



SHENZHEN ZHUOMAO TECHNOLOGY CO., LTD.



## BGA Rework Station ZM-R5860C Instruction Manual

# Contents

A. Preface .....	2
B. Structures.....	3
C. Specifications .....	4
D. Operations.....	5
E. Installation.....	12
F. Packing list.....	13

## **A. Preface**

Shenzhen ZhuoMao Hi-tech Co., Ltd. is a high-technology company located in the western district of BaoAn. Thanks to its proximity to the international airport and container terminal, this part of the booming industrial city of Shenzhen is rich in modern business opportunities.

BGA repair turnkey solutions are the heart of ZhuoMao activities. A strong R&D team supports a dynamic workforce of over fifty people. A well established sales network and after sales service has built ZhuoMao a strong reputation in China among high profile customers.

The main products of ZhuoMao are BGA Rework Station and some other devices (BGA Mounter, BGA Reballing Machine, and BGA Soldering Machine), BGA Testing Machine (main board testing, video card testing, digital camera testing, and mobile chip testing)

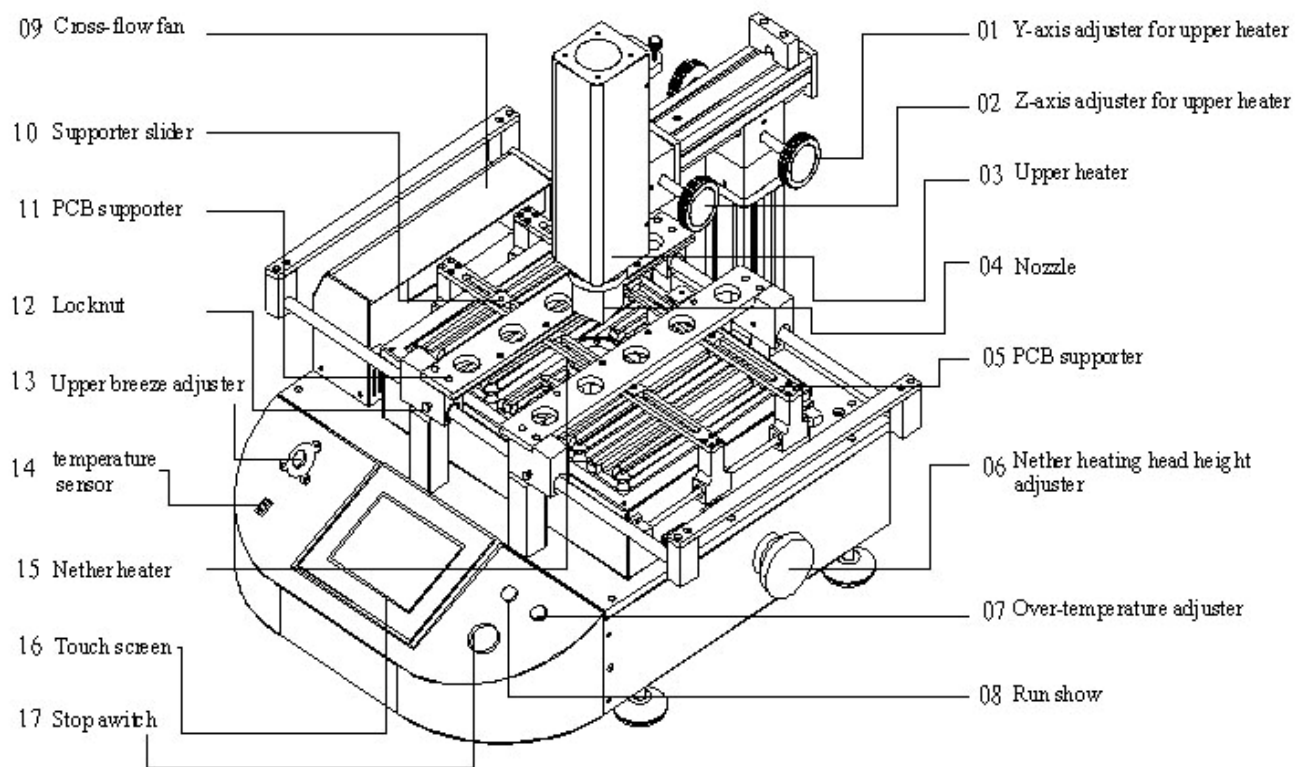
Devoted to put in practice the motto “Specialized, Innovative and Dedicated”, the company is focused on its customer’s satisfaction and has set up a network of local offices to tailor its offer to an expanding market.

