

Owner's Manual



FY-15000

The equipment is approved by following car manufacturers (China)



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Preface

Please read this instruction manual carefully before using and the equipment and refer to it as needed to ensure the continued safe operation of the equipment.

- ▲ This instruction manual should be read completely before attempting to use or service the equipment.
- ▲ Failure to follow the instructions in this manual could result in property damage, severe personal injury, or death.

▲ The following warnings and important notices are used in the instruction manual:

 DANGER	Improper use of this equipment can cause serious or fatal injury	 WARNING	Improper use of this equipment can cause personal injury or property damage
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DANGER

Improper use of this equipment can cause serious or fatal injury



- ◆ Magnetic fields can affect pacemakers. Pacemaker wearers keep away from the equipment. Wearers should consult their doctor before going near equipment operations.



- ◆ Do not touch any live electrical parts. Wear dry, hole-free insulating gloves and body protection. The input power circuit and machine internal circuit are live with high voltage when power is on. Touching live electrical parts can cause fatal shocks or severe burns. High voltage exists in the power supply socket. Never touch the conductor terminals with bare hand.



- ◆ Input power installation must meet national standard. All electrical connections must be made by a qualified electrician. Insulated gloves and shoes must be worn when connecting input power or maintaining equipment.



- ◆ Never disassemble, repair, alter or rebuild the equipment without approval from the manufacturer. There is a risk for electrical shock and fire.

- ◆ Make sure the supply cable is up to national standard or local code. Use only the right gauge of electrical wire/cable. There is a risk of fire or electrical shock if overload building wiring—be sure power supply system is properly sized, rated and protected to handle this unit.



- ◆ Electric shock can kill. Properly ground this equipment according to its user manual and national standard.



- ◆ Replace power cord/wire/cable immediately—bare wiring can kill.
- ◆ Do not step on, twist or pull the power cord..
- ◆ Frequently inspect input power cord and regularly clean the unit to remove dust and dirt. Any worn or damaged power cord or internal components in heavy dust may cause electrical shock, short circuit or fire.



- ◆ In the event of abnormal, operation must be immediately stopped. If smoke, smell or abnormal noise is produced by the unit, disconnect the power cord immediately and contact your local dealer. Do not use it until the problem is fixed.



- ◆ Do not operate or place the device near water or in wet locations. Risk for electrical shock or damage to the device.



- ◆ Do not operate the equipment in potential hazardous areas : chemicals, oil, gas and mining, or the worksites where power supply system is in poor condition.



- ◆ Use only well-maintained device. Inspect and maintain the device for safety every 12 months, including cleaning and removing dust. Repair or replace damaged parts/cables at once.



- ◆ Follow the installation and operation instruction to ensure user safety and proper equipment performance. It is the responsibility of the owner to ensure that the equipment has been installed and operated as specified in the instructions provided. The manufacturer takes no responsibility for any loss or damage suffered as a result of using the equipment incorrectly or improperly.



WARNING

Improper use of this equipment can cause personal injury or property property damage



The equipment is designed for welding of metals only. Do not use the equipment for other purposes. This may cause fire or electrical shock.



Never place any materials/objects on top of the equipment to avoid fire and electrical shock. Do not locate equipment on, over, or near combustibles in worksite. The flying sparks can cause fires and burns. Do not weld where flying sparks can strike flammable material.



Read instruction manual before using equipment. Use only the spare parts supplied or approved by manufacturer.



Overuse can cause overheating. Avoid overuse of the equipment which can cause components to overheat and reduce the life of equipment.



Follow the installation and operation instruction to ensure user safety and proper equipment performance. It is the responsibility of the owner to ensure that the equipment has been installed and operated as specified in the instructions provided. The manufacturer takes no responsibility for any loss or damage suffered as a result of using the equipment incorrectly or improperly.


















NOTE

- ◆ The equipment must be used by qualified personnel familiar with electronic equipment.
- ◆ Do not place the equipment on unstable or uneven ground. The equipment might fall causing injuries and damage to the equipment.
During operation process, the equipment should keep a distance about 10cm from the wall to keep air way clear.
- ◆ Avoid using the equipment in the environments with high humidity (above 90%), high temperature (above 40°C), low temperature (below 5°C), high frequency source nearby, chemical and drug, water vapor for condensation, dust or vibration.
- ◆ Make sure the facility supply voltage and frequency are the same as shown on name plate. The supply cable must be properly sized and rated.
- ◆ The connection between the main power supply and the equipment should be as short as possible.
- ◆ Use a dry cloth to clean the dirt on the equipment.
- ◆ Do not forget to take back all repair tools/objects inside the equipment after repair/ maintenance, such as screws, bolts or nuts. The left out metallic objects inside the equipment can cause damage to the equipment.
- ◆ Follow the instructions of this user manual to operate the equipment.
- ◆ We have made installation and operation quick and easy. Please operate the buttons and switches gently with your hands, only one button each time. The sensitive control circuit will be damaged if pressing the buttons with a hard and sharp thing such as screw driver and, pen.
- ◆ Turn off all equipment when not in use.
- ◆ **Follow the installation and operation instruction to ensure user safety and proper equipment performance. It is the responsibility of the owner to ensure that the equipment has been installed and operated as specified in the instructions provided. The manufacturer takes no responsibility for any loss or damage suffered as a result of using the equipment incorrectly or improperly.**

























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

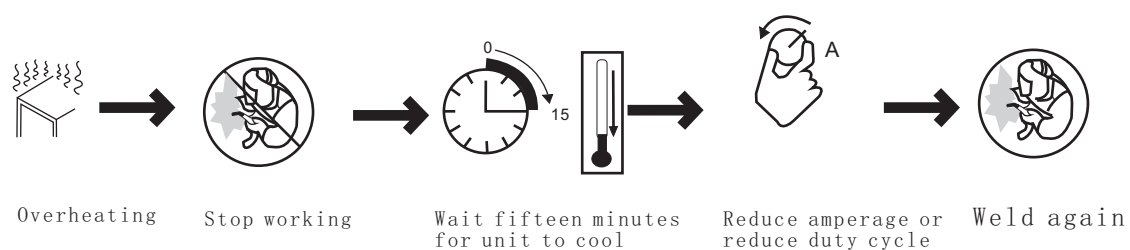
Input voltage	Single phase 380V	50/60HZ
Output voltage	Kriptol heating AC6V-10V	washer welding AC1V-12V double-side welding AC1V-13V
Input power	60KW	
Instant max.current	15000A	
Input current	60A	
Operation way	Electronic timer,continuity	
Time regulation system	0-99ms	
Operation way	Infinity	
One side welding thickness	1.0+1.5 (mm)	
Double-side welding thickness	3.0+3.0+2.0 (mm)	
Air supply pressure	2-6kg	
Vacuum suction	180kg	
Dimension	740*610*1800 (mm)	
Weight	195kg	

