weldtech

UltraCut41

UltraCut 41 Plasma Cutter



OPERATING INSTRUCTIONS

www.weldtech.net.nz

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- Light Engineering
- Automotive
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1. PRODUCT OVERVIEW

The UltraCut41 plasma cutter is designed for clean, fast, and precise cutting of mild steel, stainless steel, and aluminum from 1mm up to 14mm.

Compared to traditional mechanical cutting methods, plasma cutting offers significantly higher speed and improved cutting accuracy, especially for curved and intricate shapes.

This unit features advanced inverter technology, delivering stable performance from a 230V power supply. Its compact and lightweight design makes it ideal for both workshop and on-site applications.

The built-in pilot arc system allows easy arc starting, even on rusty or painted surfaces. An external air filter ensures a clean, dry air supply for consistent cutting performance.

2. SPECIFICATIONS

Parameter	Value
Rated Output Current	15~35A
Max Cutting Thickness	14mm (mild steel)
Input Voltage	230V (Auto-identification)
Required Air Pressure	50PSI (0.35MPa) ~ 65PSI (0.45MPa)
Duty Cycle (at 35A)	15% (10min cycle)
Power Supply Frequency	50Hz

	Current	15A	30A	35A
230V	Cutting Thickness	5mm	8mm	14mm
	Air Pressure	50Psi (0.35Mpa)	55Psi (0.38Mpa)	60Psi (0.41Mpa)

Duty Cycle Explanation:
The 15% duty cycle at 35A means the cutter can operate for 1.5 minutes of continuous cutting within a 10-minute period, followed by 8.5 minutes of cooling. Lowering the output amperage will increase the duty cycle. Strictly follow the duty cycle requirements to prevent overheating and extend equipment service life.

3. SAFETY INFORMATION

⚠ GENERAL SAFETY

Read and understand all instructions before operating this equipment.
Failure to follow these instructions may result in serious injury, electric shock, fire, or death.

This equipment must be used in accordance with applicable electrical and workplace safety regulations.

⚠ DANGER – ELECTRIC SHOCK CAN CAUSE INJURY OR DEATH

Disconnect the machine from the power supply before inspection, maintenance, or servicing

Never touch live electrical parts or torch components while the unit is powered

Ensure the machine is properly grounded in accordance with local electrical regulations

Keep the equipment and work area dry at all times

Do not operate the unit in wet or damp environments

⚠ WARNING – FIRE AND EXPLOSION HAZARD

Sparks and molten metal may ignite flammable materials

Keep all combustible substances away from the work area

Do not cut or weld on sealed containers, tanks, or pressurized vessels

Ensure adequate fire prevention measures are in place

⚠ WARNING – ARC RADIATION AND FUMES

Plasma cutting produces intense ultraviolet (UV) radiation that can cause serious eye and skin injury

Always wear a welding helmet with a minimum shade level of #11

Wear flame-resistant clothing, gloves, and protective footwear

Ensure adequate ventilation or local exhaust extraction to remove fumes and gases

Do not inhale fumes generated during cutting operations

⚠ CAUTION – HOT MATERIAL AND EQUIPMENT

Workpieces, torch components, and surrounding materials become extremely hot during operation

Allow sufficient cooling time before handling

Use appropriate heat-resistant gloves and protective equipment

⚠ NOTICE – PROPER USE AND OPERATION

This machine is designed for plasma cutting of conductive metals only

Do not modify or alter the equipment in any way

Use only recommended consumables, parts, and accessories

Operate the unit within the specified duty cycle to prevent overheating and damage

KEEP THIS MANUAL FOR FUTURE REFERENCE.

4. PACKAGE CONTENTS

Check all components (FIG.A) immediately upon unboxing to ensure no missing, damaged or defective parts:

1. UltraCut41 Plasma Cutter
2. Air Hose
3. IPT-40 Plasma Cutting Torch
4. Work Clamp
5. Air Compressor Filter
6. Hose Clamp *2
7. Simple Wrench



FIG. A

5. CONTROL & DISPLAY PANEL

The control panel (FIG. B) features intuitive buttons and a rotary knob for easy parameter adjustment and monitoring:



FIG. B

Component	Function
Button A (STEPS MODE)	Select cutting mode: 2T / 4T • 2T: Power only when trigger is depressed • 4T: Trigger interlock – no need to hold trigger continuously
Button B (UNIT)	Switch gas pressure display unit: PSI / MPa
Button C (POST FLOW)	Switch display between Amperage and Post-Flow Time
Knob D	Adjust the value of amperage or Post-Flow Time
Thermal Protection LED	Lights up when unit overheats • Unit shuts off automatically • Fan runs continuously for cooling • Resumes operation when cooled to safe temperature
Digital Display	Real-time display of Amperage, Post-Flow Time, Gas Pressure and Input Voltage

1. **Amperage / Post-Flow Time**
Displays output current or post-flow duration. Adjust using the control knob.
2. **Gas Pressure Display**
Shows air pressure value. Switch between PSI and MPa as required.
3. **Input Voltage Indicator**
Displays the input voltage automatically.
4. **2T / 4T Mode**
Select cutting mode based on operation preference.

