

Owner's Manual

FY-5015L

The equipment is approved by following car manufacturers(China)



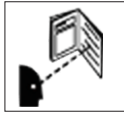
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Safety Precaution Symbols



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



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



Electric shock can kill:
1. Do not touch live electrical parts.
2. Wear dry, hole-free insulating gloves and body protection.
3. Do not wrap electrical cable around your body.
4. Ground the workpiece with a good electrical ground.



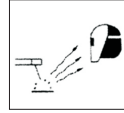
Exploding parts can injure. Always wear a face shield and long sleeves.



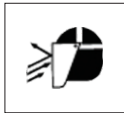
Fumes and gases can be hazardous welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.
If inside, ventilate the area.
Do not weld in a confined space only if it is well ventilated.



Static can damage PC boards
1. Put on grounded wrist strap before handling boards or parts.
2. Use proper static-proof bags and boxes to store, move or ship PC boards.



Eye protection for welding:
Current level in amperage Minimum shade
Number
30-150A----- #8
150-300A----- #10
300-500A----- #12



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



Pay attention not to be crushed by the wheel of the wire feeder when installing welding wires and cleaning the inside of the machine.



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



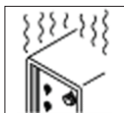
Pay attention not to be scratched by the fan when installing welding wires and cleaning the inside of the machine.



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



The heat from the workpiece can cause serious burns.



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



Prevent fire or explosion hazard.
Do not locate unit on, over or near combustible surfaces. Do not install unit near flammables.



Check the integrity of the gas cylinder before use. Any damage in the gas cylinder could cause explosions.



Remove all flammables away from the welding area.



Do not weld in the height!



Falling unit can cause injury.



Never cut on pressurized cylinder.



Protect yourself



Warn others



OK



OK



















Factory safety!



Maintenance regularly!








































Symbols & Definitions

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	 Low air pressure light
U₀ Rated no load voltage (Average)	 Constant current	 Voltage input	 Automatic
U₂ Conventional load voltage	 Temperature	 Power	 Manual

Optional Accessories & 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 NO.F013		Front part of nozzle 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		Circuit board NO. F028
	Φ5mm pulling screw		Φ4mm pulling screw		10A fuse
	Control transformer NO. F025		Aluminium two-stand crossbar lifter		Aluminium four-stand crossbar lifter
	Φ5mm stud adapter		Φ4mm stud adapter		Tools
	Φ5mm stud hook		Φ4mm stud hook		Φ12mm washer
	Φ5mm aluminium stud		Φ4mm aluminium stud		Tool box
	Φ5mm pulling ring		Φ4mm pulling ring		Polisher

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

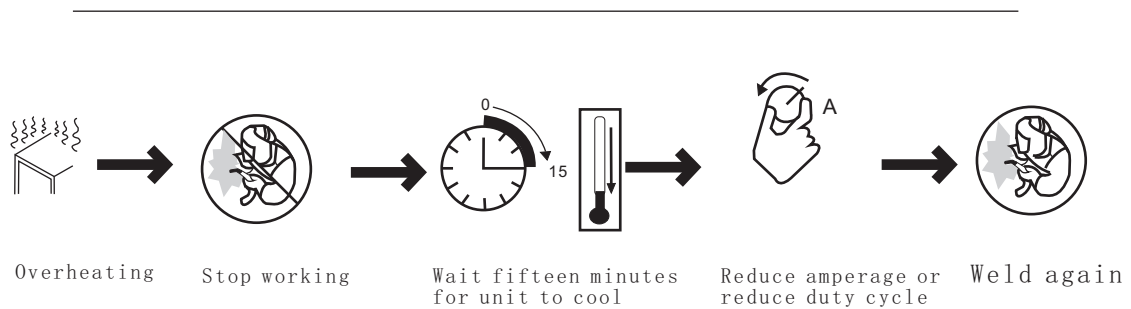
1、specifications

Model	Alu Dent Puller	Model	Steel Dent Puller
Input voltage	AC 220V	Input voltage	AC 220V
Phases	Single phase	Phases	Single phase
Frequency	50/60Hz	Frequency	50/60Hz
Input current	2.0A	Output voltage	1-13V
Output current	600A	Input power	18KVA
Fuse	4A	Max instantaneous current	2200A
Insulation grade	H grade	Input current	54A/18A
Capacitance	66000 UF	Operation way	Electronic timer continuously
Charging voltage	50-150V	Time regulation system	0-99s
Stud diameter	$\Phi 3-\Phi 6\text{mm}$	One side welding thickness	0.8+1.2
Duty cycle	80%		

