

## Microfluidic Assembly System



### 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

The full assembly process of the multi-layer subassembly requires two passes through the system. To begin the first pass, the operator loads an input cassette with a stack of laminates (items 1/2) and the label applicator with a roll of laminated components (items 3/4). The system will continuously pick up the material (items 1/2) from the cassette and precisely position it into a custom nest. A laminated component (items 3/4) is retrieved from the roll feed and accurately placed into the next over the 1/2 material.

A second pick-and-place will lift the combined subassembly (items 1/2/3/4) and place it onto an outbound conveyor, where precise pressure is applied. Following the batch processing of the subassemblies, a second roll of laminated material (items 5/6) is loaded and the subassemblies are fed through the system again to complete the assembly.



### Result

The automated system produces **33,400 completed assemblies per month**, at a rate of **9 seconds per lamination** using six key subsystems, including a label applicator, laminating nest, laminating roller, input and output cassettes, pick and place, and reject handling.

### 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.

