



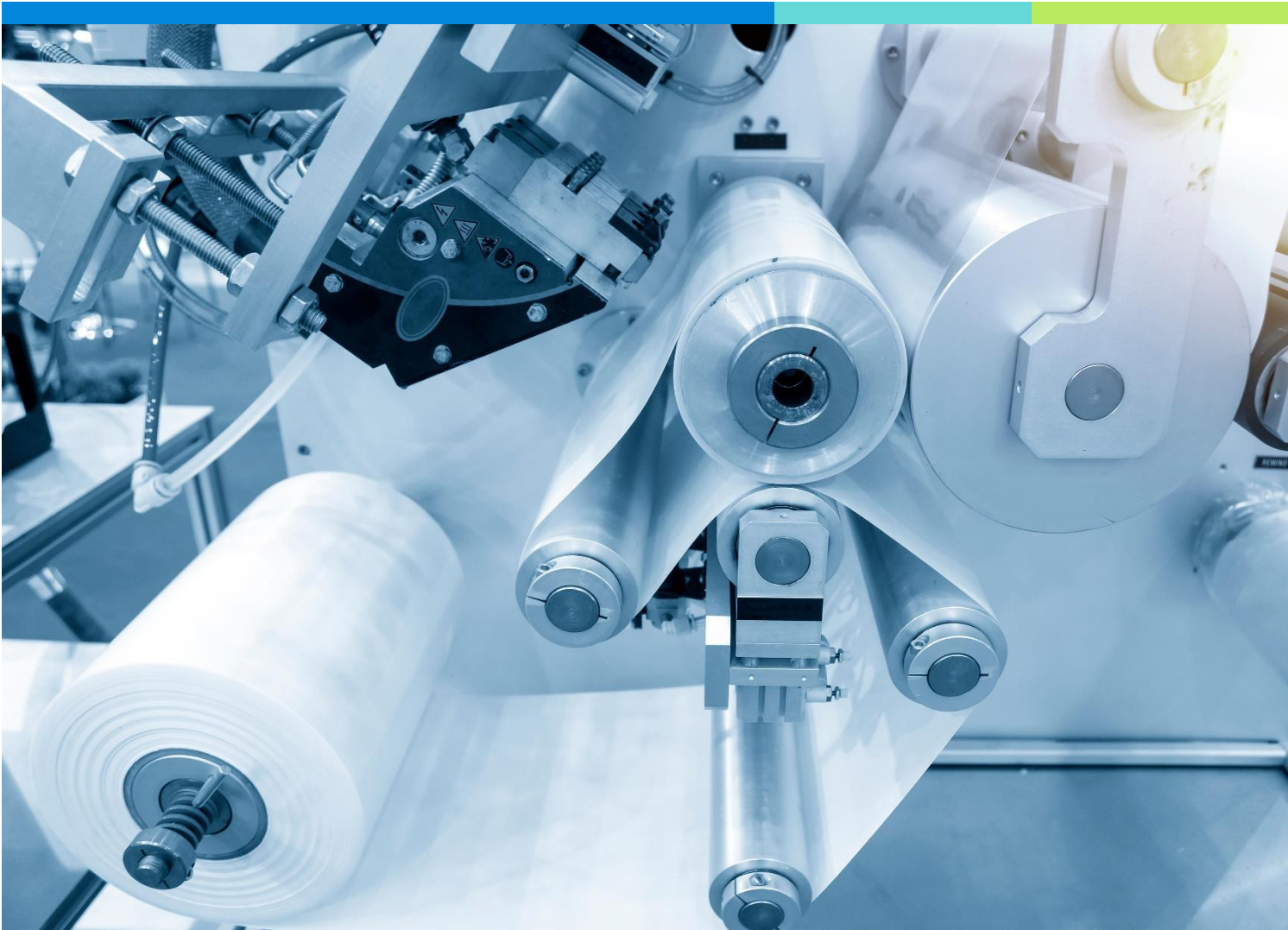
Packaging Industry Notification

Application Pack

Delta Shrink Sleeve Labeling Machine Solution

IABG Global Solution Center

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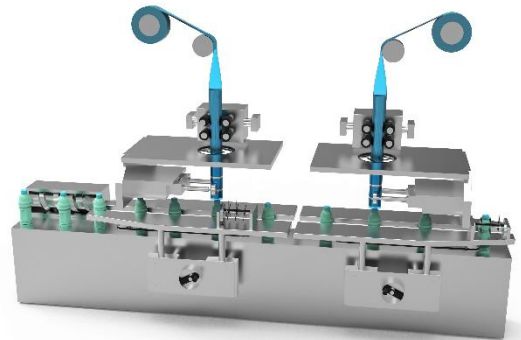
Delta Shrink Sleeve Labeling Machine Solution

Introduction

The labeling machine is playing an important role in the filling process. It labels the filled bottles to visualize the product information and improve the publicity value.

