AUTOOL EWM-508

AUTOOL ARC-200 DC Inverter Welder (Model EWM-508) Instruction Manual

Your guide to safe and efficient welding.

1. Introduction

Thank you for choosing the AUTOOL ARC-200 DC Inverter Welder, Model EWM-508. This portable electric welder is designed for various welding tasks, offering dual voltage compatibility (AC 110V/220V) and a current range of 20-160 Amps. Equipped with IGBT (Insulated Gate Bipolar Transistor) control technology, it ensures precise current management, reduced spatter, and smooth weld joints for high-quality results.

2. Safety Instructions

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

- **Eye and Face Protection:** Always wear a welding helmet with appropriate shade lenses to protect your eyes and face from arc rays and sparks.
- **Protective Clothing:** Wear flame-resistant clothing, gloves, and sturdy footwear to protect against burns and electric shock.
- **Ventilation:** Ensure adequate ventilation to remove welding fumes and gases, which can be hazardous to your health.
- **Fire Prevention:** Keep a fire extinguisher nearby. Remove all flammable materials from the welding area. Sparks and hot metal can cause fires.
- **Electrical Safety:** Ensure the welder is properly grounded. Do not operate in wet conditions. Inspect cables for damage before each use. Avoid touching live electrical parts.
- **Work Area:** Keep the work area clean and free of clutter. Ensure stable footing.
- **Children and Bystanders:** Keep children and unauthorized persons away from the welding area.

3. Product Overview

The AUTOOL ARC-200 (EWM-508) is a compact and efficient DC inverter welder. Key features include:

- **IGBT Control:** For precise current control, resulting in low spatter and smooth welds.
- **Dual Voltage:** Operates on AC 110V +/- 15% or AC 220V +/- 15%.
- **Full Protection:** Features automatic power-off protection for overheating.
- **Efficient Cooling:** Equipped with a 4100 turn/min mute fan and a serrated aluminum alloy radiator for rapid heat dissipation.
- **Stable Performance:** Digital chip control ensures immediate arcing. Built-in ultra-low voltage intelligent regulator allows operation in unstable voltage areas.
- **Portable Design:** Lightweight and compact with a sturdy handle for easy transport.

3.1 Internal Components

The welder's internal design incorporates advanced components for stable and powerful performance.

Image: Internal components of the AUTOOL ARC-200 welder. This view highlights the amorphous copper transformer for powerful operation, 560uF 400WV capacitors for stable current output, and energy-efficient IGBTs (Insulated Gate Bipolar Transistors).

3.2 External Features and Dimensions

Familiarize yourself with the welder's external controls and connections.

Image: A diagram illustrating the key external features of the AUTOOL ARC-200 welder, including the handle, power cable, power switch, cooling fan, digital display, current adjustment knob, and the positive and negative output terminals. Dimensions are also indicated.

Image: A close-up view of the digital display panel and the current adjustment knob, which allows precise control over the welding amperage.

Image: This image highlights the built-in cooling fan, which is part of the welder's overheat protection system, ensuring efficient heat dissipation during operation.

Image: A visual representation of the welder's portable and lightweight design, emphasizing its ease of handling and transport.

4. Setup

4.1 Unpacking and Inspection

- Carefully remove all components from the packaging.
- Inspect the welder and accessories for any signs of damage during transit.
- Ensure all listed accessories are present. The kit typically includes the welder, an instruction manual, an electrode holder, a ground clamp, and a basic welding mask/wire brush.

Image: The AUTOOL ARC-200 welder displayed alongside its standard accessories, including the user manual, electrode holder, ground clamp, and a basic welding mask with a wire brush.

4.2 Power Connection

The welder supports dual voltage input. Ensure the correct voltage is selected and the power source meets the requirements.

- **Voltage Selection:** The welder automatically detects 110V or 220V AC input.
- **Circuit Breaker:** For 110V operation, a dedicated 30 Amp circuit breaker is recommended to prevent tripping, especially at higher amperage settings. For 220V, consult local electrical codes for appropriate breaker size.
- **Power Cord:** Connect the power cord to a suitable electrical outlet.

Image: A detailed view of the power cord and plug, illustrating the connection point to the welder.

