

**OMRON**

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## 3D Solder Paste Inspection Machine

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**CKD** VP9000 Series

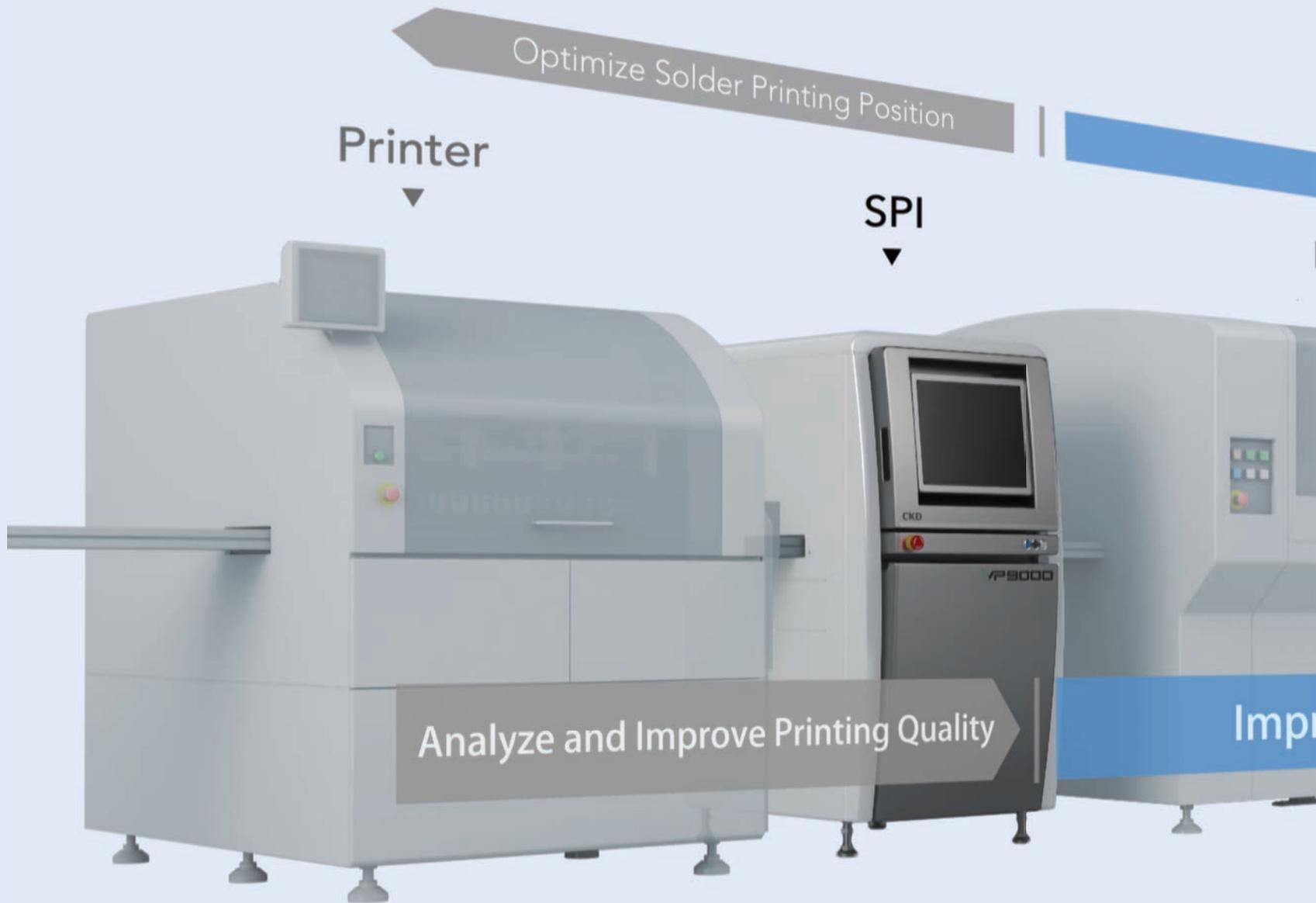


The Future of  
Flexible Inspection

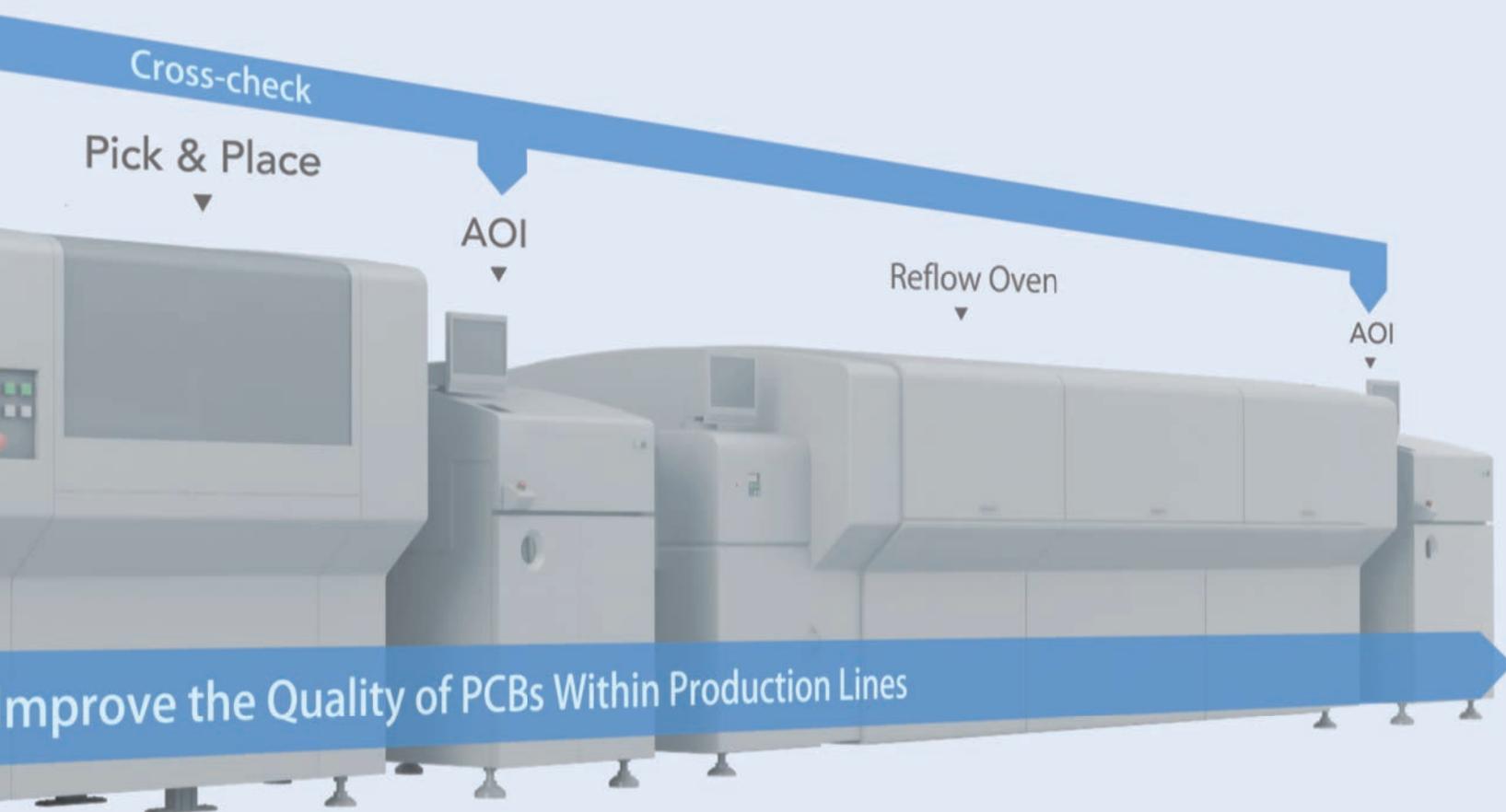
# What is a Solder Paste Inspection Machine?

Smart SMT Style

Solder paste inspection machines (SPI) can analyze and optimize printing conditions



70%

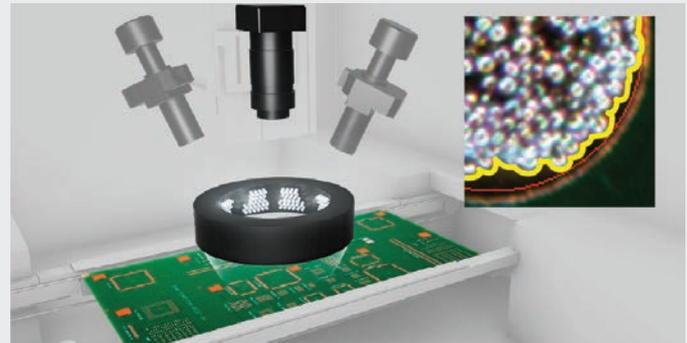


About 70% of all defects in Surface Mount Technology (SMT) lines are said to occur in the printing process. The VP9000 prevents printing defects by detecting faults and optimizing printing conditions.

