深圳鼎华科技发展有限公司

Shenzhen Dinghua technology Development Co.,Ltd

DH-A2E BGA Rework Station Manual

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Company introduction

SHENZHEN DINGHUA TECHNOLOGY DEVELOPMENT CO.,LTD is a professional manufacturer of BGA rework stations, Xray inspection machine and automatic soldering machines.

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!

Before starting the machine, please **MUST** screw on one of vaccum nozzle marked in the red circle as below:
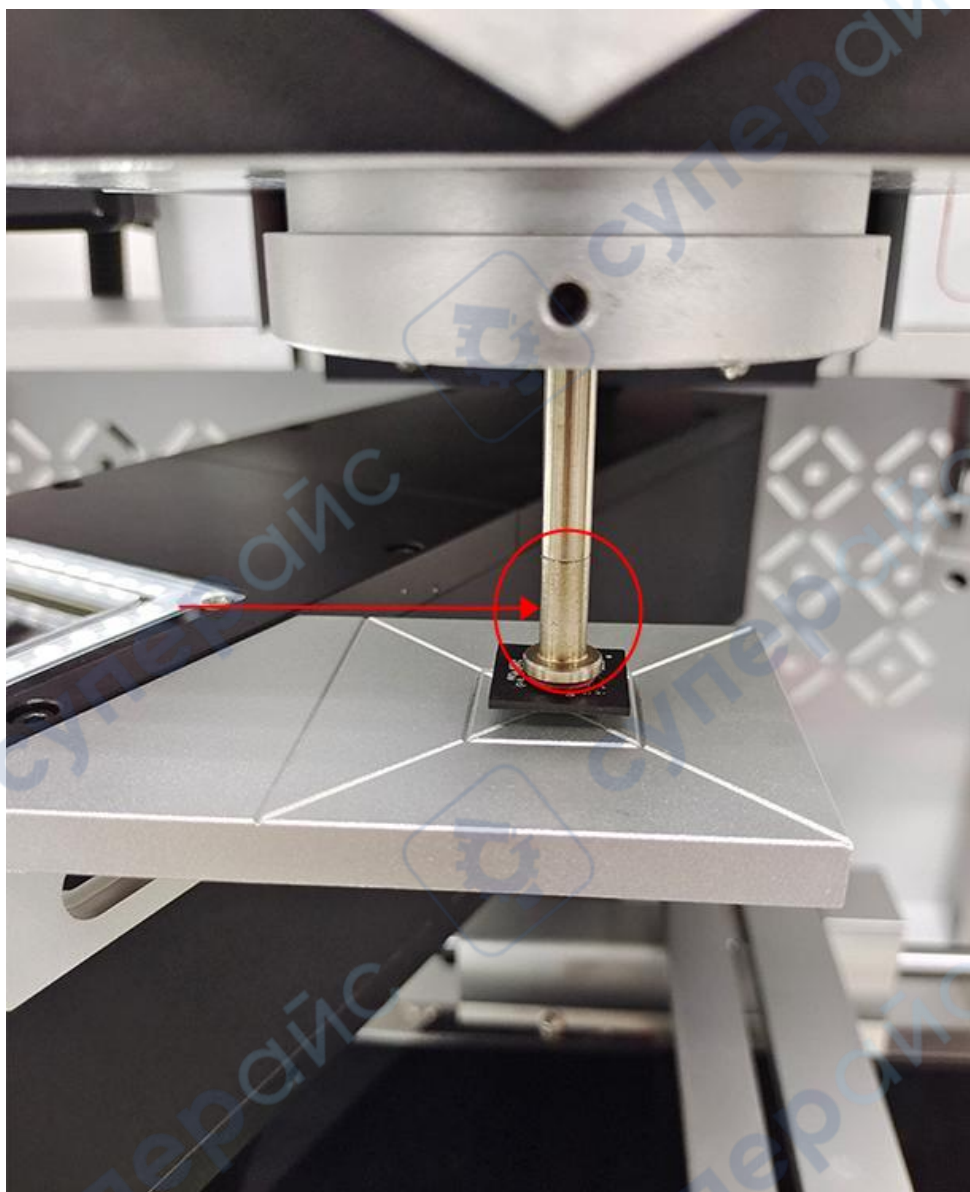
(Please find it in that tool box taken with the machine to you)

B 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 :AC220V±10% 50/60Hz

 (C).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

(A)Structure

Monitor screen

Upper nozzle

feeding system

Optical CCD

IR preheating

Left IR switch

Joystic

Touchscreen

USB port

Angle rotating

HR adj.

