

V5000 Series

High Precision and High Speed
Inline AOI



Advanced Hardware Structure

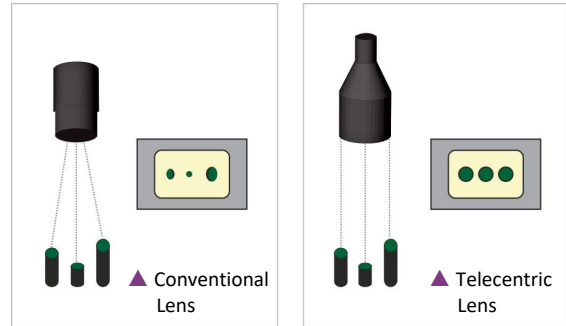
- Granite Platform and Frame**

Ensure the stability of the equipment and the consistency of sharing program between machines.



- Industrial Camera + Telecentric Lens**

The high component solder joint inspection is not affected as no shadow effect in the entire field of view.



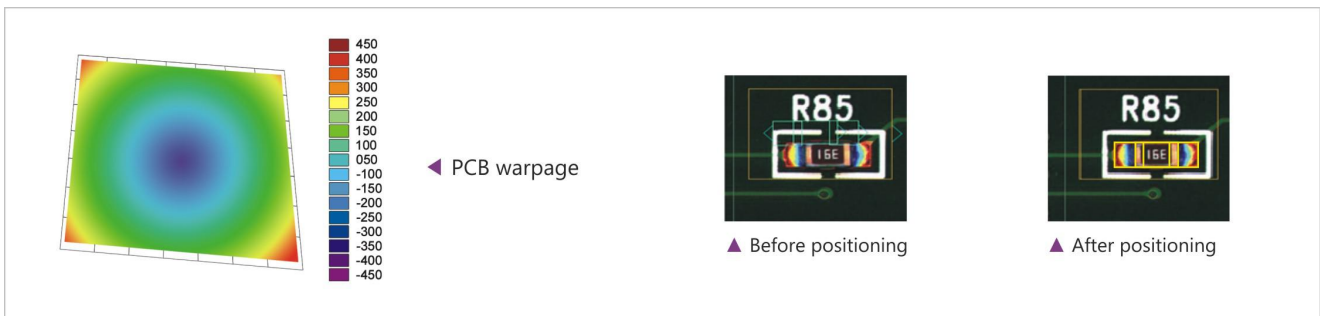
Core Technology and Advantages

- Solder Pad Position**

Solder pad position able to reduce high false call due to deformation of PCB after reflow, especially for FPC.

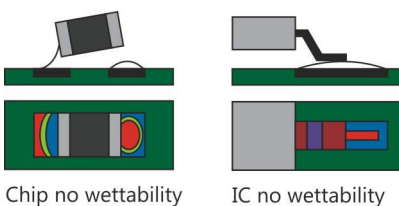
- Entire FOV Assist Positioning**

High detection ability on no exposed pad components (BGA, etc.) or partially shielded components.

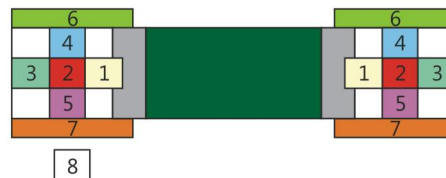


- Poor Soldering Inspection**

Based on precisely positioning on the solder pad, the features points of the entire solder pad will be analyzed. Therefore, the poor solder of chip or IC can be effectively detected.



The shape of no wettability



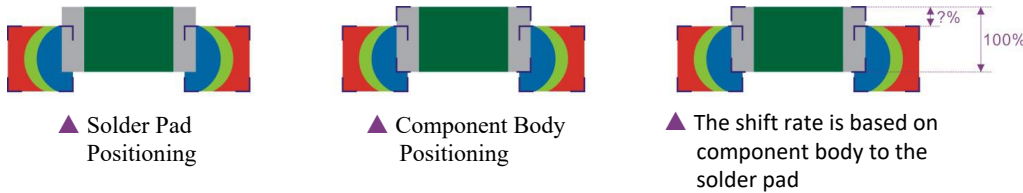
MagicRay

- Accurately positioning pad
- Analysis 8 feature points

Core Technology and Advantages

- **Detection Parameters Directly Interface with IPC Standards**——Based on the IPC test standard, the test results are more reliable.

Shift: IPC-A-610-D Class 3 - If the component shift out of solder pad more than 25% of the component electrode, it will be NG.



