

Best Solution & Service for you
SJ INNO TECH
Vision Screen Printer



3D VISION SCREEN PRINTER HP-520SPI



ISO9001 
ISO14001 



INNO-BIZ Corporation
Venture Business



Promising Export Company
Leading Medium Business

Continuous R&D transferred to Best Technology for Customer.

HP-520SPI



New Technology High Performance Vision Screen Printer



Features

- ▶ Printing accuracy ($\pm 0.015\text{mm}$) repetition ($\pm 0.01\text{mm}$)
- ▶ Fine Pitch (0.3mm), CSP, 0402
- ▶ Printing section speed/Control the pressure (5 section)
- ▶ Various PCB mounting depend on PCB type
- ▶ Various auto Solder Stencil Cleaning
- ▶ Array PCB Inspection
- ▶ Multistage separation system for solder shortage
- ▶ Easy change of stencil size by LM Guide
- ▶ Enhance fiducial recognition by high-performance Digital Camera
- ▶ Optimum In-Line total Inspection Solution
- ▶ Easy Model change interface



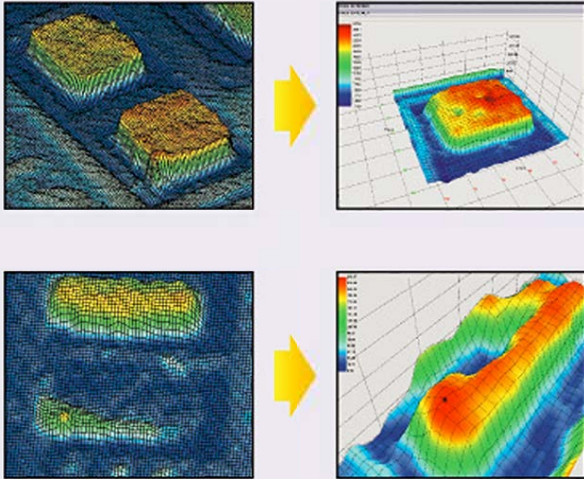
Solder complex inspection technology by 2D & 3D color image

- C Solder 3D inspection without additional curve calibration sensor.
- C First 2D & 3D Image realization of SPI
- C Perfect Hole Silk distinct inspection by 2D color Image
- C Operation of device without zero-point teaching

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0 3D Vision Screen Printer

- Calibrate 3D configuration of pasted solder on PCB and get a 3D configuration data with accurate data such as width, length and volume.
- Daring reduction the error without loss by perfect detection the fault such as short, open, cold paste, erection, insufficient & excessive solder, bridge, un-positioned, configuration defect, co-planarity.



Vision Screen Printer

No plan to meet discontinuous fault, different defect depend on an operator & line condition in screen printer.

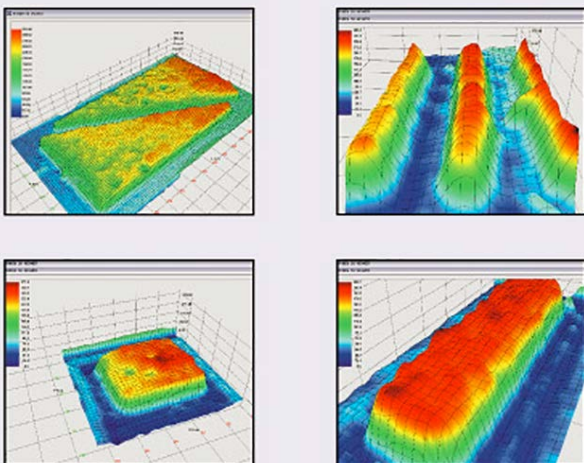
The rise of customer's strong NEEDS

- Real-time feed back and control system through the Solder paste 3D total inspection
- Develop the Quality & productivity

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0 3D Inspection

- Detect insufficient solder, bridge, un-positioned by 2D Inspection
- Detect excessive solder, configuration defect by 3D Inspection



Effect

- Increase productivity
- Minimum rework of defective board.
- Reduction of cost and maximize productivity

Optimum In-Line total inspection Solution

Realization of Solder paste total inspection by high speed data process

Inspection speed

20.5cm/sec (0.30 sec/FOV) - 2.0M
3D Graphic with 3D Data Display

20/30 Solder Paste Inspection

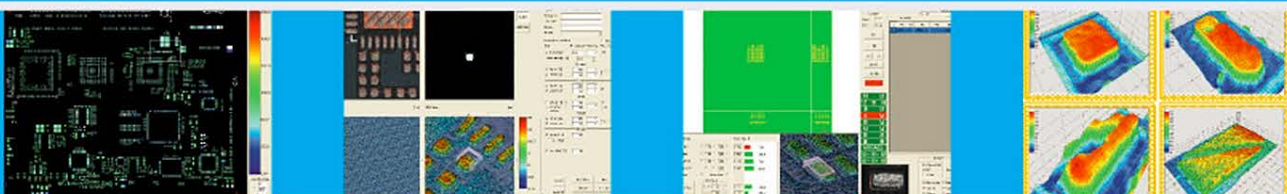
Perform the size, height, volume, bridge of solder paste with high speed 2D/3D

