



# GeKaMac®



## PowerPlus+ CUT 41i Users Manual

Please Read and Understand This Manual  
Before Operating The Welding Machine

[www.gedikwelding.com](http://www.gedikwelding.com)

This machine is for internal use only.

It complies with the WEEE Directive.

This machine has been designed in accordance with the EN 60974-1 and EN 60974-10 standards.

The machine is safe when installation, operation, and maintenance are performed in accordance with the user manual and regulations. The operator and machine owner are responsible for adhering to safety rules.

Gedik Kaynak San. Ve Tic. A.Ş. assumes no responsibility for safety or CE compliance if any modifications are made to the machine or if safety rules are not followed.



**This Class A equipment is not suitable for use in homes and similar residential areas where the power supply is provided by the low-voltage public electricity network.**



This machine is not household waste and cannot be disposed of in the trash.

When the machine reaches the end of its service life or becomes obsolete, it must be disposed of in accordance with regulations.

**COMPLIES WITH THE WEEE DIRECTIVE.**

### **Eco Design Statement**

This machine has been designed and manufactured in accordance with the requirements of the 2009/125/EC Eco Design Directive concerning the environmentally friendly design of energy-related products.

Accordingly, machines with an idle mode are as follows.

	<b>Idle Mode</b>
<b>MMA</b>	<b>X</b>
<b>MIG</b>	√
<b>TIG</b>	√
<b>Plazma</b>	√
<b>SAW</b>	<b>Out of Scope</b>

**Efficiency measurements should be conducted only on the power unit. The water cooling system should be disabled. For more information on measurements and machine settings, Gedik Kaynak Sanayi ve Ticaret A.Ş. should be consulted.**

## Dear Customer

This instruction manual will help you get to know your new machine. Read the manual carefully and you will soon be familiar with all the many great features of your new product. Meanwhile, please remember well safety rules and operate as instruction.

If you treat your product carefully, this definitely helps to prolong its enduring quality and reliability—things which are both essential prerequisites for getting outstanding results.

Production specification may change without advance notice.

The model you purchase is:

**PowerPlus+ CUT 41i**

Please find corresponding models from the "Contents".

### **Important:**

Please take special note of safety rules and operate as instruction in case of damage and serious injury.

# Safety Rules



“**Danger**” indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



“**Warning!**” indicates a possible hazardous situation which, if not avoided, could result in death or serious injury. The possible hazards are explained in the text.



“**Caution**” indicates a possible hazardous situation which, if not avoided, may result in slight or moderate injury.



“**Note!**” indicates a situation which implies a risk of impaired cutting result and damage to the equipment.



## Utilisation for intended purpose only

- The machine may only be used for jobs as defined by the “Intended purpose”.
- Utilisation for any other purpose, or in any other manner, shall be deemed to be “not in accordance with the intended purpose”. The manufacturer shall not be liable for any damage resulting from such improper use.



## Safety signs

- All the safety instructions and danger warnings on the machine must be kept in legible condition, not removed, not be covered, pasted or painted cover.



## Safety inspection

- The owner/operator is obliged to perform safety inspection at regular intervals.
- The manufacturer also recommends every 3-6 months for regular maintenance of power sources.



## Electric shock can kill

- Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on. In MIG/MAG welding, the wire, drive rollers, wire feed housing and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.
- Do not touch live electrical parts of the cutting circuit, electrodes and wires with your bare skin or wet clothing.
- The operator must wear dry hole-free insulating gloves and body protection while performs the cutting.
- Insulate yourself from work and ground using dry insulating protection

which is large enough to prevent you full area of physical contact with the work or ground.

- Connect the primary input cable according to rules. Disconnect input power or stop machine before installing or maintenance.
- If welding must be performed under electrically hazardous conditions as follow: in damp locations or wearing wet clothing; on metal structures such as floors, gratings, or scaffolds; when in cramped positions such as sitting, kneeling, or lying; or in occasion when there is a high risk of unavoidable or accidental contact with the work piece or ground. Must use additional safety precautions: semiautomatic DC constant voltage (wire) welder, DC manual (Stick) welder and AC welder with reduced open-load voltage.
- Maintain the electrode holder, ground clamp, cutting cable and cutting machine in good, safe operating condition. Replace damaged part immediately.



### **Electric and magnetic fields (EMF) may be dangerous**

- If electromagnetic interference is found to be occurring, the operator is obliged to examine any possible electromagnetic problems that may occur on equipment as follow:
  - minas, signal and data-transmission leads
  - IT and telecoms equipment
  - measurement and calibration devices
  - Wearers of pacemakers
- Measures for minimizing or preventing EMC problems:
  - Mains supply

If electromagnetic interference still occurs, despite the fact that the mains connection in accordance with the regulations, take additional measures

- cutting cables

Keep these as short as possible

Connect the work cable to the work piece as close as possible to the area being welded.

Lay tem well away from other cables.

Do not place your body between your electrode and work cables.

