Bakon®

BK3500 Intelligent Auto feed &
Lead-free Soldering Station

INSTRUCTION MANUAL V2.0

⚠ **WARNING**

- Please follow the instruction to avoid accidents.
- Misuse may potentially cause injury to the user or physical damage to the objects involved.
- For you own safety, be sure to comply with these precautions.
- Please keep this manual after read.

CE RoHS

Contents

⚠ Caution

- Do not touch the the tip or the metal partsnear the tip.

- Do not allow the tip to come close to, or touch, flammable materials.

- Inform others in the area that the units is hot and should not be touched. Turn the power off when not in use, or left unattended.

- Turn the power off and wait for its tempersture decreases to room temperature, when changing parts or soldering tips.

- To prevent accidents or damage to the soldering station, be sure to observe the following,

- Do not use the soldering station for application other than soldering.

- Do not strike the iron against hard objects to remove residual solder. This will damage the iron.

- Do not modify the unit.

- Use only genuine replacement parts.

- Do not wet the unit or use the unit when your hands are wet.

- Be sure the work area is well ventilated, soldering produces smoke.

- To avoid any injury to the boday and damage to the soldering station when operation.

Packing list

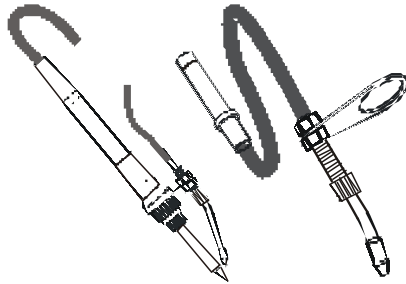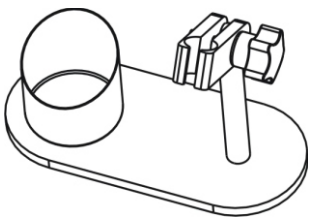| Item	Quantity
Lead-free soldering station with auto-feeder	1
Iron	1
Iron holder (include cleaning ball)	1
Foot switch	1
Power cord	1
Grounding wire	1
Instruction Manual	1

Part Names
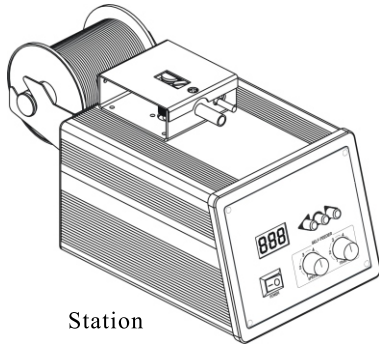
Station
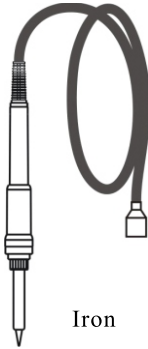
Iron

Optional Part

Option 1

Option 2

Option 3

Mode Switch

Foot Switch Socket

Power Socket

Iron Socket

Grounding Socket
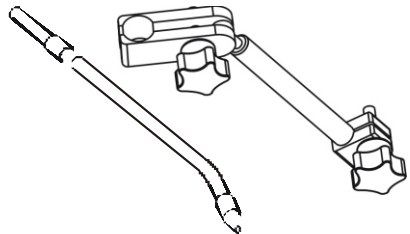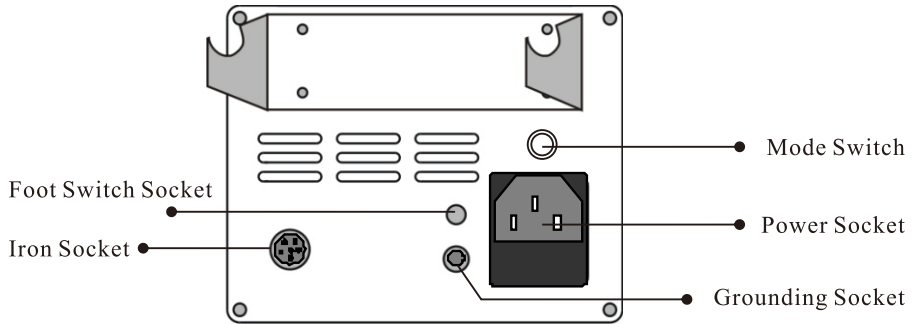
Install solder guider assembly

