



**Li-ion Battery Welder**

### WP-0024 Low Voltage DC Welder (External)

Main features:

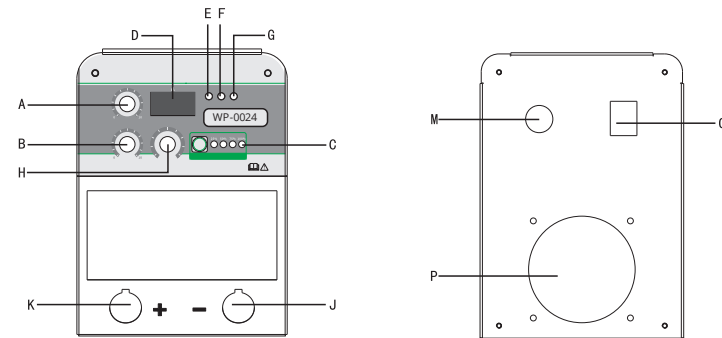
1. Portable design, compact and lightweight;
2. Pure battery drive, suitable for variable batteries;
3. Intelligent power detection function;
4. Pure DC output, smooth and beautiful welding;
5. Built in battery undervoltage protection function, ensuring safe battery life;
6. Built in functions that can only detect overheating and abnormalities;
7. Support welding rods with a diameter of 2.5mm/3.2mm for long welding;
8. Intelligent start/stop function of the fan.

<b>Rated Output Power</b>	3.7KW	<b>Input Voltage</b>	39-54.6V
<b>Current range</b>	10-150A	<b>Suitable material</b>	Stainless steel, carbon steel, low alloy steel
<b>Size</b>	372x182x320MM	<b>Weight</b>	5.5KG



AK-170 uses an external battery input. It is recommended to use the original battery or a mobile power supply that is approved by our company. If a battery module that is not approved by our company's technology is used, it may cause the device to be unusable and even cause battery safety accidents.

### Panel Description



- |                                      |                                       |                 |
|--------------------------------------|---------------------------------------|-----------------|
| A. Arc current adjustment knob       | F. Overheat indicator light           | M. Power input  |
| B. Thrust current adjustment knob    | G. Undervoltage indicator light       | O. Power switch |
| C. Battery level display and buttons | H. Welding current adjustment knob    | P. Fan          |
| D. CURRENT                           | J. Battery welding negative electrode |                 |
| E. Power indicator light             | K. Battery welding positive electrode |                 |

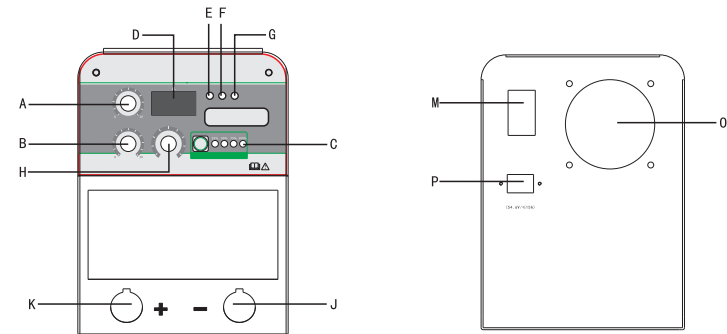
### WP-0024 Li-ion Battery Welder

Main features:

1. Built-in large capacity power battery, strong endurance.
2. Portable design, easy to carry.
3. Built-in battery undervoltage protection function, safe protection of battery life.
4. Built-in overheating, abnormal intelligent detection function.
5. Built-in thrust, thermal arc adjustment, pure DC welding. Used for scratching argon arc welding.
6. Support long welding diameter 2.5mm/3.2mm electrode, can quickly cut a variety of metals.
7. Fan intelligent start and stop function.

