

ANDELI TIG-250MPL

ANDELI TIG-250MPL Cold Welder TIG Welding Machine User Manual

Model: TIG-250MPL

1. SAFETY INFORMATION

Always prioritize safety when operating welding equipment. Failure to follow safety guidelines can result in serious injury or death.

- **Eye Protection:** Always wear a welding helmet with appropriate shade lenses to protect your eyes from intense light and UV radiation.
- **Body Protection:** Wear flame-resistant clothing, welding gloves, and protective footwear to prevent burns and electrical shock.
- **Ventilation:** Ensure adequate ventilation to remove welding fumes, which can be hazardous if inhaled. Work in a well-ventilated area or use a fume extractor.
- **Electrical Safety:** Ensure the welding machine is properly grounded. Do not operate in wet conditions. Inspect cables and connections for damage before each use.
- **Fire Prevention:** Keep flammable materials away from the welding area. Have a fire extinguisher readily available.
- **Gas Cylinders:** Secure gas cylinders to prevent them from falling. Handle cylinders with care and ensure proper connections to regulators.

2. PRODUCT OVERVIEW

The ANDELI TIG-250MPL is a versatile 110/220V Cold Welder TIG Welding Machine designed for various

welding applications, including cold welding, TIG welding, and pulse welding. It features MOS tube technology for stable performance and reliable quality.

Key Features:

- **Cold Welding Function:** Suitable for thin stainless steel, thin steel, and carbon steel. Minimizes deformation and discoloration due to lower welding temperatures.
- **Pulse Function:** Allows welding current to cycle between high and low, preventing burn-through on thin metals and high thermal conductivity materials.
- **Multi-function Welding:** Supports Cold welding, Argon Arc Welding (TIG), Pulse welding, and MMA (Stick) welding.
- **Dual Voltage Compatibility:** Operates on both 110V (max 140A) and 220V (max 180A) power supplies.
- **Memory Storage:** Conveniently store and recall up to 10 groups of commonly used parameters.

Components and Accessories:

The TIG-250MPL package includes the following items:

- 110/220V TIG-250MPL Welding Machine
- Ground Clamp (2m)
- COLD Torch WP-9F (4m)
- TIG Torch WP-17F (4m)
- Gas Pipe (3m)
- Nozzles (20 pcs)
- Collets (20 pcs)
- House Clamps (2 pcs)
- Tungsten Electrode
- Foot Switch (1 pc)



Figure 2.1: ANDELI TIG-250MPL Welding Machine and Included Accessories.

TIG-250MPL PULSE TIG WELDING MACHINE

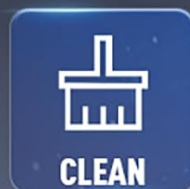
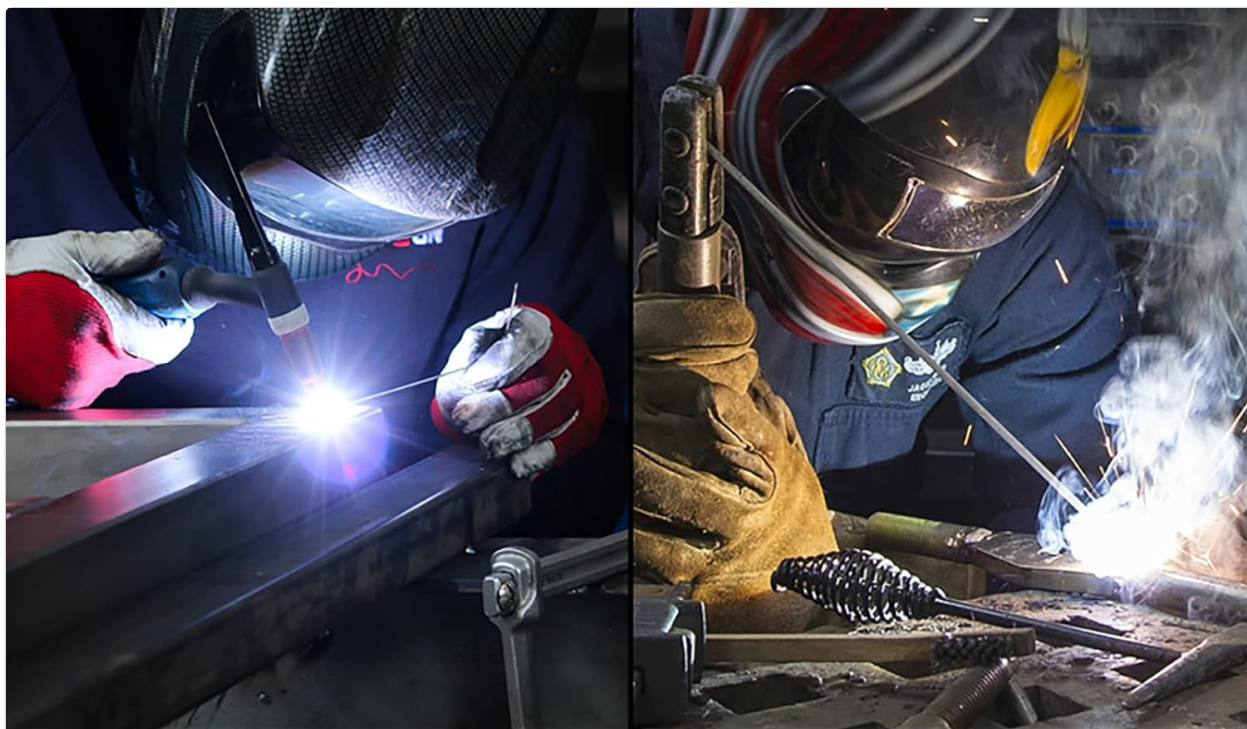


