BGA IRDA-WELDER User Manual

Model: T870A

CATALOGUE

Features

- **Unlike Air Re-Work systems, The T-870A uses an Infrared source and optics to target heat to individual components without dislodging other SMT parts by way of eddies air currents.**
- **Infrared soldering technology with independent exploration capabilities via focus lenses which is included in the package.**
- **Technician focused infrared heat is easy to target most component removal/replacement and re-work.**
- **The Workstation has a 180X240mm a 800W controlled Pre-heating System.**
- **Infrared heat source bulbs are long-lived, in-expensive and easily replaced.**
- **Processor controlled set-point regulated temperatures with thermocouple feed-back.**
- **Integrated and adjustable Infrared (IR) eye protection.**
- **Can suitable for the entire component, especially Micro BGA component.**
- **Extra soldering tools are not necessary. It can solder/unsolder and re-work Surface Mount Technology (SMT) components 35-50cm in size**
- **Training is illustrated in factory provided video.**
- **It can satisfy the maintain of computer, the notebook, the electricity swims and so on. Especially to the request of BGA sealing off/repairs, and computer north/south bridge。**

Technical parameter

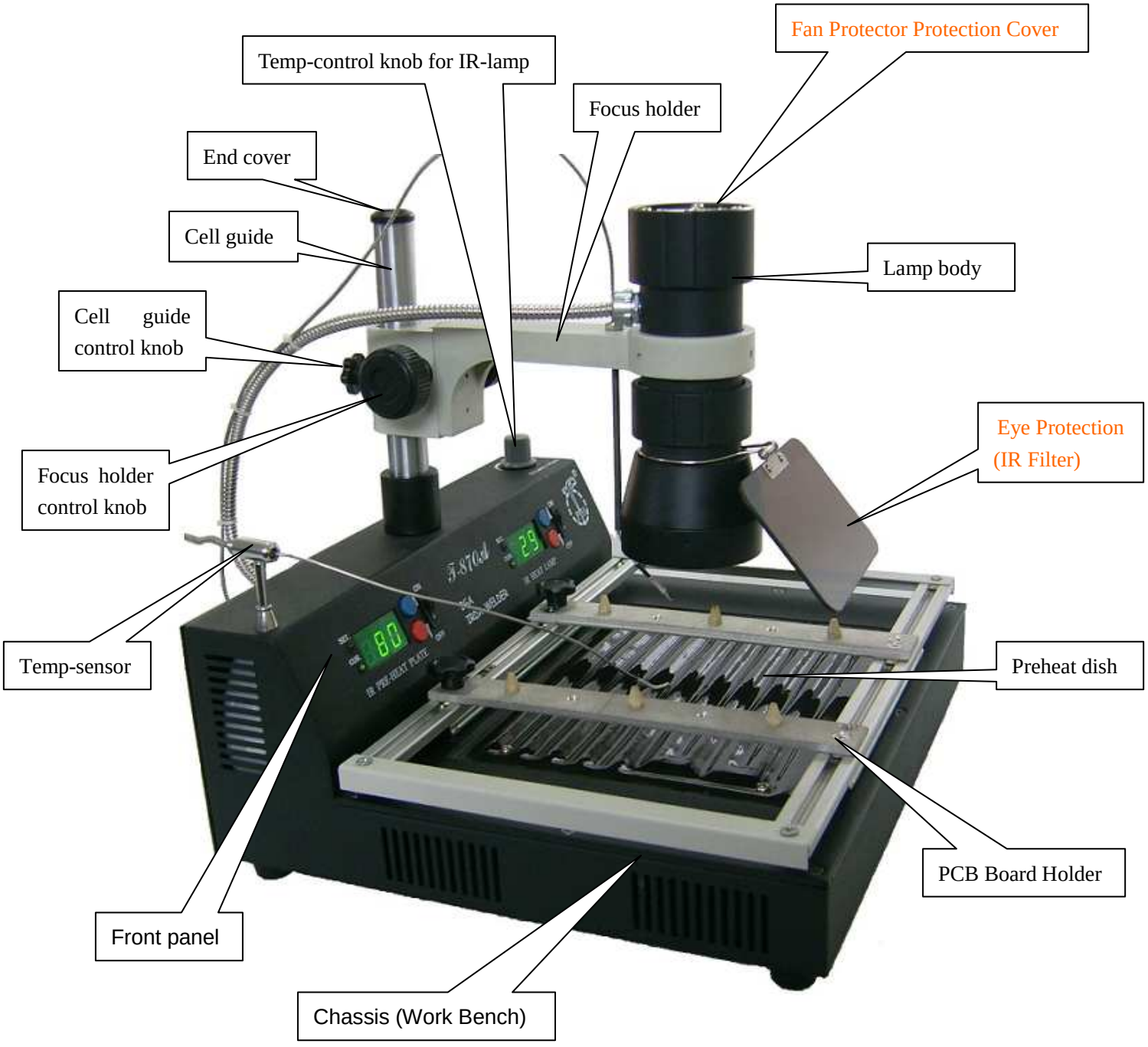
Working Voltage	**AC220V/50Hz AC110V/60Hz**
Output power	**1000W**
Infra-red lamp body temperature adjustable	**200℃-350℃**
Preheating dish temperature adjustable	**60℃-200℃**

