ANDELI TIG-250MGC

ANDELI TIG-250MGC 170Amp Digital Inverter TIG Welder Instruction Manual

Brand: ANDELI | Model: TIG-250MGC

1. Introduction

This manual provides detailed instructions for the safe and efficient operation of your ANDELI TIG-250MGC 170Amp Digital Inverter TIG Welder. This versatile machine supports multiple welding functions including TIG, MMA, Clean, and Pulse TIG welding, utilizing advanced IGBT inverter technology for high efficiency and stable performance.



Figure 1: ANDELI TIG-250MGC 170Amp Digital Inverter TIG Welder

Key Features:

- **Multi-Functionality:** Supports TIG, MMA, Clean, and Pulse TIG welding modes.
- **IGBT Inverter Technology:** Ensures high efficiency, reliability, and increased duty cycle.
- **Digital Control Panel:** Allows for precise adjustment of welding parameters.
- **Intelligent Parameter Storage:** Features 9 channels (U0-U8) for TIG and Pulse modes, and 9 channels (C0-C8) for cleaning, allowing users to save and recall preferred settings.
- **Safety Features:** Includes overheating and overload automatic shutdown systems, IP21 protection standard, and electrostatic protection.
- **Compact Design:** Lightweight and portable for various applications.

2. Product Overview and Components

The TIG-250MGC is designed for efficient and precise welding across various materials. Below is an overview of the machine and its included accessories.



Figure 2: TIG-250MGC Welder with key features, dimensions, and included accessories such as ground clamp, TIG torch, gas pipe, hose clamps, nozzles, collets, and welding rods.

The welder features a clear digital display and intuitive controls for selecting welding modes and adjusting parameters. Its compact size and lightweight design (5.28 KG) make it suitable for various work environments.



Figure 3: Detailed dimensions of the ANDELI TIG-250MGC Welder: 396mm (15.59") length, 142mm (5.59") width, 268mm (10.55") height, and 5.28KG weight.

3. Setup and Connections

Proper setup is crucial for safe and effective welding. Follow these steps to connect your welding equipment.

3.1 TIG Torch Installation

1. Connect the TIG torch cable into the designated interface on the welder and tighten securely.
2. Connect the gun switch cable to the two-pin interface.
3. Connect the grounding clip to the positive pole of the welder.

3.2 Cleaning Torch Installation

1. Connect the fast plug of the cleaning torch to the negative pole of the welder.
2. Connect the gun switch cable to the two-pin interface.

3. Connect the grounding clip to the positive pole of the welder.
4. For the cleaning torch head:
    - Install the brush head onto the gun head and tighten with a wrench. This is recommended for thin plate cleaning.
    - Alternatively, install the copper rod head: first, insert the copper rod into the nozzle, then install the nozzle onto the gun head. Wrap the copper rod with a cleaning cloth and secure it with a rubber band. The copper rod head is recommended for thick plate cleaning.

3.3 MMA (Electric Welding) Clamp Installation

1. Connect the fast plug interface of the electric welding clamp to the positive pole of the welder.
2. Connect the grounding clip to the negative pole.

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Video 1: Detailed instructions on connecting the TIG torch, cleaning torch, and MMA clamp to the ANDELI TIG-250MGC welder. This video also demonstrates the control panel functions and welding results.

4. Operating Instructions

The TIG-250MGC features a user-friendly control panel for selecting functions and adjusting parameters. The red button on the panel is used to switch between functions and adjust parameters within each function.

4.1 Control Panel Overview



Figure 4: Close-up of the ANDELI TIG-250MGC control panel, showing the digital display, function selection buttons, and adjustment knob.

The digital display shows the current parameter value. The red knob allows for parameter adjustment, and pressing it can switch between different parameters or intelligent modes.

4.2 MMA (Electric Welding) Function

- Switch to the electric welding function.
- The display shows "Hz" which represents the current. The current range is 20-250A.
- Press the knob to enter intelligent mode, and the current will automatically match electrode specifications:
    - 1.6mm electrode = 90A
    - 2.0mm electrode = 130A
    - 2.5mm electrode = 180A
    - 3.2mm electrode = 250A

4.3 Cleaning Function

- Switch to the cleaning function.
- The display shows "Hz" (current) and "C" (low-temperature cleaning).
- The current range for low-temperature cleaning is C05-C10, suitable for 1mm thin plates.
- For strong cleaning, the display shows "H". The current range is H11-H40, suitable for plates above 2mm.

