

SUNKKO®

LA-15L02

**Lithium Battery Special Handheld
Galvanometer-Type Laser Welding Machine**

User Manual



Thanks for choosing **SUNKKO** series produces . It will bring you convenience and efficiency for spot welding work.For optimal user experience,please read the manual carefully before using and store it properly for future reference.

SUNKKO has the right to upgrade the machine and modify the manual without prior notice. Thanks for understanding!

Summarizes

LA-15L02 Lithium Battery Special Laser Welding Machine adapts handheld welding with built-in biaxial galvanometer device. It can spot weld aluminum, nickel, copper and other materials on lithium battery electrodes. Precise and reliable welding reduces the contact resistance of lithium batteries during assembly and improves the output and performance of lithium battery packs. It has an 8-meter-long cable, which can easily weld large-sized battery packs for new energy vehicles and reduce the requirements for operating equipment.

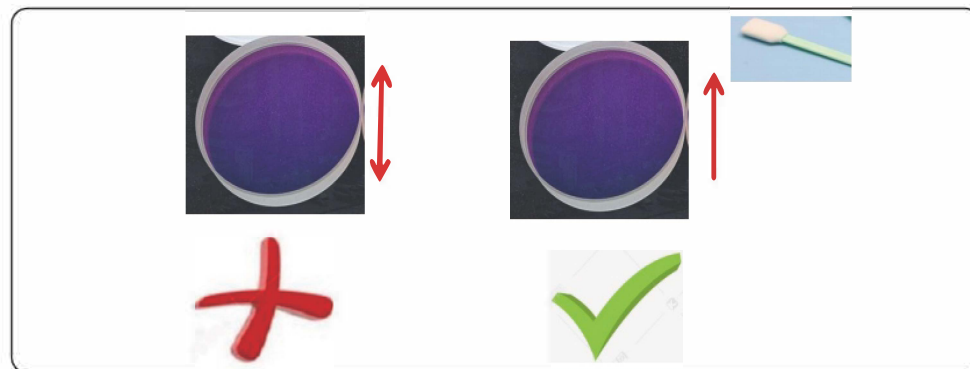
Features

- 1) The welding gun with built-in biaxial galvanometer device achieves precise positioning of tiny welding spots and ensure welding quality and accuracy.
- 2) The high-speed swinging lenses guide the laser for welding. The welding speed is faster than the traditional method and improves production efficiency.
- 3) Achieve multi-shape welding through program control, and flexibly adapt to the welding requirements of various complex shapes.
- 4) Equipped with software of graphics processing functions, which makes operation easier.
- 5) It uses an advanced control system and high-quality lenses and has very good stability and can work continuously for a long time with stable welding quality.
- 6) It is suitable for welding and cutting various metal materials, such as stainless steel, tungsten steel, aluminum alloy, etc.
- 7) The output energy waveform can be set and waveform controlled to achieve a more ideal welding effect according to different welding materials.
- 8) Various welding copper nozzles can be switched helps to weld special-shaped materials with ease.

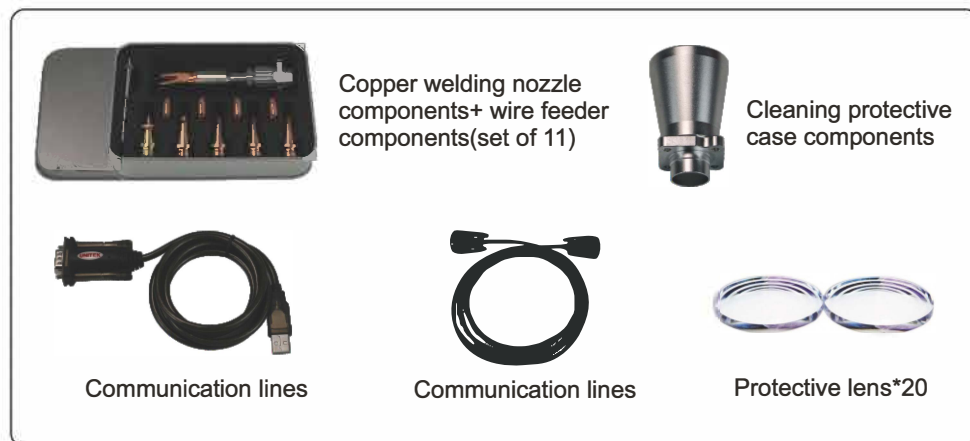
Parameters

Product name	Handheld Galvanometer-Type Laser Welding Machine		
Supply voltage	AC 110V or 220V	Power consumption	≤6KW
Output power	1500W	Laser wavelength	1070±10nm
Cooling system	Water cooling	Welding head weight	0.9KG
Size	91*50*70cm	Machine weight	133KG

