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# AZZUNO MMA/Lift TIG 145A Mini Stick Welder User Manual

Model: A-3

## 1. INTRODUCTION

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Thank you for choosing the AZZUNO MMA/Lift TIG 145A Mini Stick Welder. This versatile and portable welding machine is designed for both Manual Metal Arc (MMA) and Lift Tungsten Inert Gas (TIG) welding processes. Featuring dual voltage capability (110V/220V), IGBT inverter technology, Hot Start, ARC Force, and Anti Stick functions, it provides efficient and reliable performance for various welding tasks. This manual provides essential information for safe operation, setup, maintenance, and troubleshooting.



Image 1.1: The AZZUNO MMA/Lift TIG 145A Mini Stick Welder with included accessories, showcasing its compact design and ready-to-use components.

## 2. SAFETY INFORMATION

**WARNING: Welding can be dangerous. Always follow safety precautions to prevent injury or death.**

- **Electric Shock:** This machine uses high voltage. Ensure proper grounding. Do not touch live electrical parts. Always wear dry welding gloves and protective clothing. The machine features VRD (Voltage Reduction Device) for electric shock protection.
- **Fumes and Gases:** Welding fumes and gases can be hazardous to your health. Work in a well-ventilated area. Use a fume extractor if necessary.
- **Arc Rays:** Arc rays can burn eyes and skin. Wear a welding helmet with appropriate shade filter and protective clothing.
- **Fire and Explosion:** Welding sparks can cause fire or explosion. Keep flammable materials away from the welding area. Have a fire extinguisher readily available.
- **Burns:** Hot metal and equipment can cause severe burns. Wear protective gloves and clothing. Allow welded materials to cool before handling.
- **Overheating:** The machine is equipped with over-heating protection. If the machine overheats, it will temporarily shut down. Allow it to cool before resuming operation.

# SMOOTH OPERATION under GOOD SAFETY PROTECTION



Image 2.1: Close-up of the welder's control panel highlighting the VRD (Electric Shock Protection) and Over Heat Protection indicators, crucial for user safety.

## 3. PRODUCT OVERVIEW

### 3.1. Key Features

- Dual Functionality:** Supports both MMA (Stick) and Lift TIG welding.
- Portable Design:** Compact size (10.6" x 3.9" x 5.5") and lightweight (5.0 lbs) with a handle and shoulder strap for easy transport.
- Dual Voltage:** Operates on both 110V and 220V power sources, adapting to various work environments.
- Advanced Technology:** IGBT Inverter for stable arc, Built-in Hot Start for easy arc ignition, ARC Force

for preventing electrode sticking, and Anti Stick for smooth welding.

- **Safety Protections:** Includes Over-heating Protection, Over-current Protection, and VRD (Voltage Reduction Device).

