



JBC PHBE-1A (120V) Convection Preheater Set Instruction Manual

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JBC

JBC PHBE-1A (120V) Convection Preheater Set



Specifications

- Product Name: Convection Preheater Set
- Model: Ref. PHBE-KA
- Power Supply: 120V (Ref. PHBE-1A), 230V (Ref. PHBE-2A), 100V (Ref. PHBE-9A)
- Included Items: Convection Preheater, Heater Unit, Console, RJ45 Cable, Convection Preheater Support, Power Cord, Kapton Tape, Thermocouple, Manual

Features

Heater Unit

- Heating Areas: Zone A, Zone B
- Thermocouple connectors x4
- RJ12 connector to Robot
- RJ45 connector to Console
- USB-B connector
- Pedal socket (optional) Ref. P-005 or P-405

Console

- USB-A connector
- Start / Stop button
- 2.8" Color TFT screen
- Fixing brackets for PHB-SA Convection Preheater Support
- Power socket
- RJ45 connector to Heater Unit
- USB-B connector
- Foot for vertical set up

PHB-SA Features

- Sliding guides
- Clamp knobs
- Allen key
- Adjustable slot clamps for switching PCBs
- Adjusting system for changing height
- Height Adjustment:
 - Low level: 28 mm
 - Medium level: 38 mm
 - High level: 48 mm

Product Usage Instructions

Changing PCBs of the same batch

1. The support lets you place PCBs of the same batch so as to always heat the same area. Use the sliding guides to change the PCBs.
2. To remove the PCB:
 - Loosen one sliding guide
 - Pull back and lift out the PCB
3. To place another PCB:
 - Position it and tighten the sliding guide knobs using the clamp knobs

Reworking large PCBs

1. Use the 4 caps to place larger PCBs than the PHB-SA Support or over 3mm thick.
2. Remove both guides by untightening the 8 screws.
3. Place the PCB on the 4 rubber caps.
4. The PCB is now ready to work.

Temperature mode

Select Temp. mode from the Work mode menu. In this mode, the heater unit maintains the selected temperature for the TC1 thermocouple as long as the other TCs do not reach the control/protection temperature limit.

Status bar:

- Instant power supplied to heater
- Thermocouple current temp.
- Thermocouple selected temp. and mode

Station Information

Menu Options: Press INFO for each parameter description.

- General
- Work mode
- Profile editor
- Graphics
- Files
- Reset

Available languages: English, Spanish, German, French, Italian, Portuguese, Japanese, Chinese, Russian, and Korean.

*Original PIN: 0105

System notifications (Status Bar):

- USB flash drive is connected.
- Station is controlled by a PC.
- Station is controlled by a robot.
- Station software update. Press INFO to start the process.
- Warning. Press INFO for failure description.
- Error. Press INFO for failure description, the type of error, and how to proceed.

FAQ

Q: How many power supply options are available for the Convection Preheater Set?

A: There are three power supply options available: 120V (Ref. PHBE-1A), 230V (Ref. PHBE-2A), and 100V (Ref. PHBE-9A).

Q: Can I use the Convection Preheater for reworking large PCBs?

A: Yes, you can use the 4 caps provided to place larger PCBs than the PHB-SA Support or over 3mm thick. Follow the instructions in the manual to rework large PCBs.

Packing List

The following items should be included:

The following items should be included:

Convection Preheater 1 unit
Ref. PHBE-1A (120V)
PHBE-2A (230V)
PHBE-9A (100V)



RJ45 Cable 1 unit
Ref. 0019914



Convection Preheater Support 1 unit
Ref. PHB-SA



Power Cord 1 unit
Ref. 0016814 (100V/120V)
0009401 (230V)



