

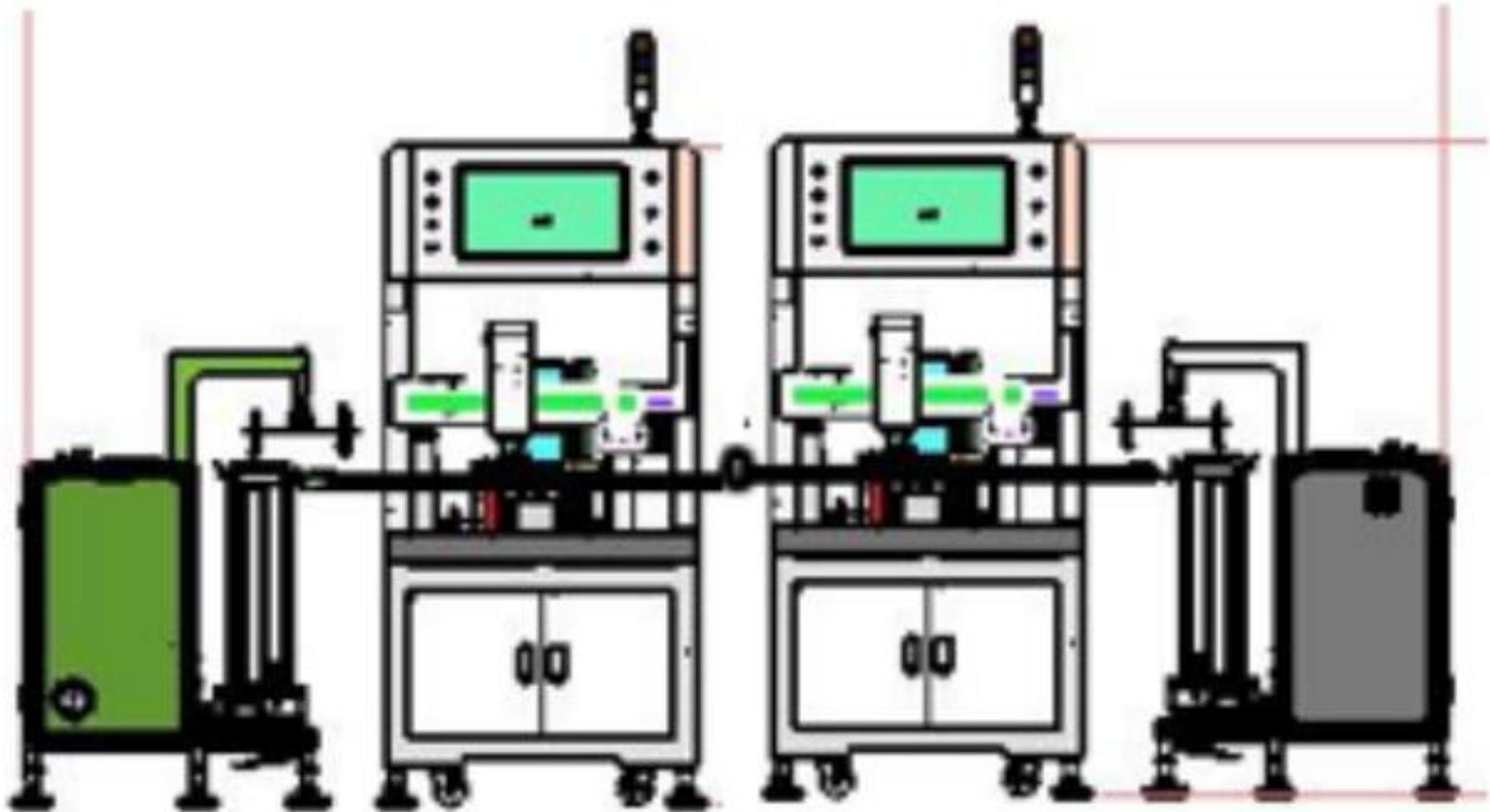


# ALM Automation

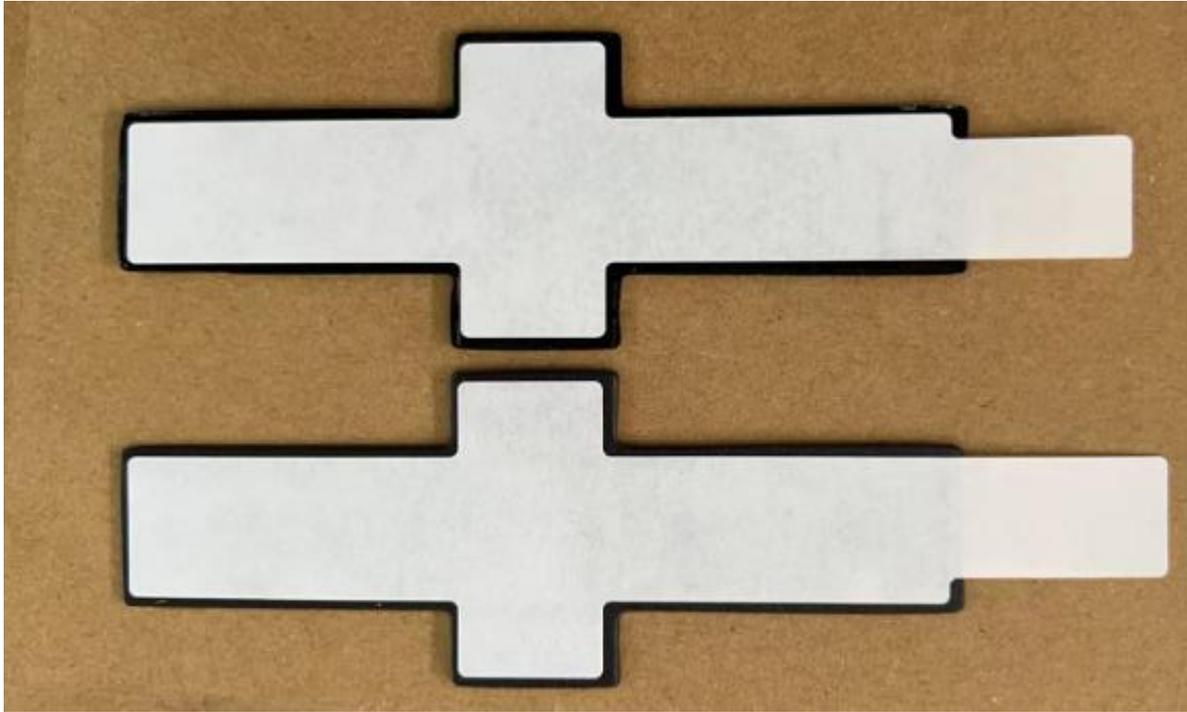
Automatic Loading/Unloading with Double-Sided Labeling

## **Vision-Based Online Labeling Equipment Solution**

# Automatic Loading/Unloading with