



## Packaging Industry Notification

Solution Pack

# Delta Labeling Machine Solution

IABG Global Solution Center

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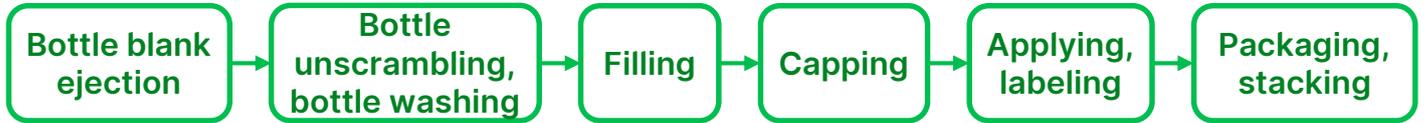
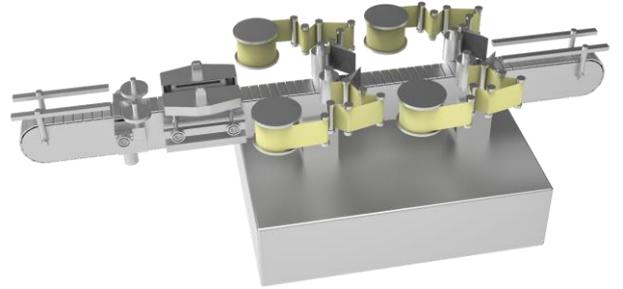
# Delta Labeling Machine Solution

## Introduction

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

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

Delta labeling machine solution employs a 4-head labeling machine. Compared with the traditional 2-head labeling machine, it offers a faster processing speed with a smaller footprint and does not need to stop the line when supplementing.



