

Owner's Manual

CE

FY-13000

The equipment is approved by a number of car manufacturers (China)



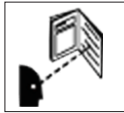
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Safety Precautions Symbols



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.



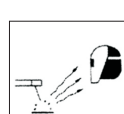
Exploding parts can injure. Always wear a face shield and long sleeves.



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 handing 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



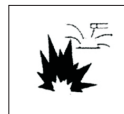
1. Wear approved face shield or safety goggles with side shields.
2. Wear proper body protection to protect skin.



The heat from the workpiece can cause serious burns.



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



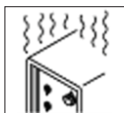
Remove all flammables of the welding area.



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!

























Definitions

Symbols and 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		Kriptol 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		Circuit board NO. F028		
	Control transformer NO. F025				




Remark:

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

Installation

1、specifications

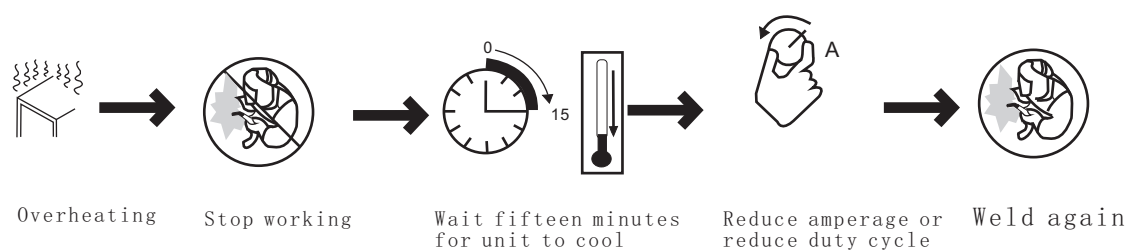
Input voltage	Single phase 380V	50/60HZ
Output voltage	Kriptol heating AC6V-10V	washer welding AC1V-12V double-side welding AC1V-13V
Input power	45KW	
Instant max.current	13000A	
Input current	60A	
Operation way	Electronic timer,continuity	
Time regulation system	0-99ms	
Operation place	Infinity	
One side welding thickness	1.0+1.5 (mm)	
Double-side welding thickness	2.5+2.5 (mm)	
Input gas/air pressure	2-6kg	
Vacuum cupule device	180kg	
Dimension	850*600*1030 (mm)	
Weight	138kg	

Image	Description	Time (s)	Welding power	Power consumption (KW/HRS)
	Triangle washer welding	0.03-0.08	53%-80%	1.02-4.08
	Washer welding	0.05-0.15	55%-78%	1.31-5.6
	Stud welding	0.05-0.10	55%-85%	1.32-4.06
	Singel-sided spot welding	0.20-0.50	100%	2.13-6.36
	Sheet metal flattening	0.50-0.70	60%-85%	1.42-5.15
	Carbon rod heating	FFF	25%-50%	1.59-3.18
	Carbon rod seam welding	FFF	35%-75%	2.18-4.78
	Waveform wire welding	0.03-0.03	43%-50%	1.2-1.92
	Sheet metal cutting	FFF	60%-85%	3.84-5.48
	Two-sided spot welding	0.45-0.90	60%-100%	8.0-14.26

2、 Duty Cycle and Overheating

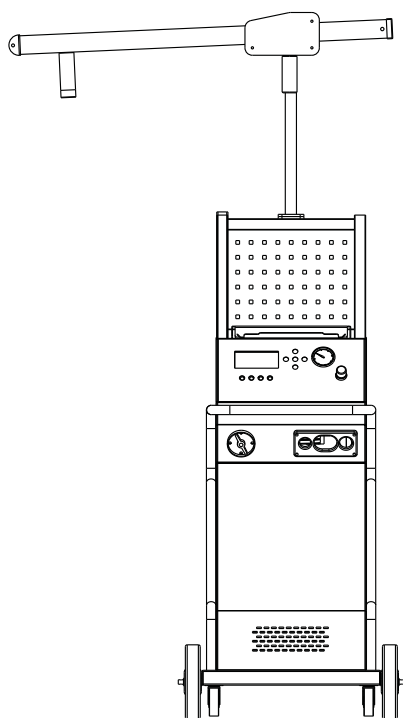
Duty cycle is percentage of 10 minutes that unit can weld at rated load without overheating.

If unit overheat, output stops ,and cooling fan runs .Wait fifteen minutes for unit to cool.Reduce amperage or duty cycle before welding.



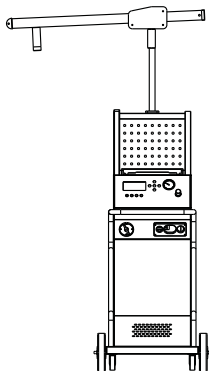
3、 Machine Installation

- 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.



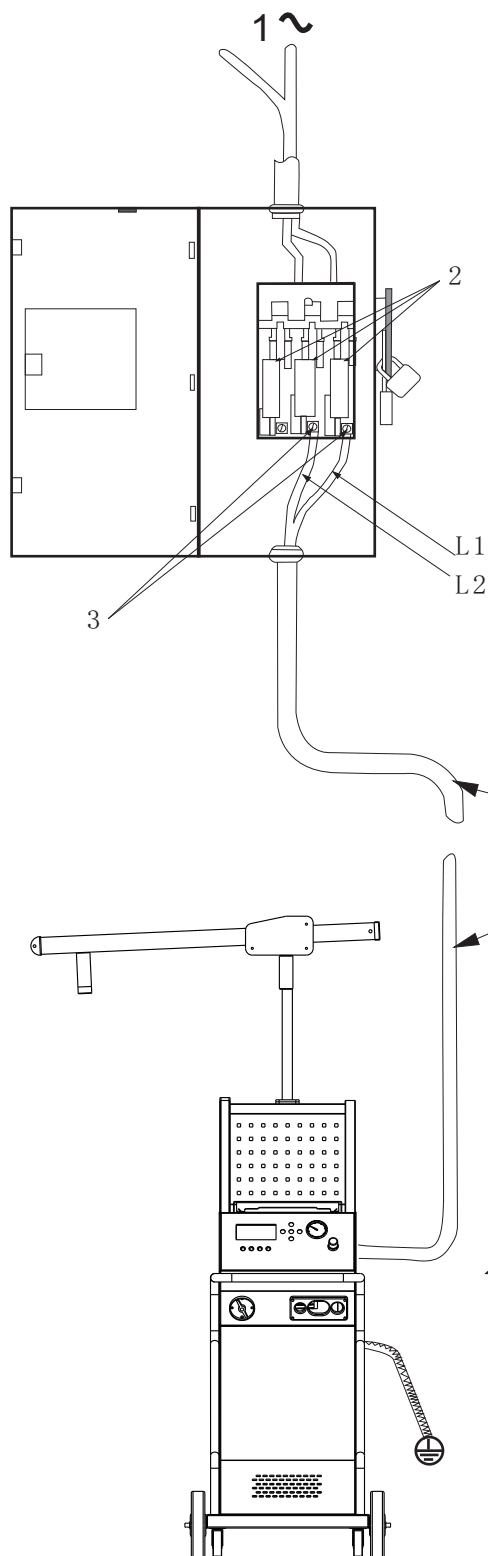
4、 Selecting a Location

- 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 6mm²indiameter
- 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