4.3 Welding Cable Connection

Connect the electrode holder and ground clamp to the appropriate terminals.

- **Electrode Holder:** Connect the electrode holder cable to the positive (+) output terminal.
- **Ground Clamp:** Connect the ground clamp cable to the negative (-) output terminal.
- **Cable Quality:** The welder uses pure copper core cables for efficient power transmission with minimal loss. For enhanced performance or specific applications, consider upgrading the electrode clamp and ground clamp, potentially using DIN adapters for compatibility with professional-grade accessories.

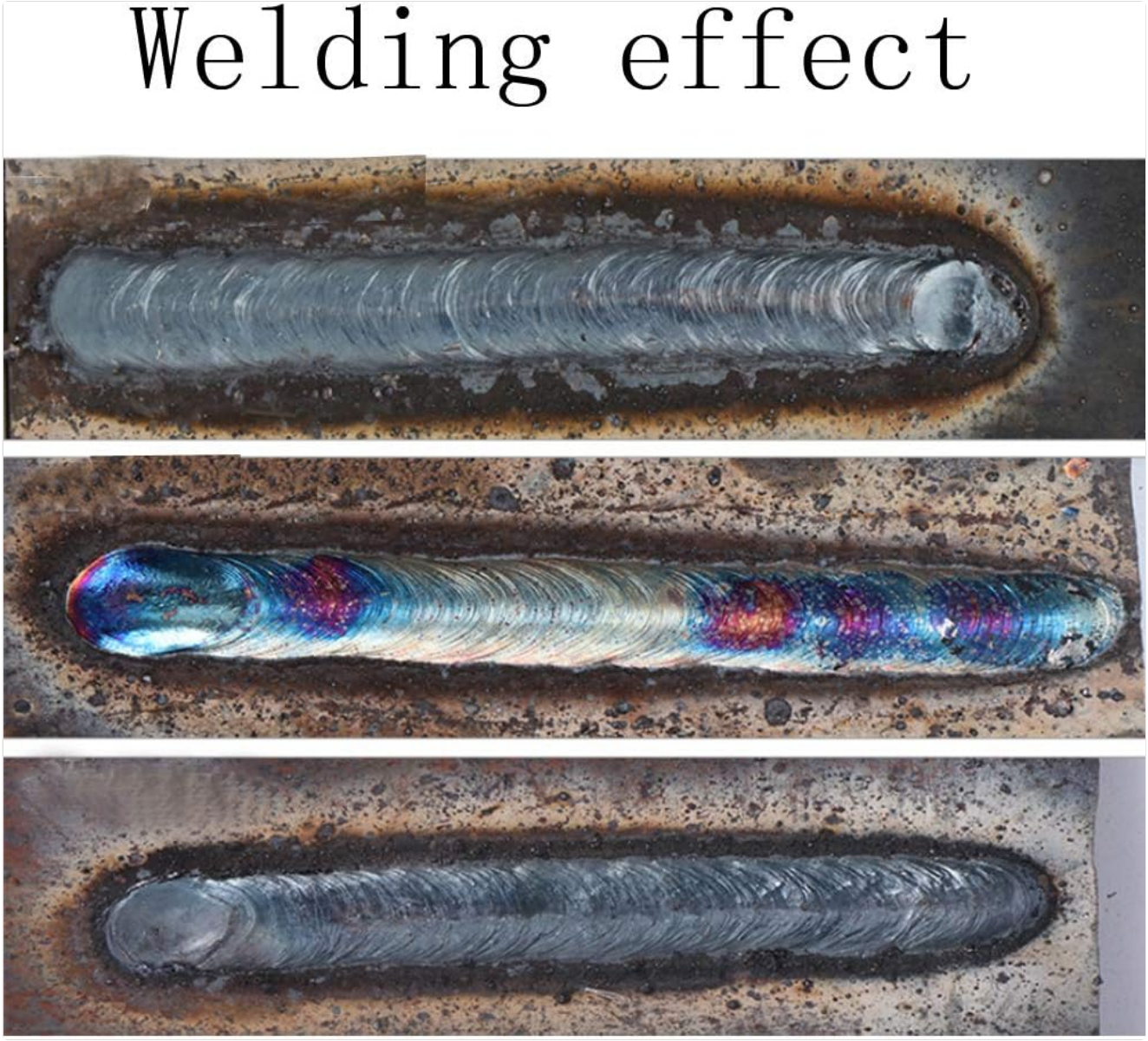

Image: A close-up of the pure copper core welding cable, emphasizing its robust construction designed for efficient power transmission over distances.

