

WAVE  
SOLDERING

Top-sided Wave Soldering AOI machine

## V5100 Series

Top-sided Wave Soldering AOI



# Top-sided Wave Soldering AOI

## Wave Soldering Precision Manufacturing Escort

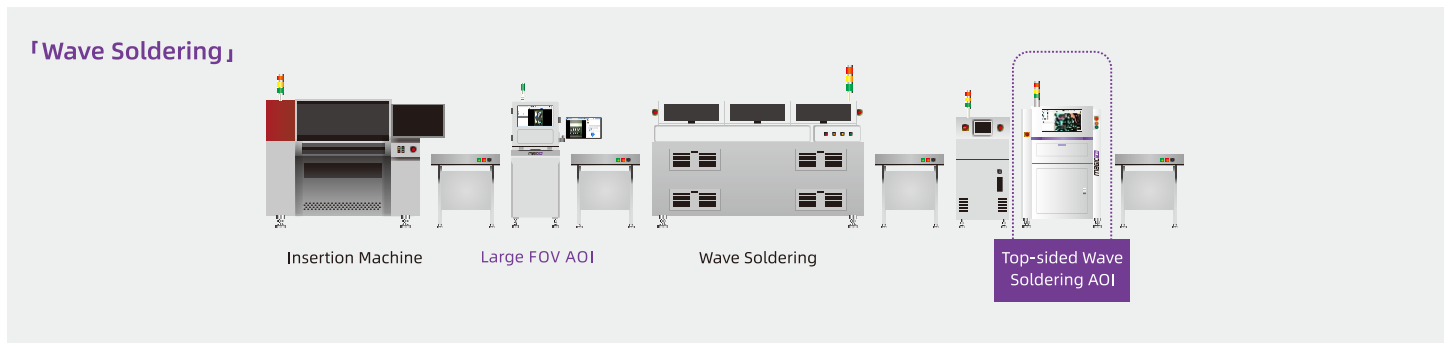
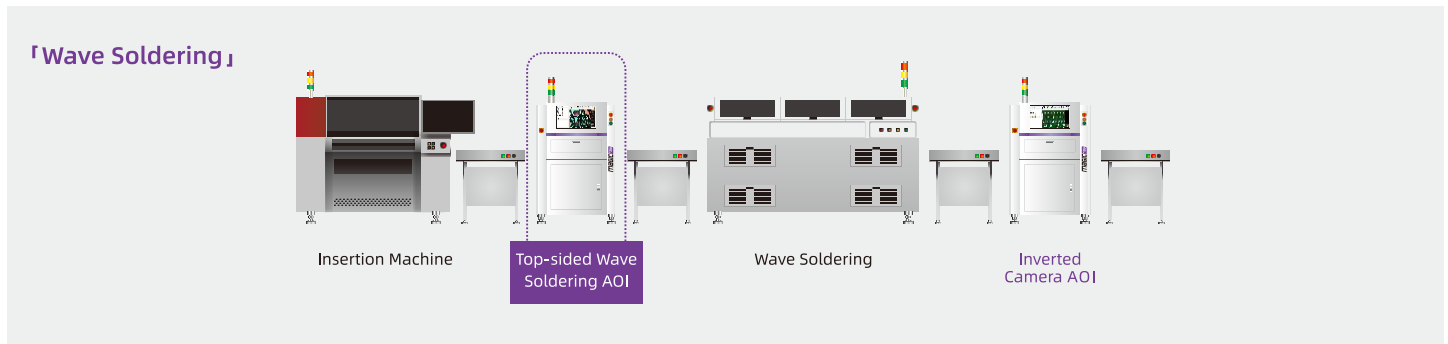
Magic-ray Top-sided Wave Soldering AOI-V5100 series, widely used in the quality inspection of PCBA manufacturing process before/after wave soldering, and highlighted features include such as intelligent programming, high detection, low false alarm and strong stability, escort for intelligent manufacturing.

