



ELECTROSPOT7001 INSTRUCTION MANUAL



Thank you for purchasing a Sealey Electrospot welder. Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.



IMPORTANT: BEFORE USING THIS PRODUCT, PLEASE READ THE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS, AND CAUTIONS. USE THIS PRODUCT CORRECTLY, AND WITH CARE, FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY.

1. SAFETY INSTRUCTIONS

1.1. ELECTRICAL SAFETY

WARNING! ELECTRICAL INSTALLATION OF SPOT WELDER TO A 3 PHASE 415VOLT SUPPLY MUST ONLY BE CARRIED OUT BY A QUALIFIED ELECTRICIAN. Make sure that the power supply cable is correctly connected to the Earth.

It is the user's responsibility to read, understand and comply with the following:

You must check all electrical equipment and appliances to ensure that they are safe before using. You must inspect power supply leads, plugs and all electrical connections for wear and damage. You must ensure the risk of electric shock is minimised by the installation of appropriate safety devices. An RCCB (Residual Current Circuit Breaker) should be incorporated in the main distribution board.

You must also read and understand the following instructions concerning electrical safety.

- 1.1.1. The **Electricity At Work Act 1989** requires all portable electrical appliances, if used on business premises, to be tested by a qualified electrician, using a Portable Appliance Tester (PAT), at least once a year.
- 1.1.2. The **Health & Safety at Work Act 1974** makes owners of electrical appliances responsible for the safe condition of the appliance and the safety of the appliance operator. **If in any doubt about electrical safety, contact a qualified electrician.**
- 1.1.3. Ensure that the insulation on all cables and the product itself is safe before connecting to mains power supply.
- 1.1.4. Ensure that cables are always protected against short circuit and overload.
- 1.1.5. Regularly inspect power supply, leads, plugs and all electrical connections for wear and damage, and especially power connections, to ensure that none is loose.
- 1.1.6. **Important:** Ensure that the voltage marked on the product is the same as the power supply to be used. A three phase plug must be fitted to this machine.
- 1.1.7. DO NOT pull or carry the appliance by any of the input or output cables.
- 1.1.8. DO NOT pull power plugs from sockets by the power cable.
- 1.1.9. DO NOT use worn or damage leads, plugs or connections. Immediately replace or have repaired by a qualified electrician.
- 1.1.10. DO NOT use this product with a cable extension reel.
- 1.1.11. **THE SPOT WELDER HAS A 'SINGLE PHASE' CABLE 3 CORE BUT MUST BE CONNECTED TO A THREE PHASE SUPPLY.**

This product must be fitted with a 3 phase plug according to this diagram, and will require a 16amp per phase supply. You must contact a qualified electrician to ensure that an appropriately fused supply is available.

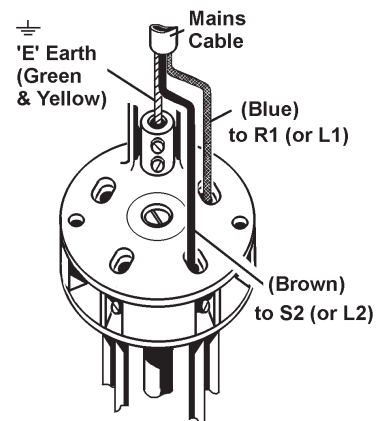
Connect GREEN/YELLOW wire to Earth (E or ⊕) terminal.

Connect BLUE wire to R1 (or L1) terminal.

Connect BROWN wire to S2 (or L2) terminal.

Note that both brown and blue wires will be 'live' when the plug is connected to the supply.

Finally, check that there are no bare wires, that all wires have been connected correctly, that the cable external insulation extends beyond the cable restraint and that the restraint is tight.



1.2. GENERAL SAFETY

Note: Spot welding produces sparks, fused metal projectiles and fumes which are dangerous.

- WARNING: Unplug from power supply before connecting cables and accessories, or before performing maintenance or service.**
- ✓ Ensure that the welder and all cables are in good order and condition.
- ✓ Replace or repair damaged parts. *Use genuine parts only, unauthorised parts may be dangerous and will invalidate the warranty.*
- ✓ Keep the welder clean for best and safest performance.
- ✓ Locate the welder in a suitable work area and ensure that good ventilation is provided.
- ✓ Keep work area clean and tidy and free from unrelated materials and ensure that there is adequate lighting.
- WARNING: Ensure that no flammable or combustible materials are in, or near, the work area. Welding containers or pipes which hold, or have held, dangerous gases or substances may cause explosion or fire. Materials cleaned with chlorinated solvents, or varnished surfaces pose the danger of toxic fumes.**
- WARNING: Spot welding generates strong magnetic fields. Take great care to ensure that there are no items near your work area that may be attracted to the welding process and ensure that there are no items that may be damaged or adversely effected by operating the welder.**
- WARNING: Electronic watches may be damaged. Persons wearing heart pace-makers must not operate, or be in the area of the welder.**
- WARNING: You MUST use safety goggles or a face shield, such as the Sealey SSP9, or SSP10.**
- DANGER! Permanent eye damage may result if you do not use the correct protection. Also wear safety welding gauntlets and dry, oil-free safety protective clothing to protect yourself from sparks and hot droplets of fused metal. Cover exposed flesh to avoid burns.**

