



SOLDER PASTE INSPECTION MACHINE

# Solder Paste Inspection Machine VP9000 Series

Future with  
Flexible Inspection



**CKD Corporation**

CC-1467A

# VP9000

Future with Flexible Inspection



## 1 User-friendly GUI

Information is easily accessible and operations are intuitive.

## 2 Multiple Resolution Switch

The VP9000 can inspect a wide range of pads with only a reliance on one machine.

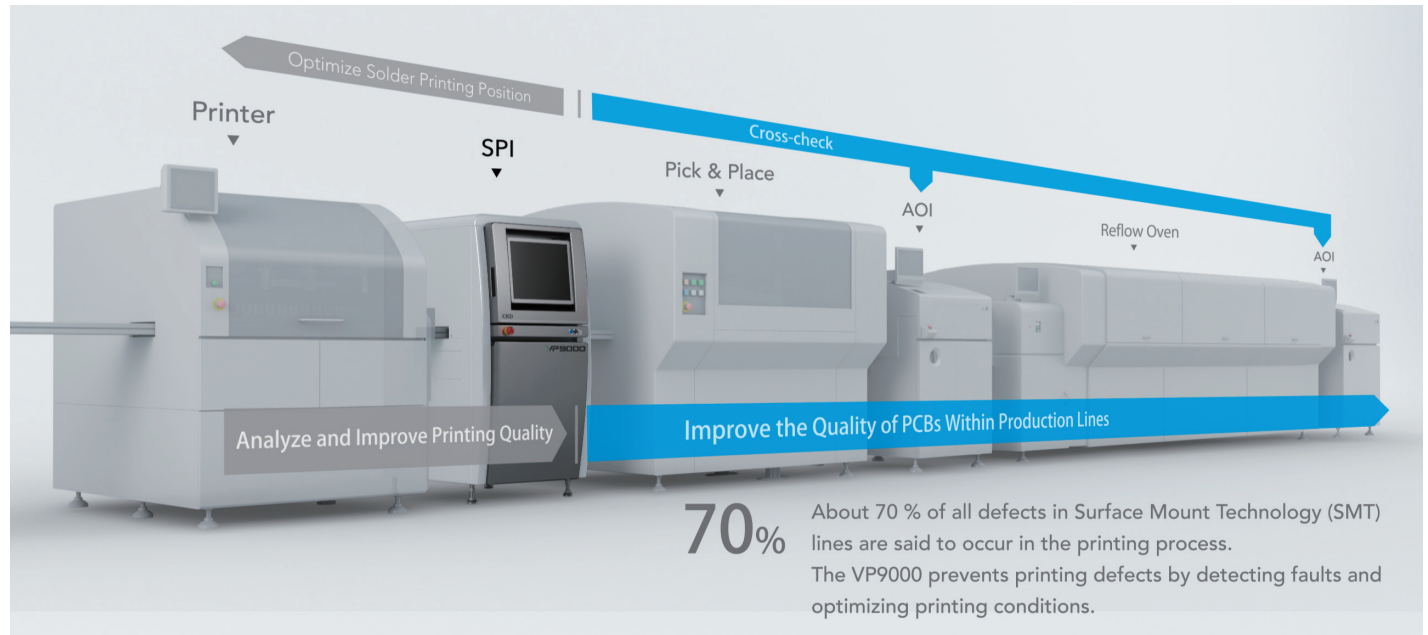
## 3 Adjustable Touch Screen

A large touch screen that comes equip with an angle adjustment function can accommodate everyone.

# What is a "Solder Paste Inspection Machine"?

Smart SMT Style

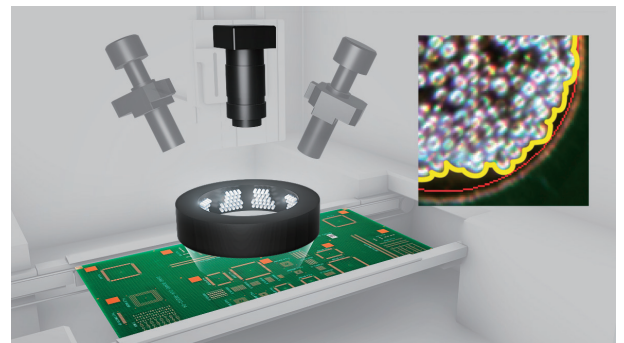
Solder paste inspection machines (SPI) can analyze and optimize printing conditions.



## Inspection Principles of the VP Series

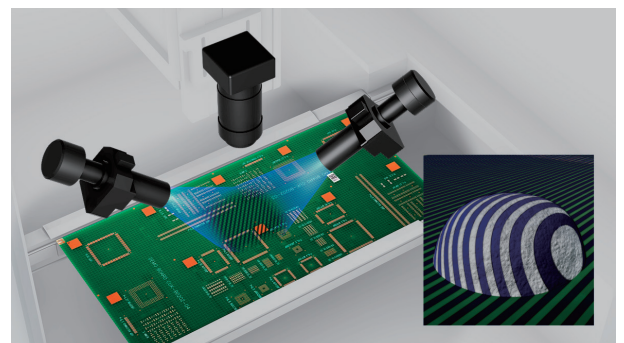
### Ring Light

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 solder paste images with a stripe pattern light using 3D projectors that are positioned diagonally and faced downwards. Depending on the height of the solder paste, the stripe pattern light will shift according to the relative height. Through the principles of triangulation, the height is calculated based on the stripe pattern light shift.



