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ANDELI LCDTIG250PLSQ

ANDELI Tig Welder LCDTIG250PLSQ User Manual

Comprehensive Guide for Operation and Maintenance

1. Product Overview

The ANDELI LCDTIG250PLSQ is a versatile 110V/220V, 200AMP multi-process TIG welder designed for a wide range of welding applications. This machine integrates Pulse TIG, HF TIG, Cold Pulse, Cold Welding, and MMA (Stick) functionalities into a single portable unit. Featuring a large LCD screen for intuitive control, it is suitable for both small operations and industrial use, capable of welding various metals including aluminum, stainless steel, iron, and copper.



Figure 1: Front view of the ANDELI LCDTIG250PLSQ Tig Welder, showing the control panel, knobs, and connection ports.

2. Key Features

- **Multifunctionality:** 5-in-1 capabilities including Pulse TIG, HF TIG, Cold Pulse, Cold Welding, and MMA (Stick) welding.
- **Dual Voltage Operation:** Automatically adapts to 110V or 220V power sources, providing flexibility for various work environments.
- **Intuitive LCD Screen:** Large, clear LCD display for easy mode selection and parameter adjustment, enhancing user experience.
- **Aluminum Welding Capability:** Specialized cold spot welding for thin aluminum plates (0.04 inch seamless) and stainless steel (0.015-0.12 inch), minimizing deformation and discoloration.
- **AC/DC Modes:** Supports both Alternating Current (AC) and Direct Current (DC) for welding a wide variety of metals including iron, stainless steel, aluminum, and copper.
- **Portability:** Lightweight design with a convenient handle for easy transport to different job sites.



Figure 2: The LCD screen interface demonstrating multi-layered page structure for easy function adjustment, including waveform selection, pulse control, and gas settings.



Figure 3: Illustration of the dual voltage capability, allowing operation at both 110V for small tasks and 220V for industrial applications.

3. Package Contents

Upon unpacking, ensure all the following items are present:

- ANDELI LCDTIG250PLSQ Welding Machine (1 unit)
- Grounding Clamp (2M cable)

- Aluminum Torch WP-26 (4M cable)
- Nozzles (20 pieces)
- Collets (20 pieces)
- Hose Clamps (2 pieces)
- Tungsten Poles (10 pieces)
- Foot Switch (1 unit)



Figure 4: A visual representation of the complete package contents, including the welder, ground clamp, torch, nozzles, collets, and foot switch.

4. Safety Information

Welding operations involve significant risks. Always adhere to safety precautions to prevent injury or damage. This section provides general safety guidelines. Refer to local regulations and industry standards for comprehensive safety protocols.

4.1 General Safety Precautions

- **Electric Shock:** Welding current can cause fatal electric shock. Ensure proper grounding, wear dry insulating gloves, and do not touch live electrical parts.
- **Fumes and Gases:** Welding produces fumes and gases hazardous to health. Work in a well-ventilated area or use local exhaust ventilation.
- **Arc Rays:** Arc rays can injure eyes and burn skin. Wear a welding helmet with appropriate filter shade and protective clothing.
- **Fire and Explosion:** Sparks, hot slag, and hot metal can cause fires. 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.
- **Cylinders:** Gas cylinders can explode if damaged. Secure cylinders properly and handle with care.

4.2 Personal Protective Equipment (PPE)

- Welding Helmet with appropriate filter lens
- Flame-resistant clothing (long sleeves and pants)
- Welding gloves

- Safety glasses (worn under helmet)
- Ear protection
- Safety footwear

5. Setup Instructions

5.1 Power Connection

1. Ensure the welder's power switch is in the OFF position.
2. Connect the power cord to a suitable 110V or 220V power outlet. The machine automatically detects the voltage.
3. Verify the power source can provide sufficient amperage for the welding task.

5.2 Ground Clamp Connection

1. Connect the ground clamp cable to the appropriate terminal on the front panel of the welder.
2. Securely attach the ground clamp to the workpiece or a clean, bare metal portion of the welding table. Ensure good electrical contact.

5.3 Torch and Gas Connection (for TIG Welding)

1. Connect the WP-26 TIG torch to the designated TIG torch connector on the welder.
2. Connect the gas hose from the TIG torch to a pure argon gas cylinder via a flowmeter/regulator.
3. Ensure all gas connections are tight to prevent leaks.
4. Insert the appropriate size tungsten electrode into the torch collet and tighten the cap.