- x **DO NOT** operate the welder if it or the cables are damaged.
- x **DO NOT** hold or touch the pieces to be welded. All workpieces must be suitably clamped.
- x **DO NOT** place your hands near the electrodes - danger of burning and/or crushing.
- ✓ The operator must be fully trained in the use of the welder and must be aware of the potential dangers.
- ✓ The work area must be closed off in order to keep non-essential persons at a safe distance from the welding operation. Persons within the work area are subject to the same dangers as user.
- ✓ Remove ties, watches, rings and other jewellery and contain long hair.
- x **DO NOT** use the welder for any purpose other than that for which it is designed.
- x **DO NOT** use the welder in damp or wet locations, or outside when raining or snowing.
- ▲ **DANGER! DO NOT weld near inflammable materials, solids, liquids, or gases.**
- x **DO NOT** operate welder while under the influence of drugs, alcohol or other medication, or if tired.
- x **DO NOT** touch newly welded parts as they will be hot.
- x **DO NOT** pull the welder by the cable, or the welding clamp.
- ✓ When not in use, switch off machine and remove the plug from the power supply. Store in a safe, dry location.

1.3. ELECTROMAGNETIC FIELDS

When operating, the spot welder produces a very intense electromagnetic field which could cause malfunctions and/or damage to the following:

- | | | |
|----------------|---------------------|--|
| Pace makers | Metallic prostheses | Watches |
| Magnetic cards | Instrumentation | Data transmission systems or local telephone lines |

1.4. ELECTROMAGNETIC COMPATIBILITY

Spot welding equipment which is connected to a public electricity supply can cause radio frequency interference (e.g. poor radio/television reception) for other supply users.

2. INTRODUCTION

Microprocessor controlled, single phase, stud and spot welder machine with automatic torch recognition. Suitable for the professional body shop. Push-button control of welding functions and setting of the material thickness selects a pre-programmed welding time for consistent weld quality. Ideal for all types of single-sided steel body repair techniques including the use of studs, nails, washers and wavy-wires. Supplied with welding-gun mounted slide-hammer for fast dent removal and also studder kit. Set also includes carbon rod for heating and re-tempering spot repairs. May also be used for double-sided spot welding with optional guns. Trolley (120.803002) also available.

3. CONTENTS & SPECIFICATION

Unpack the product and check that there are no missing or damaged parts. If you do experience a problem contact your supplier immediately. Your kit should consist of the following: Electrospot welder, earthing cable with bracket, studder gun with cables, slide hammer and accessory box of standard electrodes / rivets etc. For contents of box see fig.3.

SPECIFICATIONS:	Electrospot7001
Power supply	400V - 1ph
Enclosure protection rating.	IP22
Input	
Max welding power (S max).	16.2kVA
Rated power at 50% (Sn).	4kVA
Mains supply delayed fuses.	16A
Output	
Secondary no-load voltage (U ₀ max).	5.4V
Max spot welding current (I ₂ max).	3000A
Capacity:	max. 1.5 + 1.5mm



Electrospot7001 with optional trolley (part no.120.803002)

4. INSTALLATION

⚠ **WARNING:** Unplug from mains power supply before connecting cables and accessories.

6.1. ELECTRICAL CONNECTION

Ensure that the machine is compatible with your mains supply.