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

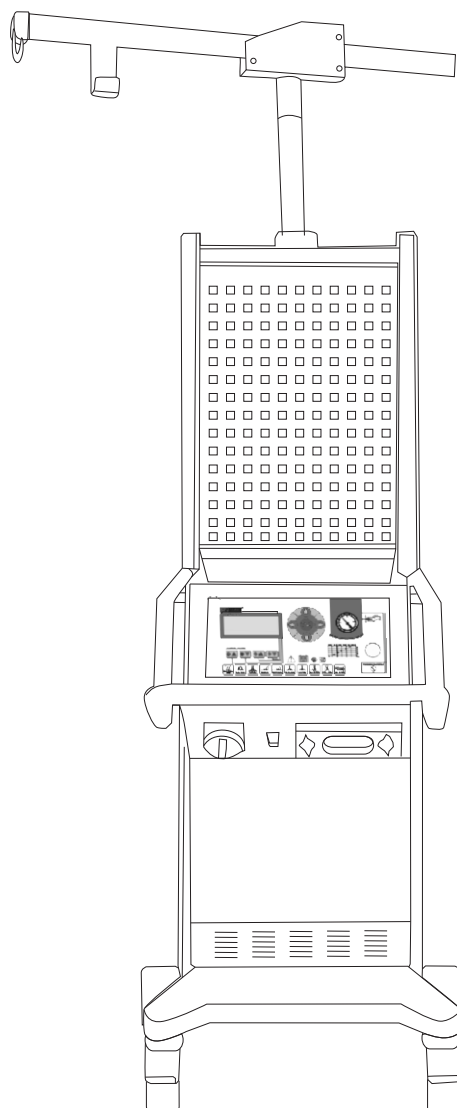
Duty cycle is percentage of 10 minutes that unit can weld at rated load without overheating.

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



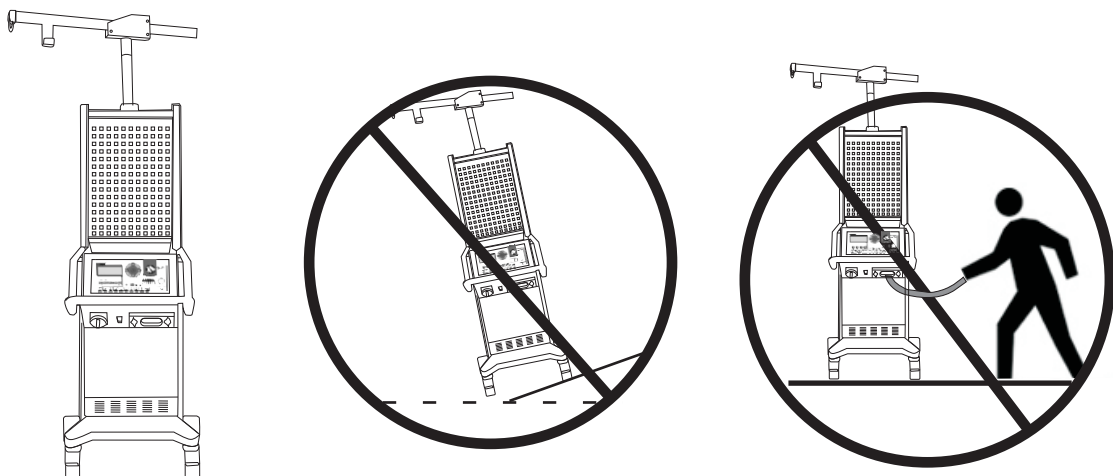
3、 Machine Installation

- 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.

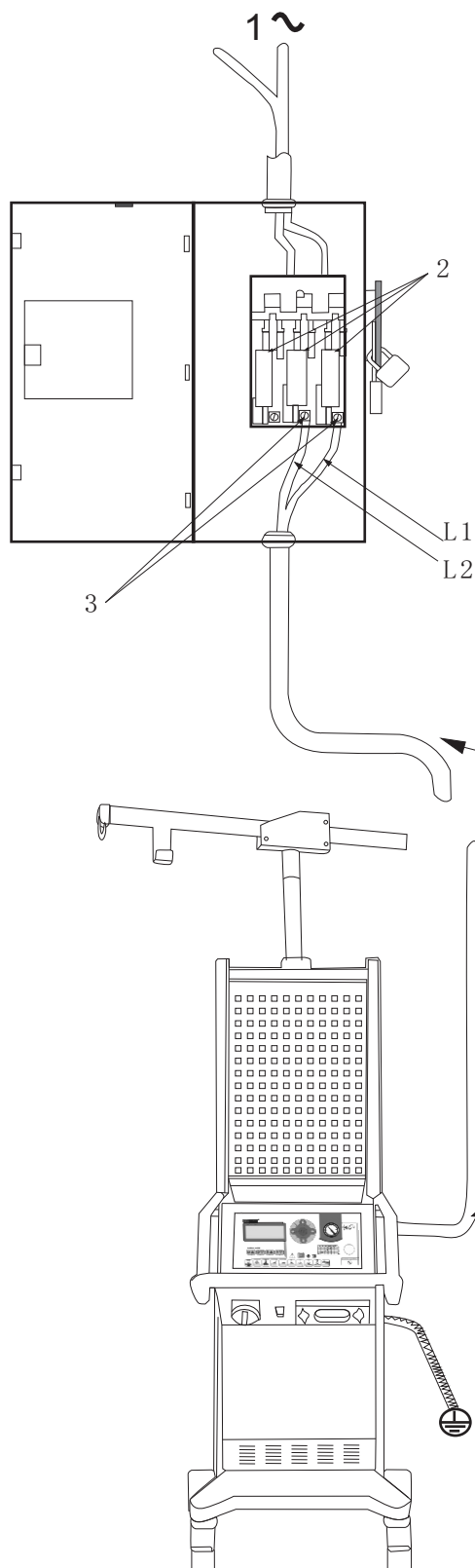


4. Selecting a Location

- 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 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