Developing new solutions to help customers tackle issues always more diverse and complex keeps ZhuoMao engineering teams to the forefront of the technology and rewards its products with the most prestigious awards and recognition in China and abroad.

Because ZhuoMao understands BGA repair is a critical activity needing speed, accuracy and user-friendliness, its machines are designed for you to

**REGAIN SATISFACTION.**

## B. Structures



## C. Specifications

Specifications	Description
Top Heater	Hot Air: 800 W
Bottom Heater	Infrared plates: 3000 W - Central nozzle: 1200 W
Temperature control	Imported K-type thermocouple (Closed Loop) $\pm 3-5^{\circ}\text{C}$
PCB size	Max: 400x450 mm                      Min: 22x22 mm
Positioning	V-clip PCB clamping   10~20 $\mu\text{m}$ X-Y table adjust.
Power required	Single Phase AC 220 V ( $\pm 10\%$ )   50 Hz   5.2 kW
Machine dimensions	L710mm x W680mm x H660mm
Weight	40 kg

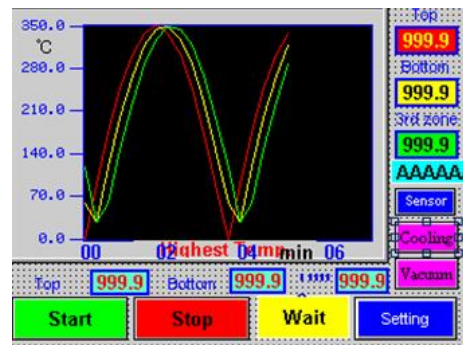
## D. Operations

### 1. Set the program.

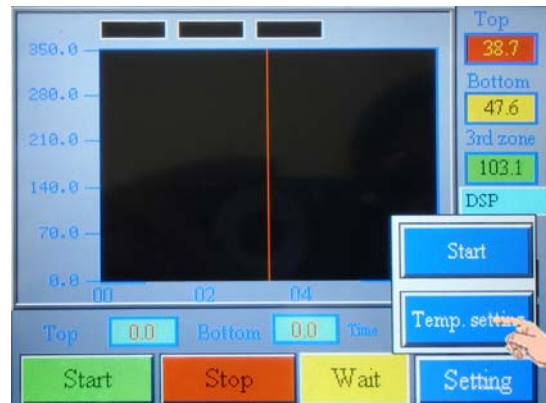
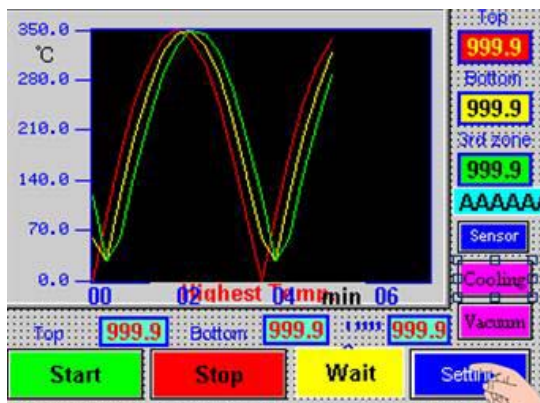
- a. Turn on the electric power supply of the whole machine. The following image will appear on the touch-screen. (The original password is 8888)



- b. Click "Ent".



- c. Click "Setting", and then "Temp. setting".



- d. Input the proper temperature parameters.

	Preheat 1	Preheat 2	Activation	Soldering 1	Soldering 2	Cooling	
Top:	99.9	99.9	99.9	99.9	99.9	99.9	
Time	9999	9999	9999	9999	9999	9999	
Bottom	99.9	99.9	99.9	99.9	99.9	99.9	
Time	9999	9999	9999	9999	9999	9999	
Slope	99.9	99.9	99.9	99.9	99.9	99.9	
IR	99.9	Alarm time	9999	Cooling time	9999		
999	Group	Name	AAAAAAAAA			Alarm in advance	9999
Save		+	Select	-		Name	Back

Introduction of the interface (take the above one for example):

**Preheat:** The temperature of upper and lower heater rises from room temperature to 165°C in 30s at a speed of 3°C/s (the slope).