CCD brightness

Laser position

start of light

Light

Lower nozzle

Right IR switch

Up and down knob

Emergency stop

start

thermocouple

micrometer

(B.)Functions

Name	Usage	How to use
Angle rotating	Fine tune the BGA angle	Rotate the micrometer
HR adj.	For upper HR adjusting	
CCD brightness	Control the brightness of the LED light on the lens	Rotate the knob
Laser position	Turn on/off the laser	Press the button

Start of light	LED switch	Press the button
Light	Lighting when working	
Lower nozzle	Control the hot air more evenly	
Right IR switch	On/off	
IR preheating	Preheating the PCB board	
Up and down knob	Control the distance between the bottom heater and PCB board	Rotate the knob
Emergency stop	Stop the machine immediately	Press the button
Start	Heat automatically	Press the button
Thermocouple	External temperature testing	Insert sensor wire
Micrometers	PCB platform movement at X and Y axis	
Monitor screen	Observe dots of chip and PCB	
Upper nozzle	Control the hot air more evenly	
Feeding system	For chip uploading or recycling	
Optical CCD	Transmit the image to the displayer	Pull it out
IR preheating	For PCB preheating	
Joystick	Upper head up or down, zoom in and out	
Touchscreen	Time and temperature setting	
USB port	Transfer files	

Specification

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.

E Setting

(A.)Introduction of the touch screen operation

1 Switch on the power, the touch screen will show as follow: choose the user's language

ver:2.3.01

简体中文　产品型号：**DH-A2E**　ENGLISH

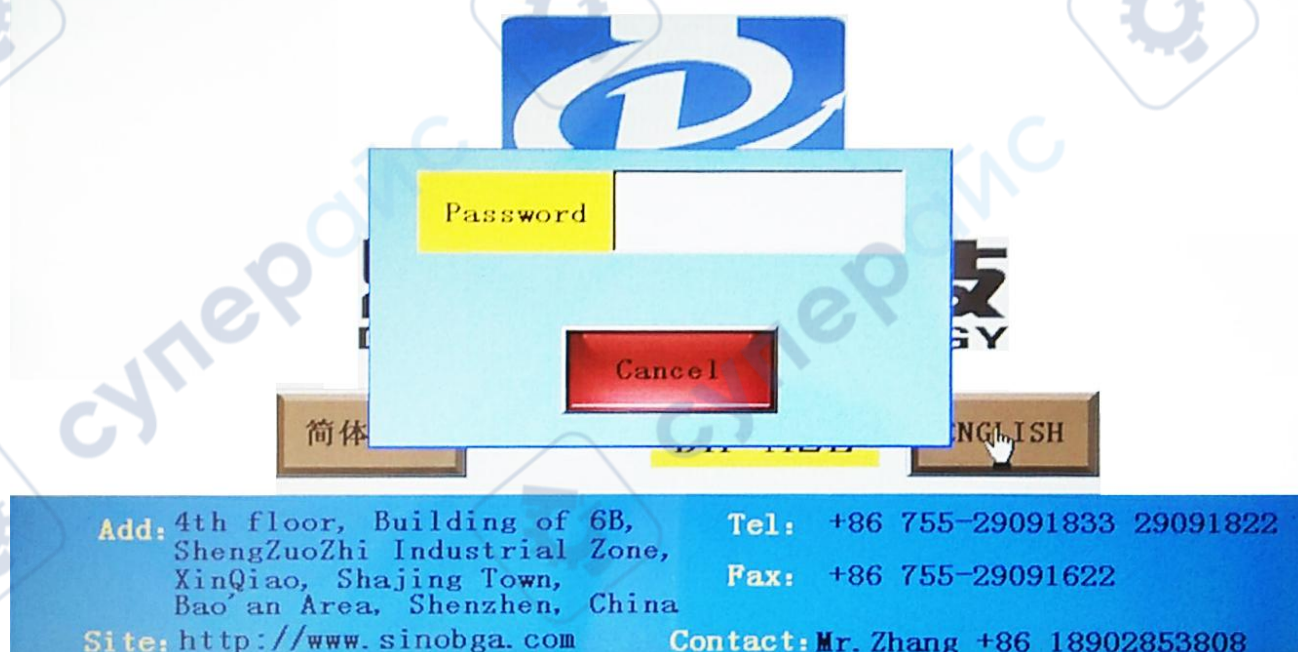| 地址：深圳市宝安区沙井镇新桥新玉路	电话：0755-29091833　29091822
圣佐治科技工业园6B栋4楼	传真：0755-29091622
网址：http://www.dh-bga.com.cn	联系人：张先生 手机:18902853808