5.4 Foot Switch Connection

1. Connect the foot switch cable to the designated foot switch port on the welder.
2. The foot switch provides remote amperage control during TIG welding.

6. Operating Instructions

The LCDTIG250PLSQ features an intuitive LCD control panel for easy operation. Use the L-KNOB and R-KNOB to navigate menus and adjust parameters.



Figure 5: The LCD Crystal Panel, showcasing its intelligent solution and multi-layered page design for enhanced functionality and control.

6.1 Selecting Welding Mode

From the main screen, use the knobs to select your desired welding mode:

- **TIG AC Pulse:** For aluminum and other AC weldable materials requiring pulse control.
- **TIG DC Pulse:** For stainless steel, carbon steel, copper, etc., with pulse control.
- **TIG AC:** Standard AC TIG welding for aluminum.
- **TIG DC:** Standard DC TIG welding for steel and other DC weldable materials.
- **Cold Welding:** For thin materials like 0.04 inch seamless aluminum or 0.015-0.12 inch stainless steel, minimizing heat input.
- **MMA (Stick):** For shielded metal arc welding with various electrodes.



Figure 6: Display of various TIG AC and DC waveforms supported by the machine, including Sine, Square, Trapezoidal, and Pulse options.

6.2 Adjusting Parameters

Once a mode is selected, use the L-KNOB and R-KNOB to adjust specific parameters. Common parameters include:

- **Amperage (Current):** Adjust welding current based on material thickness and type.
- **Pre-Gas/Post-Gas Time:** Controls gas flow before and after welding to protect the weld puddle and tungsten.
- **Pulse Frequency/Duty Cycle (for Pulse modes):** Fine-tunes the pulse characteristics for better control and reduced

heat input.

- **AC Balance (for AC TIG):** Adjusts the cleaning action and penetration when welding aluminum.
- **Waveform Selection (for AC TIG):** Choose between Square, Sine, or Trapezoidal waveforms based on desired arc characteristics and weld appearance.