Components

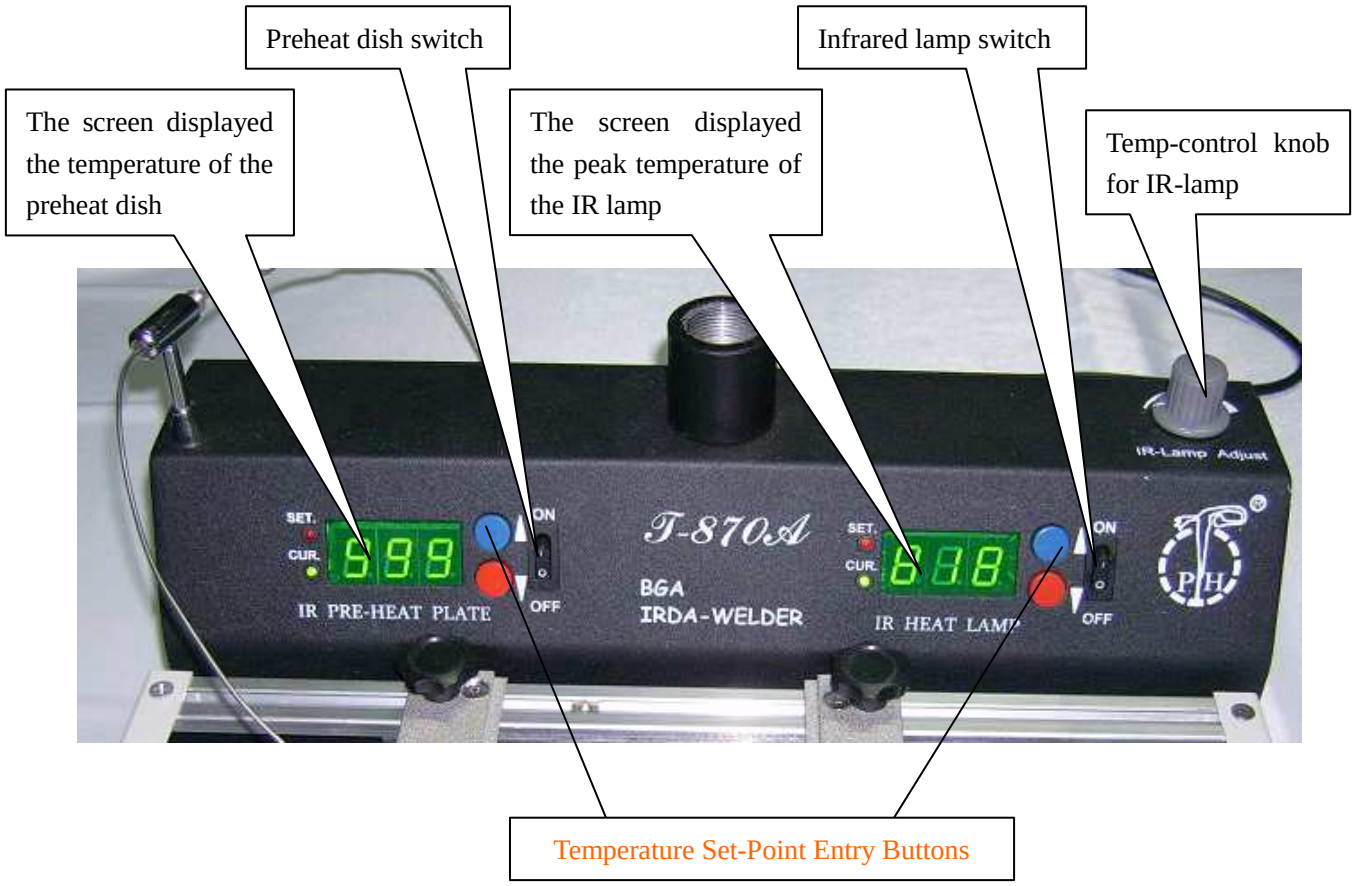
Description	Quantity	Illustration
T-870A Chassis	**1**	
PCB Board holder	**1**	
Lamp Body and Lens(D=48mm)	**1**	
Temp-sensor for IR-Lamp	**1**	
Temp-sensor for Pre-heat dish	**1**	
Eye protection(IR Filter)	**1**	
Cell guide	**1**	
Focus holder	**1**	
Focus holder control knob	**1**	
Fasten nut for focus holder	**1**	
Steady ring	**1**	
Fasten nut for steady ring	**1**	
Power Cable (110VAC or 200VAC)	**1**	
5mm Fuse, 10A 250VAC (Spare)	**1**	
CD User Manual w/Video	**1**	

