

USER'S MANUAL

TIG/MMA dual function
DC pulse welding inverter

GORILLA SUPERPULSE 200



INDEX

INTRODUCTION	3.
WARNING	4.
MAIN FEATURES AND PARAMETERS	5.
INSTALLATION	6.
OPERATION	8.
WELDING PARAMETERS AND DIAGRAMS	11
TROUBLESHOOTING	12.
CAUTIONS AND MAINTENANCE	14.

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.

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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

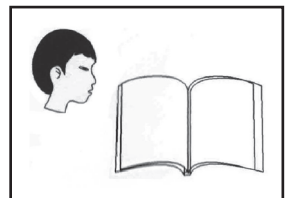
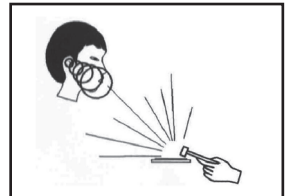
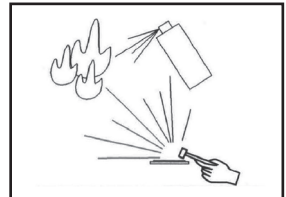
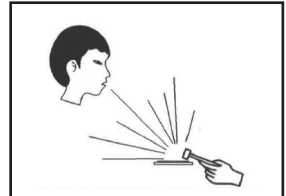
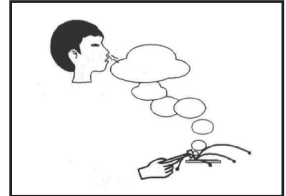
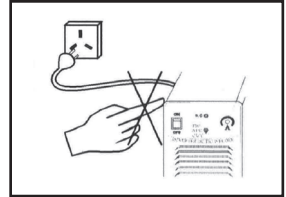
- The welding spatter may cause fire, thus remove flammable materials from the working area.
- Have a fire extinguisher nearby in your reach!

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.


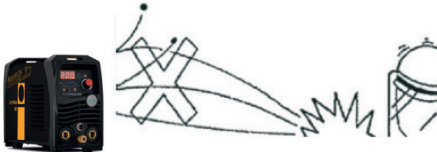

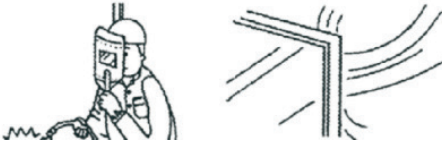



Main Features and Parameters

		SUPERPULSE 200
Art. Nr.		8TIG200SPUL
GENERAL	Inverter type	IGBT
	Digital display	✓
	Plastic case	✗
MIG/MAG	Reverse Polarity - FCAW	✗
	2T/4T	
	Number of Wire Feeder Rolls	
FUNCTIONS	Arc ignition	HF
	DC TIG	✓
	Pulse DC TIG	✓
	AC AWI	✗
	Pulse AC TIG	✗
	2T/4T	✓
	SPOT	✓
	Arc Force	✓
	Adjustable Arc Force	✗
	Hot Start	✗
Anti Stick	✗	
Accessories Welding Torch		IGrip SR26
Phase number		1
Rated input Voltage		230 V AC±10% 50/60 Hz
Max./eff. input Current	MMA	26A/18.7A
	MIG/TIG	26A/18.7A
Power Factor (cos φ)		0.93
Efficiency		≥85%
Duty Cycle (10 min/20 °C)*		200A@60% 155A@100%
Welding Current Range	MMA	10A-160A
	MIG/TIG	10A-200A
Output Voltage	MMA	20.4V-26.4V
	MIG/TIG	10.4V-18V
No-Load Voltage		56V
Insulation		F
Protection Class		IP23
Welding Wire Diameter		-
Size of Coil		-
Weight		5.7 kg
Dimensions (LxWxH)		410x135x238mm
PARAMETERS		

2. Installation

2-1. Installation Place

<p>Place the welding machine in the rainproof room with no direct sunshine, low humidity and little dust! (room temperature 10 °C -40 °C).</p> 	<p>Any conductive foreign object can not enter the welding power supply!</p> 
<p>Keep the welding power supply over 20 cm away from the wall! Two welding machines should be over 30 cm apart when placed in parallel.</p> 	<p>Conduct the welding at the place without wind (use the wind shield, etc.)!</p> 

	<p>CAUTION This product should be used indoor; it's recommended not to use it in the place which may suffer from rain!</p>
<p>In case this product is soaked with rain, raindrops may fall into power supply inside; at this time, a serious accident may occur. therefore, ask professional personnel to related check maintenance.</p>	