6.2. MANUAL CLAMP, CLAMP STUDDER & GROUND CABLE CONNECTION

6.2.1. Connect the two Dinse plugs into the welder sockets.

6.2.3. Connect the control cable.

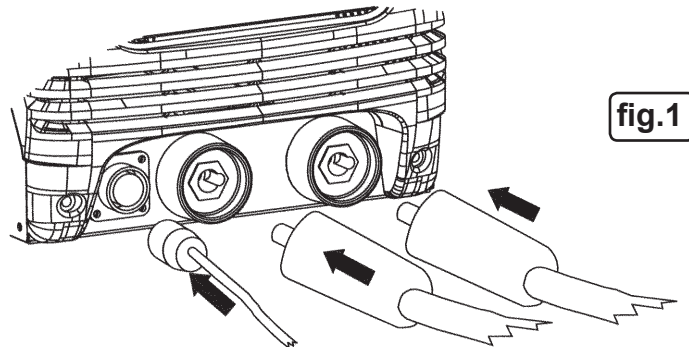


fig.1

5. FRONT PANEL

Key 1 Spot welding time control

For correction (upwards or downwards) within preset limits, of spot welding time with respect to the preset factory default value.

Key 2 Sheet thickness control

To specify the thickness of the sheet(s) to be welded.

The options with key 3 only work when studder gun is used.

Key 3



To spot weld pins, rivets, washers, special washers with the correct electrode.



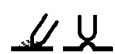
To spot weld 4mm diameter screws with the correct electrode.



To spot weld 5&6mm diameter screws and 5mm diameter rivets with the correct electrode.



To spot weld single spots with the correct electrode.



To temper sheet with carbon electrode. To upset sheets with the correct electrode.



Jogged spot welding for patching on sheets with the correct electrode.

The spot welder automatically adjusts the spot welding time to suit the sheet thickness.

4



"Studder" gun is used in all procedures selectable by key 3.

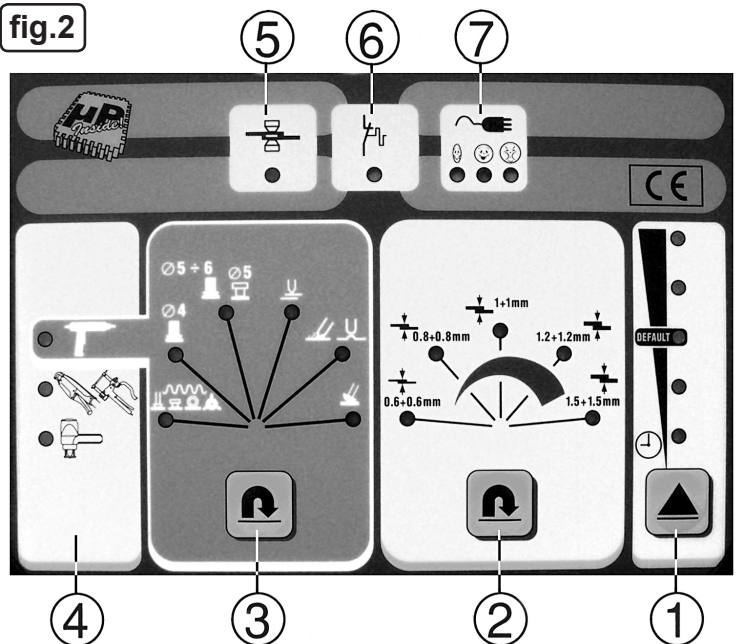


Manual clamp. To spot weld opposed sheets accessible from both sides.



Pneumatic clamp (air puller) is used to straighten bodywork dents.

fig.2



5



LED which indicates welding in progress.

7



LED indicating supply connected.



Supply voltage low.



Supply voltage correct.

