深圳市鼎华科技发展有限公司

SHENZHEN DINGHUA TECHNOLOGY DEVELOPMENT CO., LTD

DH-G200　　BGA rework station

ADD: 3rd floor, 46th building, Da yangtian Industry District, Shajing Town, Bao'an District, Shenzhen,China

Website：www.sinobga.com

Tel：0755-29091633 29091833

Fax：0755-29091622

E-mail:dh-smt@hotmail.com

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Attach: Packing list.

一、 **Company profile**

SHENZHEN DINGHUA TECHNOLOGY DEVELOPMENT CO.,LTD is a professional manufacturer of welding equipments.Our products: bga rework stations,automatic soldering machines,automatic screwdriving machines,welding kits and SMT materials etc.Our mission: "Research as basis, Quality as core, Service as guarantee" . Our goal: "Professional equipment, quality and service"

To ensure the quality, Dinghua was the first to pass UL、E-MARK、CCC、FCC、CE ROHS certificates. Meanwhile, to improve and perfect the quality system, Dinghua has passed ISO、GMP、FCCA、C-TPAT on-site audit certification.

Science and technology are the primary productive forces, with over years of hardworking, Dinghua has owned core technology of temperature controlled and 38 patents and finished the development and production of manual, semi-auto and automatic series and realized the second revolution from traditional hardware combination to integrated control.Our products have been exported to Europe , America, Southeast Asia, Australia, Africa, the Middle East, Taiwan and more than 80 countries and regions and established the relatively sales network and terminal services system.We are becoming the pioneer and guide of SMT welding industrial and our products have been applied in individual maintenance,industrial and mining enterprises,teaching and research work,military manufacturing industry and aerospace industry and so on, which has treed good reputation among users.

We believe:your successes are our successes,let's work together and build a better future!

二、 **Installation**

（A）Installation sites

In order to ensure that the useful life of BGA rework station, installation of repair station must meet the following conditions:

1.Away from flammable and explosive materials

2.Do not splash water or other liquids

3.Well-ventilated , dry place

4.Stable , flat areas less susceptible to vibration

5.Place less dust

6.Prohibit Placing heavy objects on top of the touch screen

7.Without the influence of air-conditioners, heaters and fans

8.Reserved for 30cm to move and rotate around the upper for the back of rework station

（B）Power supply

INPUT :220AV±10% 50/60HZ

三、 **Safety precautions**

Safety Precautions

1.Do not use fans or other devices directly to the repair station hair when it works, otherwise it will lead to negative differential heating plate surface , burn the workpiece

2.When the machine is on working, high-temperature heating zone can not be any direct contact with the object , it may cause fire or explosion ,and the PCB workpiece should be placed on the PCB support shelves

3.Do not shake rework station , and move gently

4.Do not touch the high fever area , otherwise you will burned

5.When turned on, do not use the flammable spray , liquid or flammable gas near the repair station

6.Do not try to modify rework station , otherwise it will cause fire or electric shock

7.Electrical box has the high-voltage components , do not attempt to disassemble

8.If the metal objects or liquids fall into the repair station when it works , immediately disconnect the power , unplug the power cord until the machine to cool down , then completely remove litter , dirt ;   if dirt left ,there is odor when reboot

9.When abnormal heating or smoking, immediately disconnect the power , and inform the technical service to repair It needs to disconnect the wires between the electrical boxes and machine parts, and have to hold the plug, otherwise it leads to poor contact, and does not work

10.Note that the repair station not to press or run over other electrical equipment or power lines or communication cable , and it may cause device malfunction or cause fire or electric shock

