

KeyGree

# MIG Series User's Manual

---

*Do it easy, comfortable, trustable.*

# MODEL

MIG-250Y/MIG-250/MIG-270K/MIG-315K



---

## PREFACE

Dear users, thank you for using our inverter welder. For your correct operation of our product, please read this manual carefully before use and keep it properly for future reference.

### SPECIAL NOTICE

1. When the welder is placed on an inclined plane, care should be taken to prevent it from tipping over;
2. As the protection level of this welder series is IP21S, it is not suitable for use in the rain;
3. The product conforms to GB15579 standard;
4. This product complies with the electromagnetic compatibility requirements for type A equipment.

Chengdu KeyGree Technology Co., Ltd.

Address: No. 6668 Qingquan Avenue, Qingbaijiang District, Chengdu, Sichuan Province

Zip code: 610300

Tel: 4001887588




Website: [www.keygree.com](http://www.keygree.com)

Email: [info@keygree.com](mailto:info@keygree.com)

---

# SAFETY PRECAUTIONS

## Precautions for Installation

	<p><b>ELECTRIC SHOCK!!!</b></p> <ul style="list-style-type: none"><li>● Install the earthing device according to the applicable standard.</li><li>● Do not touch live parts while bare skin or wearing wet gloves or clothes.</li><li>● Insure you to insulate appearance with the ground and the work piece.</li><li>● The cover plate must be covered before power on, otherwise it may cause electric shock.</li><li>● Make sure that your workstation is in a safe state.</li></ul>
	<p><b>FIRE!!!</b></p> <ul style="list-style-type: none"><li>● Please install the product on non-combustible objects, otherwise there is a risk of fire.</li><li>● Do not put combustible materials nearby, otherwise there is a risk of fire.</li></ul>
	<p><b>EXPLOSION HAZARD!!!</b></p> <ul style="list-style-type: none"><li>● Do not install the product in an environment containing explosive gas, otherwise there is a risk of an explosion.</li></ul>



### Replacing parts and components may cause danger

- Only professionals can replace the parts.
- Do not drop foreign objects such as thread ends, screws, gaskets and metal bars into the welder when replacing parts.
- After replacing the circuit board, the internal connection of the welder shall be correct before the welder can be operated, otherwise there is a risk of property damage.

## Precautions for Use

### **Fume/smoke dust — It may be harmful to health.**

- Welding would produce lots of gases and fumes that are harmful to the body. Avoid inhalation into the respiratory tract.
- Keep your head away from fumes while welding. Adopt adequate ventilation or exhaust facilities to keep smoke and gas away from the breathing area, and maintain good ventilation in the working environment.

### **Arc radiation — It may damage your eyes and burn your skin.**

- Use an appropriate welding mask and wear protective clothing to protect your eyes and body.
- Use an appropriate mask or curtain to protect bystanders from harm.

### **Magnetic field will affect pacemakers.**

- The electric current from any conductor will produce electromagnetic fields. Welding operators with cardiac pacemakers should consult a doctor before welding.
- Stay away from power sources as much as possible to minimize the impact of electromagnetic fields.

### **Improper use and operation may cause fire or explosion.**

- Sparks from welding may cause fire. Please confirm that there is no flammable material near the welding station and pay attention to fire safety.
- Ensure that there is a fire extinguishing device nearby and a trained person who can use fire extinguishers proficiently.
- Do not weld sealed containers.
- Do not use the welder for thawing pipelines.

### **Hot workpiece may cause severe burns**

- Do not touch hot workpieces with bare hands.
- Let the welding gun cool down for a while after continuous operation.

### **Noise — Excessive noise is harmful to hearing.**

- Protect your ears. Use ear shields or other hearing protectors.
- Warn bystanders of the potential damage to their hearing caused by noise.

### **Moving parts may cause personal injury**

- Avoid moving parts (such as fans).
- Protective devices such as doors, panels, covers and baffles must be tightly closed and put in the right place.

### **Fault — Seek professional help when in trouble.**

- If you encounter difficulties during installation and operation, please follow relevant contents of this manual for troubleshooting.
- If you do not fully understand it after reading, or if you cannot solve the problem according to the guidelines in this manual, you should contact your supplier immediately and seek professional help.