<b>Rated Output Power</b>	3.7KW	<b>Input Voltage</b>	42V-55.9V
<b>Current Range</b>	10-150A	<b>Suitable Material</b>	Stainless steel, carbon steel, low alloy steel
<b>Continuous Welding Rod diameter/Quantity</b>	Φ2.5mm/60pcs Φ3.2mm/30pcs	<b>Actual Standard Construction</b>	Φ2.5mm/70pcs Φ3.2mm/35pcs
<b>Charging Time</b>	15A/3.5H	<b>Charger Input Power</b>	220V/50HZ
<b>Charger Output Voltage</b>	55.9V/15A	<b>Battery Capacity</b>	48V/2405WH
<b>Number of cycles</b>	1500 charging and discharging cycles	<b>Weight</b>	21.6kg
<b>Size</b>	460x215x350mm		

### Panel Description



- A. Arc current adjustment knob
- B. Thrust current adjustment knob
- C. Battery level display and buttons
- D. CURRENT
- E. Power indicator light
- F. Overheat indicator light
- G. Undervoltage indicator light
- H. Welding current adjustment knob
- J. Battery welding negative electrode
- K. Battery welding positive electrode
- M. Power switch
- O. Fan
- P. Charging port

## WP-0024 Instructions for use

1. Turn on the power switch (M), press the front panel power display button (C), the power display light, confirm that the battery power is sufficient, adjust the panel current adjustment knob (H) to the welding required current position, you can carry out welding operations.
2. When the battery power is less than 10%, the welding arc will be unstable, and the undervoltage indicator light (G) on the front panel of the welder will light up. Please charge the device in time. Please use the original charger, connect the charging port of the charger to the charging input port (P) on the rear panel of the welder, and then plug the AC input power plug of the charger into the power socket of AC120~240V ± 10%.
3. The device has an intelligent air cooling system. When the internal temperature of the machine reaches the required heat dissipation temperature the air blower will automatically open. When the temperature of the device decreases or does not reach the required heat dissipation temperature, the fan will be stopped.
4. When the internal temperature of the machine is too high, the overheating indicator light (F) on the front panel of the welder will light up. Please keep the welder on and cool for 5 minutes before welding.
5. The power display on the panel is set to the key display in order to save power. When the battery power is measured, press the battery power button. When the battery is displayed as the last grid power, please charge the battery pack in time. When the battery is exhausted the battery BMS circuit will cut off the protection, which will lead to charging failure. Only after the BMS circuit is closed can the battery be charged. It is not recommended to use up all the battery power. Please charge it in time when the battery power is too low. The battery of this device has no memory, and can be charged and discharged at any time or used while charging.
6. The device has the functions of thrust current adjustment, hot arc current adjustment and welding current adjustment, among which VRD anti-shock function is the built-in default opening mode.
7. When using this equipment, please use no less than 25mm<sup>2</sup> copper core welding cable, the total length of the welding rod wire does not exceed 10 meters, too long cable will lose the output power of the equipment, reduce the endurance.
8. When using this equipment, please wear necessary protective equipment, keep ventilation during welding, and prevent inhaling smoke. Pay special attention to the impact of arc on eyes and facial skin, improper protection will cause arc burns on eyes and skin.
9. Do not block the air inlet of the rear door panel of the welding machine, which is easy to cause poor heat dissipation of the welding machine, resulting in overheating of the welding machine.
10. Do not use the welder for pipeline heating, do not charge or heat other equipment.
11. The device built-in overcurrent, short circuit protection function, when the device battery BMS protection shutdown, you can charge through the charger to activate the battery BMS, charging and use.
12. In the outdoor hot environment when using the equipment should avoid sunlight exposure, avoid rain soaking water, please place the equipment at a height of 30cm above the ground when using to ensure that the welding machine and battery pack good heat dissipation. When using the equipment in the cold environment in winter, please give the equipment the necessary warm facilities. The use of the equipment below -15°C will lead to the decrease of the battery life of the equipment, when it is below -25°C, the device may shut down protection and other phenomena. It is strictly prohibited to charge the battery pack in an environment below 0°C.

13. It is strictly prohibited to use non-original charger to charge the device or battery pack, different charging characteristics and charging power will cause serious danger, do not charge at the same time.
14. Please avoid severe bumps and bumps when the equipment is transported, and fix the equipment safely when it is used at high altitude to avoid safety accidents and equipment damage caused by falling of the equipment.
15. After the use of the device, please fill the device or battery pack before storage, so as to protect the battery life, when the device idle for more than half a year, please check the device power, low power please charge in time. Without charging for a long time, the battery will run out of power and cause irreversible damage to the battery cell. The power switch must be turned off when storing. Slow discharge will cause the battery module to overdischarge and the battery voltage to fall below the limit value, resulting in battery damage.
16. There are battery modules and other charged components installed inside the equipment. Any modification or replacement of different parts is strictly prohibited without the permission of the factory. The designed service life of this equipment is 5 years. If the battery has not attenuated after the expiration, it can continue to be used, but it should not exceed 8 years. Do not discard the equipment after decommissioning, you can contact the dealer or the factory for recycling.

