

AIS 40X-HW

Inline PCBA SMD Automatic Optical Inspection Machine



Fast Programming ①

AI simplifies programming and greatly improved programming efficiency

Strong Recognition ②

Intelligent OCR recognition, more powerful interception of wrong materials

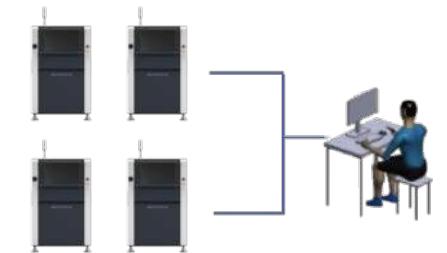
High precision ③

Higher detection accuracy, meet the requirements of precision device detection

CHOICE DISPOSITION

Repair station MKR-AOI-RS100

For reviewing the inspection results. It can quickly identify defective areas to guide maintenance and can be used with AOI in a one-to-one or one-to-many review.



SPECIFICATION

Category	Item	AIS401-HW	AIS401-D-HW
Board Info	Dimension	Single Lane: 50* 50mm-510* 460mm Dual Lane: 50* 50mm-690* 460mm	Single Lane: 50* 50mm-510* 610mm (Large board mode supports 690* 610mm) Dual Lane: 50* 50mm-510* 330mm (Large board mode supports 690* 330mm)
	Thickness	0.5mm-6mm	
	Height Clearance	900mm	
	Max weight	≤3KG	
	Max Component Height	Top: 25mm, Bottom: 80mm	
	Edge Clearance	3.7mm	3mm
Vision Module	Camera & Light Source	12MP color high speed camera & RGB+W	
	Resolution & FOV	10um: 40mm* 30mm/ 15um: 60mm* 45mm (Option)	
	Inspection Speed	0.23sec/FOV	
Inspection	SMD Defects	Wrong, Missing, Polarity(Reversed), XY Offset, Angle Offset, Damaged, Skewed, Etc.	
	Main Algorithm	AI Algorithm Mainly: AI Skew Algorithm, AI Missing Algorithm, OCR Algorithm, AI Solder Algorithm, AI Solder Hole Algorithm, AI Bridging Algorithm, AI No Pin Algorithm, etc.	
	Multi-scene Inspection	Support Auto Change Program, multi-panel, mixed components, etc	
Programming	Programming Method	1. Support importing CAD file 2. AI One-click search for components and solder, intelligent identifies and matching parameters	
	In-line on fly programming and finetuning	Feature allow users perform programming, components changes or parameters updates without stop or distract the active production line.	
	Component Library	Feature allow user store default parameter setting for specific component become standart or template for common parts and improve shorten programming time.	
Other Features	Barcode Identification	1D / 2D barcode & QR code identification(5*5mm above)	
	Industrial Computer	CPU: intel i5 Graphics: Nvidia GTX1050Ti Memory: 32G DDR4 Storage: 256G SSD+2T HDD	
	Display	23.8 inch	
	Operating System	Ubuntu 18.04 LTS 64bit	
	Communication	Standard SMEMA interface	
Hardware	Width Adjustment	Manual/automatic	
	Motion Structure	High precision screw + servo motor	
	Dimension and Weight	(L*H*W) 1015*1512*1070mm (Tower light excluded) 670Kg	(L*H*W) 1015*1512*1330mm (Tower light excluded), 790Kg
	Power Supply and Power	AC 220V. Rate power 380W	
	Air	0.4-0.6Mpa	
	Environmental Requirements	Temperature: 10~45°C. Humidity: 30~85%RH	



WWW.MAKER-RAY.COM



(+86)020-86154335



MKR-AOI@MAKER-RAY.COM



NO. 6, YUNPU 4TH ROAD, HUANGPU DISTRICT,
GUANGZHOU, GUANGDONG PROVINCE, CHINA



LinkedIn

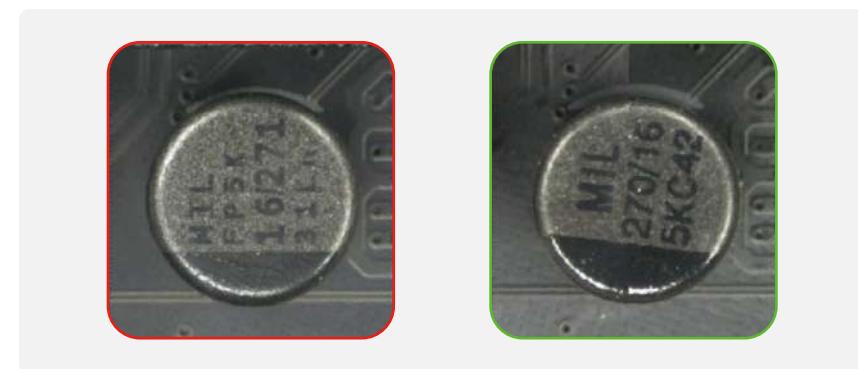
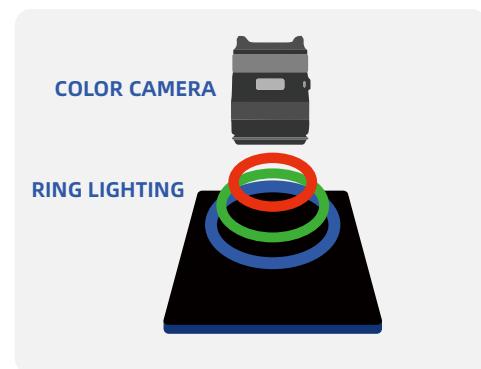