## Precautions for Scrapping

### **When scrapping the welder, please note:**

- The electrolytic capacitor of the main circuit and the electrolytic capacitor on the printed board may explode when burned.
- The plastic parts such as front panels will produce toxic gas when burned.
- Please dispose of it as industrial waste.

# CONTENTS

<b>Chapter I Product Overview</b> .....	<b>01</b>
<b>1.1 Model Explanation</b> .....	<b>01</b>
<b>1.2 General Technical Parameters</b> .....	<b>01</b>
<b>1.3 System composition</b> .....	<b>02</b>
<b>1.4 Description of functions and features</b> .....	<b>02</b>
<b>Chapter II Installation and Wiring</b> .....	<b>03</b>
<b>2.1 Installation requirements</b> .....	<b>03</b>
<b>Chapter III Operating Instructions</b> .....	<b>04</b>
<b>3.1 Operating methods</b> .....	<b>04</b>
<b>3.2 Panel functions</b> .....	<b>04</b>
<b>3.3 Use method of basic welding functions</b> .....	<b>05</b>
<b>Chapter IV Maintenance</b> .....	<b>06</b>
<b>4.1 Routine maintenance</b> .....	<b>06</b>
<b>4.2 Regular inspection</b> .....	<b>08</b>
<b>Chapter VI Troubleshooting</b> .....	<b>09</b>
<b>5.1 Welder failure and problems in welding procedure</b> .....	<b>09</b>
<b>5.2 After-sales service</b> .....	<b>10</b>

# Chapter I Product Overview

## 1.1 Model Explanation

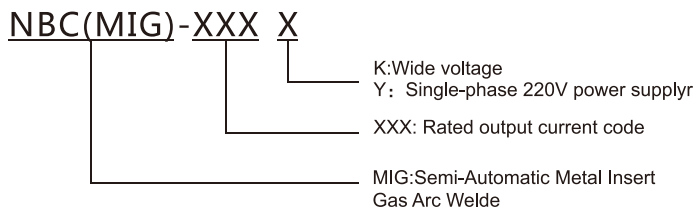


Fig. 1-1 Model Explanation

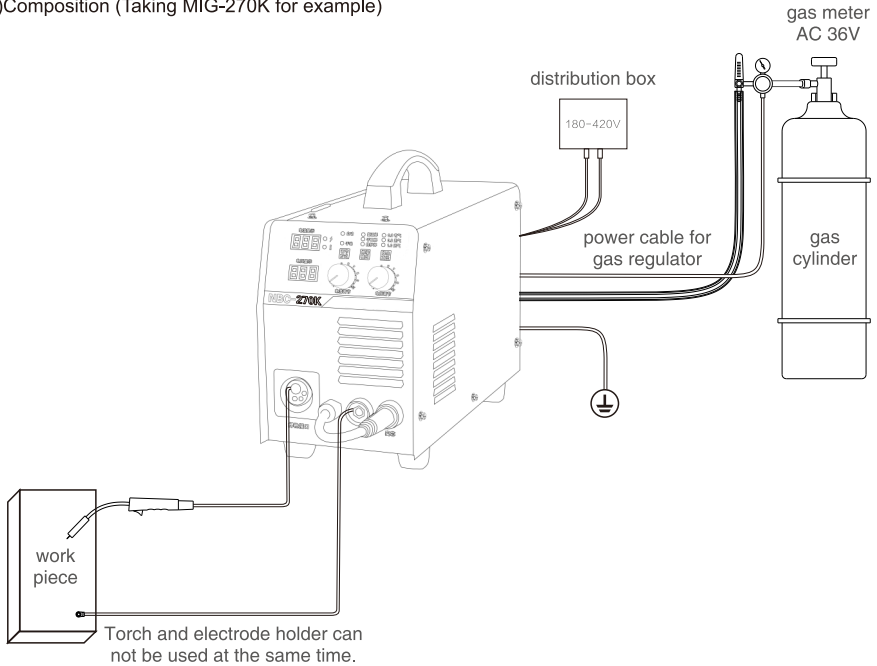
## 1.2 General Technical Parameters

See Table 1-1 for the general technical parameters of the welder.

