

Owner's Manual



FY-4500

The equipment is approved by following car manufacturers(China)



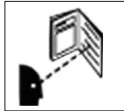
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Safety Precautions Symbols



Protect yourself and others from injury, read and follow these precautions before installation and operation.



- Read instructions.
1. Read owner's Manual before using or servicing unit.
 2. Use only manufacturer's supplied replacement.



- Electric shock can kill:
1. Do not touch live electrical parts.
 2. Wear dry, hole-free insulating gloves and body protection.
 3. Do not wrap electrical cable around your body.
 4. Ground the workpiece with a good electrical ground.



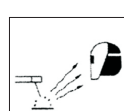
Exploding parts can injure. Always wear a face shield and long sleeves.



Fumes and gases can be hazardous welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health. If inside, ventilate the area. Do not weld in a confined space only if it is well ventilated.



- Static can damage PC boards
1. Put on grounded wrist strap before handling boards or parts.
 2. Use proper static-proof bags and boxes to store, move or ship PC boards.



Eye protection for welding:

Current level in amperage	Minimum shade Number
30-150A	#8
150-300A	#10
300-500A	#12



1. Wear approved face shield or safety goggles with side shields.
2. Wear proper body protection to protect skin.



The heat from the workpiece can cause serious burns.



- Flying metal can injure eyes.
- 1) Wear safety glasses with side shields or face shield.



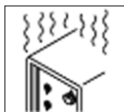
Remove all flammables of the welding area.



1. Magnetic fields can affect pacemakers. Pacemaker wearers keep away.
2. Wearers should consult their doctor before going near plasma arc cutting operations.



Falling unit can cause injury.



Overuse can cause overheating
Allow cooling period, follow rated duty cycle before starting to weld again.



Fire or explosion hazard.
Do not locate unit on, over, or near combustible surfaces. Do not install unit near flammables.



Do not weld in the height!



Never cut on pressurized cylinder.



Protect yourself



Warn others



OK



OK


















Factory safety!



Maintenance regularly!





























Symbols and Definitions

Definitions

A Amperes	I_{1max} Rated maximum supply current	I On	% Percent
V Volts	I_{1eff} Maximum effective supply current	O Off	 Increase
I₂ Rated welding current	IP Degree of protection	 Protective earth (Ground)	 Line connection
S₁ Power rating, product of voltage and current (KVA)	1~ Single phase	 Do not do this	 Loose shield cup
HZ Hertz	X Duty cycle	 Suitable for some hazardous locations	 Adjust air/gas pressure
U₁ Primary voltage	 Direct current	 Input	 Automatic
U₀ Rated no load voltage (Average)	 Constant current	 Voltage input	 Manual
U₂ Conventional load voltage	 Temperature	 Low air pressure light	

Accessories And Spare parts

Accessories and Spare Parts List:

	Pneumatic vacuum cupule NO. F001		Pull hammer NO. F002		Vertical spot welding pull hammer NO. F003
	Hook puller NO. F004		Hook NO. F005		Waveform wire NO. F006
	Kriptol NO. F007		Spot welding electrode tip NO. F008		Carbon rod adaptor NO. F009
	Waveform electrode tip NO. F010		Washer adaptor NO. F011		Electrode holder NO. F012
	Trianger washer adaptor NO. F013		Front part of hook puller NO. F014		Triangle wasler NO. F015
	Stud NO. F016		Washer NO. F017		Ground wire clamp NO. F018
	Manual cupule NO. F019		Welding gun NO. F020		Front wheel NO. F021
	Back wheel NO. F022		Digital display NO. F023		Time adjustment NO. F024
	Control transformer NO. F025		A.C. contactor NO. F026		Tools box NO. F027
	Circuit board NO. F028				

Remark:

- 1)、Optionnal orders for above accessories and components are available.
- 2)、Model and parts number required when ordering parts from your local distributor.

