SEALEY POWER WELDERS

INSTRUCTIONS FOR

ARC WELDERS

Models:

150XL

150XTC

160XTC

200XTC

SEALEY POWER WELDERS

INSTRUCTIONS FOR ARC WELDERS

Thank you for purchasing a Sealey Power 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.**

INTRODUCTION

This instruction manual contains the information required to prepare your arc welding set for welding. For Individual model specifications refer to part 2. The instructions are not intended to show you how to become a welder. If you have no experience, we recommend that you seek training from an expert source. Arc welding is relatively easy to perform, but does require a steady hand and time practising with scrap metal, as it is only with continued practice that you will achieve the desired results.

1. SAFETY INSTRUCTIONS

1.1. ELECTRICAL SAFETY

❒ **WARNING!** It is the responsibility of the owner and the operator to read, understand and comply with the following:
You must check all electrical products, before use, to ensure that they are safe. You must inspect power cables, plugs, sockets and any other connectors for wear or damage. You must ensure that the risk of electric shock is minimised by the installation of appropriate safety devices. A Residual Current Circuit Breaker (RCCB) should be incorporated in the main distribution board. We also recommend that a Residual Current Device (RCD) is used. It is particularly important to use an RCD with portable products that are plugged into a supply which is not protected by an RCCB. If in any doubt consult a qualified electrician. You may obtain a Residual Current Device by contacting your Sealey dealer. **You must** also read and understand the following instructions concerning electrical safety.

1.1.1. The **Electricity at Work Act 1989** requires that all portable electrical appliances, if used on business premises, are 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 those appliances and the safety of the appliance operators. **If in any doubt about electrical safety, contact a qualified electrician.**

1.1.3. Ensure that the insulation on all cables and on the appliance is safe before connecting it to the power supply. See 1.1.1. and 1.1.2. and use a Portable Appliance Tester.

1.1.4. Ensure that cables are always protected against short circuit and overload.

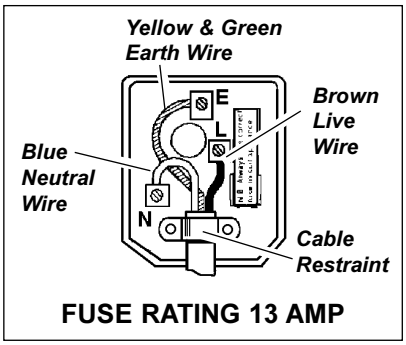
1.1.5. Regularly inspect power supply cables and plugs for wear or damage and check all connections to ensure that none is loose.

1.1.6. **Important:** Ensure that the voltage marked on the appliance matches the power supply to be used and that the plug is fitted with the correct fuse - see fuse rating at right.

1.1.7. **DO NOT** pull or carry the appliance by the power cable.

1.1.8. **DO NOT** pull the plug from the socket by the cable.

1.1.9. **DO NOT** use worn or damaged cables, plugs or connectors. Immediately have any faulty item repaired or replaced by a qualified electrician. When a BS 1363/A UK 3 pin plug is damaged, cut the cable just above the plug and **dispose of the plug safely.**
Fit a new plug according to the following instructions (UK only).
a) Connect the GREEN/YELLOW earth wire to the earth terminal 'E'.
b) Connect the BROWN live wire to the live terminal 'L'.
c) Connect the BLUE neutral wire to the neutral terminal 'N'.
d) After wiring, check that there are no bare wires, that all wires have been correctly connected, that the cable outer insulation extends beyond the cable restraint and that the restraint is tight.
Double insulated products, which are always marked with this symbol ⧈, are fitted with live (brown) and neutral (blue) wires only. To rewire, connect the wires as indicated above - **DO NOT** connect either wire to the earth terminal.



FUSE RATING 13 AMP

1.1.10. Products which require more than 13 amps are supplied without a plug. In this case you must contact a qualified electrician to ensure that a suitably rated supply is available. We recommend that you discuss the installation of an industrial round pin plug and socket with your electrician.

