

Welding & Cutting Equipment

The international symbol of
safe welding, better welds,

reinterpreted with

a modernized design and a new-generation electrical engineering.

It doesn't just weld. It welds with perfection.

PLASMA AIR CUTTING MACHINE

USER'S MANUAL

Welding & Cutting Equipment

USER'S MANUAL
For the following models

1PH CUT 60;

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Warning!



On the process of welding or cutting , there will be any possibility of injury , so please take protection into consideration during operation . More details please review the Operator Safety Guide , which complies With the preventive requirements of the manufacturer

Electric shock——may lead to death ! !

- Set the earth fitting according to applying standard.
- It is forbidden to touch the electric parts and electrode when the skin is not protected, or when user wearing wet gloves or clothes.
- Make sure you are insulated from the ground and the workshop.
- Make sure you are in safe position.

Gas——may be harmful to health !

- Keep your head out of the gas.
- When arc welding , air extractor should be used to prevent from breathing gas.

Arc radiation——Harmful to your eye and burn your skin.

- Use suitable helmet and light filter , wear protective garment to protect eye and body.
- Use suitable helmet or curtain to protect looker-on.

Fire

- Welding spark may cause fire , make sure the welding area no tinder around.

Noise——extreme noise harmful to ear.

- Use ear protector or others means to protect ear .
- Warn that noise harmful to hearing if looker-on around.

Malfunction——When trouble, count on the professionals

- If trouble in installation and operation, please follow this manual instruction to check up.
- If fail to fully understand the manual, or fail to solve the problem with the instruction, you should contact the suppliers or service center for professional help.

PRODUCTS INSTRUCTION

Thank you for your purchase of our Cutting machines.

Our Cutting machines, Cut 60, Cut 60E, are made by the most advanced inverting technology.

50/60 Hz power input is being inverted to over 100Khz and then a stepped hctiws fo ygonlhcet gnitrevni ot euD .tnerruc de itcer htiw egatlov nwod power is used, dimensions and weight of the power source has been reduced yltnac ingis.

HF arc starting system is very easy for users to strike an arc.

Our Cutting machines can either be HF TOUCH START or HF PILOT ARC START.

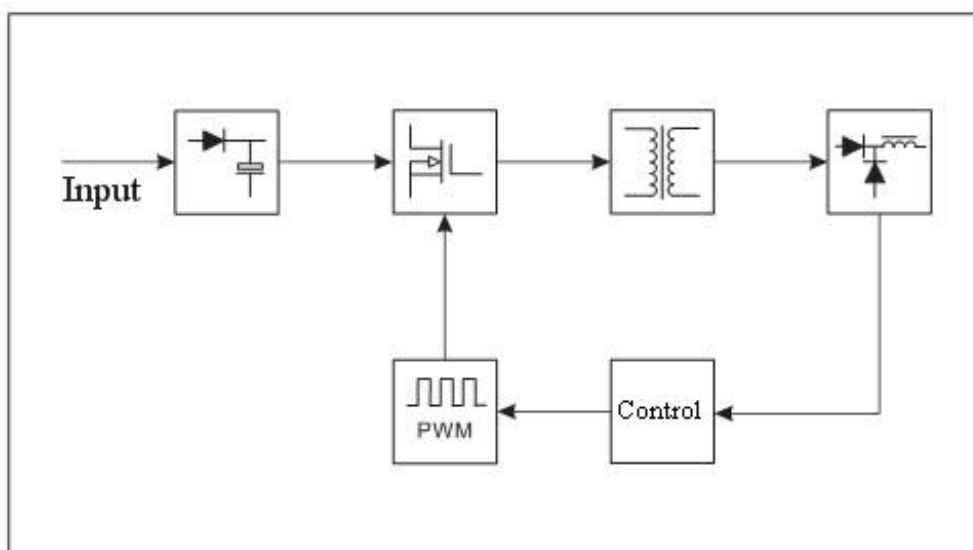
The advantages of our machines as follows:

1. stable
2. reliable
3. light weight
4. energy saving
5. high cutting efficiency
6. great cutting performance

Cutting machines can be used widely; they are suitable for cutting stainless, steel, alloy steel, mild steel, copper and other color metals

Welcome to use our products and make suggestions; we will try our best to support your business.