Installation

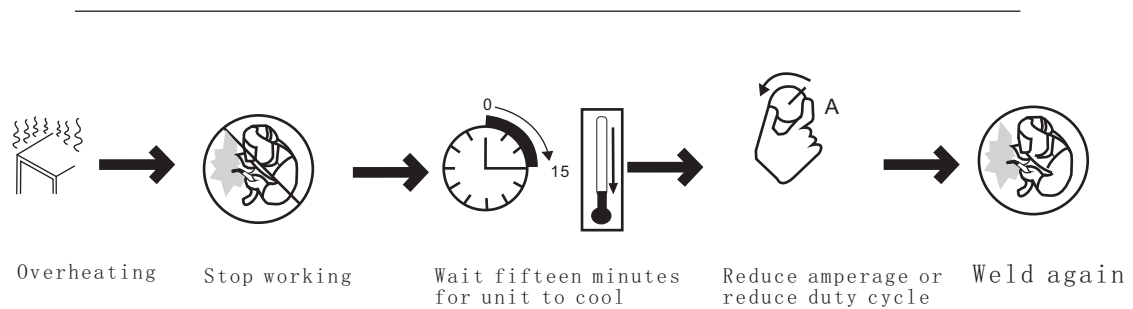
1、specifications

Parameters	Model	FY-4500
Input voltage		Single phase 220V 50/60HZ
Output voltage		AC6V-10V Carbon rod heating AC1V-12V Washer fusion AC1V-13V Butt weld
Input power		16KW
Instant max.current		4000A
Input current		42A
Operation way		Continuity
Time regulation system		0-99ms
Currenf Regulafion		A. B. C
Dimension (mm)		620*450*980
Weight		60kg

2, Duty Cycle and Overheating

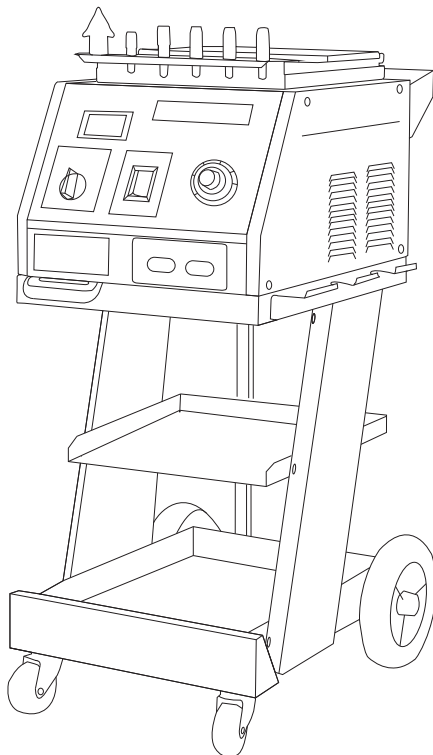
Duty cycle is percentage of 10 minutes that unit can weld at rated load without overheating.

The welder is equipped with over-heat protection. On exceeding the critical temperature, the welder will be stopped automatically. The welder can be used again after cooling down.



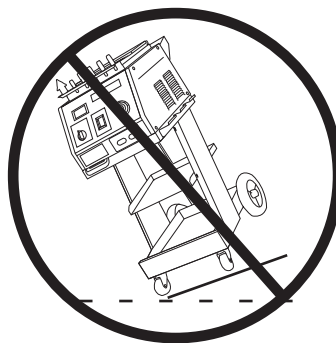
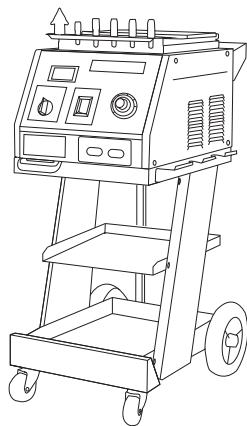
3、 Machine Installation

- 1) Open the package and find out the owner's manual.
- 2) Check the supplied accessories according to packing list that attached to this manual.
- 3) Properly install this equipment as following diagram. Inspect the unit for any problems. If so, contact your local distributor or service agency. To locate a distributor or service agency.

