

LOTOS TECHNOLOGY

Plasma Cutter LT5000D

www.uwelding.com



Lotos Technology LT5000D

Quick Setup

Instructions

Power plug wiring identification:

The GREEN wire with the yellow strip is ground wire. The other two wires have equal usage. They are both hot wires for 240 V. And one is hot one is natural under 120 V.



Figure 1.1

Quick Setup:

1. Wear a proper helmet (Figure 1.1) to protect your eyes from harmful plasma cutting arc radiation. Wear safety gloves to protect your hands during operation.
2. Connect the machine air inlet (on the back of the machine, use stand NPT 1/4" industry type D coupler, Figure 1.2) to an air compressor (Figure 1.3 & 1.4) and set the air pressure to 65 - 70 PSI. (The capacity of air compressor should be larger than 4.0 SCFM @ 65 PSI).

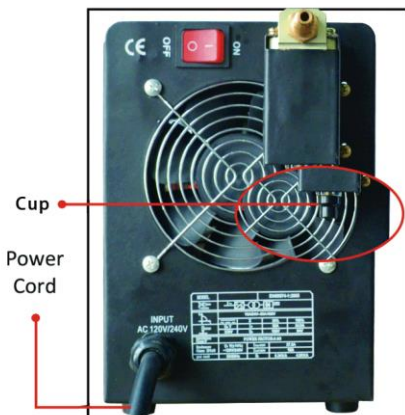


Figure 1.2



Figure 1.3

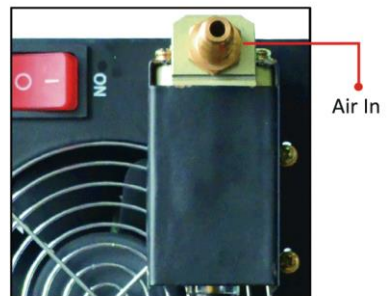


Figure 1.4

3. Connect your plasma cutting torch and ground cable to the front panel of the machine (Figure 1.5).



Figure 1.5

4. Attach the ground clamp to the metal work piece that you plan to cut. Make sure that you cannot pull out the ground connection from the machine input. The metal work piece should be securely attached.
 5. Make sure the consumables are properly assembled on the torch head.
 6. Press the trigger of the torch and make sure there is air flow through it.
 7. Move the torch head to the work piece, press the trigger and you will find that the torch will ignite. Enjoy cutting!!
 8. Change your consumables (tip, electrode, and cup) when they become worn out. The correct consumable type for this machine is LCS22, LCS33, LCS77 etc. All accessories and consumables can be purchased at www.uwelding.com or Lotos's authorized resellers.
- Thank you for your business!

LOTOS TECHNOLOGY
POWERFUL, PORTABLE AND AFFORDABLE WELDING SOLUTIONS



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LOTOS Plasma Cutters User Manual

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**For more information and more of our products,
please visit our website at
<http://www.uwelding.com/>**

Introduction

Overview

Dear Valued Customer:

Thank you for purchasing a Lotos Technology plasma cutter! Feel free to check out our other products at www.uwelding.com.

The User Manual documents policies and procedures for proper operation of the equipment.

IMPORTANT: Be sure to review the contents of this manual before attempting to operate the equipment. This manual should be located where it can be easily referenced by all users of the machine.

Users

This manual assumes that all individuals reading the manual and using the welder/cutter are able, qualified, and/or certified to operate this type of machinery.

Safety Recommendations - Read Before Using

Overview

Protect yourself and others from injury — read and follow these precautions.

Caution Recommendations



CAUTION: Welding and arc cutting can cause bodily injury.

- Do NOT switch off the machine while machine is in operation since internal circuitry can be damaged.

- Connect the machine to a UL-approved outlet only. Do not hard wire the machine directly to the power source.
- Wear safety goggles at all times. This will darken the arc that is generated by the machine and protect your eyes from harmful rays.
- All machine operators should be technically certified for welding/cutting.

Avoiding Fatal Electric Shock



- Isolate yourself from both the ground and the work piece.

- Make sure that your working area is nonflammable and explosive-free.

Avoiding Harmful Smoke, Gases, and Vapors that can injure or kill.



Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

- Keep your head away from any smoke, gases, or vapors.

Avoiding Harmful Arc Emissions/Rays that can burn eyes and skin.



