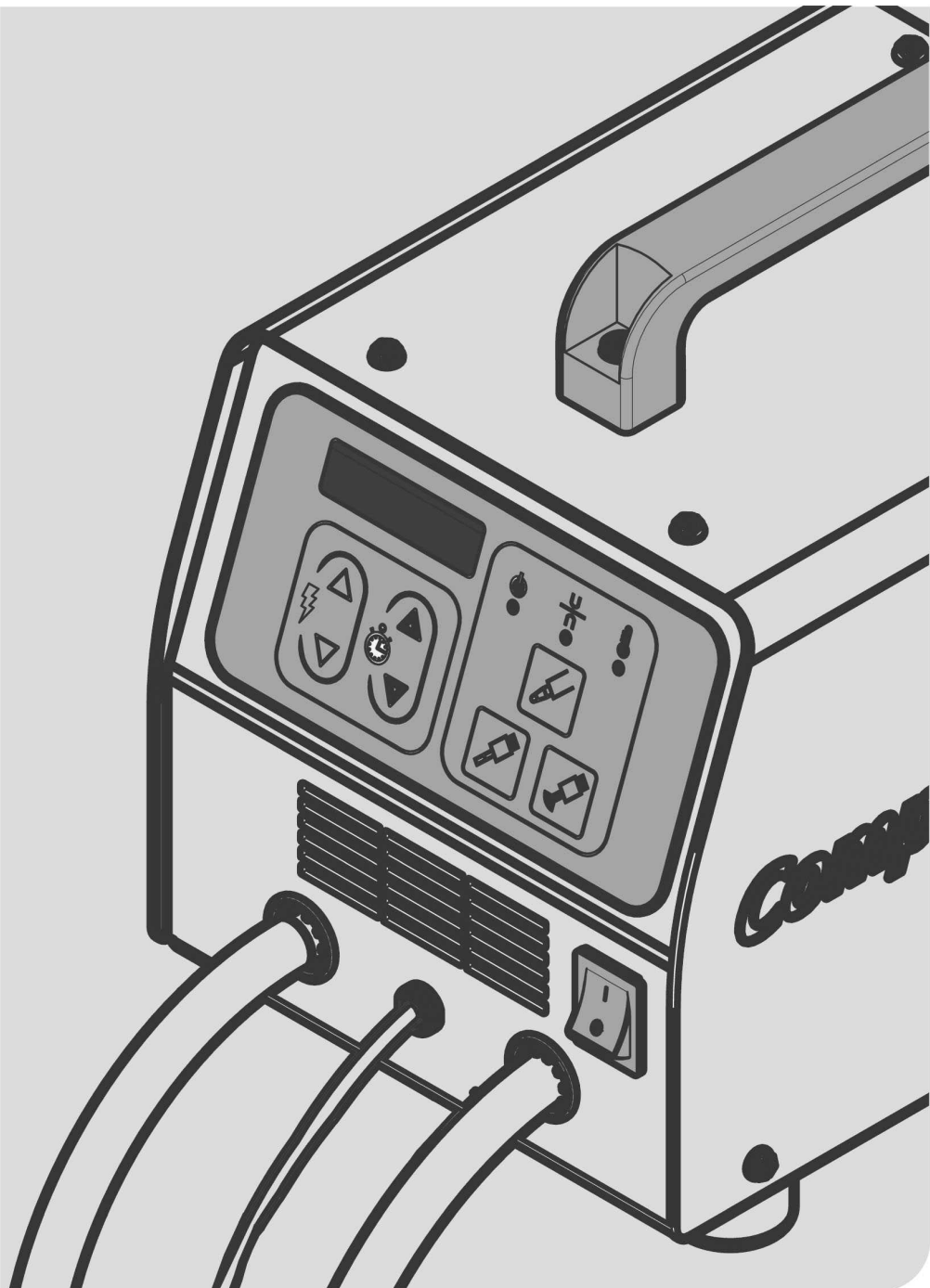


# COMPUSPOT 160

## DIGITAL

### INSTRUCTION MANUAL



## Table of contents

WARNING .....	3
INTRODUCTION .....	6
MULTIFUNCTIONAL WELDER SPECIFICATIONS.....	7
<i>Specifications</i> .....	7
<i>Receiving and Unpacking the Welder</i> .....	8
WELDER CONNECTIONS.....	9
<i>How to connect the power cord - Precautions</i> .....	9
<i>Ground Cable</i> .....	9
START-UP .....	10
LANGUAGE SELECTION.....	10
MODE AND SETTINGS.....	11
1. <i>Tack welding with cables and one contact tip</i> .....	11
2. <i>How to weld nails, wiggle wire and washers</i> .....	13
3. <i>How to weld molding rivets</i> .....	14
4. <i>Energic Slide Hammer With Tip 13.PS.10.29</i> .....	15
5. <i>Shrinking With Copper Tip For Heat Treatment</i> .....	16
6. <i>Shrinking With Carbon Rod</i> .....	17
7. <i>Half Moon Stitch Welding</i> .....	18
LIST OF ACCESSORIES .....	19
TROUBLESHOOTING.....	20
EXPLODED VIEW.....	21
WIRING DIAGRAM.....	24
ANNEXE A: GENERAL SET-UP TABLE.....	25

# Warning

1. Read, study and understand all warning and operating instructions furnished with this equipment prior to use. If any part of this material is unclear, contact the factory for clarification.
2. Only qualified persons are to install, operate and maintain this equipment in accordance with applicable codes, safety practices and manufacturer's instructions.
3. Electric shock can be fatal, therefore:
  - A. Install and ground unit in compliance with national, regional and local codes.
  - B. Protect hands and body with dry, insulated gloves and clothing.
  - C. Do not operate in damp or wet area.
4. Fumes and gases can be seriously harmful to an operator's health, therefore:
  - A. Operate this equipment in well-ventilated area. If this is not possible, use air-supplied breathing apparatus.
  - B. Welding of containers can result in poisonous fumes. Ensure that all containers are empty and properly cleaned prior to welding.
5. Hot metal slag and sparks may cause fire, burns and explosions, therefore:
  - A. Do not operate in explosive atmosphere such as one containing paint, solvents, degreaser or gasoline fumes.
  - B. Do not operate near combustible materials.
  - C. Have appropriate fire extinguisher available and know how to use it.
  - D. Allow workpiece to cool before handling.
6. Refer to the operating manual supplied with this equipment for all safety information.
7. It is owner's responsibility to keep all warning decals legible and intact. Replacement decals are available from the factory.
8. Failure to heed these warning may result in personal or fatal injury and/or equipment and property damage.

Read and carry out all instructions included in this manual as well as the following specific procedures.

When one of the symbols shown here is displayed, be alert to the possibility of personal injury and carefully read the message that follows.



#### **ELECTRICK SHOCK**

Electric shock hazard exists during the operation of the step(s).



#### **RISK OF FIRE AND BURNS**

Fire hazard and possibility of being burned by hot slag exists during the operation of the step(s).



Helmet must be worn during the step(s) to protect against eye damage, flying debris and burns due to flash hazard.



#### **FUMES AND GASES**

Toxic gas hazard exists during operation of the step(s).



#### **EXPLOSIONS**

Possibility of injury or death exists due to improper handling and maintenance of compressed gas cylinders or regulators.



#### **NOISE**

This welding machine can produce sounds which can inconvenience the user, the wear of a protection for the ears is advised.



#### **MAGNETIC FIELDS**

This welding machine produces an electromagnetic fields created by a high current. Any person wearing vital electronic equipment (pacemakers) have to consult a medical specialist before using this machine.

Published standards on safety are available. They are listed in **ADDITIONAL SAFETY INFORMATION** at the end of this **SAFETY SUMMARY**.

The National Electrical Code, Occupational Safety and Health Act regulations, local industrial codes and local inspection requirements also provide a basis for equipment installation, use, and service.

**SHOCK HAZARDS**

WARNING!

**ELECTRIC SHOCK CAN KILL!**

To reduce the risk of death or serious injury from shock, read, understand, and follow the following safety instructions. In addition, make certain that anyone else who uses this welding equipment, or who is a bystander in the welding area understands and follows these safety instructions as well.

**IMPORTANT! TO REDUCE THE RISK OF DEATH, INJURY, OR PROPERTY DAMAGE, DO NOT ATTEMPT OPERATION** of this welding equipment prior to having read and understood the following safety summary.

