FY-TECH

Owner's Manual

CE

The equipment is approved by following 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.

Cylinders can explode if damaged.
Gas cylinders contain gas under high pressure. If damaged,a cylinder can explode . Be sure to treat them carefully.

Do not weld in the height!

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

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

Moving parts can cause injury.

Keep away from moving parts such as fans.

The heat from the workpiece can cause serious burns。

Keep away from the torch tip.

Remove all flammables of the welding area.

Falling unit can cause injury.

Never cut on pressurized cylinder.

Protect yourself

Warn others

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	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 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

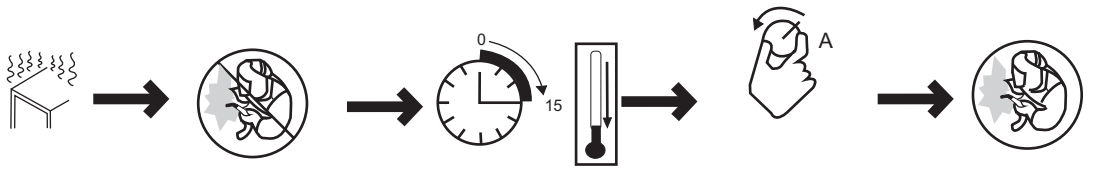
1、Specifications

Model	FY-88A	FY-87A	FY-86A	FY-85A
Input voltage	AC380V three phase 50/60Hz	AC380V three phase 50/60Hz	AC380V three phase 50/60Hz	AC380V three phase 50/60Hz
Output voltage	1-13V	1-13V	1-13V	1-13V
Input power	18KW	16KW	12KW	10KW
max instant current	2200A	2000A	1800A	1600A
Max input current	54A/18A	48A/16A	42A/14A	40A/12A
Operation way	Electronic timing	Electronic timing	Electronic timing	Electronic timing
Time regulation system	0-99s	0-99s	0-99s	0-99s
One side welding thickness	0.8+1.2	0.8+1.0	-------	-------
Dimensions	370×230×280	370×230×280	370×230×280	370×230×280
Weight	10.5kg	10kg	9.5kg	9kg

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.



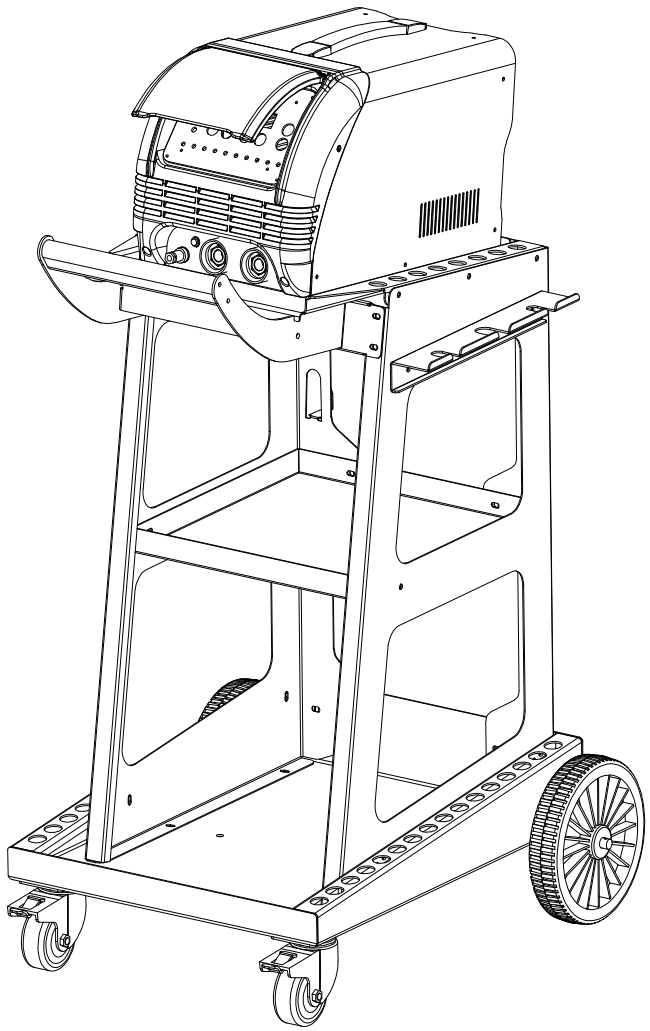
Overheating | Stop working | Wait fifteen minutes for unit to cool | Reduce amperage or reduce duty cycle | Weld again

3、Machine Installation

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

2)Check the details of 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.



