FY-TECH

Owner's Manual

CE

FY-9013L

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

Contents

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 property damage

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.
- Electric shock can kill. Properly ground this equipment according to its user manual and national standard.
- 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.
- 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℃),low temperature(below5℃), 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
I_2 Rated welding current	IP Degree of protection	Protective earth (Ground)	Line connection
S_1 Power rating, product of voltage and current (KVA)	1~ Single phase	Do not do this	Loose shield cup
HZ Hertz	X Duty cycle	S Suitable for some hazardous locations	Adjust air/gas pressure
U_1 Primary voltage	Direct current	Input	Automatic
U_0 Rated no load voltage(Aaverage)	Constant crrent	V Voltage input	Manual
U_2 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
Claw puller NO. F004	Hook NO. F005	Wriggle NO. F006
Carbon Cod 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 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)、Optionnal orders for above accessories and components are available.

2)、Model and parts number required when ordering parts from your local distributor.

Installation

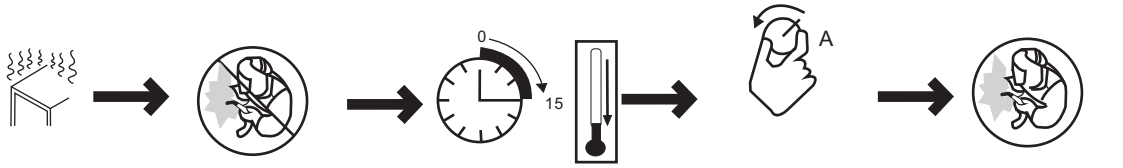
1、specifications

Input voltage	220V 50/60Hz
Output voltage	AC6V-10V Carbon rod heating AC1V-12V Washer fusion AC1V-13V Butt weld
Input power	10KW
Instant max.current	1200A
Input current	30A
Operation way	Continuity
Time regulation system	0-99ms
Operation place	Stepless
One side welding thickness	0.8+1.2(mm)
Vacuum cupule device	180kg
Dimension	460*480*1050(mm)
Weight	35kg

Picture	Description	Time (s)	Power
	Triangle washer welding	0.01-FFF	25-FF
	Washer welding	0.01-FFF	25-FF
	OT washer welding	0.01-FFF	25-FF
	Stud welding	0.01-FFF	25-FF
	Single-sided spot welding	0.01-FFF	25-FF
	Wavy wire welding	0.01-FFF	25-FF
	Sheet metal flattening	FFF	25-FF
	Carbon rod stitch welding	FFF	25-FF
	Carbon rod heating & shrinking	FFF	25-FF
	Carbon rod cutting	FFF	25-FF

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.



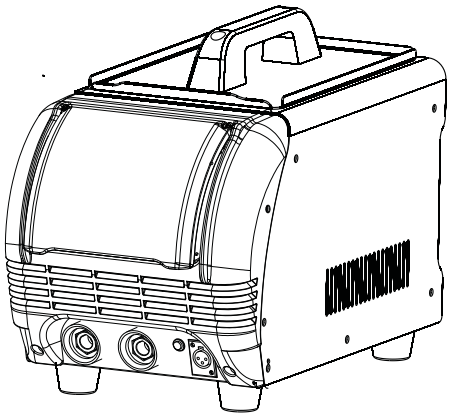
Overheating | Stop working | Wait fifteen minutes for unit to cool | Reduce amperage or reduce duty cycle | Weld again

3、Machine Installation

1)Open the package and find out the owner's manual。

2)Check the supplied of 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.



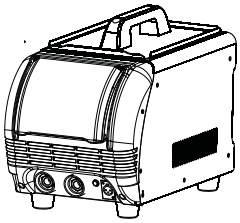
4、Selecting a Location

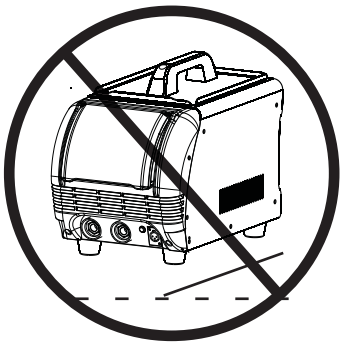
1)Select a correct location to place the unit.

