

# The Blueprint to Automation

Resolving SMT Bottlenecks with the  
SP-830 Series Auto Solder Paste Printer



# Diagnosing the Hidden Costs of SMT Manufacturing

Modern production floors face cascading inefficiencies where a single point of friction compounds into significant financial loss.

## Changeover Lag



Rigid machinery prolongs setup times, drastically reducing daily line agility.

## Yield Degradation



Imprecise paste application introduces structural defects downstream, driving up rework costs.

## Labor Dependency



Manual interventions mask systemic flaws, exposing production to human error and high overhead.

# The Mandate for Intelligent Production

Scaling throughput requires transitioning from manual adjustments to programmed, self-correcting systems.



## Rapid Agility

**Sub-5-minute product changeovers** to enable high-mix, low-volume manufacturing without downtime.



## Uncompromised Precision

**Closed-loop, self-adjusting motor drives** to eliminate paste volume inconsistencies.



## Seamless Integration

**Standardized I/O interfaces** (SMEMA) and complete upstream/downstream communication.

# Engineered for the Agile Factory Floor

The SP-830 Series Auto Solder Paste Printer is a high-precision, high-stability automated vision printer designed to eliminate SMT bottlenecks.

## Fast ROI



High-speed throughput with minimal manual intervention.

## Seamless Automation

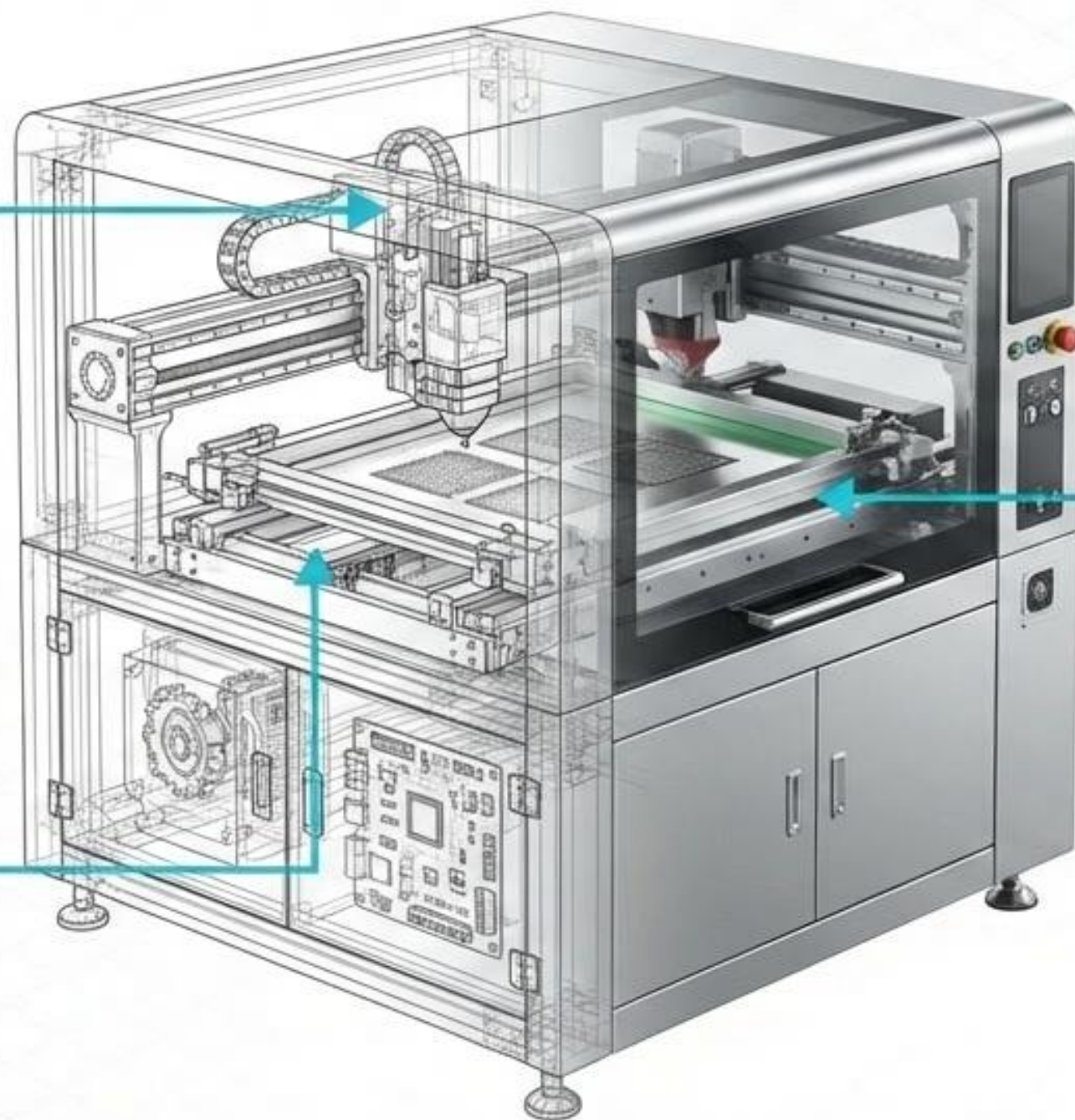


Intelligent frame clamping and adaptive scraping synchronize with international leading technology.