1.1.11. If an extension reel is used it should be fully unwound before connection. A reel with an RCD fitted is preferred since any appliance plugged into it will be protected. The cable core section is important and should be at least 1.5mm^2, but to be absolutely sure that the capacity of the reel is suitable for this product and for others which may be used in the other output sockets, we recommend the use of 2.5mm^2 section cable.

1.2 GENERAL SAFETY ❒ WARNING! *Arc welding produces sparks, fused metal projectiles and fumes which are dangerous.*

❒ **WARNING:** Unplug from the mains power supply before performing maintenance or service.
✓ Keep the welder and cables in good working order and condition. *Take immediate action to repair or replace damaged parts.*
✓ 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 welder in a suitable work area. Ensure area has adequate ventilation as welding fumes are harmful.
✓ Keep work area tidy and free from unrelated materials. Also ensure work area has adequate lighting and a fire extinguisher is at hand.
❒ **WARNING:** You MUST use an appropriate shaded lens welding face mask (contact your Sealey dealer for details). DANGER! Permanent eye damage may result if you do not use 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 potential burns from the ultraviolet rays of the arc.
✓ Check you have good ventilation and that air can flow freely around the welder.
▲ **DANGER!** Ensure no flammable or combustible materials are near work area. Welding containers or pipes which hold, or have held dangerous

gases or substances may explode or burn. Materials cleaned with chlorinated solvents, or varnished surfaces pose danger of toxic fumes.

✓ Keep unauthorised persons at a safe distance from the work area. Persons within the work area are subject to the same dangers as the welder and must take the same precautions.

✓ Remove ties, watches, rings and other jewellery and contain long hair.

✗ DO NOT use the welder for any purpose other than that for which it is designed.

✗ DO NOT use the welder in damp or wet locations.

✗ DO NOT stand welder on a metal workbench, car bodywork or similar object.

✗ DO NOT touch any live metal parts of the torch or electrode while the machine is switched on.

✗ DO NOT weld without a welding safety head shield, gauntlets, clothing.

▲ **DANGER!** DO NOT weld near inflammable materials - solids, liquids, or gases.

✗ DO NOT operate welder while under the influence of drugs, alcohol or other medication, or if you are tired.

✗ DO NOT operate the welder if it or the cables are damaged.

✗ DO NOT allow untrained persons to operate the welder.

✗ DO NOT pull welder by the cable, or electrode holder. DO NOT bend or strain cables, protect from sharp or abrasive items. DO NOT stand on cables or leads. Protect from heat. Long lengths of slack must be gathered and neatly coiled. DO NOT place cables where they endanger others.

✗ DO NOT touch the electrode holder or workpiece immediately after welding as they will be very hot. Allow to cool.

✗ DO NOT open the cover of the machine. Switch off machine and remove the plug from the power supply after use.

2. DESCRIPTION & SPECIFICATIONS

HEAVY DUTY AIR-COOLED ARC WELDER

The “XL” model is fitted with a heavy duty air-cooled transformer. Features include single vented wrap-around shell fitted on heavy duty chassis, carrying handle and screw-type stepless welding current control. Supplied with a full accessory kit, including electrode holder, earth clamp and hammer/brush.

	Welding Current	Electrode Capacity	Cooling	Output Cable Ø	No-Load Voltage	Power Input/ Efficiency	Weight
150XL	40-150A	Ø1.6-3.2mm	Air Cooled	10mm²	48V	230V 1ph 3.35 kVA	20 kg

HEAVY DUTY TURBO COOLED ARC WELDERS

Turbo Forced Air Cooling System, the “XTC” range has increased duty cycle and performance. Featuring single vented wrap-around shells fitted to a heavy duty chassis with wheels and chassis support and a screw-type stepless welding current control. Supplied with carrying handle and extension bar for easy mobility. Complete with full accessory kits including electrode holder, earth clamp chipping hammer and brush.

