IRONMAX ET10051

IRONMAX 160A 3-in-1 MIG/LIFT TIG/MMA Welder

Model: ET10051

User Instruction Manual

1. Introduction

The IRONMAX 160A 3-in-1 Welder is a versatile and efficient welding machine designed for various applications. It integrates MIG, Lift TIG, and MMA (Stick) welding processes, offering flexibility for different material types and project requirements. Equipped with advanced IGBT inverter technology, this welder provides a stable arc, controlled current, minimal spatter, and deep penetration for clean and strong welds. Its dual voltage capability (110V/220V) ensures adaptability to different power sources, making it suitable for a wide range of work environments.



Figure 1: IRONMAX 160A 3-in-1 Welder.

This manual provides essential information for the safe and effective operation, setup, and maintenance of your IRONMAX welder. Please read it thoroughly before use to ensure proper handling and to maximize the lifespan of your equipment.

2. Safety Information

Welding involves inherent risks. Always prioritize safety by following these guidelines:

- Wear appropriate personal protective equipment (PPE), including a welding helmet with proper shade, flame-resistant clothing, welding gloves, and safety shoes.
- Ensure adequate ventilation in the work area to disperse fumes and gases.
- Keep a fire extinguisher nearby and know how to use it.
- Never weld near flammable materials or liquids.
- Ensure all electrical connections are secure and properly grounded.

- Do not touch live electrical parts.
- Disconnect power before performing any maintenance or changing accessories.
- The welder features overheat, overload, and overcurrent protection. If a protection system activates, allow the unit to cool down or resolve the underlying issue before resuming operation.



Figure 2: High-Level Safety features of the IRONMAX welder.

3. Package Contents

Verify that all items are present in the package:

- 1 x Welding Machine
- 1 x MIG Gun (6.56 ft/2m)
- 1 x Electrode Holder with Cable (5.58ft/1.7m)
- 1 x Earth Clamp with Cable (4.92ft/1.5m)
- 1 x 0.03" (0.8mm) Flux Core Wire (1lb)

- 1 x 220V To 110V Adapter
- 1 x Welding Mask
- 1 x Steel Brush
- 1 x User Manual (this document)

Note: Welding gas is not included. A TIG torch needs to be purchased separately for Lift TIG welding.

4. Product Overview

Familiarize yourself with the components and controls of your IRONMAX welder.

