PRO SPOT

QUALITY WELDING SYSTEMS

Instruction Manual

MNL-DA-3-Rev. A

About Pro Spot

Pro Spot International specializes in quality welding and repair products for the collision repair industry. Pro Spot owns numerous patents for special welding equipment and applications, and works with the largest auto manufacturers in the world. Pro Spot is a proud 'MADE IN THE USA' manufacturer in Carlsbad, CA. The turnkey facility includes Design, Engineering, Machine and Sheet Metal Shops, Powder Coating, Assembly, Training and Customer Support. The Pro Spot equipment line includes resistance spot welders, aluminum & steel dent repair systems, pulse MIG welders, rivet guns and tools, dust-free sanding systems, fume extraction and more.

Pro Spot Training and Services

Pro Spot provides on-going training to all of our distributors and their technicians, therefore, all owners of Pro Spot products receive complete training first hand. Pro Spot has two ASE certified training programs that are I-CAR Alliance approved. Pro Spot has a fully equipped training facility at their Headquarters in Carlsbad, CA, as well as in Nashville, TN, and Denver, CO, for groups to come in and train on all products. To stay up-to-date, Pro Spot offers their unique My.prospot.com which includes interactive training courses for shops and technicians to access online.

Pro Spot is constantly striving to improve. Whether that means designing innovative equipment, implementing cutting edge technical support or further improving their already extensive training programs, Pro Spot is always looking for ways to better our customer's experiences.

ASE Continuing Automotive Service Education
CERTIFIED TRAINING PROVIDER

I-CAR INDUSTRY TRAINING ALLIANCE

PRO SPOT
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1.1 Introduction

Read this instruction manual carefully before using the DA-3.

Make sure that the DA-3 is installed and repaired only by qualified experts, in compliance with the law and with the accident prevention regulations.

Make sure the operator is trained in the use and risks connected to the welding processs and in the necessary measures of protection and emergency procedures.

1.2 Electrical Safety

- Make sure that the power source to the DA-3 is connected to is protected by suitable safety devices (fuses or automatic switch) and that it is grounded.
- Make sure that the plug and power cable are in good condition.
- Before plugging into the power socket, make sure that the DA-3 is switched off.
- Switch the welding machine off and pull the plug out of the power socket as soon as you have finished using the DA-3.
- Switch the welding machine off and pull the plug out of the power socket before: connecting the welding cables, installing the continuous wire, replacing any parts in the torch or wire feeder, carrying out maintenance operations, or moving it (use the carrying handle on the welding machine).
- Do not touch any electrified parts with bare skin or wet clothing. Insulate yourself from the electrode, the piece to be welded and any grounded accessible metal parts. Use gloves, footwear and clothing designed for this purpose and dry, non-flammable insulating mats.
- Use the welding machine in a dry, ventilated space. Do not expose the welding machine to rain or direct sunshine.
- Use the welding machine only if all panels and guards are in place and mounted correctly.
- Do not use the welding machine if it has been dropped or struck, as it may not be safe. Have it checked by a qualified person or an expert.
- Eliminate any welding fumes through appropriate natural ventilation or using a smoke exhauster. A systematic approach must be used to assess the limits of exposure to welding fumes, depending on their composition, concentration and the length of exposure.
- Do not weld materials that have been cleaned with chloride solvents or that have been near such substances.
- Use a welding mask with adiactinic glass suited for welding. Replace the mask if damaged; it may let in radiation.
- Wear fireproof gloves, footwear and clothing to protect the skin from the rays produced by the welding arc and from sparks. Do not wear greasy garments as a spark could set fire to them. Use protective screens to protect people nearby.
- Some parts of the spot-welder (electrodes arms and nearby areas) may reach temperatures of over 65°C: suitable protective clothing must be worn.
- Metal-working gives off sparks and splinters. Wear safety goggles with protective side eye guards.

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1.3 Protective Gear

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- Metal-working gives off sparks and splinters. Wear safety goggles with protective side eye guards.

1.4 Risk of Fire

- Welding sparks can cause fires.
- Do not weld or cut anywhere near flammable materials, gasses or vapors.
- Do not weld or cut containers, cylinders, tanks or piping unless a qualified technician or expert has checked that it is possible to do so, or has made the appropriate preparations.

1.5 EMF Electromagnetic Fields

Welding current creates electromagnetic fields (EMF) near the welding circuits and the welder. Electromagnetic fields may interfere with medical equipment such as pacemakers.

Suitable and sufficient measures should be implemented to protect those operators having such aids. For instance, they should not be allowed to enter that area where welding equipment is used. Any operator having such aids should consult their doctor before coming close to an area where welding equipment is used.