The power supply must have a ground connection.
The welder must also be connected to circuit breaker.



- 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.

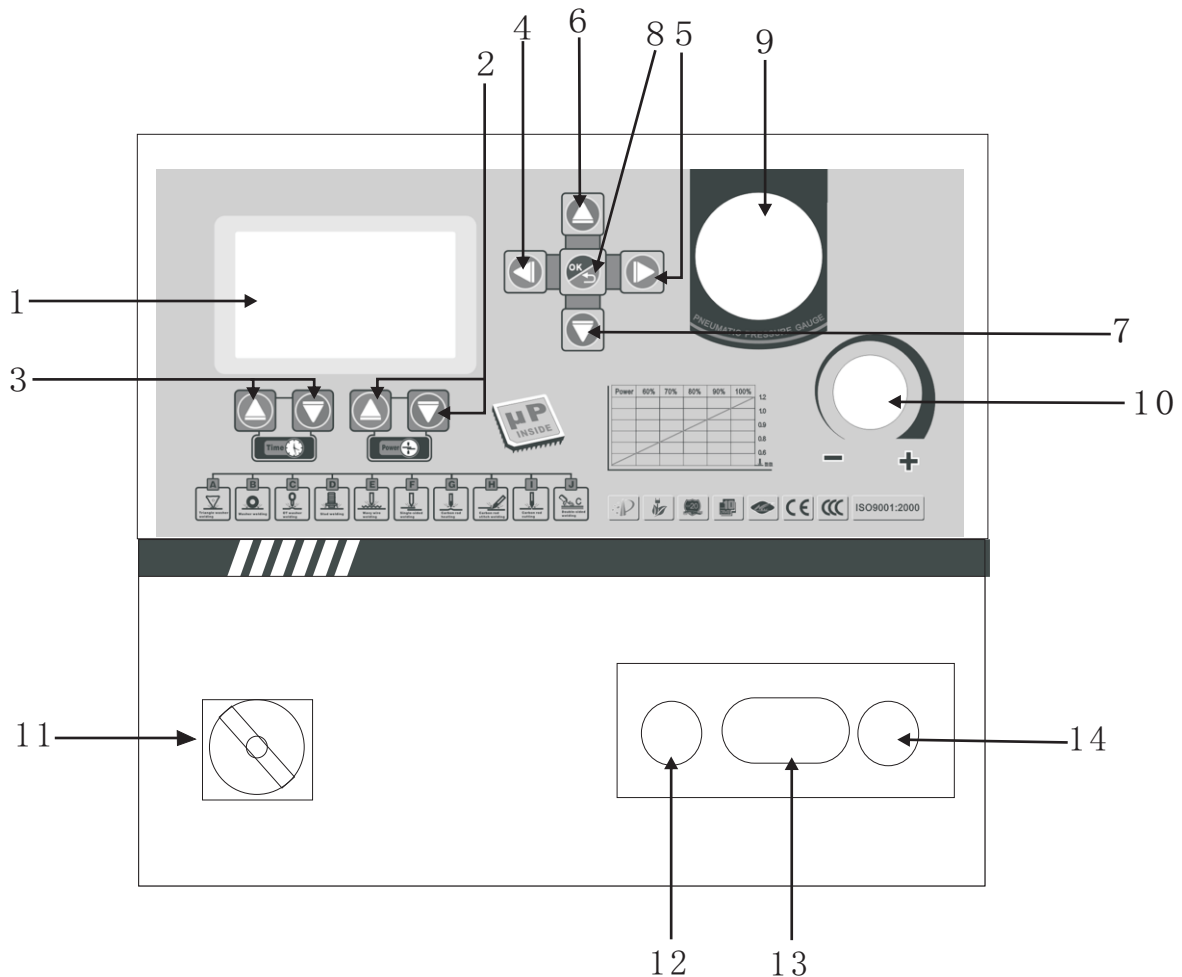
The power supply must have a ground connection.
The welder must also be connected to circuit breaker.

The machine must be grounded(earthed) properly to prevent accidental electrical shock.

If you need to open the machine case(after work every day,make sure to turn off the external power source and turn off the power switch on the machine.