### Z axis Auto-Focus Function

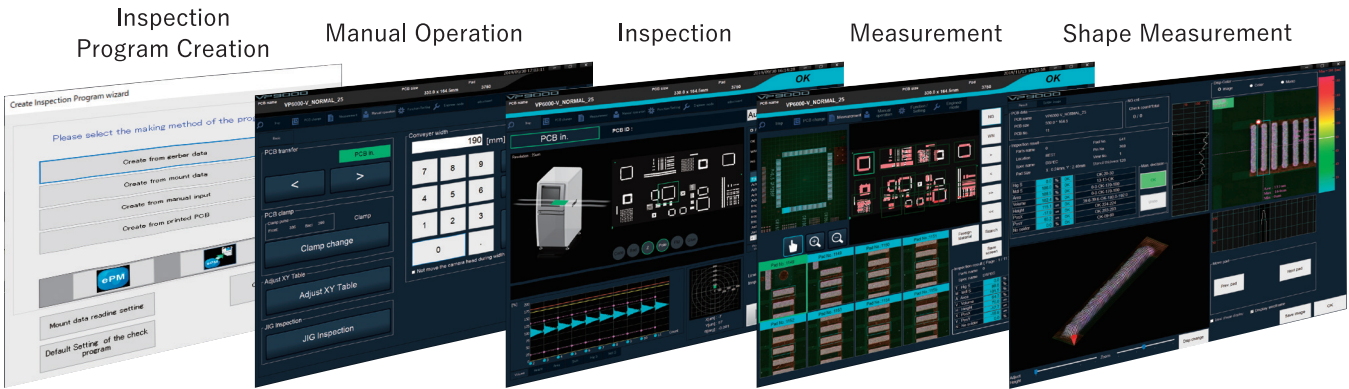
The amount of PCB warping is measured in each field of view and the inspection camera automatically compensates for the distance between the camera and the surface of the PCB. This function enables users to perform inspections without the influence of PCB warping.





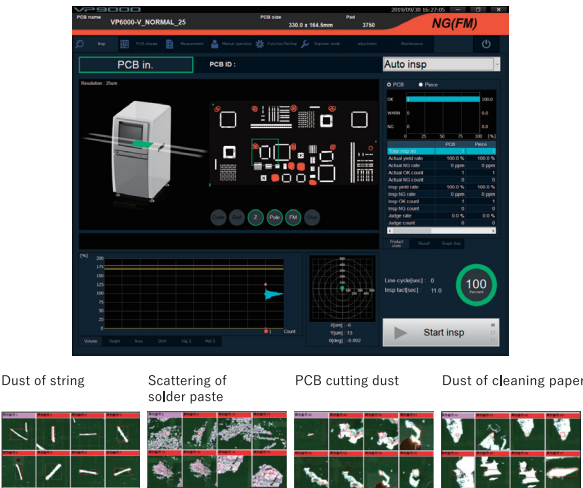
# Swift Creation of Inspection Program

Inspection program can be created from Gerber data in a minimum of 3 minutes.  
Part information is easily registered by using mount data and optional software.



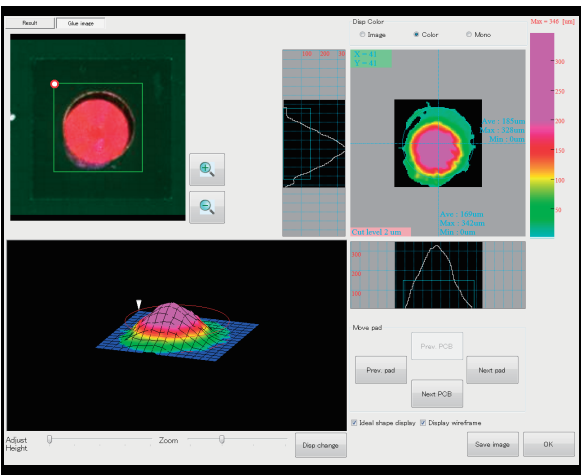
## Foreign Material Inspection

Foreign materials can be effortlessly detected while inspecting solder paste.



