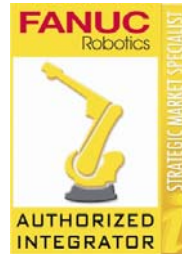


Innovative Packaging Solutions for Pharmaceuticals, Cosmetics, Medical Devices, and Consumer Goods

Application Brief (AB0322007)

Robotic Infeed for Flow Wrapping Machine

Application: Robotic Infeed to Pouching Machine
Products Used: TaskMate™ Robotic Loader with FANUC M-430iA Robot and Integrated Vision System

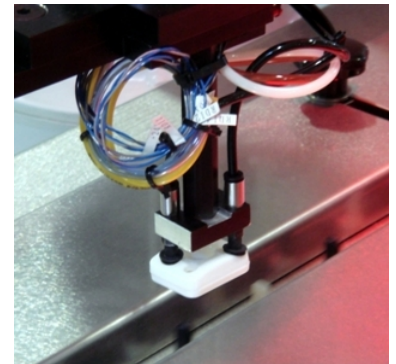


The Challenge:

In conjunction with automating the assembly of diagnostic test kits, the manufacturer needed to specify a packaging line that automated the infeed of a flow wrapping machine in order to maintain the desired production speed of 40 pieces per minute. To further add to the design challenge, the machine's infeed consisted of a continuous motion conveyor that required the diagnostic test kits, along with a desiccant pack, to be placed at precise intervals, indicating a solution that included vision and line tracking.

The Solution:

ESS engineers designed a robotic infeed loading cell that integrates a FANUC Model M-430iA multi-axis robot and an ESS-designed vacuum-style end-of-arm tool for product handling. The robot incorporates FANUC's integrated vision and line tracking capabilities to pick assembled test kits from a tray and place them into the continuous motion flow wrapper infeed. The system design also integrates gravity rollers, which allow the system to automatically present full trays of diagnostic test kits to the robotic cell and discharge empty trays.



End Effector Placing Test Kit on Conveyor

How it Works:

A full tray of assembled and lyophilized diagnostic test kits arrives at the robotic infeed cell via a gravity roller conveyor. The conveyor positions the tray below the robot's integrated vision system and in front of the continuous motion flat conveyor that connects to the flow wrapping machine. The robot uses vision to select and pick assembled diagnostic test kits and line tracking assists the robot in placing them on the moving conveyor. This sophisticated vision and line tracking system can be easily recalibrated (as needed) by connecting the controller to a PC via a standard Ethernet cable. Once a tray has been fully unloaded, the system discharges the empty tray at one end while a full tray enters the robotic cell from a second conveyor. As the test kits move downstream on the conveyor, a desiccant pack is paired with a test kit prior to entering the flow wrapping machine.

The Results:

The installed system allowed the customer to meet the required infeed speed to keep the flow wrapping machine operating at optimum production speeds. By automating the process, the customer increased production without taking on additional personnel costs. The customer also maximized the flexibility of their packaging line, allowing for new products to be added to the existing line in the future.



M-430iA Robotic Cell with Integrated Vision



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