- Do not, in any manner, come into physical contact with any part of the welding current circuit. The welding current circuit includes:
  - a. the work piece or any conductive material in contact with it,
  - b. the ground clamp,
  - c. the threaded stud,
  - d. metallic parts on the stud gripping clamp.
- Do not weld in a damp area or come in contact with a moist or wet surface.
- Do not attempt to weld if any part of clothing or body is wet.
- Do not allow the welding equipment to come in contact with water or moisture.
- Do not drag welding cables, the welding gun, or welder power cord through or allow them to come into contact with water or moisture.
- Do not touch welding machine, attempt to turn welder on or off if any part of the body or clothing is moist or is in physical contact with water or moisture.
- Do not attempt to plug the welding machine into the power source if any part of body or clothing is moist, or if you are in physical contact with water or moisture.
- Do not connect welder ground clamp to or weld on electrical conduit.
- Do not alter power cord or power cord plug in any way.

- Do not attempt to plug the welder into the power source if the ground prong on power cord plug is bent over, broken off, or missing.

- Do not allow the welder to be connected to the power source or attempt to weld if the welder, welding cables, welding site, or welder power cord are exposed to any form of atmospheric precipitation, or salt water spray.

- Do not carry coiled welding cables around shoulders, or any other part of the body, when they are attached to the weld machine.

- Do not modify any wiring, ground connections, switches, or fuses in this welding equipment.

- Wear welding gloves to help insulate hands from welding circuit.

- Keep all liquid containers far enough away from the welder and work area so that if spilled, the liquid can not possibly come in contact with any part of the welder or electrical welding circuit.

- Replace any cracked or damaged parts that are insulated or act as insulators such as welding cables, power cord, or electrode holder IMMEDIATELY.

**FIRE HAZARDS**

WARNING!

**FIRE OR EXPLOSION CAN CAUSE DEATH, INJURY, AND PROPERTY DAMAGE!**

To reduce risk of death, injury, or property damage from fire or explosion, read, understand, and follow the following safety instructions. In addition, make certain that anyone else that uses this welding equipment, or is a bystander in the welding area, understands and follows these safety instructions as well. REMEMBER! Arc welding by nature produces sparks, hot spatter, molten metal drops, hot slag, and hot metal parts that can start fires, burn skin, and damage eyes.

- Do not wear gloves or other clothing that contain oil, grease, or other flammable substances.
- Do not wear flammable hair preparations.
- Do not weld in an area until it is checked and cleared of combustible and/or flammable materials. BE AWARE that sparks and slag can fly 35 feet and can pass through small cracks and openings. If work and combustibles cannot be separated by a minimum of 35 feet, protect against ignition with suitable, snug-fitting, fire resistant, covers or shields.
- Do not weld on walls until checking for and removing combustibles touching the other side of the walls.

- Do not weld, cut, or perform other such work on used barrels, drums, tanks, or other containers that had contained a flammable or toxic substance. The techniques for removing flammable substances and vapors, to make a used container safe for welding or cutting, are quite complex and require special education and training.
- Do not weld or cut in an area where the air may contain flammable dust (such as grain dust), gas, or liquid vapors (such as gasoline).
- Do not handle hot metal, such as the work piece or electrode stubs, with bare hands.
- Have fire extinguishing equipment handy for immediate use! A portable chemical fire extinguisher, type ABC, is recommended.
- Wear ear plugs when welding overhead to prevent spatter or slag from falling into ear.
- Make sure welding area has a good, solid, safe floor, preferably concrete or masonry, not tiled, carpeted, or made of any other flammable material.
- Protect flammable walls, ceilings, and floors with heat resistant covers or shields.
- Check welding area to make sure it is free of sparks, glowing metal or slag, and flames before leaving the welding area.

## FUME HAZARDS



WARNING!

### FUMES, GASES, AND VAPORS CAN CAUSE DISCOMFORT, ILLNESS, AND DEATH!

To reduce risk of discomfort, illness, or death, read, understand, and follow the following safety instructions. In addition, make certain that anyone else that uses this welding equipment or is a bystander in the welding area, understands and follows these safety instructions as well.

- Do not weld in an area until it is checked for adequate ventilation as described in ANSI standard #Z49.1. If ventilation is not adequate to exchange all fumes and gasses generated during the welding process with fresh air, do not weld unless you (the welder) and all bystanders are wearing air-supplied respirators.
- Do not heat metals coated with, or that contain, materials that produce toxic fumes (such as galvanized steel), unless the coating is removed. Make certain the area is well ventilated, and the operator and all bystanders are wearing air-supplied respirators.

- Do not weld, cut, or heat lead, zinc, cadmium, mercury, beryllium, or similar metals without seeking professional advice and inspection of the ventilation of the welding area. These metals produce EXTREMELY TOXIC fumes which can cause discomfort, illness, and death.

- Do not weld or cut in areas that are near chlorinated solvents. Vapors from chlorinated hydrocarbons, such as trichloroethylene and perchloroethylene, can be decomposed by the heat of an electric arc or its ultraviolet radiation. These actions can cause PHOSGENE, a HIGHLY TOXIC gas to form, along with other lung and eye-irritating gasses. Do not weld or cut where these solvent vapors can be drawn into the work area or where the ultraviolet radiation can penetrate to areas containing even very small amounts of these vapors.

- Do not weld in a confined area unless it is being ventilated or the operator (and anyone else in the area) is wearing an air-supplied respirator.

- Do not weld in a confined area unless it is being ventilated or the operator (and anyone else in the area) is wearing an air-supplied respirator.

- Stop welding if momentary eye, nose, or throat irritation develops as this indicates inadequate ventilation. Stop work and take necessary steps to improve ventilation in the welding area. Do not resume welding if physical discomfort persists.

## PROTECTION AGAINST MAGNETIC FIELD



WARNING!

The magnetic field can be a cause of trouble to operators who have HEART MONITORS, PACE-MAKERS, AUDITIVE APPARATUS, AND/OR COCHLEAIRE IMPLANTS (HEARING AIDS). Do not carry any credit card or magnetic card when using any welding machine.

# Introduction

You are the lucky owner of the new multiple function dent pulling system, **COMPUSPOT CPS160** developed especially for body men. You have made the right choice and we congratulate you.

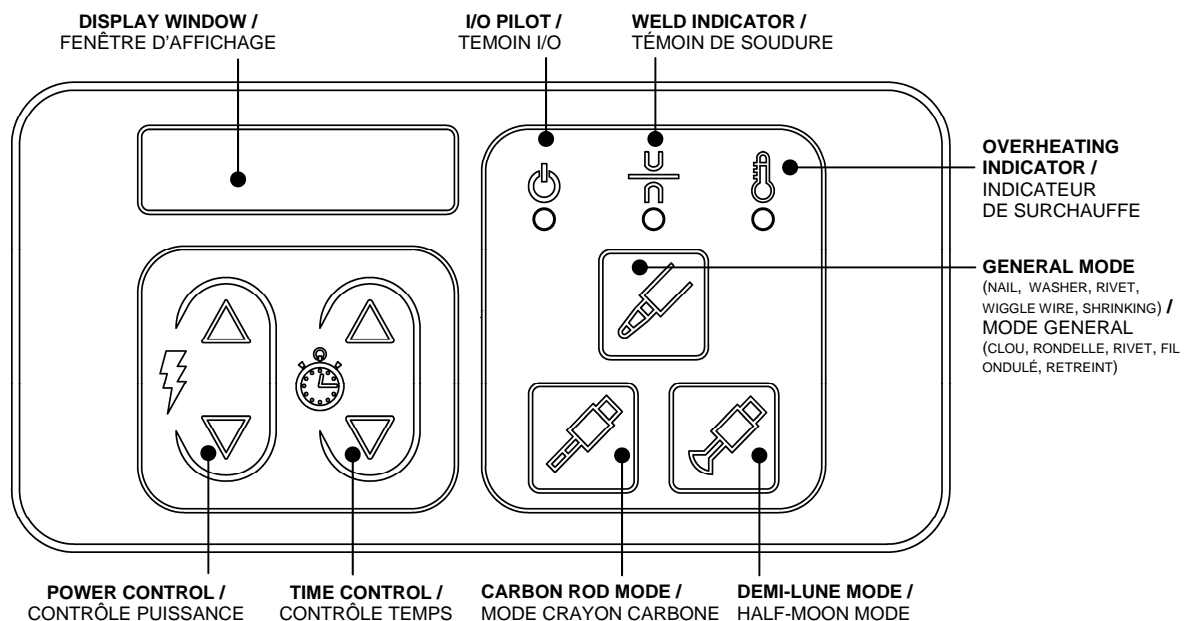
Your **COMPUSPOT CPS160** dent pulling system was designed to perform most panel work calling for the application of studs, washers, and rivets. It can easily carry out even the most delicate procedures which until today represented a major undertaking.