Kapton Tape 1 unit
Ref. PH217



Thermocouple 1 unit
Ref. PH218

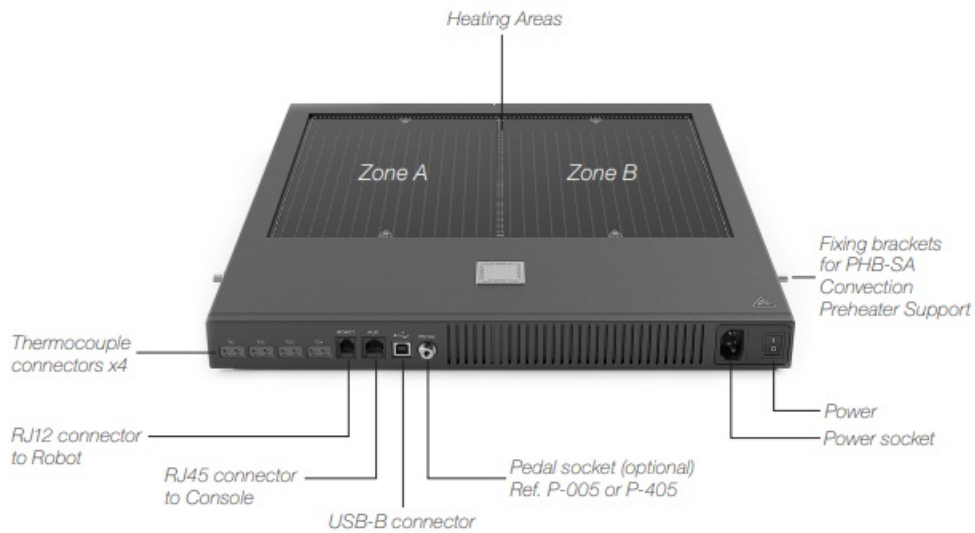


Manual 1 unit
Ref. 0023517



Features

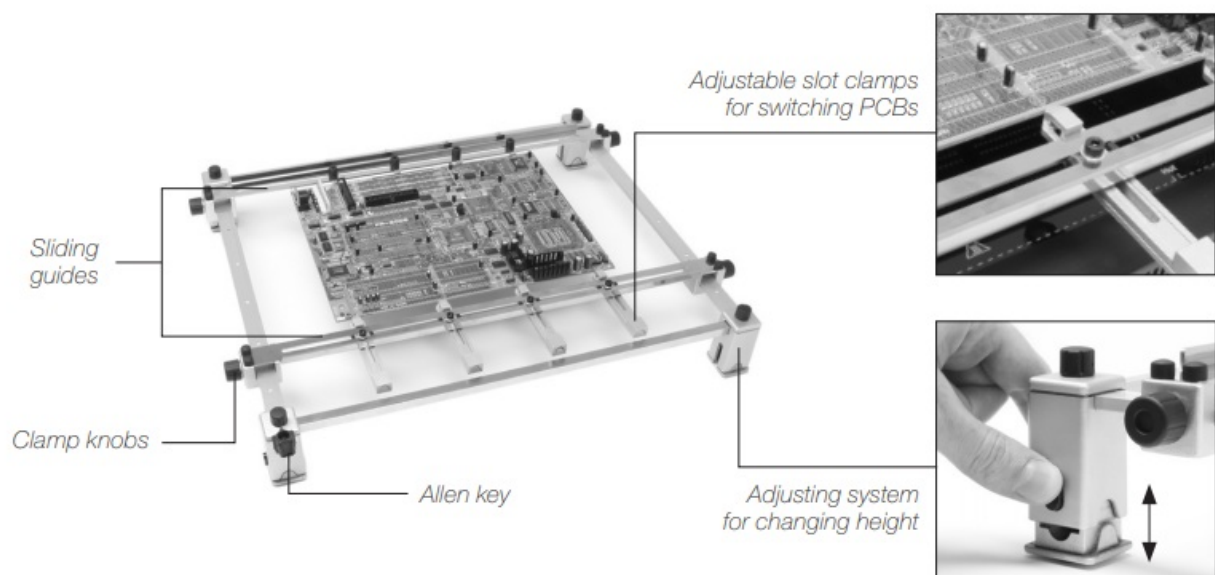
1. **Heater Unit**
2. **Console**



Console



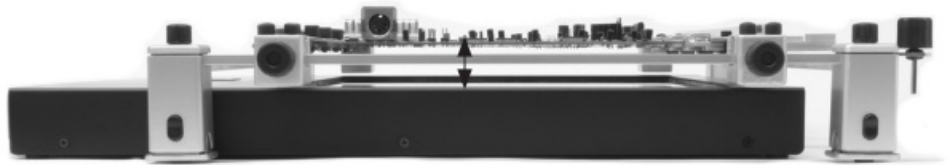
PHB-SA Features



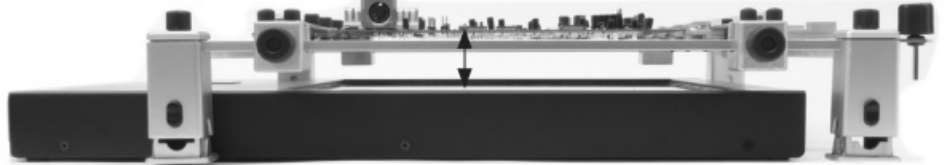
Height Adjustment

It allows adjustment for 3 heights between the PCB and the Heating Area of the PHBE-A Heater Unit.

