
Fluxon 1250 all-digital IGBT inverter intelligent welder

User manual

Version: V1.0

Shenzhen Magmet Welding Technology Co., Ltd. provides customers with a full range of technical support, and users can contact local distributors or company headquarters.

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Preface

Thank you for purchasing our company's Fluxon 1250 series fully digital IGBT inverter intelligent welding machine (hereinafter referred to as the welding machine).

This manual provides users with precautions related to installation and wiring, parameter setting, troubleshooting and troubleshooting, and daily maintenance. To ensure proper installation and operation of the welding machine and its superior performance, please read this user manual carefully before installing the machine, and please keep it properly and hand it over to the user of the welding machine.

The company continues to develop and innovate products, and if there is a difference between the content, parameters, and pictures in this user manual and the actual product, the actual product shall prevail, and if there is any change, without prior notice, the company has the final right to interpret this user manual.

Safety precautions

Security definitions

To use the welding machine safely and correctly, to prevent harm to you or others and property damage, this manual uses various warning signs to explain, please be sure to fully understand and strictly follow them.

The following signs are classified by the degree of danger or damage and are warned.



Please do as required, otherwise death or serious injury may occur.



Please do as required, otherwise it may cause moderate or minor injury or damage to property.

Installation precautions



·Before transporting the mobile welding machine, the input power supply of the switch of the distribution box must be cut off.

·When using a crane to carry the welding machine, it is necessary to make sure that the lifting ring is tightened and the machine housing and cover plate are installed.

When hoisting the welding machine, two lifting belts should be used, and the angle between the lifting belt and the vertical direction must be less than 15 degrees.

The welding machine shall not be hoisted with other objects at the same time.

•Please install on non-combustible objects as there is a risk of fire.

Do not place combustibles nearby, otherwise there is a risk of fire.

Do not install in an environment containing explosive gases, otherwise there is a risk of explosion.

Wiring work must be carried out by a person with professional qualifications, otherwise there is a risk of electric shock.

Confirm that the input power supply is completely disconnected before wiring work, otherwise there is a risk of electric shock.

Before powering on, the grounding terminal of the welding machine must be reliably grounded, otherwise there is a risk of electric shock.

Before powering on, the cover must be covered, otherwise there is a risk of electric shock.

When the power is on, do not touch the terminal with your hand, otherwise there is a risk of electric shock.

Do not operate the welding machine with wet hands, otherwise there is a risk of electric shock.

Perform maintenance operations after disconnecting the power supply for 5 minutes, at this time the welding machine power indicator is completely extinguished and confirm that the positive and negative bus voltage is below 36V, otherwise there is a risk of electric shock.

Parts must be replaced by professionals, and it is strictly forbidden to leave wires or metal objects in the machine, otherwise there is a risk of fire.

After replacing the control board, the parameters must be set correctly before it can be operated, otherwise there is a risk of damaging the property.

The exposed part of the cable nose for wiring must be wrapped with insulating tape, otherwise there is a risk of electric shock.



When handling, do not put stress on the operation panel and cover, otherwise there is a risk of injury or damage to property if it falls.

·When using a forklift to transport the welding machine, the bottom wheel of the welding machine should be fixed firmly.

· When installing, it should be installed in a place that can withstand the weight of the welding machine, otherwise there is a risk of injury or damage to property if it falls.

It is strictly forbidden to install it in water pipes and other places where water droplets may splash, otherwise there is a risk of damaging property.

Do not drop foreign objects such as screws, spacers and metal rods into the welding machine, otherwise there is a risk of fire and damage to property.

If the welding machine is damaged or the parts are incomplete, please do not install and operate, otherwise there is a risk of fire or injury.

The main loop terminal and the wire nose must be firmly connected, otherwise there is a risk of damaging property.

Precautions for use



To ensure safety, please ask personnel with knowledge and welding skills to perform welding operations.

·Do not use the welding machine for any purpose other than welding.

·The installation, commissioning, and maintenance of the welding machine must be carried out by professionals.

·People using pacemakers should not be near welding machines and welding workplaces without a doctor's permission.

Do not touch the live parts, otherwise there is a risk of electric shock.

Do not use cables with insufficient cross-sectional area, exposed conductors, or damage.

The case or cover plate should not be removed during use.

·Please use undamaged, well-insulated gloves.

Pay attention to safety protection when working at height.

When the welding machine stops working for a long time, please cut off the power supply to the welding machine and the distribution box.

·When welding in confined or confined spaces, please be supervised by an inspector and ventilate adequately or use respiratory protection, otherwise suffocation may occur due to lack of oxygen.

Harmful fumes and gases are generated during the welding process, so please ventilate well or use respiratory protection equipment, which can endanger your health.

Do not weld pressure vessels such as gas pipes and sealed tanks containing gas.

Do not place hot workpieces near combustibles.

Do not weld near combustible materials.

·Please place a fire extinguisher near the welding operation site.

The gas cylinder must be fixed with a special bracket, otherwise the tipping of the gas cylinder may cause personal accidents.

Do not let the electrode touch the cylinder.

Please use the pressure reducing valve correctly as required.

The disassembly and maintenance of the pressure reducing valve must be carried out by professionals.

Do not touch the rotating parts such as fans and wire feeders at work, otherwise it may cause personal injury and property damage.

When welding or supervising welding, please use protective equipment with sufficient shading to prevent arc light damage to the eyes or skin.

- Please use protective equipment such as leather protective gloves, long-sleeved clothes, foot guards, aprons, glasses, etc. Prevent arc light, spatter, and welding slag damage.
- Protective barriers must be set up around the welding site to prevent arc light from harming others.
- Please use soundproofing equipment to prevent noise hazards.



- It is forbidden to use this welding machine for operations other than welding.
- Do not place heavy objects on the welder.
- Do not block the vents of the welder.
- Place it in a place where metal foreign objects such as splashes cannot fall inside the welding machine.
- Please keep the distance between it and the wall or other welding machine at least 30cm.
- To prevent the wind from arcing, use a screen to shield it.
- Please fix the bottom wheel of the welder to avoid the welding machine from sliding.
- To prevent electromagnetic hazards, electromagnetic shielding should be applied to cables or welding sites.
- The tilt angle of the welder placement plane should be less than 15 degrees to prevent the welding machine from tipping over.
- The protection level of this welding machine is IP23, and the requirements for the use environment are as follows:
 - Operating temperature range: -10°C~+40°C
 - Transport and storage temperature range: -40°C~+70°C
 - Operating humidity range: at 40°C, no more than 75%RH; At 20°C, it does not exceed 95%RH
 - The altitude does not exceed 2000m
 - There is no obvious mechanical vibration or mechanical shock in the working environment, and the tilt of the welding machine does not exceed 15°
 - Dust, metal dust and corrosive gases in the surrounding air do not exceed normal levels
 - Avoid welding machine rain or fans sucking in rainwater

Scrapping precautions

When scrapping a welder, please note:

1. Please treat it as industrial waste
2. Explosion can occur when the electrolytic capacitors of the main loop and the electrolytic capacitors on the printed board are incinerated.
3. Plastic parts such as front panels produce toxic gases when incinerated.

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Chapter 1 Product Overview

1.1 Application occasions and characteristics

The Fluxon 1250 is a carbon arc gouging and manual arc welding machine.

It is mainly used for root cleaning, beveling and removing welding defects of different materials such as carbon steel, stainless steel, cast iron, aluminum alloy, copper alloy, etc. It is widely used in boilers, pressure vessels, ships, steel structures, wind power and other industries.

Features:

1. The welding machine panel design is simple, the parameters are easy to adjust, and novices can easily master it
2. Support USB flash drive software upgrade
3. RFID card management and group control functions to meet the customer's centralized digital operation management
4. It has the function of anti-electric shock protection to ensure that welders work safely in a small and humid environment
5. It has the function of anti-stick strip to avoid the burning of welding tongs, cables and terminals caused by short circuits
6. Manual welding is more stable, suitable for different specifications of acid and alkaline welding rod welding, and the arc current and thrust current are independently adjustable to meet different operation habits
7. The network pressure fluctuates at -15%~+15%, and the welding machine protection level is IP23, which meets the operation of harsh working conditions

1.2 Model description

The model description of the welding machine is shown in Figure 1-1.

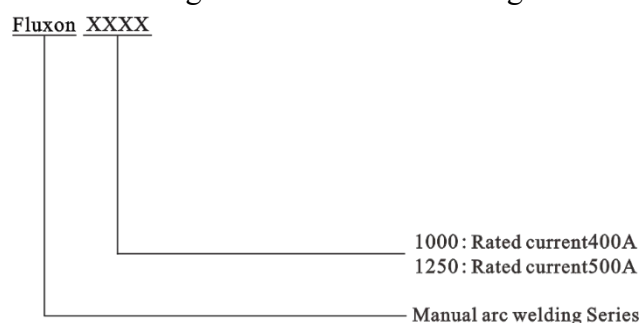


Figure 1-1 Model description

Example: The Fluxon 1250 represents the Fluxon series of electrode arc/gouge welding machines with a current rating of 1250A.

1.3 Explanation of system feature names

● Load persistence rate

The rated load duration rate refers to the time ratio of the rated output state in the time unit of 10 minutes. The Fluxon1250 welder is rated for 100% @ 40° C, as shown in Figure 1-2.

