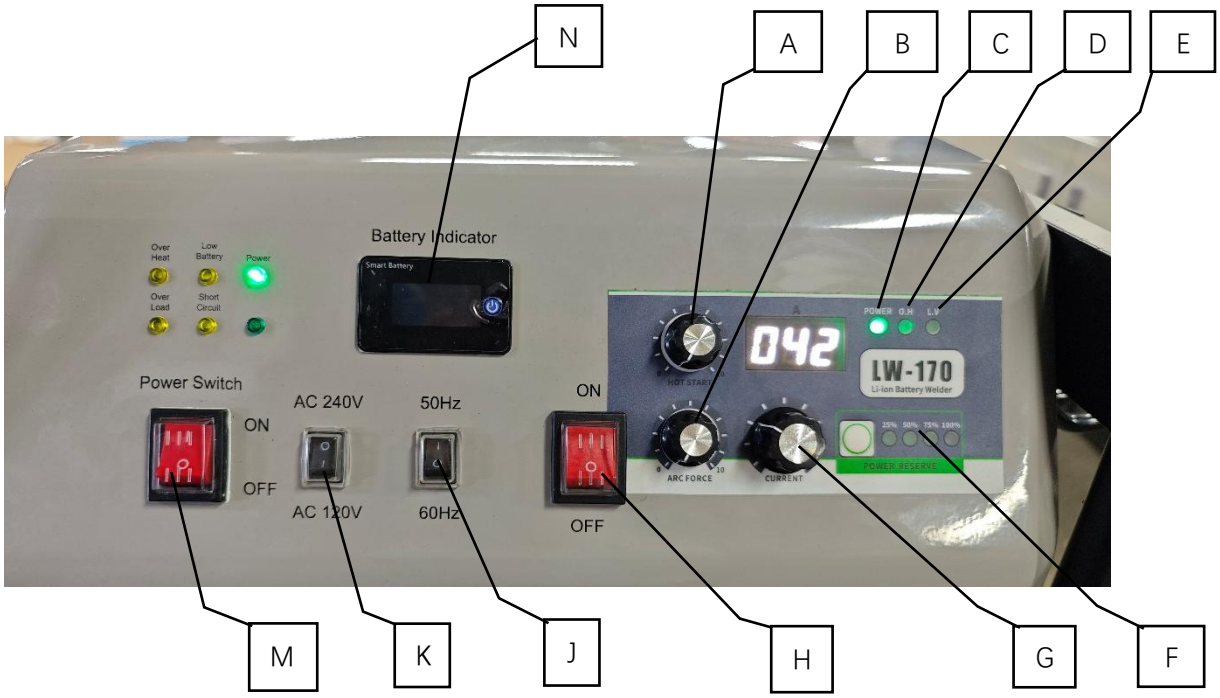
LI-ION BATTERY WELDER

SCV-5050

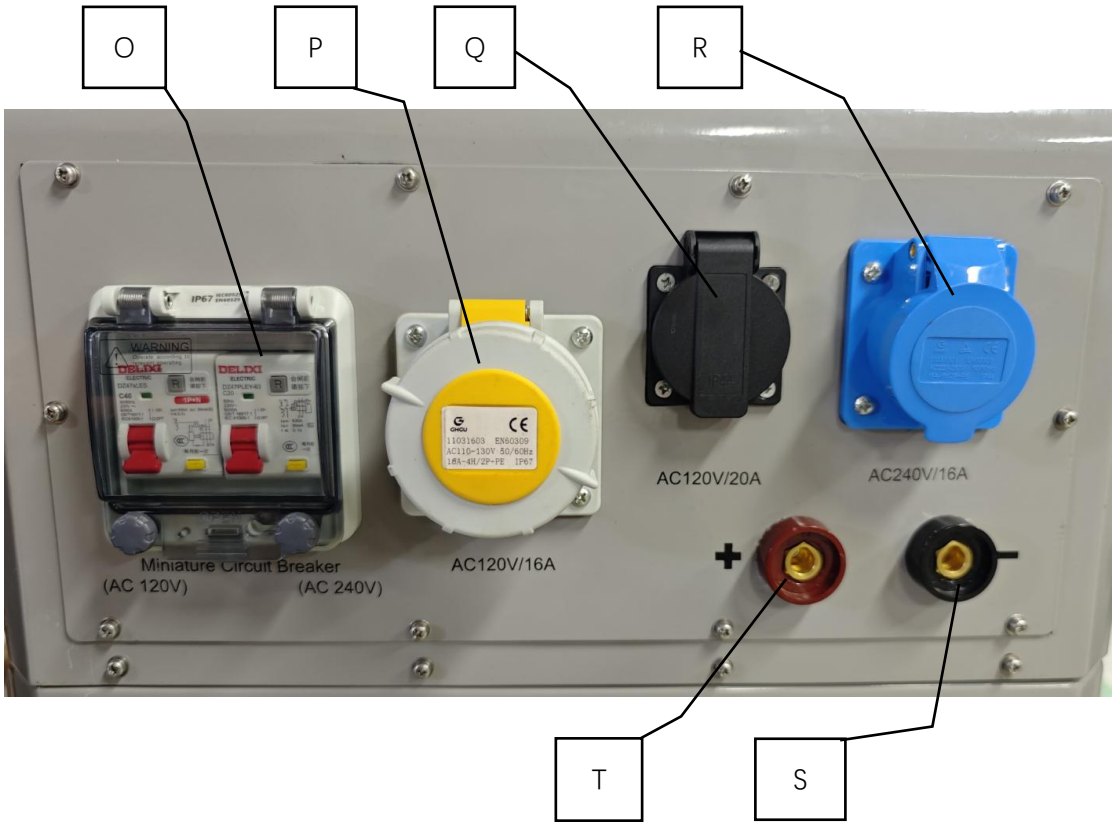
TECHNICAL PARAMETERS

MODEL	SCV-5050
RATED OUTPUT POWER	4KW
PEAK OUTPUT POWER	15000W
OUTPUT VOLTAGE	42V-56V
CURRENT RANGE	10-150A
CHARGER INPUT POWER	15A/6.5H
POWER INPUT	110V/60HZ
POWER OUTPUT (SP/TP)	110V/240V
BATTERY VOLTAGE	55.9V/15A
BATTERY CAPACITY	48V/5600WH
SIZE	850mm×600mm×600mm
