USER'S MANUAL

MODEL: 800/1000/1250

PREAMBLE

Thank you for choosing our products.

After the equipment arrives, please check carefully whether the equipment is damaged during transportation or does not match the packing list. If you have any problems, please contact the local agent or our customer service department for timely processing.

This manual provides the user with installation, technical parameters, abnormal diagnosis and elimination, and daily maintenance related equipment. Please read the instruction manual carefully before installation, use and maintenance.

This equipment should be repaired by professional maintenance personnel, and other personnel should not do it.

If there are any omissions in the contents of this manual, please forgive me. Users are welcome to give us valuable comments and suggestions so that we can do better for you and provide better service.

The contents of this manual are subject to change without prior notice; the spare parts sales list and drawings in this book are for the user to easily check and confirm the spare part name, model and sales code when ordering spare parts. Please keep it safe and order it at zero. When providing accessories, provide accurate parts name and model number, so that we can provide you with accurate, fast and thoughtful service.

CONTENTS

Main Uses And Features

MZ series arc welding power sources include MZ-800, MZ-1000 and MZ-1250. This welding machine is a new generation of arc welding machine developed by foreign advanced technology combined with China's national conditions. Adopt digital control, accurate and reliable; adopt IGBT high-frequency soft-switching inverter technology, IGBT work is stable, reliable, fast dynamic response; has the advantages of flexible adjustment, convenient use, reliable performance, advanced control technology, etc., and each component uses blocks Assembled structure. As hand arc welding, double-station can be completely independent operation; as submerged arc welding, it can be easily converted into double-wire submerged arc welding, belt surfacing welding, gas shielded welding and automatic carbon arc gouging, etc. Filament and melting nozzle electroslag welding are the ideal replacement products for domestic automatic welding equipment. Mainly used for welding manual welding and butt welds, lap welds and fillet welds of various steel structures. The product complies with JB/T 7824-1995 Inverter Arc Welding Rectifier Technical Condition Standard and GB15579.1-2013 Standard Requirements.

Normal Working Environment And Conditions

1)The altitude is no more than 1000 meters.

2)The wettest month average maximum relative humidity is 90%, while the monthly average minimum temperature of the month is 25°C.

3)The ambient temperature should not exceed the following limits:

①Maximum temperature 40°C

②Minimum temperature -10°C

4)The use should not seriously affect the gas, steam, chemical deposits, grime, mold and other flammable and explosive materials and corrosive substances used in the welder, and does not allow severe vibration and bumps.

5)The equipment should be placed in a dry, well-ventilated area and protected from direct sunlight and rain.

The main technical parameters

Technical Parameters	MZ-800	MZ-1000	MZ-1250
(VAC)	3P/380V 50Hz	3P/380V 50Hz	3P/380V 50Hz
(KVA)	41.5	51.5	64.5
(VDC)	80	80	80
(%)	60	60	60
(A)	40~800	40~1000	40~1250
(%)	90	90	90
Insulation class	F	F	F
size(mm)	690×365×960	690×365×960	690×365×960
weight(Kg)	75	80	95

Main Structure And Working Principle

1) Main structure and function

MZ series arc welding power supply mainly consists of self-protecting air switch, three-phase rectifier bridge, main transformer, full-bridge IGBT switch, fast recovery diode rectifier, filter reactor, control circuit board, frame, control panel, input terminal and output terminal. And so on. The function of each component is as follows:

①Control circuit board: including digital control system panel, phase shift drive board, input protection board, over current check board and output absorption board. The panel part of the digital control system is used for the realization of the program function, the generation of the output characteristic, the digital parameter display, the digital communication and the control realization of all the protection functions, etc.; the phase shift drive board part realizes the controllable signal voltage generated by the control system Amplify and sequence, generate two sets of PWM waves with opposite phase and phase difference, and output drive full-bridge IGBT switch. At the same time, the overcurrent protection function is implemented to protect the IGBT. The combination realizes the control of the inverter process.