- Equipotential bonding
- Workpiece grounding (earthing)
- Shielding

Shield the entire cutting equipment and other equipment nearby.

### **ARC rays can burn.**



- Visible and invisible rays can burn eyes and skin.
- Wear an approved welding helmet or suitable clothing made from durable flame-resistant material (leather, heavy cotton, or wool) to protect your eyes and skin from arc rays and sparks when cutting or watching.
- Use protective screens or barriers to protect other nearby personnel

with suitable, non-flammable screening and/or warn them not to watch the arc nor expose themselves to the arc rays or to hot spatter or material.



### **Fumes and gases can be dangerous**

- cutting may produce fumes and gases, breathing these fumes and gases can be hazardous to your health.
- When cutting, keep your head out of the fume. If inside, ventilate the area at the arc to keep fumes and gases away from the breathing zone. If ventilation is not good, wear an approved air-supplied respirator.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator.
- cutting fumes and gases can displace air and lower the oxygen level causing injury or death. Always use enough ventilation, especially in confined areas, to insure breathing air is safe.



### **Welding and cutting sparks can cause fire or explosion.**

- When not welding, make sure the electrode circuit is not touching the work or ground. Accidental contact can cause sparks, explosion, overheating, or fire. Make sure the area is safe before doing any welding.
- Welding and cutting on closed containers, such as tanks, drums, or containers, can cause them to blow up. Make sure proper steps have been taken.
- When pressure gas is used at the work site, special precautions are required to prevent hazardous situations.
- Connect work cable to the work as close to the welding zone as practical to prevent welding current from passing too long and creating fire hazards or overheat.
- Wear oil-free protective garments such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap. Wear ear plugs when welding out of position or in confined places. Always wear safety glasses with side shields when in a welding area.
- Be attention that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas and start a fire. Remove fire hazardous from the welding area, if not possible, cover them thoroughly. Do not weld where flying sparks can strike flammable material and where the atmosphere may contain flammable dust, gas, or liquid vapors (such as gasoline).
- Protect yourself and others from flying sparks and hot metal. Remove any combustibles from operator before perform any welding.
- Keep a fire extinguisher readily available.
- Empty containers, tanks, drums, or pipes which have combustibles before perform welding.
- Remove stick electrode from electrode holder or cut off welding wire at contact tip when not in use.



Apply correct fuses or circuit breakers. Do not oversize or bypass them.

### **Cylinder can explode if damaged.**

- Pressure gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.
- Cylinders should be located away from areas where they may be struck or subjected to physical damage. Use proper equipment, procedures, and sufficient number of persons to lift and move cylinders.
- Always install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling over or tipping.
- Keep a safe distance from arc welding or cutting operations and any other source of heat, sparks, or flame.
- No touching cylinder by welding electrode, electrode holder or any other electrically “hot” parts. Do not drape welding cables or welding torches over a gas cylinder.
- Use only correct compressed gas cylinders, regulators, hoses, and fittings designed for the process used; maintain them and associated parts in good condition.
- Use only compressed gas cylinders containing the correct shielding gas for the and properly operating regulators designed for the gas and pressure used. All hoses, fittings, etc. should be suitable for the application and maintained in good condition.
- Open the cylinder valve slowly and keep your head and face away from the cylinder valve outlet.

Valve protection caps should be kept in place over valve except when the cylinder is in use or connected for use.

### **Hot parts can burn**



- Do not touch hot parts with bare hand or skin.
- Ensure equipment is cooled down before perform any work.
- If touching hot parts is needed, use proper tools and/or wear heavy, insulated welding gloves and clothing to prevent burns.

### **Flying metal or dirt can injure eyes**



- When welding, chipping, wire brushing, and grinding can cause sparks and flying metal. It can hurt your eyes.
- Remember wear appropriate safety glasses with side shields when in welding zone, even under your welding helmet.



### **Noise can damage hearing**

- Noise from some processes or equipment can damage hearing.

Remember wear approved ear protection to protect ears if noise level is high.



### **Moving parts can injure**

- Stay away from moving parts such as fans.
- Stay away from pinch points such as drive rolls.
- Keep all doors, panels, covers, and guards closed and securely in place.
- Have only qualified persons remove doors, panels, covers, or guards for servicing and maintenance.
- Reinstall doors, panels, covers, or guards when servicing and maintenance is finished and before reconnecting input power.



### **Overuse can cause overheating**

- Use machine follow duty cycle. Reduce current or reduce duty cycle before starting to weld again.
- Allow cooling period.

Do not block or filter airflow to unit.



### **Safety markings**

Equipment with CE-markings fulfils the basic requirements of the Low-Voltage and Electromagnetic Compatibility Guideline (e.g. relevant product standards according to EN 60974).



### **Safety markings**

Equipment with CCC markings meets the requirements of implementations rules for China compulsory certification (e.g. relevant product standards according to GB/T 15579) .



