



BGA Rework Station RW-E6250U Introduction



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1.RW-E6250U Profile—Parts Introduction



**High-definition
monitor**

Cross-flow fan

Stop switch

**PLC control
screen**

Upper heating

**High-definition
Vision system**

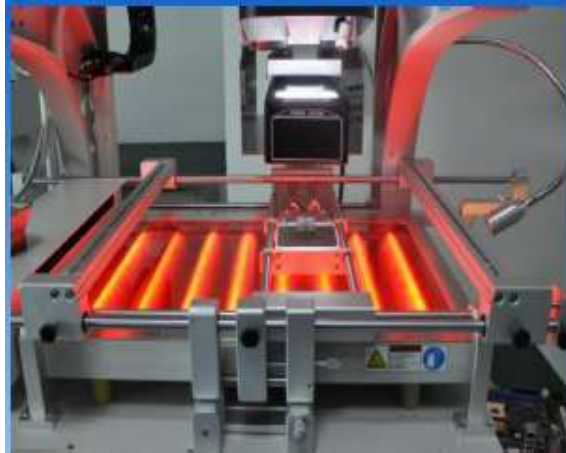
Independent heating

Rocking lever

1.RW-E6250U Profile—Features

- Hot air head and mounting head are designed 2 in 1, and have both the auto soldering and mounting function;
- 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, 27X optical focus; able to rework BGA sized up to 70mm*70mm;
- Touch screen interface, PLC control; able to display temperature curves and five detecting curves at the same time;
- Color LCD monitor;
- Built-in vacuum pump; 360 ° rotation in Φ angle; mounting nozzle is micro-adjustable;
- 16 segments of temperature up (down) and 16 segments constant temperature control, more than 50000 groups of profile can be stored.; Profile analysis can be carried out on the touch screen and has the communication function as computers ,with software attached;
- Able to arrive at three independent temperature zones, temperature and time can be displayed digitally on the touch screen, able to rework CGA;
- The supports rack can be adjusted to restrain the local sinkage of the BGA soldering area;
- Suction nozzle can identify material and mounting height automatically, and can control the air pressure within a small range;
- Both upper and lower hot-air heating head are movable on the IR preheating area to fit for reworking BGA in different positions on PCB;
- Equipped with different alloy hot air nozzles, easy to replace and able to locate in any angle;
- Driven by the servo motor, the integrative hot air head can store 20 groups of different BGA heating points and register marks.