② Full-bridge IGBT switch: Four IGBT tubes form a 'H'-type full bridge with the primary transformer as its load. An alternating voltage is generated at the primary of the main transformer by controlling the turn-on and turn-off of the 'H' bridge. That is to achieve 'inversion'. The front

and rear arms of the 'H'-type full bridge realize the phase shift and the timing difference between turn-on and turn-off, and realize the zero-voltage and zero-current condition switch of the IGBT switch. The loss is greatly reduced relative to the hard switch.

③Fast recovery diode rectifier: full-wave structure, rectification becomes the output energy of the arc welder.

④ Filter reactor: bare aluminum winding, straight rod structure, from the current limiting filter.

⑤ Digital panel: (see Figure 1)

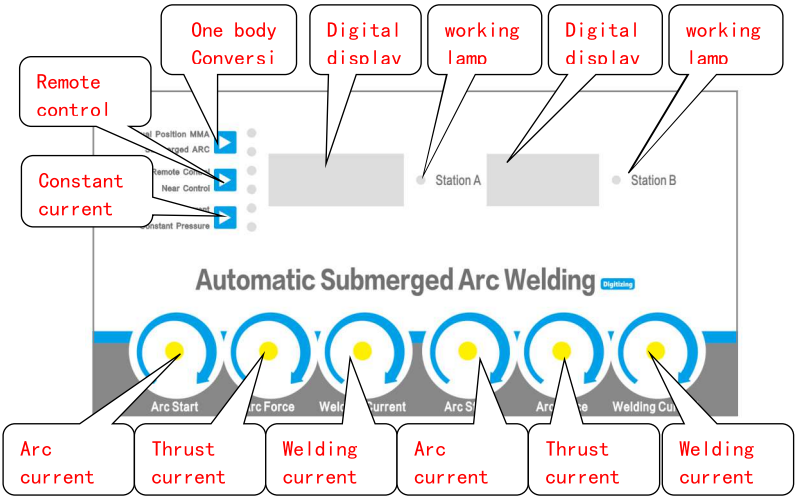

Figure 1, schematic diagram of MZ series digital control panel

Separate/integrated conversion button: Press the kinetic energy to realize the working mode selection of the dual system. When they are separated, the two systems work completely independently to achieve the dual-station function. When integrated, the dual system is connected in parallel in master-slave mode to become a stand-alone system.

Remote control/near control conversion button: Press the kinetic energy to realize the control form selection of remote control and near control. In the case of near control, the system is controlled by a given value of the panel; when remotely controlled, an external setpoint control system is introduced by the control socket.

Constant current/constant voltage conversion button: Converts the constant current output characteristic and the constant voltage output characteristic when pressed.

In the digital display meter, the current or voltage in the respective states is displayed, and the current value is displayed during constant current and the voltage value is displayed at constant voltage; when integrated, the current value is displayed.

Arcing current potentiometer: The arcing current is given, which is convenient for arcing success; A and B are controlled separately.

Thrust current potentiometer: Thrust current is given to prevent sticking wire; A and B are controlled separately.

Welding current potentiometer: In the constant current / constant voltage form, the welding current / voltage reference is respectively realized; A and B are respectively controlled.

When integrated, the A/B potentiometers are only controlled by the A group potentiometer, and the B group potentiometers have no effect.

2) Working principle

MZ series arc welding power supply adopts IGBT soft switching inverter technology. The input is three-phase 380VAC 50Hz grid AC. After power frequency rectification and filtering, the inverter composed of IGBT is converted into 20KHz intermediate frequency AC, and then the intermediate frequency transformer is stepped down and rectified and filtered to obtain DC output that can meet the welding needs. The output parameters are fed back to the control system and integrated with the given parameters to meet the welding output characteristics and achieve stable welding output parameters. The control system simultaneously provides the welding parameters to the digital display to display the welding parameters in real time. Through the role of the relevant system, the dynamic response speed of the welder is increased, and the size and weight of the welder are reduced. Adopting closed-loop control mode, MZ series arc welding power source has good resistance to grid fluctuation and excellent welding performance. The scope of application is quite extensive.