MACHINE EXTERIOR INTERFACES (FIG. C)



FIG. C

5- Cutting Torch Connector – For plasma torch connection
6- Torch Switch Connector – For torch trigger switch connection
7- Pilot Arc Connector – For pilot arc ignitor connection
8- Work Clamp Connector – For ground clamp connection
9- Air Input Port – For compressed air supply connection
10- Main Power Switch (ON/OFF) – Main power control
11- Power Input Port – 230V power supply connection
12- Cooling Fan – Maintains optimal operating temperature
13- Air Compressor Filter Connector – For air filter regulator connection

6. INSTALLATION

- **DANGER – ELECTRIC SHOCK HAZARD**

Turn off the unit and unplug from the power supply before all installation, assembly or disassembly operations!

6.1 Cutting Torch & Work Clamp Installation (FIG. D)



FIG. D

1. Insert the cutting torch terminal into the Cutting Torch Connector and secure it tightly.
2. Insert the pilot arc ignitor terminal into the Pilot Arc Connector.
3. Insert the torch switch terminal into the Torch Switch Connector.
4. Insert the work clamp terminal into the Work Clamp Connector and fasten securely.
5. Ensure all connections are tight and secure before powering on the unit

6.2 Air Filter Regulator & Gas Hose Installation (FIG. E)



FIG. E

1. Connect the Air Compressor Filter Regulator to the Air Compressor Filter Connector on the unit.
   Recommended pressure: 50–65 PSI (0.35–0.45 MPa)

2. If the default fitting is incompatible, use the extra PC10-02 Quick-Connect Fitting (included).

3. Apply Thread Seal Tape to all threaded connections for airtight sealing before installation.

4. Connect one end of the air hose to the filter regulator and the other end to your air compressor.

5. Check all air connections for leaks before operation.

6.3 Air Compressor Filter Regulator Installation & Maintenance

① Fit the ARO plug into the input side of the air regulator. Ensure the thread is sealed with thread tape or sealant.

② Fit the air hose supplied between the output side of the air regulator, and the air input socket at the back of the plasma cutter.

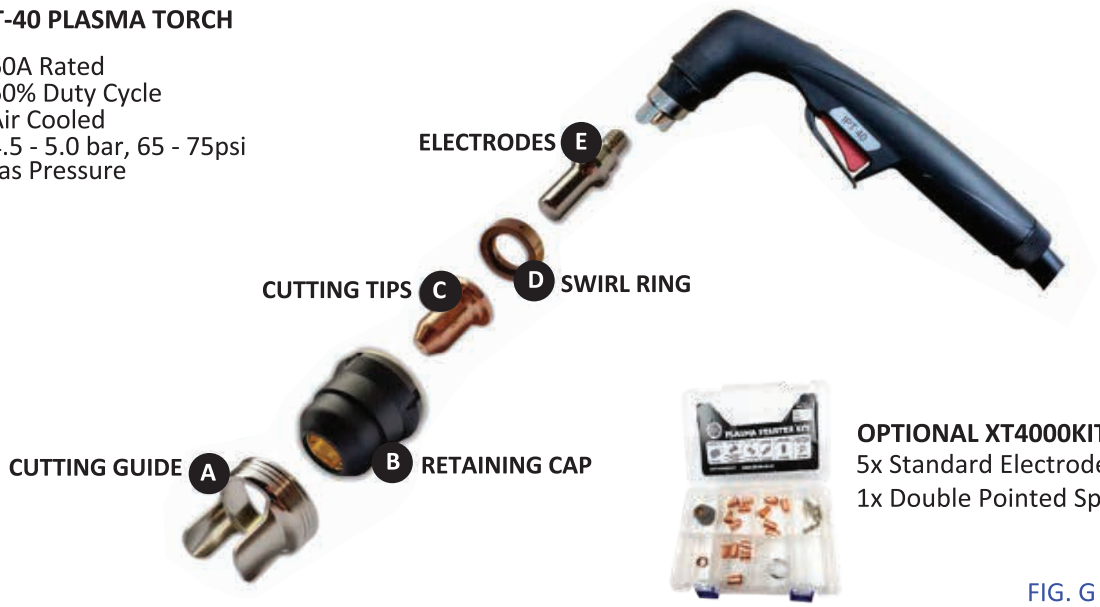


FIG. F

6.4 Plasma Torch Consumables Installation (FIG. G)

IPT-40 PLASMA TORCH

- 60A Rated
- 60% Duty Cycle
- Air Cooled
- 4.5 - 5.0 bar, 65 - 75psi Gas Pressure



OPTIONAL XT4000KIT Consumables Kit
5x Standard Electrodes, 2x Swirl Rings, 1x Double Pointed Spacer.

