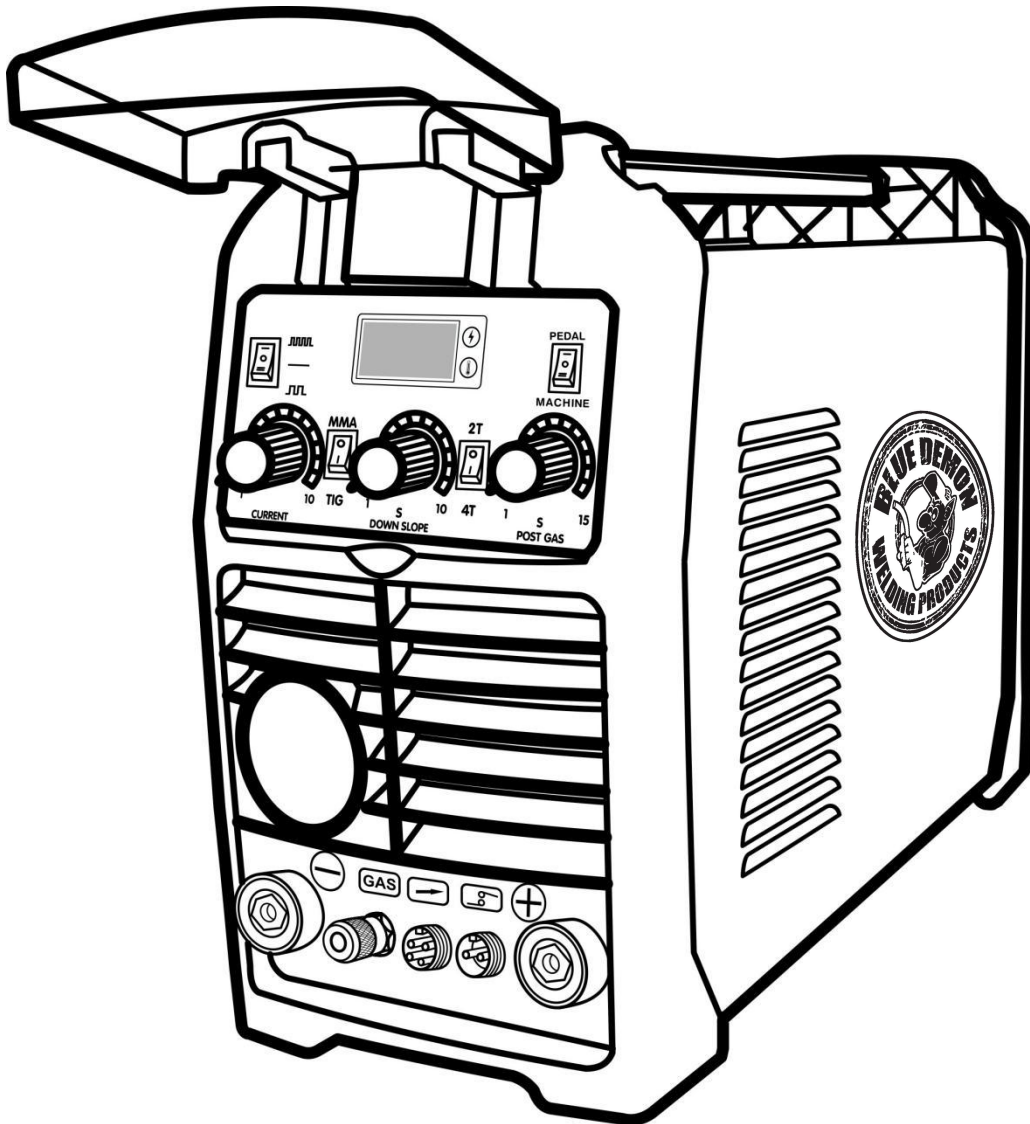


BLUEARC 200STI OWNERS MANUAL



(Plastic Panel)

INVERTER IGBT DC PULSE TIG/MM WELDING MACHINE



WARNING!

Read the instructions before installing and starting the device!

1. GENERAL REMARKS

Commissioning and operation of the device may only be carried out after thoroughly reading this Operator's Manual.

Due to the constant technical development of the device, some of its functions may be modified and their operation may differ in detail from the descriptions in the manual. This is not a device error, but the result of progress and continuous modification work on the device.

Damage to the device caused by improper operation will void the warranty. Any modifications to the charger are prohibited and will void the warranty.

