



**MIG200PFC/MIG250PFC**

**MIG200PFC LCD/MIG250**

**IGBT INVERTER WELDER**

## Thank you for selecting this new JASIC equipment!

This operating manual contains important information on the use and maintenance of this product, as well as safe handling of the product. Please refer to technical parameters of the equipment in Technical Parameter section in this manual, and read the manual carefully before using the equipment for the first time. For your own safety and that of your working environment, please pay particular attention to the safety instructions in the manual and operate the equipment according to the instructions. For more information on JASIC products, please contact JASIC Technology, consult an authorized JASIC dealer or visit JASIC website at [www.jasitech.com](http://www.jasitech.com).

## Disclaimer

**Shenzhen JASIC Technology Co., Ltd.** solemnly promises that this product is manufactured according to relevant domestic and international standards, and that this product conforms to EN60974-1 International Safety Standard. Patents protect the relevant design scheme and manufacturing technology adopted in this product.

1. Whilst every effort has been made to ensure that the information contained within this manual is complete and accurate, no liability can be accepted for any errors or omissions. Please note products are subject to continual development and may be subject to change without notice.
2. Though contents in this manual have been carefully checked, there may be inaccuracies. Please do not hesitate contact us in case of any inaccuracy.
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**For your safety, please read this manual carefully before installing and operating this JASIC equipment.**

**Pay extra attention to all content marked with "  ".**

**All operations must be carried out by professional, suitably qualified persons!**

# 1. Safety precautions

## 1.1. General safety



### SAFETY INSTRUCTION

These general safety norms cover both arc welding machines and plasma cutting machines unless otherwise noted.

It is important that users of this equipment protect yourselves and others from harm or even death.

The equipment must only be used for the purpose it was designed for. Using it in any other way could result in damage or injury and in breach of the safety rules.



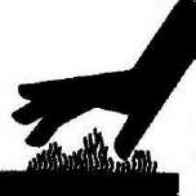
Only suitably trained and competent persons should use the equipment.

Pacemaker wearers should consult your doctor prior to using this equipment


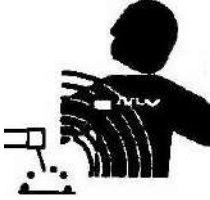


PPE and workplace safety equipment must be compatible for the application of work involved.

Always carry out a risk assessment before carrying out any welding or cutting activity

	<p><b>Only qualified personnel should operate this machine!</b></p> <ul style="list-style-type: none"> <li>·Always use the appropriate personal protective equipment.</li> <li>·Always pay attention to the safety of other persons around the working zone</li> <li>·Do not carry out any maintenance with the power on the machine</li> </ul>
	<p><b>Electric shock—May cause serious injury or even death!</b></p> <ul style="list-style-type: none"> <li>·The equipment should be installed by a qualified person and in accordance with current standards in operation. It is the user's responsibility to ensure that the equipment is connected to a suitable power supply. Consult with your utility supplier if required. Do not use the equipment with the covers removed.</li> <li>·Do not touch live electrical parts or parts, which are electrically charged.</li> <li>·Turn off all equipment when not in use.</li> </ul>
	<p><b>Fumes and gases—May be hazardous to your health.</b></p> <p>Locate the equipment in a well-ventilated position and keep your head out of the fume.</p> <p>Do not breathe the fume.</p> <p>Ensure the working zone is well ventilated and provision should be made for suitable local fume extraction system to be in place.</p> <p>If ventilation is poor, wear an approved air fed welding helmet or respirator.</p> <p>Read and understand the Material Safety Data Sheets (MSDS's) and the manufacturer's instructions for metals, consumable, coatings, cleaners and de-greasers.</p> <p>Do not work in locations near any de-greasing, cleaning or spraying operations.</p> <p>Be aware that heat and rays of the arc can react with vapours to form highly toxic and irritating gases.</p>

	<p><b>Arc rays—May injure the eyes and burn the skin.</b></p> <p>The arc rays from all processes produce intense, visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin.</p> <ul style="list-style-type: none"> <li>·Wear an approved welding helmet fitted with an appropriate shade of filter lens to protect your face and eyes when working or watching.</li> <li>·Wear approved safety glasses with side shields under your helmet.</li> <li>·Never use broken or faulty welding helmets.</li> <li>·Always ensure there are adequate protective screens or barriers to protect others from flash, glare and sparks from the working area.</li> <li>·Ensure that there are adequate warnings that welding or cutting is taking place.</li> <li>·Wear suitable protective flame resistant clothing, gloves and footwear.</li> </ul>
	<p><b>Precautions against fire and explosion</b></p> <p>Avoid causing fires due to sparks and hot waste or molten metal.</p> <p>Ensure that appropriate fire safety devices are available near the welding and cutting area.</p> <p>Remove all flammable and combustible materials from the welding, cutting and surrounding areas.</p> <p>Do not weld or cut fuel and lubricant containers, even if empty. These must be carefully cleaned before they can be welded or cut.</p> <p>Always allow the welded or cut material to cool before touching it or placing it in contact with combustible or flammable material.</p> <p>Do not work in atmospheres with high concentrations of combustible fumes, flammable gases and dust.</p> <p>Always check the work area half an hour after cutting to make sure that no fires have begun.</p> <p>Take care to avoid accidental contact of electrode to metal objects. This could cause arcs, explosion, overheating or fire.</p>
	<p><b>Risks due to hot material</b></p> <p>The process will create hot metal, sparks and drips of molten metal, so it's very important to ensure the operator is equipped with full PPE and to always ensure there are adequate protective screens or barriers to protect others from flash, glare and sparks from the working area. Hot surfaces will create fires and will burn any exposed skin.</p> <p>Always protect your eyes and body. Use the correct welding screen and filter lens and wear full PPE protective clothing.</p> <p>Do not touch any hot surfaces or parts bare handed.</p> <p>Always allow hot surfaces and parts to cool down first before touching or moving.</p> <p>If you are required to move hot parts, ensure you use proper tools and insulated welding gloves (PPE) to prevent burns to your hands and arms.</p>



	<p><b>Noise—Excessive noise may be harmful to hearing</b></p> <ul style="list-style-type: none"> <li>·Protect your ears by ear shields or other hearing protectors.</li> <li>·Give warning to nearby personnel that noise may be potentially hazardous to hearing.</li> </ul>
	<p><b>Risks due to magnetic fields</b></p> <p>The magnetic fields created by high currents may affect the operation of pacemakers or electronically controlled medical equipment.</p> <p>Wearers of vital electronic equipment should consult their physician before beginning any arc welding, cutting, gouging or spot welding operations.</p> <p>Do not go near welding equipment with any sensitive electronic equipment as the magnetic fields may cause damage.</p> <p>Keep the torch cable and work return cable as close to each other as possible throughout their length, this can help minimize your exposure to harmful magnetic fields.</p> <p>Do not wrap the cables around the body.</p>
	<p><b>Protection from moving parts</b></p> <p>When the machine is in operation keep away from moving parts such as motors and fans.</p> <p>Moving parts, such as the fan, may cut fingers and hands and snag garments.</p> <p>Protections and coverings may be removed for maintenance and controls only by qualified personnel after first disconnecting the power supply cable.</p> <p>Replace the coverings and protections and close all doors when the intervention is finished and before starting the equipment.</p> <p>Take care to avoid getting fingers trapped when loading and feeding wire during set up and operation.</p> <p>When feeding wire be careful to avoid pointing it at other people or towards your body.</p> <p>Always ensure machine covers and protective devices are in operation.</p>
	<p><b>Troubleshooting</b></p> <p>Before the machines are dispatched from the factory, they have already been checked thoroughly. The machine should not be tampered with or altered.</p> <p>Maintenance must be carried out carefully. If any wire becomes loose or is misplaced, it maybe potentially dangerous to user!</p> <p>Only professional maintenance personnel should repair the machine!</p> <p>Ensure the power is disconnected before working on the machine. Always wait 5 minutes after power switch off before removing the panels.</p> <p>If you still do not fully understand or cannot solve the problem after reading the instructions in this manual, you should contact the supplier or JASIC's service center immediately for professional help.</p>

## 1.2. Other precautions



### **Warning! Location**

The machine should be located in a suitable position and environment. Care should be taken to avoid moisture, dust, steam, oil or corrosive gases. Place on a secure level surface and ensure that there is adequate clearance around the machine to ensure natural airflow.



**Warning!** The handle or strap on the machine is only suitable for manual lifting of the machine. If mechanical equipment such as crane is used to lift the machine, please ensure the machine is secured with suitable lifting equipment.



### **Warning!**

#### **Input connection**

Before connecting the machine, you should ensure that the correct supply is available. Details of the machine requirements can be found on the data plate of the machine or in the technical parameters shown in the manual. The equipment should be connected by a suitably qualified competent person.















**Always ensure the equipment has a proper grounding.**











**Never connect the machine to the mains supply with the panels removed.**

- 1) When the operator's movement is limited by the surroundings (for example, the operator can only bend his knees, barefoot, or lie down during operation), the operator shall practice proper insulation and avoid direct contact with conductive parts on the equipment.
- 2) Do not use the machine in closed containers in narrow spaces where conductive components cannot be removed.
- 3) Do not use the machine in humid environments where the operator is prone to the risk of electric shock.
- 4) Do not use the machine in sunlight or rain, and no water or rainwater shall seep into the machine.
- 5) Do not perform gas shielded welding in an environment with strong air flow.
- 6) Avoid welding or cutting in dusty area or environment with corrosive chemical gas.
- 7) The ambient temperature must be between -10° C and 40°C during operation and between -25°C and 50°C during storage.
- 8) Welding or cutting shall be carried out in a relatively dry environment, and the air humidity shall not exceed 90%.
- 9) The inclination of the machine shall not exceed 10°.
- 10) Ensure that the input power supply voltage does not exceed 15% of the rated voltage of the machine.
- 11) Beware of falling when welding or cutting at heights.

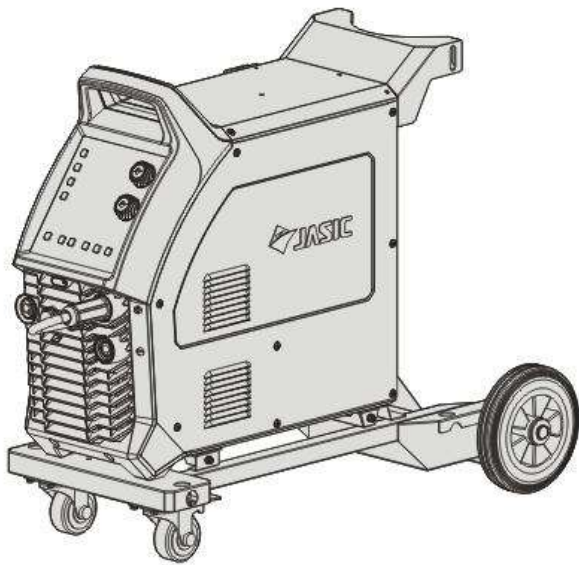


## 2. Description of symbols

	Warning! Read the Manual
	Electric shock risk warning
	WEEE tag
<b>A</b>	Current unit "A"
<b>m/min</b>	Wire feed speed unit "m/min"
	Thickness of welding base metal "mm"
<b>V</b>	Voltage unit "V"
	"Inductance" of MIG / "Arc force" of MMA
	MIG burn back time unit "ms"
	Overheat protection indicator
	Overcurrent protection indicator
	VRD function indicator
	MMA mode
	MIG mode
	Lift TIG mode
	Welding mode selector
Steel Ar80% CO <sub>2</sub> 20%	Mixed gas welding (80%Ar+ 20%CO <sub>2</sub> ) of carbon steel
Steel FluxCored Ar80% CO <sub>2</sub> 20%	Mixed gas welding (80%Ar+ 20%CO <sub>2</sub> ) of flux-cored carbon steel
Steel FCW-SS	Self-shielded welding of carbon steel
AlMg Ar100%	100%Ar welding of aluminum magnesium alloy
CrNi Ar98% CO <sub>2</sub> 2%	Mixed gas welding (98%Ar + 2%CO <sub>2</sub> ) of stainless steel
	Welding type selection: welding base metal and gas selection
φ 0.6	Welding wire diameter
φ 0.8	
φ 1.0	
φ 1.2	

	MIG/Lift TIG 2T operation
	MIG/Lift TIG 4T operation
	MIG push torch
	MIG push-pull torch
	MIG spool torch
	Other function switching
	Remote control function
	Synergic MIG function
	Inching function
	Gas check function

### 3. Product overview



HD digital screen version



Touchless LCD version

This series of GMAW welder features rich functions, easy operation, advanced technology, excellent performance and high quality. It supports three welding modes, i.e. **DC MIG, DC MMA and Lift TIG**, and can be widely used for welding various metal materials.

In DC MIG, the machine has the "Synergic" function. In Synergic MIG mode, the user can set the panel according to the welding materials, protective gas and welding wire diameter, and the machine will automatically call the corresponding "Synergic" expert parameter library. At this time, the user just needs to set the welding current, and the machine will automatically finds the corresponding welding voltage to achieve good welding results. The user can also disable the "Synergic" function, and set the wire feed speed and welding voltage freely.

In MMA, the machine has the VRD function, which makes the welder safer to use.

Lift TIG supports torch control, which is more operable than Lift TIG without torch control, and can effectively control gas and avoid argon waste.

Main functions include:

Three welding modes: MIG, MMA and Lift TIG.

- ◆ In MIG mode, the user can preset the wire feed speed, welding voltage, adjust welding inductance and burn back time.
- ◆ Supports selection of gas check, inching and wire diameter selection.
- ◆ "Synergic" function: The welder automatically matches the parameters according to the welding wire diameter, gas and base metal after setting the current, wire feed speed, and plate thickness, making it easier to use.
- ◆ MIG supports common push torch, numeric key push torch, push-pull torch and spool torch.
- ◆ In MMA mode, the user can preset the current and arc force current, which makes the current adjustment more accurate in MMA.
- ◆ MMA anti-stick function: Prevents the welding electrode from sticking to the workpiece

during welding.

- ◆ MMA hot start function: Makes MMA arc ignition easier and more reliable.
- ◆ Lift TIG is controlled by the torch switch.
- ◆ On-demand fan: Prolongs the fan lifespan and reduces internal dust accumulation.
- ◆ Parameters are automatically saved before shutdown, and the settings are restored after starting again.
- ◆ Supports factory reset function.
- ◆ Standby function: In MIG and Lift TIG mode, the machine automatically enters standby state if it is not used for a long time.
- ◆ Optional wired handheld remote controller and wireless remote controller.

**Note: The standard HD digital screen version does not support numeric key-type push torch, push-pull torch and spool torch functions; no remote controll function.**

## 4. Technical parameters

Item	Unit	MIG250
Model	/	MIG250
Input voltage	V <sub>AC</sub>	230±15%
Input frequency	Hz	50/60
Rated input current (AC230V)	A	45.5@MIG 40.0@TIG 45.5@MMA
Rated input power (AC230V)	kVA	10.5@MIG 9.2@TIG 10.5@MMA
Output voltage range (MIG)	V	11~30
Wire feed speed range (MIG)	m/min	2~18
Output current range (MIG)	A	30~250
Output current range (TIG)	A	5 ~ 250
Output current range (MMA)	A	20 ~ 220
Arc force range	A	0 ~ 100
Hot start current range	A	0 ~ 60
No-load voltage	V	65
VRD voltage	V	11
Rated operating voltage	V	26.5@MIG 20@TIG 28.8@MMA
Efficiency (%)	/	>80%
Duty cycle (%)	/	30%
Power factor	/	0.73@MIG 0.66@TIG 0.72@MMA
Insulation class	/	H

Protection class	/	IP23S
Dimensions L*W*H	mm	920*480*755
Net weight	Kg	41.3
Overall total weight	Kg	53.8
Idle state power	W	<50
Characteristics	/	CC/CV
Pollution level	/	Level 3

Item	Unit	MIG250PFC/MIG200PFC Parameters	
		MIG250PFC	MIG200PFC
Model	/	MIG250PFC	MIG200PFC
Input voltage	V <sub>AC</sub>	95~265	95~265
Input frequency	Hz	50/60	50/60
Rated input current (AC230V)	A	33.6@MIG 26.4@TIG 32.0@MMA	24.5@MIG 19.3@TIG 24.7@MMA
Rated input current (AC115V)	A	34.5@MIG 28.9@TIG 32.9@MMA	31.6@MIG 24.1@TIG 28.2@MMA
Rated input power (AC230V)	kVA	7.7@MIG 6.1@TIG 6.9@MMA	5.6@MIG 4.4@TIG 5.7@MMA
Rated input power (AC115V)	kVA	4.0@MIG 3.3@TIG 3.8@MMA	3.6@MIG 2.8@TIG 3.2@MMA
Output voltage range (MIG)	V	11~30@230V 11~25@115V	11~28@230V 11~23@115V
Wire feed speed range (MIG)	m/min	2~18@230V 2~14@115V	2~16@230V 2~12@115V
Output current range (MIG)	A	30~250@230V 30~160@115V	30~200@230V 30~140@115V
Output current range (TIG)	A	5~250@230V 5~160@115V	5~200@230V 5~140@115V
Output current range (MMA)	A	20~220@230V 20~125@115V	20~180@230V 20~110@115V

Arc force current range	A	0 ~ 100	0 ~ 100
Hot start current range	A	0~60	0~60
No-load voltage	V	70	68
VRD voltage	V	11	11
Rated operating voltage	V	26.5@MIG 20@TIG 28.8@MMA	24@MIG 18@TIG 27.2@MMA
Efficiency (%)	/	>80%	>80%
Duty cycle (%)	/	30%	30%
Power factor	/	0.99	0.99
Insulation class	/	H	H
Protection class	/	IP23S	IP23S
Dimensions L*W*H	mm	920*480*755	920*480*755
Net weight	Kg	43.5	41.9
Overall total weight	Kg	56.0	53.4
Idle state power	W	<50	<50
Characteristics	/	CC/CV	CC/CV
Pollution level	/	Level 3	Level 3

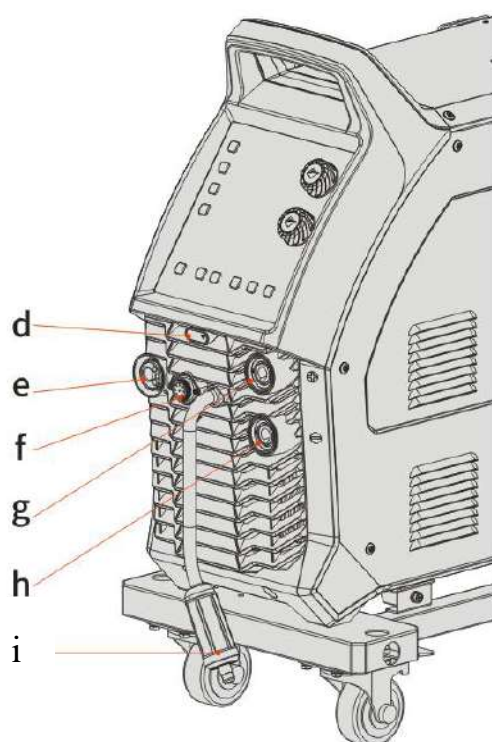


## 5. Installation

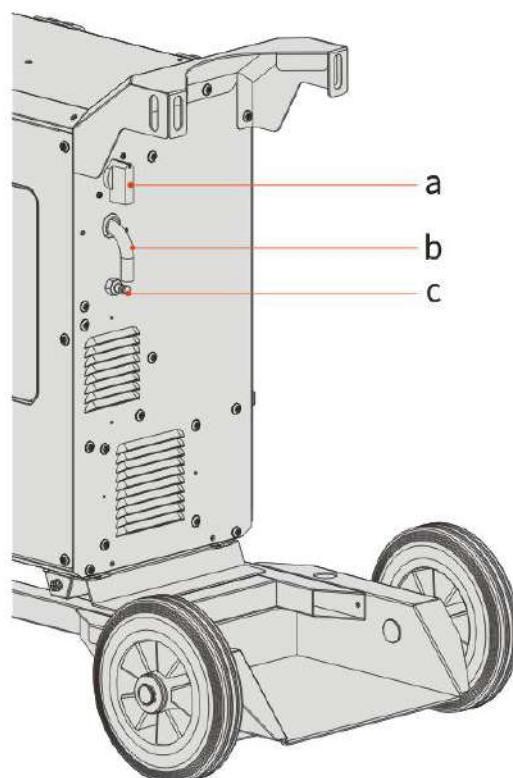


**Warning!** All connections shall be made after the power supply is turned off.  
**Warning!** Electric shock may cause death; after power failure, there is still a high voltage on the equipment, do not touch the live parts on the equipment.  
**Warning!** Incorrect input voltage may damage the equipment.  
**Warning!** This product meets the requirements of Class A equipment in EMC requirements and is not to be connected to a residential low-voltage power supply grid.

