



BGA Rework Station SV-650 Introduction



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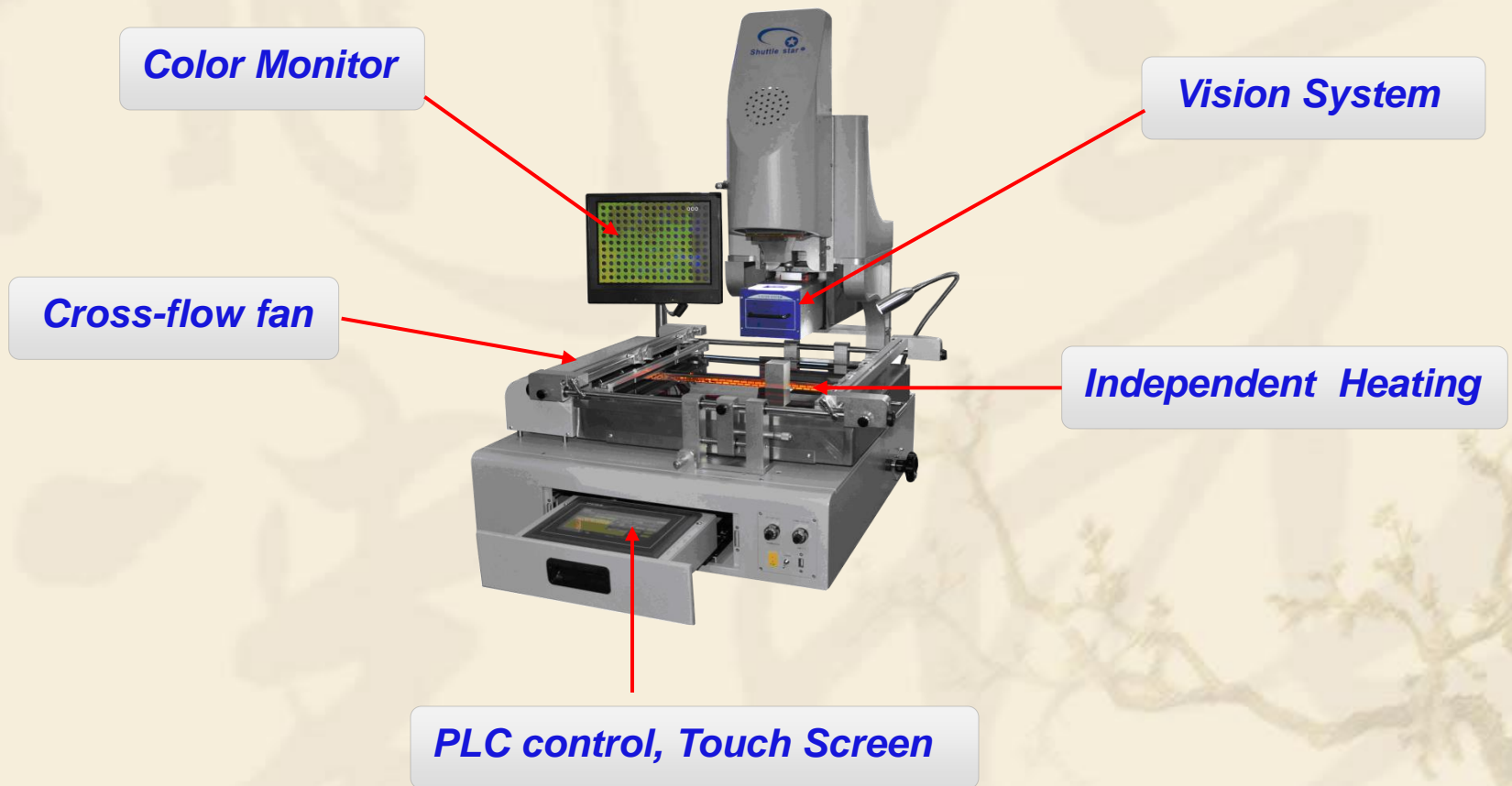
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1.SV-650 Profile—Parts Introduction