MODEL	MIG-250Y	MIG-250	MIG-270K		MIG-315K	
Rated Input Voltage(V)	1P 220V	1P 220V	180-420		180-420	
Frequency (Hz)	50/60					
Rated Input Capacity (KVA)	5.6	5.6	6.6		8.8	
Rated Output (A/V)	MIG:140/21 MMA:140/25.6	MIG:200/24 MMA:180/27.2	MIG:170/22 MMA:170/26.4		MIG:200/21 MMA:200/28	
No-Load Voltage (V)	52	62	62	54	65	56
Adjustable Current Range(A)	20-200	30-200	20-170		20-200	
Duty Cycle (%)	60					
Efficiency(%)	85	85	85		85	
Wire feeder	built in					
Wire Diameter (MM)	0.8-1.0	0.8-1.0	0.8-1.0		0.8-1.0	
Spool Size(KG)	1/5	1/5	1,5		5,15	
Net Weight(KG)	8.9	10	9		9.1	
Machine Dimension(MM)	420×255×355	470×210×340	420×255×355		490×255×415	

### 1.3 System composition

1)Composition (Taking MIG-270K for example)



### 1.4 Description of functions and features

FLUX welding machine is a new power source developed by our company that can perform melting electrode welding without gas protection. mainly uses the positive and negative polarity exchange,at the same time the use of FLUX core welding wire, and can use co<sub>2</sub>,as well as manual welding ,simple scratch argon arc welding function.



## Chapter II Installation and Wiring

### 2.1 Installation requirements

Environmental requirements: When selecting the installation environment, the following should be noted:

- Avoid installation in places with much dust and metal powder;
- Strictly prohibited to install in places with corrosive and explosive gases;
- Ambient temperature range: working: -10 to +40°C; transportation and storage state: -25 to +55°C;
- Do not place the welder on a table top with an inclination greater than 15°;
- Put the welder at a dry and ventilated location and protect it from direct sunlight or rain;
- Keep the welding site from wind, and use wind shield when necessary in case of affecting the welding technology.

### Installing Space Requirements

The welder is at least 20 cm away from the wall, and two welders should be placed side by side at a distance of more than 30 cm.

#### 1) Installation of wire feeder

- ① Install the wire spool with welding wire on the damper of the wire feeder. The hole of the wire spool should be aligned with the fixing pin of the damper.
- ② According to the diameter of the welding wire, choose different contact tips, loosen the nut of the wire press wheel, send the wire guide tube into the groove of the wire feed wheel, adjust the wire to press the welding wire to ensure that the welding wire does not slide, but the pressure should not be too large, to prevent the deformation of the welding wire and affect the wire feeding.
- ③ The wire spool should be turned clockwise to release the welding wire. In order to prevent the welding wire from loosening, the head of the new wire reel is often inserted into the fixing hole on the edge of the wire reel. In normal use, in order to prevent the bent wire from being stuck, please install this part. The welding wire is cut. Different wire feed rolls are selected according to the wire diameter. Press the electric wire feeding button on the panel to send the welding wire out of the gun head (Note: Please do not aim the gun head at the human face when feeding the wire).

#### 2) Output installation

Align the welding torch with the corresponding hole and install it on the central copper head, and tighten it clockwise. The adapter should be connected according to the instructions for use. The ground wire must be tightened with the quick socket, and the ground wire should be connected reliably.

#### 3) Requirements for power cable and earth cable

Specification	MIG-250Y	MIG-250	MIG-270K	MIG-315K
Switch Capacity	50	63	63	63
Cross-sectional Area of International Copper Core Power Cable( $\text{mm}^2$ )	2.5	4	4	4
Cross-sectional Area of the Grounding Copper Core Wire( $\text{mm}^2$ )	1.5	2.5	2.5	2.5

