

USER'S MANUAL

Digitally Controlled
IGBT Inverter Technology
MMA and DC TIG Welding Power Sources

HD 170 MULTIARC

HD 220 MULTIARC

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

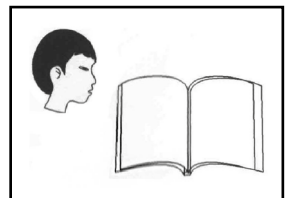
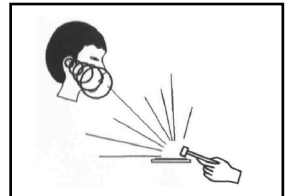
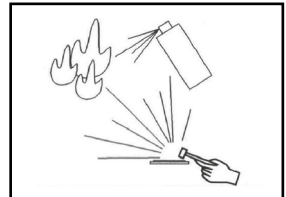
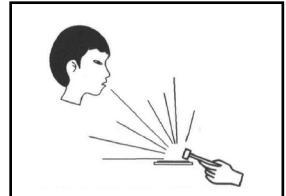
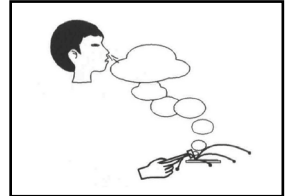
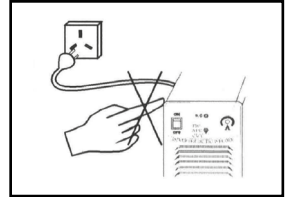
- The welding spatter may cause fire, thus remove flammable materials from the working area.
- Have a fire extinguisher nearby in your reach!

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

| | | HD 170 MULTIARC | HD 220 MULTIARC | |
|--------------------|----------------------------------|--|---|------|
| Art. Nr. | | 8HD170MTARC | 8HD220MTARC | |
| FUNCTIONS | GENERAL | Inverter Type | IGBT | IGBT |
| | | Display | LED | LED |
| | | Plastic Case | ✘ | ✘ |
| | | EMC | ✓ | ✓ |
| | MMA | Arc Force | ✓ | ✓ |
| | | Adjustable Arc Force | ✓ | ✓ |
| | | Hot start | ✓ | ✓ |
| | | Anti Stick | ✓ | ✓ |
| | TIG | LT TIG (VRD) | ✓ | ✓ |
| | | LT pulse | ✘ | ✘ |
| PARAMETERS | Phase Number | 1 | 1 | |
| | Rated input Voltage | 230V AC±15% 50/60 Hz | 230V AC±15% 50/60 Hz | |
| | Max./eff. input Current | MMA: 33A / 16.5A TIG: 20A / 10A | MMA: 38.7A / 19A TIG: 24.7A / 12A | |
| | Power Factor (cos φ) | 0.73 | 0.73 | |
| | Efficiency | 80 % | 80 % | |
| | Duty Cycle (10 min/40 °C) | 160A @ 35% 80A @ 100% | 200A @ 40% 143A @ 100% | |
| | Welding Current Range | MMA: 40A - 160A TIG: 10A - 160A | MMA: 40A - 200A TIG: 10A - 200A | |
| | Output Voltage | MMA: 21.6V -26.4V TIG: 10.4V -16.4V | MMA: 21.6V -25.7V TIG: 10.4V -17.6V | |
| | No-Load Voltage | 64V/16V _{VRD} | 64V/16V _{VRD} | |
| | Electrode Diameter | Ø 2.0-3.2 mm | Ø 2.0-4.0 mm | |
| | Insulation | F | F | |
| | Protection Class | IP21S | IP21S | |
| | Weight | 4.3 kg | 4.3 kg | |
| Dimensions (LxWxH) | 288 x 126 x 234 mm | 288 x 126 x 234 mm | | |