## Cost-Effectiveness



Premium Japanese-imported guide rails and servos at an accessible acquisition cost.



# The Performance Dashboard

Transforming technical specifications into measurable manufacturing advantages.

**Precision = Higher Yield**



**±0.025mm**  
**±0.01mm**

**Printing & Repeat Accuracy**  
Eliminates bridging and insufficient paste errors.

**Agility = Line Utilization**



**<5 Min**

**Product Changeover**  
Enabled by auto stencil positioning and auto conveyor width adjustment.

**Throughput = Output Volume**



**<7.0s**

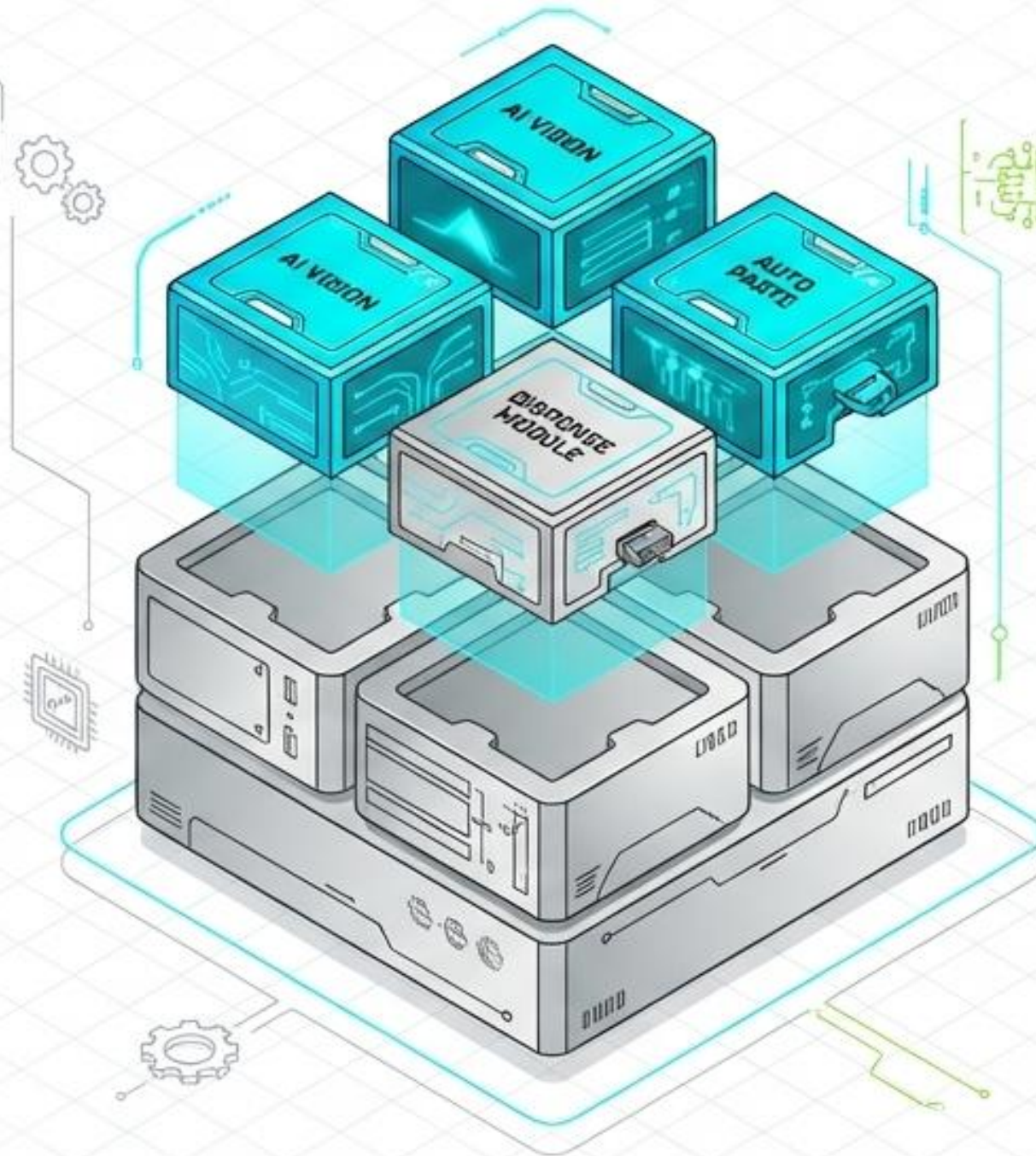
**Cycle Time (excluding printing/cleaning)**  
Driven by high-speed programmable transport (Max 1500mm/s).

# Adapting to Production Complexity

A modular architecture designed to scale alongside your operational demands.