The shrink sleeve labeling machine and labeling machine are the 2 common types of equipment in the filling and labeling process. The shrink sleeve labeling machine applies the sleeve label onto the bottle from the top, while the labeling machine wraps the label around the bottle and sticks it with the psa or hot glue.

Delta labeling machine solution employs a double-head shrink sleeve labeling machine. Compared with the conventional single-head shrink sleeve labeling machine, it offers a faster processing speed with a smaller footprint and does not need to stop the line when supplementing.



Application

Beverage, food, pharmaceutical, commodities, and agrochemistry industry.



Beverage



Food



Pharmaceutical

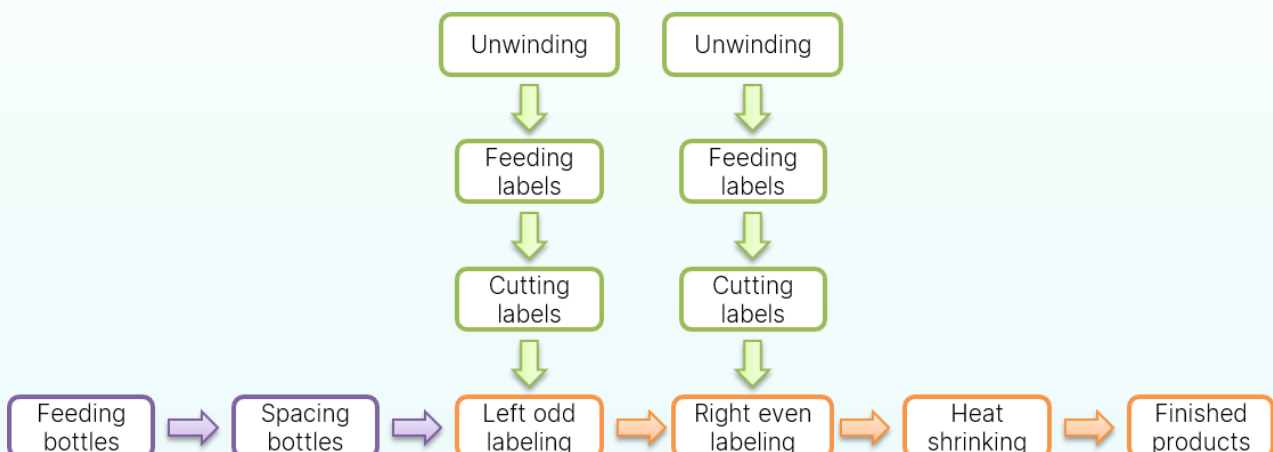
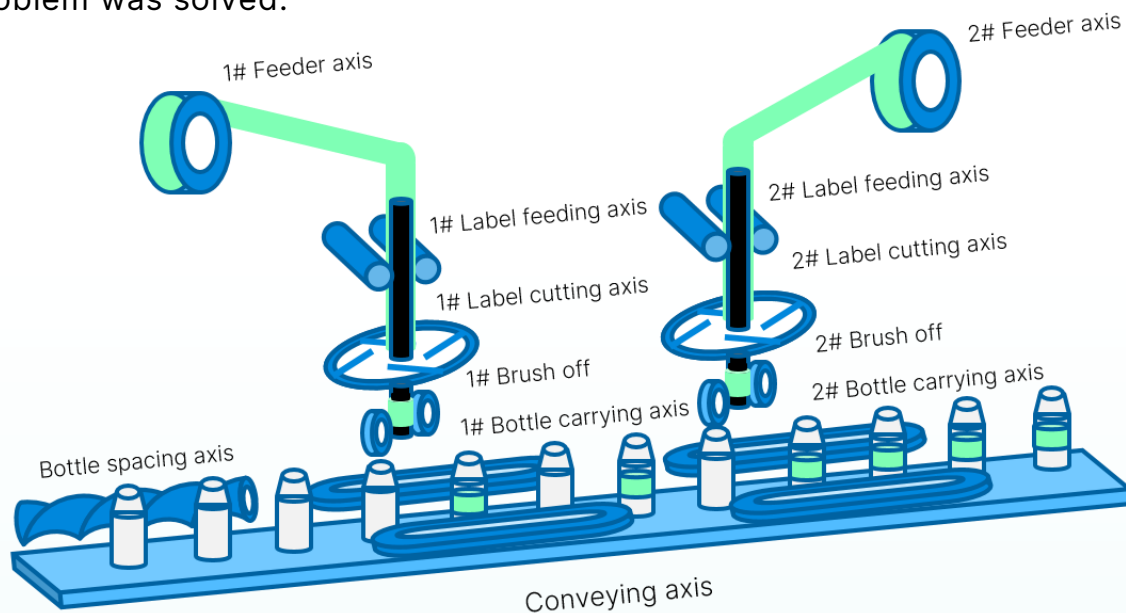


