



INDUSTRIAL EQUIPMENTS PVT. LTD.

# INSTRUCTION MANUAL

## ARC630-2T

Dual Operator Arc Welding Machine

630 A | IGBT Inverter | MMA | Air Carbon Arc Gouging



Please read carefully before using the machine!

**Cruxweld Industrial Equipments Pvt. Ltd.**

5, Sector 29, Faridabad - 121008 (Haryana), India

Phone: +91 8800 882 983 | +91 (129) 489 2868

Email: [sales@cruxweld.com](mailto:sales@cruxweld.com) | Service: [support@cruxweld.com](mailto:support@cruxweld.com)

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

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## **1. INSTRUCTIONS FOR USE OF THE OPERATING MANUAL**

Please read this manual carefully before installing and using the equipment.

This manual is an integral part of the unit and must remain with the unit if it is relocated or resold.

The information contained in this publication is correct at the time of going to press. In the interests of development, the company reserves the right to change specifications and equipment, as well as make changes to the design of the equipment at any time without warning and without any obligations.

The manufacturer is not responsible for the consequences of the use or operation of the device in the event of improper operation or changes to the design, as well as for possible consequences due to ignorance or incorrect implementation of the operating conditions set out in the manual.

The user of the equipment is always responsible for the safety and legibility of this manual.

For any questions related to the operation and maintenance of the device, you can get advice from our company's specialists.



**PAY ATTENTION!** Features that require increased attention from the user.

## **2. DECLARATION OF CONFORMITY**

Thank you for choosing Cruxweld welding equipment, which has been created in accordance with the principles of safety and reliability.

High-quality materials and modern technologies used in the production of these welding machines guarantee reliability and ease of maintenance and operation.

## DECLARATION OF CONFORMITY

We hereby declare that the equipment is intended for industrial and professional use and is designed, manufactured and tested in accordance with the applicable safety requirements for arc welding power sources. Cruxweld inverter welding machines are built for heavy-duty industrial service.

### 3. SAFETY MEASURES

If the equipment is not used correctly, the welding process poses a hazard to the welder and to people in or near the work area.

When operating the equipment and its subsequent disposal, it is necessary to comply with the requirements of current state and regional norms and rules of labor safety, environmental, sanitary and fire safety.

Only persons aged 18 or older who have studied the operating instructions and the device's structure, have permission to work independently and have been instructed in safety precautions are allowed to work with the device.

#### 3.1. EQUIPMENT OPERATING CONDITIONS

- The devices are intended only for the operations described in this manual. Using the equipment for other purposes may result in its failure.
- For safety reasons, the work area must be cleared of dust, dirt and oxidizing gases in the air.
- Before turning on the machine, make sure that its ventilation openings remain open and that it is provided with air flow.



**CAUTION!** Do not use these devices to defrost pipes, recharge batteries or accumulators, or start engines.

### **3.2. SAFETY MEASURES WHEN CARRYING OUT WELDING WORK**

- The smoke and gas generated during welding are hazardous to health. The work area must be well ventilated. Try to arrange an exhaust hood directly above the welding area.
- Do not work alone in confined, poorly ventilated spaces – work should be supervised by another person located outside the work area.
- The radiation from the welding arc is dangerous to the eyes and skin. When welding, use a welding mask, protective glasses and special long-sleeved clothing with gloves and a head covering. The clothing must be durable, of a suitable size, and made of non-flammable material. Use durable shoes to protect against water and metal splashes.
- Do not wear contact lenses, as the intense radiation from the arc may cause them to stick to the cornea.
- The welding process is accompanied by surface noise, use hearing protection if necessary.
- Remember that the workpiece and equipment become very hot during the welding process.

- Do not touch the hot workpiece with unprotected hands.
- During cooling of the welded surfaces, spatter may appear and the temperature of the workpieces remains high for some time.
- Measures must be taken to protect people in or near the work area. Use protective screens and screens for this purpose. Warn others that the arc and hot metal must not be looked at without special protective equipment.
- Always keep a first aid kit nearby. Injuries and burns from welding can be very dangerous.



WARNING! After completing work, make sure the work area is safe to prevent accidental injury to people or damage to property.

### **3.3. FIRE AND EXPLOSION SAFETY**

- Sparks generated during welding can cause a fire, so all flammable materials must be removed from the work area.
- Fire extinguishing equipment must be located near the work area, and personnel must know how to use it.
- It is prohibited to weld vessels under pressure, containers that contained flammable and lubricating substances. Residual gas, fuel or oil may cause an explosion.