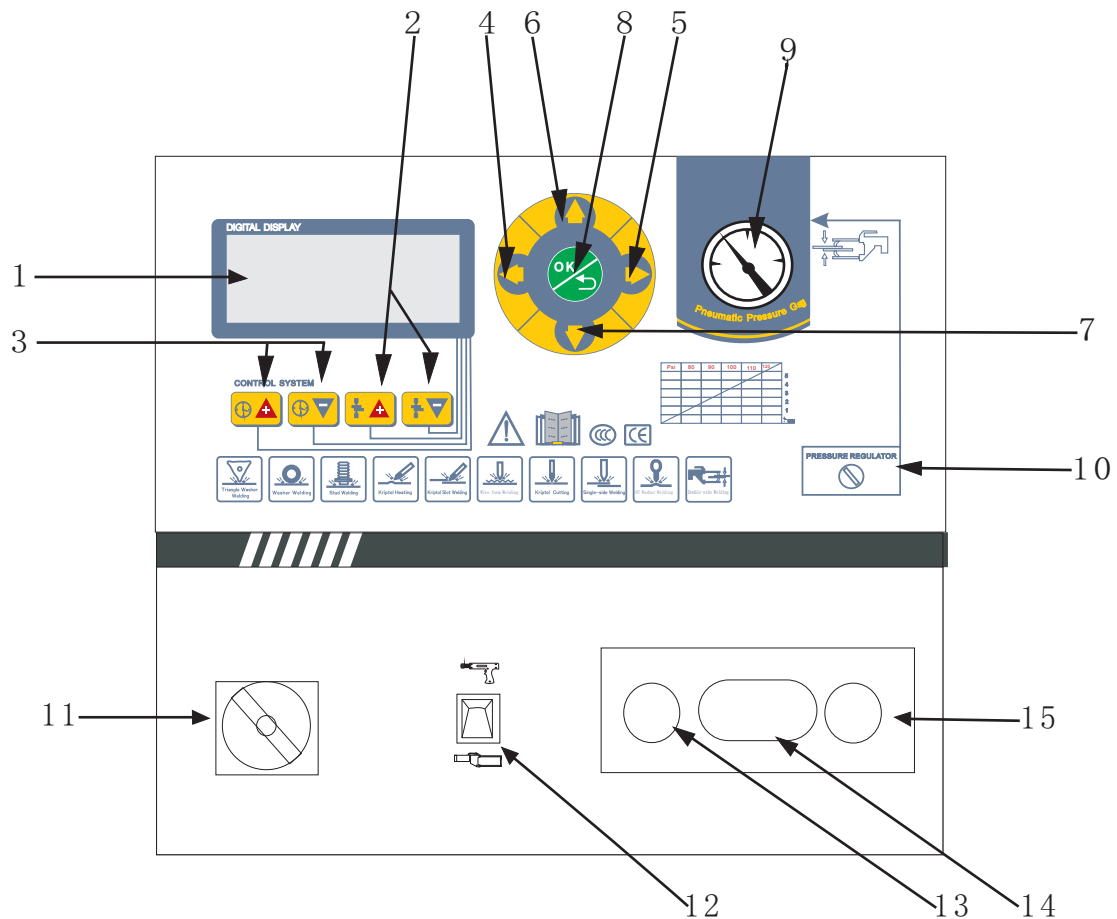


- 1、Input power cord (not less than 6mm² copper cord).
- 2、Over-current protection.
- 3、Disconnect device line terminals.
- 4、Ground wire L1/L2 input conductors.

- 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.

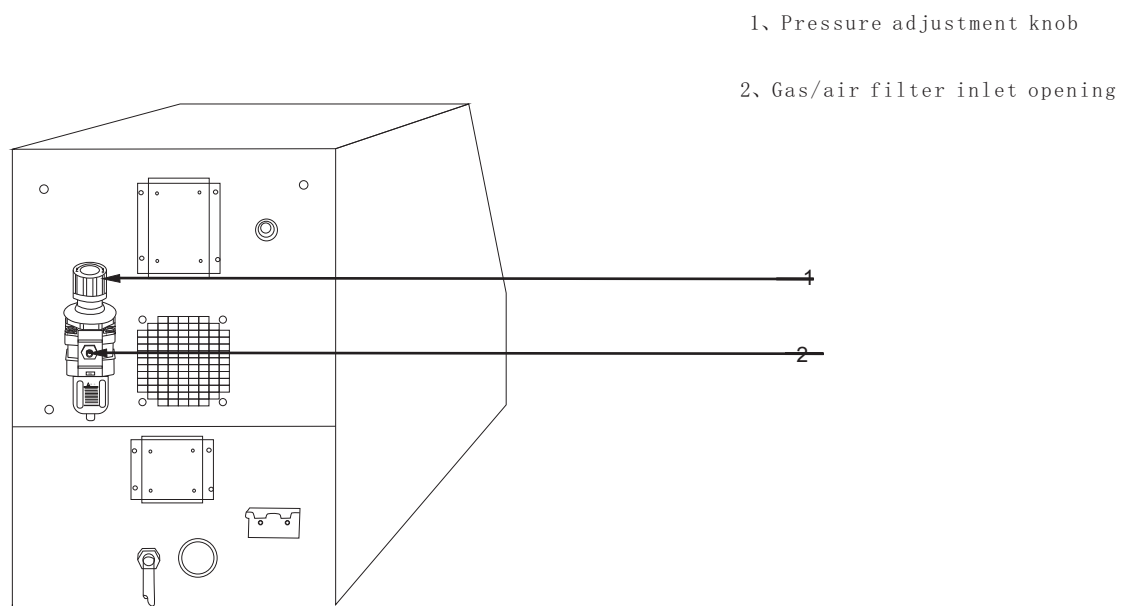
Operation

1、Controls



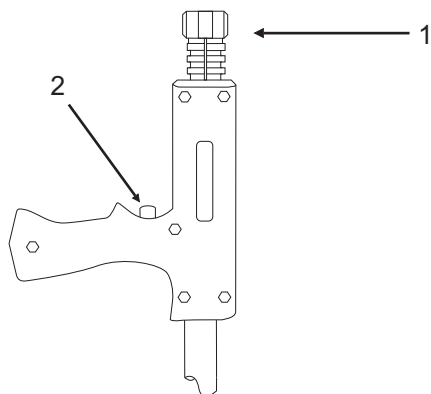
1. LCD Display
2. Power Adjustment
3. Time Adjustment
4. 5. Right/Left
6. 7. Up/Down
8. Enter/Return
9. Pneumatic Pressure Gauge
10. Pneumatic Regulator
11. Power switch
12. Single-side or Double-side welding
13. Negative outside wire
14. X-gun output cable
15. single-side gun output cable