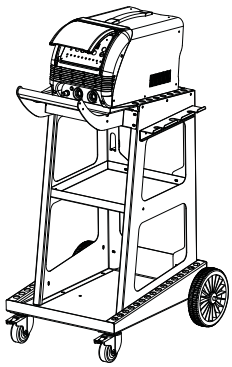
4、Selecting a Location

1)Select a correct location to place the unit。

2)Determine input power cord length according to its actual o-peration requirement.Input power cord must have a minimum inside diameter of 6mm。 ^{2}

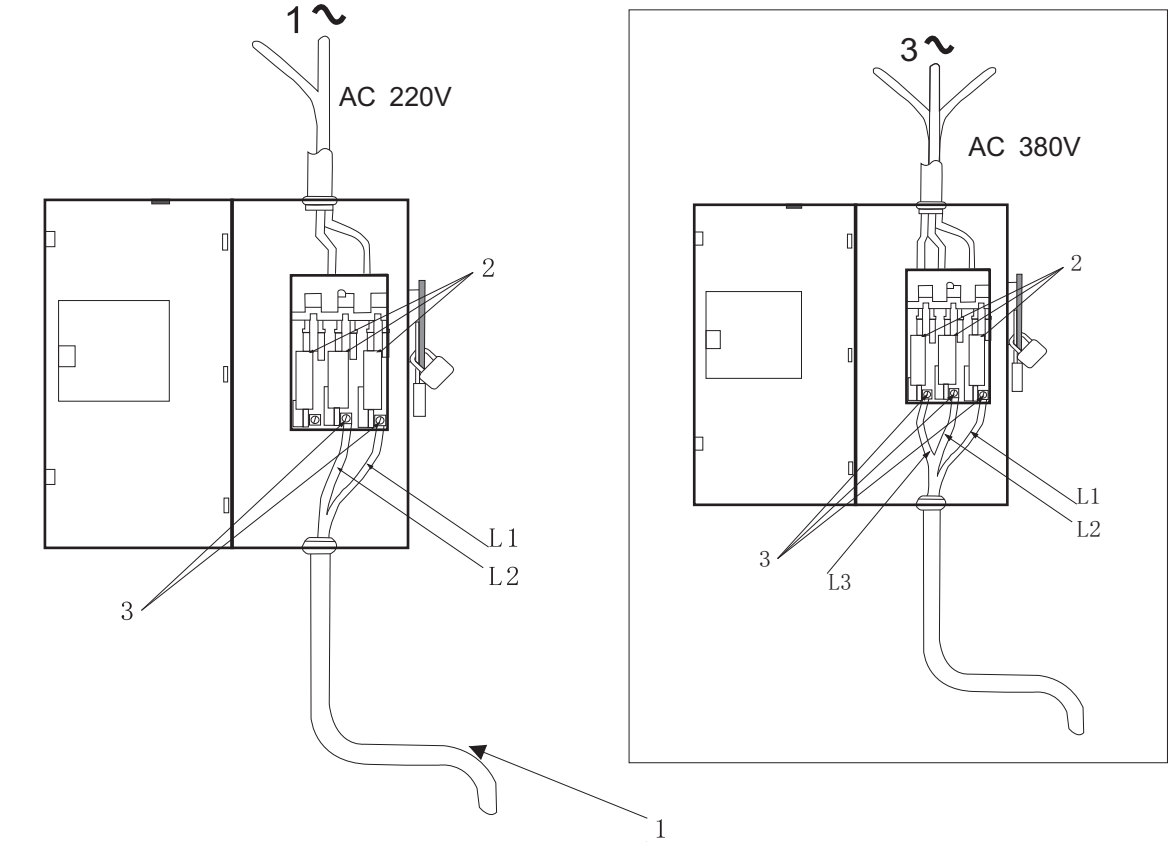
3)Do not move or operate unit where it could tip。