## The Body Man's Perfect Dent Pulling Tool

Among the different dent pulling techniques applied to maintenance work on car bodies, low amperage spot welding application of studs, pins, wiggle wire, or washers is the most economical, the fastest, and the most suitable for the sheet metal used in today's automobiles. Thanks to this method, the damage of assembled parts is reduced to a minimum - it is negligible and even invisible in many cases. The structure of high-resistant sheet metal is not affected. Further, this type of application does not requires special training.

This machine can produce excellent results for many years to come; read this manual carefully so as to draw the full benefits from this equipment and keep it in perfect running order.

- Mode, power and time settings are easy to make, making this multifunctional welder an efficient, user-friendly tool.
- By observing the precautions set forth for the operation and maintenance of the welder and its accessories, the operator will achieve excellent results in each mode.
- This dent pulling system can be used by programming the time (stops automatically when time has expired) or by manual control.
- The welding cables are flexible, easy to handle and a convenient length (2 m) for all operations.
- The accessories provided with the equipment enable the operator to do most of automotive panel repair work.



# Multifunctional Welder Specifications

## Specifications

General		
Voltage	208/240 V Single Phase	380/415 V Single Phase
Frequency	50/60 Hz	50/60 Hz
Fuses	30 A, delay	20 A, delay
Welding Current	2100/3500 A	2100/3500 A
Open Circuit Voltage	7 V	7 V
Duty Cycle	7 %	7 %
Power Rating	2.0/2.9 kVA	2.0/2.9 kVA

Mechanical Specifications	
Power Cord Length	8 m
Welding Cable Length	2 m

## Electricity: Basic Rules to be Observed

### Voltage

For the **COMPUSPOT CPS160** run properly, it is essential that the power supply correspond to the voltage listed on the identification plate attached to the rear of the machine.

### Amperage

The welding unit must be connected to an outlet rated at 30A (or 20A for the 380V model) with a delay fuse or time limiting breaker.

### Remedy for insufficient power supply

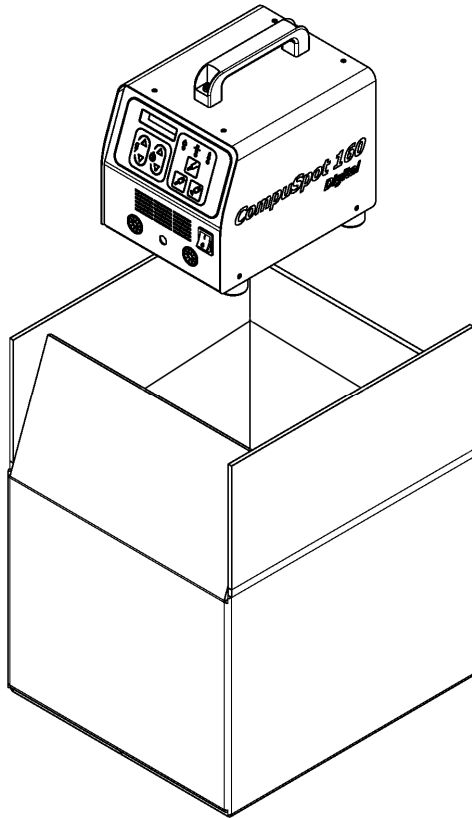
The outlet to which the **COMPUSPOT CPS160** dent pulling system will be connected must be reinforced. Replace the circuit breaker or the fuses. In some cases, it may even be necessary to change the conductors.

### Final precaution

Avoid connecting several units to the same line as the dent pulling system when the line is calibrated at 30A (or 20A for the 380V model).

## ***Receiving and Unpacking the Welder***

First remove the slide hammer, manual, and accessory package from the box. Remove any packing material surrounding the machine. Then lift the machine straight up and out of the box.





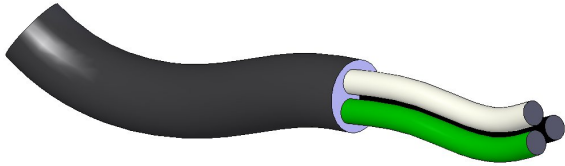
# Welder Connections

## How to connect the power cord - Precautions

The **CompuSpot160** dent pulling comes with a 8-m power cord permanently connected to the unit. This cord contains 3 conductor wires of the same diameter:

Black and white (Run on 240V/400V or 380/415V – 50/60Hz, Single Phase)

Green (GROUND; must always be connected for important safety reasons).



The operator must supply a properly rated plug to match the outlets in the shop.

**Do not make any trial runs or tests with the machine before checking the circuit breaker, the outlet, and the wiring configuration on the plug.**

Connect the ground wire (green) to the ground post of the plug being installed. Most single phase 240/400 volt plugs have 3 terminals and 3 posts. The 2 wires of the power cord fit are then connected to the 2 remaining terminals.

### TIP

**Avoid adding an extension to the power cord. If it is too long, it may cause a drop in power. If an extension or drop cord must be used, its size and rating must be the same or greater than that of the power cord mounted on the machine.**

## Ground Cable

### Location

Choosing and preparing the place where to apply the ground plate is very important.

Fix the ground plate directly to the part of the car body to be repaired, near the work area (less than 3 feet/1 m).

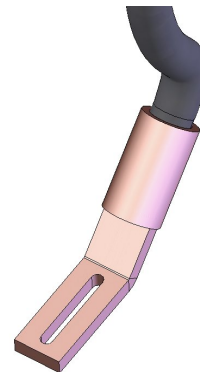
Example : When dent pulling on a door panel, attach the ground plate to the panel itself. For further work on the same car, move the ground plate.

### Cleaning

Carefully prepare the spot where the ground plate will be installed to ensure excellent electrical contact: strip all paint and filler from the sheet metal. Clamp the ground plate firmly against the body part with vise grip pliers to obtain perfect electrical contact. Magnetic clamps may be used provided they are powerful enough that use of a slide hammer will not dislodge the ground plate.

### Maintenance

After having used the machine for a certain period of time, clean the ground plate with an abrasive pad or light file, if necessary.



## Start-Up

1. Connect the power cord to an electric outlet rated at 240 V, single phase - 30 Amps (400 V, single phase – 20 Amps for 380-400V model).

2. Turn the switch located in the lower right-hand corner of the front. (power knob)

**1 = power on; pilot light begins flashing and then stays on.**

**0 = off**

3. Select the desired mode.

4. Select the desired power.

5. Set the welding time to the minimum required for the dent pulling application.

**NOTE: Most of the modes can be implemented automatically or manually. The automatic mode has only to do with the welding time.**

### Automatic position

The length of time which is preset can be initiated by pressing the switch on the welding gun handle.

### Manual position

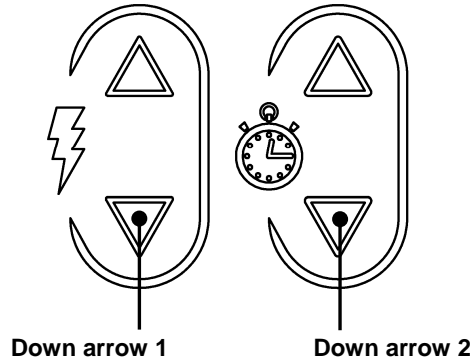
The welding time is completely controlled manually by the operator pressing and releasing the trigger switch on the contact handle.

It must be modified (increased or decreased) depending upon the variations in shop voltage, the local electrical network, and other electrical equipment installed in the shop.

It will also vary depending on the thickness of the sheet metal upon which work is being done.

## Language selection

The machine is programmed for three different languages: **French, English** and **German**. Press on the two down arrows at the same time to select the desired language.



### OVERHEATING WARNING

There is an overheating if the yellow indicator lights ON and the following message appears:



The machine automatically stop when there is an overheating in the power components. Please wait at least 30 minutes before using the machine or until the machine has cooled down. If the problem persists, call AMH Canada or your local dealer.