# Inspection Principles of the VP Series 3D SPI

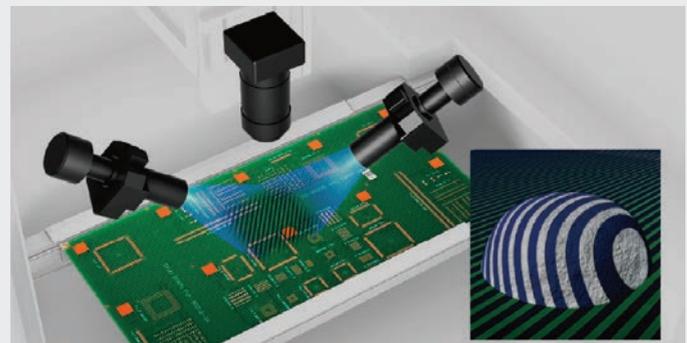
## Ring Light

An outline of solder paste is extracted through the use of a 360° ring light source that projects against inspection objects (solder paste). This method of inspection isolates solder paste on a Printed Circuit Board (PCB) and performs three-dimensional measurements to achieve more reliable inspections



## 3D Projectors

A camera captures an image of solder paste illuminated with a stripe pattern from 3D projectors. Depending on the height of the solder paste, the projected line pitch and pattern will change. Through a method of triangulation, the software can calculate solder height information from these lines.



## Z axis Auto-Focus Function

The machine automatically compensates for PCB warpage in each field of view. This effectively makes each PCB appear perfectly flat.



## Fast and Simple Operation with a User-Friendly Interface

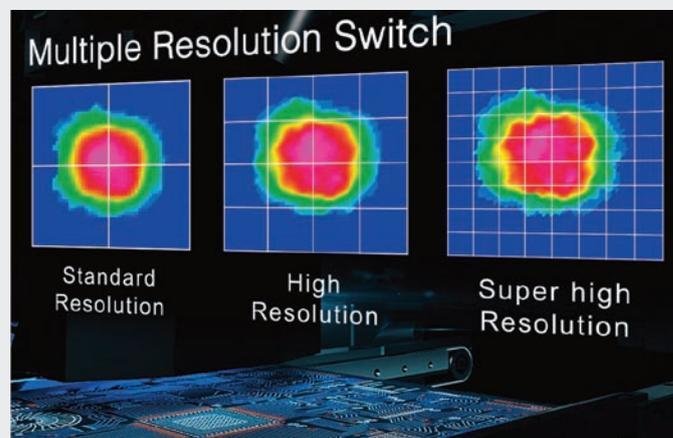
- **Setting Dashboard**  
Program settings can be verified on the main screen including 1D/2D code reading and PCB warp compensation
- **Visualization of Results**  
Print trends and measurements from inspection are displayed as a scatter plot
- **Display Status and Quality**  
Current machine status and production results are easily accessible from the main screen



## Multiple Inspection Resolutions

Advanced software enhances images, allowing for multiple resolutions to be used for the inspection of various components

- **Standard Resolution**  
Standard inspection of larger pads
- **High Resolution**  
Smaller and finer-pitch pad inspection
- **Super High Resolution**  
Smallest and finest-pitch pad inspection



## Adjustable Touch Screen

- **Adjustment Feature**  
The angle of the touch screen is adjustable up to 10° upwards and 25° downwards
- **Improved Operability**  
Operators use touch screen controls at their desired position without the need for a mouse and keyboard



# Inspection Principles of the VP Series 3D SPI

## Swift Creation of Inspection Programs

Inspection programs can be created from Gerber data in as little as 3 minutes. Part number registration using mount data is easily achieved with offline programming software.



## Foreign Material Inspection

Foreign materials can be effortlessly detected while inspecting solder paste.



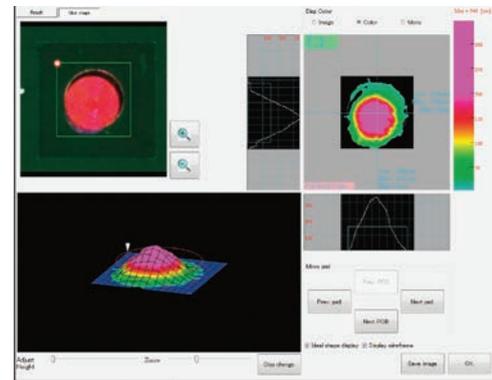
## PCB Warp Distribution Display

Warpage amounts can be measured, visualized and saved for future reference.



