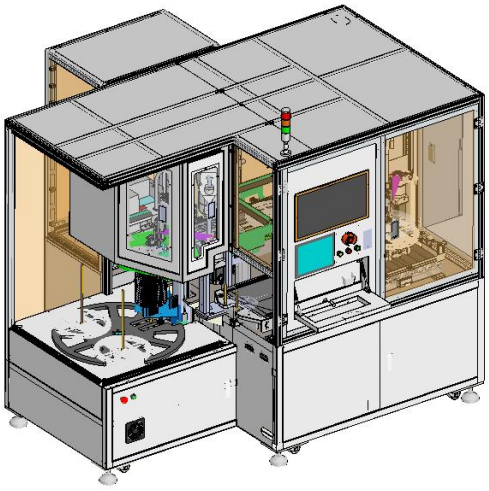
FUTURE ATT technology

Automatic labeling machine

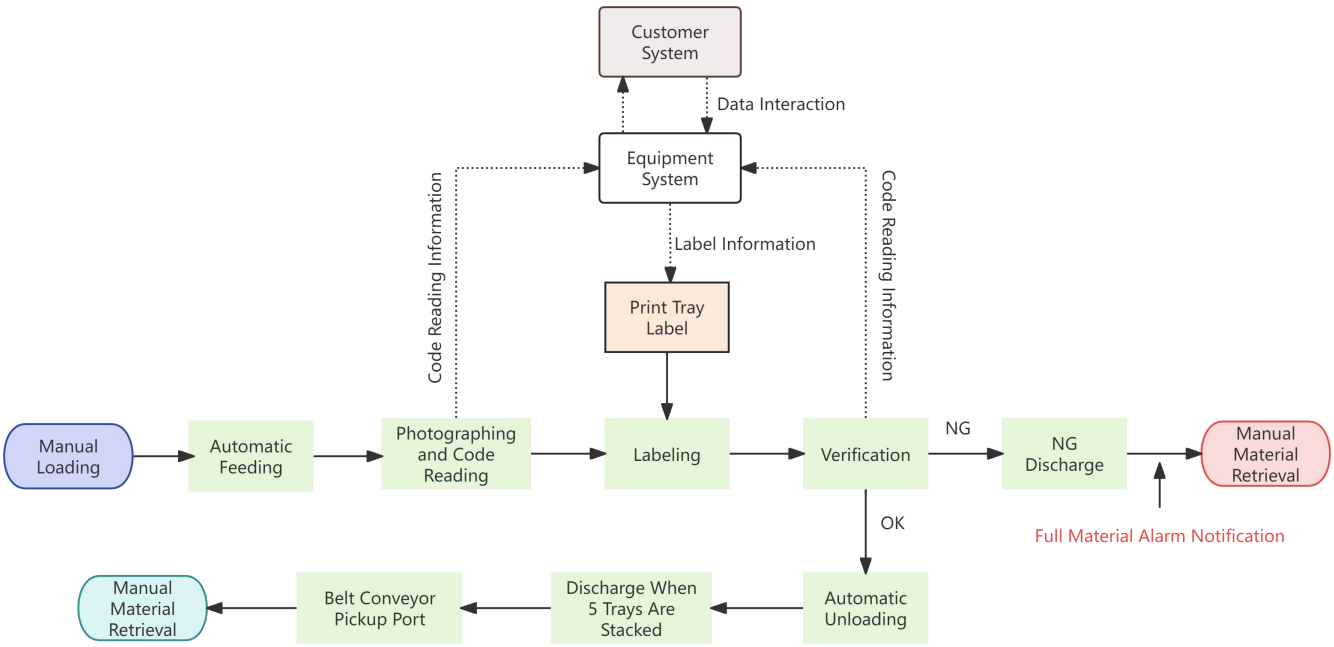
Product Type: FUTUREATT-LAM710



Function Description

The 7/13 inch fully automatic labeling machine is designed to automatically label 7/13 inch trays: the operator places the trays into the feeding tray of the equipment, which then automatically feeds, labels(single label), and verifies the correctness of the labeling. NG trays are automatically rejected to the NG port by the equipment, while OK trays are automatically collected by the conveyor line and outputted, finally to be manually collected and boxed.

