



# MSK 320A User Manual

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AA Portable Power Corp

## 1 Overview:

**MSK-320A** Microcomputer Control Capacitive Discharge Spot Welder (CD Welder), a capacitive resistance spot welders, is the most popular capacitive discharge spot welder driven by compressed air, which is designed for the production of the world's high-class battery manufacturer (NiMH, NiCd, Li-Ion, LiMnNi, LifePO<sub>4</sub>, NMC) with more reliable and consistent welding than AC pulse. It can be used for AA / AAA / C / D / F / M / 10440 / 14430 / 14500 / 14650 / 17500 / 18650 / 26650 / 38120 / 40160 sizes of batteries. Key characteristics include:

- 1.1 Excellent choice when the welding application require a rapid rise time and high energy discharge
- 1.2 Digital LCD control panel.
- 1.3 Compact and attractive dimension.
- 1.4 Most cost-effective welding solutions for fine-spot resistance welding.
- 1.5 Quick energy release for welding highly conductive metals such as copper
- 1.6 Small heat affected weld zones
- 1.7 Repeatable energy release independent of line voltage fluctuations
- 1.8 Capable of extremely fine energy adjustment
- 1.9 Homogeneous welding spot, small spark, no black spots and stable welding current.
- 1.10 Fully eliminates the phenomenon of low voltage or condensation occurred to lithium batteries after welding and serves as ideal equipment for you to produce assembled batteries.
- 1.11 Microcomputer single chip control, the welder may achieve single-pulse, double-pulse or multi-pulse welding.
- 1.12 All parameters are set via microcomputer. Adopts LCD display and keypad adjustment, resulting in accuracy, visualization and easy of operation.
- 1.13 Independently adjust for the pressure of two welding probes, ensuring stable and reliable welding pressure.
- 1.14 Optoelectronic welding switch, which can eliminate the need of changing switches for similar welding machines.
- 1.15 Quick and immediate for machine learning and use
- 1.16 Suitable for 0.03mm ~ 0.2mm welding lugs

## 2 Precaution

- 2.1 Make sure the input voltage is same as this specification. Incorrect input voltage may damage the operator and machine.
- 2.2 Do not put the machine in the damp environment and avoid strong mechanical movement.
- 2.3 Do not open the case of machine without authorized by professional persons..
- 2.4 Do not put anything on the machine to keep the machine in a good cooling state.
- 2.5 Please shut down the machine and cut off the input AC and ask the professional engineer to check the machine in the following state:
  - a. Machine is over heat.
  - b. Any liquid or conductor materials are put in the machine.
  - c. Power cable is broken
  - d. Machine can not running.
- 2.6 Avoid touching weld spots immediately after the weld has been performed as they will be hot.
- 2.7 Always wear safety glasses when working with spot welders and weld heads.
- 2.8 Be careful not to pinch fingers in moving weld head parts or between welding electrodes.
- 2.9 Remove hand jewelry before welding.

## 3 Key Technical Specification:

Power supply: AC 220V 50Hz

Max output power: 10KVA

Input air pressure: 0.1-0.8Mpa

Net weight: 45KG

Dimension (L x W x H): 600mm x 450mm x 600mm

Suitable for 0.03mm-0.5mm welding lugs

## 4 Machine structure: (Fig.1)

- 1) Power switch: Push down to switch on and push again to switch off.
- 2) Keypad:
  - First weld current: To set up BI
  - Weld Time: To set up WT
  - Second weld current: To set up WI
  - Switch: Shift the state to pneumatic or Pedal.
  - Clear: clear the previous configuration. The welding counters zero clearing.