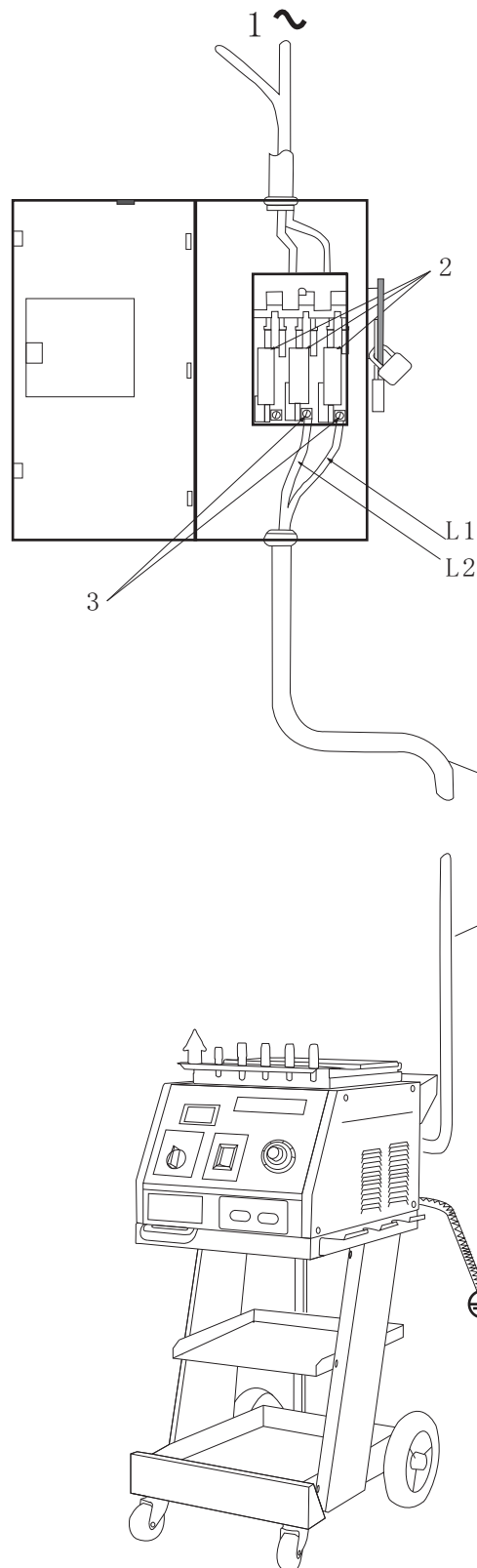


4、 Selecting a Location

- 1) Select a correct location to place the unit.
- 2) Determine input power cord length according to its actual operation requirement .Make sure that the supply cable is at least 6mm² in diameter
- 3) Do not move or operate unit where it could tip.
- 4) Use cart or unit handle to move unit .Do not pull the cords to move unit.