### 5.1. External interface description



(Front panel view)



(Rear panel view)

- a. Power switch
- b. Input power cord
- c. Gas valve inlet nozzle
- d. Wireless receiver module (optional)
- e. Euro MIG welding torch interface
- f. 9-pin aviation socket (plus)/plastic cover (standard)
- g. Positive polarity
- h. Negative polarity
- i. Polarity changeover connector

## 5.2. Power installation



**Warning!** The electrical connection of equipment shall be carried out by suitably qualified personnel.

**Warning!** All connections shall be made after the power supply is turned off.

**Warning!** Incorrect voltage may damage the equipment.

- 1) Ensure the input voltage value is within the specified input voltage range.
- 2) Ensure that the power switch is turned off.
- 3) Connect the input power cord to the input terminal or plug the power cord into the corresponding socket (if any) and ensure a good contact.
- 4) Ground the power supply well. (As shown in the diagram, the Euro plug has a grounding terminal, no additional grounding is required.)



### **NOTE!**

If the input cable needs to be extended, please use a cable with larger cross-sectional area to reduce the voltage drop, 3x2.5mm<sup>2</sup> or more is recommended.

## 5.3. MIG welding torch and earth cable connection

Pay attention to the polarity of the wiring before MIG. Generally, there are two wiring methods for DC welder: DCEP and DCEN.

DCEP: The polarity changeover connector is connected to the positive polarity, and the workpiece is connected to the negative polarity;

DCEN: The polarity changeover connector is connected to the negative polarity, and the workpiece is connected to the positive polarity.

**If MIG is selected, except for carbon steel flux-cored self-shielded welding, which uses DCEN, this series of welders generally use DCEP for other gas-shielded welding types.**

### 5.3.1 DCEP



- 1) Ensure that the welder power switch is turned off.
- 2) Insert the torch plug into the Euro MIG torch interface on the front panel of the welder and tighten it clockwise.
- 3) Insert the cable plug with earth clamp into the negative polarity socket on the front panel of the welder and tighten it clockwise.
- 4) Insert the polarity changeover connector into the positive polarity socket on the front panel of the welder and tighten it clockwise.
- 5) Connect one end of the gas hose to the gas valve inlet on the rear panel of the welder, and the other end to the gas regulator outlet, and secure it with a clamp.

### 5.3.2 DCEN

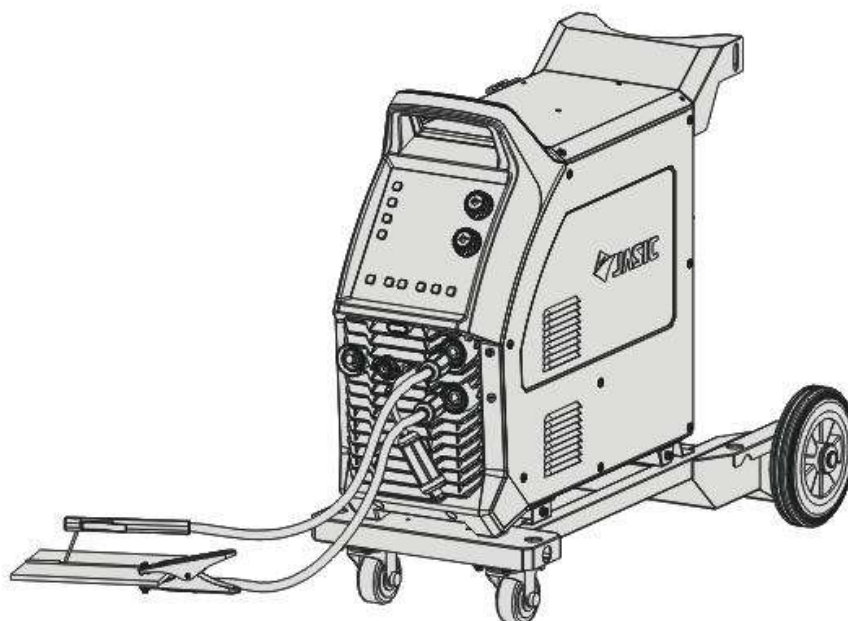


- 1) Ensure that the welder power switch is turned off.
- 2) Insert the torch plug into the central socket on the front panel of the welder and tighten it clockwise.
- 3) Insert the cable plug with earth clamp into the positive polarity socket on the front panel of the welder and tighten it clockwise.
- 4) Insert the polarity changeover connector into the negative polarity socket on the front panel of the welder and tighten it clockwise.
- 5) Connect one end of the gas hose to the gas valve inlet on the rear panel of the welder, and the other end to the gas regulator outlet, and secure it with a clamp.

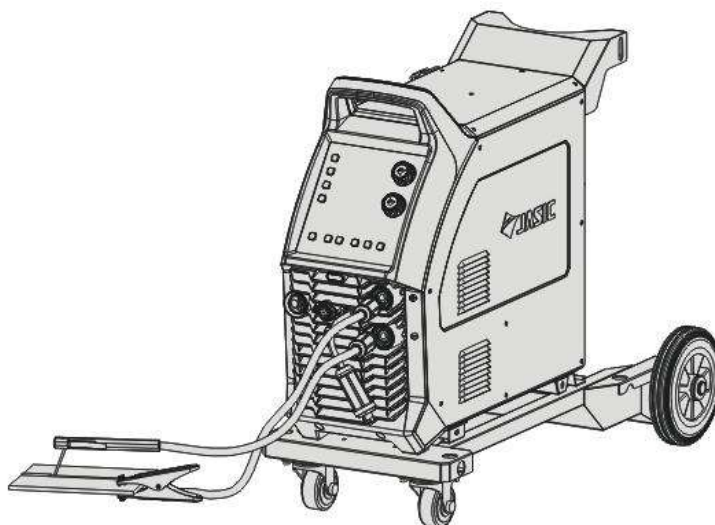
**NOTE! When performing carbon steel flux-cored self-shielded welding, please replace with dedicated knurling wire feed roller and use "DCEN".**

**When performing aluminum magnesium alloy welding, please replace with U-groove wire feed roller, contact tip, and 2.0 mm diameter Teflon liner for aluminum welding, and use "DCEP".**

## 5.4. MMA electrode holder and earth cable connection



(MMA wiring diagram: DCEP)



(MMA wiring diagram: DCEN)

Pay attention to the polarity of the wiring before MMA. Generally, there are two wiring methods for DC welder: DCEP and DCEN.

DCEP: The electrode holder is connected to the positive polarity, and the workpiece is connected to the negative polarity;

DCEN: The electrode holder is connected to the negative polarity, and the workpiece is connected to the positive polarity.

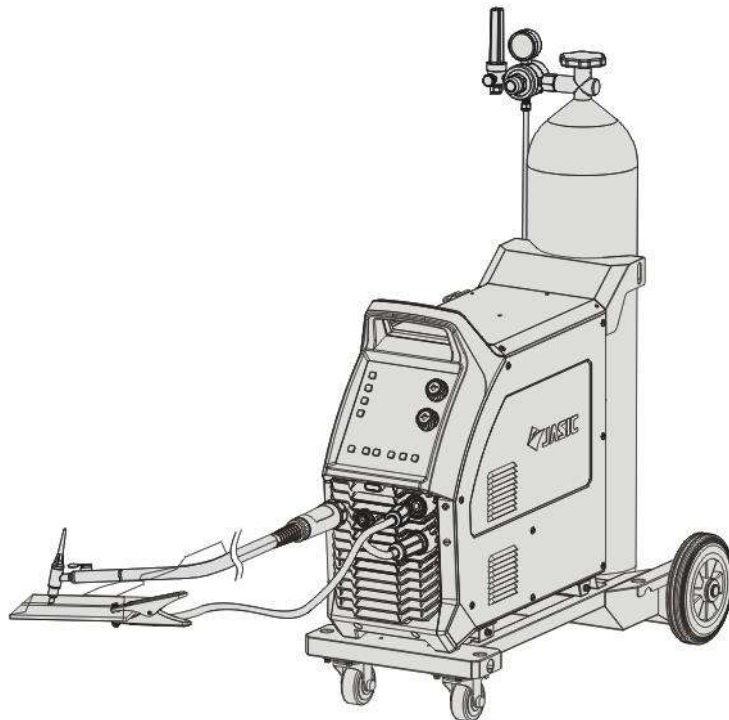
The operator can also choose connection method based on the base metal and electrode. Generally speaking, DCEP is recommended for basic electrodes, while no special provisions are made for acid electrodes.



- 1) Ensure that the welder power switch is turned off.
- 2) Insert the cable plug with electrode holder into the corresponding socket on the front panel of the welder and tighten it clockwise.
- 3) Insert the cable plug with earth clamp into the corresponding socket on the front panel of the welder and tighten it clockwise.

**NOTE! If you want to use long secondary cables (electrode holder cable and earth cable), you must ensure that the cross-sectional area of the cable is increased appropriately in order to reduce the voltage drop due to the cable length.**

## 5.5. Lift TIG welding torch and earth cable connection



(Lift TIG wiring diagram: DCEN)

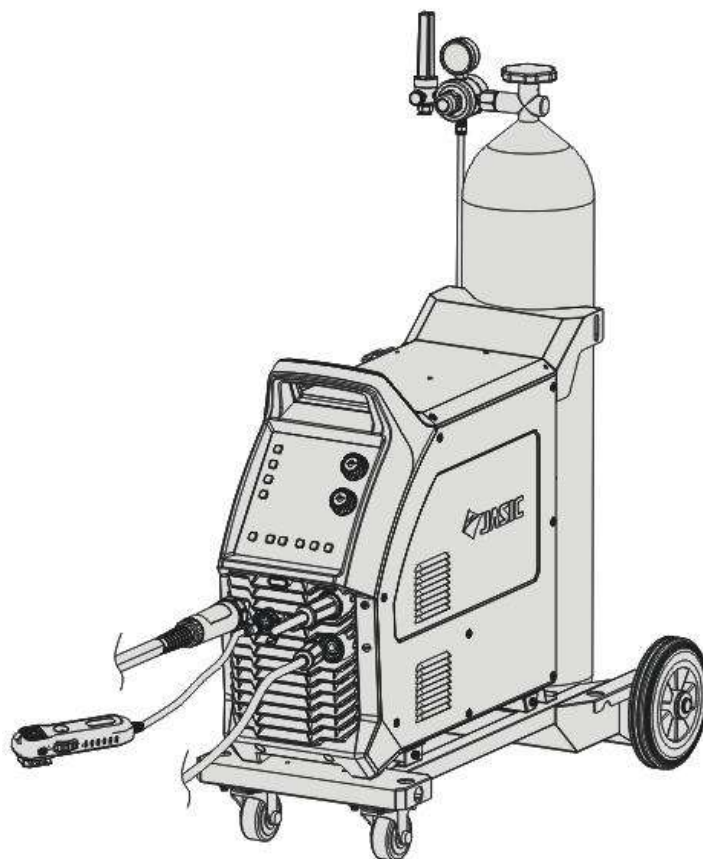
- 1) Ensure that the welder power switch is turned off.
- 2) Insert the torch plug into the central socket on the front panel of the welder and tighten it clockwise.
- 3) Insert the cable plug with earth clamp into the positive polarity socket on the front panel of the welder and tighten it clockwise.
- 4) Insert the polarity changeover connector into the negative polarity socket on the front panel of the welder and tighten it clockwise.

**NOTE! The positive and negative polarities should not be reversed as this will prevent normal welding operation.**

- 5) Connect one end of the gas hose to the gas valve inlet on the rear panel of the welder, and the other end to the gas regulator outlet, and secure it with a clamp.

**NOTE! If you want to use long secondary cables (Lift TIG torch cable and earth cable), you must ensure that the cross-sectional area of the cable is increased appropriately in order to reduce the voltage drop due to the cable length.**

## 5.6. Wired handheld remote controller/foot pedal controller connection (optional)



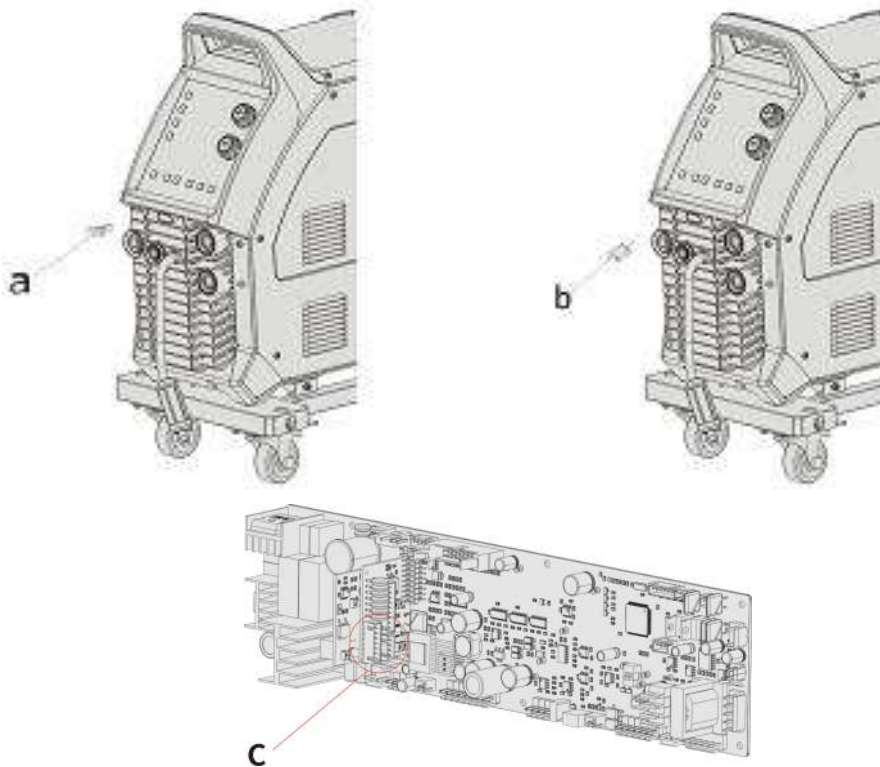
(Wiring diagram of wired remote controller)

Insert the 9-pin aviation plug of the handheld remote controller/foot pedal controller directly into the corresponding 9-pin aviation socket of the machine.

**NOTE! The standard version does not support the remote controller. Please check that the machine supports wired handheld remote controller before installation.**



## 5.7. Installation of wireless receiver module (optional)



(Installation of wireless receiver module)

- 1) Remove the **wireless remote controller plug cover** shown in the above left figure (a). Refit into the wireless receiver module shown in the above right figure (b).
- 2) Remove the screws on the left side cover of the machine and remove the side panel.
- 3) Connect the cable of the wireless module to the 7P terminal block CN3 of the control board PCB2 (Figure c).

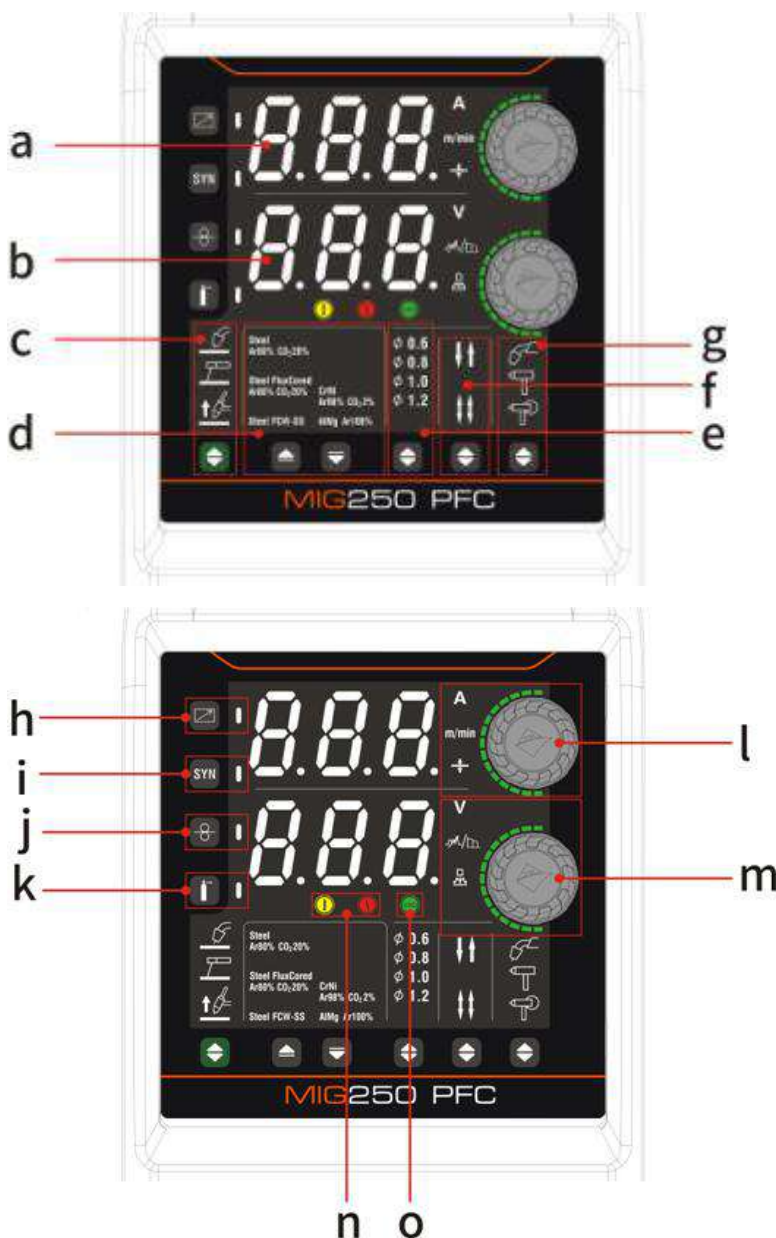
**NOTE! The standard version does not support the remote controller. Please check that the machine supports wireless handheld remote controller before installation.**

## 6. Control panel

The operation panel for this series of models supports HD digital screen and touchless LCD screen, which can be selected or replaced as needed, without needing to replace the main program of the welder.

### 6.1. HD digital screen

#### 6.1.1 Overview



(HD digital screen operation panel)

- a.Parameter display a
- b.Parameter display b
- c.Welding mode selector
- d.Welding wire type and gas selector
- e.Welding wire diameter selector
- f.MIG/Lift TIG operation mode selector
- g.Push/push-pull/spool torch selector
- h.Remote control function
- i.Synergic
- j.Inching
- k.Gas check
- l.Parameter adjustment knob A
- m.Parameter adjustment knob B
- n.Alarm/protection indicator
- o.VRD function indicator

### a. Parameter display a



"Parameter display a" is used to display the current, welding speed, plate thickness and error code.

- 1) When not welding, the preset value of current parameter will be displayed. If no operation is performed for a long time, the default parameters are displayed.
- 2) When welding, the actual output current value is displayed.
- 3) When the factory settings are reset, the countdown is displayed.
- 4) When the barcode queried, the machine barcode is displayed.
- 5) When the product is not working correctly, an error code is displayed.

In Synergic MIG mode, MMA mode or Lift TIG mode, current is displayed by default. If Synergic is disabled in MIG mode, the wire feed speed is displayed by default.

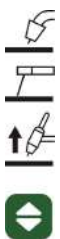
### b. Parameter display b







"Parameter display b" is used to display the voltage, arc length, inductance/arc force, and burn back time.

- 1) When not welding, the preset value of current parameter will be displayed. If no operation is performed for a long time, the default parameters are displayed.
  - 2) When welding, the actual output voltage is displayed.
- The voltage is displayed by default in all welding modes.

### c. Selection of welding mode



Before welding, press the "Welding Mode Selection" key  to switch among MIG, MMA and Lift TIG, and select the corresponding mode based on the user's needs.

- 1) If the indicator  is on, it indicates that MIG/MAG mode has been selected.
- 2) If the indicator  is on, it indicates that MMA mode has been selected.
- 3) If the indicator  is on, it indicates that Lift TIG mode has been selected.

**NOTE! When the machine is in welding mode or the torch trigger is pressed, the switching function is unavailable.**



#### d. Selection of MIG welding wire type and gas

Steel  
Ar80% CO<sub>2</sub>20%

Steel FluxCored  
Ar80% CO<sub>2</sub>20%      CrNi  
Ar98% CO<sub>2</sub>2%

Steel FCW-SS      AlMg Ar100%




- 1) In MIG mode, press the keys   to select the welding wire type and gas.
- 2) If the corresponding indicator is on, it indicates that the welding wire type and gas has been selected.

#### e. Selection of MIG welding wire diameter




φ 0.6  
φ 0.8  
φ 1.0  
φ 1.2



- 1) In MIG mode, press the corresponding function switching key  to select an optional welding wire diameter for the welding type.
- 2) If the corresponding welding wire diameter indicator is on, it indicates that the welding wire diameter has been selected.