2、Connecting and Setting Gas/Air Supply



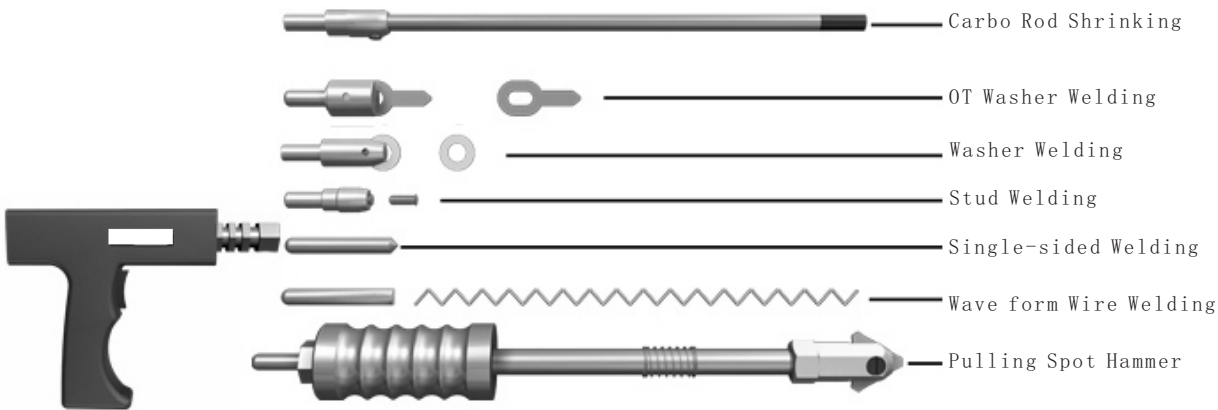
- 1、Connect to gas/air filter inlet with gas/air supply hose.
- 2、Pull and turn pressure adjustment knob .
- 3、Adjust gas/air pressure control in front panel (see page 9 NO. 3).
- 4、Set pressure to 6-10kg (see page 9 No. 2).
- 5、Push gas/air pressure control in to lock setting (see page 9 No. 3).

3、Welding Gun and Adaptors

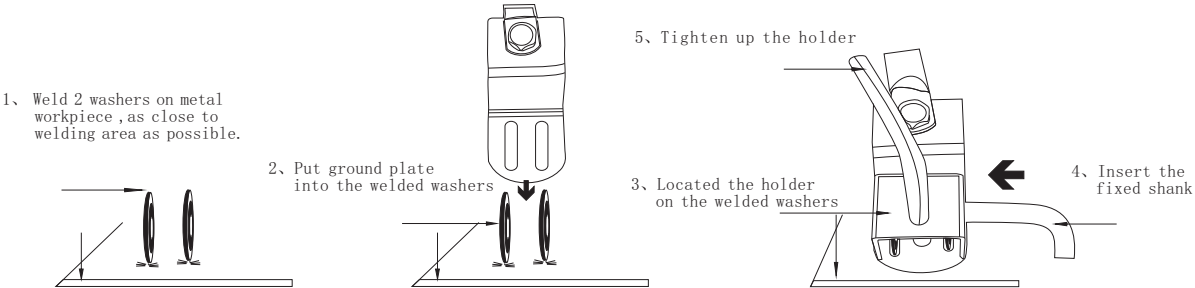


- 1、Electrode holder
- 2、Trigger

Single-Sided applications

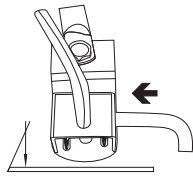


Connection of ground plate
A ground plate must be connected to the panel to be welded for it to work

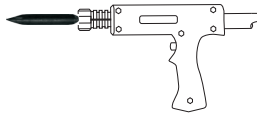


4、Operation

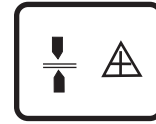
a、spot welding



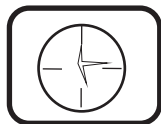
Connect ground plate wire to a clean, paint-free location on metal workpiece, as close to welding area as possible.



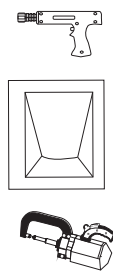
F008+F020
Connect spot welding electrode tip with welding gun and tighten.



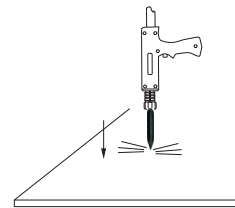
Set correct amperage.



Set correct time.



Set Mode switch to spot welding.



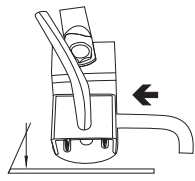
Approximately a 90° angle to the workpiece surface.
Put on pressure and press trigger.

Remark:

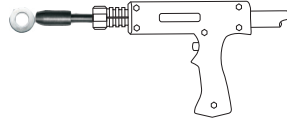
- 1、Setting amperage too high or time too long can cause workpiece surface (vehicle body) damage .
Please weld other workpieces for practice before actual operations.
- 2、Setting correct amperage and time according to the workpiece thickness.
- 3、Continuing another operation is applicable after these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

4、Operation

b、Washer Welding

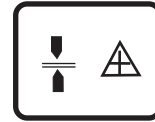


Connect ground plate wire to a clean, paint-free location on metal workpiece, as close to welding area as possible.

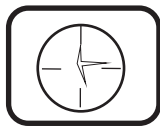


F017+F011+F020

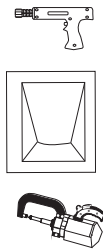
Connect washer adaptor with welding gun and tighten, Install washer.



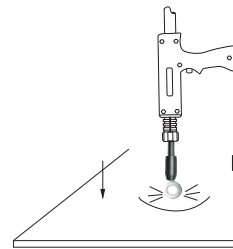
Set correct amperage.