- It is prohibited to carry flammable objects (matches, lighters) in the pockets of special clothing, or to work in clothing with stains of oil, grease, gasoline, and other flammable liquids.

### **3.4. ELECTRICAL SAFETY**

- Use sockets with a grounding circuit to connect the equipment.
- It is prohibited to make any connections under voltage.
- It is strictly forbidden to carry out work if the insulation of the cable, electrode holder, power cord or plug is damaged.
- Do not touch uninsulated parts with bare hands. The welder must weld wearing dry welding gloves.
- Disconnect the device from the power supply when not in use.
- Switching the operating modes of the device during the welding process may damage the equipment.



**WARNING!** If you are struck by electric current, stop welding, turn off the equipment, and seek medical attention if necessary. Before resuming work, carefully check the serviceability of the device.

### **3.5. ELECTROMAGNETIC FIELDS AND INTERFERENCE**

- Welding current is the cause of electromagnetic fields. With prolonged exposure, they can have a negative impact on human health.

- Electromagnetic fields may interfere with equipment, including hearing aids and pacemakers. People using medical devices should not be allowed into the welding area without consulting a physician.
- If possible, electromagnetic interference should be reduced to a level that does not interfere with the operation of other equipment. Partial shielding of electrical equipment located near the welding machine is possible.
- Observe the requirements for limiting the inclusion of high-power equipment and the requirements for the parameters of the power supply network. It is possible to use additional means of protection, such as network filters.
- Do not wrap welding leads around yourself or the equipment, and be especially careful when using long cables.
- Do not touch the power cable of the electrode holder and the ground wire at the same time.
- Grounding the parts to be welded effectively reduces electromagnetic interference caused by the machine.

### **3.6. IP PROTECTION CLASSIFICATION**

The ARC630-2T welding machine has protection class IP21. This means that the machine body meets the following requirements:

- Protection against penetration of fingers and solid objects with a diameter greater than 12 mm into the housing;
- Drops of water falling vertically on the shell do not have a harmful effect on the product.



ATTENTION! Despite the protection of the device body from moisture, welding in the rain or snow is strictly prohibited.

This protection class does not mean protection against condensation. If possible, ensure permanent protection of the equipment from atmospheric precipitation.