FIG. G

Replacing Consumables

1. The **Cutting Tip (C)** and **Electrode (E)** are the main consumables. Both should be replaced at the same time.
2. Ensure Plasma Cutter is Switched off. Remove the **Cutting Guide (A)** and **Retaining Cap (B).**
3. The **Cutting Tip (C)** and **Swirl Ring (D)** can then be removed from the torch head. Turn **Electrode (E)** anticlockwise to remove.
4. Fit new **Electrode (E)** and replace the **Swirl Ring (D)**. A new **Swirl Ring (D)** is only required if the existing is physically damaged or blocked.
5. Select the correct **Cutting Tip (C)**, according to plate thickness. (refer 7.2) and re-assemble. Ensue components are correctly seated and tightened.

7. Plasma Cutting Setup & Operation

Proper setup is essential for safe operation and optimum cutting performance. Follow the steps below before cutting.

7.1 Pre-Cutting Setup

Before using the plasma cutter, make sure you have the following:

- A **clean, dry compressed air supply** for the torch.
  An air compressor capable of delivering **50 PSI (0.35 MPa) to 65 PSI (0.45 MPa)** is required.
- A **portable air tank with regulator** may also be used, provided the air supply is clean and dry.
- The use of a **moisture trap / air filter regulator** is strongly recommended to help maintain cutting performance and reduce contamination in the air system.
- A **properly grounded power supply** suitable for the machine's rated input voltage.
  The unit must be grounded for safe and proper operation.
- A **clean, safe, dry, well-lit, and well-ventilated work area**.
- Appropriate **personal protective equipment (PPE)**, including:
  - flame-resistant long-sleeve clothing
  - heavy-duty welding gloves
  - an auto-darkening welding helmet with a suitable shade lens
  - safety footwear and additional eye protection as required

- A **clean grounding point** on the workpiece. Remove rust, paint, oil, and debris from the clamping area before attaching the work clamp.
- Attach the **work clamp** to a clean, bare metal area of the workpiece, as close to the cutting area as possible.

7.2 Parameter Adjustment

1. Press **Button [A]** to select the cutting mode (**2T or 4T**).
2. Press **Button [B]** to switch the gas pressure display unit (**PSI or MPa**).
3. Press **Button [C]** to switch the display from output current to Post-Flow Time, then adjust the value by rotating **Knob [D]**.
4. Adjust the output current according to material thickness:

- **Thin materials (1–5 mm):** 15–20 A
- **Medium materials (6–8 mm):** 20–25 A
- **Thick materials (9–14 mm):** 25–35 A

NOTE: Do not set the amperage higher than necessary. Excessive amperage may cause overheating, reduce consumable life, and result in poor cut quality.

7.3 Cutting Operation

1. Practice on scrap material of similar thickness before cutting your actual workpiece, as some skill is required to achieve optimal cutting results.
2. Ensure all required **personal protective equipment (PPE)** is worn, and the work area is clean, well-ventilated, and free of flammable materials.
3. Attach the **work clamp** to a clean, bare metal surface on the workpiece. Remove rust, paint, or coatings if necessary to ensure proper grounding.
4. Set the air pressure according to material thickness.
   Lower pressure is suitable for thinner materials, while higher pressure is required for thicker or harder metals.
5. Adjust the output current (amperage) based on material thickness.
   Lower amperage for thin materials and higher amperage for thicker materials.
   Do not use excessive amperage, as this may cause overheating and poor cut quality.
6. Position the torch approximately **1–2 mm above the workpiece**, holding it at a **90° angle** to the cutting line *(see Fig. H)*.



FIG. H

7. Press the torch trigger to ignite the pilot arc and begin cutting.
8. Move the torch steadily along the cutting path, maintaining a consistent speed and distance from the workpiece.
    1. Thin materials: Use a faster cutting speed to reduce slag
    2. Thick materials: Use a slower speed to ensure full penetration
9. Release the trigger to stop cutting.
   Post-flow will continue for a short period to cool the torch.

7.4 Cutting Tips

- Keep the torch tip clean and free from spatter to maintain stable arc performance.
- Maintain a steady hand and consistent cutting speed for best results.
- Reduce cutting speed slightly when making curved cuts to improve accuracy.
- Remove any remaining slag from the cut edge using a grinder or file if required.
- Follow the recommended duty cycle and allow the unit to cool properly. Do not attempt to bypass thermal protection.

