

# **BlackJack SolderWerks BK3060 Soldering Station**

## **INSTRUCTION MANUAL**

Thank you for purchasing the BlackJack BK3060 Soldering Station.  
Please read this manual before operating the equipment.  
Keep manual in accessible place for future reference.

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## SPECIFICATIONS

	<b>Tweezer</b>	<b>Soldering Iron</b>
Power consumption	60W peak	60W peak
Temperature range:	200°C - 450°C	200°C - 480°C
Heating Element	Ceramic Heater	Ceramic Heater
Voltage	24V	24V

\*Specifications are subject to change without prior notice

## SAFETY PRECAUTIONS

**CAUTION: Improper usage can cause serious injury to personnel and/or damage to equipment. For personnel safety, please follow these precautions:**

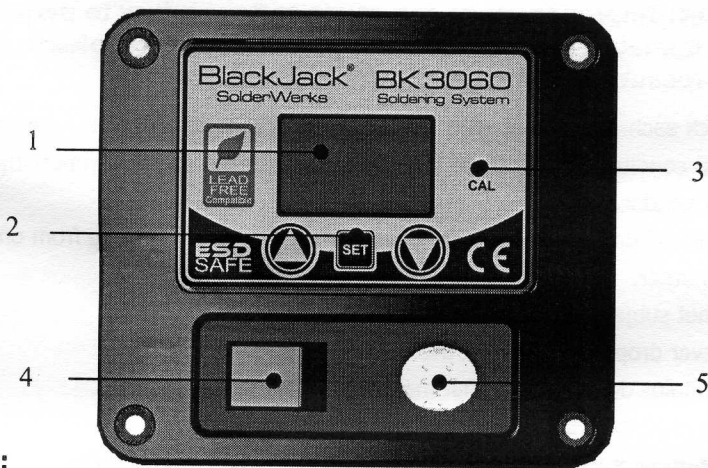
- Check each component after opening the package to make sure everything is in good condition. Do not use item if visible damage is seen, report the issue to your vendor.
- Power off unit and unplug the device when moving the device from one location to another.
- Do not subject the main unit to physical shock
  - Never drop or sharply jolt the unit.
  - Contains delicate parts that may break if the unit is dropped.
- Always connect power to a grounded receptacle.
- Tip temperature may reach as high as 480°C when switched ON.
  - Do not use the device near flammable materials.
  - Do not touch heated parts which may include tips, nozzles, barrels.
- Disconnect from power source if the unit will not be used for a long periods. Switch off power during short breaks.
- Use only genuine replacement parts.
- Soldering process produces smoke — use on well ventilated place.
- Do not try to alter or repair unit, bring to qualified service center for repairs.

# Initial Setup

## **Soldering Iron**

1. Install the solder wire to the soldering iron holder .
2. Follow Soldering stand assembly guide.
3. Connect the soldering iron cord assembly to the terminal found at the lower middle portion of the main unit.
4. Place the soldering iron to the soldering iron stand as shown above.
5. Dampen the sponge and place into sponge tray.

## CONTROL PANEL GUIDE






### **LEGEND:**

- 1 — Temperature Display
- 2 — Soldering Iron Temp Control Buttons
  - ⬆ Increase temperature
  - ⬇ Decrease temperature
  - SET Set
- 3 — Calibration adjustment
- 4 — Main Power Switch
- 5 — Soldering Iron Receptacle

## NORMAL OPERATION


Please refer to the **CONTROL PANEL GUIDE** page for buttons and display panel directory.

### **Soldering Iron Mode 1 Operation:**

1. Plug the device to the main power source.
2. Make sure power switches are deactivated.
3. Attach Solder iron to its receptacle.
4. Turn on the unit.
5. The display will show **-1-** indicating it is in mode 1, soldering iron operation mode.
6. The Digital display will then display the current set temperature, after a few seconds it would switch to displaying the actual temperature.
7. Pressing the  button increases the desired (SET) temperature settings, while pressing the  button decreases the desired (SET) temperature settings. The display would increase and decrease accordingly showing the SET temperature. If the buttons are all depressed, the display would switch from showing the SET temperature to showing the actual temperature. The button with the label  is a multipurpose button used for various adjustments.
8. When the display temperature reaches the set temperature, wait about 5 seconds before starting, this is to allow the heating element to pass the appropriate heat to the tip.
9. During normal operation pressing the set button will make the system switch to either of the two pre-programmed quick set temperature levels.
10. The display will show **"UUU"** if the unit has detected that the soldering iron and the main unit are not connected securely or is not connected. If this is displayed, turn off the unit and reattach firmly the soldering iron to the receptacle at the main unit.