**Keep warm:** The temperature of upper and lower heater rises 165°C to 195°C in 30s at a speed of 3°C/s (the slope).

**Calefactive:** The temperature of upper and lower heater rises 195°C to 225°C in 30s at a speed of 3°C/s (the slope).

**Jointing:** The temperature of upper heater rises 225°C to 245°C in 45s at a speed of 3°C/s (the slope).

The temperature of lower heater rises 215°C to 230°C in 45s at a speed of 3°C/s (the slope).

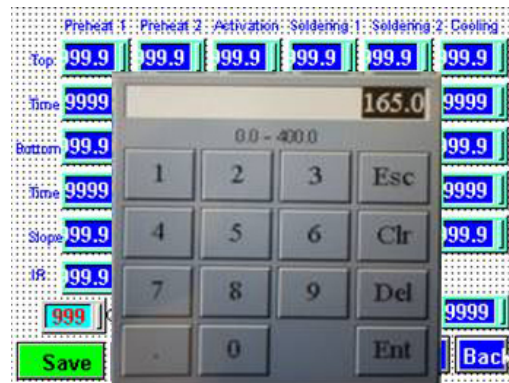
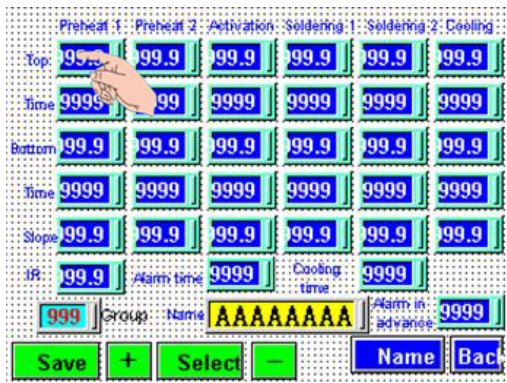
And so forth……

**Alarm time:** the time of the alarming.

**Alarm in advance:** the time between finishing the heating process and starting alarming.

**Cool time:** the time the cross-flow fan works.





The following are the temperatures for reference

#### Lead BGA temperature curve welding

- Upper temperature curve adjustment, nozzle 41\*41. Press SET to adjust.
 

r1:3.00	L1:160	d1:30
r2:3.00	L2:185	d2:30
r3:3.00	L3:230	d3:45
r4:3.00	L4:240	d4:25
r5:3.00	L5:225	d5:25
- Upper temperature curve adjustment, nozzle 38\*38. Press SET to adjust.
 

r1:3.00	L1:160	d1:30
r2:3.00	L2:185	d2:30
r3:3.00	L3:225	d3:45
r4:3.00	L4:240	d4:25
r5:3.00	L5:225	d5:25
- Upper temperature curve adjustment, nozzle 31\*31. Press SET to adjust.
 

r1:3.00	L1:160	d1:30
r2:3.00	L2:185	d2:30
r3:3.00	L3:210	d3:45
r4:3.00	L4:225	d4:20
r5:3.00	L5:205	d5:25
- Third temperature zone adjustment. Press SET for 5 seconds to adjust.
 

r1:2.00	L1:135	d1:30
r2:2.00	L2:165	d2:45
r3:2.00	L3:185	d3:240

#### Lead-free BGA temperature curve welding

- Upper temperature curve adjustment, nozzle 41\*41. Press SET to adjust.
 

r1:3.00	L1:165	d1:30
r2:3.00	L2:200	d2:30
r3:3.00	L3:245	d3:50
r4:3.00	L4:255	d4:35
- Upper temperature curve adjustment, nozzle 38\*38. Press SET to adjust.
 

r1:3.00	L1:165	d1:30
r2:3.00	L2:195	d2:35
r3:3.00	L3:240	d3:45
r4:3.00	L4:250	d4:25



r5:3.00      L5:235      d5:25      r5:3.00      L5:230      d5:25

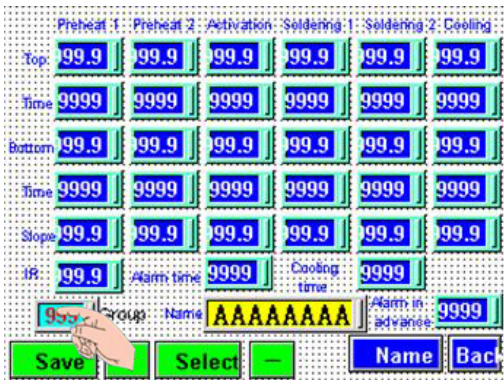
3. Upper temperature curve adjustment, nozzle 31\*31. Press SET to adjust.