Double-Sided Labeling — Vision Labeling Line Renderings



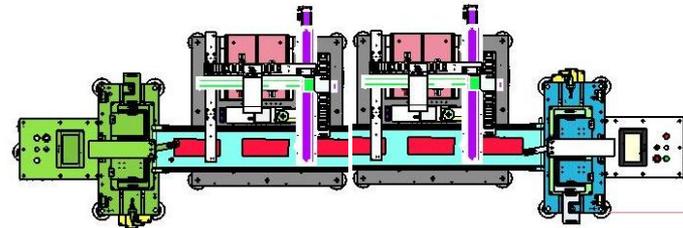
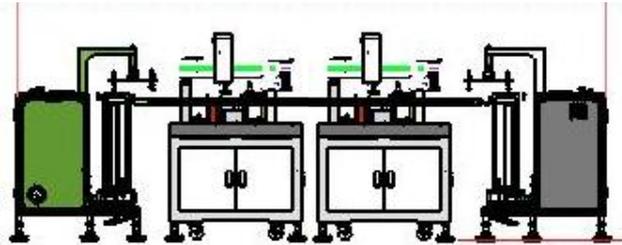
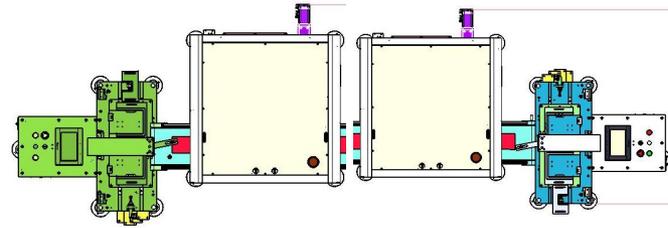
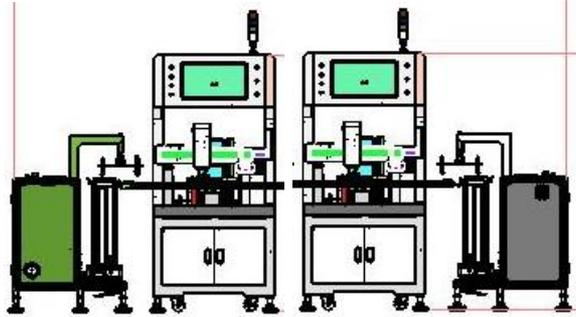
# Project Description