Flow Diagram



Tech Specs

Model	CUT 40	CUT 40Y	CUT 60	CUT 60E	CUT 70	CUT 70E	CUT 100	CUT 120	CUT 160	CUT 100E	CUT 120E	CUT 160E
Input Voltage	1ph ~ AC220V±10%						3ph ~ AC380V±10%					
Input Power (KVA)	4.80	5.30	7.73	7.73	9.37	9.37	15.70	20	30	15.70	20	30
Max Output Current (A)	40	40	60	60	70	70	100	120	160	100	120	160
Duty Cycle @ 40°C	40 A @ 60%	40 A @ 60%	60A@60%	60A@100%	70A@60%	70A@100%	100A@60%	120A@60%	160A@60%	100A@100%	120A@100%	160A@100%
No Load Voltage (V)	260	260	350	350	330	330	350	340	340	350	340	340
Hot Start	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Protection & Insulation	IP 21 & F	IP 21 & F	IP 21 & F	IP 21 & F	IP 21 & F	IP 21 & F	IP 21 & F	IP 21 & F	IP 21 & F	IP 21 & F	IP 21 & F	IP 21 & F
Clean Cut	7 mm	7 mm	15mm	15mm	15mm	15mm	20mm	25mm	35mm	20mm	25mm	35mm
Max Cut	17 mm	16 mm	25mm	25mm	25mm	25mm	35mm	45mm	50mm	35mm	45mm	50mm
Dimensions (mm)	338x179x266	338x344x330	480x230x420	480x230x420	480x230x420	480x230x420	535x275x470	535x275x470	577x305x545	535x275x470	535x275x470	577x305x545
Weight (kg)	9 kg	20 kg	21 kg	21 kg	21 kg	21 kg	24 kg	24 kg	36 kg	24 kg	24 kg	36 kg

Cut Current Setup

Setting up cutting current and air pressure is critical to cutting performance.

Industrial consensus is: Cutting current = (80~100) * tip hole

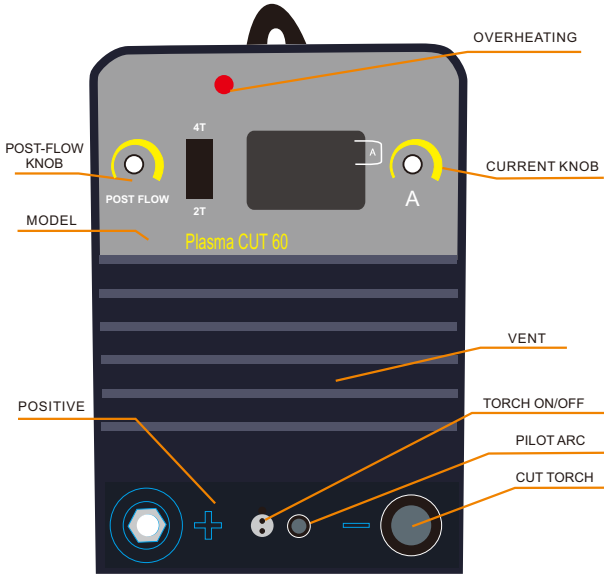
We recommend the setup as follows:

CUT TIP SIZE	CUT CURRENT	AIR PRESSURE	CLEAN CUT	MAX CUT
1.1	85 ~110 A	4.0 ~ 5.0 Bar	20 mm	30 mm
1.4	100~140 A	4.5 ~ 5.5 Bar	25 mm	35 mm
1.7	120~160 A	5.0 ~ 6.0 Bar	35 mm	50 mm

