QUICK BGA2015

Precision BGA Rework System

Features:

1. **IR2015 Infrared Reflow Soldering Section:**
   Infrared temperature sensor monitors BGA surface temperature to ensure precise temperature technical window. Even heat distribution, real closed-loop control.

2. **PL2015 Precise Aligning and Placing System:**
   Visible double-color optical alignment. Accurate alignment and overlap between solder ball and soldering pad; Easy to control and place components.

3. **RPC2015 Reflow Camera:**
   The melting course of BGA solder ball can be observed from different angles which provides critical information to get accurate and reliable process curve.

4. **IRsoft Software:**
   By means of PC, the whole process can be recorded, controlled and analyzed and then generate the curve diagram to meet the demands of modern electronic industry.

Specifications:

☆IR Infrared Rework System

Model	IR2015
General Power	2800Watt(max)
Power of Bottom Heater	500W*4=2000Watt or 400W*4=1600Watt(High Infrared heating tube/ Dark Infrared heater optional)
Power of Top Heater	180W*4=720Watt (Infrared heating tube, wavelength about 2-8μm)
Size of Top Heater	60*60mm
Size of Bottom Heater	267*280mm
Adjusting Range of Top Heater	20-60mm(X, Y direction both adjustable)
Vacuum Pump	12V/300mA, 0.05Mpa(max)
Top Cooling Fan:	12V/300mA, 15CFM
Laser Alignment Tube	3V/30mA
Movable Motor	24V DC/100mA
Movable Arm Range	93mm
Max PCB Size	420mm*500mm
LCD Display Window	65.7*23.5mm 16*2 characters
Communication	RS-232C(connect with PC)
Infrared Temperature Sensor	0-300℃(Testing Range)
Outside K-type Sensor	Optional

☆PL Precision Placement System

Model	PL2015
Power	About 15Watt
Camera	22*10 times magnifying; 12V/300mA Horizontal resolution: 480 lines; PAL format
Lens Size	60mm*60mm
Size of BGA to be aligned	60mm*60mm
Vacuum Pump	12V/600mA 0.05Mpa(max)
Camera Output Signal	Video Signal
Weight	22kg

☆RPC Reflow Soldering Process Camera

Model	RPC2015
Power	About 15Watt
Camera	22*10 times magnifying; 12V/300mA; Horizontal resolution: 480 lines; PAL format

Main Parts:

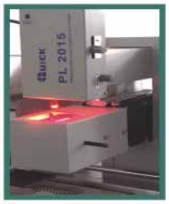
☆Infrared Heating System

Open-type dark infrared heating, non-contact infrared temperature sensor monitors the changes of BGA surface temperature to ensure precise temperature technical window, even heat distribution and real closed-loop control.

Top infrared heating tube with 2-8μm long wave: 720Watt. Can adjust heating area according to sizes of BGA to protect adjacent components from being heated. No need for nozzles to save cost.

Use 4 sets of dark infrared heating plate at bottom side with large power of 1600Watt. The heating plate can preheat bigger PCB evenly to prevent it from being distorted and damaged.

☆Optical Lens Aligning

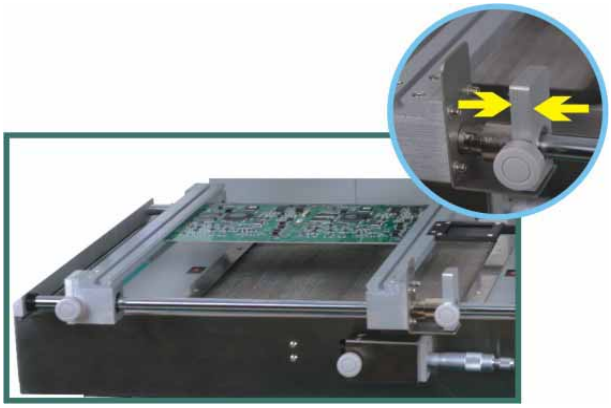


Use optical lens to align components. Red top light and white bottom light which brightness can be adjusted. The lens reflects light to make the light of BGA solder ball and PCB solder pat in line with each other.

Through camera of PL, solder ball and solder pat can be clearly viewed in the monitor. By turning the knobs of X, Y axis and component control knob, solder ball displayed in red and solder pat in white can be completely overlapped.

When aligning, fine adjustment from X, Y, Z angles can be done to get the most accurate aligning effects.

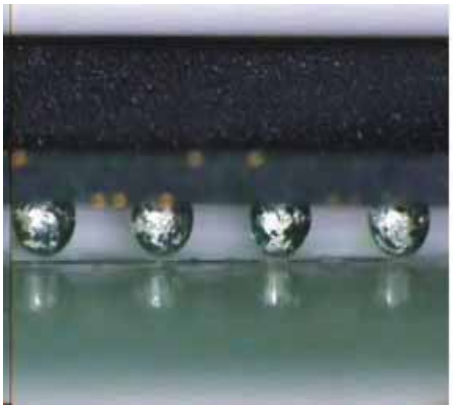
Component aligning knob can make BGA 360° rotating.