## Core Stability (Standard Base)

- 2D Inspection
- Automatic Stencil Positioning
- Programmable Transport Speed
- PC Control (Windows)



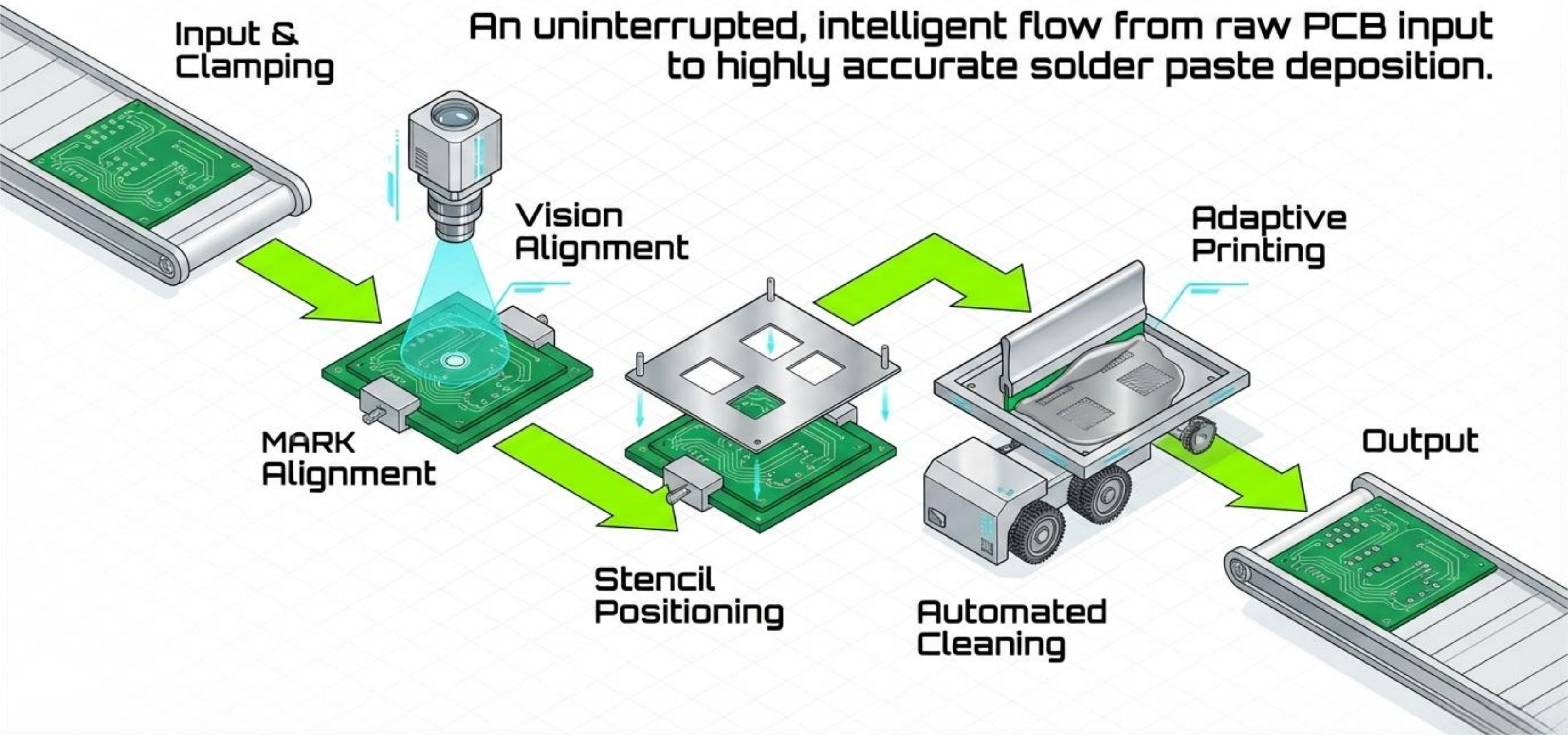
## Full-Line Automation (Add-ons)

- Automatic solder paste addition
- Auto code scanning
- Dispensing system
- MSE/SPI online function
- Constant temperature/humidity system
- Closed-loop line control

# The End-to-End Printing Sequence

Input &  
Clamping

An uninterrupted, intelligent flow from raw PCB input to highly accurate solder paste deposition.



Vision  
Alignment

Adaptive  
Printing

MARK  
Alignment

Stencil  
Positioning

Automated  
Cleaning

Output

# Unshakeable Foundation: Transport & Clamping

Precision printing requires absolute immobility. The SP-830 secures diverse board dimensions without compromising speed.

## 1 Unique Belt Transmission

Ensures zero stuck boards or fall-offs during transit.