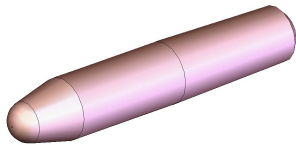
# Mode and Settings

## 1. Tack welding with cables and one contact tip

**IMPORTANT:** While the CPS160 is an extremely powerful dent pulling system, it is **NOT** designed for panel installation. The tack welding process described below is used only to attach very thin patch material or to hold a panel in place so that MIG welding or spot welding with a more powerful resistance spot welding machine can be performed.

### Equipment

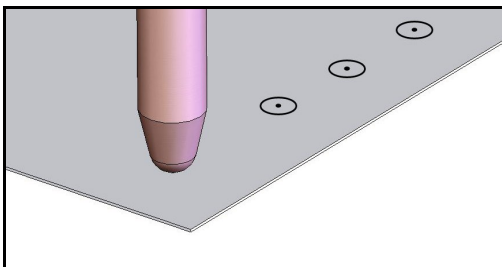
- standard contact tack weld tip **04.PS.15.18**



### REMINDER

- Mount one well-sharpened tip on the tip holder located on the control handle of the welding gun.
- Attach the ground plate.
- Prepare and strip the sheet metal for tack welding.

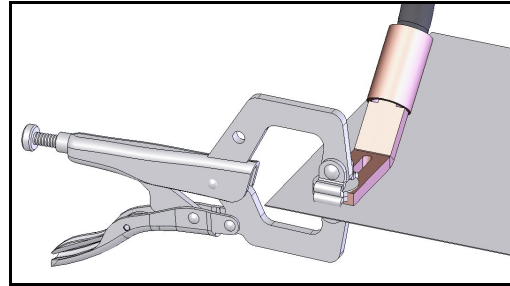
**NOTE:** For patch material use stainless sheet metal 0.4mm (26 ga) Strip both sides of the upper piece of the patch sheet metal and the outside surface of the lower piece of sheet metal on which the patch will be applied.



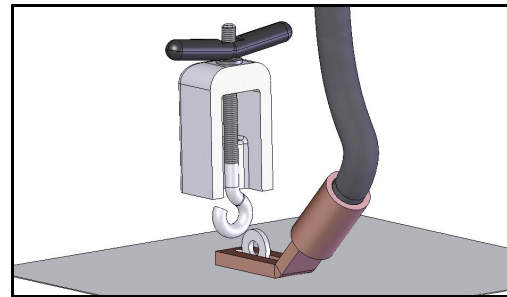
### How to fasten the ground plate

Two ways to fasten the ground plate.

1. Strip the part of the sheet metal where the ground plate is to be attached.



2. or weld a washer on the metal surface and fasten the ground plate on with the block grip.



### Welder settings

Choice of setting depends on several factors :

- Power supply to the machine (voltage)
- Quality and thickness of sheet metal to be assembled.

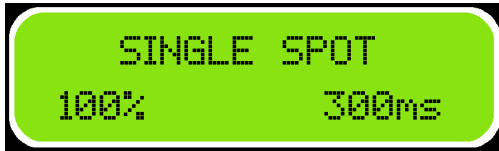
**COMMENT:** For stronger welds it is always preferable to increase the power settings and reduce the welding time to a minimum.

- Press on GENERAL MODE symbol until the MONOPOINT mode is selected.



- Set power.
- Set time.

Example for contact tip\*:



\*The values displayed in this example are suggested but can be adjustable.

**NOTE:** The first tack welds made using the above-mentioned settings will serve as a guide in selecting the appropriate setting for subsequent welds.

### Sharpening the tips

For optimum efficiency and to avoid overheating, the tips must be regularly cleaned and sharpened.

**NOTE**

In tack welding mode :

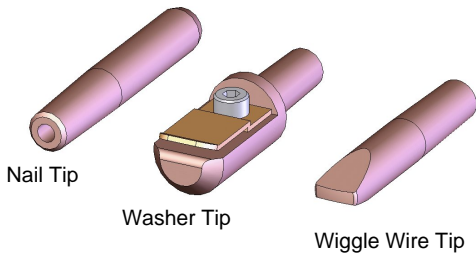
- do not press down hard on the tips;
- for greater penetration, increase the power setting;
- make sure the sheet metal is clamped tightly together before welding;
- prepare and clean properly the surface of the sheet metal to be assembled.

## 2. How to weld nails, wiggle wire and washers

Mount the tip for desired mode on the tip holder of the handle with switch.

### Equipment

- Nail tips : **04.PS.15.25**
- Washer tips : **04.PS.15.05**
- Wiggle wire tip: **04.PS.15.30**

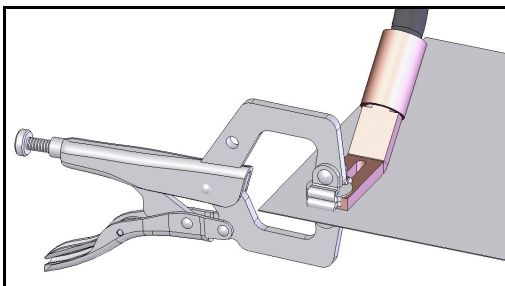


- Strip the part of the sheet metal to be welded

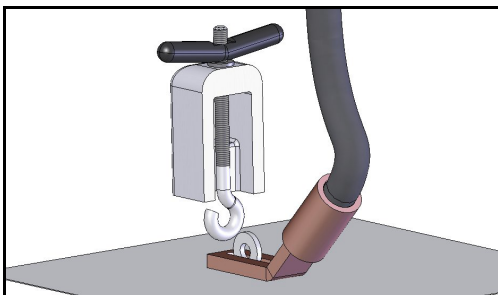
### How to fasten the ground plate

Two ways to fasten the ground plate.

1. Strip the part of the sheet metal where the ground plate is to be attached.



2. or weld a washer on the metal surface and fasten the ground plate on with the block grip.



### Settings for nails, wiggle wire and washers

- Press on GENERAL MODE symbol until the appropriated mode is selected:



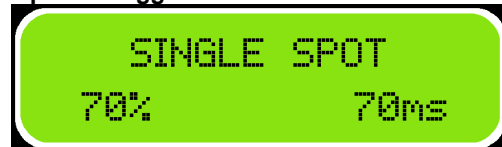
- NAIL/STAR for nails;
- SINGLE SPOT for wiggle wire;
- WASHER/SHRINK for washers.

- Set power.
- Set time.

Example for nails\*:



Example for wiggle wire\*:

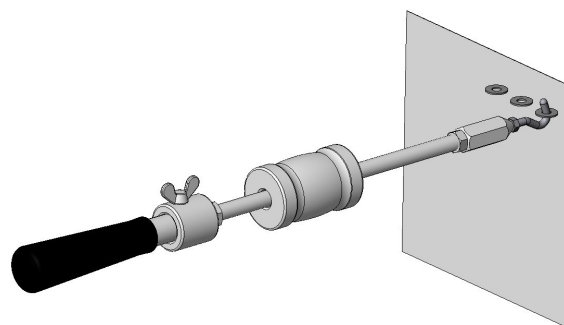


Example for washers\*:



\*The values displayed in this example are suggested but can be adjustable.

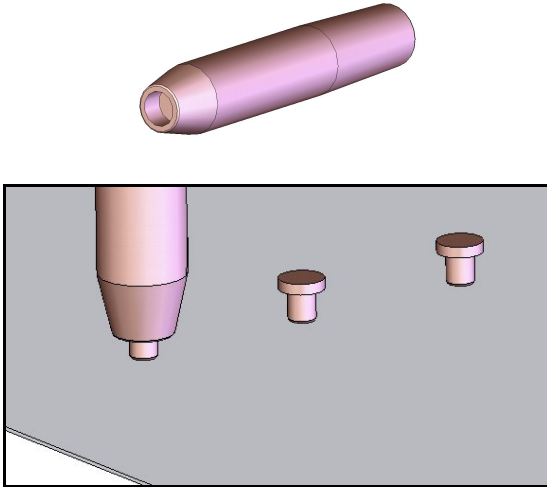
**NOTE:** After dent extraction with a puller or another means of pulling, remove the washers by breaking the welds with simple clockwise rotation of the pulling hook.