WEIGHT	90KG

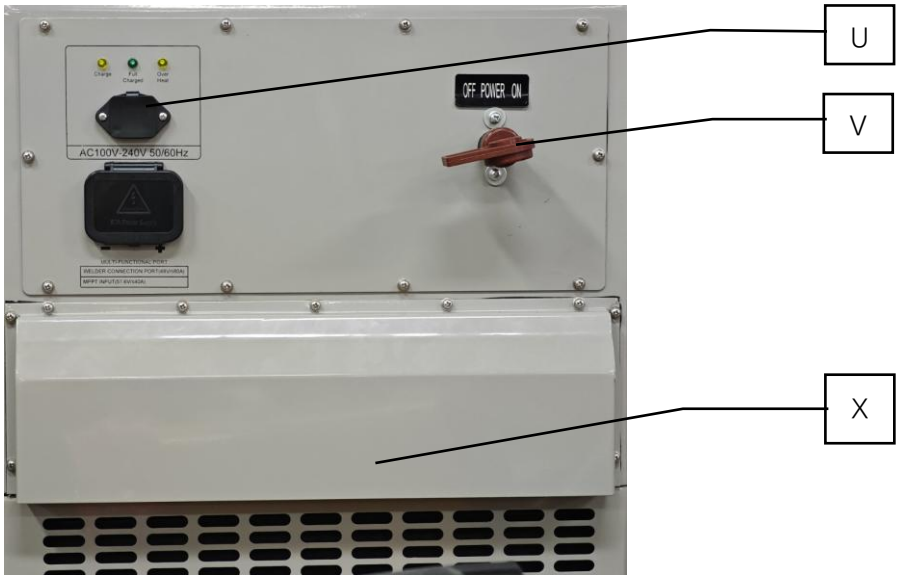
PANEL DESCRIPTION



A: Arc current adjustment knob	G: Welding current adjustment knob
B: Thrust current adjustment knob	H: Welding power switch
C: Power indicator light	J: Frequency switching button
D: Overheat indicator light	K: Voltage switching button
E: Undervoltage indicator light	M: Power switch
F: Battery level display and buttons	N: Current



