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› [ANDELI](#) /

› ANDELI MCT-416 Multi-Process Welder Instruction Manual

ANDELI MCT-416

ANDELI MCT-416 Multi-Process Welder Instruction Manual

Model: MCT-416

1. INTRODUCTION AND OVERVIEW

The ANDELI MCT-416 is a versatile 5-in-1 multi-process welding machine designed for various welding and cutting applications. It supports MIG (CO₂/MIX/FLUX), TIG (HF), MMA, and CUT functions, operating on both 110V and 220V power supplies. This manual provides essential information for safe and effective operation, setup, maintenance, and troubleshooting of your MCT-416 welder.



Image 1.1: The ANDELI MCT-416 Multi-Process Welder, showcasing its compact design and control panel.

2. SAFETY INFORMATION

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

- **Personal Protective Equipment (PPE):** Always wear a welding helmet with appropriate shade, flame-resistant gloves, protective clothing, and safety shoes. Eye protection is crucial.
- **Ventilation:** Ensure adequate ventilation in the work area to avoid inhaling welding fumes, which can be hazardous.
- **Electrical Safety:** Never operate the machine in wet conditions. Ensure the power supply is correctly grounded. Disconnect power before performing any maintenance, changing accessories, or when the machine is not in use.
- **Fire Prevention:** Keep flammable materials away from the welding area. Have a fire extinguisher readily available.
- **Arc Rays:** Welding arcs produce intense visible and invisible (UV and IR) rays that can burn eyes and skin. Protect yourself and bystanders.

- **Hot Surfaces:** The machine and workpieces will become hot during operation. Allow them to cool before handling.
- **Gas Cylinders:** If using shielding gas, secure gas cylinders properly and handle them with care.

Refer to local safety regulations and standards for additional guidelines.

3. PRODUCT FEATURES

The ANDELI MCT-416 offers a range of features for diverse welding and cutting needs:

- **Multi-Process Capability:** Performs MIG (CO2/MIX/FLUX), TIG (HF), MMA (Stick), and CUT (Plasma Cutting) functions.
- **LED Display Control:** Features an intelligent LED display for easy selection of welding mode, material type, welding wire/electrode diameter, and workpiece thickness. All parameters are clearly shown.
- **Dual Voltage Input:** Operates on both 110V and 220V power supplies, providing flexibility for various work environments.
- **IGBT Inverter Technology:** Utilizes advanced IGBT inverter technology for enhanced efficiency, reliability, and a higher duty cycle.
- **Applicable Materials:** Suitable for welding ordinary thin steel, iron, stainless steel, low-carbon steel, and for mold repair. *Note: This machine is not suitable for aluminum welding.*
- **Safety Certification:** CE certified for safety and quality standards.

ANDELI

WELDING SCENE

4-in-1 multifunctional LED welding machine, upgraded quality



MIG



LIFT TIG



CUT



MMA

Image 3.1: Visual representation of the various welding and cutting processes supported by the MCT-416.

APPLICATION

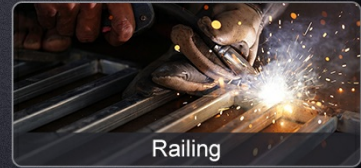
wide range of applications,meet your various needs



Steel Shed



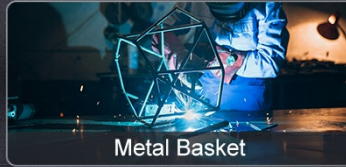
Steel Plate



Railing



Iron Door



Metal Basket



Metal Shelf

Image 3.2: Examples of materials and applications suitable for the MCT-416, including angle iron, square tube, stainless steel, and various metal structures.

4. SETUP

Proper setup is crucial for safe and effective operation. Follow these steps for connecting your welding torch and accessories.

4.1 Power Connection

- Ensure the machine is switched off before connecting to power.
- Connect the power cord to a suitable 110V or 220V AC outlet, ensuring it matches the machine's voltage setting.
- Verify the power outlet is properly grounded.

4.2 Torch and Accessory Connection

The connection method varies depending on the welding or cutting process. Refer to the diagrams below for correct setup.

