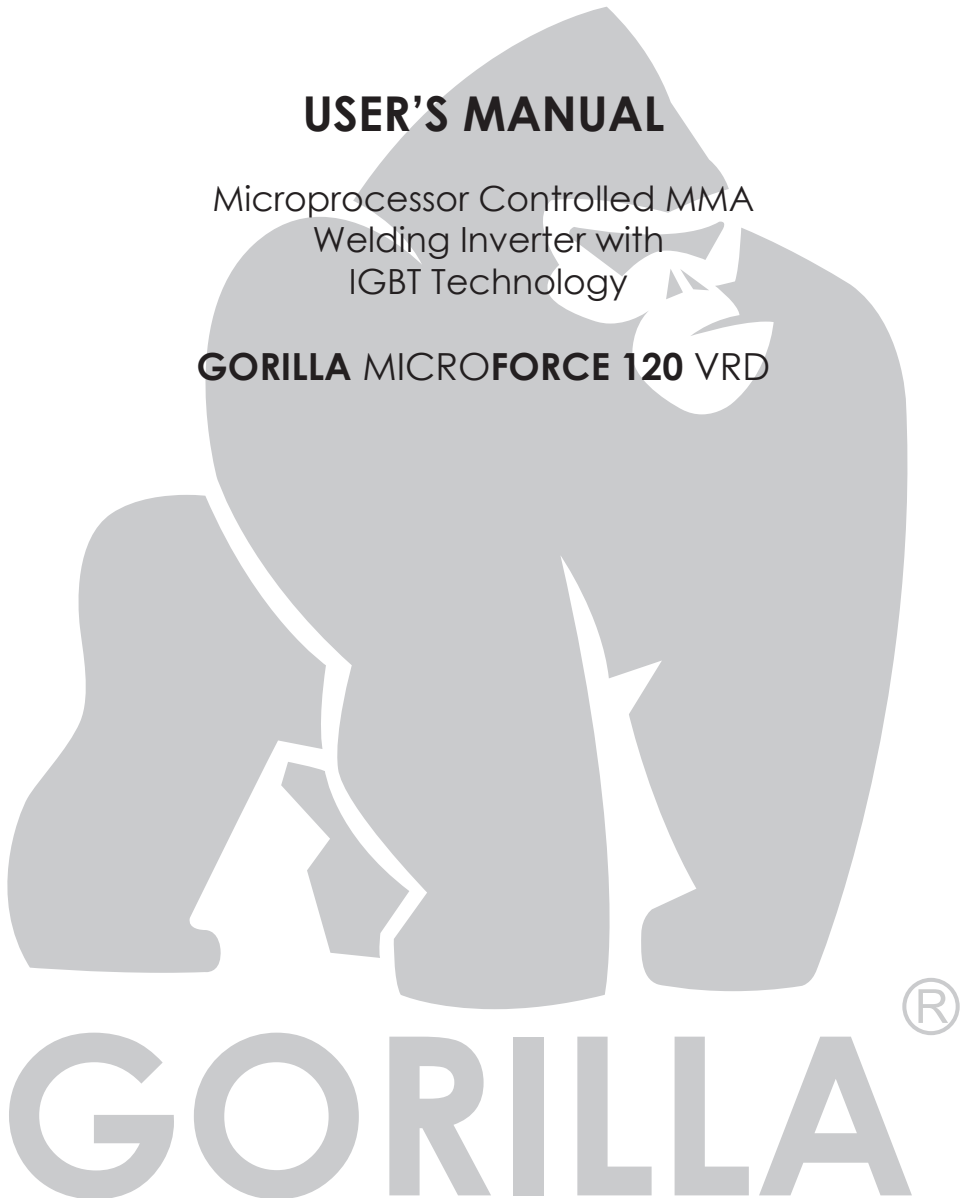


## **USER'S MANUAL**

Microprocessor Controlled MMA  
Welding Inverter with  
IGBT Technology

**GORILLA MICROFORCE 120 VRD**



# INDEX

AN INTRODUCTION TO DC WELDERS	3.
WARNING	4.
MAIN PARAMETERS	5.
INSTALLATION	6.
OPERATION	7.
PRECAUTIONS & MAINTENANCE	8.