Household chemicals, agrochemicals

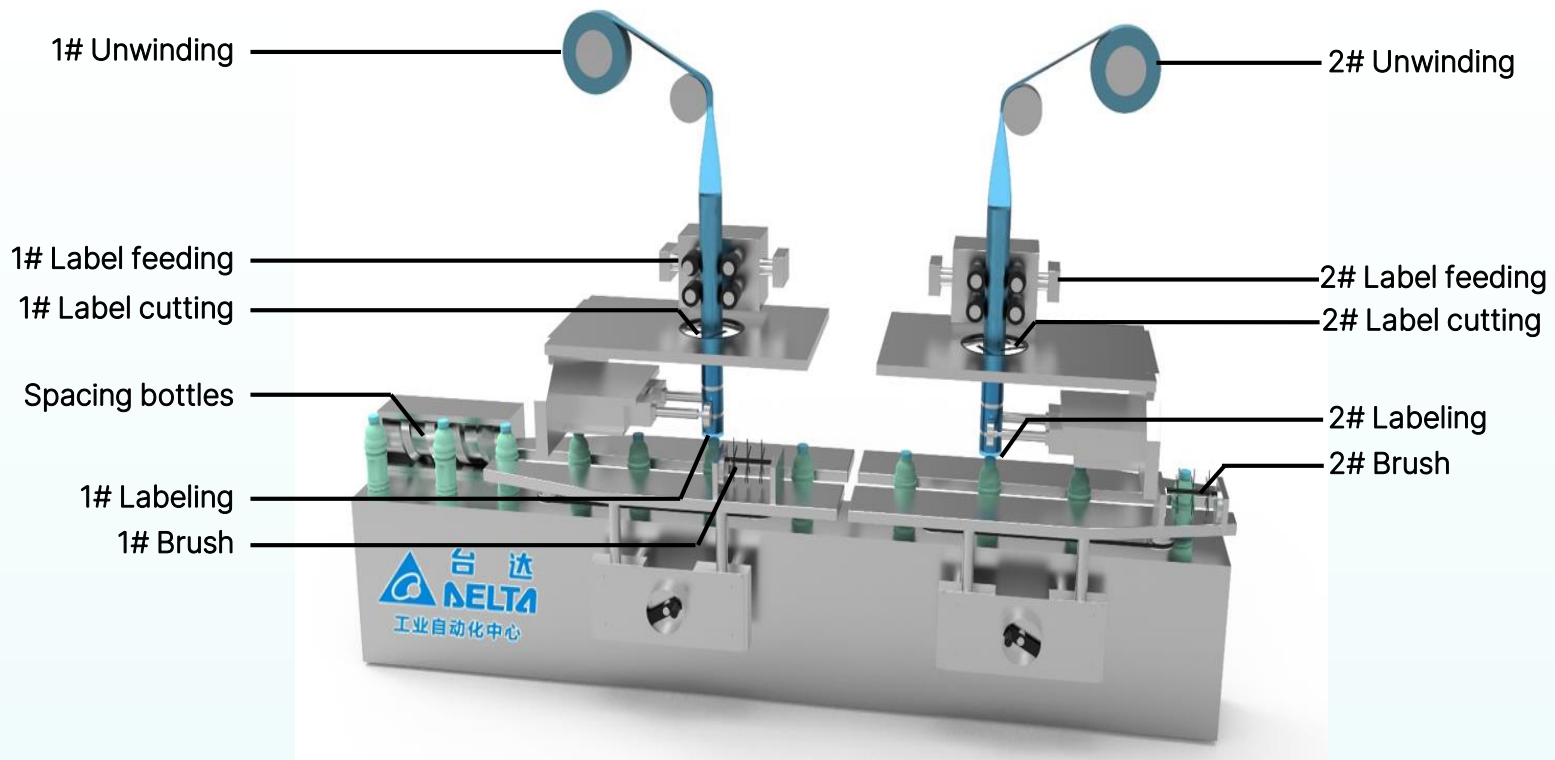