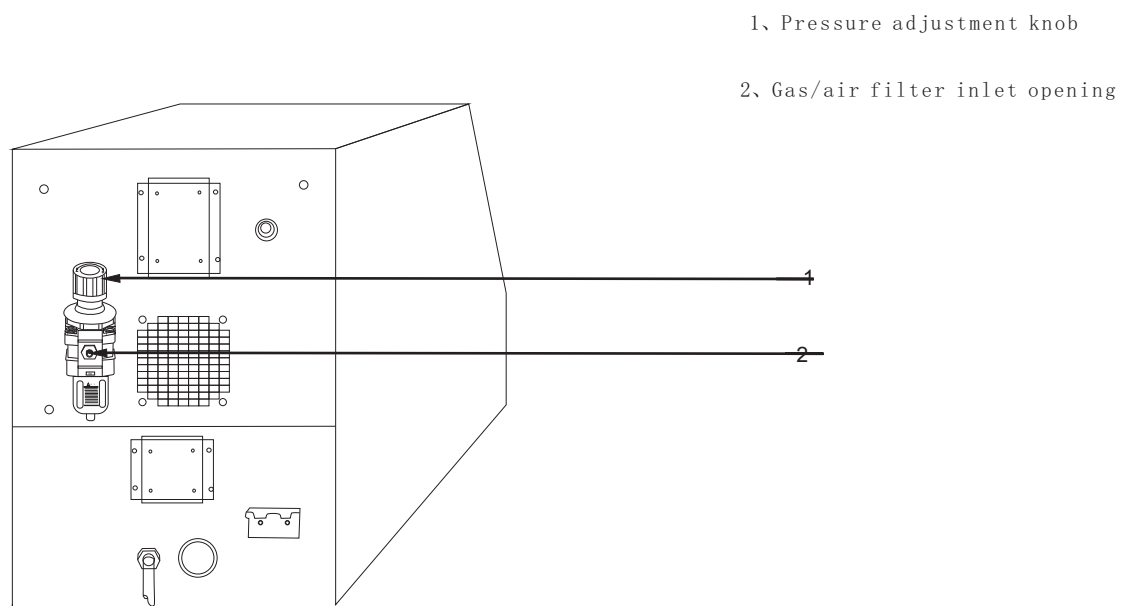
Operation

1、Controls



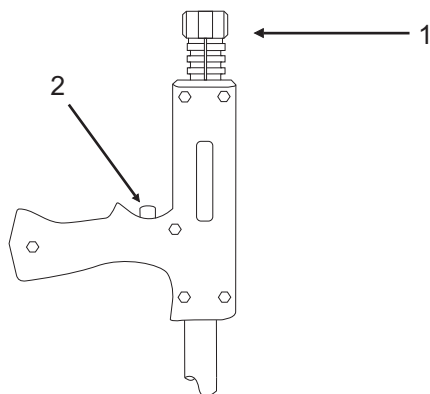
1. LCD Display
2. Power Adjustment
3. Time Adjustment
4. 5. Right/Left
6. 7. Up/Down
8. Enter/Return
9. Pneumatic Pressure Gauge
10. Pneumatic Regulator
11. Power switch
12. Negative outside wire
13. C-gun output cable
14. single-side gun output cable

2、Connecting and Setting Gas/Air Supply



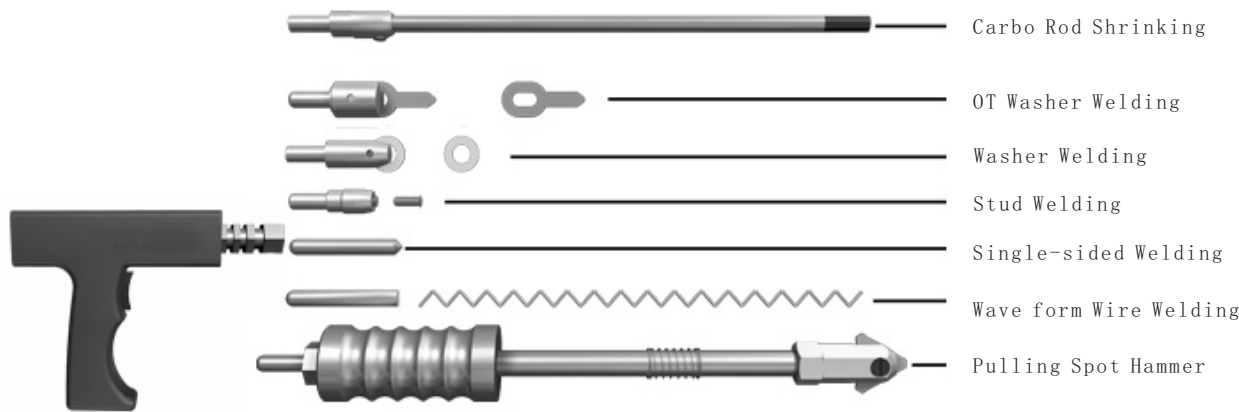
- 1、Connect to gas/air filter inlet with gas/air supply hose.
- 2、Pull and turn pressure adjustment knob .
- 3、Adjust gas/air pressure control in front panel (see page 9 NO. 3).
- 4、Set pressure to 6-10kg (see page 9 No. 2).
- 5、Push gas/air pressure control in to lock setting (see page 9 No. 3).

3、Welding Gun and Adaptors

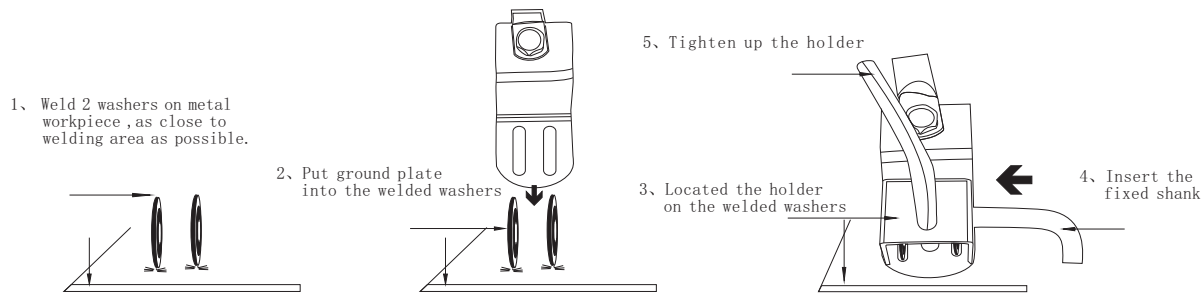


- 1、Electrode holder
- 2、Trigger

Single-Sided applications

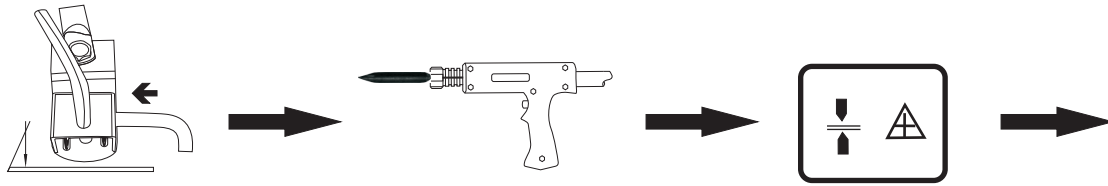


Connection of ground plate
A ground plate must be connected to the panel to be welded for it to work



4、Operation

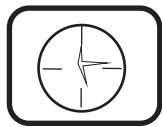
a、spot welding



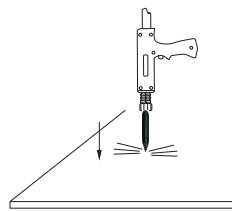
Connect ground plate wire to a clean, paint-free location on metal workpiece, as close to welding area as possible.

F008+F020
Connect spot welding electrode tip with welding gun and tighten.

Set correct amperage.



Set correct time.