Arc rays from the welding process produce intense visible and invisible rays that can burn eyes and skin. Sparks fly off from the weld.

- Wear appropriate clothing and a welding or cutting mask to protect your eyes and skin.

- Use appropriate safety screen or curtain to prevent emissions from reaching individuals near the work area.
- Ensure that your working area contains no flammable items; and that none are nearby. Caution: Welding and cutting spray can ignite.

Avoiding Harmful Noises that can damage hearing.



Noise from some processes can damage hearing.

- Wear protective earplugs while operating machine.

Welding or Cutting can cause Fire or Explosion.



Welding, cutting, and allied processes can cause fire or explosion if precautionary measures are not followed.

- Develop adequate procedures, and use proper equipment to do the job safely.

- Remove combustible materials from a sphere with a minimum radius of 35 feet around the work area or move the work to a location well away from combustible materials.

Burn Protection: HOT PARTS can cause serious burns.



The work piece and equipment get hot. The hot metal, hot work piece, and hot equipment can cause burns.

- Use approved helmets or hand shields that provide protection for the face, neck, etc.
- Wear approved safety goggles or glasses with side shields, even under your helmet.
- Wear dry, hole-free insulated gloves.

Protect eyes from FLYING METAL or DIRT.



- Welding, chipping, wire brushing, and grinding cause sparks and flying metal.

- Wear approved safety glasses with side shields, even under your welding helmet.

PACEN MAKERS AND WELDING: MAGNETIC FIELDS can affect implanted devices.



Electric arc welding and cutting processes produce intense electric and magnetic (electromagnetic) fields. The function of pacemakers can be affected by strong

electromagnetic fields.

- Persons with a pacemaker should not go near welding or cutting operations until they have consulted their doctors and obtained information from the manufacturer about the device.

CYLINDER HANDLING: Tank can explode if damaged.



Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Be sure to treat gas cylinders carefully.

- Keep cylinders away from any welding activities or other electrical circuits.

- Protect compressed gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, sparks, and arcs.
- Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping.

If you encounter any difficulties during set up or operation:

- Consult this manual.
- Contact Lotos Customer Service by visiting <http://www.uwelding.com/contact/>.

California Proposition 65 Warnings



Welding or cutting equipment produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California

Health & Safety Code Section 25249.5 et seq.)



Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive

harm. Wash hands after handling.



For Gasoline Engines:

Engine exhaust contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.



For Diesel Engines:

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other

reproductive harm.

PLEASE READ THIS OPERATION MANUAL CAREFULLY AND THOROUGHLY BEFORE ATTEMPTING TO OPERATE THIS MACHINE. KEEP THIS MANUAL HANDY FOR QUICK REFERENCE. PAY CLOSE ATTENTION TO THE SAFETY INSTRUCTIONS PROVIDED FOR YOUR OWN PROTECTION.

Equipment

General Overview

The LT5000D employs state of the art inverter technology. 50/60Hz frequency is inverted to high frequency (over 100 KHz) by V-MOSFET followed by step down voltage and rectification current.

Using Pulse-Width-Modulation (PWM) technology, the inverter power supply generates powerful DC welding currents.

By applying switch power inverter technology, the dimensions and weight of the main transformer is significantly reduced; while efficiency is increased by 30%.

Main Characteristics

- Stabilization
- Reliability
- Portability
- Power efficiency and low noise output
- High cutting speed
- Smooth cuts

Suitable for stainless steel, alloy steel, mild steel, copper aluminum and other metal materials; there are many applications for plasma cutters.

Specifications

Input voltages	120-240 V, 1-PH, 50/60 Hz
Input current	120 V @ 40 A; 240 V @ 30 A
Recommended breaker	50 A @ 120 V; 40 A @ 240 V
Output current	10-50 A
Duty cycle @ 40°C (104°F)	60% @ 35 A, 120 V 60% @ 50 A, 240 V
Dimensions with handle	17'' (440 mm) L; 6'' (167 mm) W; 12'' (300 mm) H
Weight w/ 8'11'' (2.7 m) torch	20.0 lbs (9.1 kg)
Gas Supply	Air
Recommended gas inlet flow rate / pressure	3.6s cfm @ 65 psi
Input power cable length	6' (1.8 m)
Power supply type	MOSFET
Accessories	Plasma Torch (9' 9") Plasma Consumables Ground Clamp & Cable User Manual

