very frequently, or that must meet rigorous quality control regulations, may check the instruments for accuracy more frequently.

ZERO DISPLAY CHECK:

The purpose of Zero Display Check is to assure the unit is free of alcohol from previous tests.

1. Depress **READ** button. A negative result should be seen for at least 7 to 10 seconds.
2. If above condition is not seen, depress **SET** button and recheck in 1 minute.

ACCURACY CHECK:

The purpose of Accuracy check is to determine if the unit is within acceptable calibration limits.

3. Check temperature strip on back of Alco-Sensor. Any visible number verifies proper operating temperature.
4. Be certain **SET** button is depressed.
5. Attach Alco-Sensor to the Mini Alco can, the Alcohol Gas Tank, or a Simulator.
6. Make a note of the Target value of the Mini Alco can or Alcohol Gas Tank. If using a Simulator, Target value is usually .100, depending on the solution being used.

If using Mini Alco Can: Connect the Mini Alco can, valve, mouthpiece, and Alco-Sensor as follows. Remove the clear plastic tubing from the top of the Mini Alco can. With a light back and forth twisting motion, attach valve to the stem on the top of the Mini Alco can. Insert the small plastic tubing on the valve into the end of the mouthpiece that is closest to the mounting hole in the side of the mouthpiece. Attach the mouthpiece to the Alco-Sensor. Depress valve on Mini Alco can for 4 seconds. On the 3rd second of the 4-second count, depress the **READ** button and hold it down. This ensures that a flow of gas is going through the mouthpiece when the **READ** button is pressed.

If using Alcohol Gas Tank: First, purge the regulator by depressing valve on Alcohol Gas Tank for at least 10 seconds to allow stale gas to be expelled from regulator. Press tank valve for seven seconds. Press the **READ** button on the sixth second BEFORE releasing Alcohol Gas Tank valve, so that the Alco-Sensor samples the gas while the gas continues to flow.

If using Simulator: Blow steadily through the Simulator for about 6 seconds. Press **READ** button on the 4th second, while continuing to blow through the Simulator.

7. Observe the reading on the Alco-Sensor until it peaks and becomes stable for 5 seconds.

8. If the reading is within the acceptable tolerance limits, the unit is considered within calibration limits and no further action is necessary. Acceptable tolerance limits for the Clinical Alco-Sensor are +/- .01. Acceptable limits for the Alco-Sensor III when using an Alcohol Gas Tank are +/- .010. **If not within limits, the Calibration Procedure should be performed.**

Example #1: Target value of a Mini Alcohol Can is .113. Acceptable limit is .113 +/- .010, or any reading between .103 and .123. Accuracy check shows an Alco-Sensor III reading of .111. This is within acceptable limits, so Calibration Procedure is not necessary.

Example #2: Target value of Mini Alcohol Can is .09. Acceptable limit is .09 +/- .01, or any reading between .08 and .10. Accuracy check shows a Clinical Alco-Sensor reading of .07. This is not within acceptable limits, so Calibration Procedure is performed.

CALIBRATION PROCEDURE
Clinical Alco-Sensor & Alco-Sensor III
(Previous Versions, serial # 0-1099999; does NOT have a red ejection button)

The purpose of Calibration Procedure is to adjust the sensitivity of the Alco-Sensor to bring it into correct calibration.

1. Using the screwdriver provided in the Alco-Sensor case, turn the calibration screw located on the right side of the unit two full turns **clockwise**. This increases the sensitivity of the Alco-Sensor, resulting in a higher than normal reading.
2. Perform the Zero Display procedure as described earlier to ensure that unit is free from traces of alcohol from previous tests.
3. Take a reading of the Mini Alco can, Alcohol Gas Tank, or Simulator, as described in the Accuracy check procedure.
4. Quickly remove Alco-Sensor from Mini Alco can, Alcohol Gas tank, or Simulator and insert screwdriver in the calibration screw.
5. Carefully observe the reading. When the reading goes above the target value (the value marked on the can or tank), immediately turn the calibration screw **counterclockwise** until the reading on the Alco-Sensor just approaches, but does not go below the target value. The reading will continue to rise, and the screw should again be turned counterclockwise to bring the reading to the target value, **but not below it**. The reading may rise a bit more, and another slight adjustment may be necessary to bring the reading down to the target value.

Note: Under no circumstances should the screw be turned clockwise to increase the reading on the Alco-Sensor during this procedure. If during the calibration the screw is turned too far, resulting in the reading going below the target value, **DO NOT** bring the reading UP by turning the screw clockwise. **Instead, wait to see if the reading will rise to the target value.** If it does rise past the target value, the screw may then be turned counterclockwise to lower the reading. If the Alco-Sensor reading does not rise to the target value, let the Alco-Sensor rest for several minutes with the **SET** button depressed, and repeat the calibration procedure.