5、Connecting Input Power

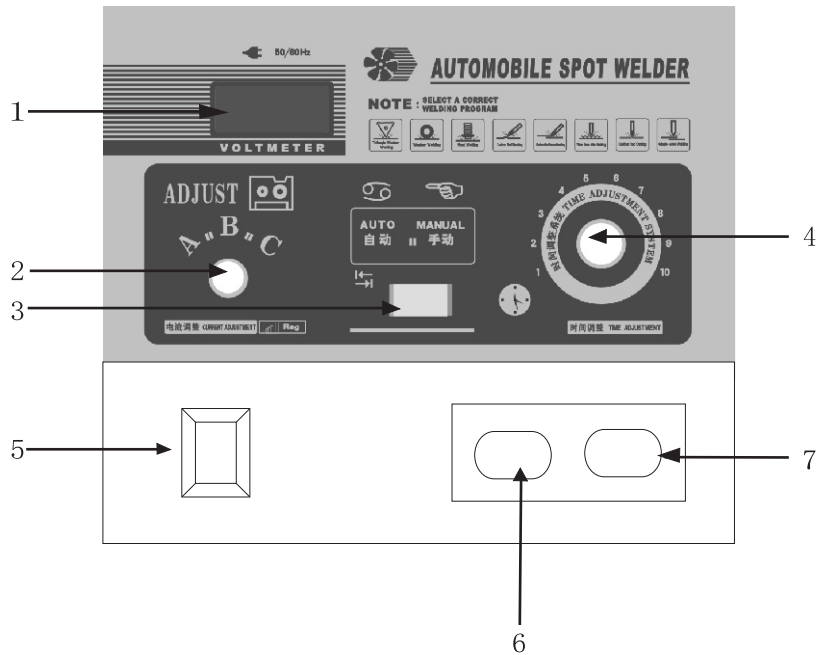


- 1、Input power cord (not less than 6mm² copper cord) .
- 2、Over-current protection.
- 3、Disconnect device line terminals.
- 4、Ground wire L1/L2 input conductors.

- Installation must meet all National and Local Codes---have only qualified persons make this installation.
- Disconnect and lockout/tagout input power before connecting input conductors from unit.
- Select type and size of over-current protection.
- Close and secure door on disconnect device . Remove lockout/tagout device, and place switch in the "on" position.

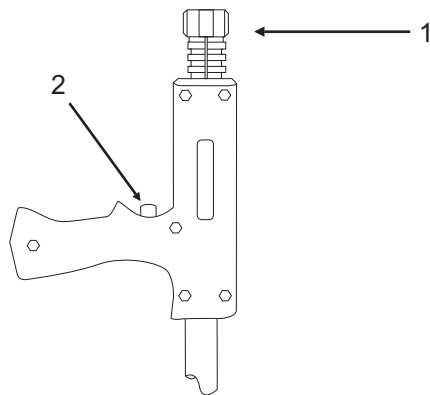
Operation

1、Controls



- 1、Voltmeter
- 2、Current adjustment (A-Low, B-Mid, C-High)
- 3、Mode
- 4、Time adjustment
- 5、Power switch
- 6、Negative outside wire
- 7、Welding gun output cable