O: Miniature circuit breaker
P: Output interface (AC 120V-240V/16A)
Q: Output interface (AC 120V-240V/16A)
R: Output interface (AC 120V-240V/16A)
S: Battery welding negative electrode
T: Battery welding positive electrode



U: Battery welding switch
V: Power switch
X: Fans

INSTRUCTIONS FOR USE

1、Turn on the power switch (V-M-H) , press the power display button on the front panel. After the power indicator light confirms that the battery power is sufficient, adjust the panel current adjustment knob to the current position required for welding, and then you can perform welding operations.

2、When the battery power is less than 10%, the welding arc will become unstable, and the undervoltage indicator light on the front panel of the welder will turn on. Please charge the device in time. Use the original charger: connect the charger's charging port to the charging input port on the rear panel of the welder, then plug the AC input power plug of the charger into a 220V±10% AC power socket.

3、The device is equipped with an intelligent air-cooling system. When the internal temperature of the machine reaches the temperature requiring heat dissipation, the blower will turn on automatically. When the device temperature drops below the required heat dissipation temperature, the fan will stop.

4、When the internal temperature of the machine is too high, the overheating indicator light on the front panel of the welder will turn on. Please keep the welder powered on and let it cool for 5 minutes before resuming welding.

5、The power display on the panel is set to key-activated display to save power. To check the battery power, press the battery power button. When the battery power is displayed as the last bar, please charge the battery pack in time. If the battery is fully drained, the battery BMS circuit will cut off power for protection, which may cause charging failure. The battery can only

be charged after the BMS circuit is reset. It is not recommended to fully deplete the battery power; please charge it promptly when the power is low. The battery of this device has no memory effect and can be charged or discharged at any time, or even used while charging.

6、The device features thrust current adjustment, hot arc current adjustment, and welding current adjustment. Among these, the VRD anti-shock function is enabled by default.

7、When using this equipment, use a copper-core welding cable with a cross-sectional area of at least 25mm^2. The total length of the welding cable should not exceed 10 meters; an excessively long cable will reduce the output power of the equipment and shorten its runtime.

8、When using this equipment, wear necessary protective gear. Ensure ventilation during welding to prevent smoke inhalation. Pay special attention to the impact of arcs on eyes and facial skin: improper protection may cause arc burns to the eyes and skin.

9、Do not block the air inlet on the rear panel of the welder, as this may lead to poor heat dissipation and cause the welder to overheat.

10、Do not use the welder for pipeline heating, nor use it to charge or heat other equipment.

The device has built-in overcurrent and short-circuit protection functions. If the battery BMS shuts down due to protection, you can activate the battery BMS by charging it with the charger, after which it can be charged and used normally.

11、When using the equipment outdoors in hot environments, avoid direct sunlight and exposure to rain or water. Place the equipment at least 30cm above the ground during use to ensure good heat dissipation for both the welder and the battery pack. When using the equipment in cold winter environments, provide necessary insulation. Using the equipment

below -15℃ will reduce battery life; below -25℃, the device may shut down for protection. Charging the battery pack in environments below 0℃ is strictly prohibited.

12、It is strictly prohibited to use a non-original charger to charge the device or battery pack. Different charging characteristics and charging power may cause serious dangers. Do not charge multiple devices or battery packs at the same time.

13、During transportation of the equipment, please avoid severe impacts and collisions. When using the equipment at high altitudes, secure it firmly to prevent safety accidents and equipment damage caused by the equipment falling.