# 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**

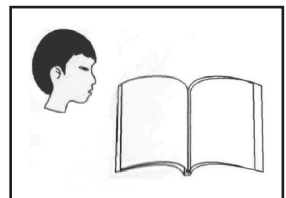
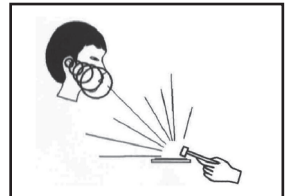
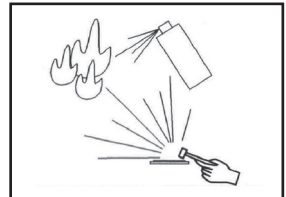
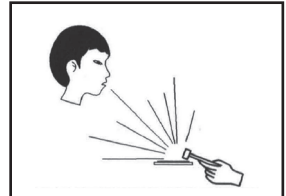
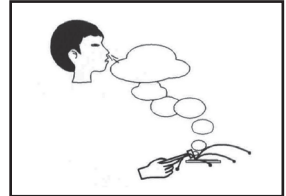
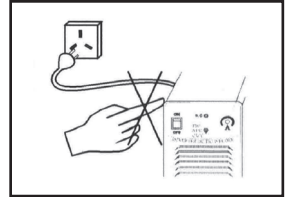
- The welding spatter may cause fire, thus remove flammable materials from the working area.
- Have a fire extinguisher nearby in your reach!

### **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.



# The main parameters

## GORILLA MICROFORCE 120 VRD

Art. Nr.		80MROFRC120	
FUNCTIONS	GENERAL	Inverter Type	<b>IGBT</b>
		Digital Display	✓
		Plastic Case	✗
	EMC	✓	
	MMA	Arc Force	✓
		Adjustable Arc Force	✓
		Hot start	✓
		Anti Stick	✓
		CELL	✗
	TIG	LT TIG (VRD)	
		LT pulse	
PARAMETERS	Phase Number	1	
	Rated input Voltage	230V AC±15% 50/60 Hz	
	Max./eff. input Current	19A	
	Power Factor (cos φ)	0.7	
	Efficiency	85 %	
	<b>Duty Cycle (10 min/40 °C)</b>	<b>110A @ 60% 85A @100%</b>	
	Welding Current Range	10 A - 110 A	
	Output Voltage	110A@24V	
	No-Load Voltage	72V	
	Electrode Diameter	Ø 2.0 - 2.5 mm	
	Insulation	F	
	Protection Class	IP21S	
	Weight	2 kg	
	Dimensions (LxWxH)	190 X 90 X 130 mm	

## 2. Installation

### 2-1. Power Connection

1. Each machine has its own primary power cable, it must be connected to the mains through a grounded power outlet on the right!
2. Power cable must be plugged into an appropriate power outlet!
3. Check the correct earth connection

### 2-2 . Accession output lines

1. Each machine has two connectors. Check the cables connected tightly to avoid risk of burning or over heating!
2. Connect electrode cable to the negative pole , while the workpiece (earth) to the positive!
3. Pay attention to the right polarity! Generally, there are two ways of switching the rectifier welding machine: positive and negative connections . Positives: electrode "-", while the work on the "+ " to . Negatives: piece work " - " elect-rod while "+" is linked to . The proper practice mode , choose as faulty switching unstable arc and cause a lot of splashing . In this case, switch the polarity to use the machine correctly!
4. Use a high cross section supply cable to avoid voltage drop and to keep the performance of the machine. Low input voltage will reduce the lifetime of the machine!

