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> AZZUNO 5-in-1 Welding Machine MF160PRO Instruction Manual

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Model: MF160PRO | Brand: AZZUNO

INTRODUCTION

The AZZUNO MF160PRO is a versatile 5-in-1 multi-process welding machine designed for a wide range of welding and cutting applications. This single unit combines the functionalities of Gas MIG, Flux MIG, HF TIG, Stick (MMA) welding, and Plasma Cutting, making it suitable for both DIY enthusiasts and professional industrial projects. This manual provides essential information for the safe and effective operation, setup, maintenance, and troubleshooting of your MF160PRO machine.

5 IN 1 Multi-Process Welding Machine



MMA



HF TIG



GAS MIG



FLUX CORE MIG



CUT



Figure 1: The AZZUNO MF160PRO machine, highlighting its 5-in-1 capabilities: MMA, HF TIG, Gas MIG, Flux Core MIG, and CUT.

SAFETY INFORMATION

Always prioritize safety when operating welding and cutting equipment. Failure to follow safety precautions can result in serious injury or death. Read and understand all safety warnings and instructions before use.

- **Personal Protective Equipment (PPE):** Always wear appropriate PPE, including welding helmet with proper shade, flame-resistant clothing, welding gloves, and safety shoes.
- **Ventilation:** Ensure adequate ventilation to remove welding fumes and gases, which can be hazardous to your health.
- **Electrical Safety:** Verify correct voltage (110V/220V) and ensure proper grounding. Do not operate in wet conditions.
- **Fire Prevention:** Keep a fire extinguisher nearby. Remove flammable materials from the work area. Welding sparks can travel.
- **Arc Rays:** Protect eyes and skin from arc rays, which can cause burns and eye damage.

- **Compressed Gas Cylinders:** Handle gas cylinders with care. Secure them properly to prevent tipping.



Figure 2: The MF160PRO includes built-in safety protections such as IGBT, over-current, over-voltage, and over-heating protection.

PRODUCT OVERVIEW AND COMPONENTS

The AZZUNO MF160PRO comes with a comprehensive set of accessories to support its multi-process capabilities. Familiarize yourself with all components before operation.



Figure 3: The MF160PRO package includes the multi-function welder machine, 15AK MIG torch, Plasma cutting torch with consumables, Air filter regulator, TIG torch with consumables, Hammer, Gas hose, Work clamp, Electrode holder, and a 110V~220V adapter.

Front Panel Introduction



Figure 4: Front panel layout and connections.

1. **Menu Choose Button:** Selects welding/cutting mode.
2. **Voltage Adjust Knob:** Adjusts output voltage (MIG mode).
3. **MMA/CUT/MIG/TIG Current Adjustment Knob:** Adjusts output current for selected mode.
4. **Polarity Reversal:** Connection point for changing polarity.
5. **MIG Torch Connector:** Connects the MIG torch.
6. **CUT/TIG Aviation Socket:** Connects the Plasma CUT or TIG torch control cable.
7. **FLUX/MMA/MIG Negative Terminal:** Negative terminal for Flux MIG, MMA, and Gas MIG.
8. **CUT/TIG Gun Connector:** Connects the main power cable for Plasma CUT or TIG torch.
9. **MMA/TIG/MIG Negative Terminal:** Another negative terminal for MMA, TIG, and Gas MIG.

10. **CUT Positive Terminal:** Positive terminal for Plasma CUT.

SETUP

Power Connection

The MF160PRO supports dual voltage input (110V/220V). Use the appropriate adapter and ensure the power source matches the machine's requirements.



Figure 5: The MF160PRO is compatible with both 110V and 220V power supplies using the included adapter.

Connecting Accessories

Connect the appropriate torch, work clamp, and gas hose (if applicable) according to the welding/cutting process you intend to use. Refer to the "Welding Polarity" section for correct terminal connections.

OPERATING INSTRUCTIONS

The MF160PRO offers five distinct operating modes. Select the desired mode using the Menu Choose Button and adjust parameters with the respective knobs.

Welding Polarity

Correct polarity is crucial for optimal welding and cutting performance. Refer to the diagram below for proper connections for each mode.



Figure 6: Polarity connections for different welding and cutting processes.

MIG (Gas MIG): DCEP (Direct Current Electrode Positive)

FCAW (Flux Core MIG): DCEN (Direct Current Electrode Negative)

TIG (HF TIG): DCEN (Direct Current Electrode Negative)

STICK (MMA): DCEP (Direct Current Electrode Positive)

CUT (Plasma Cutting): DCEP (Direct Current Electrode Positive)

MIG Welding (Gas MIG / Flux Core MIG)

The MF160PRO features SYNERGIC MIG control, which automatically matches recommended current and wire feeding

speed based on wire diameter and gas material selection. This simplifies operation, especially for beginners.