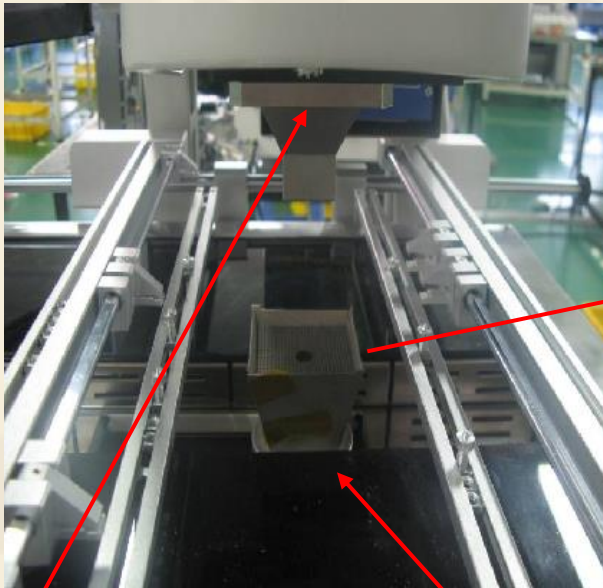


1.SV-650 Profile—Features

- Hot air heater head and mounting head are designed 2 in 1, have both the auto soldering and mounting function;
- Three heaters(top/spot hot air heater, bottom IR heater) heating independently, with auto protection function while heating abnormally ,time and temperature can be displayed digitally on touch screen;
- Top heating system and cooling system are designed 2 in 1, temperature controlled accurately and evenly.
- Bottom heater is IR wave gilding heater plate, with high temperature glass, temperature increasing and decreasing rapidly; profile setting accurate to protect the PCB from deformation, easy to solder, energy-saving and environment friendly.
- Powerful cross flow fans cool the bottom heating area rapidly with stable speed;
- Color optical system with functions of split vision, zoom in/out and micro-adjust, equipped with aberration detection device; with auto focus and software operation function,1.3 million pixel high-definition camera.
- 15" high-definition LCD monitor.
- Both top and spot hot-air heating head can move Z axis automatically, Optical vision system can move along with X、 Y axis automatically, install damping device ,easy operation.
- Large movable bottom IR heating area, PCB clamps can be adjusted along with X & Y table flexibly, the max PCB size it can handle up to 550*500mm;
- Embedded industrial computer, touch screen interface, PLC control, real-time temperature curve display, able to display temperature curves and practical curves as the same time: can analyze the practically-tested profile, and compare them with the history saved profiles;
- Built-in vacuum pump, 60 ° rotation in φ angle, mounting nozzle is micro-adjustable;
- 8 segments of temperature up(down) and 8 segments constant temperature control, profile saving is unlimited in the industrial computer;
- Suction nozzle can identify material and mounting height automatically, and can control the air pressure within a small range ;
- Big size splint, equipped with deformation-proof supporting device, suitable for the accurate rework of all kinds of PCB;
- This product has patents: (1.top heating apparatus ZL 2009 2 0262216.X utility model; 2. top heater component t ZL 2009 2 0162612.5 utility model; 3.suction nozzle device ZL 2007 2 0127185.8 utility model; 4. top heating apparatus ZL 200910238919.3 inventive patent)

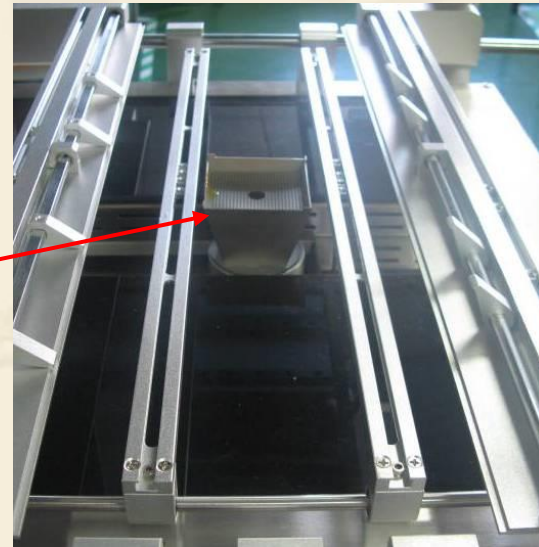
2.SV-650 Hardware Compose—Heating System

Heating system: Three independent temperature zones, (top hot air heating, under hot air heating, and bottom IR heating), temperature and time can be displayed digitally on the touch screen, able to rework CGA