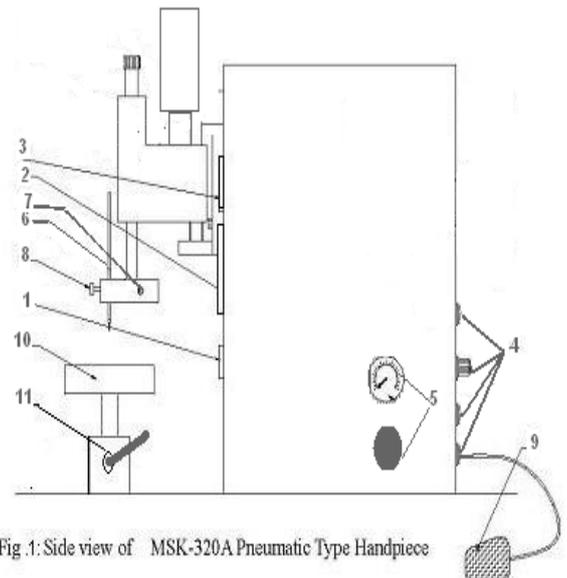


Fig.1: Side view of MSK-320A Pneumatic Type Handpiece

- 3) LCD display: It shows the previous configuration. Machine type, BI, WT, WI; Welding counters, welding curve, Connection state (left: Pneumatic; right: Pedal).
- 4) Rear Panel:
  - Input AC socket: Input AC connector.
  - Fuse holder: A 10A fuses in it.
  - Pneumatic switch connector: To connect the foot pedal.
  - Air pressure inlet: Air pressure input.
- 5) Air pressure control: The Pressure gauge and regulating valve are on the right side of the case. Pull out the valve and turn clockwise to increase the pressure and anticlockwise to decrease the pressure. Please push in the valve while the pressure is suitable.
- 6) Welding electrode
- 7) Setscrew to adjust width of welding electrode.
- 8) Setscrew to adjust height of welding electrode.
- 9) Touch switch: Used to start welding.
- 10) Welding device table.
- 11) Handle pin to adjust the height of the table.

## 5 Operation instruction:

- 5.1 Adjust the height of welding electrodes (See Fig.2): Use a wrench to unscrew Screw 8 for adjusting the height of welding electrode. Adjust (or replace) the length protruding under the electrode (usually 20mm, excessive length may cause welding electrode to distort) and retighten the screw. Use a wrench to unscrew Screw 7 for adjusting the width of the welding electrodes. Adjust the two welding electrodes to optimal distance depending on the width of welding electrodes and then retighten the screw.

Note: It is very important to make sure the electrodes are separate.

- 5.2 Adjust the height of the device table (Fig.3): Twist the handle pin 11. Adjust the batteries and welding electrodes to optimal distance (normally 4mm) and reverse twist the handle pin 11 to tighten the device table.

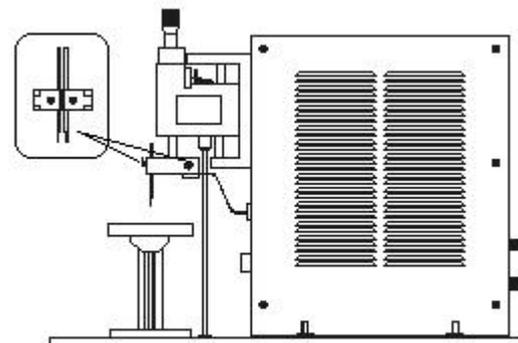


Fig.2 Welding electrodes adjustment

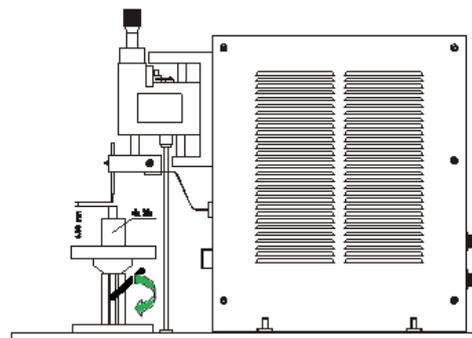


Fig.3 Device table height adjustment

5.3 Adjust welding pressure (Fig.4):

Manually twist welding pressure regulating setscrew, clockwise to increase pressure and counterclockwise to decrease pressure. Adjust it to proper pressure depending on welding requirements.

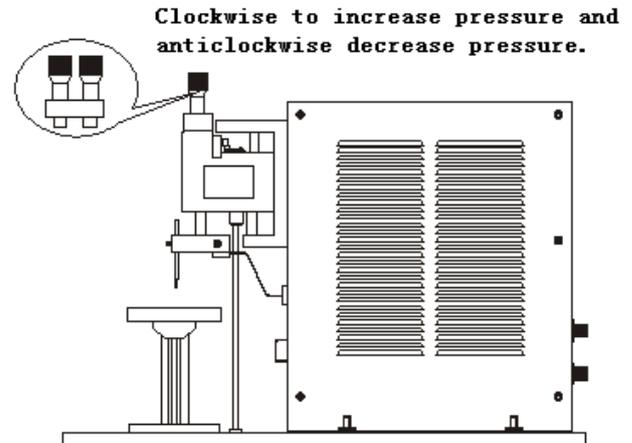


Fig. 4 Welding pressure adjustment

5.4 Adjust the input pressure: Air

pressure control: The Pressure gauge and regulating valve are on the right side of the case. Pull out the valve and turn clockwise to increase the pressure and anticlockwise to decrease the pressure. Please push in the valve while the pressure is suitable.

