Main Parts
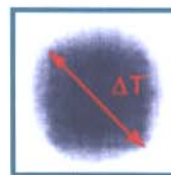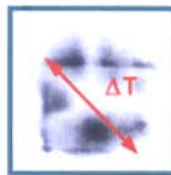
IR2005

Open-type dark infrared heating, non-contact infrared temperature sensor monitors the change 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 μ m long wave minimizes temperature differences to the largest extent to avoid damages resulted from long dipping, cold soldering and overheating.
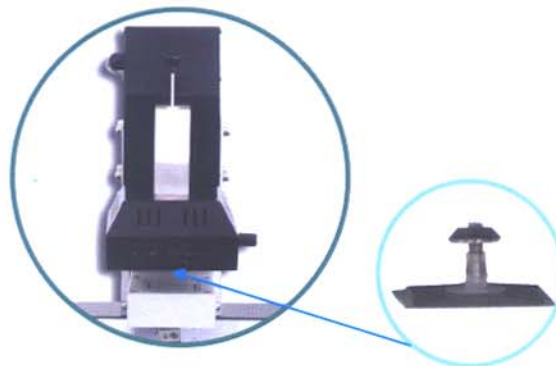
Bottom dark infrared ceramic heating plate: 800W; The heating plate can preheat PCB evenly to prevent it from being distorted and damaged. Top dark infrared heating tube: 720W; Heating area can be adjusted according to sizes of BGA. When process is over, vacuum generated automatically picks up BGA components and return to the original position automatically.

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soldering

## PL2005 Optical Lens Aligning
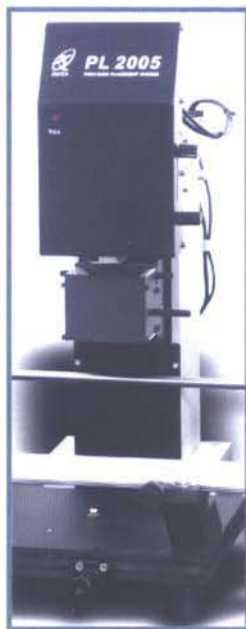
PL2005

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 will be completely overlapped.

RPC2005
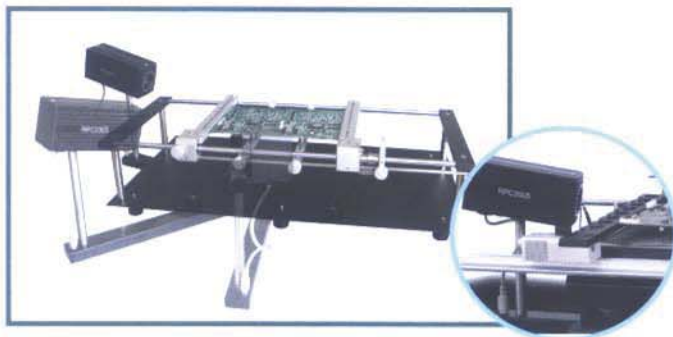
It's used to monitor melting , collapsing of solder ball and formation of soldering joint in reflow soldering process. As the aligning arm holds out or draws back, the system automatically interchange the video signal.

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.

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QK2005 IR + Simple PCB Fixture + RPC

Qk2005 IR + Simple PCB Fixture

QK2005 IR + Orbital PCB Fixture + RPC

QK2005 IR + Orbital PCB Fixture

PCB Fixtures (Optional): 1. Simple Fixture   2. Orbital Fixture

Bottom Preheating Area (Optional)
1、135mm*250mm   2、265mm*280mm

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soldering

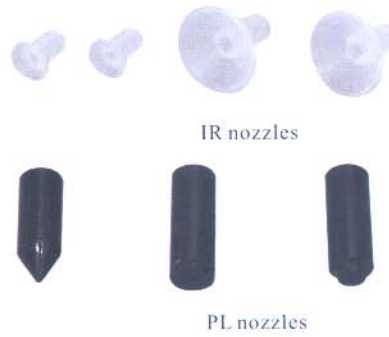## Clamp
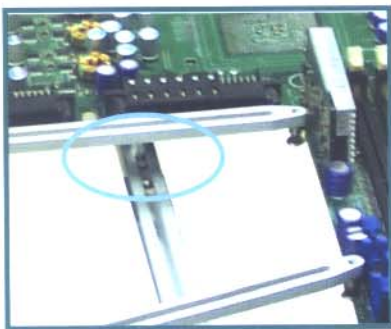
For special PCB or those PCBs with sorts of sockets, connectors, clamps of different length can be used to fix them.
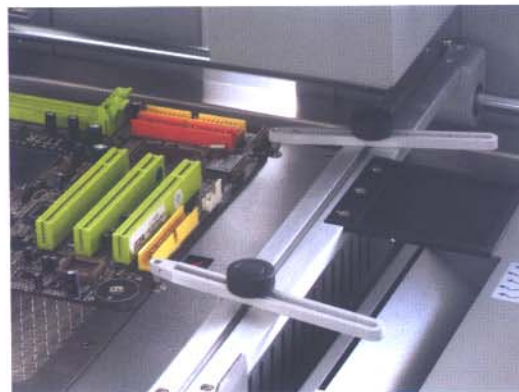
Nozzles

IR nozzles

PL nozzles

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

PCB Bottom Supporting Rod

Operation Diagram

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soldering

QUICK 2015

IR   IR Infrared Rework System

Model:	IR2015
General Power:	2800W （max）
Power of Bottom Heater:	500W×4=2000W
	or 400W×4=1600W （High Infrared heating tube/ Dark Infrared heater optional）
Power of Top Heater:	180W×4=720W
	（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:	24VDC/100mA
Movable Arm Range:	93mm
Max PCB Size:	420mm×500mm
LCD Display Window:	65.7×23.5mm 16×2个字符 characters
Communication:	RS-232C （可与PC联机 connect with PC）
Infrared Temperature Sensor:	0～300℃ （测温范围 Testing Range）
Outside K type Sensor:	可选件 Optional

PL Precision Placement System

Model:	PL2015
Power:	约15W
Camera:	22×10倍放大；12V\300mA；水平清晰度480线；PAL制式
	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:	视频VIDEO信号 Video Signal
Weight:	22Kg

RPC Reflow Soldering Process Camera

Model:	RPC2015
Power:	15W
Camera:	22×10 12V/300mA;
	22×10 times magnifying; 12V/300Ma;
	Horizontal resolution : 480 TV lines; PAL format

Main Parts

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

Top Heating

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

Bottom Preheating

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

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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.