Top heater

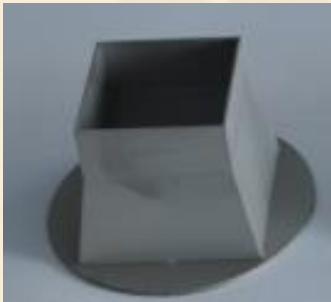
**Bottom IR
heater**



Under heater

2.SV-650 Hardware Compose—Heating System

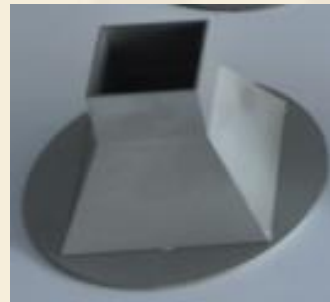
Nozzle: Different-sized nozzles for different-sized BGAs, for particular component, nozzle can be custom-made.



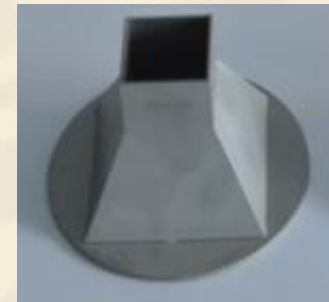
44x44mm



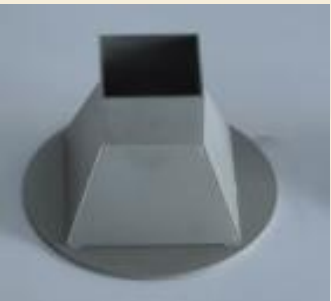
38x38mm



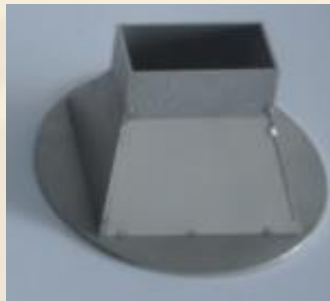
31x31mm



24x24mm



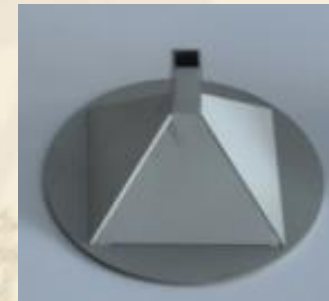
28x28mm



44x28mm



18x8mm

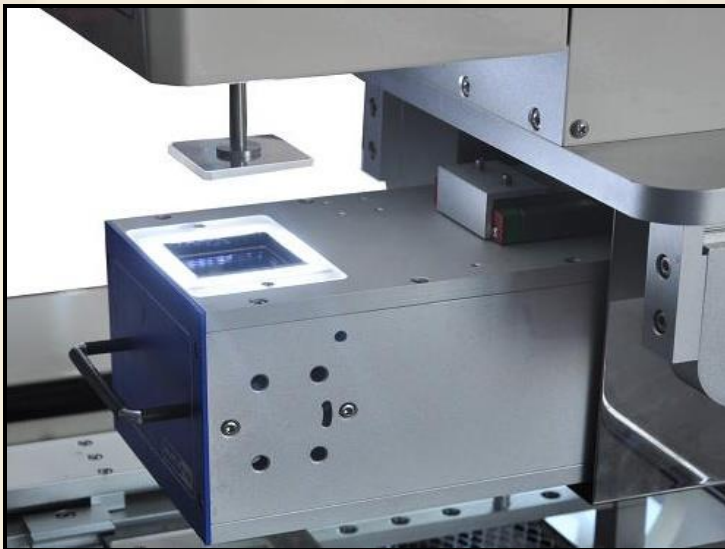


7x7mm

2.SV-650 Hardware—Alignment & Placement System

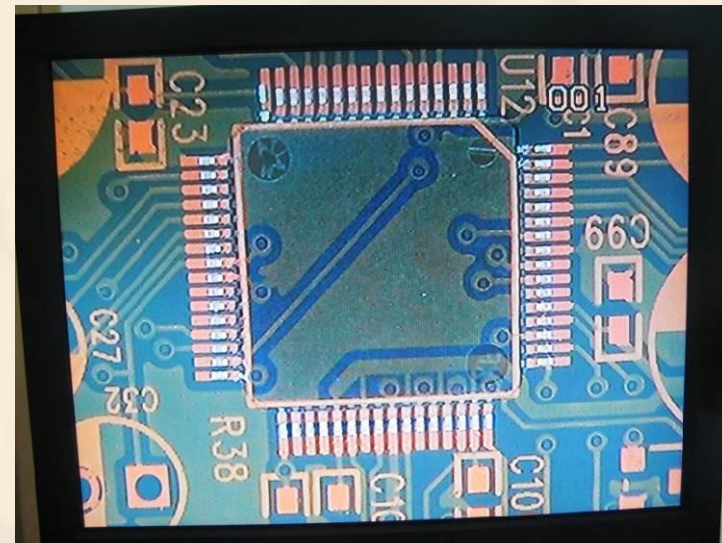
Alignment & placement: Color optical system with functions of split vision, zoom - in and micro-adjustment, equipped with aberration