ANDELI MCT-416P

ANDELI MCT-416P 6-in-1 Multifunctional Welder User Manual

Model: MCT-416P | Brand: ANDELI

1. Introduction

The ANDELI MCT-416P is a versatile 6-in-1 multifunctional welding and plasma cutting machine designed for a wide range of applications. This single unit integrates seven essential processes: HF TIG (non-contact), 40A Plasma Cutting, Pulsed MIG, Automatic SYN MIG, Manual MIG, MMA (Stick) welding, and Flux Core welding. Featuring 2T/4T modes and IGBT inverter technology, it offers a compact and cost-effective solution for various welding and cutting tasks, from DIY projects to industrial maintenance.

2. Safety Information

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

- **Electrical Shock:** This equipment operates at high voltage. Ensure proper grounding and never touch live electrical parts. Always wear dry welding gloves.
- **Fumes and Gases:** Welding and cutting produce fumes and gases that can be hazardous to your health. Work in a well-ventilated area or use a fume extractor.
- **Arc Rays:** Arc rays can burn eyes and skin. Always wear a welding helmet with appropriate shade and protective clothing.
- **Fire and Explosion:** Sparks and hot metal can cause fires. Keep flammable materials away from the work area. Have a fire extinguisher readily available.
- **Hot Parts:** Torches, workpieces, and equipment can become very hot. Allow them to cool before handling or wear heat-resistant gloves.
- **Personal Protective Equipment (PPE):** Always wear appropriate PPE, including a welding helmet, safety glasses, welding gloves, protective clothing, and safety shoes.

The ANDELI MCT-416P is CE certified and includes built-in protections against overheating, short circuits, and overvoltage for enhanced safety.

3. Package Contents

Verify that all items listed below are included in your package. If any items are missing or damaged, contact your supplier immediately.

- ANDELI MCT-416P Combined Plasma Cutting and Welding Machine
- 15AK MIG Torch
- WP-17 TIG Torch
- PT-31 Plasma Cutting Torch
- TIG Accessory Kit (collets, collet bodies, nozzles, back caps)
- Drive Roller
- Graphene Liner
- PU Gas Hose
- Air Filter with Pressure Regulator
- Ground Clamp
- Electrode Holder
- Welding Gloves (1 pair)
- TIG Gloves (1 pair)
- Dust Cover (1)
- User Manual



Figure 3.1: Complete package contents of the ANDELI MCT-416P.

4. Product Overview

The ANDELI MCT-416P features a robust design with an intuitive 5-inch LED display and a user-friendly control panel for easy parameter adjustment.



Figure 4.1: Overview of the ANDELI MCT-416P equipment, highlighting key connections and controls.