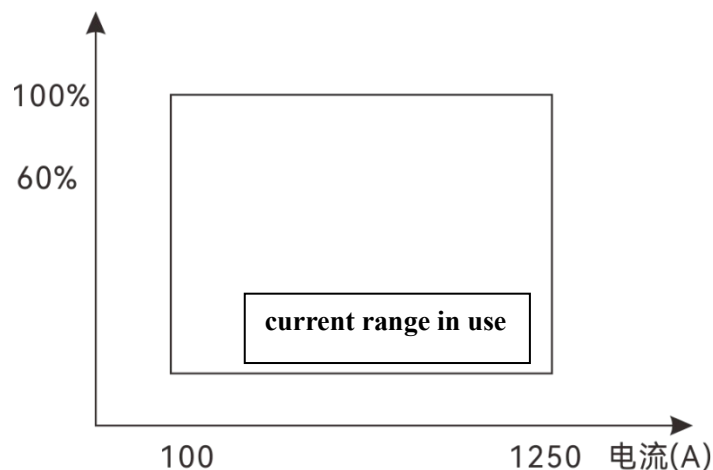


Figure 1-2 Schematic diagram of load sustaining rate (taking Fluxon1250 as an example)

Continuous use of the welding machine under overrated load will overheat the welding machine, resulting in aging or even burning out.

When the welding machine is used with other components, such as welding tongs, it should be used according to the lowest load duration rate in the whole set of equipment.

● Static characteristics

This welding machine is a constant current characteristic power supply, and its characteristics are shown in Figure 1-3 (taking Fluxon1250 as an example).

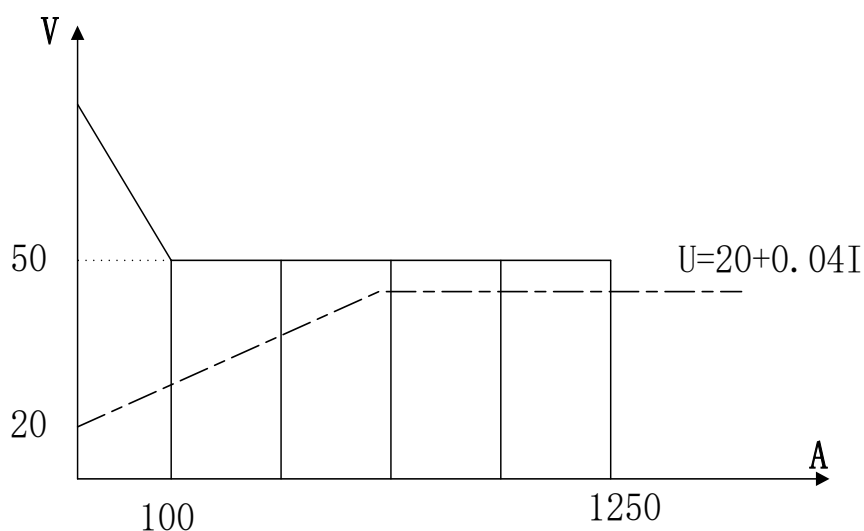


Figure 1-3 Schematic diagram of constant current characteristics

1.4 System composition and configuration

● System composition

The power supply system consists of a manual arc welding gun (carbon arc gouging welding gun), an output side welding cable ground wire and a welding machine.

The system composition is shown in Figure 1-3.

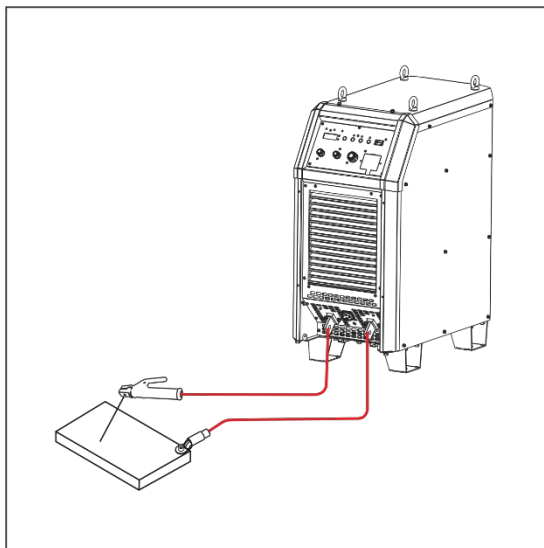


Figure 1-4 Electrode & gouge welding system

● configuration

Part name	Fluxon1250
welding machine	1 unit
Ground line	95 m ² /1.8/2 pieces

Chapter 2 Installation and wiring

This chapter describes the installation requirements for welding machines, as well as the operation steps and precautions related to installation.

2.1 Unpacking and inspection

1. Before unpacking, please confirm whether the outer packaging of the product is intact;
2. After unpacking, please confirm whether the welding machine accessories are complete and whether their models are consistent with the order.

If you find that the accessories are missing or wrong, please contact the supplier in time.

2.2 Installation requirements:

● Installation environment requirements

1. In a well-ventilated place with vibration less than 5.9 m/s^2 (0.6g);
2. Avoid installing in places with dust and metal powder; It is strictly forbidden to install in places with corrosive and explosive gases;
3. The ambient temperature is required to be within the range of $-10^\circ \text{C} \sim +40^\circ \text{C}$, and when the temperature exceeds 40°C , it needs to be forced to dissipate heat or derating from the outside.
4. Humidity requirements are less than 95%, no water droplets condensation;
5. The welding site should pay attention to windproofing, and use wind deflectors, if necessary, otherwise it will affect the welding process.
6. If there are special installation requirements, please consult and confirm in advance;

● Installation space requirements

The welding machine should be at least 50cm away from the wall, and the interval should be more than 50cm when multiple units are placed side by side, and it is recommended to place the welding machine according to the reserved space in Table 2-1.

Table 2-4 The welding machine installation reserves space

	front	Top	left	Right	Back
Reserve space	$\geq 50\text{cm}$	$\geq 50\text{cm}$	$\geq 50\text{cm}$	$\geq 50\text{cm}$	$\geq 50\text{cm}$

2.3 Handling precautions

1. Before handling the welding machine, the input power supply of the switch of the distribution box must be cut off.
2. When hoisting the welding machine, it must be confirmed that the lifting ring has been tightened and the welding machine shell and cover plate have been installed.

3. When hoisting the welding machine, please use the lifting ring to install the crane, and use 2 slings, and the angle of the sling must be less than 30 degrees. As shown in Figure 2-1.
4. The welding machine shall not be hoisted at the same time as other objects.
5. When transporting the welding machine with a forklift, the welding machine should be fixed firmly.

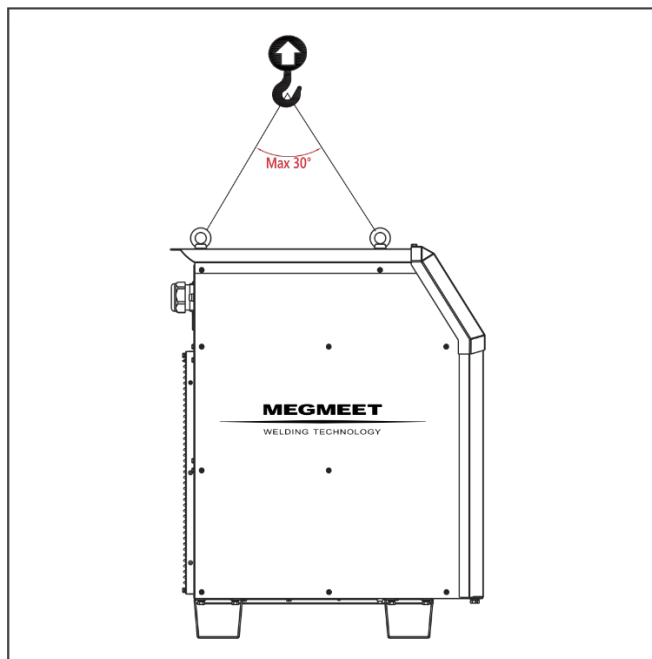


Figure 2-1 Welding machine hoisting diagram

2.4 Power supply specification requirements

The specifications of the power supply are shown in Table 2-2.

Table 2-4 Power supply specification requirements

project		Description
		Fluxon1250
Power supply characteristics		Three-phase AC 415V 50Hz/60Hz
Power equipment capacity	Grid power	$\geq 80\text{kVA}$
	Power generation equipment	$\geq 130\text{kVA}$
Enter the protection device (Distribution Box)	Air switch	$\geq \text{Class C } 125\text{A}$
Recommended cables	Welder input side	$\geq 25\text{mm}^2$
	The output side of the welding machine	$\geq 2 \times 95\text{mm}^2$
	Case grounding wire	Equivalent to or greater than the power supply Input side cable

 Tips

1. When power generation equipment is supplied, the Magmit Fluxon series welder generator option is optional.
 2. When the workplace is wet, and when operating on iron plates and frames, install leakage protectors.
-

2.5 Electrical connections

 Safety warnings

1. Please have an electrical technician with an electrician qualification perform the connection operation.
 2. Please wear protective equipment such as protective gloves, safety shoes, and long-sleeved work clothes.
 3. Electrical connection operations must be carried out with the switch of the distribution box disconnected to ensure safety.
 4. Please use the specified specification of the cable and do not touch the live parts of the welder, such as the input terminal and output terminal.
 5. Please confirm the reliability of the welding machine grounding.
-

2.5.1 Input Side Solder Cable Connection (415VAC)

1. disconnect the switch of the distribution box (user equipment);
2. Remove the input terminal cover of the welding machine, connect one side of the input cable to the input terminal of the welding machine, and fix it on the back plate of the welding machine with the input cable clamp board, and cover the input terminal cover;
3. Connect the safety ground wire in the input cable to the M6 grounding stud of the welder housing;
4. Connect the other side of the input cable to the output terminal of the distribution box switch and the cable is connected. As shown in Figure 2-2.