## 3 Programmable Control

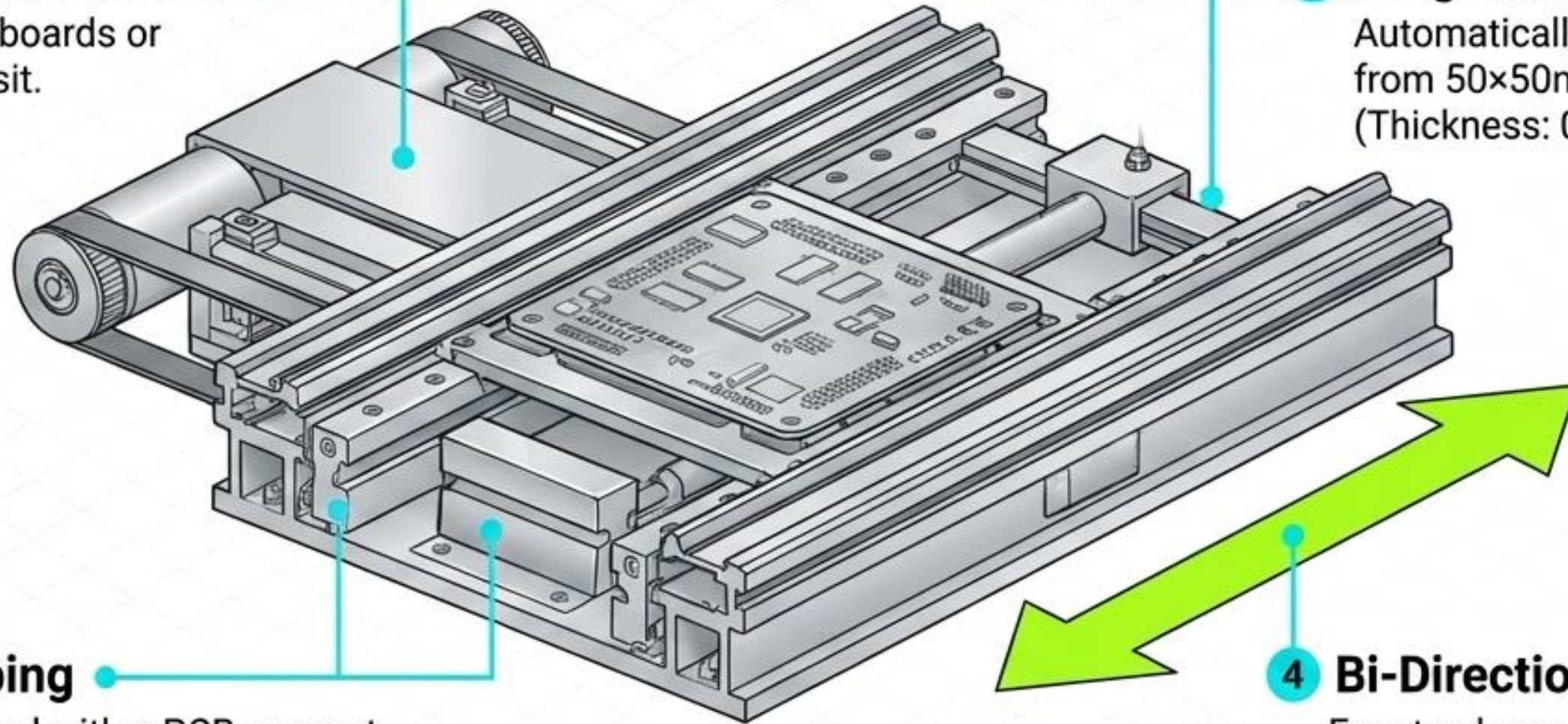
Automatically adjusts to PCB sizes from 50×50mm up to 400×340mm (Thickness: 0.4~6mm).

## 2 Flexible Clamping

Side clamping combined with a PCB support vacuum block guarantees full, even contact between the PCB and the stencil.