Operation Flow Chart



Operation Flow Description

●The operator places the trays into the positioning rods of the feeding turntable (the positioning rods are 400mm high and can hold 35 trays per stack, with 3 stacks totaling 105 trays, each tray being 10mm thick);

●The feeding lifting mechanism lifts the entire stack of trays to the gripping position, where CCD1 reads the barcode of the trays, and then the gripping mechanism transports the trays one by one to the belt conveyor line (after each tray is taken, the feeding lifting mechanism automatically lifts the stack by one tray height);
●The belt conveyor line transports the trays to the labeling station, where CCD2 photographs and positions the trays, and then the labeling robot applies the labels(single label);
●The belt conveyor line transports the trays to the verification station, where CCD3 identifies the applied labels and sends the information to the upper system for review, which then sends the review result (OK or NG) to the equipment system;
●The unloading mechanism grips the trays to the next station based on position data: if the review result is NG, the trays are taken to the NG box (a full NG box prompts manual removal); if the review result is OK, the unloading mechanism places the trays onto the belt output line (trays can be stacked up to 5 high);
●The belt output line transports the trays to the discharge port;
●The operator removes the trays for boxing;
●The cycle repeats;

Equipment Parameters

●Equipment Specifications: L2700W1900H1950mm (excluding the height of the three-color lamp)
●Labeling Efficiency: <5 s/pcs
●Compatible Tray Specifications: Φ7 inch/13 inch * T(10~16)mm
●Label Paper Specifications: W70*L50mm
●Power Supply: 127V AC single-phase (3 wires: 1 live wire + neutral wire + ground wire) @60Hz
●Air Source: Air pressure 0.5～0.7Mpa, flow rate 100L/min;

Structure Introduction

Equipment Appearance:

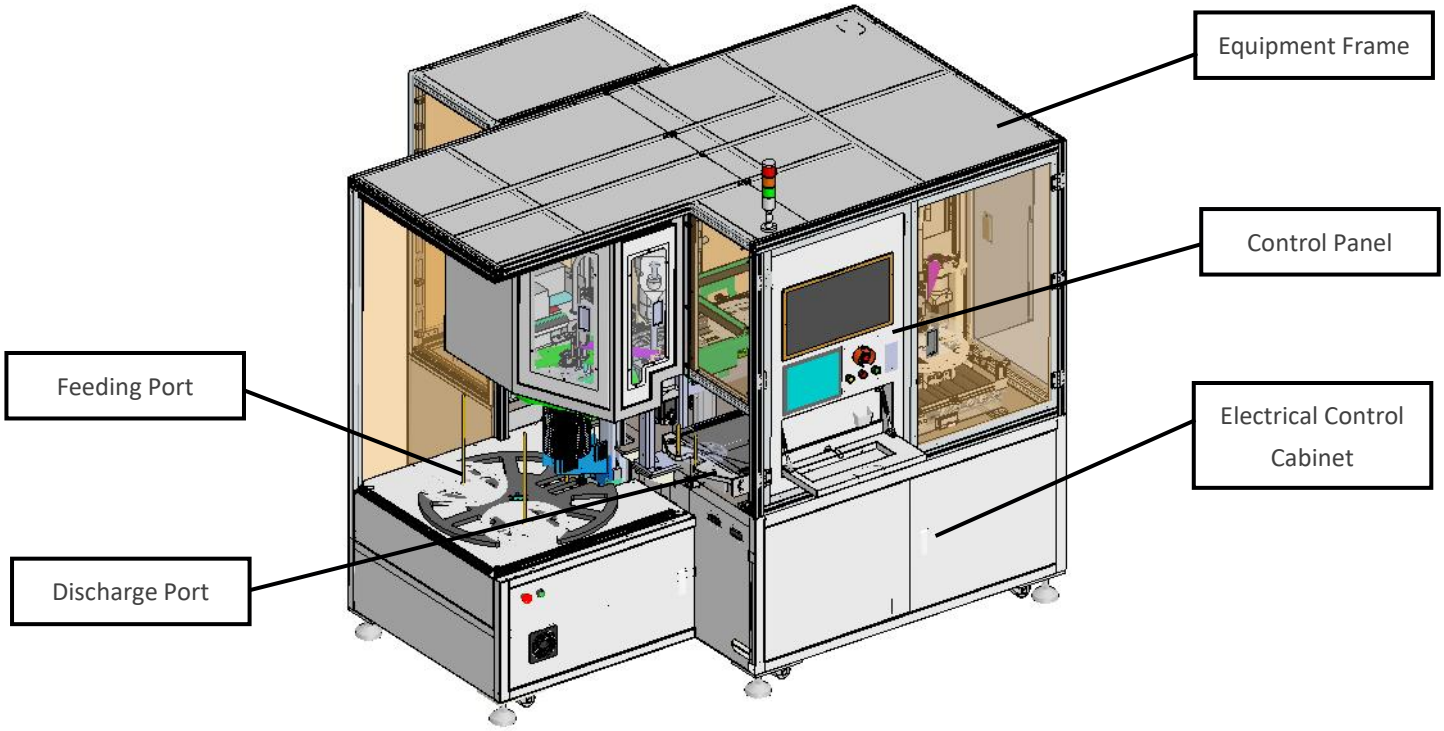


Figure 3-1 Equipment Appearance (Front)

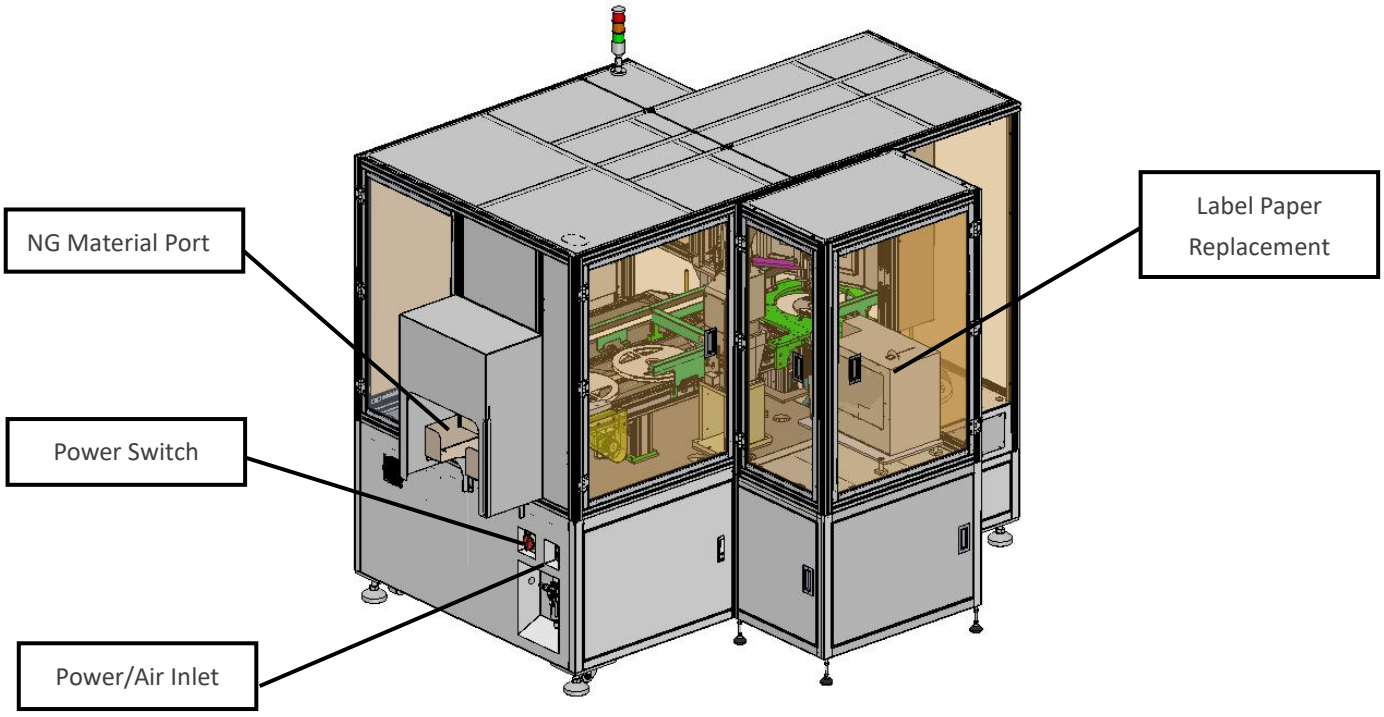


Figure 3-2 Equipment Appearance (Back)

