



USER'S MANUAL

Please read this manual carefully before
installation, use and maintenance



OPERATOR'S MANUAL

Plasma Cutter

Safety Depends on You



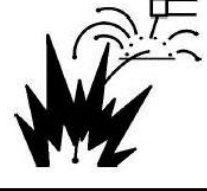

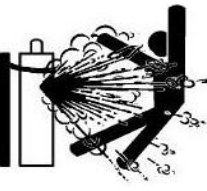
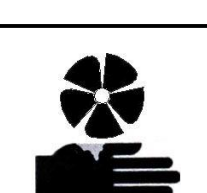

welding and cutting equipment is designed and built with safety in mind. However, your overall safety can be increased by proper installation and thoughtful operation on your part.

DO NOT INSTALL, OPERATE OR REPAIR THIS EQUIPMENT WITHOUT READING THIS MANUAL AND THE SAFETY PRECAUTIONS CONTAINED THROUGHOUT. And most importantly, think before you act and be careful.



1.SAFETY

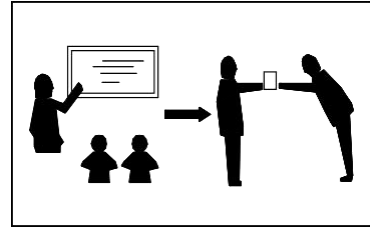
Welding and cutting is dangerous to the operator, people in or near the working and surrounding areas, if the equipment is not operated correctly. Therefore the performance of welding/cutting must only be under the strict and comprehensive observance of all relevant safety regulations.

Symbol	Description
	<p>Electric Shock: Maybe fatal</p> <ul style="list-style-type: none"> ● Avoid all contact with live components of the welding circuit, Electrodes and Wires with bare bands. Wear dry gloves before start welding task. ● Wires with bare bands Keep operator insurance from welding metal and welding pieces.
	<p>Smoke and gas generated while welding or cutting Harmful to health of people</p> <ul style="list-style-type: none"> ● Keep head distance away from gas. ● Avoid breathing the smoke and gas of welding or cutting ● Keep the working area in good ventilation.
	<p>Fire Hazard</p> <ul style="list-style-type: none"> ● Welding sparks, Power cable leakage both can cause the fire. ● Please do not welding in inflammable, it's can cause explode. ● Sparks may cause fire, Remove flammable material from the work place. ● Keep fire extinguisher nearby and have a trained fire person ready to use it
	<p>ARC light-emission: Harmful to the eyes & skin of people</p> <ul style="list-style-type: none"> ● Wear a welding helmet, Anti-radiation glass and work clothes while the welding Operation is performed. ● Keep working area in ventilation.
	<p>CYLINDER may explode if damaged.</p> <ul style="list-style-type: none"> ● Always keep cylinders in an upright position securely chained to an Undercarriage or fixed support. ● Never allow the electrode, electrode holder or any other electrically "hot" parts to touch a cylinder. ● Keep your face and head away from the cylinder valve outlet when it to be opening.
	<p>Engine fan can hurt the hands</p> <ul style="list-style-type: none"> ● Do not put your hands near the engine fan. ● Do not attempt to override the governor or idler by pushing on the throttle Control rods while the engine is running.
	<p>ELECTRIC SHOCK can kill.</p> <ul style="list-style-type: none"> ● Insulate yourself from work and ground using dry insulation. Make certain the insulation is large enough to cover your full area of physical ● Ground the work or metal to be welded to a good electrical ground. ● Never dip the electrode in water for cooling. ● Turn off input power using the disconnect switch at the fuse box before working on the equipment. ● Install equipment in accordance with electric standard code.

2. GENERAL DESCRIPTION

Please read and understand this instruction manual carefully before the installation and operation of this machine. The switching of function modes during cutting or welding is prohibited lest damage to the equipment may occur.

Do disconnect the arc/mma electrode-holder cable from the equipment before either plasma cutting or tig welding. The circuit supplying the machine should be properly fused according to the National Electrical Code and local electrical codes. Welding tools should be of high quality, Operators should be qualified.



This cutting equipment is manufactured with advanced inverter technology. With power Component mosfets and adopting PWM technology, 100KHz frequency AC voltage; as a consequence, the voltage is transformed and rectified, Therefore, It results the much more small-sized of the main transformer and lighter in weight of the inverter welding/cutting equipment, which rates the performance of cutting by 30%. The high frequency oscillation, which enables the output of the high frequency DC, is employed in the arc-starting system. The features of this product are as following: stable output, reliable, completely portable.