Welding Torch Connection

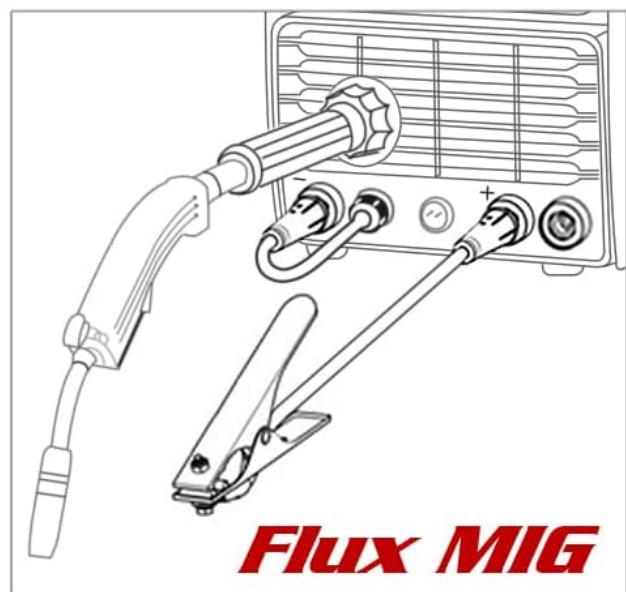
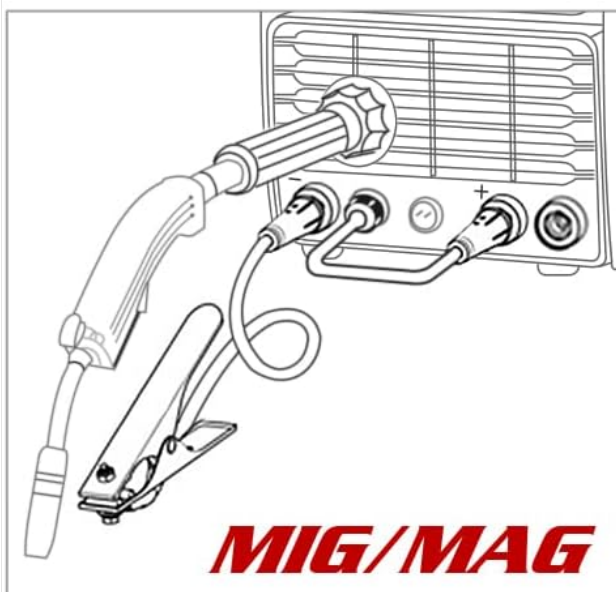
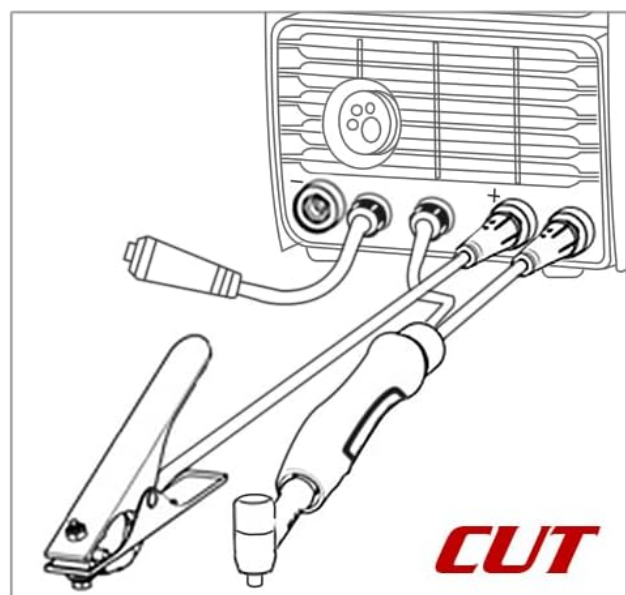
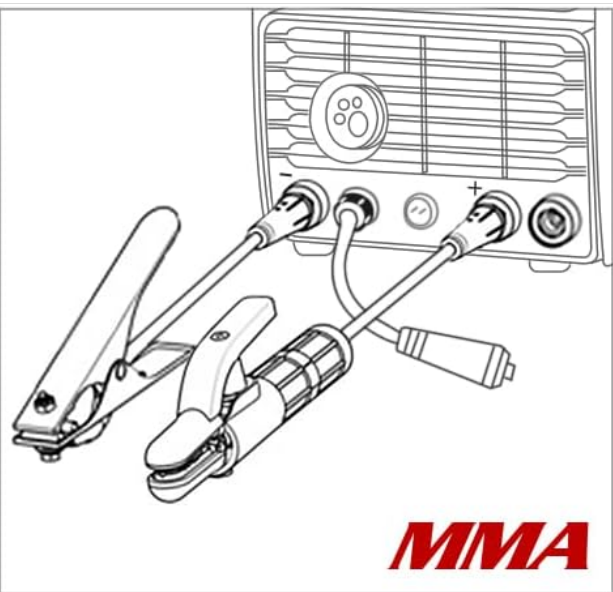


Image 4.1: Detailed connection diagrams for various welding and cutting modes.