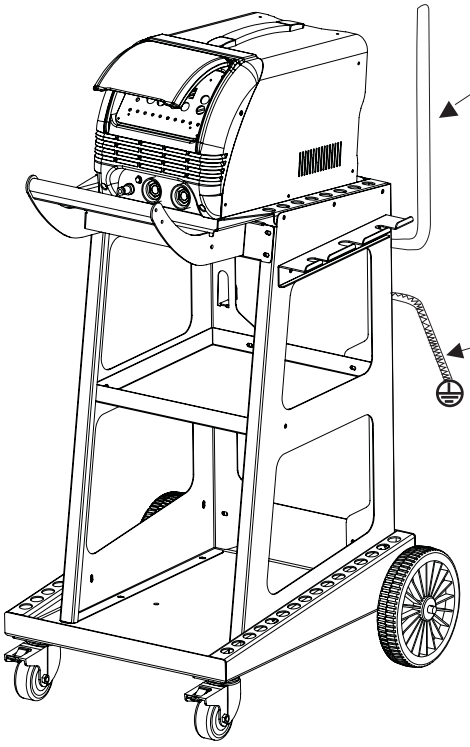
4)Use cart or unit handle to move unit .Do not pull the cords to move unit.



5、Connecting Input Power

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





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

1、Input power cord (not less than 6mm ^{2} 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.

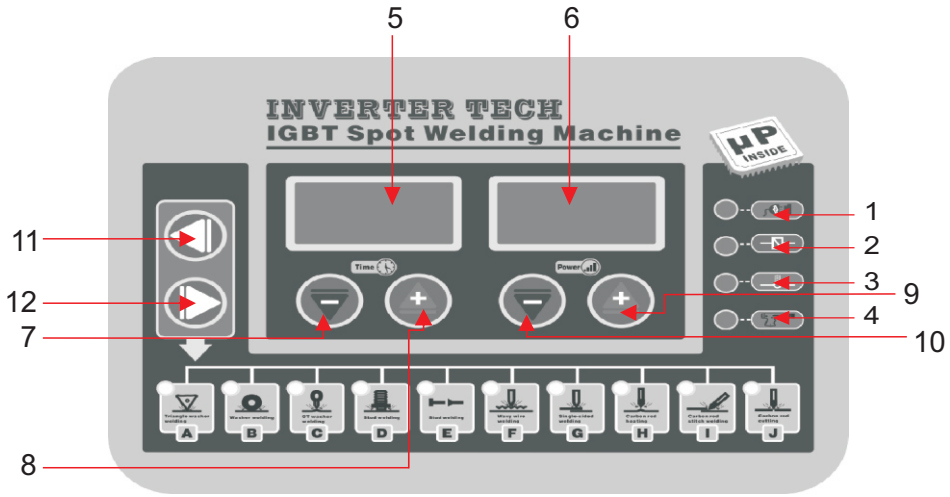
■ Disconnect and lockout/tagount input power before connecting input conductors from unit.

■ 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.

Operation

1、Controls



1. Power indicator
2. Error indicator
3. Overheat indicator
4. Gun trigger indicator
5. Spot welding time display
6. Power percentage display

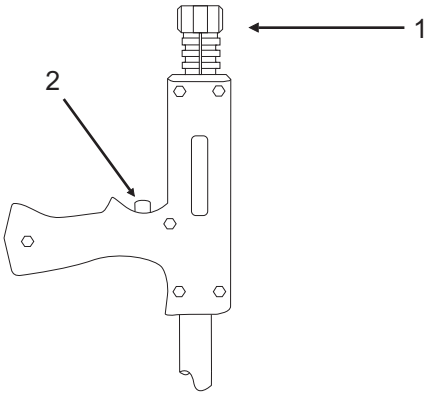
7/8. Spot welding time adjustment

9/10. Power percentage adjustment

Instruction:

1. Connect input power properly and safely
2. Turn on the power switch, select different functions through function selection buttons according to required working mode.
3. Appropriately adjust welding time and power according to actual situation.
4. After setting the parameters, the machine enters into standby mode and is ready to weld.
5. When the temperature exceeds normal working temperature, the temperature indicator will light and overload protection will start. Wait a few minutes until the indicator is off, then use the machine again.
6. The error indicator will light when the machine goes wrong, and the machine enters into automatic protection mode. Cut off the power supply then check, use the machine again until the problems are solved.