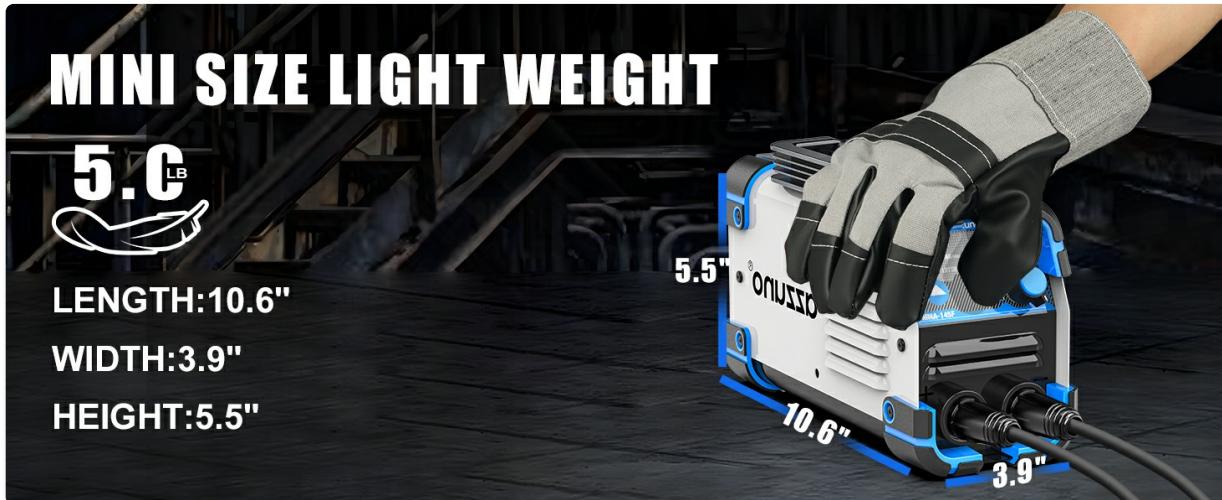


Image 3.1: Visual representation of the compact dimensions (Length: 10.6", Width: 3.9", Height: 5.5") and light weight (5.0 lbs) of the AZZUNO Mini Stick Welder, emphasizing its portability.



Image 3.2: The welder shown being carried by its integrated handle and with the included shoulder strap, demonstrating its ease of transport.

### 3.2. Included Accessories

The following accessories are included with your AZZUNO Mini Stick Welder:

1. Brush/Hammer
2. Electrode Holder
3. Earth Clamp
4. 110V-220V Adapter Cord
5. Strap
6. Mask (basic welding mask)
7. User's Manual (this document)

# ACCESSORIES

1. Brush/ Hammer
2. Electrode Holder
3. Earth Clamp
4. 110V-220V Adapter Cord
5. Strap
6. Mask
7. User's Manual



Image 3.3: A visual guide to the accessories included with the AZZUNO Mini Stick Welder, numbered for easy identification.

## 3.3. Control Panel Introduction



Image 3.4: Detailed view of the welder's control panel, indicating the function of each button, LED, and knob.

1. **Overheat Protection LED:** Illuminates when the machine is overheating and temporarily stops welding.
2. **Welding Mode LED:** Indicates the currently selected welding mode (MMA or Lift TIG).
3. **Mode Choose Button:** Press to switch between MMA and Lift TIG welding modes.
4. **Digital Display:** Shows the current welding amperage.
5. **Current Knob:** Adjusts the welding current (amperage).

## 4. SETUP

### 4.1. Power Connection

1. Ensure the welder's power switch is in the OFF position.
2. Determine your power source: 110V or 220V. The machine automatically detects the voltage.
3. If using a 110V outlet, connect the provided 110V-220V adapter cord to the welder's power cable, then plug into the wall outlet.
4. If using a 220V outlet, connect the welder's power cable directly to the 220V outlet.
5. Ensure the power outlet is properly grounded.



Image 4.1: Illustration of the dual voltage capability, showing how to connect the welder to both 110V and 220V power sources using the adapter cord.

## 4.2. Connecting Welding Cables

The AZZUNO Mini Stick Welder uses standard DINSE connectors for welding cables.

- Earth Clamp:** Connect the earth clamp cable to the negative (-) terminal on the front panel. Twist clockwise to secure. Attach the earth clamp firmly to the workpiece or welding table, ensuring good electrical contact.
- Electrode Holder (MMA):** For MMA welding, connect the electrode holder cable to the positive (+) terminal on the front panel. Twist clockwise to secure. Insert the welding electrode into the holder.
- Lift TIG Torch (Optional):** For Lift TIG welding, connect the TIG torch cable to the negative (-) terminal. Twist clockwise to secure. (Note: The Lift TIG torch is not included and must be purchased separately.)



Image 4.2: Visual guide for connecting welding cables, illustrating Direct Current Electrode Positive (DCEP) for Stick welding and Direct Current Electrode Negative (DCEN) for Lift TIG welding.