r1:3.00      L1:165      d1:30  
r2:3.00      L2:190      d2:30  
r3:3.00      L3:235      d3:45  
r4:3.00      L4:245      d4:20  
r5:3.00      L5:225      d5:25

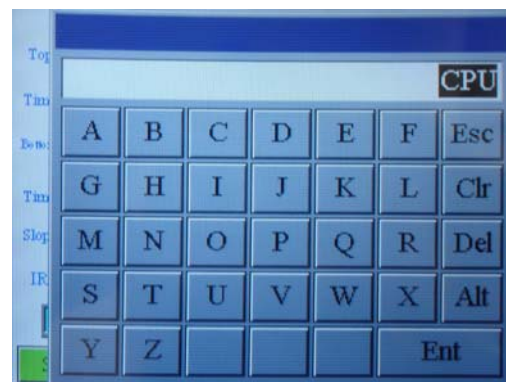
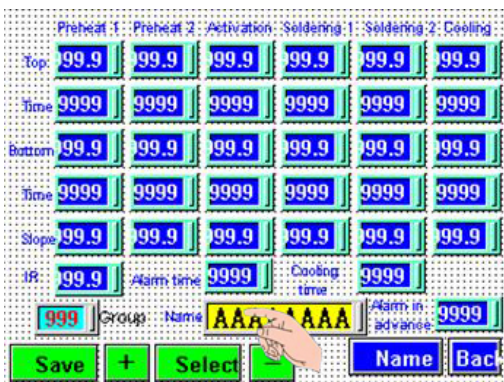
4. Third temperature zone adjustment. Press SET for 5 seconds to adjust.

r1:2.00      L1:135      d1:30  
r2:2.00      L2:165      d2:45  
r3:2.00      L3:185      d3:40  
r4:2.00      L3:210      d3:240

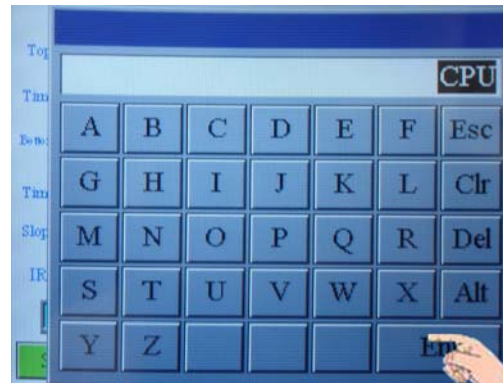
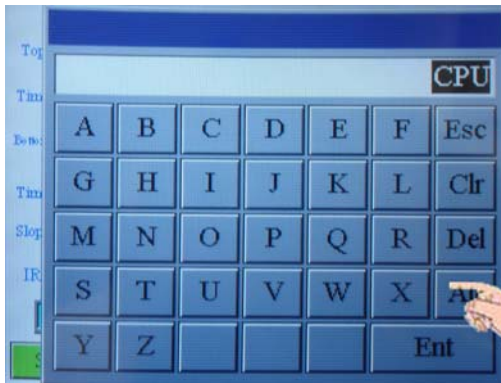
**No.:** Click the number before “Group”, input the number you want to name it by.



**Name:** Click “Name”, the input interface of name will appear, and you can set the name. Click “ENT” to the set interface.

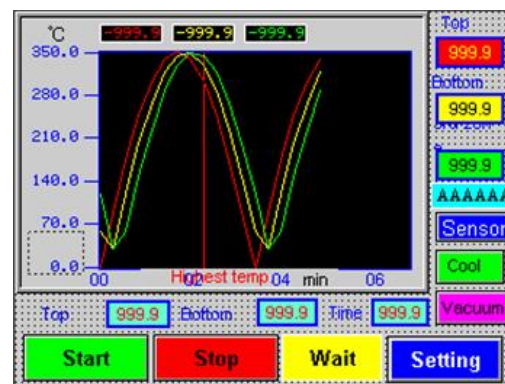


If you want to name with number, you can click “Del” and “Alt”.