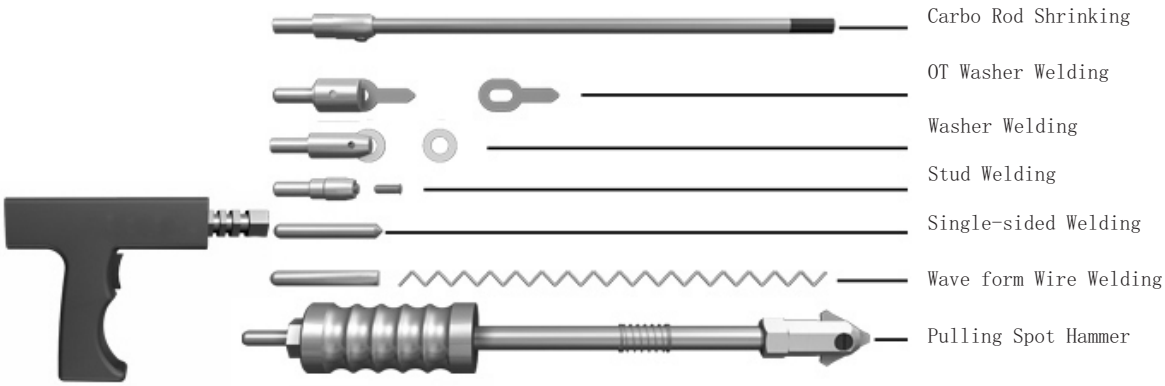
2、Welding Gun and Adaptors



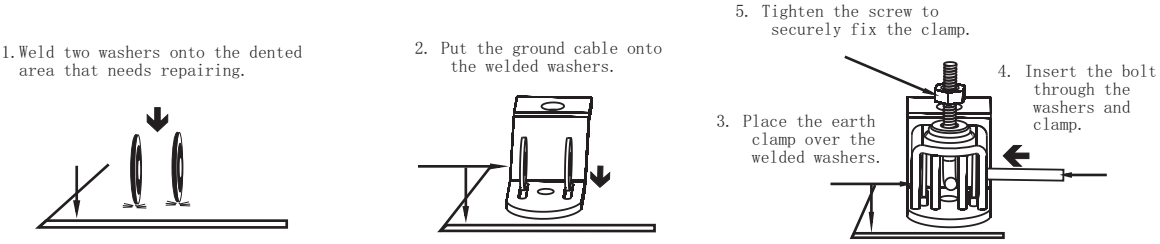
1、Electrode holder

2、Trigger

Single-Sided applications

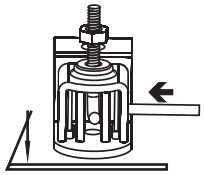


Connection of negative wire

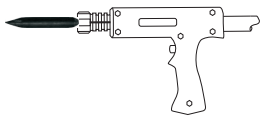


3、Operation

a、spot welding

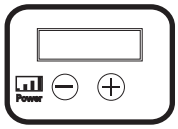


Connect negative outside wire to a clean,paint-free location on metal workpiece,as close to welding area as possible.



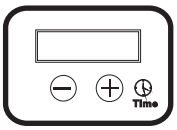
F008+F020

Connect spot welding electrode tip with welding gun and tighten.



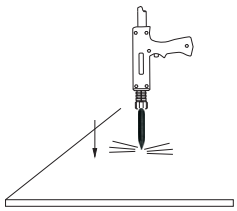
Set correct power

(Position C is recommend).



Set correct time.

Select welding function



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

Remark:

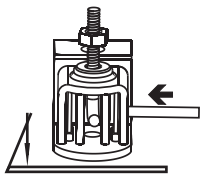
1、Setting amperage too high or time too long can cause workpiece surface (vehicle body)damage . Please weld other workpieces for practice before actual operations.