Correspondence for various production environment

- I Prompt correspondence to change model in multi-production line with easy inspection program through the Gerber Data
- I Easy installation with compact design in production line
- I Perfect correspondence for Lead-Free Solder Paste
- I Suitable for various production model such as mobile phone, LCD, DVD, MP3, HOD, PDP, OMB

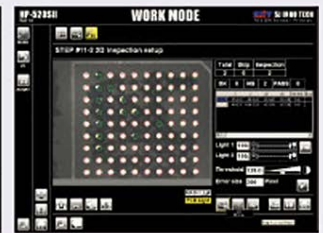
Excellent correspondence for FPCB

- I Excellent correspondence for mobile FPCB
- I Auto correction of FPCB curve and inspection of Fine Pitch
- I Maintenance of printing Quality for 0603 chip, and 0.3 pitch QFP





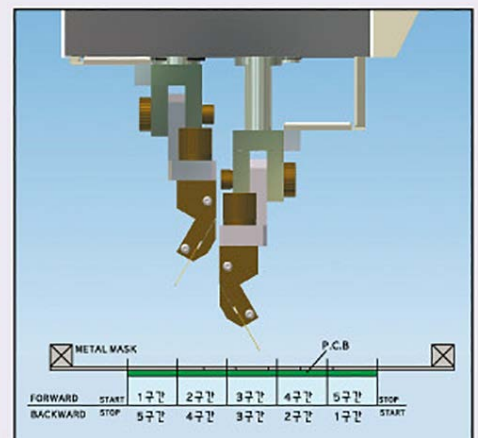
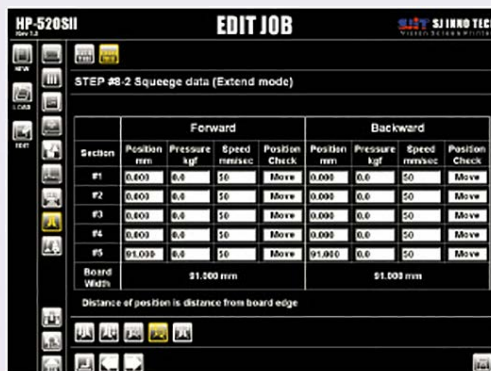
0 User Interlace



I Application of Black & White UI
I Easy Operation

I Various information Display
I Easy Model Change Interface

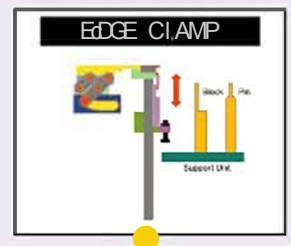
0 Printing section speed/Control the pressure



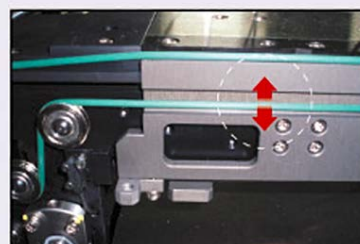
I Digital Control of pressure & speed by dividing 5 working section
I High productivity & high accuracy of printing Quality

Patent registration : 10-0505314

0 PCB Clamping



Prevention of EDGE GUIDE blade's damage for O'er OSt PCB



Prevention of PCB separation with Y axis Clamp for under OSt PCB

Patent registration : 10-0505315

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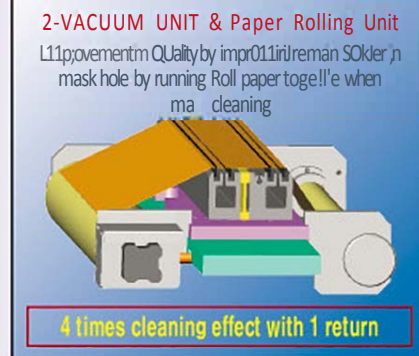
0 Auto Under Stencil Cleaning

Epochal improve of Cleaning efficiency

- ! Dual structure of vacuum and cleaning unit
- ! Optional choice system of alcohol vacuum and blown
- ! Human Cleaning system
- ! Optional designation of cleaning time

Patent registration : 10-0631156

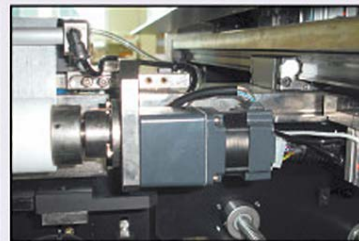
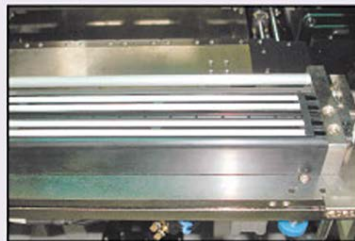
Patent registration : 10-0843782



0 Paper Finding Cleaning



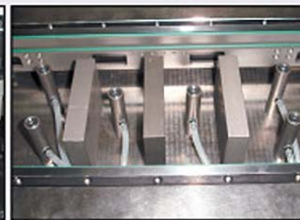
Special Cleaning



Improvement in quality with only one cleaning via roll paper rotation during cleaning

0 Pursuit the User convenience

- ! Multistage separation system for solder shortage
- ! Easy change of stencil size by LM Guide
- ! Enhance fiducial recognition by high-performance Digital camera
- ! Auto adjustment of conveyor width(step motor control-2stage+SPI)
- ! Table auto Up/Down Unit regardless of 'I' size change
- ! Various board back up unit(block, pin, vacuum pin etc.)



