FY-TECH

Owner's Manual

CE

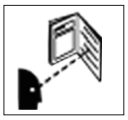
FY-93G

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

Contents

Safety Precautions Symbols

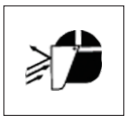
Protect yourself and others from injury, read and follow these precautions before installation and operation.



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

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

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。



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

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

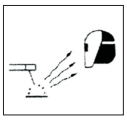
1、Magnetic fields can affect pacemakers. Pacemaker wearers keep away.
2、Wearers should consult their doctor before going near plasma arc cutting operations。

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

Do not weld in the height!

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。

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.



Eye protection for welding:

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

The heat from the workpiece can cause serious burns。

Remove all flammables of the welding area.

Falling unit can cause injury.

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

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
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

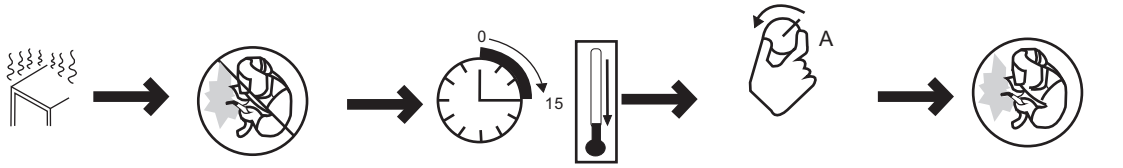
1、specifications

Input voltage	220V 50/60Hz
Output voltage	AC1V-10V Carbon rod heating AC6V-12V Washer fusion AC1V-13V Butt weld
Input power	10KW
Instant max.current	5400A
Input current	55A
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	620*450*980(mm)
Weight	80kg

Image	Description	Time(s)	welding thickness	Power consumption (KVA)
	Triangle washer welding	0.9-1.5	0.6-1.2	FFF
	Washer welding	1.0-2.0	0.6-1.2	FFF
	Stud welding	0.5-0.7	0.6-1.2	FFF
	Sheet metal flattening	0.5-0.7	0.6-1.2	FFF
	Carbon rod heating	0.99	0.6-1.2	FFF
	Waveform wire welding	0.4-0.8	0.6-1.2	0.7-0.9

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.



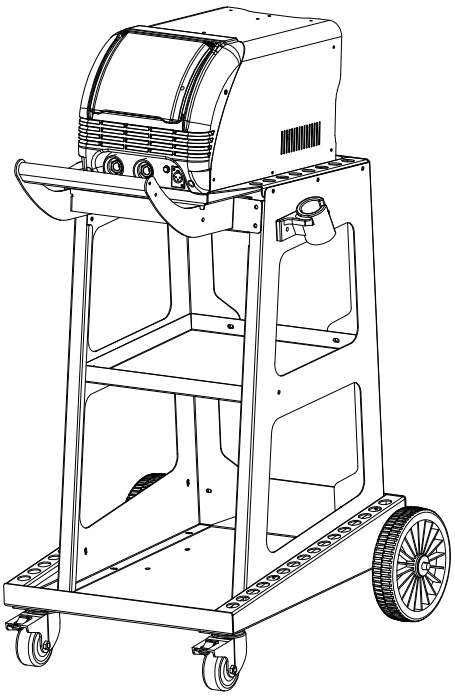
Overheating | Stop working | Wait fifteen minutes for unit to cool | Reduce amperage or reduce duty cycle | Weld again

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.



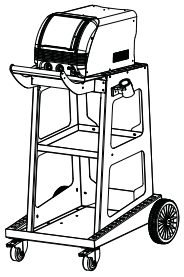
4、Selecting a Location

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 indiameter

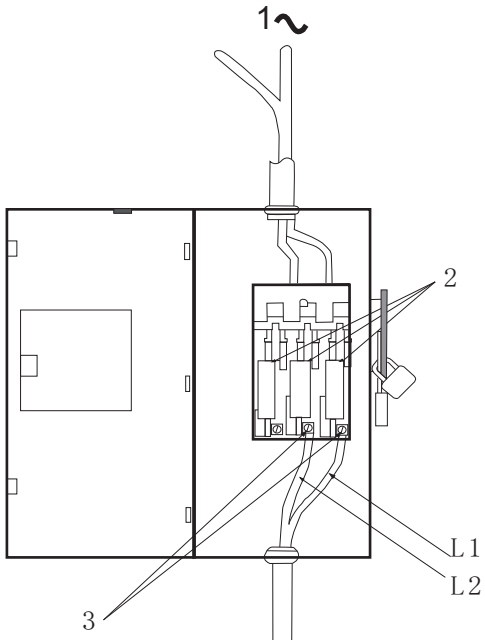
3)Do not move or operate unit where it could tip.

