PAKROMAN 3 in 1

PAKROMAN 120A Multi-Process Welder User Manual

Model: 3 in 1 | Brand: PAKROMAN

1. Introduction

This manual provides essential instructions for the safe and effective operation, setup, and maintenance of your PAKROMAN 120A Multi-Process Welder. This versatile 3-in-1 machine supports MIG (Gas/Gasless Flux Core), TIG (Lift TIG), and MMA (Stick) welding processes, and operates on dual voltage (110V/220V). Please read this manual thoroughly before use and retain it for future reference.

Image 1.1: The PAKROMAN 120A Multi-Process Welder is capable of MMA, Lift TIG, and Flux-Cored welding, offering versatility for various applications.

2. Safety Information

Welding can be hazardous. Always follow safety precautions to prevent injury or damage.

- Wear appropriate personal protective equipment (PPE), including a welding helmet, gloves, and protective clothing.
- Ensure adequate ventilation to avoid inhaling fumes.

- Protect bystanders from arc rays and sparks.
- Always disconnect power before performing maintenance or adjustments.
- Do not operate the welder in damp or wet conditions.
- Keep a fire extinguisher nearby.

The PAKROMAN 120A Multi-Process Welder includes several built-in safety features:

- **VRD (Voltage Reduction Device):** Reduces open-circuit voltage for increased safety.
- **Over Voltage Protection:** Safeguards the machine from excessive input voltage.
- **Over Current Protection:** Prevents damage from excessive current draw.
- **Over Load Protection:** Protects the internal components from overload conditions.
- **Over Heating Protection:** Shuts down the machine if internal temperatures become too high, with a "Fan On Demand" system for efficient cooling.

Image 2.1: Overview of the safety and reliability features integrated into the welding machine.

3. Product Overview and Components

Familiarize yourself with the main components and controls of your welding machine.

Image 3.1: Front and rear panel layout with numbered components.

1. Digital display
2. Mode selection
3. MMA mode indicator
4. MIG FLUX/0.8 mode indicator
5. MIG FLUX/0.9/1.0 mode indicator
6. TIG mode indicator
7. Control button
8. Torch switch socket
9. MIG torch connection
10. Positive connection (+)
11. Negative connection (-)
12. Power cable
13. Power switch
14. Ventilation

4. Setup

4.1 Included Accessories

Before starting, ensure all included accessories are present:

- Electrode Holder
- Ground Clamp
- User Manual (this document)
- Welding Machine
- Welding Wire (Flux-cored)
- Contact Tips (0.8mm/1.0mm)
- Gloves
- Adapter (for power, if applicable)
- Shoulder Strap
- MIG Torch

Image 4.1: The welding machine with its standard accessories and approximate dimensions.

4.2 Power Connection

The welder supports dual voltage input (110V/220V). Connect the power cable (12) to a suitable power outlet. The machine will automatically detect the input voltage.

4.3 Wire Feeder Installation (for MIG/Flux-Cored Welding)

To install the welding wire for MIG or Flux-Cored operations:

Image 4.2: Diagram of the inner wire feeder mechanism.

1. Open the side panel of the welder to access the wire feeder compartment.
2. Place the 0.5-1.0KG wire spool onto the spool spindle.
3. Secure the spool with the keyed washer and nut, ensuring the spool brake pad is correctly positioned to provide slight tension.
4. Feed the welding wire through the wire guide and into the drive rollers.
5. Close the drive roller tension arm and adjust the tension as needed.
6. Thread the wire through the MIG torch liner until it exits the contact tip.

4.4 Connecting Welding Cables

- **Ground Clamp:** Connect the ground clamp cable to the appropriate terminal on the front panel (Positive or Negative, depending on the welding process and wire type). Secure the clamp to the workpiece.
- **Electrode Holder (MMA):** For MMA welding, connect the electrode holder cable to the designated terminal.
- **MIG Torch:** Connect the MIG torch to the MIG torch connection (9).
- **TIG Torch:** For Lift TIG welding, connect the TIG torch to the appropriate connection.

5. Operating Modes

The PAKROMAN 120A welder offers three primary welding modes: MMA, MIG (Flux-Cored/Gas), and Lift TIG.

Image 5.1: The smart digital display allows for precise adjustment and monitoring of welding parameters.