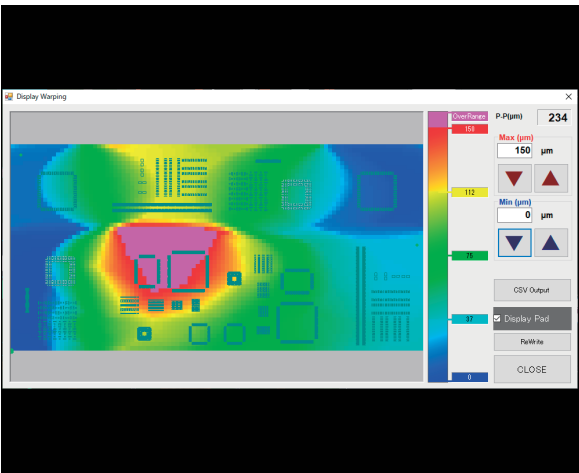
## Glue Inspection (Optional)

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



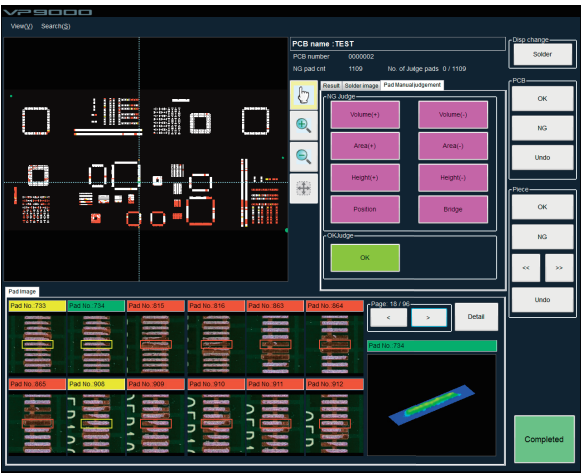
## PCB Warp Distribution Display

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



## Upgraded Manual Verification Function

Operators have the option to reconsider the reasons for defective judgements.



## SPC Function

Various statistical process controls (ex. X-bar, Cp/Cpk) have the potential to improve the productivity of production lines. 6 sets of machines can be connected and monitored simultaneously by one VP Data Station PC.





## User-friendly GUI

### Simple, Quick and Intuitive Operational Screen

#### Settings Dashboard

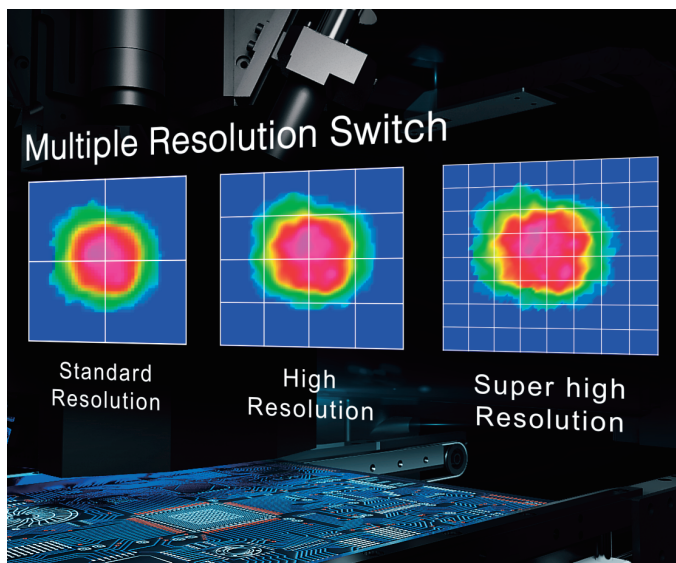
Important inspection settings can be checked on the main screen.  
1D & 2D code reading, PCB warp compensation, resolution switch etc.

#### Visualization of Solder Paste Shift

Solder paste shift can be viewed on the scatter chart .

#### Visualization of Operational Status

Operational status can be checked and monitored by displaying important information on the main screen.  
(ex. judgement results, yield rates etc.)



## Multiple Resolution Switch

### Three types of Inspection Resolutions

CKD's proprietary multiple inspection resolution switch function has been further developed. The most suitable resolutions for each part can be selected to achieve the best inspection time.

#### Standard Resolution

High speed inspection of large pads can be performed  
(ex. electrolytic capacitor).

#### High Resolution

Small pads can be inspected (ex. ceramic capacitor).

#### Super High Resolution

Fine pads can be inspected (ex. BGA).



## Adjustable Touch Screen

#### Adjustment Feature

The angle of the touch screen is adjustable up to 10° upwards and 25° downwards.

#### Improved Operability

Operators can use the touch screen at their desired position without keyboard.

Standard Specifications

Model		VP9000 (Standard Machine)				VP9000 (High-speed Machine)	
Inspection Method		Phase Shift Method					
PCB Size		(M)50x50mm～330x250mm (L)50x50mm～510x460mm					
PCB Thickness		0.3～5.0mm					
Projection		Dual Projectors			Single Projector		
Inspection Resolution		Digital Switching Method					
		25/12.5/8.5 μm	20/10/7 μm	15/7.5/5 μm	25/12.5/8.5 μm	20/10/7 μm	15/7.5/5 μm
Inspection Speed (mm²/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					

\*1 When CKD sample board is used.

Data Station (connect up to 6 sets of machines)	Transformer	Keyboard Tray	Feedback/Feedforward
Loading Conveyor	1D & 2D Code Reading	CE Compliance	Ultrafine Resolution
Unloading Conveyor	Mount Data Conversion Software	(Large machines only)	(10, 8, 5μm)
Glue Inspection	ePM-SPI Software		

Outline View



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