The user manual of welding machine

Safety！

People will may be injured during the arc welding process, so it needs to do the protect job during welding. Please refer to the operator's safety protection guidelines that meet the manufacturer's accident prevention requirements.

Electric shock——It may cause death！！

- Install the machine according to the application standard.
- Don't touch live parts or electrodes when you wear the wet gloves, or wet clothing.
- Please confirm it is insulated from the ground and the workplace.
- Please confirm the work station is safe.

Smoke——It may be harmful to health!

- Please use a ventilation and extraction device or a fume purifier to avoid breathing welding gas when welding.

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

- Please use suitable welding masks and filters, and wear protective clothing to protect your eyes and body.
- Protect bystanders from harm with a suitable mask or curtain.

Fire

- The welding sparks may cause fire. Please confirm that there are no flammable materials near the welding station.

Noise——Excessive noise is harmful to human hearing!

- Use ear shields or other hearing protection to protect your ears.
- Warn bystanders that noise can cause potential damage to their hearing.

Malfunctions——Ask professional help when you are in trouble!!

- If you encounter difficulties during installation and operation, please check according to the relevant content of this manual.
- If you still can't fully understand after reading, or can't solve the problem according to the guide of this manual, you should contact your supplier or our company's technical service department immediately for the help of professionals.

Don't use this machine for operations other than welding. (Eg: Not for defrosting of pipes, etc.)

Requires add an earth leakage protection switch when you use the machine！！！

The main of using and characteristics

The welding machine is a high-performance semi-automatic welding machine for argon (Ar) or carbon dioxide (CO2) gas shielded welding. It can be used to weld low-carbon steel and low-alloy steel with 0.8-1.6mm diameter carbon steel and solid cored wire. And other components.

Funture

1，Adopt advanced current-type inverter control technology, with reliable quality and stable performance;

2，The advanced digital CPU precise control system can ensure that the welding voltage can be highly stable in the case of grid voltage fluctuations and arc length changes;

3，Small welding spatter, high metal deposition rate, deep molten pool and good forming;

4，The arc send is initiated with a slow wire-feeding strong pulse;

5，Small size, light weight, simple operation, economical and practical!

Warning！

Confirm that the equipment's electromagnetic compatibility is Industrial Class A. This equipment may generate radio interference. Users should take adequate precautions.！

Technical Parameters

Model / Parameters	NBC-500	MIG-500	MIG-350
Voltage（V）	Three phase AC380V±10%		Three phase AC380V±10%
Frequency（Hz）	50		50
Rated input current（A）	43		19.2
No-load voltage（V）	60		60
Output current regulation（A）	30-460		30-350
Output voltage regulation（V）	16-37		15.5-31.5
Load duration	60%		60%
Efficiency	85%		85%
Insulation level	F		F
Ip	IP21S		IP21S

Installation, operation instructions

The welding machine is equipped with a power supply voltage compensation device. It can continue to work,when the power supply voltage changes within 10% of the rated voltage.when using a longer cable, it is recommended to use a larger cross-section cable; The connection cable is too long, which may have a greater impact on the arcing performance of the welder and other performance of the system.

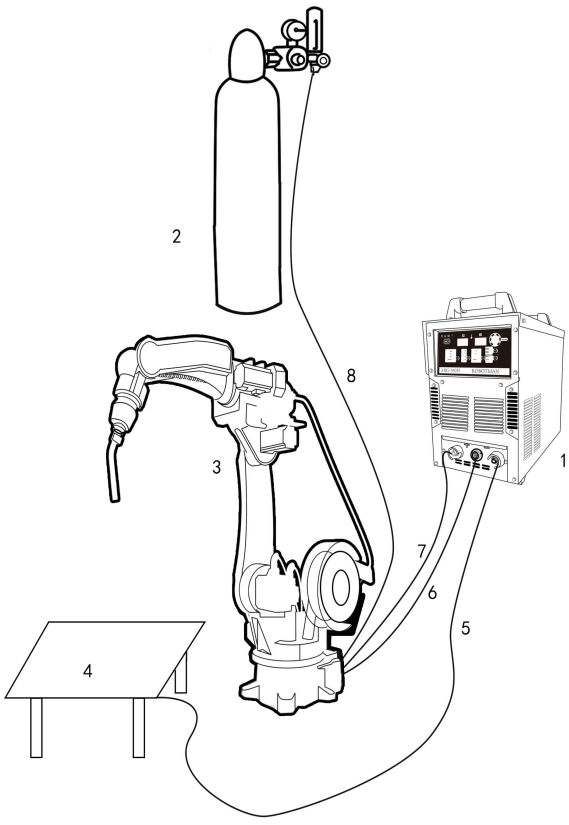
1 Confirm the welding machine vents are not covered and blocked to avoid failure of the cooling system.