2. SECURITY

Employees operating the device should have the necessary qualifications authorizing them to perform welding work:

- should be authorized by an electric welder in the field of welding with coated electrodes and in gas shields,
- knowledge of health and safety principles when operating power equipment, such as welding equipment and auxiliary equipment powered by electricity,
- be aware of health and safety rules for handling cylinders and compressed gas (argon) installations,
- Know the contents of this manual and use the device for its intended purpose.



WARNING



Welding may endanger the safety of the operator and other persons in the vicinity. Therefore, special precautions should be taken when welding. Before welding, read the health and safety regulations at the workplace.

During MMA and TIG electric welding, the following risks exist:

- **ELECTRIC SHOCK**
- **NEGATIVE IMPACT OF ARC LIGHT ON EYES AND SKIN OF A HUMAN**
- **STEAM AND GAS POISONING**
- **BURNS**
- **EXPLOSION AND FIRE HAZARDS**
- **NOISE**

Prevention of electric shock:

- connect the device to a technically efficient electrical installation with adequate protection and zeroing efficiency (additional protection against electric shock); other devices at the welder's workplace should be checked and correctly connected to the network,
- install power cables with the device switched off,
- do not touch simultaneously the non-insulated parts of the electrode holder, electrode and workpiece, including the device housing,
- do not use holders and power cables with damaged insulation,
- in conditions of special risk of electric shock (work in environments with high humidity and closed tanks), work with an assistant assisting the welder and ensuring safety, use clothing and gloves with good insulating properties,
- if you notice any irregularities, please contact competent persons to remove them,
- Operation of the device with covers removed is forbidden.

Prevention of negative effects of the electric arc on human eyes and skin:

- Wear protective clothing (gloves, apron, leather shoes),
- Use shields or protective helmets with a properly selected filter,
- Use protective curtains made of non-combustible material and choose the right colors for the walls that absorb harmful radiation.

Prevention of poisoning by vapors and gases emitted during welding from electrode coating and metal evaporation:

- Use ventilation equipment and extractors installed in positions with limited air exchange,
- Blow out with fresh air when working in a confined space (tanks),
- Use masks and respirators.

Burn prevention:

- Use appropriate protective clothing and footwear to protect against burns from arc radiation and spatters,
- Avoid staining clothing with grease and oil that can ignite it.

Explosion and fire prevention:

- It is forbidden to operate the device and weld in rooms where there is a risk of explosion or fire,
- The welding station should be equipped with fire extinguishing equipment,
- The welding station should be at a safe distance from flammable materials.

Prevention of negative effects of noise:

- Use ear plugs or other noise protection measures,
- Warn of the danger of nearby people.

**WARNING!****Do not use a power source for thawing frozen pipes.****Before starting the device:**

- Check the condition of electrical and mechanical connections. Holders and cables with damaged insulation must not be used. Inadequate insulation of the grips and current leads can cause electric shock,
- Ensure proper working conditions, i.e. ensure proper temperature, humidity and ventilation at the workplace. Protect against atmospheric precipitation outside enclosed rooms,
- Place the charger in a place that allows easy operation. Persons operating the welder should:
- have the authorization to electric welding with coated electrodes and the TIG method,
- know and comply with the health and safety regulations applicable to welding work,
- use proper, specialized protective equipment: gloves, apron, rubber boots, shield or welding helmet with a properly selected filter,
- know the content of these operating instructions and use the welder for its intended purpose. Any repairs to the device may only be carried out after disconnecting the plug from the power socket.
- When the device is connected to the network, no parts forming the welding current circuit may be touched by bare hands or wet clothing.
- It is forbidden to remove the outer covers when the device is connected to the network.
- Any modifications of the rectifier on your own are prohibited and may constitute a deterioration of safety conditions.
- All maintenance and repair works may only be carried out by authorized persons, observing the safety conditions in force for electrical equipment.
- It is forbidden to use the welder in rooms at risk of explosion or fire! The welding station should be equipped with fire extinguishing equipment.
- After finishing work, disconnect the power cord from the device.
- The threats and general health and safety rules presented above do not cover the welder's safety issues, as they do not take into account the specificity of the workplace. An important supplement to these is the workplace
- OHS instructions as well as training and instructions given by supervisory staff.