2.RW-E6250U Equipment structure introduction



High-definition Vision system



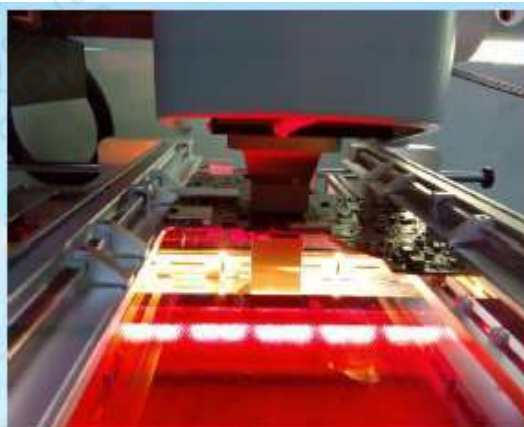
Mobile flexible fixture



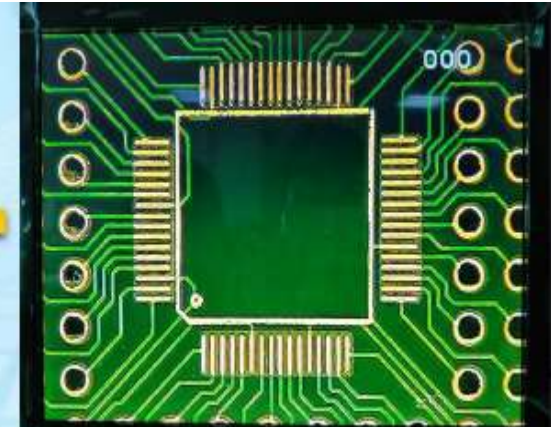
Alignment system



BGA desoldering



BGA placement



Alignment imaging

2.RW-E6250U Hardware Compose—Heating System

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



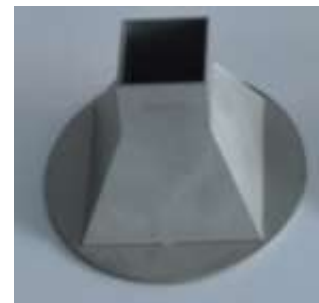
44x44mm



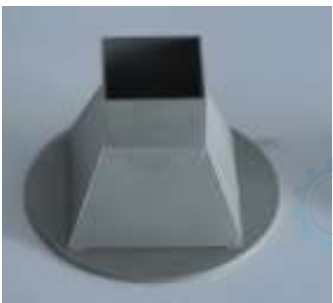
38x38mm



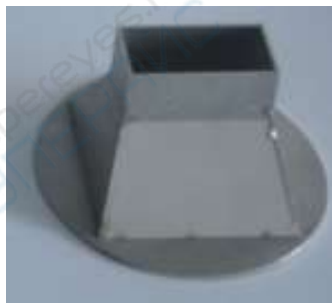
31x31mm



24x24mm



28x28mm



44x28mm



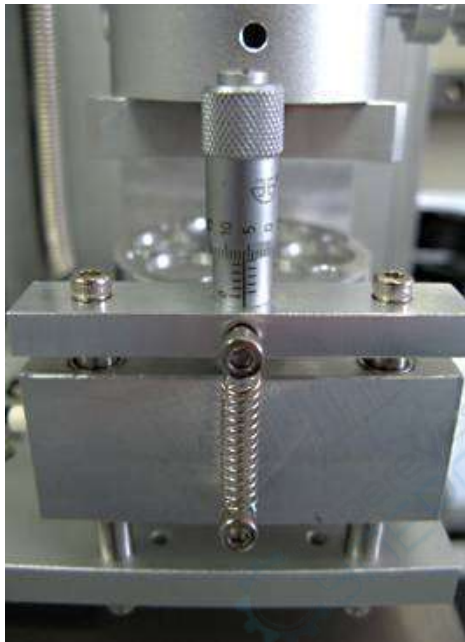
18x8mm



7x7mm

2.RW-E6250U Hardware —Alignment and placement system

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



Pressure micro-adjustment device



Pressure testing



Suction nozzles in package



2.RW-E6250U 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.



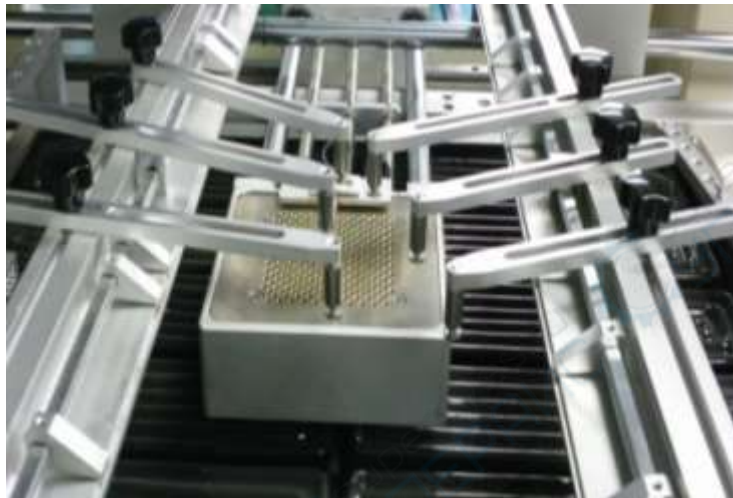
Flexibly-moving clamping device



Particular clamps for laptop motherboard

2.RW-E6250U Hardware —Clamping device

Clamping device: Clamps installing schematic diagram; the irregular PCB like laptop motherboard can be grasped flatly by the clamps.