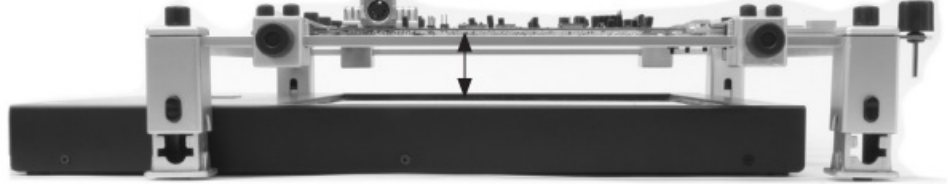
Low level
28 mm



Medium level
38 mm



High level
48 mm



Changing PCBs of the same batch

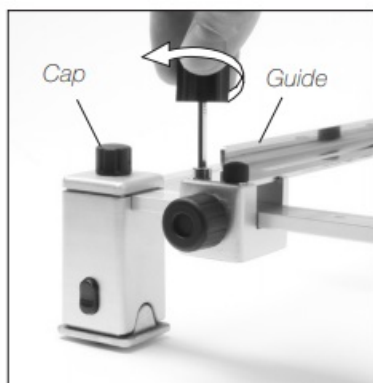
The support lets you place PCBs of the same batch so as to always heat the same area. Use the sliding guides to change the PCBs.

- Loosen one sliding guide, pull back and lift out the PCB.
- Position it and tighten the sliding guide knobs.

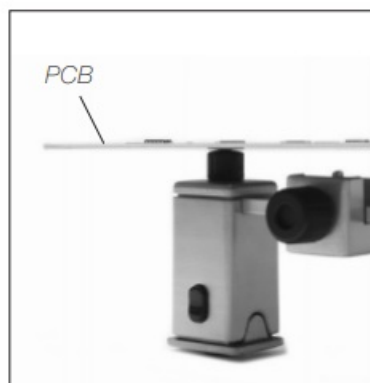
Reworking large PCBs

Use the 4 caps to place larger PCBs than the PHB-SA Support or over 3mm thick.

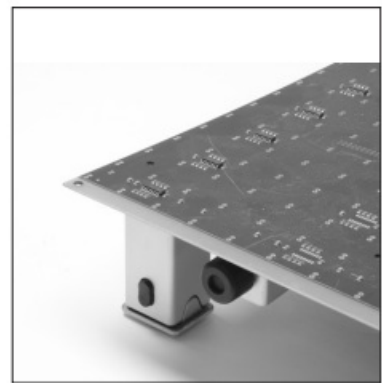
Use the 4 caps to place larger PCBs than the PHB-SA Support or over 3mm thick.



1. Remove both guides by untightening the 8 screws.



2. Place the PCB on the 4 rubber caps.



3. The PCB is ready to work.

Temperature mode

Select Temp. mode from the Work mode menu. In this mode the heater unit maintains the selected temperature for the TC1 thermocouple as long as the other TCs do not reach the control/protection temperature limit.

*Original PIN: 0105

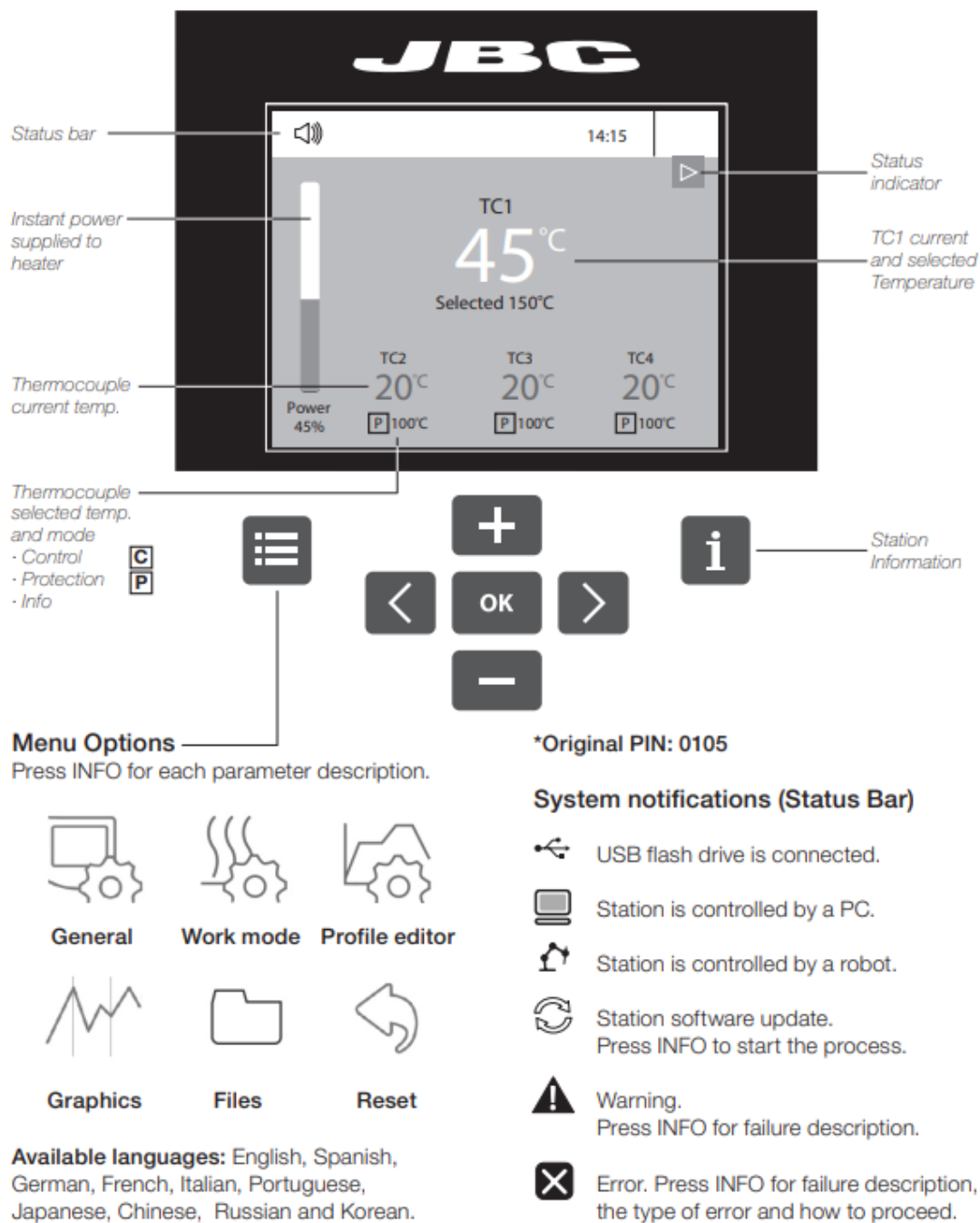
System notifications (Status Bar)