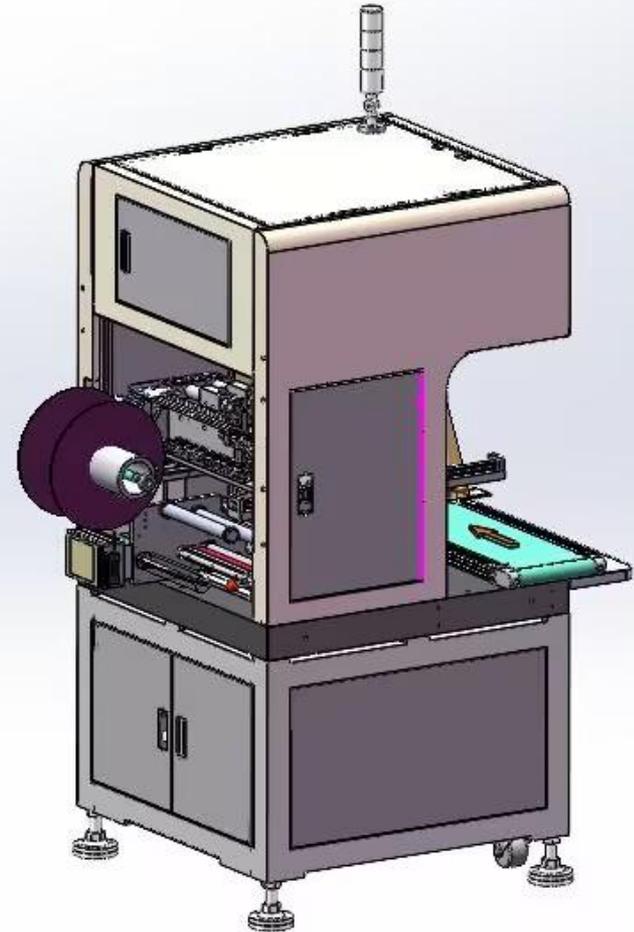
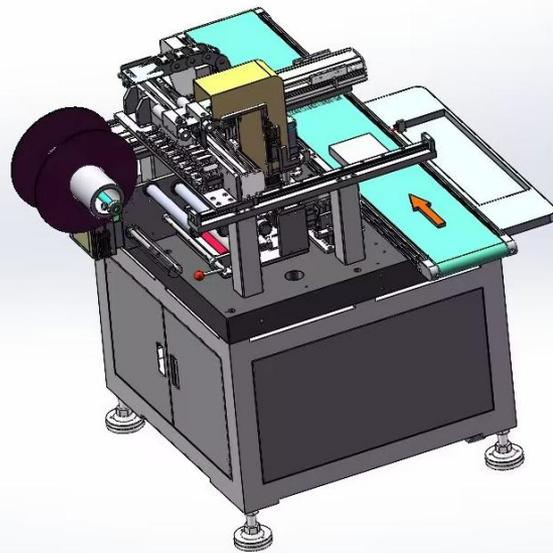
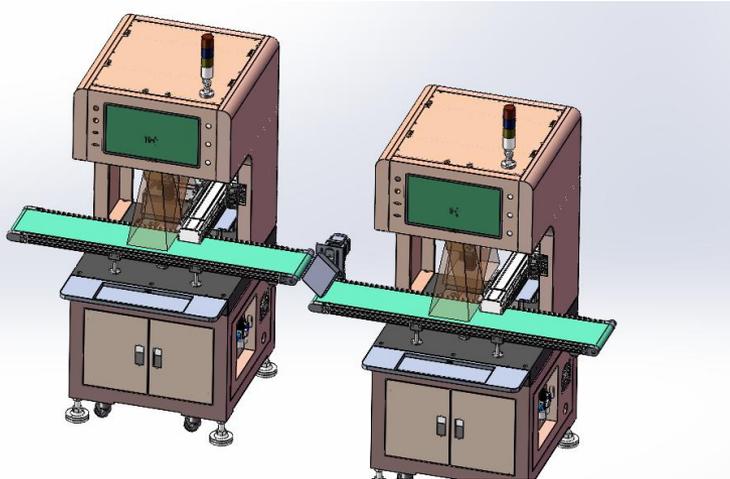
Product Images: Double-Sided Labeling on Both Sides of PC Sheets

PC sheets are automatically fed; the first machine applies labels to the front side, then the products are flipped to the second machine for back-side labeling. At the end, materials are automatically discharged into a dual-stack collection conveyor with counting capability.

