Biltek Child_BIL50N

Biltek Plasma Cutter 50A Dual Voltage 110V/220V Instruction Manual

Model: Child_BIL50N
Brand: Biltek

1. Introduction

This manual provides essential information for the safe and efficient operation, setup, and maintenance of your Biltek Plasma Cutter 50A Dual Voltage 110V/220V (Model: Child_BIL50N). Please read this manual thoroughly before using the equipment and keep it for future reference.

Figure 1: Biltek Plasma Cutter 50A Dual Voltage 110V/220V

The Biltek Plasma Cutter is a high-performance, portable metal cutting machine designed for various applications, from DIY projects to professional metal fabrication. It utilizes advanced IGBT technology and offers automatic dual voltage (110V/220V) functionality for versatile use.

Figure 2: Plasma Arcs can reach high temperatures, enabling fast and efficient cutting without preheating.

2. Product Features

- **Deep Cutting Capacity & Fast Speed:** Capable of cutting up to 1/2 inch (14mm) thick steel with speeds exceeding 100 inches per minute. Optimal clean cut is 8mm thick steel at 35A 110V 60 PSI, and maximum severance cut is 14mm thick steel at 50A 220V 70 PSI.
- **Versatile Metal Cutting:** Effectively cuts electrically conductive metals such as mild steel, stainless steel, carbon steel, expanded steel, aluminum, copper, brass, and other ferrous and non-ferrous materials.
- **Automatic Dual Voltage (110V/220V):** Automatically adjusts to the correct input power (50/60 Hz) when connected, eliminating the need for external conversion plugs. Equipped with a powerful 50AMP DC Inverter.
- **Safe and Easy Operation:** Uses non-hazardous compressed air for cutting, offering a safer alternative to oxy-fuel cutting processes. Designed for easy assembly, setup, and use, even for first-time users.
- **Multi-Purpose Functionality:** Beyond cutting, the plasma cutter can be used for beveling, gouging, marking, and even welding, making it a flexible tool for various metalworking projects.

Figure 3: Cutting thickness capabilities of the plasma cutter.

Figure 4: The plasma cutter is suitable for a wide range of electrically conductive metals.

3. What's Included

Your Biltek Plasma Cutter package includes the following components:

- Plasma Cutter Power Supply Unit
- Cutting Torch with Cable
- Ground Clamp with Cable
- 30A 250V NEMA L6-30P Plug (for 220V connection)
- User Manual
- Air Hose
- Hose Clamps
- Air Connectors
- Air Filter/Regulator
- Ceramic Cup

- Nozzle Tips
- Electrodes
- Ceramic Ring

Figure 5: Visual representation of the components included in the package.

4. Setup

Proper setup is crucial for safe and effective operation. Follow these steps to prepare your plasma cutter for use:

1. **Power Connection:** Ensure the plasma cutter is connected to an appropriate power source (110V or 220V). The machine automatically detects the voltage.
2. **Air Compressor Connection:** Connect an external air compressor to the air inlet on the plasma cutter. Install the air filter/regulator to ensure clean, dry air supply.
3. **Torch Connection:** Securely connect the cutting torch cable to the designated port on the front panel of the plasma cutter.
4. **Ground Clamp Connection:** Attach the ground clamp cable to the appropriate terminal on the plasma cutter

and securely clamp it to the workpiece or a clean, bare metal part of the work table.

5. **Consumables Check:** Verify that the nozzle tip, electrode, and ceramic cup are correctly installed in the torch head.