#### 4. DESCRIPTION OF FUNCTIONING

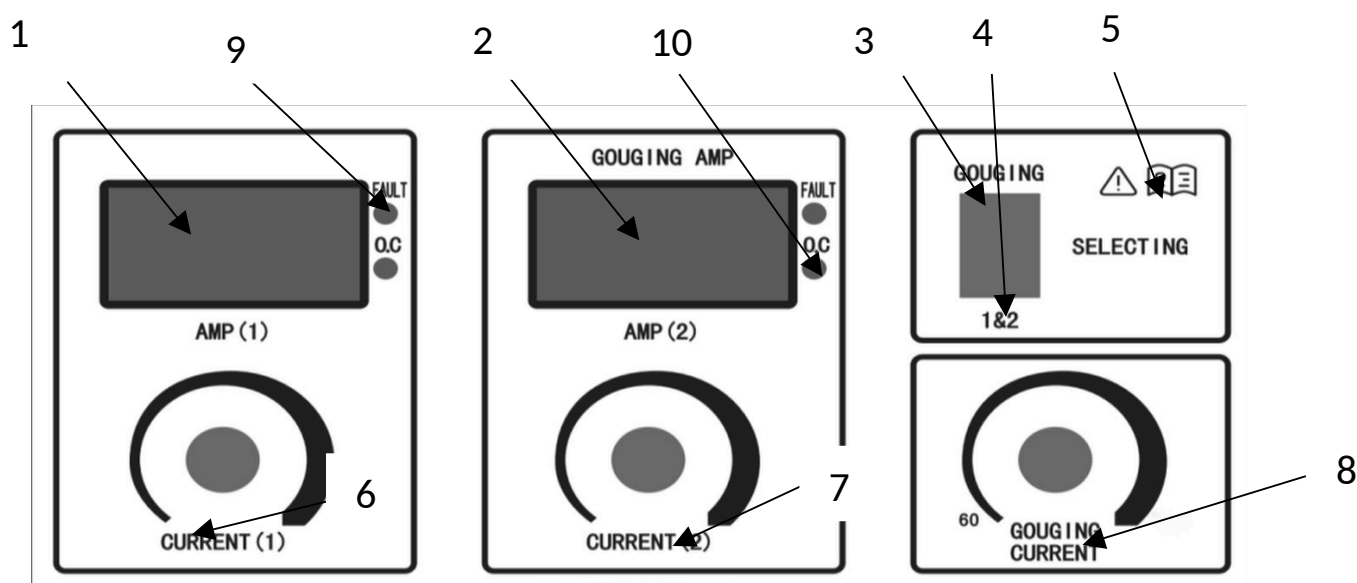


Fig. 1 – Control panel

| Pos. | Name              | Description       |
|------|-------------------|-------------------|
| 1    | Display, welder 1 | Ammeter, welder 1 |

|    |                         |                                                        |
|----|-------------------------|--------------------------------------------------------|
| 2  | Display, welder 2       | Ammeter, welder 2                                      |
| 3  | Switch 1                | Switching between welding and gouging                  |
| 4  | Switch 2                | Switching settings from the front panel (welder 1 / 2) |
| 5  | Manual instruction sign | Read carefully before using the machine                |
| 6  | Regulator               | Welder 1 current                                       |
| 7  | Regulator               | Welder 2 current                                       |
| 8  | Regulator               | Gouging current regulator                              |
| 9  | Fault indicator         | Shows that the power source has a fault                |
| 10 | Overheating indicator   | Shows overheating of the source                        |

## 5. MAINTENANCE

**ATTENTION!** Maintenance requires professional knowledge of electrical engineering and safety regulations. Specialists must be licensed to perform such work.

**ATTENTION!** Disconnect the appliance from the power supply when performing any maintenance work.

To ensure reliable operation over a long period of operation, it is necessary to carry out certain types of work in a timely manner.

**Control examination.** It is carried out every time the device is prepared for operation.

1. Check all connections of the device (especially power welding connectors). If there is oxidation of contacts, remove it with sandpaper and reconnect the wires.

2. Check the integrity of the insulation of all cables. If the insulation is damaged, insulate the damaged area or replace the cable.

3. Check the reliability of the device connection to the electrical network.

**Technical service (warranty).** It is carried out once a year at a service center (see warranty obligation for the power source).

**Technical service (post-warranty).** Should be carried out after the warranty period has expired.

Maintenance procedure:

- opening the device;
- removal of dirt and dust with compressed air;
- visual inspection of the condition of board connectors and contacts;
- tightening loose threaded connections;

- assembly of the device;
- welding test.

### **General recommendations:**

- Keep the welding machine clean, remove dust from the body using a clean and dry cloth.
- Do not allow water drops, steam or other liquids to enter the device.

## **6. TROUBLESHOOTING**

**Attention!** Repair of this welding equipment in case of its breakdown can only be carried out by qualified technical personnel.

| <b>Malfunction</b>                                                                       | <b>Cause and methods of elimination</b>                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The signal lamp does not light, there is no welding arc, the built-in fan does not work. | <p>a) No mains voltage or break in the power cable. Check the mains voltage.<br/>Replace the power cable.</p> <p>b) Defect or damage to equipment.<br/>Contact the service center.</p> <p>c) The device is in protection mode against failures due to excessive network voltage.</p> |

|                                                                                                         |                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                         | Check the mains voltage.                                                                                                                                                                                    |
| The signal lamp is off, there is no welding arc, but the built-in fan is working.                       | a) Internal connections of the device are damaged. Contact the service center.                                                                                                                              |
| The signal lamp is on, the fan is running, but there is no welding arc.                                 | a) The device is in overheat protection mode. Do not turn off the device so that the fan can lower the temperature.                                                                                         |
| The digital indicator works, the fan works. When the equipment is restarted, the signal lamp lights up. | a) The equipment may be in overheat protection mode. Do not turn off the device so that the fan can lower the temperature.<br>b) Damage to the inverter circuit is possible.<br>Contact the service center. |
| Excessive amount of sparks during welding.                                                              | a) The wrong welding mode is selected. Select the required welding mode according to the necessary requirements.                                                                                            |

## 7. STORAGE

The device in the manufacturer's packaging should be stored in closed rooms with natural ventilation at temperatures from minus 30°C to plus 55°C and relative air humidity up to 80%.

The presence of acid, alkali and other aggressive impurities in the air is not permitted.

Before placing the device into long-term storage, it must be packed in its original box.

After storage at low temperatures, the device must be kept at a temperature above 0°C for at least six hours in the packaging and at least two hours without packaging before use.