### **Safety markings**

CSA marked equipment meets the requirements of the North American market safety certification implementation rules (e.g. relevant product standards according to CAN/CSA-E60974,ANSI/IEC 60974)



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# 1-GENERAL REMARKS

This CUT series inverter air plasma cutter is kind of energy-saving metal cutting equipment with high efficiency and light weight, adopts single tube IGBT HF inverter and advanced control technology. Its advantages are fast speed, narrow & clean cut, small heat-affected zone, slightly deforming, material-saving, low cost, simple operation and so on. These cutters possess good static and dynamic characteristics, perfect control function, and high-frequency arc starting function. The characteristics are as follows:

## 1-1 Power source features

Highlights as follows:

- Single phase power supply, small size, light weight and easy to operate;
- Air filter pressure-reducing valve is built-in type, portable and easy to use;
- Highly centralized arc energy, good stability, strong cutting ability;
- Fast cutting speed (3~5 times of gas cutting), low cost;
- Narrow, burnished, clean and almost vertical cutting edge;
- Less work piece deformation;
- Continuous adjustment of cutting current;
- HF arc ignition, easy arc starting;
- Strong power grid adaptability and low noise;
- Multiple patented technology, high reliability and durability.

## 1-2 Functional principle

This series of cutting machines adopts HF inverter technology. 1- phase input volt is rectified by rectifier, inverted by inverter composed of single tube IGBT into HF AC, reduced by HF transformer, rectified and filtered by HF rectifier, then output DC power suitable for cutting. This progress increases the dynamic response capability, reduces the weight and the size of the transformer and the reactor, improves the efficiency of the machine, realizes energy-saving.

The special design of control circuit makes the machines enjoy high cutting performance despite of changes like power grid voltage fluctuation, cutting cable length. Features include easy arc starting, narrow, burnished and clean cutting edge, and continuously adjustable cutting current.

Schematic diagram is shown in Fig. 1-2-1:.

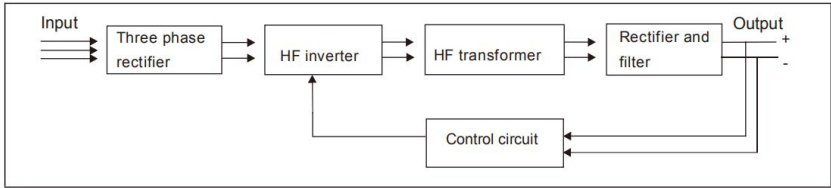


Fig.1-2-1: Schematic diagram

### 1-3 Output characteristics

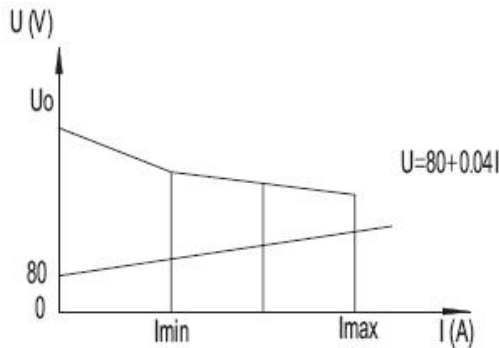


Fig.1-3-1: Output characteristics

### 1-4 Duty cycle

Duty cycle is percentage of 10 minutes that a machine can weld at rated load without overheating. If overheats, thermostat(s) will open, output stops. Wait for fifteen minutes for the machine to cool down. Reduce amperage or duty cycle before cutting.



**Note!** Exceeding duty cycle can damage the machine and greatly reduce its lifespan.

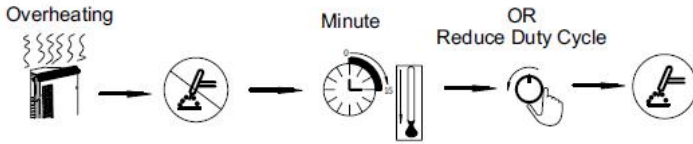
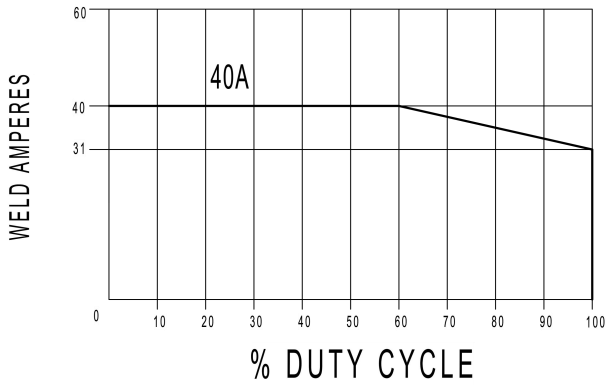


Fig.1-4-1: Duty cycle

## 1-5 Applications

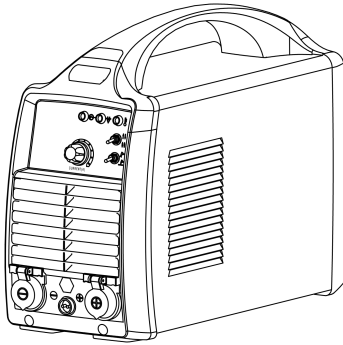
It can cut stainless steel, carbon steel, alloy steel, aluminum, copper, nickel and titanium.