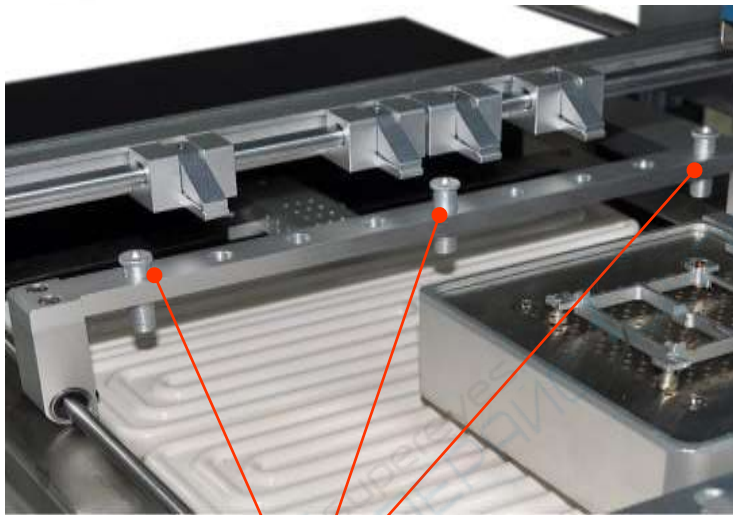
Installing diagram



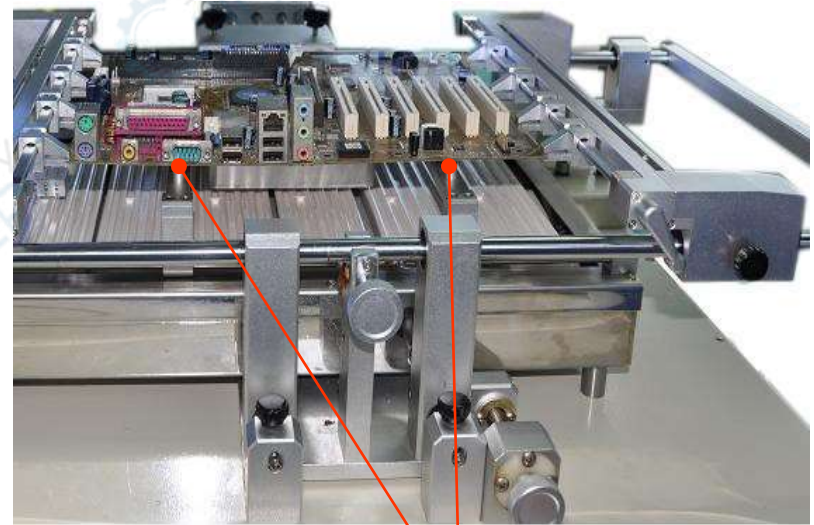
Clamping diagram

2.RW-E6250U 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.



Support pillar



**Support pillar
working diagram**

3.RW-E6250U Software Introduction—Operation Menu



Control menu: RW-E6250U with touch screen interface, PLC control; able to display temperature curves and five detecting curves at the same time



Startup screen



Main operation screen

3.RW-E6250U Software Introduction—Adjustment Menu

Adjustment menu: Able to arrive at three independent temperature zones, temperature and time can be displayed digitally on the touch screen, 16 segments of temperature up (down) and 16 segments constant temperature control, more than 50000 groups of profile can be stored.



Top	1	2	3	4	5	6	7	8
Rate	200.0	200.0	200.0	200.0	200.0	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
Rate	200.0	200.0	200.0	200.0	200.0	0.0	0.0	0.0
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

Pre. Temp: 0, Offset: 0, Pre. Power: 0, Cooling: 40, Bottom: 300, Alarm: 0

Pb: ☐ Select ☐ Pb ☒

Parameter setting



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.RW-E6250U Software Introduction—Analysis Menu

Analysis menu: Able to display 5 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

Screenshot



Analysis for points

3.RW-E6250U 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.RW-E6250U Software Introduction—Alarm Menu

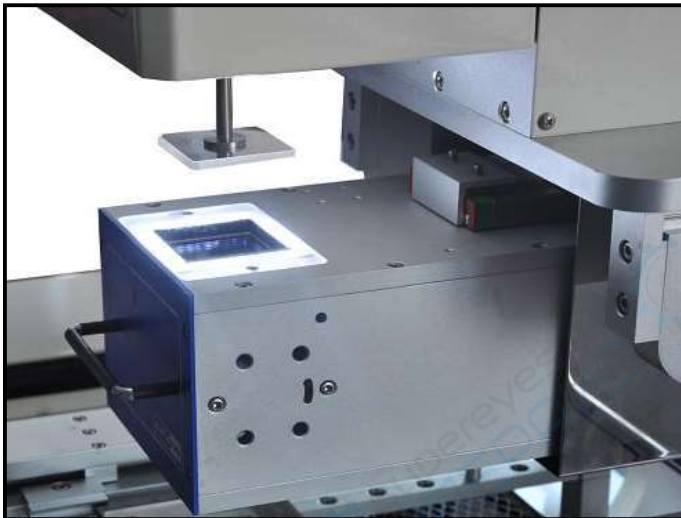
Alarm Menu: Under this menu, it pints out troubles and error while machine is working. By this caution, we may know what problem the machine faces and make quick trouble shooting.