CUT35 / 50 models only focus on cutting. During the plasma cutting operation the arc temperature rises rapidly up to 10000-15000 and produces the powerful plasma arc for cutting. By the employment of plasma cutting, It is energy saving and efficient; the high speed of metal cutting and smooth incised surface is possible.

CUT35 / 50 are applicable in welding and cutting of various kinds of metal materials, such as carbon steel, stainless steel, alloy steel, copper and other nonferrous metals etc. Also they are small in measurement, high efficient, energy saving, stable in output and reliable in quality; the efficiency ratio of input voltage and output voltage of this cutting equipment is up to 85%. Guarantee of maintenance for main inverter of this cutting equipment is one year, excluding other spare parts.

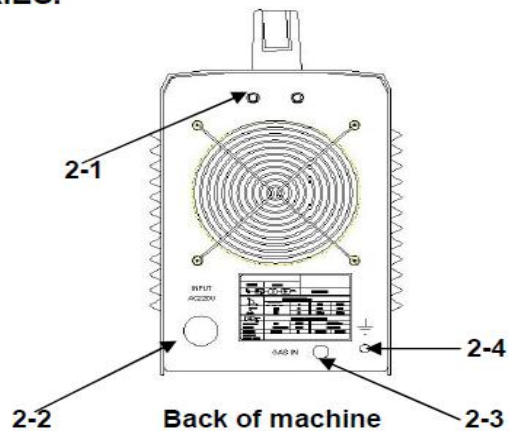
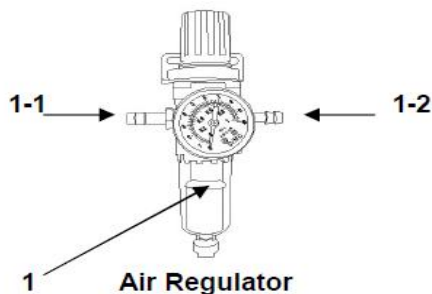
During the guarantee period all repair of all parts and labor are free of charge, excluding shipping and the deliberate damage to this welding & cutting machine. Only qualified technicians are authorized to carry out the repair task of this welding & cutting equipment in case of machine fault.

3. MAIN PARAMETER

Model	CUT40
Input Voltage (V)	110/220±15%
Input Frequency (Hz)	50/60
Rate Power (KVA)	6.5
No-load Loss (W)	42
Duty Cycle (%)@25 °C	30
Power Factor	0.7
Efficiency (%)	85
Insulation Class	F
Protection Class	IP21S
Plasma Arc Starting	Touch
Cutting Thickness(mm)	10
Air Flow Rate (CFM)	6.5
Current Range(A)	20 - 40
Weight (Kg)	8
Size (mm)	475*235*360

4.INSTALLATION

INSTALLATION DIAGRAM OF PLASMA SERIES.