- USB flash drive is connected.
- Station is controlled by a PC.
- Station is controlled by a robot.
- Station software update.
- Press INFO to start the process.
- Warning.

Press INFO for failure description.

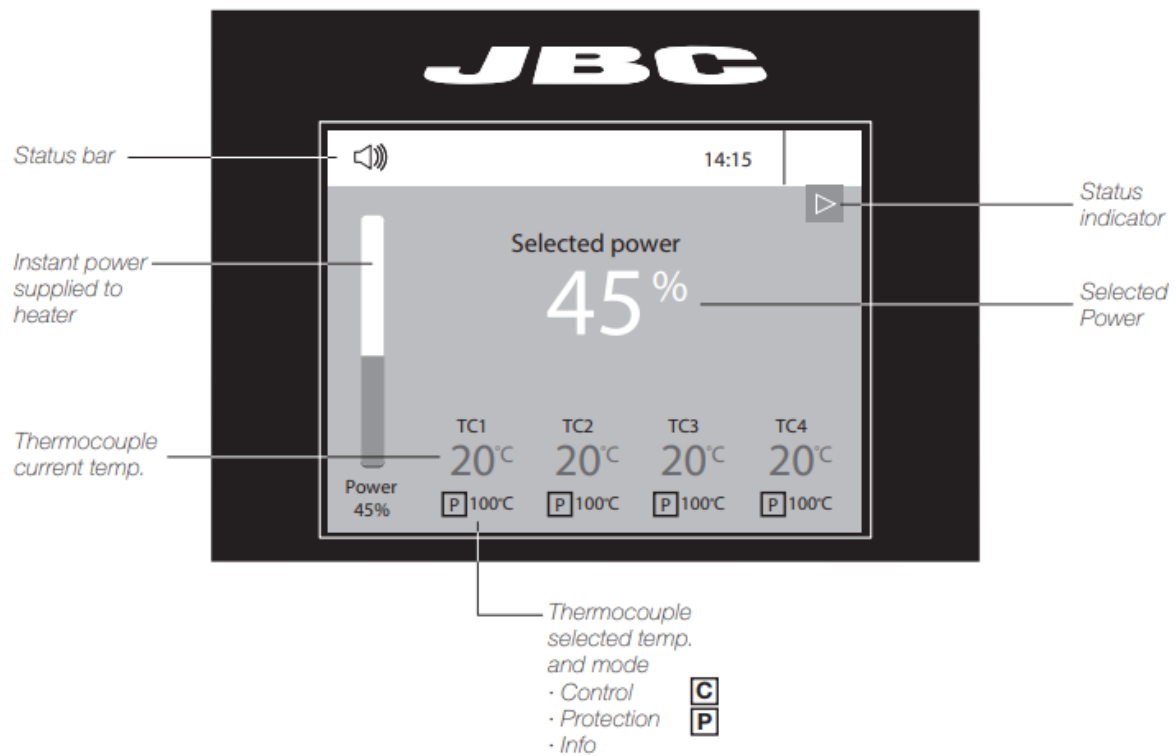
- Error. Press INFO for failure description, the type of error and how to proceed.

Available languages: English, Spanish, German, French, Italian, Portuguese, Japanese, Chinese, Russian and Korean



Power mode

Select Power mode from the Work mode menu. In this mode the heater unit maintains the selected power as long as the thermocouples do not reach the control/protection temperature limit.



Thermocouples

Select Thermocouples from the Work mode menu to set them up.