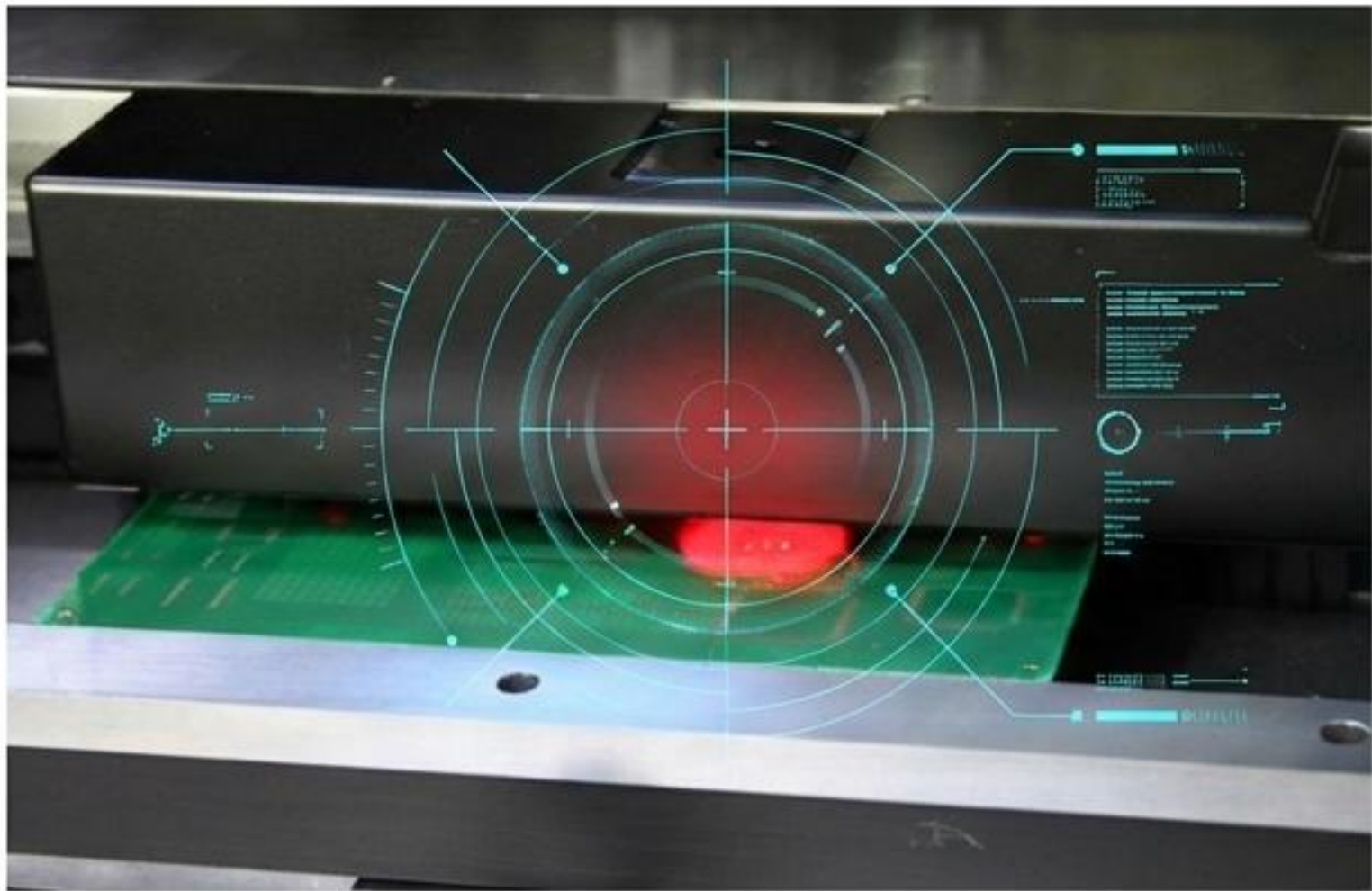
## 4 Bi-Directional Flow

Free to choose L-to-R or R-to-L input/output directions based on factory layout.



# Flawless Optics and Alignment

Synchronized with international leading technology for high-resolution visual processing and full-range light compensation.



Uniform ring light & high-brightness coaxial light for full-range compensation.



Automatic, high-speed capture of geometric patterns and MARKpoints.