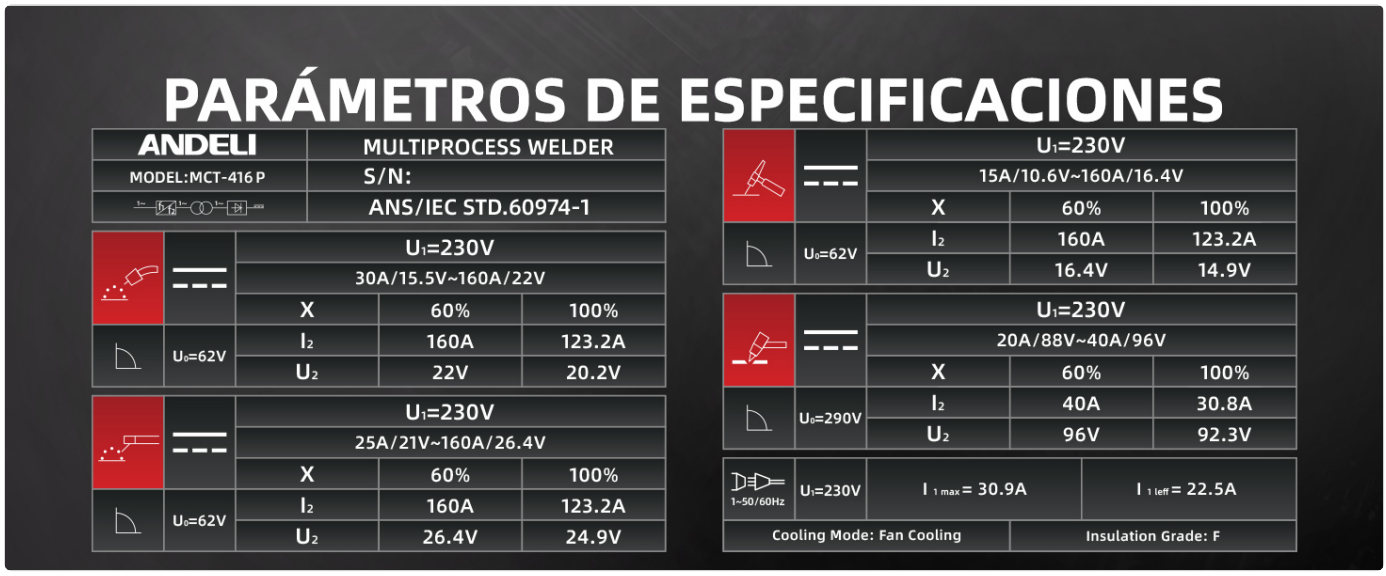


Figure 4.2: Detailed view of the intuitive control panel, indicating functions for input voltage, MIG parameters, welding process selection, wire diameter, voltage/current display, MMA parameters, material/gas selection, and operating mode.

The 5-inch LED screen provides clear visibility of parameters such as material type, wire type, workpiece thickness, and current, even in adverse lighting conditions. Rotary knobs allow for instant configuration, reducing setup time and minimizing errors.



Figure 4.3: The 5-inch LED display offers clear visibility of welding parameters.

5. Setup

5.1 Power Connection

Connect the machine to a 230V power supply. Ensure the power source meets the machine's requirements and is properly grounded.

5.2 Ground Clamp Connection

Attach the ground clamp securely to the workpiece. Ensure good electrical contact to prevent poor arc performance and potential hazards.

5.3 Gas Connection (for MIG/TIG)

For MIG and TIG welding, connect the gas hose from your shielding gas cylinder (e.g., Argon for TIG, Argon/CO2 mix for MIG) to the gas inlet on the machine. Ensure all connections are tight to prevent gas leaks.

5.4 MIG Torch and Wire Feed Setup

1. Connect the MIG torch to the appropriate connector on the front panel.
2. Open the wire feed compartment and install the welding wire spool.
3. Thread the welding wire through the drive roller and into the torch liner. Ensure the drive roller size matches the wire diameter.
4. Close the compartment and adjust the wire tension.

5.5 TIG Torch Setup

1. Connect the TIG torch and its control cable to the designated ports.
2. Install the tungsten electrode, collet, collet body, and ceramic nozzle. Ensure the tungsten is sharpened correctly for DC TIG.

5.6 Plasma Torch Setup

1. Connect the plasma cutting torch to its designated port.
2. Connect an air compressor to the air inlet on the machine via the air filter and pressure regulator. Adjust air pressure as required for cutting.
3. Ensure the plasma torch consumables (electrode, nozzle, swirl ring, shield cup) are correctly installed.

5.7 MMA (Stick) Welding Setup

1. Connect the electrode holder to the positive (+) terminal and the ground clamp to the negative (-) terminal for most electrodes (check electrode polarity).
2. Insert the welding electrode into the electrode holder.

6. Operating Instructions

6.1 General Operation

1. Power on the machine using the main switch.
2. Select the desired welding or cutting process (MIG, TIG, MMA, CUT) using the control panel.
3. Adjust parameters (current, voltage, wire speed, gas flow) according to the material and thickness. The machine features parameter memory for consistent results.

6.2 MIG Welding

The MCT-416P supports Pulsed MIG, Automatic SYN MIG, Manual MIG, and Flux Core welding.

- **Pulsed MIG:** Ideal for aluminum, minimizing spatter, deformation, and ensuring deep penetration. The IGBT inverter provides a stable arc for thin materials.
- **SYN MIG:** Automatically adjusts parameters for beginners, simplifying setup.
- **Manual MIG:** Offers full control over parameters for experienced users.
- **Flux Core:** Suitable for gasless welding, perfect for outdoor work or areas without ventilation.



Figure 6.1: MIG welding on aluminum and carbon steel, demonstrating clean results.

