



## Model: 788H-USB

### Battery Spot Welder with Lithium-ion Battery Pack Charging Function

Thank you for choosing Sunkko 788H-USB battery spot welder, let's now make the building of Lithium battery pack and mobile power bank more convenient and efficient.

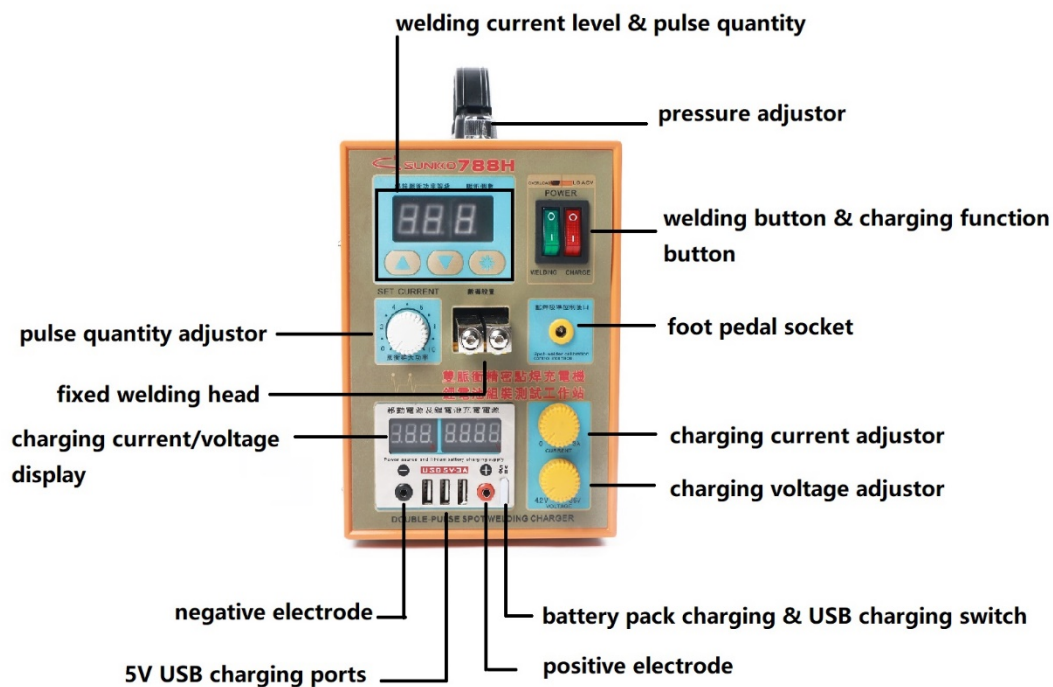


## Summary

788H-USB is our classic model which enjoys a good reputation and is highly evaluated by our beloved customers. It is specifically designed for battery welding (18650, 14500 and any other lithium batteries, etc) and can be used to weld nickel strips with thickness between 0.05 and 0.2 mm for nickel plated steel or between 0.05

and 0.15 mm for pure nickel strip. With the built-in LED light, you can even work at night.

We understand that after the power bank is done, the next step would be charging and testing, which is why 788H-USB is equipped with three USB fast charging ports whose voltage and current are 5V and 3A.



#### ◆ Now let's talk about the welding part.

1. The 788H-USB welder can weld nickel strip with thickness under 0.2mm for nickel plated steel, or 0.05 - 0.15 mm for pure nickel strip.
2. Two ways of welding: fixed welding head; fixed welding head with foot pedal.  
You can build your battery pack with the fixed welding head, in this case, you need to adjust the pressure adjustor to make the spots more reliable and elegant.  
Different users may have different welding habits, so we added a foot pedal to 788H-USB. Coordinating hands and feet at the same time will also make the long-term spot welding process not so tiring, plus the use of foot pedal during battery welding improves the precision of spot welding.

In general, there are two methods to improve the output power of spot welding: adjusting welding current level, adjusting pulse quantity. You may need to play with them a bit to get the best combination for your specific use.

**(Attention:** This spot welder can be used to weld pure nickel, nickel plated steel, nickel plated iron, iron and other alloys. It CANNOT weld metal like copper and aluminum.)

### **Specification for the welding part:**

Input voltage: AC 110 V/220 V $\pm$ 10%

Primary current: 2 ~ 15 A

Welding current: 50 ~ 800 A

Single pulse time: 5ms

Max. pulse quantity: 36

Max. power output: 2.88 KW (instantaneous)

Welding thickness for nickel plated steel: 0.05 ~ 0.2 mm

Welding thickness for pure nickel: 0.05 ~ 0.15 mm

### **Preparation steps before welding:**

1. Fit the fixed welding head with copper welding rods before the machine powers on.
2. Turn on the welding power switch.
3. Adjust the pulse quantity and welding current level to make the spots more reliable and elegant.