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.

■Power connection and installation must meet all National and Local standards(Circuit breaker must be installed). Only qualified persons are allowed to make this installation.

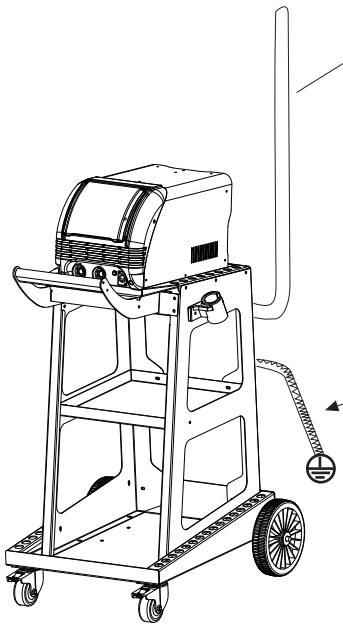
■ Disconnect and lockout/tagount input power before connecting input conductors from unit.

■ 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

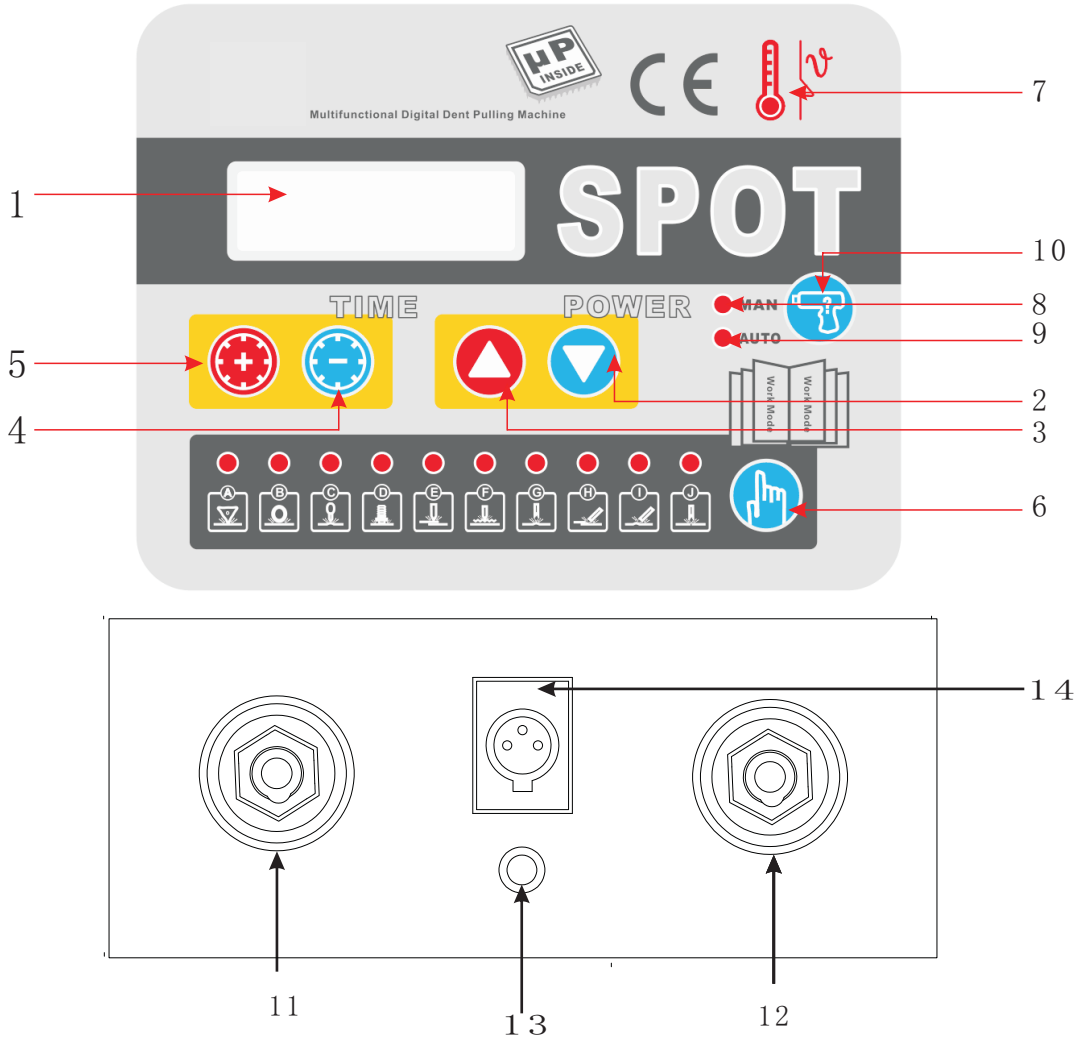


The machine must be grounded(earthed) properly to prevent accidental electrical shock.

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.

Operation

1、Controls



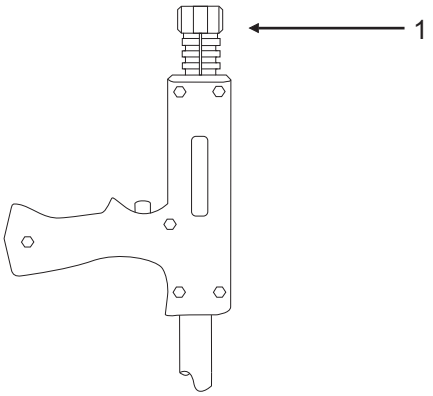
1. LCD Screen
2. Weld Power-- Down
3. Weld Power --Up
4. Weld Time---Down
5. Weld Time--Up
6. Weld Program Selection
7. Overheat Indicator
8. Manual Weld
9. Automatic Weld
10. Manual/Automatic Selection
11. Earth Cable Output
12. Weld Gun Cable Output
13. Gun Cable Trigger
14. Gun Cable Socket