11.Before use the rework station, you must read this manual carefully

四、 **Structure and Parameter：**

（一） structure：

HD display screen

limit bar

upper heater

BGA adjust handle

upper adjust handle

reference-value scale

upper nozzle

laser position

CCD camera

X,Y axis adjust

upper vacuum

LED light

top and down light adjust

bottom nozzle

sensor

preheat switch

zoom in

bottom heater adjust

start

zoom out

working light

laser alignment

HD touch screen

emergency stop

DH-G200

（二） Functions

5

Name	Usage	How to use
Limit bar	Limit the downing of upper	Rotating to suitable location
Angle fine tune	Fine tune the BGA angle	Rotate the micrometer
Para head move up and down the handle	Adjust the position of upper heater	Rotate the knob
Upper heater area	Automatic heating	Press manual or auto
Top heater hot air nozzle	Control the hot air more evenly	
LED lamp	Lighting when working	
Optical positioning structure	Transmit the image to the displayer	Pull it out
PCB fixture	Fixed the PCB	
Bottom nozzle	Control the hot air more evenly	
Workbench X axis fine tune	Adjust X axis of workbench	Rotate micrometer
WorkbenchY axis fine tune	Adjust Y axis of workbench	Rotate micrometer
Bottom heater height controller	Control the distance between the bottom heater and PCB board	Rotate the knob
Start	Heat automatically	Press the button
LED lamp switch	LED switch	Press the button
Emergency stop	Stop the machine immediately	Press the button
Touch screen	Operating the machine	
USB connector	Transfer files	USB connector
Display	Diplaying the image of BGA	Good video connector, power supply cord
Laser	Turn on/off the laser	Press the button
Cross flow fan	Cooling the PCB board after complete the work	Cross flow fan
Clip controller	Adjusting the clip	Hold by hand
IR preheating zone	Preheating the PCB board	
sensor	Test the fact temperature	Connect the sensor wire
Para brightness adjustment	Optical brightness of level adjustment	Horizontal rotation
Enlargement button	Enlarge the image	Press the button
Narrowing button	Narrow the image	Press the button

（三） **Parameter：**

Total Power	5300W
Top heater	1200W
Bottom heater	2 nd:1200W 3 rd:2700W (Plus large fever area to adapt to all kinds of P board)
power	AC220V±10％ 50/60Hz
Dimensions	L550×W580×H720 mm
Positioning	V-groove, PCB support can be adjusted in X direction with external universal fixture
Temperature control	K thermocouple （K Sensor）Closed loop
Temp accuracy	±2 degree
PCB size	Max 400×380 mm Min 22×22 mm
BGA chip	2*2-50*50mm
Minimum chip spacing	0.15mm
External Temperature Sensor	1 (optional）
Net weight	60kg

1. Embedded industrial PC, high definition touch screen, make the operation humanity, CPU control, and instant curve analysis function. Real-time display settings and actual temperature curve, which can also be used to analyze and correct the curve if necessary.
2. It uses high precise k-type thermocouple closed-loop control and automatic temperature compensation system, with CPU and temperature module to enable precise temperature deviation to add and subtract 2 degrees. Meanwhile, external temperature measurement connector enables temperature diction and accurate analysis of real time temperature curve.
3. V-groove PCB works for rapid, convenient and accurate positioning, which can meet all kinds of PCB board of positioning.
4. Flexible and convenient removable fixture on the PCB board can protect the PCB fringe devices from damaging and transmuting. It can also adapt to various BGA 's reworking.
5. Various sizes of BGA alloy nozzles, which can be adjusted 360 degree for easily installation and replacement.
6. Three temperature areas can independently heat and they are multiple temperature control, which can ensure best integration of different temperature areas. Heating temperature, time, slope, cooling and vacuum can all be set in the human-machine interface.
7. There are 8 stage temperature controls up and down. Massive storage of temperature curves which are accessible at any time according to different BGA. Curve analysis, setting and adjustment are also accessible via touch screen. Three heating areas adopt independent PID calculation to control heating process to enable more accurate temperature.
8. It uses high power cross-flow fan to enable fast cooling of PCB board and prevent PCB from deformation. There are also internal vacuum pump and external vacuum chuck,

which can help to fetch the BGA chip；

9. Collocating with sound control "early warning" function. It can warn workers to make some relative preparation 5-10 seconds before the completion of uninstalling or welding. Cooling system will start after vertical wind stopped heating. When the temperature drops to normal temperature, the cooling process will stop automatically, so that the machine will not be aging after temperature heated up.

10. It use rocker controller for controlling the upper heater go up and down freely, and it also has the function for zooming the picture.

CE approved, equipped with emergency stop switch and automatic power-off protection device when emergency happens.

五、 **Setting:**

（一） **Introduction of the touch screen operation**

1.Switch on the power, the touch screen will show   as follow:choose the language**.**

2、Click on , it will shows as follow：

Password

Cancel

简体   ENGLISH

Add: 3rd floor, 46th building, Da Yangtian Industry District, ShaJing Town, Bao' an District, Shenzhen, China
Tel: +86 755-29091833 29091633
Fax: +86 755-29091622
Site: http://www.sinobga.com
Contact: Mr. Zhang +86 18902853808

3、Click the input box, it will appear as follow:
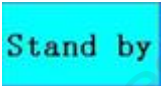
Input characters: [Caps]