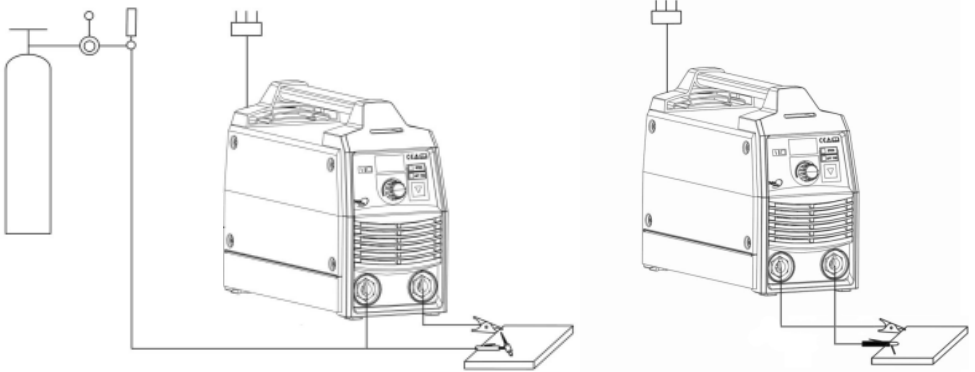
2. Installation

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 grounded/earthed power outlet!
3. Check with Multi-meter the input voltage and power.

LIFT TIG - mode

MMA - mode



2.2.1 Correct Installation of LIFT TIG

- a) Connect the shielded-gas source correctly. The gas supplying route shall include gas cylinder, argon decompression flow meter and gas pipe. The connecting parts of the gas pipe should be fastened by hose clamp or other objects, in order to prevent leakage and air-in.
- b) Connect the plug of TIG torch to the "-" socket on the front panel, and fasten it clockwise.
- c) Connect one end of the earth clamp cable to the "+" socket on the front panel, and fasten it clockwise, the other end clamp to the work piece.

2.2.2 Correct Installation of STICK

- a) Connect the quick plug of the electrode holder into the socket "-" on the machine, and fasten it clockwise tightly.
- b) Connect the quick plug of the earth clamp into the socket "+" on the machine, and fasten it clockwise, the other end clamps the workpiece.

Please pay attention to the connecting terminal, DC welding machine has two connecting ways: positive connection and negative connection.

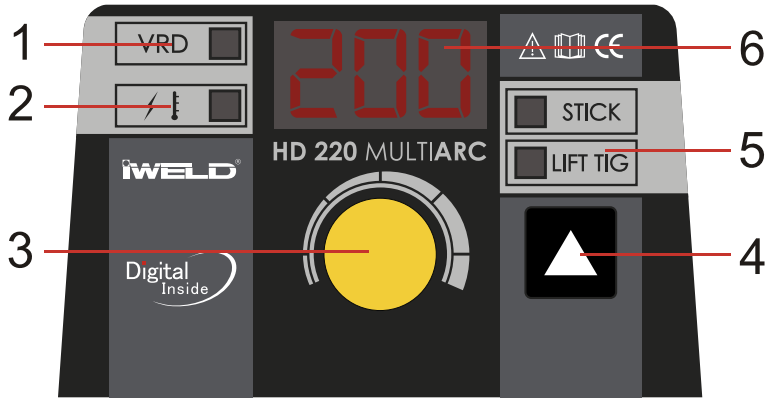
Positive connection: the work piece connects with the "+" terminal, while the electrode holder connects with "-" terminal.

Negative connection: the work piece connects with the "-" terminal, while the electrode holder connects with "+" terminal.

Choose suitable way according to the working situation. If unsuitable choice is made, it will cause unstable arc, more spatters and conglutination. If such problems occur, please change the polarity of the fastened plug. A negative connection is recommended when welding with basic electrode, while positive connection when welding with acid electrode

3. Operation

3-1 Control Panel Functions



| | |
|---|---|
| 1 | VRD indicator |
| 2 | Overvoltage/over heating indicator |
| 3 | Multifunctional data adjusting knob - Under MMA mode, press the knob to choose Current, electrode type, Hot Start current, Hot Start time and Arc Force current parameters. - Turn the knob to set the parameter value. |
| 4 | STICK/LIFT TIG and VRD switch key - Press and hold the switch key for 5s, it can open or close the VRD function. - Press the switch key quickly, it can convert the functions between STICK and LIFT TIG. |
| 5 | STICK/LIFT TIG indicator |
| 6 | Welding current display |

3.2 Operation instruction

3.2.1 The starting up display

Switch on the welding power source, the front panel displays as Chart 1. After the **[Welding current display]** (or press any key or knob on front panel) flashes for 5 seconds, the machine enters into the welding mode that saved in the last shutdown.

