

## **Other Dimensions: Cheap Calibration**

*by Hill Cox*

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*When it comes to gage calibration, you get what you pay for.*

I continue to be surprised when the subject of calibration costs comes up. Why? Because so many folks think they are getting a bargain when someone offers a calibration report for \$10 when the rest of the industry charges somewhere around \$35 for the same thing. Or is it the same thing?

Common sense dictates that there must be something different between the two due to price alone—but that little bit of logic escapes many people. Of course, it could be a communication problem when one company is offering a certificate of compliance while the other would supply a proper calibration report. Some folks would say that if they get data, it's a proper calibration report, but that's not true.

Some companies may offer "free" calibration with a gage purchase. If it costs nothing, that's just about what it's worth.

There are many ways to cut corners when it comes to gage calibration, while the illusion of work correctly done is maintained well enough to fool most quality auditors. Some companies are so good at it they should be on stage sawing ladies in half. They could make more money with no legal risks.

One way to offer cheap calibration is to avoid getting your laboratory properly accredited to ISO 17025 or ANSI Z-540, for example. You reduce operating costs and the inconvenience of someone evaluating how good you really are.

Another method is to use shopfloor data on a report that an office clerk types up. Some would argue that having the company that made the gage provide the data for a report runs a high risk of bias—and I concur. This is a cost-reduction technique that avoids having the item actually calibrated in a laboratory environment by someone independent of the manufacturing process. But when it comes down to money, many gage users won't question the details until there is trouble.

Doing half the work is an effective cost-reduction technique. In the case of thread plug gages, for example, you could take one pitch diameter reading, which is a lot cheaper than taking six of them on a go member. Similarly, you could skip measurements of the major and minor diameters, not to mention the half angle. A lot of labs do this knowing that the customer only wants a piece of paper saying the gage is "good" or a "pass."

Last but not least, we have the “long form” vs. “short form” certificate, the costs of which vary all over the map and of course, what they include does as well. Assuming they report actual data, if you get a single reading on a gage for size, you don’t know if it is tapered for example. In the case of a plug gage, the gage could be undersize at the front, meaning it is not effective for blind bores but the rest of the go member could be fine and used for through bores.

When a single feature is reported, you have no idea if other elements that have a direct effect on performance were measured. This is particularly critical when thread gages are involved as the half-angle condition, or either the major or minor diameters could have a dramatic effect on the suitability of the gage for your application.

With more gages made offshore appearing in the North American market, proper calibration is critical because the unknown maker may or may not have problems with accuracy, but they also may be working to the wrong specification.

The gage making industry is well aware of these problems and is taking steps to standardize the situation so gage and calibration buyers know what to expect when they ask for a report. The American Measuring Tool Manufacturers Association’s technical committee will soon review the final draft of a document that would list the parameters measured for basic and detailed calibration reports on gages of various kinds. An ANSI committee is working on a similar document.

In the meantime, prudent buyers should get a detailed list of what will be measured and reported when ordering calibration reports. If you don’t, you may find that the report you receive is too expensive for the information provided no matter how little you paid for it.

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