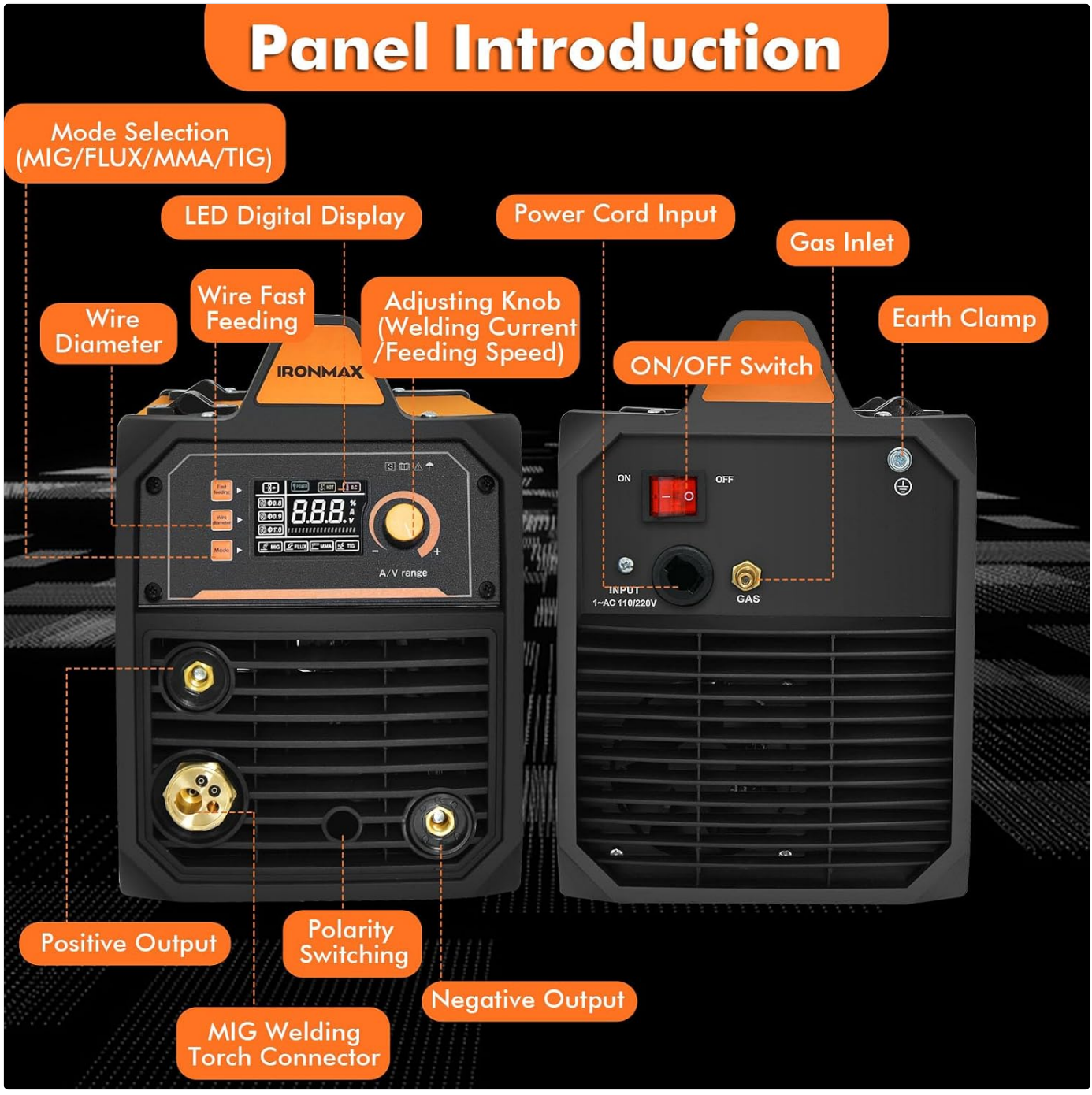


Figure 3: Front and Rear Panel Introduction.

- **Mode Selection:** Buttons to select between MIG (Gas/Flux), MMA, and Lift TIG welding modes.
- **LED Digital Display:** Shows current welding parameters (current, voltage, wire feed speed).
- **Adjusting Knob:** Used to fine-tune welding current and wire feed speed based on selected mode.

- **Wire Feed Mechanism:** Internal compartment for welding wire spool and feeding system.
- **Connectors:** Various ports for MIG gun, electrode holder, earth clamp, and gas inlet.
- **ON/OFF Switch:** Main power control.

5. Setup

5.1. Wire Installation

The welder supports different wire types and spool sizes. Ensure the correct wire is installed for your welding process.



Figure 4: Compatible Welding Wires.

5.1.1. Installing 0.8mm 5KGS Flux Wire

1. Open the wire spool compartment.
2. Place the 5KGS flux wire spool onto the spindle.
3. Secure the spool with the retaining nut.

4. Feed the wire through the guide tube and into the wire feed mechanism.
5. Ensure the wire is properly seated in the drive roller groove.
6. Close the wire spool compartment.

5.1.2. Installing 0.8mm 0.45KGS Flux Wire

1. Remove the larger spool adapter if installed.
2. Place the 0.45KGS flux wire spool onto the smaller spindle.
3. Secure the spool.
4. Feed the wire through the guide tube and into the wire feed mechanism.
5. Ensure the wire is properly seated in the drive roller groove.
6. Close the wire spool compartment.

5.1.3. Installing 0.8mm 5KGS Steel Wire

1. Open the wire spool compartment.
2. Place the 5KGS steel wire spool onto the spindle.
3. Secure the spool with the retaining nut.
4. Feed the wire through the guide tube and into the wire feed mechanism.
5. Ensure the wire is properly seated in the drive roller groove.
6. Close the wire spool compartment.

5.2. Cable Connections and Mode Selection

Connect the welding accessories according to the desired welding mode. The video below demonstrates the wire installation and cable connections for each mode.

Your browser does not support the video tag.

Video 1: IRONMAX MIG/Lift TIG/MMA Welder Setup and Operation. This video demonstrates the installation of welding wire and the connection of cables for Flux MIG, MMA, and Lift TIG welding modes, followed by brief welding demonstrations for each mode.

5.2.1. Flux MIG Mode Setup (Refer to Video 1: 0:48 - 1:42)

1. Ensure flux core wire is installed (as per section 5.1.1 or 5.1.2).
2. Connect the MIG gun to the positive (+) terminal and the earth clamp to the negative (-) terminal.
3. Select 'FLUX MIG' mode on the control panel.
4. Adjust current and wire feed speed using the adjusting knob.

5.2.2. MIG Mode Setup (with gas, Refer to Video 1: 3:10 - 3:50)

1. Ensure solid steel wire is installed (as per section 5.1.3).
2. Connect the MIG gun to the positive (+) terminal and the earth clamp to the negative (-) terminal.
3. Connect the gas hose from your shielding gas cylinder to the gas inlet on the rear panel.
4. Select 'GAS MIG' mode on the control panel.
5. Adjust current, voltage, and wire feed speed using the adjusting knob.

