

USER'S MANUAL

Manual Plasma Cutting Machine
with IGBT Inverter Technology

GORILLA CUT 45 PILOT

GORILLA[®]

Introduction

First of all, thank you for choosing an IWELD welding or cutting machine!

Our mission is to support your work with the most up-to-date and reliable tools both for DIY and industrial application.

We develop and manufacture our tools and machines in this spirit.

All of our welding and cutting machines are based on advanced inverter technology, reducing the weight and dimensions of the main transformer.

Compared to traditional transformer welding machines the efficiency is increased by more than 30%.

As a result of the technology used and the use of quality parts, our welding and cutting machines are characterized by stable operation, impressive performance, energy efficient and environmentally friendly operation.

By activating the microprocessor control and welding support functions, it continuously helps maintain the optimum character of welding or cutting.

Read and use the manual instructions before using the machine please!

The user's manual describes the possible sources of danger during welding, includes technical parameters, functions, and provides support for handling and adjustment but keep in mind it doesn't contain the welding knowledge!

If the user's manual doesn't provide you with sufficient information, contact your distributor for more information!

In the event of any defect or other warranty event, please observe the „General Warranty Terms”.

The user manual and related documents are also available on our website at the product data sheet.

IWELD Kft.

2314 Halásztelek

II. Rákóczi Ferenc street 90/B

Tel: +36 24 532 625

info@iweld.hu

www.iweld.hu

WARNING!

Welding is a dangerous process! The operator and other persons in the working area must follow the safety instructions and are obliged to wear proper Personal Protection Items. Always follow the local safety regulations! Please read and understand this instruction manual carefully before the installation and operation!

- The switching of the machine under operation can damage the equipment.
- After welding always disconnect the electrode holder cable from the equipment.
- Always connect the machine to a protected and safe electric network!
- Welding tools and cables used with must be perfect.
- Operator must be qualified!

ELECTRIC SHOCK: may be fatal

- Connect the earth cable according to standard regulation.
- Avoid bare hand contact with all live components of the welding circuit, electrodes and wires. It is necessary for the operator to wear dry welding gloves while he performs the welding tasks.
- The operator should keep the working piece insulated from himself/herself.

Smoke and gas generated while welding or cutting can be harmful to health.

- Avoid breathing the welding smoke and gases!
- Always keep the working area good ventilated!

Arc light-emission is harmful to eyes and skin.

- Wear proper welding helmet, anti-radiation glass and work clothes while the welding operation is performed!
- Measures also should be taken to protect others in the working area.

FIRE HAZARD

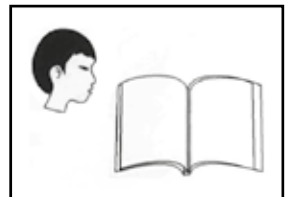
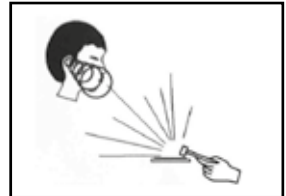
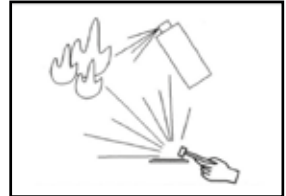
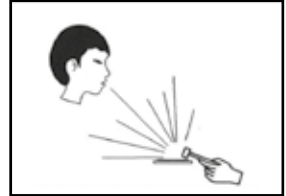
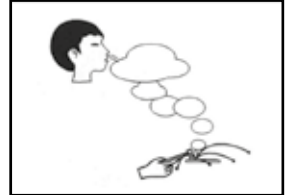
- The welding spatter may cause fire, thus remove flammable materials from the working area.
- Have a fire extinguisher nearby in your reach!

Noise can be harmful for your hearing

- Surface noise generated by welding can be disturbing and harmful. Protect your ears if needed!

Malfunctions

- Check this manual first for FAQs.
- Contact your local dealer or supplier for further advice.

