

[Manuals.plus](#) /

> [TOOLIOM](#) /

> TOOLIOM TL-CT520D 3-in-1 Welder/Cutter Instruction Manual

TOOLIOM TL-CT520D

TOOLIOM TL-CT520D 3-in-1 Welder/Cutter Instruction Manual

Model: TL-CT520D | Brand: TOOLIOM

1. INTRODUCTION AND OVERVIEW

The TOOLIOM TL-CT520D is a versatile 3-in-1 multi-function welding machine designed for plasma cutting, TIG welding, and stick welding. This portable unit supports dual voltage input (110V and 220V), making it adaptable for various work environments. It features synergic control for simplified parameter adjustment and robust safety protections to ensure reliable operation.

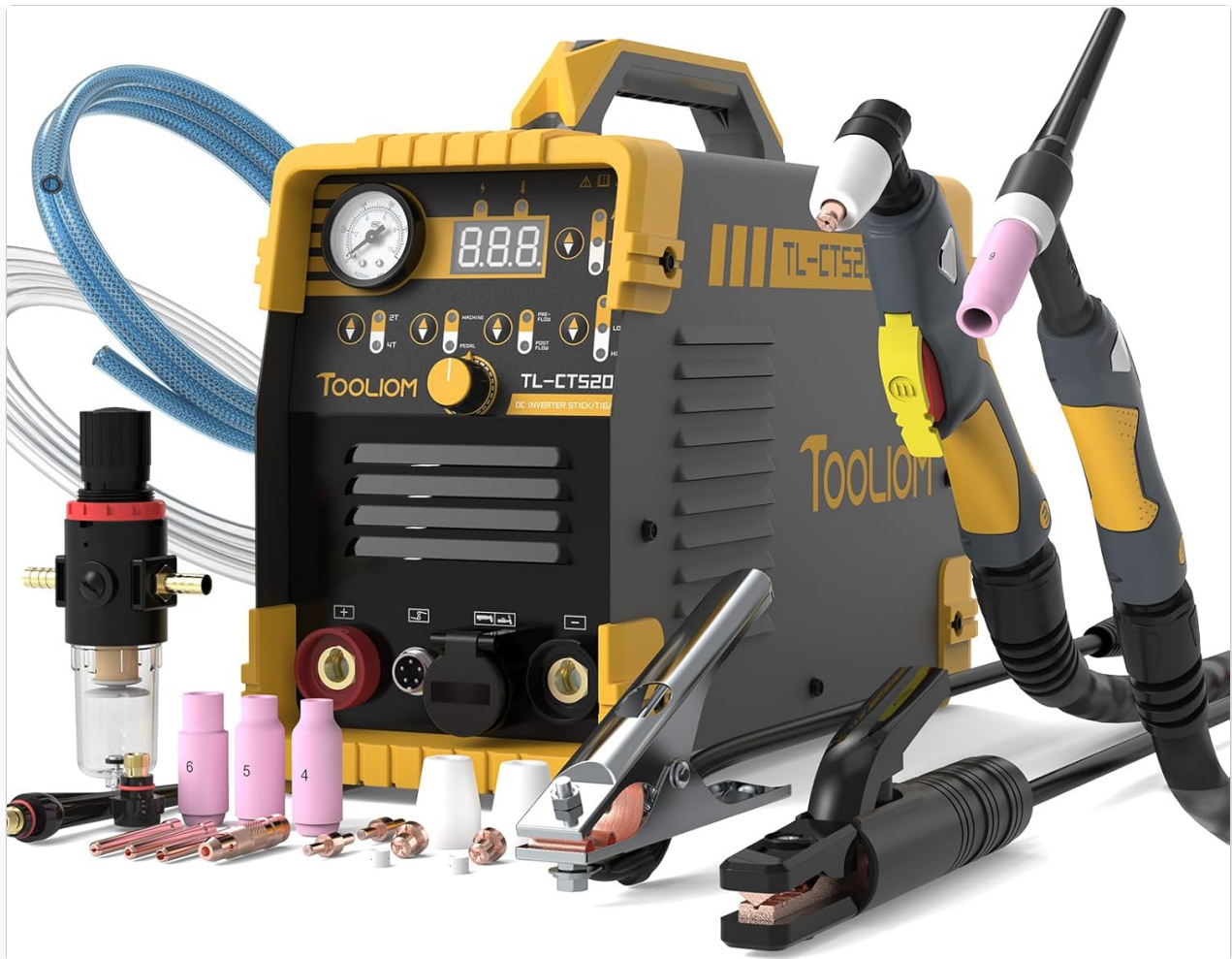


Figure 1: The TOOLIOM TL-CT520D 3-in-1 Welder/Cutter with included accessories.

2. SAFETY INFORMATION

WARNING: Always read and understand this manual completely before operating the machine. Failure to follow safety instructions can result in serious injury or death.

- **Personal Protective Equipment (PPE):** Always wear appropriate PPE, including welding helmet with proper shade, welding gloves, protective clothing, and safety shoes.
- **Ventilation:** Ensure adequate ventilation to remove fumes and gases produced during welding and cutting.
- **Fire Hazards:** Keep flammable materials away from the work area. Hot metal and sparks can cause fires.
- **Electrical Safety:** This unit is ETL certified and includes over current protection, over load protection, and temperature control. However, always ensure proper grounding and inspect cables for damage before use. Do not operate in wet conditions.
- **Eye and Skin Protection:** Arc rays and plasma arc can cause eye and skin burns. Use appropriate shielding.