2-2. Notices

- The line voltage of the 3 phase power supply should be within 340V-420V without phase loss!
- The earth cable of the welding machine should be connected correctly and reliably!
- Be sure to check all connection cables regularly. If finding the connector is loose, be sure to screw it tight; otherwise, it may be burnt and cause unstable welding!
- After the welding is over, be sure to power off in time!
- For outdoor use, be sure to cover the machine in rainy or snowy day; but do not obstruct its ventilation!
- Regularly check if the insulated skin of all cables is broken if yes, bind up or replace such cable!
- Regularly check if all electric connections inside the machine are loose. Be sure to taste the loose one!
- Take care of all devices and do not let them suffer artificial damages!

2-3. Front and Rear Panel Structure and Description



1	Shield gas output connector	5	Power source input
2	Negative output terminal	6	Power switch
3	TIG Torch connector	7	Shield gas input joint
4	Positive output terminals - AC and DC		

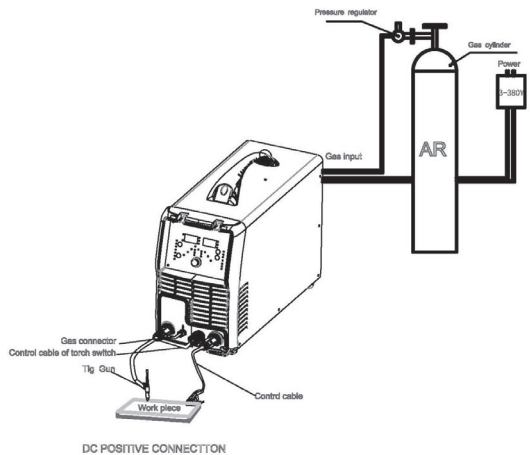
2-4. Installation in TIG mode

Workpiece is connected to the positive electrode of welding machine, and welding torch is connected to the negative electrode, which is called DC POSITIVE CONNECTION; otherwise, that is called DC NEGATIVE CONNECTION. Generally, it is usually operated in DC POSITIVE CONNECTION in TIG welding mode.

The control cable of torch switch consists of 2 wires, pedal control of 3 wires and the aero socket has 14 leads.

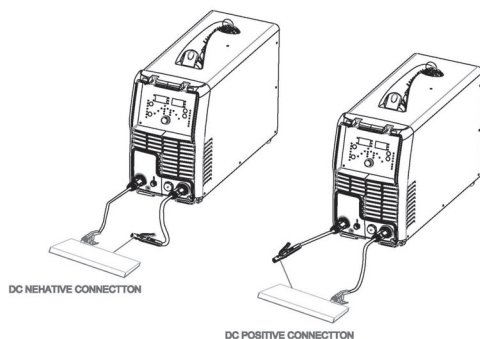
Consumable parts for TIG torch, such as tungsten electrode, tip, gas nozzle, electrode shield(short/long) , please enquire us by mail or phone according to the accessory codes.

When the welding machines are operated in HF ignition method, the ignition spark can cause interferences in equipment near the welding machine. Be sure to take specially safety precautions or shielding measures.



