

Application Success Story - Labeling

A high volume, low cost pressure sensitive labeling applicator machine builder wanted to move from their current stepper motor technology to a servo based one with the expectation of higher product throughput and performance gains that would position the builder into a new tier within the market. The stepper motor supplier had servo capabilities but they were unable to meet the demands of the application without customizing the control. The customer wanted a standard solution and looked for other vendors which opened the door for Danaher Motion to quote the digital MMC-DSA stand-alone control, S200-DLS servo drive and AKM motor.

Market: Web Handling – Pressure Sensitive Labeling

Machine Type: Intermittent motion label dispense at line speed with front, back, front & back, and top product placement

Products: Bottles, containers, jars, etc.....round, square, oval, flat shaped
Ex. Pharmaceutical vials, shampoo, eyeliner, hand lotion, beer bottles, boxes

Machine Description: One stepper or servo axis for the label web feed roll. Rewind and unwind stations, and wrap and product conveyors are typically open loop. One product sensor to detect incoming products and one label sensor for label registration.

Application Description: Labels are affixed to a paper or Mylar web backing, 1/8" apart. A roll of labels is loaded at the unwind station and feed through the machine past a feed roll, around a label peeler plate and then ends at the rewind station. As the feed roll pulls the web unwinds the labels and moves the web around a peeler plate which separates the label from the backing due to the sharp bend radius, at which point the label is placed on the product. A take up roll winds up the backing after the label is dispensed to complete the web path.

Challenge: OEM's that use stepper motors and are looking at servos for performance and throughput increases.

Why we won: Kollmorgen system solution, performance, knowledge of application, technical expertise. Design time to market and support were critical in winning account. Cost effective S200-DLS drive minimized stepper to servo price differential. Ability to control open loop frequency drives.

Benefits: High label placement accuracy using the fast input latching feature and standard function/function blocks. Stepper: 60 feet per minute, Servo: 6000+ feet per minute, 1400+ labels per minute, +/- .015" or better. Limitations are due to mechanics.

Customer wins: Previous stepper design performance of 60 FPM, new servo design at 160 FPM. Cost of servos is more than steppers but because of performance gain the OEM can charge more and offset cost and increase margins. Design time to market and support were critical in winning account. Cost effective S200-DLS drive minimized price increase.

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