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QianLi qlspot

QianLi Macaron Spot Welding Machine Instruction Manual

Model: qlspot

Brand: QianLi

1. INTRODUCTION

The QianLi Macaron Spot Welding Machine is a portable device specifically designed for precise spot welding of new replacement flex cables onto iPhone 11 and 12 series battery cells. This process is crucial for transferring original battery data to a new cell, enabling proper functionality and avoiding system warnings. The unit features a built-in rechargeable battery for portability and can also be used with other types of batteries requiring spot welding.

2. SAFETY INFORMATION

Adhering to safety guidelines is paramount when operating the spot welding machine. Failure to do so may result in injury or damage to the device.

- Always wear appropriate personal protective equipment, including safety glasses, to protect your eyes from sparks and debris.
- Ensure adequate ventilation in your workspace to dissipate any fumes produced during welding.
- Do not operate the machine in damp or wet conditions. Keep the device and your hands dry.
- Avoid touching the welding pens or the welded area immediately after operation, as they will be hot.
- When using the battery spot welding fixing board, ensure the welding pen does not simultaneously connect to both the positive and negative terminals of the battery. This can cause a short circuit and damage the battery or machine.
- Keep the device out of reach of children.
- Only use the provided or approved accessories and charging cables.

3. PRODUCT OVERVIEW

3.1 Components

The QianLi Macaron Spot Welding Machine package typically includes the main welding unit, a pair of welding pens, and three specialized holding fixtures for iPhone 11 and 12 series batteries.



Figure 3.1: The QianLi Macaron Spot Welding Machine main unit with attached welding pens.

3.2 Features

The device incorporates several features designed for efficient and precise spot welding:

- **6 Output Power Settings:** Allows for precise control over welding intensity for various applications.
- **Red Copper Shaft Welding Pens:** Ensures efficient current transfer and durability.
- **USB Type-C Quick Charge:** Provides convenient and fast charging for the internal battery.
- **Auto/Manual Mode Switch:** Offers flexibility between automated and user-controlled welding processes.
- **Temperature Control Protection:** Automatically powers off the device if temperature exceeds 60°C to prevent damage.
- **High-Rate Lithium Battery:** Built-in rechargeable battery for portable operation.
- **Power Display & Remaining Battery Indicator:** Provides clear status of the device's power.

QIANLi 潜力®

Macaron Portable Spot Welding Machine

6 Settings output power for more precise welding

Power Display

Red copper shaft

USB Type-C quick charge

Auto/Manual mode switch

Temperature control protection

Lithium batteries with high rate capabilities

Manual welding button

Power indicator

Remaining battery indicator

On/Off button switch mode

Auto/Manual mode switch

Set with boards

Battery spot welding fixing board for Phone11/12 series

11、11PM

11P、12M

12/P、12PM

Please select a set if you need the fixing board, otherwise only the machine is included.

Pre-sale of New arrival product, booking accepted

Figure 3.2: Key features and indicators of the welding machine.

3.3 Included Accessories

The machine comes with essential accessories to facilitate its primary function:

- **All-in-one Spot Welding Pen:** Gold-plated pen tip, red copper shaft, copper oxide aluminum solder for optimal performance.
- **Thickened Pure Copper Overflow Strip:** 2mm thickness for ultra-low internal resistance.
- **Gold-plated Soldering Pen Terminal:** Pure copper with gold plating for wear resistance and ultra-low internal resistance.

- **Temperature Control Probe:** Integrated for temperature protection.
- **High Power Lithium Battery:** Internal battery with discharge current >650A.

Selected accessories

Guaranteed quality



All in one spot welding pen

Gold-plated pen tip, red copper shaft, copper oxide aluminum solder pin Every detail that QianLi values is for better using experience.



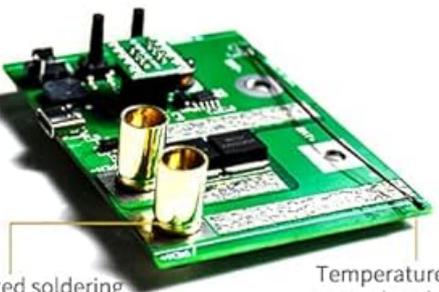
Thickened pure copper overflow strip

2MM thickness pure copper overflow strip Ultra-low internal resistance increases over-current capability



Gold-plated soldering pen terminal

Pure copper + gold plating process Wear-resistant and anti-rust Ultra low internal resistance



Temperature control protection

Temperature exceeds 60°C Automatic power-off

Gold-plated soldering pen terminal

Temperature control probe



Figure 3.3: Selected accessories for the QianLi Macaron Spot Welding Machine.