2)Determine input power cord length according to its actual operation requirement .Make sure that the supply cable is at least 6mm^2 in diameter

3)Do not move or operate unit where it could tip.

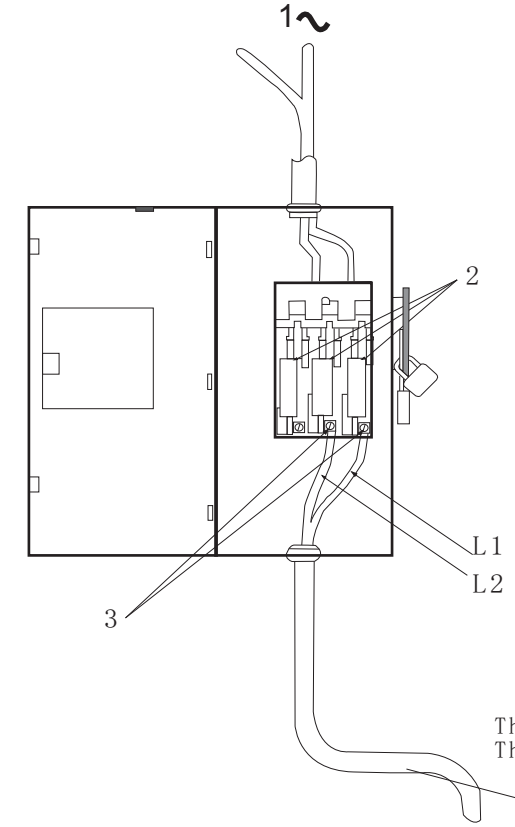
4)Use cart or unit handle to move unit .Do not pull the cords to move unit.





5、Connecting Input Power

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



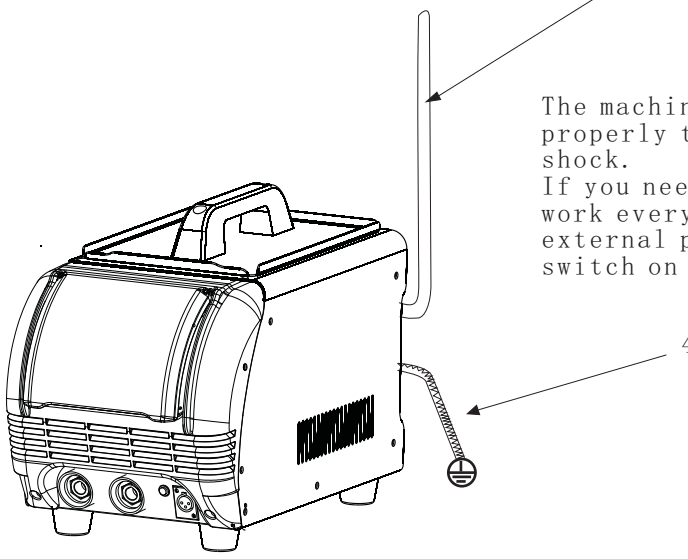
1、Input power cord (not less than 6mm² copper cord).
2、Over-current protection.
3、Disconnect device line terminals.
4、Ground wire L1/L2 input conductors.

- Installation must meet all National and Local Codes---have only qualified persons make this installation.
- Disconnect and lockout/tagount 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.