8888

1	2	3	4	5	6	7	8	9	0	<-
A	B	C	D	E	F	G	H	I	J	Del
K	L	M	N	O	P	Q	R	S	T	>>
U	V	W	X	Y	Z	OK		Cancel		

Add: 29091633

Shenzhen, China

Site: http://www.sinobga.com   Contact: Mr. Zhang +86 18902853808

4、 Input the password (the default password is 8888)
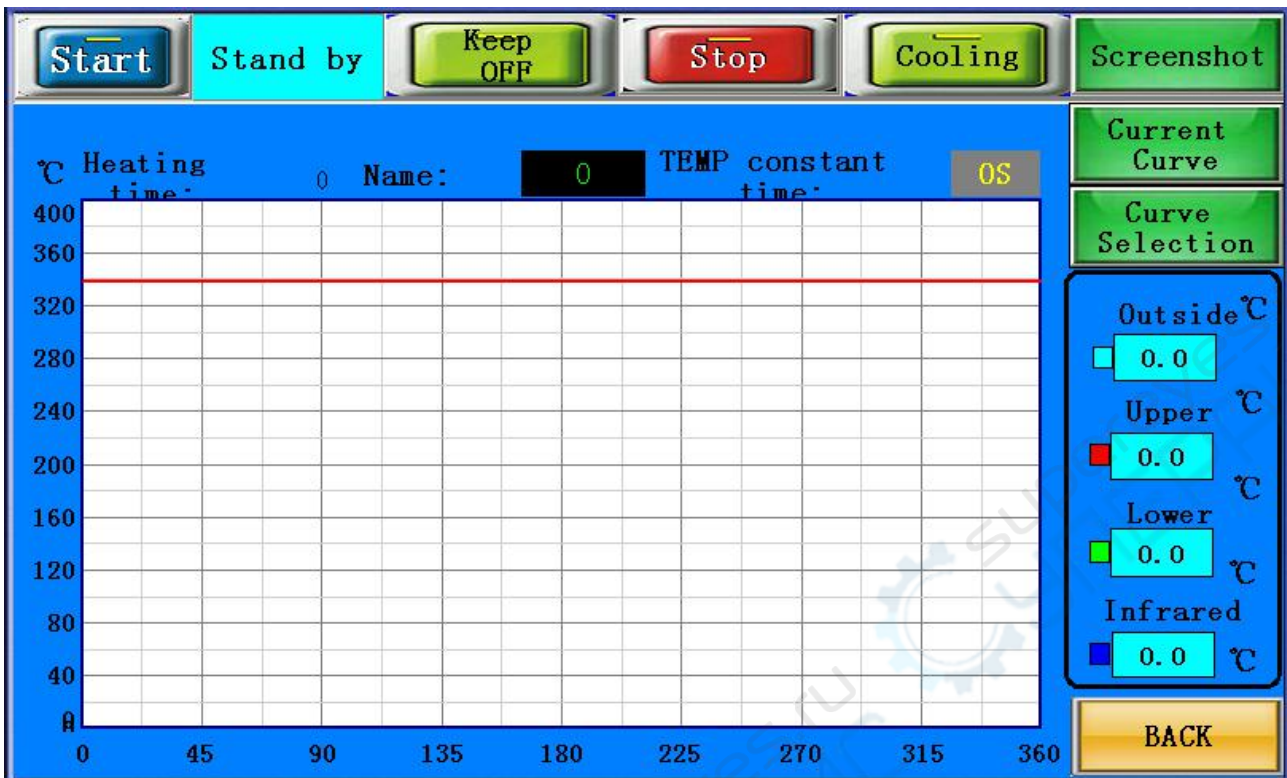
The introduction of main working interface

一、 **Start** : Starting working

二、 **Stand by** : the status of the machine now. and it will show" heating" in the heating process

三、 **Keep** This is for keeping the temperature constant

四、 **Stop** , press and then stop heating

五、 **Cooling** the OFF/ON translate button of cross-flow fan.