Solder Guider

Pressure Adjust Screw

Connect to solder pipe

Staff
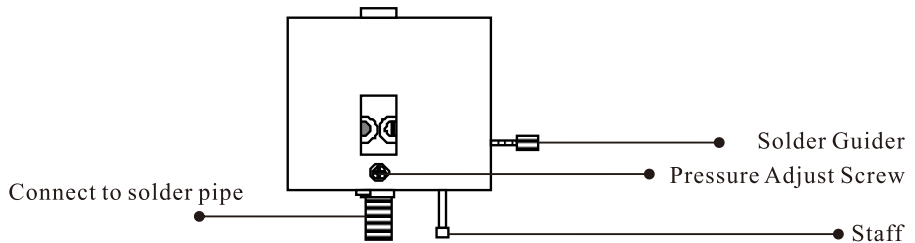
Insert iron solder pipe and screw down the fix screw.

Adjust guide pipe to tip

Adjust the top of guide pipe to make the solder wire run to the soldering tip.

Install Foot Switch

Insert foot switch plug to foot switch socket.

Install solder wire

1. Put the reel through roll solder and place into roll holder.
2. Insert the solder wire into guider, move the staff and insert solder wire into solder pipe.
3. Plug power cord and power on, make solder pipe as straight as possible, step the foot switch until the solder run out from the top of pipe.

Connect iron into station
Power off and plug the iron to the socket behind of station.

Put in cleaning wire
Put the cleaning wire into cup.

Install iron
Put iron into clip and adjust the height and angle then screw down clip.

Grounding
Plug in the grounding cable and connect the cable to ground.

⚠ **Note:**

    Do not over bend or fold the solder pipe which may lead to jam solder wire.Please pay attention the iron will heat up after switch on

Operation

Decrease

Display Screen   TEMP   Increase

Function

Power Switch   POWER   SELF-FEEDER SPEED TIME   Feed Time
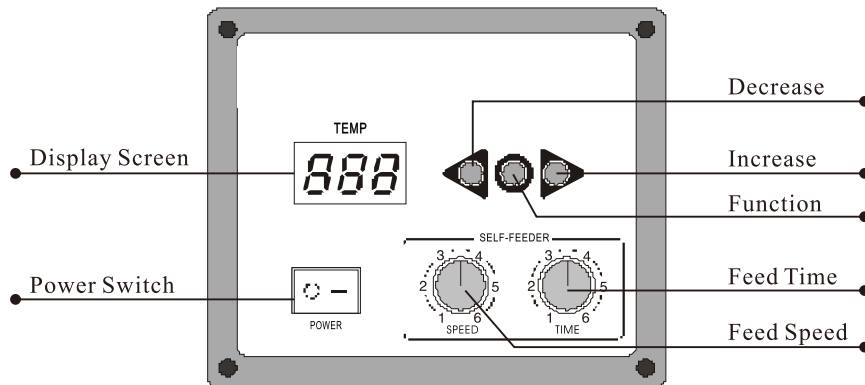
Feed Speed

Feed Speed
Adjust "SPEED" volume and change solder feed speed, the speed range is around 14~35mm/s.

Feed Time
Adjust "TIME" volume and change solder feed time, the time range is around 0~3.5s.

Adjust pressure to solder wire
Adjust Pressure Adjust Screw to give proper pressure to solder wire.

Solder withdrawing function
After finish feeding, motor will withdraw solder (solder withdrawed by a fixed time period), for special request please follow below instruction.
Press ◎ button, displayed figure flashes, press ◀ or ▶ to change the value, finally press ◎ to confirm
※Remark: displayed figure (0-950) is a value that refers to time period, 950 equals to 2 seconds.

Feed mode
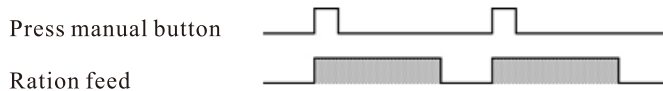The machine can be adjusted in Auto mode or Manual mode.