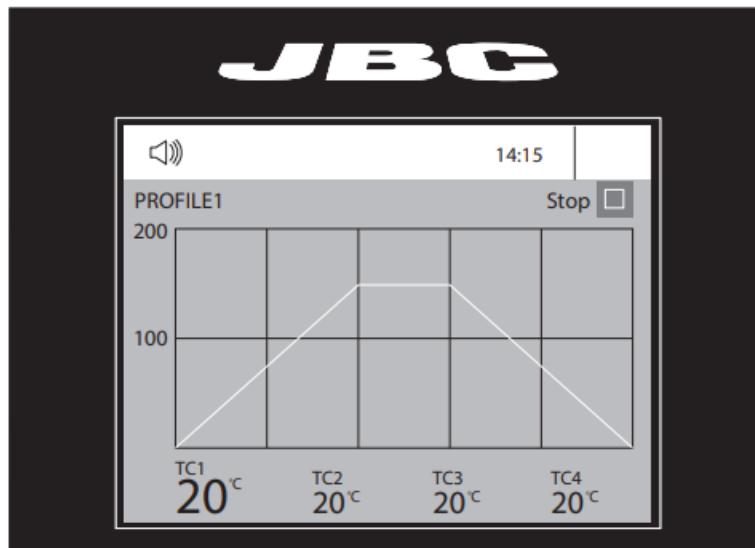
The thermocouples (TC) can work in three different ways depending on what is needed.

- Control: the unit maintains the selected temperature.
- Protection: the Heater Unit stops if the TC reaches the selected temperature.
- Info: the TC temperature is shown in the work screen.

The TC1 is always working in Control mode for the Temperature mode as well as for Profiles mode. The temperature of each TC can also be selected from the work screen.

Profiles mode

Select Profile mode from the Work mode menu. In this mode the heater unit regulates the temperature of the TC1 thermocouple according to the selected profile as long as the other TCs do not reach the control/protection temperature limit.



Teach profile

For repetitive jobs we recommend running profiles without the Thermocouple (TC). In order to do so, the Teach profile mode has to be executed before running any profile. It can be executed from the Work mode menu if the Profiles mode is selected. Once the profile has been run to the end, the system has all the process data which you can save.

Once it is saved, you can run this profile without connecting the Thermocouple (TC). The heating process will be the same as long as the same working conditions are respected.

The profiles which already have the data from the Teach profile are marked with this symbol

These profiles can be run either with or without the Thermocouples. It can be chosen from the Profiles mode work screen:

Profile editor

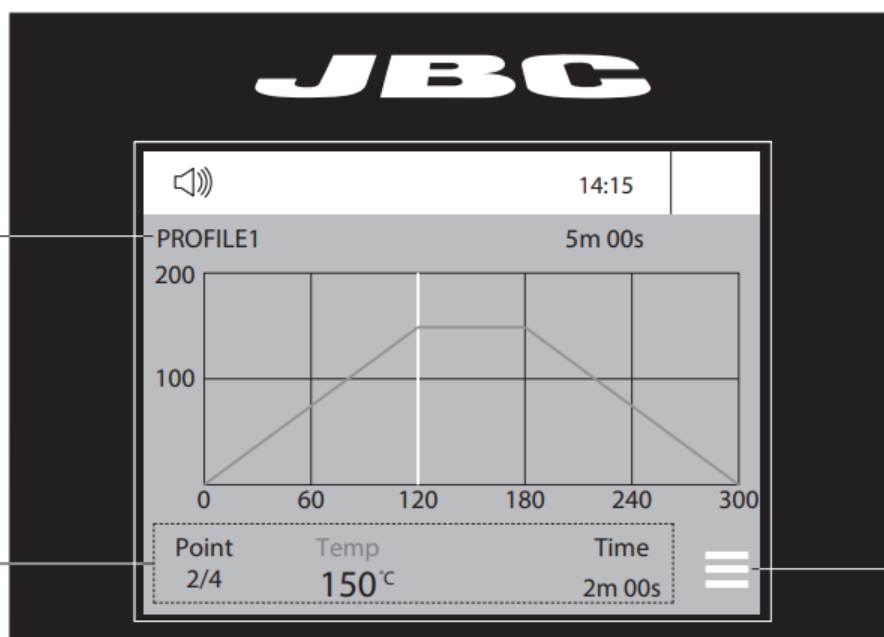
The Profile editor can be opened from the main menu or from the Profiles mode work screen by pressing the 'OK' button.

In this mode you can edit as many as 22 profiles of temperature.