### 3. How to weld molding rivets

#### Equipment

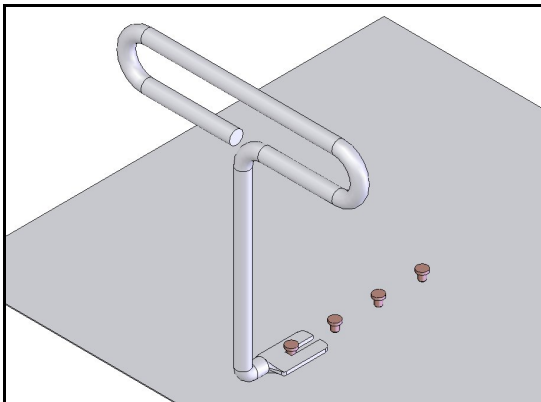
- Molding rivet tip : **04.PS.15.20**



When welding, the molding rivets and support sheet metal should not exceed a bluish colour. **Never heat until red.**

**COMMENT:** To facilitate rivet installation, the rivet-holder tip is magnetized.

**NOTE:** Molding rivets are used either to attach trim or door guards or to remove small dents from panels with a rivet puller.

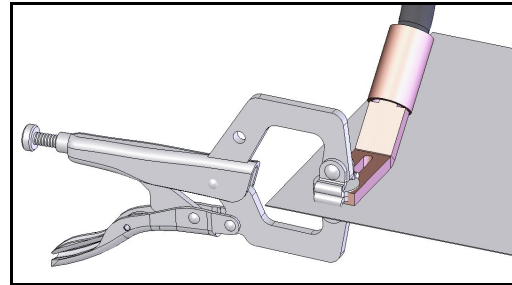


- Strip the area of the sheet metal to be worked on.

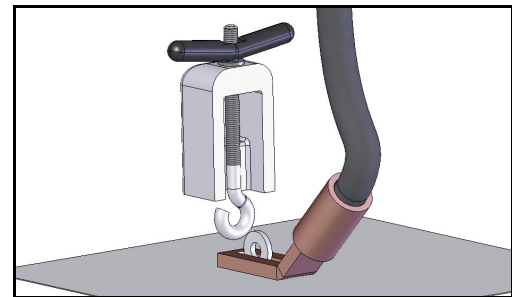
#### How to attach the ground plate

Two ways to fasten the ground plate.

1. Strip the part of the sheet metal where the ground plate is to be attached.



2. or weld a washer on the metal surface and fasten the ground plate on with the block grip.



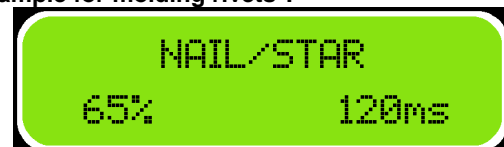
#### Setting for molding rivets

- Press GENERAL MODE symbol until you get the NAIL/STAR mode.



- Set power.
- Set time.

Example for molding rivets\*:



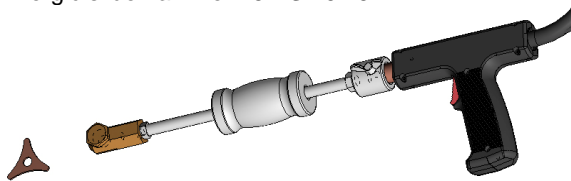
\*The values displayed in this example are suggested but can be adjustable.

## 4. Energic Slide Hammer With Tip 13.PS.10.29

This means of dent pulling is very quick; the time of implementation is reduced compared to other means of pulling (of washers, nails, etc.). The use of this puller is limited in certain cases, however.

### Equipment

- Energic slide hammer 13.PS.10.29



### Use :

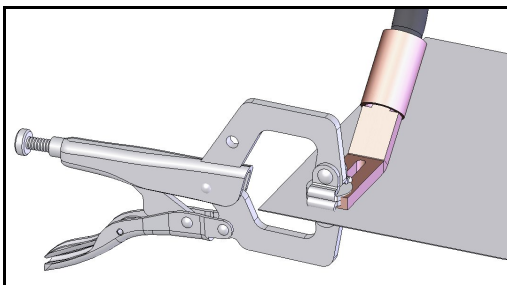
- Remove the handle of the slide hammer.
- Slide the collar of the slide hammer over the end of the electrode holder in the contact handle.
- As in the previous applications, attach the ground plate to the stripped sheet metal.
- Align the wing bold with the detent in the electrodes holder and tighten the slide hammer to the switch handle.
- After pulling, rotate the tip clockwise once to break the weld.

**Note:** Use a file to remove a small amount of the copper coating on the leading edge of the star washer before working.

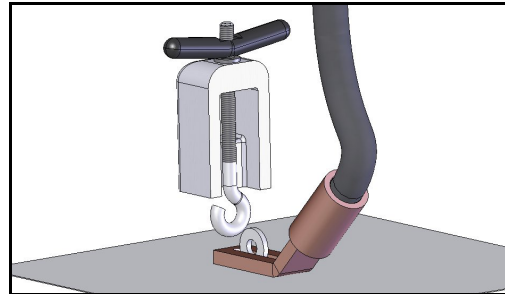
### How To Attach The Ground Plate

Two ways to fasten the ground plate.

1. Strip the part of the sheet metal where the ground plate is to be attached.



2. or weld a washer on the metal surface and fasten the ground plate on with the block grip.



### Settings for energic slide hammer

- Press GENERAL MODE symbol until you get the NAIL/STAR mode.



- Set power.
- Set time.

**Example for Energic slide hammer\*:**



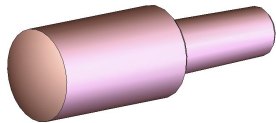
\*The values displayed in this example are suggested but can be adjustable.

**NOTE:** The recommended setting is only approximate. With CPS160 the operator has the advantage of being able to perfect setting to achieve ideal welding, in particular by adjusting the power. By increasing the time, the heating of the sheet metal is also increased. Too long a welding time can result in overheating of cables and tips.

## 5. Shrinking With Copper Tip For Heat Treatment

### Equipment

- Copper shrinking tip **04.PS.15.10**

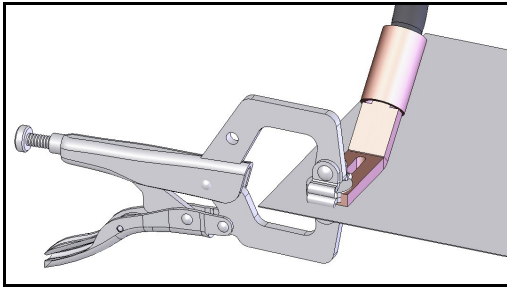


### How To Attach The Ground Plate

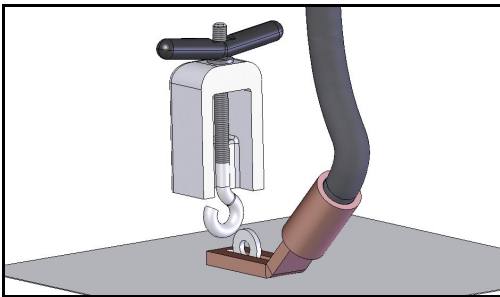
Attach the ground plate to a stripped surface less than 3 feet (1 m) from the stripped area where the shrinking is to be performed.

Two ways to fasten the ground plate.

1. Strip the part of the sheet metal where the ground plate is to be attached.



2. or weld a washer on the metal surface and fasten the ground plate on with the block grip.



### Setting for shrinking tip

- Press GENERAL MODE symbol until you get the WASHER/SHRINK mode.



- Set power.
- Set time.

Example for shrinking tip\*:



\*The values displayed in this example are suggested but can be adjustable.

This type of shrinking is used to remove small bumps in the sheet metal and to heat-treat and cool the sheet metal in order to firm up a panel. Apply the tip to an even surface and press down on the tip.

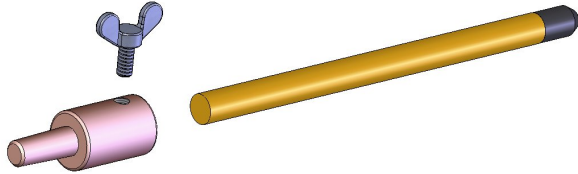
**NOTE:** Should spatter and sparks be produced upon contact, clean the tip and perform the shrinking operation firmly pressing down on the tip.



## 6. Shrinking With Carbon Rod

### Equipment (Optional)

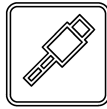
- Carbon rod: **02.205.01.60**
- Carbon rod adaptor: **04.PS.20.36**



Mount the carbon rod and adaptor on the switch handle.

### Settings for shrinking (with carbon rod)

- Press on the CARBON ROD symbol.