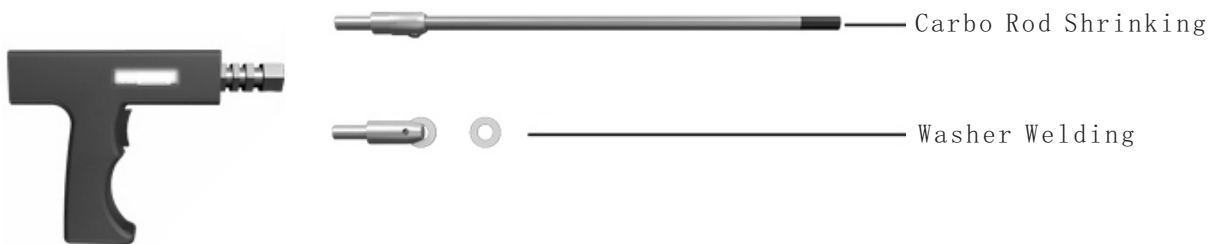
2、Welding Gun and Adaptors



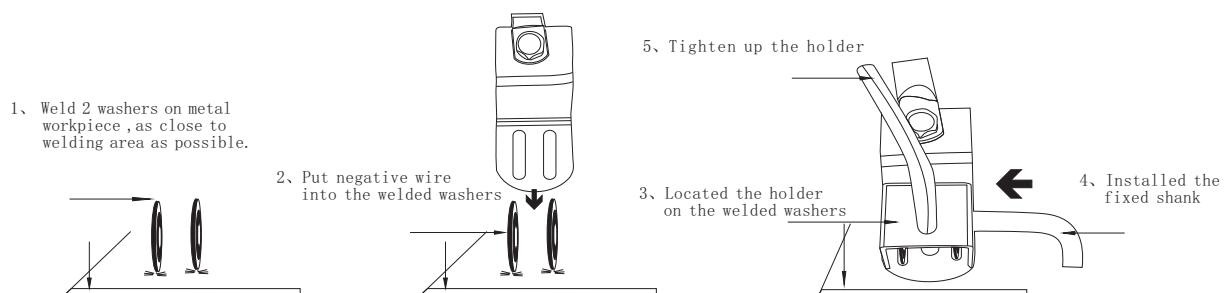
1、Electrode holder

2、Trigger

Single-Sided applications

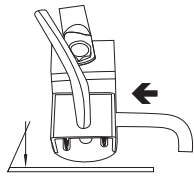


Connection of negative wire

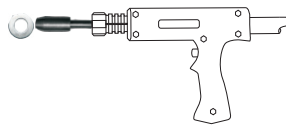


3、Operation

a、Washer Welding



Connect negative outside wire to a clean, paint-free location on metal workpiece, as close to welding area as possible.

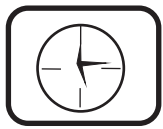


F017+F011+F020

Connect washer adaptor with welding gun and tighten, Install washer.



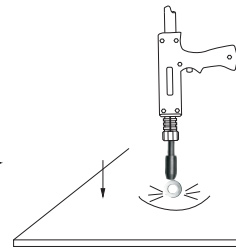
Set correct amperage.



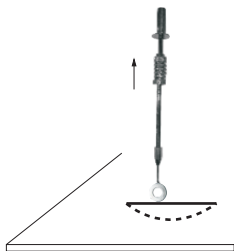
Set correct time.



Set Mode switch



Approximately a 90° angle to the dent. Put on pressure and press trigger.



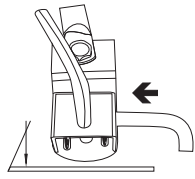
Remove welding gun. Hook the washer with pull hammer. Slide the hammer to opposite direction to pull out the dent .

Remark:

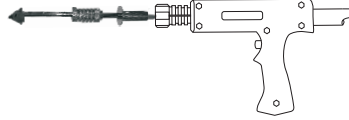
- 1、Setting amperage too high or time too long can cause workpiece surface (vehicle body) damage . Please weld other workpieces for practice before actual operations.
- 2、Setting correct amperage and time according to the workpiece thickness.
- 3、Continuing another operation is applicable after these procedures finished .if not, please shut off the main power supply and switch off the unit.

3、 Operation

b、 Triangle Washer Welding



Connect negative outside wire to a clean, paint-free location on metal workpiece, as close to welding area as possible.

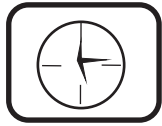


F002+F020

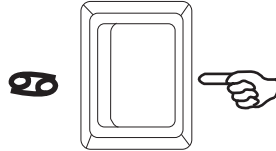
Connect triangle washer pull hammer with welding gun.



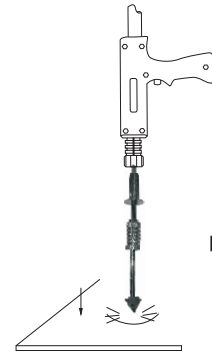
Set correct amperage.



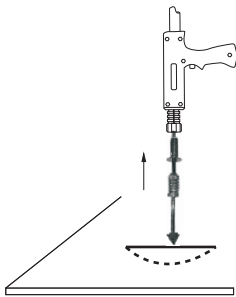
Set correct time.



Set Mode switch



Approximately a 90° angle to the dent, put on pressure and press trigger.



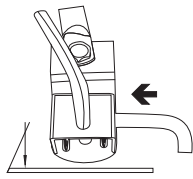
Slide the hammer to opposite direction to pull the dent

Remark:

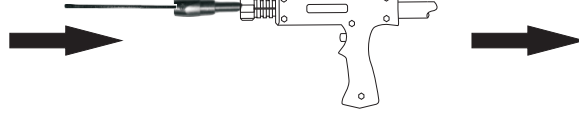
- 1、 Setting amperage too high or time too long can cause workpiece surface (vehicle body) damage . Please weld other workpieces for practice before actual operations.
- 2、 Setting correct amperage and time according to the workpiece thickness
- 3、 Triangle washer welding can replace washer welding. It can draw out the concavity directly after welded.
- 4、 Continuing another operation is applicable after these procedures finished .If not, please shut off the main power supply and switch off the unit.

