

WAVE
SOLDERING

Post Wave Soldering Inline AOI

V5200 Series

Inverted Camera AOI



Inverted Camera AOI

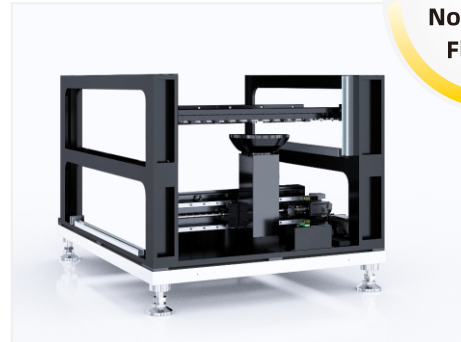
Post-reflow Defects, Nowhere to Hide

Magic-ray Inverted Camera AOI-V5200 series is installed at the bottom side and is very suitable for inline post wave soldering inspection of solder joint without the need to flip the board.

「Product Features」

- Powerful algorithm logic for post wave soldering inspection of SMT and odd shape components.
- Fast programming, auto-generate thru hole inspection window with one-click function.
- Automatic compensation for PCB deformed by high temperature effects makes our machine just as suitable for FPC.
- Optical fiber sensor is featured to trigger board drop alarm.
- Pulley type conveyor is more resistant to high temperature, dirt and heavy loads.

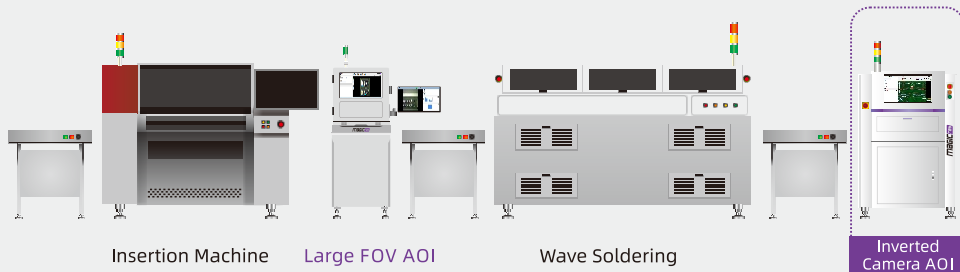
Higher Efficiency,
No Need to Flip PCB



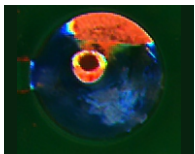
▲ Not required to flip PCBA, reducing floor space and improve the overall efficiency of the production line.

「Production Line Solution」

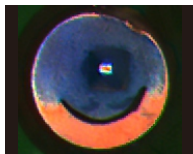
「Wave Soldering」



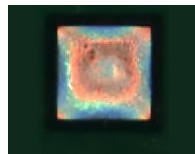
「Inspection Examples」



▲ Exposed Copper



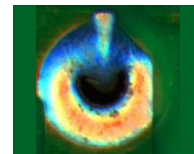
▲ Blowhole



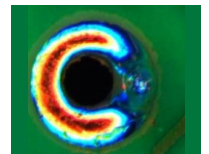
▲ Missing Pin/
No Pin Protrusion



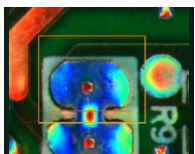
▲ Icicle



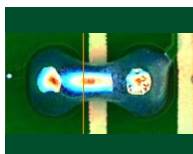
▲ Blowhole



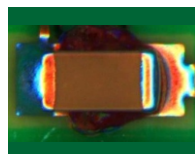
▲ Missing Pin



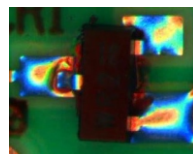
▲ Solder Bridge



▲ Solder Bridge



▲ Excess Glue



▲ Open Solder



▲ Insufficient Solder

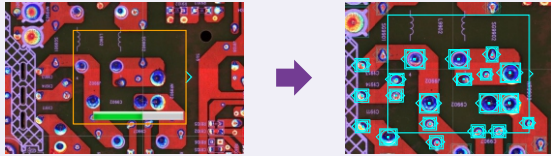


▲ Missing Pin/
No Pin Protrusion

Core Technology and Advantages

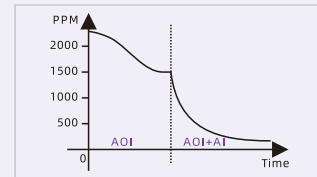
Automatic Pin Programming

Big data + AI deep learning algorithm to identify components can be done with one-click.



AI Intelligent Discrimination

With big data analysis, our AI deep learning algorithm can automatically identify errors and reduce manual intervention.