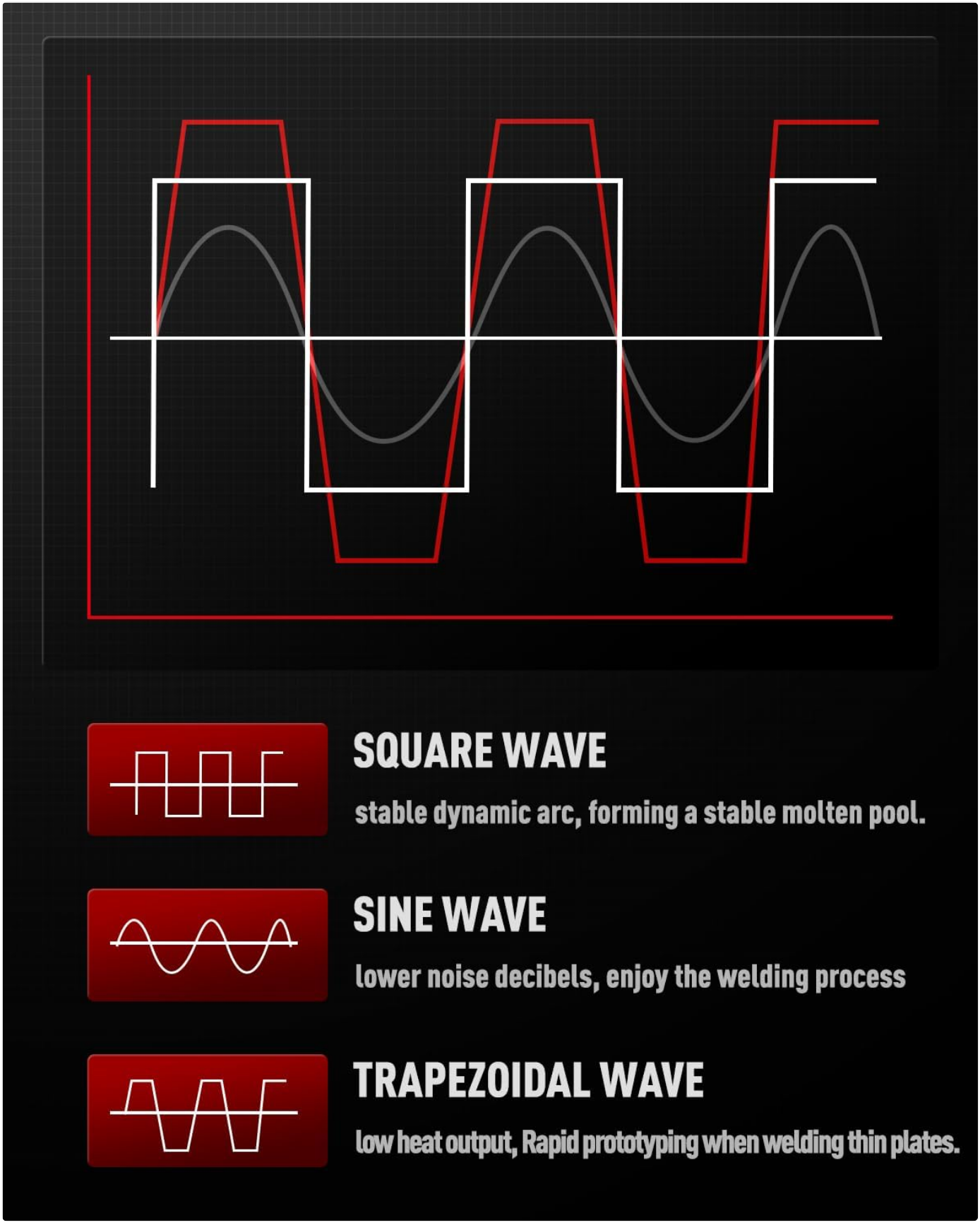


Figure 7: Explanation of different AC waveforms: Square Wave for stable dynamic arc, Sine Wave for lower noise, and Trapezoidal Wave for low heat output.



Figure 8: Example of a weld bead produced using AC Square Wave, ideal for thin plate welding with a nice bead appearance.



Figure 9: Example of a weld bead produced using AC Sine Wave, offering lower noise and a more comfortable welding experience.



Figure 10: Example of a weld bead produced using TIG AC Trapezoidal Wave, providing anti-penetration and arc stability, suitable for beginners.

Figure 11: Illustration of TIG Pulse AC/DC welding, showing how pulse settings affect weld bead leveling and appearance.