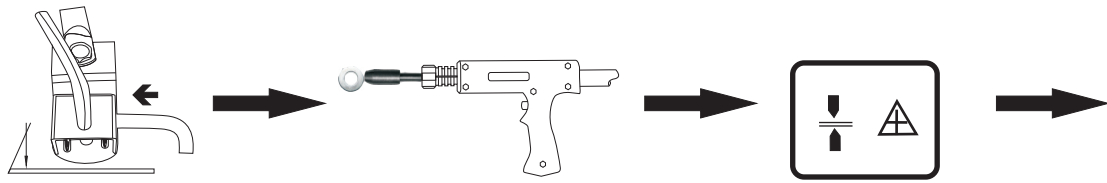
Approximately a 90° angle to the workpiece surface.
Put on pressure and press trigger.

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.

4、Operation

b、Washer Welding

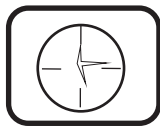


Connect ground plate to a clean, paint-free location on metal workpiece, as close to welding area as possible.

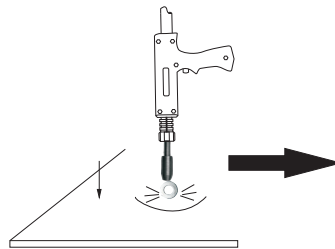
F017+F011+F020

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

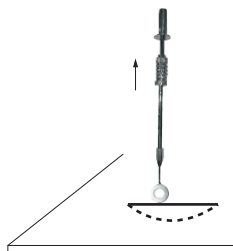
Set correct amperage.



Set correct time.



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



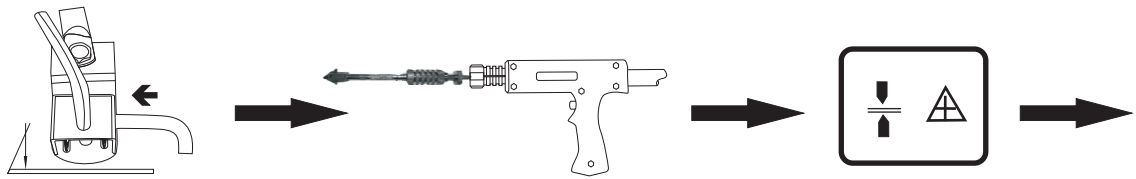
Remove welding gun. Hook the washer with pull hammer. Slide the hammer to opposite direction to pull out the dent .

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 .

4、Operation

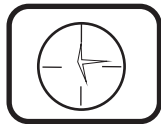
c、Triangle Washer Welding



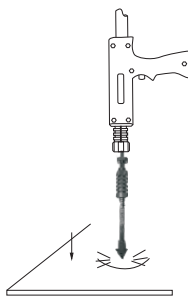
Connect ground plate to a clean, paint-free location on metal workpiece, as close to welding area as possible.

F003+F020
Connect triangle washer pull hammer with welding gun.

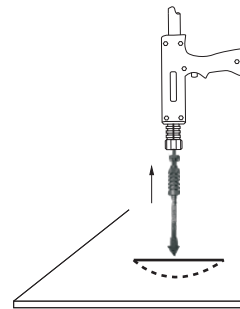
Set correct amperage.



Set correct time.



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



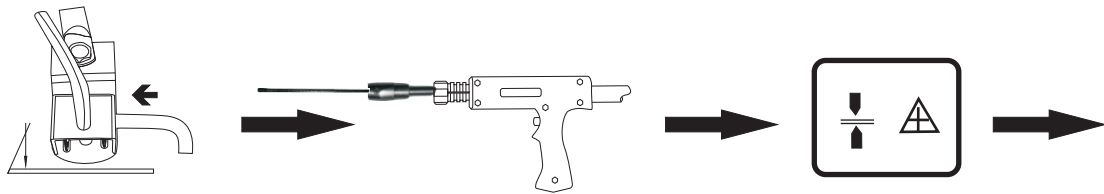
Slide the hammer to opposite direction to pull the dent.

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 .

4、Operation

d、 carbon rod



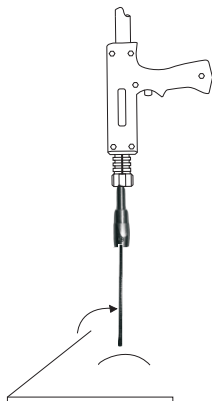
Connect ground plate to a clean, paint-free location on metal workpiece, as close to welding area as possible.

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

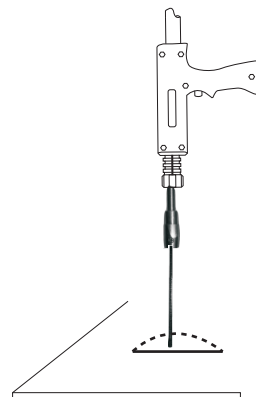
Set correct amperage.



Set correct time.



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



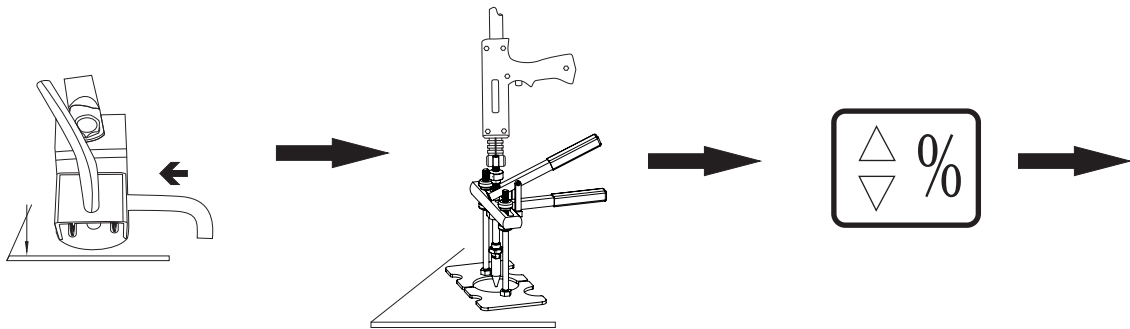
Cool the surface with a wet rag or compressed air.

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.