1. Auto mode
    The feed time can be adjusted by "TIME" and "SPEED" volume.
2. Manual mode
    Its feed volume can be adjusted accoding to the size of soldering point..

    ● Press manual button on the iron: Output solder is ration, the feed can be adjusted by "TIME" and "SPEED" volume.

    Press manual button

    Ration feed

    ● Press and hold manual button : The feed speed is proportional to the feed time. The feed speed can be adjusted by "SPEED" knob.

    Press and hold

    Scale feed
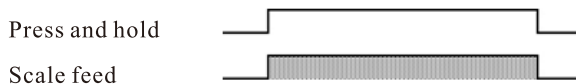
Setting the Temperature
1. Turn the power off firstly, then Press and hold ◀ and ▶ at the same time， and turn power on.
2. When it displays ▭ , press ◎ button, then display change to ⊟ and the left most digit will falsh, it enters into passward setting mode.
3. Press ◎ , the left digit will flash, and press ◀ or ▶ to enter password number.

4. Press ◎, to move to next digit, after entered all number, press ◎ again to confirm.
5. If the password is correct, display ⬛OH , or incorrect will display Err .
6. While display ⬛OH, the temperature can be adjusted by pressing ◀or▶,and press◎ to confirm.

⚠ Warning:

The temperature can be adjusted until power off, and will reload the setting at next time power on. High temperature (above than 400℃) may cause heater and tip oxidized and damaged, so please try to operate in low temperature（350℃～400℃）.

Parameter

Password setting
Modifying Password

1. Turn power off, Press and hold ◀ and ▶ together, then power on.
2. Hold them till It Displays ⬛O .which means password setting function.

Input Old Password

1. Press ◎, display ---he left digit will flash, and press ◀ or ▶to enter password number.
2. After enter all number, press ◀or▶ to confirm.

   ● If the password is incorrect, display Err , after 2 seconds soldering station will enter normal work mode, and the temperature can not be adjusted.
   ● If the password is correct, display ⬛OH , after 4 seconds soldering station will enter work mode, and the temperature can be adjusted.

3. While display⬛OH, press ◎ to display ---, means new password is allowed. Press ◀ and ▶ to enter new password.

Re-input New Password

1. After enter 3 digit number, press ◎, display--- , means enter new password to confirm, please input again.

2. If the two times password are same, after press ◎, password modify successful and new password will be remembered in machine.
3. If the two times password are not same, after press ◎, display `- --` , you have to re-enter the password, until the last two times number are same.(Please refer to Step7-8 above)

Clean Password

The initial password is "000". Press and hold 3 keys and power on, the password will change back to initial password.

Work mode setting

1. While display `- --` press ◄ and ► at the same time, display `    ✖` , means enter into work mode setting. Press ◄or ► can change working mode between mode 0 and mode 1.

Note: "×" stands for work mode number.

2. After select working mode ,press ◎ to confirm. The work mode describing in following table.

Work Mode

Work mode	Description
0	No Auto Sleep and Auto Power-off
1	20/60min Sleep and 40/90min Auto Power off

Work mode setting

In mode 1, the unit will enter in to sleep after power on 20 or 60min no work, the temperature will decrease to 200℃ in order to save power, press any key to wake up, otherwise the unit will be power-off after 40 or 90min.

⚠ **Warning:**

If you will leave the station alone for a long time, please make sure power off.

Temperature and heat recovery graph

TEMP/℃

Temperature and heat recovery curve

Work time

8s

Test condition
PCB:Bakelite PCB
Period: 1 soldering each 3S
Demostration
A:Room temperature
B:Heat up time
C:Work time
D:Temperature decrease
E:Heat recovery time