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

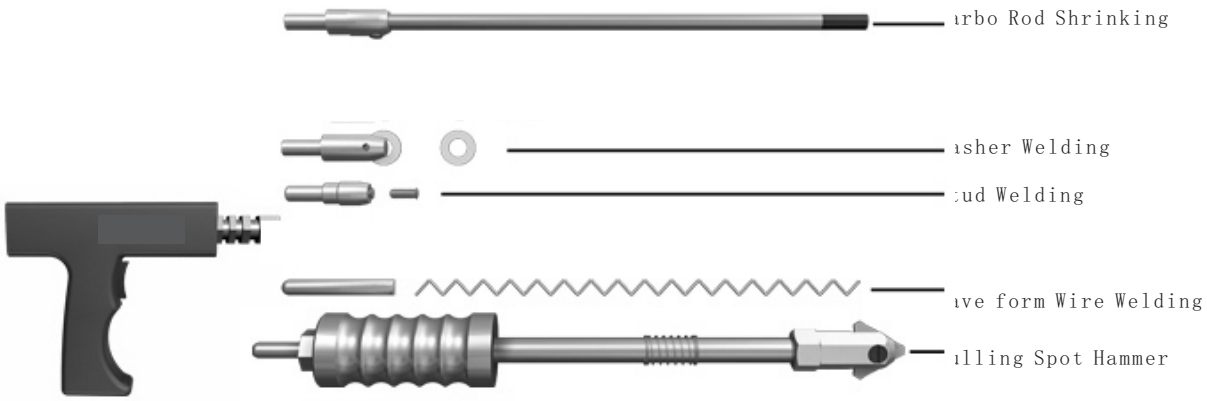
2、Welding Gun and Adaptors



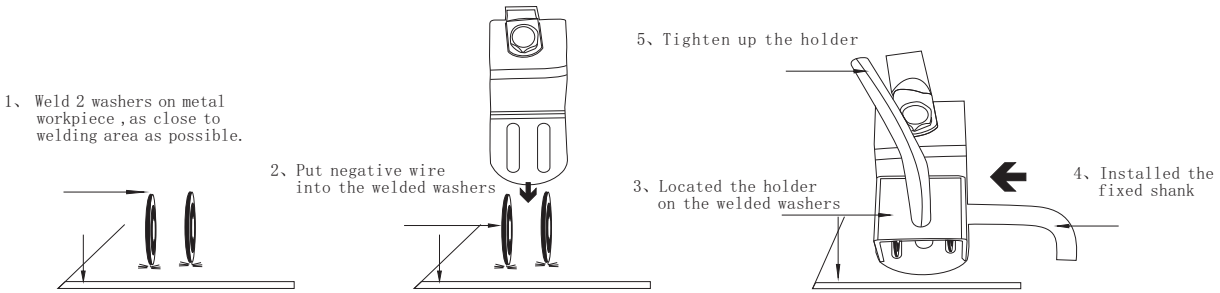
1、Electrode holder

2、Trigger

Single-Sided applications

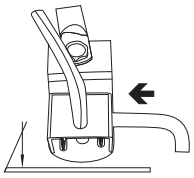


Connection of negative wire

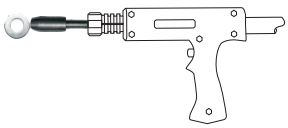


3、Operation

a、Washer Welding

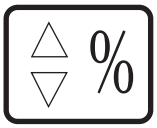


Connect negative outside wire to a clean,paint-free location on metal workpiece,as close to welding area as possible.

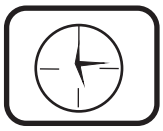


F017+F011+F020

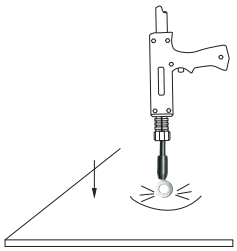
Connect washer adaptor with welding gun and tighten, Install washer.



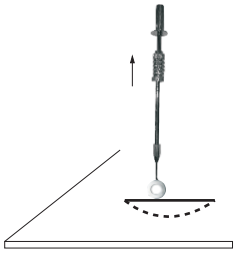
Set correct amperage.



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:

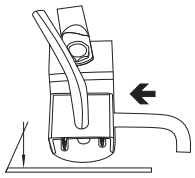
1、Setting amperage too high or time too long can cause workpiece surface (vehicle body)damage . Please weld other workpieces for practice before actual operations.

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

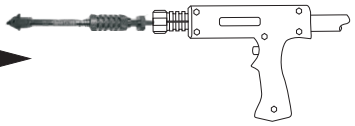
3、Continuing another operation is available after this procedure finished .if not, please shut off the main power supply and switch off the unit.

