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A TECH AUTHORITY
When Precision Counts

Dear A Tech...

"I have a Heidenhain ROD-880 that was purchased new, about a year ago. My QA department says that I have to have it calibrated every year in order for me to use it in production. Where can I send it for annual calibration and how long will I be without it?" Thanks, *Terry.*

Dear Terry...

Your situation is not uncommon to us. When it comes to calibrating or certifying the accuracy of a HEIDENHAIN gage or encoder you have two options. Your first option is to send it back to HEIDENHAIN in Germany where it will be tested against a standard and returned to you with a calibration chart just like the one that originally came with the encoder which will show the positioning accuracy of the encoder over its full travel. Or, your encoder can be calibrated and certified here at our facility in Southern California where we will analyze the mechanical and electrical characteristics of the encoder, make adjustments as necessary, and then provide a certificate based on our findings. Before you can make a decision however, you must understand the process of each option as they are very different.

The first thing to understand is that your encoder produces incremental signals by reading the transitions of lines that are precisely etched on a piece of glass. These lines are then scanned using a series optics, photo detectors and subsequent interpolation electronics. The placement of these lines will not change over time, therefore, the accuracy of an encoder will not change unless the optics, photo detectors and subsequent interpolation electronics deteriorate and are no longer able to correctly read the incremental lines on the glass.

Germany will perform a full analysis of the components mentioned above, perform repairs as necessary and will then perform an accuracy test. The accuracy test compares your encoder to a known standard at specific intervals along the encoder's travel. The report that you receive will contain the same chart that was included with the encoder when you received it showing the positioning accuracy of the encoder over its full travel. Due to the requirement to send your encoder over seas, you can expect the turn around time for this process to be 8-12 weeks.

We have found, through 30years of encoder repair and calibration that the lines that are photo-etched on the glass inside your encoder don't change over time. Therefore, as long as the bearings, optics, photo detectors and subsequent interpolation electronics are functioning properly, your encoder is as accurate today as the day it was manufactured. Our certification process includes the analysis of the electrical signals produced by the encoder to determine if all of these components are working properly. If each of these tests meets the manufacturer's specifications then the encoder is certified and returned to you along with a signed calibration certificate showing its performance. If any of the areas mentioned above fail to meet manufacturer's specifications then repairs are made and the testing is repeated. It is important to note that the report we provide will show only the performance of the bearings, optics, photo detectors and subsequent interpolation electronics not the positioning accuracy of the encoder. Our current turn around time for an encoder certification is 2-3 days.

I look forward to answering any further questions you may have.

Sincerely,

Craig D'Ambrosio
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