DWFRITZ
PRECISION AUTOMATION

Solution Sheet

Sensor Probe Encapsulation System

Challenge

A medical device manufacturer needed a custom automated system integrated with multiple subsystems to automate the encapsulation of lead frame assemblies and lift the completed assemblies from a clamshell mold cavity.

Solution

The system integrates a low-pressure injection molding machine, an injection mold controller, and a compact chiller with an 8-cavity clamshell mold, and a custom-designed pneumatic mold station, manual mold ejection fixture, and encapsulant purge tray.

During normal machine operation, operator attention is generally limited to loading and unloading the molding clamshell, and monitoring and replacing consumables as used in the process. Once the operator loads the clamshell into the system, sensors within the mold station verify the presence of the 8-cavity mold before pneumatic actuators move the clamshell into the integrated injection molding machine. Media is auto-injected into the mold at a recipe-defined time, temperature, and pressure. After the molding process is complete, the operator removes the clamshell and loads it into the custom-built extractor assembly, which lifts completed lead frame assemblies from the clamshell mold cavity.

The integrated system enables a single operator to assemble and encapsulate the three components that make up a glusose monitoring sensor suitable for clinical trial.

Result

The complete assembly enables automated encapsulation of 600 lead frame assemblies per hour.

About DWFritz Automation

Established in 1973, DWFritz Automation designs, builds, and supports engineer-to-order automation systems and high-speed, non-contact metrology platforms, as well as provides world-class build-to-print manufacturing capabilities to clients.

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