1

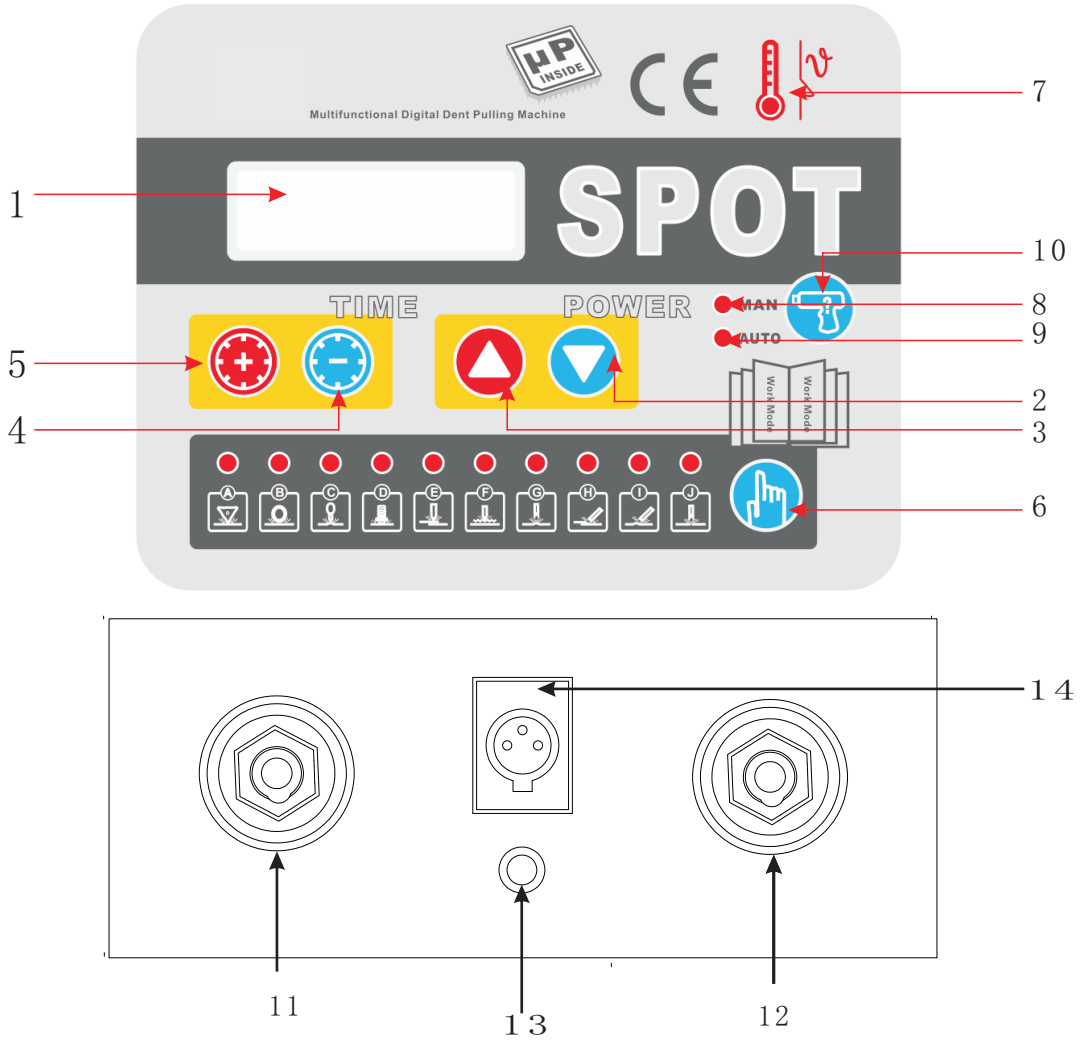
The machine must be grounded(earthed) properly to prevent accidental electrical shock.
If you need to open the machine case(after work every day, make sure to turn off the external power source and turn off the power switch on the machine.



4

Operation

1、Controls



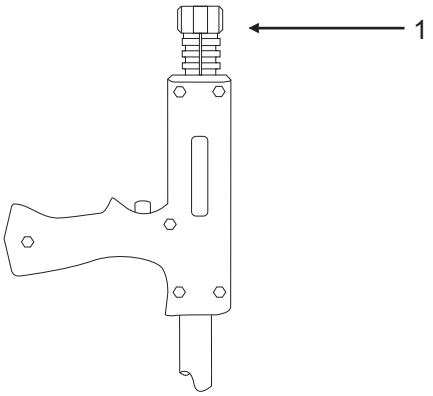
1. LCD Screen
2. Weld Power-- Down
3. Weld Power --Up
4. Weld Time---Down
5. Weld Time--Up
6. Weld Program Selection
7. Overheat Indicator
8. Manual Weld
9. Automatic Weld
10. Manual/Automatic Selection
11. Earth Cable Output
12. Weld Gun Cable Output
13. Gun Cable Trigger
14. Gun Cable Socket

REMARK:
The programs G,H,I,J cannot be used in Automatic Weld. Weld Time cannot be set to FF(Full).In Automatic Weld, welding automatically without triggering.