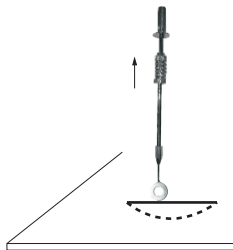
Set correct time.



Set Mode switch to spot welding.



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



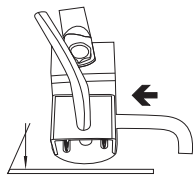
Remove welding gun. Hook the washer with pull hammer. Slide the hammer to opposite direction to pull out the dent .

Remark:

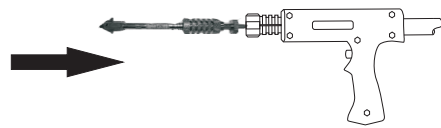
- 1、Setting amperage too high or time too long can cause workpiece surface (vehicle body) damage . Please weld other workpieces for practice before actual operations.
- 2、Setting correct amperage and time according to the workpiece thickness.
- 3、Continuing another operation is applicable after these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

4、Operation

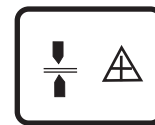
c、Triangle Washer Welding



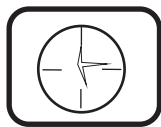
Connect ground plate wire to a clean, paint-free location on metal workpiece, as close to welding area as possible.



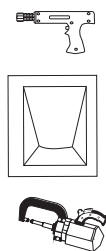
F003+F020
Connect triangle washer pull hammer with welding gun.



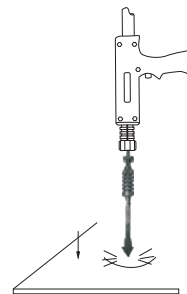
Set correct amperage.



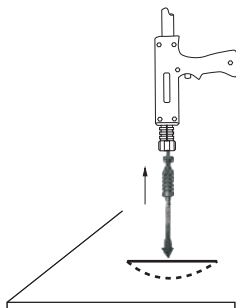
Set correct time.



Set Mode switch to spot welding.



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



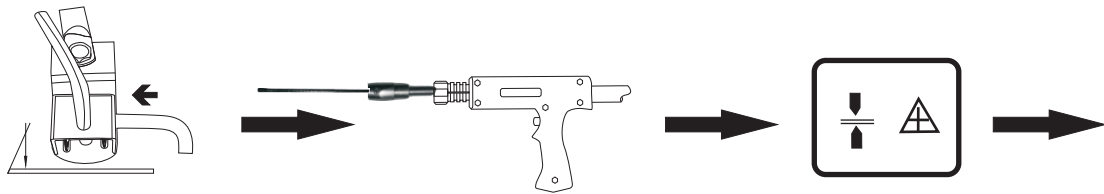
Slide the hammer to opposite direction to pull the dent.

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 pull out the dent 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



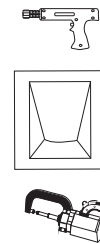
Connect ground plate wire to a clean, paint-free location on metal workpiece, as close to welding area as possible.

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

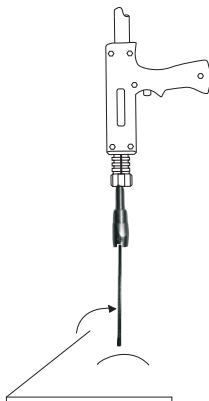
Set correct amperage.



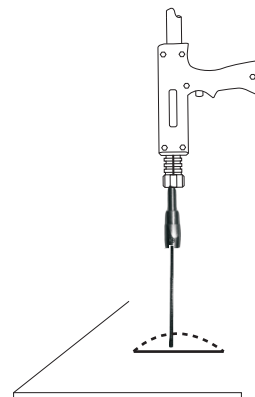
Set correct time.



Set Mode switch to spot welding.



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



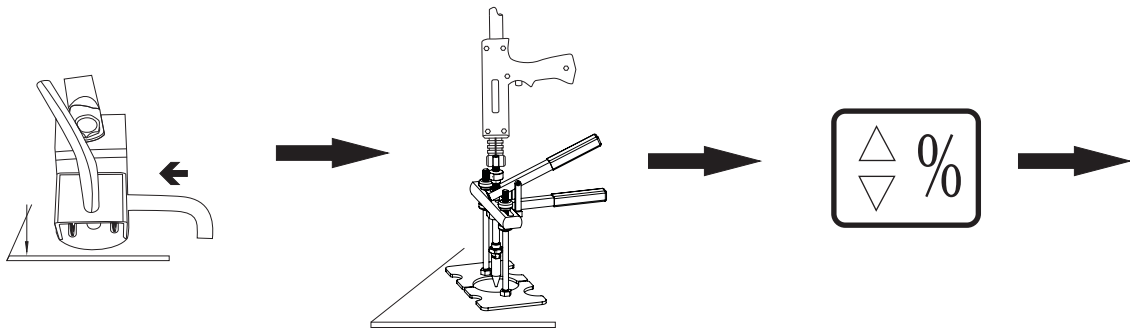
Cool the surface with a wet rag or compressed air.

