

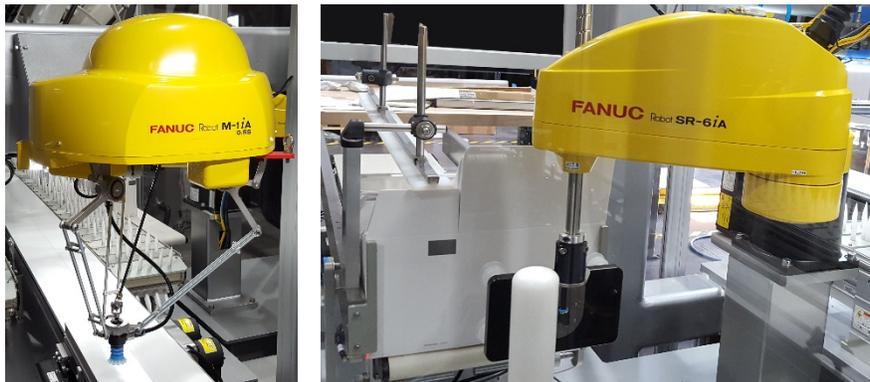
PRESS RELEASE – FOR IMMEDIATE RELEASE

COVID-19 Test Kit Cartoning Line Increased Productivity to Meet Urgent Testing Needs

February 2021, Blacksburg, Virginia — ESS Technologies supplied three Model VC30 cartoners to create a complete COVID-19 test kit packaging line, increasing the manufacturer’s production capacity when it was critically needed. As the coronavirus pandemic widened in 2020, a major manufacturer of fast-response COVID-19 test kits enlisted ESS to design and build a cartoning line to automate the packaging of pouched test kits. By integrating a variety of FANUC robots with ESS-engineered automation, ESS designed and delivered three (3) Model VC30 cartoning systems in a fraction of the normal delivery time. The equipment increased production efficiency and OEE, and automating the process allowed the manufacturer to re-assign valuable human resources to important functions not suitable for automation.

Robotic Cartoning Solution

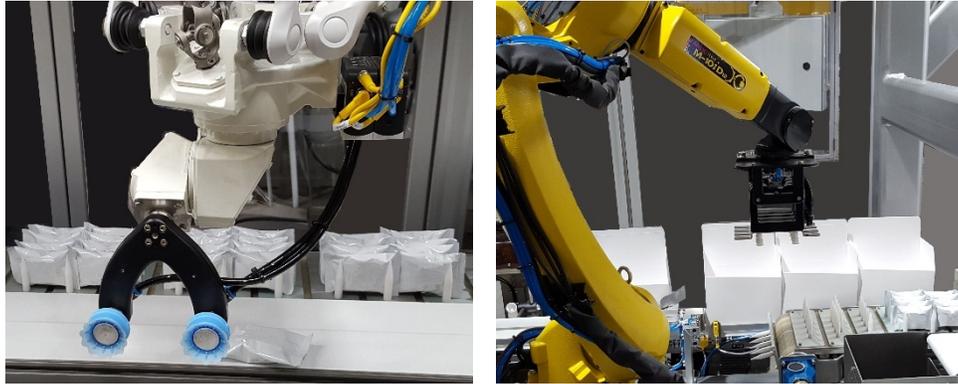
The VC30 Cartoners for the first two kit lines began with an ESS integrated FANUC M-1iA robot with vision and vacuum-style end-of-arm tooling (EOAT) that picked pouches on the conveyor and spaced them into two lanes as they entered at a rate of 150 pouches per minute. Two (2) FANUC M-2iA vision-enabled robots with vacuum EOAT picked the spaced pouches and placed them into staging fixtures in the 2x4 pack pattern. As pouches were collated, a FANUC SR-6iA robot used vacuum-cup EOAT to pick auto-bottom cartons from a magazine, square the sides, and place it in the carton transport conveyor. At the loading position, a FANUC M-10iD/12 robot used custom EOAT to pick the staged pouches, loading three (3) layers of them into an erected carton, alternating between lanes to achieve a cartoning rate of seven (7) cartons per minute.