T-870A Illustrated explain

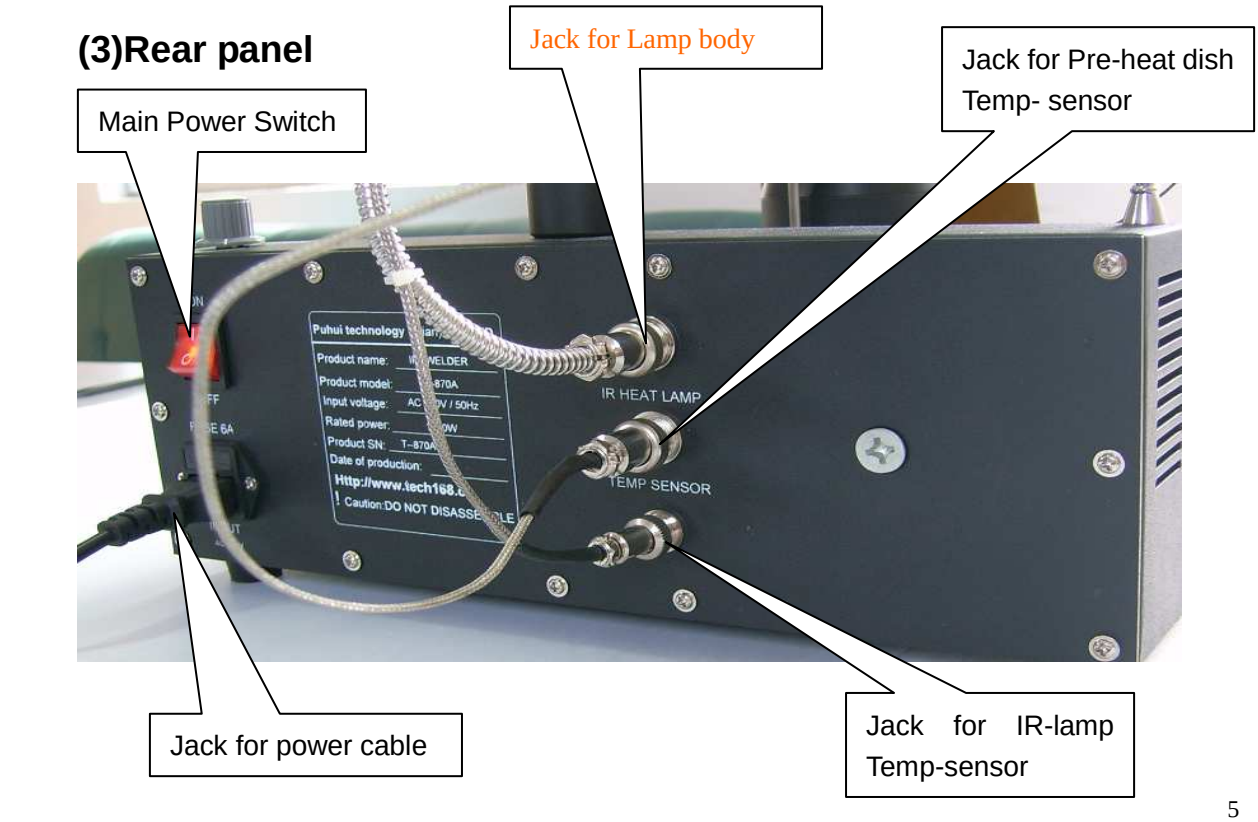
(1)The whole machine



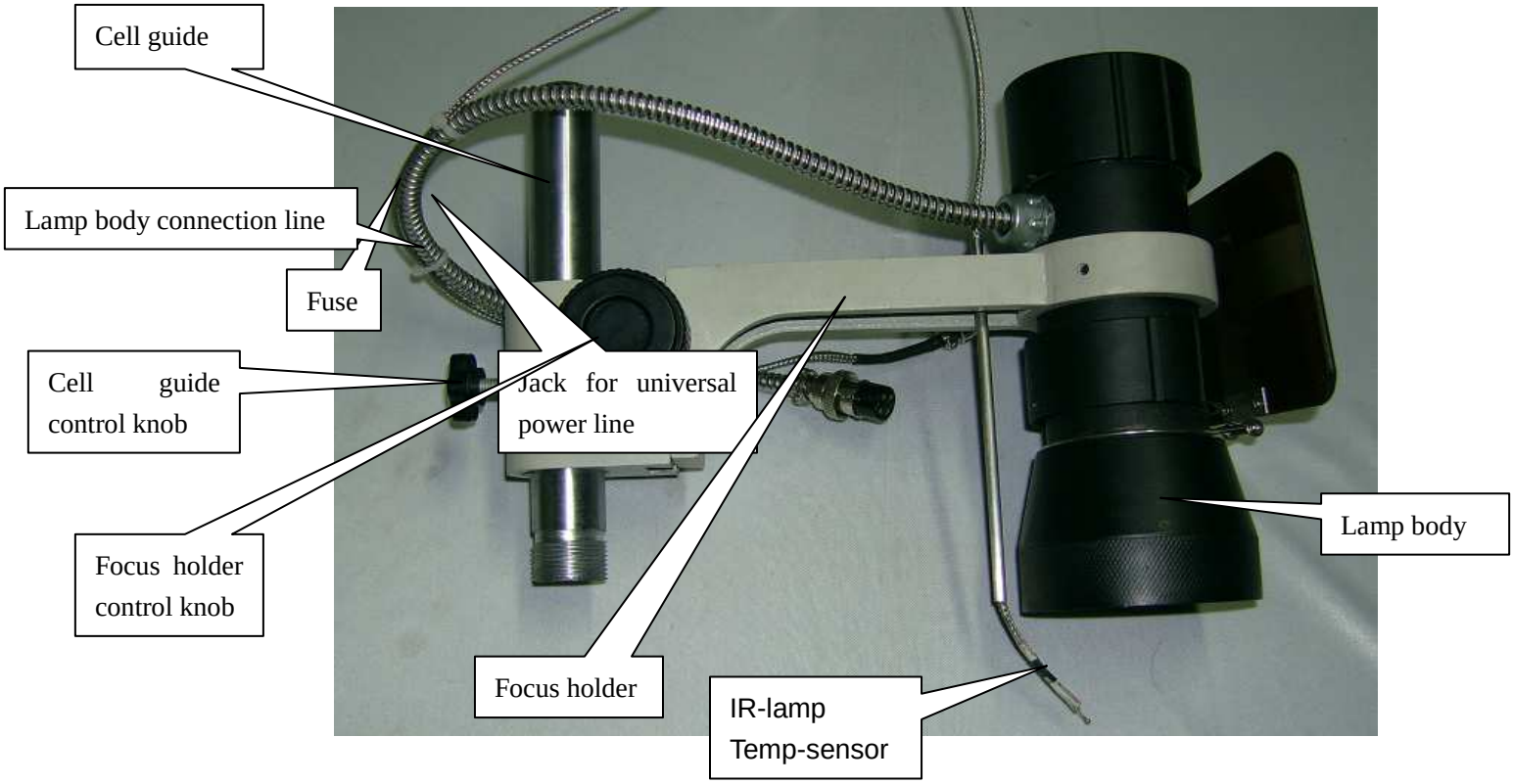
(2)Front panel



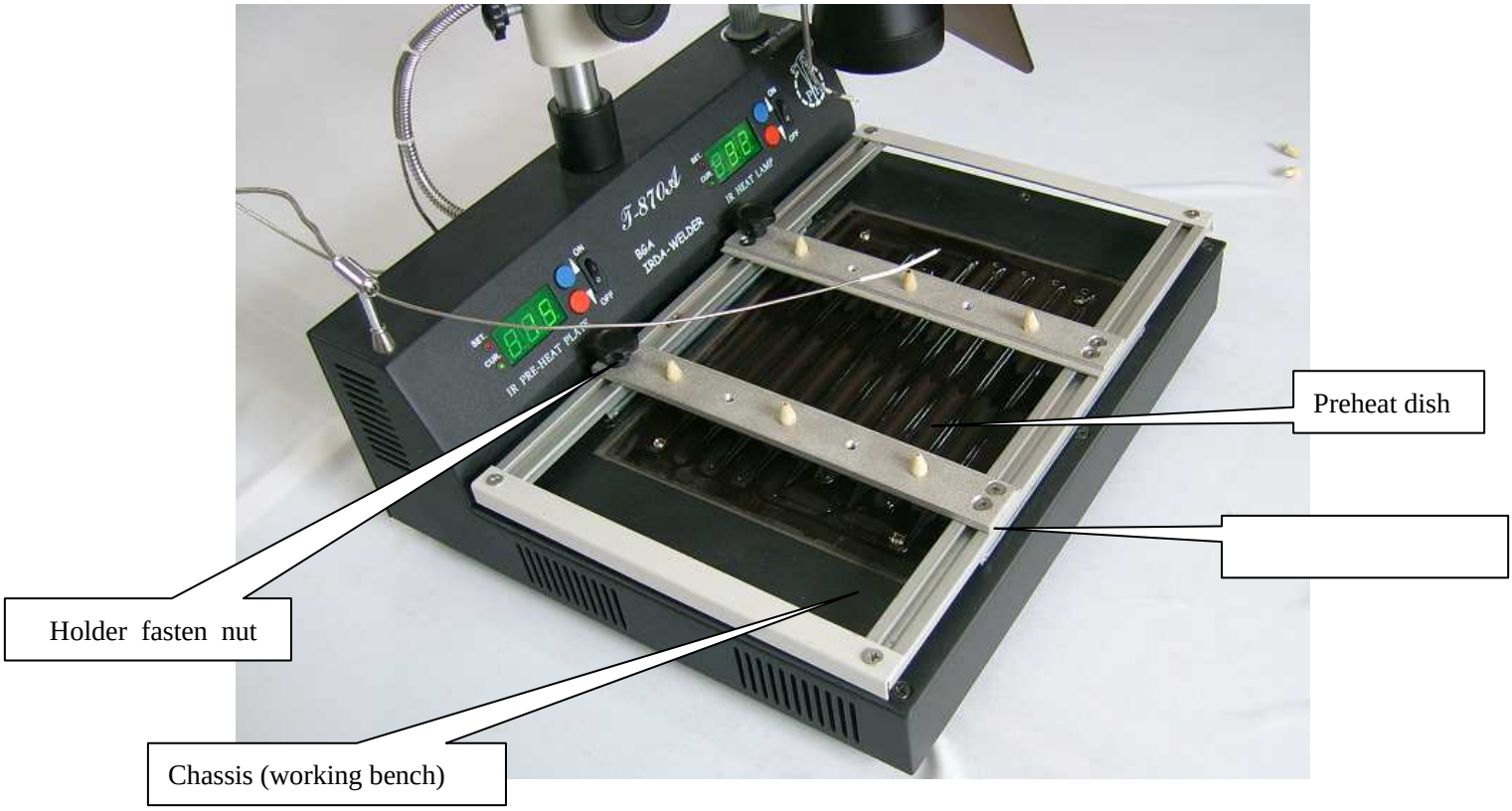
(3)Rear panel



(4)Focus Holder and Lamp Body：



(5)Chassis and PCB Board Holder



Infrared Work Station Unpacking and Assembly

main body assembly：

1. Unpack and remove the T-870A two (2) major assemblies and minor components from the Styrofoam packaging material and set aside.