4.4 TIG (Argon Arc Welding) Function

- Switch to the TIG (argon arc welding) function.
- Two parameters can be adjusted: "Hz" (current) and "Time" (post-gas time).
- "Hz" represents the current, with an adjustment interval of 5-250A.
- "Time" represents the post-gas time, with an adjustment interval of 0-10 seconds. A post-gas time of 2.5 seconds is generally recommended to protect the weld end from blackening.

4.5 Low-Temperature Welding Function

- Switch to the low-temperature welding function.
- Two parameters can be adjusted: "Hz" (frequency) and "Time" (temperature adjustment).
- "Hz" represents the frequency for continuous spot welding, with an adjustment range of 0-30Hz. Press and hold the gun switch for fast welding.
- "Time" adjusts the temperature, with a range of 1-250 seconds. A smaller value results in a lower welding temperature. This function provides continuous spot welding output to control welding depth. It is recommended to adjust during welding to find suitable parameters.

4.6 Parameter Storage Function

- The storage function can be enabled under TIG and low-temperature welding modes.
- Long press the red button for 2 seconds to enter the storage function.
- There are 9 channels (U0-U8) for TIG and Pulse modes, and 9 channels (C0-C8) for cleaning.
- U0-U4 and C0-C4 are storage channels where current parameters can be saved for future use.
- U5-U8 and C5-C8 are intelligent parameter channels, providing common parameters for different plate thicknesses (e.g., D0.8, L0.8, D3.0, L3.0 for TIG; D0.4, D0.8, D1.5, D3.0 for cleaning). 'D' represents spot welding, 'L' represents pull-welding, and the number indicates plate thickness.
- To recall a saved parameter, press the red button to select the desired channel.

5. Welding Examples

Here are examples demonstrating the results of various welding functions:

- **Low Temperature Spot Welding:** 1mm stainless steel flat butt welding at low temperature results in a white bead with no need for polishing.
- **Low Temperature Pulse Welding:** 3mm stainless steel exterior angle pulse welding at low temperature produces a golden shape and beautiful weld bead without deformation or discoloration.
- **Argon Arc Welding Spot Welding:** 1.2mm stainless steel square tube argon arc welding results in a fast welding speed, golden shape, and beautiful fish scale pattern weld bead.
- **Cleaning Function:** After cleaning a stainless steel internal angle bead, it becomes silvery white.
- **Electric Welding:** Using 2.5mm and 3.2mm electrodes for welding, the built-in thrust function prevents the arc from breaking easily and the electrode from sticking. The welding depth and forming are both good, and the medicine skin comes off easily by tapping.



Figure 5: Visual representation of the multifunctional capabilities of the TIG-250MGC welder, highlighting TIG, Pulse, Clean, and MMA modes.

6. Specifications

Specification	Value
Model Number	TIG-250MGC
Manufacturer	ANDELI
Item Weight	21.5 pounds
Package Dimensions	19 x 15.9 x 10.6 inches
Style	TIG/MMA/CLEAN
Input Voltage	220V (as per feature bullets)

Specification	Value
TIG Welder Amperage	170Amp (as per feature bullets)
Protection Grade	IP21
Insulation Grade	F
Cooling	Air-cool

