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› PrimeWeld CUT50DP 50A Air Inverter Plasma Cutter Instruction Manual

## PRIMEWELD CUT50DP

# PrimeWeld CUT50DP 50A Air Inverter Plasma Cutter Instruction Manual

Model: CUT50DP

## IMPORTANT SAFETY INFORMATION

Please read and understand all safety warnings and operating instructions before using the PrimeWeld CUT50DP plasma cutter. Failure to follow these instructions may result in serious injury or death.

- **Electrical Safety:** Ensure the unit is properly grounded. Do not operate in wet conditions. Always disconnect power before performing maintenance or changing consumables.
- **Eye and Skin Protection:** Always wear appropriate welding helmet with proper shade, safety glasses, gloves, and protective clothing to shield against arc rays, sparks, and hot metal.
- **Fume Hazards:** Ensure adequate ventilation to avoid inhaling fumes and gases produced during cutting. Use a respirator if necessary.
- **Fire and Explosion:** Keep flammable materials away from the cutting area. Sparks and hot metal can cause fires.
- **Compressed Air:** Use clean, dry compressed air at the specified pressure. Ensure air lines are secure.
- **Children and Bystanders:** Keep children and unauthorized personnel away from the operating area.

## PRODUCT OVERVIEW

The PrimeWeld CUT50DP is a portable 50A Air Inverter Plasma Cutter designed for efficient metal cutting. It features a non-touch pilot arc for easy starting and dual-voltage (110V/220V) and dual-frequency (50Hz/60Hz) capabilities for versatile use.



Image: Front view of the PrimeWeld CUT50DP plasma cutter, showing the control panel and output terminals.

## Key Features

- **Plasma Cutting Equipment:** Utilizes non-hazardous compressed air to cut various metals including stainless steel, carbon steel, copper, and aluminum.
- **Cutting Capacity:** Capable of a 1/2" clean cut and a 3/4" severance cut.
- **Pilot Arc:** Integrated non-touch pilot arc function allows efficient cutting through rough, painted, and rusty metal with reduced slag.
- **Dual Voltage/Frequency:** Operates on 220V 50/60Hz or 110V 50Hz/60Hz power sources.
- **Air Pressure:** Requires an operating air pressure of 75 PSI at 5 CFM.
- **Cooling System:** Features a PAPST Advanced German cooling system for optimal performance.
- **Transistor Technology:** Equipped with a MOSFET transistor for reliable operation.
- **Portability:** Compact design with a built-in handle for easy transport.

## UNPACKING AND INCLUDED COMPONENTS

Carefully unpack the plasma cutter and all accessories. Inspect for any shipping damage. Retain the packaging for future transport or storage.



Image: The PrimeWeld CUT50DP plasma cutter displayed with its complete set of accessories, including the torch, ground clamp, air regulator, and consumables.

### Included Components:

- PrimeWeld CUT50DP Plasma Cutter Unit
- Plasma Torch
- Ground Clamp with Cable
- Air Regulator
- Air Hose
- Air Hose Connections
- Power Adapter (for 110V operation)
- Consumables (e.g., electrodes, nozzles, ceramic cups)

## SETUP

### 1. Power Connection

The CUT50DP supports dual voltage operation. Connect the appropriate power cord to a suitable electrical outlet. For 110V operation, use the provided adapter. Ensure the power source matches the unit's requirements (110V/220V, 50Hz/60Hz).

### 2. Air Connection

Attach the air regulator to the plasma cutter's air inlet. Connect the air hose from your compressed air source to the air regulator. Ensure the air pressure is set to 75 PSI at 5 CFM for optimal performance. The air supply must be clean and dry to prevent damage to the unit and ensure consistent cutting quality.



Image: Rear view of the plasma cutter showing the air regulator assembly and the power input connection.

### 3. Torch and Ground Clamp Connection

- Connect the plasma torch cable to the designated output terminal on the front panel of the plasma cutter.
- Connect the ground clamp cable to the ground terminal on the front panel.
- Securely attach the ground clamp to the workpiece, ensuring good electrical contact. The ground clamp must be attached directly to the metal being cut, not to painted or insulated surfaces.

## OPERATING INSTRUCTIONS

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### 1. Basic Operation

The CUT50DP features a high-frequency, non-touch pilot arc starting system. This allows for easy arc initiation without needing to touch the torch to the workpiece, which is beneficial for cutting painted or rusty materials.