## 5. OPERATING INSTRUCTIONS

### 5.1. Powering On and Mode Selection

- After connecting power and welding cables, turn on the main power switch located on the rear of the machine.
- The digital display will light up.

3. Press the 'Mode Choose Button' on the front panel to select between MMA (Stick) or Lift TIG welding. The corresponding LED will illuminate.



Image 5.1: A hand pressing the mode selection button on the welder's control panel to switch between Stick and Lift TIG welding modes.

## 5.2. Adjusting Welding Current

Use the 'Current Knob' to adjust the welding amperage. The digital display will show the selected current. Refer to electrode manufacturer specifications or welding charts for appropriate current settings based on electrode type and material thickness.

## 5.3. MMA (Stick) Welding

This mode is suitable for welding with various types of electrodes, including E6011, E6013, and E7018, for material thicknesses up to 13/64" (5mm).

1. Ensure the electrode holder is connected to the positive (+) terminal and the earth clamp to the negative (-) terminal (DCEP).
2. Select MMA mode.
3. Set the appropriate welding current.
4. Strike the arc by lightly touching the electrode to the workpiece and quickly lifting it slightly to establish the arc. The built-in Hot Start feature assists with arc ignition.
5. Maintain a consistent arc length and travel speed. ARC Force helps maintain arc stability, and Anti Stick prevents the electrode from fusing to the workpiece.



Image 5.2: Examples of various materials and applications suitable for the AZZUNO Mini Stick Welder, including mild steel, sheet metal, square pipe, stainless steel, and metal fences.

#### 5.4. Lift TIG Welding

For precision welding of thinner materials. (Requires a separate Lift TIG torch and shielding gas setup).

1. Ensure the TIG torch is connected to the negative (-) terminal and the earth clamp to the positive (+) terminal (DCEN).
2. Select Lift TIG mode.
3. Set the appropriate welding current.
4. Initiate the arc by gently touching the tungsten electrode to the workpiece and then lifting it slightly. The arc will start without high-frequency interference.

5. Maintain a consistent arc length and feed filler rod as needed.

## 5.5. VRD Function (Voltage Reduction Device)

The VRD function reduces the open-circuit voltage (OCV) of the welding machine when not welding, enhancing safety, especially in damp or confined environments. You can toggle the VRD function ON or OFF using the mode button. When VRD is ON, the MMA(VRD) LED will be lit.

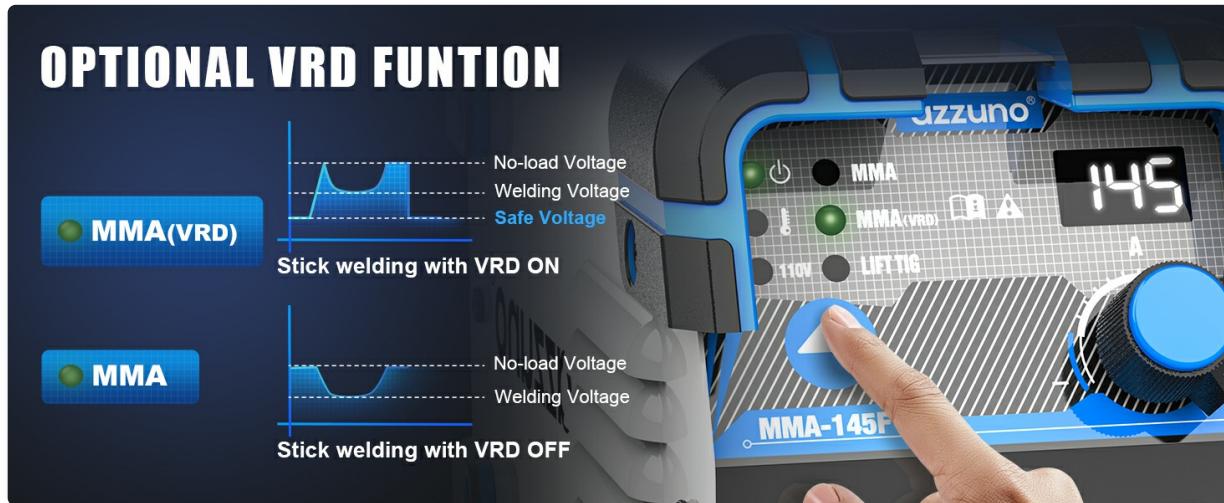


Image 5.3: Comparative graphs showing the welding voltage characteristics with VRD function enabled (safe voltage) and disabled.