Time/s
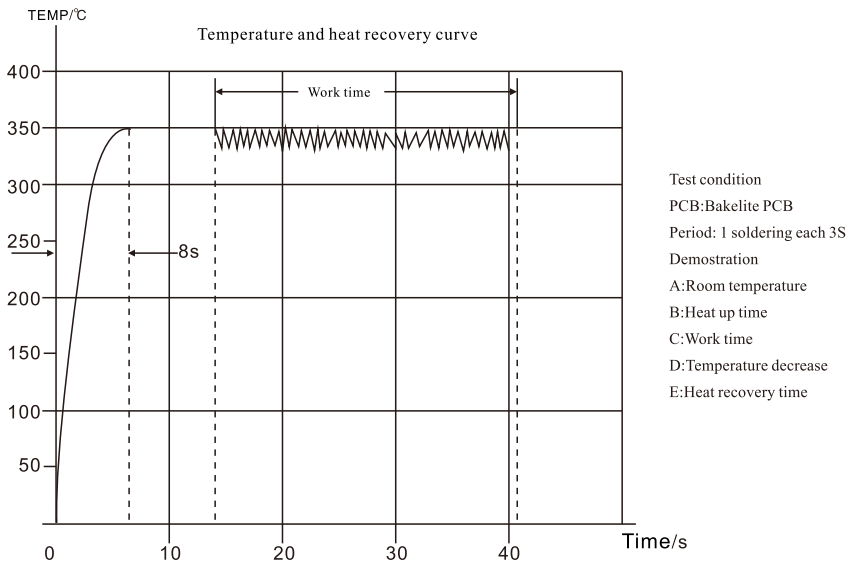
Usage of High Frequency Iron

Choose proper tip for soldering

1. Pick a tip that maximizes contact area between the tips and solder joint. Maximizing contact area gives the most efficient heat transfer; allowing operators to produce high quality solder joints quickly.
2. Pick a tip that allows good access to the solder joint, shorter tip lengths allow more precise control. Longer or angled tips may be needed for soldering densely populated boards.

Calibrate the Iron Temperture

Use thermometer to check the temperature every time you change any parts from the soldering iron.

Use thermometer for high frequency iron testing.

Calibrating the temperature manually：

1. Set the temperature as 350℃.
2. When the temperature is stable, pull out of the Cal stopple.
3. Use "-" or "+" screw driver to adjust the Cal screw till the displaying temperature is 350℃.(Clockwise is for temperature increasing, unclockwise is for temperature decreasing. After adjustment, insert the Cal stopple)
4. When the temperature stabilizes， if there is a difference between tip temperature and measured temperature， press ◎ to enter into the tempersture offset, then use ◄ and ► to increase or decrease the temperature. For example the measured temperature is higher then set temperature by 5 ºC, then set the offset as -5.

We suggest use 191/192 thermometer for calibrating.

Tip temperature

High soldering temperatures can degrade the tip. Use the lowest possible soldering temperature. The excellent thermal recovery characteristics ensure efficient and effective soldering even at low temperatures. This also protects the soldered item from thermal damage.

Clean

Clean up the tip regularly with a cleaning ball, as oxides and carbides from the solder and flux can damage the tip. These impurities can result in defective joints or reduce the tip's heat conductivity. After soldering, please clean tip and coat with new solder, this helps prevent tips from oxidizing.

Maintenance of Tip

Inspect and clean the tip

1. Set the temperature to 350℃.
2. When the temperature stabilizes, clean the tip with the cleaning ball and check the condition of the tip.
3. If there is black oxide on the solder- plated portion of the tip, apply new solder (containing flux) and wipe the tip on the cleaning ball. Repeat until the oxide is completely removed. Coat with new solder. The solder protects the tip from oxidation and prolongs the life of the tip.
4. If the tip is deformed or heavily eroded, replace it with a new one.

⚠ Note：Never file the tip to remove oxide.

A "dead" tip is one not wetted with solder. This exposes the plating to oxidation and degrades the heat transfer efficiency of the tip. "Dead" is caused by：

- Failure to keep the tip covered with fresh solder during idling periods.
- High tip temperatures for long time.
- Not melt fully during soldering.
- Wiping the tip on dirty or dry sponge and rags. (Always use a clean, wet, industrial grade, sulfur-free sponge or ball)
- Impurities in the solder, iron plating, or on the surfaces to be soldered.

