Bakon® 3200

INTELLIGENT LEAD FREE SOLDERING STATION
INSTRUCTION MANUAL V1.0

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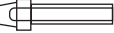
Please follow the instruction to avoid accidents.
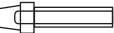Misuse may potentially cause injury to the user or physical damage to the objects involved.
For you own safety, be sure to comply with these precautions.
Please keep this manual after read.

CE UL RoHS

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	2.4 0.5
200-1.2D	1.2 0.5	200-3.2D	3.2 0.5
200-1.6D	1.6 0.5	200-4.2D	4.2 0.5

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
Replace fuse

1. Unplug the power cord from the power receptacle
2. Remove the fuse cover
3. Remove the damaged fuse.
4. Replace new fuse.
5. Put the fuse cover back.
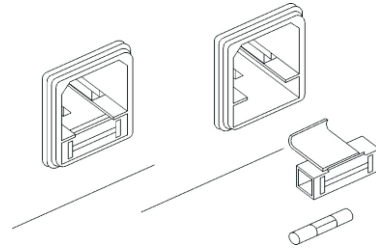
Specification

Item	Intelligent Lead free soldering station
Power	120W
Input Voltage	220V　50Hz
Output Voltage	36V　400KHz
Temperature Range	200℃－480℃
Temperature Stability	±2℃（No load and air flow）
Case Material	Aluminum
Demension	158.5mm×124mm×76mm
Weight（Without iron）	820g

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.

CONTENTS

⚠ CAUTION

●   Be sure your power voltage is same as the unit's supply voltage before connect the power cord.
●   Be sure grounding the unit.
●   After use unit, please turn off unit and unplug.
●   Do not touch the metal parts near the tip while using.
●   Before replacing parts or storing the unit, turn the power off and allow the unit cool down to room temperature.
●   Do not use the product near flammable items.
●   Do not modify the unit.
●   Use only genuine replacement parts.
●   Do not wet the unit or use the unit when your hands are wet.
●   The soldering process will produce smoke, so make sure the working area is well ventilated.

Packing List

Item	Quantity
Lead free soldering station	1
Iron	1
Iron holder (include cleaning ball)	1
Power cord	1
Grounding wire	1
Instruction manual	1

iron.If the resistance of "C" is bigger than the resistance value listed below, please clean and remove the oxide with sand paper and steel wool.

Excel 2 High frequency iron resistance

A	Between pin 4 and 5(heater)	$<10\,\Omega$ (normal)
B	Between pin 2 and pin 3 (Sensor)	$<10\,\Omega$ (normal)
C	Between high frequency iron and pin 1	$<1\,\Omega$ (normal)

Damage of accessories of heater and sensor
Dismantle the high frequency iron
1.   Unfasten the screw anticlockwise①, pull out the steel jacket② and soldering tip③
2.   Unfasten the nut anticlockwise④ ,pull out the nut from the soldering iron.
3.   Take out heating elements ⑤and connection cord ⑪ from soldering iron⑧
4.   Take out the heating elements from the soldering iron with heat-resistance pad instead of metal tool(such as pliers).

Measure the resistance of heater and sensor
Measure the resistance when the temperature of soldering element recovers to room temperature, please refer to Excel 2.

Check after replacement
After repalcement of heating elements, please proceed with the following items:
Measure the resistances between pin 1 and pin4/pin5, pin1and pin2/3, pin 4and pin2/3, the resistance should be ∞, if resistance is not ∞ , the heater may touch sensor or external cover, the station won't work.
2.Measure the resistances of "a" "b" and "c" to make sure the lead is not distorted and the grounded wire is connected correctly.

High frequency iron lead damage
Measure the power of high frequency iron as below two methods,
1.Turn on the power, Try to shake or enwind the every parts of connection cord. If LED indicator light of heater flashes, the connection cord should be replaced.
2.Measuer the resistance between pins of iron plug and lead wires at the socket.Pin1-Shilding wire, Pin2,3-sensor, Pin4,5-heater.The resistance value should be $0\,\Omega$, the resistance is over $0\,\Omega$ or ∞, replace the wire.

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.

Check the heater, sensor and lead damage

Pull the iron plug out of station, Measure the resistance value between pin and pin:

If the resistance value between A and B is not identical with the resistance value listed below, heater, sensor or connection cord need be replaced. Please follow up the procedure of Diamantle high frequency

Part Names

① ◄ Reduce
② ◎ Function
③ ► Increase

④ Display window
⑤ Iron socket
⑥ Power Switch

⑦ Grounding Socket
⑧ Power Socket
⑨ Fuse
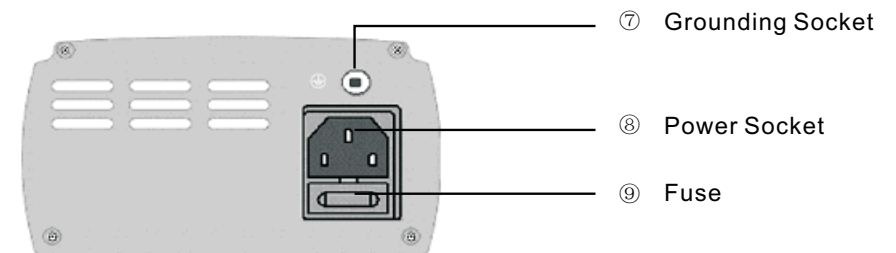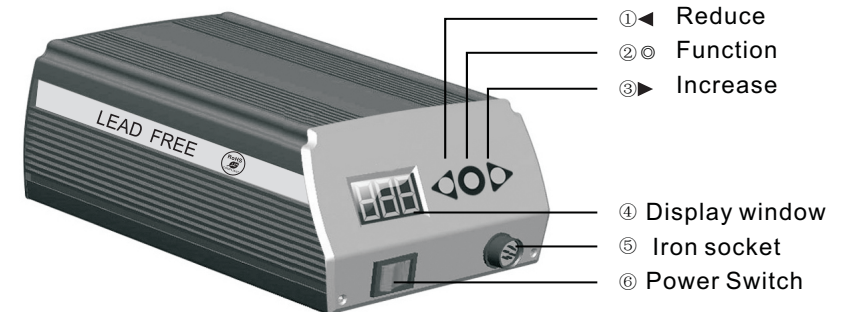
Setup and Operation