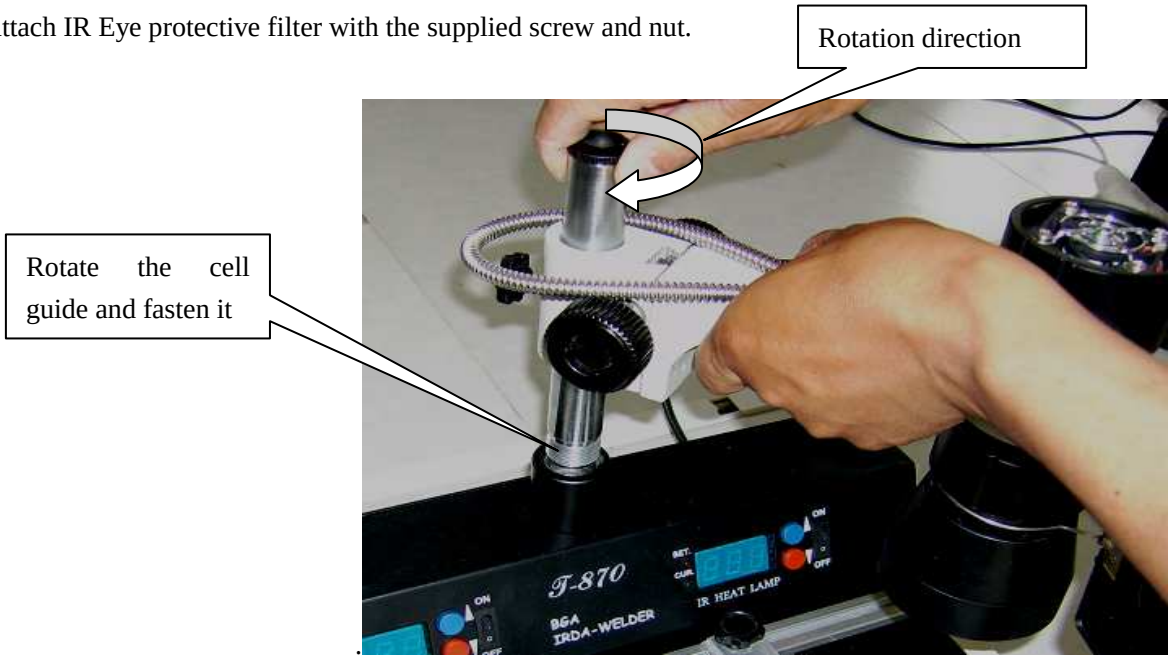
Note: The Infrared Lamp, Body Mounting and others will be installed in the T-870A chassis later.

2. Inventory all Items, confirm no parts are missing. If parts are missing call 0086 538 6138575

3. Assemble wholly.

Relax “focus holder control knob”, and then rotation the “cell guide” to the relevant nut. focus the shelf and fasten the nut. Fasten the “focus holder control knob” at last.

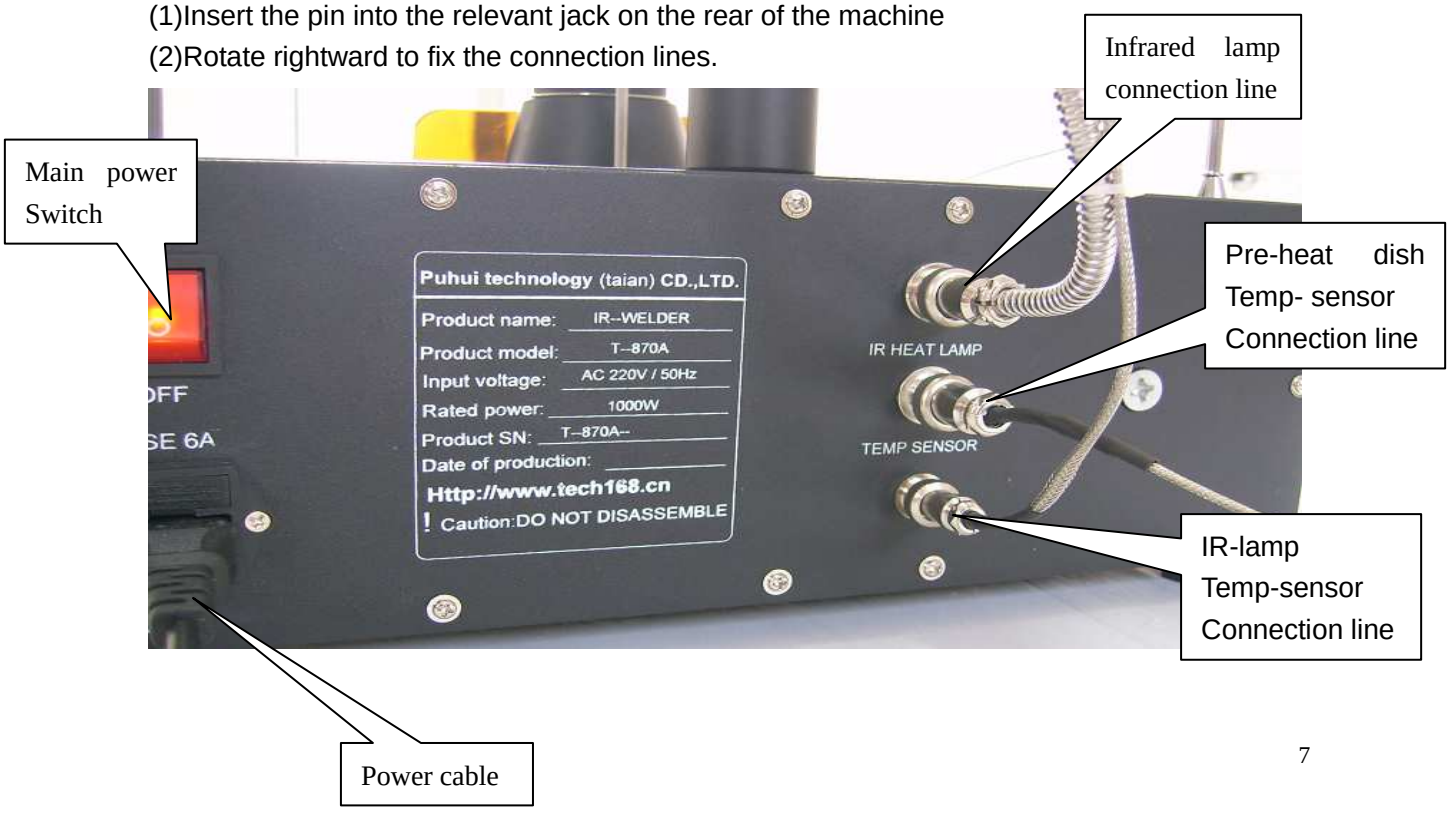
Attach IR Eye protective filter with the supplied screw and nut.