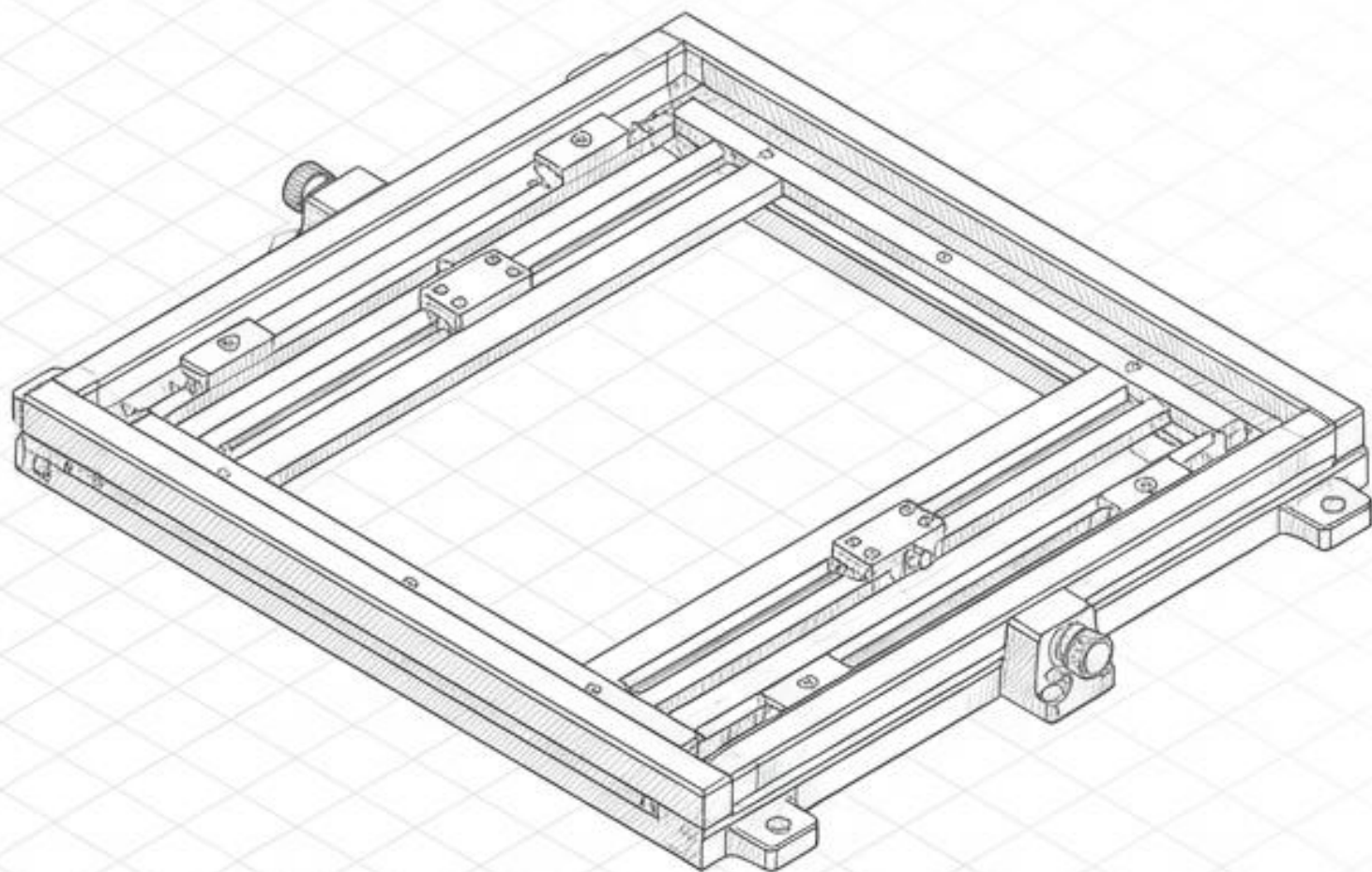


CCD driven by high-precision servo motors and original Japanese imported grinding screws and guide rails.



# Agility in Stencil Positioning

Engineered for rapid tooling transitions to keep high-mix assembly lines moving.



**37** Frame Capacity:  
370×370mm up to 737×737mm

**25** Thickness Adjustment:  
25~40mm

**0.1** Separation Speed:  
0.1~20mm/sec (Fully Programmable)

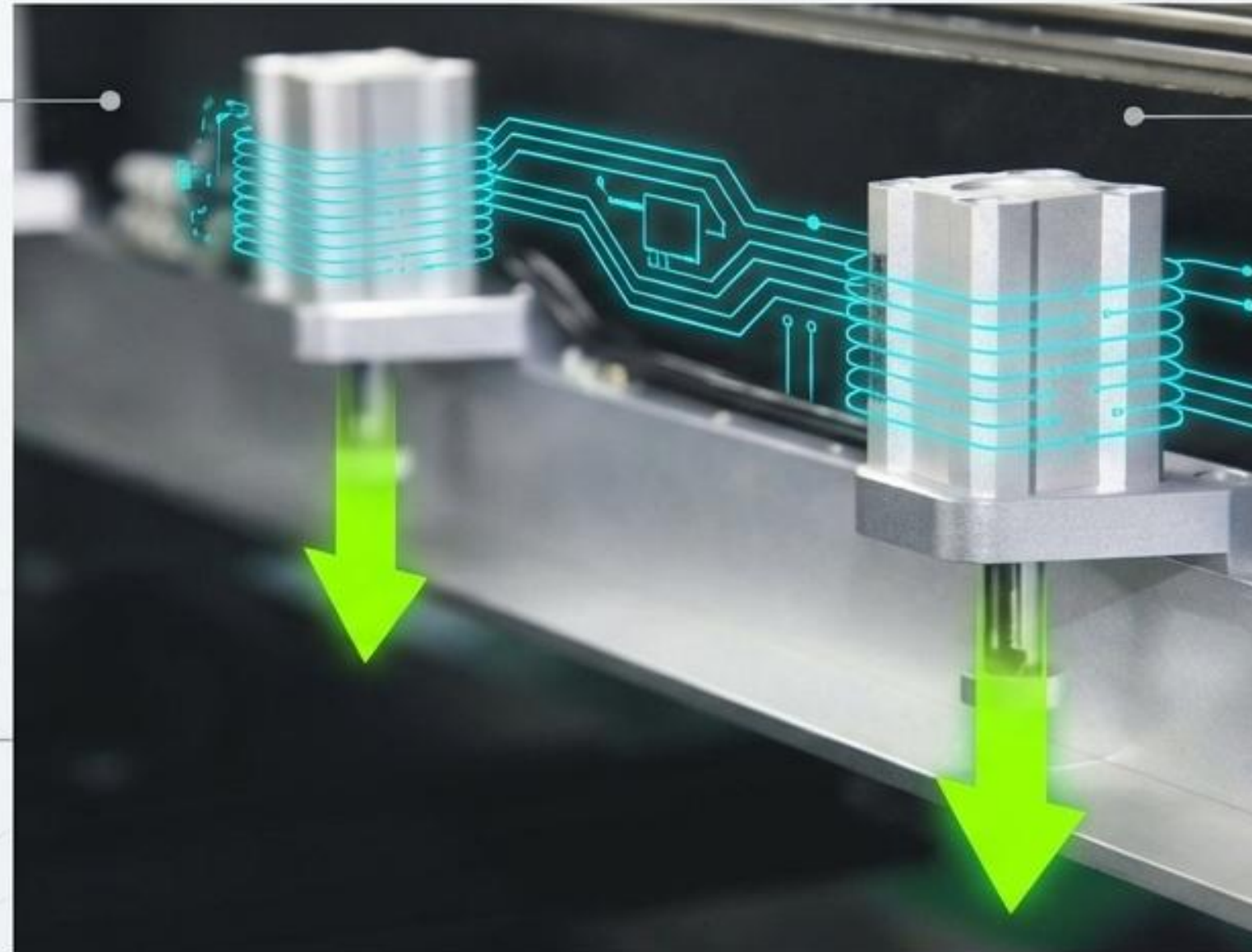
**The automatic positioning system completely removes manual calibration, driving the sub-5-minute changeover metric.**

# Adaptive Pressure Control

Eliminating paste volume inconsistencies through closed-loop, programmable force application.