Profile editor

Profile name

Data for these points



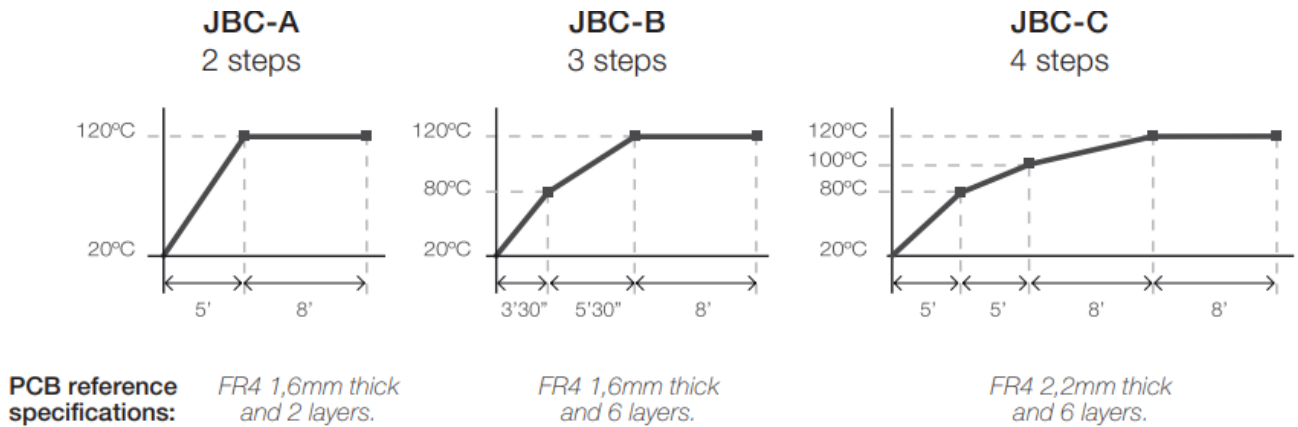
Menu Options

- Add point
- Delete point
- Load profile
- Save profile
- Exit

JBC set profiles

There are 3 profiles predefined by JBC: A, B and C. The difference between them is the number of steps: 2, 3 or 4. The thicker your PCB is and the more layers it contains, the more steps are needed to obtain a gradual warming.

These profiles are not modifiable but can be used as a template to create your own profiles.



Profiles set using the low position of the PHS-SA Support (28 mm in height between the PCB and the heating area)

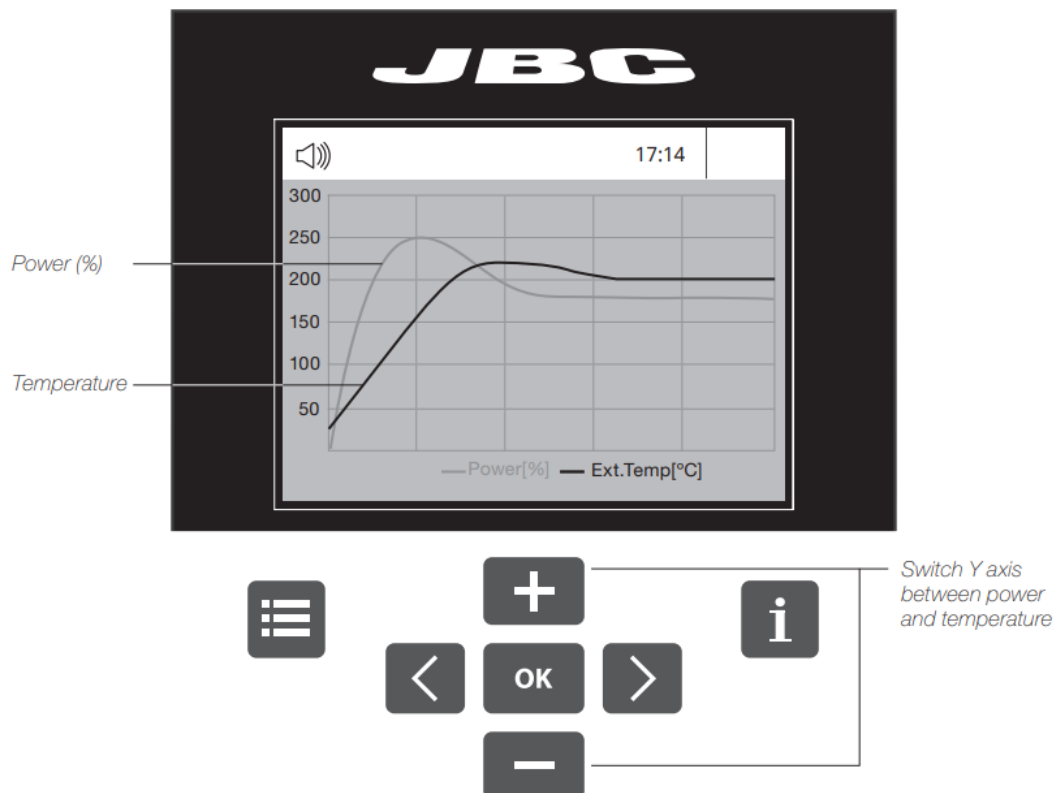
Process analysis

By pressing Graphics in the main MENU, temperature of TC1 thermocouple and power figures in real time are displayed.