6. Once the unit has been calibrated, depress the **SET** button.
7. Verify calibration by performing an Accuracy Check to ensure that the instrument is now reading within the acceptable level of tolerance.

GLOSSARY

Accuracy Check: A procedure that documents how accurately the Alco-Sensor is reading. This procedure determines if the Alco-Sensor needs adjustment or is giving acceptably accurate readings.

Calibration Adjustment: A procedure that adjusts the accuracy of the Alco-Sensor.

Target Value: The alcohol value printed on the Mini Alcohol can, Alcohol Gas Tank, or Simulator. This value is different for every Mini Alcohol can. For a simulator, the target value is found on the label of the simulator solution used in the simulator, and is commonly .100. Alcohol Gas Tanks come in values of .038 and .082. Actual target value is determined using an elevation chart on the tank.

If you have questions, comments, or difficulties calibrating your instrument, please feel free to contact us at 800-227-9890.

ACCURACY CHECK PROCEDURE
Clinical Alco-Sensor & Alco-Sensor III
(New Versions, Serial # 1200000+, with a red ejection button)

New Alco-Sensors should be checked for accuracy once a week for the first month, and once a month thereafter. Programs that use the Alco-Sensor very frequently, or who must meet rigorous quality control regulations, may check the instruments for accuracy more frequently. Before beginning have these items available: instrument, alcohol standard, clean mouthpiece

Accuracy Check Using Mini-Alco Can (can be used in non-evidentiary testing environments).

1. Remove plastic sleeve from top of Mini-Alcohol Can.
2. With a light back and forth motion, attach valve to stem on top of Mini-Alcohol can.
3. Attach end of new mouthpiece to plastic nozzle on valve. (This will be called the MINI-ALCO ASSEMBLY).
4. Check the temperature of the Alco-Sensor by depressing READ while holding down the SET button.
Be certain that the instrument temperature is between 15C and 36C. RELEASE the READ button.
5. Depress only the READ button, allowing the SET button to pop up, drawing fresh air from the room into the instrument.
.000 should be seen first in the dim mode and then in the bright display mode before continuing on with the test procedure.
6. If .000 is not seen in the bright mode, depress SET button and recheck in one minute.
(If you cannot successfully complete this process after several attempts, contact AlcoPro at 800-227-9890.)
7. Depress the SET button.
8. Attach the MINI-ALCO ASSEMBLY to the Alco-Sensor.
9. Observe the value marked on the Mini-Alco Can - this is the target value.
10. Depress valve on Mini-Alco Can for 6 seconds. On the 4th or 5th second of the 6-second count, depress the READ button.
(NOTE: The vapor must be flowing through the mouthpiece when the READ button is depressed).
11. Release the valve on the Mini-Alco Can.
12. Remove the MINI-ALCO ASSEMBLY from the Alco-Sensor and observe the reading until it is displayed in the bright mode.
13. The displayed result should be within +/- .010 of the value marked on the Mini-Alco Can.
14. If the reading does not meet the specified tolerance, the unit requires a calibration adjustment.

Accuracy Check Using Dry Gas Standard

1. Follow instructions on the dry gas standard to mount the regulator.
2. Purge regulator by depressing button/valve on regulator for approximately 3 to 4 seconds before running your first accuracy check of the day.
3. Attach new mouthpiece to the end of the regulator line (small plastic tubing).
4. Check the temperature of the Alco-Sensor by depressing READ while holding down the SET button.
Be certain that the instrument temperature is between 15C and 36C. Release the READ button.
5. Depress only the READ button, allowing the SET button to pop up, drawing fresh air from the room into the instrument.
.000 should be seen in the dim mode and then in the bright display mode before continuing on with the test procedure.
6. If .000 is not seen in the bright mode, depress SET button and recheck in one minute.
(If you cannot successfully complete this process after several attempts, contact AlcoPro at 800-227-9890.)
7. Depress the SET button.
8. Carefully attach Alco-Sensor to mouthpiece assembly.
9. Review the elevation chart on the tank to calculate the proper alcohol concentration for the tank at your elevation.
The value can also be determined from an appropriate True-Cal device.
10. Depress regulator control button for 6 seconds. On the 4th or 5th second of the 6-second count, depress the READ button.
(NOTE: The gas must be flowing through the mouthpiece when the READ button is depressed).
11. Release the regulator control button.
12. Carefully detach the mouthpiece assembly from the Alco-Sensor and observe the reading until it becomes stable and bright.
13. The displayed result should be within +/- .010 of the value marked on the Dry Gas Standard (or your testing program's specified acceptable tolerances).
14. If the reading does not meet the specified tolerance, the unit requires a Calibration Adjustment.

