

CROSS-SECTIONAL SCANNING SLASHES INSPECTION TIME AND LABOR

Automation drives manufacturing. Yet, the final step in the process continues to be time consuming, labor intensive and tedious. However, one quality expert has found a way to automate first article inspection. Vince Arboleda applied CGI's Cross-Sectional Scanning technology to cut labor costs by 80 percent and reduce inspection time by 60 percent.

Arboleda, an 18 year veteran in quality, cites a 48-position automotive electrical connector as one example of his automation success. To qualify the connector's eight-cavity injection mold, Arboleda's lab needed to collect and analyze 8,000 dimensions, a task that was complicated by numerous internal measurements. He believes that first article inspection would have required two lab technicians and taken five weeks, if he had used CMMs and vision systems. "With Cross-Sectional Scanning, we delivered the inspection report in just two weeks, and we did it with only one technician," stated Arboleda.

In less than two days, the Cross-Sectional Scanning process produced measurement data for all eight samples. Arboleda also noted that the unattended process needed only two hours of labor to prepare and measure the parts. He estimates that CMM fixturing and programming would have taken one day and that measurement would have taken two to three days per part. "Since the connectors had a retention barb in each of the 48 contact holes, a lot of time would have been needed to cut the parts in sections and manually inspect them on a vision system. With the Cross-Sectional Scanning process, internal measurements are gathered automatically," he stated.

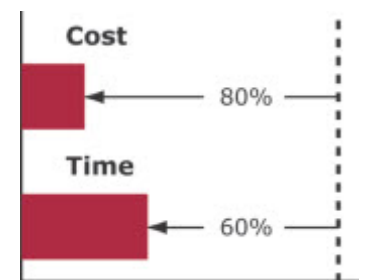
The inspection process was further expedited with Cross-Sectional Scanning's template function. A technician created an inspection template to report the measurements of 1,000 dimensions from the electrical connector. Arboleda commented, "Once the template was complete, we simply imported the point clouds from the eight samples, and the software automatically calculated the measurements. We had complete reporting on all the parts in a single shift."

"With Cross-Sectional Scanning, a quality lab can respond faster and be more productive," stated Arboleda. From his past experience, Arboleda has developed an unwritten rule. "If a part has over 300 dimensions and there are more than four cavities in the mold, Cross-Sectional Scanning is the only tool to use," he stated. Yet, he acknowledges that parts with fewer dimensions and tools with fewer cavities will also benefit. He continued, "Any part with a complex design or internal features is a good candidate for Cross-Sectional Scanning."



Connector (representative sample shown) inspection is accelerated and labor is reduced.

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Templates and automated operation slashed both time and costs.

Vince Arboleda has 18 years of experience in quality control. Formerly with Tyco Electronics, he served as the company's quality control lab supervisor. Today, Arboleda shares his experience and insight as a quality control consultant with an emphasis on blending traditional metrology tools with 3D scanning processes. He can be reached at arboleda_vince@yahoo.com