4. Connect infrared lamp and Temp-sensor to the chassis

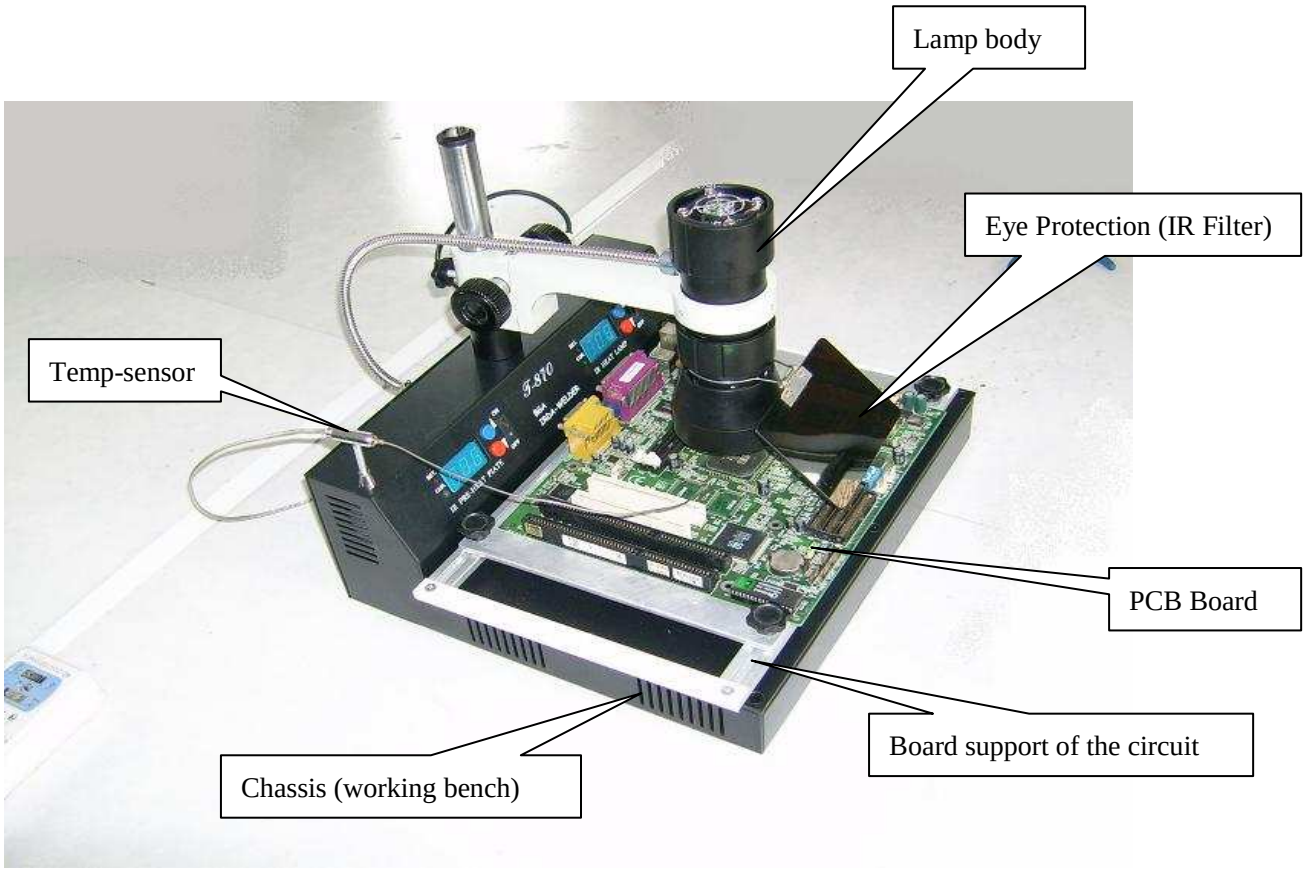
(1)Insert the pin into the relevant jack on the rear of the machine

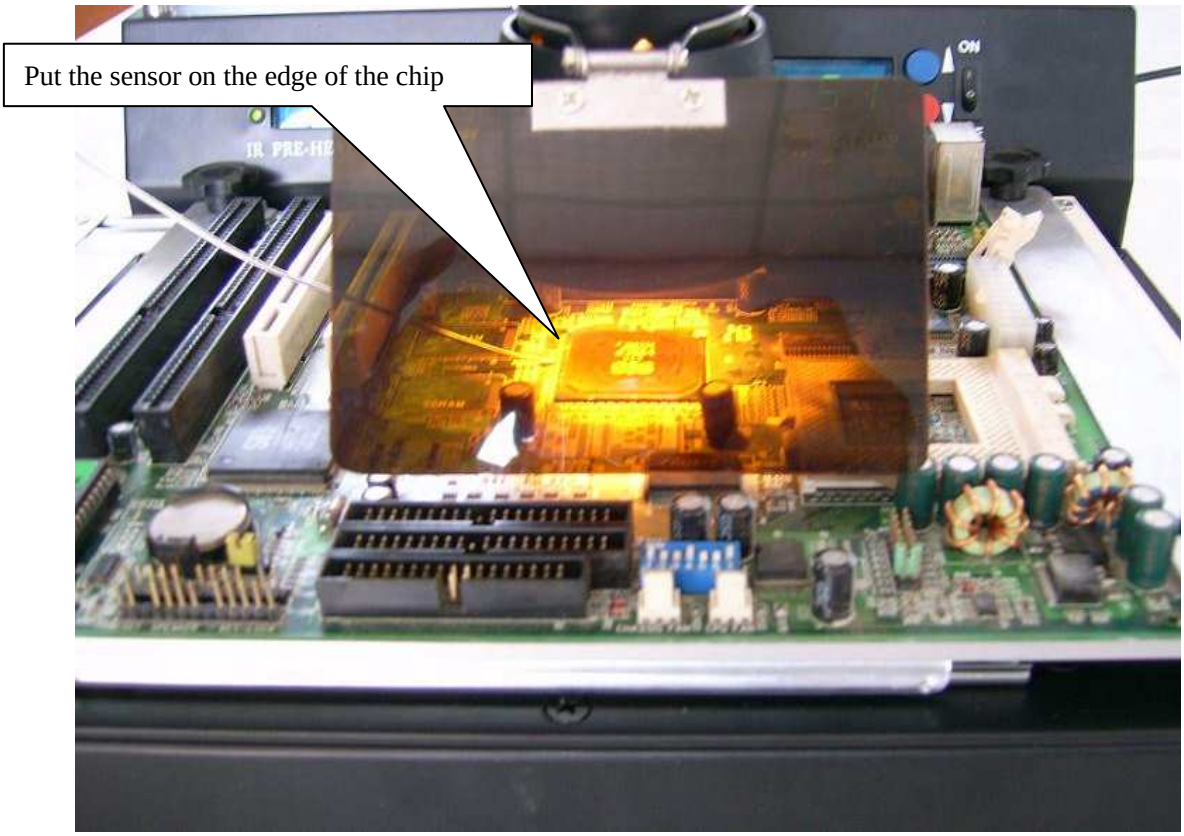
(2)Rotate rightward to fix the connection lines.