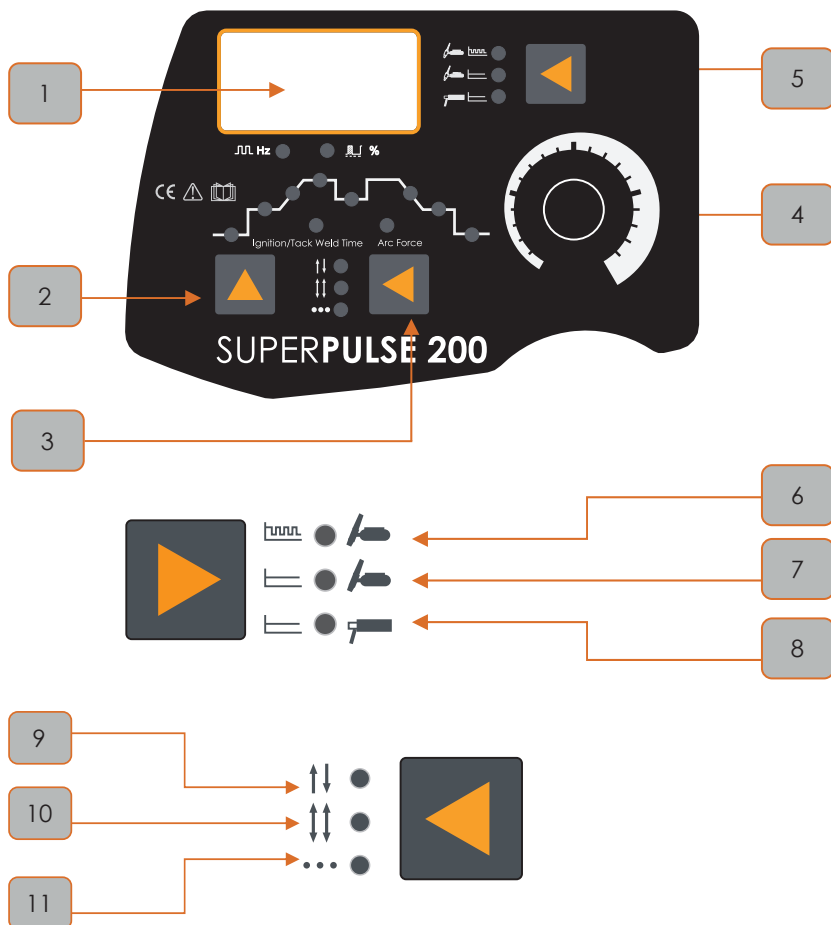
2-5. Installation in MMA mode

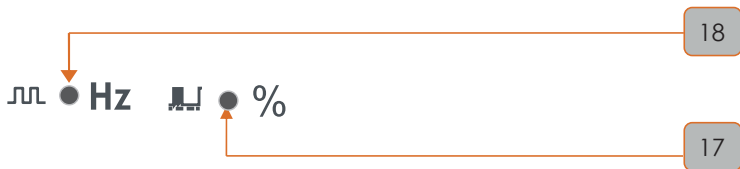
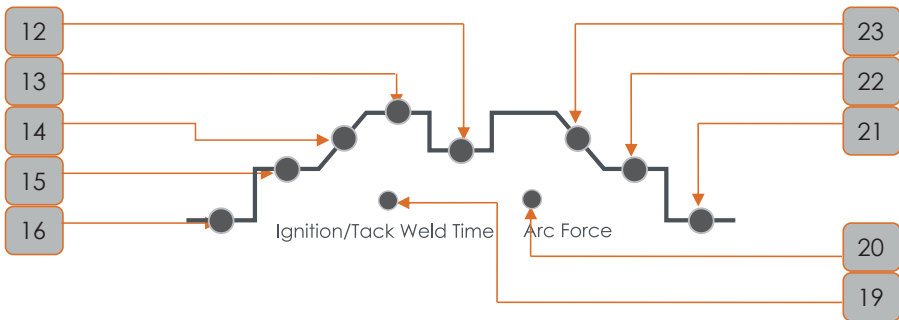
MMA: Choosing the connection of DCEN or DCEP according to the different electrodes. Please refer to the electrode manual.



3. Operation Instruction

3-1. Control Panel





- 1 Current/parameter display
- 2 Function key 1
- 3 Function key 2
- 4 Adjustment knob
- 5 Welding mode
- 6 TIG with pulse
- 7 TIG DC
- 8 MMA
- 9 2T operation mode
- 10 4T operation mode
- 11 Spot welding
- 12 Base current
- 13 Welding current
- 14 Up-slope time
- 15 Start current
- 16 Pre-fl ow time
- 17 Pulse duty
- 18 Pulse frequency
- 19 Ignition time
- 20 Arc- Force
- 21 Post-fl ow time
- 22 End current
- 23 Down-slope time

3-2. Operation in MMA mode

- Connect the output cables
- Turn on the welding machine to the power switch, the fan starts to work!
- Select the mode to switch to MMA.
- Set the desired welding current according to the welding task.
- Start the work.

3-3. Operation in TIG mode

- Connect the ground cable to the positive (+) pole!
- Use a TIG torch connected to the negative pole (-)!
- Set the machine in to TIG-2T or TIG-4T mode!
- Set the welding current.
- Adjust the gas post flow and down slope time on the control panel.
- Keep the distance between tungsten and workpiece between 2 and 4 mm , press the gun button , you will hear the voice of high-frequency ignition, after the arc penetrates through the splash disappears and you can start the work.