2. Duty Cycle & Overheating

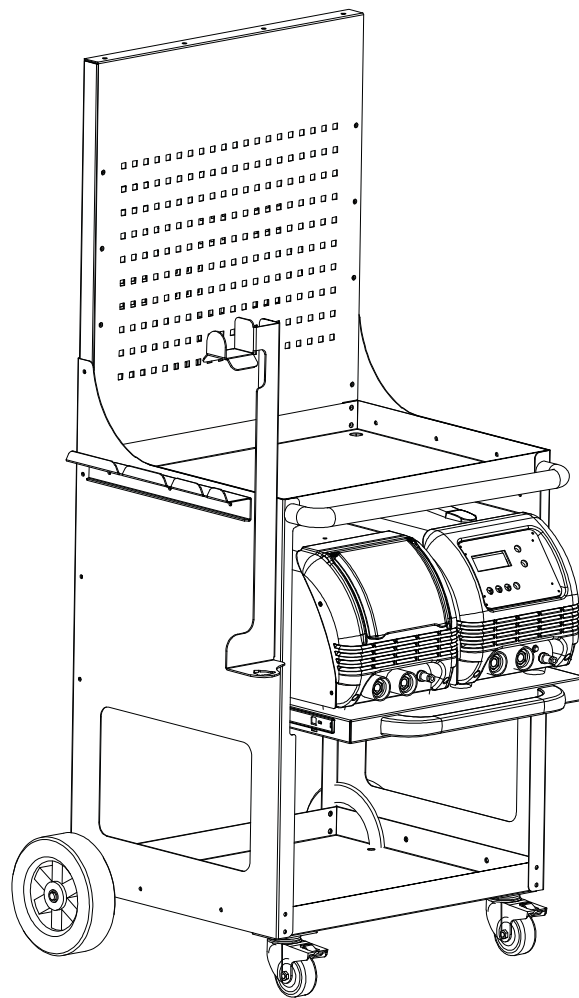
Duty cycle is percentage of 10 minutes that unit can weld at rated load without overheating.

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



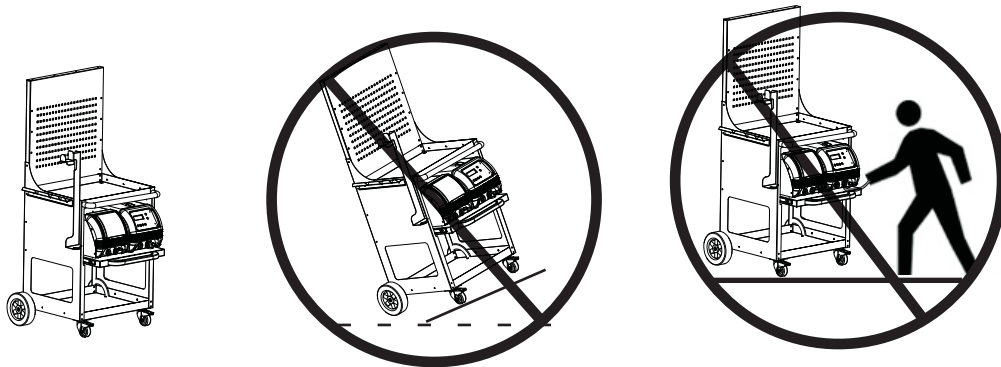
3. Machine Installation

- 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.