# NORMAL OPERATION

## **Tweezer Mode 1 Operation:**

1. Plug the device to the main power source.
2. Make sure power switches are deactivated.
3. Attach tweezers to its receptacle.
4. Press and hold the set button while turning on the unit. This will switch the system mode to mode 2 operation.
5. The display will show briefly -2- indicating it is in mode 2, soldering iron operation mode.
6. The Digital display will then display the current set temperature, after a few seconds it would switch to displaying the actual temperature.
7. Pressing the ▲ button increases the desired (SET) temperature settings, while pressing the ▼ button decreases the desired (SET) temperature settings. The display would increase and decrease accordingly showing the SET temperature. If the buttons are all depressed, the display would switch from showing the SET temperature to showing the actual temperature. The button with the  is a multipurpose button used for various adjustments.
8. When the display temperature reaches the set temperature, wait about 5 seconds before starting, this is to allow the heating element to pass the appropriate heat to the tip.
9. During normal operation pressing the set button will make the system switch to either of the two pre-programmed quick set temperature levels.
10. The display will show "UUU" if the unit has detected that the soldering iron and the main unit are not connected securely or is not connected. If this is displayed, turn off the unit and reattach firmly the soldering iron to the receptacle at the main unit.
11. Pressing the set button while turning on the power enables the user to switch between mode 1 and mode 2.



## SLEEP MODE ADJUSTMENT

Adjustable sleep timer to conserve heating element life and protect against accidents.

1. Plug the device to the main power source. Make sure power switches are deactivated and attach Solder iron to its receptacle.
2. Hold both  and  button while turning on the unit.
3. The Digital display will show a small letter "t" followed by a two digit number. We are now in sleep timer adjustment mode.
4. The two digit number represents the sleep timer. Timer is adjustable from 2-60 minutes, in 2 minute increments. Use the up and down arrow keys to adjust sleep timer.
5. To turn off the sleep timer function adjust the sleep timer to "00". This indicates that the sleep timer is turned off. Unit will not go into sleep mode.
6. To save the new sleep timer and exit from the sleep timer adjustment mode press the set button.
7. System will save the timer settings exit from sleep timer adjustment mode and begin normal operation.

## CELSIUS AND FAHRENHEIT SCALE

To program switch between Celsius and Fahrenheit scale

1. Plug the device to the main power source.
2. Make sure power switches are deactivated.
3. Attach Solder iron to its receptacle.
4. Hold both  and  button while turning on the unit.
5. The Digital display will show a °C or °F indicating we are in the temperature scale selection mode.
6. Switch between °C or °F scale by pressing the up or down arrow buttons.
7. To save the selected temperature scale press the set button.
8. System will save the selected temperature scale into memory and begin normal operation.

# PROGRAMMABLE QUICK SET

To program the two quick set levels

First Quick Set level :

1. Plug the device to the main power source.
2. Make sure power switches are deactivated.
3. Attach Solder iron to its receptacle.
4. Hold the Ⓐ button while turning on the unit. The system will enter quick set adjustment mode.
5. The Digital display will show a number indicating the quick set level. Use the up and down arrow keys to adjust the desired quick set level.
6. To save this quick set level and exit from the first quick set level adjustment mode press the set button.
7. System will save the first quick set level settings into memory and begin normal operation.

Second Quick Set level :

1. Plug the device to the main power source.
2. Make sure power switches are deactivated.
3. Attach Solder iron to its receptacle.
4. Hold the Ⓑ button while turning on the unit. The system will enter into second quick set adjustment mode.
5. The Digital display will show a number indicating the quick set level. Use the up and down arrow keys to adjust the desired quick set level.
6. To save this quick set level and exit from the quick set level adjustment mode press the set button.
7. System will save the second quick set level settings into memory and begin normal operation.

To switch between the programmed quick set level press the set button during normal operation mode.



# DIGITAL CALIBRATION

To digitally calibrate tip temperature

## Calibrating the Tip Temperature

1. Plug in station and turn it on, we need to be in normal operation mode.
2. Set temperature to desired calibrating temperature.
3. Wait for display to reach the desired temperature.
4. Use an external sensor and place it on the solder tip. And write down the actual solder iron tip temperature.
5. Press and hold both the up and down button to enter the digital calibration mode. A display like "000" indicates that the digital calibration is currently set at neutral.
6. Press the increase and decrease button to adjust the digital calibration. A negative number denotes we are decreasing the actual tip temperature and a positive number means we are increasing the tip temperature. Adjust the calibration number until the external temperature sensor reading is equal to our set temperature.
7. To save the new calibration number and exit from the digital calibration mode press the set button.
8. System will save the new calibration settings , exit from digital calibration mode and begin normal operation.

## CARE and MAINTENANCE

- The soldering iron tip should be cleaned after use by wiping excess solder. This is to get rid of burnt solder or fluxes that causes oxidation on the tip
- Maintain a thin layer of solder over the tip when iron is not being used. This maintains the tinning on the tip, and the tip will last much longer.

# CARE and MAINTENANCE

## Changing TIP

1. Always turn the power OFF when removing or inserting a tip.
2. When the tip is hot, hold it with heat resistant pads.
3. Lock the tip securely.

## Checking, Cleaning and Tinning the Tip

1. Set temperature to 250° C (482° F)
2. After real temperature reaches the set temperature, use a damp sponge to clean the tip and check for damages.
3. If the tip has oxidation, apply solder and wipe using the damp sponge, repeat these steps until oxidation is removed.
4. After cleaning, coat tip with a thin layer of solder and set it aside ready for the next usage.
5. If the tip shows disfiguration or has rust on it. Change the tip.