M-1iA Pouch Laning Robot and SR-6iA Carton Erecting Robot

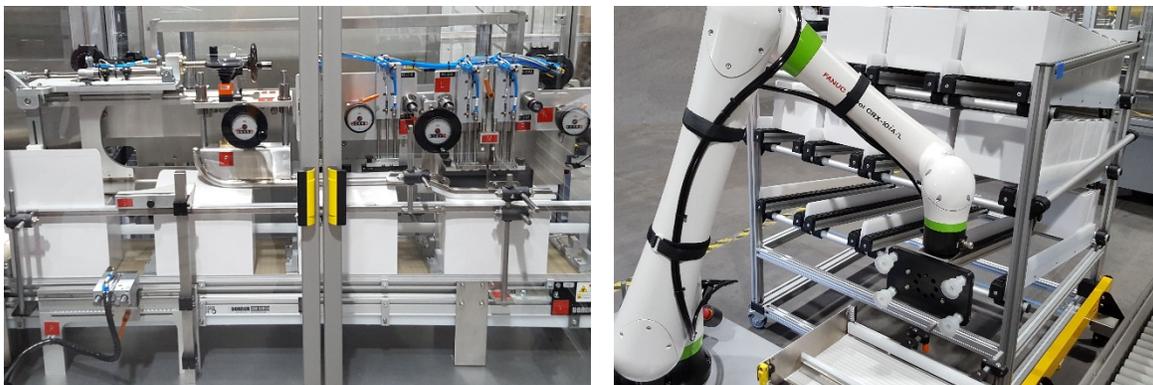
The VC30 top closing station folded and closed the carton flaps. ESS integrated an OEM coder to print a LOT/EXP code on the side of the cartons. An integrated vision system inspected the

code and non-compliant coded cartons were automatically rejected from the system. Compliant cartons were offloaded using a TaskMate Robotic Systems[®] Machine Unloader with FANUC CRX-10iA collaborative robot that placed cartons on customer-supplied cart. ESS supplied two identical systems to carton pouches.



M-2iA Collation Robot for Pouches; M-10iD Carton Loading Robot

The third VC30 brought loaded cartons on the customer's carts from the first two lines and packaged one of each into a larger auto-bottom carton to complete the final test kit shipper. This system also used a FANUC SR-6iA robot to erect the master carton, and an integrated laser coder printed a LOT/EXP date on the carton. Two FANUC CRX-10iA collaborative robots offloaded cartons from carts from the first two kit lines. One robot took cartons from the Kit 2 cartoning line cart and automatically loaded it into the master carton. The second robot took cartons from the Kit 1 cartoning line and placed them next to the master carton for manual loading along with other components and instruction booklets.



Top Closer for Cartons, CRx-10iA Collaborative Robot Unloader

To increase the cartoning line's productivity, the customer ordered the VC30 cartoner to include a number of features such as lot/date inspection and barcode grading in order to ensure product integrity. Sensors and cameras around the system inspected the product, kept track of the carton count, verified carton closing and verified product count in each carton. Allen Bradley controls

and color touchscreen HMI made the VC30 easy to operate, and FANUC robots offered high reliability for the system. As an authorized FANUC System Integrator and OEM machine builder, ESS was able to provide a full turnkey solution for the test kit manufacturer.

About ESS Technologies, Inc.

ESS Technologies, Inc., founded in 1993, specializes in complete packaging line design, manufacture, and integration. Our product expertise includes filler-capper systems, side-load and top-load cartoners, side-, bottom- and top-load case packers, wrap around case packers, robotic palletizing systems, and custom designed TaskMate Robotic Systems®. ESS is a robotics Strategic Partner with FANUC America in the area of secondary packaging and palletizing pharmaceuticals and a FANUC Robot Authorized System Integrator. As an essential machinery supplier to the diagnostics and pharmaceutical industries, ESS Technologies remains committed to designing high performance packaging machinery.