

Automated Epoxy Dispensing System



Challenge

An automotive manufacturer needed an automated system to precisely dispense a two-part epoxy into propriety battery modules for electric vehicles.

Solution

The battery modules and their carriers are loaded one at a time onto a rotary dial using an external 6-axis robot. During the loading process, the RFID tag located on the bottom of the module carrier is scanned. The rotary dial then rotates 180 degrees, moving the module and its carrier into the dispense chamber where a barcode reader scans a barcode and provides updated information to the factory MES. Next, a vision system attached to the gantry-mounted dispense head precisely locates fiducials on the module to accurately determine the module's position. The gantry then moves the dispense needle to each location and dispenses the appropriate amount of the two-part epoxy.



Result

The two-part epoxy is dispensed at a **rate of 1.4ml per second** without drips or spills in accordance to a user-programmable recipe that includes X/Y coordinates, dispense volumes, and needle insertion depth. To ensure accuracy, a precision automatic shot weigh check system calibrates dispense volumes and an optical sensor accurately locates the tip of the dispense needle.

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.