#### f. Selection of 2T/4T operating mode






- 1) In MIG or Lift TIG mode, press the corresponding function switching key  to select 2T or 4T operating mode.
- 2) If the indicator  is on, it indicates that the machine is in 2T operating mode.
- 3) If the indicator  is on, it indicates that the machine is in 4T operating mode.

### g. Selection of push/push-pull/spool torch




In MIG mode, press the corresponding function switching key  to select the push torch or spool torch.


- 1) If the indicator  is on, it indicates that the MIG is in push torch state.
- 2) If the indicator  is on, it indicates that the MIG is in push-pull torch state.
- 3) If the indicator  is on, it indicates that the MIG is in spool torch state.

### h. Selection of remote control function



#### 1) Enable/disable remote control function

(1) Before welding, press the remote control function key  to enable/disable the remote control function.



(2) If the indicator  is on, it indicates that the remote control function has been enabled. If it is off, it indicates that the remote control function has been disabled.


#### 2) Wired remote control and wireless remote control



The remote control function is divided into wired remote control and wireless remote control. Setting method: Enter the Welding Engineer Mode (see section 6.4 for details), set the "F09" parameter value, "1" indicating wired remote control and "0" indicating wireless remote control.

#### 3) Connect/disconnect wireless remote controller

(1) Connect wireless remote controller

When not welding and the wireless remote control function has been enabled, press and hold the remote control function key  on the panel and the pairing key  of the wireless remote controller at the same time for 2s to pair the wireless remote controller.

During pairing, the blue indicator  of the wireless receiver module will flash. After

successful pairing, the remote control mode indicator  will be on, the blue indicator  on wireless receiver module will remain on and the welder display window will display "OK".

After successful pairing, the parameters can be adjusted by the wireless remote controller.

(2) Disconnect wireless remote controller

After the remote controller has been successfully paired, press and hold the remote control

function key  on the panel or the pairing key  on the wireless remote controller


for 2s, and the connection of the wireless remote controller will be disconnected. After disconnecting, the display window of the welder will display "FAL", and the green indicator

 of the wireless receiver module will remain on.

### i. Selection of Synergic MIG function



1) In MIG mode, press the "Synergic" function key  to enable or disable the function.


2) If the indicator  is on, it indicates that the "Synergic" function is enabled. If it is off, it indicates that the function is disabled, and MIG is in separate mode.


3) In "Synergic" mode, the machine automatically matches the welding voltage (arc length) and inductance according to the welding type and welding wire diameter selected and the set current (or wire feed speed, plate thickness), and the user can adjust the voltage or inductance as required.

(4) In separate mode, the wire feed speed, voltage and inductance can be set separately.

### j. Inching function






1) In MIG mode, press the inching key  to start wire feeding and release the key to stop wire feeding.

2) If the indicator  is on, it indicates that the inching is enabled to start wire feeding, and the wire feed speed depends on the preset value.

### k. Gas check function

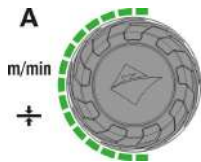


1) In MIG or Lift TIG mode, press the gas check function key  to start gas supply and press the key again in 20s to stop gas supply;

2) If the indicator  is on, it indicates that the gas check function is enabled and the gas valve is open; if the indicator  is off, it indicates that the gas check function is disabled and the gas valve is closed.

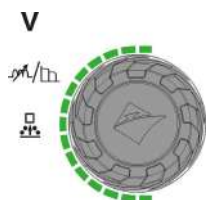
**Note: The gas check function automatically stops after 20s to avoid gas waste.**

### I. Parameter adjustment knob A




- 1) In MIG mode, if the "Synergic" function is disabled, rotate the knob to set the wire feed speed; if the function is enabled, rotate the knob to switch display of current, wire feed speed and plate thickness for configuration.
- 2) In MMA or Lift TIG mode, rotate the knob to set the current parameter.
- 3) Rotating the adjusting knob clockwise increases the parameter value, and rotating it counterclockwise decreases the value.
- 4) When the adjustment knob is rotated, the adjusted parameter is displayed in the parameter display area.

### m. Parameter adjustment knob B




- 1) In MIG mode, press the knob to switch the display of voltage, arc length, inductance, and burn back time, rotate the knob for configuration.
- 2) In MMA mode, press the knob to switch to arc force and rotate the knob for configuration.
- 3) Rotating the knob clockwise increases the parameter value, and rotating it counterclockwise decreases the value.
- 4) When the adjustment knob is rotated, the adjusted parameter is displayed in the parameter display area.

### n. Protection/alarm indicators

If the overheat indicator  is on, it indicates that the main circuit temperature of the welder is too high, and the welder has automatically entered overheat protection and stopped output.

**Do not turn off the machine. Wait for a while, and then continue welding after the overheat indicator turns off.**




If the overcurrent indicator  is on, it indicates that the main circuit device of the welder is abnormal, and the welder has entered overcurrent protection and stopped output.

**Please turn off and restart the machine. If this phenomenon persists, please contact professional maintenance personnel of the company.**


### o. VRD function indicator

1) The VRD function only works in MMA mode. When the VRD function is not enabled, the VRD indicator is off.

2) When the VRD function is enabled and no welding is performed, the VRD indicator



displays green , indicating that the VRD function is normal.

3) When the VRD function is enabled and no welding is performed, the VRD indicator light

displays red , indicating that the VRD function is abnormal.


4) When the VRD function is enabled, the VRD indicator is not on during welding.

**Note: The VRD switch is the "SW1-1" on the main control panel (PK-476) inside the**

**machine, "ON"  indicating VRD enabled, and "OFF"  indicating VRD disabled.**

### 6.1.2 Barcode display

1) Before welding, press and hold the "Welding Mode Selection" key  and "Parameter

Adjustment Knob A"  for 3s at the same time, and the machine barcode will be displayed.

2) Press any key or wait for 20s to exit the barcode display.

3) The barcode is displayed in nine groups of data in the "Parameter display a" area, including "1.XY", "2.XY" ..... to "9.XY", where X and Y are figures from 0-9. Refer to the following table for details:


Data displayed	Meaning
1.XY	X and Y represent the 1st and 2nd digits/letters of the digital barcode respectively
2.XY	XY represents the 3rd digit/letter of the digital barcode, and XY is from 11-45, corresponding to the barcode D-Z and representing the year
3.XY	XY represents the 4th digit/letter of the digital barcode, and XY is from 01-12, corresponding to the barcode 0-C and representing the month
4.XY	XY represents the 5th digit/letter of the digital barcode, and XY is from 01-31, corresponding to the barcode 0-V and representing the date
5.XY	X and Y represent the 6th and 7th digits/letters of the digital barcode respectively

6.XY	X and Y represent the 8th and 9th digits/letters of the digital barcode respectively
7.XY	X and Y represent the 10th and 11th digits/letters of the digital barcode respectively
8.XY	X and Y represent the 20th and 21st digits/letters of the digital barcode respectively
9.XY	X and Y represent the 22nd and 23rd digits/letters of the digital barcode respectively

The 12th-19th digits in the digital barcode are the company's internal fixed numbers, which are not displayed in the window.

Read the nine groups of data and arrange them in order from left to right, skipping the 12th-19th digits, to get the barcode of the machine.

### 6.1.3 Factory reset

- 1) Before welding, press and hold the "Welding Mode Selection" key  for 5 seconds to reset factory settings.
- 2) After pressing and holding for 5 seconds, the display window will count down from 3. When the countdown ends, the factory settings are reset. If the button is released before the countdown ends, the factory reset will not take place.
- 3) The factory settings are as shown in the following table:

Item	Parameter Name	Reset Value	Remarks
Synergic MIG parameters	Material & gas	Steel Ar80% CO <sub>2</sub> 20%	
	Welding wire diameter	Ø0.8	
	Welding current	80 A	
	Welding arc length	0.0 V	
MIG parameters	Welding speed	5m/min	
	Welding voltage	19.0V	
General MIG parameters	Burn back time	0.2S	
	Burn back voltage	13.0V	
	Welding torch selection	Push torch	
	Operation method	2T	
	Inductance	0	
	Pre-flow time	0.1S	
	Post-flow time	0.5S	
MMA parameters	Welding current	80A	
	Arc force current	40A	
	Hot start current	30A	

Lift TIG parameters	Welding current	100A	
	Pre-flow time	0.5S	
	Post-flow time	5.0S	
	TIG downslope time	0.5S	

#### 6.1.4 Welding engineer mode function

The Welding Engineer Mode function allows users to set/modify the default parameters /functions as follows:

- 1) Press and hold "Parameter Adjustment Knob A" for 5s in startup state.
- 2) After pressing and holding the "Parameter Adjustment Knob" for 2s, the machine will count down from 3s; at the end of the countdown, "Parameter Display A" on the display window will display a parameter number, such as "F01". "Parameter Display B" on the display window will display the value corresponding to that number.
- 3) Rotate "Parameter Adjustment Knob A" to select the parameter number to set the back-end parameter/function.
- 4) Rotate "Parameter Adjustment Knob B" to set the value corresponding to that parameter number.
- 5) Press "Parameter Adjustment Knob A" to save the new value.
- 6) After setting the value, press "Welding Method Selection" key to exit the Welding Engineer Mode.
- 7) Refer to the following table for the parameter numbers, function definitions and configuration values

Background parameter/ function	Parameter No.	Default value	Function definition
Standby response time	F01	10	Can be set to four values: "0", "5", "10" or "15". 1) "0" indicates that the standby function is disabled and the machine will not enter standby state. 2) "5", "10" and "15" indicate that the standby function is enabled and the machine will enter the standby state after the corresponding time (unit: minutes).
Input overvoltage/ undervoltage protection	F02	0	Can be set to "0" or "1". 1) "0" indicates that the overvoltage/undervoltage protection function is disabled. 2) "1" indicates that the overvoltage/undervoltage protection function is enabled. <b>Note: The standard version only supports overvoltage protection function.</b>

Pre-flow time	F03	MIG: 0.1 Lift TIG: 0.5	Set the MIG/Lift TIG welding parameters based on the "Welding Mode" when in Welding Engineer Mode.  1) If the "Welding Mode" is MIG, set the MIG pre-flow time, with range of 0-2.0, accuracy of 0.1, and unit of seconds. If the "Welding Mode" is Lift TIG, set the Lift TIG pre-flow time, with range of 0-5.0, accuracy of 0.5, and unit of seconds.
Post-flow time	F04	MIG: 0.5 Lift TIG: 5.0	Set the MIG/TIG welding parameters according to the "Welding Mode" when in Welding Engineer Mode. 2) If the "Welding Mode" is MIG, set the MIG post-flow time, with range of 0-5.0, accuracy of 0.5, and unit of seconds. 2) If the "Welding Mode" is Lift TIG, set the Lift TIG post-flow time, with range of 0-10.0, accuracy of 0.5, and unit of seconds.
Lift TIG downslope time	F05	0.5	Set the Lift TIG downslope time, with range of 0-5, accuracy of 0.5, and unit of second.
Burn back voltage	F06	13.0	Set the MIG burn back voltage, with range of 10.0-20.0, accuracy of 0.1, and unit of voltage.
MMA hot start current	F07	30	Set the MMA hot start current, with range of 0-60, accuracy of 1, and unit of ampere.
Slow wire feed speed	F08	3	Set the slow wire feed speed of MIG; can be set to "0", "1", "2" or "3". 1)"0" indicates that the slow wire feed function is disabled. 2)"1" and "2" indicate that the slow wire feed speed is 1/3 or 1/2 of the current set speed, respectively. 3)"3" indicates that the current slow wire feed speed is 3m/min.
Remote control mode	F09	0	Can be set to "0" or "1" to use wired or wireless remote controller. 1) "0" indicates wireless remote controller. 2) "1" indicates wired remote controller.

**NOTE! If entering the Welding Engineer Mode from different "Welding Mode" states, the functional definition corresponding to the background parameters/functions may be also different!**

## 6.2. Touchless LCD screen

### 6.2.1 Overview

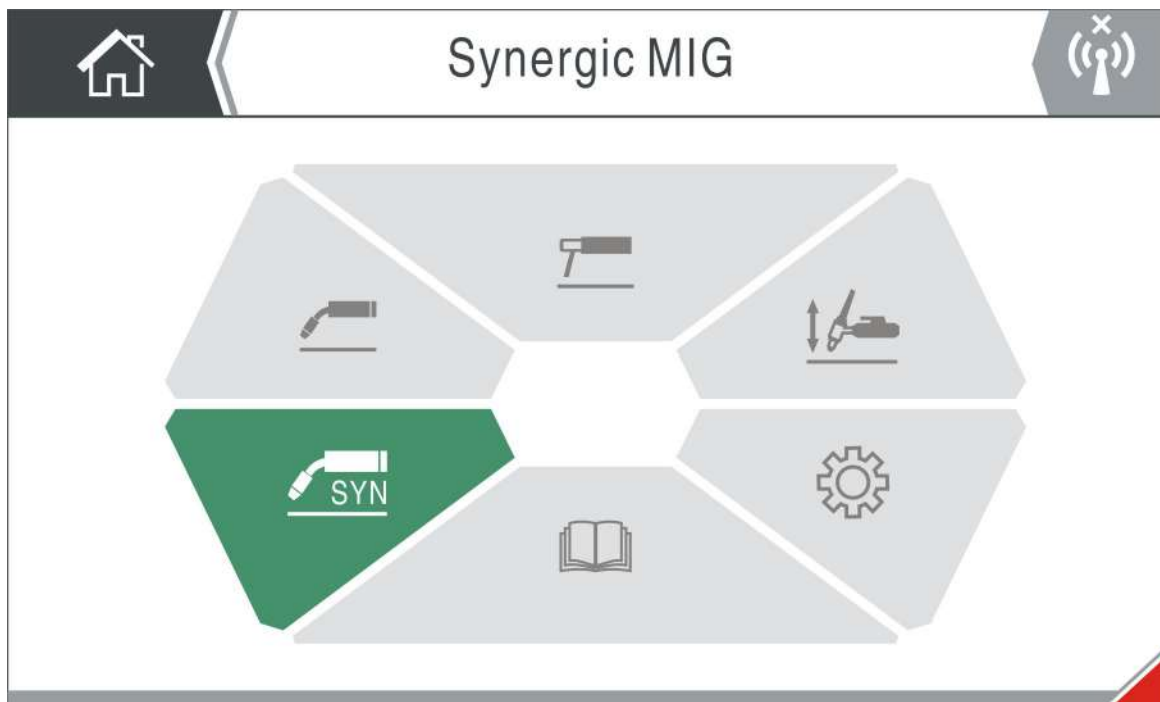


(LCD screen operation panel)

a	LCD screen	Display all human-computer interaction information
b	Home key	Press the key to directly return to Home page. This key is invalid on Home page.
c	Master encoder	Adjust most of the parameters and select options on the LCD screen: The knob can be used to adjust all parameters, switch among pages or options, and control the display content on the LCD screen.
	Master encoder key	Select most of the menus or parameters on the LCD screen: This key can be used to switch among different menu levels or select parameters.
d	Parameter adjustment knob A	Current/wire feed speed encoder: It can be used to adjust the welding current in SynMIG or wire feed speed in MIG.
e	Back key	Return to the upper-level menu.
f	Parameter adjustment knob B	Voltage/arc length encoder: It can be used to adjust the welding voltage or arc length in SynMIG or MIG.








## 6.2.2 LCD screen functions

### 1. Home page





The Home page includes the following content:

- 1) There are 6 options in this page, which are displayed in order from: Synergic MIG (SynMIG), MIG, MMA, Lift TIG, Settings and User Manual. When entering the Home page, the SynMIG is selected by default.
- 2) Each function page has a figure on the top left that identifies the current page, easy for the user to identify. Details are shown in the following table:

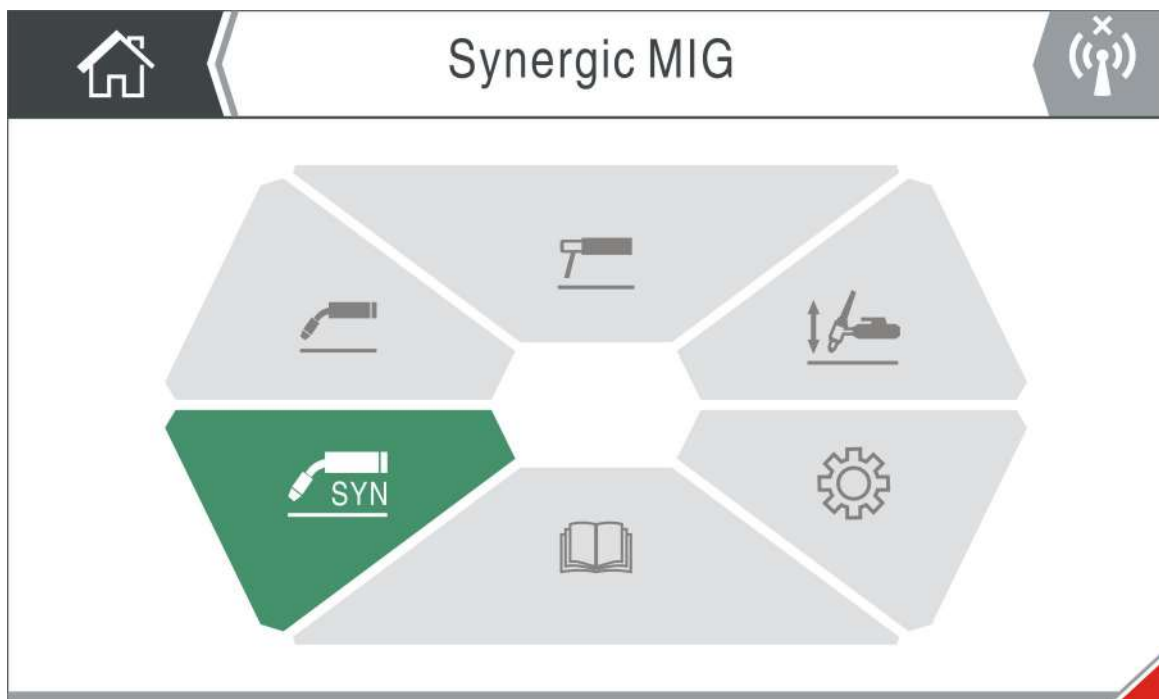
Home page	
SynMIG page	
MIG page	
MMA page	
Lift-TIG page	
Settings page	
User Manual page	
Welding page	<b>Welding</b>

- 3) The text on the top of the page indicates the option currently selected by the user.

4) The connection symbol  or  on the top right indicates the connection state of welder with wireless remote controller.

### 6.2.3 Welding mode selection and entrance

In the Home page, rotate the master encoder to select the welding mode, and press the master encoder to enter the mode.



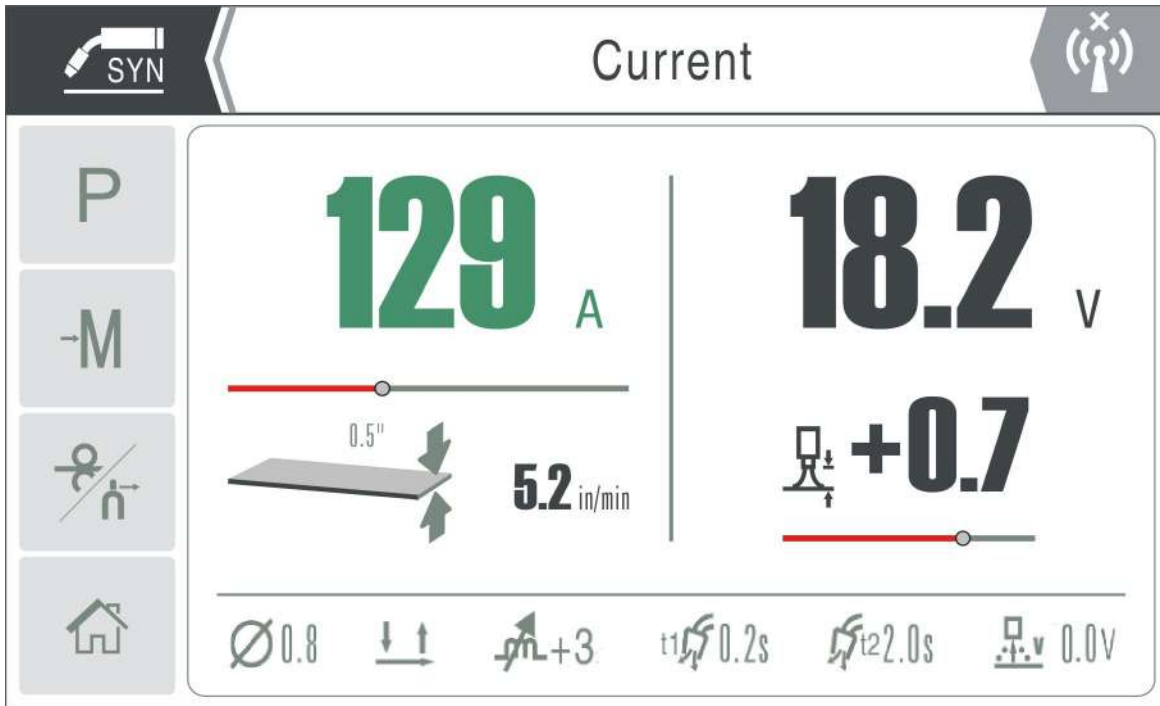
The welder can memorize the welding mode and enter the last welding mode page directly after starting the welder next time. If the welder is on the Home page, Settings page or User Manual page when powered off, it will enter the Home page after restarting.

