

# CALIBRATION PROCEDURE : ToxCO+

## (Calibration equipment: CO-Calib-34-50)

For continued accurate use of your breath carbon monoxide monitor, calibration on a six-month basis is recommended. Please follow steps 1-6 below. Do not use the calibration instructions listed in the ToxCO+ Instruction Manual if you are using the **CO-Calib-34-50**. Those instructions reference slightly different equipment. The steps below provide instructions for calibrating the ToxCO+ Monitor, using the calibration equipment you received (**CO-Calib-34-50**). Customers may find it helpful to read through these directions once, prior to calibrating. If you would like a detailed visual explanation of your calibration equipment, please, visit the following website: [www.immva.com](http://www.immva.com) and select "calibration help" under the resources tab. There you can download the *Calibration Parts Description* document for the kit that you purchased. If you are using different calibration equipment or a different monitor, you will not use the instructions listed below. If you require assistance with calibration, please contact IMMVA at (757) 645-9369 Mon-Fri, 9-5 PM EST, or email your questions to [service@immva.com](mailto:service@immva.com).

### Step 1

Begin by setting up your calibration equipment. You should be using the calibration equipment that is specific to these instructions. You can find a detailed visual explanation of your calibration equipment on the CD that came with your monitor or at [www.immva.com](http://www.immva.com).

### Calibration Kit Set-up Procedure:

Remove the regulator from the kit and ensure that the valve is in the OFF position. Screw the regulator onto the can of gas. This is best done by screwing the can into the regulator. Next, place the calibration adapter into or onto the clear T-piece sampling system the same way you would place a cardboard disposable mouthpiece. (Do not use a cardboard mouthpiece for calibration.) You can now connect the T-piece to the onitor. **DO NOT TURN THE GAS ON UNTIL THE INSTRUCTIONS TELL YOU TO DO SO.** Proceed to Step 2.

### Step 2

Ensure the battery is located in the battery compartment of your monitor. Press the **power** button to turn the monitor on. The LCD screen will display "**Zeroing**". Wait for the screen to display "**OK ToxCO+**" and then proceed to Step 3.

### Step 3

With the screen displaying "**OK ToxCO+**", enter calibration mode by pressing and holding down first the CAL and then the RECALL buttons. As soon as the screen shows "**Apply 50 ppm CO**", release the buttons. After a few seconds the screen will display "**CAL**" and then immediately proceed to Step 4.

#### **Step 4**

Immediately open the regulator control valve and allow the gas to flow into the monitor (gas flow will flow at a rate of 1.0 liters/minute). The regulator is set to allow the gas to flow at 1.0 liter/minute regardless of how far or little you open the valve, so no fine tuning adjustments are needed to control the flow of gas. As the calibration gas is applied, the bar graph level on the screen will rise. (NOTE: If no gas has been detected after 25 seconds, the unit will display "**FAIL**" and you will have to begin the process over. If this occurs, press the power button to clear this mode and return to ready mode and proceed from Step 3.) After approximately 1.5 minutes, the unit will Auto Calibrate and display "**CAL Pass**" and the screen back light will flash 4 times to signify this. If no gas has been applied or the monitor has developed a fault or an incorrect calibration gas is applied (High or Low) then "**CAL FAIL**" will be displayed. If "**CAL PASS**" message is received, press the power button to accept calibration and return to ready mode and then proceed to Step 5. If "**CAL FAIL**" message is received, press the power button to accept and return to ready mode and begin process over from Step 3.

#### **Step 5**

Once you are back at ready mode, you can disconnect the T-piece from the monitor. Once you have disconnected the calibration adapter and tubing from the T-piece, you are ready to either turn the monitor off or you can conduct a test. To begin a test, simply press the **power** button to initiate the 15 second countdown timer (be sure you've reconnected the T-piece and a new cardboard mouthpiece prior to starting the countdown). If you do not wish to conduct a test, simply turn the monitor off.

#### **Step 6**

Unscrew the regulator from the can of gas (you can leave the tubing attached to the top of the regulator) and place it along with the can of gas back into the kit. As you remove the regulator you will hear and feel a slight pop. This is normal. Removing the valve from the can prevents gas from leeching out over time. Store your calibration equipment (specifically the can of gas) in a temperature controlled environment (See MSDS Document).

## **END INSTRUCTIONS**