This device meets the specific requirements of the product technical standard and is intended for professional use in an industrial environment only. Compliance to expected limits for human exposure to electromagnetic fields at home is not ensured.

Follow these strategies to minimise exposure to electromagnetic fields (EMF):

- Do not place your body between the welding cables. Both welding cables should be on the same side of your body.
- Twist both welding cables together and secure them with tape when possible.
- Do not wrap the welding cables around your body.
- Connect the ground cable to the workpiece as close as possible to the area to be welded.
- Keep your head and body as far away as possible from the welding circuit. Do not work close to the welder, or seated or leaning on it. Minimum distance: Fig. 7 Da = cm 50; db = cm.20

Class A Equipment

This equipment has been designed to be used in professional and industrial environments.

If this equipment is used in domestic environments and those directly connected to a low voltage power supply network which supplies buildings used for domestic purposes, it may be difficult to ensure compliance to electromagnetic compatibility as the result of conducted or radiated disturbances.

1.6 Welding in Conditions of Risk

- Do not use the DA-3 in the presence of flammable or explosive materials. Make sure that trained people are present who can intervene in the event of an emergency. Always use personal protective equipment.
- If you are using the DA-3 in a position raised above ground level, always use a safety platform.

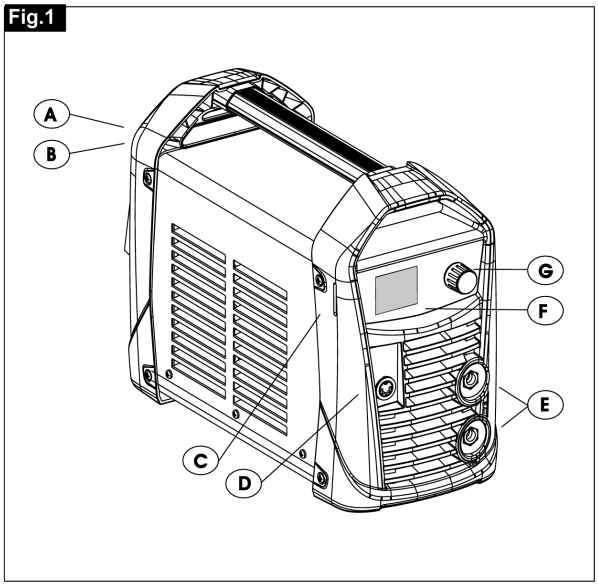
Additional Warnings

- Do not use the welding machine for purposes other than those described.
- Place the welding machine on a flat stable surface, and make sure that it cannot move. It must be positioned securely to allow it to be controlled during use and prevent the welder from being hit by sparks.
- Do not lift the welding machine while in use.
- Do not use cables with damaged insulation or loose connections.

Portable welding system for welding of pulling keys and pins. It is used for the repair of aluminium and metal components for collision repair.

The welding machine is manufactured with INVERTER technology. The current delivered is continuous.

Fig.1



2.1 Product Breakdown:

A) Power cable
B) ON/OFF switch
C) SD Card
D) Trigger harness connection
E) Welding cable connections
F) Display
G) Adjustment dial

3.1 Starting Up

- Connections to the power source must be made by expert or qualified personnel.
- Make sure that the welding machine is switched off and the welder is not connected to a power source.
- Make sure that the power supply the welder plugs into is protected by safety devices (fuses or automatic switch) and grounded.

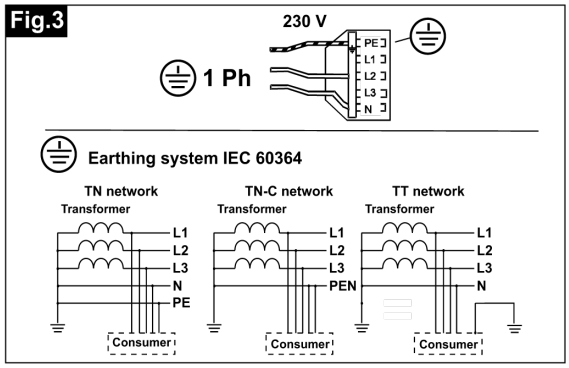
Assembly and electrical connections

- Check that the power source provides the correct voltage and frequency for the welder and has a delayed fuse suited to the maximum delivered rated current.

3.2 TN Systems

Protect by means of automatic circuit breaker (C curve) rated: 16A for 1Ph 208/230. The disconnection time in case of fault must not be higher than 0.4sec (for supply network having a nominal voltage to earth of 230V) and should be evaluated at the installation: if, due to installation conditions, the fault current becomes too low to properly operate the circuit breaker, the use of an additional RCD (residual current device) may become necessary (not on TN-C systems).