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

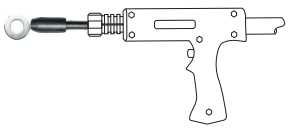
3、Continuing another operation is applicable after these procedures finished .If not, please shut off the main power supply and switch off the unit.

3、Operation

b、Washer Welding

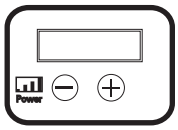


Connect negative outside wire to a clean,paint-free location on metal workpiece,as close to welding area as possible.



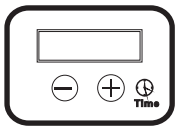
F017+F011+F020

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



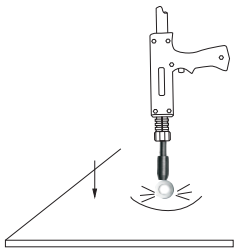
Set correct power

(Position A orB is recommend).

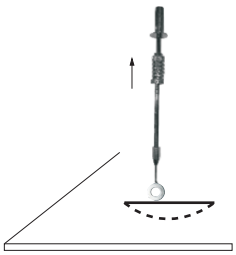


Set correct time.

Select welding function



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



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

Remark:

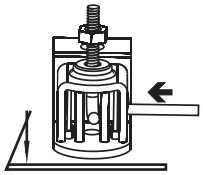
1、Setting amperage too high or time too long can cause workpiece surface (vehicle body)damage . Please weld other workpieces for practice before actual operations.

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

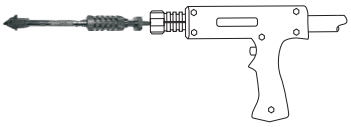
3、Continuing another operation is applicable after these procedures finished .if not, please shut off the main power supply and switch off the unit.

3、Operation

c、Triangle Washer Welding

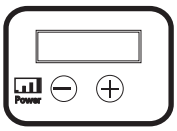


Connect negative outside wire to a clean,paint-free location on metal workpiece,as close to welding area as possible.



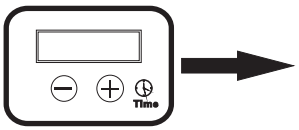
F003+F020

Connect triangel washer pull hammer with welding gun.



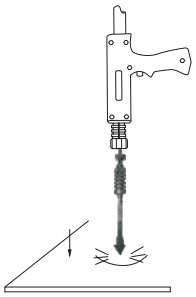
Set correct power

(Position A is recommend).

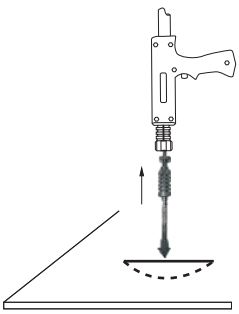


Set correct time.

Select welding function



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



Slide the hammer to opposite direction to pull the dent

Remark:

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

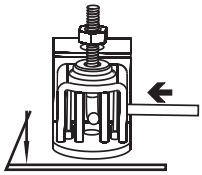
2、Setting correct amperage and time according to the workpiece thickness

3.Triangle washer welding can replace washer welding.It can draw out the concavity directly after welded.

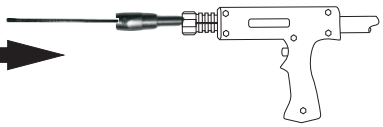
4、Continuing another operation is applicable after these procedures finished .If not, please shut off the main power supply and switch off the unit.

3、Operation

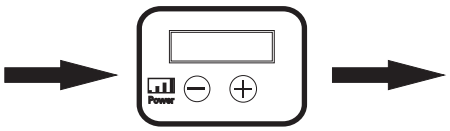
D、Carbon rod Heating



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

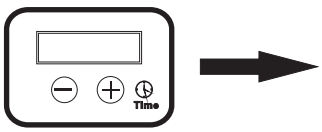


F007+F009+F020
Connect carbon rod and carbon rod adaptor with welding gun.