- Adjust the power. As the machine will be in the manual mode, current will be flowing as long as the trigger switch is held down.

Example for shrinking with carbon rod:



\*The values displayed in this example are suggested but can be adjustable.

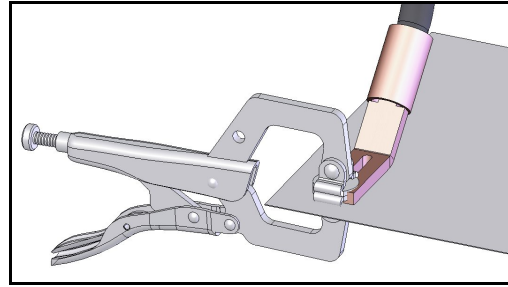
**NOTE:** The power setting should be selected in such a manner as to ensure that the tip does not create sparks or exceed a light reddish colour.

### How To Attach The Ground Plate

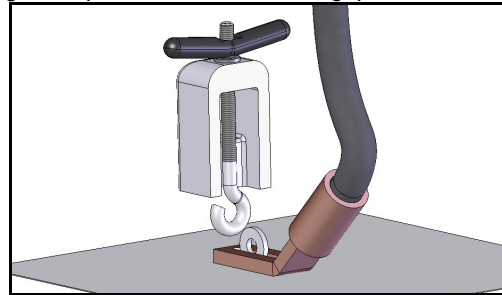
Clamp the ground plate in an area near the surface to be shrunk (less than 3 ft/1 m) on the same panel or piece of metal.

Two ways to fasten the ground plate.

1. Strip the part of the sheet metal where the ground plate is to be attached.



2. or weld a washer on the metal surface and fasten the ground plate on with the block grip.



**IMPORTANT:** Thoroughly clean the part of the sheet metal to be worked and which comes into contact with the ground plate.

### Application

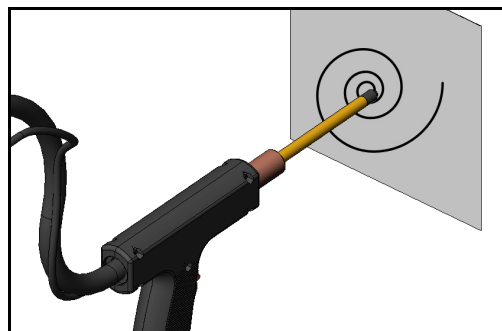
1. Press the switch button on the control handle. The electricity passes as soon as the tip comes into contact with the sheet metal. It is continuous.

#### 2. Shrinking or elimination of a high spot or over pulled area.

Apply the tip lightly to the sheet metal and move it as if writing with a pen.

#### 3. Shrinking a panel which has lost firmness or strength due to dent pulling

Move the tip slowly drawing concentric circles or continuous spirals on the sheet metal. Move from the outside of the work area toward the center. Cool with a wet rag, sponge, or spray bottle.

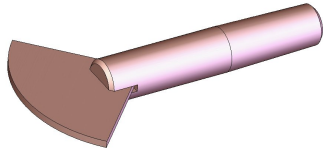


## 7. Half Moon Stitch Welding

Mount the half moon shaped tip for the desired mode on the tip holder of the handle switch.

### Equipment

- Half moon electrode: **04.PS.15.15**



### Settings for half moon mode

- Press on the HALF MOON symbol.



- Set power.
- Set time.

Example or half moon mode\*:

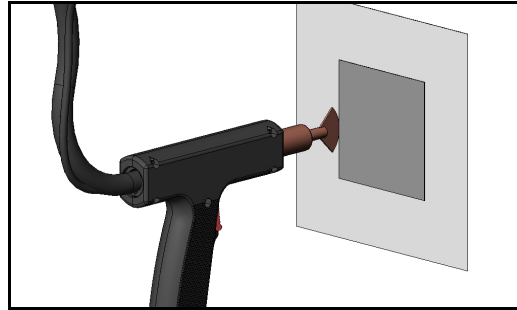


\*The values displayed in this example are suggested but can be adjustable.

**NOTE: The welding time is pre-set . Only the time "OFF" can be set by the using the timer knob.**

- Strip the part of the sheet metal to be weld.
- Place a 0.4mm thick stainless sheet metal over the area to be patched. Place the half moon electrode on the edge of the stainless, and by pulling the trigger switch, weld it with a rocking movement.

**NOTE: The machine will continue stitch welding as long as the trigger switch is held down.**

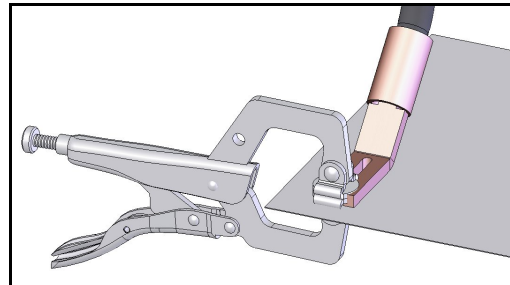


### How To Attach The Ground Plate

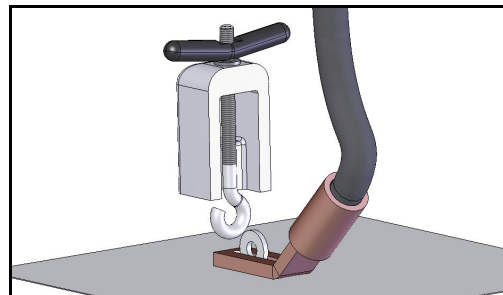
Attach the ground plate to a stripped surface less than 3 feet (1 m) from the stripped area where the shrinking is to be performed.

Two ways to fasten the ground plate.

1. Strip the part of the sheet metal where the ground plate is to be attached.



2. or weld a washer on the metal surface and fasten the ground plate on with the block grip.



## List of Accessories

No. AMH	Description
16.178.00.72	Washers (set of 100)
16.178.00.71	Molding rivets (set of 100) for extraction or attachment of door guards
16.178.00.67	Nails (set of 100)
04.PS.15.18	Standard tack weld tip
04.PS.15.05	Washer tip
04.PS.15.25	Nail tip
04.PS.15.10	Copper shrinking tip
04.PS.15.20	Molding rivet tip
13.PS.10.31	Washer puller with hock
13.PS.10.27	Nail mandrel
04.PS.20.36	Electrode holder adaptor
13.PS.10.29	Electric washer puller with tip adapter
13.PS.10.45	Block grip
13.155.00.36	Flat tips for puller 13.PS.10.29 (set of 10)

### **Optional:**

13.155.10.76	Wiggle wire (1lb/pk)
13.155.10.50	8 Finger bear claw for jack
13.155.30.07	Hand lifter
13.155.10.45	5 Finger bear claw for hammer
14.CS.00.20	Cart

# Troubleshooting

## Sheet metal burn through

Power and/or welding time settings too high or poor contact between tip and sheet metal. Also, in the case of tack or stitch welding a patch a gap may exist between the patch and the panel.

## Poor contact

- Tip(s) need to be cleaned; metal particles of the welding surface stick to tip. Poor contact of electric current owing to dirty tip.
- To improve contact of tip(s) with the welding surface, turn the tips around at each weld when it comes into contact with the sheet metal.
- With a fine emery cloth or light abrasive pad, clean periodically the tip holder surface which is in contact with the tip.

## Tip removal

Tips may be removed from the tip holder by tapping lightly on the tip holder with a fiber hammer.