⚠ CAUTION:
Be sure to turn off the unit before connecting or disconnecting the soldering iron. Failure to do so may damage soldering station.

1. Take out the iron holder and let the cleaning box toward operator, and put the clea ing ball into the box.
2. Put iron into the iron holder. Make sure it is suitable for cleaning tips.
3. Connect the iron to controller as showed.
4. Put the iron into the iron holder.
5. Plug power cord and remember grounding well.
6. Make sure a soldering tip is installed before the power on, then turn power on.
7. Preset temperature is 350℃, The heater indicator flash when the temperature has stabilized.
8. Press ◎ for display to work mode for 2S.

Setting the Temperature
1. Press and hold ◄or ► at the same time，then turn power on.
2. Press ◎ after display ☐☐ ,display change to ☐－－☐ means 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☐☐F ,or incorrect will display☐Err☐ .
6. While display ☐☐F , the temperature can be adjusted by pressing ◄ or ► , and press◎ to confirm.

⚠ Note: 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℃）.

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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.

Error Messages

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.

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.

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：
● Impurities in the solder, iron plating, or on the surfaces to be soldered.
● Failure to keep the tip covered with fresh solder during idling periods.
● High tip temperatures for long time.
● Wiping the tip on dirty or dry sponge and rags. (Always use a clean, wet, industrial grade, sulfur-free sponge or ball)

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.

Parameter

Password setting
Enter Password
1. Press and hold ◄ and ►together, then power on.
2. It will Display ⬚ which means entered password function.
Input original Password
1. Press◎,display ⬚,the left digit will flash, and press ◄ or ►to enter

password number.
2. After enter all number, press ◎ to confirm.
   ● If the password is incorrect, display ⬚, soldering station will enter work mode after 2 seconds and the temperature can not be adjusted.
   ● If the password is correct, display ⬚, soldering station will enter work mode after 4 seconds and the temperature can be adjusted.
3. While display ⬚, press ◎ to display ⬚, means enter new password. Press ◄ or ► 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 remember 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.

Clean Password
The initial password is "000". Press and hold 3 keys and power on, the password will change back to original 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 Sleeping and Auto Power off
1	20/60min Sleeping and 40/90min Auto Power off

Sleeping (Available for customization)

In mode 1, the unit will enter sleeping after power on 20 or 60min, the temperature will drop to 200℃ in order to save power, press any key to

⚠ Warning:
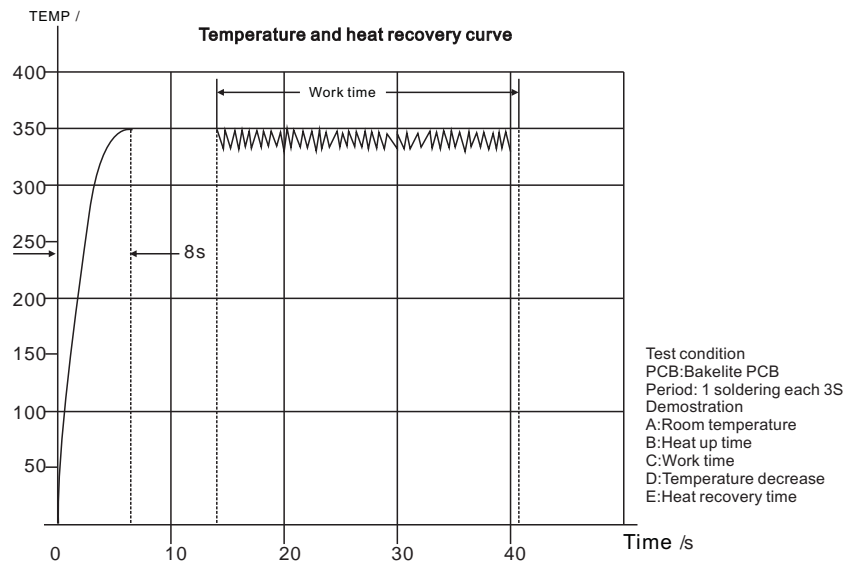 If you will not use the station for long time, please make sure power off.

Temperature and heat recovery graph

TEMP/

Temperature and heat recovery curve

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

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Usage of high frequecy iron

Choose proper tip for soldering
● 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.
● 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 Temperature
Use thermometer to check the temperature every time you change any parts from the soldering iron.

Calibrating the temperature：
1. power off, press and hold ◄ and ►, then power on.
2. Enter correct password.
3. setting temperature (see ■Temperature setting)， check the tip temperature with thermometer.
4. When the temperature stabilizes，if there is a difference between tip temperature and measured temperature，press ◎, you will see "00", then use ◄ and ► to increase or decrease the temperature.
＊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 oxidizing tip.

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.

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