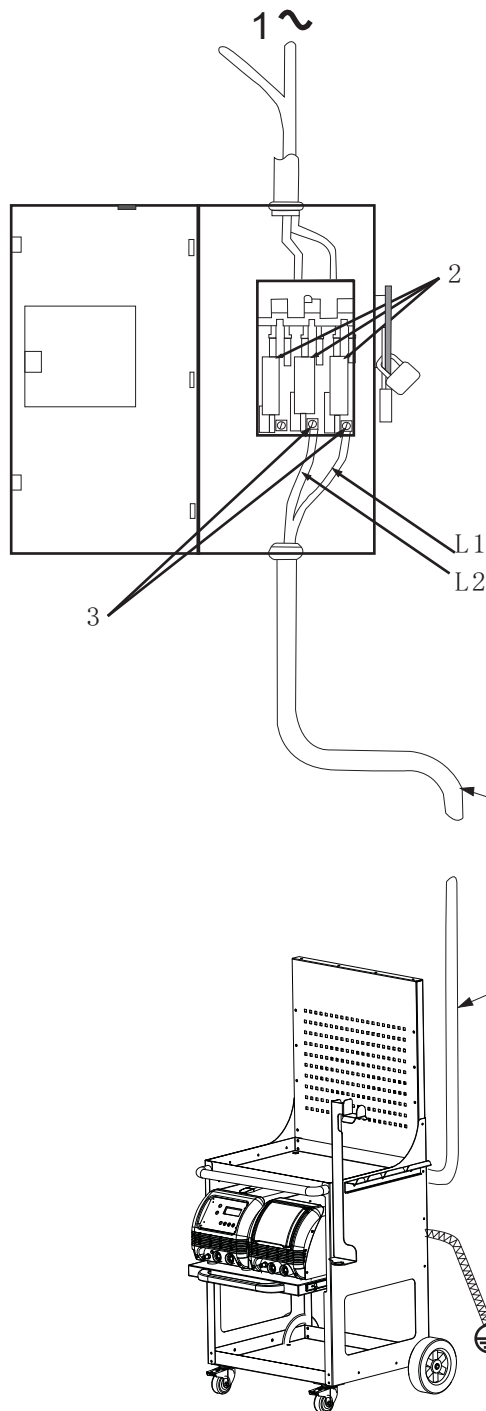


4. Selecting a location

- 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

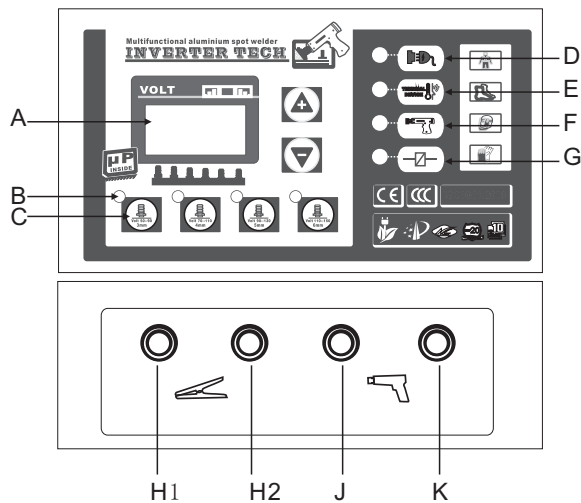


- 1、Input power cord (not less than 6mm² copper cord) .
- 2、Over-current protection.
- 3、Disconnect device line terminals.
- 4、Ground wire L1/L2 input conductors.

- 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. Aluminium Dent Puller Controls



- A. Voltage display
- B. Voltage indicator
- C. Voltage selector
- D. Power indicator
- E. Overheat indicator
- F. Gun trigger indicator
- G. Over-voltage indicator
- H1/H2. Earth cable
- J/K. Gun cable

It is easy and simple to operate the stud welder even though you have no relevant experience. Firstly, you could turn the main power switch to the “on” position and adjust the current according to relevant stud diameters. Put the chosen stud into the gun, then the welding process could be started. The greases of the workpiece surface should be cleared every time before welding to avoid poor contact. It has a little welding spatter, please wear glasses and gloves.

You could get the best result by connecting H1 and H2 with both edges of the workpiece surface for large area welding (you could choose either H1 or H2 for small area welding).