3、Operation

b、Triangle Washer Welding

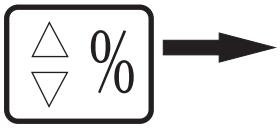


Connect negative outside wire to a clean, paint-free location on metal workpiece, as close to welding area as possible.

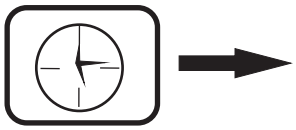


F003+F020

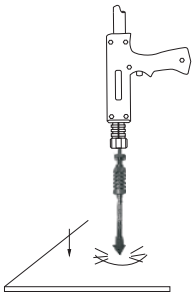
Connect triangel washer pull hammer with welding gun.



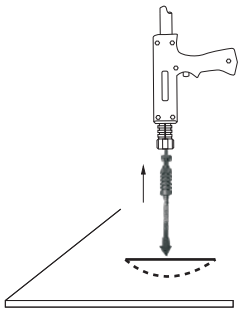
Set correct amperage.



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.

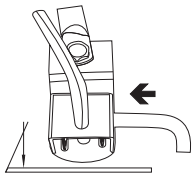
2、Setting correct amperage and time according to the workpiece thickness

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

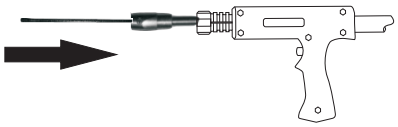
4、Continuing another operation is available after this procedure finished . If not, please shut off the main power supply and switch off the unit.

3、Operation

C、Carbon rod Heating

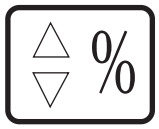


Connect negative outside wire to a clean,paint-free location on metal workpiece,as close to welding area as possible.

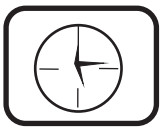


F007+F009+F020

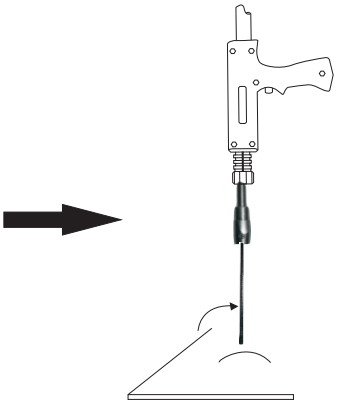
Connect carbon rod and carbon rod adaptor with welding gun.