-Pressing the two buttons "Weld Time—Up" and "Weld Program Selection" at the same to resume to default setting.
- Pressing the two buttons "Weld Power –Up" and "Manual/Automatic Selection" at the same time for switching English and Chinese

Weld Program Selection:
Press quickly: Moving icon to the right
Press and hold: Moving icon to the left

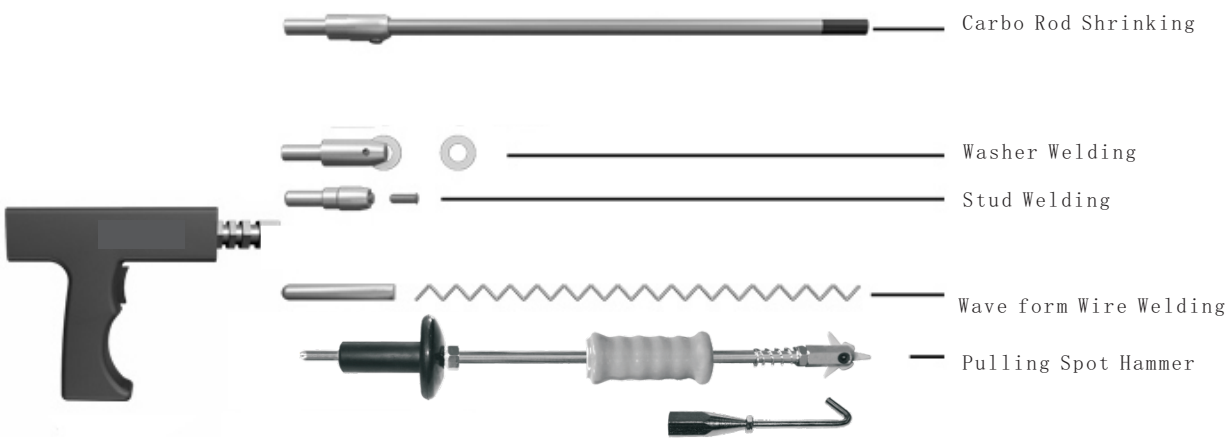
2、Welding Gun and Adaptors



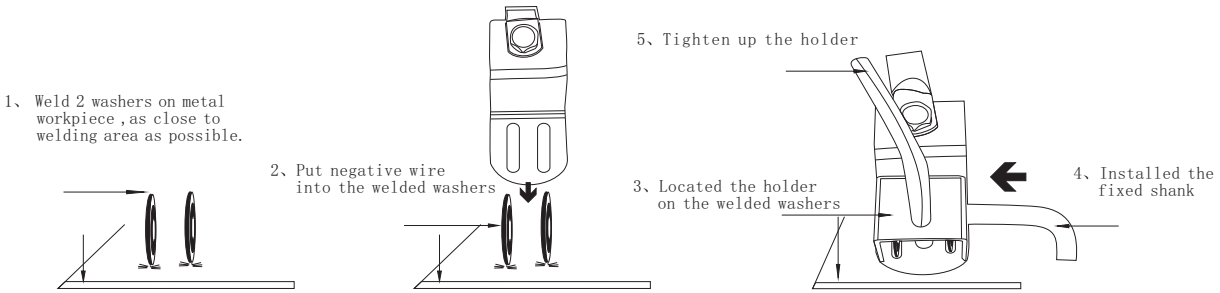
1、Electrode holder

2、Trigger

Single-Sided applications

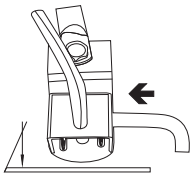


Connection of negative wire

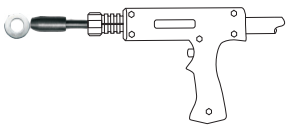


3、Operation

a、Washer Welding

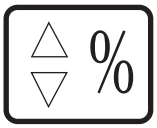


Connect negative outside wire to a clean,paint-free location on metal workpiece,as close to welding area as possible.