	Welding Current	Electrode Capacity	Cooling	Output Cable Ø	No-Load Voltage	Power Input/ Efficiency	Weight
150XTC	40-150A	Ø1.6-3.2mm	Turbo Fan	16mm²	48V	230V 1ph 3.35 kVA	20 kg
160XTC	55-160A	Ø2-4mm	Turbo Fan	16mm²	49V	230V 1ph 5.98 kVA	21 kg
200XTC	55-200A	Ø2-4mm	Turbo Fan	16mm²	52V	230V 1ph 5.98 kVA	27 kg

IMPORTANT INFORMATION
To operate all welders to their full capacity, you ***must*** run them on the correct power supply. To check the amperage, use the following formula: **kVA Rating x 4.35 = Correct Amps Supply**

3. ASSEMBLY

Unpack the product and check contents. Should there be any damaged or missing parts contact your supplier immediately.

3.1. Where necessary assemble wheels, handle, feet etc (fig 1a,b,c) and fit the lens inside face mask (fig 2).

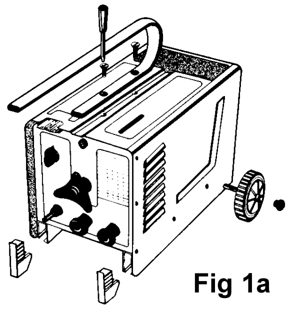


Fig 1a

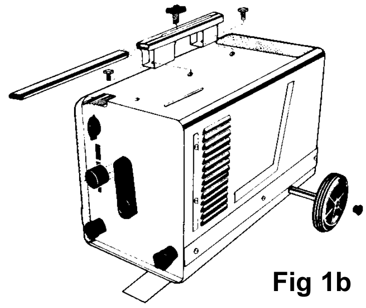


Fig 1b

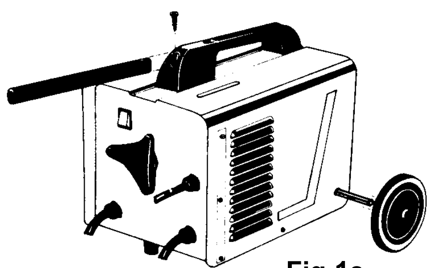


Fig 1c

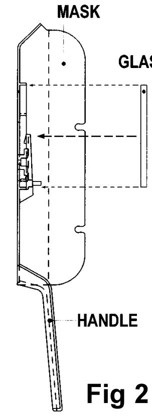
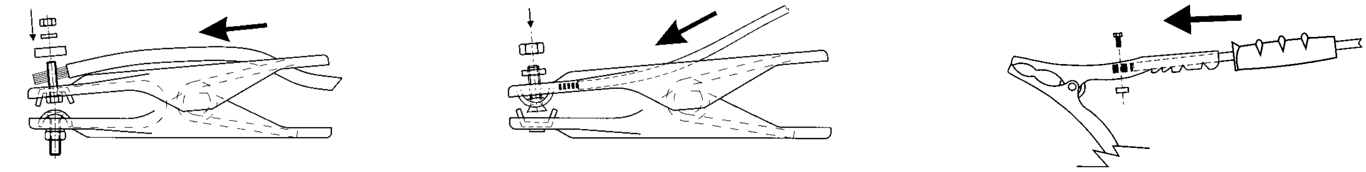


Fig 2

3.2. Where necessary assemble the work clamp supplied with your model to the cable associated with the work collet symbol as indicated below.



3.3. Where necessary assemble the electrode holder supplied with your model to the cable associated with the manual arc welding symbol. (see fig.3). On models with terminal style connections assemble eyelets to cables as shown in fig.4.