By pressing **Graphics** in the main MENU, temperature of TC1 thermocouple and power figures in real time are displayed.

Graphics



Files

- Export graphics

Insert a USB flash drive into the USB-A connector to save your soldering process in csv format.

- Export / Import profiles


Insert a USB flash drive into the USB-A connector to export / import profiles.



Update the station software

1. Download the JBC Update File from www.jbctools.com/software.html and save it on a USB flash drive. (Preferably one with no other files).



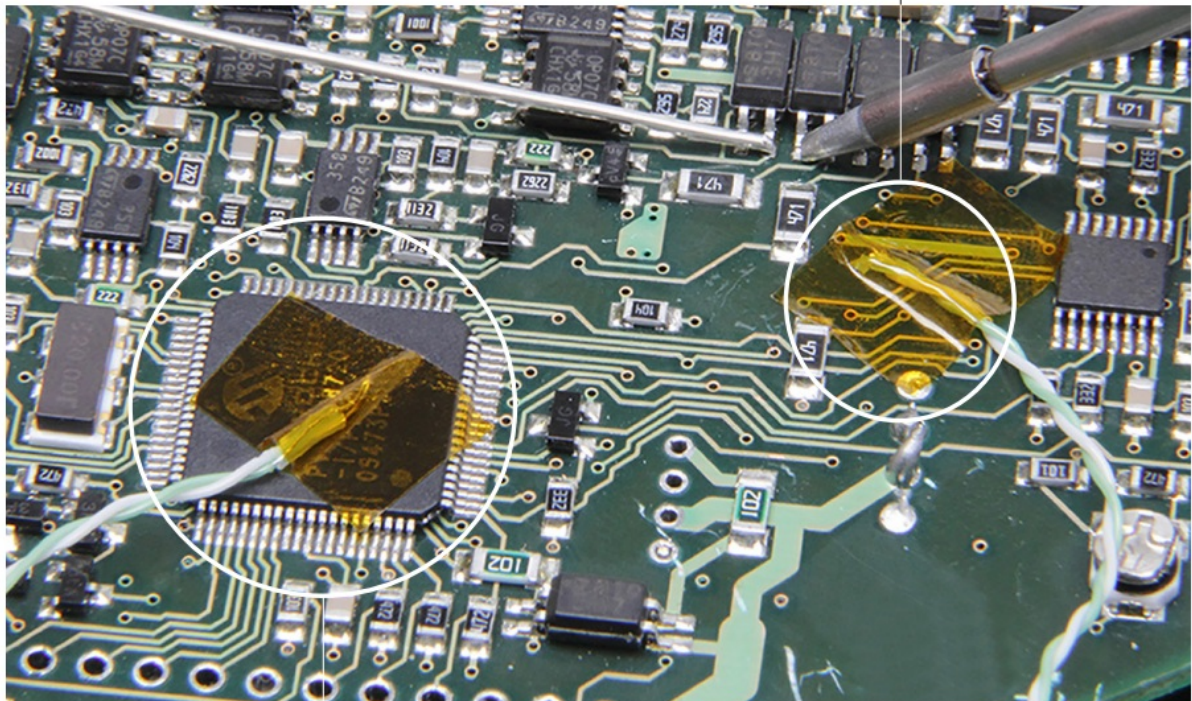
2. Insert the USB flash drive to the station. The icon  is displayed while updating.



Recommended Guidelines

1. Place the Thermocouple (TC) as near as possible to the component being worked on.

Fix the TC with Kapton Tape

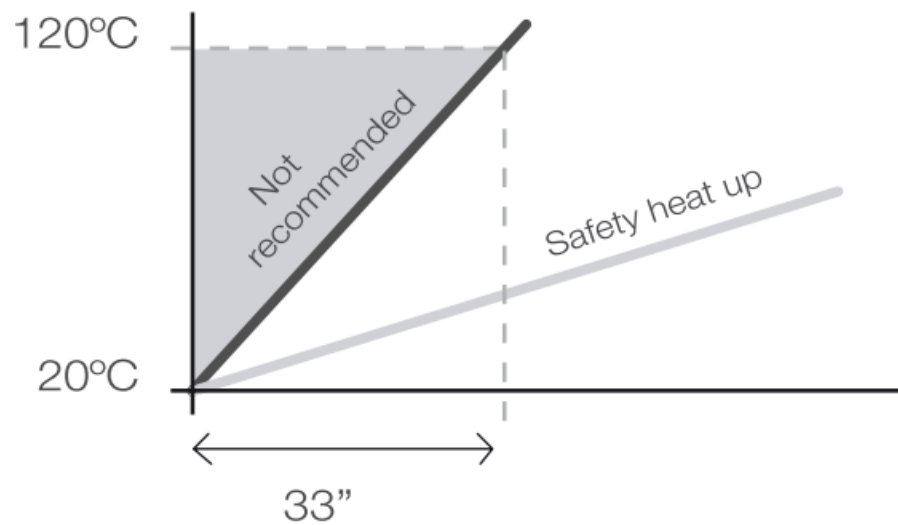


Protection Thermocouple (TC)

2. If there are any sensitive components, use a Thermocouple as protection.
You can select the protection temperature in the Thermocouples menu. If the selected temperature is reached, the Heater Unit will stop the process and a warning message will be shown.
3. IPC* does not recommend exceeding ramp-up rates over 3 – 4 °C / sec (5 – 7 °F / sec) so as to reduce the risk

of thermal stress on the PCB.

