Case Study 114

Automated Balance with Collect Shows a ROI of Less Than One Week

The Project

An internationally recognized producer of circulation and collector coins uses Collect software both in their development laboratory, to assist in new product development, and on the shop floor, to provide real time data collection from their laboratory instruments directly into their statistical process control software.

Providing the excellent quality level that their customers have come to expect requires continual monitoring of the weight, thickness, diameter and hardness of the coins throughout the development and production process. At every stage of the process, Collect is used to collect data from micrometers, calipers, hardness testers, balances and other special gauges.

Commenting on the flexibility of the Collect data parser, the Quality Systems Engineer noted, "there isn't a gauge yet that doesn't work with Collect".

Before production of a new coin begins, tests are run to determine how long each part of the manufacturing process should take to produce a coin within the specified limits for weight, thickness, diameter and hardness. In the development lab, the flexibility of Collect and its ability to automate data collection has allowed them to quickly design and carry out experiments that would be impractical and time consuming using other means.

One example of how Collect assists in new product development, involved an experiment to test a new plating process. In this case, the lab needed to measure the change in the weight of plating chemicals over an extended period of time. Collect's ability to send commands to the balance on a regular timed basis allowed the lab to setup an experiment with Collect automatically prompting the balance for a weight reading every 10 seconds.

With Collect providing complete automation of the data collection, the lab set up the experiment to run unattended over the weekend. By Monday morning, Collect had created a file containing thousands of data points, each of which was date and time stamped by Collect. Using Collect to automate the data collection for experiments like this saves both time and resources in the development process.

Collect is also instrumental in collecting data throughout the production process. There are 4 key phases of the production process where Collect is used:

1. After the first blank is cut from the raw material, it is weighed and measured for hardness, diameter and thickness.

2. After the blank has been formed it is again checked for diameter and thickness and hardness.

3. The blank is weighed again after the plating process.

4. After the final stamping, a final weight is recorded and the coin is measured for diameter and thickness.

These critical parameters are measured at regular time intervals throughout each stage of the process. All of the data is date and time stamped by Collect and then automatically entered into the statistical analysis software. The savings on the labor cost to manually transcribe that data are estimated to be around $450 per week, which is about the cost of the Collect software.

Using the data provided by Collect, the statistical process control software performs real time calculations and creates real time graphs of the data showing trends within the limits that were originally determined for the process. As results move towards either end of the limits, adjustments are made to the production process before the coins go out of specification. Being able to make these adjustments reduces the manufacturing cost by reducing the amount of wasted material in the process.

The Result

Collect has provided a flexible data collection solution that is as beneficial in the R&D lab as it is on the shop floor.

• Analysts can quickly design and carry out experiments that would be impractical using manual means.

• Real time data entry provides a more accurate analysis of the production process.

• Operators can focus their time on producing product.

• Eliminating manual data entry saves $450 per week in labor costs.

For an initial investment of just $395, Collect has proven to be an automated data collection solution that is "as good as gold".