Fig.3



3.3 TT Systems

- According to IEC 60364-4-41 the installation must be protected by an RCD which sensitivity depends upon the earth connection resistance of each installation, IEC 60364-4-41 also requires that the RCD tripping time is lower than 1sec.
- The earth connection resistance of the installation must be considered for the selection of the RCD sensitivity; the maximum resistance of the protective bonding circuit of the welding equip ment is: 0.19 Ohm.

The requirements set out in the IEC/EN61000-3-12 standard do not apply to this equipment. If this equipment is connected to low voltage power supply network, either the installer or the user is responsible for checking that this can be done (consult the distribution system operator if required).

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- In order to comply with the requirements set out in EN61000-3-11 (Flicker), it is advisable to connect the welder to the supply mains interface points with a service current capacity of >/= 100A per phase.

- Either the installer or the user is responsible for checking that the welder can be properly connected; (consult the electrical grid operator if required).

Plug. If the welding machine is not fitted with a plug, fit a normalised plug (2P+T for 1Ph) of suitable capacity to the power cable (Fig.3)

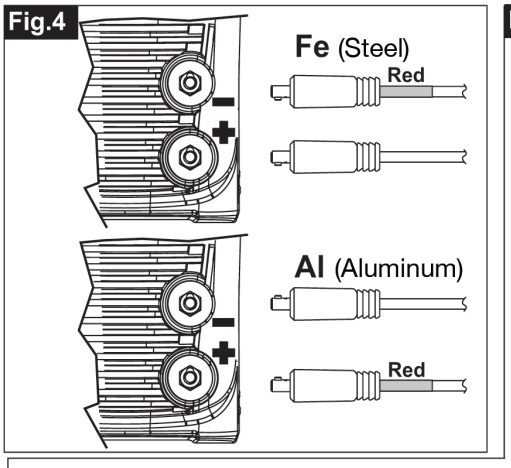
4.1 Preparation of the Welding Circuit

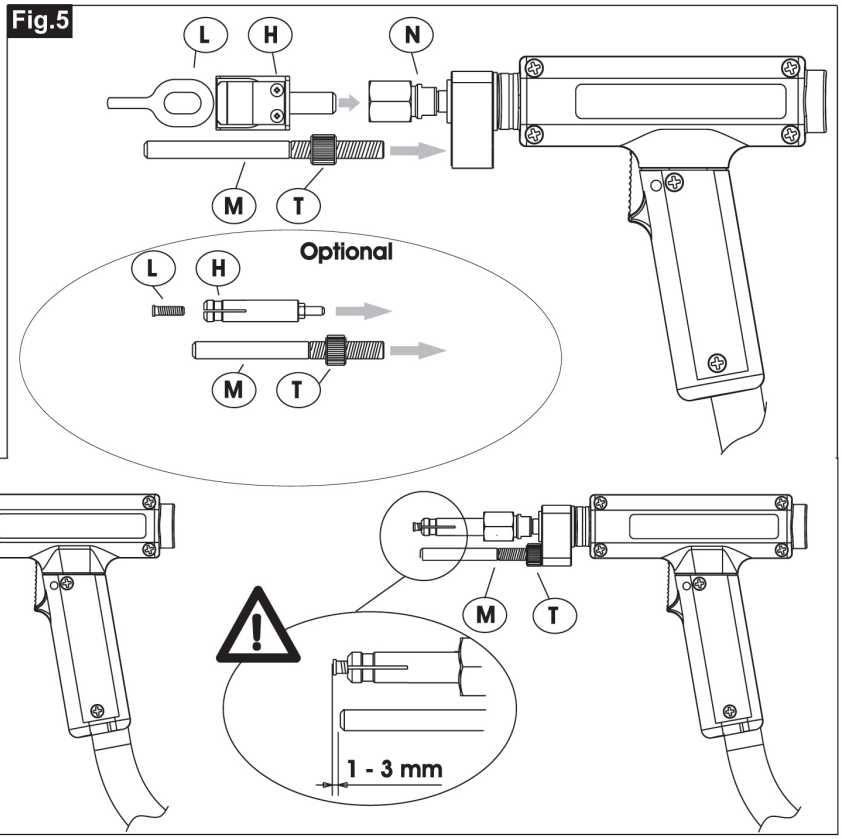
1. Connect the gun to the front of the welder, making sure the polarity required by the type of metal to be welded is correct: Aluminium or Steel.
2. Connect the trigger harness of the gun to the front of the welder.

4.2 Preparation of the Gun

The gun can weld various keys and studs depending on the clamp mounted and on its setting.