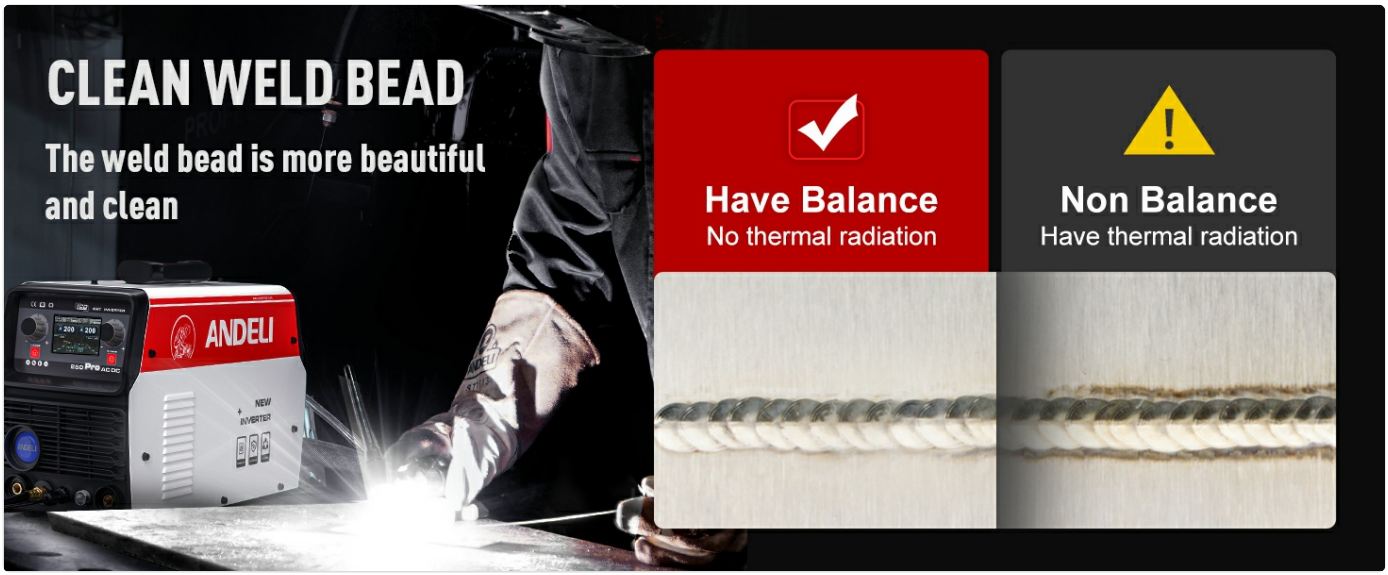


Figure 12: Comparison demonstrating the effect of balance control on weld bead cleanliness and thermal radiation.

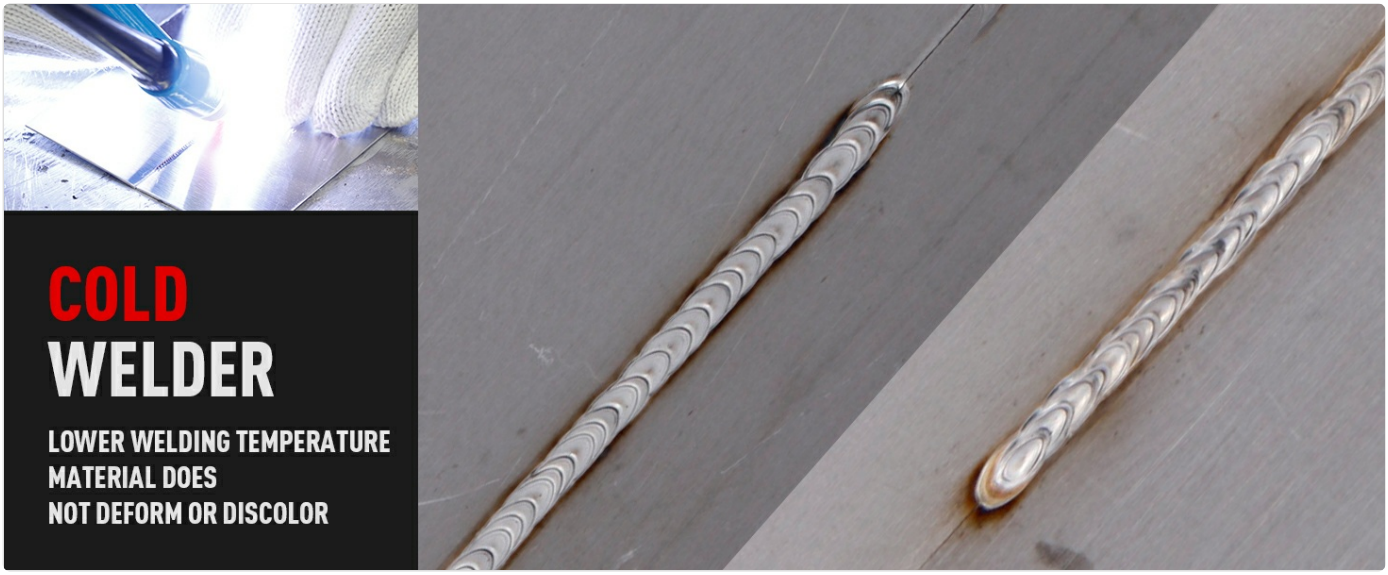


Figure 13: Example of cold welding, highlighting how lower welding temperatures prevent material deformation or discoloration.