Notices:

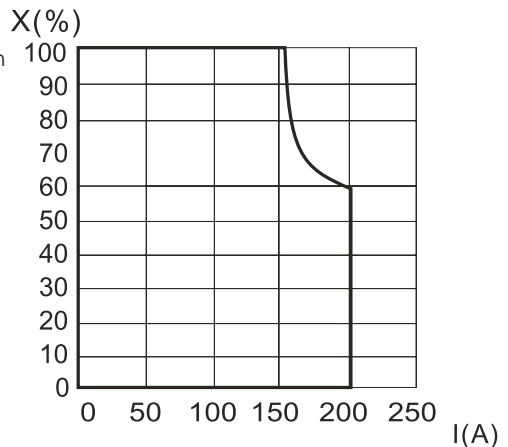
- Check the condition of welding and connection units firstly, otherwise there will be malfunction such as ignition spark, gas leakage, out of control and so on.
- Check that whether there is enough Argon gas in the shield gas cylinder, you can test the electromagnetic gas valve through the switch on the front panel.
- Do not let the torch aim at your hand or else of your body. When you press the torch switch, the arc is ignited with a high-frequency, high-voltage spark, and the ignition spark can cause interferences in equipment.
- The flow rate is set according to the welding power used in the job. Turn the regulation screw to adjust the gas flow which is shown on the gas hose pressure meter or the gas bottle pressure meter.
- The spark ignition works better if you keep the 3 mm distance from the workpiece to the tungsten electrode during the ignition.

3-1. Duty Cycle Curve

The letter "X" stands for duty cycle, which is defined as the proportion of the time that a machine can work continuously within a certain time (10 minutes). The rated duty cycle means the proportion of the time that a machine can work continuously within 10 minutes when it outputs the rated welding current.

The relation between the duty cycle "X" and the output welding current "I" is shown as the right figure.

If the welder is over-heat, the IGBT over-heat protection unit inside it will output an instruction to cut output welding current, and brighten the over-heat pilot lamp on the front panel. At this time, the machine should be relaxed for 15 minutes to cool the fan. When operating the machine again, the welding output current or the duty cycle should be reduced.

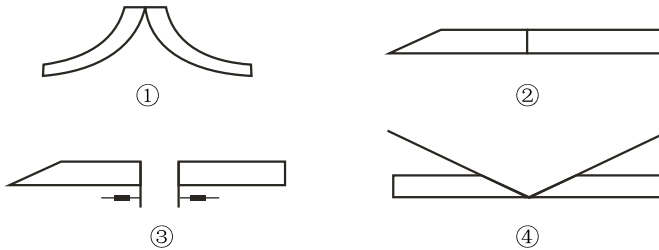


Warning: Work in Overload is Harmful to the Welding Machine

4. Welding Workmanship Parameter Reference Values

4-1. TIG Welding Workmanship Parameters

Workpiece thickness (mm)	Tungsten electrode diameter(mm)	Welding wire diameter (mm)	Welding current(A)	Argon speed (L/min)	Clearance size(mm)	Types of Weld
0.4	1.0-1.6	0-1.0	5-30	4-5	1	①、②
1.0	1.0-1.6	0-1.6	10-30	5-7	1	①、②
1.5	1.0-1.6	0-1.6	50-70	6-9	1	②
2.5	1.6-2.4	1.6-2.4	70-90	6-9	1	②
3.0	1.6-2.4	1.6-2.4	90-120	7-10	1-2	②、③
4.0	2.4	1.6-2.4	120-150	10-15	2-3	④、③
5.0	2.4-3.2	2.4-3.2	120-180	10-15	2-3	④、③
6.0	2.4-3.2	2.4-3.2	150-200	10-15	3-4	④、③
8.0	3.2-4.0	3.2-4.0	160-220	12-18	4-5	④
12.0	3.2-4.0	3.2-4.0	180-300	12-18	6-8	④



4-2. Common MMA Welding Workmanship Parameters

Workpiece thickness (mm)	≤1	1~2	2~3	4~5	6~12	≥13
Eleectrode diameter (mm)	1.5	2	3.2	3.2~4	4~5	5~6
Welding current (A)	20~40	40~50	90~120	90~130	160~250	250~400

4. Troubleshooting

WARNING The following operation requires professional knowledge on electric application and comprehensive safety knowledge. Operators should be licensed with related qualification certificates (still in validation) which can prove their skills and knowledge.



Make sure the power supply is cut off before uncovering the welding machine.