## Application

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



Beverage



Industry



Pharmaceutical

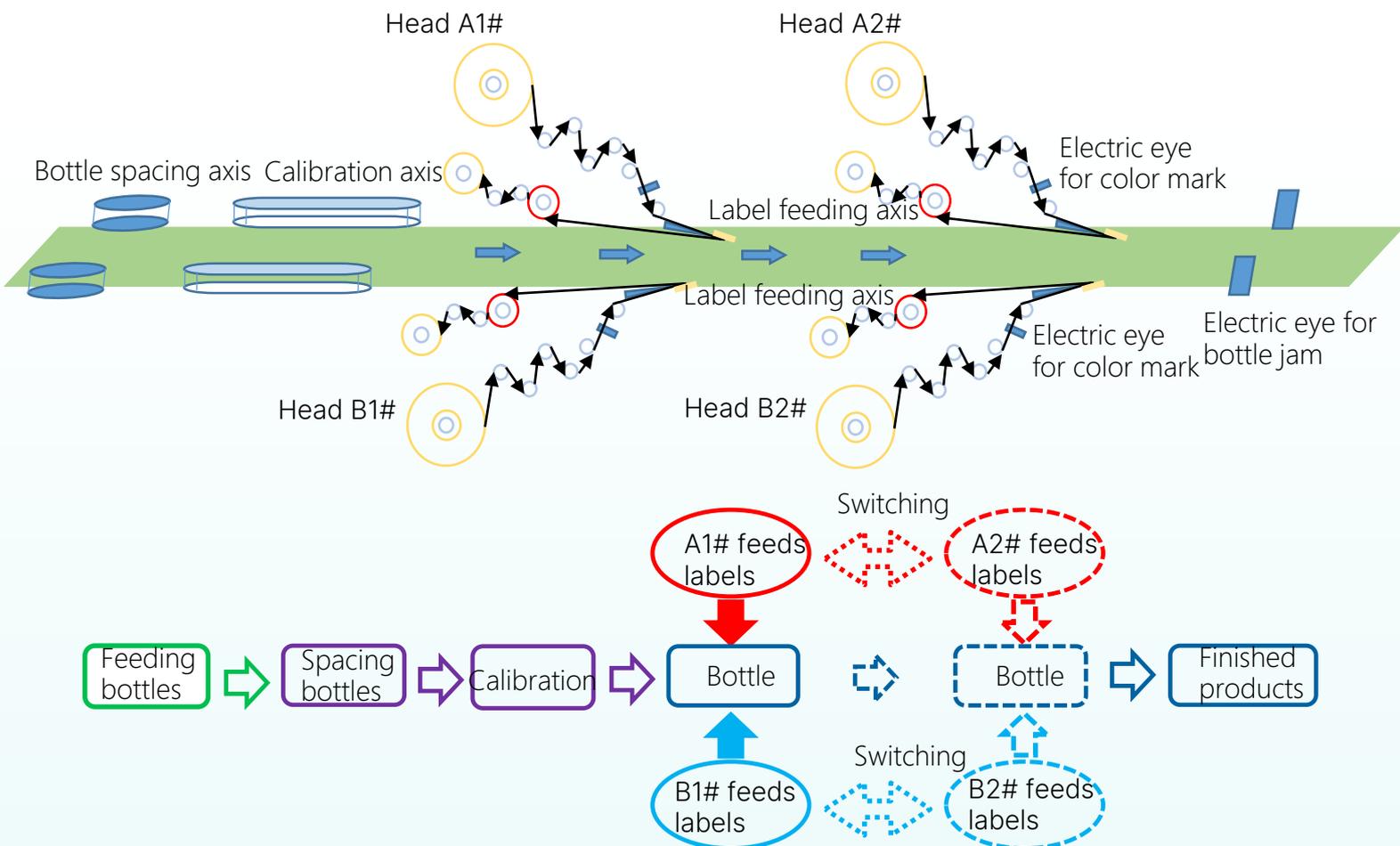


Household chemicals, agrochemicals

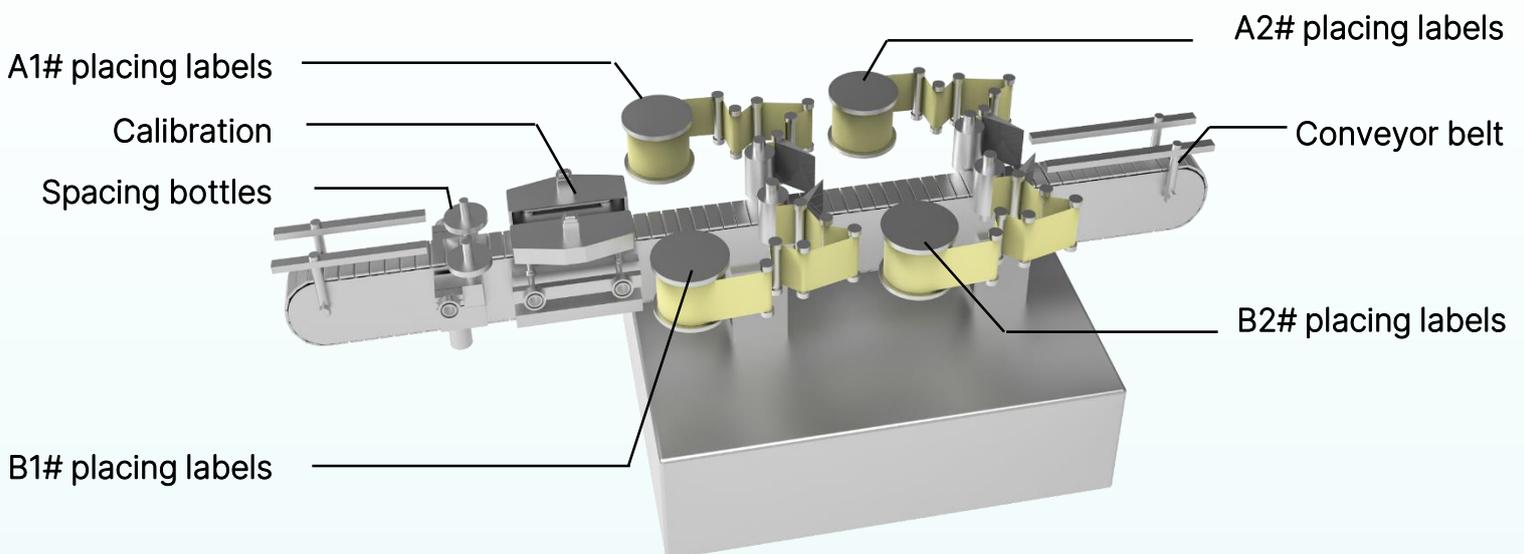
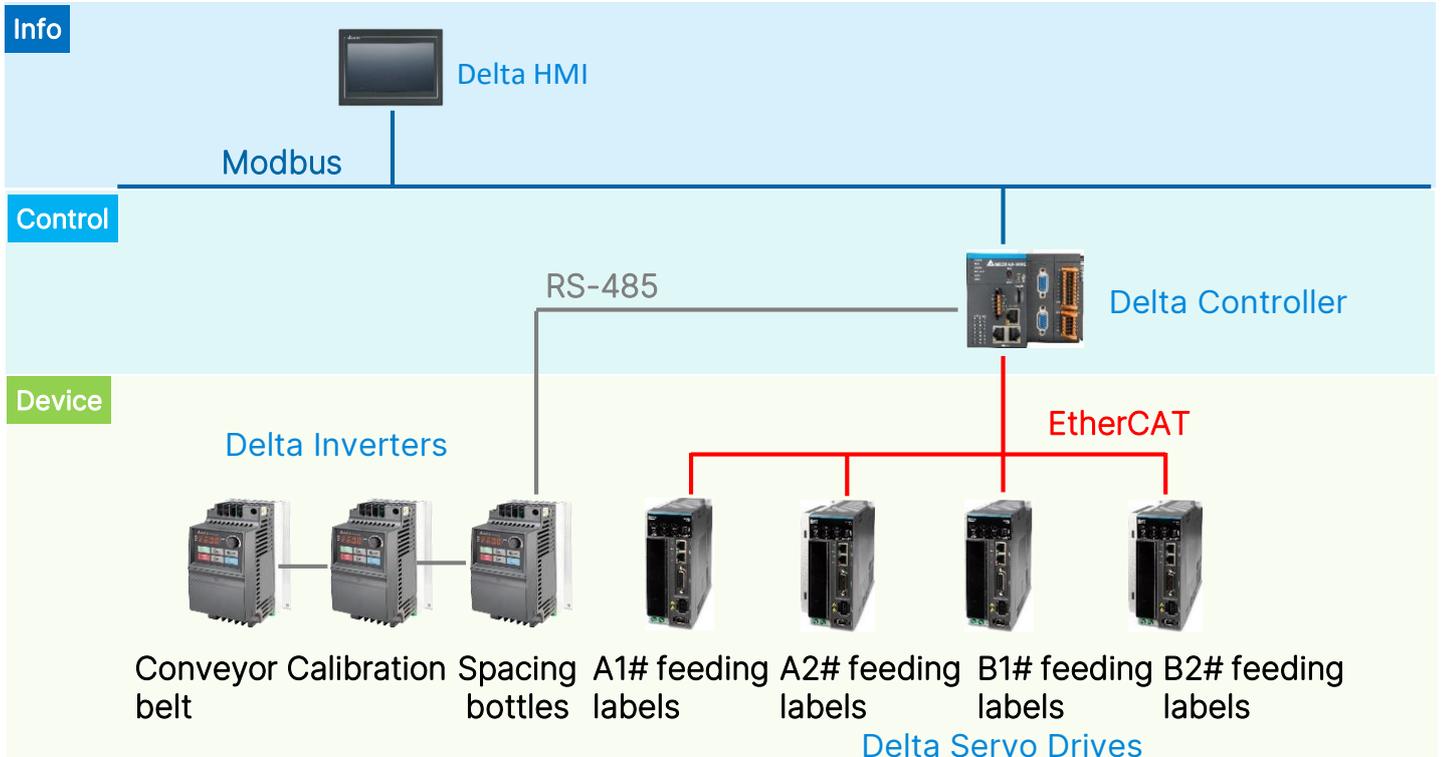
## Process

The labeling machine consists of 1 bottle feeding line and 4 label feeding heads. The process starts with bottle conveying, then the bottles are spaced by the spacing unit, straightened by the calibration axis, and finally arrive at the label outlet for labeling. The label feeding heads feed labels. The label feeding unit makes corrections according to the color mark position for precise label feeding. It can automatically switch between head A1# and A2#, also head B1# and B2#, and does not need to stop the line when supplementing.