- 3) When cleaning optical lenses, you need to prepare dust-free gloves or finger cots, dust-free cotton swabs, isopropyl alcohol, and filled with dry and pure compressed air. Spray isopropyl alcohol onto a dust free swab with the lenses facing the eyes. Gently hold the side edge of the lens with your left thumb and index finger, hold a dust-free wiping cotton swab in your right hand, and gently wipe the front and back of the lens in one direction from bottom to top or from left to right. (Do not wipe back and forth to avoid secondary contamination of the lenses.) And blow the surface of the lenses with filling, dry and pure compressed air to confirm that there is no foreign matter on the surface of the lens after cleaning. As shown below.

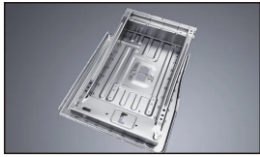


Accessory List

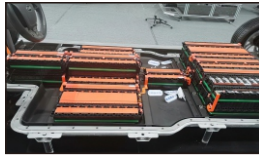


Application

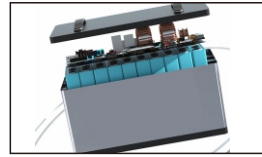
Applicable to new energy vehicle maintenance, lithium battery dealers, and battery pack manufacturers.



New energy vehicle aluminum shell material



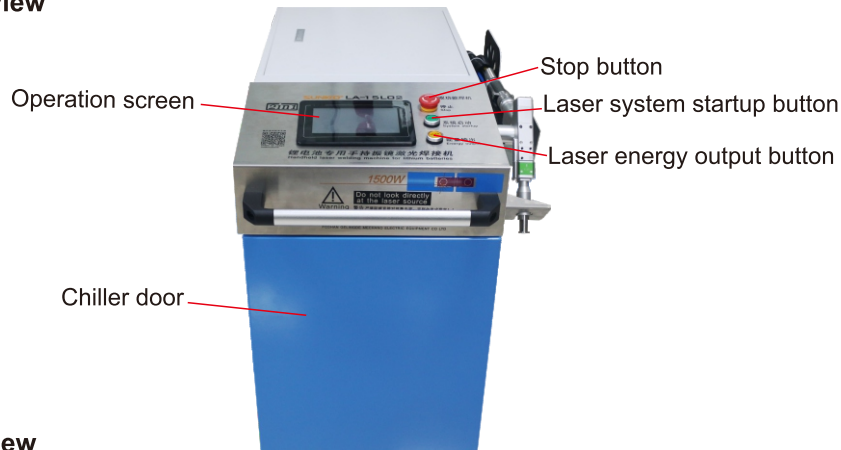
Battery pack of new energy vehicle



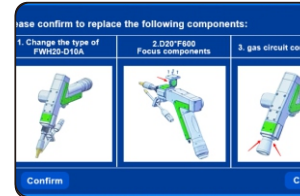
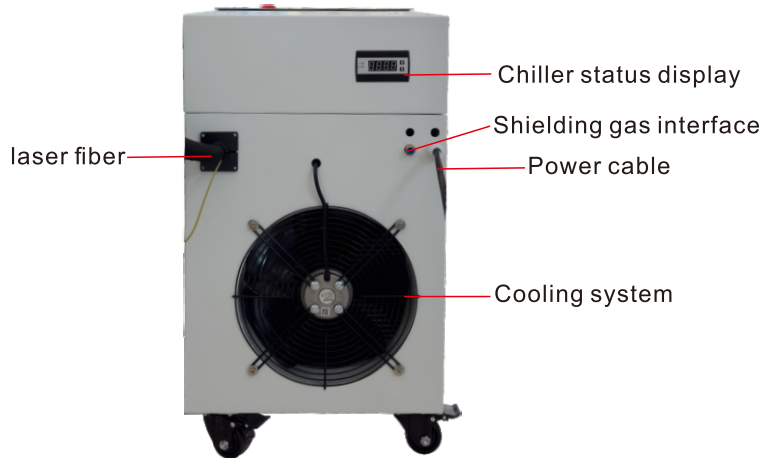
Power battery shell