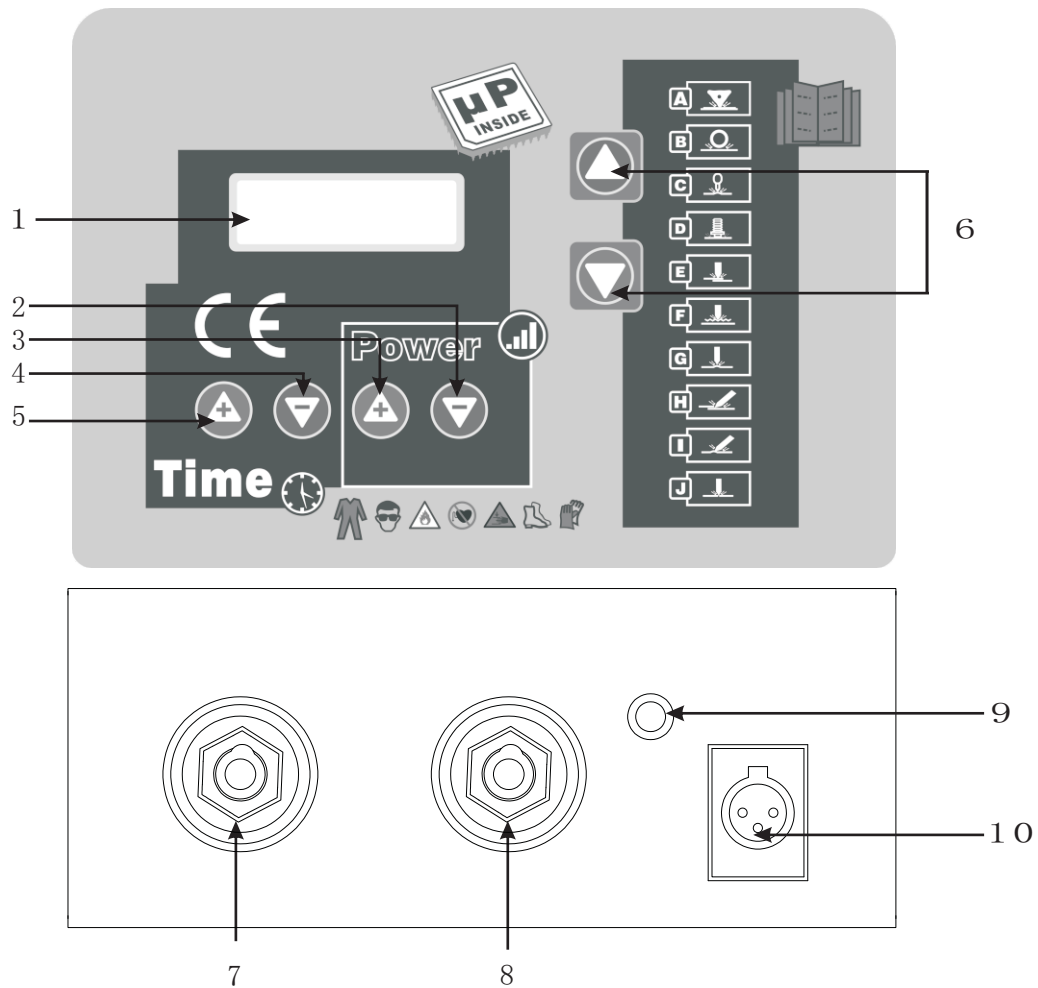
Weld metallic stud or post form components in sheet metal.

The diameter of studs is 3mm-6mm. The welder is based on stud welding technology. It has advantages as high efficiency, low heat emission for workpiece surface, quality weld appearance, firm welded joint and low energy consumption. It could save your time and materials with excellent weld quality (great strength, no distortion, no leakage), easy and simple operation without complicated procedures such as drilling holes, riveting, welding and polishing...etc. The resistance heat is extensively used in welding field, suitable for welding of various metallic materials such as magnetism copper, stainless steel, copper, aluminum, aluminum alloy, etc.

Please read this instruction manual before use .

Operation

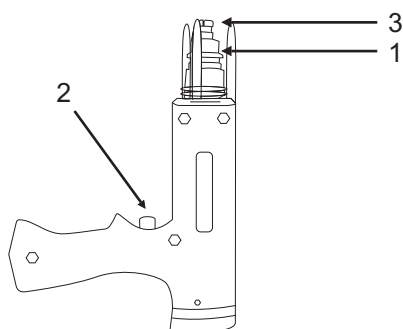
2. Steel Dent Puller Controls



1. LCD display
2. Current decrease
3. Current increase
4. Time decrease
5. Time increase
6. Function selection
7. Earth cable
8. Gun cable
9. Gun testing button
10. Trigger control cable

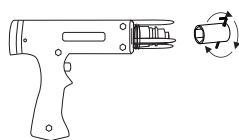
3. Aluminium Welding Gun Application

A. Aluminium welding gun

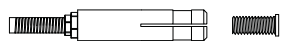


- 1、Ferrule
- 2、Trigger switch
- 3、Weld chuck

B. Aluminium welding gun setup

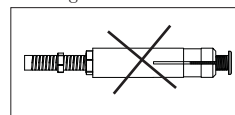


(1)

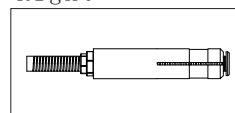


(2)

Wrong

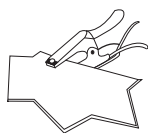


Right

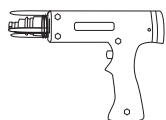


- 1.Insert a ferrule grip into the foot and tighten the ferrule
- 2.Insert a stud into the weld chuck.A different chuck is required for each different stud diameter(0.6mm chuck with 0.6mm stud,0.4mmchuck with 0.4mm stud)
- 3.Place the weld chuck into the chuck adapter.Make sure that the chuck is seated properly in the adapter.