Ideal Cutting Chart

Material	Thickness*		Current	
	Inches	mm	Amps Under 240 V	Amps Under 120 V
Mild Steel	10 Gauge	3	15 A-50 A	15 A-35 A
	1/4	6	25 A-50 A	30 A-35 A
	3/10	8	35 A-50 A	35 A
	3/8	10	45 A-50 A	Not Support
	1/2	12	50 A	Not Support
Stainless Steel	10 Gauge	3	15 A-50 A	15 A-35 A
	1/4	6	25 A-50 A	30 A-35 A
	3/10	8	35 A-50 A	35 A
	3/8	10	45 A-50 A	Not Support
	1/2	12	50 A	Not Support
Aluminum	10 Gauge	3	15 A-50 A	15 A-35 A
	1/4	6	25 A-50 A	30 A-35 A
	3/10	8	35 A-50 A	35 A
	3/8	10	45 A-50 A	Not Support
	1/2	12	50 A	Not Support

*Production cut thickness are the results of Lotos' laboratory testing.

For optimum cut quality, cutting speeds may vary based on different cutting applications.

*All the recommended current values are tested under 240 V. While using under 120 V, please appropriately adjust the current.

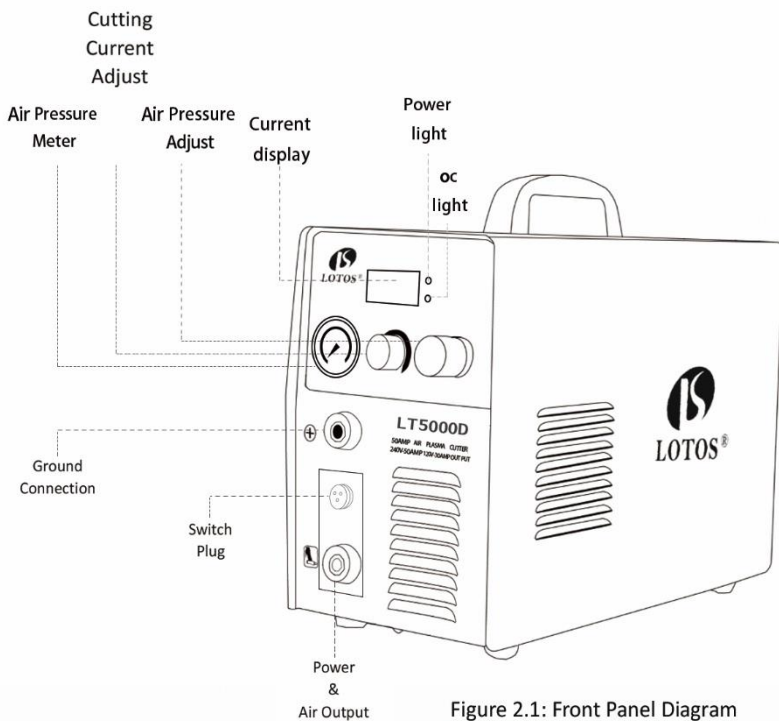


Figure 2.1: Front Panel Diagram



Figure 2.2: Power Cord Plug Connection

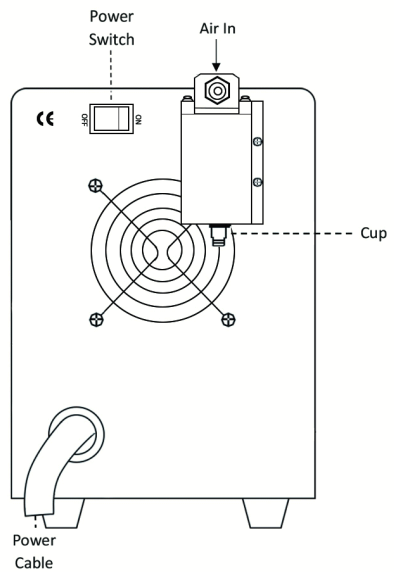


Figure 2.3: Air Regulator Configuration

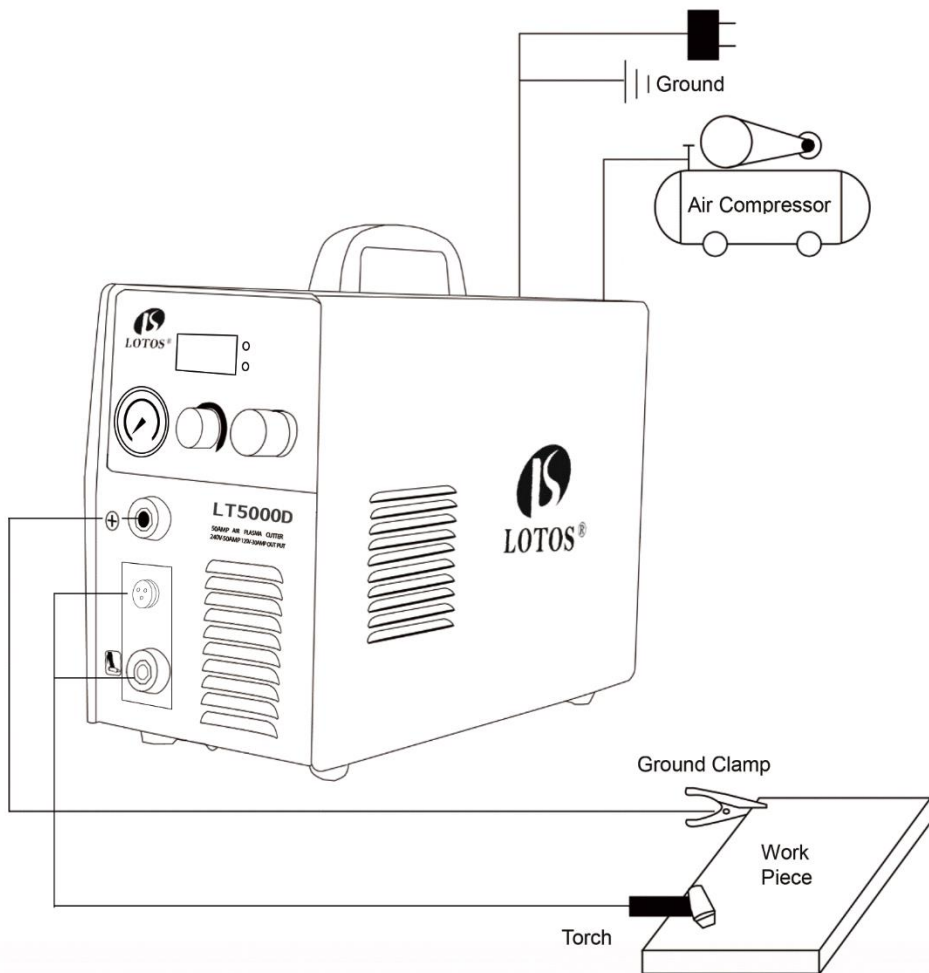


Figure 2.4: Connecting Cables to Machine

Installation

Power Cord Plug Connection (Figure 2.2)

1. Be sure to connect the power cord plug to the appropriate power voltage and use a proper hookup to avoid damage to internal circuitry. Typically, the ground wire is **GREEN with a YELLOW** stripe.
2. Ensure that the power cord is properly connected to the power switch to prevent oxidation. Make sure the power voltage is within the specified safety range.
3. Please refer to the Plug Wiring Instructions of this manual for detailed instructions on plug wiring.

Connecting the Cables to the Machine (Figure 2.4)

1. Properly connect the air hose of compressed air to air inlet.
2. To avoid air leakage, turn screw clockwise until it locks into position. Connect ground cable pincer to the positive terminal located on the front panel; then tighten.
3. Ensure that the switch plug of the torch is connected to the switch plug on the panel.

Check-list before Operation

1. Ensure that the cutting machine is properly grounded.
2. Ensure that all connectors are connected appropriately and firmly.
3. Ensure that power voltages are correct.

Operating the Plasma Cutter

1. Make sure the machine on/off switch is in the off position. Plug the power cord plug into the electrical outlet.
2. Connect air compressor with air regulator/filter.
3. Connect the ground clamp to your work piece. Caution: Rust or paint on the work piece could create an open circuit; therefore, the contact point should be cleaned thoroughly to ensure a good connection between clamp and work piece.
4. Turn on the power switch. The cooling fan should start to operate and the power light should come on. You can adjust the current by turning the cutting current knob on the front panel.