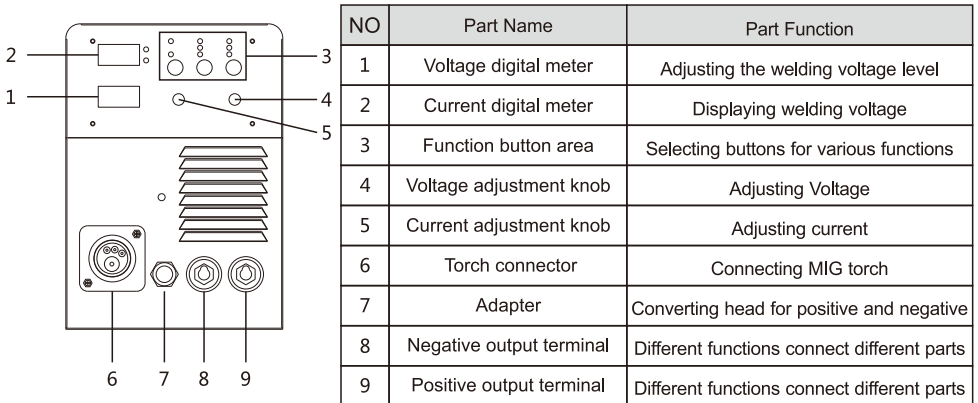
## Chapter III Operating Instructions

### 3.1 Operating methods

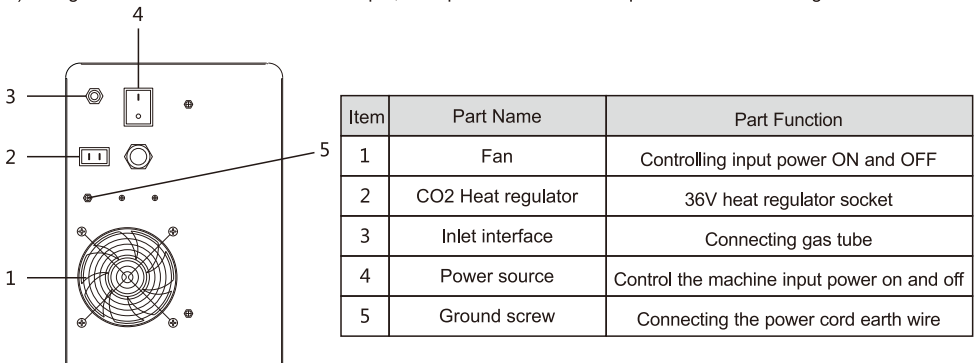
- 1) After correct installation, turn on the power switch and push the power switch in the "ON" position. Then, the power indicator light will be on and the fan inside the welder will start rotating.
- 2) According to the actual situation of use, the adapter is connected to the corresponding position, and the ground wire is firmly connected to the workpiece.
- 3) According to the diameter of the welding wire, select the diameter of the contact tip of the welding gun.
- 4) According to the thickness and process of the workpiece to be welded, cooperate with the "voltage adjustment" knob and "current adjustment" knob to the corresponding position.
- 5) "Auto" mode can be selected, at this time it is a unified adjustment, only the current needs to be adjusted, and the voltage is automatically matched. 6) In the "manual" mode, the current and voltage need to be adjusted separately, and the parameters can be manually matched to achieve a good welding process.

### 3.2 Panel functions

- 1) Taking the all-in-one MIG-270K for example, the operations of the front panel are shown in Figure 3-1



- 1) Taking the all-in-one MIG-270K for example, the operations of the front panel are shown in Figure 3-1



### 3.3 Use method of basic welding functions

Through the two modes of "automatic" and "manual" on the panel, the welding current and voltage can be adjusted in a unified way or separately.

#### 3.3.1 Operating procedures for crater welding

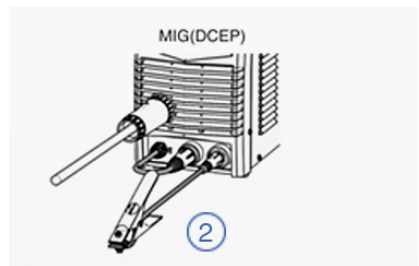
##### 1) Mode description

- In automatic mode: At this time, only one knob of the current potentiometer is needed to adjust the current and voltage. In this mode, the voltage automatically matches the current, which is convenient for novice operation, simple and practical; the voltage adjustment only needs to adjust the arc voltage up and down, Range -5--+5. Crater welding is most suitable for the welding of medium and thick plates.
- In manual mode: At this time, the current and voltage need to be adjusted through the current and voltage potentiometer knobs respectively. In this mode, the current and voltage need to be manually adjusted and matched in order to obtain more accurate welding parameters. It is suitable for mastering welding skills and for welding. Craftsmanship requires people and occasions to use.