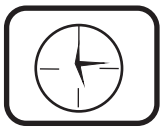


F017+F011+F020

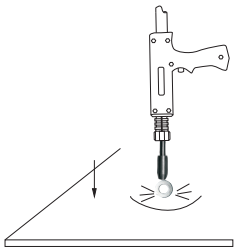
Connect washer adaptor with welding gun and tighten, Install washer.



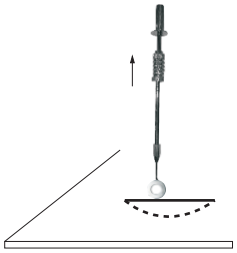
Set correct amperage.



Set correct time.



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 oppositedirection to pull out the dent .

Remark:

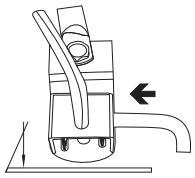
1、Setting amperage too high or time too long can cause workpiece surface (vehicle body)damage . Please weld other workpieces for practice before actual operations.

2、Setting correct amperage and time according to the workpiece thickness.

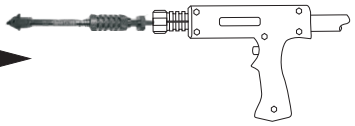
3、Continuing another operation is available after this procedure finished .if not, please shut off the main power supply and switch off the unit.

3、Operation

b、Triangle Washer Welding

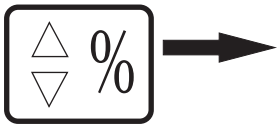


Connect negative outside wire to a clean, paint-free location on metal workpiece, as close to welding area as possible.

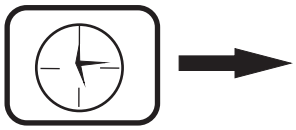


F003+F020

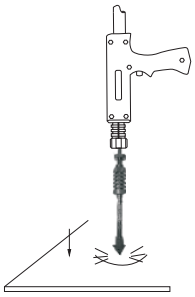
Connect triangel washer pull hammer with welding gun.



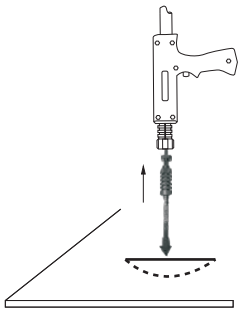
Set correct amperage.



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 out.

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.

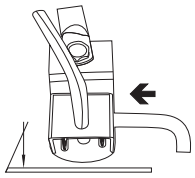
2、Setting correct amperage and time according to the workpiece thickness

3. Triangle washer welding can replace washer welding. It can pull out the dent directly after welded.

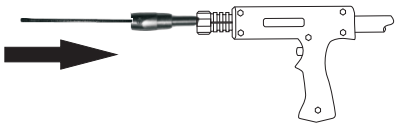
4、Continuing another operation is available after this procedure finished . If not, please shut off the main power supply and switch off the unit.

3、Operation

C、Carbon rod Heating

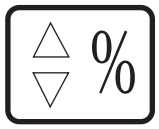


Connect negative outside wire to a clean,paint-free location on metal workpiece,as close to welding area as possible.

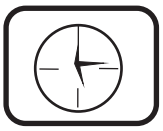


F007+F009+F020

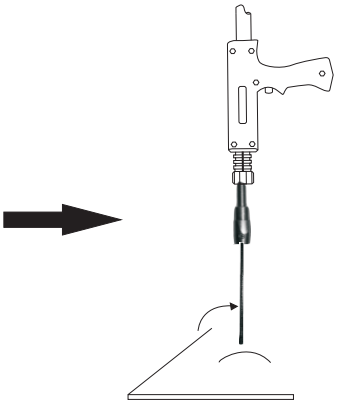
Connect carbon rod and carbon rod adaptor with welding gun.



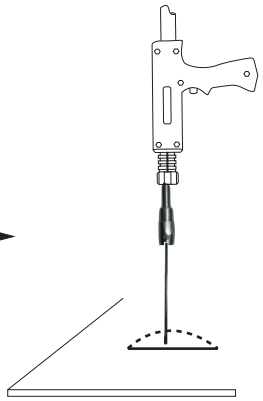
Set correct amperage.



Set correct time.



Carbon rod turning in clockwise to heat up the stretched panel



Use cold water or wet rag to cool down the heated area that makes the stretched panel shrunken as normal status.