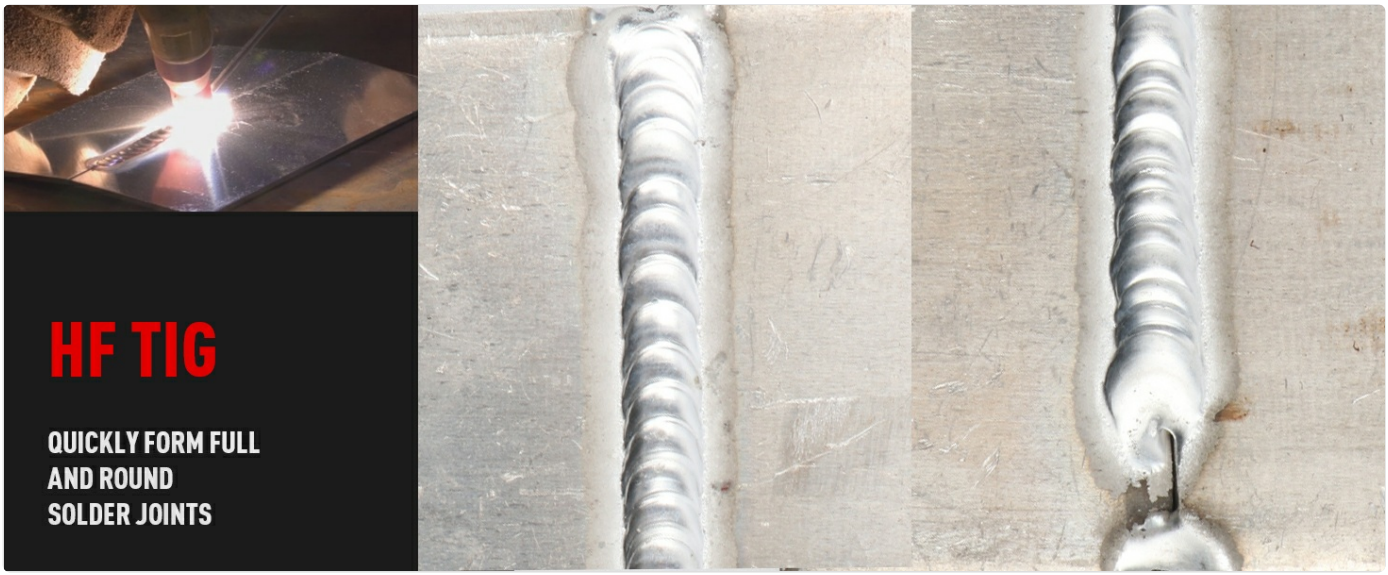


Figure 14: Example of HF TIG welding, demonstrating its ability to quickly form full and round solder joints.



Figure 15: Examples of stick welding with different rod sizes (4.0, 3.2, 2.5), illustrating easy arc start and no sticky welding rod.

6.3 Welding Techniques

- **TIG Welding:** Maintain a consistent arc length and travel speed. Use appropriate filler rod for the material. Ensure proper gas shielding.
- **Cold Welding:** This mode is designed for minimal heat input, ideal for thin materials where distortion or discoloration is a concern. Follow recommended settings for specific material thicknesses.
- **MMA (Stick) Welding:** Select the correct electrode type and size for your material. Maintain a steady hand and consistent arc length.



Figure 16: Visual examples of weld beads produced using Pulse TIG, DC TIG, and AC TIG processes.

7. Maintenance

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

- **Cleaning:** Periodically clean the exterior of the machine with a dry, soft cloth. Use compressed air to blow out dust and debris from cooling vents. Ensure the machine is unplugged before cleaning.

- **Cable Inspection:** Regularly inspect all cables (power, ground, torch) for cuts, abrasions, or loose connections. Replace damaged cables immediately.
- **Torch Maintenance:** Clean the torch nozzle and collet regularly. Replace worn-out tungsten electrodes, nozzles, and collets as needed.
- **Storage:** Store the welder in a clean, dry environment, away from excessive dust, moisture, and extreme temperatures.

8. Troubleshooting

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

Problem	Possible Cause	Solution
Welder does not power on.	No power supply; tripped circuit breaker; faulty power cord.	Check power outlet and circuit breaker. Inspect power cord for damage.
No arc or weak arc.	Poor ground connection; incorrect current setting; worn tungsten/electrode; gas flow issue (TIG).	Ensure ground clamp has good contact. Adjust current. Replace tungsten/electrode. Check gas cylinder and flowmeter.
Poor weld quality (porosity, discoloration).	Insufficient gas shielding; contaminated workpiece; incorrect parameters; dirty tungsten.	Increase gas flow or check for leaks. Clean workpiece thoroughly. Adjust welding parameters. Clean or replace tungsten.
Overheating protection activated.	Exceeded duty cycle; blocked cooling vents; high ambient temperature.	Allow machine to cool down. Ensure proper ventilation and clear cooling vents. Reduce welding time.