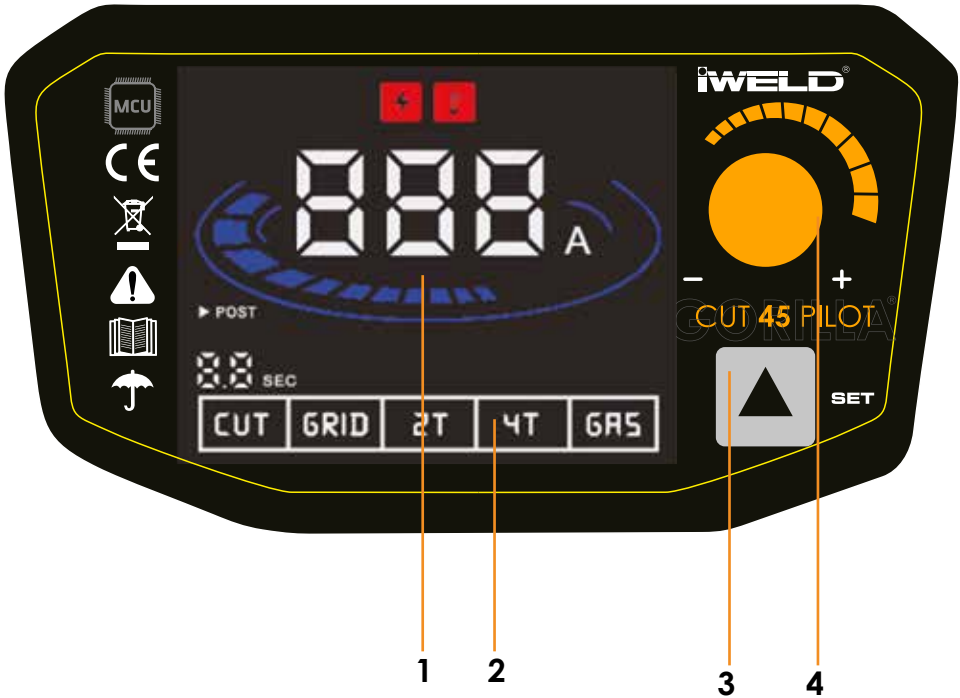


1. THE MAIN PARAMETERS

GORILLA		CUT 45 PILOT	
Art. Nr.		800CUT45PT	
FUNCTIONS	Inverter Type	IGBT	
	Arc Ignition	PILOT	
	THC - Torch Height Control	✘	
	Display	LED	
	CNC Compatibility	✘	
	2T/4T	✔	
	PFC	✘	
Accessories Plasma Torch		PT40 (4m)	
Max. cutting thickness (Scarp cutting) Carbon Steel		18 mm	
Optimal cutting thickness (quality surface cutting)	Carbon Steel	14 mm	
	Stainless Steel	14 mm	
	Aluminum	10 mm	
	Copper	8 mm	
Phase Number		1	
Rated Input Voltage		230V AC±15% 50/60 Hz	
Max./eff. Input Voltage		31A/17A	
Power Factor (cos φ)		0.73	
Efficiency		>85%	
Duty Cycle (10 min/40 °C)		40A@30% 22A@100%	
Cutting Current Range		20A-40A	
Cutting Voltage Range		88-96V	
No-load Voltage		290V	
Insulation		H	
Protection Class		IP21S	
Weight		7 kg	
Dimensions (LxWxH)		440x145x245 mm	

2. FRONT PANEL INSTRUCTION

- 1 Turn on the switch on the back panel, while at the meantime, the digital display lights up and the fan runs
2. Open the gas valve, adjust the gas pressure and gas flow to rated standard. (refer to "technical parameter table")
3. Press the Torch switch, the pilot arc will be ignited from the nozzle
4. setting the suitable current according to the workpiece thickness and process requirements



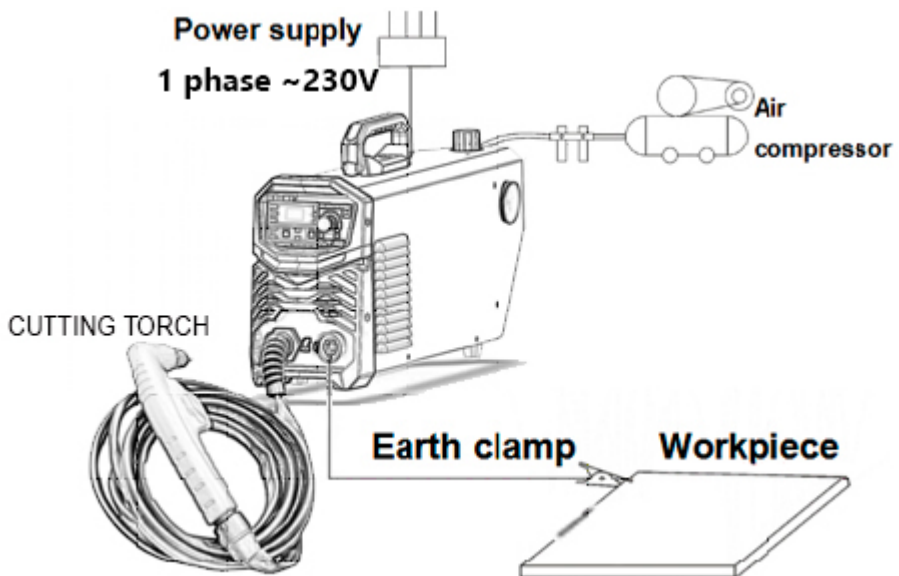
1	LED display: display of voltage, gas afterflow, cutting current and cutting parameters
2	Cutting mode 2T/4T handling mode, cutting mode and gas control display fields
3	Function selection button: gas control, 2T/4T selection
4	Parameter setting knob: used to set the parameter selected with button "3".