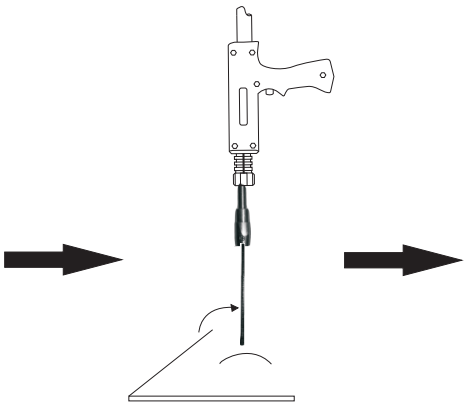
Set correct power

(Position A is recommend).

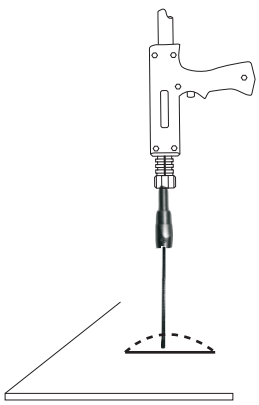


Set correct time

Select welding function



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



Cool the surface with a wet rag or compressed air.

Remark:

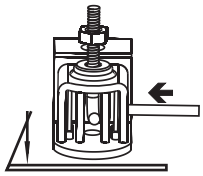
1、Setting amperage too high or time too long can cause workpiece surface vehicle body)damage . Please weld other workpieces for practice before actual operations.

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

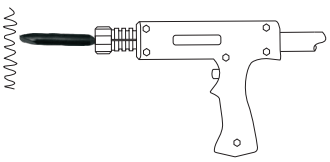
3、Continuing another operation is applicable after these procedures finished .If not, please shut off the main power supply and switch off the unit..

3、Operation

e、Wriggle Form Wire Welding

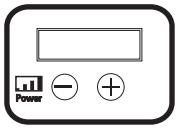


Connect negative outside wire to a clean, paint-free location on metal workpiece, as close to welding area as possible.



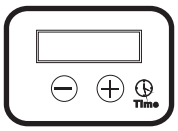
F006+F010+020

Connect wave form wire electrode tip with welding gun.



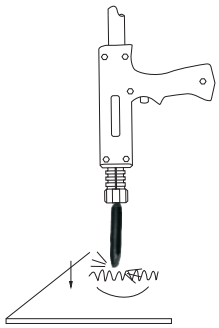
Set correct power

(Position A is recommend).

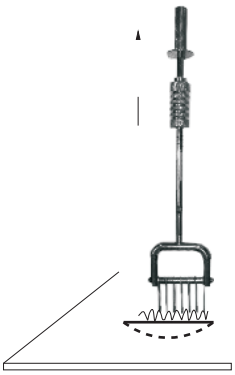


Set correct time.

Select welding function



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



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

Remark:

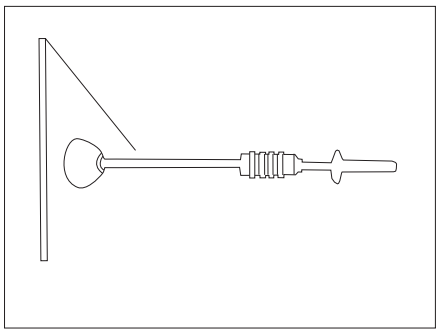
1、Setting amperage too high or time too long can cause workpiece surface (vehicle body) damage . Please weld other workpieces for practice before actual operations.

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.

3、Operation

f、Cupules

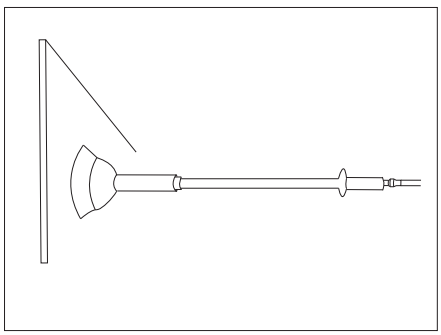


Manual operating cupule:

1、Connect manual operating cupule with pull hammer.

2、Push manual operating cupule in to lock the cupule on the concavity.

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 to draw the concavity out.

4、Cupule falls off when close the valve.

Maintenance

2、Troubleshooting

Trouble	Reason	Remedy
No weld 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.
Kriptol working unstable	(1)Kriptol did not polish,workpieces did not polish. (2)Incorrect amperage and time setting.	(1)Polish kriptol 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.