- Ensure all connections (power, air, torch, ground) are secure.
- Turn on the plasma cutter.
- Adjust the amperage setting on the control panel according to the material thickness and type.
- Position the torch nozzle approximately 1/8 inch to 1/4 inch above the workpiece.
- Press the trigger on the torch to initiate the pilot arc and begin cutting.
- Maintain a steady travel speed and torch height for a clean cut.



## Easy To Use

Using the CUT50DP plasma cutter couldn't be easier. PrimeWeld incorporates a high-frequency, no-touch arc starting system for the 50 amp plasma cutter. Hold the torch just above the surface and pull the trigger.

Image: A plasma torch actively cutting through a metal sheet, producing sparks and molten metal.

## 2. Cutting Guidelines

The cutting capacity varies based on material and power input:

- **Clean Cut:** Up to 1/2 inch (12.7 mm) for most metals.
- **Severance Cut:** Up to 3/4 inch (19 mm) for most metals.

Adjust amperage and travel speed based on the material type and thickness. Thicker materials generally require higher amperage and slower travel speeds.

## 3. Controls and Display

The front panel features a digital display and control knobs for adjusting cutting parameters.

## Light & Powerful

This light-weight machine provides heavy-duty cutting right out of the box. This 50-amp plasma cutter can go through 1/2-inch thick steel in a single pass when running on 240 volts.

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TIG - MIG - STICK - PLASMA CUTTERS - MULTI PROCESS WELDERS



Image: Close-up view of the CUT50DP's control panel, showing the digital display for amperage and voltage, along with adjustment knobs.

- **Digital Display:** Shows current amperage and voltage settings.
- **Amperage Adjustment Knob:** Used to set the cutting current.
- **Mode Selection:** Allows selection of 2T (two-touch) or 4T (four-touch) trigger modes for torch operation.

## MAINTENANCE

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

- **Consumables:** Regularly inspect the torch consumables (electrode, nozzle, swirl ring, shield cup). Replace them when they show signs of wear or damage to maintain cut quality.
- **Air Filter:** Check and clean or replace the air filter element in the air regulator periodically to ensure a clean and dry air supply. Moisture and contaminants in the air can negatively affect cutting performance and damage internal components.
- **General Cleaning:** Keep the unit clean and free from dust and metal particles. Use

compressed air to blow out internal components if necessary, ensuring the unit is unplugged.

- **Cables and Connections:** Inspect all cables and connections for wear, cuts, or loose fittings. Repair or replace damaged components immediately.

## TROUBLESHOOTING

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This section provides solutions to common issues you might encounter.

Problem	Possible Cause	Solution
No arc initiation	No power, poor ground connection, worn consumables, insufficient air pressure.	Check power supply, ensure ground clamp is secure, replace torch consumables, verify air pressure.
Poor cut quality (rough, dross)	Incorrect amperage, worn consumables, incorrect torch height/speed, contaminated air.	Adjust amperage, replace consumables, optimize torch height/speed, check air filter.
Unit overheats	Exceeding duty cycle, blocked ventilation.	Allow unit to cool down, ensure proper airflow around the machine.
Air flow but no arc	Faulty torch switch, internal fault.	Check torch trigger, contact customer support if issue persists.

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

## SPECIFICATIONS

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Feature	Specification
Model Number	CUT50DP
Input Voltage	110V/220V (Automatic Dual-Voltage)
Input Frequency	50Hz/60Hz (Dual-Frequency)
Output Current	50 Amps
Clean Cut Thickness	1/2 inch (12.7 mm)
Severance Cut Thickness	3/4 inch (19 mm)
Operating Air Pressure	75 PSI at 5 CFM
Cooling System	PAPST Advanced German Cooling
Transistor Type	MOSFET
Package Dimensions	18 x 14 x 11 inches
Item Weight	25 Pounds

## WARRANTY AND SUPPORT

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### Warranty Information

The PrimeWeld CUT50DP plasma cutter is backed by a **3-year warranty**. This warranty covers defects in materials and workmanship under normal use. Please refer to the warranty card included with your product for full terms and conditions.

### Customer Support

PrimeWeld is committed to providing excellent after-sales service. Our USA-based technical specialists and representatives are available 7 days a week to assist you with any questions or issues.

For technical support, parts, or customer service, please contact PrimeWeld directly. Contact information can be found on the PrimeWeld website or in the owner's manual.