Three-level Positioning Technology

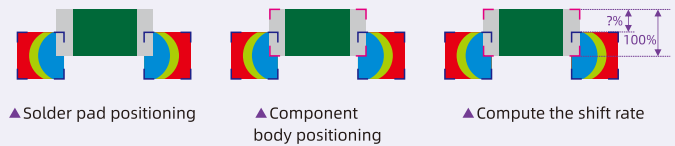
Magic-ray's three-level positioning technique effectively solve false call and escape due to board deformation, improving detection rate and the accuracy of inspecting thru' hole defects.



Detection Parameters Directly Aligned to IPC Standards

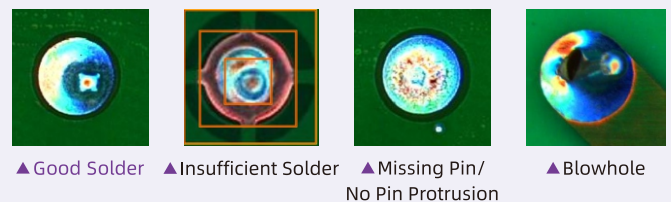
Our algorithm can calculate offsets based on IPC standards resulting in more reliable inspection.

Maximum Component Side Overhang (IPC-A-610-G Class 3) :
Less than 25% of the component termination width or 25% of the pad width whichever is less.



Powerful Wave Soldering Algorithm for Through Hole Inspection

Powerful wave soldering algorithm for inspection of manually or machine inserted through hole components.



Features & Functions

Centralized Management

Adopting centralized management of AOI in production line can realize remote judgement, offline programming and real-time debugging update.

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.

SPC Alarm Function

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

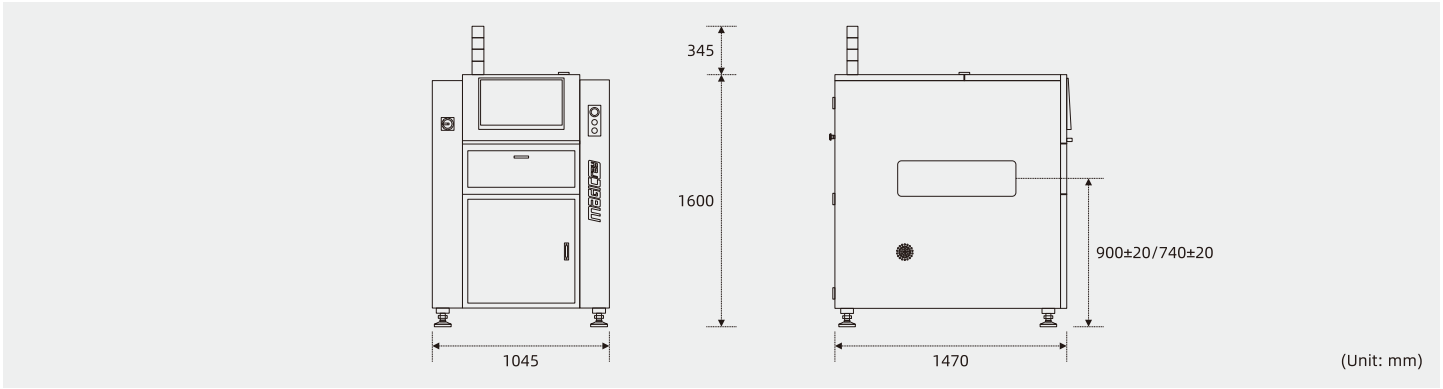
Multiple Repair Stations can be Linked to a Single Repair Station

One operator can handle multiple machines repair stations, thus, improving the repair process and saving manpower.

Product Specification

Equipment Model		V5200	V5200XL
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 Drive)
	Width Adjustment	Automatic	
	Transport Type	Roller Pulley	
	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, SMEMA	
	Power Requirement	Single phase 220V, 50/60Hz, 5A	
	Air Requirement	0.4-0.6MPa	
	Conveyor Height	900±20mm (740±20mm optional)	
	Equipment Dimensions	L1045*D1470*H1600mm (Without tower light)	L1200*D1470*H1600mm (Without tower light)
	Equipment Weight	700kg	850kg
PCB Size	Size	50*50-510*510mm	50*50-650*610mm
	PCB Weight	≤30kg	
	Component Clearance	Top clearance 120mm, Bottom clearance 25-50mm adjustable	
	Clamping Edge	3.0mm	
Inspection Categories	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	LSI: 0.3mm pitch and above Others: Odd shape component	
	Inspection Speed	180-200ms/FOV	

Equipment Dimensions



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