0 Cycle Time

Improvement of real production cycle time with work up down and stencil align structure, Digital video image and New Software

Cycle Time	Counter
1 Cycle	12.14 sec
Array Inspection	2.26 HC
Printing	5.14 sec
Step 1 down	1.0, HC
2D In 1 Position	0.0 HC
Primary auto-cleaning	14.67 sec

PCB Size : standard 200 x 200mm
(real production cycle time 13sec(except screen printing))





0 HP-520SPI Dimension

HP-520SPI

Screen Frame	Specification
Screen Frame	600L X 550W, 650L X 550W, 736L X 736W
Mask Oil(In)	Center, Front
PCB ApphcaOn	Specification
PCB9ze	SOLXSOW - 520LX420W
PCB Thickness	Min 0.4mm - Max 4.0mm
PCBQ.wnp	for both Edge Guide & Top Guide Clamp type
PCB &PI()It Method	Magnetic Support Pin & Bloek
PCB Transfer	Specrhcatlon
Coll/eYor wklh adjustment	Automatic(Stand<Id)
PCB Transfer Way	Left => Right Ontf
Transfer Hei!tlt From FI(I)()	900±30mm
Transfer Base	Front Foced(Stand;;rd)
Vision Parameter	Specification
Vision camera	Grabber Internal Digital Camera IEE Interfaces
Illunination Method	Excellent teaching of R, G, B 3 channel ind'ect lqiting regardless fiducial material
Vision Processing Method	Real-time im transfer with 256 Gray Scale
F«luciafsType	All type of fiducial recognition
F«luciafs	0, 1, 2
vrs,on Printing	Specification
Printing Diredioo	Front <=> Re<I
Squeegee Type	Special heat treated Metal Squeegee
Squeegee Speed	2 - 15Lmm/sec
Squeegee Pressure	1 - 25K()If
Print Speed & Presst'e Cootra	Digital control
Snap off DiSlance	0 - 5.0(Incl 0.01mm)
Separate Speed	1 - 15mm/s(Incl 0.01 mm/s)
Separate Wey	0 - 10mm(Incl 0.01mm)
Cide Time	9sec+Pnnting Time
/IroJr(f);f	±0.015mm
Repeatallity	±0.01mm
Cleaning Unit	Specification
Clean Type	Wet, Vacuum, Blower, optional designation time, winding clean
Other	Specification
Mon or	m - L C D I S . r
Power Req.irements	AC220V(50/60Hz)x 1.2Kw(5.2A)
fljr &Jpplly Req.irements	5.0Kg/f, 40NUMin
ChensiooQ.x w x HJ	2,060(LJ X 1,585(W) X 1,535(H)
Awrolt Weigt'l	1,500Kg

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0 Specification (3D Inspection, V-)

2D/3D Vision Algorithm		21: Vision Inspection Algorithm 1) : PMP (Phase Measuring Profilometry) Algorithm
Measurements Per Pad		Volume, Height, Position, Area
Measurements Type of Defects		Insufficient Paste, Excessive Paste, Shape Deformity, No Paste, Bridge, Paste Displacement
	Inspection Speed	20.5cm/sec
	FOV (Field of View)	32 X 24mm (2M)
	Solder Paste Height Range	40 - 450 μ m
	XY Pixel Resolution	20 μ m
	Height Resolution	0.4 μ m
	Height Repeatability	$\pm 2\mu$ m (3 σ)
	Height Accuracy	2 μ m
	Typical Load/Unload & Fiducial Find Time	5sec
	Max. PCB Warp	± 3 mm
	Gage R&R	<10%
XY Robot	Moving Speed	0.8mm/sec
	Resolution/Accuracy	1 μ m/pulse/pulse ($\pm 10\mu$ m)
PCB Specification	Working Area	Min: 50x50 / Max: 500X420
	PCB Thickness	0.4-4.0mm
Control Unit	Control Method	PC Based Control (Windows)
	Monitor	11" LCD Panel
Operation Condition	Operation Temperature	20 - 110°C
	Operation Humidity	30 - 100% Non-Condensing
Systems	Statistical Analyses	Histogram, X Bar & Chart, X Bar & S Chart, Cp & Cpk, % Gage R&R Data
	Inspection Position Teaching	SLIP Ports GERBER Format (274(X) X274(O))



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