Equipment Specifications and Layout:

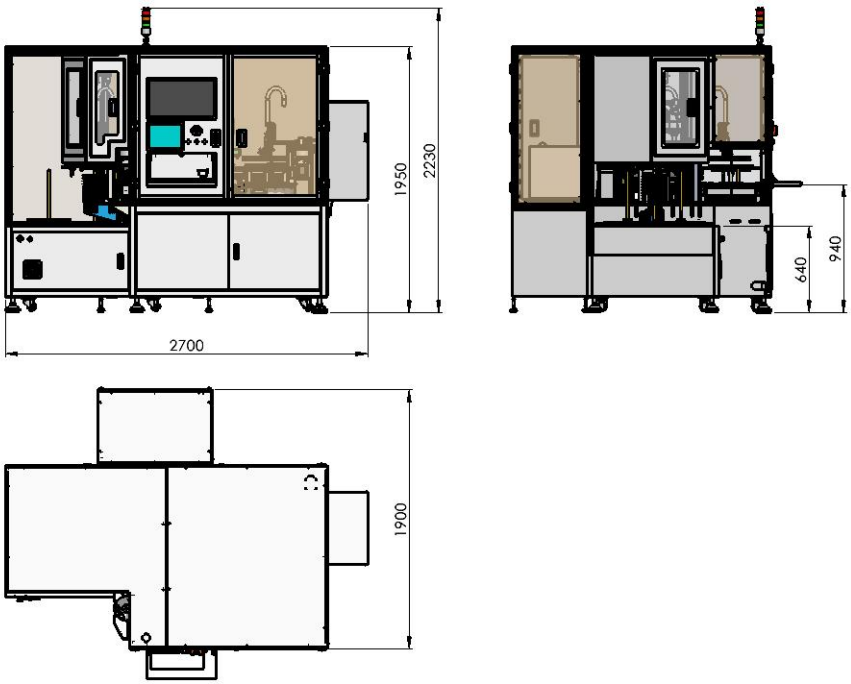


Figure 3-3 Equipment Three-View Drawing

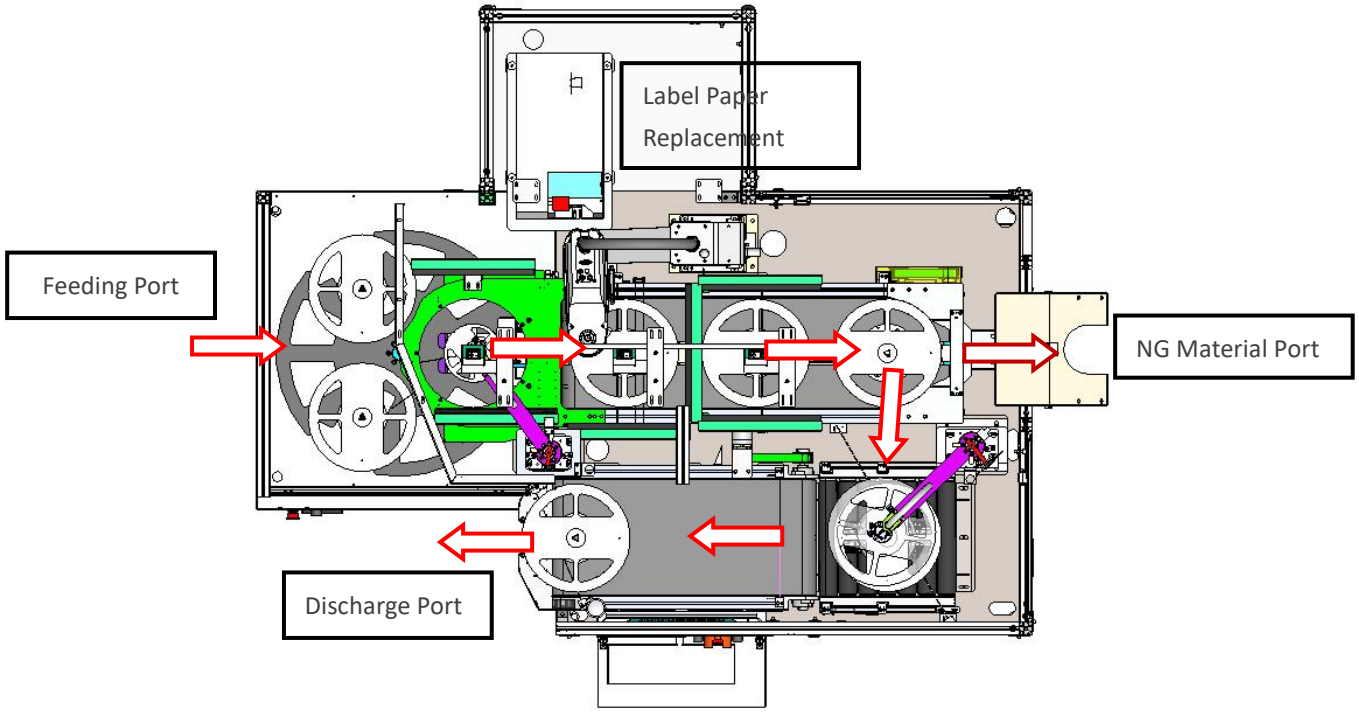


Figure 3-4 Equipment Internal Layout

Equipment Internal Structure Description:

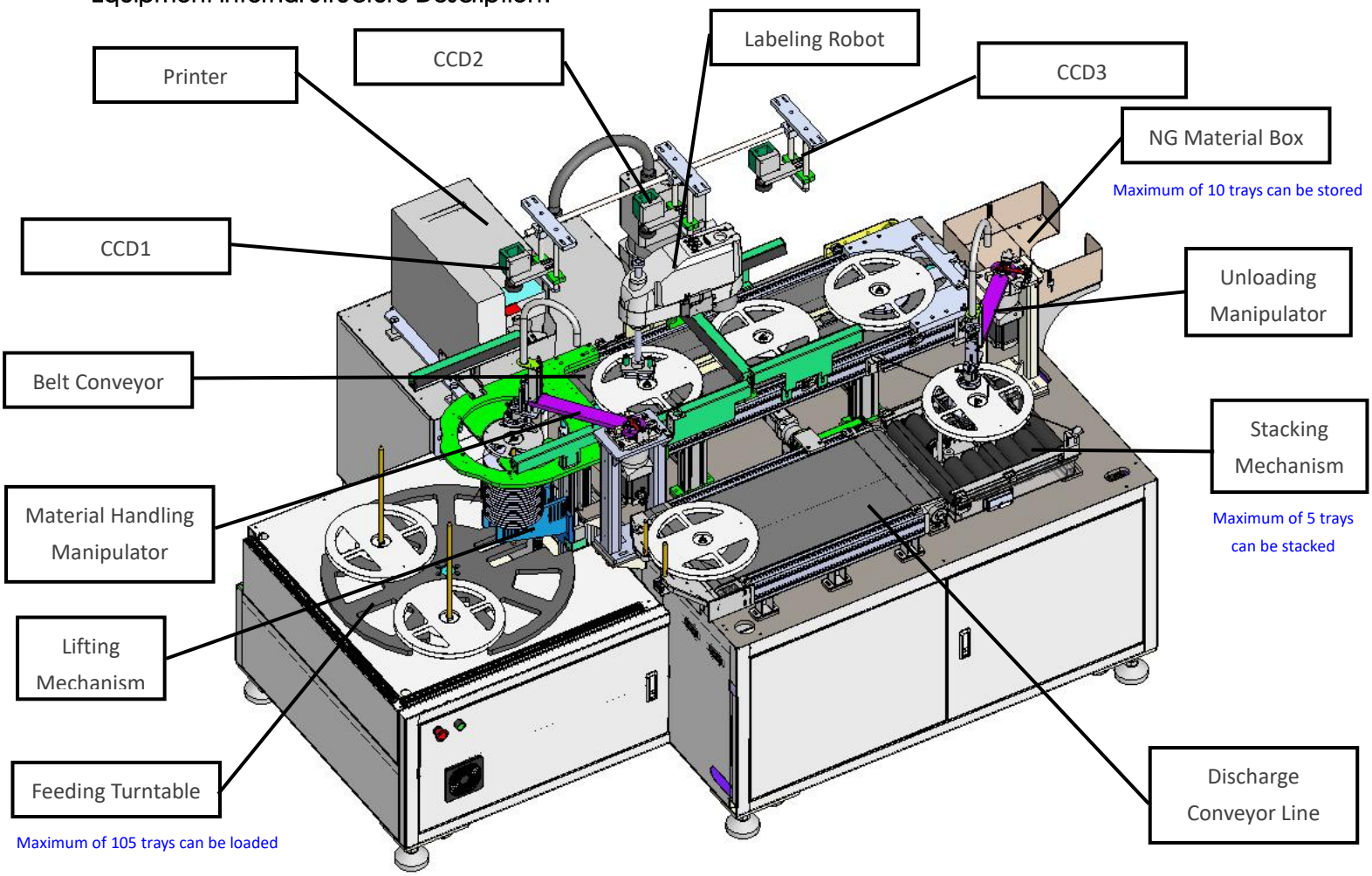


Figure 3-4 Equipment Internal Structure Description Diagram

Control Description

● Equipment Control:

The equipment control section includes: electrical control system and vision software system

1. Electrical Control System

Function: Controls the various functional mechanisms of the equipment.

2. Vision Software System

Function: Records tray information, detects labels, traces various states of products produced on the machine; interacts with the upper system.

● Safety Devices:

1. The equipment is equipped with door sensors; if a door is opened, all mechanisms stop.

2. The feeding port is equipped with safety light curtains. If the light curtain is triggered, the feeding turntable does not rotate.

3. The NG port is equipped with safety light curtains. If the light curtain is triggered, the unloading robot is not allowed to operate.

● Electrical Section:

1. The power distribution cabinet has an independent circuit breaker for easy maintenance.
2. The power distribution cabinet is equipped with an exhaust fan.
3. The wiring is aesthetically arranged using plastic wire ducts.

● Pneumatic Section:

1. The primary air source is installed with a triple unit. It includes a pressure detection switch that alerts if the pressure is below 0.5MPA to ensure the smooth and stable operation of the pneumatic components.
2. The wiring is aesthetically arranged.

Equipment Configuration

● **Equipment Appearancel:**

Equipment outer cover sheet metal: Light grey RAL7035