8. Maintenance & Storage

8.1 Regular Maintenance

- Clean the torch tip and consumables after each use to remove spatter and debris.
- Drain the air filter moisture separator regularly (daily or before each use).
- Inspect all cables, hoses, and connections for damage or wear before use.
- Clean the cooling fan and ventilation openings periodically to prevent dust buildup.
- Replace worn or damaged consumables immediately. Do not operate the unit with damaged parts.
- Ensure adequate airflow around the unit for proper cooling during operation.

8.2 Storage

1. Turn off the unit and disconnect it from the power supply and air source.
2. Drain all moisture from the air filter and air system.
3. Clean the torch and ensure all consumables are in good condition.
4. Disconnect hoses and cables if necessary and store them properly.
5. Store the unit in a clean, dry, and dust-free environment.
6. Avoid storage in humid, wet, or corrosive environments.

9. Troubleshooting

If the unit fails to operate properly or produce quality cuts, check the following before contacting customer support:

Problem	Possible Cause	Solution
No power / unit does not start	Power cord not connected or loose Power switch is OFF Faulty electrical outlet	Check power cord connection Turn on power switch Test outlet with another device
Pilot arc does not ignite	Loose torch connections Insufficient or excessive air pressure Faulty torch trigger	Check all torch connections Adjust air pressure to 50–65 PSI (0.35–0.45 MPa)Inspect or replace torch trigger if necessary
Poor cut quality / rough edges	Incorrect amperage or air pressure Worn or dirty consumables Inconsistent cutting speed	Adjust settings according to material thickness Clean or replace consumables Maintain steady cutting speed
Excessive molten slag	Cutting speed too slow Amperage too high Incorrect torch angle	Increase cutting speed Reduce amperage Maintain a 90° torch angle
Unit shuts down unexpectedly	Overheating (duty cycle exceeded)Poor ventilation Dust buildup in cooling system	Allow unit to cool completely Improve ventilation Clean cooling fan and air passages
Air leaks at connections	Loose fittings No thread seal tape Damaged air hose	Tighten all fittings Apply thread seal tape Replace damaged hose
Arc unstable or intermittent	Moisture in air supply Dirty workpiece surface Poor grounding	Drain air filter/moisture separator Clean workpiece surface Ensure proper grounding
Air flows but arc does not start	Incorrect input voltage Poor grounding Internal connection issue	Check power supply Ensure proper grounding Inspect internal connections if necessary

Warranty

As part of an on-going commitment to excellence in product support, Euroquip offers a comprehensive product warranty program.

Registered warranty period for the UltraCut 41:
Commercial Use: 18 Months
Domestic Use: 18 Months

Warranty covers failure caused by manufacturing and material defects in the product, during the warranty period specified. The warranty period begins when the product is purchased by the end user. Warranty is not transferrable and is only claimable by the original purchaser.

Warranty does not cover parts that are subject to wear and tear from usage.

Warranty covers failure of a product caused by defective materials and/or manufacturing for the period given and the usage specified by Euroquip. The warranty period begins when the product is purchased by the end user. Warranty is not transferrable and is only claimable by the original purchaser.

Warranty also does not cover failure caused by the untimely replacement or service of the above wearing parts. Evidence must be provided that the product has been maintained and serviced suitably for a claim to be considered under warranty.

Failure caused by incorrect operation of the product, lack of proper care and maintenance of the product, external damage, external circumstances such as contaminated fuel or poor water supply, modifications to the product, attempted repair/ service by a party other than an Approved Service Agent, is not covered under warranty.
Warranty does not cover pre delivery service and adjustment, or failure that may occur as a result of lack of/ incorrect pre delivery service and adjustment.

Warranty does not cover any incidental, indirect or consequential loss, damage or expense that may result from any defect, failure or malfunction of a product.

Should any issue be found to be a combination of a warranty failure and a non-warranty issue, the repair cost component to rectify and repair the non-warranty failure is the customers' full responsibility.

The decision that an issue with a product qualifies as a warranty claim is made at the sole jurisdiction of Euroquip.

No costs incurred will be considered under warranty if repairs are carried out by a party other than a Euroquip Approved Service Agent, unless with prior consent in writing from Euroquip.

It is the responsibility of the purchaser to deliver a product under warranty to the nearest relevant service agent or product reseller. Warranty does not cover call outs, mileage and freight costs.

If a product is repaired under warranty, parts and labour required for the repair will be supplied at no charge. Warranty assessment and repair will be scheduled and executed according to the normal work flow at the service location and depending on the availability of suitable replacement parts.

This warranty policy is an additional benefit and does not affect the legal rights of any end user, reseller or service agent.

Congratulations on your new WELDTECH product. We are proud to have you as our customer and will strive to provide you with the best service and reliability in the industry. This product is backed by our extensive warranty and service network. To locate your nearest distributor or service agency visit www.weldtech.net.nz, or email us at customerservice@euroquip.co.nz