Operating the Plasma Cutter

1. Adjust the air pressure on your air compressor to 60 – 65 psi for the machine.
2. Bring the torch tip into direct contact with your work piece edge or, for thicker cutting, over a pre-drilled pilot hole. Press the button on the torch to start cutting.
3. Ensure that the cutting current is appropriate and adequate for the machine based on the rated thickness of the cutter.

Note: Below is the consumable assembly on the torch head (Figure 3.1).

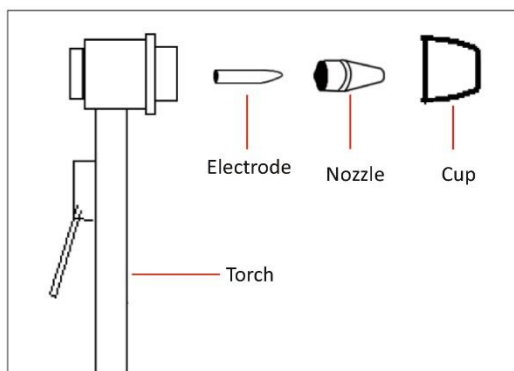
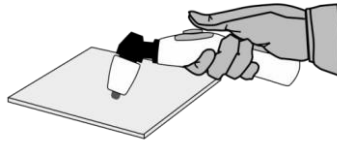
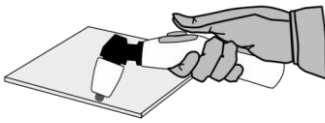


Figure 3.1

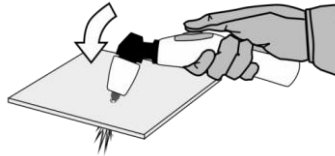
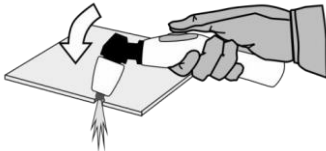
Tips For Cutting



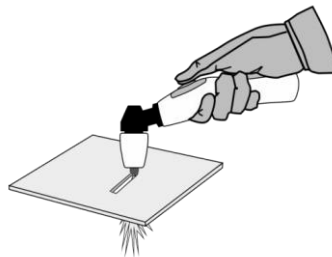
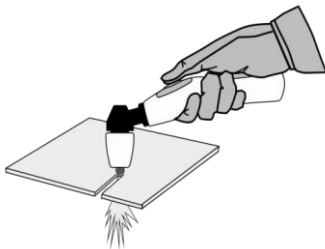
1. Hold the torch at an approximate 30° to the workpiece, let the copper tip directly contact with the workpiece.



2. Fire the torch. Slowly rotate the torch to from 30° to 90°.



3. Hold the torch in place while continuing to press the trigger. When the arc goes completely through the workpiece, then the arc has pierced the material.



CAUTION: If cutting functions improperly, try to remove oxidization of the electrode on the torch with sand paper.

Instruction Notes

Cutting Environment

1. The cutting machine can perform in an environment where conditions are particularly harsh: it can withstand outside temperatures between 14 and 104 degrees Fahrenheit and a humidity level of up to 80%.
2. Please try to keep machine dry.

Safety

1. Working area **MUST** be adequately ventilated.
2. No over-load! Your machine can be damaged by over-loading.
3. No over-voltage! Internal circuitry can be damaged by over-voltage.
4. An internal heat-variable component is initialized if machine exceeds duty cycles. The cutting machine will stop working immediately, and an internal red diode will be lit.
Note: The user does not need to break the circuit; the fan will continue working in order to cool the machine. Once temperature is reduced to allowable range, machine can be operated again.

Maintenance and Troubleshooting

1. Dust created by compressed air should be removed regularly. If work environment is polluted with smoke and dust, daily maintenance is required.
2. Ensure adequate air pressure exists to protect internal components.
3. Check all connectors to ensure firm connections.
4. Protect machine from water or dampness.
5. When machine is not in use for a long period of time, it should be properly packed and stored in a dry environment.
6. Replace any worn consumables to avoid damage.