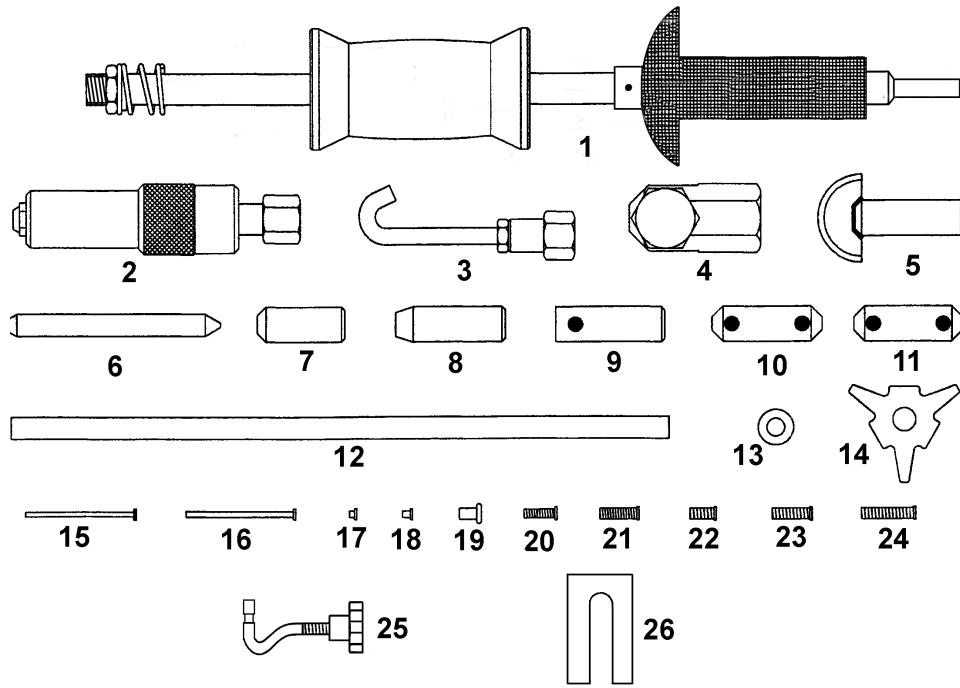


Supply voltage high.

When the power supply is abnormal, with the over or under voltage LED's lit up and an intermittent beep, it is advisable to switch the spot welder off to prevent it being damaged.

6. ACCESSORIES

fig.3



- | | | | |
|-----|---------------------------|--------|---------------------|
| 1. | Slide hammer / electrode | 11. | Screw electrode |
| 2. | Chuck for holding pins | 12. | Tempering electrode |
| 3. | Hook | 13. | Washer |
| 4. | Holder for special washer | 14. | Special washer |
| 5. | Line welding electrode | 15-16. | Pins |
| 6. | Spot welding electrode | 17-19. | Rivets |
| 7. | Smoothing electrode | 20-24. | Screws |
| 8. | Rivet electrode | 25. | Grounding hook |
| 9. | Washer electrode | 26. | Grounding bracket |
| 10. | Pin electrode | | |

7. OPERATING INSTRUCTIONS

7.1. APPLICATIONS & ACCESSORIES The following text will refer to **fig.3** for identification.

7.1.1. PRELIMINARY CHECKS At the start of each work cycle it is important to perform the following checks,

1. Ensure that the machine is compatible with your mains supply by checking the data plate.
2. Check that the electrical connections are safe and fully engaged.
3. If required set the time control.
4. Select thickness of sheets to be welded
5. If using "studder" gun, select mode using key 3.

7.1.2. HOW TO USE THE STUDDER GUN

To assemble or disassemble electrodes use two hex. wrenches, one to prevent the clamp spindle rotating and the other to loosen the clamp nut. Before starting welding it is advisable to carry out a series of test welds in similar circumstances to check for correct time sheet thickness and mode settings etc.

7.1.3. HOW TO CONNECT THE GROUND CABLE

Base sheet area must be at least as big as the ground bar contact area and should be as near as possible to the welding area. Fasten the copper ground bar to the sheet with an articulated clamp (welding type) or alternatively, spot weld a washer to the surface of the sheet as follows. Mount the special electrode (**fig.3**.item 9) on the studder spindle and insert a washer (**fig.3**.item 13). Position washer on chosen "ground" area and contact ground terminal on the same area. Press torch push-button to weld washer. Position ground bar over washer then use hook and bracket (**fig.3**.items 25 & 26) to secure (see **fig.4**). After completing welding, remove washer by twisting it through 90°. When working on hinged panels, doors, bonnets or boots ensure that the ground cable is attached to the work panel rather than to the vehicle body, so that current does not pass through the hinges.

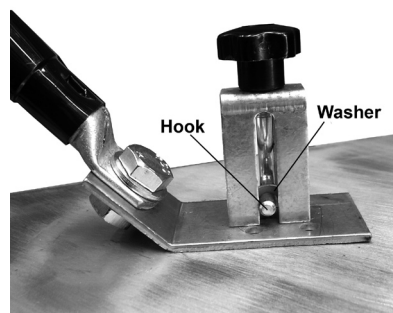


fig.4

7.1.4. SPOT WELDING PINS, RIVETS, WASHERS, SPECIAL WASHERS AND SCREWS.



Fit the appropriate electrode into the stuffer:


fig.3 - item 4 - for special washer (see 7.1.5).

fig.3 - item 8 - for rivets.

fig.3 - item 9 - for washers (see 7.1.3).

fig.3 - item 10 - for pins.

fig.3 - items 10 & 11 - for screws.

Lock in place, then insert the item to be welded into the electrode and position on the sheet. Press the button on the stuffer and only release after the green LED  goes out.