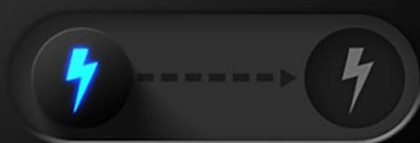
Figure 2.2: Front Panel with TIG-250MPL Pulse TIG Welding Machine Modes.



DUAL VOLTAGE

110V FOR SMALL OPERATIONS / 220V FOR INDUSTRIAL OPERATIONS

220v



110v

Figure 2.3: Dual Voltage (110V/220V) Operation.

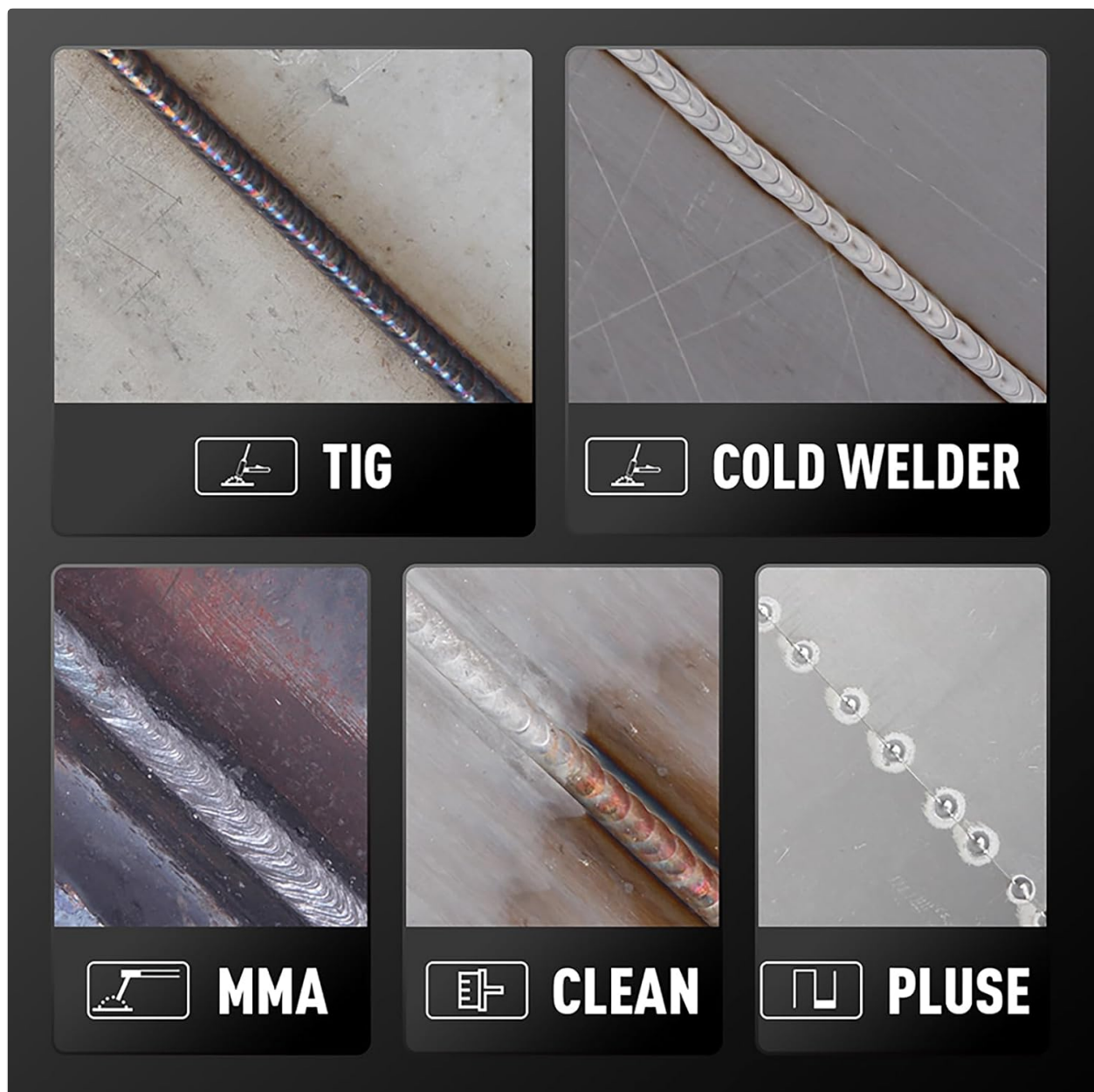


Figure 2.4: Welding Results for Different Modes.

3. SETUP

Proper setup is essential for safe and effective operation. Follow these steps to prepare your welding machine.

3.1. Torch and Ground Clamp Installation

This section details the installation of the WP-17F hot welding torch and the ground clamp, followed by the WP-9F cold welding torch.

Video 3.1: Installation of WP-17F Hot Welding Gun, WP-9F Cold Welding Gun, and Gas Cylinder.

1. WP-17F Hot Welding Torch Installation:

- Identify the quick plug and the two-pin plug on the WP-17F torch cable.
- Connect the quick plug to the negative terminal on the welding machine.

- Connect the two-pin plug to the corresponding two-pin port on the machine.
- Connect the ground clamp to the positive terminal on the welding machine.

2. WP-9F Cold Welding Torch Installation:

- The installation method for the WP-9F cold welding torch is identical to the WP-17F.
- Connect its quick plug to the negative terminal and its two-pin plug to the two-pin port.
- Ensure the ground clamp remains connected to the positive terminal.

3.2. Gas Cylinder and Regulator Installation

