

HITBOX Plasma Cutter Welder Combo/CT520

HITBOX CT-520 Plasma Cutter Welder Combo User Manual

Model: CT-520 | Brand: HITBOX

1. SAFETY INFORMATION

Always prioritize safety when operating welding and cutting equipment. Failure to follow safety precautions can result in serious injury or death.

- **Personal Protective Equipment (PPE):** Always wear appropriate welding helmet with proper shade, flame-resistant clothing, welding gloves, and safety shoes.
- **Ventilation:** Ensure adequate ventilation to remove welding fumes and gases. Work in a well-ventilated area or use local exhaust ventilation.
- **Electrical Safety:** Ensure the machine is properly grounded. Do not operate in wet conditions. Inspect cables and connections for damage before each use.
- **Fire Prevention:** Keep flammable materials away from the work area. Have a fire extinguisher readily available.
- **Arc Rays:** Arc rays can cause eye and skin burns. Protect yourself and bystanders from direct exposure.

Refer to local safety regulations and standards for comprehensive safety guidelines.

2. PRODUCT OVERVIEW

The HITBOX CT-520 is a versatile 4-in-1 Plasma Cutter Welder Combo machine, integrating ARC (MMA), Pulse TIG, DC TIG, and 50Amp Plasma Cutting functions. It features advanced Air Sensor Technology and a comprehensive LED digital display for enhanced control and safety.



Figure 2.1: HITBOX CT-520 Plasma Cutter Welder Combo and included accessories.

Key Features:

- **4-in-1 Functionality:** ARC (MMA), Pulse TIG, DC TIG, and Plasma Cutting.
- **Air Sensor Technology:** Visualizes gas pressure on the screen, allowing for real-time adjustments and error reporting for safety.
- **LED Digital Display:** Centralized display for air pressure, voltage, and current, along with an error code system for easy troubleshooting.
- **HF Non-Touch Pilot Arc:** Provides cleaner cuts and improved cooling effect for plasma cutting.
- **Dual Voltage Input:** Supports 110V/220V operation with automatic detection.

MULTIFUNCTIONAL PRODUCT

- 1 Air pressure display meter
- 2 2T/4T switching
- 3 Gas Test /Cutting
- 4 Current Adjustment
- 5 Current display
- 6 Mode switching



Figure 2.2: Detailed view of the CT-520 control panel and its various functions.

4 IN 1 MACHINE

with 2T/4T



MMA



CUT



TIG/PULSE TIG

Figure 2.3: The four primary functions of the CT-520: MMA, CUT, and TIG/PULSE TIG.

SAFETY AND STABILITY

PROTECTION YOU CAN DEPEND ON



VRD



Over Load
Protection



Overheating
Protection



IP21S
Protection



Figure 2.4: Built-in safety and stability features of the CT-520.

3. SETUP

Proper setup is essential for safe and effective operation. Follow these steps to connect your HITBOX CT-520.

ACCESSORIES SHOW



CUTTING TORCH



TIG TORCH



EARTH CLAMP



ELECTRODE HOLDER



RELIEF VALVE



FOOT SWITCH



GAS PIPE



OTHER ACCESSORIES



SPECIFICATION

Figure 3.1: Overview of included accessories.

3.1 Power Connection

Connect the power cable to a suitable 110V or 220V power outlet. Ensure the circuit breaker specifications meet the machine's requirements (40A for 110V, 30A for 220V).

3.2 Air Pressure Regulator Installation

Attach the relief valve (air pressure regulator) to the rear of the machine. Connect your air compressor hose to the regulator's inlet. Adjust the pressure as needed for cutting operations (e.g., 50PSI for 110V, 65PSI for 220V).

3.3 Electrode Holder (MMA) Connection

For MMA (Stick) welding, connect the electrode holder cable to the positive (+) terminal on the front panel.

3.4 Ground Clamp Connection

Connect the ground clamp cable to the negative (-) terminal on the front panel. Securely attach the ground clamp to the workpiece or work table to ensure a good electrical connection.

3.5 TIG Torch Connection

For TIG welding, connect the TIG torch cable to the negative (-) terminal. Ensure the gas hose from the torch is connected to the gas outlet on the machine.

3.6 Plasma Cutting Torch Connection

For plasma cutting, connect the plasma cutting torch cable to the positive (+) terminal. Ensure the air hose from the torch is connected to the air outlet on the machine.

Video 3.1: A detailed guide on connecting the HITBOX CT-520 for various welding and cutting operations.

4. OPERATING MODES

The CT-520 offers multiple operating modes. Select the desired mode using the control panel buttons and adjust parameters with the central knob.

