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FEMEROL MMA120R

FEMEROL MMA120R Handheld Welding Machine User Manual

Model: MMA120R | Brand: FEMEROL

1. Introduction

This user manual provides essential information for the safe and effective operation, setup, maintenance, and troubleshooting of your FEMEROL MMA120R Handheld Welding Machine. Please read this manual thoroughly before using the product to ensure proper function and to prevent injury or damage.

Image 1.1: The FEMEROL MMA120R Handheld Welding Machine shown with its included accessories, including the ground clamp, welding gloves, folding welding helmet, welding brush, welding rods, and toolbox.

2. Safety Information

Welding can be dangerous. It is crucial to follow all safety precautions to prevent serious injury or property damage. Always prioritize your safety and the safety of those around you.

2.1 General Safety Precautions

- **Electric Shock:** Welding circuits are electrically live. Do not touch live electrical parts. Wear dry welding gloves and protective clothing. Ensure your work area is dry.
- **Fumes and Gases:** Welding produces fumes and gases that can be hazardous to your health. Work in a well-ventilated area. Use local exhaust ventilation or a respirator if ventilation is poor.
- **Arc Rays:** Arc rays can injure eyes and burn skin. Wear a welding helmet with a proper shade filter. Protect exposed skin with appropriate clothing.
- **Fire and Explosion:** Welding sparks and hot metal can cause fires. Keep flammable materials away from the welding area. Have a fire extinguisher readily available.
- **Burns:** Hot metal and sparks can cause severe burns. Wear protective clothing, including long sleeves, pants,

and welding gloves.

- **Work Area:** Keep the work area clean and free of clutter. Ensure adequate lighting.

3. Package Contents

Upon opening your FEMEROL MMA120R package, please verify that all the following components are included and in good condition:

- 1 x Handheld ARC Welder Machine (FEMEROL MMA120R)
- 1 x Ground Clamp
- 1 x Pair of Welding Gloves
- 1 x Folding Welding Helmet
- 1 x Welding Brush
- 5 x Welding Rods
- 1 x Toolbox
- 1 x Cloth Bag

Image 3.1: A visual representation of all items included in the FEMEROL MMA120R welding machine package.

4. Product Features

The FEMEROL MMA120R Handheld Welding Machine is designed for efficiency and portability, incorporating advanced technology for reliable performance.

- **Powerful Output:** Features a 20-120 amp welding output, adjustable via a knob to match project requirements. Capable of welding mild steel plates up to 8.0mm thick.
- **Mini Portable Design:** Weighing only 3.2 lbs (approximately 1.45 kg), this mini ARC welder supports one-hand operation, making it highly compact and portable for various work environments, including elevated positions.
- **Wide Application:** Compatible with 3/32" - 1/8" (1.6-3.2mm) electrodes. Utilizes IGBT inverter technology for stable current, energy efficiency, easy arc striking, reduced spatter, and consistent performance.
- **Safety Features:** Equipped with a powerful air inlet heat dissipation system for prolonged operation and intelligent overload and overheating protection systems to ensure user safety.

Image 4.1: The compact dimensions (255mm length, 100mm height, 160mm grip height) and light weight (3.3 lbs) of the FEMEROL MMA120R, emphasizing its portability.

Image 4.2: Demonstrations of weld quality, showcasing a Gorgens Weld, Smooth Arc, and Spatter-Free finish achievable with the FEMEROL MMA120R.

5. Setup

Before operating the welding machine, ensure proper setup and safety measures are in place.

5.1 Unpacking and Inspection

1. Carefully remove all components from the packaging.
2. Inspect the machine and accessories for any signs of damage during shipping. Do not use if damaged.
3. Ensure your work area is clean, dry, and well-ventilated, free from flammable materials.

5.2 Connecting the Ground Clamp

1. Connect the ground clamp cable to the designated ground terminal on the welding machine.
2. Securely attach the ground clamp to the workpiece or a sturdy metal workbench that is in direct electrical contact with the workpiece. Ensure a clean, bare metal connection for optimal conductivity.

5.3 Inserting the Welding Rod

1. Select an appropriate welding rod (electrode) for your material and application. The MMA120R supports 3/32" - 1/8" (1.6-3.2mm) electrodes.
2. Insert the welding rod into the electrode holder at the front of the handheld unit. Ensure it is firmly seated.

Image 5.1: The FEMEROL MMA120R in operation, demonstrating its compatibility with different types of welding rods, including E6013, E6014, and E7018.

5.4 Power Connection

1. Connect the power cord of the welding machine to a standard 110V AC power outlet.
2. Ensure the power outlet is properly grounded and capable of handling the machine's power requirements.

5.5 Personal Protective Equipment (PPE)

Always wear appropriate PPE before starting any welding operation:

- Welding Helmet with proper shade filter (included folding helmet is for basic use; a professional auto-darkening helmet is recommended for extended use).
- Welding Gloves (included).
- Flame-resistant clothing (long sleeves and pants).
- Safety glasses (worn under the helmet).
- Closed-toe shoes.