4、Operation

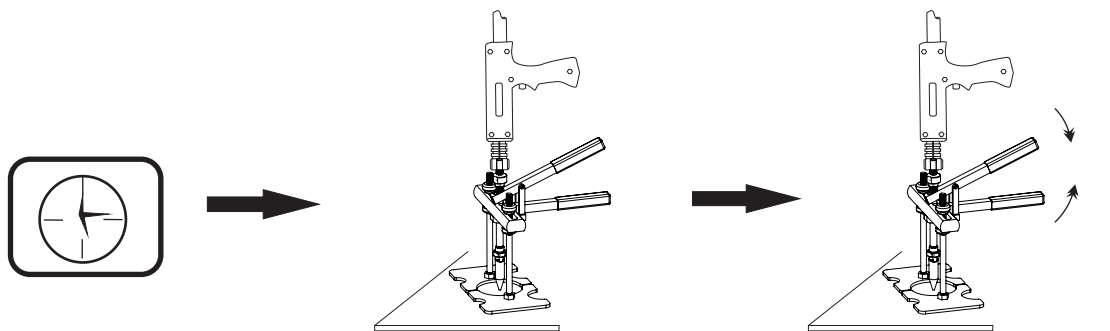
e、Quick Puller



Connect ground plate to a clean, paint-free location on metal workpiece, as close to welding area as possible.

Connect quick puller to welding gun

Set correct amperage.



Set correct time.

Touch the dent area by the electrode of quick puller.
Put on pressure and press trigger

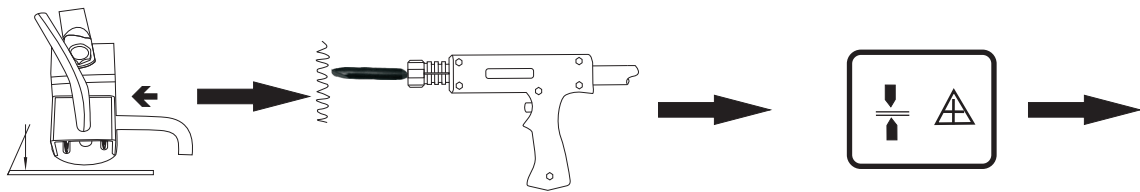
Squeeze the lever to pull the panel

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 available after this procedure finished .
If not ,please shut off the main power supply and switch off the unit.

4、Operation

f、Wave Form Wire Welding



Connect ground plate to a clean, paint-free location on metal workpiece, as close to welding area as possible.

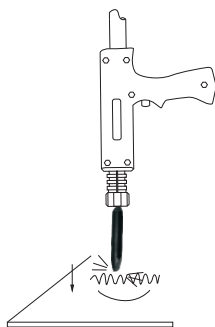
F006+F010+020

Connect wave form wire electrode tip with welding gun.

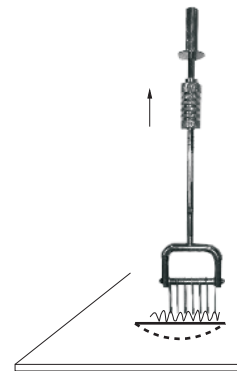
Set correct amperage.



Set correct time.



Place a wave form wire horizontally on the dent. Approximately a 90° angle to wave form wire. Put on pressure and press trigger.



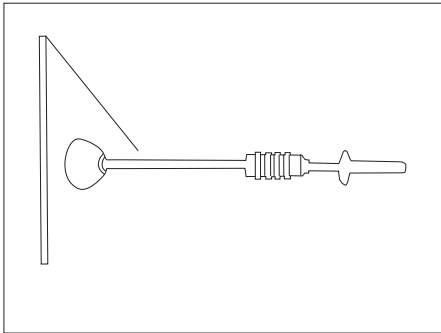
Connect hook puller with pull hammer. Hook wave form wire and slide the hammer to pull out the dent.

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.

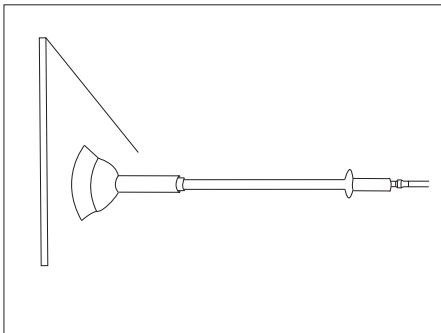
4、 Operation

g、 Cupules



Manual operating cupule:

- 1、 Connect manual cupule with pull hammer.
- 2、 Push manual cupule in to lock the cupule on the dent.
- 3、 Slide the hammer to opposite direction to pull the dent out.

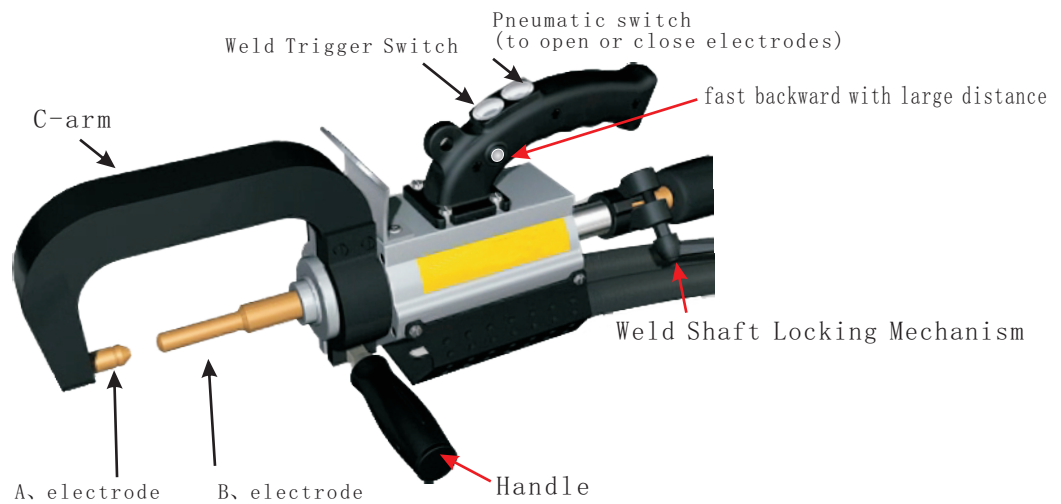


Pneumatic vacuum cupule:

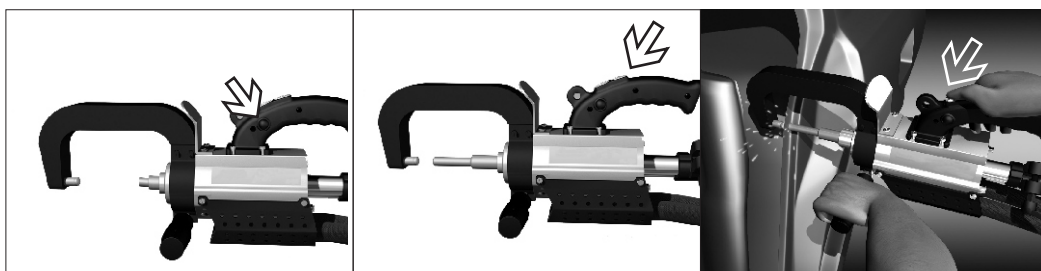
- 1、 Connect gas/air supply with the adaptor of cupule.
- 2、 Open the valve ,sticking cupule to the dent.
- 3、 Slide the hammer to opposite direction pull the dent out.
- 4、 Cupule falls off when close the valve.