**NOTE! Do not exit the welding page (i.e. return to the Home page) when the welder is working or the torch trigger is pressed; otherwise the current welding will stop.**

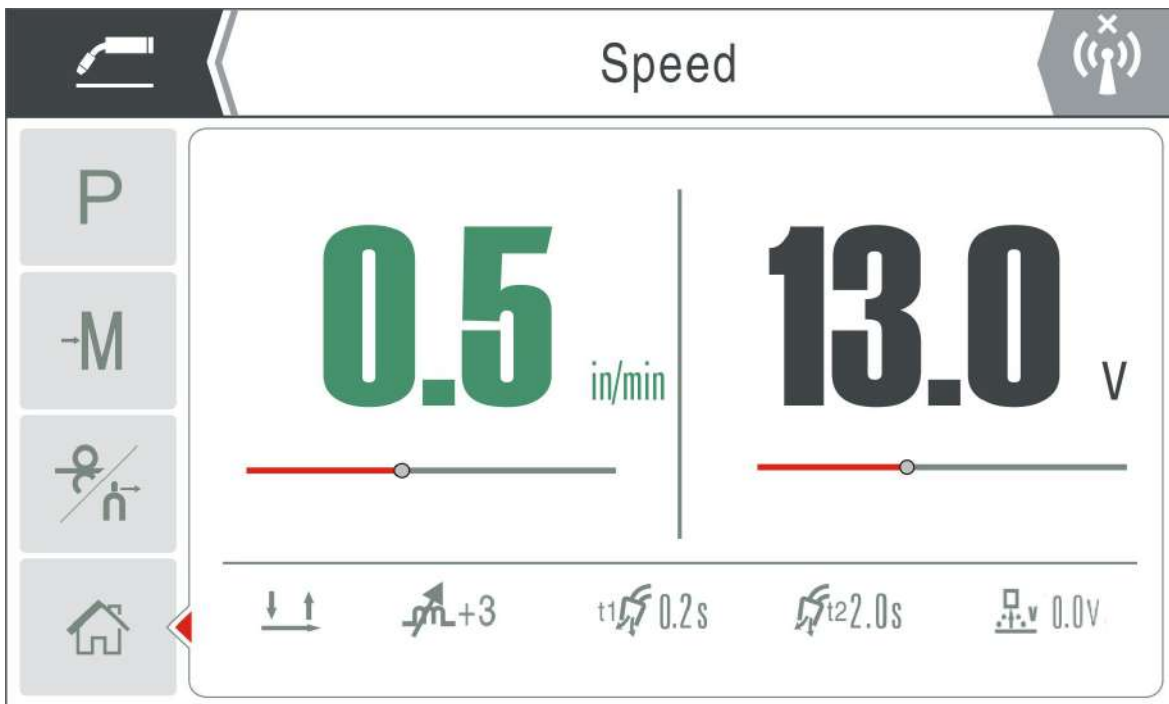
### 6.2.4 Working page display

When entering the SynMIG, MIG, MMA or TIG page, the screen will display the working page of corresponding welding mode. This page includes the main welding parameters of the welding mode and Level 1 menu options.

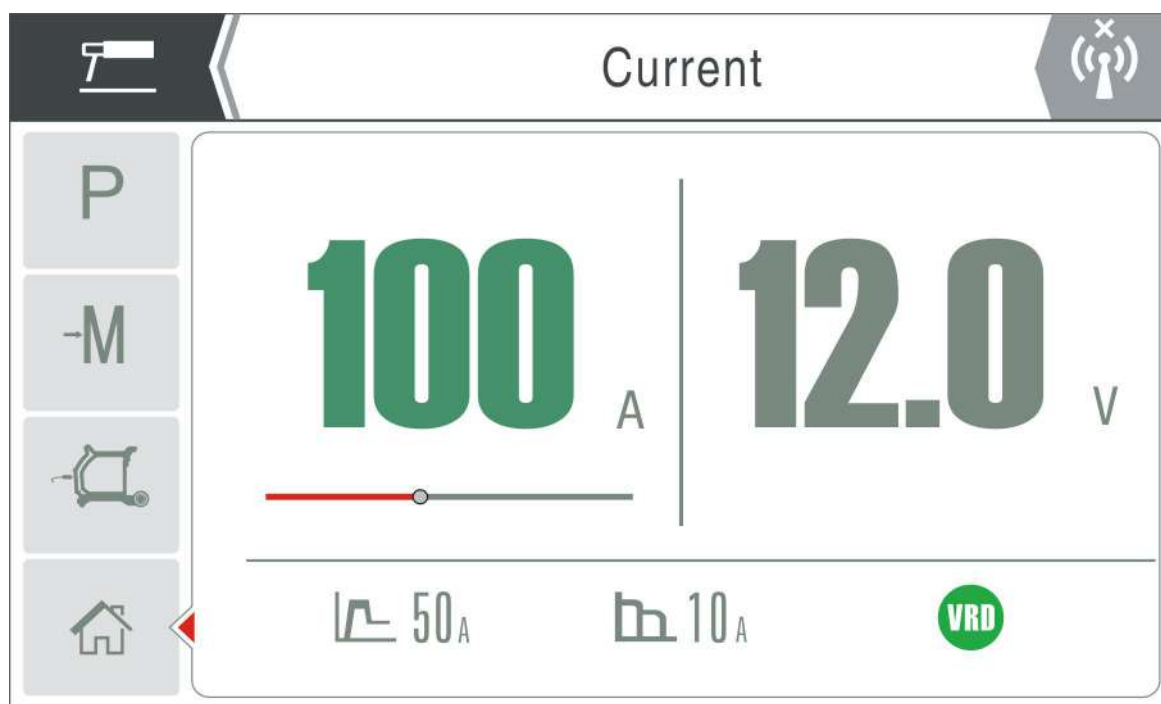




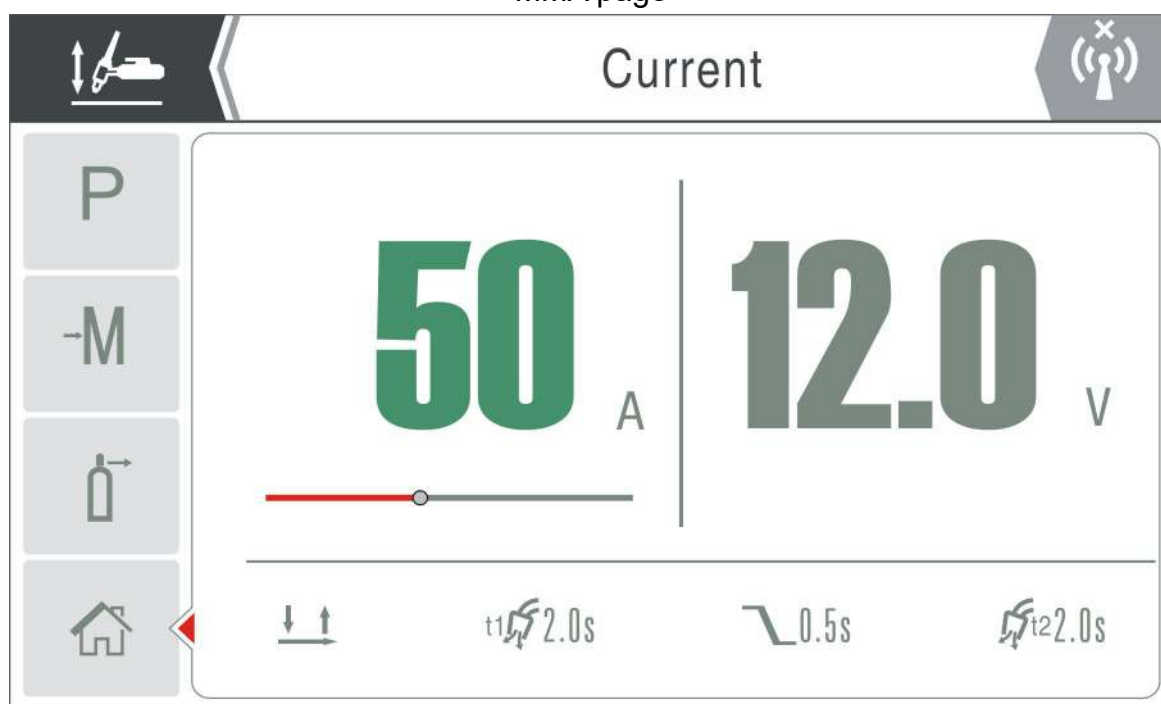
SynMIG page



MIG page



MMA page



Lift-TIG page

When not welding, the working page displays the preset welding parameters; when welding, it displays the actual current and voltage values. During welding, the user can press the master encoder to select parameters and rotate the encoder to set parameters, and then the screen will enter the corresponding page and display the parameters according to your selection; if there is no operation within 3s, the welder will automatically return to the welding working page and continue to display the real-time current and voltage values. After welding, the working page will display the average current and voltage of the welding for 4s for user's reference.

### 6.2.5 Selection and adjustment of welding parameters

The master encoder can switch and adjust all parameters. If the numbers or options on the LCD screen display green, it indicates the parameter can be adjusted with the master encoder; if they display gray, it indicates the parameter cannot be adjusted.

#### 1. Adjustment of main welding parameters

In the welding working page, the current, wire feed speed and voltage can be adjusted by rotating three knobs, respectively.

In MIG mode, knob A can adjust the welding current or wire feed speed, knob B can adjust the welding voltage or arc length, and the master encoder can adjust all parameters.

Pressing the master encoder can switch the parameters.

In MMA or Lift TIG mode, the current can only be adjusted by the master encoder.

#### 2. Adjustment of other welding parameters

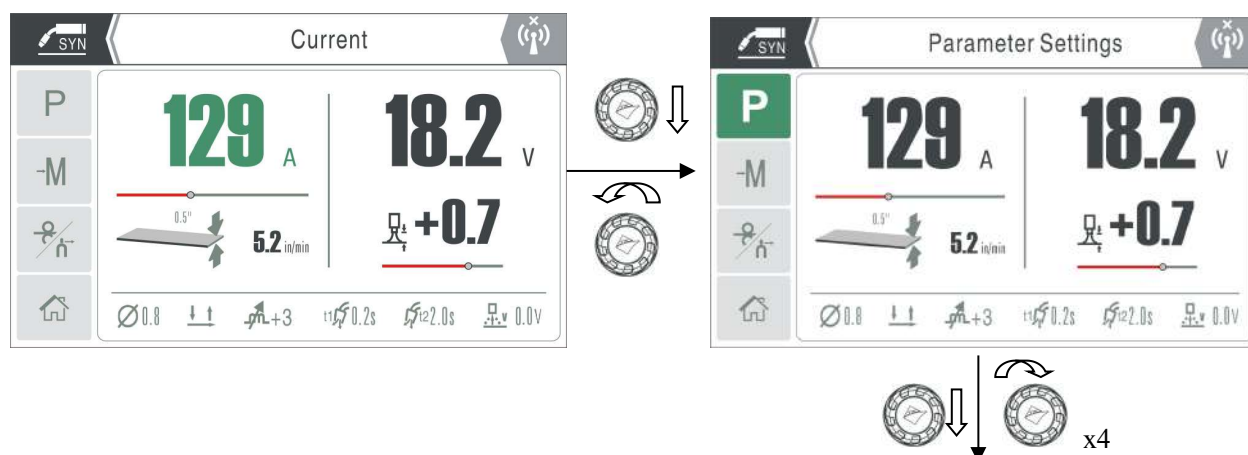
Except for current and voltage, all other parameters can only be adjusted in "Parameter Settings", which are detailed in the following table:

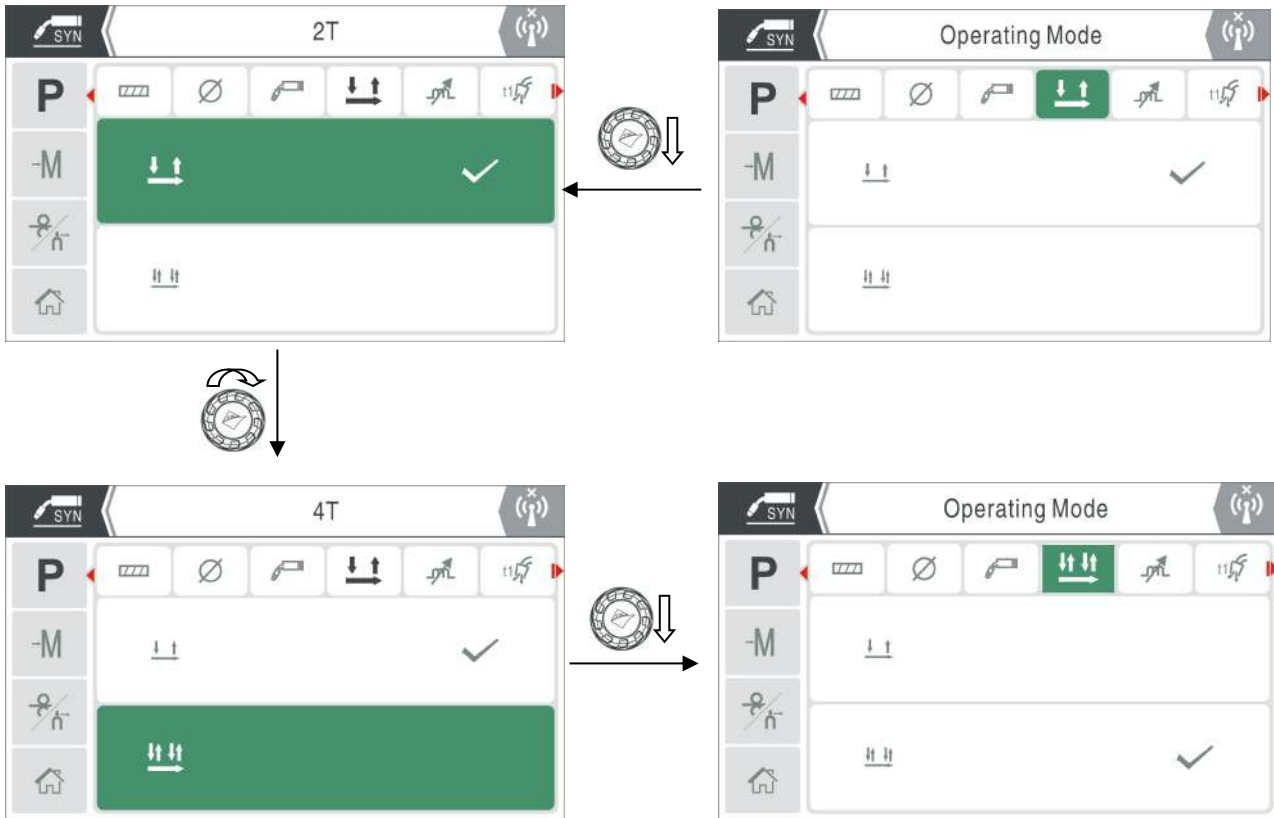
Welding mode	Parameter Name	Option or Range	Remarks
Synergic MIG parameters	Material & gas	Steel Ar80% CO <sub>2</sub> 20% Steel FluxCored Ar80% CO <sub>2</sub> 20% Steel FCW-SS CrNi Ar98% CO <sub>2</sub> 2% AlMg Ar100%	
	Welding wire diameter	Ø0.6, Ø0.8, Ø1.0, Ø1.2	Vary by materials and gases.
	Welding torch selection	Push torch, push-pull torch	
	Operation method	2T, 4T	
	Pre-flow time	0~2.0S	
	Post-flow time	0~5.0S	
	Inductance	-10~+10	
	Burn back voltage	-3.0~7.0V	
Separated MIG parameters	Welding torch selection	Push torch, push-pull torch, spool torch	
	Operation method	2T, 4T	
	Pre-flow time	0~2.0S	

	Post-flow time	0~5.0S	
	Inductance	-10~+10	
	Burn back voltage	10.0~20.0V	
MMA parameters	Arc force current	0~100A	
	Hot start current	0~60A	
Lift TIG parameters	Pre-flow time	0~5.0S	
	Post-flow time	0~10.0S	
	Current downslope time	0~5.0S	

To select parameters, the user needs to first rotate the encoder to select "Parameter Settings"; then press the encoder to enter the "Parameter Settings" page; rotate the encoder to locate the parameter to be adjusted; and press the encoder again to adjust the parameter value. After adjustment, press the encoder to exit adjustment. The adjustment steps are as follows:

For example: If the user wants to adjust the operating mode in SynMIG, use the master encoder to select and enter the "Parameter Settings" page, select "Operating Mode" and then select between 2T and 4T. The selected operating mode will change from gray to green. If selected, press the master encoder and a "√" will appear after the option, indicating that the option is valid. After the above operation, the user can rotate the master encoder to select other parameters or options, or press "Back" to return to the upper-level menu. If no operation is performed within 3s, the welder will automatically return to the SynMIG home page.

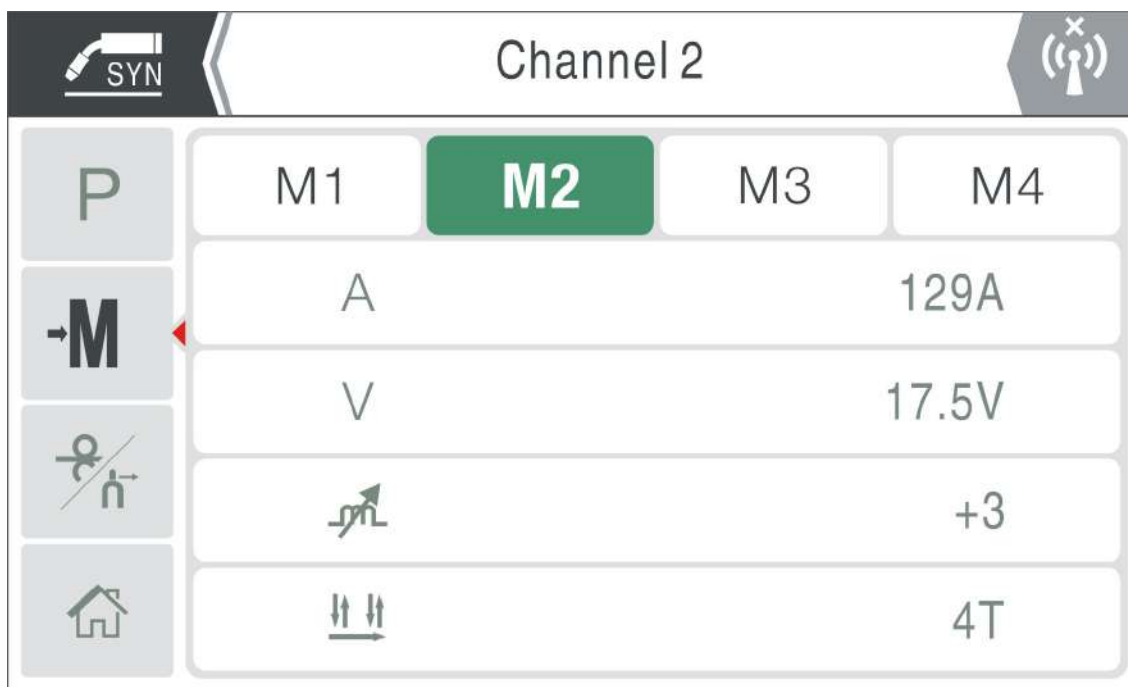




### 6.2.6 Storage channel function

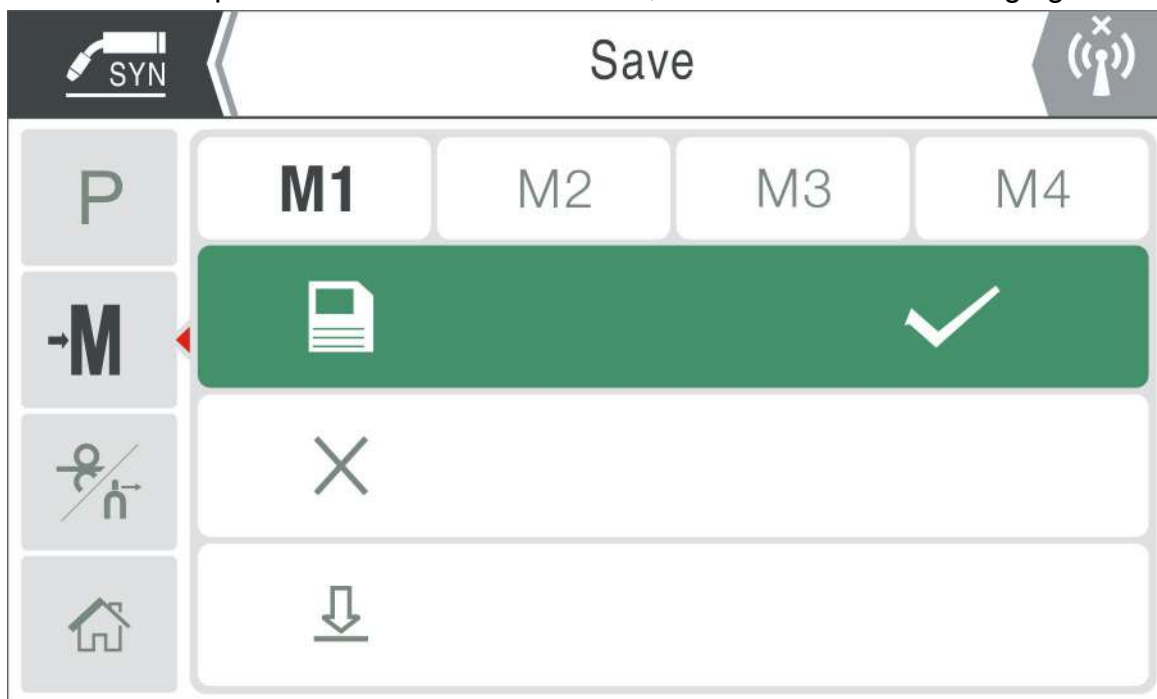
The storage channel function is only available in the LCD screen version. HD digital screen does not support such function. The storage channel is used to store the four groups of welding parameters in the current welding mode. All four welding modes are provided with

four storage channels. After entering **-M**, the user can rotate the master encoder to select any channel from M1 to M4. When selecting a channel, the parameters and their values stored in the channel are displayed, as shown in the following figure:





Note: Due to the limited area of the LCD screen, only the most commonly used welding parameters are displayed.