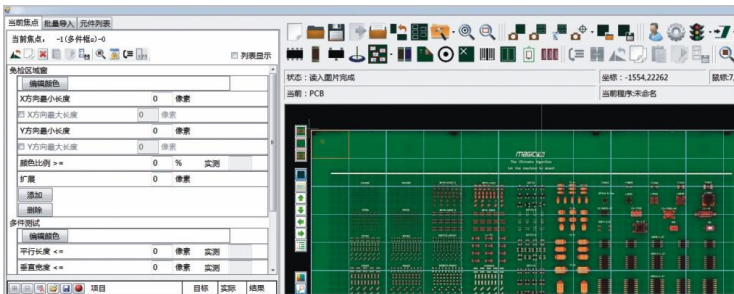
- **High Inspection Ability for Laser Body Marking**——The laser barcode and laser body marking are difficult to differentiate by RGB light source due to background noise. Magic Ray using unique design light source which is helpful to inspect the laser barcode and laser body marking.

RGB Light Source

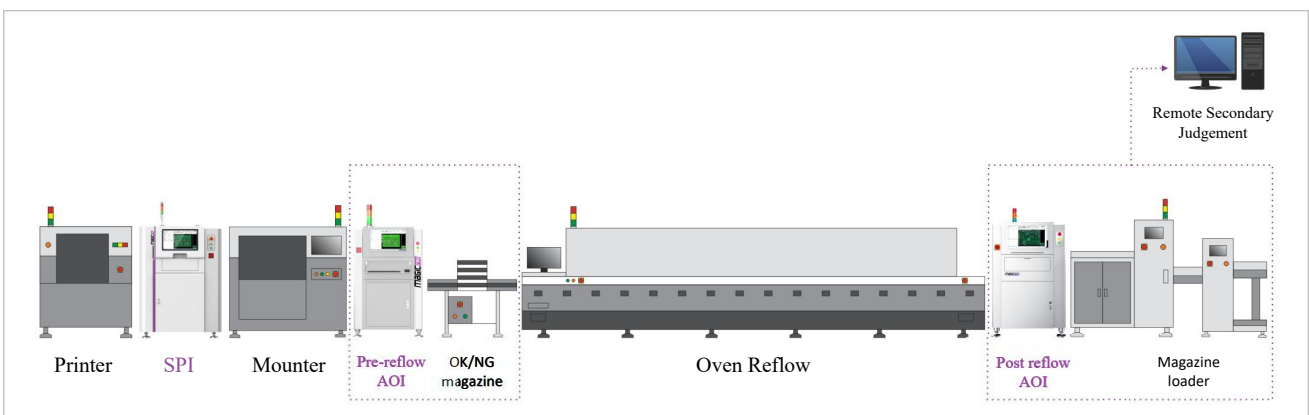
Magic Ray Light Source



- **Un-Populated and Solder Ball Inspection**——This function can be turned on at any time.



- **Unmanned Smart Factory Solution**——Data communication with upstream and downstream equipments (OK/NG magazine, NG Buffer and OK/NG magazine loader).