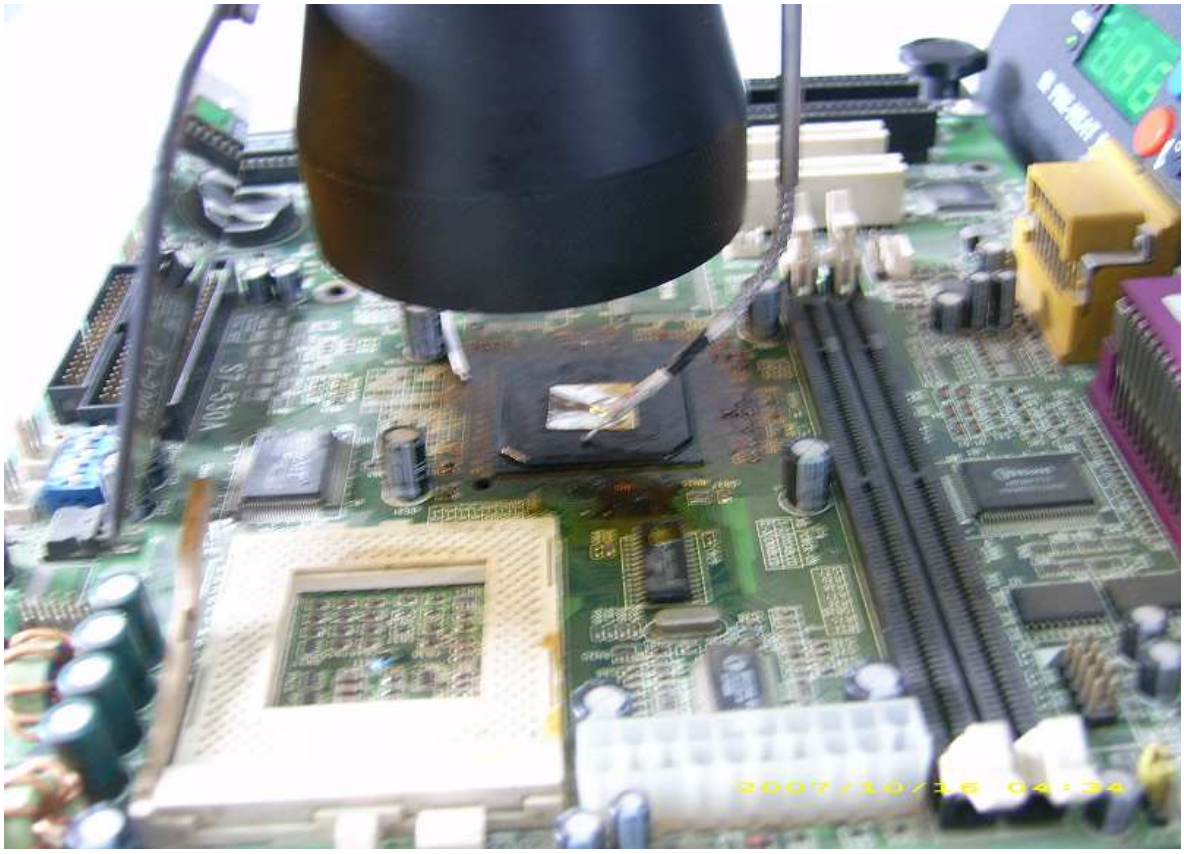


Operation method

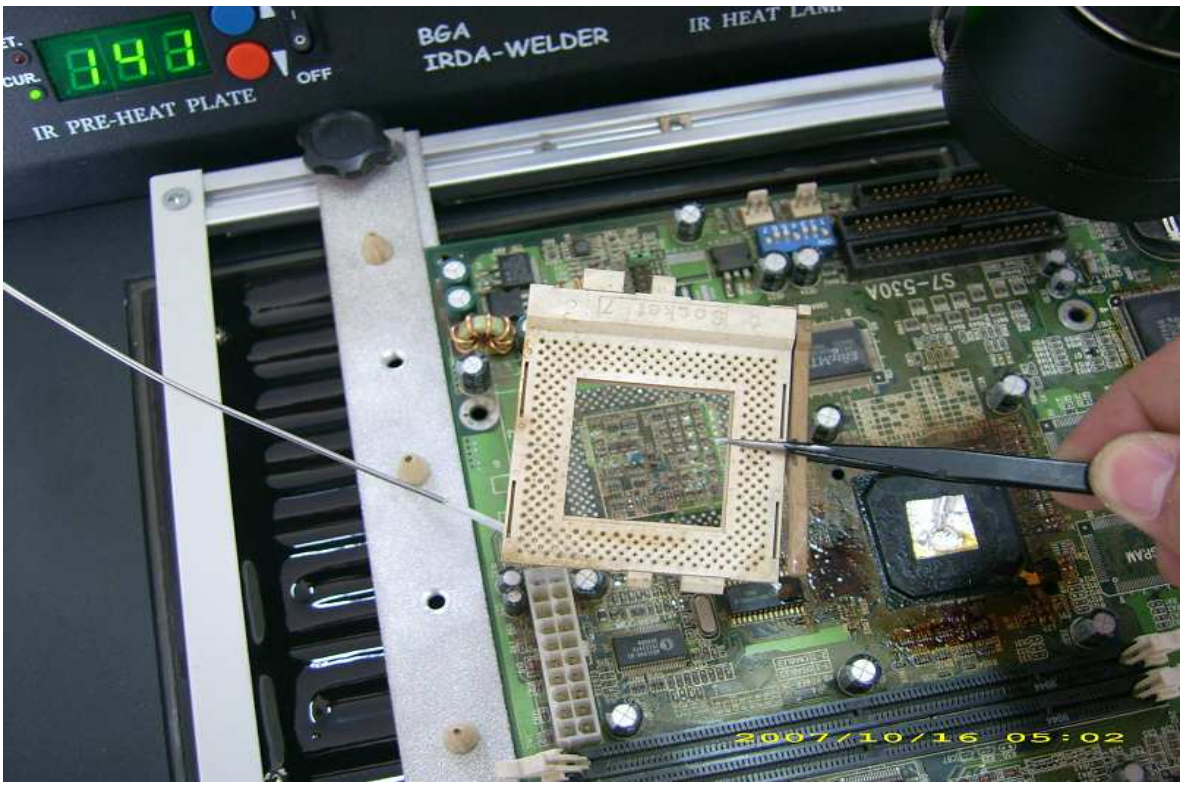
(Maintain the south/north bridge of computer)