At this time, you can save the set welding parameters to the channel, or call/delete the existing welding parameters in the channel. Press the master encoder to perform save/read/delete operation of the current channel, as shown in the following figure:

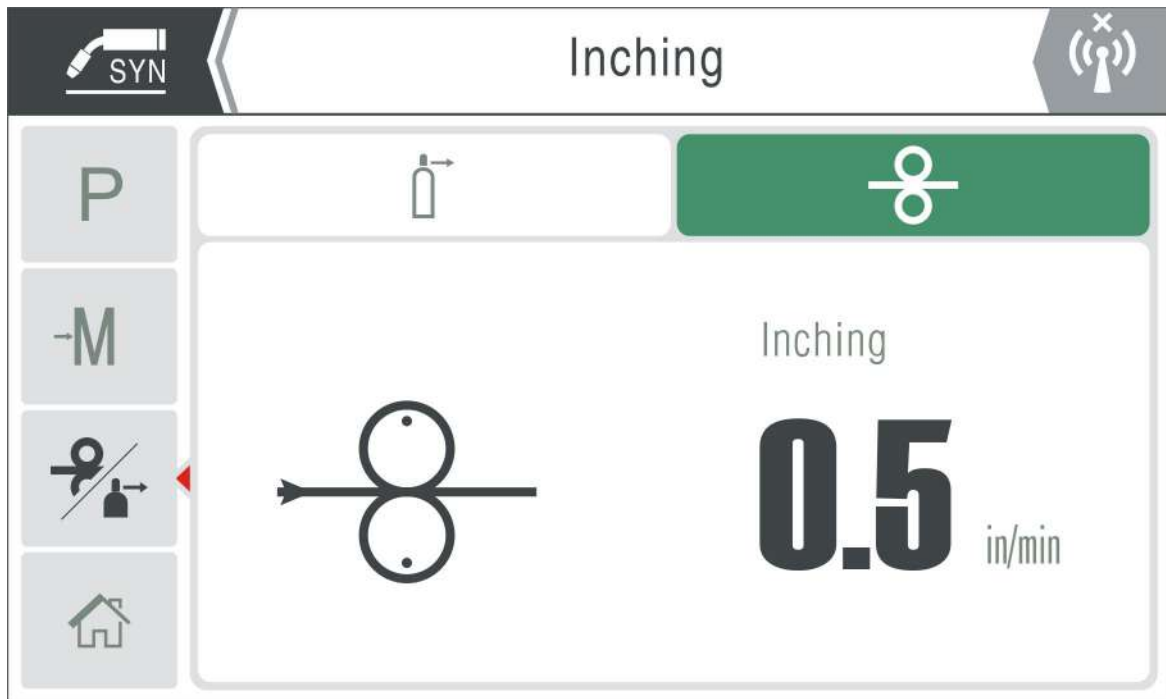


- 1)  Save: Save the welding parameters currently used to the channel.

- 2)  Read: Read the welding parameters saved in the channel and have parameters displayed on the LCD screen.
- 3)  Delete: Reset all parameters in the channel to the default values.

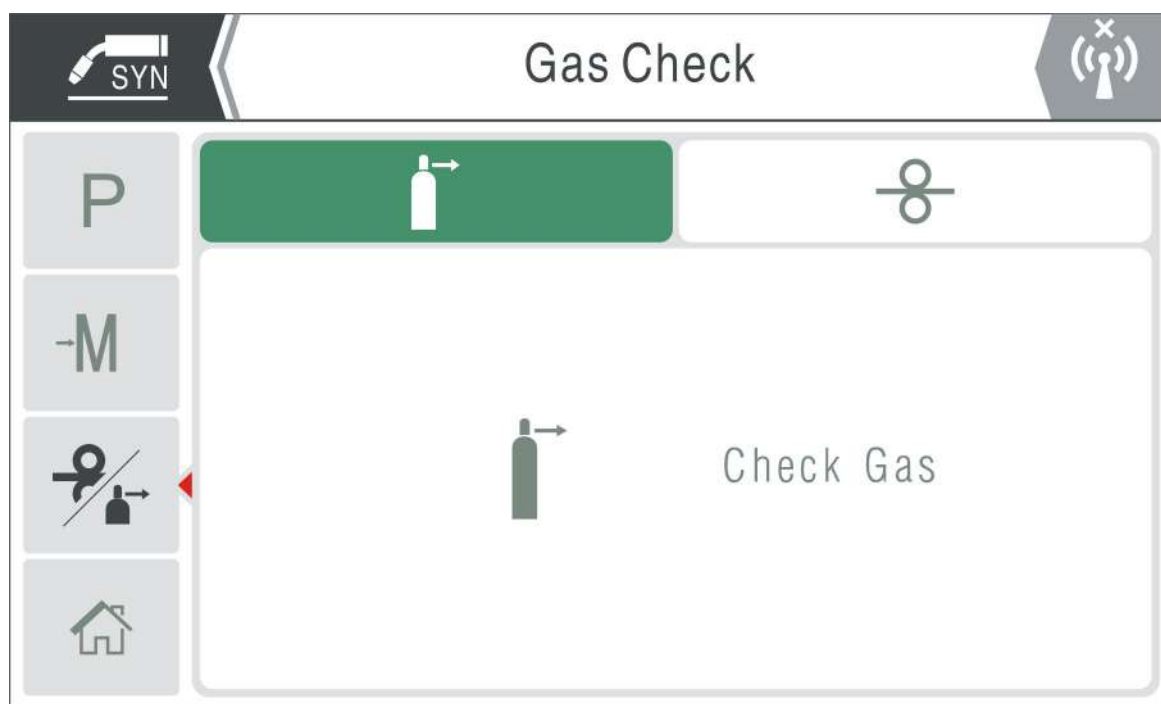
### 6.2.7 Inching/gas check function

In the SynMIG or MIG page of LCD screen, the user can select the  option on the operation page to enter the "Inching" or "Gas Check" function. The "Inching" or "Gas Check" function needs to be selected by rotating and pressing the master encoder. When starting inching or gas check, the LCD screen will display the inching or gas check animation, as shown in the following figure:



Inching









Gas check

Note:

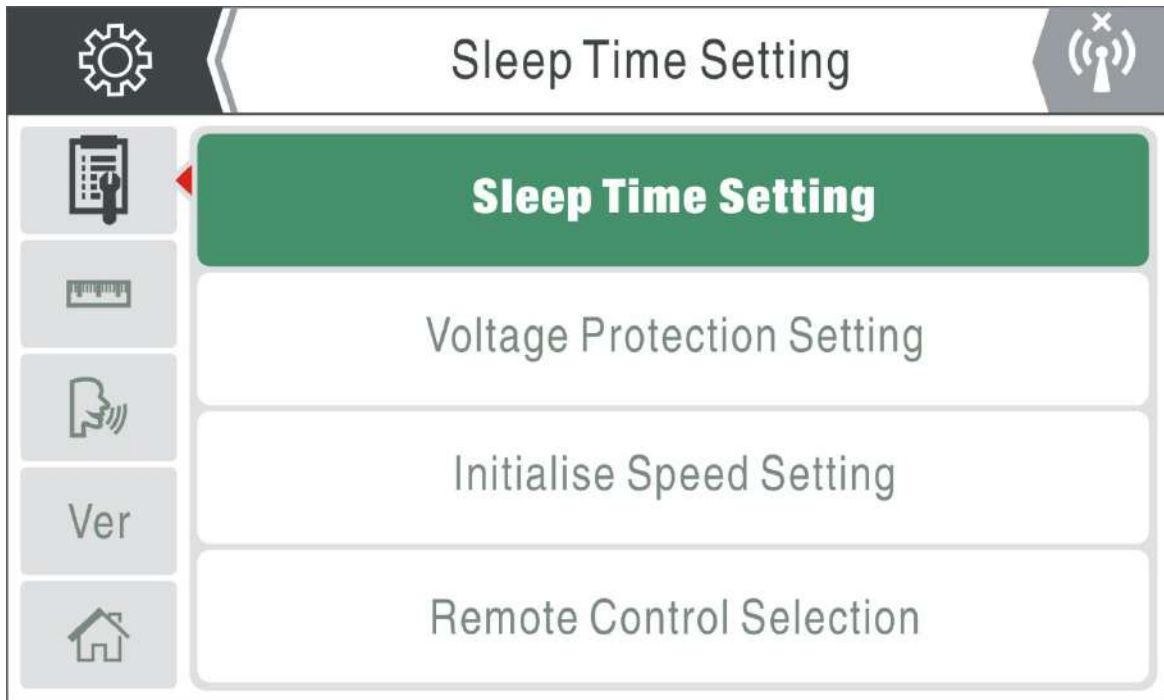
- 1) To use "Inching" function, the master encoder shall be pressed and held; if the encoder is released, the inching function will stop.
- 2) To use "Gas Check" function, press the master encoder once to start gas check, and press it again to stop gas check; or the gas check function will automatically stop after 20s, to avoid gas waste.

### 6.2.8 Settings

The "Settings" page is as shown in the following figure, which includes  "User Parameter Setting",  "Unit System Setting",  "Language Setting" and  "Software Version Information".

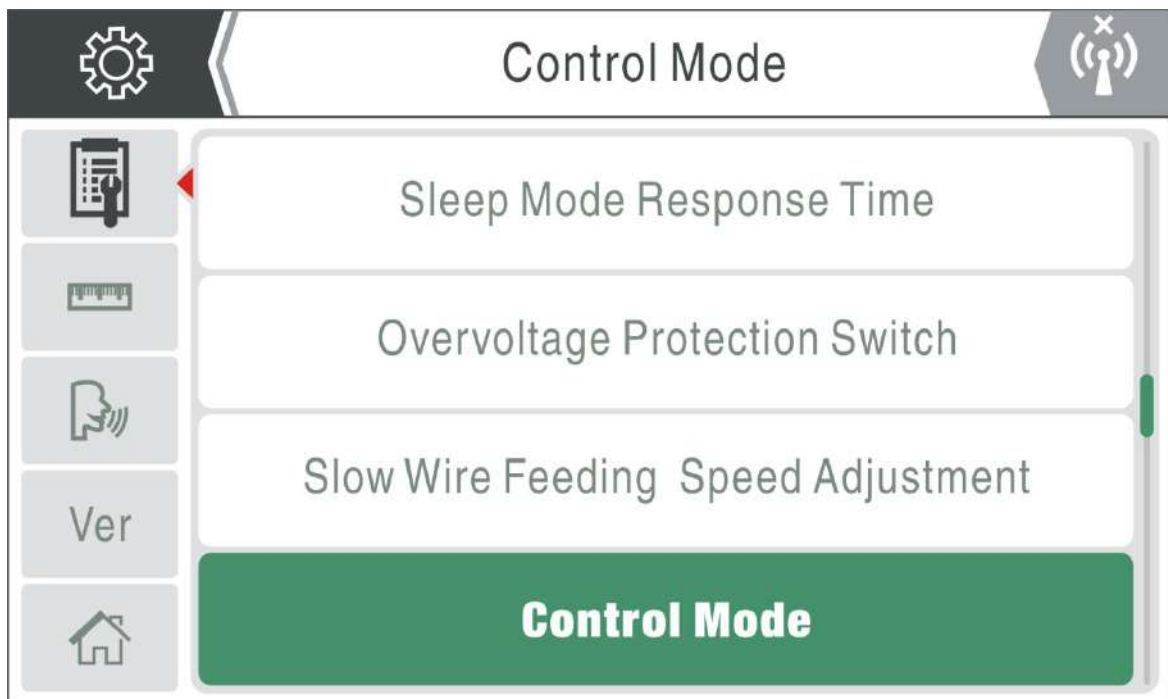
#### 1. User Parameter Setting

For general parameters or options, please refer to the user parameter table of HD digital screen in Section 6.1.4.

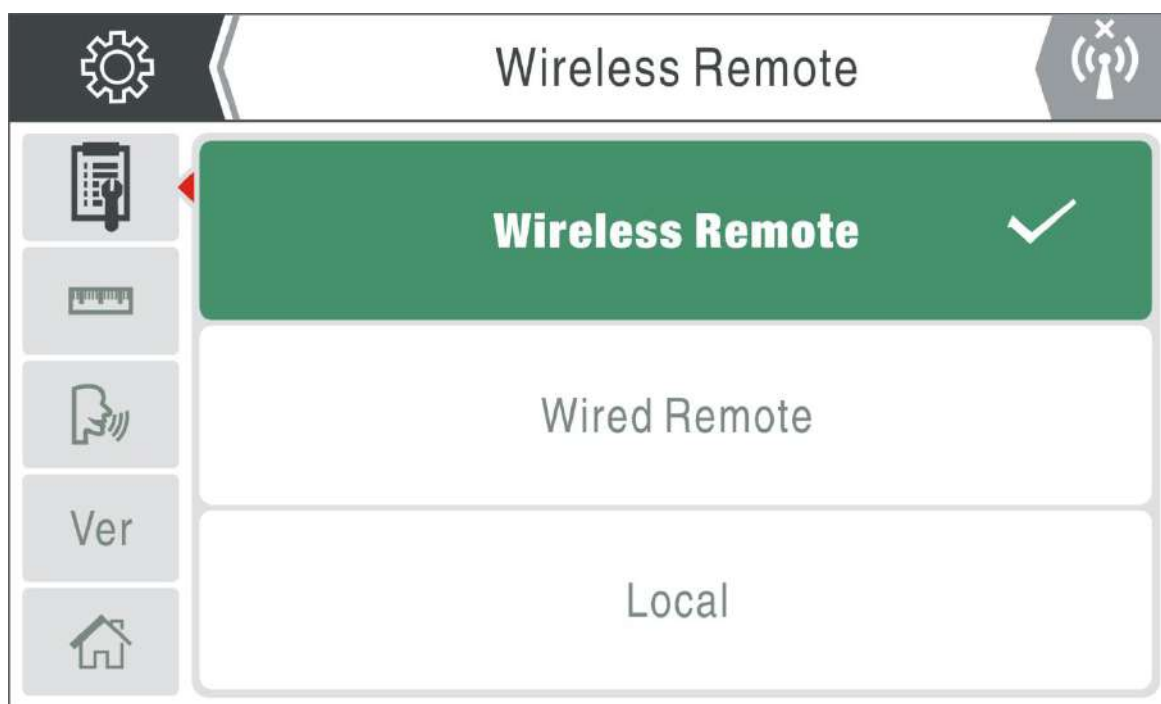


For special functions, please refer to the following section:

2. Control Mode








The wireless remote function includes three options: Wireless Remote, Wired Remote, and Local.



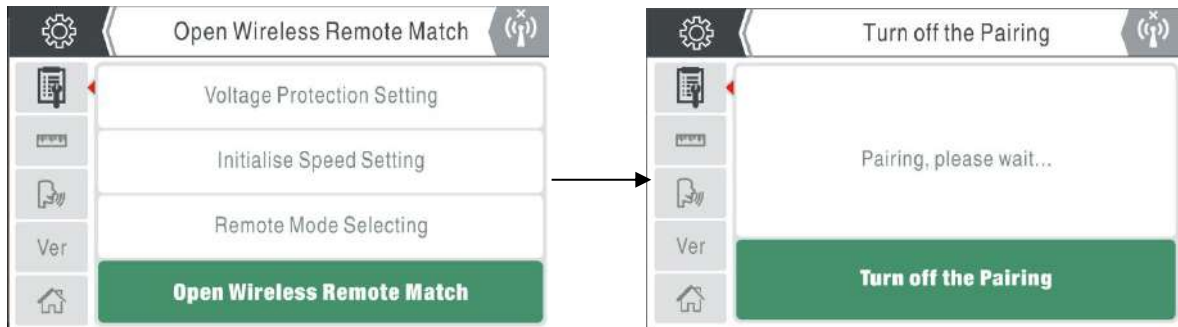
## (1) Wireless Remote

### Wireless pairing connection

The optional wireless remote control devices for this series of models include wireless foot pedal controller and wireless handheld remote controller. After entering  "User Parameter Setting", set the remote control function to "Wireless Remote" and return to "User Parameter Setting"; rotate the master encoder to select "Open Wireless Remote Match"; press the master encoder to pair the welder with the wireless remote controller. During pairing, the blue indicator of the wireless module on the front panel will flash; after successful pairing, the blue indicator will remain on, the LCD screen will exit the pairing page, and the symbol  will change to  on the top right of the page.

Note: If the pairing is not successful after a long time, the user can press the master encoder to realize "Match Close", and the LCD screen will exit the pairing page. If the connection is disconnected during use, the symbol  will change to  on the top right of the LCD screen.

The pairing page is shown below.



**Disconnecting wireless remote control device**

Select "Local" for the wireless remote control function to disconnect the wireless remote control device.

**(2) Wired Remote**

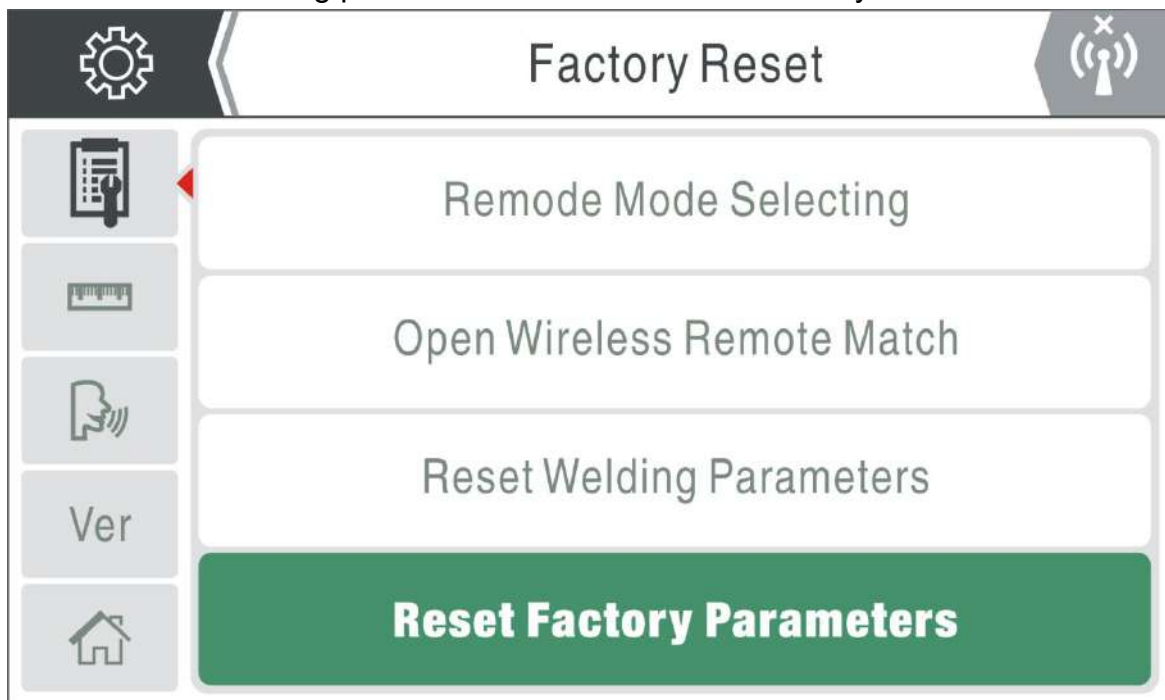
The optional wired remote control devices for this series of models include wired foot pedal controller and wired handheld remote controller. Set the remote control function to "Wired Remote", and the connected wired remote control device can be used.