Installation And Commissioning

1) installation

First, please read the instruction manual carefully and check that the products and accessories are in good condition.

Place the MZ power supply in a dry, dust-proof, rain-proof, corrosion-resistant site and connect as described below.

①Arc welding power supply as a double-position hand arc welding connection

The welding cable is connected to the positive terminal of the positive output terminal of welding power source 1 and the positive output terminal 2, and then connected to a welding power supply cables are connected to the negative output terminal of shouting and a negative output terminal 2 ,, are tightened.

②Connection of arc welding power source and trolley control box during submerged arc welding

Insert the two ends of the control cable into the multi-core control socket of the arc welding power supply and the trolley control box, and tighten them.

③Welding cable connection during submerged arc welding

Use two welding cables to connect the "+" output of the arc welding power supply to the welding torch of the trolley; use the other two welding cables to connect the "-" output of the arc welding power supply to the workpiece to be welded. All bolted joints should be tightened and the workpiece and cable should be connected reliably.

2)debugging

First put the power switch on the welding power supply to "OFF", the walking state switch is turned to "manual", and then the power switch on the welding power supply is set to "on" power-on operation, the steps are as follows:

①According to the instruction manual of the arc welding power source, the arc welding power supply is first tested. After the arc welding power supply is normal, first place the welding method selection switch on the arc welding power supply at the desired position.

②For duplex hand arc welding, the button switch 'integrated/separate' select 'separate', 'remote control/near control' switch select 'near control', 'constant voltage/constant current' switch select 'constant current'; see (Figure 3)

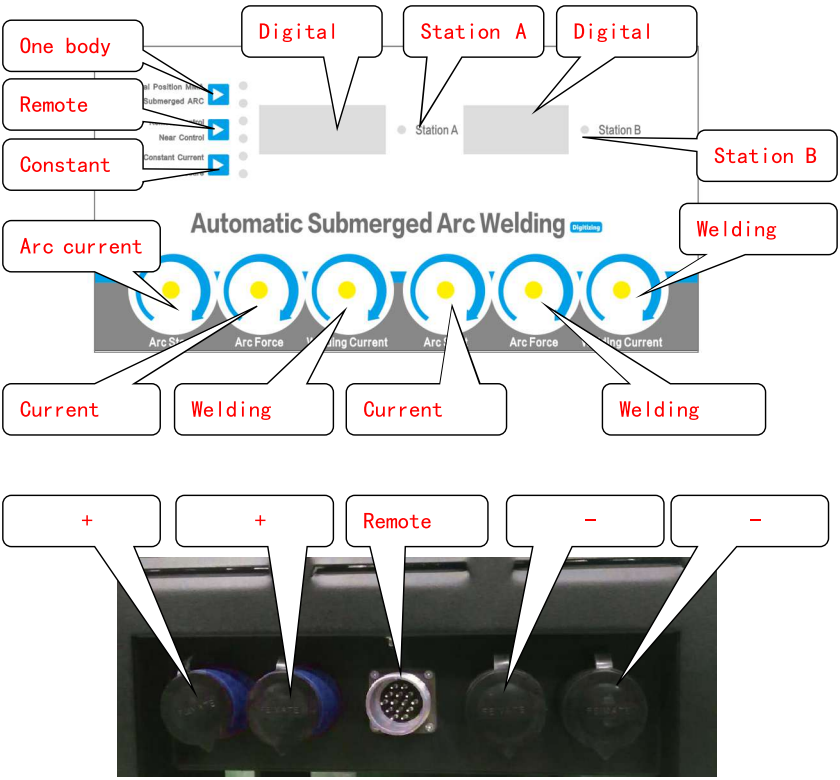

Figure 4: Lower panel diagram of MZ series arc welding power supply

③For hand arc welding, given potentiometers A and B control outputs A and B, respectively. Independent welding current, thrust current and pilot current adjustment are implemented separately.