3. GENERAL DESCRIPTION

The machine is used for manual welding of structural steels with coated electrodes (MMA method) and quality steels, copper and its alloys with a non-fusible electrode in an inert gas shield (TIG method). The device is intended for workshop and occasional production work. The welder has the possibility of welding with pulse and regulation, time of current drop and gas outflow. The device works in 2T / 4T mode and has a display indicating welding parameters. The set includes a TIG welding torch, electrode cable and ground cable.

The machine is made in IGBT technology that allows a significant reduction in the weight and dimensions of the welder and an increase in efficiency while reducing energy consumption.

The machine is used in closed or roofed rooms, not exposed to direct weather effects.

4. TECHNICAL SPECIFICATIONS**4.1 MACHINE**

Model	BLUEARC 200STI	
Power supply voltage	AC 230V ±10% 50Hz/60Hz	AC 110V ±10% 50Hz/60Hz
Max. Power consumption	MMA: 6.6 KVA, TIG: 4,6 KVA	MMA: 4,6 KVA, TIG: 3.0 KVA
Welding current / work cycle	MMA: 180 A / 60% TIG: 200 A / 60%	MMA: 130 A / 60% TIG: 140 A / 60%
No-load voltage	81 V	80 V
Power consumption	MMA: 29A, TIG 20 A	MMA: 42 A, TIG 28 A
Weight	7 kg	
Dimension	430 x 175 x 320 mm	
Protection Class	IP21S	

4.2 Parameter adjustment ranges

Model	BLUEARC 200STI	
Power supply voltage	AC 230V \pm 10% 50Hz/60Hz	AC 110V \pm 10% 50Hz/60Hz
Current	MMA: 10-180 A TIG:10-200 A	MMA: 10-130 A TIG:10-140 A
Gas outflow(Post Gas)	0 – 15 s	
Current drop(Down Slope)	0 – 10 s	
Pulse frequency	1,2 Hz / 200 Hz	

Work cycle

The work cycle is based on a 10-minute period. A 60% duty cycle means a 4-minute break is required after 6 minutes of operation. A 100% duty cycle means that the device can work continuously without interruptions. Warning! Heating tests were carried out at ambient air temperature. The duty cycle at 40°C was determined by simulation.

Level of security

IP determines to what extent the device is resistant to the penetration of solid and water pollutants. IP23 means that the device is designed to work indoors and is not suitable for use in the rain

5.CONNECTION TO THE POWER SUPPLY NETWORK

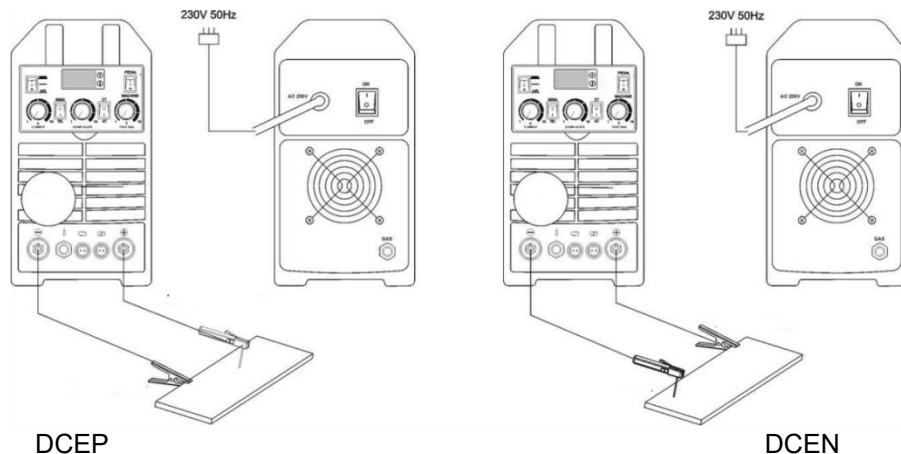
1. The machine should only be used in a single-phase, three-wire power supply system with grounded neutral.
2. The machine is designed to work with 230V 50Hz mains protected with 25 A fuses with time delay. The power supply should be stable, without voltage drops.
3. The machine is equipped with a power cord and plug. Before connecting the power supply, make sure that the power switch (14) is in the OFF position.