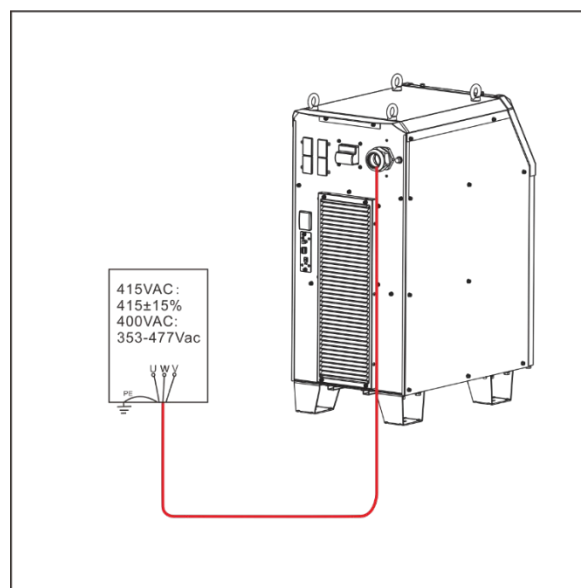


Figure 2-2 Schematic diagram of the connection on the power input side

Safety warnings

1. In order to ensure safety, be sure to connect the safety grounding wire, otherwise there will be a risk of electric shock;
2. The welding machine has no special requirements for the three-phase phase sequence of the power grid, and the Fluxon1250 input cable is more than 25mm².

2.5.2 Solder cable connection on the output side

● Carbon arc gouging wiring installation

1. The gouging adopts the DC reverse connection method, open the cover, and use a 16mm wrench to screw out the M10 screw of the negative output terminal; Connect the ground wire to the negative terminal and tighten;
2. 16mm wrench unscrews the positive output terminal M10 screw; Connect one end of the gouging cable to the positive output terminal; 16mm wrench tightens the M10 screw;
3. Connect the gouging pipe to the air compression pipe.

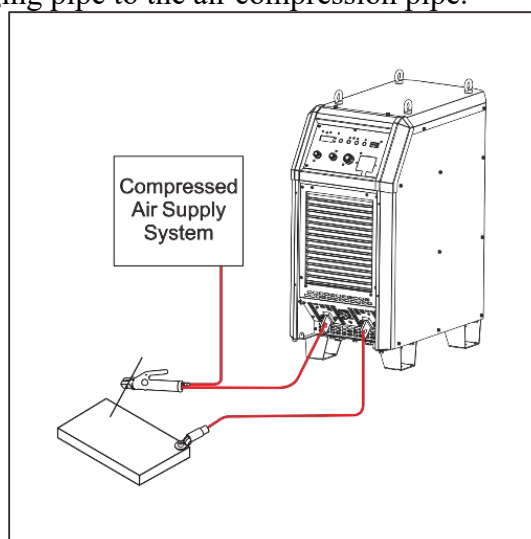


Figure 2-3 Schematic diagram of carbon arc gouging wiring installation

- Manual welding wire installation

1. Manual welding adopts the DC reverse connection method, open the cover, use a 16mm wrench to screw out the negative terminal M10 screw, connect the ground wire to the negative terminal and tighten it;

2. Use a 16mm wrench to unscrew the M10 screw of the positive output terminal, connect one end of the welding torch cable to the positive output terminal and tighten it.

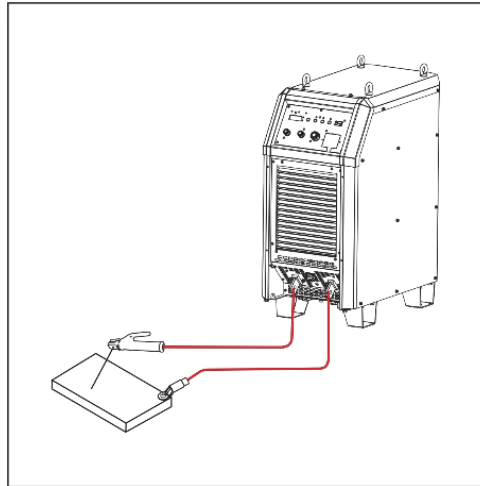


Figure 2-4 Schematic diagram of manual welding wire installation

Tips

Fluxon1250 adopts double positive and negative cables, most of the work is in high current conditions, it is recommended to use 800A or more for both positive and negative poles, and it is recommended to use 95m2 double wiring method.

2.6 Preparation before welding

- Safety protection measures

1. Use of exhaust equipment or respiratory protection;
2. When welding or supervising welding, use goggles or protective equipment with sufficient shading;
3. To prevent your eyes from being hazarded by splashes and welding slag, please wear protective glasses;
4. To prevent gas poisoning, suffocation, dust poisoning and other hazards, please follow the regulations
5. Set up protective barriers around the welding site to prevent arc light from harming others;
6. When the noise is loud, please use soundproofing equipment;
7. Use a ventilation fan to ventilate or take windproof measures to prevent welding failure caused by direct arcing when the wind blows directly.

- Check the cable connections

1. Fixed welding machine - place the welding machine in a dry, flat and well-ventilated station;
2. Confirmation after circuit connection – check confirmation according to 2.5 electrical connection check.

- Other item checks

Check the welding conditions and the extension line, etc.

- Check the power switch

1. Open the switch of the distribution box and connect the three-phase 415VAC power supply;
2. Set the power switch of the welder to on.

2.7 Post-welding operation

After the gouging operation is completed, the switch valve of the gas supply is first closed, then the power supply is turned off, and then the power supply of the distribution box is turned off.

After the manual arc welding operation is completed, turn off the power supply, and then turn off the power supply of the distribution box.



Tips

To cool the welding machine internally, please disconnect the welding machine after 3~5 minutes after the welding operation is completed.

Chapter 3 Function description and operation

3.1 Panel description

The function description of the welding machine panel is shown in Figure 3-1.

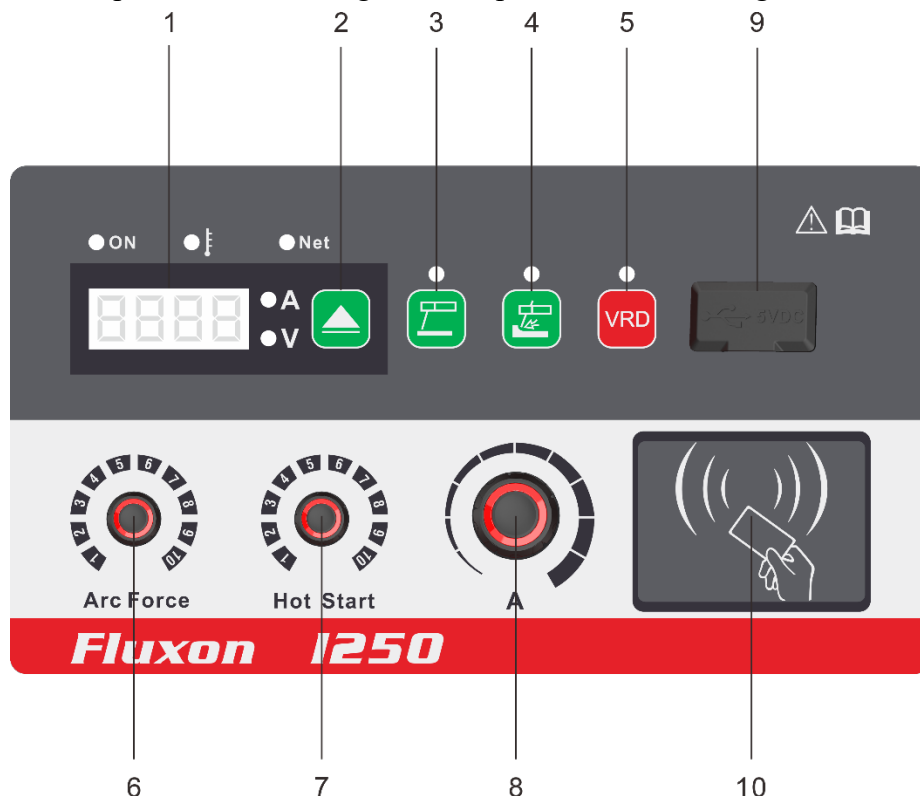


Figure 3-3 Welding machine panel

Table 3-4 Welding machine panel function description

number	Number Name	Descriptions of each function button
1	Digital tube display	When not welding, the digital tube displays the set current value, and presses the switch button to display the no-load voltage value; When welding, the digital tube displays the actual current value, and presses the switch button to display the actual voltage value; When it fails, the fault code is flashed; When the internal menu is introduced, the internal dish code and corresponding parameters are displayed.
2	Switch	Short press to switch current and voltage display Long press 3s to enter or exit the internal menu
3	Welding rod	Manual welding rod function. When using the internal menu interface, adjust the internal menu code or menu parameters to a smaller size.
4	Carbon arc gouging	Carbon arc gouging mode. When the internal menu interface is used, adjust the increase of the internal menu code or menu parameters
5	VRD	Turn VRD on or off When using the internal menu interface, it is used to toggle the selection menu code or menu parameters

6	Thrust current adjustment knob	Adjust the thrust current
7	Arc current adjustment knob	Adjust the arc starting current
8	Welding current adjustment knob	Adjust the welding current
9	USB	USB flash drive upgrade
10	RFID card swiping	Swipe to lock or group control to swipe the card

3.2 Interior menu

Step

1. Long press the Switch button to enter the internal menu, and the digital tube displays the internal menu code

2. Short press the VRD button to switch between internal menu codes or internal menu parameters;

3. Short press the welding rod button, you can adjust the internal menu code or internal menu parameter reduction, when adjusting the internal menu parameters, long press for 3s, you can quickly adjust the value to decrease, and then short press to stop the adjustment;

4. Short press the carbon arc planing button to adjust the internal menu code or internal menu parameter increase, when adjusting the internal menu parameters, long press for 3s, you can quickly adjust the value increase, and then short press to stop the adjustment.