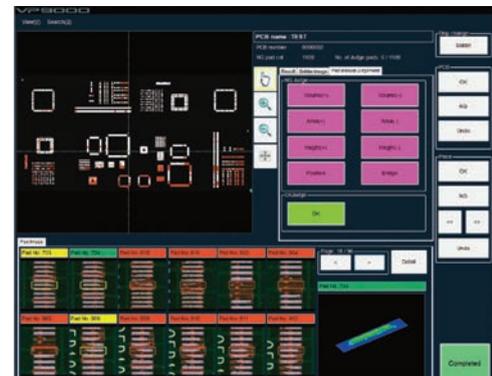
## Glue Inspection (Optional)

Precise amounts of dispensed glue can be measured in 3D for judgment.



## Manual Verification Function

Operators have the ability to reclassify inspection result judgements



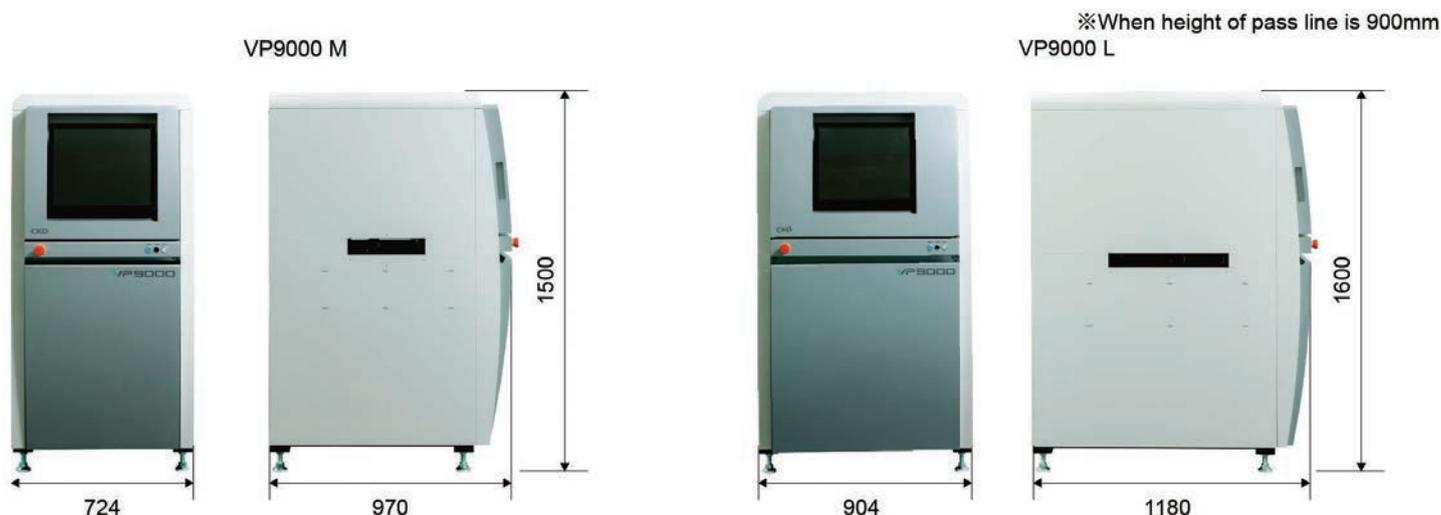
# Standard Specifications

Model		VP9000 (Standard Machine)			VP9000 High-speed Machine		
Inspection Method		Phase Shift Method					
PCB Size		(M)50 x 50mm~330 x 250mm (L)50 x 50mm~510 x 460mm					
PCB Thickness		.03~5.0mm					
Projection		Dual Projectors			Single Projector		
Inspection Resolution		Digital Switching Method					
		25/12.5/8.5 μm	20/10/7μm	15/7.5/5μm	25/12.5/8.5μm	20/10/7μm	15/7.5/5μm
Inspection Speed (mm <sup>2</sup> /sec)	Standard Resolution	8900	5700	3200	9400	6000	3300
	High Resolution	5600	3500	1900	6000	3700	2000
	Super High Resolution	1900	1200	650	2000	1300	700
Accuracy (volume 3σ) *1		Within 2%			Within 3%		
PCB Warping Compensation		± 5mm					
Outline Dimensions		(M)724x970x1500mm (L)904x1180x1600mm					
Power Supply		Single Phase AC200~230V 50~60Hz MAX 1KVA					
Pneumatic Supply		Not Required					
Weight		(M)460kg (L)550kg					
UPS		Standard Equipment (only PC)					
Environmental Standard		RoHS					

## Optional

- Data Station (connection up to 6 sets of machines)
- Loading Conveyor
- Unloading Conveyor
- Glue Inspection
- Transformer
- 1D & 2D Code Reading
- Mount Data Conversion Software
- ePM-SPI Software

## Outline View





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