4. SETUP

Before first use, ensure the device is fully charged. Connect the USB Type-C cable to the charging port and a suitable power adapter. The battery indicator will show charging status.

4.1 Connecting Welding Pens

Carefully insert the connectors of the welding pens into the corresponding ports on the main unit. Ensure a secure connection.

4.2 Using the Battery Spot Welding Fixing Board

The fixing board is designed to hold the battery and flex cable securely in place during welding, preventing movement and ensuring effective welds. Select the appropriate fixing board for your specific iPhone model (11, 11PM, 11P/12M, or 12/12P/12PM).

- Place the battery into the designated slot on the fixing board.
- Position the flex cable over the battery's protection board, aligning it with the limit slot.
- Use the positioning clamps to secure both the battery and flex cable firmly.
- Ensure the battery protection board is fixed to avoid shaking during welding.

5. OPERATING INSTRUCTIONS

5.1 Powering On/Off

Press and hold the power button (usually marked with a circle or power symbol) to turn the device on or off. The power indicator lights will illuminate when the device is active.

5.2 Selecting Welding Mode

The machine supports both Automatic and Manual welding modes. Use the mode switch button to toggle between these options. In Automatic mode, the machine detects contact and initiates the weld. In Manual mode, you control the weld initiation via a dedicated button.

5.3 Adjusting Power Settings

The device offers 6 output power settings. Use the power adjustment button (often marked with 'W' or similar) to cycle through the power levels. Start with a lower setting and increase as needed to achieve a strong, clean weld. The power indicator lights will show the current setting.

5.4 Performing a Spot Weld

This machine supports spot welding of 0.1-0.15mm nickel sheets, commonly used in battery pack assembly.

1. Ensure the battery and flex cable are securely positioned in the fixing board.
2. Position the tips of the welding pens firmly against the nickel sheet or flex cable where the weld is to be made. Ensure good contact with both points.
3. If in Automatic mode, the weld will initiate automatically upon proper contact. If in Manual mode, press the manual welding button to initiate the weld.
4. Hold the pens steady during the welding process. A brief spark and sound indicate a successful weld.
5. Inspect the weld for strength and cleanliness. Adjust power settings or technique if the weld is weak or inconsistent.



Figure 5.1: Examples of successful spot welds on lithium battery nickel sheets.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your spot welding machine.

- **Cleaning Welding Pens:** Periodically clean the tips of the welding pens to remove any residue or oxidation. A fine-grit sandpaper or specialized cleaning tool can be used. Clean tips ensure good electrical contact and consistent welds.
- **Battery Care:** To prolong the life of the internal lithium battery, avoid completely discharging it. Recharge the unit when the battery indicator shows low power. If storing the device for an extended period, charge it to approximately 50-70% capacity.
- **General Cleaning:** Wipe the main unit with a soft, dry cloth to remove dust and debris. Do not use abrasive cleaners or solvents.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures.

7. TROUBLESHOOTING

This section addresses common issues you might encounter and their potential solutions.

Problem	Possible Cause	Solution
No weld or weak weld	Low battery; dirty welding tips; insufficient power setting; poor contact; incorrect material thickness.	Charge the device; clean welding tips; increase power setting; ensure firm contact with workpiece; verify material is within 0.1-0.15mm nickel sheet range.
Device powers off unexpectedly	Overheating (temperature protection activated); low battery.	Allow the device to cool down; charge the device.
Welding pens spark excessively or stick	Dirty or worn tips; incorrect pressure.	Clean or replace welding tips; adjust pressure applied during welding.
Indicators not working	Device off; battery completely drained; internal fault.	Turn on the device; charge the device; if problem persists, contact support.

8. SPECIFICATIONS

Model: qlspot

Product Dimensions (L x W x H): 5.91 x 2.76 x 0.2 inches (15 x 7 x 0.5 cm)

Input: USB Type-C

Output Power Settings: 6 levels

Compatible Welding Material: 0.1-0.15mm nickel sheet

Battery: Built-in rechargeable Lithium battery (Discharge current >650A)

Temperature Protection: Automatic power-off at 60°C

Compatibility: iPhone 11/12 series battery flex cables (with specific fixtures)

Manufacturer: ffs

Date First Available: July 20, 2021

9. WARRANTY AND SUPPORT

For information regarding product warranty, returns, or technical support, please contact the original seller or the manufacturer, QianLi. Keep your purchase receipt or proof of purchase handy as it may be required for warranty claims. For further assistance, you may visit the official QianLi website or contact their customer service department. Specific contact details are typically provided with your product packaging or on the manufacturer's website.