- Show hidden internal menu (F09)

ON shows the hidden internal menu, OFF does not show the hidden internal menu.

Table 3-2 Internal menu parameter table

code	Feature name	unit	Adjustment range	Step length	Default
F01	Factory reset	/	/	/	/
F09	Show hidden internal menus	/	OFF: Hide ON: Show	/	OFF
F31	Arc current rise time	s	0-1	0.001	0.003
F34	Welding current transition time	s	0-1	0.001	0.001
F53	Arc current duration	s	0~1	0.001	0.2
F54	Anti-stick current	A	50-300	1	50
F55	Anti-stick determination time	s	0~3	0.01	1
F56	Thrust current transition time	s	0~1	0.001	0.001
F57	Thrust current duration	s	0~1	0.001	0.001
F80	Swipe lock enable	/	OFF: Disable ON: Enable	/	OFF

F81	Card number storage and deletion	/	1-50	1	/
F84	Host macid	/	0-15	1	1
FA0	Group control enablement	/	OFF: Disable ON: Enable	/	OFF
FB0	Software version	/	/	/	/
FB1	Hardware version	/	/	/	/
FB2	IAP version	/	/	/	/
FB3	Fault inquiry	/	0-199	1	/
FB6	Welding machine model query	/	/	/	/
FB7	Power level query	/	/	/	/
FB8	Adapt to grid level query	/	/	/	/

1.1 Electrode arc welding internal menu function description

The welding rod is a manual arc welding function. It can realize the welding of acidic, alkaline, cellulose and other types of welding rods of carbon steel and stainless steel.

Common welding rod process specifications are as follows:

Table 3-3 Welding process specification table of welding rods

Welding process specification for electric welding rod				
Welding rod diameter (mm)	2.5	3.2	4	5
Welding Current (A)	60-100	80-150	120-160	160-200

Step

1. Press the welding rod button to enter the manual arc welding function, and adjust the welding current through the corresponding current knob on the panel;
2. After the parameter setting is completed, welding can be carried out, and the panel display is shown in Figure 3-2.



Figure 3-4 Welding rod setting interface

- Schematic diagram of welding parameters of arc welding of welding rods

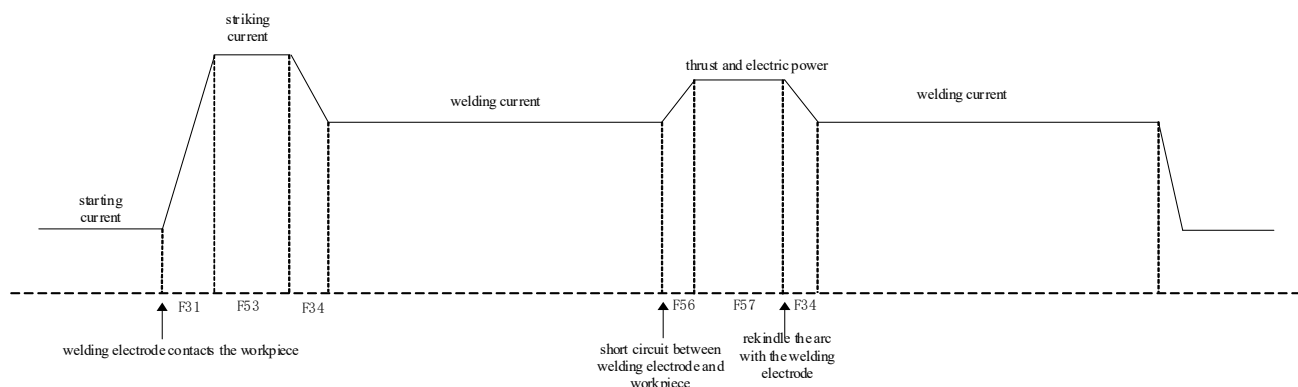


Figure 3-5 Schematic diagram of welding parameters of arc welding of welding rods

- F31、F34、F53

When there is a sticky strip in the arc starting section, it can be adjusted by the following parameters: arc current transition time, arc current duration, arc current, and welding current transition time.

Table 3-4 Electrode arc welding parameter table

code	Feature name	Function
F31	Arc current transition time	The transition time from the starting current to arcing or welding, the longer the time, the slower the rise, and the smoother the arcing. The slower the time, the opposite is true.
F34	Welding current transition time	The longer the time between the arc current and the welding current, the more obvious the length of the weld in the arc section and the weld section. The shorter the time, the opposite is true.
F53	Arc current duration	The longer the arc current lasts, the longer the arc current lasts, which can easily make the weld become large or burn through. The shorter the time, the opposite is true.

- F56、F57

When sticky strips appear during the welding process, the purpose of non-stick strips can be achieved by forcing the melt droplets to transition through three parameters: thrust current, thrust current transition time, and thrust current duration.

Table 3-5 Electrode arc welding parameter table

code	Feature name	Function
F56	Thrust current transition time	The longer the transition time from the welding current to the thrust current, the slower the droplets fall off
F57	Thrust current duration	The longer the time, the longer the welding current plus thrust current.

The thrust current is often used for alkaline and cellulose electrodes below 200A.

When the short circuit exceeds 1 second, the anti-stick protection function is triggered, and it will be reduced to 50A in an instant, making it easy to remove the welding rod. Avoid the welding rod sticking to the workpiece and short circuit cannot be taken, when the short circuit current is large, it will cause the welding rod to turn red, the welding cable will be hot, and the welding tongs and positive and negative output terminals will be burned.

3.3 Description of carbon arc gouging functions

Carbon arc gouging is a method of using gouging welding tongs to clamp the carbon rod, and use the high temperature of the arc generated between the carbon rod and the workpiece to melt the metal and blow it away, to realize the processing of grooves on the metal surface.

Common carbon rod current usage specifications are as follows:

Table 3-6 Specification table of carbon arc gouging welding process

Specification of carbon arc gouging welding process			
Carbon rod diameter (mm)	8	10	12
Welding Current (A)	400-450	500-550	600-650

It is recommended to use 95 square cables for soldering ground wires, with air compression of 0.3-0.6MPA.

Step

1. Press the carbon arc planing button, the indicator light lights up and enter the carbon arc planing function; Select the corresponding welding current according to the diameter of the carbon rod.
2. After the parameter setting is completed, the gouging operation can be performed, and the panel display is shown in Figure 3-4.



Figure 3-6 Carbon arc gouging setting interface

3.4 RFID card swiping function

RFID can create a setting card for welder identity information registration, panel locking and group control system control.

3.4.1 Panel locking

Lock the main panel functions and parameters are not adjusted.

Place the card with the stored card number in the card swiping area in the lower right corner of the host panel to swipe the card, and the digital tube will display "Lock" and then flash the card number and card number number, that is, enter the locked state. Except for the toggle button, all other buttons and knobs will indicate the LOCK status. As shown in Figure 3-5



Figure 3-7 Panel locking and unlocking

Use any card with the card number saved to exit the panel lock by swiping the card on the host panel. The digital tube displays the unlock status of UNLK, card number, and card numbering prompt.

When the card number is displayed as "--" on the digital tube when the card is swiped, it means that the card has not entered the memory card number and cannot be used to lock and unlock the panel.



Figure 3-8 Non-lockable diagram

Card number setting

It supports storing 50 card number information and one card can store 50 numbers.



Long press the panel **switch** button for 3s to enter the internal menu; Adjust to F80 through the gouge button, press the **VRD** button briefly, and turn on the card swipe enable switch ON; Short press the VRD button to return to the internal menu code adjustment interface; Adjust to F81 through the gouge button, short press **the VRD** button to enter the card number storage and deletion interface.

a. Card Number Storage:

Under the memory card number interface, the digital tube displays NXX (01-50), indicating the card number that is not stored. After selecting the unstored card number, swipe the card in the lower right corner of the card swiping sensor area, and after completion, the digital tube will display the corresponding card number, and the card number will change to YXX (01-50). The card number can be stored.