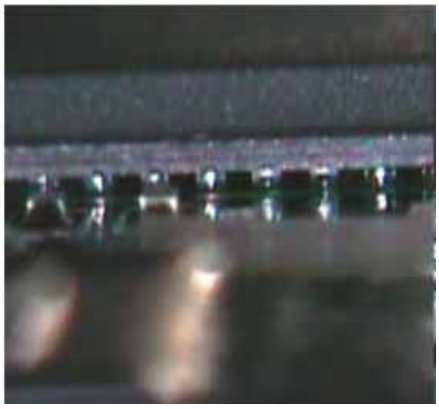
The flexible PCB supporting rod can effectively fix PCB and absorb the expansion force resulted from heating or cooling to avoid the distortion of PCB.

For special PCB, different clamps can be used to fix it. For large PCB, the bottom supporting rod is available to avoid the distortion.

☆RPC2015



The image of BGA solder ball before collapsing

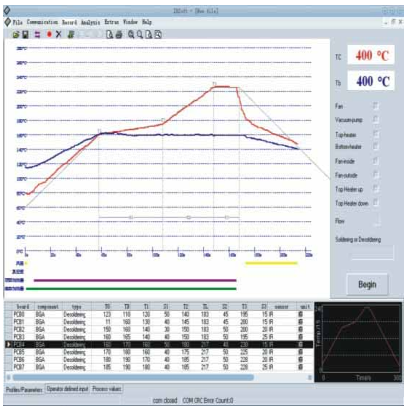


The image of BGA solder ball after collapsing

RPC2015 is used to monitor melting, collapsing of solder ball and formation of soldering joint in reflow soldering process. It can move in all directions to observe from different angles.

IRsoft:

IRsoft is particularly for BGA2005&BGA2015. It can be used to view, record, set and analyze the temperature curve of every reflow soldering process.



◇The reflow soldering process of BGA includes 5 phases: preheating, temperature preserving, activating, soldering, cooling. Among which the temperature in three phases(temperature preserving phase, activating and soldering phases) as well as the temperature rising speed are particularly important.

◇Temperature Preserving Phase: Eliminate the temperature differences between components or between PCB and components to protect PCB from being distorted and damaged.

◇Activating Phase: Completely activate flux for soldering.

◇Soldering Phase: The heater heats up continuously. Temperature reaches up to peak value to melt the BGA solder ball completely and then make it and solder pad well soldered.

◇TL: Melting temperature of solder. Generally, lead free solder material 217℃, lead solder material 183℃.

◇T1: Starting temperature in temperature preserving phase.

◇T2: End temperature in temperature preserving phase.

◇T1-T2: Temperature determined according to the size of BGA, thickness of PCB and the quantity of components on PCB.

◇T3: The peak temperature of reflow soldering. Generally, lead free solder material 235℃, lead solder material 200℃.

◇T0: Value temperature, the temperature of bottom heater which allows the top heater to start

heating

◇TB: The set temperature of bottom heating.

◇Tb: Real-time temperature of bottom heating.

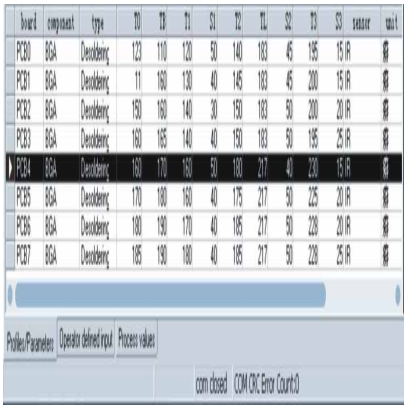
◇Tc: BGA Real-time temperature.

◇S1: Heating time rising from T1 to T2.

◇S2: Heating time rising from T2 to T3.

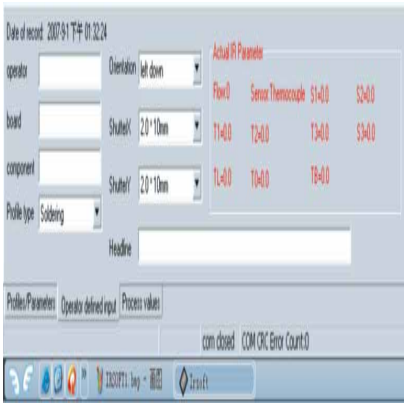
◇S3: Prolonged heating time after the temperature reaches T3.

☆Parameter Setting Interface



Set process parameter and upload, download, copy and paste data.

☆Operator Input Interface



Completely display current temperature of soldering process and operating information of BGA and PCB.

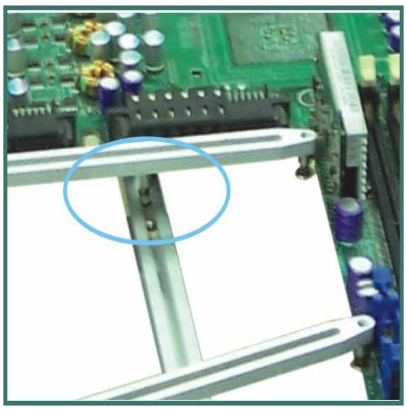
☆Clamp

For special PCB or those PCBs with sorts of sockets, connectors, clamps of different length can be used to fix them.

☆Nozzles

The nozzles used to pick up BGA while desoldering and nozzles needed while aligning can be selected according to the sizes of BGA/CSP.

☆PCB Bottom Supporting Rod



☆Operation Diagram