## Ternary Power Battery Charger

MODEL	CH-4815
Input Voltage	100-240V/60H
Output Voltage	54.6
Charging Current	15
Charging Mode	Three stage CC-CV
Protection Grade	IP21
Heat Dissipation Method	Forced air cooling

## Instructions for use

1. The charger is only used indoors, please protect it for outdoor use.
2. When the user needs to charge, first connect the charging output interface to the battery charging port, and then connect the AC input end of the charger to the AC220V socket. When the charger starts to charge, the function indicator will blink or be steady on.
3. After the charger is charged, the full indicator light will be on.
4. If the user needs to use the device after full charging or charging process, please disconnect the AC power cord and charging cable at both ends of the charger, you can start to use the device normally.

## Usage notice

1. This product can be applied to emergency or outdoor without power welding construction use, the product welding current output is stable, beautiful weld.
2. In the welding operation should wear protective equipment, high altitude work should pay attention to safety to avoid equipment falling high altitude caused by safety accidents.
3. When the battery is used at a high temperature of 35 degrees or more, it should be left 60CM from the ground and effectively shielded by sunshade items.
4. In the low temperature -10 degrees below, please pay attention to the welding machine battery cold insulation work, can use the incubator and other items for external packaging use, pay attention to smooth ventilation.
5. In the mobile transportation or storage should avoid falling or strong impact, avoid moisture or the product soaked in water, it is strictly prohibited to use this product in the environment with corrosive gas or full of metal dust.
6. In order to save power the cooling fan of the equipment starts intelligently and will automatically open when it reaches the temperature.

Operating temperature	Charge Temperature	Storage temperature
-20°C ~ 40°C	1°C ~ 35°C	5°C ~ 30°C



Warning:  
This equipment is mainly used in the industrial industry. In indoor environments, this device may generate radio interference. Personnel should take adequate preventive measures.

## WP-0024 Range Comparison

Load rate	Φ3.2mm welding rod	Φ2.5mm welding rod
50%	43PCS	87PCS
60%	41PCS	82PCS
80%	37PCS	75PCS
100%	35PCS	67PCS

Note: Actual usage varies according to customer usage habits and environmental factors.

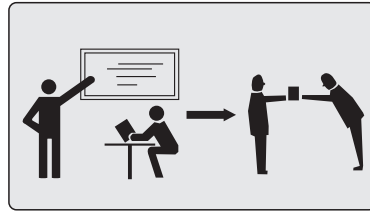
## Device charging instructions and precautions

1. The use of different batteries to match different chargers, factory power lithium battery must use the original charger, the specification requirements are (ternary lithium 54.6V /15A), do not allow the use of other models or higher power charger to charge the original battery. Because the charger is an optional product, the original charger is not allowed to charge other batteries, otherwise it will cause damage to the charger and battery and even cause other safety accidents, while charging must have special care.
2. The equipment in storage, should be charged in time, can not be fed for a long time storage, if the equipment is not used for 6months, must carry out a charge and discharge cycle. Charge and discharge the battery regularly, can extend the service life of the battery.
3. Do not allow the use of welding machine to charge the battery, improper operation will cause the battery overcharge explosion or bulge damage.

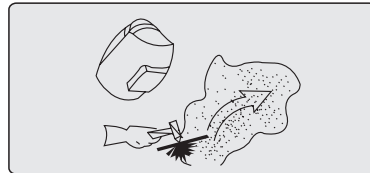
## Safety considerations

During the welding process, it may cause injury to you and others. take good protection while welding. For details. please refer to the Operator Safety Guide that meets the manufacturer's accident prevention requirements.

