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› [HITBOX CT520 Plasma Cutter 50A + Pulse TIG Welder 200A + Electrode Stick ARC Welder 200A High Frequency Non-Touch Pilot Arc Digital Plasma Cutter with Foot Pedal,110/220V \(CT520-US\) - Instruction Manual](#)

HITBOX CT520-US

HITBOX CT520 Multi-Process Welder Instruction Manual

Model: CT520-US (FHB-CT520CA)

1. INTRODUCTION

Thank you for choosing the HITBOX CT520 Multi-Process Welder. This machine is a versatile 3-in-1 unit, combining Plasma Cutting (CUT), Pulse Tungsten Inert Gas (TIG) welding, and Electrode Stick Arc (MMA) welding functionalities. Designed for both professional and hobbyist use, it offers high-frequency non-touch pilot arc plasma cutting, precise pulse TIG welding, and robust ARC welding capabilities. This manual provides essential information for the safe and effective operation, maintenance, and troubleshooting of your CT520 unit.

2. SAFETY PRECAUTIONS

Operating welding and cutting equipment can be hazardous if proper safety measures are not followed. Always prioritize your safety and the safety of others. Read and understand all safety warnings before operating the machine.

- **Electric Shock:** Welding and cutting circuits are electrically live. Do not touch live electrical parts. Wear dry, insulating gloves and clothing. Ensure your work area is dry and free of standing water.
- **Fumes and Gases:** Welding and cutting produce 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 and Sparks:** Arc rays can burn eyes and skin. Wear a welding helmet with appropriate shade filter, safety glasses, and protective clothing. Sparks and hot metal can cause fires. Keep flammable materials away from the work area.
- **Fire and Explosion:** Hot metal and sparks can cause fires. Have a fire extinguisher readily available. Do not weld or cut near flammable materials, containers, or pipes that have held flammable substances.
- **Compressed Gas Cylinders:** Handle gas cylinders with care. Secure them properly to prevent falling. Use only the correct gas for the application.
- **Moving Parts:** Keep hands, hair, and loose clothing away from moving parts such as cooling fans.

3. PRODUCT OVERVIEW

3.1. Main Unit and Components

The HITBOX CT520 is a compact and portable unit designed for various welding and cutting tasks.



Figure 3.1: Front view of the HITBOX CT520 Multi-Process Welder with included foot pedal.

3.2. Control Panel

The front panel features a digital display and various controls for selecting modes and adjusting parameters.



Figure 3.2: Detailed view of the CT520 control panel, showing the digital display, mode selection buttons, and adjustment knobs.

- **Digital Display:** Shows current settings and error codes.
- **Mode Selection Buttons:** For switching between CUT, TIG, Pulse TIG, and MMA (ARC) modes.
- **Voltage Selector (110V/220V):** For input power selection.
- **Parameter Adjustment Knob:** Used to set current, pre-flow, post-flow, pulse frequency, etc.
- **Pressure Gauge:** Indicates gas pressure for TIG and Plasma cutting.

4. SETUP

4.1. Unpacking and Initial Inspection

Carefully unpack the CT520 unit and all accessories. Inspect for any shipping damage. If damage is found, contact your supplier immediately.

●What You Get



2.8m\9.1ft



110V-220V PLUG

0.35m\1.1ft



WP-26

4m\13.1ft



SG-55

4m\13.1ft



**300A
Welding Holder**

2.1m\6.8ft



**200A
Ground Clamp**

2m\6.5ft

Figure 4.1: Standard accessories included with the HITBOX CT520, such as torches, ground clamp, welding holder, and power cable.

4.2. Power Connection

The CT520 supports both 110V and 220V input power. Ensure the voltage selector on the front panel matches your power supply. Use the appropriate power plug and ensure the power source is capable of supplying the required amperage.

4.3. Gas Connection

For TIG welding and Plasma cutting, an external gas supply is required. Connect the gas hose from your argon (for TIG) or compressed air (for Plasma) cylinder to the gas inlet on the rear of the machine. Ensure all connections are secure and leak-free.



