DWFRITZ
PRECISION AUTOMATION

Solution Sheet

Sensor Soldering System

Challenge

A medical device manufacturer needed a system to automatically install and solder pre-cut, formed sensors to anode and cathode solder tabs.

Solution

The system integrates custom-designed component handling into a laser-safe enclosure with the customer-supplied laser soldering system. An operator manually loads trays of eight sensors and a clamshell fixture with a strip of eight leadframes into the enclosure. Both the sensor trays and clamshell fixture index at 15mm, the pitch of the leadframes, and solder paste is applied to the anode and cathode tabs on the leadframes held by the fixture.

CCD cameras and pattern-match software inspect the size and location of the solder paste placement before a rotating gripper assembly moves between carrier and clamshell to place and hold a sensor at the current solder location where a laser melts the paste at the anode and cathode solder tabs. With each subsequent index, the clamshell moves to the next solder location and the wire carrier to the next sensor. After each laser soldering is completed, a second CCD captures an image of the solder joints.

The process continues until sensors have been placed and soldered to the anode and cathode tabs at all eight leadframes in the clamshell.

Result

The system provides an automated station producing 600 prototype glucose monitoring sensors 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 and inspection platforms, as well as providing world-class build-to-print manufacturing capabilities to clients.

800.763.4161 | www.dwfritz.com | info@dwfritz.com