C. Aluminium welding gun application



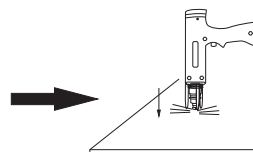
Connect ground cable to a clean,paintfree location on metal workpiece,as close to welding area as possible.



Weld gun with chuck and stud



Adjust current
(See page 9)

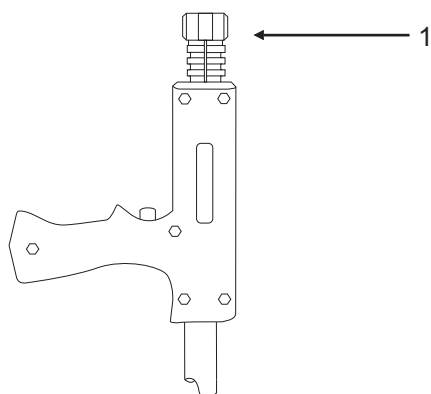


Place the weld gun perpendicular to the dent area on the workpiece. Apply pressure to the gun.Hold gun steady and push trigger to weld..

Remark :

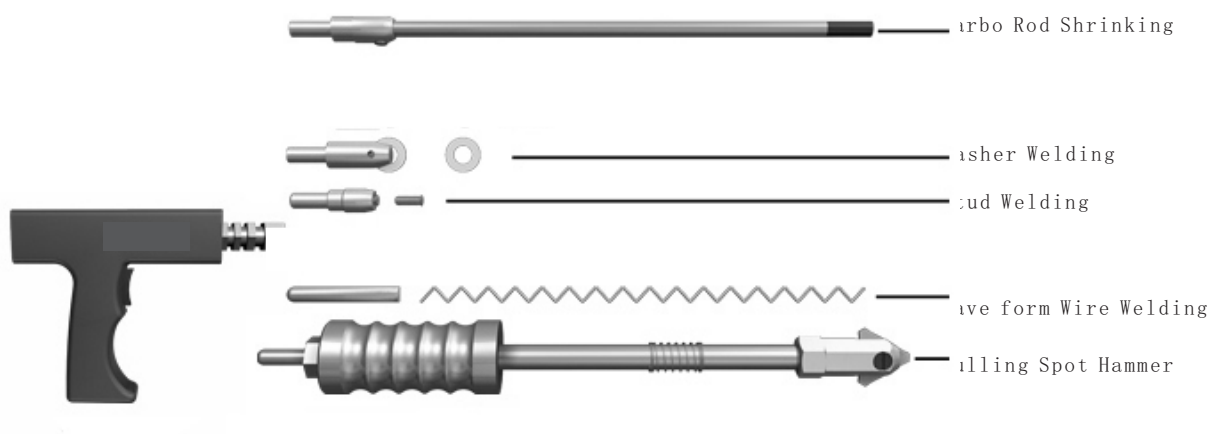
- 1、 Setting amperage too high or time too long can cause workpiece surface (vehicle body)damage . Please weld other workpieces for practice before actual operations.
- 2、 Setting correct amperage and time according to the workpiece thickness.
- 3、 Continuing another operation is applicable after these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