The cutting machine is designed for the following recommend areas:

- Maintenance and repair
- Steel construction
- Metal shop
- Office furniture supplies
- Daily civil occasions

## 1-6 Warning label

The warning label is affixed on the top of machine.



<b>DANGER!</b> <b>WARNING!</b>		<b>DO NOT REMOVE THIS MARKING</b>	
	<ul style="list-style-type: none"><li>ELECTRIC SHOCK can kill.</li><li>Keep the welder and work piece in good grounding.</li></ul>		<ul style="list-style-type: none"><li>GASES AND FUMES can be dangerous &amp; hazardous to your health.</li><li>Keep adequate ventilation, anti-dust and exhaust.</li><li>Keep your head out of the fumes.</li></ul>
	<ul style="list-style-type: none"><li>ARC RAYS, Spatter can injure eyes and skins.</li></ul>		<ul style="list-style-type: none"><li>FIRE, EXPLOSION can be caused by hot slag, spatter and sparks.</li><li>Remove combustibles from working area.</li></ul>
	<ul style="list-style-type: none"><li>NOISE can cause permanent hearing loss.</li><li>Wear protective clothing and welding shield with filter.</li></ul>		<ul style="list-style-type: none"><li>Provide fire watch as well as fire appliance in the working area.</li></ul>

Fig. 1-6-1: Warning label

## 2-VERSIONS BRIEFS

Cutting of special materials requires special cutting parameters.

### ■ PowerPlus+ CUT 41i

This series of cutting machine is small, light and portable. Adopt single tube IGBT HF inverter technology, can perform fast speed cutting with clean and almost vertical cutting edge.

## 3-BEFORE COMMISSIONING



**Warning!** Operating the equipment incorrectly can cause serious injury and damage. Do not use the functions described here until you have read and completely understood “safety rules”.

### 3-1 Utilization for intended purpose only

The power source may only be used for cutting. Utilization for other purposes, or in any other manner, shall be deemed to be "not in accordance with the intended purpose". The manufacturer shall not be liable for any damage resulting from such improper

use. Operate, inspect and maintain should follow all the instructions given in this manual.

### 3-2 Machine installation rules

According to test, protection degree of this power source is IP23S. However, the internal key components must be protected from direct soaking.



**Warning!** A machine that topples over or falls from its stand can cause injury.

Place equipment on an even, firm floor in such a way that it stands firmly.

The venting duct is very important for safety protections. When choosing the machine location, make sure it is possible for the cooling air to freely enter and exit through the louvers on the front and back of machine. Any electro conductive metallic dust like drillings must not be allowed to get sucked into the machine.

### 3-3 Power source connection

- The power source is designed to run on the voltage given on the nameplate.
- The mains cables and plugs must be mounted in accordance with the relevant technical standards.
- The power supply sockets that come with power source are designed to use strictly according to the marked voltages.



**Note!** Inadequately dimensioned electrical installations can lead to serious damage. The mains lead, and its fuse protection, must be dimensioned in accordance with the local power supply. The technical data shown on the nameplate shall apply.

## 4- PowerPlus+ CUT 41i

### 4-1 System components

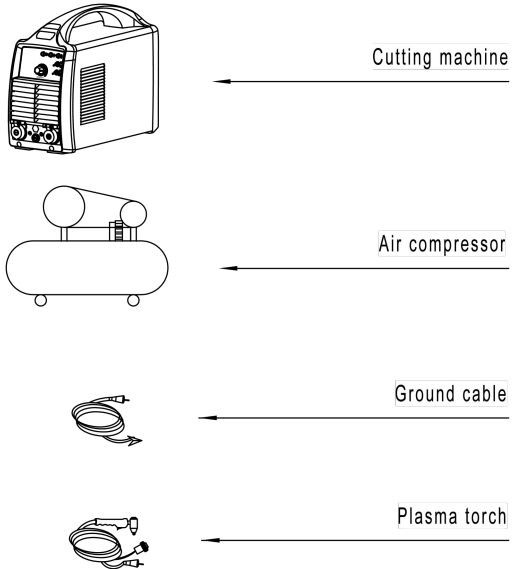


Fig. 4-1-1: System components

### 4-2 Basic equipment

Only be equipped with the necessary accessories, can the power source operate well.

The following is the needed accessories list.

CUT

- Cutting machine
- Ground cable
- Plasma torch
- Air compressor

## 4-3 Control panel

The functions on the control panels are all arranged in a very logical way.



**Note!** Some described parameters in this manual may be slightly different from the power source, some identification may be slightly different from power source identification, but the manner of working is the same.



**Warning!** Operating the equipment incorrectly can cause serious injury and damage. Do not use the functions described here until you have read and completely understood all content of this manual.