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

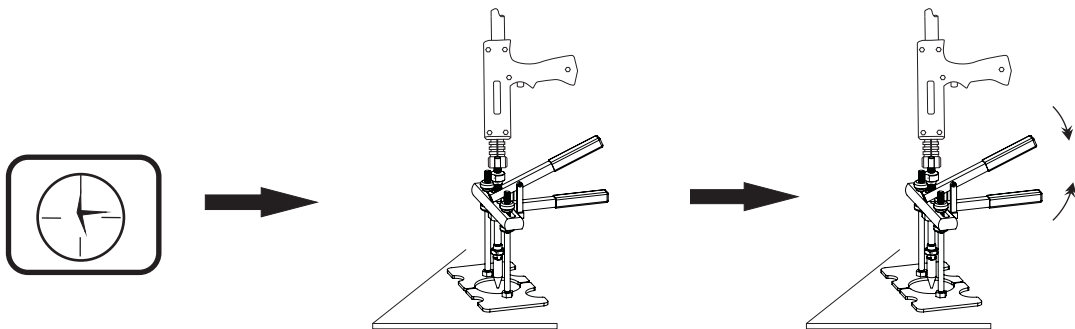
e、Quick Puller



Connect ground plate wire 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

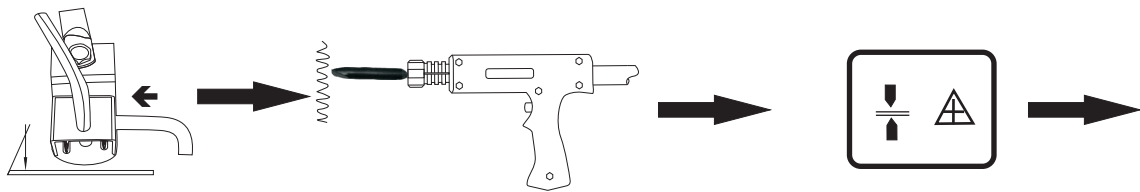
Squeeze the lever to pull the panel

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、WaveFormWireWelding

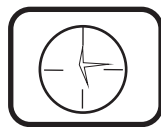


Connect ground plate wire to a clean, paint-free location on metal workpiece, as close to welding area as possible.

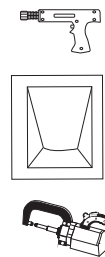
F006+F010+020

Connect wave form wire electrode tip with welding gun.

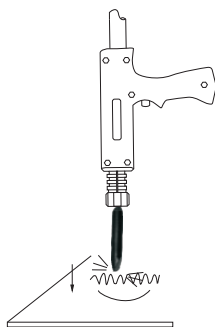
Set correct amperage.



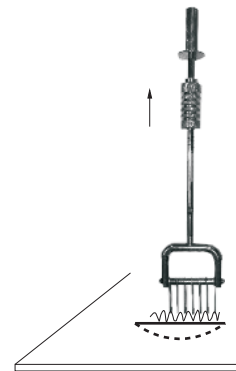
Set correct time.



Set Mode switch to spot welding.



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



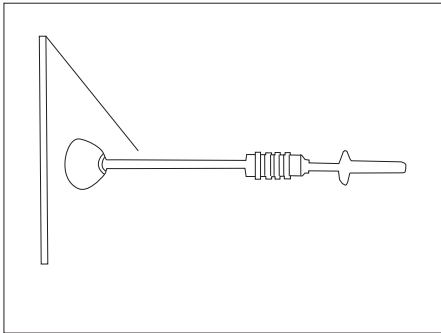
Connect hook puller with pull hammer. Hook wave form wire and slide the hammer to pull out the dent.

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.

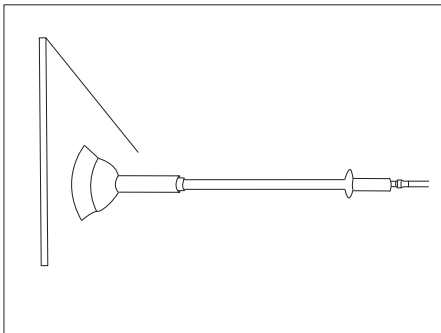
4、 Operation

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.

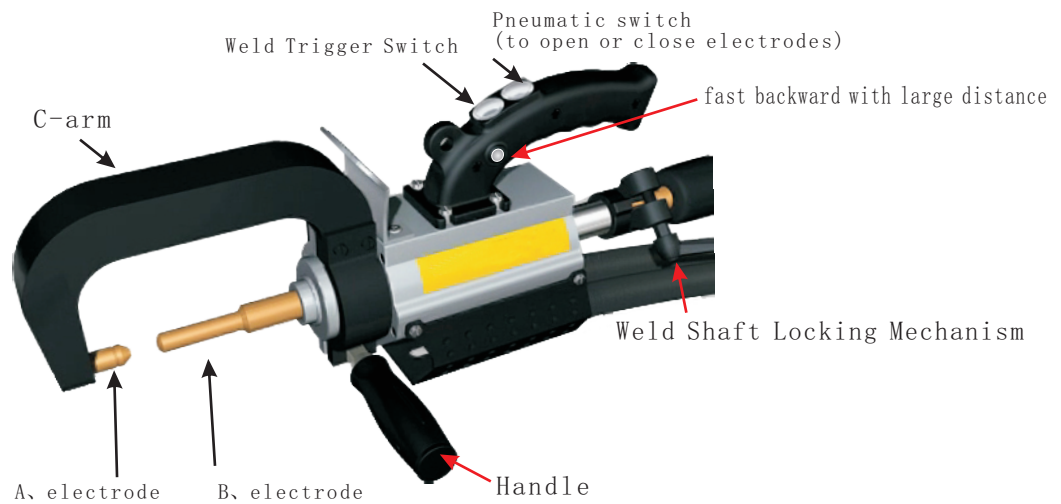


Pneumatic vacuum cupule:

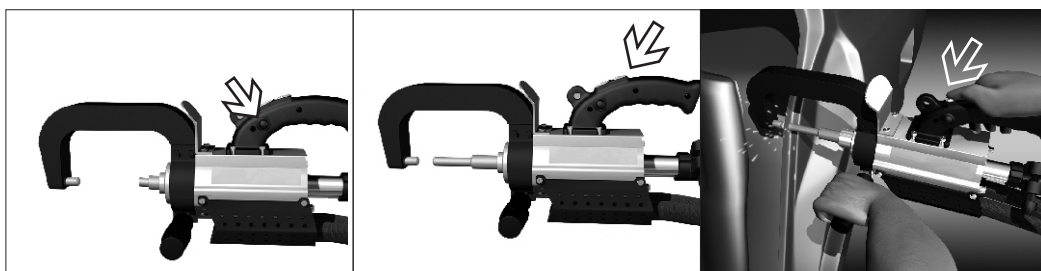
- 1、 Connect gas/air supply with the adaptor of cupule.
- 2、 Open the valve ,sticking cupule to the dent.
- 3、 Slide the hammer to opposite direction pull the dent out.
- 4、 Cupule falls off when close the valve.