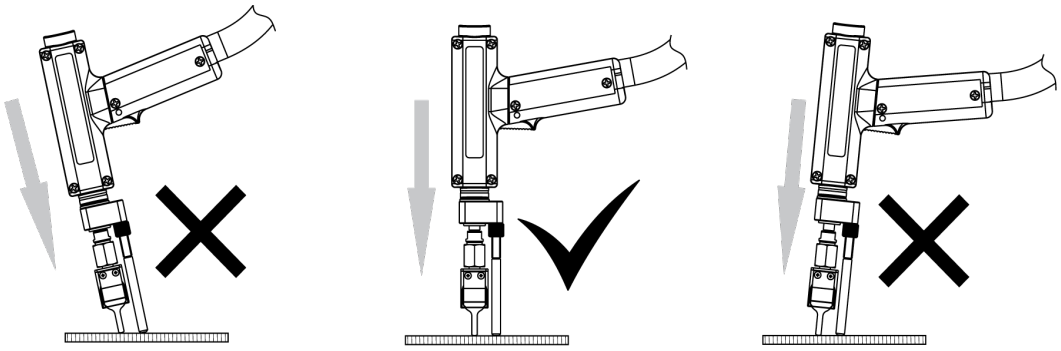
1. Install the correct size collet (H) for the size stud/pin (L) you are welding with.
2. Install the ground pin (M) to the gun. The ground pin must be adjusted so that 1-3mm of the key/stud being welded protrudes past the ground pin. See diagram. Use the locking nut (T) to lock the ground pin in place.





4.3 Gun Positioning

Place the ground pin onto the part and position the gun vertically so that the slot or the pin is in contact with the part compressing it only for the 1 - 3 mm which protrudes with respect to the ground pin. Ground pin and stud/key must be touching bare metal to function properly.