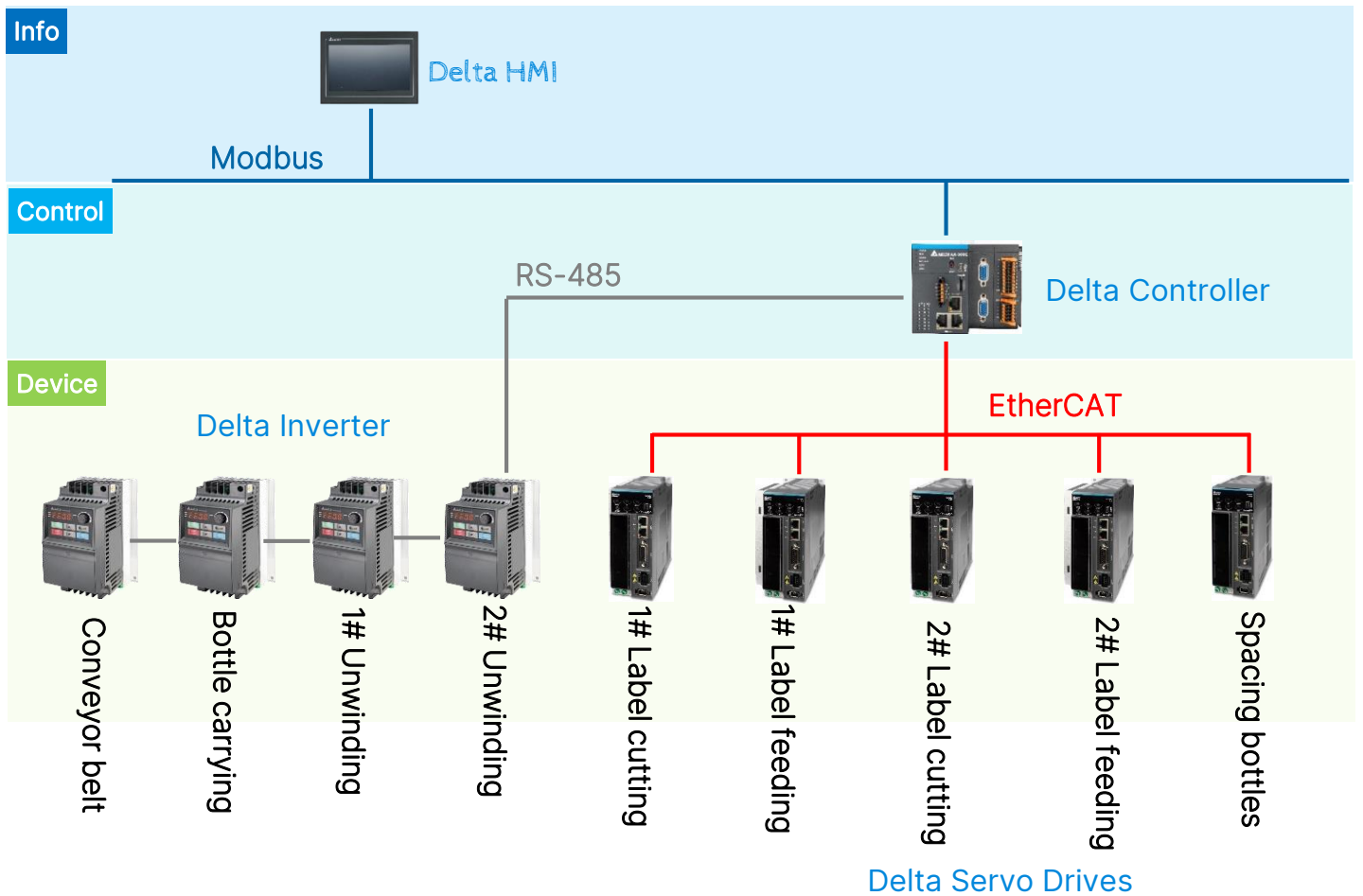
Process