5、Operation of C-type Two-sided Spot Gun

A. C-type Two-sided Spot Gun Component Diagram



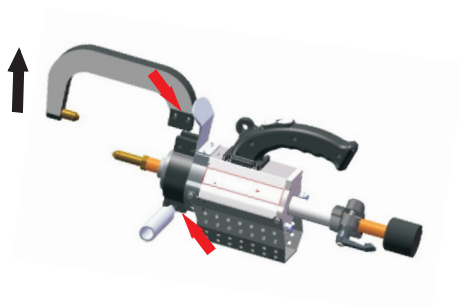
b. Using the C-type Two-sided spot gun



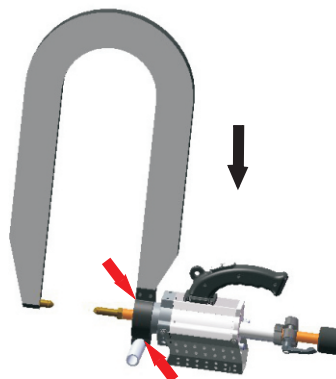
1. Push air button to open electrodes wide
2. Push pneumatic button to adjust the space between electrode and weldment
3. Push weld trigger to weld

5、Operation of C-type Two-sided Spot Gun

C、Switching to extension arms (optional)



Loosen the screws and pull out C-arm



Insert the extension arm and tighten the screws



NO. F9001
160X130MM



NO. F9002
300X180MM

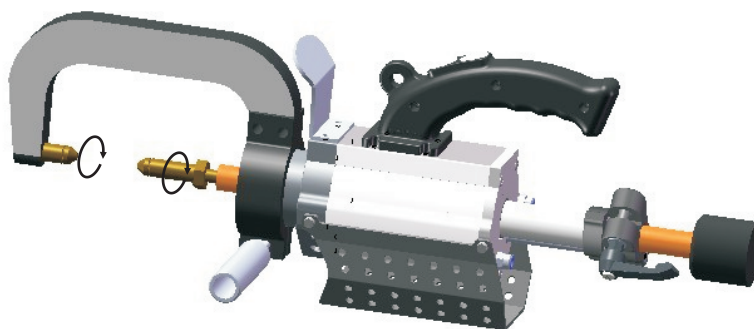


NO. F9003
450X180MM



NO. F9004
600X180MM

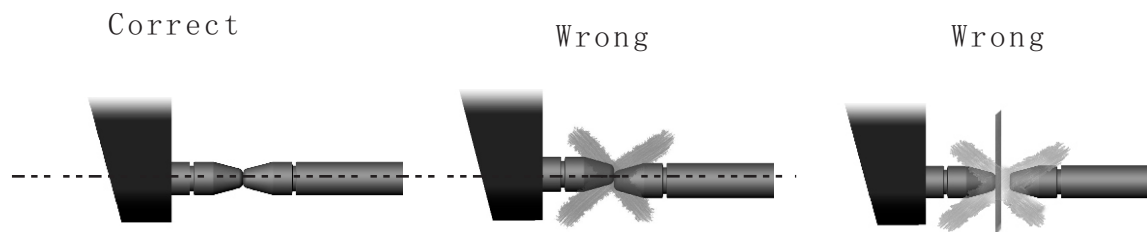
Removing Electrode



1. Use a spanner to loosen and disconnect electrodes
2. Fit the gun with electrodes, and align the electrodes

5、Operation of C-type Two-sided Spot Gun

d、Electrode Adjustment (Alignment)

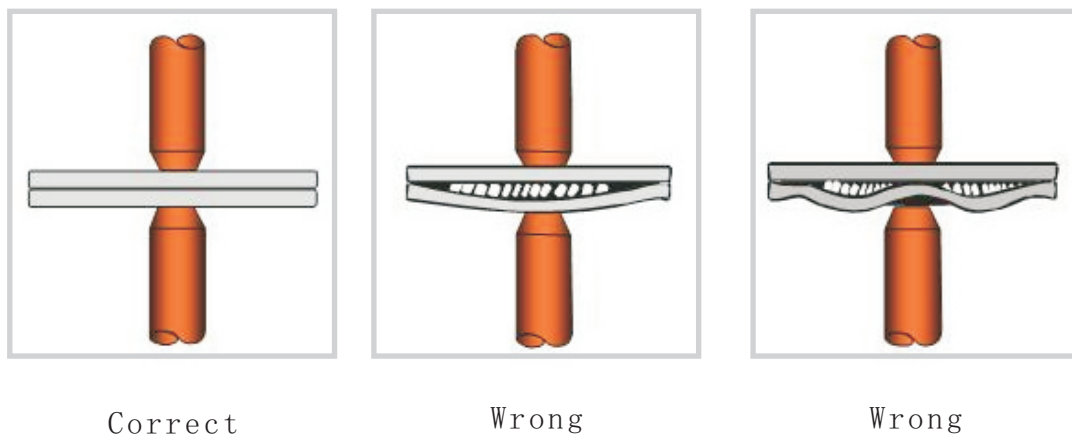


Note!

