Biotechnology

Petri Dish Handling System

Pick And Place, Fill And Aspirate In Class 100 Cleanroom

Process, Features & Benefits

An array of petri dishes, resting securely on trays, is manually loaded into the system. A barcode scanner reads the product code on the tray, which in turn identifies the specific process to take place.

An Adept Cobra 600, 4 axes robot arm, equipped with a multi-function end effector, removes the petri dish cover, positions a nozzle over the dish, and fills a well with a precise volume of product, deposited via an Ivek filling pump. The dish is recovered and the robot moves to the next dish. This process continues until the entire matrix of petri dishes on the tray is completed. Component presence and operation completion is verified.

When the trays are returned to the system after undergoing ancillary operations, the robot moves the end effector to again remove the petri dish cover and this time aspirates the product from the well and dispenses another dose of product into two wells. The product tray is tilted to facilitate required aspiration and minimize residual product. These processes continue until the product has completed dispensing and aspirating the required cycles.

The Ivek pump is periodically calibrated by dispensing product into a receptacle resting on an electronic load cell. Adjustments to the pump fill rate and volume to be dispensed is achieved through the operator display panel.

The system is designed and manufactured consistent with Cleanroom Class 100 standards. Surfaces contacting the product are compatible with sanitizing agents used for wipe down and are capable of being removed and autoclaved periodically and reassembled in a Class 100 area. An overhead HEPA air filtration system and equipment design resulted in efficient unilateral air flow over the sterile items.

Machine structure is fabricated of stainless steel and is compact and equipped with casters for easy mobility between clean rooms.

A PLC controls sequence logic and collects data. A touch screen monitor reports system status, data, and diagnostic messages. Industry standard communications protocol allows for data retrieval via an external system.

More Information

For more information on this, and many other Farason projects, please visit our website at www.farason.com or call us at (610) 383-6224.

FARASON

FLEXIBLE AUTOMATION SOLUTIONS