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

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



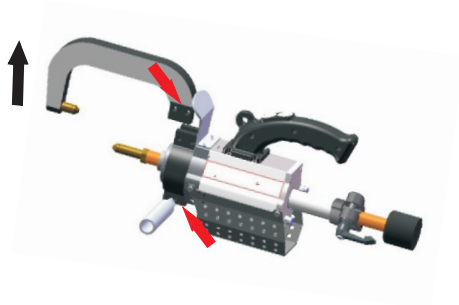
b. Using the C-type Two-sided spot gun



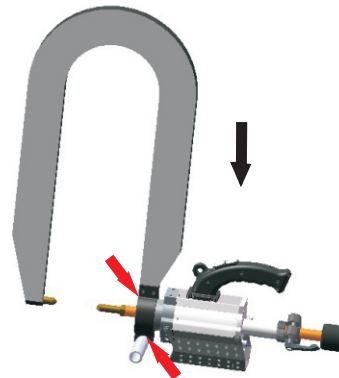
1. Push air button to open electrodes wide
2. Push pneumatic button to adjust the space between electrode and weldment
3. Push weld trigger to weld

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

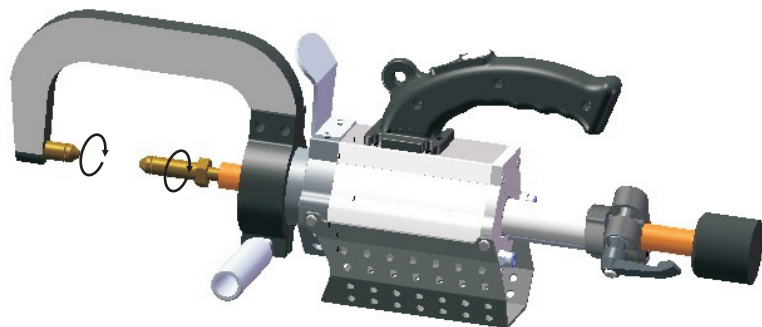


NO. F9003
450X180MM



NO. F9004
600X180MM

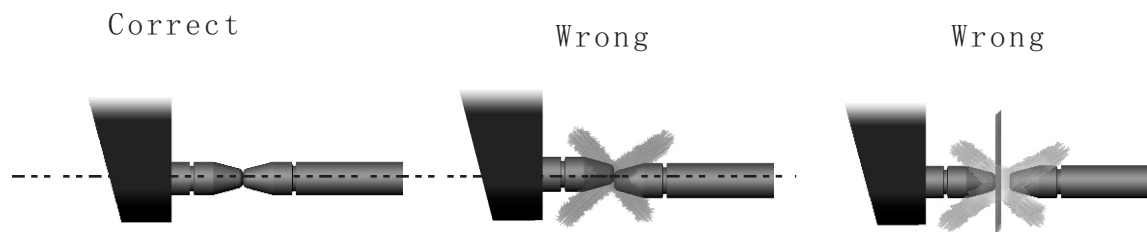
Removing Electrode



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)

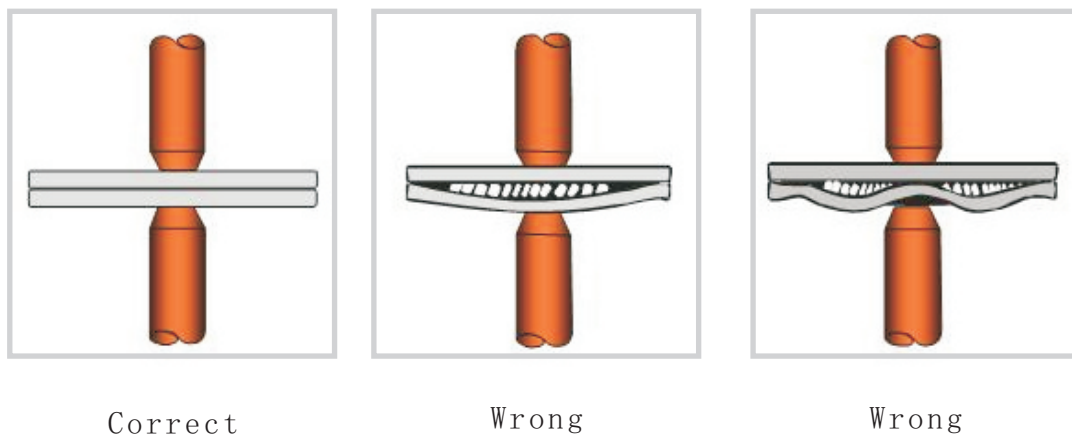


Note!

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

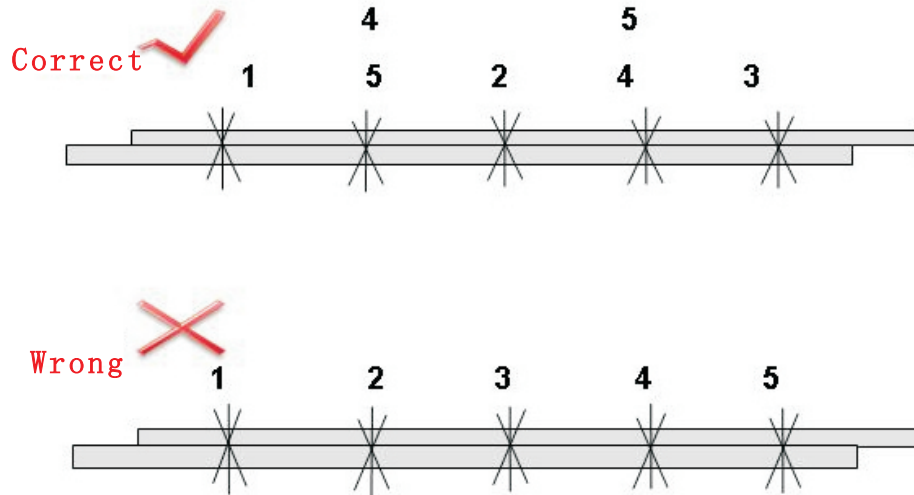
Electric current, which passes through the workpieces, will be affected by the gap between the workpieces. Even though it can be welded, the weld joint will be smaller and weld strength will be decreased. Therefore, it is necessary to make the surface between the workpieces smooth or use a clamping device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



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.



