

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

Application Brief (AB02212006)

Drug Delivery Device Assembly & Packaging

**Application:** Assemble & Package a Drug Delivery Device  
**Products Used:** Seven (7) FANUC Robotic Systems, Wrap Around Labeler, Thermoformer, Cartoner, Case Packer, Mini Pallet Cell

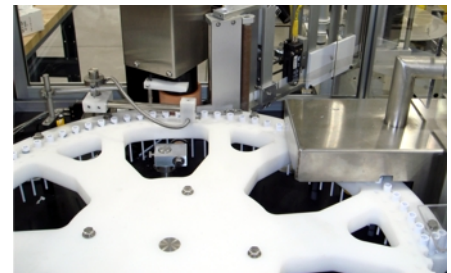


## The Challenge:

A pharmaceutical manufacturer needed an automated high speed system for assembling and packaging a new drug delivery device. The customer required a full turnkey solution with the integration of feeders, hoppers, conveyors, material handling systems, and the inspection of the final product.

## The Solution:

ESS engineers, working with the customer, designed an integrated system that assembles 320 parts per minute and then packages the drug delivery device. The system integrates sixteen pieces of feeding and packaging equipment including seven TaskMate™ robotic systems, an automatic horizontal cartoner, a horizontal case packer, and an ESS robotic mini cell palletizer. The TaskMate™ robotic systems incorporate FANUC LR Mate 200iB robots with ESS-designed end-of-arm tooling to handle the assembly, collating and loading/unloading of the drug delivery devices.



Wrap Around Labeling System

## How it Works:

Dosed tablets and handles, components for the drug delivery device, enter the dual-lane assembly process through separate feeders. Two FANUC LR Mate 200iB robots, with ESS-designed end-of-arm-tooling, insert the labeled handles into the tablets. Two more robots collate the devices and transfer them to a thermoformer infeed conveyor. A fifth robot loads 30 completed assemblies per pick to thermoformed blisters.



Robotic Loading of Thermoformed Blisters

At the thermoformer discharge, a sixth FANUC LR Mate 200iB removes blister packs, inspects them and rejects incorrectly filled or sealed blisters. Correct blister packs are placed on a five-lane conveyor to a seventh TaskMate robotic system that collates the blisters into groups of 10 packs per carton (three devices per blister pack). Collated blister packs are inserted into cartons using an automatic horizontal cartoner. A printer and camera system prints then verifies the bar code on the carton flap. The filled carton crosses a high speed checkweigher to verify content before entering the horizontal case packer. The cartons are loaded into shipper cases, which are conveyed to the ESS Mini Pallet Cell for final palletizing.

## The Results:

The system met the high speed requirements for the assembly and packaging of the new drug delivery devices. The fully automated system doubled the production rate of the drug delivery devices to 320 pieces per minute. In addition, the number of required personnel was reduced from fifteen to five people, allowing the customer to reassign several personnel to other processes.



Collating and Loading Blister Packs into a Cartoner Infeed Bucket



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