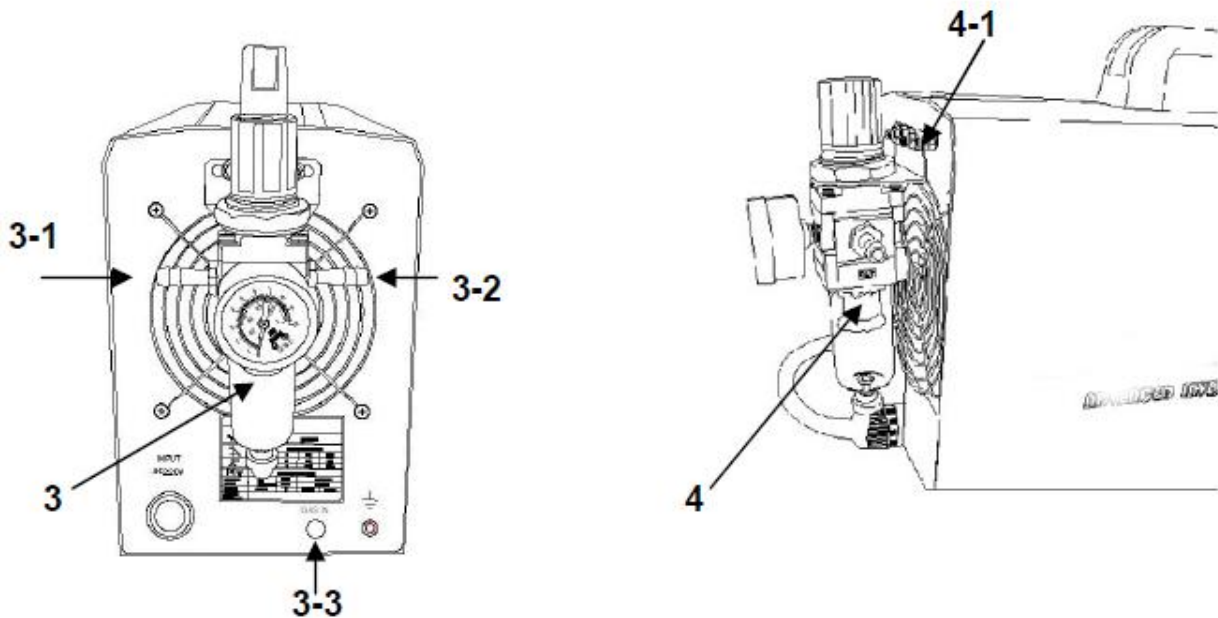


1. Air regulator

This is air regulator, This part is supplied along with machine, You will see it after you open carton.
 1-1. This terminal fix on a side of hose for air in, another side of hose connecting air compressor
 1-2. This terminal fix one side of hose for air out. Another side of hose for fix on picture 2-3.

2. Back of machine.

This is back of machine, Air regulator will be fixed there.
 2-1. This is screw for fix air regulator. Please be sure screw fasten after fix it.
 2-2. This is power cable, Connecting 220V or 110V.
 2-3. This is air in, A terminal of hose connecting here, Another terminal connecting air regulator 1-2
 2-4. Do not use this connection, Please just ignore it.



3. Installation of machine.

- 3-1. The terminal of hose connecting here, Another side of hose connect air compressor
- 3-2. Air hose is supplied, a terminal of hose connecting position 3-2, another side connect on 3-3
- 3-3. This terminal for air in. The air input from 3-1 via 3-2 to 3-3.

4. Installation finished.

- 4-1. After fixed all parts as per instruction, user can see two screws in this Position. Please make sure screw fasten.

Note: Please to be sure keep air into machine before press torch trigger.

How to installation of the air regulator:

Please refer to the right drawing.

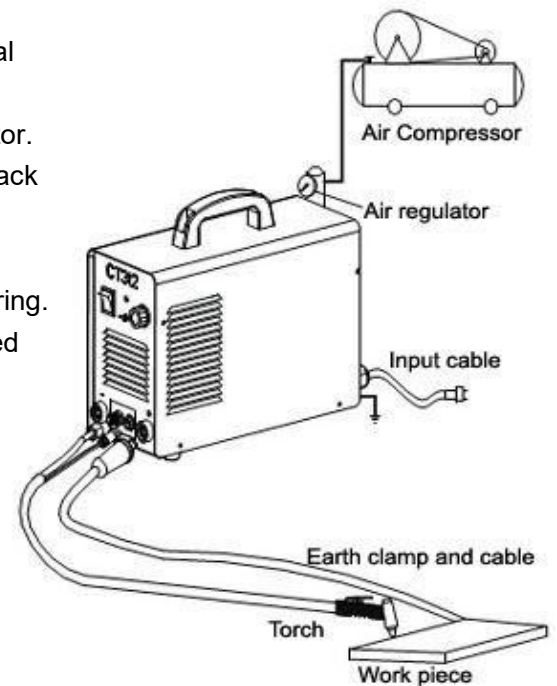
The installation and operation of the air regulator.

- 1) Seal the connection of the copper gas fitting and the "IN" terminal and "OUT" terminals.
- 2) Connect the regulator seal to the installation place of the regulator.
- 3) Install the regulator bracket to the two screws at the top of the back of the machine.
- 4) Remove the mounting ring from the top of the regulator and install the regulator to the mounting bracket and re-attach with ring.
- 5) Release the gas valve, modulate the pressure of gas to stipulated pressure and press the button
- 6) The gas pressure is 4 times of normal atmospheric pressure.
- 7) In case that the water-filtering bottle is full with water, Remove the water.