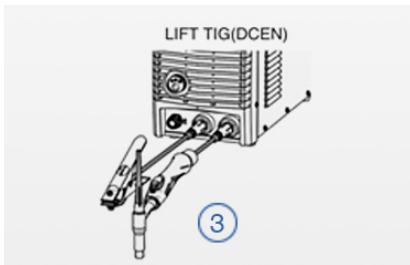
##### 2) Instructions for use of output connectors



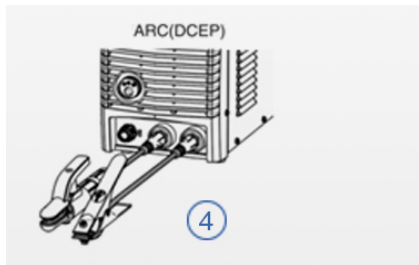
**FLUX-core wire:**  
Locate the Ground Clamp with Cable and connect the plug on the cable end to the Positive Connector (+) on the Welder.



**Solid wire:**  
Locate the Ground Clamp with Cable and connect the plug on the cable end to the Positive Connector (-) on the Welder.



**LIFT TIG:**  
Locate the Ground Clamp with Cable and connect the plug on the cable end to the Positive Connector (+) on the Welder. Lift tig is optional(need buy extra tig lift torch,not included inside product)



**ARC:**  
Locate the Ground Clamp with Cable and connect the plug on the cable end to the Negative Connector (-) on the Welder.

## Chapter IV Maintenance

### 4.1 Routine maintenance

**ATTENTION: Routine inspection must be carried out after switching off the power supply of the distribution box and the welder (except for visual inspection that does not require contact with the conductor) to avoid personal injury like electric shock and burn.**

Notice for Use

- 1) Routine inspection is vital for the high use performance and safe operation of the welder.
- 2) The routine inspection shall be conducted according to items in the table below and cleaning or replacement shall be conducted if necessary.
- 3) For the purpose of ensuring the high performance of the welder, the components provided or recommended by our company shall be used for the replacement of components.

Tbale 4-1 Routine Inspection Contents of the Welder

Item	Inspection Requirements	Remarks
Front panel	Check whether parts and components are damaged or loose; Check whether the quick output socket is tightened; Observe whether the indicator light is on.	The quick outlet terminal on the front panel is the item of regular inspection. In case of any nonconformity, the interior of the welder shall be checked, the fastener supplemented, or the components replaced.
Rear panel	Check whether the input power cord and the buckle are intact and whether the air inlet is clear and free of foreign objects.	
Upper cover	Check whether the bolt is loose.	In case of nonconformity, the fastener shall be supplemented or the component replaced.
Bottom plate	Check whether the screws on the bottom plate are loose.	
Routine inspection	Check whether there is color fading or overheating; Check whether the sound of the fan is normal when the welder is working; Check whether there is odor, abnormal vibration and noise when welding.	If abnormal conditions occur, check the inside of the welder.

Table 4-2 Routine Inspection of Cables

Item	Inspection Requirements	Remarks
Earth wire	Check whether the safety earth wire falls off, including the working earth wire and the welder earth wire.	In case of nonconformity, the fastener shall be supplemented or the component replaced.
Welding cable	Check whether the insulation layer of the cable is worn or damaged or whether the live parts are exposed; Check whether the cable is stretched by abnormal external force; Check whether the cable is firmly connected with the workpiece.	To ensure safe and normal welding, appropriate methods should be used for comparison inspection according to the conditions on the job site.

Table 4-3 Routine Inspection Content of Torch

Item	Inspection Requirements	Remarks
Nozzle	Check whether the installation is firm and whether the front end is deformed	Cause of pores
	Check for attached splashes	Cause of torch burnout (The effective way is to use anti-spatter agent)
Wire guide	Check whether it is firmly installed	Cause of torch thread damage
	End damage, hole wear and blockage	Cause of unstable arc or arc breakage
Feeding hose	Check the size of the feeding hose extension	If smaller than 6 mm, replace it. If the size of the protruding part is too small, it will lead to unstable arc. (When replacing the wire feeding tube, it is best to make the extension slightly longer than specified)
	Check whether the wire diameter coincides with the inner diameter of the wire feeding tube	The cause of unstable arc is mismatching. Replace the wire feeding tube with a suitable one.
	Local bending and elongation	Cause of poor wire feeding and arc instability. Please replace it.
	Dirt in wire feeding tube and clogging of wire plating residue	Leading to poor wire feeding and arc instability (wipe off with kerosene or replace with a new wire feeding tube)
	Broken wire feeding tube, worn O-ring	Likely to cause splatter; Breakage of heat-shrink tubes, replace with a new wire feeding tube; wear of O-ring, replace with a new one
Gas distributor	Forgot to insert or hole blockage, or mismatching with the components purchased from other manufacturers	Likely to cause welding defects (spatter, etc.) and burn out the torch body (arc inside the body), etc. due to poor gas shielding. Please deal with them correctly.