detection device; with auto focus and software operation function, 1.3 million pixel HD Camera, 27X optical focus, applying the prism optical principle to make both up and down image clear and accurate.

Alignment system



Can be moved all round,
large visual area

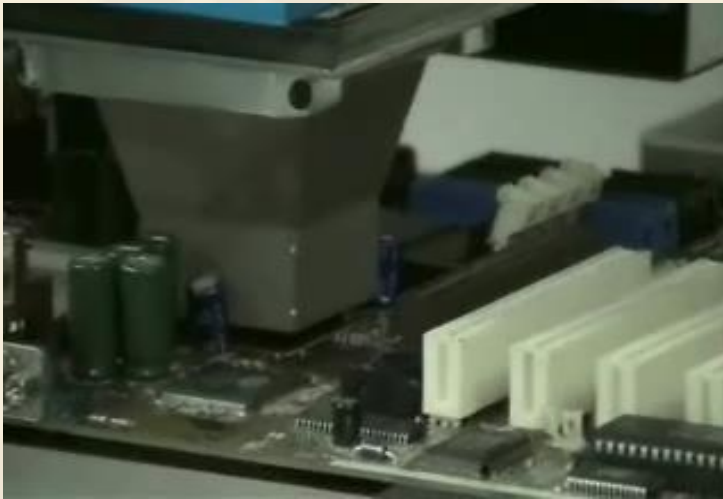
Alignment image



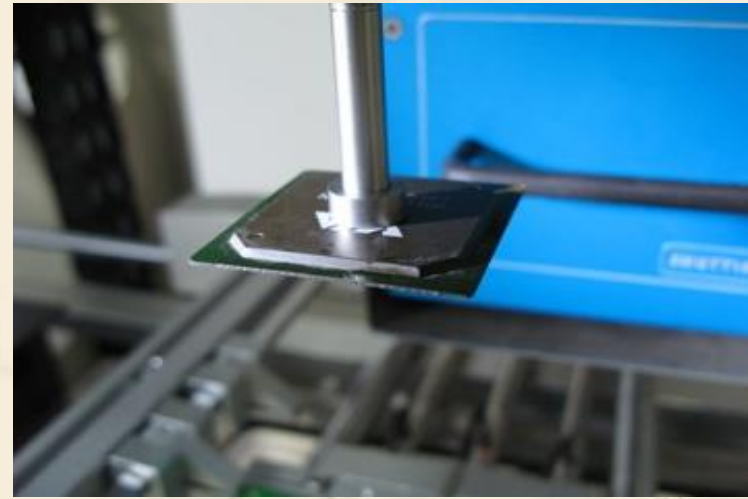
Blue image for IC,
yellow image for PCB

2.SV-650 Hardware—Alignment & Placement System

Hot air head and mounting head are designed 2 in 1, and have both the auto soldering and mounting function, easy to operate.



BGA placement



BGA Removal 拆焊

2.SV-650 Hardware—Alignment & Placement System

Pressure from the suction to the IC can be micro-adjusted, minimum pressure less than 30g,ensure BGA not leak lead while heating.