Abnormal alarm event discription

4.RW-E6250U Testing Accuracy—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.RW-E6250U Testing Accuracy—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



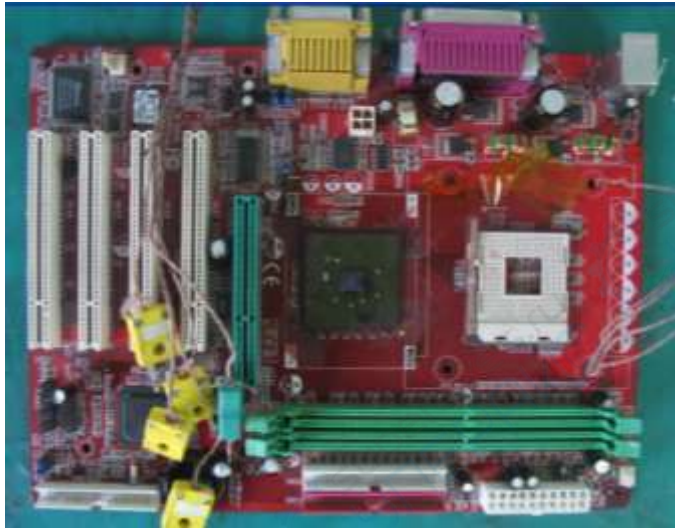
Desolder & solder



Placement

4.RW-E6250U Testing Accuracy—Temp. Proportionality Testing

Temp.proportionality testing : First, to make a testing board
。 Applying SMT technology, make 5 holes at the back side of the BGA. The 5 holes should be at the 4 angles and the center, shows as following picture:



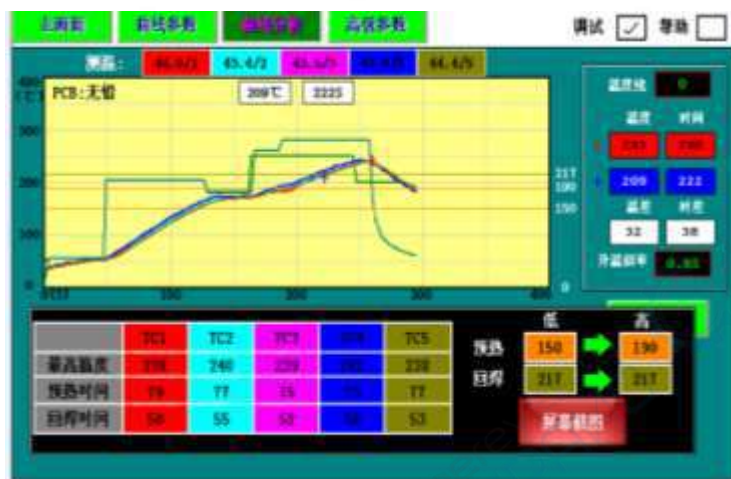
Front view



Back view

4.RW-E6250U Testing Accuracy—Temp. Proportionality Testing

Temp.proportionality testing : Third, after repeat testing, we judge the proportionality of 5 points' temperature by comparing the temperature difference among those 5 points.



Max temp. : 242 °C

test1

Min temp : 238 °C

Temp.difference : 4 °C



Max temp : 242 °C

test 2

Min temp : 241 °C

Temp.difference : 1 °C

4.RW-E6250 U Testing Accuracy—Temp. Stability Testing (1)

Temp.proportionality testing : To compare the temp. value of the same point in 2 testing to test the stability of the heating system.



TC1 temp.diff. : 240 °C--238 °C=2 °C

TC2 temp.diff. : 240 °C--239 °C=1 °C

TC3 temp.diff. : 239 °C--239 °C=0 °C



TC4 temp.diff. : 242 °C--239 °C=3 °C

TC5 temp.diff. : 239 °C--238 °C=1 °C

Max temp.diff. : 242 °C--239 °C=3 °C

4.RW-E6250U Testing Accuracy—Temp. Stability Testing (2)

Temp.proportionality testing : To compare the temp. value of the same point in 2 testing to test the stability of the heating system.



TC1 temp.diff. : 240 °C--238 °C=2 °C

TC2 temp.diff. : 240 °C--239 °C=1 °C

TC5 temp.diff. : 239 °C--238 °C=1 °C



TC3 temp.diff. : 239 °C--239 °C=0 °C

TC4 temp.diff. : 242 °C--239 °C=3 °C

Max temp.diff. : 242 °C--239 °C=3 °C

5.RW-E6250U Specification



SPEC:

PCB size W20*D20 ~ W600*D550 mm
The processing range W600*550 mm
PCB thickness 0.5 ~ 4mm
Suitable chip 1*1 ~ 80*80mm
Mounting accuracy $\pm 0.05\text{mm}$
Minimum spacing 0.15mm
Degree of automation Intelligent full-automatic
Visual alignment system High definition
Heating zone three temperature zones
Temperature curve upper and lower eight temperature zones
Temperature measurement channel Five
Interface The human-machine interface is displayed both in English and Chinese

6. RW-E6250 U Patent & Awards