Remark:

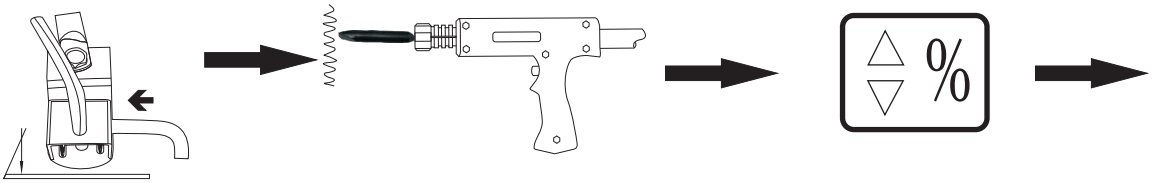
1、Setting amperage too high or time too long can cause workpiece surface (vehicle body)damage . Please weld other workpieces for practice before actual operations.

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..

3、Operation

d、Wriggle Form Wire Welding

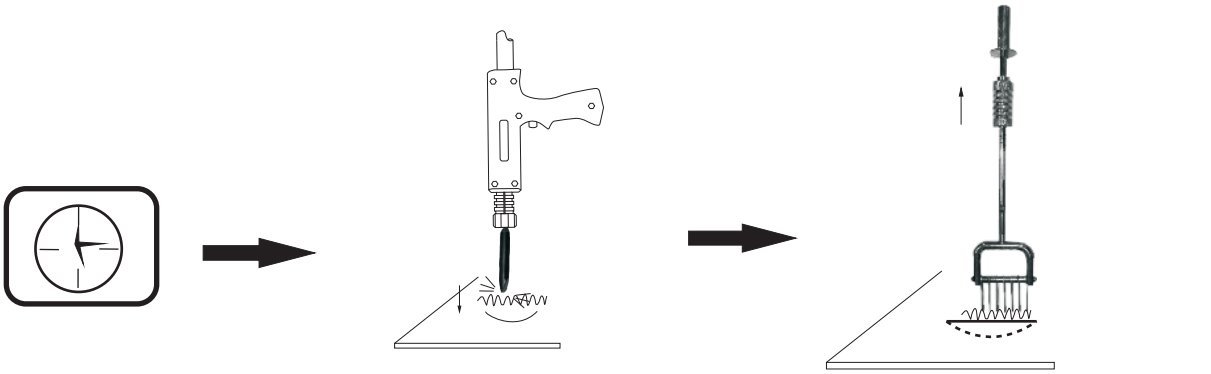


F006+F010+020

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

Connect wriggle 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:

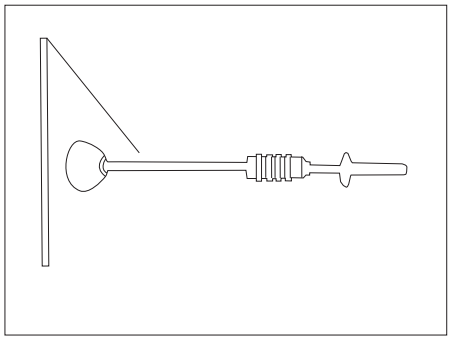
1、Setting amperage too high or time too long can cause workpiece surface (vehicle body) damage . Please weld other workpieces for practice before actual operations.

2、Setting correct amperage and time according to the workpiece thickness.

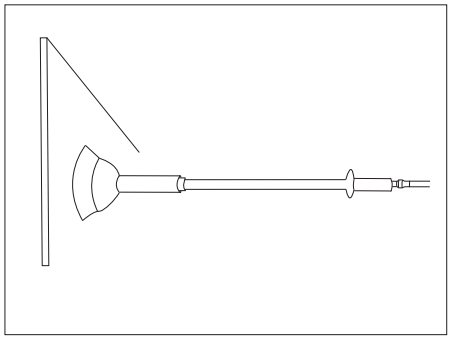
3、Continuing another operation is available after this procedure finished . If not , please shut off the main power supply and switch off the unit.