**(3) Local**

In case of no remote control device is used, please switch the remote control function to "Local". In "Local" state, even a wired remote control device is connected, it is invalid.

**3. Factory Reset**

The last option of "User Parameter Setting" is "Factory Reset", and the user can use the function to reset the welding parameters or functions to the factory default values.



The user has two options:

Function	Reset Range	Remarks
Parameter reset	<ul style="list-style-type: none"> <li>① The welding parameters in all welding modes;</li> <li>② The function options in all welding modes, such as operation mode, welding torch, etc.</li> </ul>	For the default values of all welding parameters and functions, please refer to Section 6.1.3.
Factory reset	<ul style="list-style-type: none"> <li>① The welding parameters in all welding modes;</li> <li>② The function options in all welding modes, such as operation mode, welding torch, etc.</li> <li>③ The parameters in all storage channels;</li> <li>④ Language and unit system.</li> </ul>	For the default values of all welding parameters and functions, please refer to Section 6.1.3.

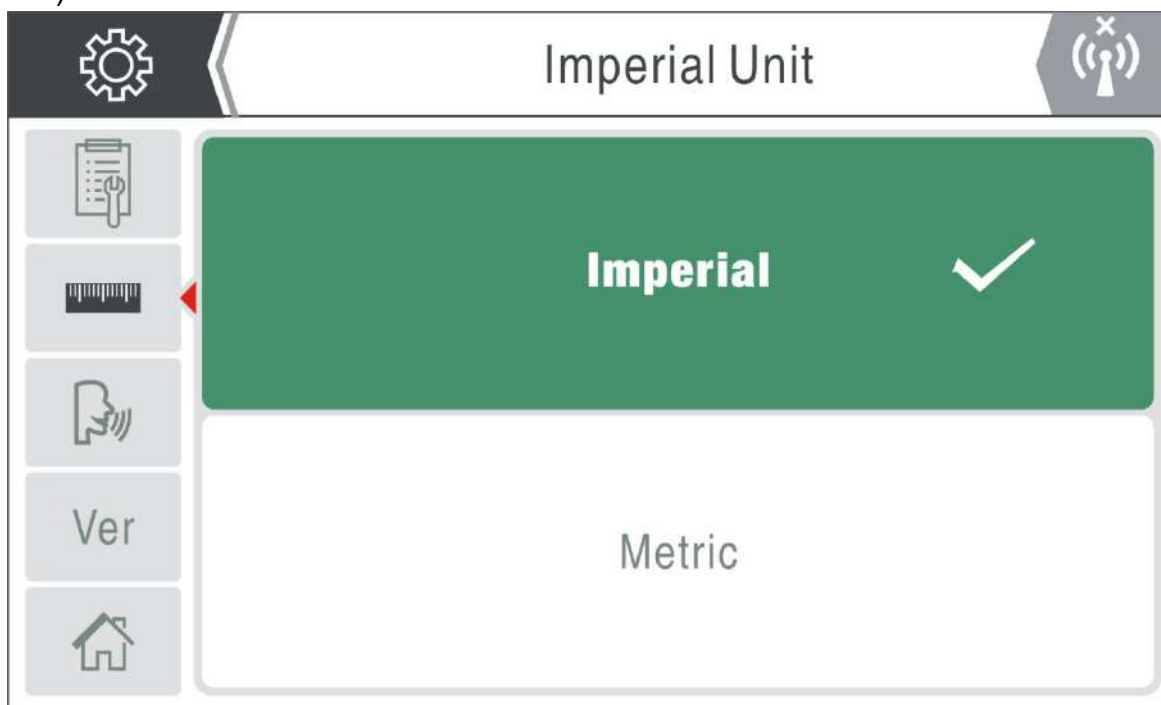
#### 4. Unit System Setting

There are two unit system options, i.e. "Metric System" and "Imperial System". The parameters related to the unit system conversion in this series of models include:

(1) Wire feed speed: Metric system: m/min, Imperial system: in/min (values are expressed as decimals, reserving 1 decimal place).

(2) Welding wire diameter: Metric system: mm, Imperial system: in (abbreviated as ", values are expressed as decimals, reserving 3 decimal places, such as 0.030").

(3) Plate thickness: Metric system: mm, Imperial system: in (values are expressed as fractions).



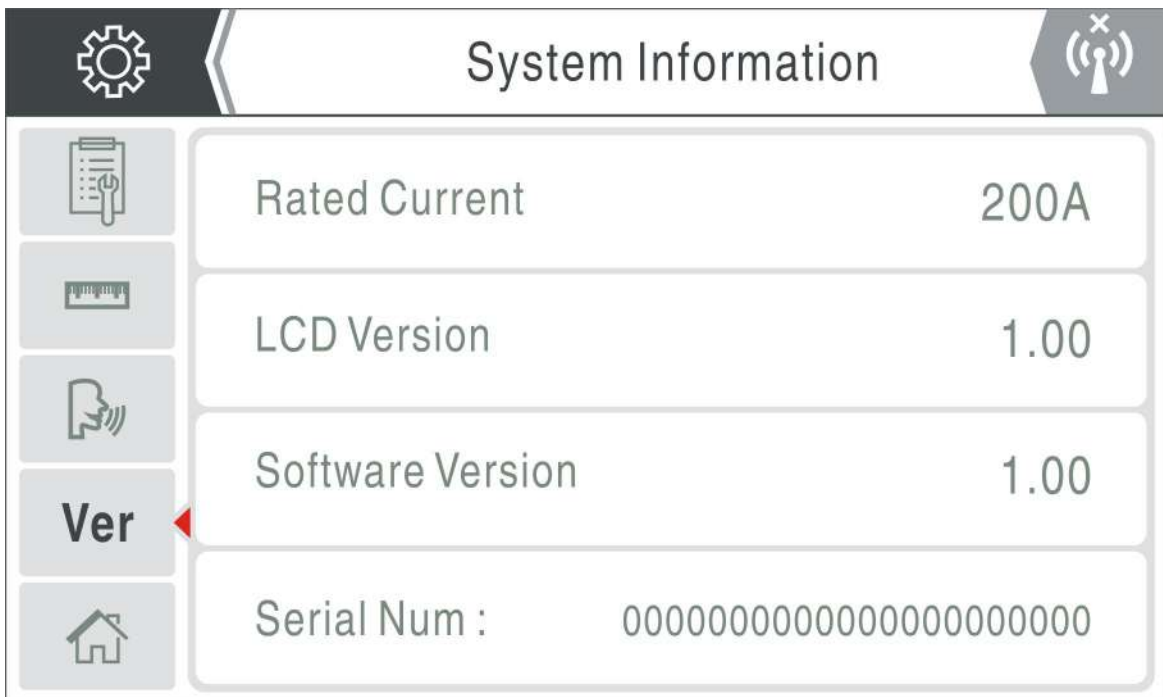
### 5. Language Setting

The "Language Setting" function is unique to the LCD screen. This series of models are available in various languages, and the available languages are constantly updated and added.



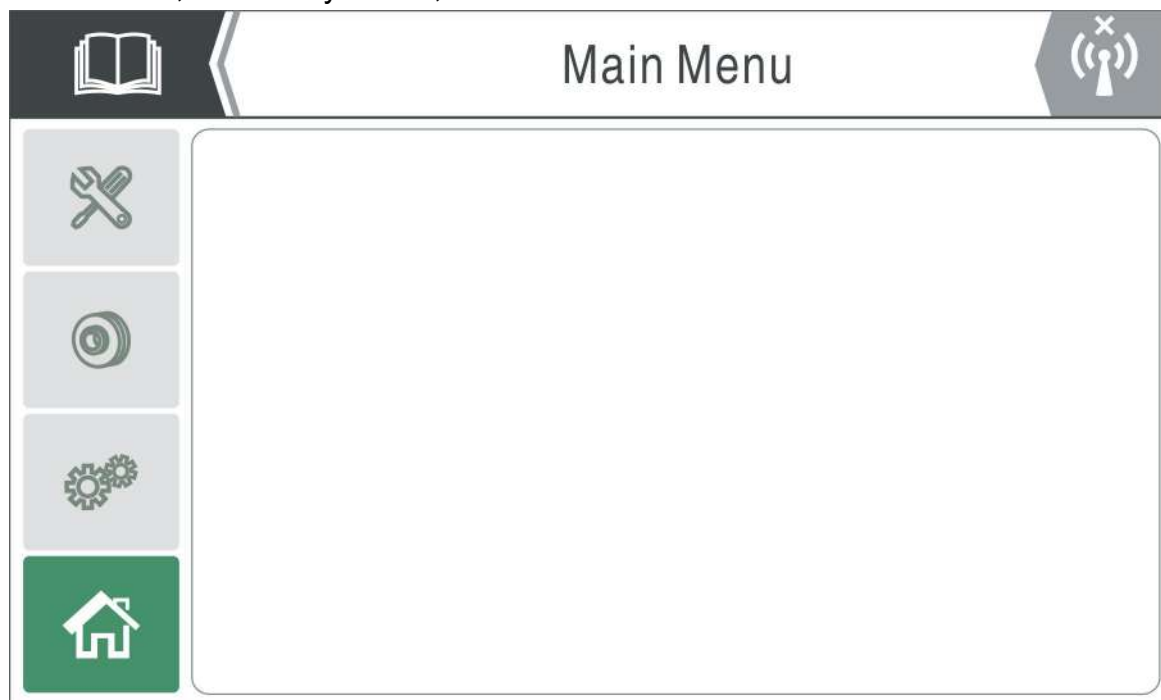
### 6. System Information

The "System Information" on the "Settings" page includes: Rated welder current, LCD software version, welder software version and barcode information.



### 6.2.9 Main menu page

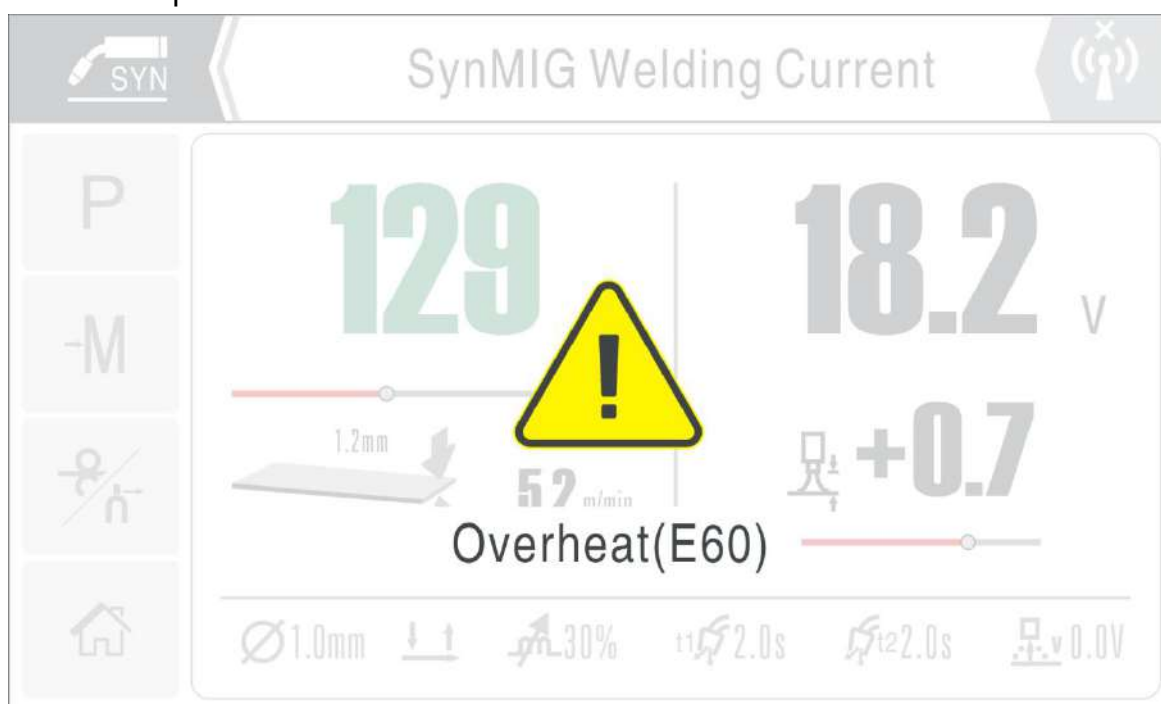
The "Main Menu" function is unique to the LCD screen. In "Main Menu", the user can view the User Manual, Accessory Guide, Alarm and Solutions of the welder.



### 6.2.10 Other functions and operations

#### 1. Protection/malfunction display

In case of protection/malfunction, the welder will stop working immediately, and the LCD screen will display the protection or malfunction code. At this time, the welder cannot work or operate until the protection or malfunction is released.



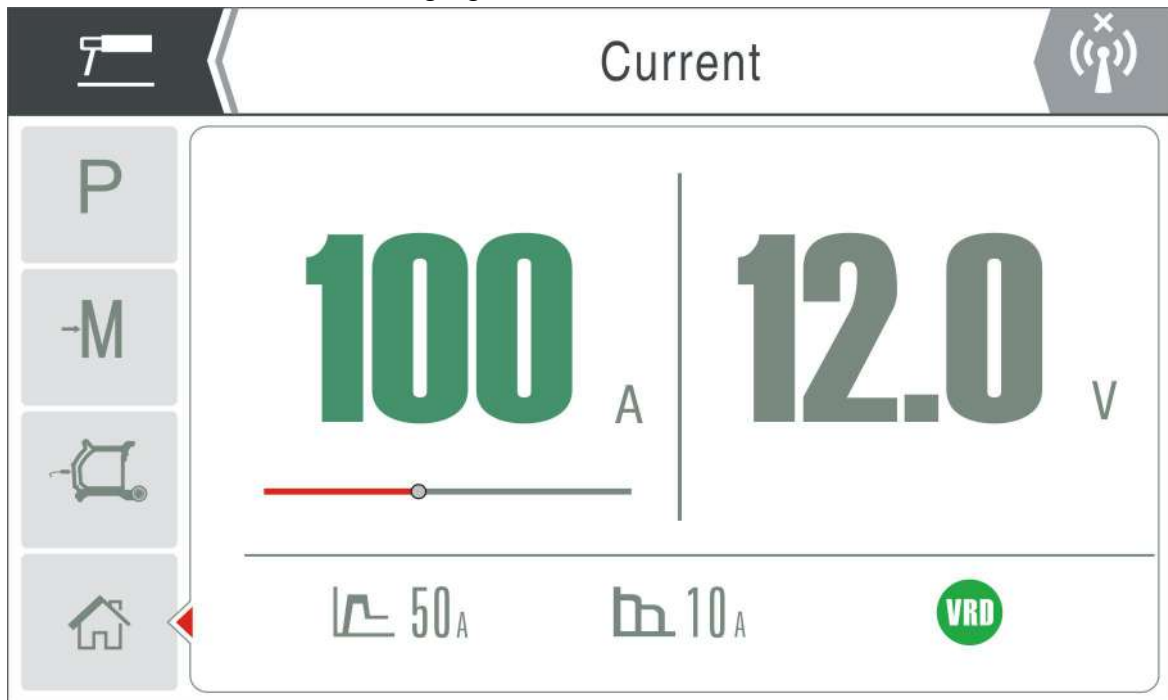



**Note:** The above figure is an example of overheat protection. When an overheat protection occurs, do not turn off the machine. After the temperature of the overheat component is cooled down to normal temperature by fan, the protection will be off automatically;

· The overcurrent protection cannot be automatically released; unless the welder is turned off and restarted. If the overcurrent protection remains after restarting, please contact the sales department of the company.

## 2. VRD function display

In MMA mode, the VRD function can be enabled or disabled: if VRD is enabled, the VRD icon will be displayed; if VRD is disabled, the VRD icon will not be displayed. The VRD icon position is as shown in the following figure.



1) When not welding, the VRD icon displays green , indicating that the VRD function is normal.

2) When not welding, the VRD icon displays red , indicating that the VRD function is abnormal.

3) When welding, the VRD icon is not displayed.

## 7. Welding function operation



**Warning!** Before turning on the power supply make sure that the equipment is disconnected to the output. Otherwise, an unexpected arc may be started when the power is turned on. This can cause damage to the work piece and to personnel.



**Warning!** Be sure to wear appropriate protective equipment during welding or cutting operation. Arcs, spatter, smoke, and high temperatures produced in the process may cause injury to personnel.



**Warning!** After the power supply is turned off, the output voltage of the machine may continue for a period and then drop slowly. Please do not touch the conductive part of the output before the panel is extinguished.

### 7.1. MIG operation

**NOTE!** Some models are equipped with the smart fan function. When the power supply is turned on for a period before welding or cutting, the fan will automatically stop running. It will run automatically when welding or cutting begins.

#### 7.1.1 Turn on the power switch



The power switch is located at the rear panel of the machine; set it in the "ON" position; then the panel indicator will light up, the fan will start to rotate, and the welder will start to work normally.

### 7.1.2 Select MIG mode

HD digital screen:



- 1) Press the "Welding Mode Selection" key to select MIG mode.
- 2) Use the corresponding function switching key to select the welding type, wire diameter, operation method and welding torch type.
- 3) Enable/disable the "Synergic" function.
- 4) Use "Parameter Adjustment Knob A/B" to set the welding parameters.

LCD screen:



Select MIG or SynMIG on the Home page.

### 7.1.3 Set welding parameters with "Synergic" disabled

HD digital screen:



- (Setting wire feed speed and voltage)      (Setting inductance)      (Setting burn back)
- 1) Use "Parameter Adjustment Knob A" to set the "Wire Feed Speed".
  - 2) Use "Parameter Adjustment Knob B" to set the "Welding Voltage".
  - 3) Press "Parameter Adjustment Knob B" to switch display of "Welding Voltage", "Welding Inductance", and "Burn Back Time" and set the parameter values.

LCD screen:

The adjustable parameters are as shown in the following figures in MIG mode with "Synergic" disabled:



- (Setting wire feed speed and voltage)      (Setting inductance)      (Setting burn back)
- 1) Use the "Master Encoder" or "Parameter Adjustment Knob A" to set the "Wire Feed Speed".
  - 2) Use "Parameter Adjustment Knob B" to set the "Welding Voltage".
  - 3) Enter the "Parameter Settings" page to set the "Inductance" and "Burn Back Voltage".

In "Non-synergic" MIG mode, the parameters that can be set on the panel and their ranges are as follows:

SN	Parameter Name	Parameter options or range (Input 230VAC)		
		MIG250PF C	MIG250	MIG200P FC
1	Wire feed speed (m/min)	2~18	2~18	2~16
2	Welding voltage (V)	11~30	11~30	11~28
3	Inductance	-10~10	-10~10	-10~10
4	Burn back time (ms)	0~800	0~800	0~800
5	Burn back voltage (V)	10.0~20.0	10.0~20.0	10.0~20.0

SN	Parameter Name	Parameter options or range (Input 115VAC)		
		MIG250PF C	MIG250	MIG200P FC
1	Wire feed speed (m/min)	2~14	/	2~12
2	Welding voltage (V)	11~25	/	11~23
3	Inductance	-10~10	/	-10~10
4	Burn back time (ms)	0~800	/	0~800
5	Burn back voltage (V)	10.0~20.0	10.0~20.0	10.0~20.0 0

### 7.1.4 Set welding parameters with "Synergic" enabled

HD digital screen:



(Setting welding current)

(Setting wire feed speed)

(Setting plate thickness)

1) Press "Parameter Adjustment Knob A" to switch display of "Welding Current", "Wire Feed Speed", and "Plate Thickness"; set one parameter and the other two parameters will also change.

2) The welder automatically matches the voltage and inductance according to the built-in Synergic expert library to achieve good welding results.

3) Press "Parameter Adjustment Knob B" to switch display of "Welding Voltage", "Welding Inductance", and "Burn Back Time" and adjust the parameter values.

LCD screen:



1) Both the "Parameter Adjustment Knob A" and the master encoder can be used to adjust the welding current. When the current is adjusted, the wire feed speed and plate thickness also change with it.

2) The "Parameter Adjustment Knob B" can be used to adjust the welding voltage. When the voltage is adjusted, the arc length also changes with it. The master encoder can also be used to adjust the welding voltage, but needs to switch to select the parameter first. When the voltage parameter changes to green, it can be adjusted by the master encoder.