5.5 Trial welding: Step on touch switch to lower electrode. The two welding electrode make contact by weldment when the electrode contact the weldment . It begin to discharging and welding, Adjust welding current (BI, WI), welding time, welding electrode pressure and air pressure to make welding status to achieve optimal welding effect.

5.6 To ensure excellent welding quality, frequent maintenance should be conducted on the welding electrodes. Use small sand paper to make the tips of welding electrodes even and smooth.

## 6 General Troubleshooting

No	Symptom	Possible cause	Solution
1	LCD displays at startup.	Fuse blown out. Failure in input power.	1. Replace with fuses of same specifications. 2. Check power lines.
2	LCD displays but no response in welding.	1.10A fuse blown out.	1. Replace with fuses of same specifications.

3	Power indicator lights up and display is good but no welding spark.	<ol style="list-style-type: none"> <li>1. Air pressure too low.</li> <li>2. Parameters for welding current set too low.</li> <li>3. Excessive gap between lower surface of welding electrode and batteries.</li> <li>4. Wires connecting welding switch broken.</li> <li>5. Optoelectronic switch damaged.</li> <li>6. If working indicator does not light up or flicker, it may be caused by power interference.</li> </ol>	<ol style="list-style-type: none"> <li>1. Increase air pressure.</li> <li>2. Increase welding current.</li> <li>3. Adjust the gap between batteries and the surface of welding electrode to about 3-4mm.</li> <li>4. Connect wires in compliance with Fig.1</li> <li>6. Switch power off and switch it on again.</li> </ol>
4	In welding, it is easy to ignite and even burn battery casing.	<ol style="list-style-type: none"> <li>1. Pressure for welding electrode too low.</li> <li>2. Foreign matter on the lower side of welding electrode.</li> <li>3. Incorrect welding material.</li> </ol>	<ol style="list-style-type: none"> <li>1. Increase welding pressure.</li> <li>2. File the surface of welding electrode even and smooth with a small file.</li> <li>3. User proper welding material.</li> </ol>

Note: In case failure remains unsolved please contact manufacturer for maintenance.

## 7 Warranty Card

### Warranty card

Customer Name: \_\_\_\_\_ Tel: \_\_\_\_\_

Address: \_\_\_\_\_

Product Name: \_\_\_\_\_ : Model & Specifications: \_\_\_\_\_

Date of Delivery: \_\_\_\_\_ Product No: \_\_\_\_\_

**Failure descriptions:**

Please stamp your purchase invoice on this page and send a copy to our After-sale

Dept to establish information file. Keep the original for yourself. We promise a one-year warranty period for our product commencing on the date of delivery. In case any mechanical failure occurs during this period, please complete the copy with such detailed information as your company name, address and failure symptoms and fax a copy to our company or call us to describe detailed situations, and we will provide onsite services immediately. In case of mechanical failure, it is recommended to first refer to the User Manual as well as the instructions and Tips on the following pages.

**Stamp Invoice Here**

## **8 Instructions for Warranty:**

1. Please refer to this User Manual before using this product and/or when encountering any failure (See "General Troubleshooting").
2. In case of enquiry or normal maintenance, please present the Warranty Card and invoice, and contact our corresponding technicians for inquiry and maintenance.
3. For warranted maintenance, please fax your Warranty Card to our company and call us describing your company name, address, phone number, product model, number and date of delivery as well as failure symptom.

## **9 Tips for Warranty:**

1. We provide free maintenance for our equipment for one year commencing on the date of delivery. Our warranty covers failure arising from normal use within such period.
2. We shall not be held responsible for failure arising from improper operation or intentional damage. However, we may provide paid services in this case.

3. In case of maintenance for equipment after our one-year warranty period (or for equipment provided by other companies), we will charge normally for such maintenance. In this case, we will provide three-month warranty for such replaced parts.
4. Welding electrodes are quick-wear parts and their service life is associated with welding material, its shape and size, operating methods and some other factors. Our warranty does not cover any damage to the welding electrodes.
5. Our warranty does not cover any of the following circumstances:
  - a) No Warranty Card and/or invoice are available.
  - b) The Warranty Card and/or invoice are obliterated and are not in line with the product code.
  - c) Damage arising from improper use, erroneous operation or unauthorized retrofitting.
  - d) Damage caused due to use of components made by other manufacturers.
  - e) Damage caused by unexpected factors.
  - f) Expiration of the Warranty Period.
  - g) Failure to make full payment as scheduled by the contract.