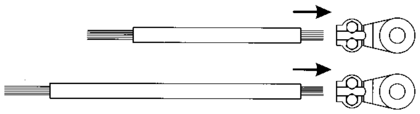


Fig 4

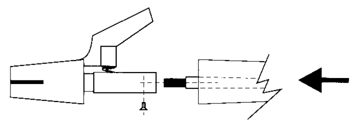


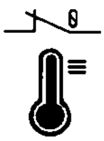
Fig 3

4. CONTROLS & SYMBOLS

4.1. **Introduction.** Your welder features either a single phase or a three phase transformer with a drooping characteristic suitable for welding with an alternating current using stick electrodes with diameters from 1.5mm to the highest electrode diameter as described on the data table to be found on the welder's front panel or top cover. The welding current may be regulated by using the screw type stepless welding current control. The value of the current (I_2) may be read on the amp graduated scale, this corresponds to the voltage of the arc (U_2) according to the equation: $U_2 = (18+0{,}04I_2)$ V (EN 50060).

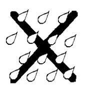
The following is to assist you identify your models control panel symbols.

THERMOSTATIC PROTECTION
Lights up when the machine overheats and cuts out. The machine can be used again when cooled.

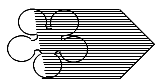


REGULATION SCALE

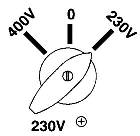
RAIN WARNING SYMBOL
DO NOT use the machine in the rain or snow.



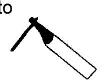
ELECTRO-FAN
Cools the machine when running.

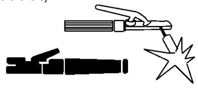


SWITCH POSITION settings

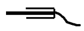


ELECTRODE HOLDERS
various. The electrode holder is connected to the machine via this outlet,






Manual arc welder


Work Collet

EARTH CLAMP

GUIDE TO RATINGS PLATE AND SYMBOLS

(For actual ratings of your model refer to the front panel or top cover.)

Welding power source symbol showing single phase transformer. 🡻

British Standard applying to arc welders 🡻

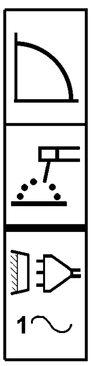
1~ —(O O)— 1~		EN 50060
U_0 45-49V	50/60Hz	I_2 55 - 160±10% A

Rated no load 🡹 voltage (min & max)

Frequency 🡹 of alternating current

Max & min rated 🡹 value for weld current

FOR ANY FURTHER CLARIFICATION OF SYMBOLS REFER TO BRITISH STANDARD EN 50060



Symbol for drooping characteristic.➔

Indicates manual arc welding with a covered electrode.➔

Indicates an alternating current power supply and 1 to 3 phases as required by the specification.➔

Diameter of electrode.➔

Rated ➔ welding current.

Rated value of supply voltage and its frequency.➔

International ➔ Standard relating to moisture ingress indicating degree of protection.

Ø mm		2.0	2.5	3.5	4.0
I_2 A		55	80	115	160
nc / nc1		50/50	15/31	6/16	2/7
nh / nh1		50/50	5/25	2/12	1/4
U_1 230V 50/60Hz	16A Mains fuse required	I_1 max 26 A			32 A I_1 max
IP 21	H				⚠ 📖

Code letter for 🡹 class of insulation.

🡹 Rated maximum 🡹 supply currents

nc = no. of electrodes weldable starting at room temperature until the thermostat intervenes.
nc1 = no. of electrodes weldable in one hour when welder starts at room temperature.

🡸 **nh** = no. of electrodes weldable between restart and further thermal switch interruption.
nh1 = no. of electrodes weldable in one hour when welder starts at thermal steady state.

5. OPERATING INSTRUCTIONS

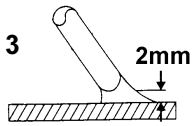
❒ **WARNING! If you have no welding experience, we recommend you seek supervised training from an expert source.**

5.1. Ensure the machine is turned off from the mains power supply.
5.2. Create a complete circuit by joining the earth clamp to a point on the workpiece that has been cleanly ground to provide good contact. DO NOT join the clamp to other surfaces such as a wooden bench or painted surface, as there would be no current induction.
5.3. The other end of the earth lead must be connected to the machine.
5.4. Insert the electrode into the electrode holder. Ensure there is a good connection, the other end must be connected to the machine. Ensure welding surfaces are kept clean and free from grease, or oil.
5.5. Set amperage by regulating control wheel according to visual scale relating to amperage/electrode diameter. This is on top, or side of machine.