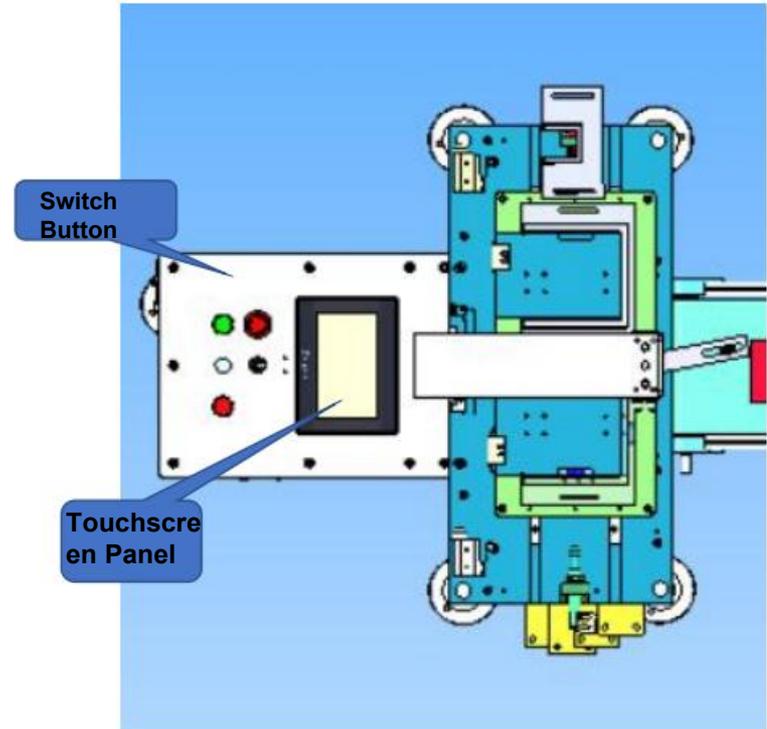
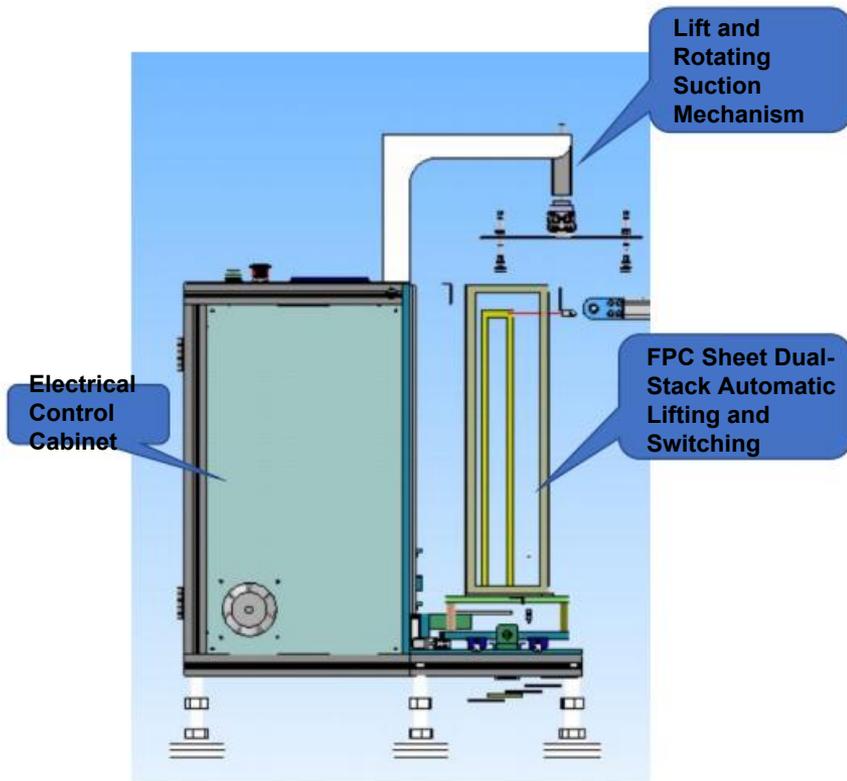
# Project Design — Overall Layout Diagram



