

Precision Vision Inspection System



Challenge

A consumer product manufacturer needed a high-accuracy, automated vision system to perform 100% inspection of structural adhesive pattern and die placement on a production line.

Solution

This system provides automated inspection of client provided substrates mounted in delicate plastic frames using a unique low friction, six-point kinematic fixture and automated part loading procedure. The operator loads substrates into either of two custom nests installed on a high-resolution, X-Y table stack within the guarded enclosure. Once loaded, the operator initializes the automated inspection process by selecting the desired inspection plan.

A load actuator extends and pushes the substrate beneath one of two high-resolution digital cameras, which performs vision inspections. Critical features are measured using advanced machine vision algorithms based on the selected inspection plan. A class II laser measuring sensor performs feature height inspections, while the remaining camera completes high-resolution inspections.



Result

The automated system completes **500 measurements with 0.2-micron fixture repeatability**, using vision systems capable of recognizing orientation of the die, edge detection, circle detection, and pattern recognition.

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.