- **Gas MIG:** Requires shielding gas (e.g., Argon/CO2 mix for steel). Connect gas hose to the machine and cylinder.
- **Flux Core MIG (Gasless MIG):** Uses flux-cored wire, no external shielding gas required. Ensure correct polarity (DCEN).
- **Wire Installation:** Install the appropriate welding wire spool and feed the wire through the torch liner.
- **Parameter Adjustment:** Select MIG mode. Use the voltage and current knobs to fine-tune settings if not using synergic control, or to override synergic suggestions.

HF TIG Welding

High Frequency (HF) start TIG provides non-contact arc initiation, reducing tungsten and material consumption and offering a cleaner start compared to Lift TIG. Ideal for precise welding of low-carbon steel or stainless steel.

- **Gas Connection:** Requires shielding gas (e.g., 100% Argon). Connect gas hose.
- **Tungsten Electrode:** Install a sharpened tungsten electrode into the TIG torch.
- **Pre-flow/Post-flow:** The machine is equipped with pre-flow/post-flow functions to protect the weld puddle and tungsten.
- **Parameter Adjustment:** Select TIG mode and adjust current.

MMA (Stick) Welding

MMA welding is suitable for various materials and outdoor conditions. Connect the electrode holder and work clamp according to the polarity requirements of your electrode type.

- **Electrode Selection:** Choose the appropriate electrode for your material and application.
- **Parameter Adjustment:** Select MMA mode and adjust current based on electrode diameter and material thickness.

Plasma Cutting (CUT)

The plasma cutter offers powerful cutting ability, with an 8mm ideal clean cut and 12mm maximum severance cut under 220V. It uses non-hazardous compressed air to cut various metals.

- **Air Compressor:** Connect a suitable air compressor to the air filter regulator on the machine. Ensure clean, dry air supply.
- **Consumables:** Ensure correct plasma torch consumables (electrode, nozzle, shield cup) are installed.
- **Material Compatibility:** Capable of cutting stainless steel, alloy steel, mild steel, copper, and aluminum.
- **Parameter Adjustment:** Select CUT mode and adjust current.

Great Welding & Cutting Performance



Figure 7: Example of cutting and welding effects achieved with the MF160PRO.



Figure 8: The MF160PRO is suitable for working with various materials including mild steel, square pipe, stainless steel, cast iron, and sheet metal.

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 to clear internal components if necessary (with power disconnected).
- **Torch and Cable Inspection:** Inspect all torches, cables, and connectors for wear, damage, or loose connections before each use. Replace damaged parts immediately.
- **Consumables:** Replace MIG contact tips, TIG collets/nozzles, and Plasma CUT electrodes/nozzles as they wear out to maintain performance.
- **Air Filter Regulator:** Periodically drain any accumulated moisture from the air filter regulator for plasma cutting.
- **Storage:** Store the machine in a clean, dry environment, protected from extreme temperatures and humidity.

TROUBLESHOOTING

This section addresses 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; tripped circuit breaker; faulty power cord.	Check power outlet, circuit breaker, and power cord connections. Ensure correct voltage.
No arc/poor arc start.	Incorrect polarity; poor work clamp connection; worn consumables; incorrect settings.	Verify polarity for the selected process. Ensure work clamp has good contact. Replace worn contact tips/electrodes. Adjust current/voltage settings.
MIG wire feeding issues.	Incorrect wire tension; clogged liner; worn contact tip; wrong drive roller size.	Adjust wire tension. Clean or replace liner. Replace contact tip. Ensure correct drive roller for wire diameter.
Plasma cutter not cutting cleanly.	Low air pressure; worn plasma consumables; incorrect cutting speed/current.	Check air pressure and ensure dry air. Replace electrode and nozzle. Adjust cutting speed and current.
Overheat protection activated.	Exceeded duty cycle; insufficient ventilation.	Allow machine to cool down. Ensure proper airflow around the machine. Reduce continuous operation time.

SPECIFICATIONS

Key technical specifications for the AZZUNO MF160PRO welding machine.

Model: MF160PRO

Input Voltage: 110V/220V Dual Voltage

Welding Processes: Gas MIG, Flux MIG, HF TIG, MMA (Stick), Plasma CUT

Plasma Cutting Output: 40A DC

Plasma Cutting Capacity (220V): 8mm ideal clean cut, 12mm maximum severance cut

Duty Cycle: 60% (at 220V)

Item Weight: Approximately 40.9 pounds

Package Dimensions: Approximately 22 x 17 x 15.5 inches

Included Components: Multi-function welder machine, 15AK MIG torch, Plasma cutting torch with consumables, Air filter regulator, TIG torch with consumables, Hammer, Gas hose, Work clamp, Electrode holder, 110V~220V adapter.



Figure 9: Approximate dimensions of the MF160PRO machine (9.5 in x 18.1 in x 12.2 in).

WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the documentation included with your product or visit the official AZZUNO website. Keep your purchase receipt as proof of purchase for warranty claims.

AZZUNO Official Store: [Visit the AZZUNO Store on Amazon](#)

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