### 「Product Features」

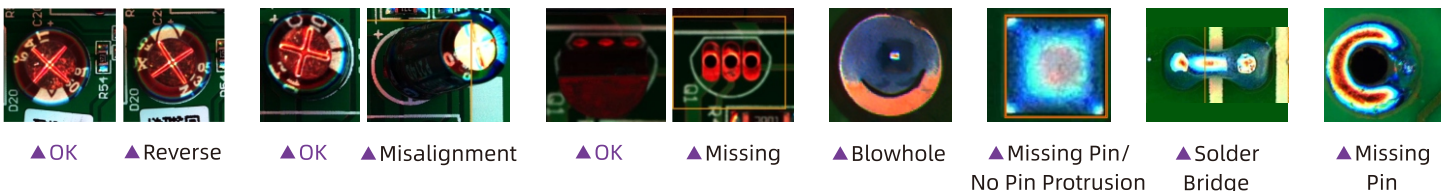
- Abundant algorithms, capable of detecting SMT, wave soldering and special-shaped components.
- AI minimal programming, one-click generation of components and solder joint inspection windows, automatic identification of component polarity.
- Belt or wheel drive, easy to deal with oversized and overweight circuit boards.
- Wide range of applications, can be flexibly used for pre-furnace or post-furnace inspection.
- Original marble base with anti-seismic and anti-shake functions to ensure stable operation of the equipment.



### 「Production Line Solution」



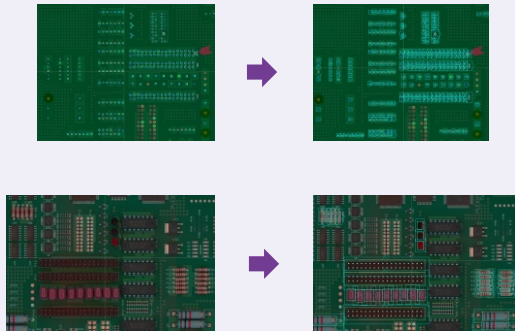
### 「Inspection Examples」



## Core Technology and Advantages

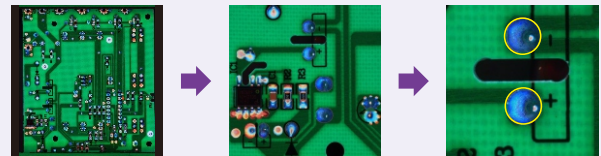
### Intelligent Programming

Using big data + AI deep learning algorithm, one-click identification of pre-furnace components or post-furnace solder joints.



### Three-level Positioning Technology

Three-level positioning is adopted to effectively solve the false positives and false negatives caused by the deformation of the board, and improve the detection rate and accuracy. Whole board positioning, FOV positioning, pad positioning



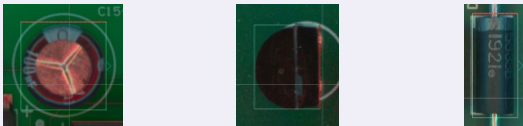
▲ PCB positioning

▲ FOV positioning

▲ Solder pad positioning

### DIP Intelligent Special Algorithm

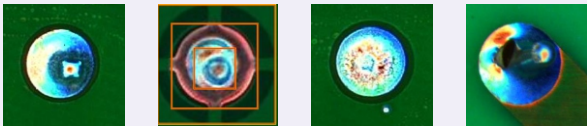
Intelligently identify the polarity of components before the furnace, detect bad solder joints after the furnace, deeply simplify the detection method, and reduce the difficulty and cost of learning.



▲ Capacitor polarity

▲ Triode polarity

▲ Diode polarity



▲ OK

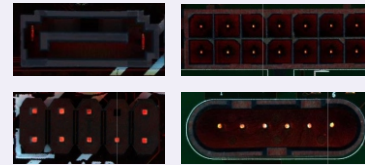
▲ Less tin

▲ No pins

▲ Tin hole

### Server-specific Algorithm

Equipped with a dedicated detection algorithm, it has the ability to detect various connectors on servers and PC motherboards.



▲ Various connectors



▲ DIMMs

## Features & Functions

### Major Defects Foolproof

This feature can be set up by an authorized personnel to specifically inspect key locations. This will prevent unauthorized individuals from allowing a bypass of such a location to be inspected. Such a feature helps ensure good control over critical locations to be inspected.

### SPC Alarm Function

Real-time production quality monitoring can be achieved thru' timely feedback of abnormal situation, thus, preventing defects from flowing thru'.

