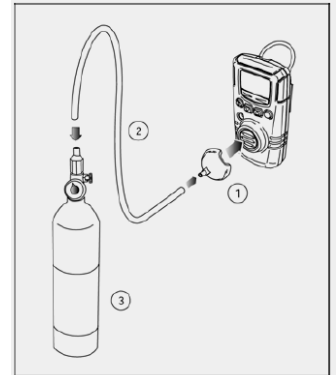


## "Bump test" before detector use!

### ***The only way to ensure worker safety is to verify accuracy on a daily basis***

*By Jason Pike, Technical Specialist- Biosystems*

Gas detectors are designed for the detection and measurement of potentially life threatening atmospheric conditions. Hazards such as oxygen deficiencies, explosive atmospheres, and toxic gases and vapors regularly kill more than three-hundred workers per year in North America, many of them during confined space entry procedures. The only way to insure conditions are safe is to use an accurate atmospheric monitor. The only way to know that the readings are accurate is to expose the instrument to known concentration test gas; in other words, to check the accuracy of the instrument on a regular basis.



Some manufacturers actually take the approach that it is not necessary to verify the accuracy of their instruments in the field at all, but to send them back to the factory once or twice a year where they can be adjusted if necessary. We think this is a morally bankrupt approach to business! The primary concern must be keeping workers safe.

### **The regulations say "Verify accuracy daily!"**

Gas detectors are usually classified by Underwriters Laboratories (UL) or the Canadian Standards Association (CSA) as being intrinsically safe for use in hazardous locations Class I, Division I, Groups A, B, C, and D. **Both UL and CSA require that any instrument carrying their approval must be checked with known concentration test gas before any daily period of use.** It is not necessary to make an adjustment if the instrument is found to be accurate, but it is necessary to verify accuracy by daily testing.

The new OSHA standard governing confined space entry procedures (29 CFR 1910.134) stresses the importance of calibration. Section (c)(5)(ii) says only "calibrated, direct reading instruments" may be used when testing the atmosphere prior to entry. In Appendix E the code goes on to explain that atmospheric monitoring equipment **must** be calibrated and maintained in accordance with manufacturer guidelines.

### **Instruments can lose accuracy due to contamination**

Sensors may be poisoned or suffer degraded performance if exposed to certain substances in the atmosphere. Bumps verify that your sensors are accurate. If exposure to test gas indicates a loss of sensitivity, the instrument needs to be adjusted. The important thing to understand is that if you never test the instrument with known concentration gas, you will never know if you need to adjust the sensitivity of the sensors.

### **"Bump" tests verify accuracy**

A simple functional "bump" test is all that is necessary to verify accuracy. Simply turn your instrument on, allow the readings to stabilize, slip on the calibration adapter, flow calibration gas to the sensors, and wait for the readings to stabilize (about 45 seconds). Note the readings. If the readings are accurate, it is safe to use the instrument without further adjustment. If the readings are off the mark, then a span calibration adjustment should be made before further use.

### **Don't take a chance with your life. Verify accuracy daily!**

Gas detectors are designed to help keep you safe in potentially life threatening environments. If you test your instrument on a daily basis, you know that your readings are accurate. Confined spaces and other areas where the air is potentially dangerous are environments where you want to be sure your monitor is accurate!