Common Malfunction Analysis and Solution

The failures listed below may be related to your accessories, gas, working environment, power supply conditions. Please try to improve the above so that to avoid similar failures.

	Malfunction	Cause	Solutions
	Fan doesn't work or has abnormal revolving speed after power on	Temperature is too low or fan is broken.	When the temperature is too low, please operate welder for a while and wait till the internal temperature is increased; if the fan is still not working, change the fan.
MMA	Difficult arc ignition	Low arc ignition current or short ignition time.	Adjust (increase) the arc ignition current and time.
	Over arc ignition or over-size molten pool	Ignition current is too big or ignition time is too long.	Adjust (decrease) the arc ignition current and time.
	Abnormal arc	Poor power cable connection	Make sure the well connection of power cable.
	Sticking electrode	Low arc force current	Adjust(increase) the arc force current
	Burning electrode holder	Electrode holder rated current is too low	Change a larger current electrode holder.
	Easy arc breaking	Network voltage is too low	Please operate when network voltage is back to normal.
TIG	No output current when torch switch is on.	Some TIG function allows welding ending while torch switch is still on.	Release torch switch and restart welding
		Welding disconnection circuit	Check the circuit and reconnect
	When it's under HF arc ignition mode, no arc ignition when turn on the torch switch.	Poor connection of welding torch switch.	Reconnect and tighten the welding torch
		Over-wide spark gap.	Adjust the spark gap(about 0.8mm)
	Over burning of tungsten electrode.	Reverse connection of welding torch and ground cable	Exchange the two plugs' position
		Cleaning intensity is too big	Decrease the cleaning intensity
	Black welding spot.	Welding spot is poorly protected and has oxidation	<ol style="list-style-type: none"> 1. Make sure the argon cylinder valve is open and has enough pressure. If the internal pressure is lower than 0.5Mpa, please refill the gas. 2. Please check if the argon flow is normal or not. You may choose different flow according to different welding current. But under-volume gas flow may result in incomplete coverage of welding spot. We suggest the min argon flow of 5L/min no matter how small the welding current is. 3. Please make sure the well sealing of all gas circuit as well as gas purity. 4. Please check if there is strong airflow in the working environment.
	Difficult arc ignition, easy arc breaking	Poor quality tungsten electrode or severe oxidation of tungsten electrodes	<ol style="list-style-type: none"> 1. Change good quality tungsten electrodes 2. Remove the oxidation layer. 3. Prolong the post-flow time so that to avoid tungsten oxidation 4. Adjust the spark gap(around 0.8mm)
Unstable welding current during welding	Big fluctuation of network voltage or poor connection with power grid. Interference from other equipment	<ol style="list-style-type: none"> 1. Make sure the power grid is normal and well connection of power source connector. 2. Use different power cables for those severe interference equipments 	

Alarm Codes and Solutions

Type	Alarm	Error code	Machine reaction	Reason	Solution
Overheating	Overheat indicator lights up and there is alarm sound	E-1	Temporary close of main circuit	Overloading of main circuit	Do not power off; restart welding when the overheat indicator stop lighting up.
Undervoltage	Display error code and there is alarm sound	E-2	Permanently close main circuit and need to restart the machine	Power grid undervoltage (lower than 160V AC)	Please restart the welder; if warning still remains, If there is a continuous power grid undervoltage, please wait and restart welder when the power grid is back to normal voltage. If power grid voltage is normal but with undervoltage warning, please contact professional maintenance personnel.
Overvoltage	Display error code and there is alarm sound	E-3	Permanently close main circuit and need to restart the machine	Power grid overvoltage (more than 270V AC)	Please shut off the welder and restart. If there is a continuous power grid overvoltage, please wait and restart welder when the power grid is back to normal. If power grid voltage is normal but with overvoltage warning, please contact professional maintenance personnel.
Abnormal internal circuit	Display error code and there is alarm sound	E-4	Permanently close main circuit	Load current is too big or main power device is under over-current protection.	Plas restart welder. If the warning still remains, please contact professional maintenance personnel.

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.
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Item: GORILLA SUPERPULSE 200
TIG/MMA dual function DC welding inverter

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.

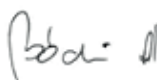
Manufacturer declares that the above specified product is complying with all of the above specified rules and it also complying with the essential requirements as specified by the Directives 2014/35/EU, 2014/30/EU, 2006/42/EU and 2011/65/EU

Serial No.:



Halásztelek (Hungary),

14/03/20


Managing Director:
András Bódi