### Automatic Program Switch Through Barcode Scanning

Auto width adjustment is a standard feature and is achieved by simply reading the PCB's barcode. At the same time, it supports MES command.

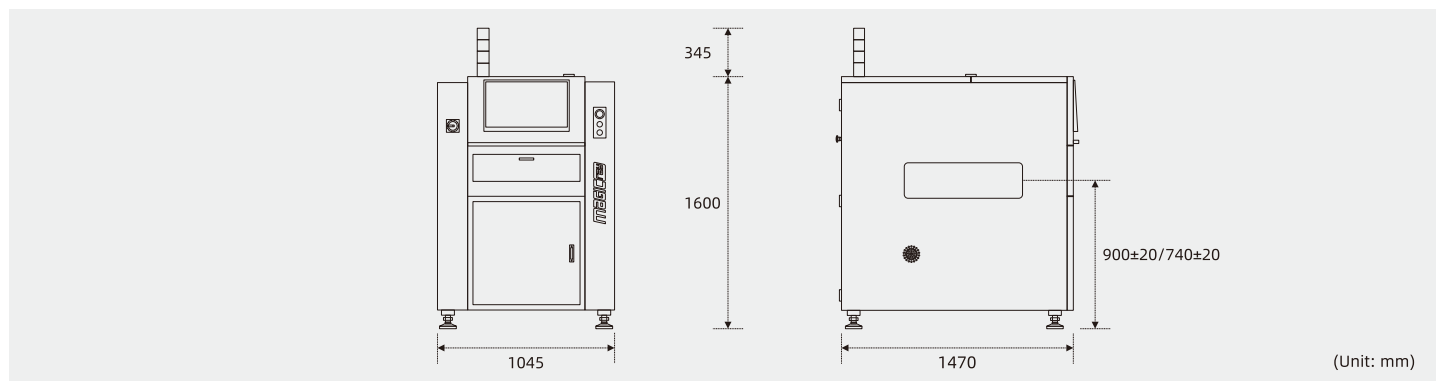
### Output Entire Board Photo

The entire board photo of component or non-component area can be saved for the quality traceability purpose after the inspection is completed.

## Product Specification

Equipment Model	V5100	V5100XL	
Image System	Camera	5MP/12MP industrial camera	
	Resolution	5MP Camera: 24μm, 15μm; 12MP Camera: 15μm	
	FOV	60*49mm (5MP, 24μm); 60*45mm (12MP, 15μm)	
	Lens	Telecentric lens	
	Lighting	4 color ring shape LED (RGBW)	
Movement Structure	X/Y Movement	AC Servo	AC Servo (Dual Ddrive)
	Width Adjustment	Automatic	
	Transport Type	Belt (Roller pulley optional)	
	Board Loading Direction	Left to right or right to left (Select at point of order)	
	Fixed Rail	1st Rail	
Hardware Configuration	Operating System	Win 10	
	Communication	Ethernet, SITEMA	
	Power Requirement	Single phase 220V, 50/60Hz, 5A	
	Air Requirement	0.4-0.6MPa	
	Conveyor Height	900±20mm (740±20mm optional)	
	Equipment Weight	700kg	850kg
	Equipment Dimensions	L1045*D1470*H1600mm (Without tower light)	L1200*D1470*H1600mm (Without tower light)
PCB Size	Size	50*50-510*510mm	50*50-650*610mm
	PCB Weight	≤8kg (Roller pulley optional: ≤20kg)	
	Thermotolerance	≤60°C (Roller pulley optional: ≤150°C)	
	Thickness	≤6.0mm	
	Component Clearance	Top clearance 25-85mm adjustment, Bottom clearance 25-80mm adjustment	
	Clamping Edge	3.0mm	
Inspection Criteria	Component	Wrong Component, Missing, Polarity, Misalignment, Reverse, IC Lead Bend, Foreign Material, Tombstone, etc.	
	Solder Joint	No Solder, Insufficient Solder, Open Solder, Excess Solder, Solder Bridge, Blowhole, Solder Ball, etc.	
	Inspection Component	Chip: 03015 and above; LSI: 0.3mm pitch and above; Others: Odd shape component	
	Inspection Speed	180-200ms/FOV	

## Equipment Dimensions



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