5.1 PREPARING THE MACHINE FOR WORK

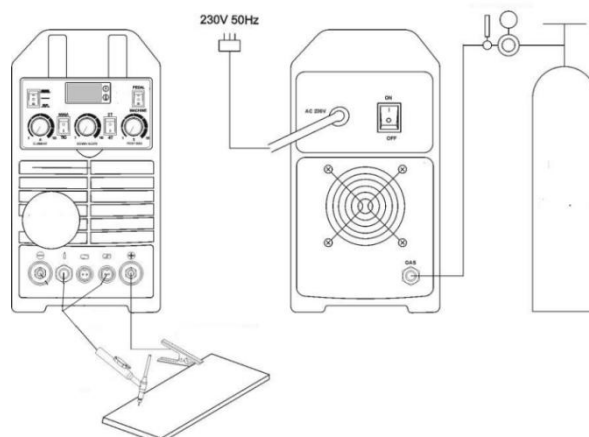
If the device is stored or transported in low temperatures, the device should be brought to the right temperature before starting work !!!

5.1.1 Method MMA

The ends of the welding leads should be connected to the sockets (5) and (8) on the front panel so that the correct pole for the electrode is on the electrode holder. The polarity of the welding cable connection depends on the type of electrode used and is indicated on the electrode packaging (DCEN negative or DCEP positive). The return hose clamp should be securely attached to the workpiece. Connect the device's plug to a 230V 50Hz power socket.



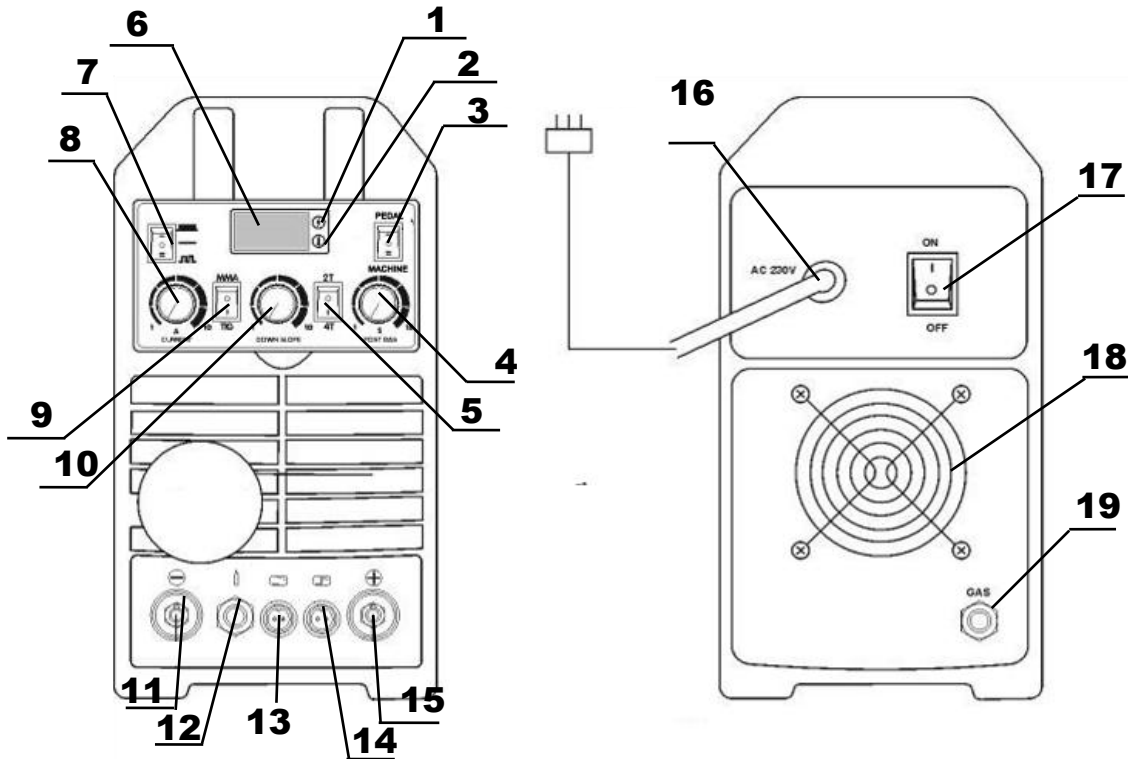
5.1.1 Method TIG



the control plug of the clamp should be placed in the socket (6), and the gas connector plug in the socket of the quick coupler (7). The gas pipe from the regulator should be connected and secured to the gas connector (16) located on the back of the housing. Connect the positive pole of the source (5) with the workpiece using a cable with a clamp. Connect the device's plug to a 230V 50Hz power socket.