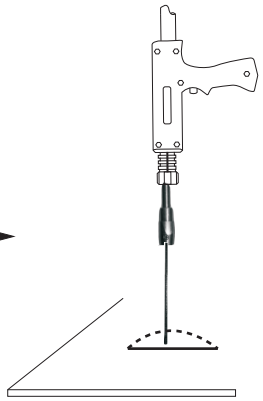
Set correct amperage.



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:

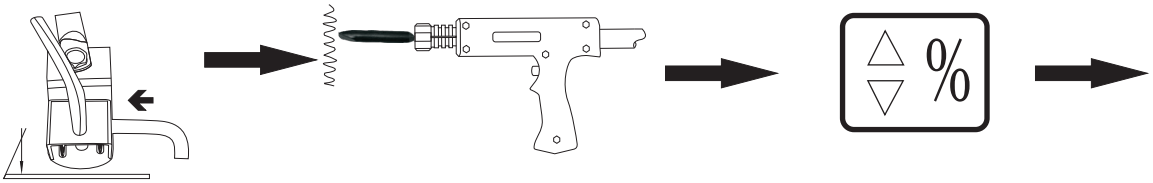
1、Setting amperage too high or time too long can cause workpiece surface (vehicle body)damage . Please weld other workpieces for practice before actual operations.

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

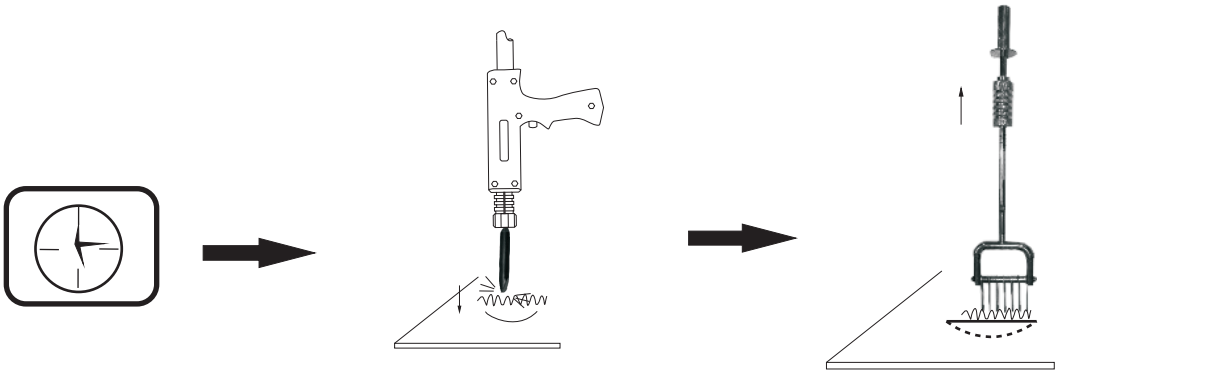


F006+F010+020

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:

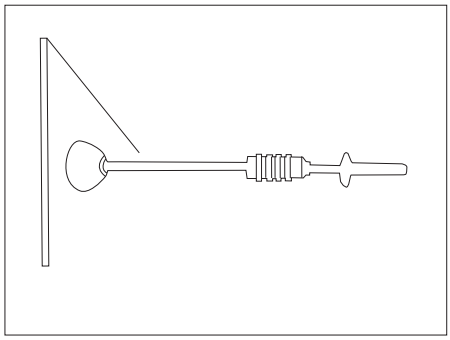
1、Setting amperage too high or time too long can cause workpiece surface (vehicle body) damage . Please weld other workpieces for practice before actual operations.

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

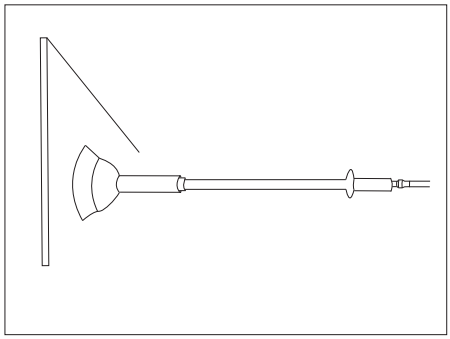
3、Continuing another operation is available after this procedure finished . If not , please shut off the main power supply and switch off the unit.