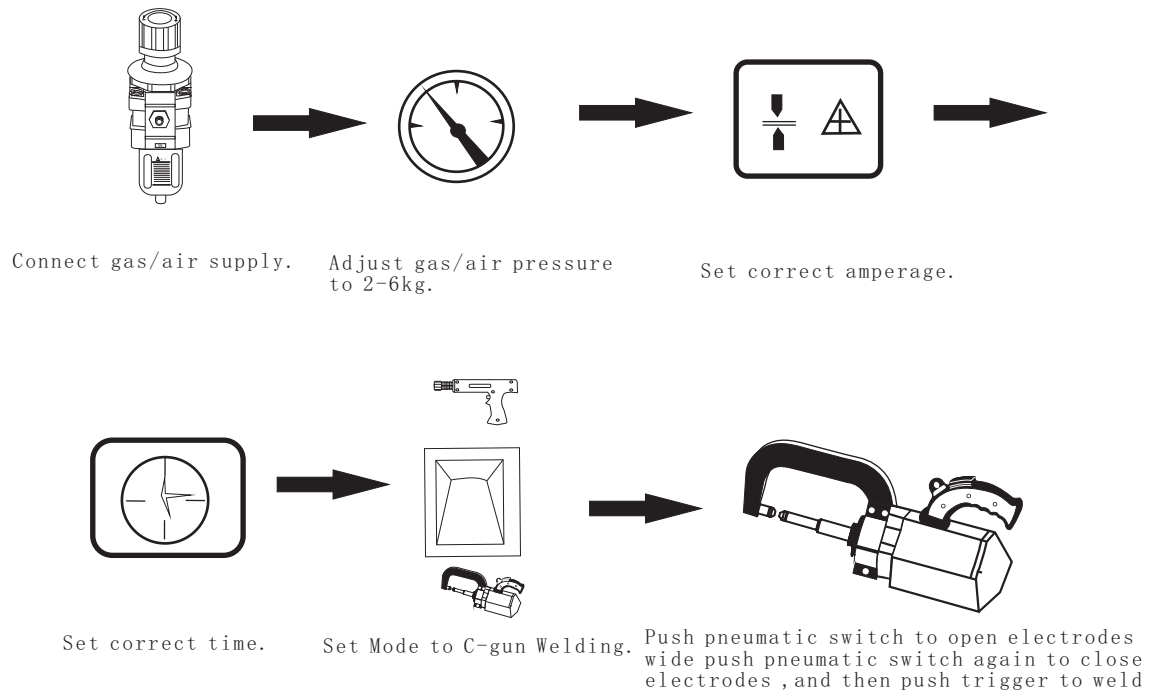
NOTE

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.



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

g、Double-side Welding



Remark:

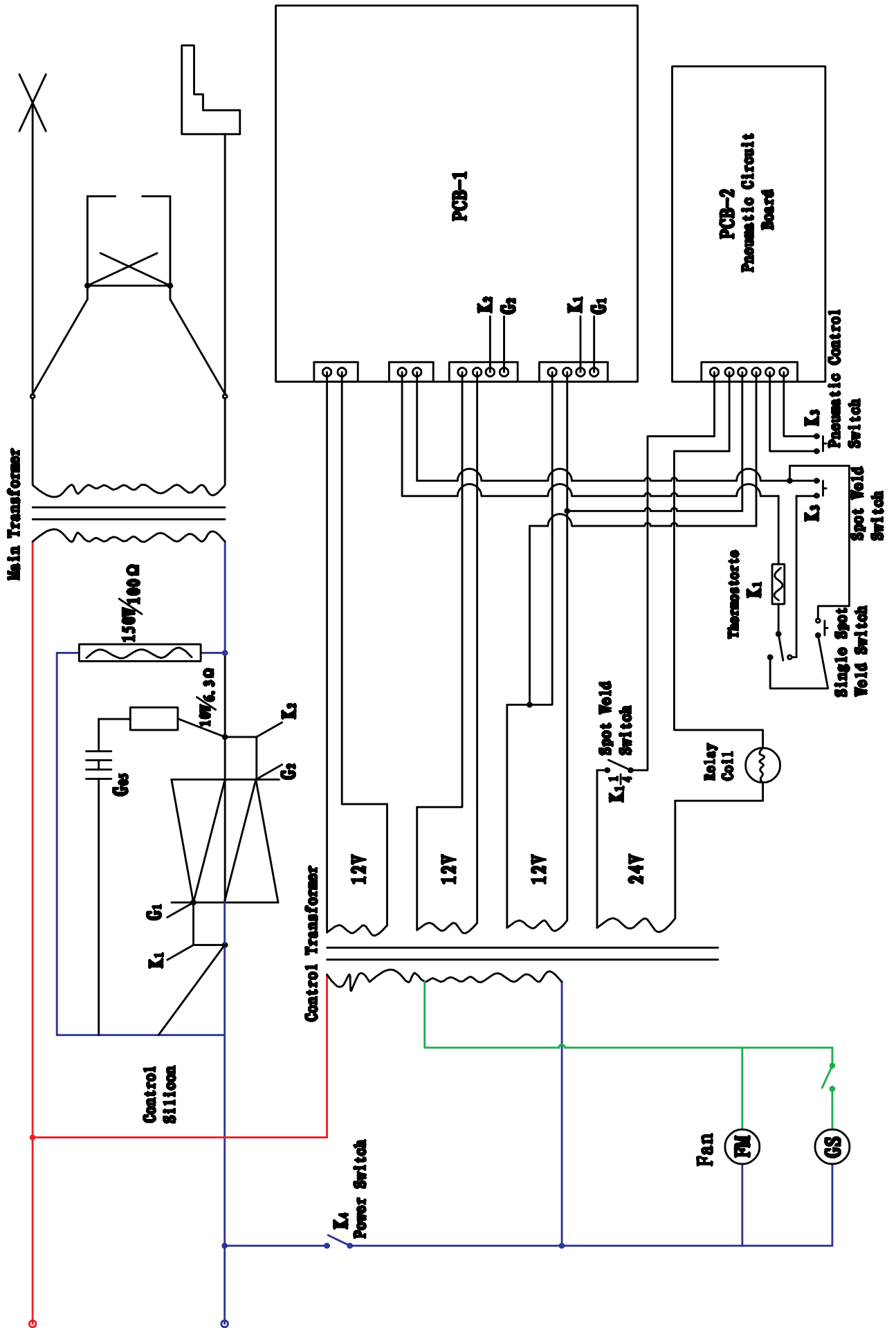
- 1、Setting amperage too high or time too long can cause workpiece surface (vehicle body) damage . Please weld other workpieces for practice before actual operations.
- 2、Setting correct amperage and time according to the workpiece thickness.
- 3、Continuing another operation is applicable after these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

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