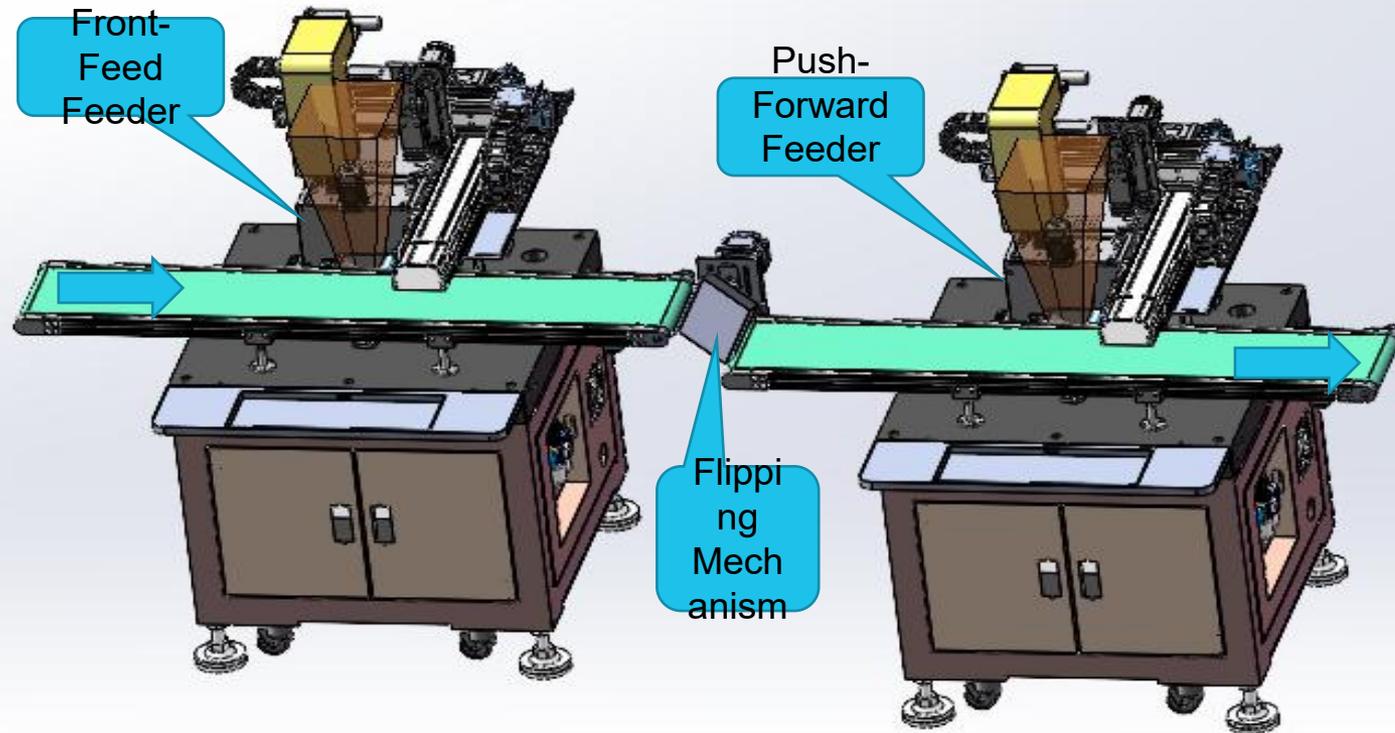
# Project Design — Detailed / Partial Views



# Project Description — Loading and Unloading Machines



# Project Description — Vision Labeling Machine → Flipper → Vision Labeling Machine Diagram



# Equipment Specifications & Advantages

## Equipment Specifications & Advantages

1. To meet customer requirements, the equipment adopts the following specifications:

- Input Voltage: AC 220V, 50Hz

2. Working Air Pressure: 0.4–0.7 MPa

3. Machine Dimensions:

- Single machine: 600 × 600 × 1700 mm

- Overall layout: see diagram

4. Equipment Functions:

- Configured with two vision labeling machines + middle flipper, enabling automatic double-sided labeling.

- The full line supports automatic material loading and unloading, and the discharge stack can include counting functionality upon request.

5. Software Control:

- Proprietary vision alignment and placement software, integrated with motion control system.

- Easy to learn and operate.

6. Conveyor Specifications:

- Automatic loading and unloading, modules move left and right.