3、Operation

e、Cupules

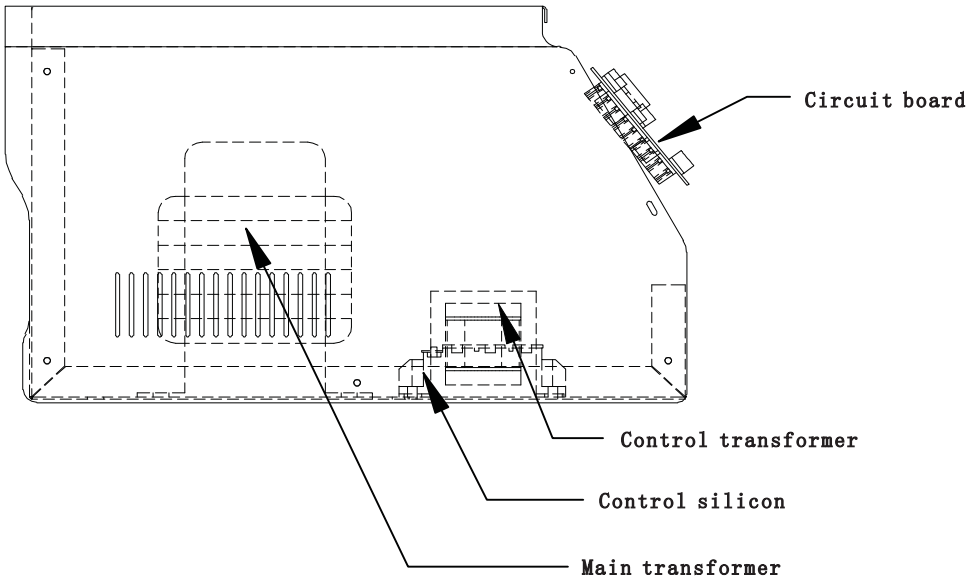


Manual operating cupule:
1、Connect manual cupule with pull hammer.
2、Push manual cupule in to lock the cupule on the dent.
3、Slide the hammer to opposite direction to pull the dent out.

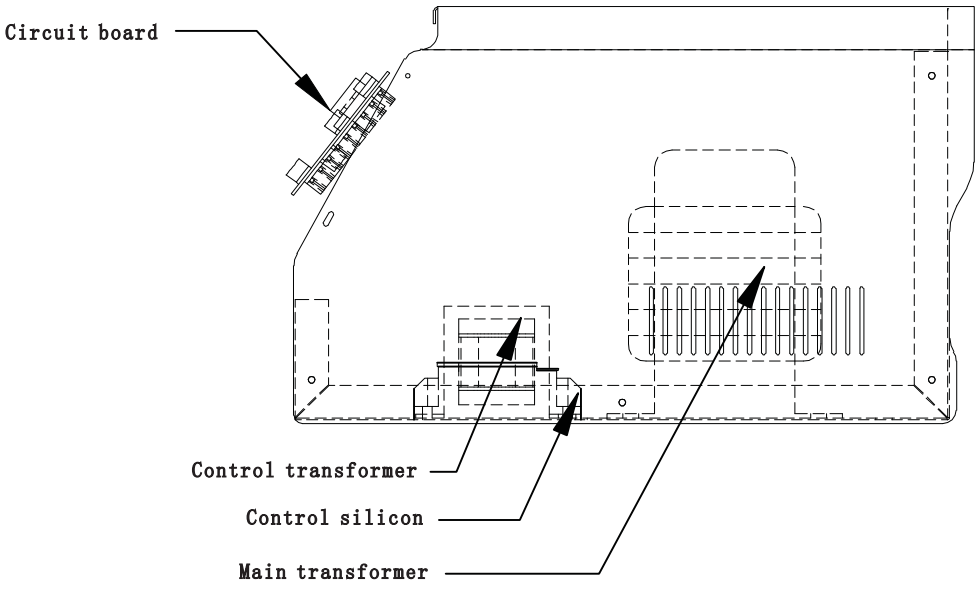


Pneumatic vacuum cupule:
1、Connect gas/air supply with the adaptor of cupule.
2、Open the valve , sticking cupule to the dent.
3、Slide the hammer to opposite direction pull the dent out.
4、Cupule falls off when close the valve.

1. Exploded view



Left side view



Right side view

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)Aamperage 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)Rrduce 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.
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.