

The diagram below represents the back plate of an AlcoSensor IV, setting forth the instructions for administering a test to a subject.

OPERATING INSTRUCTIONS

1. MOUNT MOUTHPIECE.
Unit turns on.

2. NOTE TEMPERATURE.

If unit displays Set,

3. DEPRESS SET BUTTON.

*When unit displays Blnk,
Unit runs BLANK auto-
matically & displays .000 (*)*

If unit displays Set,

4. DEPRESS SET BUTTON.

When unit displays Test,

5. COLLECT A BREATH SAMPLE.


6. RECORD 3 DIGIT READING.

7. DEPRESS SET BUTTON AND REMOVE MOUTHPIECE.

If unit displays a message not mentioned above, consult manual.

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4,770,026
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Other patents pending

SERIAL NUMBER



(*) The type of software in your unit requires specific information at this point. Each unit has different wording here. Complete information on what to expect for the Red, Green and Blue Dot ALCO-SENSOR IV follows.

The following material is excerpted from Intoximeter's operators's manual for the Alco-Sensor IV, and sets forth the procedures for administering a test. Note that slight variations exist for the different versions ("Red Dot," "Black Dot," etc.) of the device.

EXPLANATION OF BACKPLATE OPERATING INSTRUCTIONS

Your ALCO-SENSOR IV must not be attached to an RBT IV printer at this time.

1. MOUNT MOUTHPIECE.

Unit turns on.

Remove ALCO-SENSOR IV from its case and mount a NEW mouthpiece as described previously. This will power up the unit and within 1 second the display will be active. If the battery is too low, the first display will be "Bat". Replace the battery as soon as the test is concluded.

2. NOTE TEMPERATURE.

The temperature in °C will be displayed for 3 seconds after turn-on. ALCO-SENSOR IV is designed to provide maximum accuracy when the unit temperature is between 10°C and 40°C. Below 10°C, the FUEL CELL process becomes progressively slower, measurement times become longer and some information begins to be lost, so that accuracy begins to decline. Clearing time for the cell increases and, consequently, the required interval between tests is increased. On the other hand, temperatures above 40°C tend to degrade FUEL CELL performance and shorten the useful life of the cell. All ALCO-SENSOR IV's with a serial number higher than 002343 will not allow a test if the unit, i.e. fuel cell, is out of the proper operating temperature range. If the temperature is outside of the proper operating range, take appropriate corrective action by removing the mouthpiece and placing the instrument in a cooler or warmer environment.

3. If unit displays SET DEPRESS SET BUTTON.

If the previous test has been properly concluded, the pump mechanism should already be cocked and "Set" will not appear. If this was not correctly done, or if by impact or rough handling the mechanism has been sprung, this instruction requires the pump to be restored to its cocked position. The test cannot proceed until it is done.

IMPORTANT:

The type of unit you purchased determines what will be the next step that you will observe. Following is an explanation for each type of unit. Depending upon the operating instructions as laid out on the back of your unit, you will notice a difference in the numeric sequencing.

During the initial phase of this step, the computer is monitoring the FUEL CELL output to be sure that the system is essentially zero so that a measurement may start. During the first ten seconds, a BUSY display consisting of alternating "<" and ">" characters appears. If, at the end of this time, the output is still not low enough, "Wait" or "Void" appears. Generally, if a minute or more has elapsed since the last test, the wait will only be a few seconds. If "Wait" persists more than 3 or 4 seconds, it is suggested, in the interest of battery life, that the mouthpiece be removed and the test be started again from Step 1 30 seconds later. When the FUEL CELL output is zero and stable, your unit will proceed in one of the following manners:

On Red Dot ALCO-SENSOR IV (Air Blank) unit, you will see:

4. When unit displays Blink,
Unit runs Blank and displays .000

"Blink" appears on the ALCO-SENSOR IV display while the unit draws a blank sample and checks for alcohol residue in both the manifold and the fuel cell. The busy signal "><" displays while the sample is analyzed. If both the manifold and the fuel cell are clean, ".000" appears followed by "Set".