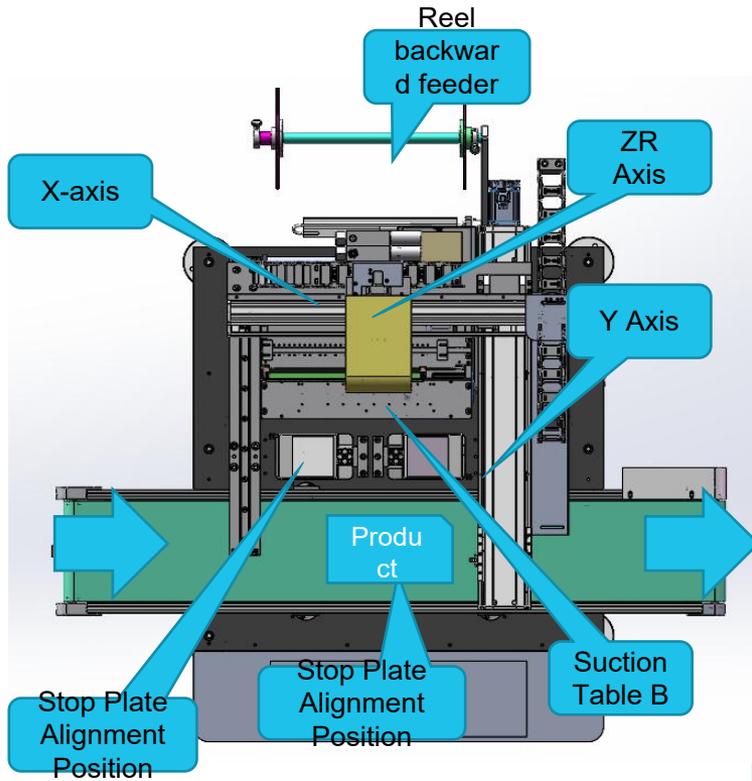
- No fixtures required, highly versatile, labor-saving, and efficiency-enhancing.

7. Labeling Specifications:

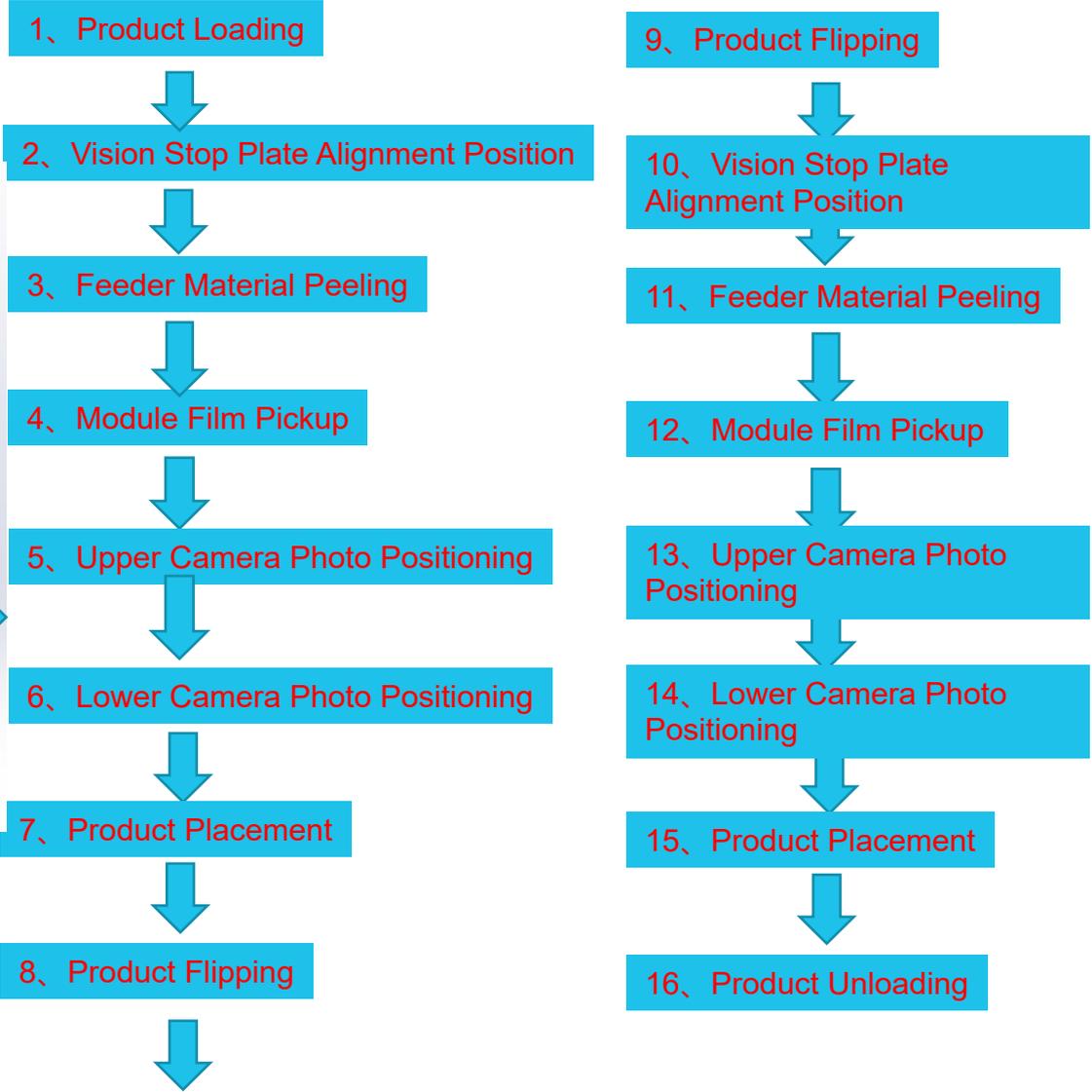
- Feeder supports labels up to 150 mm wide.