Picture 1

2.Click on ENGLISH , it will shows as follow

Picture 2

3. Click the input box, it will appear as follow:

Picture 3

4. Input the password (the default password is 8888)

The working interface will appear as follow

Start	Stop	Keep OFF	Cooling	Manual align	Current Program

Stand by

Heating time: 0
Temp constant time: 0S

Optics Position: 65
Welding Position: 30

Name: 无铅2   Location: 41.2 mm

400
360
320
280
240
200
160
120
80
40
0

0   45   90   135   180   225   270   315   360

Program Selection

Desoldering
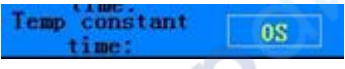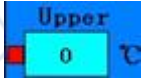
Alignment ok

Upper
■ 29.2 ℃
Lower
□ 29.2 ℃
Infrared
■ 29.0 ℃
Outside1
□ 446.1 ℃

BACK

The introduction of main working interface

1. **Start** : Starting working

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

3. **Optics Position** `0` : this is the optical align distance

4. **Welding Position** `0` : this the soldering distance

5. **Desoldering** he status for the work, click here, it will show 3 models, Desoldering，Soldering and Position

3. **Keep OFF** : This is for keeping the constant temperature

4. **Stop** : Stopping button

5. **Cooling** : Control the upper, bottom and air-flow cooling fan, Click it, it will become **Cooling** , all of the fans turn on

7. **Name:** `0` : Show the name of working profile

8. **Temp constant time:** `0S` : Show the rest time of constant temperature

9. **Outside1** `0.0` : Indicate temperature detected by the outer temperature sensor 1 The color of curve is Baby blue

13. **Upper** `0` ℃ : Indicate the practical temperature of upper heater The color of curve is Red

14. **Lower** `0` ℃ : Indicate the practical temperature of lower heater The color of curve is Green
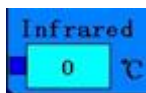
15. : Indicate the practical temperature of infrared temperature zone The color of curve is dark blue

16. Click it to enter the current program interface as follow, which displays the running temperature parameters

These are three Temperature, Constant Time and Rate

Name	无铅2		Soldering position		30	Optics position		65	
Current Curve	1st	2nd	3rd	4th	5th	6th	7th	8th	Current profile
Upper Temper	165	190	225	245	260	0	0	0	
Upper Rate	3	3	3	3	3	0	0	0	
Constant Time(s) *	30	30	30	40	40	0	0	0	
Lower Temper	165	190	225	245	260	0	0	0	
Lower Rate	3	3	3	3	3	0	0	0	
Constant Time(s)	30	30	30	40	40	0	0	0	
Infrared Temper		180	Infrared Rate		3	Constant Time(s)		300	BACK

Picture 6

The temperature rate is usual at 3 degrees per second.The upper/bottom and infrared temperature zones can set up to 8 heating temperatures and 8 constant times,the parameters can be modified in the current curve system, but they are not going to be saved in the procedure If saving is needed, please refer to the following procedure

"17"！If the profile is not suitable for the required welding temperature, please click

Back
, return to the main interface

Soldering position this is the distance of the upper heater to chip on PCB for soldering . We usually set it from 190 to 198, but if you can not make sure the distance for the

first time, you can go to **Manual align**, use the **Manual down** to control the upper heater go down,until the vacuum sucker touch the BGA, you will see the exactly distance at **Soldering Position** `0`, take down this parameter, when you set the program, you can set the **Soldering position** `0`

16. **Optics position** `0` is the distance for optical align,the distance is from the BGA chip(which is being picked up) to the CCD camera, we usually set it 20.

17. **Selection** Click it, the interface will appear as follow

Name	Selection	Saved	Deleted	Apply	Smart profile	BACK
无铅2	Soldering position		30		Optics position		65	
*	1st	2nd	3rd	4th	5th	6th	7th	8th
Upper Temper	165	190	225	245	260	0	0	0
Upper Rate	3	3	3	3	3	0	0	0
Constant Time(s)	30	30	30	40	40	0	0	0
Lower Temper	165	190	225	245	260	0	0	0
Lower Rate	3	3	3	3	3	0	0	0
Constant Time(s)	30	30	30	40	40	0	0	0
Infrared Temper	180		Infrared Rate		3		Constant Time(s)		300