4. Steel Welding Gun Application

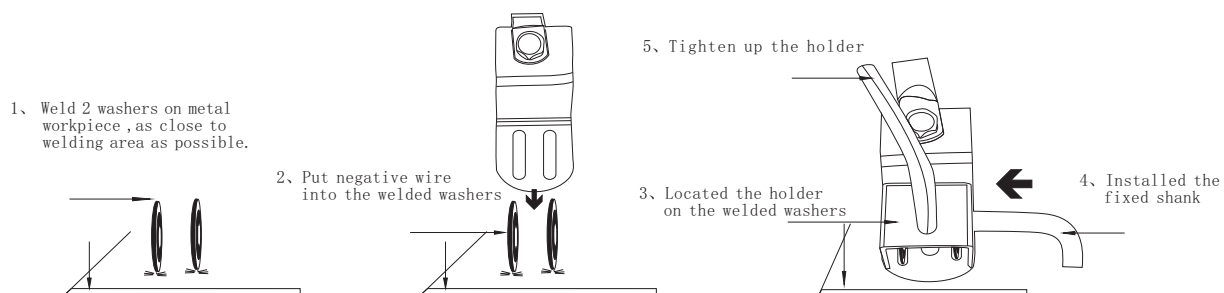


- 1、Electrode holder
- 2、Trigger

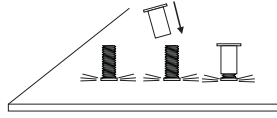
Single-Sided applications



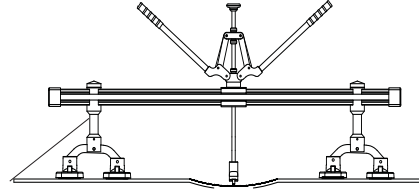
Connection of negative wire



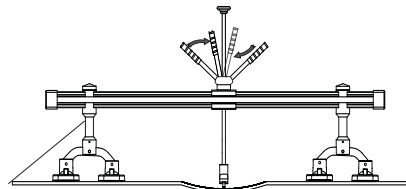
5. Pulling Hammer Application



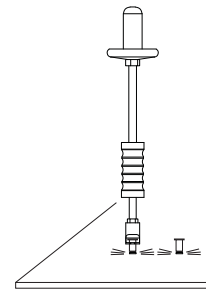
Weld the studs to the dent area of car body. Put the corresponding pulling screw on the studs and tighten up.



Choose crossbar lifter: Make sure the crossbar lifter with pulling hook is fixed on the car body. Connect the pulling hook to the pulling screw. Adjust the adjusting screw of the crossbar lifter. Squeeze the lever to pull out the dent.

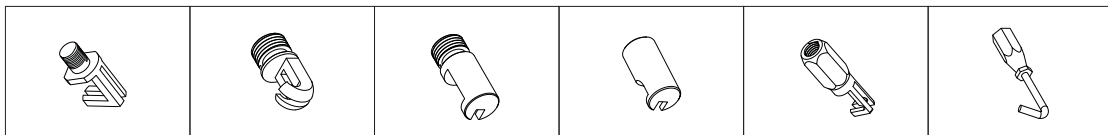


Choose crossbar lifter: Make sure the crossbar lifter with pulling hook is fixed on the car body. Connect the pulling hook to the pulling screw. Adjust the adjusting screw of the crossbar lifter. Rotate the lever to pull out the dent.



Choose pulling hammer: Connect corresponding pulling hook to the pulling screw. Slide the hammer to opposite direction to pull out the dent.

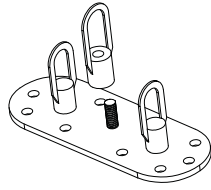
A variety of pulling hooks are available to fit crossbar lifter and pulling hammer.



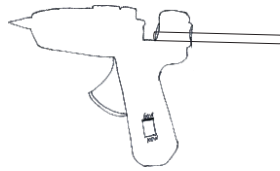
Remark :

- 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、 According to actual conditions to select a suitable puller for repairing
- 4、 The nut of the puller is to adjust the up and down moving range of the main axle
- 5、 Continuing another operation is available after this procedure finished .If not ,please shut off the main power supply and switch off the unit.

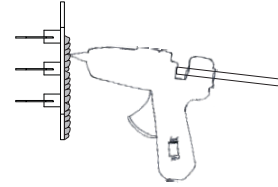
6. Glue Pulling Kit Application



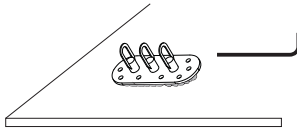
Tighten the corresponding pulling ring to the pulling plate.



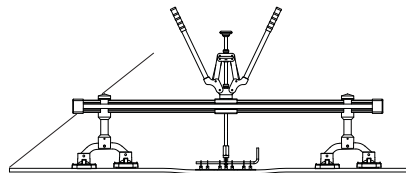
Insert the glue stick to the gun. Make sure the glue stick is seated properly..



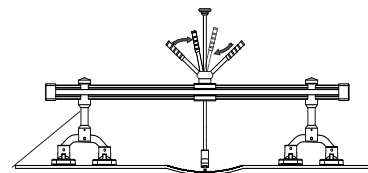
Connect power supply to the gun, and point to the back side of pulling plate. Push trigger switch (according to operation, select power 60W or 100W) to squeeze out the glue to the plate.