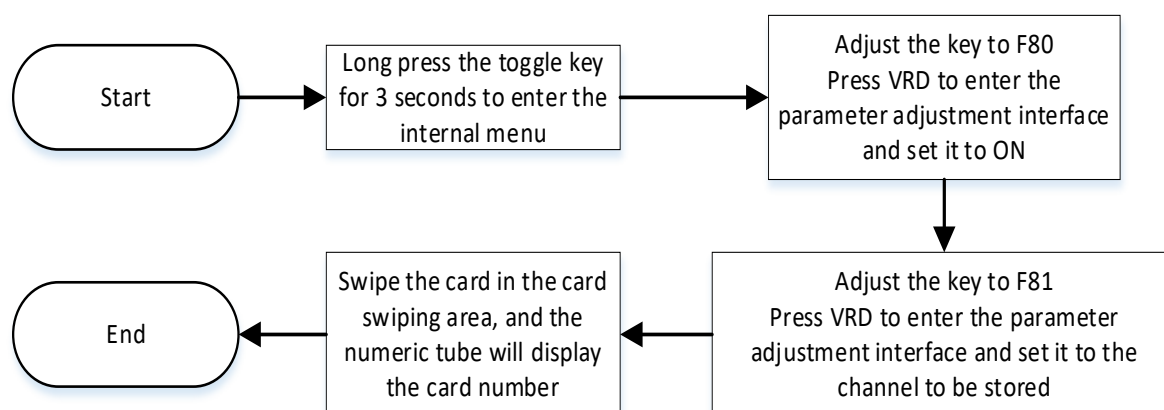


Figure 3-9 Card number storage flow chart

b. Card Number Deletion:

1、Obtain the permission to delete the card number: select F81 from the internal menu, and press the **Switch** button to enter the password input interface; Short press **the welding rod** button to select the number of digits to enter the password; Short press **the carbon arc gouging** button to adjust the input password; When the short press **of the welding rod** button to the digital tube no longer flashes and the password is entered, short press **the switch** button to confirm the password, and the password is correct to temporarily have the permission to delete the card number (it will be invalid if you exit the internal menu); After entering the password incorrectly three times, the password is no longer allowed to be entered in this power-up.

2、Delete a single card number: After obtaining the permission to delete the card number (F81 minimum parameter is ON), in the internal menu F81, press the button to display the card number you want to delete in the digital tube, and swipe the card in the lower right corner to delete the card number in the channel, and the digital tube display will change from YXX to NXX after deletion.

3、Delete card numbers in all channels: After obtaining permission to delete card numbers (F81 minimum parameter is ON), select the F81 parameter in the internal menu to ON, press and hold the **VRD** button for 3s and then display good, which means that the card number has been successfully deleted.

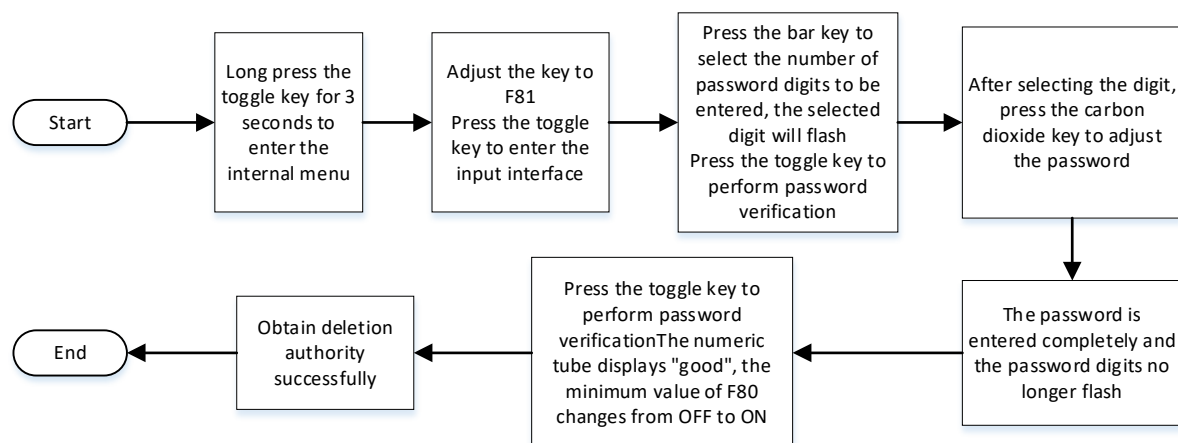


Figure 3-10 Flow chart of obtaining permission to delete card numbers

3.4.2 Group control card swiping

Under the group control system, functions such as welder information registration, panel locking and process specification issuance can be realized.

After connecting the group control box, the group control enable is automatically turned on, and the card is close to the induction area in the lower right corner of the host display board.

Tips

The welding machine's RFID function recognizes non-encrypted ICs and ID cards based on ISO/IEC14443 standards.

3.5 Dedicated Aircraft & Robot Communication (MAC ID)

● Host MACID(F84)

When multiple machines are connected in parallel and use robots or special machines to communicate, the internal ID address of the welding machine is required.

Step

Go to the internal menu, select F84 in the panel, and set the MAC ID value. The default MAC ID for the host is 1.

3.6 Group control mode

● Group Control Enabled (FA0)

Group control enabled flag, ON turns on group control mode, OFF turns off group control mode, and defaults to OFF.

For detailed use of the group control function, please refer to the "Megmit SMARC-CLOUD Intelligent Welding Management System User Manual".

3.7 VRD anti-electric shock function

When the VRD light is lit, the output voltage is reduced to less than 14V, which can effectively reduce the risk of electric shock to welding workers when working in humid and confined spaces.

3.8 Fault Log Inquiry (FB3)

Query the history of failures. Can store 200 historical faults (channel numbers 0-199)

Step

Press and hold the toggle button to enter the internal menu, switch to Fb3 through the carbon arc gouging button and confirm the channel number interface through the VRD button. With the welding rod and carbon arc gouge key, the channel number can be switched up or down, and the corresponding fault code can be viewed. 0 indicates the latest fault, and F00 indicates the boot self-test.

3.9 Upgrade function (USB)

The welding machine comes with an upgraded interface. Software upgrades can be performed through USB flash drives, and factory reset upgrades can also be performed.

3.9.1 Process software upgrade

Upgrades to software and hardware updates

Step

Shut down, insert the USB flash drive, press and hold toggle +VRD and turn on at the same time, release the button when the digital tube shows to read the USB flash drive file, wait for the display of "ALLE", unplug the USB flash drive and shut down and restart, automatically upgrade to normal display, and the upgrade is complete.

3.9.2 Factory reset upgrade

Upgrade back to factory procedures.

Step

Turn off the machine, press and hold the carbon arc gouging + VRD at the same time and turn it on, the welding machine will restore the factory upgrade state and display the upgrade progress, release the button, and wait for the display HLLO to enter the normal state and the recovery is completed.

3.10 Factory Default Reset

All set parameters are not saved, and all are reverted to factory defaults.

Step

After long pressing the "switch button" digital tube to display F01, and then long press the VRD button for 3 seconds to display good, and the factory parameters are successfully restored. As shown in Figure 3-9.

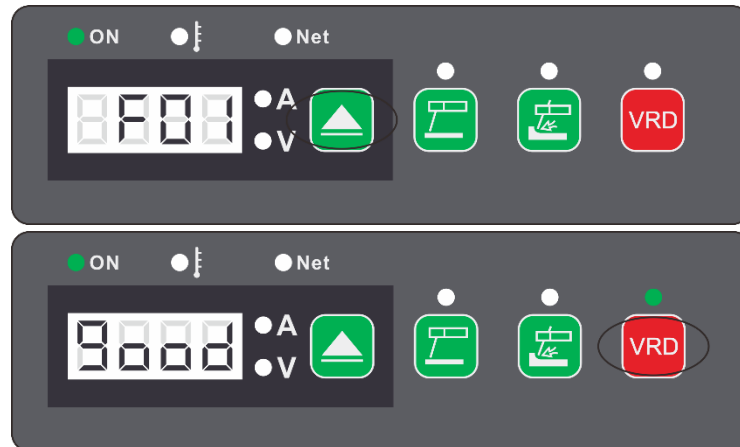


Figure 3-11 F01 menu

3.11 Welding machine information query

When it is necessary to provide some information such as welder configuration, arc welding process package, etc., it can be obtained through the welder serial number or the code in the internal menu of the welder.

- The welding machine host query serial number

Step

Method 1: Obtain the serial number directly through the welding machine side. As shown in Figure 3-10.

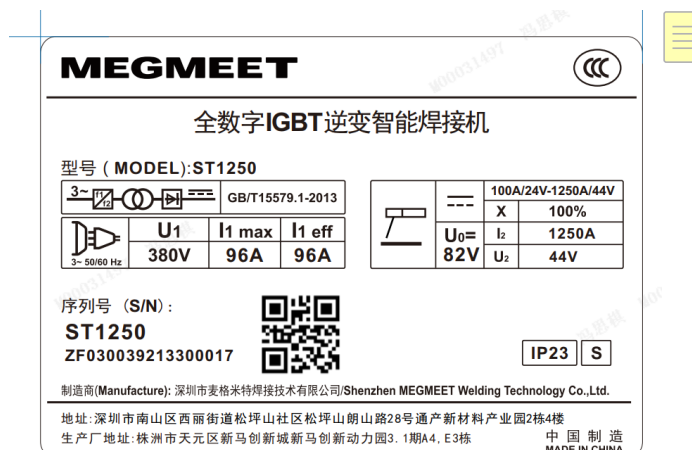


Figure 3-12 Welding machine label diagram

Method 2: Get the serial number by combining the function keys

1. At the same time, press and hold the "welding rod" + "carbon arc gouging" button, and the digital tube displays "rEAd" to enter the serial number query interface;
2. Query the serial number backwards through the carbon arc gouging key,
3. The digital tube displays the serial number, a total of 4 groups, press the carbon arc gouging button to query backwards, press the welding rod key to query forward.

Internal menu welder information query

Step

Long press the **"Toggle"** key to enter the internal menu. Query via the following internal menu code.

Table 3-7 Internal menu code table

code	Feature name	
FB0	Software version	Upgrade
FB1	Hardware version	
FB2	IAP version	The version number of the USB flash drive upgrade
FB6	Welding machine model query	AC/DC/DCCE
FB7	Power level query	1000A/1250A
FB8	Adapt to grid level query	220V/380V/575V

3.12 Smart function description

When the power supply is powered on, it starts to rotate at low speed, and the fan speed is shown in Table 3-8 below.