4.1 Mode Selection

Use the mode selection buttons on the left side of the display to switch between TIG, TIG-PULSE, MMA, and CUT functions.

4.2 Parameter Adjustment

The central knob allows adjustment of various parameters depending on the selected mode, such as welding current (Amps), pulse frequency, and other specific settings. The LED display will show the current parameter value.

4.3 MMA (Stick) Welding

Select 'MMA' mode. Adjust the welding current based on the electrode type and material thickness. Ensure proper electrode selection and technique for optimal results.



Figure 4.1: Visual comparison of ARC and TIG welding.

4.4 TIG Welding (DC & Pulse)

Select 'TIG' or 'TIG-PULSE' mode. Adjust current, pulse frequency (for Pulse TIG), and other parameters. Use appropriate shielding gas (e.g., Argon) for TIG welding. The foot pedal can be used for remote current control if connected.



Figure 4.2: Visual comparison of Pulse TIG welding and Plasma Cutting.

4.5 Plasma Cutting

Select 'CUT' mode. Ensure the air compressor is connected and the air pressure is set correctly (e.g., 50PSI for 110V, 65PSI for 220V). The HF Non-Touch Pilot Arc allows for efficient and clean cuts without direct contact with the workpiece.

NON-TOUCH PILOT CUT

With collaborative control, cooling cutting effect is better



Figure 4.3: Non-Touch Pilot Arc in action for plasma cutting.

Cutting Thickness Guidelines:

- **110V:** Recommended clean cut up to 12mm (approx. 1/2 inch) at 35A and 50PSI.
- **220V:** Recommended clean cut up to 16mm (approx. 5/8 inch) at 50A and 65PSI.

CUTTING THICKNESS

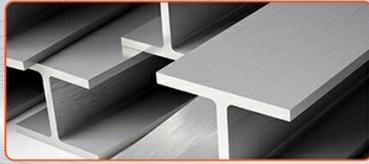


Figure 4.4: Cutting thickness capabilities of the CT-520.

The machine is suitable for cutting various metals including stainless steel, alloy steel, mild steel, copper, and aluminum.

WIDE RANGE OF METALS

WELDING MACHINE IS APPLICABLE TO METALS OF VARIOUS MATERIALS AND FORMS



CAST IRON



MILD STEEL



STAINLESS STEEL



SHEET METAL



SQUARE PIPE



METAL CAGE

Figure 4.5: Wide range of metals compatible with the CT-520.

5. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your CT-520 machine.

- **Cleaning:** Periodically clean the machine's exterior and cooling fan vents to prevent dust and debris buildup. Use compressed air to clear internal components if necessary, ensuring the machine is unplugged.
- **Consumables:** Regularly inspect and replace worn-out consumables for the TIG torch (collets, collet bodies, nozzles, tungsten electrodes) and plasma cutting torch (electrodes, nozzles, swirl rings, shield cups).
- **Cable Inspection:** Check all cables and connections for signs of wear, cuts, or damage. Replace damaged cables immediately.
- **Air Filter:** The air pressure regulator typically includes a filter. Check and drain any accumulated moisture from the filter bowl regularly.

6. TROUBLESHOOTING

The CT-520 features an error code system on its LED display to help identify issues. If an error code appears, consult the specific error code table in the full manual (not provided here) or contact customer support.

Common Issues and Solutions:

- **No Power:** Check power cable connection, power switch, and circuit breaker.
- **No Arc/Cut:** Ensure proper ground connection, correct mode selection, and sufficient air pressure (for plasma cutting). Check torch consumables for wear.
- **Poor Weld/Cut Quality:** Adjust current settings, check gas flow (for TIG), inspect consumables, and ensure proper technique.
- **Overheat Warning:** The machine may display a warning if it overheats. Allow it to cool down. Ensure cooling fan is unobstructed.

7. SPECIFICATIONS

Specification	Value
Model Number	Plasma Cutter Welder Combo/CT520
Manufacturer	HITBOX
Item Weight	38.4 pounds
Package Dimensions	19 x 16 x 15 inches
Country of Origin	China
Power Source	AC
Included Components	Plasma Cutter Welder Combo/CT520
Batteries Required?	No
ASIN	B0DP767FP6
Date First Available	November 26, 2024



Figure 7.1: Rear panel with cooling fan and detailed specifications.

8. WARRANTY AND SUPPORT

HITBOX provides a five-year warranty for the CT-520 Plasma Cutter Welder Combo. For technical support, warranty claims, or any inquiries, please contact HITBOX customer service through their official channels or the retailer where the product was purchased.

For more information and detailed support, please visit the official HITBOX website or refer to the contact information provided with your product packaging.