7.1.5. SIMULTANEOUS TRACTION AND SPOT WELDING SPECIAL WASHERS.



Mount and fasten the spindle (**fig.3.item 4**) on the threaded end of the extractor (**fig.3.item 1**), and then fasten the other end of the extractor into the stuffer and lock in place with the nut ring. Place the special washer (**fig.3.item 14**) into the spindle and lock in place with the large bolt. Spot weld washer in desired position as for normal washer spot welding and then apply traction. Once finished, rotate extractor by 90° to remove the washer which can then be re-used.

7.1.6. SPOT WELDING SHEETS ON ONE SIDE ONLY.



Fit the electrode (**fig.3.item 6**) into the stuffer and press on the surface to be welded. Press the button on the stuffer and release only after the green LED  goes out.

NOTE: The maximum sheet thickness that can be welded in this way is 1mm + 1mm.

This method must not be used on load bearing structures of vehicle bodies.

In order to achieve good results when spot welding sheets the following conditions must be met:

1. A perfect ground connection.
2. Sheets to be welded must be clean and free from varnish, grease, oil, paint etc.
3. Sheets to be welded must be in contact with no air gap. If pressure is required to achieve this, apply pressure with a separate tool.
4. The thickness of the upper sheet must not exceed 1mm.
5. The electrode tip must have a diameter of 2.5mm.
6. Make sure that the electrode fastening nut is tight and also that the welding cable connectors are locked in place.
7. When spot welding, press lightly (3-4kg) on electrode. DO NOT move electrode until the weld is completed - when green LED goes out.
8. DO NOT attempt to weld at a position more than 300mm from the ground connection.

7.1.7. TEMPERING AND SHEET HEATING / UPSETTING.



In this operating mode, the timer is inoperative. The operating time is determined manually by the amount of time the stuffer button is pressed for. Current is controlled automatically according to the sheet thickness. Mount the carbon electrode (**fig.3.item 12**) on the stuffer spindle and lock in place by tightening the nut ring. Touch the cleaned work area with the carbon tip of the electrode and press stuffer button. Work from the outside towards the inside of the work area, using circular movements to heat the sheet, which will return to its original position. In order to prevent the sheet from overheating too much, work on a small area and, when finished, immediately wipe carefully with a damp cloth to cool the treated area. Alternatively fit smoothing electrode (**fig.3.item 7**) to use in a similar way to flat ten sheets that have undergone local deformation

7.1.8. INTERMITTENT SPOT WELDING (PATCHING).



To weld small rectangular pieces of sheet over holes caused by corrosion or minor damage. Mount the electrode (**fig.3.item 5**) on the stuffer spindle and tighten ring nut. Clean area to be worked on and also make sure that patch sheet is free of grease, paint or similar. Position the patch piece and press the electrode on it, press the stuffer button and keep it pressed. Move the electrode during each 'pause' in the weld/rest cycle determined by the welder.

Note: The work/rest cycles are controlled automatically by the spot welder according to sheet thickness selected. Keep a light pressure on the electrode (3-4kg) and weld along a line ideally 2-3mm in from the edge of the new piece.

To achieve good results: DO NOT weld more than 300mm from ground point.

Use patch sheet of 0.8mm maximum thickness, preferably stainless steel.

Move forwards in rhythm with the welder. Only advance electrode during the 'pauses' and stop during welding.

7.1.9. USING THE EXTRACTOR / SLIDE HAMMER FOR TRACTION.

Mount and lock the hook (**fig.3.item 3**) onto the extractor (**fig.3.item 1**). Hook washer (**fig.3.item 13**), previously welded (see 7.1.3) and begin traction. When finished, rotate the extractor through 90° to break off washer from weld.

To lock onto welded pins, fit chuck (**fig.3.item 2**) onto the extractor (**fig.3.item 1**). Insert previously welded pin (**fig.3.items 15 & 16**) into chuck whilst pulling chuck head towards extractor. Release chuck head when pin is fully inserted. Begin traction. On completion pull chuck head back to release the pin.