Figure 4.2: Rear view of the CT520, highlighting the gas inlet connection and main power switch.

4.4. Accessory Connections

Connect the appropriate torch, ground clamp, and welding holder based on the desired operation mode.

3in1

MULTIFUNCTIONAL WELDER



Figure 4.3: Connection methods for TIG, ARC, and CUT modes, illustrating how to connect the respective torches, ground clamp, and welding holder.

- **Ground Clamp:** Always connect the ground clamp securely to the workpiece or work table.
- **TIG Torch:** Connect the TIG torch to the designated port. Ensure the gas line is also connected.
- **Plasma Torch:** Connect the plasma torch to its designated port. Ensure the air line is connected.
- **ARC Welding Holder:** Connect the electrode holder to the positive (+) terminal for most electrodes.
- **Foot Pedal:** Connect the foot pedal to its dedicated port for remote current control in TIG mode.

5. OPERATING MODES

The CT520 offers three primary operating modes: Plasma Cutting (CUT), Pulse TIG Welding, and Electrode Stick ARC Welding (MMA).



Figure 5.1: Overview of the CT520's capabilities, including 200A TIG, 50A CUT, and 180A ARC.

5.1. Plasma Cutting (CUT) Mode

This mode is used for cutting various conductive metals using a high-temperature plasma arc. The CT520 features a 50A plasma cutter with high-frequency non-touch pilot arc for easy starting.



Figure 5.2: Examples of cutting capabilities, showing clean cuts on various thicknesses up to 16mm.

1. Connect the plasma torch and ground clamp.
2. Connect the air compressor to the machine's gas inlet.
3. Select 'CUT' mode on the control panel.
4. Adjust the cutting current (amperage) based on material thickness.
5. Ensure proper air pressure is set.
6. Position the torch nozzle close to the workpiece and initiate the arc.

5.2. Pulse TIG Welding Mode

TIG welding provides precise, high-quality welds, especially on thinner gauge materials and stainless steel. The pulse function offers enhanced control over heat input.

1. Connect the TIG torch, ground clamp, and argon gas cylinder.
2. Select 'TIG' or 'PULSE TIG' mode.
3. Adjust welding current, pre-flow, post-flow, and pulse parameters (if in Pulse TIG mode).
4. Ensure the tungsten electrode is properly ground and extended.

5. Initiate the arc using the torch trigger or foot pedal.

5.3. Electrode Stick ARC Welding (MMA) Mode

MMA welding is suitable for a wide range of materials and thicknesses, offering ease of use and portability.

1. Connect the electrode holder and ground clamp.
2. Select 'MMA' mode.
3. Insert the appropriate electrode into the holder.
4. Adjust the welding current based on the electrode type and material thickness.
5. Strike the arc by lightly tapping or scratching the electrode on the workpiece.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your CT520 unit. Always disconnect power before performing any maintenance.

- **Cleaning:** Periodically clean the internal components using dry, compressed air to remove dust and metal particles. Clean the exterior with a soft, dry cloth.
- **Torch Maintenance:** Inspect TIG and Plasma torches regularly for wear on consumables (nozzles, electrodes, collets, diffusers). Replace worn parts as needed.
- **Cable Inspection:** Check all cables (power, ground, torch) for cuts, cracks, or loose connections. Repair or replace damaged cables immediately.
- **Air Filter:** If applicable, clean or replace the air filter on the plasma cutter's air regulator to ensure clean air supply.
- **Fan Vents:** Ensure cooling fan vents are clear of obstructions to allow proper airflow.

7. TROUBLESHOOTING

This section provides solutions to common issues you might encounter. For problems not listed here, contact technical support.