3、Operation

c、Carbon rod Heating



Connect negative outside wire to a clean, paint-free location on metal workpiece, as close to welding area as possible.



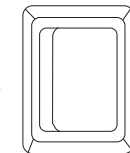
F007+F009+F020
Connect carbon rod and carbon rod adaptor with welding gun.



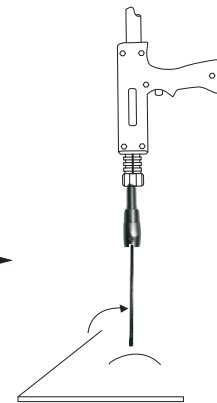
Set correct amperage.



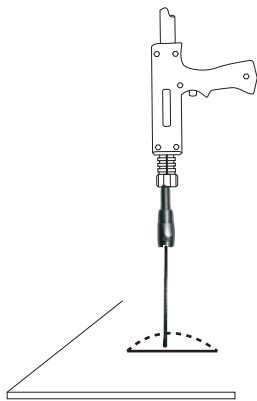
Set correct time



Set Mode switch



Turn carbon rod clockwise to heat up the entire convexity surface.



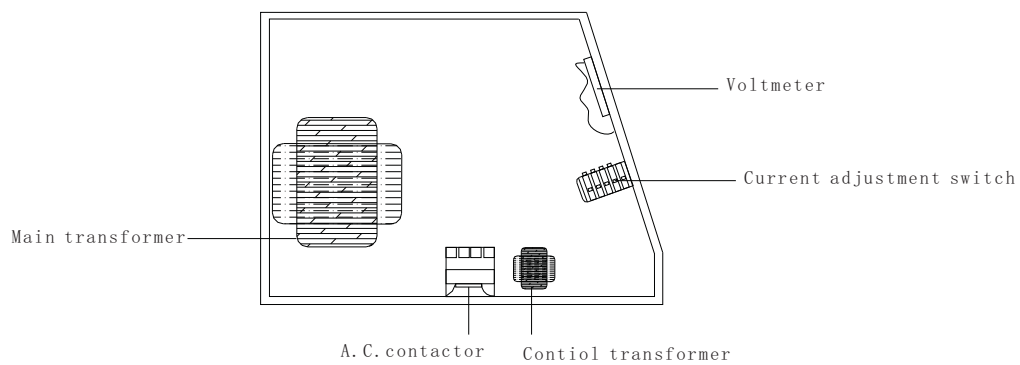
Cool the surface with a wet rag or compressed air.

Remark:

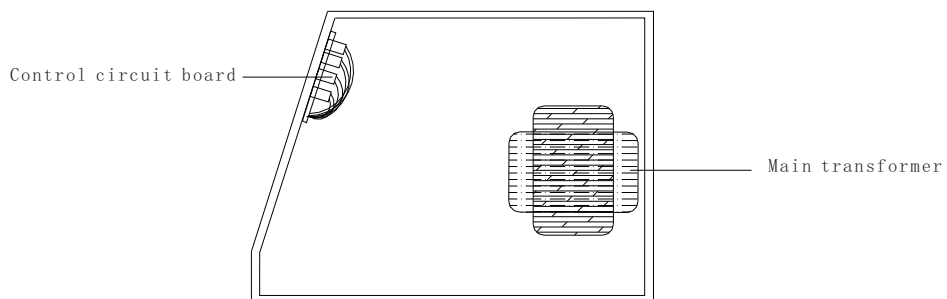
- 1、Setting amperage too high or time too long can cause workpiece surface vehicle body) damage . Please weld other workpieces for practice before actual operations.
- 2、Setting correct amperage and time according to the workpiece thickness.
- 3、Continuing another operation is applicable after these procedures finished .If not, please shut off the main power supply and switch off the unit..

