

**Problem:** A manufacturer of medical needles needed to automatically inspect for tip measurement and tip to sleeve measurement. The needles were fixtured on a grinding machine.

**Solution:** Stand-alone inspection retrofitted to existing part handling system. Fluorescent illumination lighting the part from the top. FOV approximately  $\frac{3}{4}$  inch yielding a resolution of approximately 0.0015 inch.

Part number of the inspected part is selected from a Windows recipe menu. Parts are held in place and rotated within the Field Of View of the camera as the inspection is performed. Part position repeatability is +/- 0.002 " .

Parts are automatically loaded onto the fixture from the previous process. A Part In Place signal triggers the camera to acquire a series of images. Software tools measure the area of the face of the tip ( maximum area as the needle is rotated before the camera ) and the distance from the tip to the sleeve. This meas-

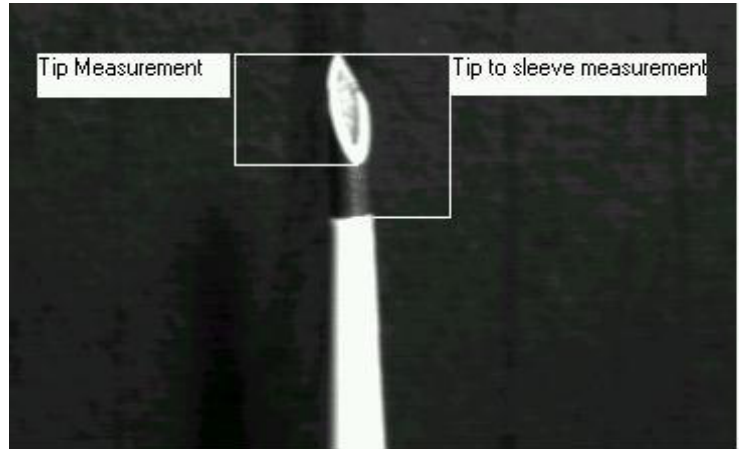


Figure 1: Needle Tip

urement is determined by the contrast between the tip and its background and the sleeve area and the metallic material of the needle.

A comparison to a series of stored data is performed. If the part fails, it is flagged for automatic rejection downstream. If the part passes, the results are recorded and the part is passed to the downstream process.

**Avalon Vision Solutions LLC** helps manufacturers reduce costs by identifying process defects in real time. It is a privately held company managed by the primary owners of the company. The headquarters is located in Lithia Springs, Georgia a suburb of Atlanta, Georgia USA. Avalon has sales offices in Michigan, Colorado, and Monterrey, Mexico. Field service support is located in Pennsylvania, Michigan, California, and the company headquarters in Atlanta, Georgia.



Figure 2: Validator Product

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