Standard solution for lateral flow device assembly

Ginolis Lateral Flow Device Assembly (LFDA) is a standard system for the fully automated assembly and packaging of rapid tests. 

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The Ginolis Lateral Flow Device Assembly system is a revolutionary new step in diagnostics manufacturing. The LFDA brings together intelligent automation and modularity on a desktop scale.

**Flexible**
The solution is easily adaptable and can assemble different rapid tests with minimal product specific adjustments. The LFDA provides manufacturers flexible production capacity within a desktop footprint.

**Intelligent**
To ensure flawless and high-quality operation a versatile machine vision system is utilized for accurate positioning, defect detection, tolerance monitoring and component measurement. The machine vision guidance system yields a consistent high quality assembled device.

**Modular**
The LFDA is built on Ginolis’ modular Xanthia robotic platform. The line can be easily expanded to include modules for multiple test strips, RFID tags, printing, labelling, laser marking, cap assembly, ultrasonic welding and pouching.

**Main Features**
- Machine vision guided infeed of materials
- Strip cutter with card magazine or reel infeed
- Vision guided component placement, strip cutting and assembly ensure consistent high quality
- Quick product changeover due to minimal product specific parts
- Compact design saves valuable space in clean room environments

**Other Configurations**
- LFDA an easily be expanded to include modules for multiple test strips, RFID tags, printing, labeling, laser marking, cap assembly, ultrasonic welding and pouching
INTELLIGENT DESKTOP AUTOMATION

LFDA Modules

Housing Infeed

The housing bulk infeed module comes standard on all LFDA systems and is capable of handling a wide range of housing types. The bulk feeder mechanism provides a controlled and monitored input of housings with a customizable buffer.

Machine vision inspection ensures each housing fits QC requirements before it is placed onto the carrier for transfer to the next cell.

Intelligent Transfer Unit

Components advance along the LFDA system on the Ginolis Intelligent Transfer system. The multi-functional system transfers the components from module to module on magnetic carriers across a glass platform.

With minimal exposed and moving parts, the intelligent transfer system is easy to clean and low maintenance.

Strip Cutting and Assembly

The strip cutter module utilizes a linear servo motor driven blade to cut strips. The LFDA is available with card magazine or reel infeed.

Vision guidance system checks for bad marked material, ensures precise strip width and the presence of pads before placement.

For test devices with more than one strip, additional strip cutting modules can be easily integrated to system.

Press Unit

The assembled lateral flow device is fed through servo driven press unit which has adjustable force and height parameters.

After successful cassette closure, the test device is transferred via the intelligent transfer system to final quality inspection station.
Quality Inspection

The Lateral Flow Device Assembly system includes a final quality inspection before packaging. Multiple cameras and dash lights check for component features, correct positioning and proper cassette closure.

Failed test devices are removed from assembly line automatically. Additional options include fluorescence light check.

Cap Assembly

Cap assembly module performs the placement and closure of cap onto end of test device. The cap and test device is pressed together using a servo driven press unit.

The cap assembly module comes standard with bulk component infeed.

Ginger Control System

- Ginger - desktop automation software
- Embedded industrial PC (Win 7 Pro, Windows 10 IoT)
- GIN UX Tablet User Interface
- USB, WLAN, LAN
- Machine vision system
- Supports multiple languages

3rd Party Equipment

Ginolis’ LFDA solutions can be integrated with 3rd party vendor equipment

Options include pouching and kitting machines, labelling, printing, laser marking and ultrasonic welding.