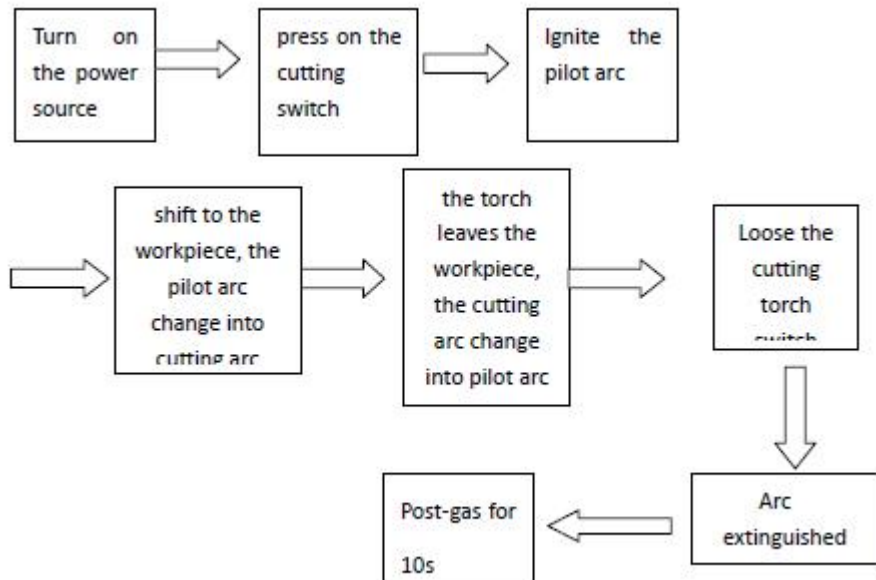
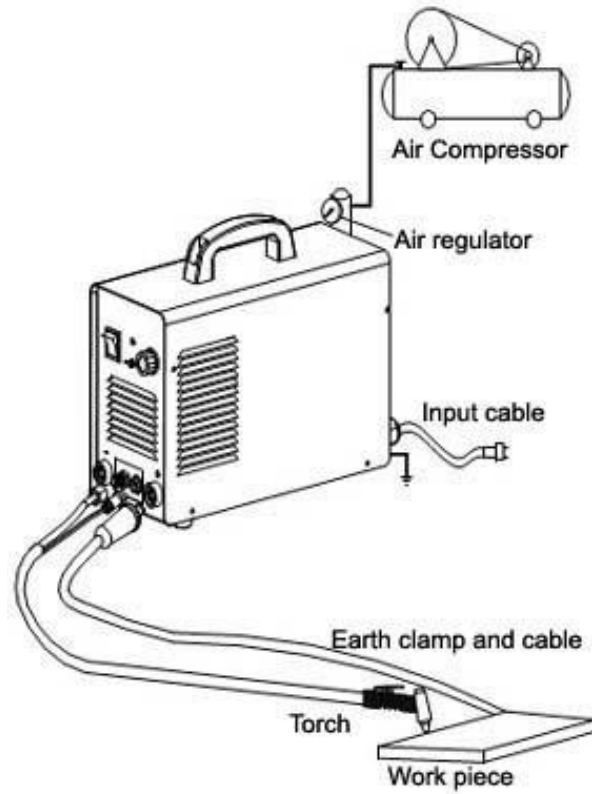
Please note that:

Please choose the gas supply respectively for TIG welding and plasma cutting are different.

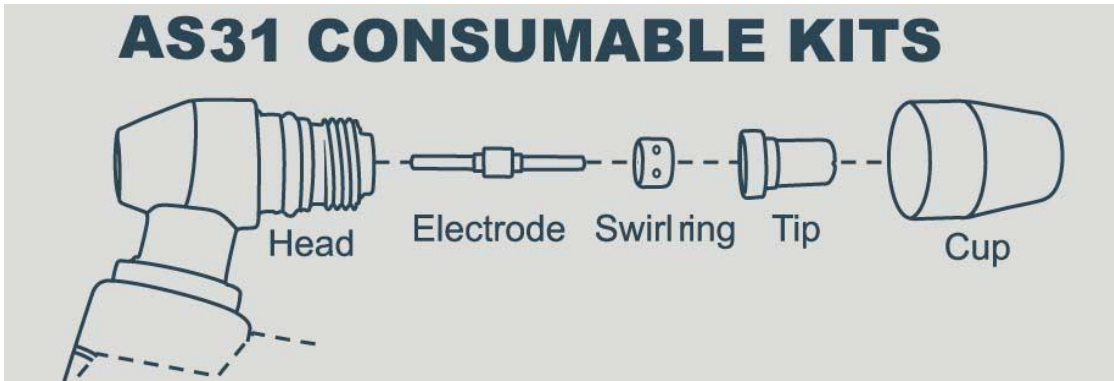
The duty cycle for cutting of CT416/520 is 60%



5.Connection



6.ACCESSORIES



ACCESSORIES / OPTIONS

Standard Accessories

1. Earth clamp

With earth lead and euro plug Length for earth lead is an option



2. Air regulator

Air regulator must be installed before use machine, Set the air pressure range: 70 PSI to 80 PSI, User can adjust it accordingly to get better cutting, Machine may not cut in higher or lower air pressure.



