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ANDELI TIG-250GLC

ANDELI TIG-250GLC TIG Welder User Manual

Model: TIG-250GLC

1. Introduction

Thank you for choosing the ANDELI TIG-250GLC TIG Welder. This machine is a versatile and portable welding solution, featuring advanced IGBT digital inverter technology. It offers multiple welding functions including TIG, Hot, Cold, and Clean modes, making it suitable for a wide range of applications, particularly for precise welding of thin materials without deformation or discoloration.
This manual provides essential information for the safe and effective operation, maintenance, and troubleshooting of your TIG-250GLC welder. Please read it thoroughly before operation and keep it for future reference.

2. Safety Information

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

- **Electric Shock:** Can kill. Do not touch live electrical parts. Wear dry insulating gloves and protective clothing. Insulate yourself from work and ground.
- **Fumes and Gases:** Can be hazardous to your health. Keep your head out of the fumes. Use enough ventilation and/or exhaust at the arc to keep fumes and gases away from the breathing zone.
- **Arc Rays:** Can burn eyes and skin. Wear a welding helmet with a proper shade of filter lens to protect your face and eyes when welding or watching. Wear appropriate eye protection with side shields when not welding. Wear protective clothing made from durable, flame-resistant material.
- **Fire and Explosion:** Welding sparks can cause fire or explosion. Keep flammables away from the welding area. Have a fire extinguisher nearby.
- **Hot Parts:** Can cause severe burns. Allow hot parts to cool before handling.
- **Noise:** Excessive noise can damage hearing. Wear ear protection.

Always ensure proper grounding and use only approved accessories and consumables.

3. Product Overview

The ANDELI TIG-250GLC is a compact and powerful TIG welding machine designed for precision and versatility. Below are images illustrating the unit and its key components.



Figure 3.1: Front view of the ANDELI TIG-250GLC TIG Welder, showcasing its compact design and control panel.





Figure 3.2: Close-up of the TIG-250GLC's digital control panel and connection ports, including ground, plug, and torch connections.



Figure 3.3: The TIG-250GLC welder shown with its standard accessories, including ground clamp, TIG torch, gas pipe, hose clamps, nozzles, and collets.

Key Features:

- **Multi-functionality:** Supports TIG, Hot, Cold, and Clean welding modes.
- **Cold Welding Function:** Ideal for thin plates, preventing discoloration and deformation, and reducing the need for post-weld grinding.
- **Digital Panel Adjustment:** Provides precise control over various welding parameters.
- **IGBT Technology:** Ensures stable arc starting and reliable performance.
- **Portable Design:** Lightweight and easy to transport for various job sites.

4. Setup Instructions

Proper setup is crucial for safe and effective operation. Follow these steps carefully:

1. **Power Connection:** Ensure the welder is connected to a stable 220V power supply. Verify the power outlet meets the machine's requirements.

2. **Ground Clamp Connection:** Connect the ground clamp cable to the positive (+) terminal on the front panel. Securely attach the ground clamp to the workpiece or welding table, ensuring good electrical contact.
3. **TIG Torch Connection:** Connect the TIG torch cable to the negative (-) terminal (or the designated "Torch" connection) on the front panel. Ensure it is firmly seated.
4. **Gas Connection:** Connect the gas hose from your inert gas cylinder (e.g., Argon) to the gas inlet on the rear of the welder. Ensure all connections are tight to prevent gas leaks. Set the gas flow rate according to your welding requirements.
5. **Electrode Installation:** Install the tungsten electrode into the TIG torch collet, ensuring it is clean and properly sharpened for the desired welding application.

Before powering on, double-check all connections and ensure the work area is clear of obstructions and flammable materials.

5. Operating Instructions

The TIG-250GLC features a user-friendly digital control panel for selecting modes and adjusting parameters.

5.1. Control Panel Overview

The digital display shows current settings, and the rotary knob and buttons allow for mode selection and parameter adjustment. Refer to Figure 3.2 for the layout.

5.2. Welding Modes

- **TIG Mode:** Standard TIG welding for various metals. Offers precise control over arc and puddle.
- **Hot Welding Mode:** Designed for applications requiring higher heat input.
- **Cold Welding Mode:** Ideal for thin materials (e.g., 0.4mm, 0.8mm, 1.5mm, 2.0mm workpieces). This mode minimizes heat input, preventing material deformation and discoloration, and often eliminates the need for post-weld grinding.
- **Clean Mode:** This mode is typically used for surface preparation or specific cleaning functions related to the welding process, often involving AC balance control for aluminum welding.