9. Specifications

Technical specifications for the ANDELI LCDTIG250PLSQ Tig Welder.

Parameter	Detail
Model Number	LCDTIG250PLSQ
Input Voltage	110V/220V (Automatic Detection)
Rated Input Current (220V)	37A (TIG), 45A (MMA)
Rated Input Power (220V)	8.2KW (TIG), 10KW (MMA)
Max. No-Load Voltage	68V
Welding Current Range	10-200A (TIG), 10-200A (MMA)
Duty Cycle (220V)	60% @ 141A (TIG), 60% @ 118A (MMA)
Protection Class	IP21S
Insulation Class	H

Parameter	Detail
Dimensions (L×W×H)	485 x 210 x 340 mm
Weight	~20.2 kg (44.5 lbs)
First Available Date	July 6, 2023

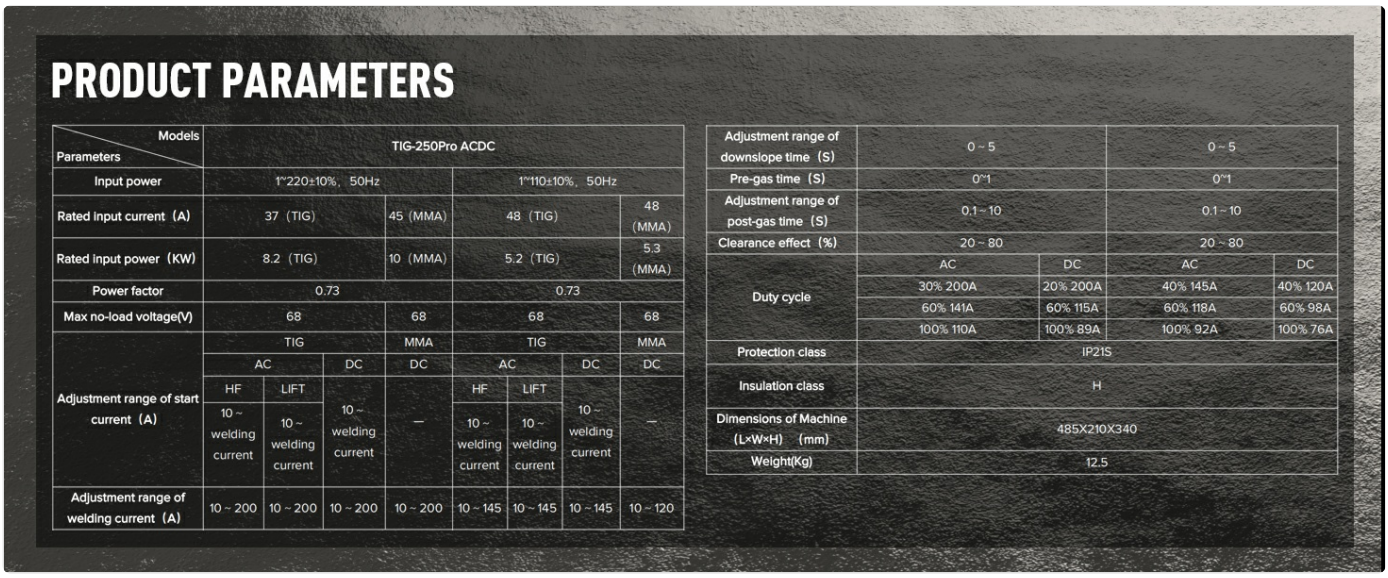


Figure 17: A detailed table outlining the product's technical parameters and specifications.

10. Warranty and Support

This ANDELI product is covered by the manufacturer's standard warranty. Please refer to the warranty card included with your product for specific terms and conditions, including warranty period and coverage details.
For technical support, service, or warranty claims, please contact ANDELI customer service through their official website or the retailer from whom you purchased the product. Keep your purchase receipt as proof of purchase.
You can visit the official ANDELI store for more information:ANDELI Store on Amazon.

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