3. INSTALLATION INSTRUCTION

The machine is equipped with power voltage compensation device. When the power voltage fluctuates between $\pm 15\%$ of rated voltage, it still can work normally.

When the machine is used with long cables, in order to prevent voltage form going down, bigger section cable is suggested. If the cable is too long, it may have great affluence on the arc-striking or other performance of cutting system, e.g. the HF arc-striking performance get weak or the system work abnormally. So cables of configured length are suggested.

1. Make sure intake of the machine is not blocked or covered to avoid malfunction of cooling system.
2. Ground the cables with section area no less than 6mm^2 to the housing, the way is connecting screw in the back of the power source to ground device, or make sure ground terminal of power socket is firmly connected. Both ways can be used for absolute safety.
3. Use pressure-resisting air pipe to connect the air intake and compressed air source, tight the joint with hoop or other ways in case of gas leaking. Dry gas with suitable pressure and flow should be supplied. If your air source cannot meet above requirements, you should consider using sole compressor with enough power and air-decompressing filter to ensure the machine work normally.
4. Put cable plug to the socket on the panel and fix it clockwise. On the other hand, clamp the work piece with earth clamp.
5. According to input voltage grade, connect power cable with power supply box of relevant voltage grade. Make sure there is no mistake and the voltage of power supply does not exceed permission range.
6. Connect the cabled following the right schematic, next steps can be performed then.



4. NOTES OR PREVENTIVE MEASURES

1. Environment

1. The machine can perform in environment where conditions are dry with a dampness level of max 90%.
2. Ambient temperature is between -10 to 40 degrees centigrade.
3. Avoid welding in sunshine or drippings. Do not let water enter the gas.
4. Avoid welding in dust area or the environment with corrosive gas.
5. Avoid gas welding in the environment with strong airflow.

2. Safety norms

Our welding machine has installed protection circuit of over voltage, over current and over heat. When voltage, output current and temperature of machine are exceeding the rate standard, welding machine will stop working automatically. Because that will be damage to welding machine, user must pay attention to following.

1. The working area is adequately ventilated.

Our welding machine is powerful machine, when it is being operated, it generated by high currents, and natural wind can't be satisfied with machine cool demands. So there is a fan in inter-machine to cool down machine. Make sure the intake is not in block or covered, it is 0.3 meter from welding machine to objects of environment. User should make sure the working area is adequately ventilated. It is important for the performance and the longevity of the machine.

2. Do not over load.

The operator should remember to watch the max duty current (Response to the selected duty cycle). Keep welding current is not exceed max duty cycle current. Over-load current will damage and burn up machine.

3. No over voltage.

Power voltage can be found in diagram of main technical data. Automatic compensation circuit of voltage will assure that welding current keeps in allowable range. If power voltage is exceeding allowable range limited, it is damaged to components of machine. The operator should understand this situation and take preventive measures.

4. If welding time is exceeded duty cycle limited, welding machine will stop working for protection. Because machine is overheated, temperature control switch is on "ON" position and -E2 Error Code will be shown on digital display. In this situation, you don't have to pull the plug, in order to let the fan cool the machine. When the indicator light is off, and the temperature goes down to the standard range, it can weld again.

5. QUESTIONS TO BE RUN INTO DURING CUTTING

Fittings, welding materials, environment factor, supply powers maybe have something to do with welding. User must try to improve welding environment.

A Cutting surface is rough, poor cutting result:

The machine may be not well operated. You can check it as follow:

1. Make sure the compressed air supply has enough pressure which is not less than 3 bar, and its range is ± 0.5 bar.
2. Electrode and nozzle are not matched with current. Check as follow:

Current	10-30A	30-40A	60-100A	100-120A
Nozzle	Ø1.0mm	Ø1.2mm	Ø1.3mm	Ø1.4mm

B Arc-striking is difficult and easy to pause:

1. Make sure quality of tungsten electrode is high.
2. Cutting current is too small and air flow is too big. And if cooling effect is too strong, it will lead to arc pause.
3. Power net voltage is low and input cable is too long.

C Output current is not up to the rated value:

When power voltage departs from the rated value, it will make the output current not matched with rated value; when voltage is lower than rated value, the max output may be also lower than rated value.

D Current is not stabilizing when machine is being operated:

It has something to do with factors as following:

1. Electric wire net voltage has been changed.
2. There is harmful interference from electric wire net or other equipment.