1. Always maintain proper electrode alignment. Not doing so may result in weak, substandard welds, or even damage the electrode cap!
 2. Make sure there is no gap between electrode caps during welding. Otherwise, the electrodes may be burnt out.
 3. Usually, adjust the air pressure setting to 2.5-4 kg for two-sided welding.
-

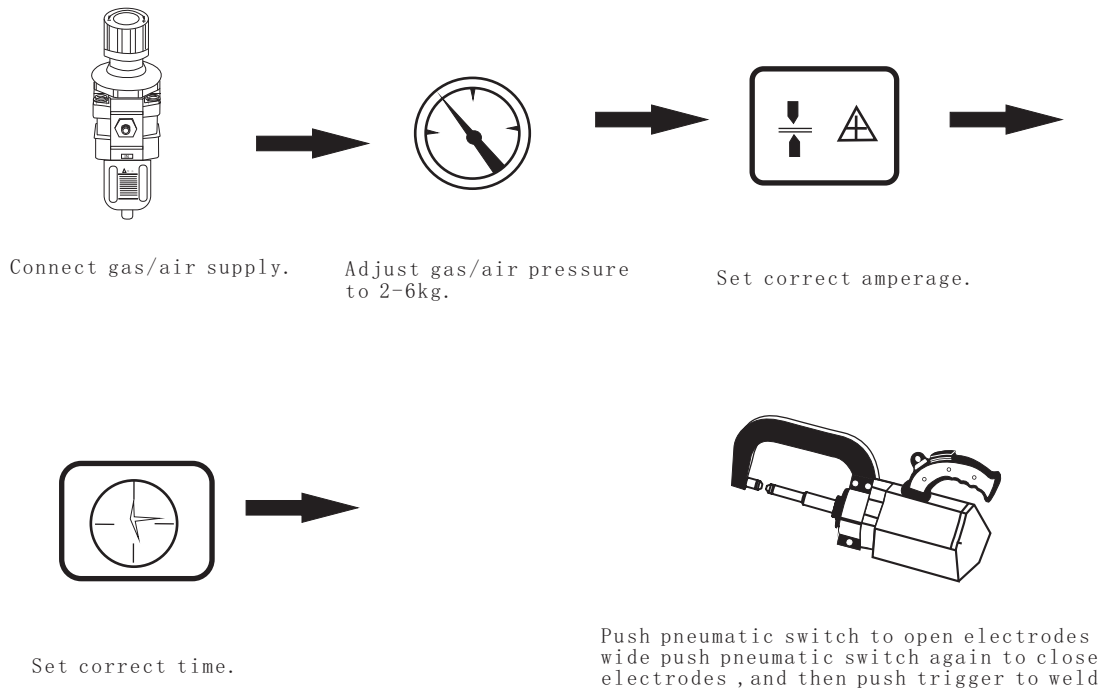
e、The problem in operation of spot welding

Electric current, which passes through the workpieces, will be affected by the gap between the workpieces. Even though it can be welded, the weld joint will be smaller and weld strength will be decreased. Therefore, it is necessary to make the surface between the workpieces smooth or use a clamping device to clamp the workpieces tight.



4、Operation

f、Double-side Welding



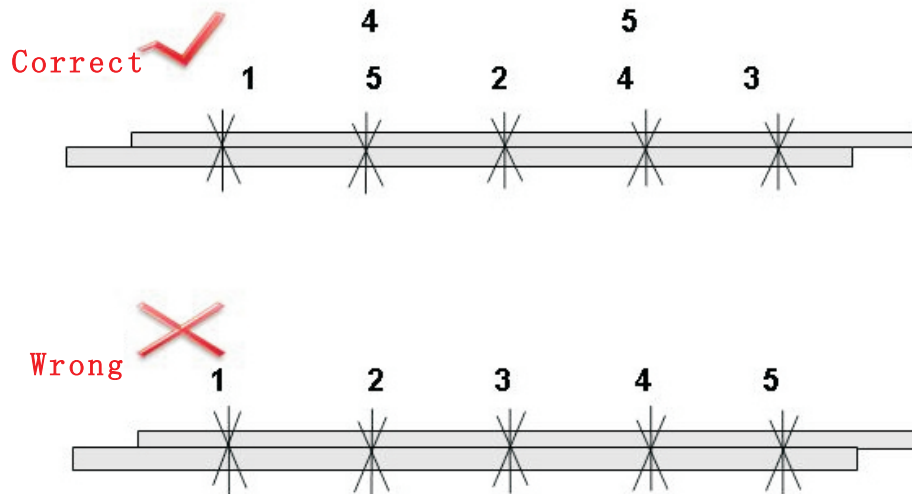
Remark:

- 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 .

5、 Operation of C-type Two-sided Spot Gun

f、 Sequence of weld nugget

Do not spot weld continuously in one direction. Doing so may result in current split-flow, and weak, substandard welds. The welder shall be stopped and cooled down when the electrode caps get hot and change color.



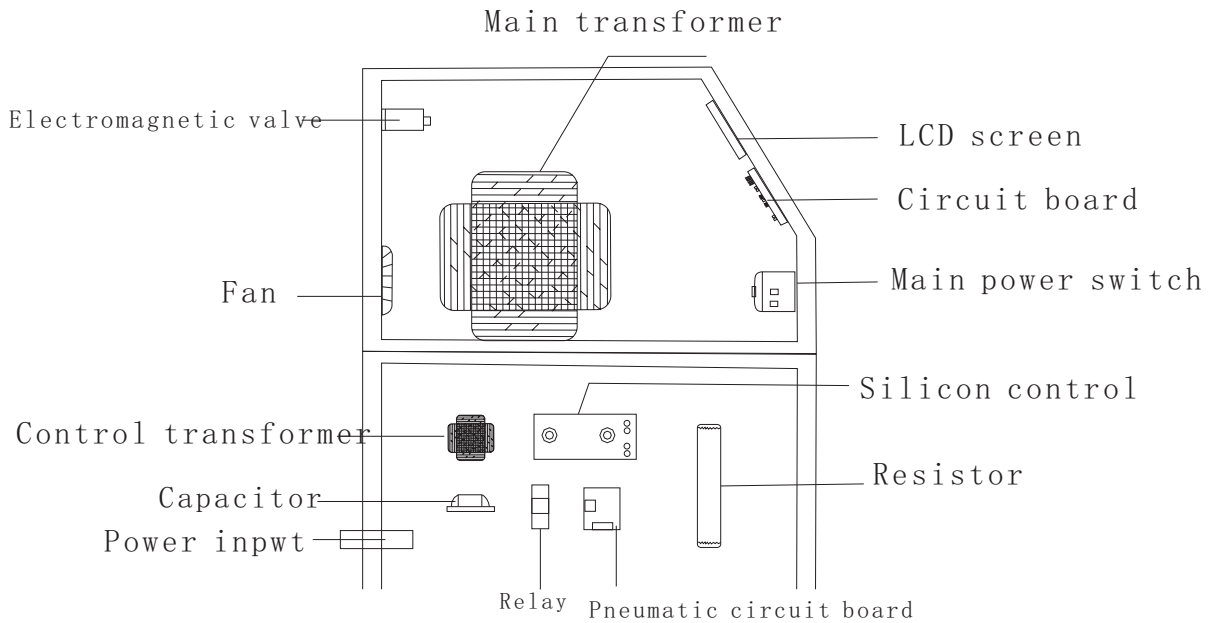
NOTE

To maintain structurally-sound welds it is important to keep your welding electrodes clear from build-up. It is also important to maintain a proper nugget diameter. Clean electrodes with a file and periodically replace welding caps.