YOU ARE NOW READY TO WELD

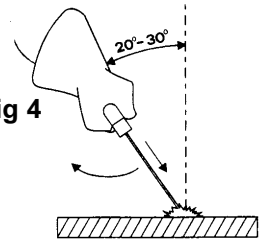
❒ **WARNING! Remember to wear a full face welding mask, gauntlets and protective clothing, and ensure you have read, understood and apply safety instructions. Wear goggles whilst chipping slag.** ***DO NOT*** switch on the power supply until you are ready to start welding. Practice on scrap metal first. Place the face mask in front of your face, then tap the electrode lightly to strike an arc and maintain a steady gap between the end of the electrode and the work piece of approximately 2mm (fig 3). DO NOT hit the electrode on workpiece as this may damage the stick. Withdraw with a clean movement at the end of the run.

Fig 3



A few minutes practice will ensure that you get used to this and enable you to compensate accordingly.
If the electrode sticks, you may be holding it too close to the work piece. Pull sharply to the left, and then to the right to free the electrode. After welding, chip off the slag with a chipping hammer (fig 4).*Wear goggles.*
Disconnect welder from the mains power supply before resetting the electrode holder.

Fig 4



❒ **WARNING! Use pliers to remove the hot consumed electrodes or to move the hot welded pieces.**

IMPORTANT - THERMOSTATIC CONTROL

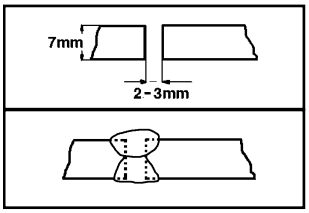
Your welder is cooled by the circulation of air. As you use larger welding rods you will experience a temporary current shut off. This is to protect your transformer from overheating. The larger the welding rod, the greater the current required, consequently, the hotter the machine will become and the quicker it will cut out.

5.6. VARIOUS WELDING METHODS

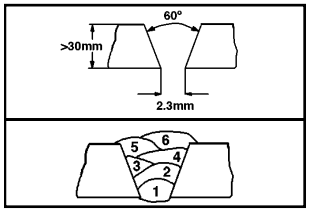
IMPORTANT

If you have no welding experience, we recommend you seek training from an expert source to ensure your personal health and safety.
You must familiarise yourself with the applications, limitations and specific hazards peculiar to welding. Good arc welding may be achieved only with continued practice. For example:

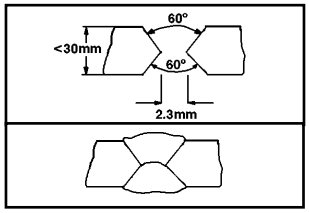
5.6.1 Metal up to 7mm thick, keep pieces 2-3mm apart. A 2nd run can go underneath for extra strength.



5.6.2. Thickness of up to 30mm, make a single butt joint, filling up the space with several layers of weld.



5.6.3. Over 30mm, you need a double "V" butt joint fill up the space with several layers of weld.



6. MAINTENANCE

❒ **WARNING! Ensure the welder is disconnected from the electrical mains power supply before attempting any service or maintenance.**

6.1. Keep the welder clean and dry at all times. Use a dry cloth to clean the unit.
6.2. Keep all electrodes clean and ensure all cables are in good condition.
6.3. Use authorised service agent for any other maintenance or service requirements.

7. TROUBLESHOOTING

7. 1. **Burning through thin metal:** On very thin sheet, e.g. car body work, the lowest amperage setting will be too fierce. In this case you can still use your welder but you will need a brazing kit which is available from your Sealey stockist, Part Number "AK4".