5.1 Mode Selection

Use the mode selection button (2) on the front panel to cycle through the available welding processes: MMA, MIG FLUX/0.8, MIG FLUX/0.9/1.0, and TIG. The digital display (1) will show the selected mode and current settings.

5.2 MMA (Manual Metal Arc) Welding

MMA welding, also known as Stick welding, uses a consumable electrode coated in flux.

- Select MMA mode.
- Connect the electrode holder to the positive (+) terminal and the ground clamp to the negative (-) terminal for most common electrodes (check electrode manufacturer specifications).
- Insert the appropriate electrode into the holder.
- Adjust the current using the control button (7) based on the electrode type and material thickness.
- Strike an arc and maintain a consistent arc length and travel speed.

5.3 MIG (Metal Inert Gas) Welding - Flux-Cored/Gas

MIG welding uses a continuously fed wire electrode. This machine supports both gasless flux-cored wire and gas-shielded MIG welding.

- **For Flux-Cored Welding:** Select MIG FLUX/0.8 or MIG FLUX/0.9/1.0 mode. Connect the MIG torch to the positive (+) terminal and the ground clamp to the negative (-) terminal. No external shielding gas is required.
- **For Gas-Shielded MIG Welding:** Select the appropriate MIG mode. Connect the MIG torch to the positive (+) terminal and the ground clamp to the negative (-) terminal. Connect an external shielding gas cylinder (e.g., Argon/CO2 mix) to the gas inlet on the machine (if available, not explicitly shown but implied by "Gas/Gasless").
- Adjust wire feed speed and voltage using the control button (7) according to the material and wire diameter.
- Ensure proper stick-out and torch angle for optimal welds.

5.4 Lift TIG Welding

Lift TIG welding provides precise control for high-quality welds.

- Select TIG mode.
- Connect the TIG torch to the negative (-) terminal and the ground clamp to the positive (+) terminal.
- Ensure a suitable tungsten electrode is installed in the TIG torch.
- Connect an external shielding gas cylinder (e.g., 100% Argon) to the gas inlet.
- Adjust the current using the control button (7).
- To initiate the arc, gently touch the tungsten to the workpiece and then lift it slightly.