④For flat-duty double-station gas shielded welding, the push button switch 'integrated/separate' select 'respectively', 'remote control/near control' switch select 'near control', 'constant voltage/constant current' switch select 'constant pressure';

⑤For flat-characteristic double-station gas shielded welding, the given potentiometers A and B respectively control the outputs A and B to control the welding voltage A and the welding voltage B respectively; Note: the matching wire feeder is a semi-automatic wire feeder;

⑥As a submerged arc welding power source, the button switch 'integrated/separate' selects 'integrated', 'remote control/near control' switch selects 'remote control', 'constant voltage/constant current' switch does not control, submerged arc Welding trolley control box realized; see (Figure 3)

⑦Press the wire feed button and the wire withdrawal button on the control box. The wire feed wheel should be able to rotate forward (the wire is fed down) or reverse (the wire is pulled upwards).

⑧Press the test/weld button on the control box to place the “testing”, the trolley should be able to walk, and its speed is adjusted by the speed adjustment encoder; press the left/right button on the control box to switch the direction of travel control.

Use And Operation

① When used as a hand arc welding, the arc welding power source can be used as a single large current or as an independent duplex. When integrated, the positive output needs an external connection. The panel reference is controlled by the group A potentiometer.

②When the arc welding power source is used as gas shielded welding, it can also be used as a large integrated current or as an independent duplex station. When integrated, the positive output needs an external connection. The panel reference is controlled by Group A 'Welding Current'. Only voltage reference is achieved. In the case of split use, output voltage control is also achieved only by the panel 'welding current' potentiometer. The rest of the control needs to be achieved by a semi-automatic wire feeder.

③As a submerged arc welding, various welding can be realized by a trolley that matches the integrated control box.

According to the shape of the workpiece to be welded, the appropriate welding method can be selected, mainly in the following types:

1. Use welding track

Generally used for high precision long distance tailor welding, fillet welding. Because the model is four-wheel drive, the requirements for the track are reduced, so the general angle steel can be used directly as the track, as shown in Figure 5-a.

2. Use the wheel

In fillet welding or edge welding, using the workpiece itself as a trajectory and using the wheel, the time for adjusting the track can be omitted, and the work efficiency is improved. As shown in Figure 5-b, by adjusting the hole position of the wheel bar, the distance between the front traveling wheel and the workpiece vertical plate is slightly smaller than the distance between the rear traveling wheel and the workpiece vertical plate (about less than 10~15mm); As long as the distance between the front walking wheel and the welding wheel is slightly larger than the distance of the rear traveling wheel by adjusting the hole position of the wheel bar, the welding machine can be kept in parallel by the welding bead.

3. If the inner angle welding special angle wheel is selected, the trolley can be placed on the workpiece so that the guide wheel is facing the weld seam, and the boat shape welding can be realized. See Figure 5-c.

In the case of boat welding or long-span fillet welding and flat welding, the lateral span of the trolley may not be sufficient. In this case, please loosen the clamp of the trolley beam and move the controller and the wire spool bracket backwards. The beam can be extended forward. Out of 135mm, the adaptability of the car is greatly enhanced.

When welding, if the workpiece is lower than the bottom plane of the trolley or the groove is deep, when the welding gun cannot be reached, the column clamp can be loosened, the whole beam can be lowered, the welding gun can reach the welding position, and the welding torch can be customized to our company. Combined) to meet welding requirements.

4. When the trolley is used to weld the longitudinal seam and the inner ring seam in the cylinder, the trolley can be directly placed in the cylinder, as shown in Figure 5-d.

If the head has been welded, the car can be disassembled into parts, enter the cylinder from the inlet, and then assembled in the cylinder to weld, or custom-made the head number for the submerged arc welding of the body cylinder (≥500mm). When the inner ring is welded, the trolley travels clockwise, and the cylinder rotates counterclockwise, and the relative speed remains the same, so that the trolley can be welded in the cylinder. When welding the outer longitudinal seam or the outer ring seam, a simple platform can be set up, and the trolley can be placed on the platform to achieve the welding requirements. In addition, the trolley can also be used in conjunction with the operating machine or roller frame produced by our company, and the trolley can be placed directly on the operating machine to achieve different requirements of welding.