六、 **Screenshot** can serve the present profile data to USB flash disk.
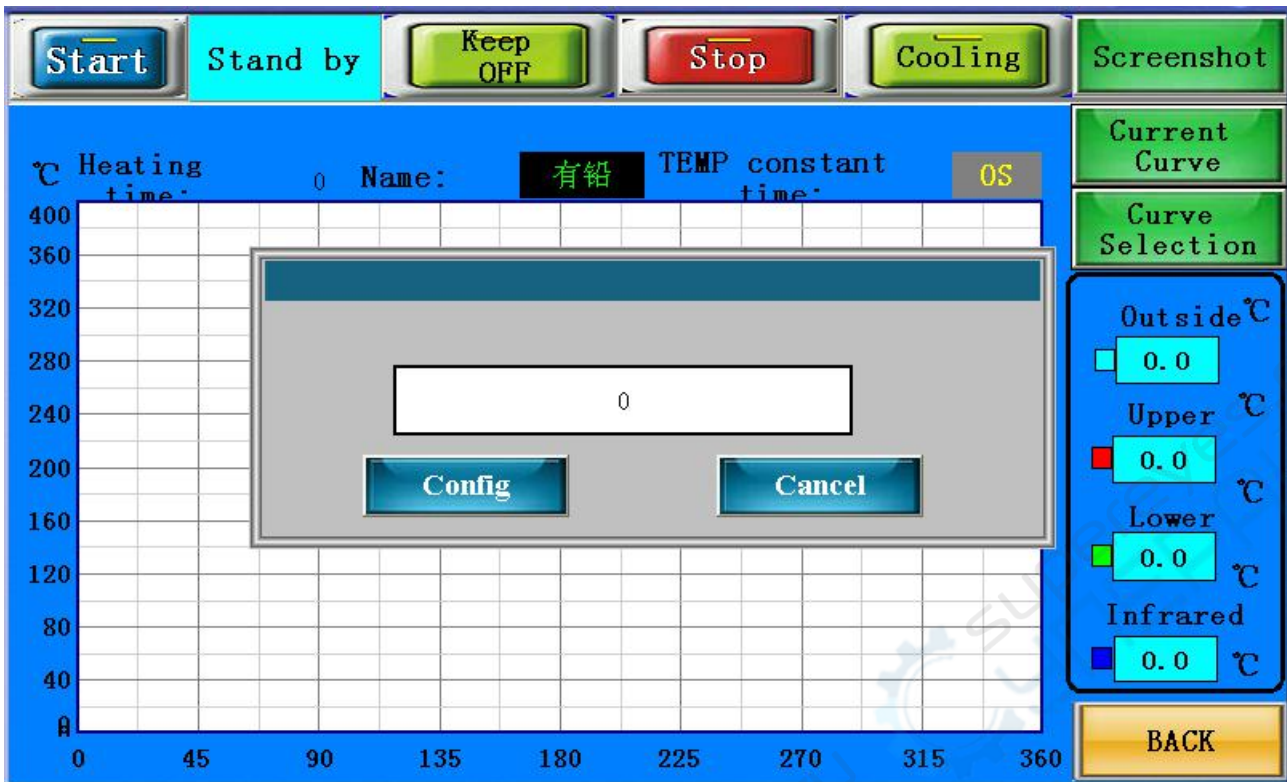
五、 **Heating time：display the time from starting to   present.**

六、 **Curve name： present temperature curve name**

七、 **Keep tme：** the remaining time of present curve

八、 **Test tmoerature：** blue curve。

九、 **Upper tmeperature：red curve**

十、 Bottom temperature: green curve

十一、 IR temperature: heavy blue curve

十二、 **Selection** Click it, the interface will appear as follow

CurrentCurve	1th	2th	3th	4th	5th	6th	Curve Name
Upper Temperature	0	0	0	0	0	0	0
Upper Rate	0	0	0	0	0	0	
Time Constant	0	0	0	0	0	0	
Lower Temperature	0	0	0	0	0	0	
Lower Rate	0	0	0	0	0	0	
Time Constant	0	0	0	0	0	0	
Infrared Temperature	0	0	0	0	0	0	
Infrared Rate	0	0	0	0	0	0	
Time Constant	0	0	0	0	0	0	BACK

Three-zone tempertures can be set 6 levels of variable and constant temperature controls.If
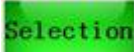
need,you can change the related parameters,but it's not saved,just can heat it with this line. If saveing is necessary, please refer to relative information of ingredient setting！ Ifthe temperature curve doesn't meet to the needed welding temperature; please press the return button, returning to the main Interface.

十四、 **Selection** button to choose the relevant parameter as follow,

Name	Selection	Saved	Deleted	Apply	Advanced	BACK
0	1th	2th	3th	4th	5th	6th
Upper Temperature	0	0	0	0	0	0
Upper Rate	0	0	0	0	0	0
Time Constant	0	0	0	0	0	0
Lower Temperature	0	0	0	0	0	0
Lower Rate	0	0	0	0	0	0
Time Constant	0	0	0	0	0	0
Infrared Temperature	0	0	0	0	0	0
InfraredRate	0	0	0	0	0	0
Time Constant	0	0	0	0	0	0

If it is necessary to input new parameters, click the box where need to modify, it will appear like the picture；

In this interface, you can modify and save temperature profiles

Users can set the heating time, constant time and temperature rate accordingly, **Selection** button to choose the relevant parameter as follow,

Name	Selection	Saved	Deleted	Apply	Advanced	BACK
0	1th				4th	5th	6th
Upper Temperature	0				0	0	0
Upper Rate	0				0	0	0
Time Constant	0				0	0	0
Lower Temperature	0				0	0	0
Lower Rate	0				0	0	0
Time Constant	0				0	0	0
Infrared Temperature	0				0	0	0
InfraredRate	0				0	0	0
Time Constant	0	0	0		0	0	0

Overlaid dialog:

Number	Name
1	0
2	
3	
4	
5	
6	
7	
8	
9	
10	

↑ ↓

Confirm   Cancel

If it is necessary to input new parameters, click the box where need to modify, it will appear like the picture;