Table 3-4 Fan tachometer

Fan speed	Trigger conditions
Low speed	The temperature inside the welding machine is below the threshold
High speed	The internal temperature of the welding machine is greater than the threshold
Stop	Standby for 5 minutes

Chapter 4 Fault diagnosis

4.1 Welding machine fault indication

When an overtemperature fault occurs inside the welder, the overtemperature indicator light on the power panel will illuminate. As shown in Figure 4-1.

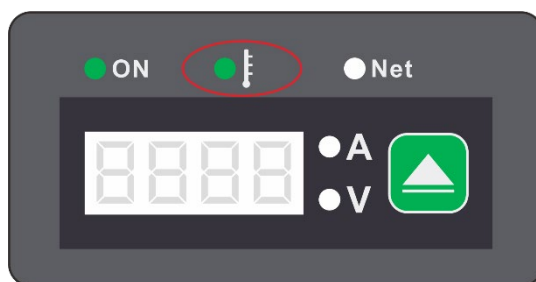


Figure 4-1 Fault code over-temperature display

4.2 Welding machine fault codes and countermeasures

When the welder fails, the welder's panel digital tube alternately displays the fault code. As shown in Figure 4-2



Figure 4-2 Fault code display (change diagram)

The fault code and cause countermeasures of the welding machine are shown in Table 4-1 below.

Table 4-1 Welding machine failure and cause countermeasures

Trouble code	Digital tube flashing display		Fault content	Cause	Countermeasures
E1	E1	None	Short circuit power on failure	Power on in case of output short circuit	Clear short circuit conditions
E3-1	E3	--1	The first internal power supply is abnormal	The input bus ripple is too large	Check that the input cable is properly connected; Check whether the input power supply is normal;
E3-2	E3	--2	The first internal power supply is abnormal	The input power supply is undervoltage	Check that the input cable is properly connected; Check whether the input power supply is normal;
E3-3	E3	--3	The first internal power supply is abnormal	The input power supply is overvoltage	Check that the input cable is properly connected; Check whether the input power supply is normal;

E3-4	E3	--4	The second internal electrical anomaly	The input bus ripple is too large	Check that the input cable is properly connected; Check whether the input power supply is normal;
E3-5	E3	--5	The second internal power supply is abnormal	The input power supply is undervoltage	Check that the input cable is properly connected; Check whether the input power supply is normal;
E3-6	E3	--6	The second internal power supply is abnormal	The input power supply is overvoltage	Check that the input cable is properly connected; Check whether the input power supply is normal;
E4-1	E4	--1	Welder Abnormal temperature	Original IGBT Module overtemperature 1	Use in strict accordance with the rated load sustaining rate range; Check whether the welding machine vent is blocked; clean the radiator; Check whether the fan is working properly; Check whether the IGBT module on the primary side is normal
E4-2	E4	--2	Welder Abnormal temperature	Secondary edge diodes Module overtemperature 1	Use in strict accordance with the rated load sustaining rate range; Check whether the welding machine vent is blocked; clean the radiator; Check whether the fan is working properly; Check whether the secondary diode module is normal
E4-3	E4	--3	Welder Abnormal temperature	Original IGBT Module overtemperature 2	Use in strict accordance with the rated load sustaining rate range; Check whether the welding machine vent is blocked; clean the radiator; Check whether the fan is working properly; Check whether the IGBT module on the primary side is normal
E4-4	E4	--4	Welder Abnormal temperature	Secondary edge diodes Module overtemperature 2	Use in strict accordance with the rated load sustaining rate range; Check whether the welding machine vent is blocked; clean the radiator; Check whether the fan is working properly; Check whether the secondary diode module is normal
E5	E5	--1 ~ --4,--F	Wrong keys	The button was pushed to death when it was installed; The button does not bounce back when pressed;	Check the corresponding numbered buttons;
E6-1	E6	--1	Output overcurrent	The first output is overcurrent	Check if the output is shorted
E6-2	E6	--2	Output overcurrent	The second output is overcurrent	Check if the output is shorted

E6-4	E6	--4	The output current is unbalanced	2 Current outputs are unbalanced	Please contact after-sales processing
E7-1	E7	--1	Communication failure	Abnormal communication between the host display board and the host control board	Check the communication line between the host display board and the host control board
E8	E8	None	Output overvoltage	the input voltage is too high; The main transformer is damaged; Wrong output wiring;	Check whether the input voltage is normal; Check whether the main transformer is damaged; Check the output wiring
E9-1	E9	--1	The original side 1 is overflowing	IGBT damage; The main transformer is damaged; Secondary side output diode Damaged modules;	Check the main power board; Check the main transformer; Check the output diode module
E9-2	E9	--2	The original side 2 is overflowing	IGBT damage; The main transformer is damaged; Secondary side output diode Damaged modules;	Check the main power board; Check the main transformer; Check the output diode module
E10-1	E10	--1	The original side 1 is overvoltage	insufficient power from the input power supply; the input voltage is too high;	Check the input power supply; Check the input voltage
E10-2	E10	--2	The original side 2 is overvoltage	insufficient power from the input power supply; the input voltage is too high;	Check the input power supply; Check the input voltage
E11-1	E11	--1	Current Hall 1 is not plugged in	Current Hall the connector is not plugged in;	Plug in the current Hall connector
E11-2	E11	--2	Current Hall 2 is not plugged in	The current Hall connector is not plugged in;	Plug in the current Hall connector
E12-2	E12	--2	Software versions don't match	Host control board Software versions don't match	Upgrade the welder firmware or contact the manufacturer
E12-8	E12	--8	Software versions don't match	Group control communication board Software versions don't match	Upgrade the welder firmware or contact the manufacturer
E15-1	E15	--1	Auxiliary power supply failure	Host control board Auxiliary source failure	Please contact after-sales processing

E20-1	E20	--1	Veneers are not registered	The host dashboard is not authorized	Please purchase the original authorized circuit board
E20-2	E20	--2	Veneers are not registered	The host control board is not authorized	Please purchase the original authorized circuit board
E20-5	E20	--5	Veneers failed Whole machine test	The host failed the whole machine test	Please contact after-sales processing
E20-7	E20	--7	EEPROM error	Host Display Board EEPROM Timeout	Please contact after-sales processing
E20-8	E20	--8	EEPROM error	There is an error in the EEPROM data of the host display board	Please contact after-sales processing
E20-9	E20	--9	EEPROM error	The host control board EEPROM timed out	Please contact after-sales processing
E20-10	E20	-10	EEPROM error	Error with the EEPROM data of the host control board	Please contact after-sales processing
E22	E22	--1	The channel has no parameters	The welding parameters do not match, and the channel has no parameters	Please contact after-sales processing
E23-1	E23	1	Hardware versions don't match	The hardware version of the host display board does not match the software	Please contact after-sales processing
E23-2	E23	2	Hardware versions don't match	The console control board hardware version does not match the software	Please contact after-sales processing
E27	E27	--8	JOB number is out of range	Group control JOB number Beyond range 1-99	Check whether the JOB number issued by the group control system complies with specification 1-99
E29	E29	None	Group control communication failure	Welders and clusters Controller communication failure	Contact after-sales

E30	E30	None	The group control issuance parameters exceed the range	The process parameters issued to the welding machine by the cluster control system exceed the range	Cluster control system is issued Correct process parameters
E32	E32	None	The group control needs to swipe the card and the welding machine does not swipe the card	The cluster control system requires the welding machine to be swiped before it can be used, but the card is not swiped when used	Please swipe your card before use

Chapter 5 Maintenance

5.1 Daily inspections

Safety warnings

Daily inspections must be carried out after disconnecting the power supply of the user's distribution box and turning off the power supply of the machine (except for visual inspections that do not require contact with conductive materials) to avoid personal injury accidents such as electric shock and burns.

- Instructions for use
 1. Consistent daily inspections are essential to maintain the high performance and safe operation of this welding equipment.
 2. Routine inspections are carried out according to the items in the following list and should be cleaned or replaced when appropriate.
 3. To ensure the high performance of this welding machine, please use the parts provided or recommended by Shenzhen Magmit Welding Technology Co., Ltd.
- Welder

Figure 5-1 Daily inspection content of the welding machine

project	Check the main points	Note:
Front panel	Whether each mechanical appliance is damaged or loose Whether the cable push-in connector is tight Observe if the fault indicator light is flashing	Cable push-in connectors as a regular inspection item. If there is a non-conforming situation, it is necessary to conduct internal inspection of the welding machine, supplement fastening or replace parts
Rear panel	Whether the input power cord is loose or broken whether the air inlet is unobstructed and free of foreign objects	
Top plate	Check for loose bolts	
Base plate	Check the wheel legs for damage or looseness (optional)	If there is a non-conformity, it is necessary to supplement the fastening or replace the parts
Side panel	Check that the side panel is not loose	
Regular	Check the case for discolorization or overheating Check whether the sound of the fan is normal when the welding machine is running Check whether there is any peculiar smell, abnormal vibration or noise during welding when the welding machine is running	If there is an abnormal situation, the welding machine needs to be inspected internally

- cable

Figure 5-2 Cable daily inspection content

project	Check the main points	Note:
Grounding cable	Check the grounding wire of the workpiece.	If there is a non-conformity, it is necessary to supplement the fastening or replace the parts.
Welding cables	Check whether the cable insulation is worn or other damaged, and whether there are exposed conductive parts. Check whether the cable is stretched by abnormal external forces. Check whether the cable connecting the workpiece is firmly connected to the workpiece	In order to ensure safe and normal welding, appropriate methods should be used to inspect according to the conditions of the work site

5.2 Check regularly

Safety warnings

1. To ensure safety, regular inspections need to be performed by professionally qualified personnel;
2. Periodic inspections must be carried out after turning off the power supply to the user's distribution box and turning off the power supply of the machine. Avoid personal injury accidents such as electric shock and burns;
3. Because of the capacitor discharge, the inspection operation can only be carried out after the welding machine is powered off for 5 minutes.