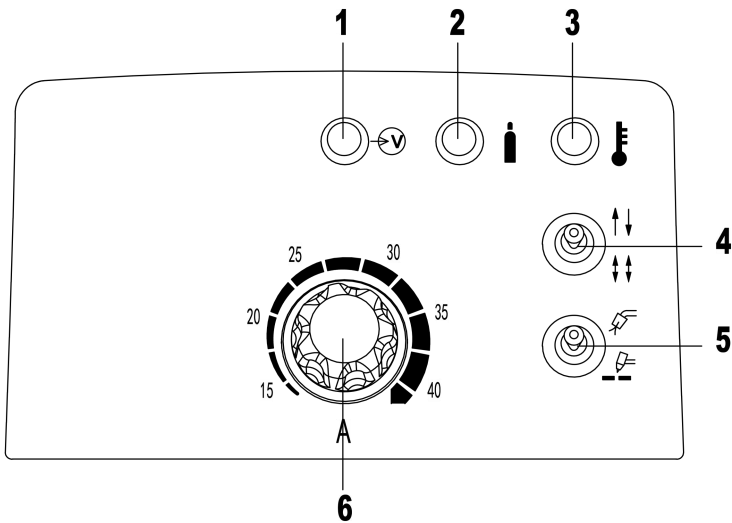


Fig. 4-3-1: Control panel

### 1. Power on indicator

It is green light, indicates whether cutting machine is connected well to power supply. It lights up when power on.

### 2. Gas pressure indicator

It is yellow light, does not light up during normal cutting; when input gas pressure of cutting machine is lower than **0.35MPa**, cutting machine will stop working automatically, protection indicator lights up.

### 3. Over heat/fan locked-rotor protection indicator

It is yellow light, does not light up when cutting machine works normal. It lights up when inner temperature is too high or fan is locked-rotor, and cutting machine will stop work



automatically.

#### 4.2 step/4 step switch

On 2 step mode, press torch trigger to start cut, release to stop, suit for short cut seam.

On 4 step mode, can release torch trigger to perform cut after pressing torch trigger and starting arc, re-press and release torch trigger to stop cutting, suit for long cut seam.

#### 5.Gas test/cut switch

On gas test mode, check whether gas circuit is normal. On cut mode, start normal cut.

#### 6.Current adjustment knob

For regulating the cutting current.

### 4-4 Interface

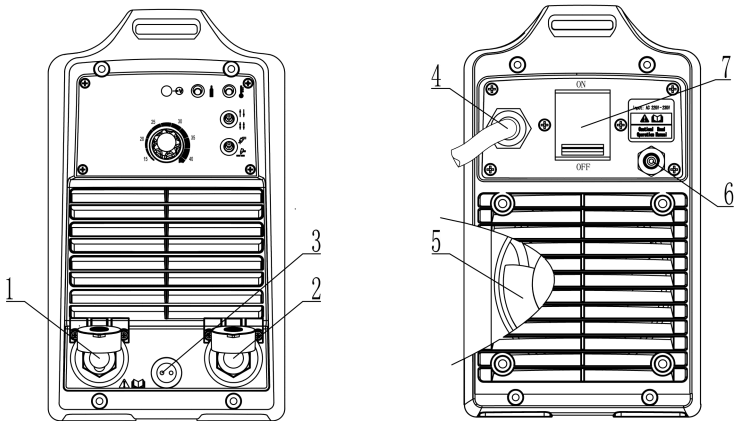


Fig. 4-4-1: interface

#### 1. Gas-electric torch connector (-)

Connect torch.

#### 2.Quick socket (+)

Connect the work piece.

#### 3.Control socket

Connect with control connector of cutting torch

#### 4.Power cord

The mixed-colored wire must be firmly grounded; the rest wires connect to 1- phase AC 220/230V ~50/60Hz power supply.

#### 5.Fan

Cool down the hot components inside cutting machine

#### 6.Gas inlet

Connect with compress gas source by gas hose.

#### 7.Main breaker

Switch for 220/230V single-phase AC power.Turn on this switch (on the position:“ ON”), then the Power on indicator lights up, and the fan runs.

## 4-5 Installation



**Warning!** An electric shock can be fatal. If the machine is plugged into the

mains electricity supply during installation, there is high risk of very serious

injury and damage. Do not use the functions described here until you have read

and completely understood “safety rules” in the beginning.Only carry out work

on the machine when

- the mains switch is on turn-off position,
- the machine is unplugged from the mains.

### ● Installation environment requirements

1. It should be placed indoors without direct sunlight, rainproof, low humidity and less dust. The ambient air temperature range is -10 ~+40 .
2. The inclination to the ground should not exceed 10° .
3. There should be no wind in the cutting station, if any, it should be covered.
4. The cutting machine is more than 20cm away from the wall, and the distance between the cutting machine is more than 10cm.

### ● Power supply and cable requirement

Please note the size of fuse and circuit breaker in the table below are for reference only.