RPC2015
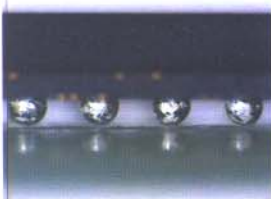
The image of BGA solder ball before collapsing

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.

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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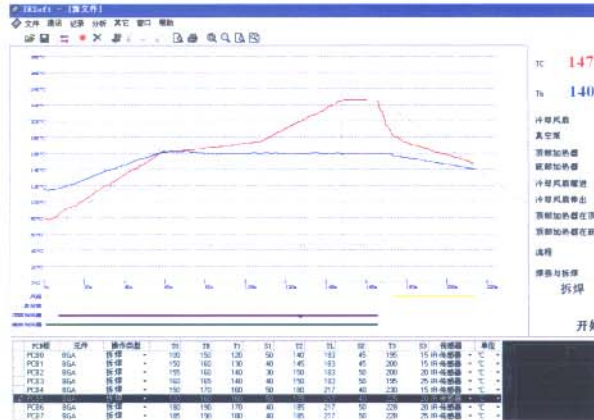 temperatures in three phases (temperature preserving phase, activating and soldering phases) as well as the temperature rising speed are particularly important.
- Temperature Preserving Phase: Eliminate the temperature differences between components or between PCB and components to protect PCB from being 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 starting heating
- TB: The set temperature of bottom preheating
- 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

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soldering

Parameter Setting Interface

	PCB板	元件	操作类型	T0	TB	T1	S1	T2	TL	S2	T3	S3	传感器	单位	起始引脚1	光圈X	光圈Y
▶	PCB0	BGA	拆焊 ▾	100	150	120	50	140	183	45	195	15	IR 传感器 ▾	℃ ▾	左上 ▾	3.0*10mr ▾	2.5*10mr ▾
	PCB1	BGA	拆焊 ▾	150	160	130	40	145	183	45	200	15	IR 传感器 ▾	℃ ▾	左上 ▾	3.0*10mr ▾	2.5*10mr ▾
	PCB2	BGA	拆焊 ▾	155	160	140	30	150	183	50	200	20	IR 传感器 ▾	℃ ▾	左上 ▾	3.0*10mr ▾	2.5*10mr ▾
	PCB3	BGA	拆焊 ▾	160	165	140	40	150	183	50	195	25	IR 传感器 ▾	℃ ▾	左上 ▾	3.0*10mr ▾	2.5*10mr ▾
	PCB4	BGA	拆焊 ▾	150	170	160	50	180	217	40	230	15	IR 传感器 ▾	℃ ▾	左上 ▾	3.0*10mr ▾	2.5*10mr ▾
	PCB5	BGA	拆焊 ▾	170	180	160	40	175	217	50	225	20	IR 传感器 ▾	℃ ▾	左上 ▾	3.0*10mr ▾	2.5*10mr ▾
	PCB6	BGA	拆焊 ▾	180	190	170	40	185	217	50	228	20	IR 传感器 ▾	℃ ▾	左上 ▾	3.0*10mr ▾	2.5*10mr ▾
	PCB7	BGA	拆焊 ▾	185	190	180	40	185	217	50	228	25	IR 传感器 ▾	℃ ▾	左上 ▾	3.0*10mr ▾	2.5*10mr ▾

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

Operator Input Interface

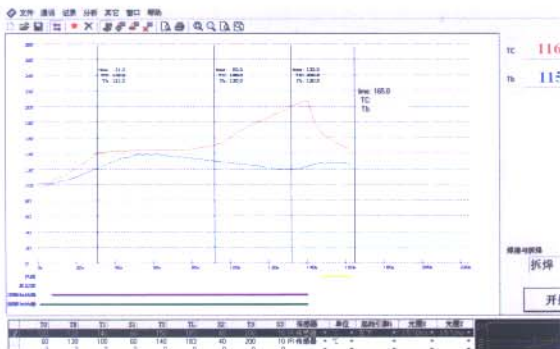2005-1-12 16:54:46

X   2.0 * 10mm

Y   2.0 * 10mm

S1=0.0   S2=0.0
T1=0.0   T2=0.0   T3=0.0   S3=0.0
TL=0.0   T0=0.0   TB=0.0

com opened   COM CRC Error Count:0

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

Other Functions

- Can set password to log on.
- Can set password for protecting parameters and can modify parameters.
- Fast uploading function available, Press 'Begin' key to start current process.
- Can analyze and study recorded temperature curve.

Meanwhile, can check historical process parameters and temperature curve. Can make a comparison between these two curves.

2006-1-11 10:01:17   位置
PCB0   光圈X   3.0 * 10mm
BGA   光圈Y   2.5 * 10mm

S1=60.0   S2=45.0
T1=120.0   T2=140.0   T3=195.0   S3=15.0
TL=183.0   T0=100.0   TB=150.0

com opened   COM CRC Error Count:0