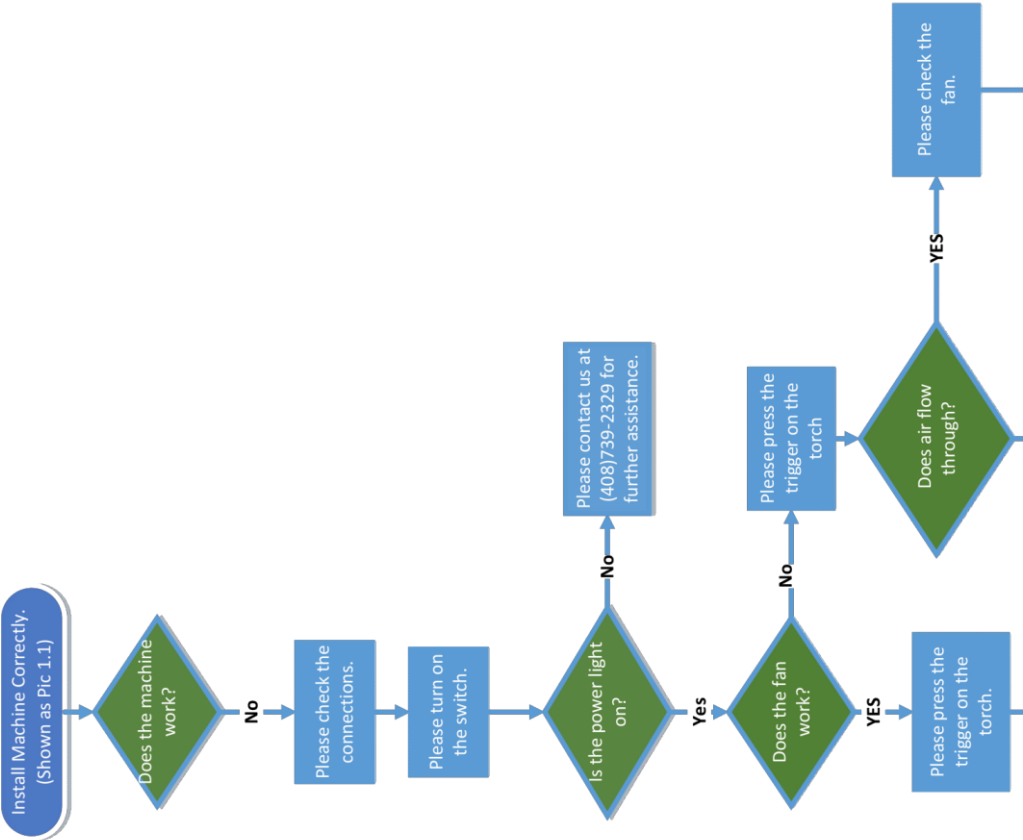
The following trouble shooting guide is for your reference only. Lotos Technology will NOT take any liability or responsibility for any injury or damage caused in such action(s). Always turn off electrical power and air supply before performing inspection and reconnection.