### **How is the pressure knob works?**

The pressure knob regulates the pressure between copper welding rods and nickel strip. Generally speaking, the thinner the nickel strip, the smaller the pressure. A proper pressure between nickel strip and welding rods can also make the spots more elegant.

### **◆ Battery charging part:**

#### **Specification:**

Voltage output: 4.2 ~ 36 V

Current output: 0 ~ 3 A (Max)

Precision of constant current:  $\pm$ 2.5%

Voltage stability:  $\pm$ 1.5%

Measurement error:  $\pm$ 1.5%

(Attention: 788H-USB can not test a battery pack's voltage like 788H.)

**Charging mode 1:** in this mode, you can charge your lithium-ion battery pack whose voltage is between 4.2 and 36 volts, and the charging current can be adjusted from 0 ~3 A.

When you plug in the charging cables and connect them to your battery pack, the LCD voltage display will show the battery pack's current voltage. Once the displayed voltage gets close to the rated voltage of the battery and the current decreases to the finishing rate (usually 5 amperes per 100 Ah of rated capacity), your charging process is done.

For example, I need to charge a 4800 mAh battery pack which is 3 volts but has a rated voltage of 4.2 volts, and its full capacity is.

I set the rated voltage to 4.2 volts and the charging current to 2.4 A through the knobs. When the battery pack is getting full, the value from the voltage display increased from 3 to 4.2 volts and the value from the current display decreased from 2.4 A to 0.24 A, or even lower.

**Charging mode 2:** press the 5V button right of positive electrode socket, you can charge your power banks after you build them. And three power banks can be charged at the same time, the charging current of USB ports is adjustable by the charging current knob, when the power banks getting full, the charging current in the LCD display will approach to 0.

#### **Things you need to know before charging your battery or battery pack:**

##### ✧ **For battery or battery pack without BMS**

- ✓ If you want to fully charge a battery or battery pack, you need to adjust the charging voltage based on the maximum charging voltage. For example, if you need to charge a 3.6 volts (nominal voltage) lithium battery whose maximum voltage is 4.2 volts, you should set the charging voltage to 4.2 volts. Only in this way can the battery be fully charged.

(788H-USB can fully charge a battery pack with a nominal voltage of up to 30 volts, assuming this battery pack does not have a BMS.)

- ✓ In most instances, users should adjust the charging current according to the specific battery pack, the relationship between charging current and battery pack's capacity is generally 1 amperes per 2 Ah of rated capacity and it cannot exceed 1 ampere per Ah of rated capacity. For example, if the capacity of your battery pack is 5000 mAh, we should set the charging current between 2.5~5 A, and in general, we set the charging current to 2.5 A.

##### ✧ **For battery, battery pack or power bank equipped with BMS**

- ✓ Users should adjust the charging voltage and current to match the standard of BMS. Otherwise the BMS and battery packs may be damaged.

##### ✧ **Do NOT charge a battery pack if you do not know its capacity.**

#### ◆ **Packing List:**

788H-USB main machine: 1 pc

Copper welding rods: 2 pairs

Battery fixture: 1 pc  
Charging cables: 1 pair  
Foot Pedal: 1 pc  
Fuse: 2 pcs  
Hexagon wrench: 1 pc  
0.15 x 8 x 100 mm (nickel plated) 50 pcs  
0.1 x 4 x 100 mm (nickel plated) 50 pcs  
Manual: 1pc

### ◆ Notice

1. When building battery pack with Sunkko welders, if the home circuit system keeps tripping, please replace your Circuit Air Breaker. For 110V version machine, the Circuit Air Breaker in your circuit system should be higher than 40 A. For 220V version machine, the Circuit Air Breaker in your circuit system should be higher than 30 A.
2. Please put on gloves and mask during your battery pack welding process to protect yourself (Sparks may occur during welding process).
3. Unplug the welder when you are not using the welder.
4. During your welding process, the instantaneous large current generated by the welder may cause the lighting equipment under the same power system flash and it is considered normal.
5. Do not short circuits during spot welding or charging.
6. Do not use Sunkko welders with a voltage transformer as Sunkko welders are not compatible with the common voltage transformers in the market.
7. Continuously spot weld too fast will speed up the loss of internal components of the spot welder. We recommend that the time between each spot welding should be 3 seconds or longer.

### [Warranty!](#)

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