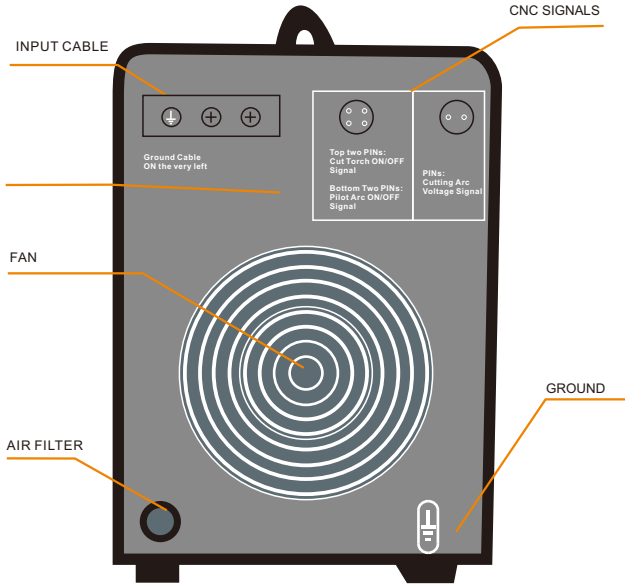
SWITCH EXPLANATION

FOR 1PH CUT60

FRONT PANEL



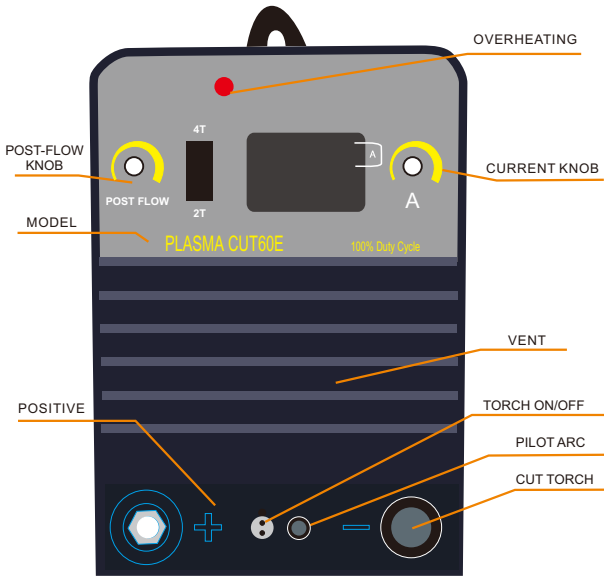
BACK PANEL



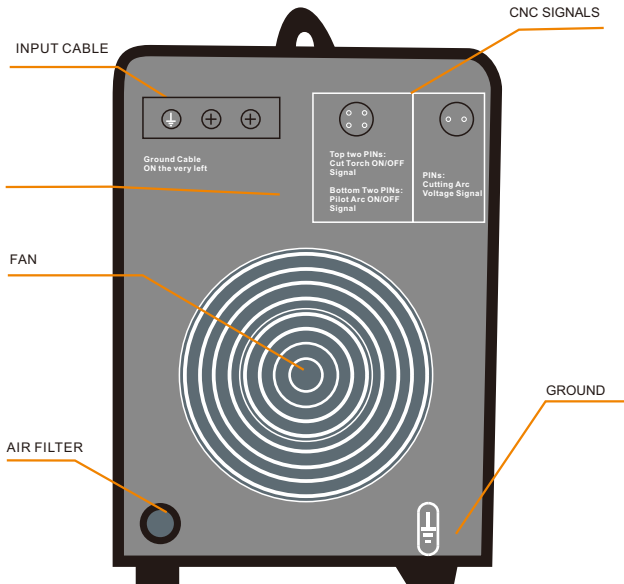
SWITCH EXPLANATION

FOR 1PH CUT60

FRONT PANEL



BACK PANEL



Installation instruction

Input cable connection (enclose installing diagram)

1. Every machine has been disposed a power cable which must be connected to coordinated voltage class in compliance according to input voltage of cutting machine. If cutting machine whose power voltage is 380v is connected wrong to AC 220v ,that will cause components of inter-machine are burned up .
2. Make sure power cable is connected to power switch reliably and prevent from oxidizing. Make sure power voltage is inside the waved range.
3. For CNC cutting, please see the back panel for CNC signal control instructions.

Output cable connection

1. Make sure tube of pressed air is connected to copper connector by high pressure rubber tube firmly .
2. Make sure copper screw of another end of torch is connected to electrify integration terminal then tighten them clockwise relation (prevent from leaking gas). Mobile plug of another end of grounding cable pincer is connected to positive terminal of front panel then tighten it .
3. Make sure air plug of torch is connected to switch connector of panel (If it is arc-supporting cutter ,arc-supporting cable of torch is connected to terminal of arc-supporting .)

CHECK

1. Check if cutting machine is grounded reliably according to standard .
2. Check if all connectors are connected firmly .
3. Check if power voltage is correct .