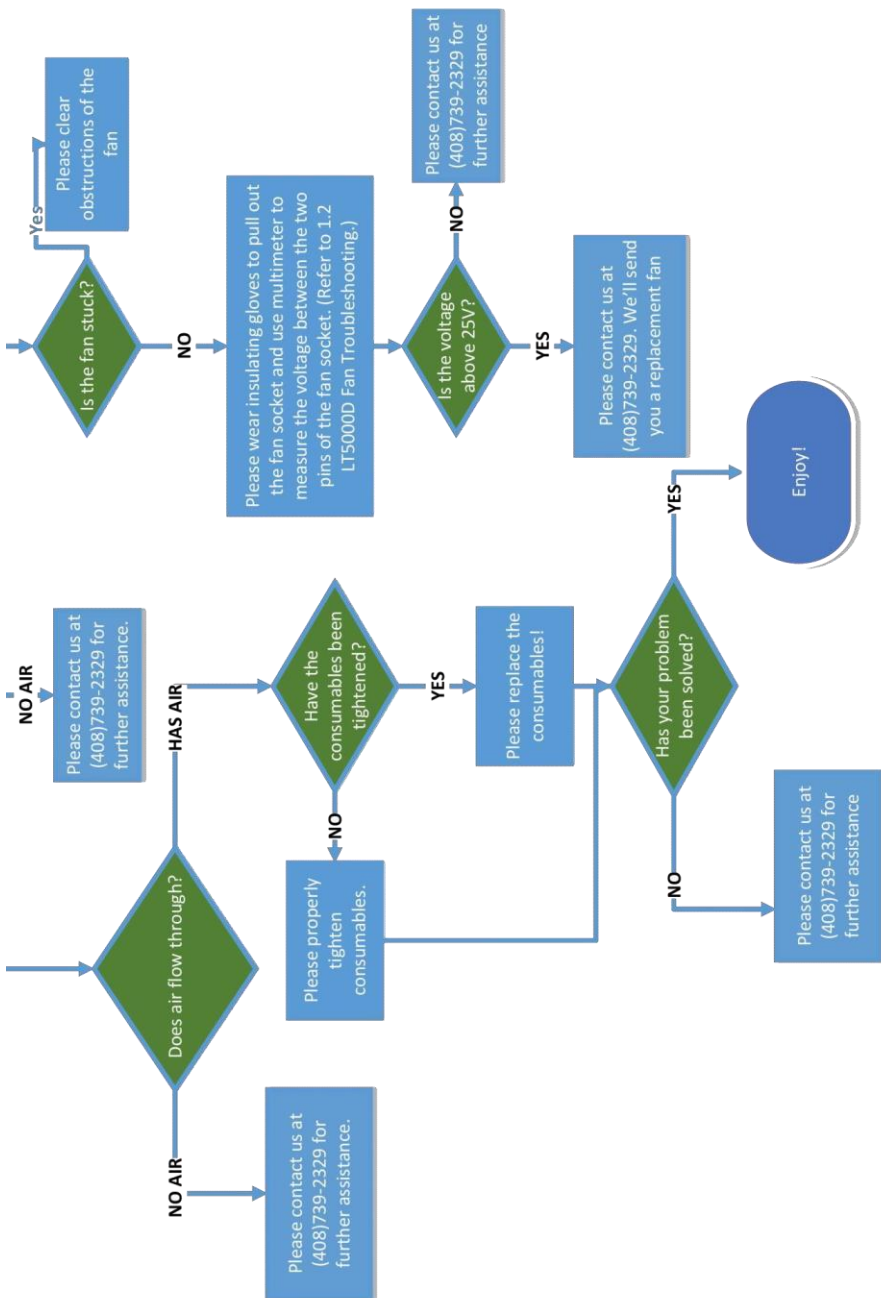
CAUTION: *Only qualified technicians are authorized to undertake the repair of this equipment in the case of machine failure.*

Plasma Cutter LT5000D Troubleshooting Flowchart

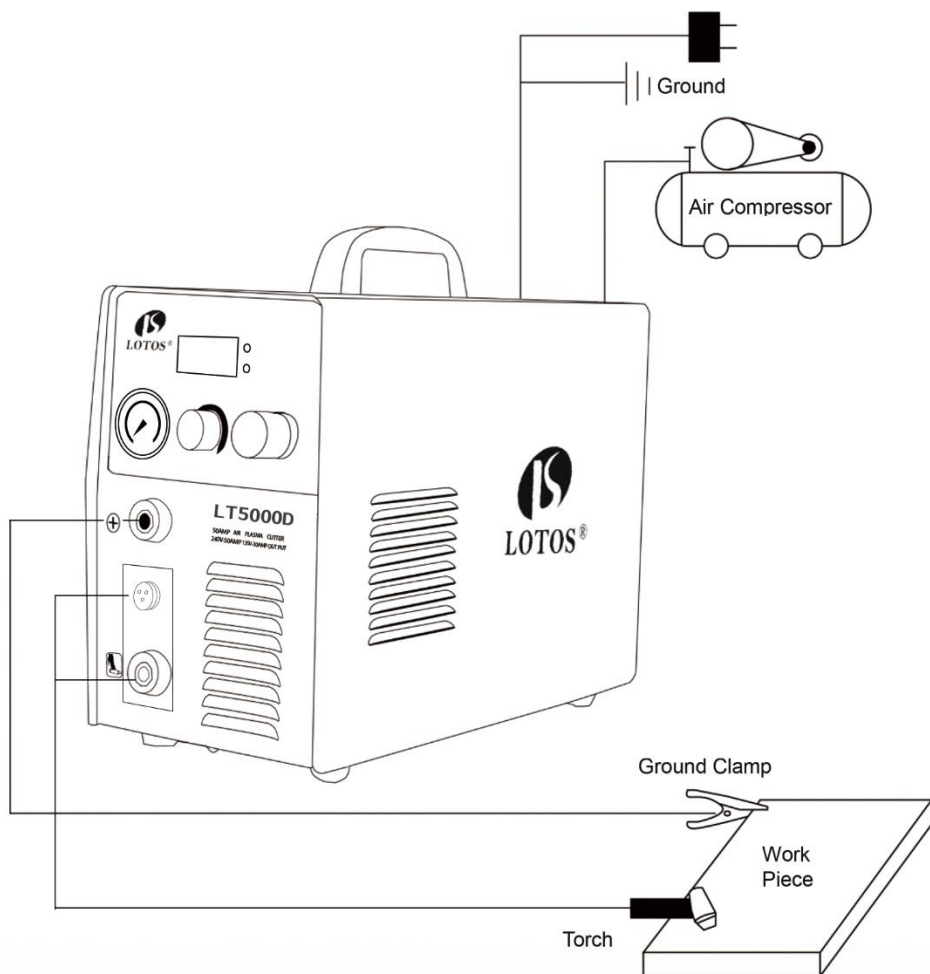
Note: If the O.C. light turns on before operating the machine, please call us at (408) 739-2329.