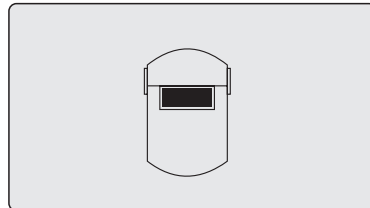
1.Only trained professionals are required to operate this equipment! Use welding labor protection products approved by the national safety supervision department!  
The operator must be holding a valid "metal welding according to gas cutting operation"operation certificate of special operators!  
In the maintenance and repair of the welding machine, do not live work.



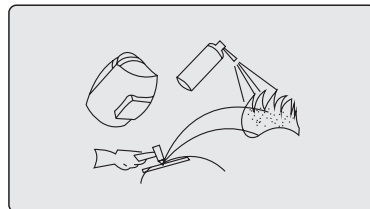
2.Smoke a may be harmful to health!  
Keep your head out of the smoke to avoid inhaling welding exhaust gas;  
When welding, use ventilation or pumping device to keep the working environment air circulation.



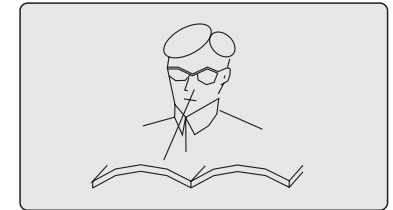
3.Arc radiation a may damage your eyes and burn the skin!  
Use a suitable welding mask and wear protective clothing to protect your eyes and body;  
And protect bystanders from injury with a suitable face mask or curtain.



4.Fire  
Welding sparks may lead to fire, please make sure that there is no flammable material near the welding station, and pay attention to fire safety.  
Ensure that there is a fire extinguishing device nearby and a trained person is skilled in the use of fire extinguishers.



5.A fault encountered difficulties, seek professional help.  
If you encounter difficulties in installation and operation, please check according to the relevant contents of the wooden manual.  
If you still can not fully understand after reading, raccording to the guidelines of this manual can not solve the problem, you should immediately contact your supplier or the manufacturer's service center to seek professional help.



## Install

The company's welding machine is equipped with power supply voltage compensation device, lithium battery voltage changes within the rated voltage range, can continue to work.  
When using a longer cable line, in order to reduce the voltage drop, it is recommended to chose a larger section of he cable; if the connection cable is too long it may have a greater impact on te arc performance of the welding machine and other performance of the system. Therefore, we recommend that you us the recommended configuration length.

1. Make sure that the welder vent is not covered and blocked, so as not to fail the cooling system.
- 2.Connect the welding pliers and ground wire correctly according to the picture below. Make sure the cable is securely connected to the welding pliers and quick plug first, plug the quick plug into the quick socket of the welder with polarity "-" and tighten it firmly clockwise.
- 3.Plug the quick plug of the loop cable into the quick socket with polarity "+" on the welder panel, and tighten it firmly clockwise, and the ground clamp on the other end holds the workpiece.
- 4.Pay attention to the polarity of the wiring, there are two general DC welding machine wiring methods: positive connection and reverse connection; Positive connection method: the welding joint is connected to the negative electrode, the workpiece is connected to the positive electrode: (generally used for acid electrode)Reverse connection method: the workpiece is connected t the negative electrode, and the welding rod is connected to the positive electrode.(Generally used for alkaline electrode)Welding according to the workpiece process requirements and selected, if the improper selection will appear arc instability, splash and stick and other phenomena. in this case can easily change the quick joint to change the polarity.

## Operate

- 1.The power supply placed ON the front pane to the "ON "position, the watch head screen displays the set current value, while the cooling fan in the machine will not work immediately, such as welding, the machine internal temperature rises, the fan starts to work.
- 2.According to the thickness of the welding workpiece, the diameter of the electrode, the station and the process needs to determine the appropriate welding current and thrust current.
- 3.Clamp the electrode on the welding clamp. Now the machine is in manual welding mode and in standby state.

In the flat welding process, the current list of the electrode specifications is used

SIZE	φ 2.5	φ 3.2	φ 4.0	φ 5.0
CURRENT	70-100A	110-140A	170-220A	230-280A

- 4.Arc current adjustment is used to adjust the instantaneous arc current, can improve the success rate of arc, to avoid sticking to the electrode.
- 5.The thrust adjustment knob is used to adjust the welding performance. in vertical welding and upward welding, and welding current adjustment knob used together, can achieve very ideal welding effect.