Table 4-4 Routine Inspection Content of Wire Feeder

Item	Inspection Requirements	Remarks
Handle	Check whether the pressure handle is set to the proper pressure indication line	Resulting in unstable feeding and arc
Wire liner	Check whether the wire liner mouth and the side of the wire feed roll accumulate cutting powder and debris	Remove the cutting powder and debris and find out the cause to eradicate it
	Check whether the wire diameter coincides with the inner diameter of the wire liner	When it does not match, the arc is unstable or produces cutting powder and debris
	Check whether the center of the wire liner mouth and the slot center of the wire feed roll are consistent (by visual inspection)	Misalignment leads to the generation of cutting powder and arc instability.
Wire feed rolls	Check whether the wire diameter and the nominal diameter of wire feed roll are consistent Check the slot of the wire feed roll for blockage	It may generate cutting powder, clog wire feeder, and cause unstable arc; if abnormalities occur, replace with new products
Pressurized roller	Check the smoothness of rotation, wear of wire pressurized surface, and narrowing of contact surface	Poor feeding, further leading to arc instability

## 4.2 Regular inspection

**ATTENTION: To ensure safety, regular inspections must be carried out by professionals. Regular inspection must be carried out after the power supply of the distribution box and the unit is turned off to avoid causing electric shock, burns and other personal injuries. Because of the capacitor discharge, it is necessary to cut off the power supply of the welder and wait for 5 minutes before inspection.**

### Operation Instructions

	<p><b>CAUTION</b></p> <p>All maintenance and repair work must be done with the power completely disconnected. Please make sure the power is unplugged before opening the housing.</p> <p>When the welder is energized, keep your hands, hair and tools away from the live parts inside such as fan in case of personal injury or damaging the welder.</p>
	<p><b>PERIODICAL INSPECTION</b></p> <p>Check the internal circuit connection of the welder regularly to make sure that the circuit connection is correct and the connection head is firm (especially the insert connector or component). If rust or looseness is found, sand paper should be used to grind off the rust layer or oxidation film, reconnect it and tighten it.</p> <p>Check all cable insulated leathers regularly for any breakage, or else bind up or replace the cable.</p>
	<p><b>BEWARE OF STATIC ELECTRICITY</b></p> <p>To avoid electrostatic damage to semiconductor components and circuit boards, please wear anti-static devices, or by touching the metal parts of the case to remove static electricity beforehand touching the wiring conductor and circuit board inside the welder.</p>
	<p><b>KEEP DRY</b></p> <p>Avoid water or water vapor entering the welder. Dry it if damped inside. Then, measure the insulation of the welder with an ohmmeter (between the connection nodes and between the connection point and the housing). Be aware that continuous welding is performed only when no abnormalities are found.</p> <p>If the welder is idle for a long time, put it in the original packaging case and stored in a dry environment.</p>
	<p><b>PAY ATTENTION TO MAINTENANCE</b></p> <p>To ensure the long-term normal use of the equipment, regular inspection must be carried out. Regular inspection should be meticulous, including internal inspection and cleaning of the equipment.</p> <p>Regular inspection is usually carried out once every 6 months, but if the welding site is full of dust or oily fumes, it is shortened to once every 3 months.</p>
	<p><b>BEWARE OF CORROSION</b></p> <p>Please use neutral deergent when cleaning plastic parts</p>

