



Point of care diagnostic (PoC) testing is on the rise and for very good reasons from convenience and rapid response to improved access to faster path to treatment and increased compliance. So how will manufacturers meet the increasing demand?

The form factors for PoC diagnostic tests vary dramatically from very rudimentary test strips to the highly complex microfluidic cartridges and wearable continuous glucose meters. As a result, the automated solutions for manufacturing tend to be customized and unique. Typical processes that require automating are:

- Handling of; plastic components or platforms, foils, pads, papers, membranes, substrates, pre-filled reagents, mixing beads, filters, O-rings, springs, biosensors, valves, chip, batteries, desiccant, plastic bottles, eye dropper tips, caps, swabs, droppers, trays, product inserts
- Dispensing of; reagents, buffers, silicone, bonding agents
- Bottle filling and capping
- Placement or forming of micropumps and valves
- Fastening, bonding or sealing – snap, thread, heat, laser, ultrasonic
- Curing
- Surface treatment – corona, plasma
- Labeling
- Pouching, traying or cartoning
- Functional testing and inspection
- Kitting



Lateral Flow Assays

This category comprises paper-based platforms that detect and (sometimes) quantify the presence of analytes in samples. Simple LFDs test for a single condition while more complex ones can test for multiple analytes.



Lab-on-a-Chip and Micro Total Analysis Systems

With the evolution of micro and nano technologies, it has become possible to miniaturize the operations normally handled in the laboratory. Fluids in very low quantities, sometimes picoliters, are manipulated via onboard pumps, valves, etc. to complete the test, and then an analyzer or reader interprets the results.



Kits

Many PoC diagnostic tests require sample collection, preparation, and storage. From saliva in tubes to nasal swabs, the various sample components and the diagnostic test are assembled into trays and cartons for ease of use at point of use.



Reagent Packs

Although not typically required for the patient, reagent packs are an essential part of many lab instruments. Some reagent packs travel with the sample while others are stored with the lab instrument.

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