压力测试



配套吸杆

2.SV-650 Hardware—clamping Device

Clamping device: Specially designed with flexibly-moving clamping device to clamp all kinds of PCB, also equipped with particular clamps for laptop motherboard



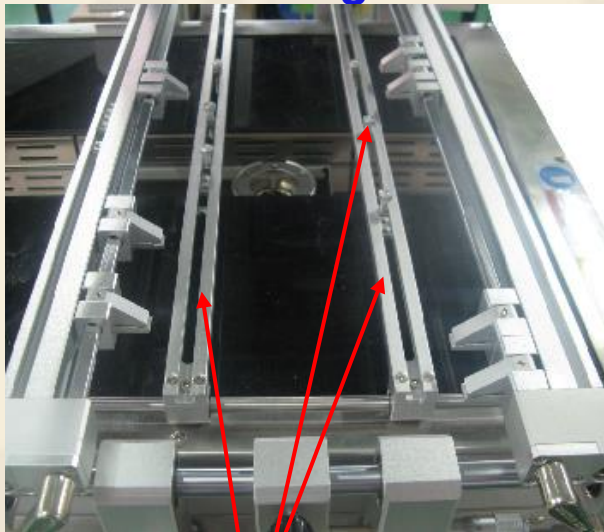
***flexibly-moving
clamping device***



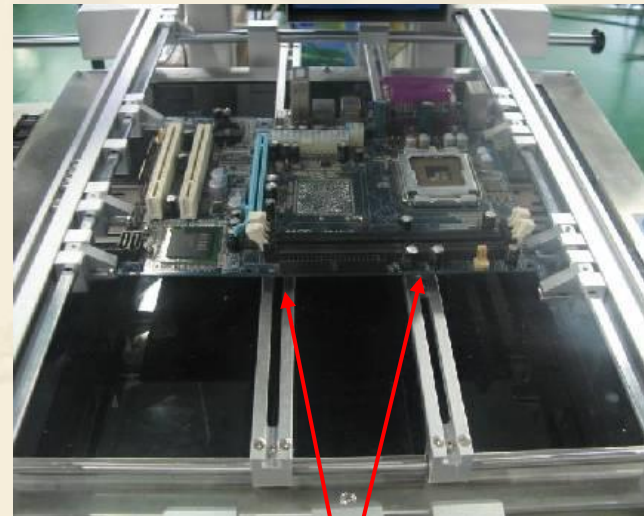
***Particular clamps for
laptop motherboard***

2.SV-650 Hardware—clamping Device

Clamping device: Special anti-warpage design ,the support pillars can be adjusted up & down to support the board to prevent the PCBA from sinking while heating.



Anti- Warpage support



Anti- warpage support working diagram

3.SV-650 Software Introduction—Adjustment Interface

Control interface: RW-SV650 with touch screen interface, PLC control; able to display real-time temperature curves and detecting temperature curves at the same time



Startup screen



Main operation screen

3.SV-650 Software Introduction—Adjustment Interface

Adjustment interface : Able to arrive at three independent temperature zones, temperature and time can be displayed digitally on the touch screen, 8 segments of temperature up (down) and 8 segments constant temperature control, more than 50000 groups of profile can be stored.

Shenzhen Shuttle Star Technology Co., Ltd. 2012-10-17 09:55:25 WED

Menu Set Para. Analyze Pro. Adv. Para. Help Camera Adjust

PCB **Leadfree** Nozzle **38**

Top	1	2	3	4	5	6	7	8	Pre. Temp	Offset
Rate	200.0	200.0	200.0	200.0	200.0	0.0	0.0	0.0	0	0
Target Temp	55.0	205.0	180.0	250.0	200.0	0.0	0.0	0.0		
Dwell Time	45	80	45	85	5	0	0	0		
Lower	1	2	3	4	5	6	7	8	Pre. Power	Cooling
Rate	200.0	200.0	200.0	200.0	200.0	0.0	0.0	0.0	0	40
Target Temp	55.0	205.0	180.0	260.0	280.0	0.0	0.0	0.0		
Dwell Time	45	80	45	20	70	0	0	0		
Bottom									Bottom	Alarm
									300	0

Pb Select Pb

Parameter Setting

PCB: **LEADED** PCB SUI: **2**

NO.	Name down	NO.	Name up
1	LEADED	11	
2	LEADED FREE	12	
3		13	
4		14	
5		15	
6		16	
7		17	
8		18	
9		19	
10		20	

Up NO.: 1 Page: 1 Down

Delete Load Close

Profile Name Setting

3.SV-650 Software Introduction—Analysis Interface

Analysis interface: able to display 1 practically-tested temperature curve at the same time, and auto-calculate the preheat time, reflow time and max temp, so to control temp. of every point of BGA overall; can create profile for every kind of BGA accordingly.