Properly connect the argon gas cylinder and regulator for TIG and cold welding operations.

1. Tighten the argon regulator securely to the gas bottle valve.
2. Connect one side of the air tube (gas hose) to the argon regulator.
3. Connect the other side of the air tube to the gas inlet interface located at the rear of the main welding machine body.

4. OPERATING INSTRUCTIONS

The TIG-250MPL features a user-friendly function panel for precise control over welding parameters.

4.1. Function Panel Overview

The panel allows selection of various welding modes and adjustment of parameters. Use the mode selection buttons, menu switching buttons, and the adjustment knob to navigate and set values.

4.2. Argon Arc (TIG) Welding Function Setting

To adjust TIG welding parameters:

1. Switch to the DC mode under the TIG function.
2. Adjust the welding current. The maximum current displayed by the digital display is 250A.
3. Adjust the post-flow (gas flow after welding) to 2 seconds.
4. Adjust the pre-flow (gas flow before welding) to 0.3 seconds.

4.3. Argon Arc Pulse Welding Function Setting

For TIG Pulse welding, additional parameters can be adjusted:

1. Ensure the machine is set to the TIG function and Pulse mode.
2. Adjust the duty ratio (percentage of peak current time in one pulse cycle).
3. Adjust the frequency (number of pulses per second).
4. Adjust the base current (lowest current during the pulse cycle).
5. Adjust the pre-flow and post-flow as needed.