Maintenance

1、Exploded view



Left side view



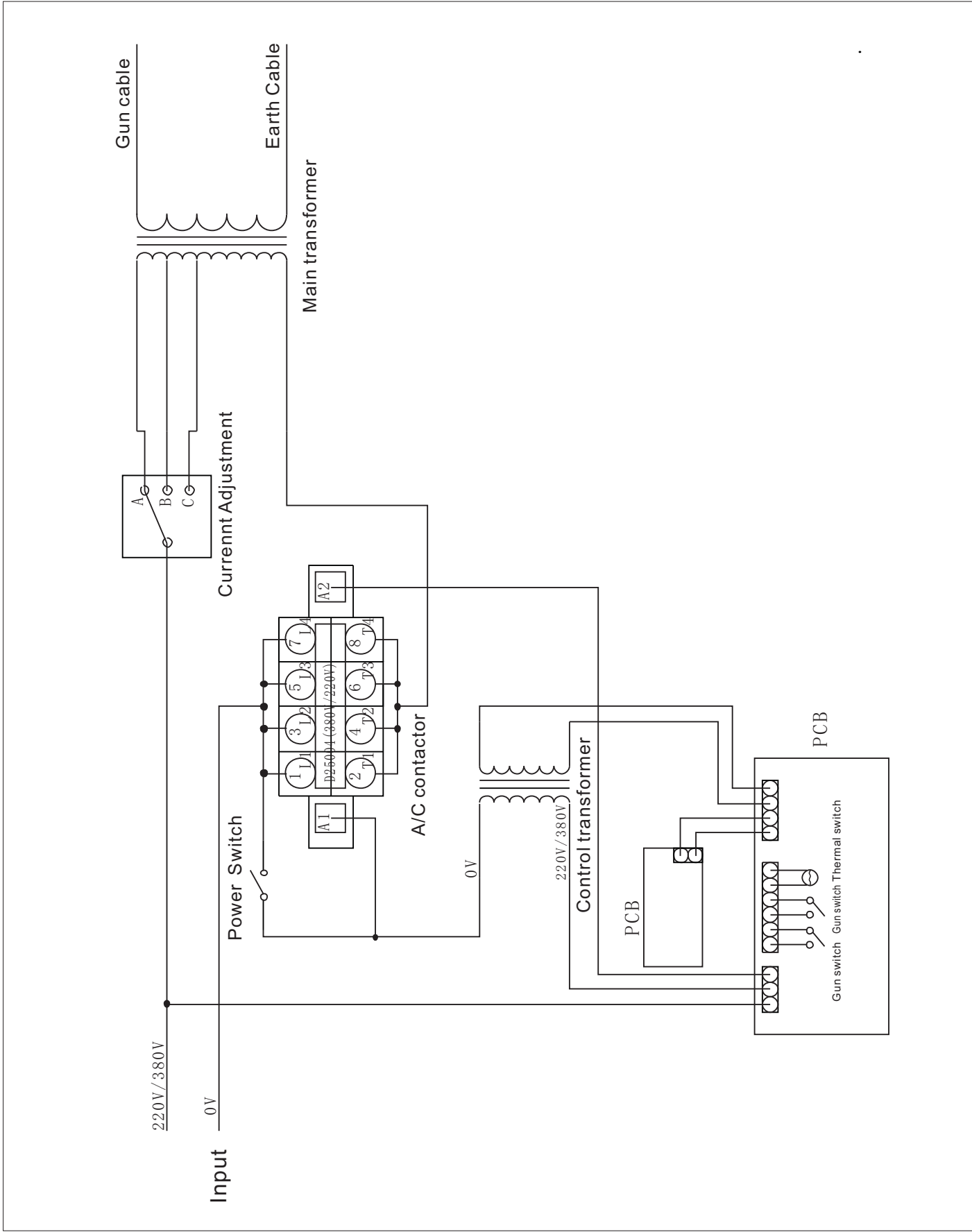
Right side view

Maintenance

2、Troubleshooting

Trouble	Reason	Remedy
No welding output	(1) Connected power supply incorrectly. (2) Power switch in "off" position	(1) Connect power supply according to manufacturer's instructions. (2) Place power switch in "on" position.
Trigger not working	(1) Trigger damaged. (2) Gun control wire broken. (3) Control wire plug loosen. (4) Mode switch in incorrect position.	(1) Replace trigger. (2) Connect again or replace if necessary. (3) Connect control wire plug again. (4) Place Mode switch in correct position.
Poor weld	(1) Amperage too low . (2) Weld time too short. (3) Input power cord did not meet the requirement. (4) Ground clamp bad contact.	(1) Increase amperage setting . (2) Increase time setting. (3) Replace input power cord. (4) Change ground clamp location.
Piercing workpiece	(1) Output amperage too high. (2) Weld time too long. (3) Bad contact of electrode tip or washer with workpiece.	(1) Reduce amperage setting. (2) Reduce weld time. (3) Remove coating from material reduce added pressure.