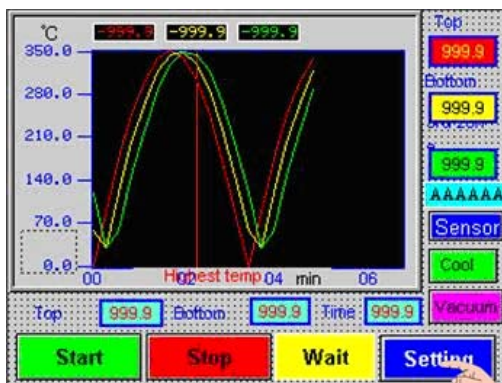


## 2. Operation

a. Turn on the power supply of the machine, and click “Operation”.



b. Click “Setting” and “Temp. setting”.

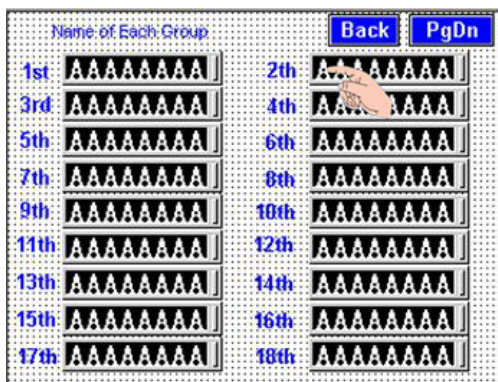


c. Choose the right group of temperature profile.

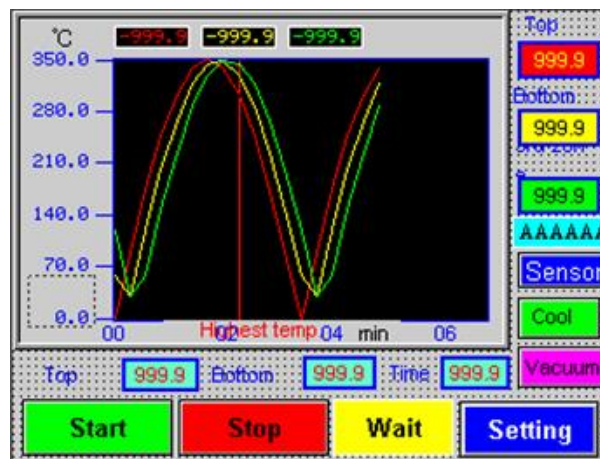




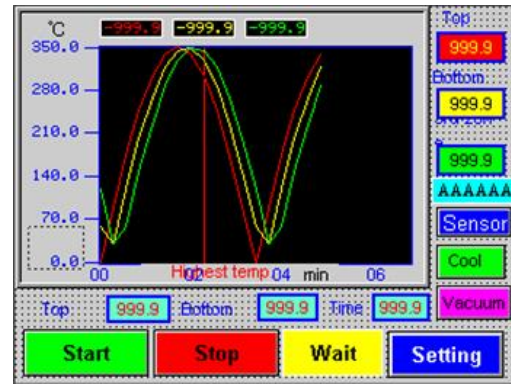
d. If you want to work with the 2<sup>nd</sup> group, click “DSP” The 2<sup>nd</sup> group of setting will appear, then click “Back”.



e. Then the following interface will appear on the screen.



f. Fix the proper PCB and BGA as shown in the picture. Move the heater down to above the BGA, keeping a distance of 3-5mm between the bottom edge of the nozzle and the surface of BGA, as shown in the following picture. When the solder process is finished, there will be an alarming.



## **E. Installation**

In order to ensure the validity of BGA Rework Station, the installation should meet the following requirements.

1. Away from inflammable and explosives;
2. Away from water and other liquids;
3. Ventilated, dry place;
4. Stable and flat, free from tremor.
5. Less dust;
6. No heavy objects on the controlling box;
7. Not affected by airflow of air conditioner, heater or ventilator.
8. Leave a space of 30cm or more behind the rework station for the upper part to move and rotate.
9. Because the machine is equipped with a touch screen it must be put on the big platform to make sure it will never move from side to side.

## F. Packing list

NO.	Item	Specification	Unit	Qty
1	BGA Rework Station	ZM-R5860C	SET	1
2	Vacuum sucker		PCS	2
3	Hot-air nozzle		PCS	3
4	Temperature sensor		PCS	1
5	Supporting screw		PCS	6
6	Instruction manual	ZM-R5860C	Copy	1
7	Fixture		PCS	4
8	Brush		PCS	1