If the O.C. light turns on while operating the machine, please let the machine take a rest, as this is normal operating procedure.





1.1 Plasma Cutter LT5000D Connections

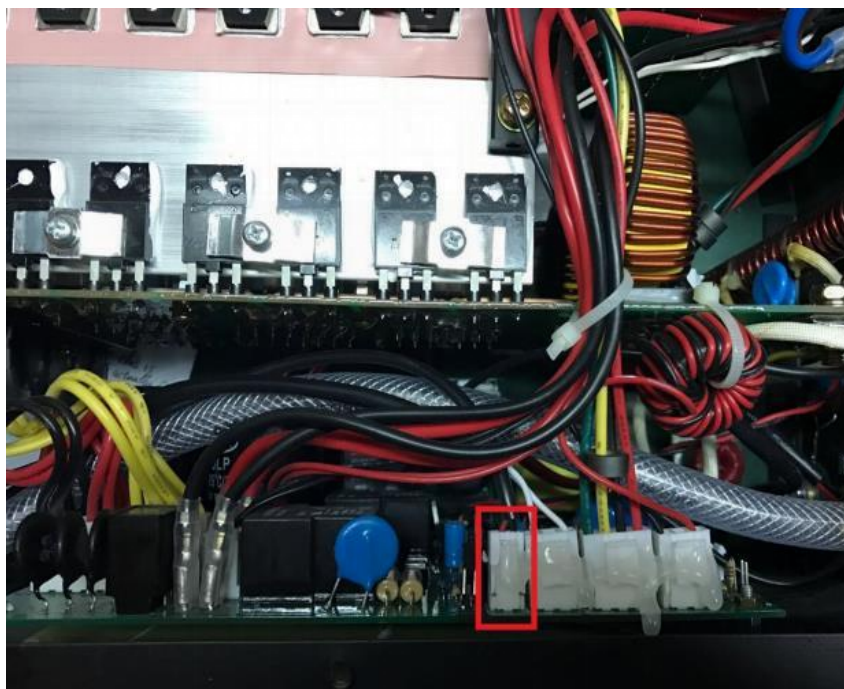


1.2 Plasma Cutter LT5000D FAN TROUBLESHOOTING

If machine powers on but you cannot hear the fan running and you can strike an arc then try the following steps:

Turn off the machine and pull the plug from the socket. Try to open the machine:

a) Check the cable connected to the fan on the bottom board. Highlighted in red. Make sure it is tightly connected.



b) Then power on the machine, to see if the fan works or not.

c) If problem remains, **with this step you need to be very careful, since the power is on. Please wear Insulating gloves and shoes to do this.**

i). Pull out the fan socket (as highlighted in red),

ii). Plug the power, turn on the machine

iii). Use the voltage meter to test if the voltage between the two pin of the fan socket is around 25 V or not.

d) If the voltage is around 25 V, then the fan is damaged, we can send a fan to you, you can replace the fan.

If this step doesn't work that means that the repair is too complex, in this case, please send the machine back to us.

Plasma Cutter LT5000D Other Accessories



GC01 Ground Cable



PT01



NCL243



LCS22



LCS33



LCS77

[illegible]

[illegible]

PLASMA CUTTERS

3-IN-1 COMBO



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