Carbon rod working unstable	(1) Carbon rod or workpiece is dirty (2) Incorrect amperage and time setting.	(1) Polish carbon rod and workpieces before welding (2) Set amperage and time according to workpiece thickness.
Welder stop working while operation	(1) Trigger plug loosen. (2) Gun control wire broken. (3) Over heating.	(1) Check gun control wire and trigger plug. (2) Wait for temperature cool down.

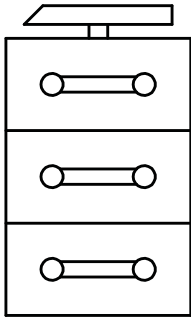
Electrical Diagram



Components

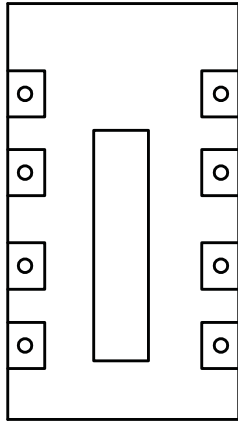
KL1

0.6-1.2 0.6-3.4 0.6-5.6
A B C



CJ × 2

1_{L1} 3_{L2} 5_{L3} 13_{N0}

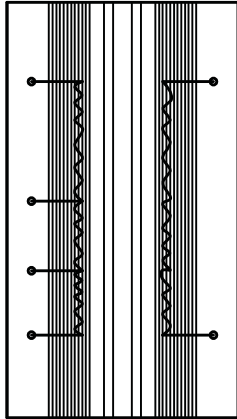


2_{T1} 4_{T2} 6_{T3} 14_{N0}

T1

**220V/20KVA
50-60Hz 5.6-12.8V**

A B C D

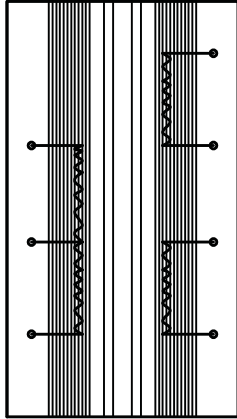


T1

T2

**30VA 220V/380V
50/60Hz 7V/21V**

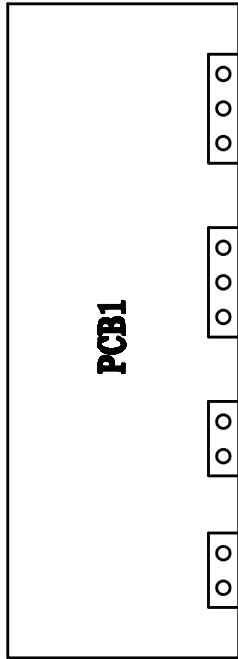
A2 B2 C2



T1

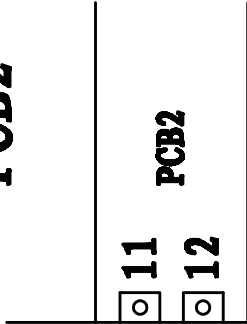
A3 A4 B3 B4

PCB1

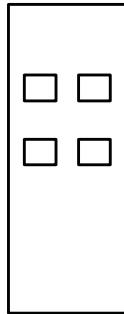


1 2 3 4 5 6 7 8 9 10

PCB2



1 2



3 4