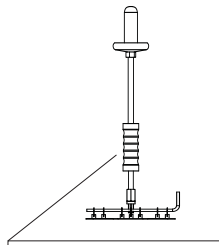
Stick the glued pulling plate (the back side must be full of glue) to the dent area of car body which should be polished and cleaned. Insert a metal rod through the pulling ring.



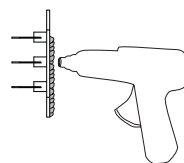
Choose crossbar lifter: Make sure the crossbar lifter with pulling hook is fixed on the car body. Connect the pulling hook to the pulling plate. Adjust the adjusting screw of the crossbar lifter. Squeeze the lever to pull out the dent.



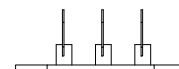
Choose crossbar lifter: Make sure the crossbar lifter with pulling hook is fixed on the car body. Connect the pulling hook to the pulling plate. Adjust the adjusting screw of the crossbar lifter. Roate the lever to pull out the dent.



Choose pulling hammer: Connect corresponding pulling hook to the pulling plate. Slide the hammer to opposite direction to pull out the dent.



After pulling out the dent, use a hot air blow gun pointing the hot air to pulling plate to remove the glue from car body.



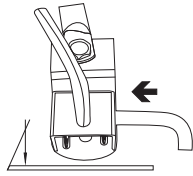
Clean the pulling plate for next use.

Remark:

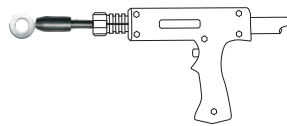
- 1、Setting amperage too high or time too long can cause workpiece surface (vehicle body) damage . Please weld other workpieces for practice before actual operations.
- 2、Setting correct amperage and time according to the workpiece thickness.
- 3、According to actual conditions to select a suitable puller for repairing
- 4、The nut of the puller is to adjust the up and down moving range of the main axle
- 5、Continuing another operation is available after this procedure finished .If not ,please shut off the main power supply and switch off the unit.

7. Steel Dent Puller Application

a、Washer Welding

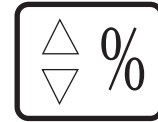


Connect negative outside wire to a clean, paint-free location on metal workpiece, as close to welding area as possible.



F017+F011+F020

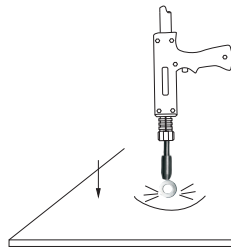
Connect washer adaptor with welding gun and tighten, Install washer.



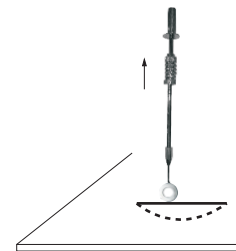
Set correct amperage.



Set correct time.



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



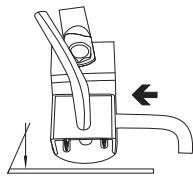
Remove welding gun. Hook the washer with pull hammer. Slide the hammer to opposite direction to pull out the dent.

Remark:

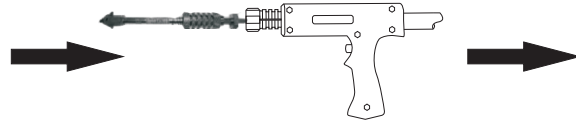
- 1、Setting amperage too high or time too long can cause workpiece surface (vehicle body) damage . Please weld other workpieces for practice before actual operations.
- 2、Setting correct amperage and time according to the workpiece thickness.
- 3、Continuing another operation is available after this procedure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

7. Steel Dent Puller Application

b. Triangle Washer Welding



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

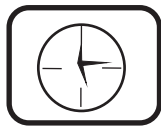


F003+F020

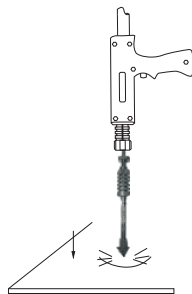
Connect triangle washer pull hammer with welding gun.



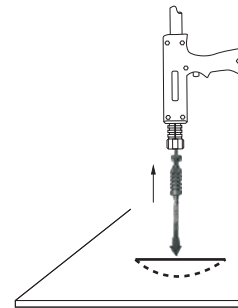
Set correct amperage.



Set correct time.