- Bottle feeding line:** The bottle spacing axis spaces the bottles to ensure stable conveying. The bottles are straightened by the calibration axis and go for labeling, then the process is completed.
- Label feeding line:** The label roll is stretched and unwound. Once the high-speed DI detects a bottle, it starts label feeding, detecting and calibrating the label feeding distance with the color mark sensor.
- Supplementing:** A1# and A2# are a pair of heads, and B1# and B2# are another pair of heads. It allows switching between heads on the same side. It can set the total and reserved number of labels for each head. When the number of labels fed by head A1# reaches the difference between the total and reserved, it switches to head A2#. The operator will supplement to head A1# during this time.
- Line stop:** In case of a conveying jam, the spacing axis stops. After the problem is solved and the set time is reached, it will resume bottle spacing with no extra operations required.



## Solution Architecture



## Customer Pain Points



When the label roll runs out on one side, the line must be stopped for **supplement**



Label replacement is **mostly determined by operators** during the operation



**Mode switching is not supported** for 2-head machine



**Poor label feeding accuracy** results in staggered labels

## Features

- **Supplement Without Downtime**

The traditional 2-head labeling machine needs to be stopped when replacing labels. While the 4-head labeling machine doesn't.

- **Automatic Head Switch**

With the total number and reserved number of labels set, when the actual number of labels reaches the difference between the total and reserved, it will automatically switch to the other head.

- **Precise Label Feeding**

Dynamic correction of the label position when it arrives at the color mark sensor to ensure accurate label length.

- **Label Shortage Detection and Timely Warning**

When the label feeding has started for a certain distance but no label is detected, it will stop the line and report a label shortage warning.

- **Automatic Detection of Bottle Jam**

Once a bottle jam has lasted for the set time, the bottle spacing axis stops and reports a warning, which will automatically resume after the problem is solved.

- **Fast Commissioning**

Provides the commissioning staff with the reference label feeding speed based on the process analysis for faster commissioning.

- **Complete Fool-Proofing Mechanism**

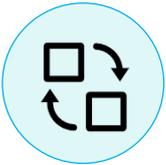
When some values are set to 0, the corresponding functions are turned off to avoid misoperation. For example, when the bottle jam time is set to 0, the bottle jam function is off; When the total number of labels for the head is set to 0, automatic head switching is off.

## Advantages



### Higher Productivity

Compared with the single-head shrink sleeve labeling machine, this solution offers a production capacity of up to 15,000 bottles/hour, improving productivity by 60%. In addition, it also improves the utilization rate to 100% through non-stop supplementing. Compared with 2 sets of 2-head labeling machines, this solution saves operating space by 50%.



### Automatic Head Switching for Non-Stop Supplementing

It supports automatic and manual head switching. Users can switch between different heads during operation as required, without missed or disordered labeling. Before the labels run out, it can switch to the other head on the same side. After label replacement, it can switch back automatically or manually, achieving non-stop supplementing.



### Strong Label Recognition Ability Ensures Labeling Quality

Missing labels or discontinuous labels are automatically ignored during feeding. If too many labels are missing, it will automatically stop and report a warning that the labels have run out.

## Solution Resource

Delta Labeling Machine Solution includes:	
 	Promotion file: Delta Packaging Industry_4-Head Labeling Machine
 	Project file: Delta Packaging Industry_4-Head Labeling Machine (Device list, IO table, parameter definition, FB description)
	Complete program: PLC AX308
	Complete project: HMI DOP-107EV
	Parameter setup: Inverter, servo
	<p>Request for resource: Solution Contact</p> <p> TEL : +86 17625751544</p> <p> E-Mail : <a href="mailto:L-CN-SC@deltaww.com">L-CN-SC@deltaww.com</a></p>