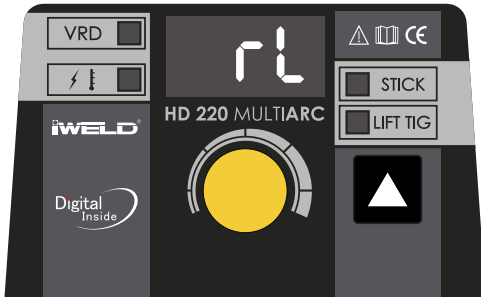


Chart 1: the starting-up display interface

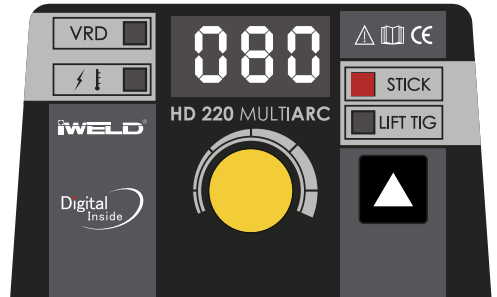
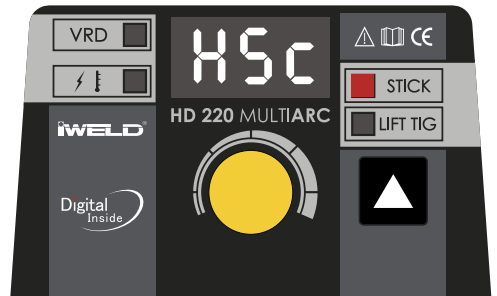


Chart 2: display under STICK mode

3.2.2 Operation instruction under STICK mode.

- When welding stops, press the [STICK/LIFT TIG] and [VRD] switch key quickly, the STICK indicator lights up, and it turns into STICK mode. The front panel displays as Chart 2.
- Press and keep pressed the switch key for 5s, it can open or close the VRD function.
- Turn the [Multifunctional data adjusting knob] to set the current.
- Press the [Multifunctional data adjusting knob] to choose electrode, hot start current, hot start time and arc force parameters as seen on the following figures.

Turn the knob to set the parameter value.





| Display | Description | Value |
|---------|-------------------|---|
| SEL | Electrode style | E13: rutile electrode E18: basic electrode E10: cellulose electrode |
| HSc | Hot start current | 0~10 |
| HSt | Hot start time | 0~10 |
| ArF | Arc Force | -10~10 |

3.2.3 Operation instruction under LIFT TIG mode.

a) When welding stops, press the **[STICK/LIFT TIG]** and **[VRD]** switch key quickly, the LIFT TIG indicator lights up, and it turns into LIFT TIG mode, the front panel displays as Chart 3.

LIFT TIG means the tungsten contacts the workpiece first, and then press the torch switch, the arc is ignited by lifting the torch.

b) [Welding current display] shows the preset current "080", its unit is ampere (A).

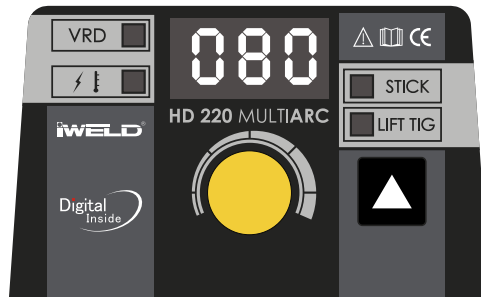


Chart 3: display under LIFT TIG mode

Notes: These machine adopts contact ignition way under TIG mode.

Tap the tungsten electrode to the work piece and then lift up from 2-5 mm. Then the arc is formed and start welding.

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: HD 170 MULTIARC
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MMA and DC TIG Welding Power Source

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),

14/03/23


Managing Director:
András Bódi