Model		PowerPlus+ CUT 41i
Power supply		1- phase AC220/230V, 50/60Hz
Electricity grid min. power (KVA)	Power grid	9
	Generator	15
Input protection(A)	Fuse	50
	Circuit breaker	60
Cable size (mm <sup>2</sup> )	Power cord	2.5
	cutting cable	16
	Protective GND wire	2.5

Table.4-5-1:Power supply and cable requirement



**Note!** Cutting machine must be taken special design if it is powered by generator, Please contact with manufacturer if you have such needs.

● **Connections of power cord and distribution box**



**Warning!** -Avoid hot-line work

- Operating by professional electrician

- Avoid connecting two power sources to one breaker

- Please refer to Table 4-5-1 to check if standard of input voltage, breaker and input cable is suitable

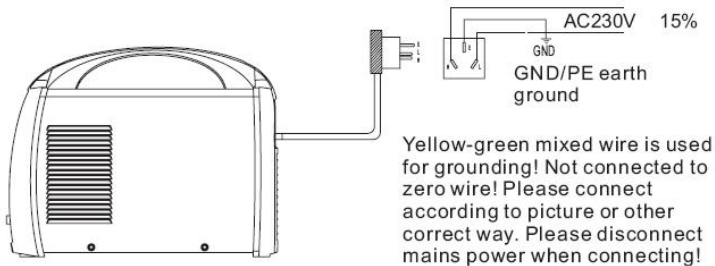


Fig. 4-5-1: Connections of power cord and distribution box

● **System installation**



**Warning!** Operating the equipment incorrectly can cause serious injury and damage. This part is about operating. Do not use the functions until you have read and completely understood content of this manual.



**Warning!** The positive and negative terminals of the cutting machine have high voltage, please cut off the input power before connecting the cutting torch to the ground wire.

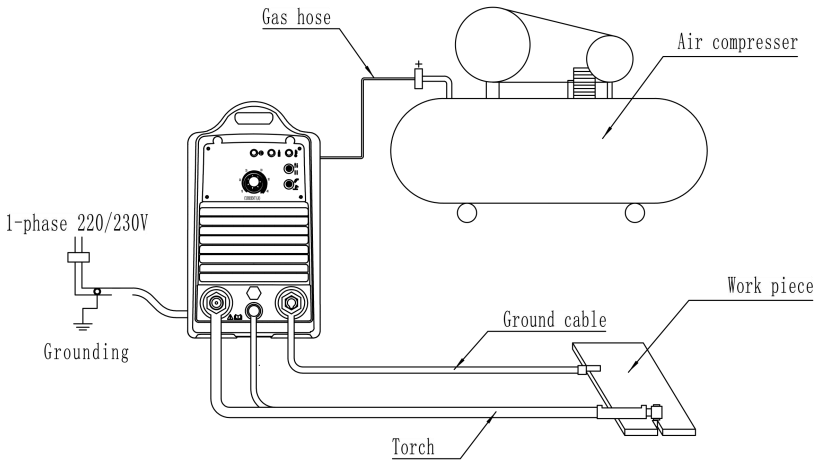


Fig. 4-5-2: Installation for cutting

## 4-6 Air requirements

### • Air supply requirements

The maximum working pressure of the air compressor selected by the cutting machine should be 0.8Mpa, and the minimum It must be less than 0.6Mpa, and air flow  $\geq 250\text{L}/\text{min}$ .

### • Air pressure requirements during cutting

During the cutting process, the air pressure of the cutting torch should be maintained at 0.35-0.55MPa (3.5-5.5bar).The cutting machine has a built-in regulating valve, which can adjust the air pressure.

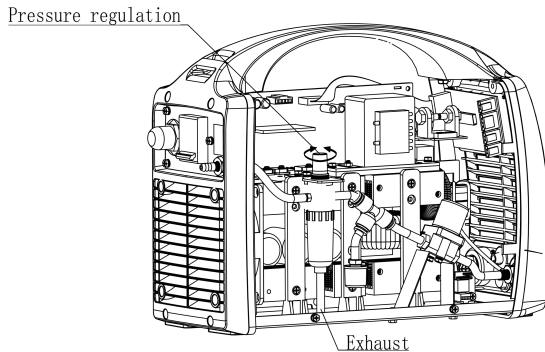


Fig. 4-6-1 pressure regulation

During the cutting process, if the air pressure is lower than 0.35Mpa, the torch will be overheated and damaged; if the air pressure is higher than 0.8Mpa, the solenoid valve will be closed.

● **Protection of air pressure**

There is an air pressure detection device in the cutting machine. When air pressure of cutting machine is lower than **0.35MPa**, cutting machine will stop working automatically, protection indicator lights up.