- Compatible with products as long as the CCD vision system can recognize the label.

# Project Design — Single Machine Operation Flow

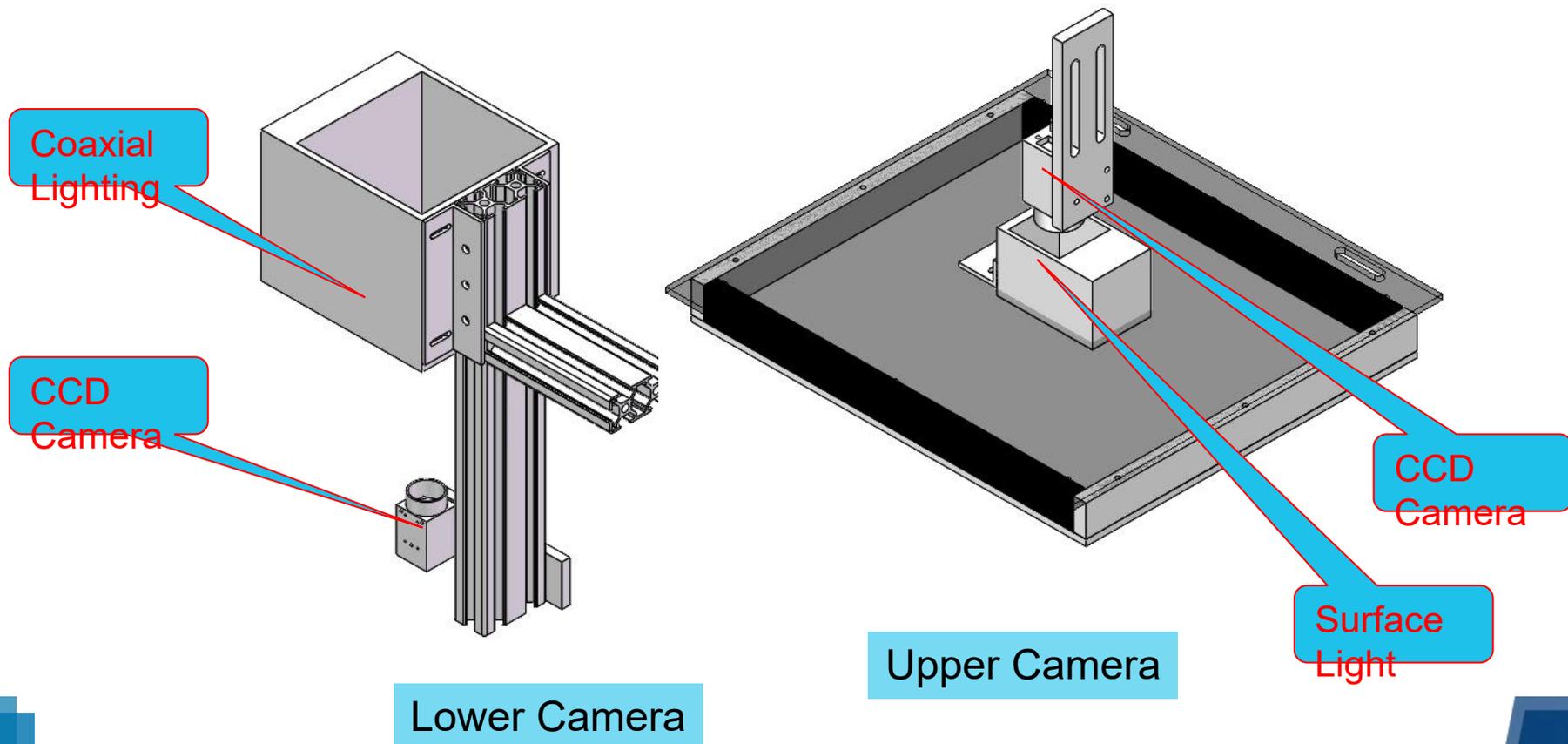


## Operation Flow



# Project Design — CCD Vision System

CCD Model: Upper camera uses 6 MP, resolution: 3072×2048  
Lower camera uses 6 MP, resolution: 3072×2048  
Industrial Lighting: Upper light uses through-hole surface light  
Lower light uses coaxial light