Picture 7

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	Smart profile	BACK

Number	Name
1	有铅
2	无铅1
3	无铅2
4	CPU座
5	
6	
7	
8	
9	
10	

无铅2	Solde posi					65	
*	1st					7th	8th
Upper Temper	165					0	0
Upper Rate	3					0	0
Constant Time(s)	30					0	0
Lower Temper	165					0	0
Lower Rate	3					0	0
Constant Time(s)	30					0	0

Confirm   Cancel

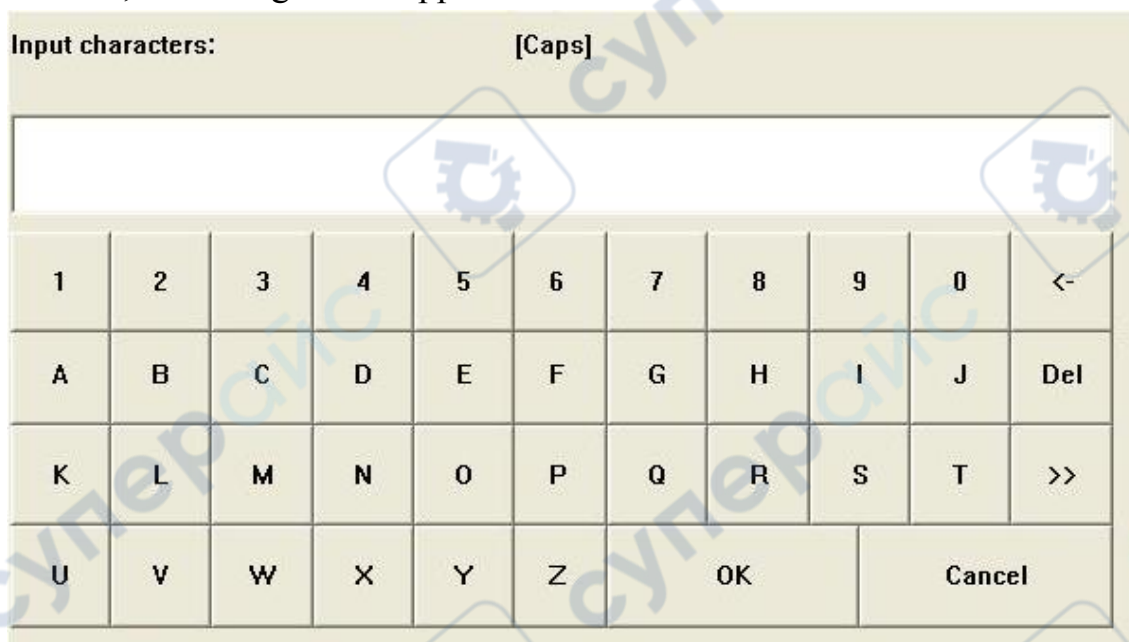| Infrared Temper	180	Infrared Rate	3	Constant Time(s)	300

Picture 8

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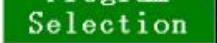

Picture 9

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 input field below **Name** to change the curve's name, the dialogue will appear as follow
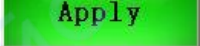
Input characters:					[Caps]					
1	2	3	4	5	6	7	8	9	0	<-
A	B	C	D	E	F	G	H	I	J	Del
K	L	M	N	O	P	Q	R	S	T	>>
U	V	W	X	Y	Z		OK		Cancel	

Picture 10

You can also click **Program 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

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** ,it would be changed into "**Keep on**", the button will flash,

15

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 on**" , the machine come back the normal heating state

Smart profile setting has been done with all parameters set when the machine leaved the 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