3. Plasma cutting torch AS-31

Depend on model, standard torch AS31 or pilot-arc Torch AS60P would be supplied with machine. User also can select other model of torch. Accessories:

- ① Ceramic cup
- ② Tip / Nozzle
- ③ Electrode
- ④ Ceramic ring / diffuser



7.ACCESSORIES

1. Working environment

- 1.1 The location in which this cutting equipment is installed should be of little dust, corrosive Chemical gas or materials, and for maximum 80% humidity.
- 1.2 Avoid the operation of cutting outdoors unless sheltered from the sun, rainwater and snow etc; The temperature of working environment should be maintained within -10°C to $+40^{\circ}\text{C}$.
- 1.3 Keep this cutting equipment 30cm distant from the wall;
- 1.4 Keep the working environment in good ventilation.

2. Safety tips

2.1 Ventilation

This welding & cutting equipment is small-sized, compact in structure, and of excellent performance in current output. Fans are required to abstract heat and smoke generated by this cutting equipment while the operation of welding is carried out.

Cautions:

Maintain good ventilation of the louvers of this welding & cutting equipment, The minimum distance between this welding & cutting equipment and any other object in or near the working area should be 30cm. Good ventilation is of critical importance for the normal performance and service life of this welding & cutting equipment.

2.2 Welding operation is forbid while this welding & cutting equipment is of over-load.

A sudden halt may occur while the cutting operation is carried out while this welding & cutting machine is Of over-load status. Under this circumstance, It is unnecessary to restart this welding & cutting equipment. Keep the built-in fan working to bring temperature down inside this welding & cutting equipment.

2.3 Over-voltage is forbid.

Regarding the power supply voltage range of the welding & cutting machine, please refer to main Parameter table. This welding & cutting equipment is of automatic voltage compensation, Which enables The maintaining of the voltage range within the given range. In case that the voltage of input power supply Current exceeds the stipulated value, It is possibly damaging to the components of this welding & cutting Equipment.

2.4 It is strongly forbid to contact the output terminal while welding or cutting is performed. An electric shock Possibly occurs.

8.MAINTENANCE

Exposure to extremely dusty damp or corrosive air is damaging to this welding & cutting machine. In order to prevent any possible failure or fault of this welding & cutting equipment clean the dust at regular intervals with Clean and dry compressed air of required pressure.