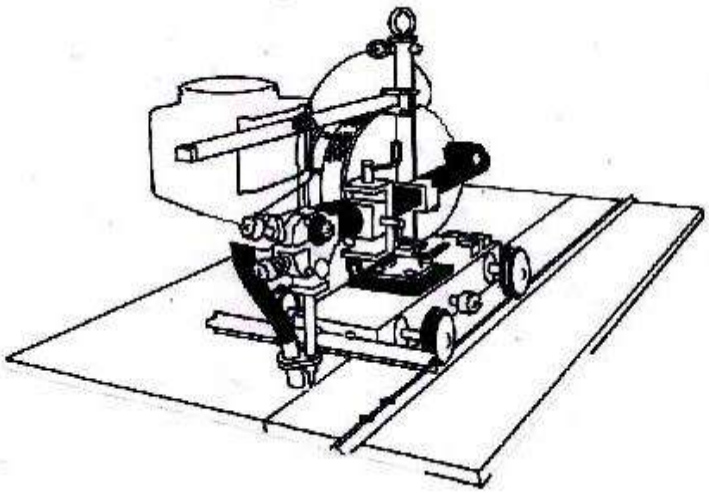

Figure 1 (a) Using The Track For Panel Welding

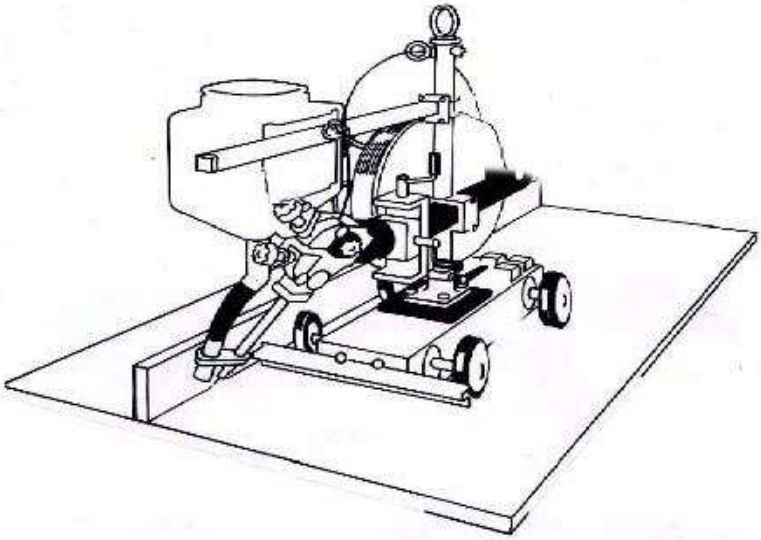

Figure 2 (b) Angle Welding Using The Angle Iron

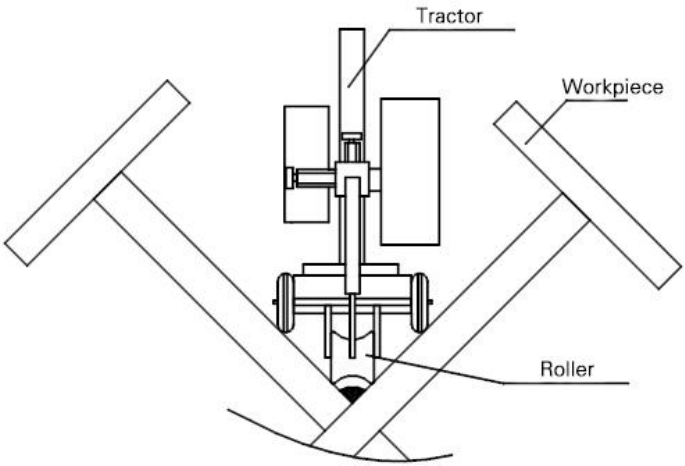

Figure 3 (c) Inner Boat Welding

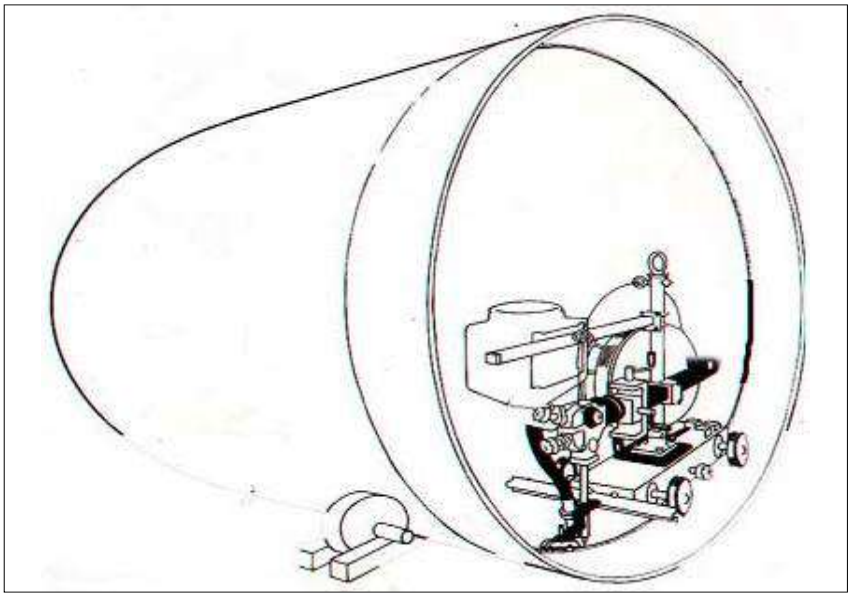

Figure 4 (d) Ring Seam Welding In The Cylinder

Maintenance And Maintenance

1)maintenance

①regular dust removal

②Regularly check that each cable is connected reliably.

③ If you do not use the original packaging in a sealed package for a long time.

④Check the insulation: measure with a megger (500V)

- Input to output resistance should be ≥5M
- Output to ground resistance should be ≥2.5MΩ
- Input-to-ground resistance should be ≥ 5M

1)maintain

The following checks should be made before the welder is inspected:

① The position of each switch on the front panel of the welder is correct.

② Is the line voltage of the three-phase power supply within the range of 340V ∽ 420V; is there a phase loss?

③ The connection of the welder power input cable is correct and reliable.

④ The welder ground wire is correct and reliable.

⑤ Is the welding cable wiring correct and the contact is good.

Note: The maximum voltage in the machine is up to 600V. To ensure safety, it is strictly forbidden to open the case at will.

Turn off the power when installing the soldering cable and replacing the torch accessories.

In principle, the maintenance of the welding machine should be handled by our company. The user can solve various problems encountered in the use under the guidance of our company.

Common faults and troubleshooting methods

	phenomenon	thereason	Measure
	After the power is turned on, the indicator light is off.	①Power shortage ②The automatic air switch on the rear panel is damaged	①Check the power supply ②Replace the automatic air switch
	When the welder is turned on, the automatic air switch on the rear panel of the welder is automatically powered off immediately.	①Automatic air switch failure ②IGBT module damage ③Three-phase rectifier bridge damage	①Replace air switch ②Replace the IGBT module and replace the drive board at the same time ③Replace the three-phase rectifier bridge
	During the welding process, the automatic air switch on the rear panel of the welding power supply is automatically powered off.	①Long-term overload operation ②Air switch damage	①Use according to welder load rate ②Replace air switch
	Welding current cannot be adjusted	①The remote control box controls the cable break or the controller is broken ②Welder control circuit board is bad	①Replace the remote control box control cable or controller ②Replacement control

Note: If you encounter other faults that cannot be eliminated, please shut down immediately and notify the company as soon as possible. The company will send professional maintenance personnel to overhaul, and do not arbitrarily pick up, dismantle or repair.