- **MMA (Stick Welding):** Connect the electrode holder to the positive (+) terminal and the ground clamp to the negative (-) terminal.
- **Lift TIG Welding:** Connect the TIG torch to the negative (-) terminal and the ground clamp to the positive (+)

terminal. Connect the gas hose from the TIG torch to the gas regulator on the shielding gas cylinder.

- **CUT (Plasma Cutting):** Connect the plasma torch to the designated cutting output and the ground clamp to the workpiece. Ensure compressed air is connected to the machine.
- **MIG/MAG Welding:** Connect the MIG torch to the Euro connector. Connect the ground clamp to the workpiece. For Gas MIG, connect the gas hose from the torch to the gas regulator on the shielding gas cylinder.
- **Flux MIG Welding:** Similar to MIG/MAG, but no external shielding gas is required as the flux-cored wire produces its own shielding.

5. OPERATING INSTRUCTIONS

This section outlines the general operating procedures for the MCT-416 welder.

5.1 Control Panel Overview

The MCT-416 features an intuitive LED control panel for easy parameter adjustment.



Image 5.1: The LED screen and control panel, illustrating parameter displays for Synergy, MIG, Lift TIG, CUT, and MMA modes.

5.2 General Operation Steps

1. **Power On:** After connecting all cables and accessories, switch on the main power switch on the machine.
2. **Select Mode:** Use the control panel buttons to select the desired welding or cutting mode (MIG, TIG, MMA, CUT).
3. **Adjust Parameters:** Rotate and press the control knobs to set parameters such as voltage, amperage, wire feed speed, and material thickness according to your specific application. The LED display will show the current settings.
4. **Prepare Workpiece:** Ensure the workpiece is clean and free of rust, paint, or oil. Secure the ground clamp firmly to the workpiece.

5. **Begin Operation:** Follow standard safety procedures for your chosen welding or cutting process.
6. **Power Off:** After completing your work, switch off the machine and disconnect from the power supply.

5.3 Welding Performance Examples

The MCT-416 is capable of producing various weld types depending on the selected process.

WELDING LINE

excellent performance, meet all your welding needs!



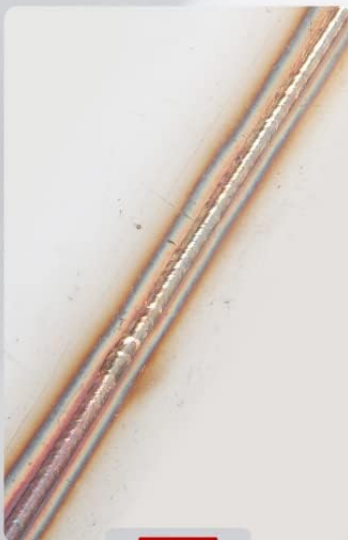
CO₂ MIG Welding



Mix Gas Welding



Flux Welding



LIFT TIG



CUT



MMA

Image 5.2: Examples of weld beads and cut edges achieved with different processes: CO₂ MIG, Mix Gas Welding, Flux Welding, Lift TIG, CUT, and MMA.

6. MAINTENANCE

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

- **Cleaning:** Periodically clean the machine's exterior and ventilation openings to prevent dust and debris buildup, which can hinder cooling. Use dry, compressed air for internal cleaning if necessary, ensuring the machine is unplugged.
- **Consumables:** Regularly inspect and replace worn-out consumables such as MIG contact tips, nozzles, TIG collets, electrodes, and plasma cutting electrodes/nozzles.
- **Cables and Connections:** Check all welding cables, power cords, and gas hoses for cuts, abrasions, or loose connections. Repair or replace damaged components immediately.
- **Wire Feeder:** For MIG welding, inspect the wire feed rollers for wear and ensure they are clean and properly tensioned.
- **Storage:** Store the machine in a dry, clean environment when not in use.

7. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Machine does not power on	No power supply; loose power cord; faulty power switch	Check power outlet; ensure power cord is securely connected; contact service if switch is faulty.
No welding arc / No cutting arc	Loose ground clamp; incorrect settings; worn consumables; machine in protection mode	Secure ground clamp; verify parameters on LED display; replace consumables; allow machine to cool.
Poor weld quality (e.g., porosity, spatter)	Incorrect parameters; insufficient shielding gas (MIG/TIG); contaminated workpiece; wrong wire/electrode	Adjust voltage/amperage/wire speed; check gas flow and cylinder level; clean workpiece; use correct consumables.
Overheating alarm / Machine shuts off	Exceeded duty cycle; blocked ventilation	Allow machine to cool down; ensure ventilation openings are clear.
Wire feeding issues (MIG)	Incorrect roller tension; clogged liner; worn contact tip	Adjust roller tension; clean or replace liner; replace contact tip.

If an alarm appears on the display that is not covered in this manual, please contact ANDELI customer service for assistance.

8. SPECIFICATIONS

The following table details the technical specifications for the ANDELI MCT-416 Multi-Process Welder.

MCT-416								
Function	MIG	TIG	MMA	CUT	MIG	TIG	MMA	CUT
Power Supply Voltage(V)	110±10%				220±15%			
Frequency(Hz)	50/60				50/60			
Power Factor	0.73				0.73			
Efficiency(%)	77				77			
No-Load Voltage(V)	53	53	53	290	53	53	53	290
Rated Input Power(KW)	3.9	2.9	3.9	3.6	5.7	4.2	7	6.2
Rated Input Current(A)	35	26	35.5	33	26	19	32	28
Welding Current Range(A)	50-120	10-120	10-100	20-25	50-160	10-160	10-160	20-40
Duty Cycle (% 40°C 10min)	20%	120	120(30%)	100	25	160	160	40
	60%	70	70	58	14	92	92	33
	100%	54	66	45	11	72	72	18
Per-Flow Time(S)	/	/	/	0-1.0	/	/	/	0-1.0
Post-Flow Time(S)	/	/	/	0.1-5.0	/	/	/	0.1-5.0
Cutting Thickness(MM)	/	/	/	8	/	/	/	18
Protection Class	IP21S				IP21S			
Insulation Class	H				H			
Cooling	Air Cooling				Air Cooling			
Dimension(MM)	490×225×340				490×225×340			
Net Weight(KG)	12.8				12.8			

Image 8.1: Detailed technical specifications for the MCT-416, including power supply, current ranges, and duty cycle.

Specification	MIG (110V)	TIG (110V)	MMA (110V)	CUT (110V)	MIG (220V)	TIG (220V)	MMA (220V)	CUT (220V)
Power Supply Voltage (V)	110±10%				220±15%			
Frequency (Hz)	50/60							
Power Factor	0.73							
Efficiency (%)	77							
No-Load Voltage (V)	53	53	53	290	53	53	53	290
Rated Input Power (KW)	3.9	2.9	3.9	3.6	5.7	4.2	7	6.2
Rated Input Current (A)	35	26	35.5	33	26	19	32	28

Specification	MIG (110V)	TIG (110V)	MMA (110V)	CUT (110V)	MIG (220V)	TIG (220V)	MMA (220V)	CUT (220V)
Welding Current Range (A)	50-120	10-120	10-100	20-25	50-160	10-160	10-160	20-40
Duty Cycle (% 40℃ 10min)	20% (120A)	20% (120A)	20% (100A)	20% (25A)	20% (160A)	20% (160A)	20% (160A)	20% (40A)
Cutting Thickness (MM)	/			8	/			18
Protection Class	IP21S							
Insulation Class	H							
Cooling	Air Cooling							
Dimension (MM)	490×225×340							
Net Weight (KG)	12.8							

9. WARRANTY AND SUPPORT

ANDELI is committed to providing quality products and customer satisfaction.

- **Return and Exchange Policy:** We offer returns and exchanges within 30 days of receiving the merchandise.
- **Warranty:** The ANDELI MCT-416 comes with a two-year warranty from the date of purchase.
- **Replacement Parts:** Free replacement parts are provided during the warranty period for manufacturing defects.
- **Customer Support:** If you encounter any issues or require guidance, please contact our efficient customer service team. They are available to provide free assistance.