E Electrode or nozzle burnt often:

1. Current is too big or nozzle is too small.
2. Air pressure is low and cooling effect is weak and nozzle is too hot.

F Arc can not cut into the steel plate fully, or too much spatter:

1. Maybe the machine capacity can not meet the demand of that thickness, please use bigger machine.
2. Electrode or nozzle is burnt, please change it.

i For normal operation you should cut from the edge of the work piece, in this way you can protect the torch from damage by spatter conglutination.

6. TROUBLESHOOTING

Fault symptom	Solutions
Digital Display meter is on, fan is not working and control knob is out of work.	1. Over voltage protection is working. Turn off machine then Turn on it again after several minutes.
Digital Display meter is on fan is running but torch doesn't work when torch trigger is pressed	1. Check if torch is open circuit. 2. Check if control knob of torch is damaged.
E2 Error Code is displayed, while fan is still running	1. Machine is over-heated, let the machine cool down for several mins until overheat LED indicator automatically turns off
Fan is running, Digital display meter is on, solenoid valve works, but there's no arc ignition	1. There's problem to arc ignition part. 2. Flyback transformer is damaged 3. There's problem to control circuit

Precautions

Workspace

1. Welding equipment free of dust, corrosive gas, non-flammable materials, up to 90% humidity for use!
2. Avoid welding outdoors unless protected from direct sunlight, rain, snow, work area temperature must be between -10 °C and +40°C.
3. Wall to position the device at least 30 inches away.
4. Well-ventilated area to perform welding.

Safety requirements

Welding provides protection against overvoltage / overcurrent / overheating. If any of the above events occurs, the machine stops automatically. However, over-stress damage to the machine, keep the following guidelines :

1. Ventilation . When welding a strong current going through the machine , so the machine is not enough natural ventilation for cooling . The need to ensure adequate cooling, so the distance between the plane and any object around it at least 30 cm . Good ventilation is important to normal function and service life of the machine.
2. Continuously , the welding current does not exceed the maximum allowable value. Current overload may shorten its life or damage to the machine .
3. Surge banned ! Observance of tension range follow the main parameter table . Welding machine automatically compensates for voltage , allowing the voltage within permissible limits of law. If input voltages exceed the specified value , damaged parts of the machine .
4. The machine must be grounded! If you are operating in a standard, grounded AC pipeline in the event of grounding is provided automatically . If you have a generator or foreign , unfamiliar , non-grounded power supply using the machine , the machine is required for grounding connection point earth to protect against electric shock .
5. Suddenly stopping may be during welding when an overload occurs or the machine overheats . In this case, do not restart the computer , do not try to work with it right away, but do not turn off the power switch , so you can leave in accordance with the built-in fan to cool the welding machines .

WARNING!

If the welding equipment is used with the welding parameters above 180 amperes, the standard 230V electrical socket and plug for 16 amp circuit breaker is not sufficient for the required current consumption, it is necessary to use the welding equipment with 20A, 25A or even to the 32A industrial fuses! In this case, both the plug and the plug socket fork have to be replaced to 32A single phase fuse socket in compliance with all applicable rules. This work may only be carried out by specialists!

Maintenance

1. Remove power unit before maintenance or repair!
2. Ensure that proper grounding!
3. Make sure that the internal gas and electricity connections are perfect and tighten, adjust if necessary, if there is oxidation, remove it with sandpaper and then reconnect the cable.
4. Hands, hair, loose clothing should be kept away under electric parts, such as wires, fan.
5. Regularly dust from the machine clean, dry compressed air, a lot of smoke and polluted air to clean the machine every day!
6. The gas pressure is correct not to damage components of the machine.
7. If water would be, for example. rain, dry it in the machine and check the insulation properly! Only if everything is all right, go after the welding!
- 8 When not in use for a long time, in the original packaging in a dry place.

CERTIFICATE OF EUROPEAN STANDARD

Manufacturer:	IWELD Ltd. 2314 Halásztelek II. Rákóczi Ferenc street 90/B Tel: +36 24 532-625 info@iweld.hu www.iweld.hu
Item:	IWELD GORILLA CUT 45 PILOT Manual Plasma Cutting Machine with IGBT Inverter Technology
Applied Rules (1):	EN 60204-1:2005 EN 60974-10:2014, EN 60974-1:2018

(1) References to laws, rules and regulations are to be understood as related to laws, rules and regulations in force at present.

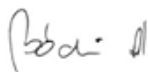
Manufacturer declares that the above specified product is complying with all of the above specified rules and it also complying with the essential requirements as specified by the Directives 2014/35/EU, 2014/30/EU, 2006/42/EU and 2011/65/EU

Serial No.:



Halásztelek (Hungary),

14/03/20



Managing Director:
András Bódi