The shrink sleeve labeling machine solution consists of 1 bottle feeding line and 2 label feeding lines. The process starts with bottle conveying, then the bottles are spaced by the spacing unit, at an equal distance, labeled by the double-head unit alternately, and finally heated by the heating unit so that the label shrinks and attaches to the bottle. The label feeding line carries out label cutting and feeding. The feeding unit makes correction based on the color mark position for accurate cutting. The double-head shrink sleeve labeling machine consists of 9 axes, combined with high-speed DI to eliminate fallen bottles and signal errors to avoid misplacement of labels.

- 1. Bottle feeding line:** It utilizes the spacing screw to space bottles evenly for stable conveying. The 2 heads apply labels alternately, and the heating unit heats the label to shrink.
- 2. Label feeding line:** The label roll is stretched and unwound by the feeder. Once the high-speed DI detects a bottle, it starts label cutting and feeding.
- 3. Supplementing:** When labels on one side are running out, it can switch to the left or right mode. After supplement, switch it back to the double head mode again.
- 4. Line stop:** In case of a conveying jam or fallen bottles, the operator can stop the spacing screw with one click, and resume the operation with one click after the problem was solved.



Solution Architecture



Customer Pain Points



Counting errors caused by **signal interference**; **Disordered odd and even labeling**, leading to excessive or missed labeling.



Fallen bottles are **mostly determined by operators** during the operation.



Poor cutting accuracy for staggered labels.



Excessive or missed labeling after mode switching.

Features

- **Filter Out Signal Interference and Avoid False Bottle Counting**

The controller comes with 16 high-speed DI (200K) and features high-speed timer function, combined with the fuzzy sampling algorithm to determine whether it is a real bottle, to filter out 99% of signal interference.

- **Automatic Detection of Fallen Bottles**

The electric eyes on both sides can automatically detect fallen bottles and report an alarm to stop feeding. The fallen bottles can be removed without stopping the conveyor belt.

- **Precise Label Cutting**

It utilizes the color mark sensor and repeated average algorithm for the precise cutting of staggered labels.

- **Timely Alarm Upon Feeder Exceptions**

Reports an alarm when the feeder feeds labels for a long time to avoid waste.

- **Bottle Spacing Emergency Stop**

Independent emergency stop function of the spacing axis, allowing start/stop with one click for convenient loaded commissioning.

- **Complete Fool-Proofing Mechanism**

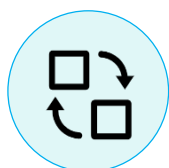
Fool-proofing function under manual mode. For example, manual label feeding is impossible if the brush is not opened manually, to prevent label jam.

Advantages



Higher Productivity

Compared with the single-head shrink sleeve labeling machine, this solution offers a production capacity of up to 30,000 bottles/hour, improving productivity by 66%. In addition, it also improves the utilization rate to 100% through non-stop supplementing. Compared with 2 single-head shrink sleeve labeling machines, the double-head shrink sleeve labeling machine saves operating space by 50%.



Diversified Labeling Modes for Non-Stop Supplementing











It supports left labeling, right labeling, and double-head labeling modes. Users can switch between different modes during operation as required, without missed or disordered labeling. When labels on one side are running out, it can switch to the left or right mode, then switch back to the double head mode again after supplement, so that to achieve non-stop supplementing.



Filter Out Signal Interference Effectively

The controller comes with 16 high-speed DI (200K), combined with the fuzzy sampling algorithm to determine whether it is a real bottle, to filter out 99% of signal interference.

Solution Resource

	Delta Shrink Sleeve Labeling Machine Solution includes:
 	Promotion file: Delta Packaging Industry_Double-Head Shrink Sleeve Labeling Machine
 	Project file: Delta Packaging Industry_Double-Head Shrink Sleeve Labeling Machine (Device list, IO table, parameter definition, FB description)
	Complete program: PLC AX308
	Complete project: HMI DOP-110WS
	Parameter setup: Inverter, servo
	Request for resource: Solution Contact  TEL : +86 17625751544  E-Mail : L-CN-SC@deltaww.com