

New Inspection System Reduces False Failures for Medical Manufacturer

Stainless steel catheter needles are used in medical procedures to insert catheter tubes into patient's veins. These needles are cut to exacting tolerances with lasers during manufacturing, and even slight flaws in the angle or cleanliness of the cut makes a needle unusable. A new PC-based inspection station developed by Retina Systems Inc. of Seymour, CT has increased inspection efficiency by up to 20% on the production line of a major medical manufacturer.

This application was a challenge for Retina Systems because the station must be able to inspect almost 20 different sizes of catheter tips. When a part arrives at the inspection station, it is moved into position between two monochrome cameras equipped with zoom lenses. As a motor turns the catheter tip once every second, the camera images are acquired by a Data Translation [DT3152-LS](#) line-scan frame grabber mounted inside a standard PC backplane.

The system measures twelve different parameters, including the angle of the cut, presence of flaws (burrs and hooks), and the diameters of the cannula (the hollow section of the tip) and the catheter body. If any of the measurements do not meet required tolerances, the part is shifted off the line to a reject bin. Rejects are checked manually to determine why flaws occurred.

The process is controlled and monitored by custom software designed with a simple DOS interface. The operator controls the system from a remote control panel containing five buttons: Setup/Run, Next, Select, Test, and A&B. When the production line changes from one catheter tip to another, the operator selects the new part on the monitor, and the appropriate tolerances are automatically set.

Retina Systems credits the accuracy of the Data Translation frame grabber, combined with very good lenses, in substantially reducing the false failure rate compared to their client's previous system. The increased accuracy has enabled them to set tighter tolerances, resulting in fewer false failures during inspection.

For more information, click on [DT3152-LS](#) or call (800) 525-8528.