Product Diagram

Front view



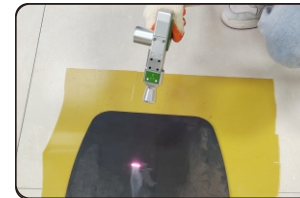
Rear view



4. After selecting the mode, press the stop button and rotate it to power on again. Click "confirm".

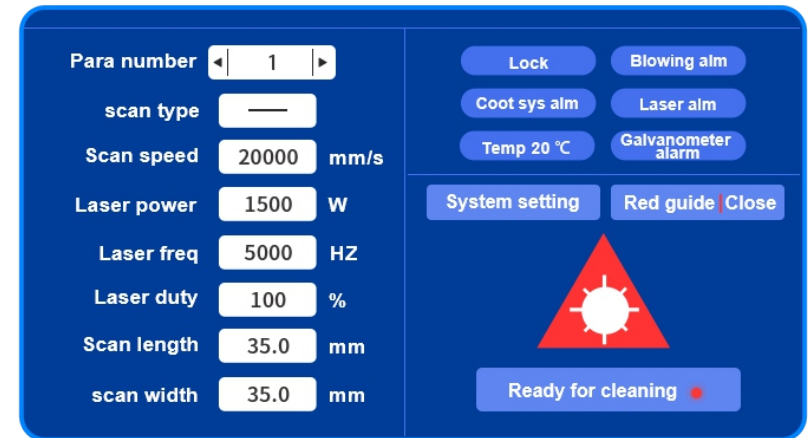


5. Adjust the corresponding parameters, refer to the parameter settings below.



6. Press the "Energy output" button after confirming the parameters. Long press the welding gun switch to emit light for removing rust.

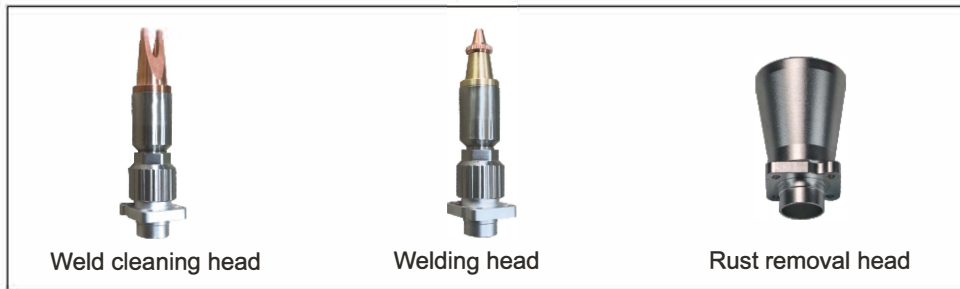
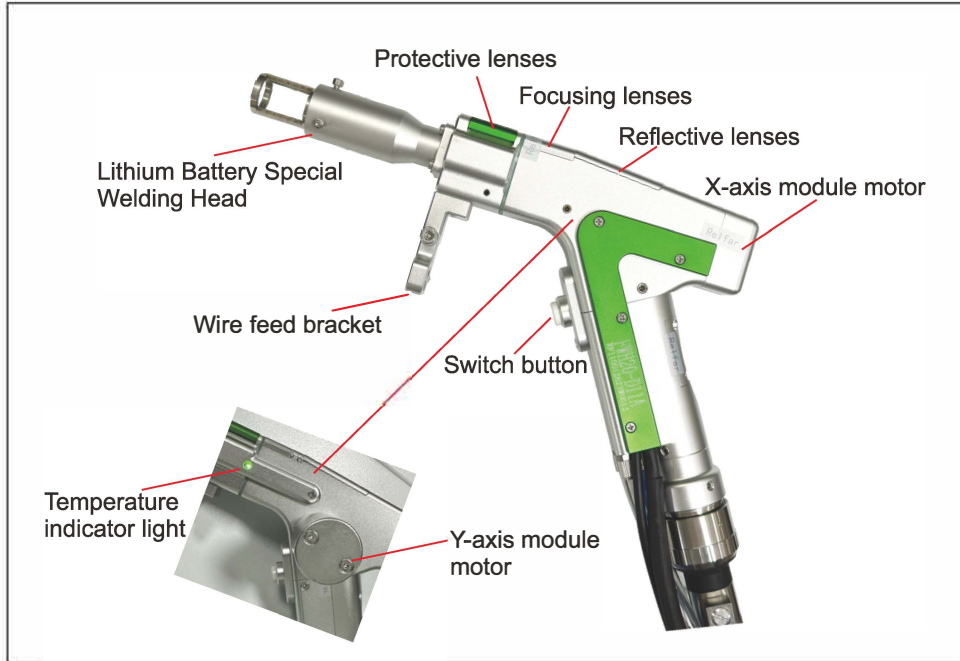
Rust Removal Parameters:



Precautions

1. To ensure personal safety, please wear special fiber laser protective glasses before operation.
2. Keep the product clean to prevent coolant, condensation or other foreign matter from intruding into the gun., otherwise it will cause functional contamination and functional impact on related parts.

