CYBEROPTICS

PRINTER CARTRIDGE INSPECTION AND METROLOGY

Large Printer Cartridge Manufacturer Selects CyberOptics SQ3000™ Multi-Function system for Fast, 100% In-Line Production Inspection and Metrology

With manufacturers needing to output large quantities of product and meet precise quality standards, the speed and accuracy of their coordinate measurement machine (CMM) plays an integral role in business. One large printer cartridge manufacturer selected CyberOptics' SQ3000 Multi-Function system for CMM and component inspection, replacing a far less efficient traditional process. The advanced capabilities of the SQ3000 continue to save this company time and costs while delivering 100% inspection.

Challenge

The manufacturer needed an efficient, reliable coordinate measurement system to ensure consistent high-quality production of printer cartridges. They were previously using a sampling test method of inspection, which demanded a great deal of time and resources. Components needed to be taken off the assembly line for touch-probe inspection, consequently halting the flow of production. The sheer amount of time required to measure the cartridge with the touch-probe method made 100% inspection a logistical challenge.

Solution

The company underwent a rigorous process to determine which coordinate measurement machine to invest in. They assessed the capabilities of four competitive systems and ultimately chose CyberOptics. CyberOptics' SQ3000 Multi-Function system offered speed and ease-of-use without compromising on accuracy, delivering meticulous inspection at the pace needed to maintain the flow of production. Competitors' products were significantly slower or had to be run in off-line positions, rendering 100% inspection impossible.

Results

Advanced technology powers the SQ3000 Multi-Function system for AOI, SPI and CMM, the fastest and only in-line inspection system in the world for attaining coordinate measurements – in seconds, not hours or days. Using structured white light, the Multi-Reflection Suppression™ (MRS™) sensor integrated into the SQ3000 Multi-Function system uses phase shift profilometry and proprietary sophisticated algorithms for highly accurate, non-contact inspection and metrology.

The machine utilizes CyberCMM™, a software suite of coordinate measurement tools delivering precise, 100% measurement on all critical points. Set-up can be performed in less than an hour for advanced applications, while traditional coordinate measurement machines typically require a multi-hour set up and several manual adjustments.

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CyberOptics provided the customer with a customized vacuum chuck to flatten flex circuits, air supply for the vacuum, and non-recurring engineering to render conveyors adjustable. Adjustments were made to the stopper to ensure optimal vacuum chuck functionality. In addition, the inclusion of a backlight enabled superior metrology results.

The manufacturer uses the SQ3000 Multi-Function system for measuring datum reference distances, underfill adhesive inspection, flex circuit attach, die placement, as well as cosmetic defects. The system meets the rigorous clean room requirements of their manufacturing facility.

Benefit Summary

Our customer, tasked with large volume orders of printer cartridges, was able to vastly improve their inspection process efficiency with CyberOptics. The fast, 100% inspection and metrology capabilities of the system improve yields, processes, productivity, and maintains quality.

The SQ3000 Multi-Function system delivers best-in-class metrology and inspection, providing an unsurpassed combination of high-resolution, high accuracy and high speed. CyberOptics' CMM technology is equally efficacious at board level and final assembly level inspection. The unmatched accuracy of CyberOptics' advanced MRS technology is well-suited for applications where high-precision and reliability are critical.

About CyberOptics

CyberOptics Corporation is a leading global developer and manufacturer of high-precision 3D sensing technology solutions. CyberOptics' sensors are used for inspection and metrology in the SMT and semiconductor capital equipment markets to significantly improve yields and productivity. By leveraging its leading edge technologies, the Company has strategically established itself as a global leader in high precision 3D sensors, allowing CyberOptics to further increase its penetration of key vertical markets. Headquartered in Minneapolis, Minnesota, CyberOptics conducts worldwide operations through its facilities in North America, Asia, and Europe.

For more information on CyberOptics products, services, or solutions, visit our website at www.cyberoptics.com.

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