5.3. Parameter Adjustment and Storage

The TIG-250GLC allows for the storage of welding parameters across 9 channels (0-8) for TIG, Pulse, and Clean modes. Channels 0-4 are for user-defined parameters, while 5-8 are for built-in parameters.

- To store parameters: Select a channel (e.g., Channel 0), adjust the desired parameters, then long-press the parameter selection key. The system will automatically save the settings and advance to the next channel.
- Built-in TIG parameters (U5-U8) are optimized for spot and continuous welding of various workpiece thicknesses (e.g., 0.8mm, 3.0mm).
- Built-in Cold welding parameters (C5-C8) are pre-set for different workpiece thicknesses (e.g., 0.4mm, 0.8mm, 1.5mm, 2.0mm).



Figure 5.1: Digital display illustrating the parameter storage channels for TIG, Pulse, and Clean modes (U, P, C series).



Figure 5.2: An operator performing TIG welding with the ANDELI TIG-250GLC, demonstrating the precise arc control.



Figure 5.3: An operator making adjustments on the control panel of the ANDELI TIG-250GLC, highlighting the ease of digital parameter setting.

6. Maintenance

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

- **Cleaning:** Periodically clean the internal components of the welder using compressed air to remove dust and debris. Ensure the machine is unplugged before cleaning.
- **Cable Inspection:** Regularly inspect all cables (power, ground, torch) for cuts, fraying, or damage. Replace

damaged cables immediately.

- **Connections:** Check all electrical and gas connections for tightness. Loose connections can lead to poor performance or safety hazards.
- **Torch Consumables:** Inspect and replace worn-out torch consumables (tungsten electrodes, collets, collet bodies, nozzles) as needed to maintain weld quality.
- **Storage:** Store the welder in a clean, dry environment, away from excessive dust, moisture, and extreme temperatures.

7. Troubleshooting

This section provides solutions to common issues you might encounter.

Problem	Possible Cause	Solution
No power to the machine	Power cord unplugged, circuit breaker tripped, faulty power switch.	Check power cord connection, reset circuit breaker, contact service if switch is faulty.
No arc or weak arc	Poor ground connection, incorrect gas flow, worn tungsten electrode, incorrect settings.	Ensure good ground contact, check gas supply and flow rate, replace or sharpen tungsten, verify welding parameters.
Overheat indicator on	Exceeded duty cycle, blocked ventilation, high ambient temperature.	Allow machine to cool down, clear ventilation openings, operate in a cooler environment.
Poor weld quality (porosity, lack of fusion)	Insufficient gas shielding, contaminated workpiece, incorrect travel speed or current.	Check gas flow and purity, clean workpiece thoroughly, adjust welding technique and parameters.

If you encounter issues not listed here or if solutions do not resolve the problem, please contact ANDELI customer support.

8. Specifications

Detailed technical specifications for the ANDELI TIG-250GLC TIG Welder.

TIG-250GLC				
Function		CLEAN	HOT	COLD
Power Supply Voltage(V)		AC220V ± 15%		
Frequency(Hz)		50 / 60		
No-Load Voltage(V)		56		
Efficiency(%)		85		
Rated Input Power(KW)		4.1		
Rated Input Current(A)		18.5		
Welding Current Range(A)		5-170		
Duty cycle (% 40℃ 10min)	40%	170A / 16.8V		
	100%	108A / 14.3V		
Power Factor		0.7		
Protection Class		IP21S		
Insulation Class		F		
Cooling		AIR		
Dimension(MM)		368×134×201		
Net Weight(KG)		5.24		

Figure 8.1: Comprehensive technical specifications for the TIG-250GLC, including welding parameters for Clean, Hot, and Cold modes.

Attribute	Value
Manufacturer	ANDELI
Part Number	TIG-250GLC
Style	TIG-250GLC 3 in 1
ASIN	B09BQTWD77
Date First Available	August 1, 2021
Power Supply Voltage	AC220V ± 15%
Frequency	50 / 60 Hz
No-Load Voltage	56 V
Efficiency	85%
Rated Input Power	4.1 KW
Rated Input Current	18.5 A
Welding Current Range	5-170 A
Duty Cycle (40°C 10min)	40% @ 170A / 16.8V, 100% @ 108A / 14.3V
Power Factor	0.7
Protection Class	IP21S

Attribute	Value
Insulation Class	F
Cooling	AIR
Dimension (MM)	396 x 142 x 268
Net Weight (KG)	5.28

9. Warranty and Support

ANDELI stands behind the quality of its products. For warranty information, technical support, or service inquiries, please contact ANDELI customer service through the official channels provided at the point of purchase or on the ANDELI website.
Please have your model number (TIG-250GLC) and purchase date ready when contacting support.

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