ver:2.3.01

鼎华科技
DINGHUATECHNOLOGY

简体中文　产品型号：**DH-A2E**　ENGLISH

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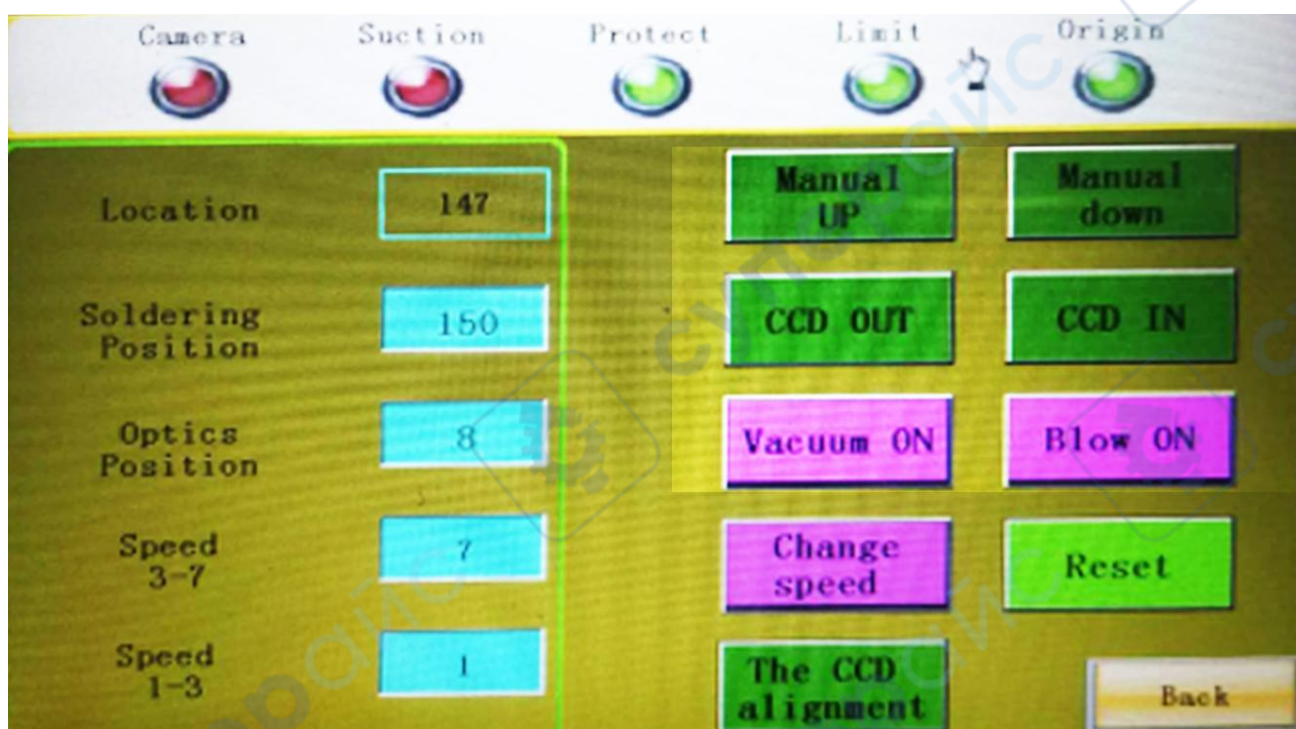网址：http://www.dh-bga.com.cn　　联系人：张先生 手机:18902853808

Picture 11

18. **Manual** ,

1. Camera: The indicator will turn green when CCD Camera in the oringal.
2. Suction: The indicator is on green, the top heater is on stand by.
3. Protect:　The indicator is on green, when the top heater inductive switch in on.
4. Limit:　The indicator is on green, when the top heater goes to the bottom.
5. Origin:　The indicator is on green, when the top heater is on the default position.
6. Soldering position:　Welding position can be setting here.
7. Location: Showing the present position of the top heater.
8. Optics position: Showing the present position of the top heater.
9. Speed: showing the speed of the top heater, can setting from 3-7
10. Low speed, only can set　from　1-3
11. Cooling time: cooling time, you can set to what you need,we usally set 200seconds
12. Reset: Click it, the top heater will go back to back to the top.
13. Vacuum: Click it, the vacuum will on working.
14. Manual Up: Click it, the top heater will goes up
15. Manual Down: Click it, the top heater will goes down
16. Change speed: it is for changing the speed from low speed to high speed.

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!

(F) Operations:

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 `Current Program`, then it will work as you set

After the process finished, raise up the Upper heater, then take the BGA chip off with vacuum pen,the procedure of desoldering is finished

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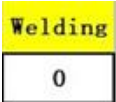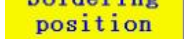
Apply the paste flux with the brush pen on the PCB pad If you apply so much, it will cause connected welding, on the contrary, it will cause null welding In order to wipe off dust and impurity of tin balls, and enhance welding effect, the welding paste must be wiped equally

7. 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 temperature profile, choose the model `Position`, then click

`Start`

3). The upper sucker will go down to `Welding 0` (`Soldering position`)welding position as set in "picture 6" to pick up the BGA chip, and goes up the Optic position set in "picture 6" `Optics 0`
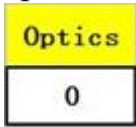
4). The optical CCD camera will go out right away for alignment, the BGA tin ball and welding pad will be displayed on the monitor screen, you can check images of tin balls on the screen through the adjusting angle handle--X axis,Y axis and angle axis,the tin ball and PCB's pad must be coincided completely on the screen

5)Click the `Alignment ok`, the monitor screen will go back to its original position.