5.2.3. MMA (Stick) Mode Setup (Refer to Video 1: 3:50 - 4:13)

1. Connect the electrode holder to the positive (+) terminal.
2. Connect the earth clamp to the negative (-) terminal.
3. Insert the welding electrode into the electrode holder.
4. Select 'MMA' mode on the control panel.

5. Adjust the welding current using the adjusting knob.

5.2.4. Lift TIG Mode Setup (Refer to Video 1: 4:13 - 4:37)

1. Connect a TIG torch (not included) to the negative (-) terminal.
2. Connect the earth clamp to the positive (+) terminal.
3. Ensure a suitable TIG electrode (tungsten) is installed in the torch.
4. Connect the gas hose from your shielding gas cylinder (Argon) to the TIG torch.
5. Select 'LIFT TIG' mode on the control panel.
6. Adjust the welding current using the adjusting knob.

6. Operating Instructions

After completing the setup for your chosen welding mode:

1. Turn on the welder using the ON/OFF switch.
2. Select the desired welding mode (MIG, MMA, or Lift TIG) using the mode selection buttons.
3. Adjust the welding parameters (current, voltage, wire feed speed) using the adjusting knob. The LED display will show the current settings.
4. Perform a test weld on scrap material to verify settings and technique.
5. Begin welding, maintaining proper arc length and travel speed for optimal results.



Figure 5: Example of Quality Welding Results.

The welder's advanced IGBT technology ensures higher efficiency and precision, while the one-button automatic adjustment of current and wire feed speed simplifies operation for both beginners and experienced welders.



Figure 6: Welder compatibility with multiple electrodes and materials.

7. Maintenance

Regular maintenance ensures optimal performance and extends the lifespan of your welder.

- **Cleaning:** Periodically clean the exterior of the welder with a dry cloth. Use compressed air to clear dust from the cooling vents.
- **Cable Inspection:** Regularly inspect all welding cables, connections, and the MIG gun/electrode holder for wear, damage, or loose connections. Replace damaged components immediately.
- **Wire Feed Mechanism:** Keep the wire feed rollers clean and free of debris. Ensure the drive roller is appropriate for the wire size being used.
- **Nozzle and Contact Tip:** For MIG welding, regularly clean or replace the nozzle and contact tip to prevent wire feeding issues and ensure good electrical contact.
- **Storage:** Store the welder in a dry, clean environment when not in use.

8. Troubleshooting

If you encounter issues, refer to this section for common problems and solutions.

Problem	Possible Cause	Solution
Welder does not power on	No power supply; faulty power cord; tripped circuit breaker.	Check power connection, power cord, and circuit breaker.
No arc/poor arc stability	Improper ground connection; incorrect welding parameters; contaminated workpiece; worn contact tip/electrode.	Ensure good ground connection; adjust current/voltage; clean workpiece; replace contact tip/electrode.
Wire feeding issues (MIG)	Incorrect drive roller tension; clogged liner; wrong drive roller size; tangled wire spool.	Adjust drive roller tension; clean/replace liner; ensure correct drive roller; untangle wire.
Overheat indicator active	Exceeded duty cycle; blocked ventilation; high ambient temperature.	Allow welder to cool down; clear ventilation; work in a cooler environment.

For issues not listed here, please contact IRONMAX customer support.

9. Specifications

Detailed technical specifications for the IRONMAX 160A 3-in-1 Welder (Model ET10051):

- **Model Number:** ET10051
- **Function:** MIG/MMA/Lift TIG
- **Color:** Orange, Black
- **Material:** PP, Metal
- **Net Weight:** 27.5 lbs (12.5 kg)
- **Overall Dimension (L x W x H):** 16.5" x 8" x 12" (42 x 20 x 30 cm)
- **Power Cord:** 7.2 ft (2.2 m)
- **Voltage:** 110-220V (Dual Voltage System)
- **Frequency:** 50/60Hz
- **Output Current Range:** 20-160A
- **No-load Voltage:** 60V
- **Welding Wire Diameter:** 0.3"-0.4" (0.8-1.0 mm)
- **Usable Electrode Size (MMA):** 0.06-0.12" (1.6-3.2 mm)
- **Wire Feeding Speed:** 6.5-50 ft/min (2-15 m/min)
- **Efficiency:** 85%
- **Rated Duty Cycle:** 25%
- **Protection Class:** IP21S
- **Insulation Grade:** F



Figure 7: Product Dimensions and Included Accessories.

10. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the warranty card included with your product or contact IRONMAX customer service directly. Keep your purchase receipt as proof of purchase for warranty claims.

You can typically find contact information on the manufacturer's official website or through the retailer where the product was purchased.

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

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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