2 Using the wire with a conductive cross-sectional area of not less than 6mm2 connect the ground .The method is to connect the grounding screw from the back of the welding machine to the grounding device, or confirm that the grounding end of the power socket has been reliably grounded separately. To ensure safety, you can use both methods at the same time.

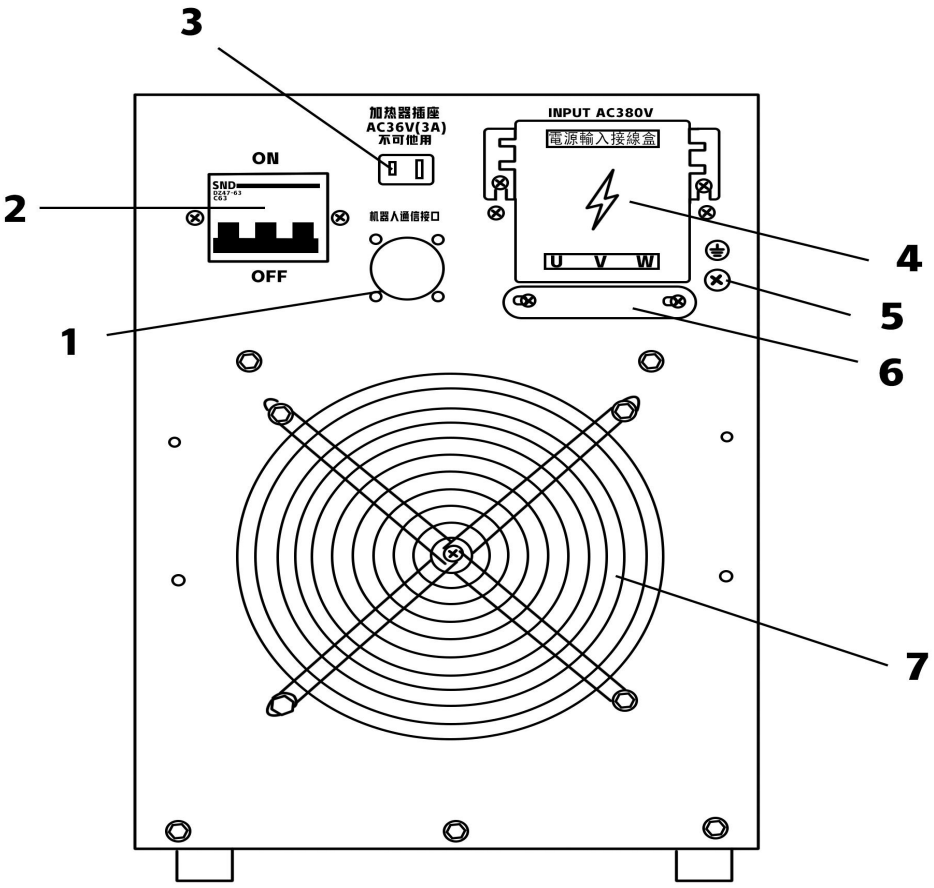
3 Installation diagram

（1）Installation diagram

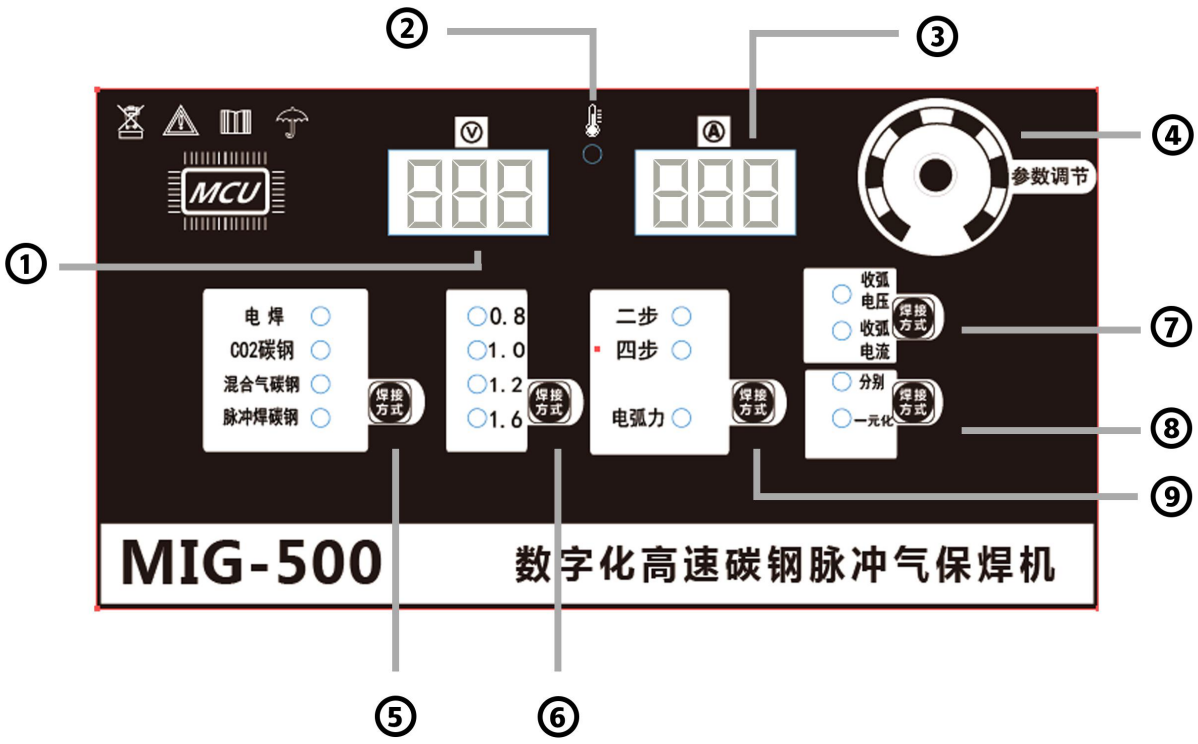
No.	Funture
1	Welding robot power
2	Gas cylinder
3	Robotic arm body
4	Welding fixture
5	Welding output line
6	Wire feeder, solenoid valve control line
7	Welding output positive wire
8	Trachea



No.	Funture
1	Robot control cabinet communication cable socket
2	3 phase 380V power switch
3	AC36V carbon dioxide heating meter socket
4	3-phase 380V power junction box
5	Ground screw
6	3-phase 380V power line crimping card
7	Cooling fan



No	Funture
1	Welding voltage display table
2	Protection light
3	Welding current display table shows preset wire feed speed.
4	Parameter adjustment knob
5	Welding selection button
6	Wire diameter button
7	At 4 steps, the arc closing voltage and arc closing current selection buttons
8	Total, set the keys button
9	2 step, 4 step and arc force selection buttons



Precautions and precautions

1. Environment

1） The welding operation should be performed in a relatively dry environment, and the air humidity should generally not exceed 90%.

2） The ambient temperature should be between -10°C and 40°C.

3） Avoid welding in sunlight or rain, and do not allow water or rain to penetrate the welder.