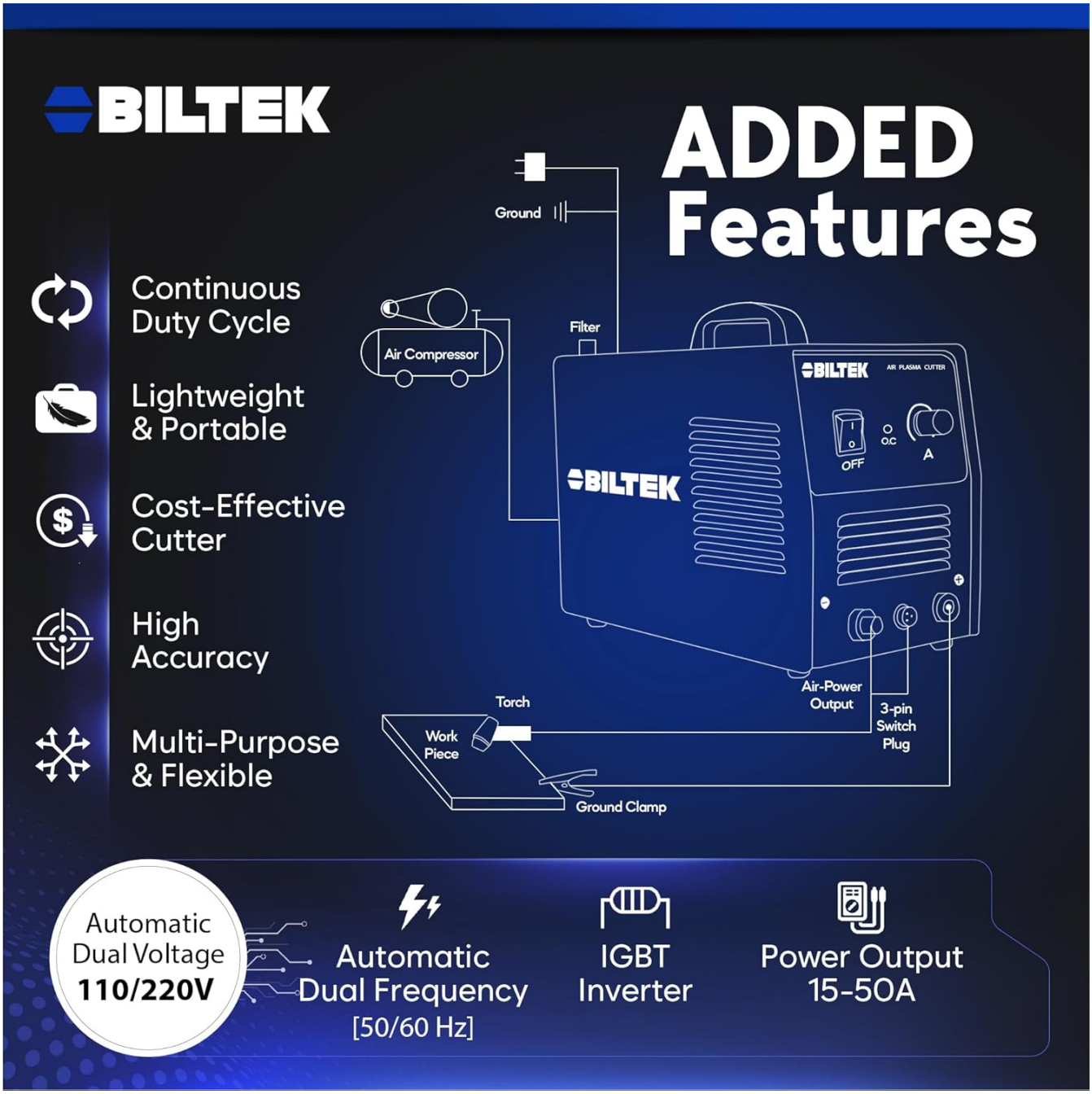

Figure 6: Overview of connections and features on the plasma cutter.

Setup Demonstration Video

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Video 1: A demonstration of how to set up a similar plasma cutter model (Reboot RBC6000DL).

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Video 2: A video demonstrating the setup and basic operation of a plasma cutter (CUT55X model).

5. Operating Instructions

Always wear appropriate personal protective equipment (PPE), including welding helmet, gloves, and protective clothing, when operating the plasma cutter.

Cutting Techniques:

- **Straight Edge Cutting:** Hold the torch at a 90-degree angle to the material and drag it along the desired cut line.
- **Piercing:** For piercing, hold the torch tip in contact with the material at a 45-degree angle. Once the arc is established, move the torch to a 90-degree position. Ensure sparks and molten material are directed away from the operator.

Figure 7: Illustrated guide for proper cutting and piercing techniques.

Operation Demonstration Videos

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Video 3: Demonstration of a plasma cutter cutting aluminum sheet.

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Video 4: Demonstration of a plasma cutter cutting 20mm thick metal.

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Video 5: Further demonstration of cutting thick metals with a plasma cutter.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your plasma cutter.

Consumables Replacement:

Periodically inspect and replace worn-out consumables such as nozzle tips, electrodes, and ceramic cups. Worn consumables can lead to poor cut quality and damage to the torch.

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Video 6: Guide on replacing PT31 cutting torch consumables.

Air System Maintenance:

Regularly check and drain the water from the air filter/regulator. Ensure the air supply is clean and moisture-free to prevent damage to the torch and improve cut quality.

Figure 8: Importance of air filter and moisture-free air for optimal performance.

7. Troubleshooting

If you encounter issues with your plasma cutter, refer to the following common troubleshooting tips:

- **No Arc:** Check power connections, ensure the ground clamp is securely attached to bare metal, verify air pressure, and inspect torch consumables for wear.
- **Poor Cut Quality:** This can be caused by incorrect air pressure, worn consumables, improper torch height, or incorrect cutting speed. Adjust settings and replace consumables as needed.
- **Overheat Indicator:** If the overheat indicator lights up, allow the machine to cool down. Ensure proper ventilation and that the cooling fan is operating correctly.
- **Air Flow Issues:** Check the air compressor for sufficient pressure and flow. Inspect the air hose for kinks or leaks, and ensure the air filter is not clogged.

8. Specifications

Feature	Detail
Brand	Biltek
Model	Child_BIL50N
Cutting Capacity (Optimal)	8mm Thick Steel (at 35A 110V 60 PSI)
Cutting Capacity (Max Severance)	14mm Thick Steel (at 50A 220V 70 PSI)
Input Voltage	110V/220V (Automatic Dual Voltage)
Frequency	50/60 Hz
Technology	IGBT Inverter
Manufacturer	KapscoMoto
Country of Origin	China

9. Warranty and Support

For warranty information, technical support, or to purchase replacement parts, please contact Biltek customer service or refer to the warranty card included with your product. Keep your purchase receipt as proof of purchase.