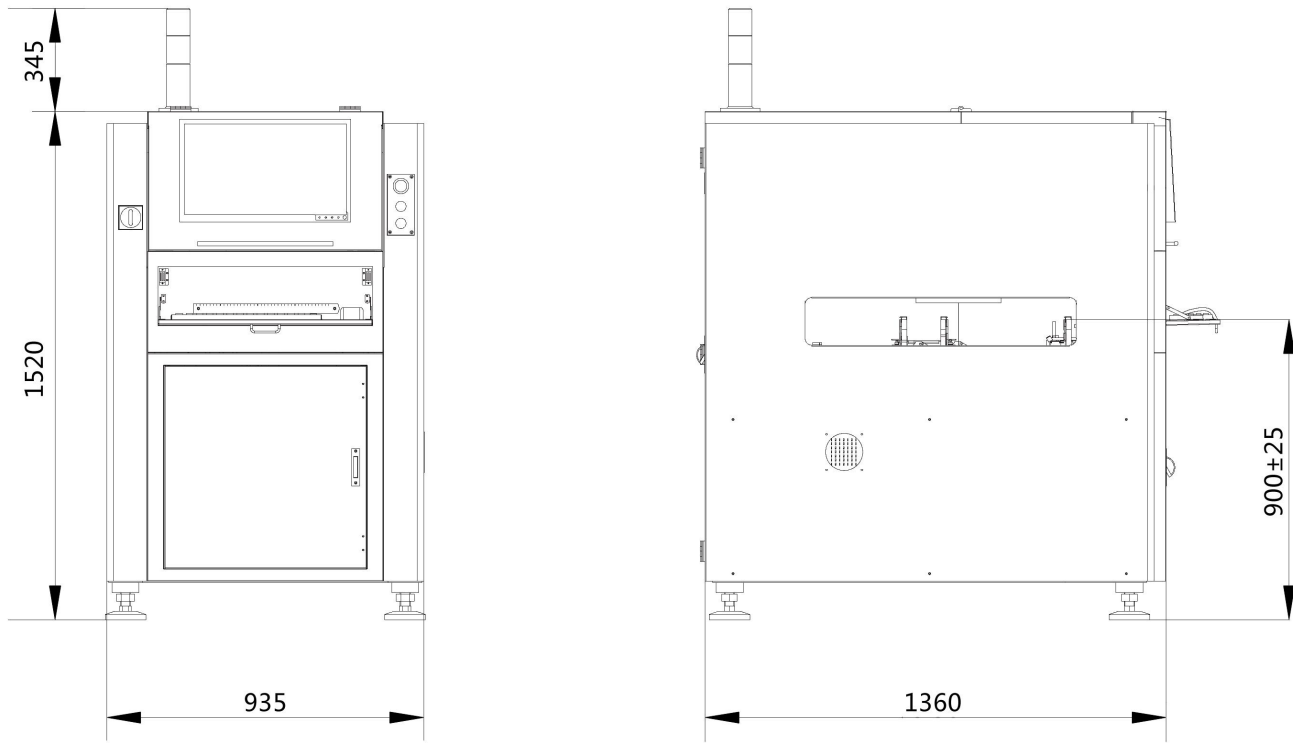
- **Other advantages**——Intelligent programming (One click rectification, Add substitute, Sub-programming ,etc.); Offline programming and fine tuning in real time without stopping the production line; Special wave soldering algorithm for DIP inspection; Remote technical support...

Product Specification

Equipment Model		V5000H	V5000HD	V5000S	V5000SD
Image System	Camera	5M pixels industrial camera		12M pixels industrial camera	
	Resolution(FOV)	15 μ (36*30mm)/10 μ (24*20mm) set before delivery		9 μ (36*27mm)/6 μ (24*18mm) set before delivery	
	Lens	Telecentric lens			
	Lighting	4 color ring shape LED (RGBW)			
Movement Structure	X/Y Movement	AC servo motor			
	Platform	Granite			
	Width Adjustment	Automatic			
	Board Loading Direction	Left to right or right to left (set before delivery)			
	Fixed Lane	Front Lane			
Hardware Configuration	Operating System	WINDOWS 10/WINDOWS 7			
	Communication	Ethernet, SMEMA			
	Power Requirement	Single phase 200-240V, 50/60Hz, 5A			
	Air Requirement	0.4-0.6Mpa			
	Conveyor Height	900 \pm 25mm			
	System Dimensions	L935*W1360*H1520 (with tower light + 345)			
	Weight	750kg	800kg	750kg	800kg
PCB Size	Size	50*50-510*610mm	50*50-510*W (W1+W2 \leq 640)mm /50*50-510*580mm	50*50-510*610mm	50*50-510*W (W1+W2 \leq 640)mm /50*50-510*580mm
	Thickness	\leq 6.0mm			
	PCB Weight	\leq 3kg			
	Clearance	Top/Bottom: 25/45mm(Top Clearance 25-40mm adjustment)			
	Clamping Edge	3.0mm			
Inspection Categories	Solder Paste	Bridge,Misalignment,Insufficient/Excess solder,Foreign material			
	Placement	Bridge,Wrong component,Missing,Polarity,Misalignment,Tombstone,Overturn,Damage,IC pin bend,Foreign material			
	Post Reflow	Component:Wrong component,Missing,Polarity,Misalignment,Billboard,Overturn,Tombstone,IC pin bend,Foreign material			
		Solder Joint: No solder,Insufficient /Excess solder,Bridge,Poor soldering,Solder ball			
	After Wave Soldering	Insert pin,No solder,Insufficient/Excess solder,Hole,Open solder,Solder ball			
	Inspection Component	Chip: 03015 and above LSI: 0.3mm pitch and above Others: Odd shape component			
	Inspection Speed	180-200ms/FOV		180-250ms/FOV	

Disclaimer: MagicRay keeps on improving this product with continuous efforts in research,development and reengineering. Please contact us for the latest version of this specification sheet.

Equipment Size (Unit: mm)



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