Random Document

1)MZ series double station arc welding power supply instruction manual

2)Packing List

3)Certificate

4)Warranty Card

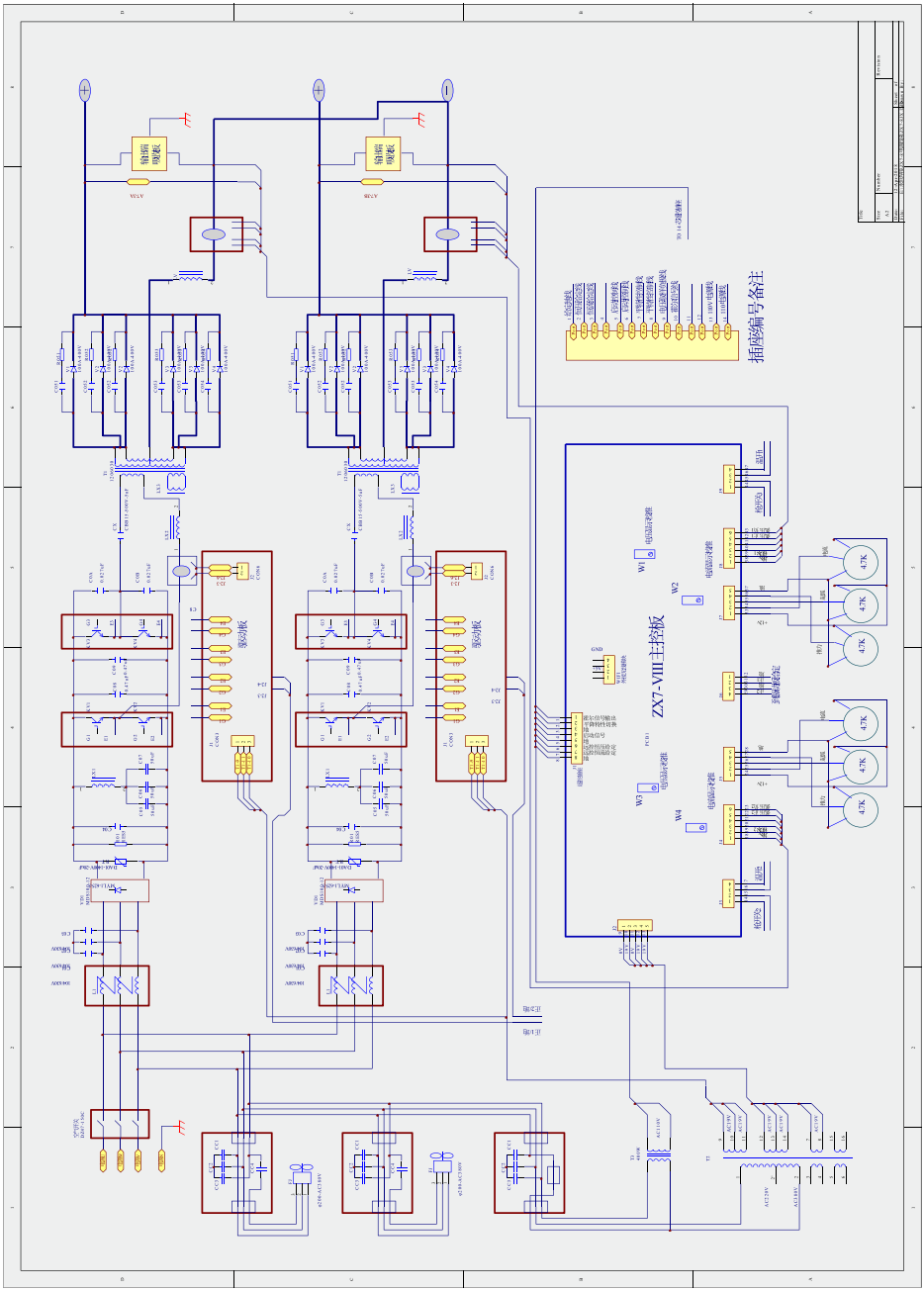

Figure 6: Schematic diagram of MZ series double station arc welding power supply