**Warning:**

All connection operations should be carried out after confirming that the power supply has been cut off. The correct sequence is to first connect the welding wire and ground wire to the welding machine, confirm that the connection is reliable and free of looseness, and then turn on the power switch on the back panel of the welding machine.

## Precautions or preventive measures

### Safety points

The company's welding machine has been installed in the undervoltage, over and overheating protection circuit, when the battery voltage, output current and machine temperature exceeds the set standard, the welding machine will automatically stop working so you still need to pay attention to the following matters:

- 1) Ensure that the ventilation is good!

The welding machine of our company is a small welding machine, in operation, there is a large working current through the natural ventilation can not meet the cooling requirements of the welding machine, so a fan is installed to effectively cool the welding machine to make it work smoothly.

The user should confirm that the ventilation is not covered or blocked, the distance between the welder and the surrounding objects should be no less than 0.3meters, the user should always pay attention to maintain good ventilation, which is very important for the better work of the welder and to ensure a longer service life.

- 2) No overload!

The user should remember to observe the maximum allowable load current (relative to the selected load duration) at all times, and keep the welding current does not exceed the maximum allowable load current.

Current overload will significantly shorten the service life of the welding machine, and may even burn the welding machine.

- 3) Forbid undervoltage of battery voltage.

Under normal circumstances, the automatic voltage compensation circuit in the welder will ensure that the welding current is kept within the allowable range. If the battery voltage is lower than the allowed value. the welder will be undervoltage protection, please charge the battery in time.

- 4) If the welder is working in excess of the standard load persistence rate, the welder may suddenly enter the protection state and stop working, which means that the welder exceeds the standard load persistence rate, the excessive thermal energy triggers the temperature control switch. making the welder stop working, and the yellow indicator on the front panel is lit up. In this case, you do not need to turn off the power supply of the welder, so that the cooling fan can continue to work to cool the welder. When the yellow light is off and the temperature drops to the standard range, you can start welding again.

## Problems you may encounter during the welding process

### Questions and answers

The phenomena listed here may be related to the accessories you use, welding materials, environmental factors, and power supply. Please try to improve the environment to avoid such cases.

A. the arc is difficult, and easy to break arc:

1. Confirm that the quality of the electrode you use is good, and the poor quality electrode may not meet the requirements of high-quality welding
2. The welding rod that has not been dried is also not easy to arc, and causes the arc to be unstable, which increases the number of welding defects and deteriorates the welding quality.
3. If the use of a longer cable will cause the output voltage to drop too much, it is recommended that you shorten the cable length as far as possible:

B. The output current does not reach the rated value:

The battery voltage deviation from the rated value will cause the output current value to be different from the set value; When the battery voltage is below the rated value, the maximum output current of the welder may also be below the rated value.

C. The welding machine during the use of the current can not remain stable:

This situation may be related to the following factors:

1. The battery voltage changes;
2. Serious interference from other electrical devices

D. Excessive splash:

1. The current may be adjusted too large, and the diameter of the electrode is too small;
2. The polarity of the output end is reversed, and positive polarity welding should be used under the normal process, that is, the electrode should be connected to electricity.

The negative electrode of the source, and the workpiece should be connected to the positive electrode of the power supply, please switch the polarity.

### Questions and answers

1. Regularly blow the dust with dry and clean compressed air, if the welder is used in a heavy smoke and air pollution environment, the welder should be dusted every day.
2. The pressure of compressed air should be at a reasonable level so as not to damage the small components in the welder.
3. Regularly check the internal circuit connection of the welding machine, confirm that the line connection is correct, the connection head is firm (especially inserted joints or components), if there is rust and loose, the application of sandpaper to polish off the rust layer or oxide film, reconnect, and tighten.
4. To avoid water or water vapor into the inside of the welder, if such a situation, should be dried inside the welder.

Subsequently, the insulation of the welder is measured with a megohm meter (including between the connection nodes and between the connection points and the housing). Only if it is confirmed that there are no abnormal conditions, can the welding work continue.

5. If the welder is not used for a long time, the welder should be put back into the original packing box and placed in a dry environment, and the battery should be fully charged and discharged every 6 months regularly.



Common sense: the operator should hold a valid qualification document that can prove its ability and knowledge. Before the maintenance, we will first contact the company and obtain recognition.