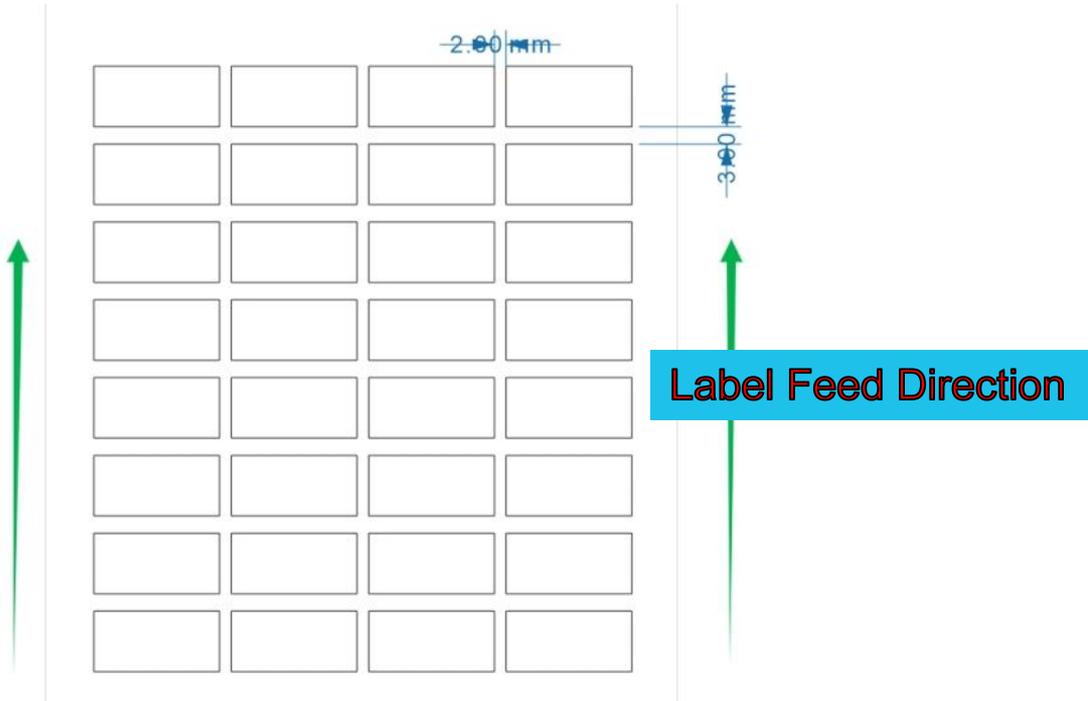
# Project Evaluation — Main Configuration of Laminating Equipment

No.	Product Name	Model	Quantity	Brand
1	Motion & Vision Software System	NR-vision4.0	1	In-house Brand
2	CCD Industrial Camera	6MP / 20MP	2	Hikvision
3	Integrated Motion Control Card	8-axis	1	In-house Brand
4	Industrial PC	i512D	1	In-house Brand
5	4-axis Module	XYZR	1	Airtac Guide Rail
6	Reel Feeder Label Peeling Machine	NR-QT150	1	In-house Brand
7	Servo Motor	400W / 400W	2	Leadshine
8	Stepper Motor	57 / 42	3	Leadshine
9	Monitor	19.5"	1	Bangsuo
10	Belt Conveyor Mechanism	Length 1500mm	1	In-house Brand
11	Pneumatic Components	Vacuum Generator / Solenoid Valve	1	Airtac
12	Electrical Control	Automatic Brand	1	Custom Non-standard

1. Estimated Capacity: 1500 PCS/H
2. Yield Rate  $\geq 95\%$
3. Qualification Rate  $\geq 99.5\%$
4. Process Scrap Rate  $\leq 1\%$
5. Laminating Accuracy:  $\pm 0.1$  mm

## Requirements for 150 Feeder Adhesive / Auxiliary Roll Material:

1. Core inner diameter: 76 mm; outer diameter: Max ~300 mm; width: Max ~150 mm
2. Preferred base film material: PET film
3. Base film thickness: 0.04–0.06 mm
4. Adhesive must separate easily from the base film; release force of the base film should be controlled within 5 g
5. Base film must not be cut through or have knife marks; it should be tear-resistant
6. Adhesive should be marked on the short edge horizontally
7. Leave 200 mm blank at the front of the base film to facilitate feeder peeling mechanism rewinding
8. Distance between adhesives: front-to-back spacing  $\geq 2-3$  mm, left-to-right spacing  $\geq 2$  mm (each material must be fully separated without sticking; defective materials must be discarded)





For more information, please visit: <https://automatedlabelingmachine.com>

Thank you for  
watching!