8. MAINTENANCE

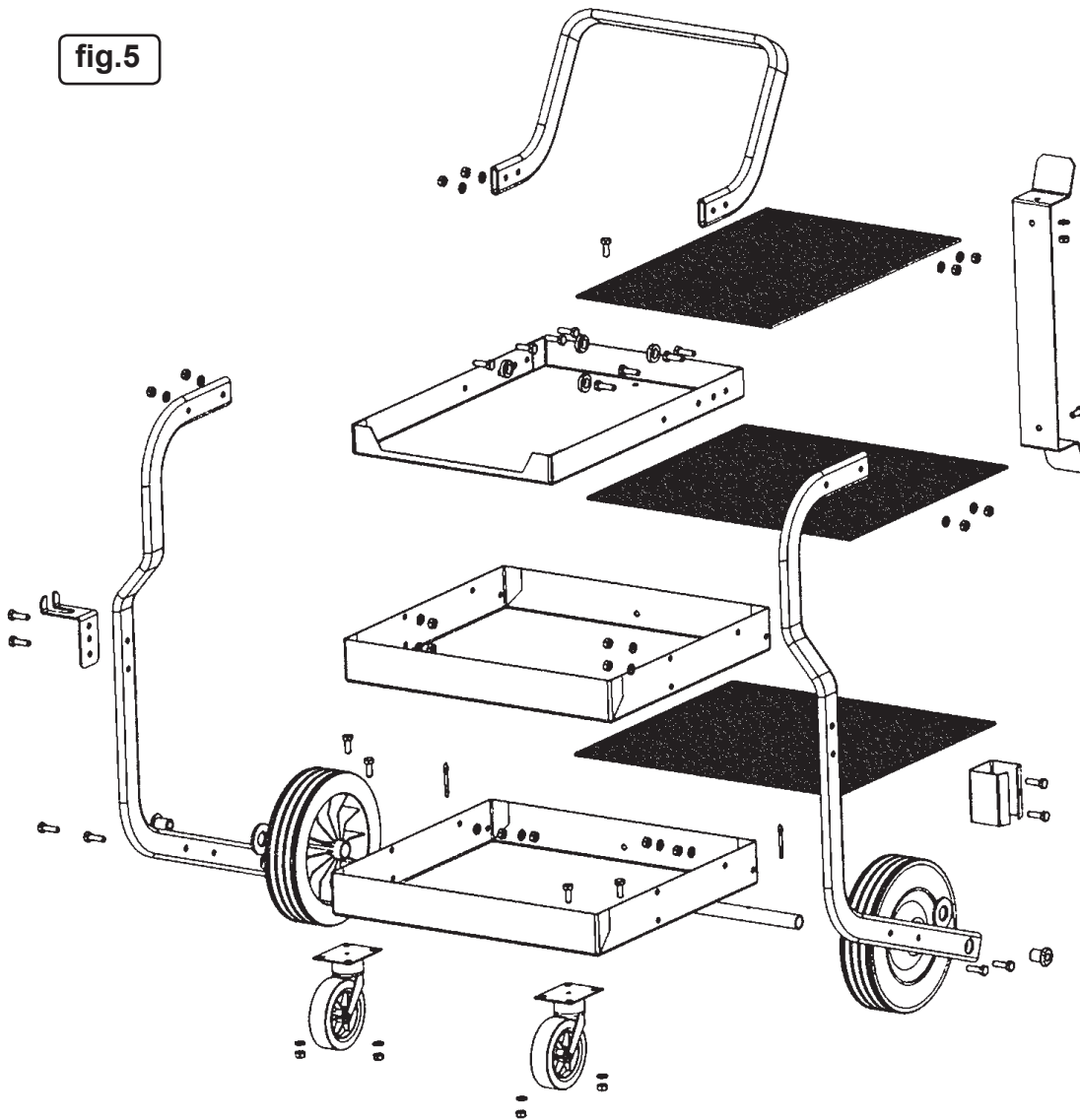
☐ **WARNING! DO NOT** remove any panels without first switching the machine off and unplugging the unit from mains power supply.

- 8.1. Periodically, depending on environmental conditions, remove panels and clean dust and metallic particles from inside the welder using dry, compressed air at no more than 5 bar pressure (wear safety eye protection and dust mask).
Avoid directing compressed air at the electronic circuit board, clean with a soft brush and suitable solvents.
- 8.2. Check that all cables are in good condition with undamaged insulation and connections are tight and free of oxidation.
- 8.3. Check that screws connecting the transformer secondary circuit to the welding cable taps are secure and do not show signs of overheating or oxidation.
- 8.4. If the welder operation is not satisfactory, before contacting your service agent, check the following:
 - a) With welder connected to mains supply and welder main switch 'Off', green LED should be on. If not there is a supply fault or the supply voltage is too low.
 - b) Thermal protection has triggered (yellow LED flashing). If it has, wait until the LED goes out before re-starting. If necessary reduce the duty cycle
 - c) The connections in the secondary circuit (fuse, arm holders, arms, electrode holder), are not producing high resistance due to loose screws or oxidised contact surfaces.
 - d) The electrode face diameter and the electrode pressure being used are appropriate to the weld being produced.