OPERATION

1. Turn on the power switch at the back panel, make sure the power switch is at "on" position. At this time, indicator of power switch is on. Screen will show the output current.
2. Adjust the gas pressure and make it adequate to the power source, open the valve of the pressed air.
3. Press the control knob on the torch, electro magnetic valve is started, the sound of HF arc striking can be heard and burner of torch should flow out gas (burner of arc supporting cutter should spurt fire).
4. Make sure cutting current is adequate to machine according to the thickness of cutting piece.
5. It is 1mm from copper tip to work piece (it is further if it is arc-supporting cutter), press knob on the torch and burn and strike an arc, spark of HF arc-striking will diminished immediately. Cutting is ready by now.

INSTRUCTION NOTES

Operation environment

1. The cutting machine perform in environment where conditions are particularly harsh and with outside temperature between -10 and $+40$ degrees centigrade with a dampness level of max 80% .
2. Avoid to use in sun shine and dropping environment .
3. Keep machine dry and avoid water into machine .
4. Do not use the cutting machine in environment where condition is polluted with high concentration of dust or corrosive gas in the air .

SAFETY

1. Make sure the working area is adequately ventilated.

Cutting machine is light and its structure is compact and the electromagnetic fields generated the high current. So natural wind can not cool down components, there are two axial-flow fan inside cool it down.

NOTES: Exhaust shutter must not in block or covered, it is 0.3 m from machine to environment objects. Make sure keep improving ventilated situation, it is very important to machine .

2.No over-load

Limited to cutting current strictly according to max allowable current with all kinds of duty cycles .Do not exceed load working in order to prevent from shorting use lifetime of cutting machine even burning up machine .

3.No over-voltage

Power voltage range of cutting machine is according to main technical data sheet .Voltage automatic compensation circuit will prevent from exceeding allowable arrange .If power voltage is too high, and that will damaged to components .Users must be carefully .

4. There is a grounding screw which is marked grounding behind cutting machines. Make sure the machine is grounded reliably by cable whose section is 6 square millimeter in order to prevent from leaking electrify and bringing electrostatic .

5. Inter heat-variable component is starting if machine is exceeded in duty cycles .that will cause cutting machine will stop working suddenly and inter red diode is lit. Users need not break the circuit and the fan may continue working in order to cool down the machine. Once temperature is reduced to allowable arrange ,machine can be operated again

CUTTING NOTES

1. Make sure copper tip must not be connected to work piece directly when cutting.

Torch should be inclined and it is 1 mm from inter-hole of copper tip to work piece in order to protect copper tip.

2. As arc-supporting cutting machine ,if arc-supporting frequency is down or there is no arc-supporting ,user may be get rid of oxidized film of inter electrode by abrasive paper .

MAINTENANCE

1. Remove dust with compressed air regularly. If cutting machine is placed in environment where condition is polluted with smoke and dust ,cutting machine must be removed dust every day .

2. Pressure is adequate for cutting in order to protect little components.

3. Check the electrify connectors and make sure the connectors are connected firmly (specially connect and insert components),tighten the connectors .

4. Avoid water into machine and keep machine dry inside, or the machine must be dried in time and measured insulation by meter. After there is no problem ,the machine can be used.

5. If the machine is not used for long time ,it should be kept in its own packing box and store in a dry environment .

TROUBLE SHOOTING

FAULT	SOLUTIONS
1.Switch indicator is on, but the fan is not working and control knob is out of work .	1.Over voltage protection is working .Turn if off and then turn it on again after several minutes .
2.Switch indicator is lit and fan is working .However ,press control knob of torch ,there is no HF arc-striking sound and electromagnetic valve is not working .	1. Check if torch is open circuit . 2. Check if control knob of torch is damaged . 3. Part of assistant power of top board is damaged and thereis no DC output .
3.Switch indicator is lit and fan is working .However ,press control knob of torch ,there is no HF arc-striking sound and inter red diode is lit .	1. Check if main control board is damaged (inverting PCB is damaged) . 2. Rising transformer of bottom board is damaged . 3. Control connector or control PCB is damaged .
4. Switch indicator is lit and fan and electromagnetic valve are working. However, there is no sound of HF arc-striking and inter red diode is not lit .	1.Is the grounding cable of the welding power source broken? Is it securely connected? 2. Is the grounding cable of the base material broken. Is it securely connected?
5.Other of machine is normal ,but arc can not be stricken when it is in operation .	1. Input voltage is too low . 2. Pressure of air compressor is too high or too low .