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Automated Assembly of Drug Delivery Products

DTE has supplied a variety of automated assembly systems enabling major manufacturers of pharmaceutical products to reduce labor, enhance quality and get their products to market quicker. In this project, the customer had issues with being able to successfully dispense the proper quantity of glue within the desired cycle time without spillage onto the product. DTE designed and developed a prototype gluing system to prove a successful glue dispensing mechanism. After extensive prototype testing, the production system was built and installed 2 months ahead of schedule. Product rates were at least 10-11 times faster than the existing production equipment. The customer was elated about the ease of installation and the innovative DTE design which allowed fast cleaning during product dose changes. Several duplicate systems were provided in the following years as the product enjoyed periods of rapid growth.



System Overview

This system is for the high speed assembly, inspection, printing and labeling of a specialty oral consumption drug delivery product. The highly reliable system consists of a high speed assembly machine, vision inspection stations and a labeling machine. The components are supplied to the assembly machine by feeder bowls with hoppers. One component is placed in a fixture and its orientation is checked. Next, the part is indexed to another station for the glue dispensing and mating with another component. The part is then ink jet printed and inspected for quality. The part is then sent to a custom labeling station for the final operation. The labeler applies one of six different labels which confirm the product dosage and this is verified by a vision inspection station. The output is fed directly to a custom DTE built final packaging line.

System Highlights

- Clean Room Type Stainless Steel Construction
- Product damage inspection system
- High reliability part feeding
- Glue dispense and detection systems
- Quality inspection with variable quantity audit
- Compact equipment footprint
- Enclosed system for cleanliness and safety
- Speeds up to 250 ppm

System Values & Benefits

- Minimized product damage
- Minimum floor space required
- Changeover in less than 15 minutes
- Ease of cleaning design considerations
- Ink jet printing for 6 different product dosages
- Clean and safe working area for employees
- Low cost unit assembly