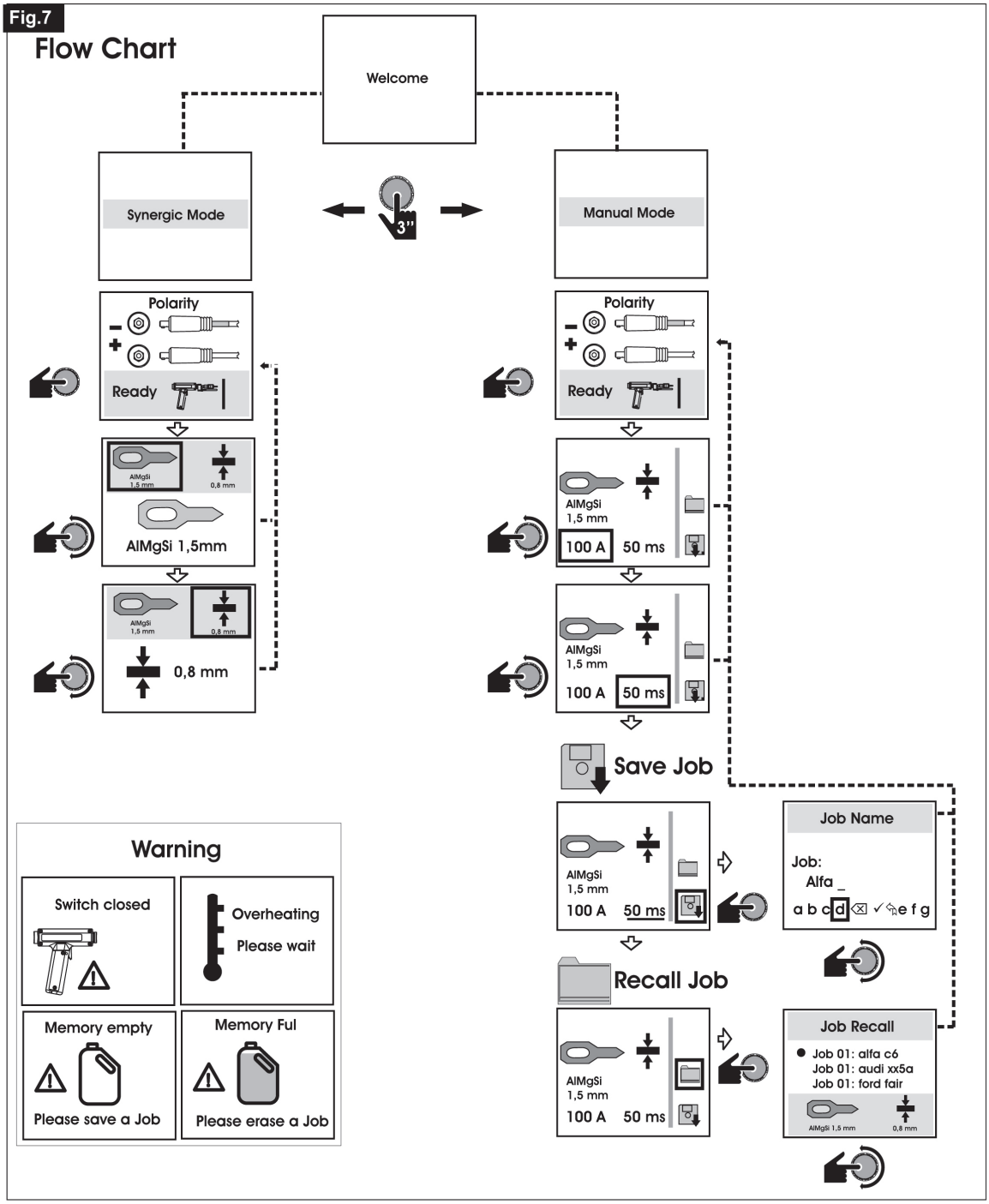
5.1 Controls Description

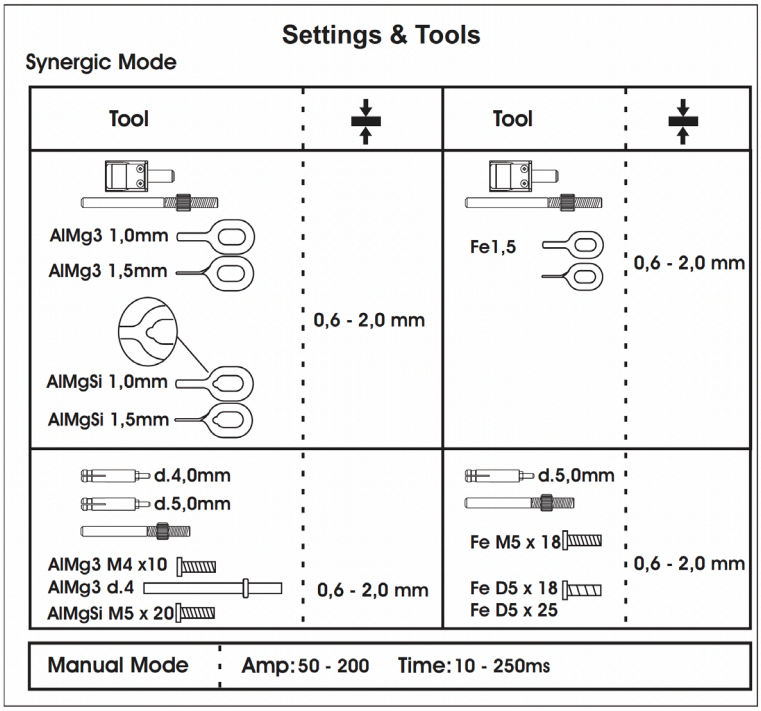
The DA-3 is equipped with LCD screen. The LCD screen will display all of the welder settings and use of the control knob will adjust the settings. The DA-3 is a synergic welder for ease of use. To use the welder in synergic mode, choose the type/size of the key or stud and the thickness of metal. Then perform the weld. To fine tune settings, the welder can be placed in manual mode by pressing the control knob in for 3 seconds. Weld power and weld time can be adjusted higher or lower.

5.2 Saving Programs

In manual mode it is possible to store your settings and save them with a name (maximum 13 characters). The memory stores up to 64 programs.

Fig.7





6.1 Error

1. SWITCH CLOSED. This warning indicates a fault in the trigger or a short in the trigger cable from the trigger back to the front of the welder.
2. OVERHEATING. This warning comes up when the welder has exceeded its duty-cycle. Allow the welder to remain on and let cool down.

6.2 SD Card Connector

The connector is useful for updating the software of the machine and uploading new synergistic programs.

- Insert the sd card when the welder is off.
- Switch on the machine. The software is loaded. At the end of the update the control panel gets back to the normal status.
- Remove the sd card.

7.0 Maintenance

Switch off the welder and remove the plug from the power socket before carrying out any maintenance operations.

STUDDER:

Torch=check that there are no cuts or abraisons in the cable that bare the internal conductors.

Ground = check the efficiency of connections and terminal.

Factory maintenance to be carried out by factory-trained personell.

- Inspect the inside of the welder and remove any dust deposited on the electrical parts (using compressed air) and the electronic cards (using a very soft brush and appropriate cleaning products).
- Check that the electrical connections are tight and that the insulation on the wiring is not damaged.

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