Welding Gun Display



Preparation Before Use



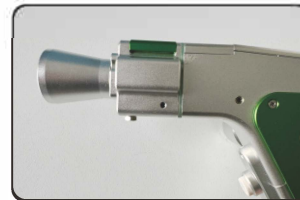
1. Connect the power harness to the air switch to ensure that the switch can withstand the maximum power of the machine 1500W.

Cutting Parameters:



Rust removal mode

Basic operation and settings:



1. Replace the laser head dedicated for cleaning. And replace the protective lenses with cleaning lenses.



2. Start the machine - after powering on, rotate the emergency stop button and press the green button.



3. Click "Authorization" —— "Working type", enter password 666666, and then choose "Clean-35mm" mode.



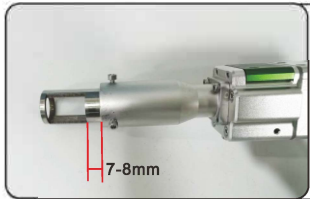
2. Open the lower cover of the machine and add purified water until the water level reaches the green range.



3. Connect the air compressor to the air inlet on the back of the machine.

Lithium Battery Welding Mode

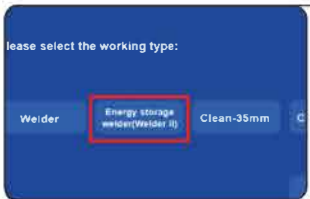
Basic operation and settings:



1. Replace the special welding head for lithium batteries and adjust the height of the welding gun with a fixed focus device. The fixed height is 7-8mm.



2. Start the machine - after powering on, rotate the emergency stop button and press the green button.



3. Click "Authorization" "Working type" enter password 666666, and then choose "Energy storage welder (Welder I)" mode.

Cutting Mode

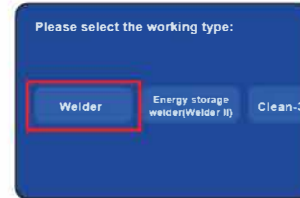
Basic operation and settings:



1. Replace the special laser welding head for cutting.



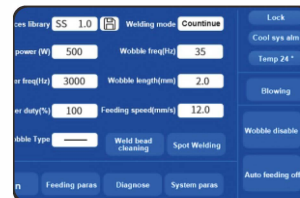
2. Start the machine - after powering on, rotate the emergency stop button and press the green button



3. Click "Authorization" "Working type", enter password 666666, and then choose "Welder" mode.



4. After selecting the mode, press the stop button and rotate it to power on again. Click "confirm".



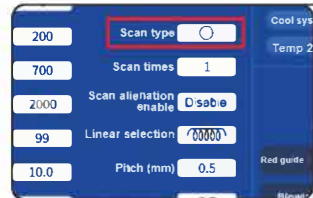
5. Refer to the parameters settings below and adjust the corresponding parameters. The laser power is adjusted according to different materials and thicknesses.



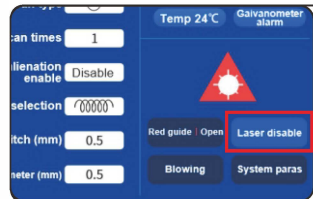
6. Press the "Energy output" button after confirming the parameters. Long press the welding gun switch to emit light for cutting.



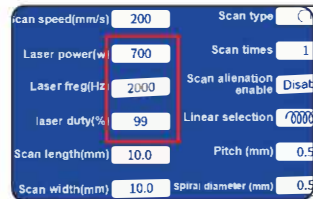
4. After selecting the mode, press the stop button and rotate it to restart the system. Click "confirm".



5. Select the "Scan type" to be welded (circle or rectangle).



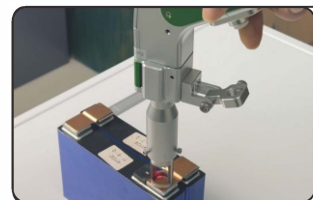
6. The welding gun emits red light when clicking "Laser disable". Press the welding gun head onto the connecting piece, and adjust the size of the graphic and the thread type according to the emitted red light.



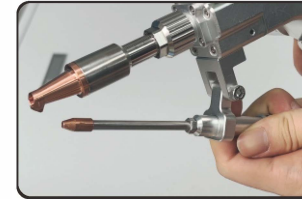
7. After finishing the adjustment, adjust the welding parameters according to the material of the connecting pieces and lithium battery electrode (see the following page for details)



8. Press "Energy output" button. (You must confirm all parameters and be ready for welding before pressing this button.) The emitted red light.