14、After using the device, please fully charge the device or battery pack before storage to protect the battery life. If the device is left unused for more than half a year, check the power level; if the power is low, charge it in time. Leaving the battery uncharged for a long time will drain its power and cause irreversible damage to the battery cells. The power switch must be turned off during storage, as slow discharge may lead to over-discharge of the battery module, causing the battery voltage to drop below the limit value and resulting in battery damage.

15、The equipment contains built-in battery modules and other live components. Without the factory's permission, any modification to the equipment or replacement of parts with non-original ones is strictly prohibited. The designed service life of this equipment is 5 years. If the battery has not deteriorated after this period, it can continue to be used, but the total service life should not exceed 8 years. Do not discard the equipment after decommissioning; instead, contact the dealer or the factory for recycling.

16、If you need to switch the equipment's voltage level and frequency to the appropriate standard, please turn off all the power sources of the equipment first, then use the buttons on

the switch panel (K and J) to perform the switching operation, and restart the equipment afterwards.

USAGE NOTICE

1、This product is suitable for emergency welding operations or outdoor welding construction where there is no power supply. It delivers stable welding current output, resulting in neat and attractive welds.

2、During welding operations, protective gear must be worn. For high-altitude work, special attention should be paid to safety—secure the equipment properly to prevent safety accidents caused by falling.

3、When using the battery in high-temperature environments (35°C or above), the equipment should be placed at least 60cm above the ground and effectively shielded with sunshade items.

4、In low-temperature environments (-10°C or below), ensure the welder's battery is properly insulated. External insulation measures such as incubators can be used, with attention to maintaining smooth ventilation.

5、During mobile transportation or storage, avoid dropping, strong impacts, moisture, or immersion in water. It is strictly prohibited to use this product in environments containing corrosive gases or heavy metal dust.

6、To save power, the equipment's cooling fan operates intelligently: it will automatically turn on when the internal temperature reaches the preset threshold.

WARNING

THIS EQUIPMENT IS MAINLY USED IN INDUSTRIAL SETTINGS. WHEN OPERATED IN INDOOR ENVIRONMENTS, IT MAY GENERATE RADIO INTERFERENCE, SO RELEVANT PERSONNEL SHOULD TAKE SUFFICIENT PREVENTIVE MEASURES.

SATETY CONSIDERATIONS

During the welding process, there is a risk of injury to yourself and others. Therefore, proper protective measures must be taken while welding. For detailed guidelines, please refer to the Operator Safety Guide that complies with the manufacturer's accident prevention requirements.

1. Only trained professionals are allowed to operate this equipment. Use welding protective gear approved by the national safety supervision department. Operators must hold a valid "Special Operator Certificate for Metal Welding and Gas Cutting Operations". When maintaining or repairing the welding machine, do not work on live parts.

2. Welding fumes may be harmful to health. Keep your head away from the fumes to avoid inhaling welding exhaust; during welding, use ventilation or exhaust devices to ensure air circulation in the working environment.

3. Arc radiation may damage your eyes and burn the skin. Use an appropriate welding mask and wear protective clothing to protect your eyes and body. Additionally, protect bystanders from harm using suitable face shields or protective curtains.

4. Fire hazard: Welding sparks may cause fires. Ensure there are no flammable materials near the welding station and pay strict attention to fire safety. Make sure fire extinguishing equipment is available nearby, and that a trained person is proficient in using fire extinguishers.

5. For faults or operational difficulties, seek professional assistance. If you encounter issues during installation or operation, please refer to the relevant sections of the user manual for troubleshooting. If you still cannot resolve the problem after following the manual's guidelines, contact your supplier or the manufacturer's service center immediately for professional support.

6. When moving the equipment, please insert the safety pin provided with the machine to ensure the safety of the operator.

INSTALL

The welding machine is equipped with a power supply voltage compensation device. When the lithium battery voltage changes within the rated voltage range, it can continue to work.

When using a longer cable line, in order to reduce the voltage drop, it is recommended to choose a larger cross-section of the cable. If the connection cable is too long, it may have a greater impact on the arc performance of the welding machine and other performance of the

system. Therefore, we recommend that you use the recommended configuration length.

