

- Manuals.plus /
- › PUWU /
- › PUWU CT-416G 6-in-1 Multi-Process Welder and Plasma Cutter User Manual

PUWU CT-416G

PUWU CT-416G 6-in-1 Multi-Process Welder and Plasma Cutter
User Manual

Model: CT-416G

1. INTRODUCTION

The PUWU CT-416G is a versatile 6-in-1 multi-process welding and plasma cutting machine designed for various metalworking applications. This unit integrates Stick Welding, Spot Welding, High-Frequency (HF) TIG, Pulse TIG, Lift TIG, and Plasma Cutting functionalities. It features dual voltage compatibility (110V/220V) and a large digital display for precise parameter control. This manual provides essential information for the safe and effective operation of your CT-416G unit.

5 IN 1

MULTI-PROCESS
SYNERGIC WELDER



Overview of the PUWU CT-416G's 5-in-1 welding and cutting capabilities, including Stick Welding, Spot Welding, HF TIG, Pulse TIG, and Plasma Cutting.

2. SAFETY INFORMATION

Always prioritize safety when operating welding and plasma cutting equipment. Failure to follow safety guidelines can result in serious injury or property damage. Read and understand all instructions before use.

General Safety Precautions:

- Wear appropriate personal protective equipment (PPE), including welding helmet, gloves, protective clothing, and safety shoes.
- Ensure adequate ventilation to avoid inhaling fumes.
- Keep a fire extinguisher nearby.
- Do not operate in damp or wet conditions.
- Ensure the workpiece is properly grounded.
- Keep children and unauthorized personnel away from the work area.

Integrated Safety Features:

The CT-416G is equipped with several safety features:

- **IP21 Rating:** Provides protection against solid objects over 12mm and vertically falling water drops.
- **Automatic Overheat Shutdown:** The unit will automatically shut down if internal temperatures exceed safe limits. Allow the machine to cool before resuming operation.
- **Overload Protection:** Protects the machine from excessive current draw.
- **Anti-Static Coating:** Helps prevent electrical shock transfer.



Visual representation of the safety features of the CT-416G, including digital screen display, overheating auto shutdown, overload auto shutdown, and electrostatic protection.

3. PACKAGE CONTENTS

Verify that all items listed below are included in your package:

- PUWU CT-416G Main Unit
- Electrode Holder with red 10-25 connector
- Ground Clamp with black 10-25 connector
- PT-31 Plasma Cutting Torch
- WP-17 TIG Torch
- Transparent Mesh Gas Hose (with extra 0.4m extension)
- Transparent Gas Hose
- Air Pressure Regulator
- 6 Hose Clamps
- U.S. Power Cord with Conversion Cable
- PUWU Instruction Manual



ACCESSORIES

- ① CT-416G
- ② GROUND CABLE PLIERS
- ③ WELDING HOLDER
- ④ TIG WELDING GUN
- ⑤ VOLTAGE CONVERTER PLUG
- ⑥ PT-31 PLASMA TORCH

Image showing the complete accessory kit included with the PUWU CT-416G, featuring the main unit, ground cable pliers, welding holder, TIG welding gun, PT-31 plasma torch, and voltage converter plug.

4. SETUP

Proper setup is crucial for safe and efficient operation.

4.1 Power Connection:

- The CT-416G supports dual voltage (110V/220V). Use the appropriate power cord and conversion cable for your power supply.
- Ensure the power outlet is properly grounded and can handle the required amperage (4.5 KW wattage).

4.2 Connecting Accessories:

1. **Ground Clamp:** Connect the ground clamp cable to the designated terminal on the front panel (usually marked with a negative symbol or ground icon). Securely attach the clamp to the workpiece or welding table.

2. **Electrode Holder (Stick Welding):** Connect the electrode holder cable to the positive terminal for DC Stick welding.
3. **TIG Torch (WP-17):** Connect the TIG torch power cable to the appropriate terminal (usually negative for DC TIG). Connect the gas hose from the TIG torch to the gas outlet on the machine, and then to your shielding gas cylinder via the air pressure regulator.
4. **Plasma Cutting Torch (PT-31):** Connect the plasma torch power cable and trigger cable to their respective ports. Connect the air hose from the plasma torch to the air outlet on the machine, and then to your air compressor via the air pressure regulator.

Your browser does not support the video tag.

Official video demonstrating the setup and basic operation of the PUWU CT-416G multi-process welder and plasma cutter, including connecting accessories and initiating welding.

5. OPERATING INSTRUCTIONS

The CT-416G offers multiple welding and cutting processes. Familiarize yourself with the control panel before operation.



Detailed introduction to the control panel of the CT-416G, labeling buttons and knobs for Pulse, Spot, DC, Cut, Stick, Lift TIG, TIG HF,

2T/4T, and Voltage Display.

5.1 Control Panel Overview:

The front panel features a large digital display and intuitive controls:

- **Digital Display:** Shows current, voltage, and selected mode.
- **Mode Selection Buttons:** For Pulse, Spot, DC, Cut, Stick, Lift TIG, TIG HF.
- **Adjustment Knob:** Used to set current (amperage) and other parameters.
- **2T/4T Switch:** Toggles between 2-stroke and 4-stroke trigger modes for TIG welding.
- **110V/220V Display:** Indicates the detected input voltage.



Close-up view of the CT-416G's large digital display, showing welding parameters and mode selections for precise control.