## **8. TRANSPORTATION**

The device can be transported by all types of closed transport in accordance with the transportation rules applicable to each type of transport.

Transportation conditions under the influence of climatic factors:

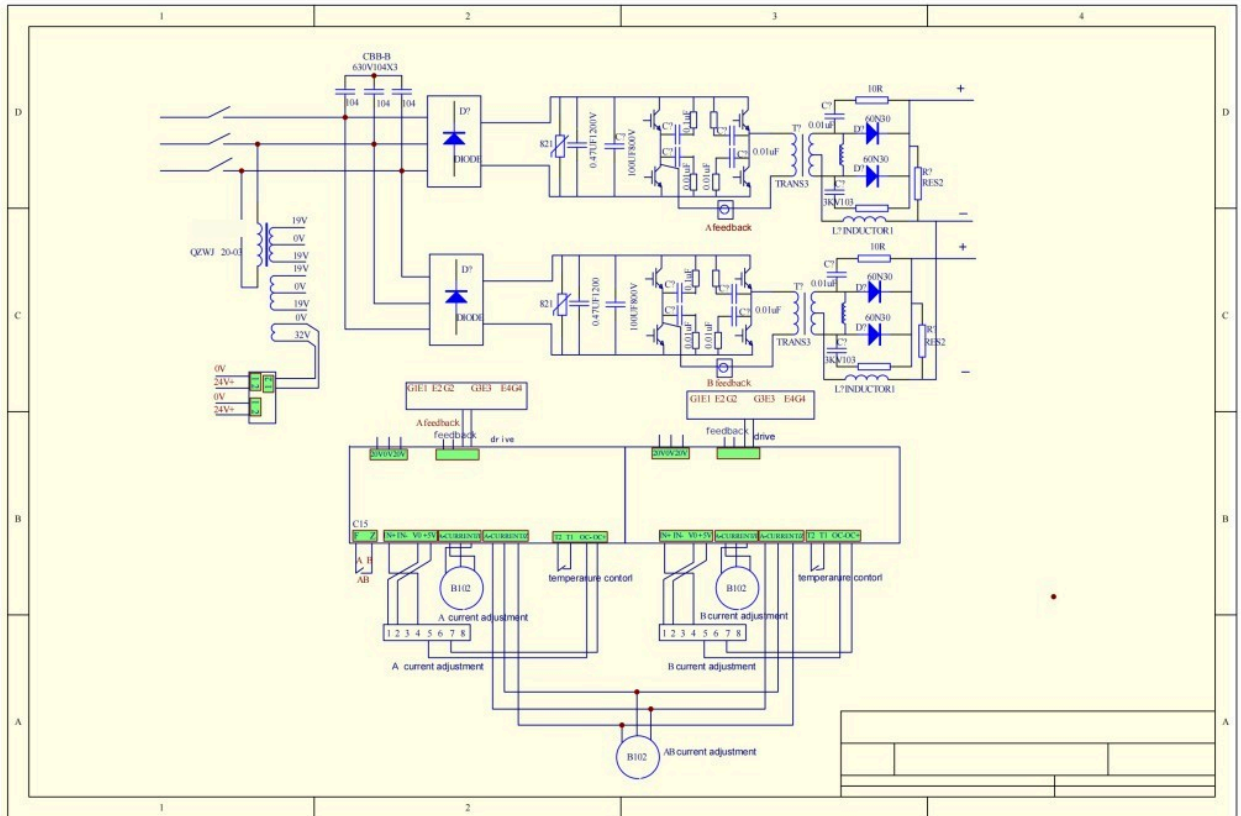
- ambient air temperature from minus 30°C to plus 55°C;
- relative air humidity up to 80%.

During transportation and loading and unloading operations, the packaging with the device should not be subjected to sudden impacts or exposure to atmospheric precipitation.

The placement and fastening of the transport container with the packed device in vehicles must ensure a stable position and the absence of the possibility of its movement during transportation.

**ATTENTION!** Before using the product, please read the Safety Precautions section of this manual CAREFULLY.

## 9. WIRING DIAGRAM



**CRUXWELD®**

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Cruxweld Industrial Equipments Pvt. Ltd., 5, Sector 29, Faridabad - 121008 (Haryana), India  
 Phone: +91 8800 882 983 | +91 (129) 489 2868 Email: sales@cruxweld.com | support@cruxweld.com  
 www.cruxweld.com