Suspending adaptive scraper.

Four-wheel positioning slide with bilateral double sliders ensures stability back and forth.

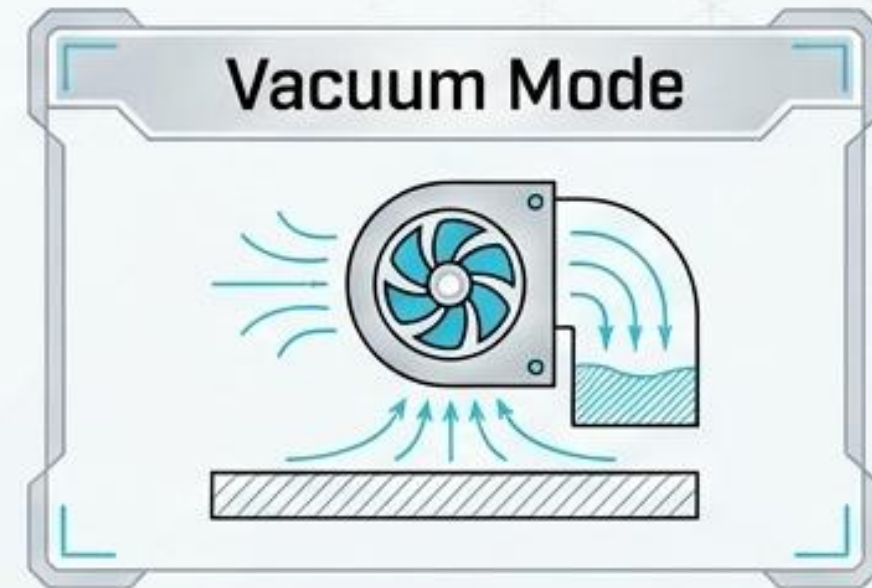
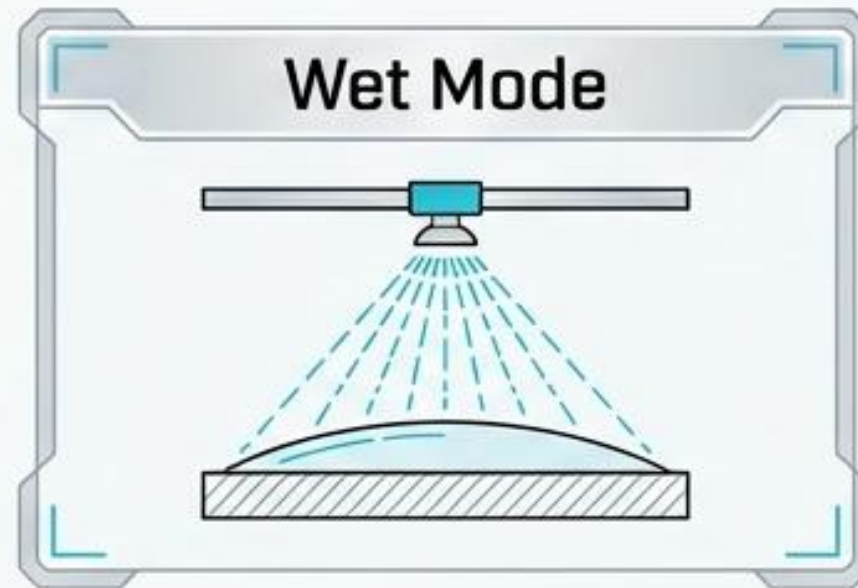


Two independent high-precision stepper motors.

Real-time closed-loop pressure control detects and adjusts squeegee pressure (0.5~10kg / 0~15kg) during production.

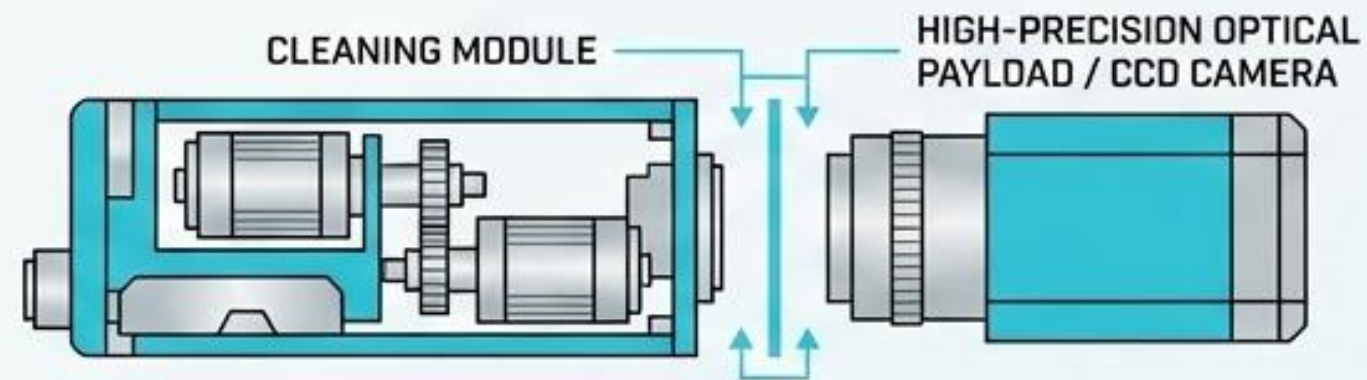
# Intelligent, Isolated Cleaning

A robust, three-stage automated cleaning cycle designed to preserve optical lifespan and guarantee aperture clarity.