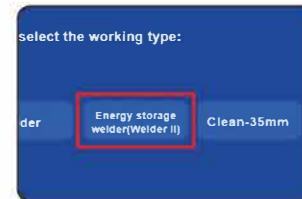
9. Double-click the welding switch and keep pressing it. The laser is emitted to complete the welding.



4. Assemble the wire feed pipe to the laser welding gun.



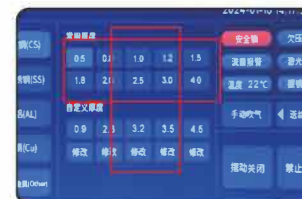
5. Start the machine - after powering on, rotate the emergency stop button and press the green button.



6. Click "Authorization"—"Working type"—Enter password 666666—and then choose "Energy storage welder (Welder II)" mode.



7. After selecting the mode, press the stop button and rotate it to power on again. Click "confirm".

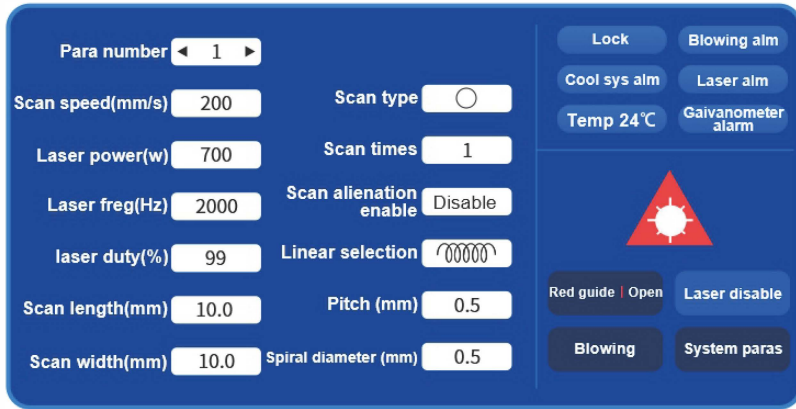


8. Click "Process library" to store the welding parameters of different materials and thicknesses, and you can directly select them without setting.



9. Press the "Energy output" button after confirming the parameters. Long press the welding gun switch to emit light for welding.

Introduction To Parameter Setting Page



1. Para number: 10 pages of parameter settings can be saved. You can switch the parameter number when welding different materials. There is no need to set all parameters repeatedly.
2. Scan speed(mm/s): The speed at which the laser completes graphics; the slower the speed, the higher the output and the higher the heat. (Recommended setting is 500.)
3. Laser power (W) : Setting the laser power (1 -1500 adjustable)
4. Laser freq(Hz): The lower the frequency, the higher the laser penetration. (Recommended setting is 2000.)
5. Laser duty(%): Laser waveform laser duty (Normally recommended setting is 99.)
6. Scan length / width(mm): Set laser pattern size
7. Scan type: choose the laser shape : circle or rectangle.
8. Scan times : Trigger the welding gun switch once, the number of times to draw a circle/square.
9. Scan alienation enable: Choose whether to use spiral. ("Enable / Disable")
10. Linear selection : Select the spiral shape during welding. (No setting required if disabled.)
11. Pitch(mm) / Spiral diameter (mm): spiral size. (No setting required if disabled.)

Welding Parameter :

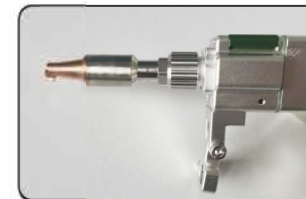
Copper aluminum composite sheet → aluminum			
Thickness (mm)	Power (W)	Speed (mm/s)	Frequency (Hz)
1	600	500	2000
1.5	825	500	2000
2	1125	500	2000
2.5	1350	500	2000

Pure aluminum → aluminum			
Thickness (mm)	Power (W)	Speed (mm/s)	Frequency (Hz)
1	600	500	2000
1.5	825	500	2000
2	1125	500	2000
2.5	1350	500	2000

Copper → Copper			
Thickness (mm)	Power (W)	Speed (mm/s)	Frequency (Hz)
1	800	500	2000
1.5	1500	500	2000

Hardware Welding Mode

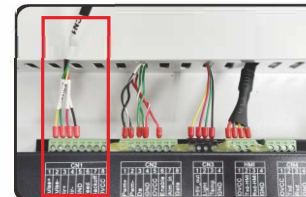
Basic operation and settings:



1. Replace the laser welding head.



2. Open the upper cover of the laser welding machine, find the handheld laser welding system.



3. Connect the wire feeder communication line to the corresponding port according to the wiring harness label.