Problem	Possible Cause	Solution
Machine does not power on	No power supply; Power switch off; Circuit breaker tripped	Check power outlet; Turn on power switch; Reset circuit breaker
No arc in TIG/MMA mode	Loose ground clamp; Incorrect current setting; Worn electrode; Incorrect polarity	Secure ground clamp; Adjust current; Replace electrode; Check polarity
Poor cut quality (Plasma)	Low air pressure; Worn plasma consumables; Incorrect cutting speed/current	Adjust air pressure; Replace nozzle/electrode; Adjust cutting parameters
Gas flow issues (TIG/Plasma)	Gas cylinder empty; Regulator closed; Gas hose kinked/leaking	Check cylinder level; Open regulator; Inspect hose for damage

Problem	Possible Cause	Solution
Overheat protection activated	Exceeded duty cycle; Blocked cooling vents	Allow machine to cool down; Clear vents; Reduce duty cycle

8. SPECIFICATIONS

Technical specifications for the HITBOX CT520 Multi-Process Welder.

HITBOX SPECIFICATION

CUT 520		EN:60974-1:2005	
		U ₁ =110/230V,50/60 Hz	
		X	60%
		I ₂	50A
		U ₂	100V
		X	100%
		I ₂	180A
		U ₂	27.2V
20A/20,8V-180A/27,2V			
		X	60%
		I ₂	180A
		U ₂	27.2V
		X	100%
		I ₂	200A
		U ₂	18V
10A/10,4V-200A/18V			
		X	100%
		I ₂	25A
		U ₂	84V
20A/20,8V-120A/24,8V			
		X	60%
		I ₂	120A
		U ₂	24.8V
		X	100%
		I ₂	120A
		U ₂	14.8V
10A/10,4V-120A/14,8V			
Masa 9.5kg	IP21S		I _{2max} =28A
www.unitweld.com			I _{1eff} =19,53A

Figure 8.1: Manufacturer's detailed technical specification table for the CT520.

Specification	Value
Manufacturer	HITBOX

Specification	Value
Part Number	FHB-CT520CA
Parcel Dimensions	50.16 x 39.37 x 37.59 cm
Pattern	CT520-US
Power Source	DC
Item Weight	18.1 kg
First Available Date	May 17 2022

9. WARRANTY AND SUPPORT

For information regarding warranty coverage, technical support, or spare parts, please refer to the warranty card included with your product or contact HITBOX customer service directly. Keep your purchase receipt as proof of purchase. You can typically find contact information on the manufacturer's official website or through the retailer where the product was purchased.

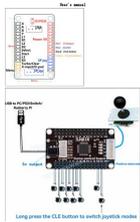
Related Documents - CT520-US

	<p>YESWELDER CT520 4-in-1 Welder & Cutter Operator's Manual</p> <p>This operator's manual provides comprehensive safety, specification, installation, operation, maintenance, and troubleshooting information for the YESWELDER CT520 4-in-1 Welder & Cutter, supporting Stick, HF TIG, Pulse TIG, and Plasma Cutting functions.</p>
	<p>HZXVOGEN MIG185II Operation Instruction Manual - Welding Machine Guide</p> <p>Comprehensive operation instruction manual for the HZXVOGEN MIG185II welding machine. Learn about features, applications, parameters, troubleshooting, and safety for this IGBT inverter welder.</p>
	<p>GE Optima CT520 CT Scanner Installation and Site Readiness Guide</p> <p>This document provides essential information for the installation and site preparation of the GE Optima CT520 CT scanner, including equipment layout, structural notes, electrical requirements, and environmental specifications.</p>
	<p>GE Healthcare Optima CT520 Final Study: Site Preparation and Installation Guide</p> <p>This document provides a final study for the GE Healthcare Optima CT520 CT scanner, detailing site requirements, equipment layout, radiation protection, environmental conditions, electrical specifications, and installation guidelines. It serves as a comprehensive resource for planning and preparing a site for the Optima CT520.</p>



[Panasonic SL-CT520 SL-CT521C Portable CD Player Operating Instructions](#)

Operating instructions for the Panasonic SL-CT520 and SL-CT521C Portable CD Players. Includes troubleshooting guide, safety instructions, warranty information, specifications, and connection diagrams.



[XINWA XINWANG CY-2202 Arcade USB Encoder User Manual](#)

User manual for the XINWA XINWANG CY-2202 Zero Delay Arcade USB Encoder, detailing its features, SOCD cleaning modes, and setup for PC, PS3, Switch, and Raspberry Pi, including Nintendo Switch connectivity.