



Better Calibration, Better Quality: 5 Ways to Improve Both

By Treg Goss,
Product Manager – Calibration & Quality Services
Advanced Technology Services

If you work in the quality field, you know how important calibration is. It's the difference between having confidence in your parts versus keeping your fingers crossed. But although quality professionals may recognize its importance, they may still not know how to get the most out of this process.

Calibration, stated simply, is the checking of an instrument against a known standard. It means that measurements made with that instrument can be trusted, and without it, inspections would be meaningless. But rather than just going through the motions with your calibration program, why not make it world-class?

At the very basic level, properly calibrated instruments are necessary to avoid recalls or product failures. But if done correctly, calibration programs can improve your business. Let's take a closer look at the advantages of a strong calibration program.

1. Mitigate Risk

A strong calibration program can provide the standardized procedures that are needed to mitigate risk associated with quality. It can also help guard against product and audit failures. Simply fixing a calibration error and stopping production can cost companies thousands of dollars every minute. Although it may seem like there has been a recall at every major company at this point, don't let your organization join the list.

An out-of-tolerance component can obviously lead to product failures, both internal ones that slow a product launch and external ones that harm both the public and the company itself. Even just having gauges unavailable can slow down work. With an effective calibration program, these issues will be solved and prevented before they occur. The costs of a world class calibration program are an investment in the company's success.

2. Meet Customer Requirements

A strong calibration program allows you to meet and exceed customer requirements as well as requirements such as ISO. It will be able to support multiple regulatory standards, which may include ISO 9001, ISO 17025, TS 16949, NADCAP, AS 9100, ITAR or EPA emissions standards. Audits will run smoother as well.

For many, continuous improvement and quality is closely linked to their ISO program. Meeting ISO requirements is a noble pursuit, and an important one for millions of businesses. But in addition to just meeting requirements, a good calibration program can lower costs and improve productivity. In short, it can make your factory run better. Instead of just meeting minimum requirements, the best quality and



calibration program can minimize both risk and costs, while driving improvements. Continuous improvement is another key quality initiative, and why not connect your calibration program to what is likely already one of your goals?

3. Optimize the Gauging Program

Calibration goes beyond simply making sure measuring devices are prepared to measure accurately. It can also mean taking a deeper look at the gauge inventory itself, making sure the items in use are easy to access and the ones that aren't commonly utilized are identified and stored properly. In other words, it allows companies to optimize the gauging program. A lean approach can help in this process. Lean is all about reducing waste, and 5S is a prime waste reduction strategy.

In addition, Gauge Repeatability and Reproducibility (Gauge R&R) and Statistical Process Control (SPC) are two of the techniques used in the product quality process. Gathering the best information via statistics can insure that you make the right decision based on data rather than ideas. Data will help reduce product variability and warranty potential.

4. Maintain a Strong Workforce

Manufacturers today face many opportunities and challenges while competing in a global marketplace. Adding to this competitive environment, U.S. manufacturers are facing a loss of skilled workers as Baby Boomers retire. The vast majority of a manufacturer's metrology knowledge may be just walking out the door.

To combat this, an outside calibration firm can be called in to handle the task. Expert technicians can provide certification for a range of equipment as well as repair devices that no longer meet specifications. When high-precision metrology tasks are required, it can be handled by an expert. This can make your location a metrology center of excellence, well-prepared for any calibration or quality requirement.

5. Improve Productivity

Solving problems—before they happen—will improve productivity and just make everyone's life easier. By tackling problems in the spirit of prevention, this can help production flow more smoothly. Consider Murphy's Law when you're working with equipment. And if you look around your plant floor, they are clearly thousands of things that could go wrong; we found that the average manufacturing operation has more than 9,600 gauges and instruments, many of which need frequent calibrating

A strong calibration program can catch problems before you spend hour or days working on a product only to find out that something went wrong early in the process. A single out-of-tolerance part means that a minor hiccup could become a major headache if it was not noticed in time. Don't let a flawed gauge become a tragedy for your business.