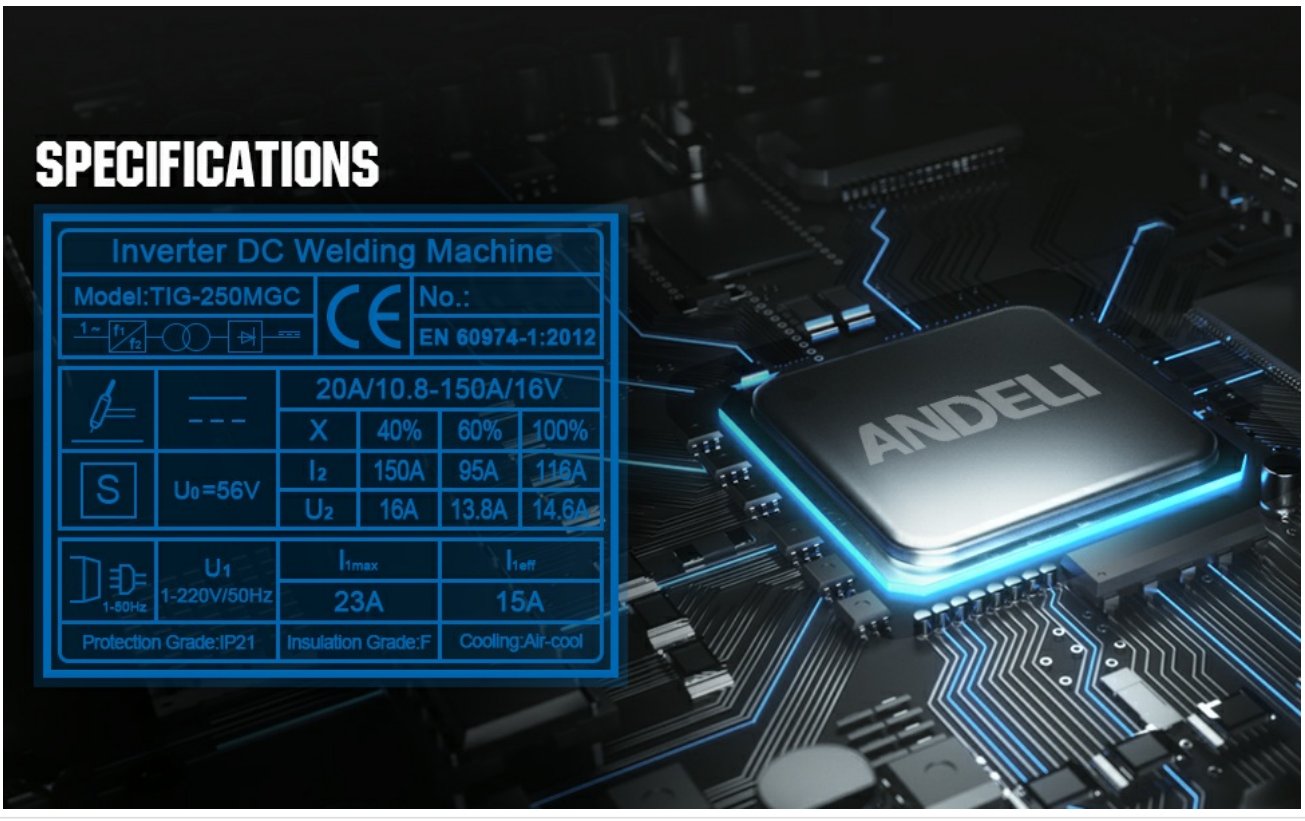


Figure 6: Technical specifications for the Inverter DC Welding Machine, Model TIG-250MGC, including current ranges, duty cycle, and protection ratings.

7. Maintenance

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

- Keep the machine clean and free from dust and debris. Use a soft, dry cloth for cleaning.
- Ensure proper ventilation around the machine to prevent overheating.
- Inspect cables, connections, and torches regularly for any signs of wear or damage. Replace damaged components immediately.
- For the cleaning function, note that the cleaning solution (HCl with a concentration of 0.175-0.035%) cannot be transported and should be purchased locally.

8. Troubleshooting

If you encounter any issues with your ANDELI TIG-250MGC welder, please refer to the following general advice. For specific problems not listed, or if issues persist, contact customer support.

- **No Power:** Check the power connection and ensure the main switch is on. Verify the power supply voltage matches the machine's requirements.
- **No Arc:** Ensure all connections (torch, ground clamp) are secure. Check for proper gas flow in TIG mode. Verify correct welding parameters are set.
- **Overheating/Overload:** The machine has automatic shutdown protection. Allow the machine to cool down. Ensure proper ventilation and that the duty cycle is not exceeded.
- **Poor Weld Quality:** Check electrode type and size, gas flow, current settings, and material preparation.

9. Warranty and Support

ANDELI provides comprehensive support for its products.

- **CE Certification:** This product is CE certified, ensuring compliance with European safety standards.
- **Returns and Exchanges:** Returns and exchanges are available within 30 days after receiving the goods.
- **Warranty:** A two-year warranty is provided, including free replacement parts.
- **Customer Service:** An efficient customer service team is available for free guidance if you encounter problems.

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