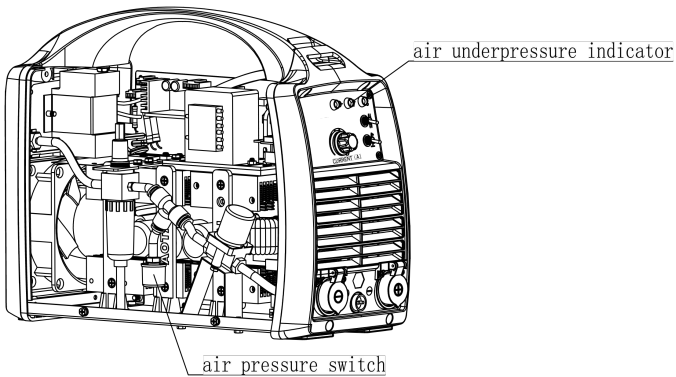


Fig. 4-6-2: Protection of air pressure

**4-7 Technical data**

Model	PowerPlus+ CUT 41i
Input Voltage/ Frequency	1-phase AC220/230V, 50/60Hz
Rated input capacity (KVA)	7
Rated input current (A)	32
Output range (A)	15~40
Rated duty cycle @40 (%)	60
Rated open circuit voltage (V)	285
Post gas time(s)	30
Max. cutting thickness (mm)	12
Quality cutting thickness (mm)	1~7