6 DESCRIPTION OF SWITCH FUNCTIONS AND KNOBS

6.1 Front and rear panel



- | | |
|---|------------------------------------|
| 1).Power supply LED | 2).Thermal protection diode |
| 3).Remote foot pedal and machine switch | 4).Post gas adjustment knob |
| 5).Control mode switch (two-stroke / four-stroke) | 6).Display |
| 7).Pulse frequency switch | 8).Welding current adjustment knob |
| 9).MMA/TIG switch | 10).Down slope adjustment knob |
| 11).Negative polarization socket | 12).Shielding gas connection |
| 13).Remote socket | 14).Control socket |
| 15).Positive polarity socket | 16).Power cord |
| 17).Power on/off | 18). Fan |
| | 19).Shielding gas cap |

6.2 Control panel

Diode

The LED lights up when the device is turned on.

Diode

Overheat protection - the power source is equipped with a thermal automatic overload switch. When the welder's temperature is too high, the protection disconnects the welding current and the LED lights up. After the temperature drops, the circuit breaker will reset automatically.

Display of welding parameters




The display shows the welding current in amperes.

Welding method selection switch

The switch is used to select the welding method. **MMA** - welding with covered electrode (MMA), **TIG** - welding with tungsten electrode in shielding gases.

Pulse frequency switch

Switch active only during TIG welding. Used to control the operation of the pulse:

 pulseless welding
  pulse frequency welding 1.2 Hz
  pulse frequency welding 200 Hz

Source mode selector switch (two-stroke / four-stroke)

The switch is only active for TIG welding. In the two-touch mode, pressing the switch on the handle of the handle will turn on the ionizer and ignite the arc. Welding is carried out with the switch pressed. Releasing the switch will end welding. In the four-stroke mode, pressing the switch in the handle of the handle will turn on the ionizer and ignite the arc then release the switch and weld with the switch released. Pressing the switch again will end welding.

DOWN SLOPE knob - current fall time Time of welding current decrease until arc extinguishing.
Adjustment range: 0 - 10s.

POST GAS knob - gas post-flow time

Time from quenching the arc to closing the gas valve to shield the solidifying weld pool from air and to cool the tungsten electrode. Too short an afterflow time can result in weld oxidation.
Adjustment range: 0 - 15s.

7.WELDING

7.1 Arc initiation and coated electrode (MMA) welding

Initiation of the arc when welding with coated electrodes involves touching the electrode to the workpiece, short rubbing and tearing. In the event of arc initiation with electrodes whose coating forms a non-conductive slag after solidification, the electrode tip should be pre-cleaned by hitting the hard surface several times until metallic contact with the welded material is achieved. To end welding, detach the electrode from the workpiece.

7.2. Welding in shielding gases (TIG method).

The machine is equipped with an ionizer enabling contactless ignition of the arc. To ignite the arc in two-stroke mode, bring the electrode closer to the welded material at a distance of 2 millimeters and press the button on the torch handle to turn on the ionizer. After correct arc initiation, welding should be carried out with the button pressed. By releasing the handle button, the current drop phase begins and the welding process ends. To ignite the arc in four-stroke mode, bring the electrode closer to the welded material at a distance of 2 millimeters and press the button on the torch handle to turn on the ionizer. After the arc has ignited correctly, the button can be released and welding can be carried out with the button released. To end welding, press and release the handle button again.


8. BEFORE CALLING FOR THE SERVICE

In the event of a malfunction of the machine, before sending the welder to the service, check the list of basic failures and try to remove them yourself.

Any repairs to the device may only be carried out after disconnecting the plug from the power socket.

Warning! The device is not sealed and the user can remove the welder's housing to remove minor failures.

symptoms	Removal methods
The control panel does not light up, the fan does not work, no output voltage	<ol style="list-style-type: none"> 1. Make sure the switch is in the ON position 2. Check the protection and voltage in the network 3. Remove the cover and check the connection of all electrical plugs inside the device
The control panel lights up, the fan does not work, no output voltage.	<ol style="list-style-type: none"> 1. Check that the device has not been connected to a higher voltage network. If so, connect to 230V and switch on again 2. The supply voltage is unstable and switches on the overvoltage protection. Turn off the device for 2-3 minutes and turn it on again 3. Briefly turning on and off the switch turned on the overvoltage protection. Switch the device off for 2 minutes and switch it on again 4. There is other damage that requires repair by an authorized service center
The control panel lights up, the fan is running, arc ignition problems	<ol style="list-style-type: none"> 1. Check TIG torch, replace consumable parts if worn.
The control panel lights up, the fan runs, the welder does not ignite the arc	<ol style="list-style-type: none"> 1. Check the terminals and the correct electrical conductivity of the electrode and ground wire 2. Check the connection of the TIG torch to the device, make sure that the pins in the socket are not broken off or are not jamming. 3. Unscrew the handle of the TIG torch and check that the switch in the torch is OK