5. Operating Instructions

5.1 Powering On and Current Adjustment

- Turn on the power switch located on the back of the unit.
- Use the current adjustment knob on the front panel to set the desired amperage. The digital display will show the current setting.
- Refer to welding rod manufacturer specifications for recommended amperage ranges for different rod types and material thicknesses.

5.2 Welding Technique

- **Arc Starting:** Initiate the arc by striking the electrode against the workpiece. The digital chip control facilitates immediate arcing.
- **Maintaining Arc:** Maintain a consistent and tight arc distance for stable and smooth welding. Inverter welders often require a tighter arc compared to traditional AC welders.
- **Electrode Types:** This welder is compatible with various electrode types, including 6013 and 7018 rods, which are commonly used for general-purpose and low-alloy steel welding, respectively.

- **Material Thickness:** The welder is suitable for welding metal up to approximately 3.0mm thickness effectively.

Image: Examples of welding beads on metal, showcasing the quality and appearance of welds achievable with the AUTOOL ARC-200 welder.

5.3 Overheating Protection

The welder features an automatic overheating protection system. If the machine operates continuously for approximately 10 minutes at high loads, the overheating protection may activate, temporarily stopping operation. The unit will automatically resume normal operation after a cooling period of about 2 minutes.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your welder.

- **Cleaning:** Periodically clean the cooling fan and ventilation openings to prevent dust and debris buildup, which can hinder heat dissipation. Use compressed air for best results.
- **Cable Inspection:** Regularly inspect all welding cables, connections, and the power cord for cuts, fraying, or

loose connections. Replace damaged components immediately.

- **Storage:** Store the welder in a clean, dry environment when not in use.

7. Troubleshooting

Problem	Possible Cause	Solution
Welder does not power on.	No power from outlet; power switch off; internal fuse blown.	Check power outlet and circuit breaker; ensure power switch is ON; contact support if fuse is suspected.
Overheating protection activates frequently.	Continuous high-load operation; insufficient ventilation; blocked cooling fan.	Allow welder to cool down; ensure adequate airflow around the unit; clean cooling fan and vents.
Circuit breaker trips during operation.	Insufficient circuit breaker amperage (especially on 110V); welder drawing too much current.	Ensure a dedicated 30 Amp breaker is used for 110V operation; reduce amperage setting if possible; consult an electrician for circuit upgrades.
Arc is unstable or difficult to start/maintain.	Improper arc length; poor electrode contact; worn electrode clamp; incorrect amperage setting.	Maintain a tight arc distance; ensure good contact between electrode and holder; consider upgrading electrode clamp; adjust amperage.
Poor weld quality (excessive spatter, weak penetration).	Incorrect amperage; improper welding technique; unsuitable electrode type.	Adjust amperage according to material and rod; refine welding technique; use appropriate electrodes.

8. Specifications

Feature	Detail
Manufacturer	AUTOOL
Model Number	EWM-508
Input Voltage	AC 110V +/- 15% & AC 220V +/- 15%
Amperage Range	20-160 Amps
Power Source	AC
Technology	IGBT Inverter
Item Weight	12.34 pounds (approx. 5.6 kg)
Product Dimensions	11.4 x 7.9 x 5.1 inches (approx. 29 x 20 x 13 cm)
Material	Metal
Cooling System	4100 turn/min mute fan, serrated aluminum alloy radiator
Overheat Protection	Automatic power-off

9. Warranty and Support

BELEY DIRECT provides a quality warranty and dedicated customer support for this product. For any inquiries, technical assistance, or warranty claims, please contact BELEY DIRECT customer service. They offer 24-hour email support and take full responsibility for their product promises.
Please retain your purchase receipt as proof of purchase for warranty purposes.