● Operating instructions

1. To prevent static electricity damage to semiconductor components and circuit boards, remove static electricity in advance by wearing an anti-static device or touching the metal parts of the chassis with your hands before touching the conductors and circuit boards of the machine's internal wiring.
2. When cleaning plastic parts, do not use solvents other than neutral detergents for household use.

● Check the plan regularly

1. In order to ensure the long-term normal use of this equipment, regular inspections must be carried out.
2. Regular inspections should be meticulous, including internal inspection and cleaning of the equipment.
3. Regular inspections are generally carried out once every 6 months, but if there is a lot of dust at the welding site or oily fumes, the regular inspection time should be shortened to once every 3 months.
4. The recommended schedule of periodic inspections is shown in Table 5-3.

Figure 5-3 Regular inspection schedule (XXXX year)

Serial number	Schedule the inspection date	Actual inspection date	Inspect people
1	XXXX-XX-XX		
2	XXXX-XX-XX		
3	XXXX-XX-XX		
...	...		

● Check the content regularly

(In addition to the following items, users can add additional inspection items according to the actual situation)

1. Dust removal inside the welding machine

Removing the welder side panels allows dry, compressed air to blow away splashes and dust that accumulate inside the welder before removing dirt and foreign matter that are difficult to blow out.

Note

Too much dust accumulation on the radiator will affect heat dissipation and easily cause over-temperature protection.

2. Welding machine inspection

Disassemble the side panel of the welding machine, check whether the welding machine has any signs of odor, discoloration, overheating damage, and check whether the connection part is loose.

3. Cable and gas pipe inspection

To inspect safety grounding wires, cables, air pipes, etc., it is necessary to carry out more detailed inspections because of the daily inspection items and routinely supplement the fastening.

● Voltage test and insulation test

Voltage resistance and insulation tests should be carried out by our after-sales service personnel, or by personnel with expertise in electrical and welding machines.

Step

Turn off the power supply to the distribution box;

1. Remove all enclosure safety grounding wires;
2. Connect the three input power cables into one piece (excluding yellow and green wires) to short circuit;
3. Place the welder power switch in the "ON" position.
4. On the secondary side, the positive output terminal and the negative output terminal relate to wires to short circuit;
5. The short-circuit cable used above should be of the same model and the cross-sectional area should not be less than 1.25mm².

Note

All changes and treatments for withstand voltage testing must be restored after completing the withstand voltage test.

5.3 After-sales service

● Warranty card

Each device has a warranty card, please fill in the relevant content on the warranty card.

Please read the contents of the warranty card carefully and keep it safe.

● Repair

Please check the  content of the 4.2 welding machine fault code and countermeasures first and preliminarily troubleshoot the fault or record the fault information.

Contact your local dealer if repair or replacement parts are required. Please use the components and accessories provided or recommended by Shenzhen Magmit Welding Technology Co., Ltd.

The company has a one-year warranty. The warranty period begins with the purchase time recorded in the warranty card or purchase invoice.

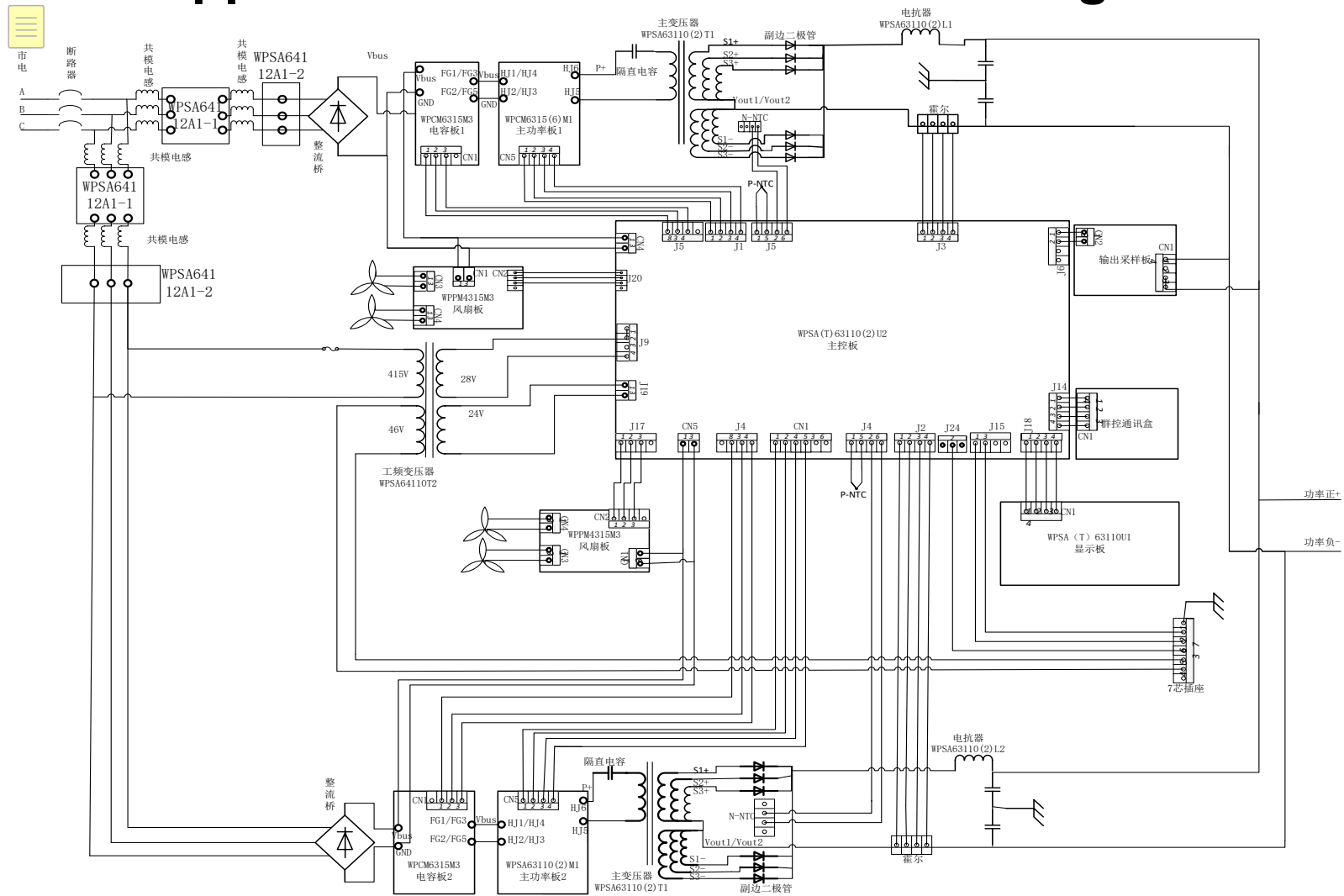
If the product is damaged due to abnormal use by the user, it cannot be guaranteed, but it can be dealt with according to the repair method.