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



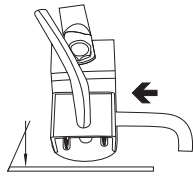
Slide the hammer to opposite direction to pull the dent out.

Remark:

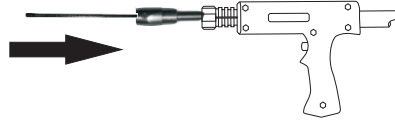
1. Setting amperage too high or time too long can cause workpiece surface (vehicle body) damage . Please weld other workpieces for practice before actual operations.
2. Setting correct amperage and time according to the workpiece thickness
3. Triangle washer welding can replace washer welding. It can 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.

7. Steel Dent Puller Application

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



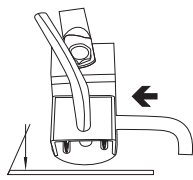
Use cold water or wet rag to cool down the heated area that makes the stretched panel shrunken as normal status.

Remark:

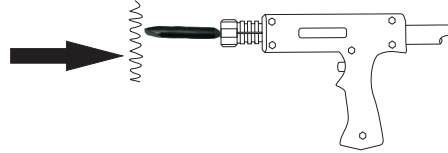
- 1、Setting amperage too high or time too long can cause workpiece surface (vehicle body) damage . Please weld other workpieces for practice before actual operations.
- 2、Setting correct amperage and time according to the workpiece thickness.
- 3、Continuing another operation is available after this procedure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

7. Steel Dent Puller Application

d、Wriggle Wire Welding

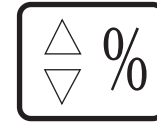


Connect negative outside wire to a clean, paint-free location on metal workpiece, as close to welding area as possible.

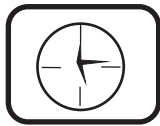


F006+F010+020

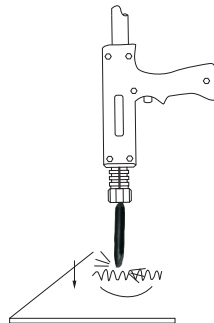
Connect wriggle wire electrode tip with welding gun.



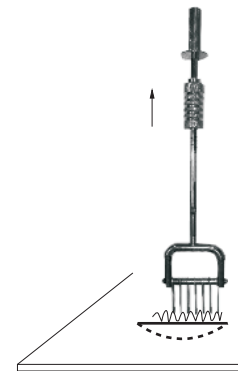
Set correct amperage.



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.

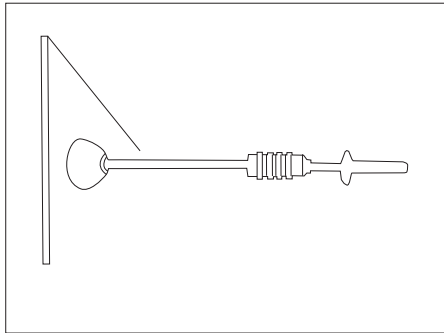


Connect hook puller with pull hammer. Hook wave form wire and slide the hammer to pull out the dent.

Remark:

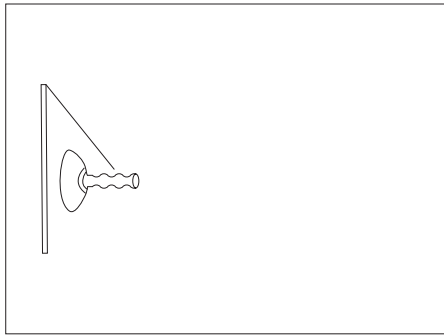
- 1、Setting amperage too high or time too long can cause workpiece surface (vehicle body) damage . Please weld other workpieces for practice before actual operations.
- 2、Setting correct amperage and time according to the workpiece thickness.
- 3、Continuing another operation is available after this procedure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

8. Cupules Application



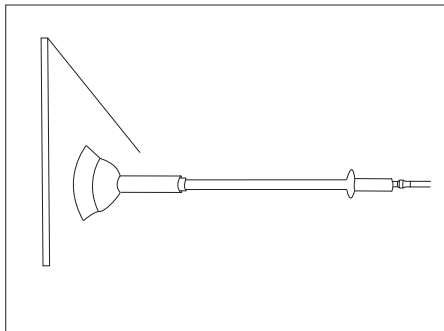
Manual operating cupule:

- 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.



Manual operating cupule:

- 1、 Push manual cupule in to lock the cupule on the dent.
- 2、 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.

Maintenance

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.
Welder 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.
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.

Circuit Diagram