### 2-3. Checking

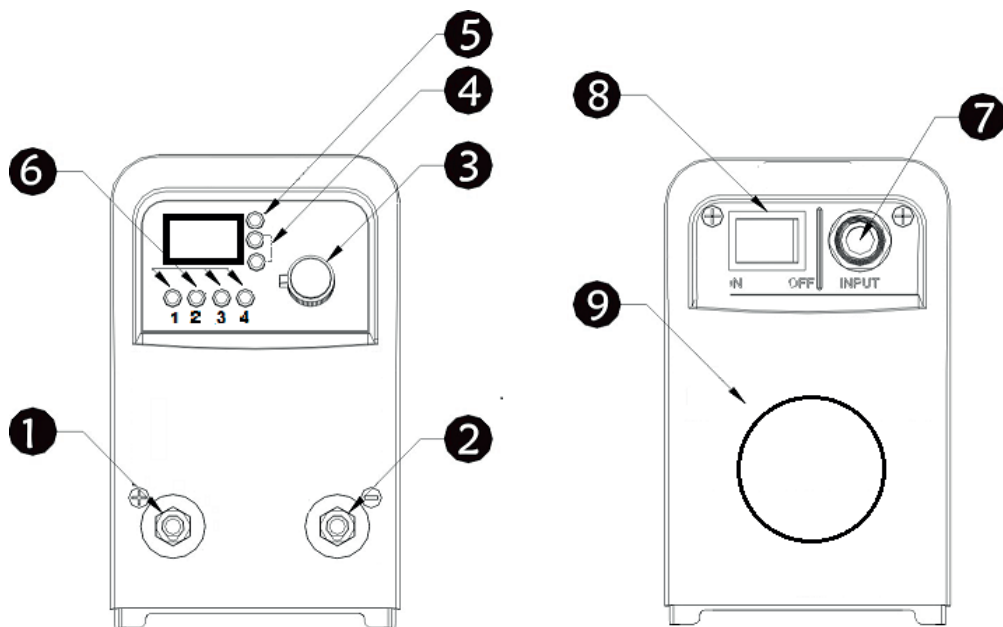
1. Make sure the machine is properly grounded!
2. Make sure that all connections are perfect, especially grounding of the machine!
3. Check that the electrode cable connection to be perfect!
4. Make sure that the polarity is correct outputs!
5. Welding spatter can cause a fire, so make sure there are no flammable materials in the work area!

## 3. Operation

1. Turn on the main power switch, the fan will start rotating.
2. Adjust welding parameters for welding in accordance with the value specified for practical application.
3. Usually the welding current is formed in accordance with the electrode diameters as follows. Make sure that it is current with reserve your unit has, otherwise do not even try to get the job done!

The welding current reference for different electrode diameter for carbon steel	
Electrode diameter/mm	Welding current/A
1.0	20~60
1.6	44~84
2.0	60~100
2.5	80~120
3.2	108~148
4.0	220~260

### 3-1 Control Panel Functions



- 1 Positive Output Connector (+)
- 2 Negative Output Connector (-)
- 3 Power and Parameter Setting Button - Press to scroll the parameters
- 4 VRD Status Indicator LED - Reduced voltage value for safe operation
- 5 Ready Status LED - When the LED is on, the welding machine is ready for use
- 6 Welding Parameters Indicators:  
Press „3” to scroll and adjust parameters:
  1. Ignition time -
  2. Hot Start - Arc Ignition Current
  3. Welding Current (A)
  4. Arc Force - Adjustable Arc Force control
- 7 Electrical Power Connector - 230V AC $\pm$ 15% ;50/60 Hz
- 8 Main switch - on / off
- 9 Cooling fan - provides the operating temperature of the welding machine

# 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: GORILLA MICROFORCE 120 VRD  
IGBT Inverter Technology  
Welding Power Sources

Applied Rules (1): EN 60204-1:2005  
EN 60974-10:2014,  
EN 60974-1:2013

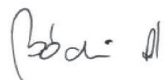
(1) References to laws, rules and regulations are to be understood as related to laws, rules and regulations in force at present.  
Manufacturer declares that the above specified product is complying with all of the above specified rules and it also complying with the essential requirements as specified by the Directives 2014/35/EU, 2014/30/EU, 2006/42/EU and 2011/65/EU

Serial No.:



Halásztelek (Hungary),

14/09/18

  
Managing Director:  
András Bódi

EN