8. 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.

2. 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

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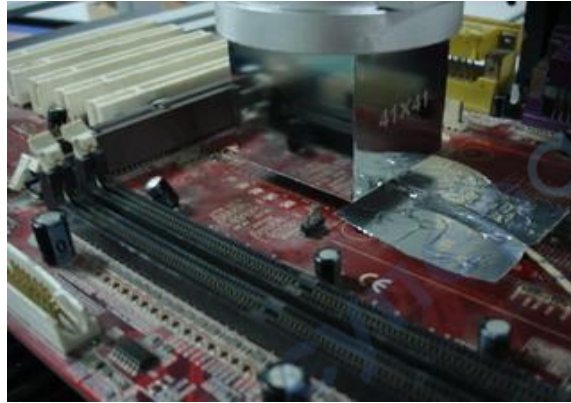c After right installation of couple, the touch screen will show the current temperature of couple

(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

Picture fifteen

Picture sixteen

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)

Picture seventeen

(D) 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

H Usual temperature parameters

Lead temperature curve welding

41*41 BGA welding temperature setting

	1st	2nd	3rd	4th	5th	6th
Upper temperature	160	185	210	220	225	0
Constant time	30	30	30	40	20	0

Upper rate	3	3	3	3	3	0
Lower temperature	165	190	215	225	230	0
Constant time	30	30	30	40	20	0
Lower rate	3	3	3	3	0	0
Infrared temperature	180	0	0	0	0	0
Constant time	300	0	0	0	0	0
Infrared rate	3	0	0	0	0	0

38*38 BGA welding temperature setting

	1st	2nd	3rd	4th	5th	6th
Upper temperature	160	185	205	215	220	0
Constant time	30	30	30	40	20	0
Upper rate	3	3	3	3	3	0
Lower temperature	160	185	210	220	225	0
Constant time	30	30	30	40	20	0
Lower rate	3	3	3	3	3	0
Infrared temperature	180	0	0	0	0	0
Constant time	300	0	0	0	0	0

Infrared rate	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	30	0
Upper rate	3	3	3	3	0	0
Lower temperature	160	180	200	210	220	0
Constant time	30	30	35	45	40	0
Lower rate	3	3	3	3	0	0
Infrared temperature	180	0	0	0	0	0
Constant time	300	0	0	0	0	0
Infrared rate	3	3	3	3	0	0

Above reference temperature are for the leaded products

Lead-free temperature curve welding

41*41 BGA welding temperature setting

	1st	2nd	3rd	4th	5th	6th
Upper temperature	165	190	225	245	255	0
Constant time	30	30	35	40	45	0
Upper rate	3	3	3	3	3	0
Lower temperature	165	190	225	245	255	0
Constant time	30	30	35	40	45	0
Lower rate	3	3	3	3	3	0
Infrared temperature	180	0	0	0	0	0

Constant time	300	0	0	0	0	0
Infrared rate	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	0
Constant time	30	30	35	40	40	0
Upper rate	3	3	3	3	3	0
Lower temperature	165	190	225	245	250	0
Constant time	30	30	35	40	50	0
Lower rate	3	3	3	3	3	0
Infrared temperature	180	0	0	0	0	0
Constant time	300	0	0	0	0	0
Infrared rate	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	0
Constant time	30	30	35	40	20	0
Upper rate	3	3	3	3	3	0
Lower temperature	165	190	220	240	245	0
Constant time	30	30	35	40	20	0
Lower rate	3	3	3	3	3	0

Infrared temperature	180	0	0	0	0	0
Constant time	300	0	0	0	0	0
Infrared rate	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

I Announcements of BGA operation

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 technics.

Packing List

NO	Item	specification	Unit	Qty
1	BGA rework station	DH-A2E	SET	1
2	Suction nozzle		SET	1
3	Instruction manual	DH-A2E	COPY	1
4	Hot-air nozzle	Upper nozzle: 31*31/38*38/ 41*41mm (for reference)	PCS	5

		Bottom nozzle: 55*55/34*34mm		
6	Shaped clip		PCS	4
7	Plum knob		PCS	4
8	Supporting screw		PCS	5
9	Temperature sensor		PCS	1

If there is anything unclear, please contact us.

Thanks a lot for your time.

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