* IPC was founded in the U.S. in 1957 as the Institute for Printed Circuits and is committed to becoming the most recognized international industry association for the electronics manufacturing industry.



Maintenance

Before carrying out maintenance or storage, always allow the equipment and the support to cool.

- Check periodically that the PHBE-KA is clean.
- Use a damp cloth when cleaning. Alcohol can only be used to clean the metal parts.
- Only if it is absolutely necessary and if cleaning with isopropyl alcohol (IPA) is not enough, it is recommended to use a scraper to remove dirt in the glass area.
- Replace any defective or damaged parts. Use original JBC spare parts only.
- Repairs should only be performed by a JBC authorized technical service.



Safety

It is imperative to follow safety guidelines to protect health and prevent electric shock, injury, fire or explosions.

- Do not use the units for any purpose other than PCB preheating. Incorrect use may cause fire.
- The mains cable must be plugged into approved bases. Make sure that it is properly grounded before use. When unplugging it, hold the plug, not the wire.
- The temperature of accessible surfaces may remain high after the unit is turned off. Handle with care.
- Do not leave the appliance unattended when it is on.
- Do not cover the ventilation grills. Heat can cause inflammable products to ignite.
- Heat can cause inflammable products to ignite even when out of sight.
- Be careful with the remains of liquid tin. In contact with skin, it can cause burns.
- Avoid flux coming into contact with skin or eyes to prevent irritation.
- Be careful with the smoke produced when soldering.
- Keep your workplace clean and tidy. Wear appropriate protection glasses and gloves when working to avoid personal harm.
- This appliance can be used by children over the age of eight as well as persons with reduced physical, sensory or mental capabilities or lacking experience provided that they have been given adequate supervision or instruction concerning use of the appliance and understand the hazards involved. Children must not play with the appliance.
- Maintenance must not be carried out by children unless supervised.

Specifications

Convection Preheater Set

PHBE-1KA / PHBE-2KA / PHBE-9KA

- Total weight: 9,7 kg (21.6 lb)
- Ambient operating temperature: 10 - 40 °C (50 - 104 °F)

PHBE-1A 120V. Input 120V 50/60Hz Fuse 15A

PHBE-2A 230V. Input 230V 50/60Hz Fuse 10A

PHBE-9A 100V. Input 100V 50/60Hz Fuse 15A

- Weight: 6,9 kg (15.4 lb)
- Dimensions (Heater Unit): 426 x 444 x 41 mm (16.8 x 17.5 x 1.6 in)
- Maximum Power: 1800W / 1800W / 1400W
- Heating Area: 180 x 277 mm (7.1 x 10.9 in - 1 zone)
360 x 277 mm (14.2 x 10.9 in - 2 zones)
- Temperature Range: 50 - 250 °C (120 - 482 °F)
- Temperature Measurement: Thermocouple type K
- JBCset temperature profiles: 3 profiles (2, 3 or 4 steps)
- User Profiles: 22 (up to 6 steps for each)
- Maximum work time: 600 min or indefinite

PHB-SA

- Weight: 2,8 kg (6.2 lb)
- Dimensions (Low Position): 432 x 514 x 78 mm (17 x 20.2 x 3.1 in)
- Dimensions (High Position): 432 x 514 x 98 mm (17 x 20.2 x 3.9 in)
- Maximum thickness of PCB: 6 mm

Complies with CE standards.
ESD protected housing.

Warranty


JBC's 2-year warranty covers this equipment against all manufacturing defects, including the replacement of defective parts and labor.

The warranty does not cover product wear or misuse.





In order for the warranty to be valid, equipment must be returned, postage paid, to the dealer where it was purchased.

Get 1 extra year JBC warranty by registering here: <https://www.jbctools.com/productregistration/> within 30 days of purchase.

Documents / Resources

 <p>JBC INSTRUCTION MANUAL</p> <p>Convection Preheater Set Ref. PHBE-KA</p>	<p>JBC PHBE-1A (120V) Convection Preheater Set [pdf] Instruction Manual PHBE-1A 120V Convection Preheater Set, PHBE-1A 120V, Convection Preheater Set, Preheater Set, Set</p>
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References

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