



Ultra-Precise Substrate Labeler

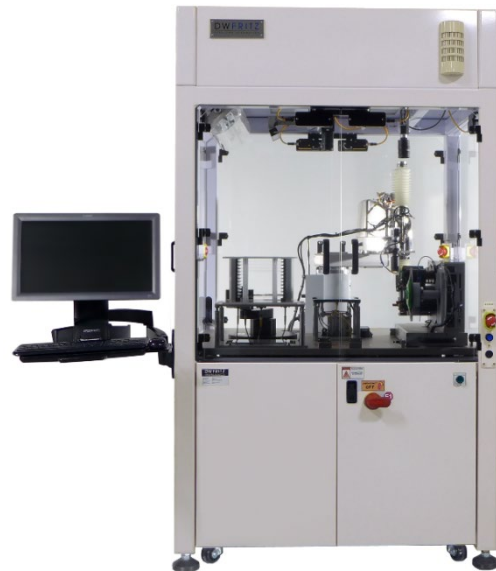
Challenge

A medical device manufacturer needed an ultra-precise system to print and accurately apply high-resolution bar-coded labels to both sides of a glass substrate.

Solution

The system uses a combination of high-performance machine vision, multiple robots, and sophisticated custom software to tackle this challenging project. Glass substrates coated with bio-medical samples are loaded into the system via carrier cassettes. The system scans the cassette to verify content and ensure there are no cross-slotted substrates before a Genmark GRex3 robot transfers the substrates to a vacuum nest.

A substrate camera scans a laser-ablated 2D matrix code on the substrate to determine the correct labels to print for the batch and for orientation fiducials. The labels are printed and vacuum-picked by an Epson G6-450 SCARA robot fitted with a custom end-effector. The robot makes positioning adjustments based on the fiducial scan and applies the label. Once the top-side of the substrate has been labeled, the system flips the substrate and places a second set of labels on the reverse side.



Result

The automated substrate labeling system prints and **places labels every 7.5 seconds** with an **accuracy of +/-70 microns**, and a front/back label **registration of +/-150 microns**.

About DWFritz Automation

Established in 1973, DWFritz Automation provides world-class build-to-print manufacturing capabilities to clients, in addition to designing, building, and supporting engineered-to-order automation systems and high-speed non-contact metrology products.