If the manifold and/or the fuel cell are not clean, ".XXX" (a numeric value) appears followed by "Void". Eject the mouthpiece and wait 15 seconds to 1 minute (depending upon the magnitude of the reading) before attempting to reinitiate the test with a new, clean mouthpiece. **DO NOT BLOW BY MOUTH THROUGH THE MANIFOLD AS THIS CAN RETARD THE CLEARING.**

5. When unit displays Set, DEPRESS THE SET BUTTON.

On Green Dot ALCO-SENSOR IV (Sensor Blank) unit, you will see:

When unit displays Blnk, Unit runs Blank automatically & displays .000

Depress the SET BUTTON to cock the breath pump and the unit is ready for a breath sample.

"Blnk" appears on the ALCO-SENSOR IV display while the unit draws a blank sample and checks for alcohol residue on the fuel cell only. The busy signal "><" displays while the sample is analyzed. If the fuel cell is clean, ".000" appears.

If the fuel cell is not clean, ".XXX" (a numeric value) appears followed by "Wait". Eject the mouthpiece and wait 15 seconds to 1 minute (depending upon the magnitude of the reading) before attempting to re-initiate the test with a new, clean mouthpiece. **DO NOT BLOW BY MOUTH THROUGH THE MANIFOLD AS THIS CAN RETARD THE CLEARING.**

6. If the unit displays Set, DEPRESS SET BUTTON.

On Blue Dot ALCO-SENSOR IV (Omnibus) unit, there is no outward indication of the internal operation at this point:

If "Set" appears, depress the SET BUTTON to cock the breath pump and the unit is ready for a breath sample.

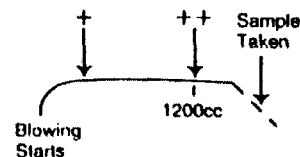
After the unit displays the temperature, the busy signal "><" flashes while the unit automatically draws a blank sample and checks for alcohol residue on the fuel cell. The busy signal "><" continues to display while the sample is analyzed. If the fuel cell is clean, the unit displays "Test". The Blue Dot ALCO-SENSOR IV unit is ready for a breath sample.

If the fuel cell is not clean, "Wait" appears. Eject the mouthpiece and wait 15 seconds to 1 minute (depending upon the magnitude of the reading) before attempting to re-initiate the test with a new, clean mouthpiece. **DO NOT BLOW BY MOUTH THROUGH THE MANIFOLD AS THIS CAN RETARD THE CLEARING.**

CHECK THE BACK PLATE OF YOUR UNIT FOR THE CORRECT NUMERIC SEQUENCE OF THE NEXT STEP.

5. COLLECT A BREATH SAMPLE.

BREATH PROFILE



At the beginning of this step, the busy symbol "><" previously described is displayed while the computer monitors the breath flow sensor for stability. (A display of "Man" at this point indicates that the breath flow sensor is disabled and that **ONLY** a manual sample is possible.) When the display shows "Test", instruct the subject to take a deep breath, hold it and then blow steadily through the mouthpiece for as long as he can. A (+) sign appears to indicate that the subject is blowing hard enough to complete an automatic sample. (If (+) does not appear, tell subject to blow harder.) When subject has blown a minimum volume of approximately 1.2 liters, a second (+) sign appears. The sample will be taken **ONLY** when this condition has been met **AND** the flow diminishes indicating that the end of the exhalation is approaching. If **BOTH** conditions are met in 10 seconds or less, the unit will automatically sample. If more than 10 seconds elapses or if blowing is interrupted before the second (+) sign appears, the unit will display "NoGo" and return to the beginning of Step 5 to start another sample attempt.

If subject has obviously impaired breathing, it is recommended that the sample be taken manually as close to the end of exhalation as possible by pressing the **MANUAL BUTTON**. The same technique can be used with an uncooperative subject to get the best possible reading under the circumstances.

A total of 3 minutes is allocated to achieve a successful sample either automatically or manually. At the end of 3 minutes "Void" appears and the test must be started again at Step 1 with a NEW mouthpiece.

Any time the sampling pump does not successfully draw a sample on either the manual or automatic command, the display will show "Void". After 3 seconds an intermittent BEEP indicates that the mouthpiece should be removed to turn power off. The cause of this failure should be investigated by a technician.