Accuracy Check Using Wet Bath Simulator

1. Prepare the Simulator for use by pouring in a fresh bottle of simulator solution.
Allow 30 minutes for the simulator to warm the solution to the operating temperature of 34C.
2. Liquid should be clear with no visible particles suspended in the solution.
3. The simulator top must be on securely so the system is airtight. To check, cover the outlet port with your finger and blow into the intake port. Resistance to your exhalation will be felt on an airtight simulator, and there should be no bubbles.

4. Check the temperature of the Alco-Sensor by depressing READ while holding down the SET button.
Be certain that the instrument temperature is between 15C and 36C. Release the READ button.
5. Depress only the READ button allowing the SET button to pop up, drawing fresh air from the room into the instrument.
.000 should be seen in the dim mode and then in the bright display mode before continuing on with the test procedure.
6. If .000 is not seen in the bright mode, depress SET button and recheck in one minute.
(If you cannot successfully complete this process after several attempts, contact AlcoPro at 800-227-9890).
7. Depress the SET button.
8. Attach mouthpiece to Alco-Sensor and then to simulator.
9. Note the alcohol concentration on the label of the simulator solution; this is the target value.
10. Blow into the inlet port of the simulator for 6 seconds. On the 4th to 5th second of the 6-second count, depress the READ button.
(NOTE: The vapor must be flowing through the mouthpiece when the READ button is depressed).
11. Stop blowing into the inlet port of the simulator.
12. Carefully detach the Alco-Sensor from the simulator and observe the reading until it becomes stable and bright.
13. The displayed result should be within +/- .010 of the value of the solution
(or your testing program's specified acceptable tolerances).
14. If the reading does not meet the specified tolerance, the unit requires a calibration adjustment.

CALIBRATION PROCEDURE
Clinical Alco-Sensor & Alco-Sensor III
(New Versions, Serial # 1200000+, with a red ejection button)

Before beginning have these items available: instrument, alcohol standard, new mouthpiece, calibration screwdriver

1. Hold down SET button and pump the READ button once to display the temperature.
Temperature must be between 15 and 35 degrees Celsius. (59F - 94F)
Note: firmware version and then revision designation will also be displayed
2. As soon as the temperature is displayed, pump the READ button 3 more times.
Note: Continue to hold the SET button during the 3 pumps of the READ button.
Note: You have only 2 seconds to complete all three pumps.
Note: "CAL" will be displayed momentarily followed by "BLn".
3. Release the SET button and press the READ button to take a blank and sample fresh air from the room.
Note: --- A moving dash will indicate that the sample is being evaluated.
Note: After blank analysis "SEt" will be displayed. Press the SET button.
4. When "CAL" appears again:
Test the alcohol standard just as described in the Accuracy Check procedure.
Note: --- A moving dash will indicate that the sample is being evaluated.
5. When the results are displayed, adjust the reading so that it matches your alcohol standard.
Note: Use a nonmetallic screwdriver. Turn clockwise to increase the reading, and counterclockwise to decrease the reading.
6. Press the SET button to re-cock the sampling pump and save the calibration.
7. Perform an Accuracy Check to verify the calibration.
(Acceptable limits immediately after adjustment are +/- .005 of target value.)

GLOSSARY

Accuracy Check: A procedure that documents how accurately the Alco-Sensor is reading. This procedure determines if the Alco-Sensor needs adjustment or is giving acceptably accurate readings.

Alcohol Standard: A system used to deliver a vapor of known alcohol concentration thru the mouthpiece of an Alco-Sensor to be analyzed during an Accuracy Check or Calibration Adjustment. Examples of Alcohol Standards include: Mini-Alcohol Cans, Alcohol Gas Tanks, and Simulators.

Calibration Adjustment: A procedure that adjusts the accuracy of the Alco-Sensor.

Target Value: The alcohol value printed on the Mini Alcohol can, Alcohol Gas Tank, or bottle of Simulator solution. This value is different for every Mini Alcohol can. For a simulator, the target value is found on the label of the simulator solution used in the simulator, and is commonly .100. Alcohol Gas Tanks typically come in values of .038 and .082. A tank's target value is determined using an elevation chart on the tank or a True-Cal device.