Name	Selection	Saved	Deleted	Apply	Advanced	BACK
0	1th	2th	3th	4th	5th	6th
Uppe Tempera						0
Upper l						0
Time Const						0
Lower Tempera						0
Lower l						0
Time Const						0
Infra Tempera						0
Infrared						0
Time Constant	0	0	0	0	0	0

Input characters: [Caps]

A

1	2	3	4	5	6	7	8	9	0	<-
A	B	C	D	E	F	G	H	I	J	Del
K	L	M	N	O	P	Q	R	S	T	>>
U	V	W	X	Y	Z	OK		Cancel		

Input the parameter, press **OK** Then click **Saved** after setting these three

temperature zones, then these parameters will be saved in the system with the displayed name Besides,

you can click the box below **Name** to change the curve's name, the dialogue will appear as follow

Input characters:					[Caps]						
1	2	3	4	5	6	7	8	9	0		←
A	B	C	D	E	F	G	H	I		J	Del
K	L	M	N	O	P	Q	R	S		T	>>
U	V	W	X	Y	Z		OK			Cancel	

You can also click **Profile Selection** to modify the curve name

After the profile, click **Apply**, the curve name and parameters displayed will be the

newest applicable data It will return to the main interface when click **BACK** button

Name	Selection	Saved	Deleted	Apply	Advanced	BACK
A	1th			4th	5th	6th
Upper Temperature	0			0	0	0
Upper Rate	0			0	0	0
Time Constant	0			0	0	0
Lower Temperature	0			0	0	0
Lower Rate	0			0	0	0
Time Constant	0			0	0	0
Infrared Temperature	0			0	0	0
InfraredRate	0			0	0	0
Time Constant	0	0	0	0	0	0

Dialog overlay:

Number	Name
1	0
2	A
3	
4	
5	
6	
7	
8	
9	
10	

Confirm　　　Cancel

Name	Selection	Saved	Deleted	Apply	Advanced	BACK
A	1th	2th	3th	4th	5th	6th
Upper Temperature	0	0	0	0	0	0
Upper Rate	0	0	0	0	0	0
Time Constant	0	0	0	0	0	0
Lower Temperature	0	0	0	0	0	0
Lower Rate	0	0	0	0	0	0
Time Constant	0	0	0	0	0	0
Infrared Temperature	0	0	0	0	0	0
InfraredRate	0	0	0	0	0	0
Time Constant	0	0	0	0	0	0

图 8

After the profile, click **Apply** , the curve name and parameters displayed will be the

newest applicable data It will return to the main interface when click **BACK** button

图 9

Click ![Start], the machine will be in the heating condition The running data is just the above current parameters Meanwhile, it helps eliminate the displayed curve last time In the normal condition, it means the heating process is finished when the temperature speed is zero during the whole running process And then the machine will stop and inform you through the alarm

During the working process, click ![Stop], it will stop heating directly, when

click ![Keep] OFF, the button will flash, indicates that the machine goes into constant state, three group of heating output of the whole machine will operate with current temperature, until click

![Keep] OFF again, the machine come back the normal heating state ![Advanced] setting has been done with all parameters set when the machine leaves factory, users have no need to modify

This machine can log monitor rotate speed of cooling fan against hot wind from up and down, and you can also set the lowest rotate speed When it appears that fan stops or fan rotate speed lower than it is set during heating, when the upper and bottom temperature higher than 300 degrees, the system will

stop heating, system can set advance roar automatically ![Alarm Time Ahead Of 10s] say 10s, when it is 10s before the machine finishing heating, the buzzer will roar

The complete machine switch to cooling state, and display relevant fault point tips on the Lord working

interface, can help workers judge the fault point rapidly

When you click **Back** the following picture will appear

Attention:

When it alarm because of stoppage, all function buttons are in locked state! After managing the stoppage and starting up, it can recover to normal state!

六、 **Operation:**

This machine could apply to in soldering and desoldering the BGA chip

1. **Preheating:**

Preheating before reworking, the temperature of constant temperature oven is set at 80 ℃ -100 ℃，

for 4-8 hours to demoist the PCBA ,to prevent the explose during reworking

2. Desoldering

1 ） .Swith the power on , the touch screen will enter the main working interface (picture 5)click

Program Selection to select the proper profile (If the profile are not suitable, you can set the profile as mentioned above)

2).Keep the center of upper and bottom heaters in a vertical line when positioning, then fix the PCB clip

Keep the bottom of the nozzle of upper heater 2-3mm above BGA chip Click Start to run the