profile analysis column



Analysis for points

3.SV-650 Software Introduction—Instant Regulation

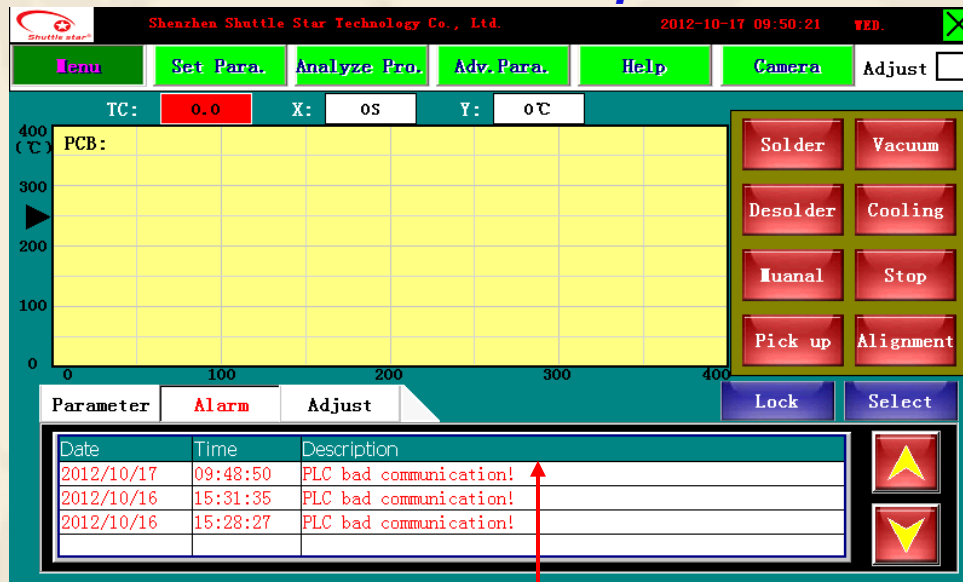
Instant regulation: During heating, if find the TC temperature too low or too high, parameters can be changed while it is heating under the Instant Regulation function to avoid repeat heating.



Click "L" or "T" in the down column to change parameters while heating

3.SV-650 Software Introduction—Alarm Interface

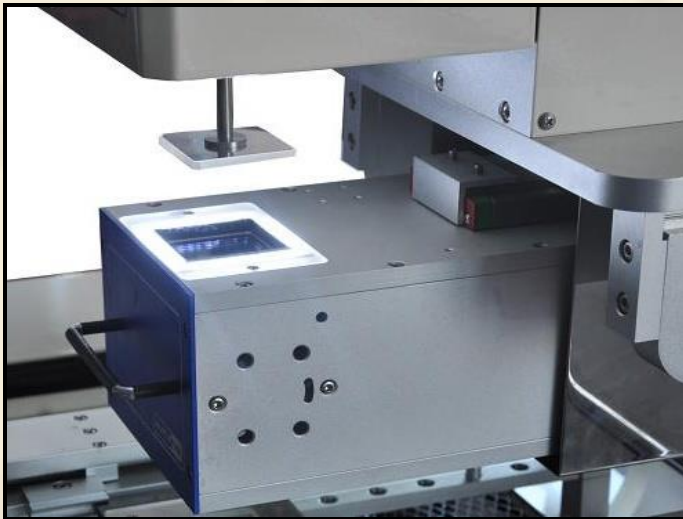
Alarm Interface: Under this menu, it points out troubles and error while machine is working. By this caution, we may know what problem the machine faces and make quick trouble shooting.



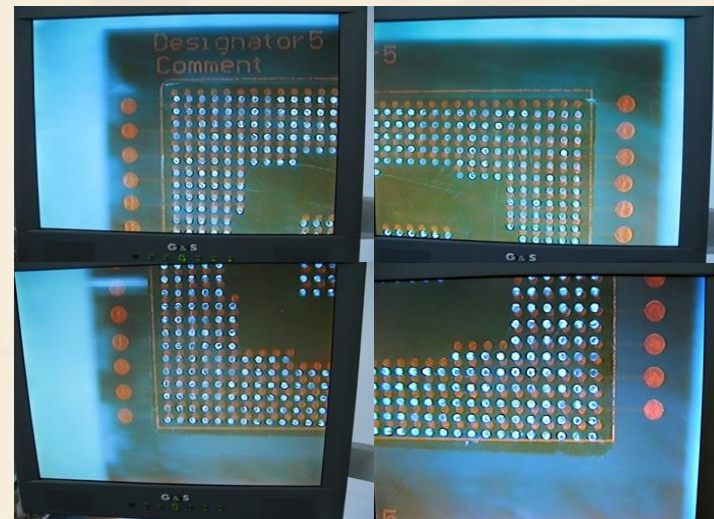
Abnormal alarm event description

4.SV-650 Accuracy Testing —Placement Accuracy

Optical Alignment System: Color optical vision system, with auto focus, 27X optical focus; 220X digital focus; able to rework BGA sized up to 70mm*70mm



