

# TECHNICAL BULLETIN #136

**SUBJECT:** Gauge Accuracy

**DATE:** April 6, 2011

**PRODUCTS AFFECTED:** All Survivair Panther™ and Cougar™ SCBAs and Sperian Warrior™ SCBAs

This Technical Bulletin addresses the issue of gauge accuracy in Survivair and Sperian pressure gauges used in the Panther, Cougar and Warrior SCBAs.

We use several different types of gauges in our SCBAs. Mechanical, analog gauges used in cylinder valves or as chest-mounted backpack gauges have an accuracy of ± 5% of full scale, which is the NIOSH minimum requirement and which is the standard level of performance for all SCBA manufacturers. Thus, the analog gauge accuracy would be as follows for the three pressures we offer:

<b>Full Pressure</b>	2216 psig	3000 psig	4500 psig
<b>Accuracy Range</b>	± 111 psig	± 150 psig	± 225 psig

Since the air cylinder gauge is curved, it is subject to errors of parallax. Parallax is the difference in the apparent position of an object viewed along two different lines of sight. For example, the 4500 psig cylinder gauge has an accuracy range of ± 225 psig if the gauge needle is viewed from directly in front. However, the gauge accuracy could be reduced to ± 300-400 psig if the user is viewing it at an angle.

The Sperian Digital Dashboard™ electronic digital gauge is accurate to ± 50 psig at the high end of the 4500 psig scale and is even more accurate than that at lower pressures. The LCD HUD portion of the Digital Dashboard is calibrated with a GE DRUCK meter, which is accurate to ± 2.5 psig. The standard LED HUD has the same accuracy as the Digital Dashboard at the relative pressure milestones (Full, ¾, ½, and ¼).

Because there is a difference in accuracy between the Digital Dashboard and the mechanical, analog gauges; and because the mechanical, analog gauges can differ from each other on pressure readings, it is not unusual to see discrepancies in pressure readings among the gauges. These discrepancies can be significant, especially comparing one analog gauge against another—as much as a 450 psig differential in analog readings for a 4500 psig cylinder. If your SCBA has the Digital Dashboard installed, its reading will be the most accurate, and you should use it as a benchmark. As long as your mechanical, analog gauges are within the required 5% tolerance, they are acceptable for use.