6. Operating Instructions

Once the machine is set up and all safety precautions are observed, you can begin welding.

6.1 Powering On and Current Adjustment

1. Plug in the machine. The digital display will illuminate.
2. Use the adjustment knob on the top of the unit to set the desired welding current between 20 and 120 amps. The optimal current depends on the electrode size and material thickness. Refer to electrode manufacturer guidelines for recommended settings.

Image 6.1: The FEMEROL MMA120R displaying a current setting of 120 amps, indicating its adjustable output range.

6.2 Basic Welding Technique (Stick Welding)

1. **Arc Striking:** With the welding helmet down, lightly scratch the electrode against the workpiece like striking a match. Once the arc is established, quickly lift the electrode slightly to maintain a consistent arc length (typically equal to the electrode diameter).
2. **Maintaining the Arc:** Keep a steady hand and maintain a consistent arc length. As the electrode melts, you will need to continuously feed it into the weld puddle.
3. **Travel Speed:** Move the electrode along the joint at a consistent speed to create a uniform weld bead. Too fast will result in a narrow, shallow weld; too slow will create a wide, lumpy weld.
4. **Angle:** Hold the electrode at a slight angle (10-20 degrees) in the direction of travel.
5. **Ending the Weld:** To stop welding, quickly pull the electrode away from the workpiece.

Image 6.2: A welder demonstrating the use of the FEMEROL MMA120R, highlighting its compatibility with 3/32" - 1/8" (2.5-3.2mm) welding rods.

6.3 Applications

The FEMEROL MMA120R is versatile and suitable for various applications, including:

- DIY projects
- Light fabrication
- Repair and maintenance tasks
- Work at heights due to its portability

Image 6.3: A collage illustrating the wide range of uses for the FEMEROL MMA120R, including welding in elevated positions, for DIY projects, and general maintenance.

7. Maintenance

Regular maintenance ensures the longevity and optimal performance of your welding machine.

7.1 Cleaning

- Before cleaning, always unplug the machine from the power source.
- Use a dry, soft cloth to wipe down the exterior of the machine.
- Periodically use compressed air to blow out dust and debris from the ventilation openings to ensure proper airflow and cooling.

7.2 Storage

- Store the welding machine in a clean, dry place, away from direct sunlight and extreme temperatures.
- Keep it in its original toolbox or a protective case to prevent damage.

7.3 Cable and Connection Inspection

- Regularly inspect the power cord, ground clamp cable, and electrode holder cable for any cuts, fraying, or damage. Replace damaged cables immediately.
- Ensure all connections are tight and secure before each use.

8. Troubleshooting

This section addresses common issues you might encounter with your FEMEROL MMA120R welding machine.

Problem	Possible Cause	Solution
No power/Machine does not turn on	Power cord unplugged; Circuit breaker tripped; Faulty outlet	Check power connection; Reset circuit breaker; Try a different outlet
Electrode sticks to workpiece	Low current setting; Incorrect arc striking technique; Damp electrodes	Increase current; Practice arc striking; Use dry electrodes
Poor weld quality (e.g., excessive spatter, inconsistent bead)	Incorrect current setting; Improper arc length; Incorrect travel speed or angle; Dirty workpiece	Adjust current; Maintain consistent arc length; Adjust travel speed/angle; Clean workpiece thoroughly
Machine overheats and shuts down	Exceeded duty cycle; Blocked ventilation; High ambient temperature	Allow machine to cool down; Clear ventilation openings; Work in a cooler environment
Weak or unstable arc	Poor ground connection; Loose cable connections; Incorrect electrode	Ensure clean, secure ground connection; Tighten all cable connections; Use appropriate electrode

If you encounter issues not listed here or if the suggested solutions do not resolve the problem, please contact FEMEROL customer support for assistance.

9. Specifications

Key technical specifications for the FEMEROL MMA120R Handheld Welding Machine:

- **Model:** FEMEROL MMA120R
- **Input Voltage:** 110V AC
- **Welding Current Range:** 20-120 Amps
- **Max Weld Plate Thickness:** 8.0mm
- **Compatible Electrode Diameter:** 3/32" - 1/8" (1.6-3.2mm)
- **Technology:** IGBT Inverter
- **Item Weight:** Approximately 3.08 pounds (1.4 kg)
- **Package Dimensions:** 14.06 x 11.89 x 6.1 inches (approx. 35.7 x 30.2 x 15.5 cm)
- **Power Source:** AC/DC
- **Protection Class:** IP21S

Image 9.1: A detailed view of the technical specification label for the FEMEROL MMA-120R, showing electrical parameters and model information.

10. Warranty and Support

FEMEROL stands behind the quality of its products.

10.1 Warranty Information

Your FEMEROL MMA120R welding machine is covered by a**two-year guarantee** from the date of purchase. During this period, FEMEROL guarantees to address any problems related to the manufacturing or functionality of the welding machine.

10.2 Customer Support

For technical assistance, warranty claims, or any questions regarding your FEMEROL MMA120R welding machine, please refer to the contact information provided with your purchase documentation or visit the official FEMEROL website for support options.

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