3、Operation

e、Cupules

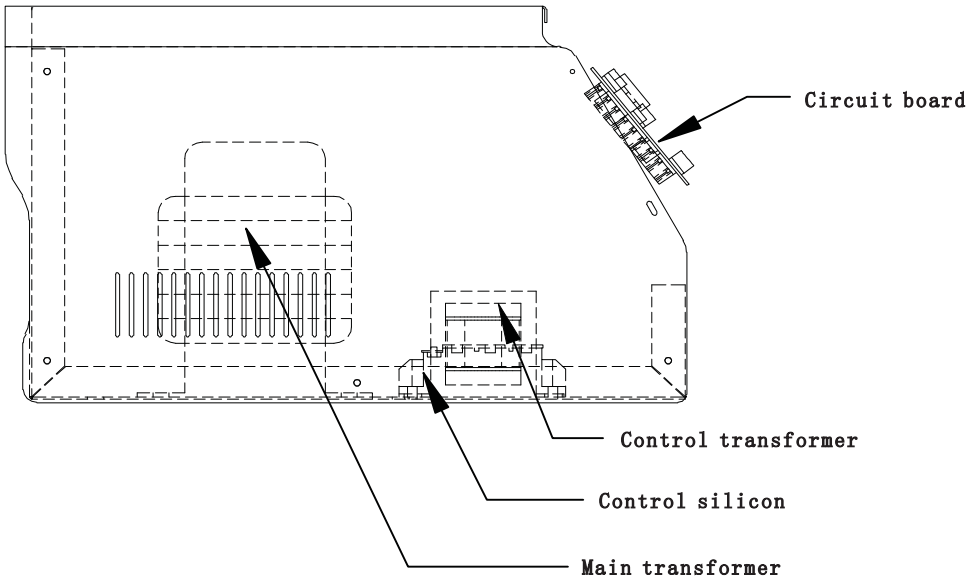


Manual operating cupule:
1、Connect manual cupule with pull hammer.
2、Push manual cupule in to lock the cupule on the dent.
3、Slide the hammer to opposite direction to pull the dent out.

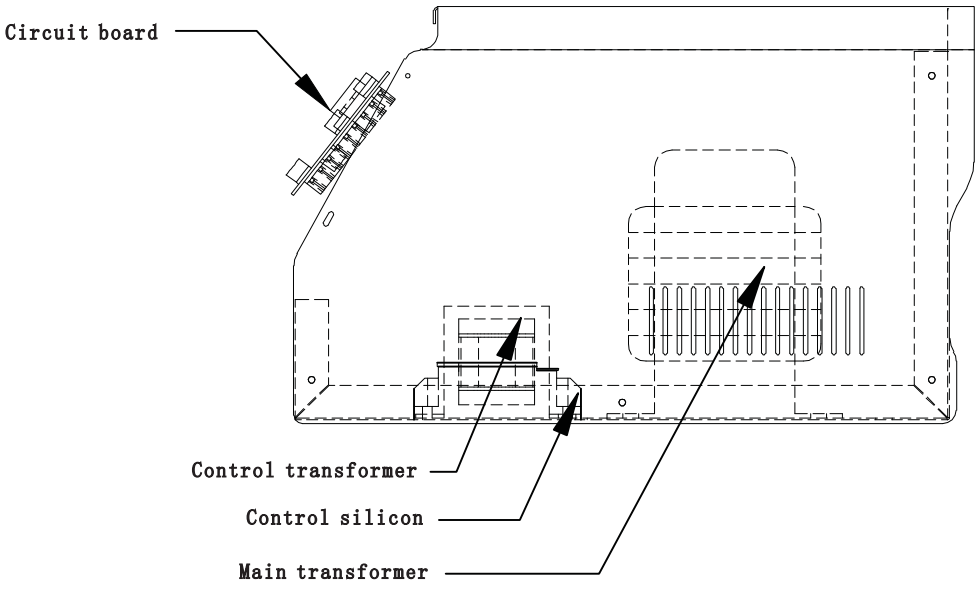


Pneumatic vacuum cupule:
1、Connect gas/air supply with the adaptor of cupule.
2、Open the valve , sticking cupule to the dent.
3、Slide the hammer to opposite direction pull the dent out.
4、Cupule falls off when close the valve.

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.