Working Profile , then it will work as you settled   After the process finished, raise up the Upper heater, then take the BGA chip off with vacuum pen The procedure of desoldering is finished
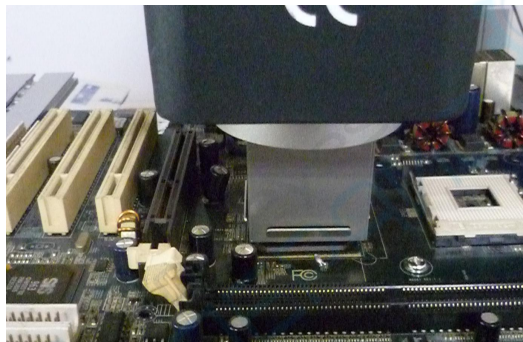

图 **12**

3.Clean-up the pad

You can clean-up the BGA pad with wick line; the best way to dismounting the tin right after the BGA removed and the temperature difference make less damage to the pad; It can improve the activity of soldering tin with the flux and is better to clean the soldering tin Pay attention that do not to damage the PCB pad, and in order to ensure the reliability of BGA solder, try to use some volatile solvents when cleaning the pad, such as plate washer water, industrial alcohol

4.BGA re-balling

Apply the paste flux evenly with the brush pen on the BGA pad, fix it on the BGA reball fixture, choose the right stencil, and then plant tin balls properly

5.Soldering BGA balls

After setting the BGA reball station properly, put the reballed BGA chip on it, remove it after the ball is soldered

6.Apply paste flux

Apply the paste flux with the brush pen on the PCB pad If you apply so much, it will cause connected welding, on the contrary, it will cause null welding In order to wipe off dust and impurity of tin balls, and enhance welding effect, the welding paste must be wiped equally
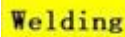
7、 **Place the BGA chip**

Place the BGA chip on the PCB board with manual alignment and silk-screen borders, meanwhile the tension of the solder joint when melt will have a good self- alignment effect.
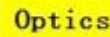
8.Alignment

1). Turn on the laser, make sure the laser is pointed to the center of the pad for the BGA, put the BGA chip on the PCB board

2). Select the proper profile, choose the mouting model Then click **Start**

3). The upper sucker will goes down to **Welding 0** welding position as settled in picture 6 to pick up the

BGA chip, and goes up the Optic position settled in picture 6 **Optics 0** ,

4). Pull the optical lens out, the BGA tin ball and welding pad will be displayed on the screen You can check images of tin balls on the screen through the adjusting angle handle.X axis.Y axis The tin ball and PCB welding position must be coincide completely on the screen

5). Push the CCD carmera back, the screen will appear like this. Click yes to soldering the chip

9. Soldering

1. Switch on the power, select the proper stored temp profile or set for yourself if needed.

2. Switch on the laser, put the BGA soldering pad center to the laser. Fasten the supporter. Install the proper nozzle, 2mm-3mm larger than the BGA.

3.install the right nozzle 2mm larger than the BGA chip, click **Start** .heating as your chosen data Cool the BGA chip after the procedure finished Raise the upper heater to make the bottom of upper heater has 3-5mm distance from the upper surface of BGA chip, and keep cooling for 30-40 seconds Or you can move away the warm heater after the starting light off Then take away the PCB board from the supporter

(1) Null welding:

Because of counterpoint by hand will cause deviation between chip and welding plate, surface tension of tin ball will have a process of automatic correction between BGA chip and welding pad Once heating, BGA falls not evenly, which will cause that the chip drops not evenly It will cause the phenomenon of missing weld and false weld if stop reflowing at this time, the chip will not fall normally So it is necessary for you to extend heating time of third .forth temperature zones or add the bottom pre-heating temperature to make the tin balls meltdown and drop evenly

(2) short-circuiting：

When the ball reached the melting point, it is in a liquid state , if too long or too high temperature and pressure, it will destroy surface tension of solder balls and the supporting role, resulting in short-circuit phenomenon when reflows, the chips fall entirely on the PCB pads the , so we need to appropriately

reduce the heating section of the third and fourth soldering temperature and time , or reduce the bottom of the preheat temperature

Attention: It will cause occur odor in the normal working process In order to assure safe and healthy operation environment, please keep ventilation in and out of the room

七 、 Outer temperature measurement couple usage

（A）the function of external temperature sensor

a To measure actual temperature more accurately during the welding process

b Because it can move freely, it is more convenient to measure different parts of ready to be measured component

c It has correct function, which can make the temperature of welding parts is more familiar with the setting temperature

(B)The installation of couple

a Check that whether the couple line is in good condition

b Put the plug of couple line in the socket of external couple

c After right installation of couple, the touch screen will show the current temperature of couple