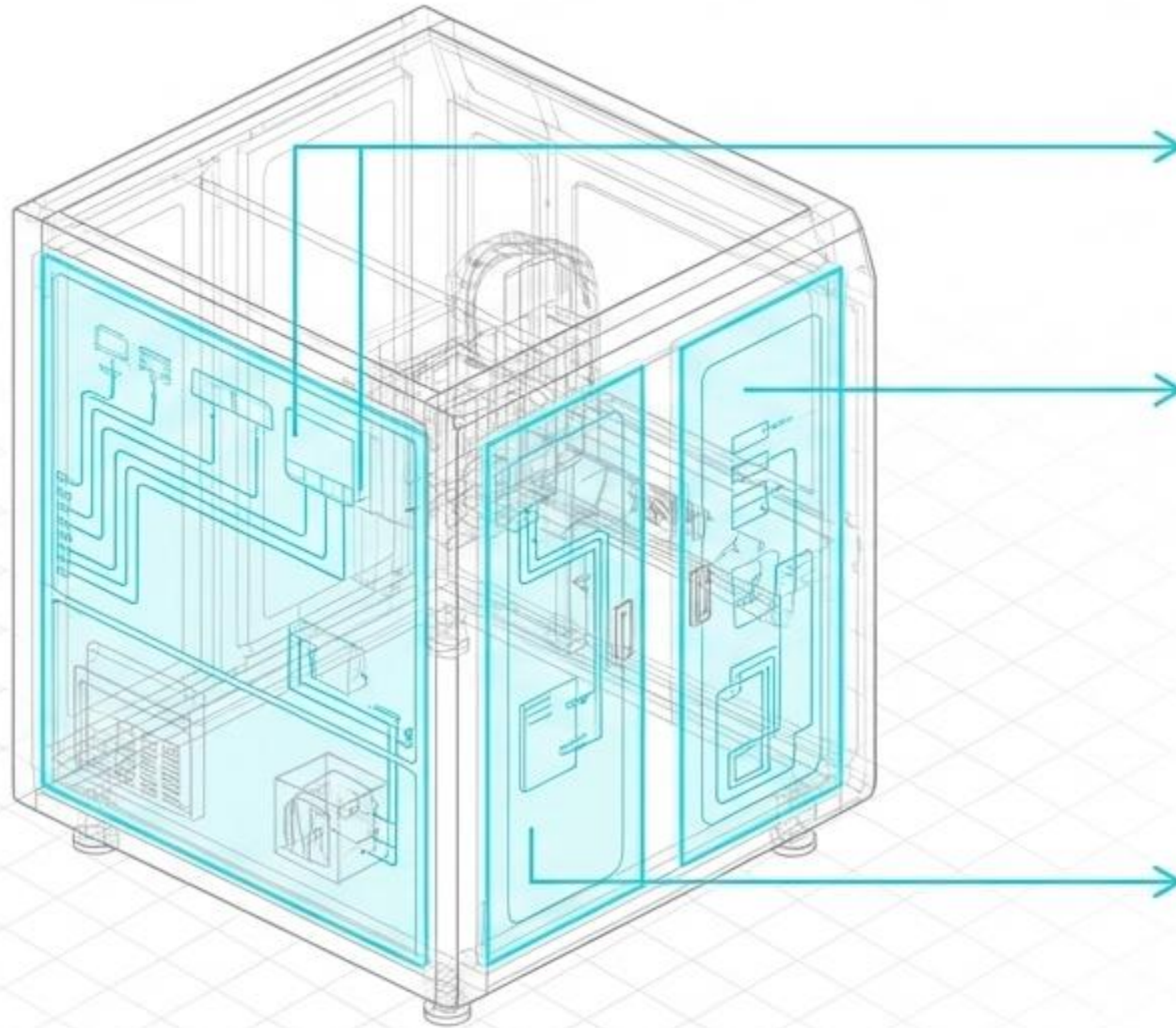
## Mechanical Isolation

Minimizes motor load and impulse interference, extending the service life of the high-precision optical systems.



# Engineered for Maintenance

Maximizing uptime through logical, accessible subsystem layouts.



## Vertical Organization

Electric and gas circuits are strictly positioned vertically at the sides and back for rapid access.

## Safety First

Safe, tidy distribution prevents circuit overlap and accelerates diagnostic checks.

## Footprint & Mass

Dimensions: 1220(L) × 1355(W) × 1500(H)mm  
Weight: Approx 1000kg

## Facility Requirements

Power: AC 220±10%, 50/60HZ, 3KW  
Air Supply: 4.5~6kg/cm<sup>2</sup>

# The ROI Equation

Precision engineering directly translates to compounding financial returns.



The SP-830 eliminates the hidden costs of SMT manufacturing, transforming a bottleneck into a profit center.

# Partner with Southern Machinery

Upgrade your SMT production line with seamlessly integrated automation.



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