1. Make sure that the welder vent is not covered and blocked, so as not to cause the cooling system to fail.

2. Connect the welding pliers and ground wire correctly according. Make sure the cable is securely connected to the welding pliers and quick plug first, then 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, tighten it firmly clockwise, and the ground clamp on the other end holds the workpiece.

4. Pay attention to the polarity of the wiring. The general DC welding machine wiring methods are as follows:

- Straight connection method: the welding joint is connected to the positive electrode, and the workpiece is connected to the negative electrode (generally used for acid electrodes).

- Reverse connection method: the workpiece is connected to the negative electrode, and the welding rod is connected to the positive electrode (generally used for alkaline electrodes).

Welding should be selected according to the workpiece process requirements. If the improper selection is made, arc instability, spatter, and sticking phenomena may occur. In this case, the quick joint can be easily changed to alter the polarity.

OPERATE

1. When the power supply on the front panel is placed in the "ON" position, the watch head screen displays the set current value. Meanwhile, the cooling fan inside the machine will not work immediately. If welding is performed, the machine's internal temperature rises, and

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, determine the appropriate welding current and thrust current.

3. Clamp the electrode in the welding clamp. Now the machine is in manual welding mode and in standby state.

4. Arc current adjustment is used to adjust the instantaneous arc current, which can improve the success rate of arc initiation and avoid the electrode sticking to the workpiece.

5. The thrust adjustment knob is used to adjust the welding performance. In vertical welding and upward welding, when used together with the welding current adjustment knob, it can achieve a 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.

SAFETY POINTS

The company's welding machine has been installed with undervoltage, overcurrent, and overheating protection circuits. When the battery voltage, output current, and machine temperature exceed the set standards, the welding machine will automatically stop working. Therefore, you still need to pay attention to the following matters:

1) Ensure good ventilation! The welding machine of our company is a small welding

machine. During operation, there is a large working current passing through. Natural ventilation cannot meet the cooling requirements of the welding machine, so a fan is installed to effectively cool the welding machine and ensure its smooth operation. Users should confirm that the ventilation is not covered or blocked. The distance between the welder and surrounding objects should be no less than 0.3 meters. Users should always pay attention to maintaining good ventilation, which is very important for the better performance of the welder and to ensure a longer service life.

2) No overload! Users should always observe the maximum allowable load current (relative to the selected load duration) and ensure that 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 protected. 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. This 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 lights 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.

Q&A

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 to initiate and easy to break:

Confirm that the quality of the electrode you use is good. Poor-quality electrodes may not meet the requirements for high-quality welding.

Welding rods that have not been dried are not easy to arc and can cause the arc to be unstable. This increases the number of welding defects and deteriorates the welding quality.

If the use of a longer cable causes the output voltage to drop too much, it is recommended that you shorten the cable lengths 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 differ 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 cannot maintain stable current during use:

This situation may be related to the following factors:

The battery voltage changes.

Serious interference from other electrical devices.

D. Excessive splash:

The current may be adjusted too large, and the diameter of the electrode is too small.

The polarity of the output end is reversed. Under normal process conditions, positive polarity welding should be used, meaning the electrode should be connected to the negative electrode of the power source, and the workpiece should be connected to the positive electrode of the power supply. Please switch the polarity.

OTHER CONSIDERATIONS

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.

The pressure of compressed air should be at a reasonable level so as not to damage the small components inside the welder.

Regularly check the internal circuit connections of the welding machine. Confirm that the connections are correct and the connection heads are firm (especially inserted joints or components). If there is rust or looseness, use sandpaper to polish off the rust layer or oxide film, reconnect, and tighten.

To avoid water or water vapor entering the interior of the welder, if such a situation occurs, the interior should be dried. Subsequently, the insulation of the welder should be measured with a megohmmeter (measuring 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.

If the welder is not used for a long time, it should be stored in the original packing box and placed in a dry environment. 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 THEIR ABILITY AND KNOWLEDGE. BEFORE MAINTENANCE, WE WILL FIRST CONTACT THE COMPANY AND OBTAIN APPROVAL.