

# User Manual of MashWB\_QB

Thank you for choosing the spot welding machine produced by BlackTechLab™. Its weight is only 420g. The principle is that two high rate 5Ah capacity 65C rate lithium batteries can be discharged through the high-temperature electrode of alumina copper, which can output huge current in a very short time, release it at the contact point between the solder pen and the nickel sheet, produce high-temperature molten solder, and then rapidly cool down, so as to ensure the firmness of the solder joint And light. It is suitable for battery assembly and welding of thin iron-based materials.

Indicators:

Output voltage: 3.2-4.25v (low voltage protection shutdown)

Output current: 400-600A (varies according to welding material)

Welding capacity: 0.12mm /0.1mm pure nickel strip

Low power consumption: < 0.022ma (shut down for more than 2 years)



The outer package is in good condition. **After full charge**, read the following precautions before operation

## 1: Function test

First of all, long press the button on the circuit board panel, and you should hear three clear beeps, which indicates that the welding machine is on. Short press to switch gears, there are 5 gears, which are mapped to 0-70 MS respectively, corresponding to welding nickel strips with different thickness, and then jump to the first gear cycle after the fifth gear.

The indicator light flashes several times, representing several gears. In the start-up state, press the button for a long time, and the "beep -" long sound will shut down. At this time, the welding machine will not flash, sound, or consume electricity. It must be shut down after not using it! Otherwise, it will be standby power consumption.

## 2: Welding test

After the above tests are passed, put the battery to be assembled stably, put the nickel piece on the battery to be welded with the left hand, and hold the two welding pens with the right hand like chopsticks. The welding pen contacts the nickel sheet and gently presses the nickel plate and the battery. If it is in 1-5 gear, the circuit board will detect the contact. After 1 second delay, the output current will be welded. At this time, it is normal to see the dark red flash at the contact point.

## 3: Advanced skills

Welding is a kind of technology, which needs to be practiced. The scientific principle of spot welding is resistance welding. If the pressure is too tight or too loose, the solder joint will not be firm. A successful welding will not produce a lot of sparks and visible bright concave solder joints. The best technique is to press the soldering pen lightly to feel the moment of current output and the collapse of solder joint. At this time, the heat of solder joint is enough, the cooling time is short, and it can work stably for a long time. If it is too tight or too loose, the welding will not be firm or burn through phenomenon will occur. Moreover, the oxide layer must be avoided for many times welding, and the contact surface should be bright. With different welding strength of 1-5 gears, the best solder joint can be obtained.

#### **4: Maintenance**

The spot welding machine shall avoid bumping and damp as far as possible, and the welding machine shall be shut down during storage. After optimization, the power consumption of the shutdown gear is very small, which can stand by for more than one year. The power consumption of gear 1-5 is large. Although there is a low power shutdown function, it is still necessary to avoid it!!

For normal use, it needs to be fully charged. The type-C charge is not divided into positive and negative to ensure that  $5V > 500mA$ . During charging, the indicator light turns red and full green. At this time, it can be welded. Please pay attention to the shell temperature when it is used for a long time. When the temperature is higher than  $60\text{ }^{\circ}\text{C}$ , protect the power off.

In order to prolong the life of the energy storage battery as much as possible, it is not necessary to charge the battery too full. It is enough to charge for 2-3 hours. (long term storage)

#### **5: Simple troubleshooting**

After reading the advanced skills in Section 3, it is necessary to understand and practice the principle of electric welding.

<Jump back to the power off gear>. It may be out of power. Charge. If the buzzer is silent at this time, it can also be charged,

< cant charge > check whether the USB charging port is damaged and the wiring is burned. When pulling and inserting, it should be straight and straight, and can not be pulled back and forth.

Check whether the battery is dead, open the two welding pens, and measure the voltage with a multimeter as the battery voltage..

The above faults may be encountered by novice players and can be easily checked. I collected them for the reference of fans.

The welding machine has been improved for many times, the hardware and software are very mature, normal use will not be damaged, default users read this manual. The point is to use it as an important tool for you, not to tinker with it. If it is damaged by misoperation, please contact me to solve the problem. If the battery and circuit board are seriously damaged, you should pay the maintenance cost according to the situation.