## Chapter VI Troubleshooting

### 5.1 Welder failure and problems in welding procedure

Table 6-1 MIG Series Failure and Problems in Welding Procedure

Fault	Troubleshooting
The power indicator light/meter does not light up; the fan refuses to work; there is no welding output.	<ul style="list-style-type: none"> <li>a. Check whether the power network pressure is normal.</li> <li>b. Check for reliable connection between the input cable and the power switch.</li> <li>c. Check for normal ON/OFF of the power switch.</li> </ul>
The torch switch does not work when pressed and the protection light is off.	<ul style="list-style-type: none"> <li>a. Check whether the panel function light and the digital meter are on;</li> <li>b. Check whether the torch switch is in good contact and the torch interface is connected.</li> <li>c. Check the contact of the wire feeder interface.</li> <li>d. Check whether the six-core control cable of the separately type machine is damaged.</li> </ul>
When pressed, the torch gun switch sends out gas and the wire feeder is normal; there is no current output and the protection light is off.	<ul style="list-style-type: none"> <li>a. Check whether the earth wire is in good contact.</li> <li>b. Check whether the wire feeder cable is correctly connected or damaged.</li> <li>c. Check the torch for damage.</li> </ul>
The torch switch starts welding but the current is high, the voltage unable to modulate, and the no-load voltage too high.	<ul style="list-style-type: none"> <li>a. Check the wire feeder control cable for breakage.</li> <li>b. There is defect in the welder control panel.</li> <li>c. Check the voltage and current feedback lines for breakage.</li> </ul>
The torch switch starts welding but the voltage is maximum and non-adjustable. The feeding speed is adjustable.	<ul style="list-style-type: none"> <li>a. Check the voltage and current feedback lines for breakage.</li> <li>b. There is defect in the welder control panel.</li> </ul>
The torch switch sends out gas and there is current output, but the wire feeder does not work.	<ul style="list-style-type: none"> <li>a. Check the wire feeder control cable for breakage.</li> <li>b. Check whether the wire feeder is struck.</li> <li>c. There is a problem about the wire feeding power.</li> <li>d. The wire feeder is damaged.</li> </ul>

The welding current is unstable, varying from high to low.	<ul style="list-style-type: none"> <li>a. Check whether the torque knob of the wire feeder is appropriate.</li> <li>b. Check whether the wire feed roll match with the welding wire/stick.</li> <li>c. Check whether the torch wire liner is heavily worn.</li> <li>d. Check whether the torch contact tube is seriously worn.</li> <li>e. Confirm the welding stick quality.</li> </ul>
The protection effect of the weld bead is not good after welding.	<ul style="list-style-type: none"> <li>a. Check the gas pressure reducing valve for heating up.</li> <li>b. After welding, keep the torch in the original position so that the gas can protect the high temperature weld bead.</li> <li>c. Prolong the shielding gas lagtime and contact the manufacturer.</li> </ul>
<b>Fault</b>	<b>Troubleshooting</b>
The gas meter does not heat up.	<ul style="list-style-type: none"> <li>a. Check whether the heating power voltage is normal.</li> <li>b. The heater plug is not inserted in place.</li> <li>c. Check whether the resettable fuse inside the welder is intact.</li> <li>d. The electric heater inside the gas meter is damaged.</li> </ul>
When the torch switch is pressed down, the welding stick is fed normally but the solenoid valve is not energized.	<ul style="list-style-type: none"> <li>a. The control panel is damaged.</li> <li>b. The solenoid valve is blocked up or damaged.</li> <li>c. The socket connecting the control panel in loosely contacted.</li> </ul>
The torch is normal but can only weld low current.	<ul style="list-style-type: none"> <li>a. Check whether the input power cord is too thin and too long.</li> <li>b. Check whether the output cable is too thin and too long.</li> <li>c. The main control panel is damaged.</li> </ul>
The weld produces massive pores.	<ul style="list-style-type: none"> <li>a. The gas is impure.</li> <li>b. The weld is full of oil stains or rust.</li> <li>c. The wind is too strong at the welding site.</li> <li>d. No gas protection.</li> </ul>
Wire is fed without pressing the torch switch.	<ul style="list-style-type: none"> <li>a. The welding torch switch is damaged.</li> <li>b. The wire feeder control line is short-circuited.</li> <li>c. The manual feeding button is damaged.</li> <li>d. The main control panel is damaged.</li> </ul>

If a fault that cannot be handled is encountered, please notify our local agent of it for maintenance and treatment.

## 5.2 After-sales service

**Warranty card:** Please read the warranty card carefully, fill it out, and keep it properly.

**Maintenance:** Please refer to Table 5.1 for welder failure and problems in welding technology, or contact your local dealer.

Our company promises to guarantee the product for one year. The warranty period is based on the purchase time recorded on the warranty card or purchase invoice. If the damage is caused due to abnormal use, it is beyond the scope of warranty but can be handled in a maintenance way.