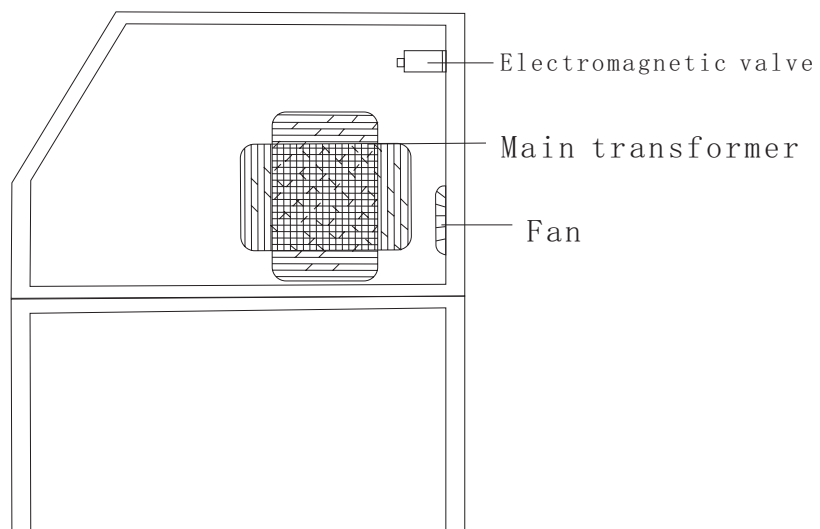


Maintenance

1、Exploded view



Left side view



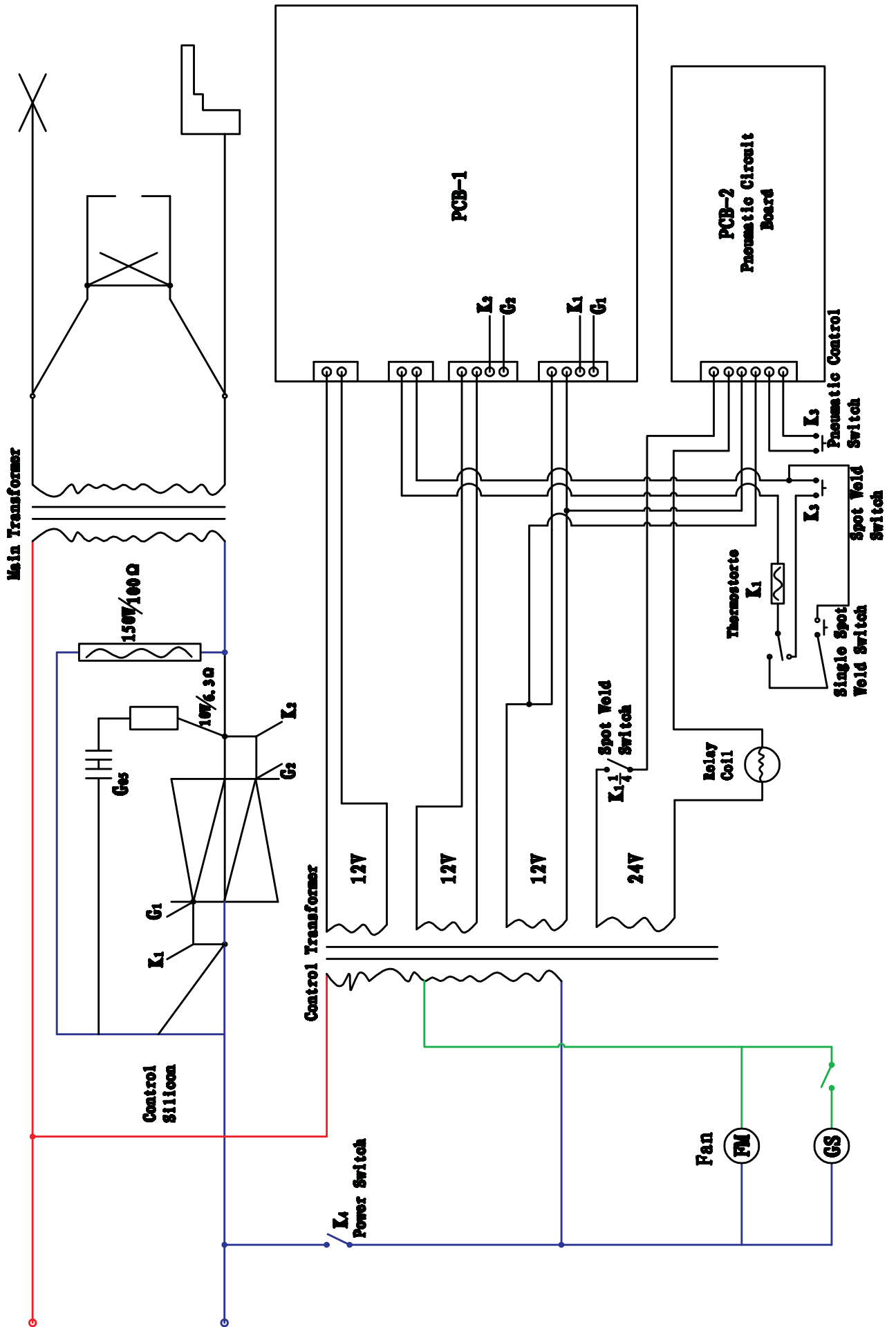
Right side view

Maintenance

1、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 (2) Set amperage and time according to workpiece thickness.
Not enough pressure	(1) Air compressor pressure not enough. (2) Pressure regulator not enough pressure. (3) Electromagnetism valve not open. (4) Incorrect gas/air pressure setting	(1) Adjust air compressor pressure. (2) Pull and turn pressure adjustment knob. (3) Adjust gas/air pressure control to 6-10kg.
Unit 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.
Excessive "dishing" of the surface contact point	(1) Welding time too long or excessive tong pressure (2) Large gap between workpieces or dirty workpieces surface (3) Make a sample weld, clean workpieces surface to remove all coatings, increase pressure properly, enlarge the contact area of workpieces (4) Decrease welding current	

Circuit Diagram



Pneumatic Schematic Diagram