## 6. MAINTENANCE

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

- **Cleaning:** Periodically clean the exterior of the machine with a dry, soft cloth. Use compressed air to blow out dust and debris from the cooling vents. Ensure the machine is unplugged before cleaning.
- **Cable Inspection:** Regularly inspect all welding cables, electrode holder, and earth clamp for damage, cuts, or loose connections. Replace damaged components immediately.
- **Cooling System:** Ensure the cooling fan and vents are free from obstructions to allow proper airflow. The machine features a high-speed fan for efficient cooling.
- **Storage:** Store the welder in a clean, dry environment, away from excessive dust, moisture, and corrosive materials.

# FAST AND EFFICIENT COOLING SYSTEM



**High-speed Fan Extends Working Time**

Image 6.1: An illustration highlighting the fast and efficient cooling system of the welder, featuring a high-speed fan designed to extend working time.

## 7. TROUBLESHOOTING

This section addresses common issues you might encounter. For problems not listed here, contact customer support.

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Welder does not power on.	No power supply; loose power cable; faulty power switch.	Check power outlet and circuit breaker. Ensure power cable is securely connected.
No arc or weak arc.	Poor earth clamp connection; incorrect current setting; damp electrodes; faulty cables.	Ensure earth clamp has good contact. Adjust current. Use dry electrodes. Inspect cables for damage.
Overheat Protection LED is on.	Exceeded duty cycle; blocked cooling vents; high ambient temperature.	Allow machine to cool down. Clear any obstructions from vents. Reduce welding time.
Electrode sticks frequently.	Low current setting; improper arc length; lack of Anti Stick function engagement.	Increase welding current. Practice maintaining proper arc length. Ensure Anti Stick is active (it's built-in).
Ground strap gets hot.	Poor connection at the clamp or machine; insufficient cable size for current.	Ensure all connections are tight and clean. Consider a heavier gauge ground cable if consistently hot during normal operation.

## 8. SPECIFICATIONS

Feature	Detail
Model Number	A-3
Welding Processes	MMA (Stick), Lift TIG
Input Voltage	110V / 220V (Dual Voltage)
Max Output Current	145A
Technology	IGBT Inverter
Built-in Features	Hot Start, ARC Force, Anti Stick
Safety Features	Over-heating Protection, Over-current Protection, VRD (Electric Shock Protection)
Weldable Material Thickness (MMA)	Up to 13/64" (5mm)
Applicable Electrodes	E6011, E6013, E7018 (1/16" - 1/8" diameter)
Item Weight	5.0 lbs (approx. 2.27 kg)
Package Dimensions	12.32 x 10.04 x 7.83 inches
Included Components	Welding machine, electrode holder, earth clamp, wire brush, 110V-220V adapter cord, strap, mask, user manual

## 9. WARRANTY AND SUPPORT

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### 9.1. Warranty Information

The AZZUNO Mini Stick Welder comes with a **1-year quality guarantee** from the date of purchase. This warranty covers manufacturing defects and ensures the product meets its specified performance standards under normal use. Please retain your proof of purchase for warranty claims.

### 9.2. Customer Support

Should you encounter any issues with your AZZUNO Mini Stick Welder or have questions regarding its operation, please contact the seller or AZZUNO customer service. Contact details are typically provided with your purchase documentation or on the official AZZUNO website.

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