Upper frame and door frame: Natural aluminum color
Door panels and observation windows: Brown acrylic panels

● **Main Equipment Component Brands:**

Serial No.	Name	Manufacturer
1	Camera	basler
2	Lens	Fujinon
3	Industrial PC	Advantech
4	PLC	Inovance
5	Label	Printer Zebra
6	Cam Divider	Shangjin
7	Coupling	Yihada
8	Drag Chain	Yihada
9	Timing Belt and Pulley	Yihada
10	Sensors	OMRON, Panasonic
11	Light Curtain	Leine

12	Buttons	Schneider
13	Linear Modules	HIWIN
14	Linear Guides	HIWIN
15	Idler Rollers	DEMC
16	Cylinders	SMC
17	Cylinder Magnetic Switches	SMC
18	Suction Cups	SMC
19	Solenoid Valve Manifold	SMC
20	Solenoid Valve Manifold Cover	SMC
21	Solenoid Valves	SMC
22	Triple Unit	SMC
23	Pressure Gauge	SMC
24	Vacuum Regulator	SMC
25	Vacuum Regulator Bracket	SMC
26	Pressure Gauge and Pressure Switch Adapters	SMC
27	Vacuum Pressure Switch	SMC
28	Precision Pressure Reducing Valve	SMC
29	HMI	Weinview
30	Low Voltage Power Distribution	Schneider
31	Servo Motors	Inovance
32	Gear Reducers	Zhuolan
33	Three-color Warning Light	TianDe
34	Touch Display	TES
35	Robotic Arm	Epson
36	Light Source	FST
37	Speed Control Motor	JSCC
38	Anti-static Belt	Xibek

*Provided Accessories-Technical Documentation

Serial No.	Item	Quantity
1	Equipment Operation Manual	1 copy
2	Equipment Maintenance Manual	1 copy
3	Equipment Electrical Schematic Diagram	1 copy
4	Wear Parts List	1 copy

*Randomly Equipped Items

Serial No.	Item	Quantity
1	Tool Bag	1pcs
2	Electric Screwdriver	1pcs
3	Small Adjustable Wrench	1pcs
4	Hex Key Wrench	1pcs
5	Micro Screwdrivert	1pcs