

## Precision BGA E2005 Rework System



### Features:

1. No need for nozzles. No air flow during re-flow process.
2. Use non-contact infrared temperature sensor to real-timely measure temperature and achieve closed loop control of temperature during rework process, suitable for lead free process.
3. Reflecting foil can be used to reduce thermal transmission to adjacent components.
4. Can use process camera to monitor re-flow process of soldering joints during BGA rework process.
5. No air flow during the course of BGA re-balling; Nearly 100% successful BGA re-balling.

### Specifications:

#### IR Infrared Rework System

Model	IR2005
General Power	1600Watt(max)
Power of Bottom Heater	400W*2=800Watt(Dark Infrared heating plate)
Power of Top Heater	180W*4=720Watt (Infrared heating tube, wavelength about 2-8 $\mu$ m)
Size of Top Heater	60*60mm
Size of Bottom Heater	135*250mm

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	300mm*300mm
LCD Display Window	65.7*23.5mm 16*2 characters
Soldering Station	Intelligent Digital Lead Free Soldering Station
Soldering Power	60Watt
Communication	RS-232C(connect with PC)
Infrared Temperature Sensor	0-300°C(Testing Range)
Outside K-type Sensor	Optional
Weight	About 13kg

### PL Precision Placement System

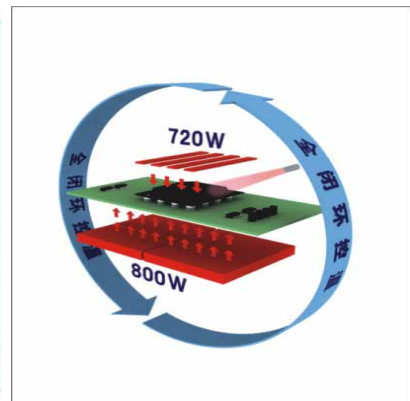
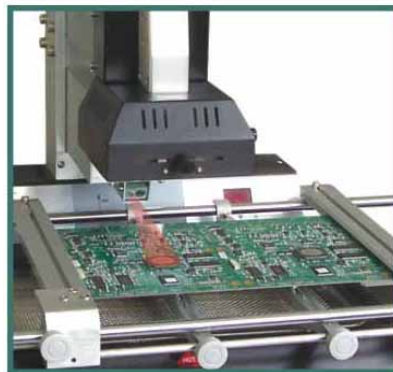
Model	PL2005
Power	About 15Watt
Camera	22*10 times magnifying; 12V/300mA Horizontal resolution: 480 lines; PAL format
Lens Size	40mm*40mm
Size of BGA to be aligned	40mm*40mm
Vacuum Pump	12V/600mA 0.05Mpa(max)
Camera Output Signal	Vedio Signal
Weight	22kg

### RPC Reflow Soldering Process Camera

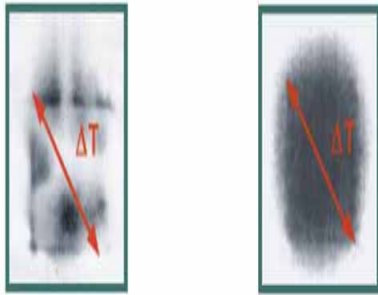
Model	RPC2005
Power	About 15Watt
Camera	22*10 times magnifying; 12V/300mA; Horizontal resolution: 480 lines; PAL format

### 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.



Dark infrared heating technology with 2-8 $\mu$ m long wave minimizes temperature differences to the largest extent to avoid damages resulted from long dipping, cold soldering and overheating.



Bottom dark infrared ceramic heating plate: 800Watt; The heating plate can preheat PCB evenly to prevent it from being distorted and damaged. Top dark infrared heating tube: 720Watt; Heating area can be adjusted according to sizes of BGA. When process is over, vacuum generated automatically picks up BGA components and return to the original position automatically.

### **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.

### **RPC2005**



RPC2005 is used to monitor melting, collapsing of solder ball and formation of soldering joint in reflow soldering process. As the aligning arm holds out or draws back, the system automatically interchange the video signal. RPC can move in all directions to observe from different angles.

## Soldering Station



Intelligent digital type: High frequency current heating; Easy to clean soldering pad.

## Several types of Combinations



IR2005+Simple PCB Fixture+RPC



IR2005+Simple PCB Fixture



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°C, lead solder material

183°C.

◇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°C, lead

solder material 200°C.

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

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

board	component	type	T0	T8	T1	S1	T2	T4	S2	T3	S3	sensor	unit
PCB0	BGA	Desoldering	123	110	120	50	140	183	45	195	15	IR	°C
PCB1	BGA	Desoldering	11	160	130	40	145	183	45	200	15	IR	°C
PCB2	BGA	Desoldering	150	160	140	30	150	183	50	200	20	IR	°C
PCB3	BGA	Desoldering	160	165	140	40	150	183	50	195	25	IR	°C
PCB4	BGA	Desoldering	160	170	160	50	180	217	40	200	15	IR	°C
PCB5	BGA	Desoldering	170	180	160	40	175	217	50	225	20	IR	°C
PCB6	BGA	Desoldering	180	190	170	40	185	217	50	220	20	IR	°C
PCB7	BGA	Desoldering	185	190	180	40	185	217	50	220	25	IR	°C

Profile/Parameters Operator defined input Process values

com closed COM (COM Error Count:0)

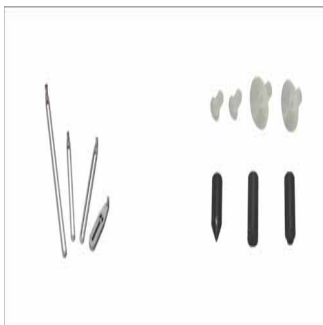
Set process parameter and upload, download, copy and paste data.

### 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.

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**