IP class	IP23S
Insulation grade	F
Weight (Kg)	9

Table 4-7-1: technical data

## 4-8 Dimension

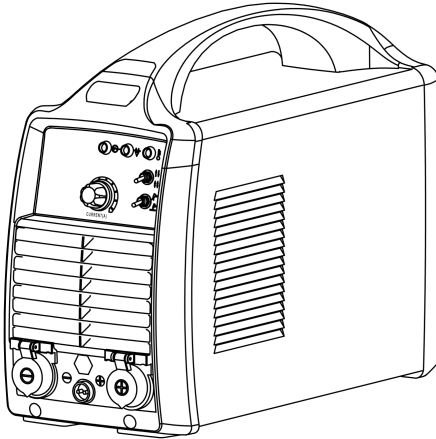


Fig. 4-8-1: Dimension

NO.	Item	Unit(mm)	Unit(inches)
1	length	390	15
2	Width	160	6.3
3	Height	300	11.8

Table. 4-8-1: Dimension

## 4-9 Disassembly and reassembly

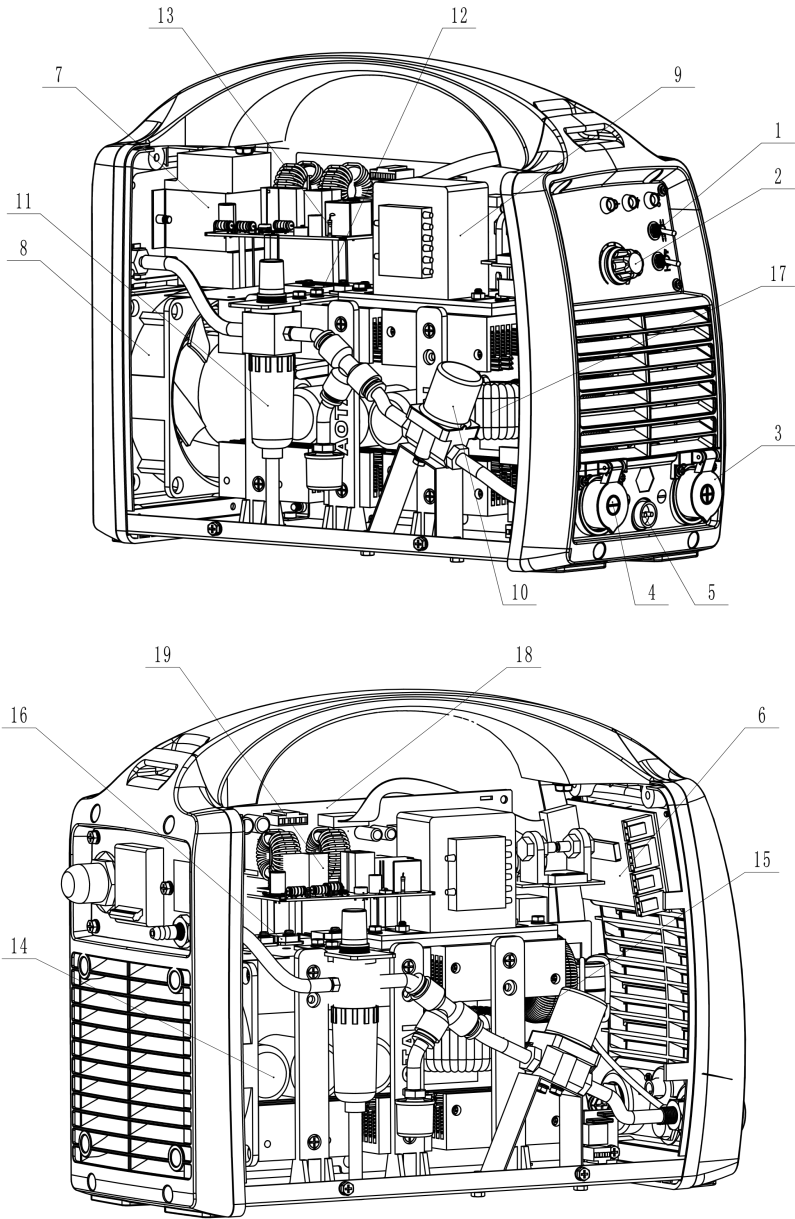


Fig. 4-9-1: Disassemble and reassembly of unit

No.	Item	Stock no.	Remark
1	Toggle switch	745003-00034	
2	Potentiometer	720031-00128	
3	Quick socket	740002-00079	
4	Torch connector	766001-01690	
5	Control socket	740001-00214	
6	Display board	220503-00126	
7	Circuit breaker	745011-00068	
8	Fan	746002-00025	
9	Power transformer	220179-00616	
10	Solenoid valve	752001-00037	
11	Pressure-reducing valve	766003-02164	
12	Rectifier bridge	735004-00007	
13	Fuse	720022-00045	
14	Aluminum electrolytic capacitor	722004-00105	
15	Output reactor	763004-00159	
16	IGBT single tube	735003-00011	
17	Main transformer	763002-00024	
18	Main control drive board	210580-01487	
19	Filter board	220900-00475	

Table4-9-1: Main components list

**Note:** This table is for reference only, and the detail of actual product shall prevail. If no special remarks, the input voltage mentioned in above table is three phase.



## 5-TROUBLE SHOOTING



**Warning!** An electric shock can be fatal. Before doing any work on the machine:

-Switch it off and unplug it from the mains

-Put up a clearly legible and easy-to-understand warning sign to stop anybody inadvertently switching it on again

-Check to make sure the electrically charged components (e.g. capacitors) have been discharged.

-Bolts in machine case also work for ground connection. Never use other bolt that can not work for ground connection.

### • Power source trouble shooting

No.	Trouble	Causes	Remedy
1	Power on indicator does not light up, fan does not run, no output	1) Main breaker is damaged 2) No electricity on the electricity grid 3) Connect to 380V power	1) Check Main breaker, fan connection between main control board and display board 2) Check power supply 3) Check
2	Power on indicator lights up, but protection on indicator does not light, and no output	1) Output cable does not connect well 2) Bad connection of joints, especially torch trigger cable connection 3) Display board is damaged	1) Check output cable connection 2) Check connection 3) Check and repair
3	Protection on indicator lights up	1) Inner temperature is too high 2) Temperature relay is broken 3) Fan is locked-rotor, fan cable is broken 4) Gas shortage	1) Let the machine cool down 2) Replace 3) Check 4) Check gas pressure

4	Circuit breaker on the switchboard trips while in cutting	1) The following devices may be damaged: power IGBT tube, output diode, input rectifier bridge, thermistor, electrolytic capacitor	1) Check and replace
5	The cutting current is unstable	1) Potentiometer is broken 2) Current sensor is damaged 3) Bad connection of joints	1) Check and replace 2) Check and replace 3) Check and replace
6	Cutting current is not adjustable	1) Current adjustment potentiometer on front panel is damaged	1) Check and replace
7	No gas flows out during cutting	1) Solenoid valve is damaged 2) Gas flow is blocked 3) The output air pressure of air filter pressure-reducing valve is too high	1) Check and replace 2) Check gas flow 3) Regulate pressure knob on the filter to reduce air pressure
8	Too wide cut	1) Slow cutting speed 2) Nozzle is burn out	1) Increase cutting speed 2) Replace
9	Non-vertical cut	1) Nozzle is burn out 2) Non-alignment of nozzle to electrode 3) Cutting torch is not vertical to work piece surface	1) Replace 2) Align the nozzle and the electrode 3) Adjust to vertical position

Table.5-1: Trouble shooting



**Note!** The flowing troubles and causes are uncertain. However, during the process of MIG Pulse and the normal using conditions, that might happen.

# 6-CARE AND MAINTENANCE

- **Before open the machine**



**Warning!** An electric shock can be fatal. Before doing any work on the machine:

- Switch it off and unplug it from the mains
- Put up a clearly legible and easy-to-understand warning sign to stop anybody inadvertently switching it on again
- Check to make sure the electrically charged components (e.g.capacitors) have been discharged.
- Bolts in machine case also work for ground connection. Never use other bolt that cannot work for ground connection.

- **Maintenance**

Please follow the instructions as below to ensure normal lifespan of power source.

- Conduct safety check at regular intervals (see “Safety rules”)
- Dismantle machine side panels and clean machine inside with clean and low-pressure compressed air by professional technician, not less than twice per year. Clean the components at a certain distance only;
- If a lot of dust has accumulated, clean the cooling-air ducts.

- **Daily maintenance**

			Disconnect main power before maintenance
3 months			
6 months			

Fig.6-1: Daily maintenance

# Power Plus+ Series



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