6.3 TIG Welding (HF Non-Contact)

The 160A HF TIG function allows non-contact ignition, making it suitable for welding oxidized or painted surfaces. It provides precise control for flawless welds on thin metals and stainless steel.



Figure 6.2: HF TIG welding in progress, highlighting precise control for delicate work.

6.4 Plasma Cutting

The integrated 40A plasma cutter offers an adjustable output from 10A to 40A. It can perform stable cuts up to 15mm thickness in steel and ferrous metals at 230V, with a maximum cutting thickness of 18mm. Cuts are smooth and uniform, often requiring no further edge refinement.



Figure 6.3: Plasma cutting operation, demonstrating the ability to cut up to 15mm thickness.

6.5 MMA Welding (Stick)

MMA welding offers portability and strong, reliable connections, even in demanding conditions. Select the appropriate electrode and adjust the current for your application.



Figure 6.4: MMA welding in progress, suitable for various applications.

6.6 2T/4T Modes

The machine offers 2T (Two-Touch) and 4T (Four-Touch) modes for torch trigger control:

- **2T (No Auto-Lock):** Press and hold the trigger to weld, release to stop. Ideal for spot welding and quick, simple tasks.
- **4T (With Auto-Lock):** Press and release the trigger to start welding, press and release again to stop. Suitable for long welds, overhead positions, or demanding applications requiring consistent results.



Figure 6.5: Explanation of 2T and 4T operating modes for enhanced control.

7. Maintenance

Regular maintenance ensures the longevity and optimal performance of your ANDELI MCT-416P welder.

- **Cleaning:** Periodically clean the machine's exterior to remove dust and debris. Use compressed air to clear internal components, ensuring proper airflow for cooling.
- **Torch and Cable Inspection:** Regularly inspect all torches, cables, and connections for wear, damage, or loose fittings. Replace worn consumables (nozzles, electrodes, contact tips) as needed.
- **Air Filter Maintenance:** For plasma cutting, regularly check and clean or replace the air filter element in the pressure regulator to ensure clean, dry air supply.

- **Screen Protector:** The transparent screen protector shields the display from sparks, spatter, scratches, and impacts. Ensure it is clean and replace if heavily damaged to maintain visibility.



Figure 7.1: The transparent screen protector safeguards the display from welding hazards.

8. Troubleshooting

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

Problem	Possible Cause	Solution
No power to the machine	Power cable disconnected, circuit breaker tripped, machine switch off	Check power cable, reset circuit breaker, turn on machine switch
No arc in welding mode	Poor ground connection, incorrect parameters, worn consumables, wrong mode selected	Ensure good ground, adjust parameters, replace consumables, verify mode
Poor weld quality (e.g., excessive spatter, lack of penetration)	Incorrect voltage/current, wrong wire speed, improper gas flow, dirty workpiece	Adjust settings, check gas supply, clean workpiece
Plasma cutter not cutting or poor cut quality	Low air pressure, worn plasma consumables, incorrect current, dirty workpiece	Check air pressure, replace consumables, adjust current, clean workpiece
Overheat warning light on	Exceeded duty cycle, blocked ventilation	Allow machine to cool down, ensure clear ventilation paths

9. Specifications

Key technical specifications for the ANDELI MCT-416P multifunctional welder:



Figure 9.1: Detailed technical specifications for the MCT-416P.

Feature	Specification
Model Number	MCT-416P
Input Voltage	230 Volts
MIG Output Current (Max)	160A
TIG Output Current (Max)	160A
MMA Output Current (Max)	160A
Plasma Cutting Current (Max)	40A
Max Cutting Thickness (Plasma)	18mm (stable cut 15mm steel)
Dimensions (Package)	58.5 x 39.5 x 39 cm
Product Weight	19.9 kg
Cooling Mode	Fan Cooling
Insulation Grade	F
Certifications	CE Compliant

10. Warranty and Support

The ANDELI MCT-416P comes with a **2-year warranty**. This warranty includes free spare parts and local technical assistance in Spain. For any issues or support needs, please contact ANDELI Official Store customer service. Please retain your proof of purchase for warranty claims.
For further assistance, please visit the official ANDELI website or contact our support team:

- **Online Support:** ANDELI Official Store on Amazon
- **Email:** Refer to your product packaging or official website for contact email.

Ask a question about this manual

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Example: How do I reset this device or fix this error?

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