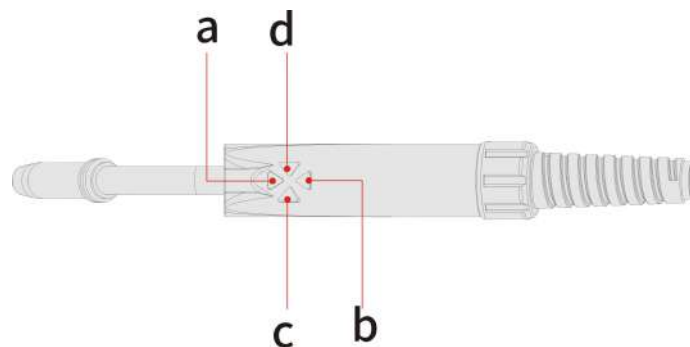
3) The "Inductance" and "Burn Back Voltage" can only be adjusted on the "Parameter Settings" page. For details, refer to section 7.1.3.

### 7.1.5 Use of digital gun or spool gun

In addition to the common push torch, these inverter welders also support numeric key-type push torch, push-pull torch and spool torch. The parameters are adjusted through the keys on the digital torch or the adjustment knob on the push-pull torch and spool torch.

**Note: The standard HD digital screen version does not support numeric key-type push torch, push-pull torch and spool torch functions.**

1) Digital torch



a. Increase the "Wire Feed Speed"/"Welding Current".

b. Decrease the "Wire Feed Speed"/"Welding Current".

The "Wire Feed Speed"/"Welding Current" adjustment key adjusts "Wire Feed Speed" when the "Synergic" is disabled, and "Welding Current" when it is enabled.

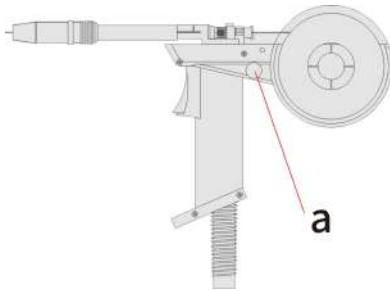
c. Increase the "Welding Voltage".

d. Decrease the "Welding Voltage".

After connecting the digital torch with the welder and the remote control indicator turning on, use the keys on the digital torch to adjust the "Wire Feed Speed"/"Welding Current" and "Welding Voltage". For details about panel operations, see sections 7.12-7.14.

**NOTE! If the digital torch is used, select the welding torch type of "Spool torch". The parameters can be adjusted by both the adjustment knobs on the operation panel and adjustment keys on the digital torch. During welding, the adjustment keys on the digital torch cannot be used to adjust the parameters.**

2) Spool torch



a. "Wire Feed Speed "adjustment potentiometer: Rotate the potentiometer clockwise to increase the "Wire Feed Speed", and counterclockwise to decrease the speed.

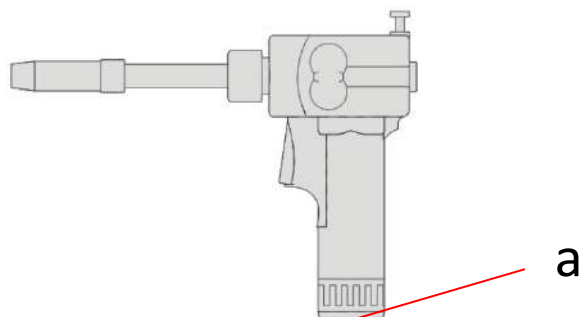


(Select spool torch on HD digital screen)

(Select spool torch on LCD screen)

The welding can only select spool torch in "Non-synergic" MIG mode.

3) Push-pull torch



4) a. "Wire Feed Speed "adjustment potentiometer: Rotate the potentiometer clockwise to increase the "Wire Feed Speed", and counterclockwise to decrease the speed.

The push-pull torch cannot adjust the parameters.





(Select spool torch on HD digital screen)



(Select spool torch on LCD screen)

The welder can select push-pull torch in both "Non-synergic" and "Synergic" MIG modes.

### 7.1.6 Start welding

#### Description of MIG 2T/4T operation

##### 2T operating mode

Step 1: Press the torch trigger to start welding.

Step 2: Release the torch trigger to stop welding.

##### 4T operating mode

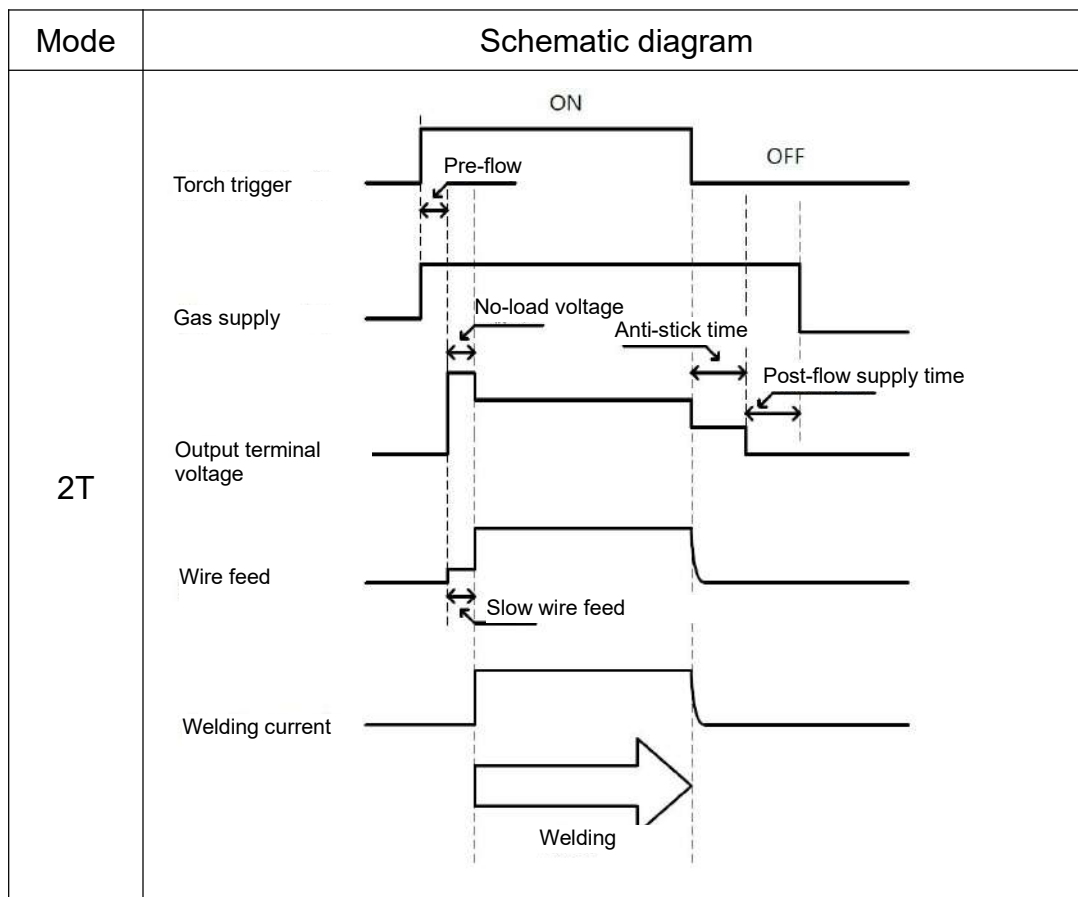
Step 1: Press the torch trigger for the first time to start welding.

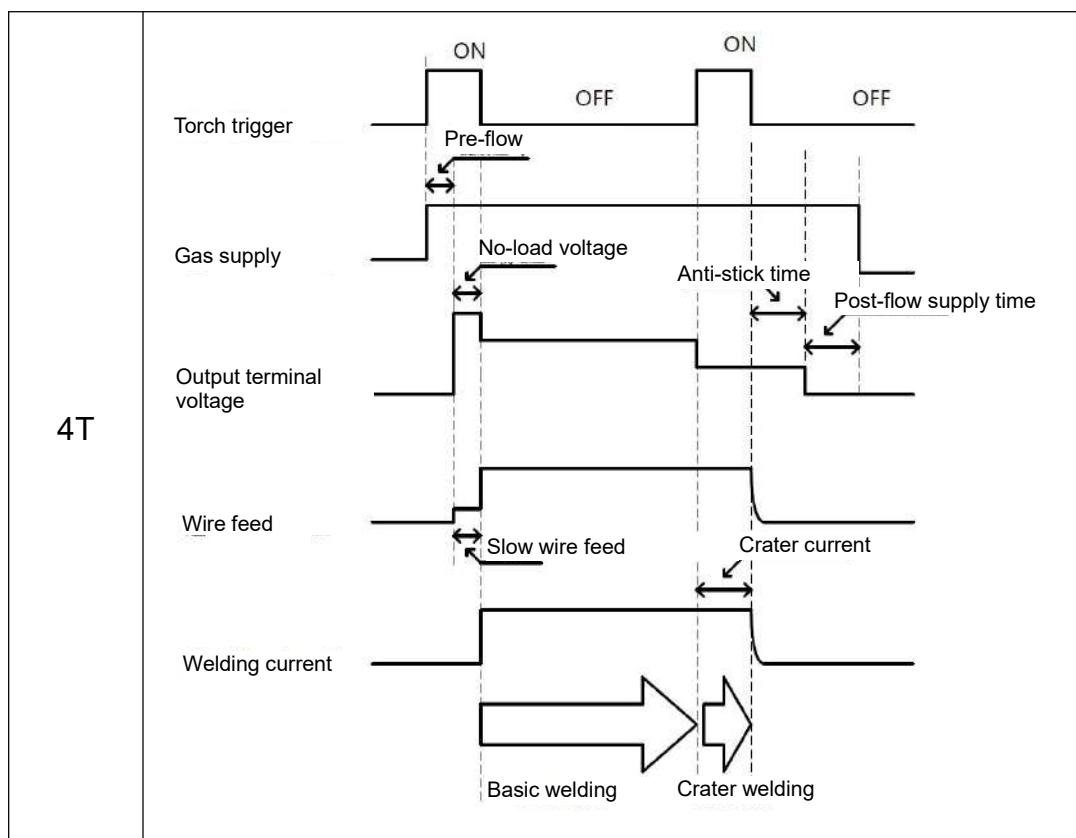
Step 2: Release the torch trigger for the first time to continue welding.

Step 3: Press the torch trigger for the second time to resume welding.

Step 4: Release the torch trigger for the second time to stop welding.

### Welding sequence of MIG 2T/4T operation





### 7.1.7 Turn off the power supply after welding



The power switch is located on the rear panel of the machine and set it to the "OFF" position. After a time delay, the panel indicator is off and the welder stops working.

## 7.2. MMA operation

### 7.2.1 Turn on the power switch

(Same as section 7.1.1)

### 7.2.2 Select welding mode

For HD digital screen, use the "Welding Mode Selection" key to select MMA mode;  
For LCD screen, select "MMA" on the Home page and press the master encoder to enter MMA mode.



(Select MMA mode in HD digital screen)



(Select MMA mode in LCD screen)

### 7.2.3 Set MMA parameters

1) For HD digital screen, use the "Parameter Adjustment Knob A" to set the "Welding Current"; for LCD screen, use the master encoder to set the "Welding Current"; (as shown in above figure)

Welding current: Set by the user based on the type and diameter of the welding electrode and the process requirements. Refer to the following table:

SN	Electrode diameter (mm)	Electrode diameter (mm)	Welding current (A)
1	1.6	1.6	25~40
2	2.0~3.2	2.0	40~65
		2.5	50~80
		3.2	100~130
3	3.2~4.0	3.2	100~130
		4.0	160~210
3	≥4	5.0	200~270
		6.0	220~300

**NOTE!** The operator should set the functions that meet the welding requirements. If the selections are incorrect this may lead to problems such as an unstable arc, spatter, or sticking of the welding rod to the work piece.

2) For HD digital screen, use the "Parameter Adjustment Knob B" to set the "Arc Force"; for LCD screen, enter the "Parameter Settings" page to set the "Arc Force".



(Select arc force in HD digital screen)



(Select arc force in LCD screen)

**Arc force:** The arc force value should be determined according to electrode diameter, current setting, and process requirements. With large arc force current, the metal transfers quickly and the droplets don't stick, but excessive force increases spatter; low arc force leads to small spatter and good weld seam formation, but sometimes the arc is soft, or causes droplets to stick. In particular, thick electrodes with low current welding require increased arc force. Generally, the arc force is 30~50A when welding.

3) Hot start current: Stronger hot start current is conducive to arc start and reduces sticking between the welding electrode and workpiece during arc start.

SN	Parameter Name	Setting range of "Arc Force" and "Hot Start Current"			Remarks	
		MIG250PFC	MIG250	MIG200PFC	HD digital screen	LCD screen
1	Arc force	0~100A			Adjustable on the panel	Enter the "Parameter Settings" page to adjust
2	Hot start current	0~60A			Adjustable on user menu	

### 7.2.4 Start welding

During DC welding, the heat on the positive and negative polarities of the welding arc is different. When welding using DC power supply, there are DCEP and DCEN connections. The DCEP connection refers to the welding electrode connected to the positive polarity of the power supply and the workpiece connected to the negative polarity of the power supply. In this mode, the workpiece receives less heat, resulting in low temperature, shallow penetration, and less penetration. This is suitable for welding thin parts. The DCEN connection refers to the welding electrode connected to the negative polarity of the power supply and the workpiece connected to the positive polarity of the power supply. In this mode, the workpiece receives more heat, resulting in high temperature, deep penetration, and easy to weld through. This is suitable for welding thick parts.

**NOTE!**

**(1) This unit has anti-stick function by default. In the welding process, if short circuit occurs for 2s, it will automatically enter anti-stick function. At this time, the welding electrode shall be separated from the workpiece, and the arc shall be restarted for welding;**

**(2) Anti-stick process: When the VRD function is disabled, the welding current will automatically drop to 20A; and when the VRD function is enabled, the current output will change to 0A.**

### 7.2.5 Turn off power supply after welding

(Same as section 7.1.7)

## 7.3. Lift TIG operation

### 7.3.1 Turn on the power switch

(Same as section 7.1.1)

### 7.3.2 Select Lift TIG welding mode

For HD digital screen, use the "Welding Mode Selection" key to select Lift TIG mode; For LCD screen, select "Lift TIG" on the Home page and press the master encoder to enter Lift TIG mode.



(Select Lift TIG mode in HD digital screen)



(Select Lift TIG mode in LCD screen)

### 7.3.3 Set welding parameters

For HD digital screen, use the "Parameter Adjustment Knob A" to set the "Welding Current"; for LCD screen, use the master encoder to set the "Welding Current"; (as shown in above figure)

Choose the appropriate welding current, tungsten electrode and shielding gas flow based on the actual situation. For details, refer to the following data.

Selection of parameters for manual TIG welding – stainless steel plate

Tungsten diameter (mm)	Stainless steel plate thickness (mm)	Maximum current (A)	Maximum argon flow rate (l/min)
1~2	1~3	50	5
		50~80	6
2~4	3~6	80~120	7
		121~160	8
		161~200	9
		201~300	10

### 7.3.4 Start welding

Description of MIG 2T/4T operation

2T operating mode

Step 1: Press the torch trigger to start welding.

Step 2: Release the torch trigger to stop welding.

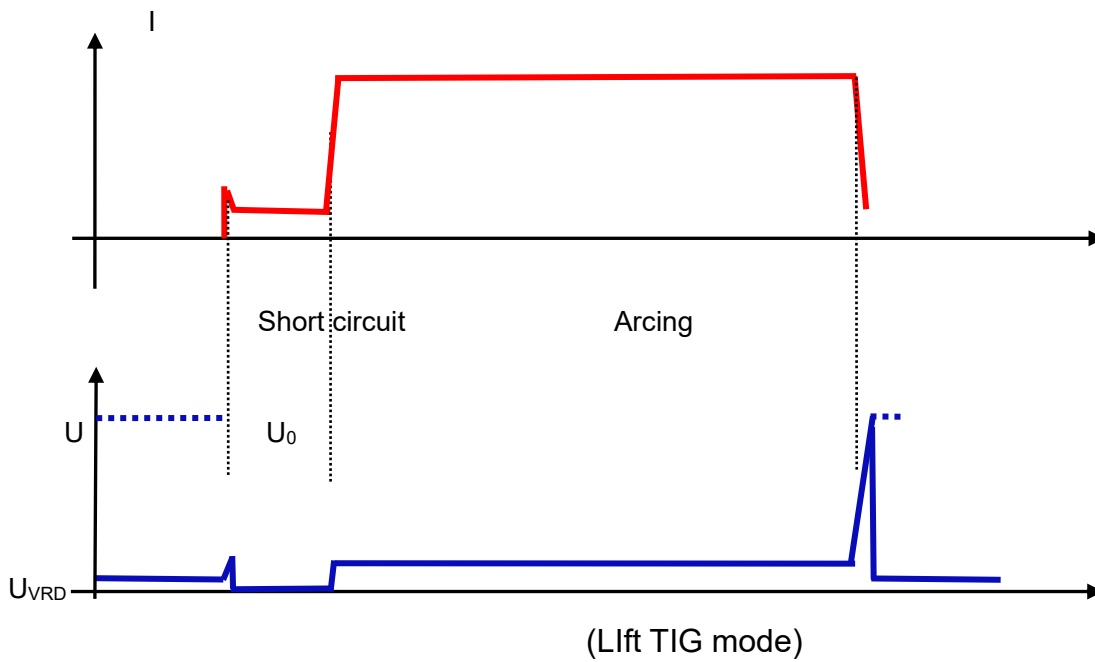
4T operating mode

Step 1: Press the torch trigger for the first time to start welding.

Step 2: Release the torch trigger for the first time to continue welding.

Step 3: Press the torch trigger for the second time to resume welding.

Step 4: Release the torch trigger for the second time to stop welding.



**NOTE!** When starting the arc if the short-circuit time exceeds 2 seconds the welder turns off the output current. Lift the welding torch clear of the work piece. Restart the process as above (7.3.2) to start the arc again.

**NOTE!** During welding, if there is short circuit between tungsten electrode and the work piece, the welder will immediately reduce the output current; if the short circuit exceeds 1 second, the welder will turn off the output current. If this happens, the arc will need to be restarted as above (7.3.2). and the welding torch needs to be lifted to start the arc again.

### 7.3.4 Turn off the power supply after welding

(Same as section 7.1.7)

## 7.4. Standby



(Standby state interface in HD digital screen)



(Standby state interface in LCD screen)



- 1) Enter standby state: In both MIG and Lift TIG modes, the machine will enter standby state and close the display window in the operation panel if there are no welding or panel operations for a long time. The default standby response time is 10 minutes.
- 2) Exit standby state: In standby state, any operation on the welder will cause it to exit standby state, including welding, key/knob operation, pressing the torch trigger, or operating the paired and valid remote controller, etc.
- 3) For safety and convenience, the machine will not enter standby state in MMA mode.

## 7.5. Functions and use of wireless/wired remote controller

If the machine supports the remote control function and is equipped with a remote controller and accessories, the user can use the handheld remote controller or foot pedal controller to perform simple welding parameter adjustments at a distance after basic configuration on the machine operation panel.

For details, refer to the instructions for remote controller.

## 8. Maintenance



### Warning!

The following operation requires sufficient professional knowledge on electric aspects and comprehensive safety knowledge. Make sure the input cable of the machine is disconnected from the electricity supply and wait for 5 minutes before removing the machine covers.

Please note: The following should only be carried out by an authorised electrical technician.

### 8.1. Power supply maintenance

In order to guarantee that the machine works efficiently and in safety, it must be maintained regularly. Operators should understand the maintenance methods and means of the machine operation. This guide should enable customers to carry out simple examination and safeguarding by oneself, try to reduce the fault rate and repair times of the machine, so as to lengthen service life of the machines.