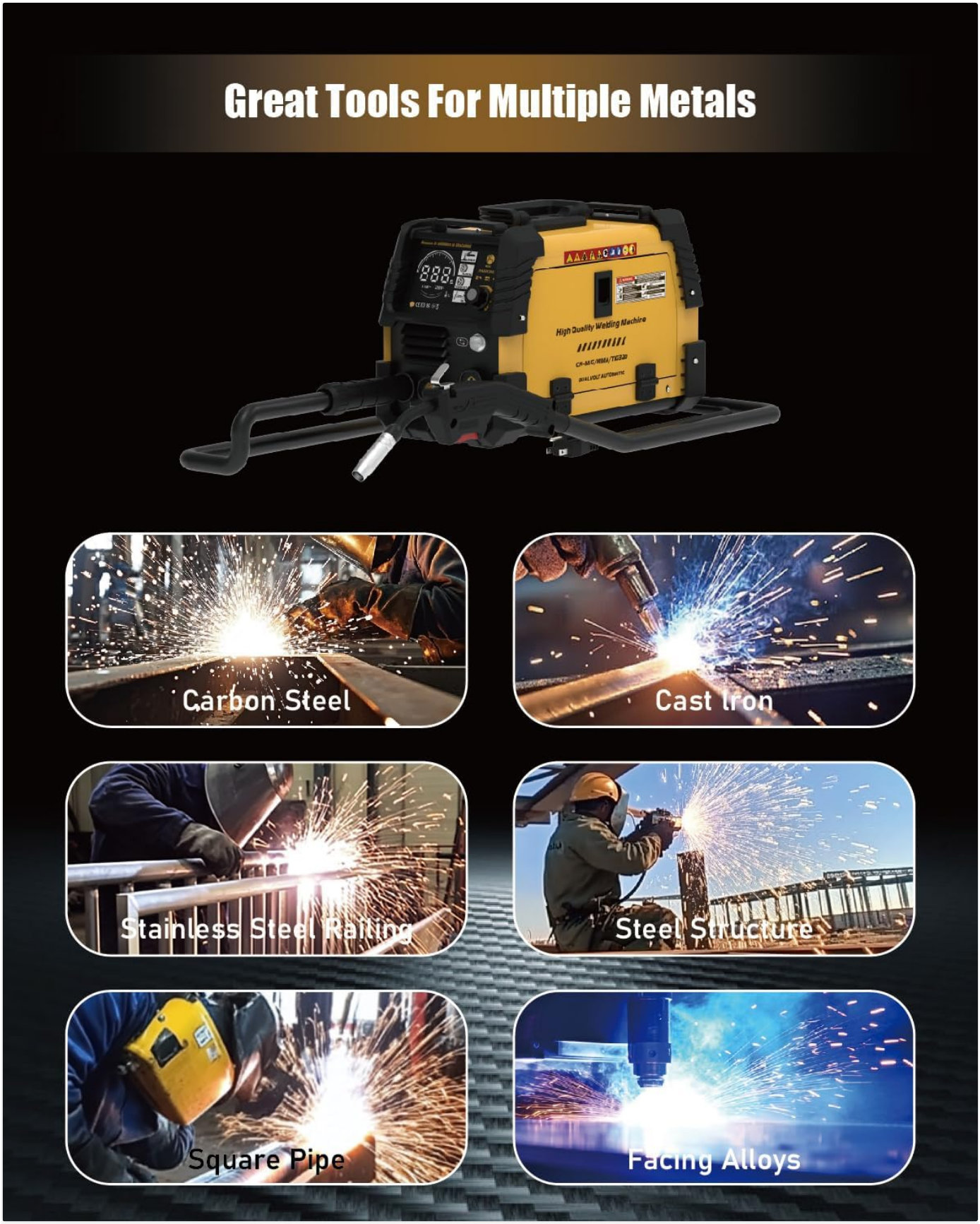

Image 5.2: The welder is suitable for various metals and applications.

6. Maintenance

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

- **Cleaning:** Periodically clean the internal components using compressed air to remove dust and metal particles. Ensure the machine is unplugged before cleaning.

- **Cable Inspection:** Inspect all welding cables, torch leads, and ground clamps for damage, fraying, or loose connections. Replace damaged components immediately.
- **Contact Tips and Nozzles:** For MIG welding, regularly check and replace worn contact tips and clean spatter from nozzles.
- **Electrode Holder/TIG Torch:** Ensure the electrode holder jaws are clean and grip electrodes securely. For TIG, inspect the tungsten electrode and collet.
- **Ventilation:** Keep ventilation openings (14) clear of obstructions to ensure proper cooling.

Image 6.1: The welder undergoes rigorous testing for quality and durability.

7. Troubleshooting

Refer to this section for common issues and their potential solutions. If problems persist, contact customer support.

Problem	Possible Cause	Solution
Welder does not power on.	No power supply; Power switch off; Internal fuse blown.	Check power connection and outlet; Turn on power switch (13); Contact service for fuse replacement.
No arc.	Poor ground connection; Incorrect welding mode; Insufficient current setting; Damaged cables.	Ensure ground clamp is secure and on clean metal; Select correct mode; Increase current; Inspect and replace cables.
Wire feeding issues (MIG/Flux-Cored).	Wire spool tangled; Drive roller tension incorrect; Worn contact tip; Liner clogged.	Untangle wire; Adjust drive roller tension; Replace contact tip; Clean or replace torch liner.
Overheat protection activated.	Exceeded duty cycle; Poor ventilation.	Allow machine to cool down; Ensure ventilation openings (14) are clear.

8. Specifications

Detailed technical specifications for the PAKROMAN 120A Multi-Process Welder.

Image 8.1: Technical specifications for the PAKROMAN Multi-Process Welder.

Feature	Detail
Model	3 in 1 (MIG/MMA/TIG-320)
Technology	Inverter IGBT
Input Voltage	110V / 220V (Dual Voltage)

Feature	Detail
Output Current Range	35A-320A (depending on voltage and mode)
Item Weight	18.26 pounds
Package Dimensions	16.74 x 14 x 8.15 inches
Material	Steel
Power Source	Electric
Protection Class	IP21S
Insulation Class	F

9. Warranty and Support

For warranty information, technical support, or service inquiries, please contact PAKROMAN customer service. Refer to your purchase documentation for specific warranty terms and contact details.
Manufacturer: PAKROMAN