Recover a "Dead" Tip

1. Remove the tip from the solder handle and allow the tip to cool down.
2. Remove oxides from the tip with 80-grit abrasive polyurethane foam stock or a 100-grit emery cloth.
3. Warp rosin core solder（Ø 0.8mm or larger）around the newly exposed iron surface, inset the tip into the handle, and turn on the station.

⚠ Note：Proper daily care can prevent "Dead" tip!

Extend tip life

1. Coat the tip with new solder after each use. This protects the tip from oxidizing, prolonging tip life.
2. Try as low temperature as possible.
3. Use fine point tips only when necessary. The plating on fine precision tips is less durable than the plating on thick tips.
4. Do not use the tip as a prying tool. Bending the tip can cause the plating to crack, shortening tip life.
5. Use the minimum activation flux necessary to do the job, higher activation flux is more corrosive to the tip plating.
6. Extend tip life by switching the system off when not in use.
7. Don't apply pressure to the tip. Move pressure does not equal more heat. To improve heat transfer, use solder to form a thermal bridge between the tip and the solder joint.
8. Use clean ball instead of wet sponge because water can oxidize the tip.

Various error message will be displayed when some problem with the unit. If the following message is displayed, see the trouble-shooting guide.

S－E Sensor Error

If there is a possibility of a failure in the sensor or anywhere in the sensor circuit, "S-E" will be displayed and the current to the iron will be cut off.

Pay attention to temperature flashes:

If transport power to high frequency iron, while the real temperature is lower then set temperature by 80°C, the temperature will flash, which need attention.

H－E Heater Error

If iron doesn't heat up, the display window will show "H-E". This indicates the possibility of a heater malfunction.

Trouble Shooting

⚠ **Warnning：**
    Disconnect the power cord before servicing. Failure to do so may result in electric shock.
    If the controller is damaged, it must be repaired by the service agent or qualified person in order to avoid personal injury or damage to the unit.

Problem 1： The unit does not work

1. Check if the power cord is loose, if yes re-plug.
2. Check if the fuse burnt?after confirm the reason why fuse burnt, please replace a new fuse. Please refer to the reason why fuse burnt as below:

   ● Short circuit happens inside of hgih frequency iron
   ● Does grounding wired touch the heater?
   ● Is the lead of heater twisted?

3. Check if the cord is broken, if yes, please replace a new cord.

Problem 2: The tip does not heat up. S- E is displayed.

1. Check if the iron cord loose? If yes, please re-connect.
2. Check if the cord and connection plug are broken. Please refer to High frequency lead damage.
3. Check the sensor, please refer to Heater and Sensor damage.

Problem 3：The tip heats up intermittently

1. Check if the iron cord is loose? If yes, please re-connect.
2. Check if the cord and connection plug are broken. Please refer to High frequency lead damage

Problem 4：Solder don't wet the tip

1. Check if the tip temperature too high, if yes, set to proper temperature.
2. Check if the tip was cleaned, if no see "Maintenance of Tip"

Problem 5：The tip temperature is too low

1. Check if the tip coated with oxide, see "Maintenance of Tip".
2. Check if the iron calibrated correctly, please recalibrate.

Problem 6：Heater error H-E is displayed

1. Check if there is a tip on the iron; if not, insert a tip in the iron.
2. Check if the cord and connection plug are broken. Please refer to High frequency lead damage
3. Check the sensor, please refer to Heater and Sensor damage.

Problem 7:Temperature display flashes

1. Check if the cord is broken. Please refer to High frequency lead damage.
2. Check if the soldering point is too large, if yes, please use another soldering station with higher power consumption.