## Poor or weak welds

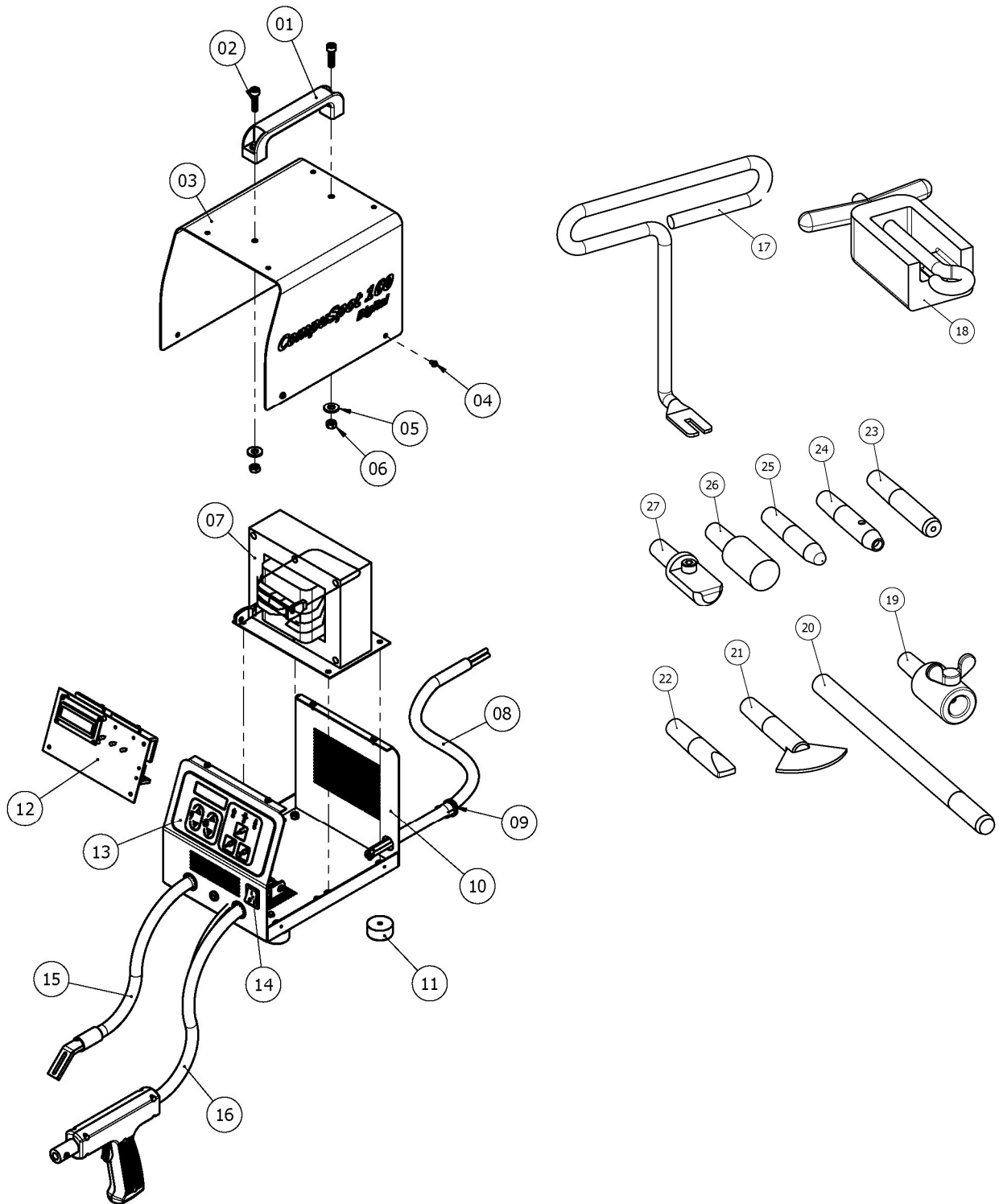
- The surfaces to be assembled have not been cleaned properly.
- Power or welding time settings are not adequate.
- Too much pressure on the tip and sheet metal to be assembled.

## Welder Failure

Problem	Diagnosis	Remedy
Poor electrical operation.		<p>Check cables to see if they are properly connected and held in place on welder.</p> <p>Make sure the control handle switch is working properly.</p>
Does not work and there is no sign that power is on when switch is in the ON position.	Failure often stems from power cord which has been bent many times at the ends, chiefly near the connecting plug. The wires are broken or badly worn so that passage of electrical current is impaired. In this case the plug is very hot if the internal connection is not good.	<p>Remove the plug, attach correctly the wires inside the plug or change the plug if defective.</p> <p>Check the circuit breaker, fuses, etc., and power line.</p>
<p>No power setting.</p> <p>Not time setting.</p> <p>Pilot lights come on and current passes through the tips.</p> <p>Humming sound is produced when power and time settings are set at maximum without welding or pressing the switch button of the handle.</p>	Defect in control circuit electrical panel.	The welder must be repaired by an approved shop.

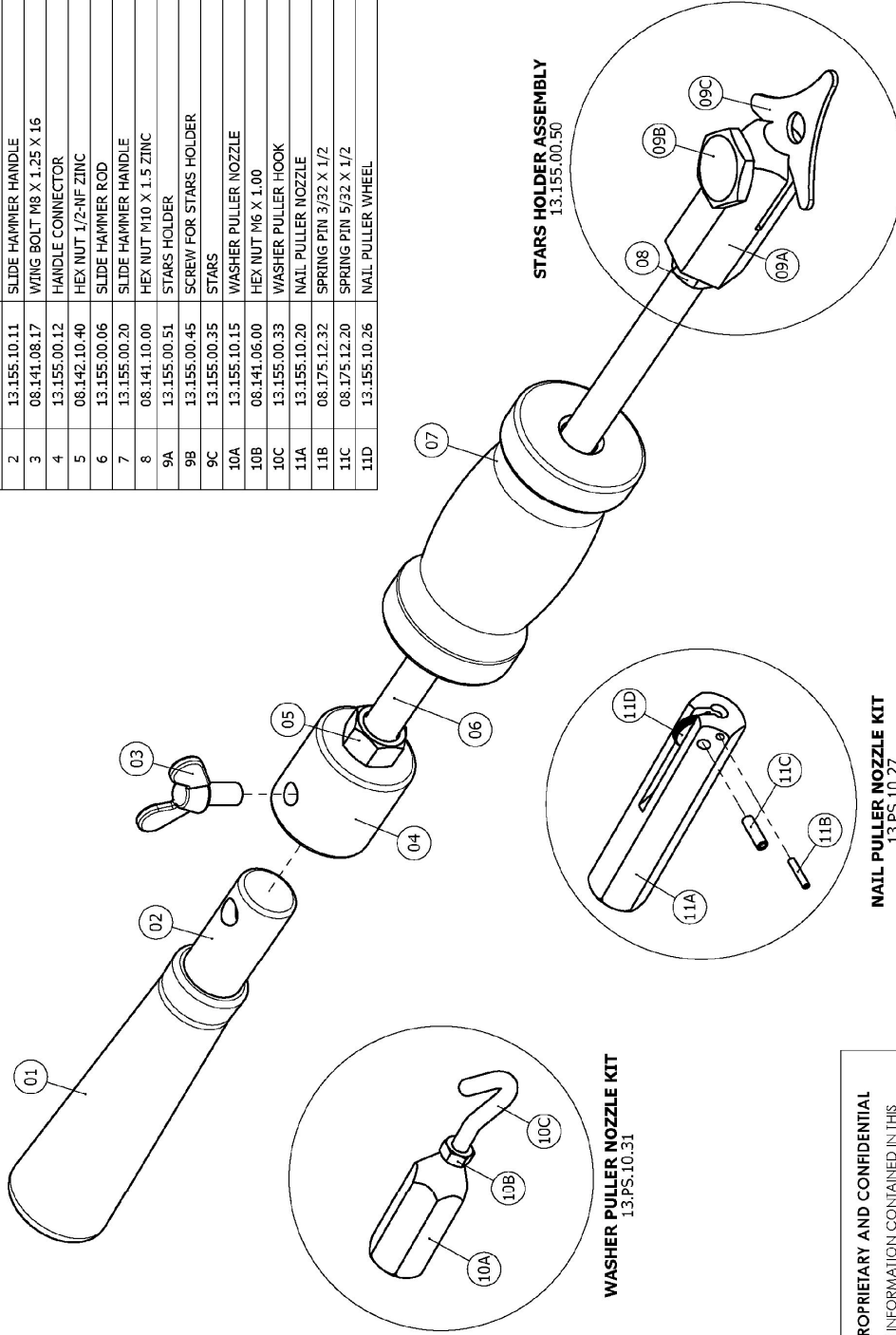
***If problem(s) persist, contact your dealer***