4） Avoid welding in dusty areas or environments containing corrosive gases.

5） Avoid gas shielded welding operations in environments with strong air flow.

2. Safety

Over-current and over-heat protection circuits have been installed in the welding machine. When the output current and internal temperature exceed the set standards, the welding machine will automatically stop working; however, excessive use (such as excessive voltage) will still cause Damage, so you still need to pay attention to the following:

1）**Ensure good ventilation!**

The welding machine is a small welding machine. During operation, a large working current passes. Natural ventilation cannot meet the cooling requirements of the welding machine. Therefore, a fan is installed to effectively cool the welding machine to make it work smoothly. The user should confirm that the ventilation place is not covered or blocked, and the distance between the welding machine and surrounding objects should not be less than 0.3 meters. The user should always pay attention to maintaining good ventilation, which is better for the welding machine to work and ensure a longer service life.

2）**Don’t overload!**

Users should remember to observe the maximum allowable load current (relative to the selectable load duration) at any time, and keep the welding current not exceeding the maximum allowable load current. Current overload will significantly shorten the life of the welder and may even burn it.

3）**Prohibit excessive voltage！**

The power supply voltage is listed in the "Main Performance Parameters" table. Under normal circumstances, the automatic voltage compensation circuit in the welding machine will ensure that the welding current remains within the allowable range. If the power supply voltage exceeds the allowable value, the welding machine will be damaged, and the user should fully understand the situation and take corresponding precautions.

4）A grounding screw is attached to the back of each welding machine and marked with a grounding mark. Before use, select a cable with a cross-section greater than 6mm2 to reliably ground the welding machine casing to discharge static electricity or prevent possible accidents due to leakage.

5）If the welding machine exceeds the standard load duration, the welding machine may suddenly enter the protection state and stop working. This means that the welding machine exceeds the standard load duration and the excessive thermal energy triggers the temperature control switch to stop the welding machine. The alarm indicator on the front panel lights up. In this case, you do not have to unplug the power plug so that the cooling fan can continue to work to cool the welder. When the alarm indicator goes out, the temperature drops to the standard range and welding can be restarted.

Routine maintenance

1 Use dry and clean compressed air to blow off the dust regularly. If the welding machine is used in the environment with heavy smoke and air pollution, the welding machine should be dusted every month.

2 The pressure of compressed air should be at a reasonable level so as not to damage the small components in the welding machine.

3 Regularly check the internal circuit connection of the welding machine, confirm that the line connection is correct, and the connector is firm (especially the connector or component is inserted). If rust and looseness are found, sandpaper should be used to remove the rust layer or oxide film and reconnect. And tighten it.

4 Avoid water or water vapor from entering the welding machine. If this happens, dry the inside of the welding machine. Then, use a megohmmeter to measure the insulation of the welder (including between the connection nodes and between the connection point and the casing). Welding work can only be continued if it is confirmed that there are no abnormalities.

5 If the welding machine is not used for a long time, it should be returned to the original box and stored in a dry environment.

Malfunction analysis

Attention：The following operations require the operator to have sufficient electrical expertise and comprehensive safety common sense. The operator should hold a valid qualification certificate that can prove his ability and knowledge. Before performing maintenance, we suggest that you contact our company's technical service department first.

Malfunction	Exclude
The digital display has no display, the indicator light is off, the fan does not rotate, and there is no welding output	1、Ensure the switch on or off. 2、Ensure power with the input cable
The digital display has no display, the fan rotates normally, the indicator light is off, and there is no welding output.	1、The input fuse of the control transformer is broken, or check whether the transformer connection cable is connected well. 2、The control transformer is broken. 3、The main control board is broken. 4, Missing phase
The display of the meter head is normal, the fan is rotating normally, the indicator light is normal, pressing the torch switch, there is no response.	1、Confirm whether the wire feeder cable is connected properly. 2、Check the welding torch switch and connection cable. 3、The main control board is broken.