High-Speed Microfluidic Connector Assembly

**Challenge**
A medical device manufacturer needed an automated system designed to assemble and laminate two microfluidic subassemblies used to create a six-layer diagnostic medium for the medical industry.

**Solution**
Bulk parts are manually loaded into vibratory bowls to be oriented and singulated before entering the machine enclosure. Inside the enclosure, turret mounted pick-and-place tools load components into pneumatic collets carried in nests on a 10-station rotary index table. As the table rotates, components are automatically swaged, vision inspected, and tested before being unloaded to the packaging line. Failed components are automatically removed to a reject bin.

**Result**
The high-speed connector assembly system orients, assembles, swages, and inspects electrical connectors at a rate of **1.25 seconds per assembly**. The entire process is recipe driven from a custom touchscreen interface. Part changeover can be completed in under 10 minutes, and requires little more than replacing part adapter components at the nests and selecting a new recipe from the user interface.

**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.