5.2 TIG Welding (HF TIG, Pulse TIG, Lift TIG):

- **Gas:** Use appropriate shielding gas (e.g., Argon) for TIG welding. Ensure gas flow is set correctly via the regulator.
- **Tungsten Electrode:** Select the correct type and size of tungsten electrode for your material and current.

- **Mode Selection:** Choose between HF TIG, Pulse TIG, or Lift TIG based on your application. HF TIG provides non-contact arc starting. Lift TIG requires touching the tungsten to the workpiece and lifting to start the arc. Pulse TIG offers better control over heat input.
- **Current Adjustment:** Use the adjustment knob to set the desired welding current.

5.3 Stick Welding:

- **Electrode:** Select the appropriate stick electrode for your material.
- **Mode Selection:** Select 'Stick' mode.
- **Current Adjustment:** Adjust the current based on the electrode type and thickness of the material.

5.4 Plasma Cutting:

- **Air Supply:** Ensure a clean, dry air supply is connected to the machine via the air pressure regulator. Set the air pressure according to the material thickness.
- **Mode Selection:** Select 'Cut' mode.
- **Current Adjustment:** Adjust the cutting current based on the material type and thickness.
- **Cutting Capacity:** The unit can achieve a clean cut of 5/16" (8mm) at 110V and 1/2" (12mm) at 220V. Maximum cut capacity is 1/2" (12mm) at 110V and 3/4" (20mm) at 220V.

INTEGRATED CUTTING FUNCTION

DEAL CLEAN CUT

5/16" (8MM) @ 110V, 1/2" (12MM) @ 220V

MAX CUT

1/2" (12MM) @ 110V, 3/4" (20MM) @ 220V



Diagram illustrating the integrated cutting function of the CT-416G, showing clean cut and max cut capacities for different voltages.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your CT-416G.

- **Cleaning:** Periodically clean the exterior of the machine with a dry cloth. Ensure cooling vents are free from dust and debris.
- **Torch Consumables:** Inspect TIG and Plasma torch consumables (nozzles, electrodes, collets, diffusers) regularly. Replace worn or damaged parts to maintain arc quality and cutting performance.
- **Air Filter (Plasma):** If applicable, check and clean or replace the air filter on the air pressure regulator to ensure a clean air supply for plasma cutting.
- **Cable Inspection:** Check all cables for cuts, cracks, or loose connections before each use.

7. TROUBLESHOOTING

This section addresses common issues you might encounter.

Problem	Possible Cause	Solution
No power to the machine	Power cord not connected, circuit breaker tripped, faulty outlet.	Check power cord connection, reset circuit breaker, test outlet.
No arc in welding/cutting	Poor ground connection, incorrect settings, worn consumables, gas/air supply issues.	Ensure good ground, verify settings, replace consumables, check gas/air flow.
Overheat indicator active	Exceeded duty cycle, blocked ventilation.	Allow machine to cool down, ensure clear airflow to vents.
Poor cut quality (Plasma)	Incorrect air pressure, worn consumables, wrong cutting speed/current.	Adjust air pressure, replace nozzle/electrode, optimize cutting parameters.

8. SPECIFICATIONS

Technical specifications for the PUWU CT-416G.

Feature	Detail
Manufacturer	PUWU
Model Number	CT-416G
Item Weight	13.7 pounds
Product Dimensions	15.7 x 6.8 x 10.4 inches
Color	Grayish Yellow
Material	Metal, Plastic
Power Source	DC
Voltage	110 volts, 220 volts
Wattage	4.5 KW
Cooling Mode	Fan Cooling
Insulation Grade	F
Protection Class	IP21S

SPECIFICATION

CT-416G



MODEL: CT-416G			S/N:		
			ANSI/IEC STD.60974-1		
		U ₁ =110V			U ₁ =220V
		20A/20.8V-130A/25.2V			20A/20.8V-180A/27.2V
		X	60%	100%	X 60% 100%
		I ₂	130A	100A	I ₂ 180A 139A
		U ₀ =58V			U ₂ 25.2V 24V
		U ₂ 25.2V 24V			U ₂ 27.2V 26.3V
		U ₁ =110V			U ₁ =220V
		10A/10.4V-145A/15.8V			10A/10.4V-200A/18V
		X			X 60% 100%
		I ₂ 145A 112A			I ₂ 200A 154A
		U ₀ =58V			U ₂ 15.8V 14.5V
		U ₂ 15.8V 14.5V			U ₂ 18V 16.1V
		U ₁ =110V			U ₁ =220V
		20A/88V-30A/92V			20A/88V-40A/96V
		X	60%	100%	X 60% 100%
		I ₂	30A	23A	I ₂ 40A 30A
		U ₀ =280V			U ₂ 92V 89.2V
		U ₂ 92V 89.2V			U ₂ 96V 92V
		U ₁ =110V			I ₁ max=45A
		U ₁ =220V			I ₁ leff=34.8A
		I ₁ max=34A			I ₁ leff=26.3A
		I ₁ max=34A			I ₁ leff=26.3A
		Cooling Mode: Fan Cooling			Insulation Grade: F
		Cooling Mode: Fan Cooling			IP21S

Detailed technical specifications table for the PUWU CT-416G, outlining welding and cutting parameters, voltage, wattage, and cooling mode.

PRODUCT DIMENSIONS



SIZE
15.7*10.4*6.8"

WEIGHTS ONLY
13.7 LB

Image highlighting the compact dimensions of the PUWU CT-416G welder, showing its length, width, and height.

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation included with your product or contact PUWU

customer service. Keep your purchase receipt as proof of purchase for any warranty claims.

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Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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