The control panel lights up, the fan runs, the LED lights up 	1. The device has been overheated. Wait a few minutes. After the diode goes out, continue welding.
Unsatisfactory weld quality when MMA welding, the electrode sticks to the material being welded	<ol style="list-style-type: none"> 1. Check the polarity of the welding cable connection 2. Check that the electrode is not wet. Replace the electrode. 3. The welder is powered by a power generator or by a long extension cord with too small cable cross section. Connect the device directly to the mains
Unsatisfactory weld quality for TIG welding	<ol style="list-style-type: none"> 1. Replace consumable parts. Change the tungsten electrode or gas cylinder for higher quality materials 2. Check that the shielding gas flows with the right intensity 3. Check gas supply hose, improve hose connection with fittings and condition of quick couplings 4. Check the bench gear reducer.

9. OPERATING INSTRUCTIONS

The machine should be operated in an atmosphere free of corrosive components and high dustiness. Do not place the device in dusty places, near working grinders, etc. Dusting and contamination with metal chips of control boards, wires and connections inside the device may lead to electric short circuit and, as a consequence, damage to the welder.

Avoid operating in environments with high humidity, especially in situations of dew on metal components.

In the event of dew on metal parts, e.g. after placing a cool device in a warm room, wait until the dew has disappeared. It is recommended to place the welding machine under a roof to protect against adverse weather conditions when using the welder outdoors.

The machine should be used in the following conditions:

- changes in the effective value of the supply voltage not more than 10%
- ambient temperature from -10°C to $+40^{\circ}\text{C}$
- atmospheric pressure 860 to 1060 hPa
- relative atmospheric humidity not more than 80%
- altitude up to 1000m

10. MAINTENANCE INSTRUCTIONS

As part of daily service, keep the welding machine clean, check the condition of external connections and the condition of electric wires and cables.

Replace consumable parts regularly.

Periodically clean the inside of the machine by blowing compressed air to remove dust and metal filings from the control boards as well as the wiring and electrical connections.

A general inspection and condition of the electrical connections should be carried out at least once every six months, in particular:

- status of electric shock protection
- insulation condition
- security system status
- proper functioning of the cooling system

Damage resulting from operating the welding machine in improper conditions and failure to comply with maintenance instructions are not covered by warranty repairs.

STORAGE AND TRANSPORT INSTRUCTIONS

The device should be stored at -10°C to $+40^{\circ}\text{C}$ and relative humidity up to 80% free of corrosive fumes and dust. Packaged equipment should be transported using covered means of transport. During transport, the packed device must be secured against slipping and positioned correctly.

IGBT Equipment Warranty

Welding Material Sales Effective Jan 1, 2019

Limited Warranty

This warranty applies to the original purchaser and is subject to the terms and conditions listed below.

This Limited Warranty is for new equipment sold after the above date, providing coverage for defects in material and workmanship at the time it is shipped from the factory.

Limited to the warranty periods listed below, Welding Material Sales will repair or replace the item under warranty that fails due to defects in material and workmanship. Welding Material Sales, Inc. must be notified within 30 days of the failure, so as to provide instructions on how to proceed with the repair of your welder and warranty claim processing. Warranty period begins at the time the welder is purchased from an authorized Welding Material Sales, Inc. distributor and/or retailer. Proof of purchase will be required for Welding Material Sales to proceed with any and all warranty claims, no exceptions.

Warranty Periods

Limited Warranty is divided into two categories: No warranty and 1 year.

No Warranty

Normal wear items including but not limited to MIG gun parts (contact tips, nozzle, adapter, liner), TIG torch parts (collet, cup, back cap, torch body) drive roll, contactor, and electrode holder are not covered under warranty.

1 Year

Solenoid valve, PC board, controls, gas valve, drive motor, and drive system. Parts and labor performed by authorized repair center with original equipment repair parts. Call 888-905-6737 for a repair center near you.