# Exploded View



NO	PART NUMBER	DESCRIPTION	QTY
01	09.125.01.43	HANDLE	1
02	08.141.08.23	ALLEN CAP SCREW M8 x 20	2
03	13.164.05.04	TOP COVER	1
04	08.148.08.09	TAPPING SCREW	8
05	08.142.00.12	FLAT WASHER 5/16	2
06	08.141.08.00	HEX NUT M8 x 1.25	2
07	07.PS.21.50	POWER TRANSFO – MODEL 208V	1
	07.PS.21.60	POWER TRANSFO – MODEL 400V	1
08	01.138.01.22	AC CABLE 14/3	1
09	09.125.04.25	STRAIN RELIEF 14/3	1
10	13.164.05.00	FRONT, BOTTOM AND BACK	1
11	09.125.04.81	PLASTIC SUPPORT	4
12	27.PS.01.60	CIRCUIT BOARD – MODEL 208V	1
	27.PS.01.64	CIRCUIT BOARD – MODEL 400V	1
13	51.600.02.16	MEMBRANE	1
14	51.600.02.58	ROCKER SWITCH	1
15	01.PS.03.20	GROUND CABLE ASSEMBLY	1
16	01.PS.03.16	CONTACT CABLE ASSEMBLY	1
17	16.178.00.45	RIVETS EXTRACTOR	1
18	13.PS.10.45	GROUND PLATE HOLDER	1
19	04.PS.20.36	CARBON ROD ADAPTER	1
20	02.205.01.59	CARBON ROD	1
21	04.PS.15.15	FAN SHAPE TIP	1
22	04.PS.15.30	WIGGLE WIRE TIP	1
23	04.PS.15.25	NAIL TIP	1
24	04.PS.15.20	RIVET TIP	1
25	04.PS.15.18	STANDARD TIP	1
26	04.PS.15.10	SHRINKING TIP	1
27	04.PS.15.05	WASHER TIP	1

REF.	PART NO.	DESCRIPTION	QTY
1	41.100.01.70	PLASTIC HANDLE	1
2	13.155.10.11	SLIDE HAMMER HANDLE	1
3	08.141.08.17	WING BOLT M8 X 1.25 X 16	1
4	13.155.00.12	HANDLE CONNECTOR	1
5	08.142.10.40	HEX NUT 1/2-NF ZINC	1
6	13.155.00.06	SLIDE HAMMER ROD	1
7	13.155.00.20	SLIDE HAMMER HANDLE	1
8	08.141.10.00	HEX NUT M10 X 1.5 ZINC	1
9A	13.155.00.51	STARS HOLDER	1
9B	13.155.00.45	SCREW FOR STARS HOLDER	1
9C	13.155.00.35	STARS	1
10A	13.155.10.15	WASHER PULLER NOZZLE	1
10B	08.141.06.00	HEX NUT M6 X 1.00	1
10C	13.155.00.33	WASHER PULLER HOOK	1
11A	13.155.10.20	NAIL PULLER NOZZLE	1
11B	08.175.12.32	SPRING PIN 3/32 X 1/2	1
11C	08.175.12.20	SPRING PIN 5/32 X 1/2	1
11D	13.155.10.26	NAIL PULLER WHEEL	1



TITLE: ENERGETIC SLIDE HAMMER CPS150	
FORMAT: <b>A</b>	DRAWING NO. 13.PS.10.23B
REV: 1.0	SHEET 1 OF 1

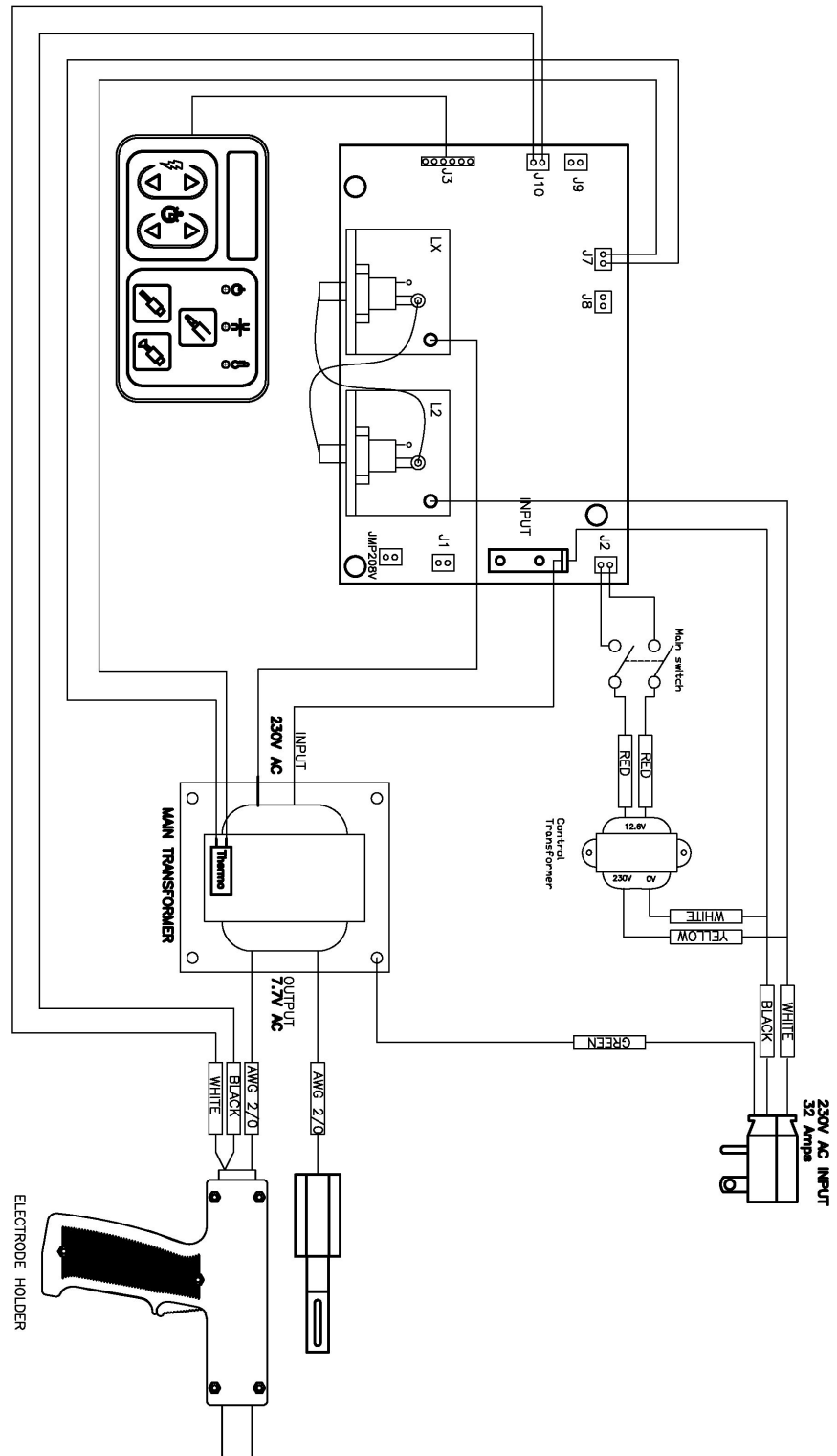
NAME: K.L.	DATE: 01.11.2007
DRAW: APPROVED	COMMENTARIES:
MATERIAL:	SCALE: 1:4
FINITION:	

**PROPRIETARY AND CONFIDENTIAL**  
 THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF AMH CANADA LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF AMH CANADA LTD. IS PROHIBITED.

COTE SANS TOLERANCEMENT:  
 FRACTION = 1/32  
 X = ± 0.30  
 .XX = ± 0.010  
 .XXX = ± 0.005



# Wiring Diagram





## ANNEXE A: General Set-up Table

Function	Welding Time	Power	Mode
Contact Tip	300ms	100%	SINGLE SPOT
Washer	100ms	80%	WASHER/SHRINKING
Nails	100ms	75%	NAIL/STAR
Molding Rivet	120ms	65%	NAIL/STAR
Energic Slide Hammer	70ms	70%	NAIL/STAR
Wiggle wire	70ms	70%	SINGLE SPOT
Half Moon Stitch Welding	100ms	100%	HALF MOON
Shrinking with Copper Tip	300ms	60%	WASHER/SHRINKING
Shrinking with Carbon Rod	---	55%	CARBONE ROD

The manufacturer reserves the right to make changes in the equipment described in this manual. Texts, drawing and photographs herein are provided for information only. They are not intended to be exact technical reproductions of the different equipments described in this manual; therefore, they cannot be considered manufacturer's references.

For more information, contact your local dealer.

**AMH Canada Ltd**

391, rue St-Jean-Baptiste Est, Rimouski (Quebec) Canada G5L 1Z2  
Tel: (418) 724-4105 Fax: (418) 722-6108 Email: amhcanad@amh.com

© 2009 AMH Canada Ltd