

Subject: Application Overview	Product: MP940, MP2300	Doc#: eng.MCD.05.112
Title: Labeler		

Labeler

Application Overview

Labeler machines are used to apply a label to a product on an incoming conveyor. Products must be synchronized together at high speed to increase output, and must be capable of handling continuous or irregular motion profiles. Labeling machines are found in a broad range of industries, stretching from food and beverage to pharmaceutical to consumer goods manufacturing.

Application Challenges

- Random Product In-feed – Controller must be able to account for product being fed at unpredictable intervals and realign to place product in the correct location.
- Slippage Control – label must be traveling at the same speed as the product in order to place the label at the intended point without label slippage
- Increased throughput – Higher productivity should result from the addition of this motion control solution due to higher speeds and lower downtime
- Smooth Motion – The solution must yield smooth motion to reduce machine wear produced by jerky accelerations, resulting in increased machine life and lower maintenance (more uptime).

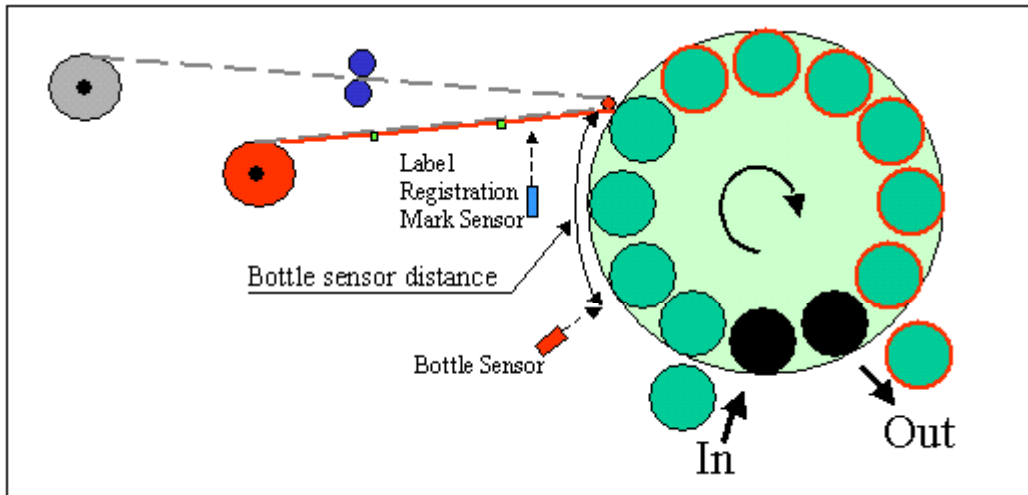
Yaskawa Products

Products	Product Features and Benefits
MP2300 with Sigma II or Sigma III	<ul style="list-style-type: none"> - Pre-developed Linear Flying Shear Solution Package that can be customized to a specific machine - High-performance Mechatrolink-II motion control network
MP940 with Sigma II	<ul style="list-style-type: none"> - Electronic camming with cam shifting for registration adjustment - Easy-to-use Icon Based programming environment

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Application Solution and Benefits

In this application, a roller or set of pinch rollers feed labels through a labeling head. The product approaching a labeling head triggers a sensor, which initiates the cam profile. The predefined profile causes the label to be pulled through the labeling head and applied to the product. The servo must provide low acceleration to prevent tearing the labels and quick deceleration to stop between tightly placed labels. The control can compensate for variation in package separation and changes to conveyor speeds.



The label web accelerates and synchronizes to the bottle in the rotary table (or in line feeder) based on the encoder signal that measures the rotary table movement by input of the master quadrature encoder signal. After a registration mark on the label is detected, the label moves a set distance from the registration mark. A continuously advancing electronic cam profile is used to provide the smooth acceleration and make any corrections for label slippage. Labels are position matched to the bottle rotary table allowing the controller to automatically compensate for any changes in table speed.

Incorporating the Yaskawa line of amplifiers and servomotors introduces the highest quality servo equipment in the industry to increase performance and reduce downtime. In addition, Yaskawa motion controllers can be integrated into larger control systems using Yaskawa machine controllers as well as a variety of communication capabilities, to provide ultimate connectivity and complete Yaskawa solutions.