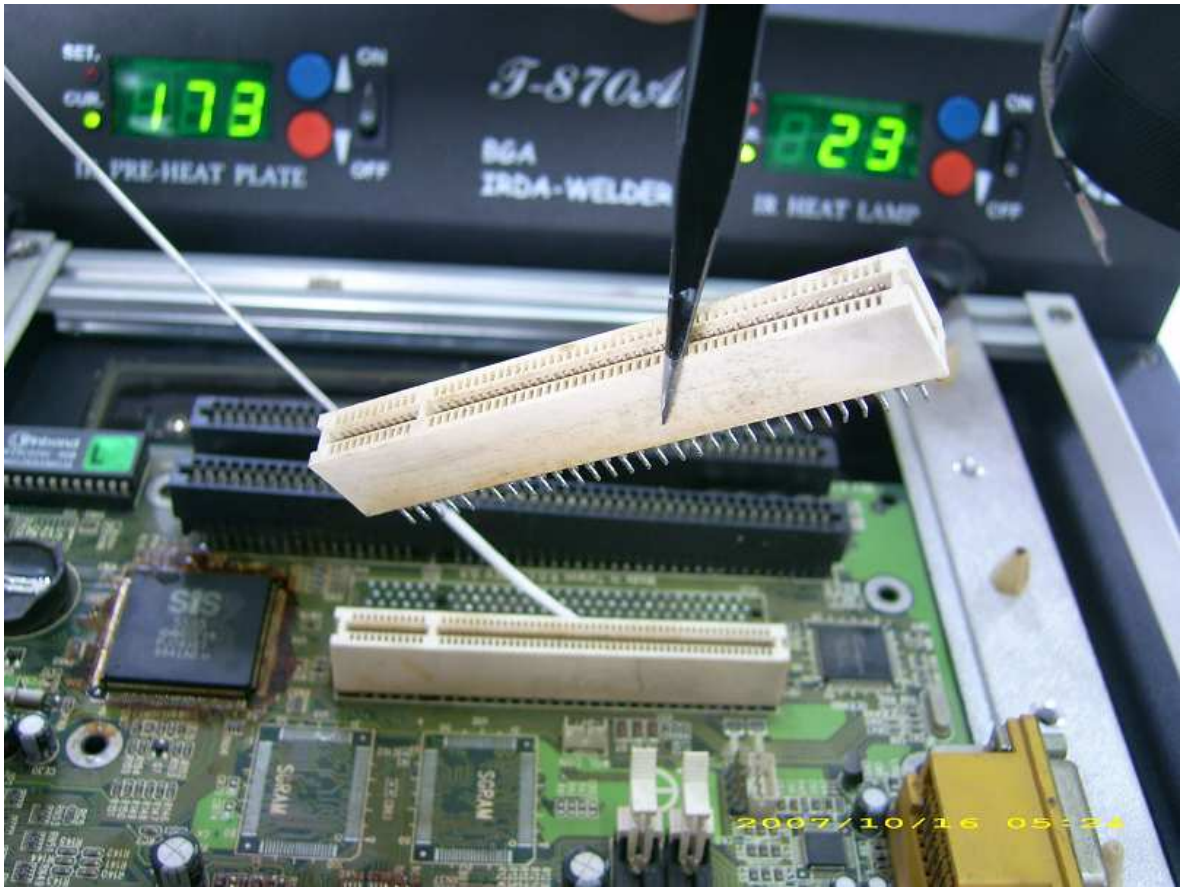




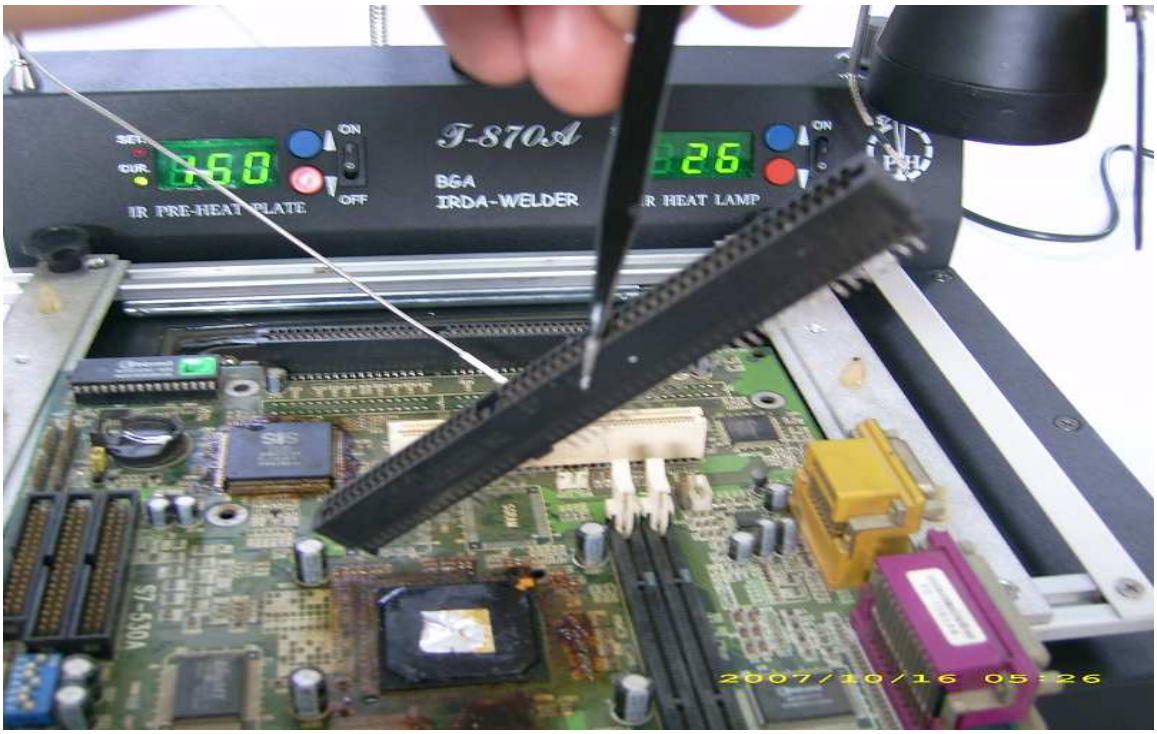
(The position of the two Temp-sensor when soldering the south/north board)



(Soldering the CPU plug of the computer motherboard)



(Soldering the GAP platoon of the computer motherboard)



(Soldering the expansion slot plug of the computer motherboard)

1. Inspect the machine and then open it

(1) Check if the connection wire of the lamp body, the Temp-sensor and power cable is ok.