Protection you can depend on

SAFETY FIRST

OVERHEATING

Automatic shutdown
if necessary

OVERLOAD

Automatic shutdown
system

WATER RATING

IP21 protection
standard

ELECTROSTATIC

unique coating to
prevent shock transfer



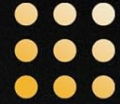
Figure 2: The TL-CT520D features built-in safety protections including overheating, overload, water rating (IP21), and electrostatic coating.

3. PACKAGE CONTENTS

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

- TOOLIOM TL-CT520D Main Unit
- TIG Torch
- Plasma Torch
- Power Adapter Cord (for dual voltage)
- Gas Hose
- Work Clamp
- Electrode Holder
- Air Compressor Filter
- User Manual

ACCESSORIES



- ① Work Clamp
- ② Electrode Holder
- ③ Air Compressor Filter
- ④ Power Cord Adapter
- ⑤ TIG Torch with Consumables
- ⑥ Cutting Torch with Consumables



Figure 3: Visual representation of the included accessories.

4. SETUP

1. **Unpacking:** Carefully remove the machine and all accessories from the packaging. Inspect for any shipping damage.
2. **Power Connection:** Connect the power adapter cord to the appropriate 110V or 220V power supply. The machine automatically detects the voltage.
3. **Air Connection (for Plasma Cutting):** Attach the air compressor filter and gas hose to the designated air inlet on the machine. Ensure all connections are secure and leak-free.
4. **Torch and Work Clamp Connection:** Connect the Plasma Torch, TIG Torch, or Electrode Holder to their respective ports on the front panel. Connect the Work Clamp (ground) to the designated terminal.

5. OPERATING MODES

The TL-CT520D offers three primary operating modes:

- **Plasma Cutting (CUT):** This mode is ideal for cutting various metals. It provides up to 50A output with a 60% duty cycle, capable of a maximum 1/2-inch clean cut. Ensure proper air pressure is supplied for optimal performance.
- **TIG Welding (TIG):** For precise and clean welds, the TIG mode offers up to 200A. This unit features High Frequency (HF) start for reliable arc ignition without contact.
- **Stick Welding (STICK):** The Stick welding mode provides up to 200A, suitable for general-purpose welding with coated electrodes.



Figure 4: The 3-in-1 functionality of the TL-CT520D, showing Plasma Cutting, TIG Welding, and Stick Welding in action.

6. CONTROLS AND FEATURES

- **Synergic Control:** The welding parameters are pre-programmed with precise data, allowing the machine to automatically select the appropriate voltage, amperage, and feeding speed based on the selected mode and material. This simplifies operation for new users.
- **Foot Remote Control (Not Included):** The unit is compatible with a 5-pin foot pedal (sold separately) for remote current adjustment, providing hands-free control during TIG welding.
- **2T/4T Function:** This feature allows for two-touch (2T) or four-touch (4T) trigger operation. 2T is suitable for short welds, requiring the trigger to be held down. 4T is ideal for long, continuous welding, reducing operator fatigue as the trigger only needs to be pressed once to start and once to stop.
- **Pre-Flow and Post-Flow Functions:** These functions control the gas flow before and after the arc. Pre-flow isolates the arc smoothly for a cleaner start, while post-flow provides cooling to extend the working life of consumables.



Figure 5: The 2T/4T function selector on the control panel.



Figure 6: The connection port for an optional foot pedal remote control.

7. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your TOOLIOM TL-CT520D.

- **Cleaning:** Keep the machine clean and free from dust, dirt, and metal particles. Use compressed air to clear ventilation openings.
- **Cable Inspection:** Regularly inspect all cables, torches, and connections for wear, cuts, or damage. Replace any damaged components immediately.
- **Consumables:** Check plasma torch tips, electrodes, and TIG torch consumables regularly. Replace them as they wear out to maintain cut quality and arc stability.
- **Air Filter:** Periodically check and clean the air compressor filter to ensure a clean and dry air supply for plasma cutting.

8. TROUBLESHOOTING

If you encounter issues with your machine, refer to the following common troubleshooting tips. For more detailed problems, consult the full user manual or contact customer support.

- **No Power:** Check power connections, circuit breaker, and ensure the power switch is in the 'ON' position.
- **No Arc/Poor Arc:** Verify work clamp connection, ensure proper gas flow (for TIG/Plasma), check consumables for wear, and confirm correct amperage settings.
- **Overheating:** The machine has built-in temperature control and will shut down if it overheats. Allow it to cool down before resuming operation. Ensure adequate ventilation around the unit.
- **Inconsistent Cut (Plasma):** Check air pressure, ensure consumables are new or in good condition, and verify cutting speed.

9. SPECIFICATIONS

Feature	Specification
Model Number	TL-CT520D
Manufacturer	TOOLIOM
Functions	50A Plasma Cutter, 200A TIG Welder, 200A Stick Welder
Input Voltage	110V & 220V (Dual Voltage)
Plasma Cutting Capacity (Clean Cut)	Up to 1/2 inch (12mm)
Duty Cycle	60% (at max output)
Item Weight	31.1 pounds
Package Dimensions	19 x 14 x 13 inches
Safety Certification	ETL Certified

SIZE

16.1" × 6.4" × 11.8"

WEIGHT

17.1 Lbs



Figure 7: Physical dimensions and weight of the TL-CT520D unit.

10. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact the manufacturer directly. Refer to the contact details provided in the original product packaging or on the TOOLIOM official website.