## Analog calibration of the Tip Temperature

1. Plug in station and turn it on.
2. Set temperature to desired calibrating temperature.
3. Wait for display to reach the desired temperature.
4. Use an external sensor and place it on the solder tip.
5. Use a screwdriver, one that fits the CAL hole, to adjust the CAL point.
6. Adjust until the external sensor reading is equal to the displayed temperature.

## Checking the fuse

1. The Fuse can be found at the back of the unit, it is incorporated into the AC power receptacle. If fuse is blown replace with same type fuse only.

# **BASIC TROUBLESHOOTING GUIDE**

## **PROBLEM 1: THE UNIT HAS NO POWER /MAIN POWER LED DOES NOT LIGHT UP**

1. Check if the unit is switched ON.
2. Check the fuse. Replace with the same type of fuse if blown.
3. Check the power cord and make sure there are no disconnections.
4. Verify that the unit is properly connected to the power source.

## **PROBLEM 2: SOLDERING IRON DOES NOT RISE IN TEMPERATURE**

**Description:** Led digital display lights up but soldering iron temperature remains low and is not heating up. Actual temperature display remains in the low value range.

### **SOLUTION:**

Heating element might have reached the end of its life. Heating element may be damaged. Replace heating element.

## **PROBLEM 3: SOLDERING IRON DISPLAY DOES NOT RISE IN TEMPERATURE**

**Description:** Actual temperature display remains in the low value range. But the soldering iron tip is already glowing hot red.

### **SOLUTION:**

Soldering iron sensor has been reversed, if soldering iron heating element has recently been changed it is possible that the heating elements' sensor wire have been connected in reverse.

## **PROBLEM 4: SOLDER WOULD NOT STICK TO THE SOLDERING TIP**

**Description:** Soldering iron is able to quickly melt solder but cannot cause the solder to attach to the tip.

### **SOLUTION:**

- ♦ Soldering iron tip may already be too dirty or oxidized. Please see the solder tip maintenance guide on page 9 on how to clean soldering tips.
- ♦ Temperature could be set too high causing solder to quickly burn away, Please adjust to a more suitable lower temperature range.

# **BASIC TROUBLESHOOTING GUIDE**

## **PROBLEM 5: SOLDERING IRON DOES NOT PRODUCE ENOUGH HEAT**

**Description:** Soldering iron cannot melt solder fast enough, or actual temperature does not reach the desired set temperature.

### **SOLUTION:**

- ♦ The system may need to be recalibrated.
- ♦ Soldering iron tip may already be too dirty or oxidized .

## **PROBLEM 6: UNIT DISPLAYS "UUU"**

**Description:** The unit displays "UUU".

### **SOLUTION:**

- ♦ Soldering iron is not properly connected to its receptacle.
- ♦ Turn off unit and reattach soldering iron.

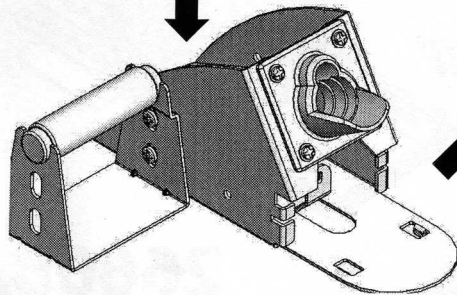
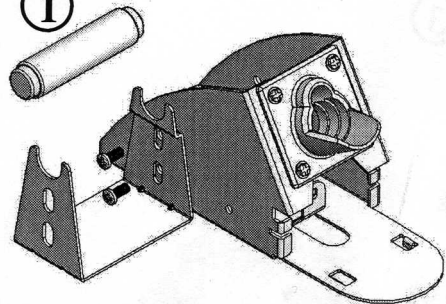
## **PROBLEM 7: DISPLAY PROBLEMS**

**Description:** Display shows unreadable characters.

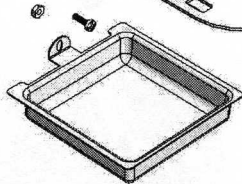
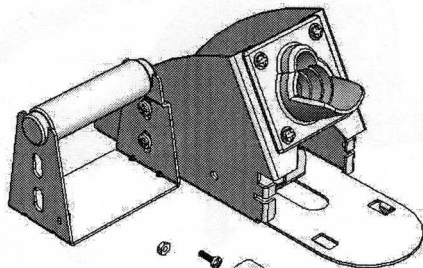
### **SOLUTION:**

- ♦ Press the turn the unit off and then back on after a few seconds.

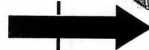
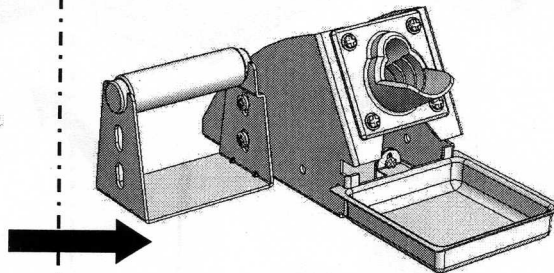
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