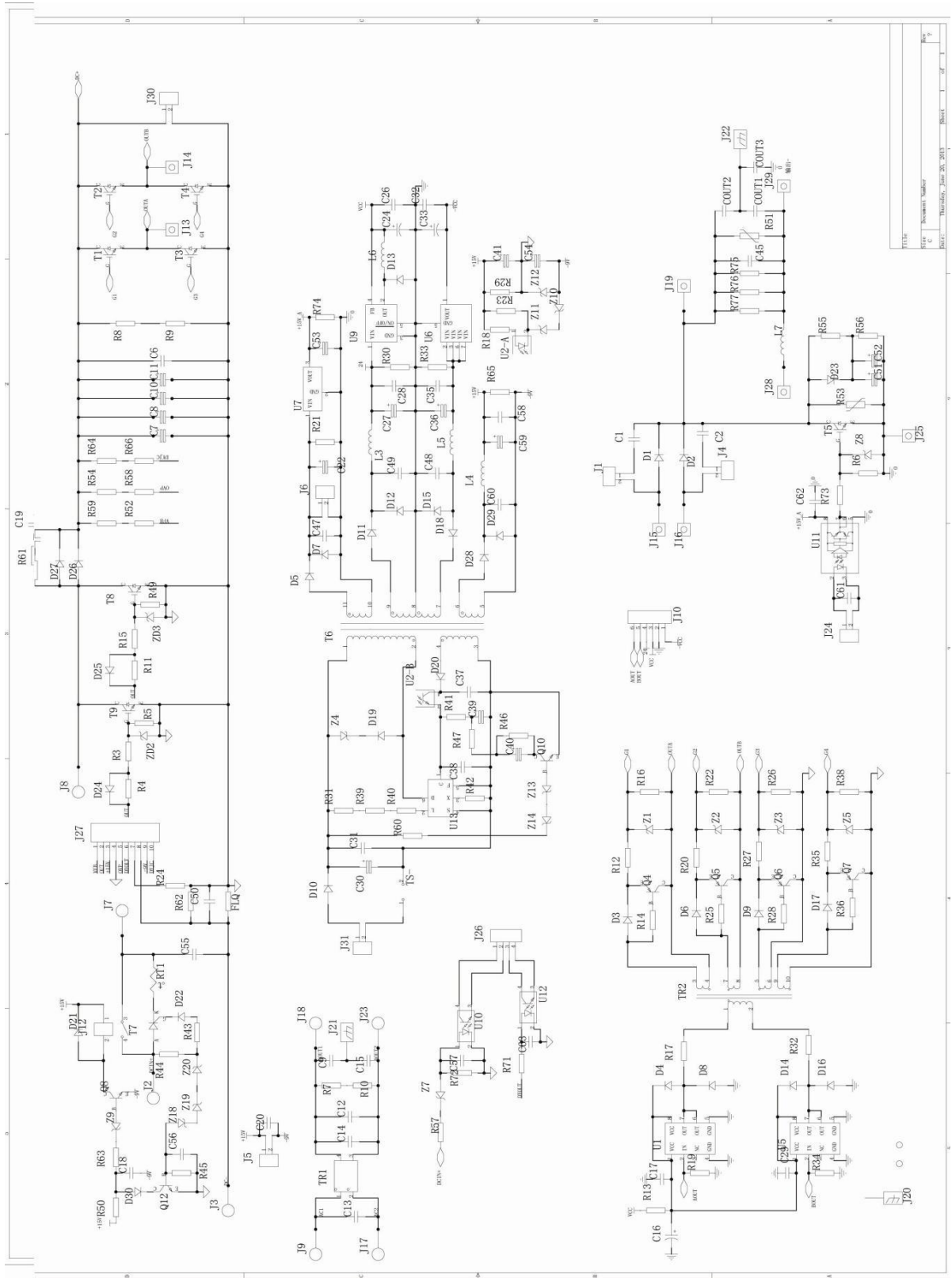
Please note that: lack of maintenance can spell to the unavailability and cancellation of the guarantee; The guarantee of this welding & cutting equipment will be no longer available in case that it has been attempted to take the machine apart or the open the factory-made sealing of the machine.

9. TROUBLESHOOTING

CAUTIONS: Only the qualified technicians are authorized to undertake the repair task

PROBLEM	CAUSE	SOLUTION
Torch will not come on	Power Switch Off Air supply is compromised Workpiece Ground Clamp not attached.	Turn Power Switch to the On Position Another indication of this is a more green flame Check air supply. Attach to workpiece or to steel table with work piece securely clamped to table.
Sparks are shooting upward Instead of down through the Material.	Plasma Torch is not piercing the material. Torch may too far away from stock Material may not be grounded properly Travel speed too fast	Increase current. Decrease the distance of your torch to stock Check connections for proper ground. Reduce speed
Beginning of cut not completely pierced	Possible connection problem	Check all connections
Dross build-up on parts of cuts	Tool/Material building up heat Cutting speed too slow or Current too high. Worn torch parts	Allow material to cool then continue cut. Increase speed and/or reduce current until dross is reduced to minimum. Inspect and repair or replace worn parts.
Arc stops while cutting	Cutting speed too slow Torch is too high, away from material Worn torch parts Workpiece ground cable disconnected	Increase speed until problem solved Lower torch to recommended height Inspect and repair or replace worn parts Connect Workpiece Ground Clamp to workpiece or steel table.
Insufficient penetration	Cutting speed too fast Torch tilted too much Metal too thick Worn torch parts	Slow travel speed Adjust tilt. Several passes may be necessary Inspect and repair or replace worn parts
Consumables wear quickly	Exceeding unit capability Excessive Pilot arc time Improperly assembled torch Inadequate air supply, pressure too low. Faulty air compressor	Material too thick, increase angle to prevent blow back into torch tip. Do not pilot for more than 5 seconds. You can also start with torch in contact with metal or within 1/16" of metal. See section titled "Torch Assembly" Check air filter, increase air pressure. Check air compressor operation and make sure input air pressure is at least 100 PSI

10. DIAGRAM



FILE:	
DATE:	
DESIGNER:	
CHECKER:	
DATE:	
PROJECT:	
SHEET:	
NO.:	