THE BACKPLATE STATES:

6. RECORD 3 DIGIT READING. OR RECORD INITIAL OR FINAL READING.

As soon as a successful breath sample has been taken, the busy signal ">:<" is displayed (*BUSY*) to indicate the computer is analyzing the breath sample.

On some units:

After a few seconds a 2 digit display will appear for 3 seconds in addition to the busy symbol ">:<" I. This is an approximation of the final reading to better than 10%. If this value is too low to be of interest, or is adequate for screening purposes, the test may be terminated at this point by depressing the SET BUTTON and removing the mouthpiece. If not terminated, the display will continue to indicate *BUSY* until the final 3 digit display appears in 20-30 seconds. It is accompanied by a 3 second series of BEEPS.

On the Blue Dot ALCO-SENSOR IV:

The final 3 digit display appears in 20-30 seconds, accompanied by a 3 second series of BEEPS.

7. DEPRESS SET BUTTON AND REMOVE MOUTHPIECE.

After the 3 digit display disappears, "Set" appears. Depress the SET BUTTON and eject the mouthpiece unless you need to recall the test result. When the pump is cocked with the SET BUTTON, an intermittent BEEP signals that the mouthpiece should be removed to turn the unit off. At any time during this BEEPING period and before the mouthpiece is ejected, depressing the RECALL BUTTON will display the 3 digit result of the test just completed.

RECALLING THE CURRENT TEST RESULT

Until the SET BUTTON is depressed after a test, the RECALL function is not available. Once the SET BUTTON has been engaged, depressing the RECALL BUTTON will display the final reading of the current test. After the mouthpiece is ejected, the test result cannot be recalled.

QUICK REFERENCE GUIDE TO DISPLAY LEGENDS

DISPLAY	MEANING
< and > alternating	The symbol "><" has been used in the previous text to denote this display. The computer is busy and the unit is functioning—wait for the next message.
Wait	A waiting period is necessary to ready the system for another test. Generally, if "Wait" persists more than 3 or 4 seconds, the unit should be turned off for a period of time before another test is attempted.
Blnk	After the display shows "Blnk", the instrument automatically reads a blank to be sure the system is free of alcohol residue.
Set	SET BUTTON should be depressed to cock sampling pump.
Void Followed by intermittent beep	An improper condition exists that requires the unit to be turned off and restarted from Step 1.
Man	The breath flow sensor is inoperative and ONLY a manual sample may be taken. Proceed with breath sample, but depress the MANUAL BUTTON near the end of exhalation.
Test	A breath sample should be collected from the subject or an ACCURACY CHECK sample should be delivered.
RBT	Appears when ALCO-SENSOR IV is connected to an RBT printer in place of "Test".
NoGo	The proper conditions for an automatic sample have not been achieved. When "Test" appears again, start a new sample.
+	A sufficient minimum breath flow is being provided for automatic sampling.
++	A minimum sample volume of at least 1.2 liters (1200cc) has been delivered.
> XXX	A sample has been introduced that exceeds the measuring range of the instrument. This may be seen during testing, Cal, Cal1 or Cal2. Example: >400.
Bat	The 9-volt alkaline battery should be changed. If this display is followed by normal operation, the battery is capable of completing the current test. If "Bat" is followed by "Void", the test must be terminated and a new battery must be installed. Good practice demands that the battery be changed at the end of the first test where "Bat" appears.

RFII	Followed by "Void" indicates that an RFI signal was detected which is sufficiently strong that the results of a test might be affected. Test must be started over by removing mouthpiece to turn unit off.
Cal or Cal1 or Cal2	Appears during the CALIBRATION PROCEDURE and indicates that a sample of the test gas should be delivered following instructions in the ACCURACY CHECK section.
XX°C	Temperature is displayed in Celsius.
XX°C (Repeatedly)	A high resistance or loose battery is indicated and should be replaced.
Tmp>	Temperature greater than allowed. (*)
Tmp<	Temperature less than allowed. (*)
>>>>	There are improper conditions during a calibration procedure that prevent proper calibration of the unit (requires servicing by a technician). (*) Seen only during Cal, Cal1, or Cal2