(2) Turn on the power switch. Allow the T-870A Power-On-Self-Test (POST) to complete. After this, Temperature set-points will display last value used.

(3) The front panel has two switches, controls the preheating dish and the infra-red lamp body separately;

2. PC Board Component Removal and Replacement

(1) Placed the PCB Board

Put the PCB board on the “PCB board holder”, rotate the “holder fasten nut”, fasten it. Move the “PCB board holder” to choose the right position.

(2) The Process of unsoldering and repairing

①Adjust the position of the PCB board, make the chip at the centre of the lamp light. Adjust the height of the lamp body; keep the lamp 20-30mm from the chip.

②Put the temp-sensor at the edge of the chip, lay a bed of solder flux around the chip and on the temp-sensor, it will make the measured temperature more accurately, at the same time the solder flux will make the soldering chip more perfect, and keep the bonding pad away from conglutinating and having tin wool.

③According to the producing technological requirement or the size of PCB board, adjust the pre-heat dish temperature (adjustable 60-200℃).

When there is waterproof solid sealing compound on the chip, please open the pre-heat dish to pulverize the solid sealing compound first, and then clean it up. You may adopt other method as sol/hydrosol. When you adopt the method we supplied, you had better choose the temperature between 100℃ and 140℃ according to the producing technological requirement or the size of PCB board, control the pre-heat time 3-5 minutes(the temperature will be steady) or longer.

Otherwise if the chip is without waterproof solid sealing compound or the PCB board is small, and then it won’t transmutation, we needn’t open the pre-heat dish

④According to the producing technological requirement or the size of chip, choose the suitable temperature of the IR-lamp.

⑤Usually, when the chip size is less than 20*20mm, we adjust the IR-lamp temperature 220-240℃, and if the chip is without waterproof solid sealing compound or the PCB board is small, then it won’t transmutation, we needn’t open the pre-heat dish. Otherwise, we should adjust the pre-heat temperature to 100-120℃.

When the chip is lager than 30*30mm,we should adjust the pre-heat temperature to 120-140℃ first, wait 3-5minutes and the temperature will be steady. Then adjust the IR-lamp temperature to 240-260℃, we will complete the unsoldering and repairing process conveniently. Attention: At the time, the light is strong, the temperature rises quickly, we should pay our attention on controlling, avoid the Temp-sensor displacement, reflect on the temperature measuring. We should also pay our attention on time controlling, avoid burning out the chip.

⑥When achieving the set-up lamp temperature, Once the solder liquefied and melted, use tweezers to remove the chip.

3. The Process of soldering a chip

It is generally the same as the “(2) Process of unsoldering and repairing”, but you should do as follows:

①Clean the target pad with the brush

②Then put the solder ball and a flat of solder flux and the chip on the target pad

③ Turn on the switch of the pre-heat dish, and set-up the temperature

④Turn on the switch of the IR-Lamp, Regulate the temperature (the temperature must be warm enough to liquefied the solder), focus the Infrared light on the chip to be solder

⑤ Wait to allow the Infrared lamp to heat the solder flux to work as the solder balls on the target chip pad reaches liquid temperature. Use tweezers or a vacuum device to place the chip target position. Once the solder liquefies, the chip will be sold automatically.

After cooling the chip, pick up the PCB board, check if it is ok. If not, re-operate.

Suggestion:

About the components without plumbum, you should add 20-30℃.

4. The Process of soldering kinds of Plug (as: GAP platoon expansion slot plug of the computer motherboard)

Usually we cover the hardware and the PCB board (which won’t be maintained) with the aluminum-foil paper, then put the PCB board on the holder, fasten it. Turn on the Pre-heater dish and adjust the temperature at 160-180℃, Put the Temp-sensor at the side of the part which is being unsoldering, and it will up to the temperature in 3-5minutes. Then you can unsolder the parts.

In special circumstances, you can open the IR-Lamp to heating the part, and it will be unsoldering quickly.

Suggestion:

About the components without plumbum, you should add 20-30℃.

About the PCB board with components on its both sides, please set-up the pre-heat temperature lower, and then use the IR-Lamp to heat.

5. Cooling the machine

Turn off the switch of the pre-heat dish and the IR-lamp.

Once the machine is cooling enough, cut off the power cable.

6. Attentions

①When you maintain some large chip of the PCB board such as the mother board of the computer, you must pre-heat and dry the whole board first, then you can avoid the transmuting of the PCB board and soldering joint and rake angle of the chip.

②All the plastic plug-in board must be covered with aluminum-foil paper, to avoid transmutation or destroying.

③The PCB board which had been maintained, after cooling, clean it, and do the test when it is dry. If it is not ok, re-soldering it.

④Around working, when the PCB board is not on the holder, please do not long time open the IR-lamp, do not shoot the light on the strong glisten objects. Otherwise

it will reduce its using time.

⑤About the chips which is encapsulation simply, please pre-stick aluminum-foil paper on the centre of the chip, to avoid burning out the slice of silicon.

The measurement of the aluminium-foil paper had better a little larger than the slice of silicon, but not too large. Otherwise, it will do effect on the soldering.

Maintenance and Warning

Maintenance:

- ✓ At all times – Insure the light body cooling fan is unobstructed and clean.
- ✓ Use a little machine oil. Lubricate the focus holder and cell guide to inhibit rusting, keep them ease to operate.
- ✓ Clean the Lamp body especially the lens and the pre-heat dish with the absolute alcohol, clean out the condensate of the welding flux. Keep the IR-thermal radiation without blocking.

Warning!

The T-870A System creates temperatures in excess of high degrees via Infrared Light. Wear appropriate eye protection or any device within **the T-870A** when using it**.** After use, do not cut the power immediately; confirm the light body is cool-to-touch, cut the power, and then place the system in airiness & safety storage.

Do NOT use this system or any associated device in an environment conducive to fire or electrical overload.

Disconnect the AC Power Plug when not in use.

When using, it is of high temperature, Do NOT allow **children** or the **un-trained** to touch **the T-870A.**

Cut off the power if it isn't be used.

Statement：**If there is any difference between users operating manual and actual product, according to the actual product!**