Appendix1 Technical specifications

Appendix 1-1 Technical specifications

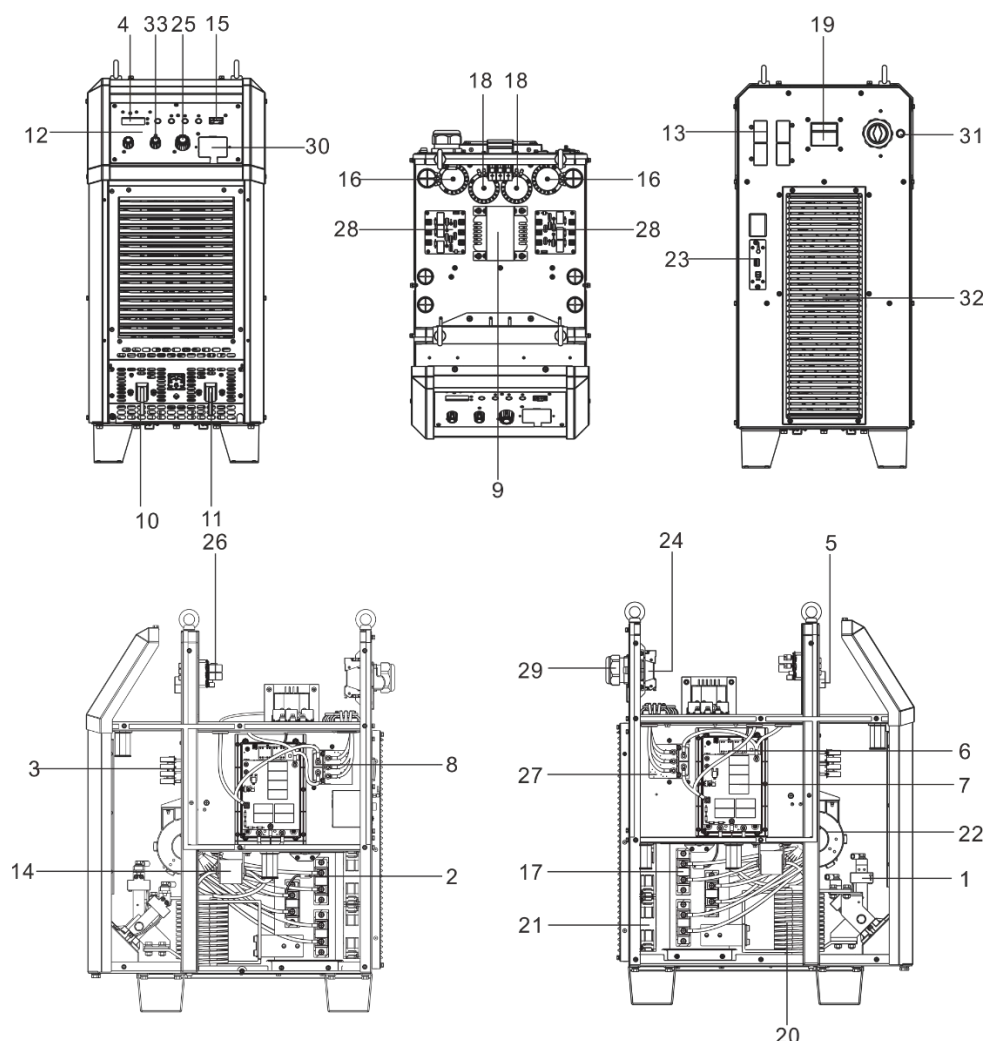
Content		Fluxon1250
Input	Rated voltage/frequency	Three-phase without centerline, 415Vac 50Hz
	Voltage operating range	Voltage: 340 VAC~475VAC; Voltage imbalance rate: $\leq 5\%$; Frequency: 30~80Hz
	Input power factor (Rated Status)	> 0.94
output	No-load voltage rating	82V
	Hand welded rated output	100A/20V—1250A/44V
	Rated load sustaining rate (Ambient temperature 40°C)	1250A@100%
	Rated output voltage change rate	$\leq \pm 5\%$ (hot and cold state and input voltage $\pm$ fluctuate by 10%)
	Output characteristics	CC (Constant Current Characteristics)
	Output current range (static load).	100~1250A
Mainly control performance	LED display	Set and weld voltage and current value display, fault code display, internal menu display
	Hand welding current	100A~1250A
	Carbon arc gouging current	100A~1250A
	USB	The software of the whole machine can be upgraded through the USB flash drive
	RFID	Permission Management and Cluster Control (Distributed Swipe)
	Cluster control	Cluster monitoring of welding parameters and welding machine status (optional)
Protection function		Input phase loss protection, input overvoltage protection, input undervoltage protection, output overvoltage protection, overheat protection, primary overcurrent protection, output overcurrent protection, etc
Efficiency of the whole machine		$> 91\%$
Insulation grade		Transformer F, reactor H
environment	Place of use	Dust, acids, corrosive gases or substances in the surrounding air do not exceed normal levels (except for these substances due to the welding process)
	Altitude	$\leq 2000\text{m}$
	Ambient temperature	$-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$ (Ambient temperature is $40^{\circ}\text{C} \sim 50^{\circ}\text{C}$, please lower the rating)
	Humidity	Less than 95%RH, no bead condensation
	Vibration	Less than 200Hz, less than 1.0m2/s3
	Storage temperature	$-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$
structure	Protection level	IP23
	Cooling method	Forced air cooling, fan intelligent speed adjustment
Dimensions	(Length× width× height).	676x395x888mm
weight		84kg

Appendix2 Electrical connection diagram



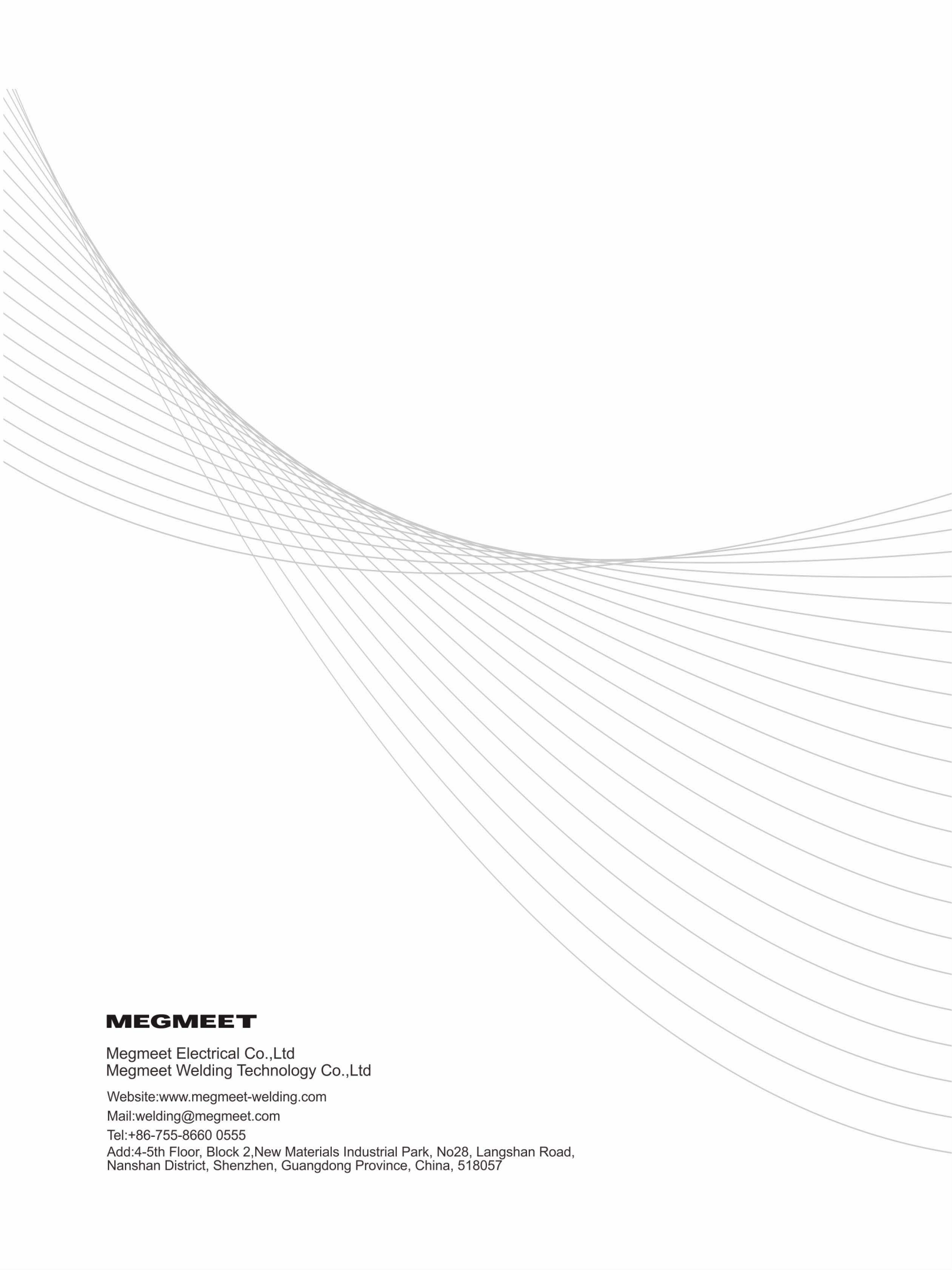
Appendix 2-1 Fluxon 1250 electrical wiring diagram

Appendix3 Structure schedule and order list



1	Current Hall Sensor	R27060318	18	WPSA64112L1 Common Mode Choke	R22033237
2	Temperature Sensor	R27050274	19	Waterproof rubber sleeve for air switch	R29060225
3	WPSA64112A3 Output EMC Board	R11110G2B	20	WPSA63112L1 Output Reactor	R22071774
4	WPST63110U1 Host Display Board	R111000TY	20	WPSA63112L1 Output Reactor	R22071775
5	WPSA63112U2 Main Control Board	R111000SN	21	DC Fan	R34020011
6	WPCM6315 M1 Main Power Board	R1111002R	22	WPSA63112T1 Main Transformer	R23015732
	WPCM6316 M1 Main Power Board	R111100DJ	23	3rd Generation 4G Group Control Box	R13401417
7	WPCM6315M3 Gold Film Capacitor Board	R1111002U	24	Air Switch	R34011202
8	Input Rectifier Bridge	R26060739	25	Large Knob on Welding Source Panel	R29141103
9	WPST63110T3 Power-frequency Transformer	R23040058	26	WPPM4315M3 High-voltage Fan Board	R111100EN
10	Positive OT Socket	R300400TD	27	WPSA64112A1-2 Input EMC Board	R11110G83
11	Negative OT Socket	R300400TD	28	WPSA64112A1-1 Input EMC Board	R11110G82
12	Fluxon 1250 Host Mask	R29109060	29	Double-locking Nylon Connector	R29133901
13	End Cap	R29060226	30	WPST6314U7 Card Swiping Single Board	R29061908
14	DC Blocking Capacitor	R21031128	31	Protective Tube	R27010154
15	USB waterproof rubber plug	R29160389	32	Fan Cover	R29142304
16	WPSA64112L2 Common Mode Choke	R22033239	33	Small Knob on Welding Source Pane	R29140623
17	300A Power Diode Module	R26020129			

Appendix 2-1 3-1 Details of the structure of the welding machine



MEGMEET

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