9. TROLLEY (OPTIONAL)

- 9.1. Trolley (part No. 120.803002) is available separately. This is a heavy-duty trolley which features storage for the slide hammer and welding gun plus shelves for storing welding accessories.
- 9.2. Assemble as pictured in fig.5.

fig.5



NOTE: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

IMPORTANT: No liability is accepted for incorrect use of this product.

WARRANTY: Guarantee is 12 months from purchase date, proof of which will be required for any claim.

INFORMATION: For a copy of our latest catalogue and promotions call us on 01284 757525 and leave your full name and address, including postcode.



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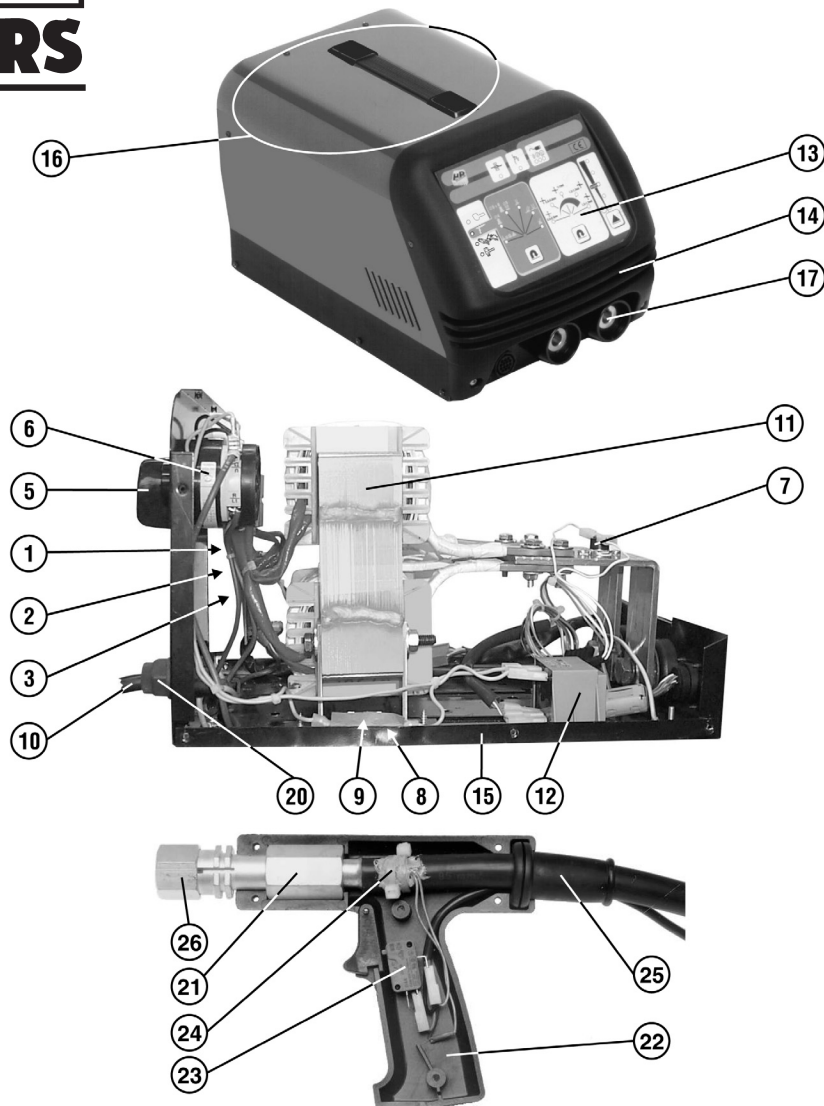
01284 703534



sales@sealey.co.uk

SEALEY POWER WELDERS

PARTS LIST FOR:



Issue No: 01
Issue Date: 150606

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1	120/112395	FILTER CARD (SO)	16	120.980125	KIT, COVER
2	120/112692	SCR	17	120/712037	DINSE SOCKET (SO)
3	120/114002	CARD (SO)	20	120/990046	BUSHING & NUT, CABLE
5	120.322901	SWITCH KNOB	21	120/722956	MANDREL, ELECTRODE HOLDER
6	120.121507	SWITCH	22	120/990240	HANDLE, 2 HALVES (SO)
7	120/122859	THERMOSTAT (SO)	23	120/122393	MICROSWITCH
8	120/122403	FUSE HOLDER	24	120/122743	THERMOSTAT (SO)
9	120.122913	FUSE	25	120/322148	CABLE BUSHING (SO)
10	120/132299	MAINS CABLE	26	120.742355	NUT
11	120.169207	TRANSFORMER	OPTIONAL (NOT ILLUSTRATED)		
12	120/164948	AUXILIARY TRANSFORMER	---	120.801041	MANUAL "C" PINCERS WITH CABLES
13	120/313548	CONTROL PCB	---	120.801043	MANUAL PINCERS WITH CABLES
14	120/322472	FRONT PANEL (SO)	---	120.803002	TROLLEY
15	120.649831	BOTTOM			