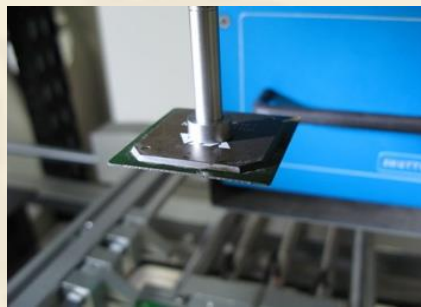
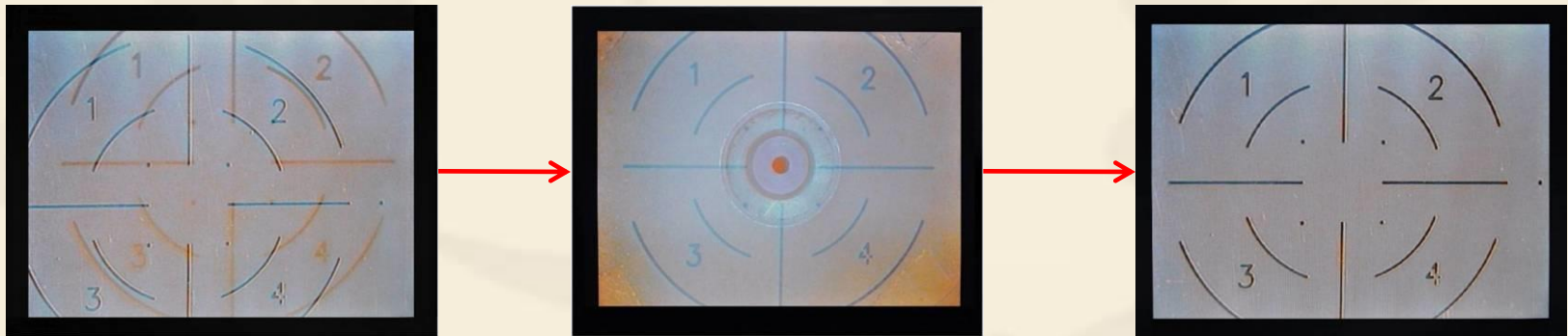
Alignment through camera



Color image in display

4.SV-650 Accuracy Testing —Placement Accuracy

Alignment accuracy: auto servo system controls placement, desolder and solder; placement accuracy reaches 0.01mm, which is suitable for the smallest IC with pitch of 0.30mm



Desolder & Solder



Placement

5.SV-650 Specification

Max.control area	120mm x 120mm
Max.PCB thickness	4mm
Max.BGA size	70mm x 70mm
Min.BGA size	1mm x 1mm
Max. BGA weight	80g
Vision System Specifications	
Max. visible area	40mm x 40mm
Min. Pitch	.30mm
Micrometer Adjust Range	Front/Rear \pm 10mm Left/Right \pm 10mm
Rotation Angle	60°
Thermal Specifications	
Max.temp.for hot-air heater	350° C
Max.temp.for IR heater	400° C
Temperature control	8-Stage Programmable Temperature Settings
Top heater power	1200W
Spot heater power	800W
Bottom IR heater power	3600W
Dimensions & Power Requirements	
Machine Dimension	850mm (L) 750mm (W) 630mm (H)
Weight	Appox 92Kg
Power Supply	Single Phase, 220VAC, 50/60 Hz,

6.SV-650的专利与获奖



Thanks for your time !

深圳市效时科技有限公司
SHENZHEN SHUTTLE STAR TECHNOLOGY CO., LTD.

Tel : +86-755- 27512579 Fax : +86-755-27513966

Website : www.shuttlestar-global.com www.shuttlestar.cn

Email: assistant@shuttlestar.cn office@shuttlestar.cn