<u>Period</u>	<u>Maintenance item</u>
Daily examination	Check the condition of the machine, mains cables, welding or cutting cables and connections. Check for any warnings LEDs and machine operation.
Monthly examination	Disconnect from the mains supply and wait for at least 5 minutes before removing the cover. Check internal connections and tighten if required. Clean the inside of the machine with a soft brush and vacuum cleaner. Take care not to remove any cables or cause damage to components. Ensure that ventilation grills are clear. Carefully replace the covers and test the unit. <b>This work should be carried out by a suitably qualified competent person.</b>
Yearly examination	Carry out an annual service to include a safety check in accordance with the manufacturers standard (EN 60974-1). <b>This work should be carried out by a suitably qualified competent person.</b>

## 9. Troubleshooting



**Warning! Before arc welding machines are dispatched from the factory, they have already been checked thoroughly. The machine should not be tampered with or altered. Maintenance must be carried out carefully. If any wire becomes loose or is misplaced, it may be potentially dangerous to user! Only professional maintenance personnel should repair the machine! Ensure the power is disconnected before working on the machine. Always wait 5 minutes after power switch off before removing the panels.**

### 9.1. Common malfunction analysis and solution



**The symptoms listed here may be related to the accessories, gas, environmental factors, and power supply you use. Please try to improve the environment and avoid such situations.**

#### Elimination of general problems in MIG

Symptom		Reasons	Troubleshooting
Fan does not rotate or rotates abnormally after power on		The ambient temperature is too low or the fan has been damaged	When the temperature is too low, leave the machine to operate for a while. The temperature in machine will rise then fan will resume normal operation. If it is still not working, it is necessary to replace the fan.
<b>MIG</b>	The welder has no current output and has no error code display	<ul style="list-style-type: none"> <li>· The welding circuit has failed</li> <li>· A component inside the welder has failed</li> </ul>	<ul style="list-style-type: none"> <li>· Check the welding circuit and repair it</li> <li>· Contact the customer-service personnel and seek professional assistance</li> </ul>
	After pressing the torch trigger to supply gas, there is current output but no wire feeding	<ul style="list-style-type: none"> <li>· The wire feeder is stuck</li> <li>· The wire feeding motor has failed</li> <li>· The control board inside the welder has failed</li> </ul>	<ul style="list-style-type: none"> <li>· Unstuck the wire feeder</li> <li>· Replace the wire feeding motor</li> <li>· Replace the control panel</li> </ul>

	<p>The welding current is unstable and the current fluctuates</p>	<ul style="list-style-type: none"> <li>· The torque knob of the wire feeder is not adjusted properly</li> <li>· The wire feed roller and welding wire are configured differently</li> <li>· The contact tip is seriously worn out</li> <li>· The liner in the welding torch is seriously worn out</li> <li>· The welding wire is of poor quality</li> </ul>	<ul style="list-style-type: none"> <li>· Properly adjust the torque knob of the wire feeder</li> <li>· Properly adjust the torque knob of the wire feeder</li> <li>· Replace the contact tip of the welding torch</li> <li>· Replace the liner in the welding torch</li> <li>· Replace with qualified welding wire</li> </ul>
<p>Other malfunction</p>			<p>Please contact the maintenance personnel of Shenzhen JASIC Technology Co., Ltd.</p>

**Elimination of general problems in MMA**


<b>Symptom</b>		<b>Reasons</b>	<b>Troubleshooting</b>
<p>Fan does not rotate or rotates abnormally after power on</p>		<p>The ambient temperature is too low or the fan has been damaged</p>	<p>When the temperature is too low, leave the machine to operate for a while. The temperature in machine will rise then fan will resume normal operation. If it is still not working, it is necessary to replace the fan.</p>
<b>MMA</b>	<p>Cannot start normal arc</p>	<p>The power cord is not connected properly</p>	<p>Connect the power cord</p>
	<p>Electrode sticking</p>	<p>Low arc force</p>	<p>Increase the arc force</p>
	<p>Hot electrode holder</p>	<p>The rated current of the electrode holder is too low</p>	<p>Change the electrode holder with a high current one</p>
	<p>Arc is easily interrupted</p>	<p>Low mains voltage</p>	<p>Use after the mains power is normal</p>
<p>Other malfunction</p>			<p>Please contact the maintenance personnel of Shenzhen JASIC Technology Co., Ltd.</p>

**Elimination of general problems in Lift TIG**

Symptom		Reasons	Troubleshooting
Fan does not rotate or rotates abnormally after power on		The ambient temperature is too low or the fan has been damaged	When the temperature is too low, leave the machine to operate for a while. The temperature in machine will rise then fan will resume normal operation. If it is still not working, it is necessary to replace the fan.
<b>TIG</b>	No current is output when torch trigger is pressed	Some Lift TIG modes allow welding to end when the torch trigger is pressed	Release the torch trigger and start over
		Welding circuit is blocked	Check the welding circuit and reconnect it
	Rapid tungsten electrode burnout	Welding torch and earth clamp are connected to the wrong polarity	Switch two plug positions
	Blackening of solder joints	Welds are not effectively protected and become oxidized	<ul style="list-style-type: none"> <li>· Ensure that the valve of argon cylinder is open and there is enough pressure. Generally, if the cylinder pressure is lower than 0.5 MPa, it must be refilled.</li> <li>· Check whether the argon flow rate is normal. You can select the flow rate according to the welding current condition, but too low a flow rate may lead to insufficient shielding gas to cover all weld joints. It is suggested that the argon flow rate be no less than 5L/min, no matter how small the current.</li> <li>· Check whether the gas path is leaking, or whether the gas purity is too low.</li> <li>· Check whether there is strong ambient air flow in the environment.</li> </ul>
Hard to start arc Arc is easily interrupted	Poor quality or serious oxidation of tungsten electrode	<ul style="list-style-type: none"> <li>· Replace tungsten grade with better quality.</li> <li>· Grind off the tungsten oxide layer.</li> </ul>	

	<p>Unstable current when welding</p>	<p>The voltage of the power grid fluctuates seriously or the joint contact with the power grid is poor. Serious interference from other electrical equipment.</p>	<ul style="list-style-type: none"> <li>· Check whether the power grid is normal and connect the power connector.</li> <li>· Use different power cords to connect equipment that could seriously interfere with welder.</li> </ul>
<p>Other malfunction</p>		<p>Please contact the maintenance personnel of Shenzhen JASIC Technology Co., Ltd.</p>	

## 9.2. Alarm and solutions

Error code	Category	Possible cause	Countermeasure
E10	Overcurrent protection	Continuously output the maximum capacity current of the welder	Restart the welder. If it is still in overcurrent protection, contact the after-sales department of the company.
E31	Undervoltage protection	Input network voltage is too low	Turn off and restart the machine. If this the alarm cannot be eliminated and the grid voltage remains too low, check the power grid voltage and wait for the grid return to normal before welding. If the grid voltage is normal and the alarm persists, contact professional maintenance personnel.
E32	Overvoltage protection	Input network voltage is too high	Turn off and restart the machine. If the alarm cannot be eliminated and the grid voltage remains too high, check the power grid voltage and wait for the grid return to normal before welding. If the grid voltage is normal and the alarm persists, contact professional maintenance personnel.
E34	Undervoltage protection	Undervoltage in the driver	Turn off and restart the machine. If the alarm cannot be eliminated, contact professional maintenance personnel.
E60	Overheat protection	Inverter IGBT temperature is too high	Do not turn off the machine. Wait for a while, and then continue welding after the indicator goes out.
E61	Overheat protection	Output rectifier diode temperature is too high	Do not turn off the machine. Wait for a while, and then continue welding after the indicator goes out.
	Abnormal VRD	No-load voltage is too high	Turn off and restart the machine. If the alarm cannot be eliminated, contact professional maintenance personnel.

**NOTE!** After applying the above countermeasures, the alarm still cannot be lifted or reappears after lifting. Please contact professional maintenance personnel.

### 9.3. Common MIG malfunction

When the welding conditions do not meet the requirements, the phenomena described in the following table will occur:

**Table 9.3 Common MIG malfunction**

Unsuitable Welding Condition	Result	Unsuitable Welding Condition	Result
The welding wire extension is too long	The arc is unstable, resulting in welding spatter.	The arc voltage is too high	The arc is too long and the fusion spatter increases.
	The bead becomes narrow		The welding bead becomes wider.
	The gas protection result is poorer, resulting in gas pores.		The arc is unstable.
The welding wire extension is too short	The nozzle is blocked, resulting in gas pores.	The arc voltage is too low	The arc is broken, the wire wanders, and welding spatter is generated.
	It affects the line of sight, making it difficult to observe the penetration.		The welding bead becomes narrow and the welding wire is not melted.
	The thin base metal is easily burned through.		More excess weld metal and weld flushes.
The welding current is too high	The welding spatter increases.	The welding speed is too high	The welding bead becomes narrow.
	The depth of penetration and excess weld metal increase and weld formation is poor.		The depth of penetration and excess weld metal decreases.
	The base metal is easy to burn through.		
Wire extension: refers to the distance between the contact tip of welding torch and workpiece to be welded			



## 10. Packaging, transportation, storage and waste disposal

### 10.1. Transportation requirements

In the process of handling the equipment, it should be handled with care, and should not be dropped or severely impacted. Avoid moisture and rain during transportation.

### 10.2. Storage conditions

Storage temperature:  $-25\text{ }^{\circ}\text{C} \sim +50\text{ }^{\circ}\text{C}$

Storage humidity: relative humidity  $\leq 90\%$

Storage period: 12 months

Storage site: indoors with no corrosive gas and air circulation

### 10.3. WEEE waste disposal



#### Disposal

The equipment is manufactured with materials, which do not contain any toxic or poisonous materials dangerous to the operator.

When the equipment is scrapped, it should be dismantled separating components according to the type of materials.

Do not dispose of the equipment with normal waste. The European Directive 2002/96/EC on Waste Electrical and Electronic Equipment states the electrical equipment that has reached its end of life must be collected separately and returned to an environmentally compatible recycling facility.

In order to comply with WEEE regulations in your country you should contact your supplier.

#### RoHS Compliance Declaration

We herewith confirm, that the above-mentioned product does not contain any of the restricted substances as listed in EU Directive 2011/65/EC in concentrations above the limits as specified therein.

**Disclaimer:** Please note that this confirmation is given to the best of our present knowledge and belief. Nothing herein represents and/or may be interpreted as warranty within the meaning of the applicable warranty law.

## **11. After-sales service**

### **11.1. Warranty card**

Each welder includes a warranty card. Please fill in the relevant information. Read and keep the warranty card carefully.

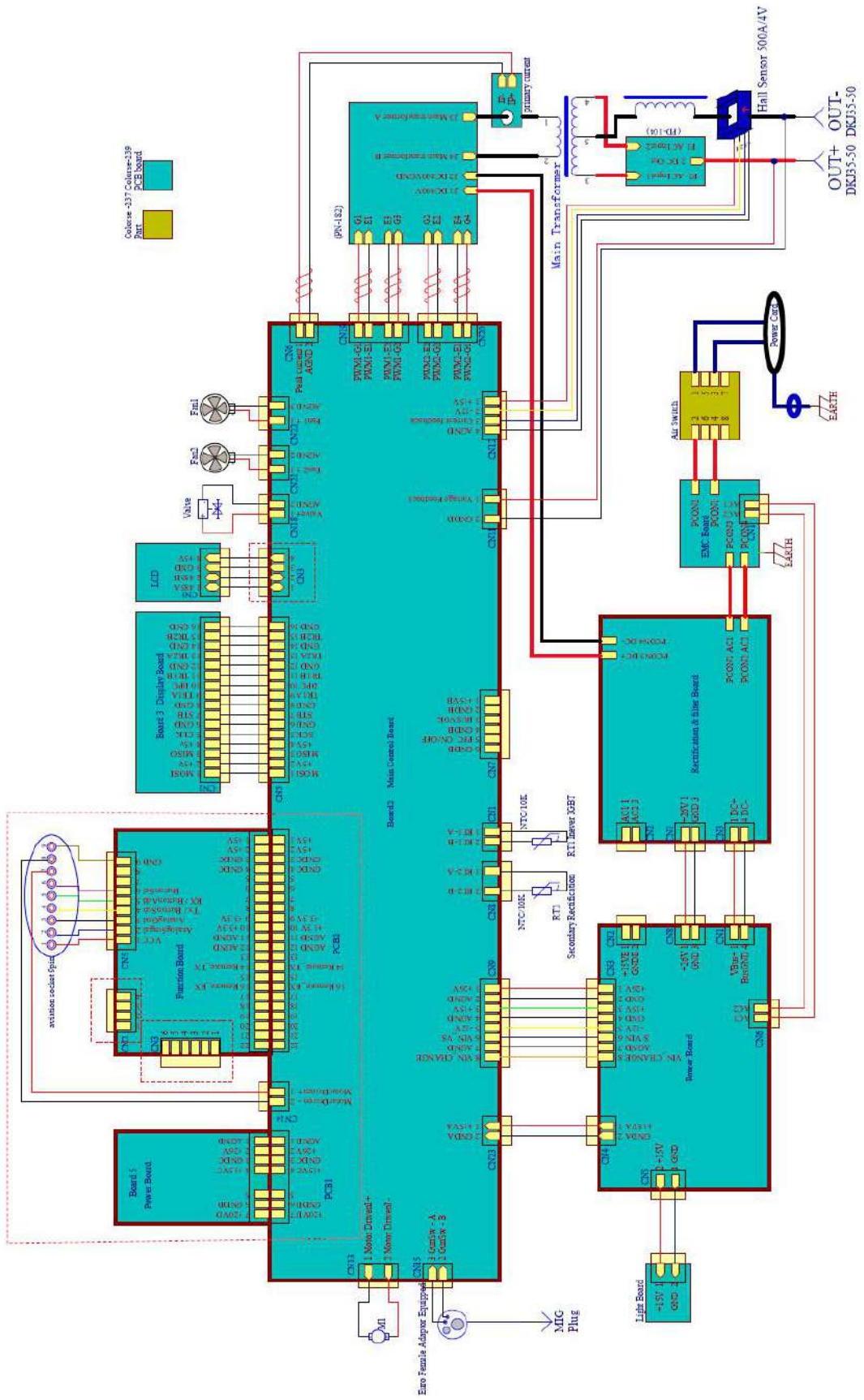
### **11.2. Maintenance**

Perform preliminary troubleshooting or record malfunction according to the common malfunction analysis and solution checklist. To repair or replace the device, contact a local dealer. Please use accessories or consumables provided by Shenzhen JASIC Technology Co., Ltd.

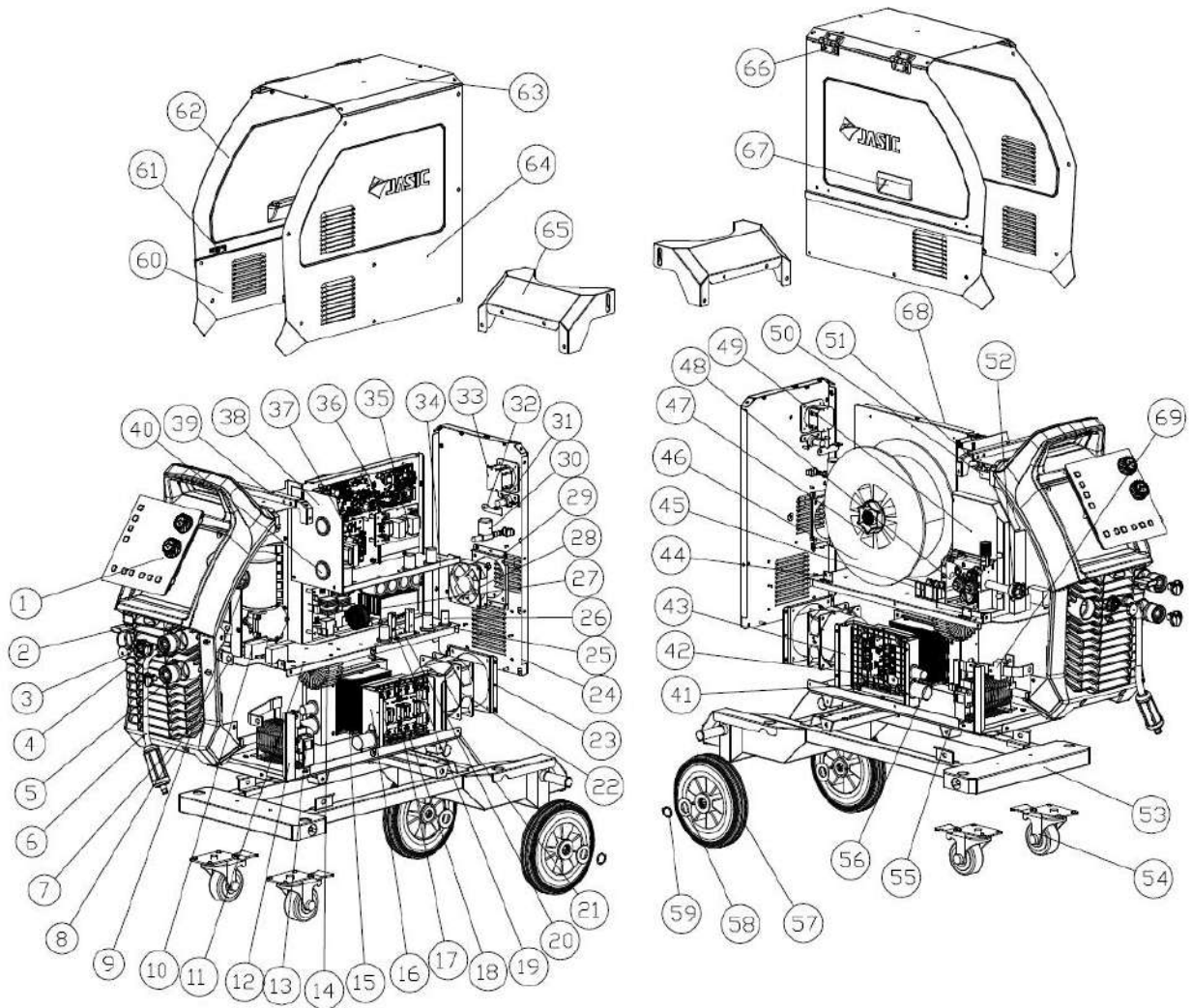
The warranty of this machine is subject to the date of sale on the warranty card or sales contract. Any malfunction caused by irregular or unreasonable use are not covered by the warranty and will be charged for repair.



### Wiring diagram 2 - MIG250



## Appendix 2: List of common spare parts





**List of spare parts**

SN	Name	Quantity	Material Code		
			MIG200PFC	MIG250PFC	MIG250
1	HD digital display board	1	51001082	51001082	51001082
	LCD screen components		51001159	/	/
2	Wireless receiver module	1	51001250	51001250	51001250
3	Euro MIG welding torch interface	1	51000333	51000333	51000333
5	Euro quick socket	2	10021855	10021855	10021855
13	Reactor	1	51001513	51001513	51001513
14	HF transformer	1	10085015	10085013	
17	Inverter board	1	10083048	10083048	10083048
22	Large fan	1	51000334	51000334	51000334
27	PFC board (plus)	1	51001142	51001140	/
	PFC board (standard)		51001769	51001807	/
	Rectifier filter board		/	/	/
28	Small fan	1	10044009	51001180	10044009
30	Gas valve	1	10007277	10007277	10007277
33	Power switch	1	10084286	10084286	10084286
35	EMC board	1	51001086	51001088	51001088
36	Main control panel (plus)	1	51001156	51001148	/
	Main control panel (standard)		51002093	51002091	/
37	Auxiliary power board	1	51001143	51001143	51001143
42	Secondary rectifier board	1	10077541	10077506	10077506
47	Spool holder	1	10061177	10061177	10061177
48	Wire feeder	1	51000446	10070666	51000446
50	Lighting board	1	51001033	51001033	51001033
54	Caster	2	10084789	10084789	10084789
57	Directional wheel	2	10016535	10016535	10016535
69	Current sensor	1	51001137	51001134	51001134

## Appendix 3. Packaging and parts

### General packaging

SN	Material code	Name	Quantity
1	User Manual of EVO20 MIG Welder (English)	Copy	/
2	Product certificate	Pcs	1
3	Warranty card	Pcs	1
4	Desiccant	Pcs	1
5	Accessories	Pcs	1
6	Welder	Set	1

### Standard parts of MIG250PFC

SN	Classification	Name	Material code	Unit	Quantity
1	Earth clamp	300A-25mm2-DKJ35-50(3M)	10021491	Pcs	1
2	MIG welding torch	MB-24(3M)	51000536	Pcs	1
3	Hose clamp	9-16mm	10057339	Pcs	2
4	Waterproof socket	Φ6.5x3 (without fastening nut and washer)	10038768	Pcs	1 (plus)
					0 (standard)
5	Wire feed roller	0.6-0.8 (V type)	10029905	Pcs	2 (plus)
			10016540		1 (standard)

### Standard parts of MIG250

SN	Classification	Name	Material code	Unit	Quantity
1	Earth clamp	300A-25mm2-DKJ35-50(3M)	10021491	Pcs	1
2	MIG welding torch	MB-24(3M)	51000536	Pcs	1
3	Hose clamp	9-16mm	10057339	Pcs	2
4	Waterproof socket	Φ6.5x3 (without fastening nut and washer)	10038768	Pcs	1 (plus)
					0 (standard)
5	Wire feed roller	0.6-0.8 (V type)	10016540	Pcs	1

### Standard parts of MIG200PFC

SN	Classification	Name	Material code	Unit	Quantity
1	Earth clamp	300A-16mm2-DKJ35-50(3M)	10043956	Pcs	1
2	MIG welding torch	MB-15(3M)	51000535	Pcs	1
3	Hose clamp	9-16mm	10057339	Pcs	2
4	Waterproof socket	Φ6.5x3 (without fastening nut and washer)	10038768	Pcs	1 (plus)
					0 (standard)
5	Wire feed roller	0.6-0.8 (V type)	10016540	Pcs	1

 **JASIC®** | Passionate About Your Welding

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