YouTube

● CORE ADVANTAGES

Self-developed specific light source system for better imaging effect

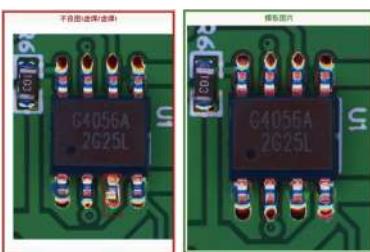
The independently developed multi-channel light source system is highly adaptable and compatible with different inspection items such as SMD and solder joints. Optimize the saturation and brightness of the imaging screen so that the device characters and the same or similar colors between the device and the body, and the some features of the solder joints can be clearly presented.



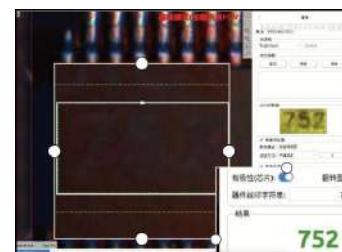
Black gold capacitor error

AI intelligent detection. Lower false call

1. The AI combined algorithm is used to directly restore the solder fullness and defects such as exposed copper and cold solder, not affected by the solder paste brand, oven temperature and other conditions that cause differences in solder imaging shape and color, and has higher reliability.



Defective soldering



Silk screen printing in dark scenes

AI minimalist programming. Saving manpower, effort, and cost

Based on AI deep learning algorithms and big data training, embedded intelligent algorithms such as whole board solder balls, holes, bridging and missing. Auto-search for components and solder joints during programming, with intelligent parameter matching, allowing engineers to quickly see programming results and assist in rapid programming.

Traditional Algorithm	AI Algorithm
Manual programming	Intelligent programming
30 min	5 min
50%	Almost zero
Operating mode	Programming
False Call Rate	

*Taking the same person programming the same board as an example

● MORE FUNCTIONS



Supports sampling inspection of the entire board or components to improve inspection efficiency

When it needs to conduct spot checks on a certain device, the detection mode can be customized to intelligently shield items that do not require detection, meeting the needs of multi-scene detection.



Genetic algorithm path planning, faster detection speed

Upgrade the traditional path planning, intelligently plan the shooting path, take pictures quickly during flight, reduce the number of FOVs, and increase the detection speed.

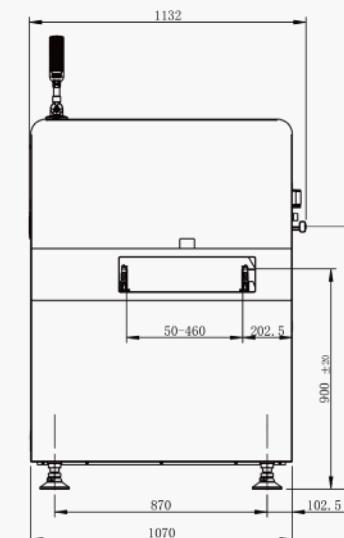
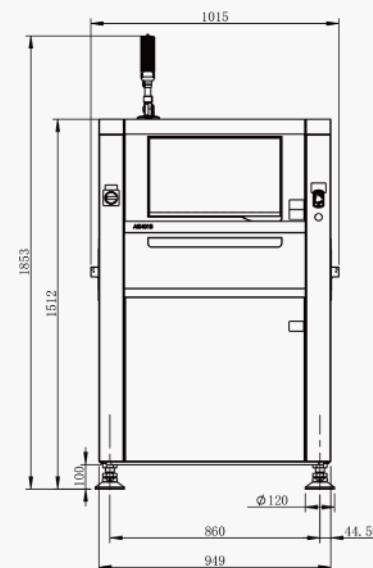


One-to-many review, improve work efficiency

Used with the review workstation, it can realize centralized management, one-to-many review, and improve work efficiency.

● ARCHITECTURE DRAWING

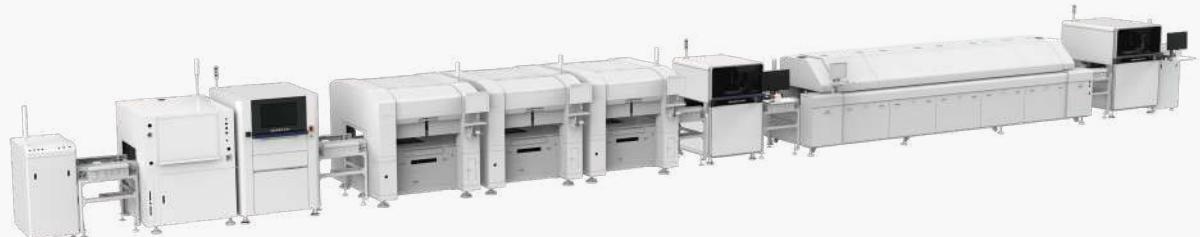
AIS401-HW



Unit: mm

● APPLICATION SCENARIO

Before/after reflow oven



● INSPECTABLE DEFECTS