4.4. Cold Welding Function Setting

Cold welding can be set to either single (spot welding) or continuous mode.

1. **Single (Spot) Welding:**

- Adjust the welding current.
- Adjust the welding time.
- Adjust the pre-flow and post-flow.

2. **Continuous Welding:**

- Adjust the welding current.
- Adjust the welding time.
- Adjust the interval between pulses.
- Adjust the pre-flow and post-flow.

4.5. Parameter Storage and Retrieval

The machine allows storing and retrieving up to 10 sets of welding parameters.

1. **To Save Parameters:** Long press the storage function button for 3 seconds. The display will indicate that the parameter is saved.
2. **To Retrieve Parameters:** Hold the retrieval button for one second until the light illuminates. Rotate the channel knob to select the desired group (e.g., tenth group). The display will show the previously saved parameters for that group.

4.6. Welding Effect Display

The following sections demonstrate the results of different welding modes.

4.6.1. Cold Welding Effect Display

Demonstration of continuous cold welding on a 1.0mm stainless steel plate with specific settings (Current 125A, Time 50ms, Interval 60ms, Post-flow 3s, Pre-flow 0.2s).

4.6.2. Argon Arc (TIG) Welding Effect Display

Demonstration of TIG DC welding on a 3.0mm stainless steel plate with specific settings (Current 150A, Post-flow 2s, Pre-flow 0.2s).

4.6.3. Argon Arc Welding Pulse Effect Display

Demonstration of TIG Pulse welding on a 3.0mm stainless steel plate with specific settings (Current 150A, Duty Ratio 19%, Frequency 2Hz, Base 18A, Post-flow 2s, Pre-flow 0.2s).

5. MAINTENANCE

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

- **Cleaning:** Regularly clean the machine's exterior and ventilation openings to prevent dust and debris buildup. Use compressed air for internal cleaning if necessary, ensuring power is disconnected.
- **Cable Inspection:** Periodically inspect all welding cables, torch leads, and power cords for cuts, abrasions, or loose connections. Replace damaged components immediately.

- **Torch Consumables:** Check and replace torch consumables (nozzles, collets, tungsten electrodes) as they wear out to maintain arc quality and prevent damage to the torch.
- **Gas Connections:** Verify that all gas connections are tight and free of leaks.
- **Storage:** Store the machine in a dry, clean environment when not in use.

6. TROUBLESHOOTING

If you encounter issues with your ANDELI TIG-250MPL, refer to the following common problems and solutions.

Problem	Possible Cause	Solution
No power/Machine not turning on	Power switch off, loose power cord, circuit breaker tripped.	Turn on power switch, check power cord connection, reset circuit breaker.
No arc/Weak arc	Improper ground clamp connection, incorrect current setting, worn tungsten electrode, no gas flow.	Ensure good ground connection, adjust current, sharpen/replace tungsten, check gas supply and flow.
Poor weld quality/Porosity	Insufficient shielding gas, contaminated workpiece, incorrect travel speed.	Increase gas flow, clean workpiece thoroughly, adjust welding technique.
Overheating/Thermal overload light on	Exceeding duty cycle, poor ventilation.	Allow machine to cool down, ensure proper ventilation.

If the problem persists after attempting these solutions, please contact customer support.

7. SPECIFICATIONS

Specification	Value
Manufacturer	ANDELI
Part Number	TIG-250MPL
Item Weight	30.3 pounds
Package Dimensions	21 x 18 x 12 inches
Country of Origin	China
Style	TIG-250MPL
Plug Format	B - US style with ground plug.
Batteries Included?	No

Specification	Value
Batteries Required?	No
Date First Available	January 26, 2021



Figure 7.1: Product Dimensions and Weight.

8. WARRANTY AND SUPPORT

ANDELI provides comprehensive customer support and warranty services for the TIG-250MPL welding machine.

- **Warranty Information:** Please refer to the warranty card included with your product for specific terms and conditions.
- **Technical Support:** For technical assistance, troubleshooting beyond this manual, or spare parts, please contact ANDELI customer service through their official website or the retailer where you

purchased the product.