Problem 8：Can't set the temperature

1. Checks if the temperature has been locked by password, if yes then unlock it.
2. If you forget the password, please initialize the password, see Password Setting.
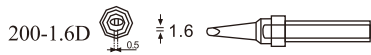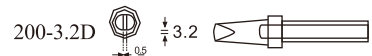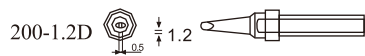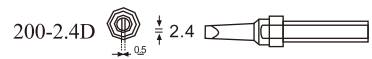
Specification

Items	Auto feed & Lead free soldering station
Power Consumption	120W
Input Voltage	AC 220V 50Hz/ 110V 60HZ
Output Voltage	AC 36V 400KHz
Feed motor	24V DC Motor
Feed Speed	Around 14～35mm/s
Feed Time	0～3.5S
Temperature Range	200℃-500℃
Temperature Stability	±2℃（Room Temp, Unload）
Case Material	Aluminum
Size	160mm×130mm×140mm
Weight（Without iron）	1500g

Soldering Iron

Tip to grounding resistance	＜0. 3Ω
Tip to grounding voltage	＜2mV
Heater	High frequency vortex
Cable	1.2m
Iron length（cable not include）	190mm
Weight	100g

- The tip temperature was measured by 191/192 thermometer.
- Specifications and design subject will be changed without notice.

200-B	1.0		200-H	3.5
200-2B	2.0		200-J	0.5
200-K	1.5		200-0.8C	0.8
200-SK	1.5		200-1C	1.0
200-I	0.5		200-2C	2.0
200-LI	0.5		200-3C	3.0
200-4C	4.0		200-2.4D	0.5 2.4
200-1.2D	0.5 1.2		200-3.2D	0.5 3.2
200-1.6D	0.5 1.6		200-4.2D	0.5 4.2
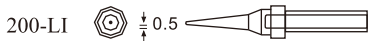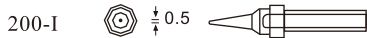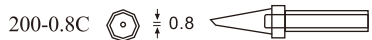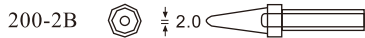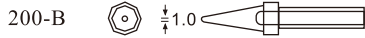
Attention:

Please use the original heater and solder tips! The soldering station's work depends on electromagnetic induction eddy current heating to make sure solder tips heating fast, the poor quality of heater and solder tips will influence the productivity and the life time of station much.

Repair Warranty （Principle）

Model：_____   Date of Production：_____

Customer：_____   Date of Purchase：_____

Product No：_____   Issued by：_____

From the date of purchasing,we provide ___months repair warranty

After Sale Suggestion （Subordinate）

Customer：_____

Delivery Date：_____   Tel：_____

Address：_____

_____

Distributor：_____

Invoice NO：_____   Invoice Date：_____

Product Model：_____   Product NO：_____

Warranty Terms：

1.The table for feedback from customers should be returned to our company within a month after the date of purchase.In this way,customers may enjoy one-month repair warranty.

2.Repair Warranty and Purchase Certificate should be presented.The warranty only applies when all the required documents are available.

3.The warranty does not apply when the equipment has received damage through abuse, carelessness,improper installation,accident or mishandling during shipment,connecting to improper line voltage,or has been serviced by anyone other than an authorized factory representative.

4.After the warranty period,we are ready to provide charged repair service,perfect as always.

Dear Sir / Madam：

Thank you for purchasing our products.To improve our service and ensure the proper use of our products,please kindly write down your suggestions.

Name of Product：_____

Date of Purchase：_____

Your Suggestions：_____

Package：_____

Functions：_____

Others：_____

Date：_____

BaKon ®

GUARANTEE CARD

The product conforms to the technical standards

Q C . _____

QC
检验员
PASS

SHENZHEN BAKON ELECTRONIC TECHNOLOGY CO.,LTD.

Warranty card

The warranty is valid in one year since the purchase of this ,any quality problem found,please send back to us with courier fee to be collected,upon receipt of the returning unit,we will repair it and send back to customer within two working days.

Notice:Please enclose the warranty card along with the returning product, or else we have the right to reject the repairing,thanks for your corporation.

BaKon®

SHENZHEN BAKON ELECTRONIC TECHNOLOGY CO.,LTD.

ADD：Ruihui Building,Matian street, Guangming District, Shenzhen, China 4 Floors 518105
MFR：Henan Bakon Tools Co., Ltd.
ADD：No.7 Building,Jinrong Technology Park, Airport Port Zone, Zhengzhou City, Henan Province, China
TEL：0755-89575688   MP：BAKON白光
SITE：www.bakon.cn   Email：postmaster@bakon.cn