(C)Use the couple to measure actual temperature

a Put the PCB board on the BGA Rework station Use tinfoil paper to fix the couple line on the PCB board

b Adjust the detector and make it 1-2mm higher than the ready to be measured parts
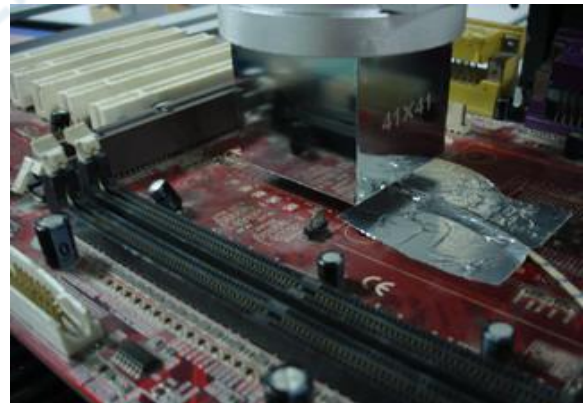
c Adjust the position of PCB board so that the ready to be heated parts is under the

upper warm wind nozzle (Like picture sixteen)

d Adjust the adjusting knob of head blow-dryer up and down so that the upper warm wind nozzle is 2-3mm higher than the surface of PCB board

e Choose the touch screen interface (like picture five), click "start", then the upper heater begin to heat

f Now the screen will show red. light blue.green three curves (Picture seventeen)

The temperature curve of external couple (light blue)

The current temperature curve of internal couple of upper heater (red)

The current temperature curve of internal couple of bottom heater (green)

图１７

（四） **Use the external couple to adjust the temperature**

Statement: Statement: In this step, fault operating will cause temperature deviation or even out of control, please be careful!

1 Set upper temperature/time/speed rate and so on (upper heater correction)

2 Suggest that do the correction on abandoned circuit, avoid damaging the circuit and components on it

3 Carry out above process step (Three), install outer galvanic couple well, and center the galvanic couple under the top head blow-dryer

4 Turn off the bottom heating process (Set the data relevant to bottom heating to be 0), back to interface as image 5, click "Start" button, the machine begins to heat according to data has been set Thus the outer measuring interface (image 17) will display the current upper temperature (in red) and outer temperature (in light blue) as 2 curve lines

5 Red curve displays temperature measured by galvanic couple inside the upper thermal fuse, light blue curve displays actual temperature measured by outer galvanic couple, the smaller the deviation between the red curve and the light blue curve is, means the nearer between the temperature of actually heating part and target temperature If it is contrary, means the upper heating is not standard

6 If the deviation between these two curve lines is too large, proper adjustment to correct is needed

7 Concrete method to adjust is below, because of impacted by system technology and environment, the deviation is unavoidable, unless the deviation influenced soldering or desoldering, non-professionals please do not operate as below!

A If outer curve (light blue) is lower than upper actual temperature curve (red), move in the galvanic couple detector inside the upper blow-dryer

B If outer curve (light blue) is higher than actual upper temperature curve (red), move out the galvanic couple detector inside the upper blow-dryer

C Adjustment range should not be too large, every time move it please control the range within 1mm

D Repeat adjustment for several times

E In adjustment state, do not touch galvanic couple inside the upper blow-dryer by anything, in order to avoid impacting accuracy of measuring temperature

F After adjustment, you should fix the detector, avoid the detector from impacting the machine measuring temperature when shaking

G Adjustment method in this example only apply to the state that when these two curves move in parallel and uniform deviation, useless when temperature up and down in disorder

H Location of galvanic couple inside the upper blow-dryer: take down the blow-dryer, cover in the couple 2-3cm away from the blow-dryer

I Please according to relevant correct operation; avoid to be burnt by high temperature!

8 Use the same theory, paste the outer galvanic couple on the bottom of PCB board, that is the right above of bottom dryer, only reserve lower heating (turn off the upper heating), can measure and correct the accuracy of lower heater

9 Statement: Turn off the upper heater (set the data relevant to upper heater to be 0) (Remark: This machine take the upper heating time as benchmark to set other segments, so when start lower heating alone, set the upper temperature to be 0, first segment of upper constant time should be set to larger than or equal to total lower heating time)

10 Matters to be attention please refer above 7th relevant details

11 Adjusting methods in details are as below:

A If the electric dipole measuring curve (light blue) is lower than actual temperature curve (green), can adjust Electric dipole probe in the hair dryer to downward

B If the electric dipole measuring curve (light blue) is higher than actual temperature curve (green), can adjust Electric dipole probe in the hair dryer to upward

七、Usual temperature parameters:

1) Intellead temperature curve welding

41*41   welding temperature setting:

	1st	2nd	3rd	4th	5th	6th
Upper temperature	160	185	210	220	225	0
Constant time	30	30	35	40	20	0
Upper rate	165	190	215	225	230	0
Lower temperature	30	30	35	40	70	0
Constant time	180	0	0	0	0	0
Lower rate	300	0	0	0	0	0
Infrared temperature	3	0	0	0	0	0

38*38 BGA welding temperature setting

:

	1st	2nd	3rd	4th	5th	6th
Upper temperature	160	185	210	215	220	0
Constant time	30	30	35	40	20	0
Upper rate	160	185	215	220	225	0
Lower temperature	30	30	35	40	40	0
Constant time	180	0	0	0	0	0
Lower rate	300	0	0	0	0	0
Infrared temperature	3	0	0	0	0	0

31*31 BGA welding temperature setting :

	1st	2nd	3rd	4th	5th	6th
Upper temperature	160	180	200	210	215	0
Constant time	30	30	35	45	20	0
Upper rate	160	180	200	215	225	0
Lower temperature	30	30	35	45	60	0
Constant time	180	0	0	0	0	0
Lower rate	300	0	0	0	0	0
Infrared temperature	3	0	0	0	0	0

Above reference temperature are for the leaded products

Intel Lead-free temperature curve welding

41*41 BGA welding temperature setting：

	1st	2nd	3rd	4th	5th	6th
Upper temperature	165	190	225	245	255	240
Constant time	30	30	35	55	25	15
Upper rate	165	190	225	245	255	240
Lower temperature	30	30	35	55	25	15
Constant time	180	0	0	0	0	0
Lower rate	300	0	0	0	0	0
Infrared temperature	3	0	0	0	0	0

38*38 BGA welding temperature setting：

	1st	2nd	3rd	4th	5th	6th
Upper temperature	165	190	225	245	250	235
Constant time	30	30	35	45	25	15
Upper rate	165	190	225	245	250	235
Lower temperature	30	30	35	45	25	15
Constant time	180	0	0	0	0	0
Lower rate	300	0	0	0	0	0
Infrared temperature	3	0	0	0	0	0

31*31 BGA welding temperature setting：

	1st	2nd	3rd	4th	5th	6th
Upper temperature	165	190	220	240	245	235
Constant time	30	30	35	40	20	15
Upper rate	165	190	220	240	245	235
Lower temperature	30	30	35	40	20	15
Constant time	180	0	0	0	0	0
Lower rate	300	0	0	0	0	0
Infrared temperature	3	0	0	0	0	0

Above reference temperature are for the lead-free products

Above are Intel lead-free BGA temperature references

If you want to dismounting the BGA chip, the cooling temperature can be set 0

八、 <u>**Announcements of BGA operation**</u>

1. After opening the power, firstly you should check whether the upper and bottom hot air nozzles have cold wind If not, starting the power is strictly prohibited, or the heaters will be burnt The bottom infrared heating areas are all controlled by switch, and you can choose the bottom heating areas depend on the PCB board size

2. You should set different temperature curves when repair different BGA, each temperature should not higher than 300℃ Lead-free rework setting can refer to welding temperature curve of BGA tin bead

3. When demount BGA, the cooling fan and vacuum should be set to automatic transmission,

   The buzzer will warn automatically when temperature curve runs to the end Meanwhile, dismounting the BGA from PCB board with vacuum pen, and then dismounting the PCB board from the positioning frame

4. When welding the BGA chip, set the cooling fan to manual grade. close vacuum After the temperature curve runs to the end, the buzzer will alarm automatically, the cooling fan begins to cooling the BGA chip and bottom heating zone, meanwhile, the warm heating head will blow a cold wind Then elevate the upper heater, make the gap has 3-5mm space between the bottom of nozzle and the upper surface of BGA chip and keep cooling for 30-40 seconds, or move away the main heater after the starting light is off, finally take away the PCB board from the support

5. Before installation of BGA, it is necessary to check that if the PCB pad and BGA tin bead are all in good condition It is necessary to check the outlet after welding and to stop installation if you find something unusual Go on welding after anything is normal, or the BGA and PCB board will be damaged

6. The machine surface needs to be clean at regular time, especially the infrared heating board Avoid the dirt stay on the board, because the dirt can lead to heat radiation unnormally, bad welding quality and shorten the using time of infrared heating element

If the heating element was burn out because of this, our company is not responsible for it and no free charge!

Conclusion:

In the electric products line, especially the PC and electric production field, component trend to microminiaturization, multi function and greening of management, various capsulation technology spring up, and BGA/CSP is the main trend

In order to satisfy the growing need of BGA device circuit assembly, manufacturers should choose more safe, more convenient, more speedily assembly and repair equipment craft

Attachment: packing list

NO	Name	Specification & type	Unit	Quantity	Note	NO
1	BGA rework station	DH-G200	set	1		Touch screen
2	display		set	1		
3	Vacuum sucker		pcs	1	/	
4	Vacuum pad		copy	2	/	
5	manual	DH-G200	pcs	1	/	
6	Hot air nozzl	Upper nozzle 31*31/38*38/41*41 Bottom nozzle 34*34/55*55	pcs	5	/	
7	Abnormity clip		pcs	6	/	
8	Blossom knob		pcs	6	/	
9	Supporting screw		Pcs	6	/	