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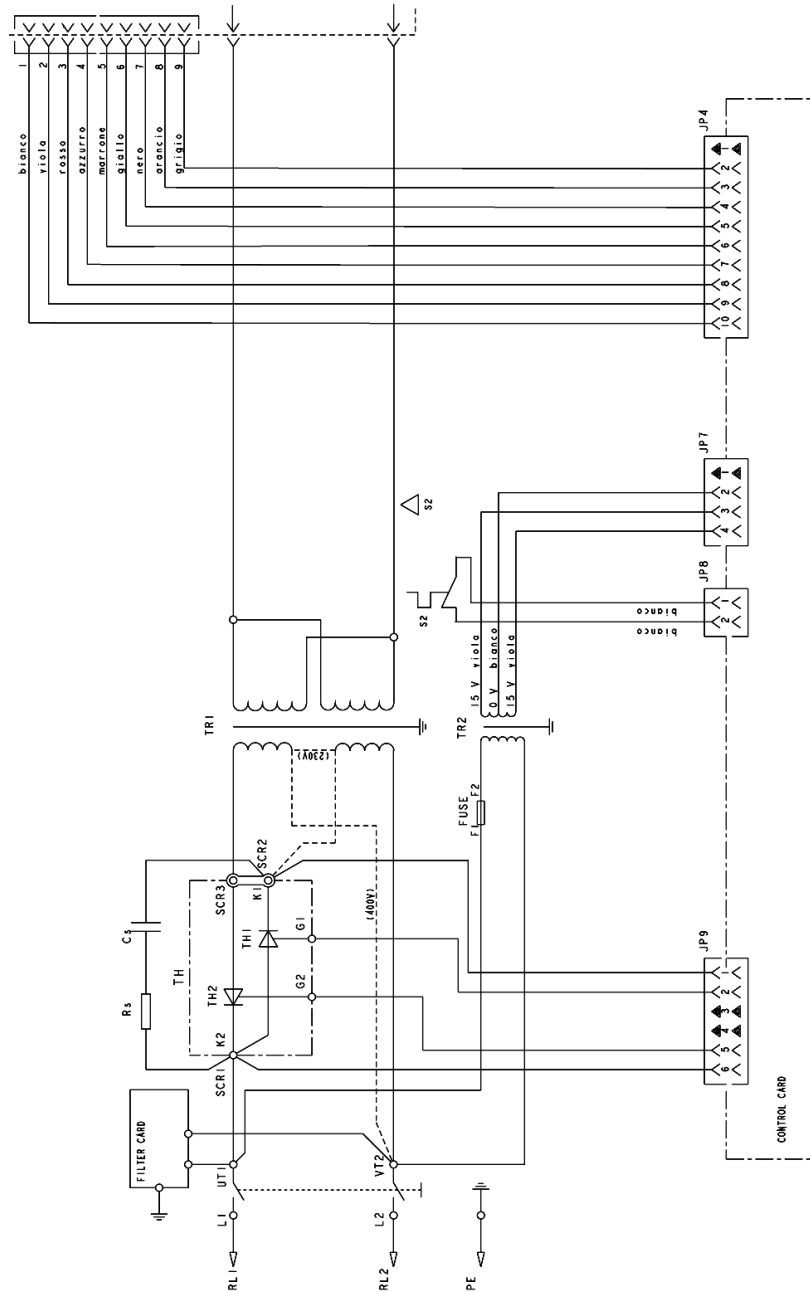


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CIRCUIT DIAGRAM FOR: ELECTROSPOT7001



Issue No: 01
Issue Date: 150606

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SEALEY POWER WELDERS

SPOT WELDER Model: ELECTROSPOT7001



DECLARATION OF CONFORMITY

We, the sole importer into the UK, declare that the product listed below is in conformity with the following standards and directives.

SPOT WELDER
Model: ELECTROSPOT7001

73/23/EEC Low Voltage Directive
89/336/EEC EMC Directive
93/68/EEC Marking Directive

The construction file for this product is held by the Manufacturer and may be inspected, by a national authority, upon request to Jack Sealey Ltd.



Signed by Tim Thompson
27th February 2006

For Jack Sealey Ltd. Sole importer
into the UK of Sealey Power Welders.

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