7. 2. **Machine frequently cuts out:** (A) The welder is being overworked causing the thermostatic control to activate. (B) May also be due to a sticking electrode causing the machine to cut out for up to ten minutes. Cut out will automatically reset when welder has cooled.

7. 3. **Difficulty in striking an arc:** a). The electrode is damp. Heat it up to 60º - 70º before using.
b). Wrong type of electrode.

8. ELECTROMAGNETIC COMPATIBILITY

10.1. THIS EQUIPMENT IS IN CONFORMITY WITH THE EUROPEAN STANDARD ON THE ELECTROMAGNETIC COMPATIBILITY OF ARC WELDING EQUIPMENT AND SIMILAR PROCESSES (e.g. ARC AND PLASMA CUTTING)

10.2. **Protection against interference. (E.M.C.)** The emission limits in this standard may not, however, provide full protection against interference to radio and television reception when the equipment is used closer than 30m to the receiving antenna. In special cases, when highly susceptible apparatus is being used in close proximity, additional mitigation measures may have to be employed in order to reduce the electromagnetic emissions. At the same time there could occur some potential difficulties in having electromagnetic compatibility in a non-industrial environment (e.g. in residential areas). Therefore it is most important that the equipment is used and installed according to the following instructions.

10.3. **Installation and use.** The user is responsible for installing and using the equipment according to these instructions. If electromagnetic disturbances are detected, then it shall be the responsibility of the user of the equipment to resolve the situation with the technical assistance of the supplier. In some cases this remedial action may be as simple as earthing the circuit (see Note). In other cases it could involve constructing an electromagnetic screen, enclosing the welding power source and the work, complete with associated input filters. In all cases the electromagnetic disturbances shall be reduced to the point where they are no longer troublesome.
Note: The welding/cutting circuit may or may not be earthed for safety reasons. Changing the earthing arrangements should only be authorised by a person who is competent to assess whether the changes will increase the risk of injury, e.g. by allowing parallel welding/cutting circuit return paths which may damage the earth circuits of other equipment. Further guidance is given in IEC 974-13 'Arc Welding Equipment - Installation and Use.'

10.4. **Assessment of area.** Before installing the equipment the user shall make an assessment of potential electromechanical problems in the surrounding area. The size of the surrounding area to be considered will depend on the structure of the building and other activities that are taking place. The surrounding area may extend beyond the boundaries of the premises.
The following shall be taken into account :
a) Other supply cables, control cables, signalling and telephone cables, above, below and adjacent to the welding equipment.
b) Radio and television transmitters and receivers.
c) Computer and other control equipment.
d) Safety critical equipment, e.g. security monitoring of industrial equipment.
e) The health of people in the vicinity, e.g. persons fitted with a pacemaker or hearing aid.
f) Equipment used for calibration or measurement.
g) The immunity of other equipment in the environment. The user shall ensure that other equipment being used in the environment is compatible. This may require additional protective measures.
h) The time of day that welding and other activities are to be carried out.

10.5. **Mains supply.** The equipment should be connected to the mains supply according to these instructions. If interference occurs, it may be necessary to take additional precautions such as filtering of the mains supply. Consideration should also be given to shielding the supply cable of permanently installed equipment in metallic conduit or equivalent. This shielding should be connected to the power source so that good electrical contact is maintained between the conduit and the welding power source enclosure.

10.6. **Maintenance of the equipment.** The equipment should be routinely maintained according to these instructions. All access and service covers should be closed and properly fastened when the welding equipment is in operation. The welding equipment should not be modified in any way except for those changes and adjustments covered in these instructions. In particular, the spark gaps of any arc striking and stabilising devices should be adjusted and maintained according to the instructions.

10.7. **Cables.** The welding/cutting cables should be kept as short as possible and should be positioned close together, running at or close to the floor level.

10.8. **Equipotential bonding.** Bonding of all metallic components in the welding/cutting installation and adjacent to it should be considered. However, metallic components bonded to the workpiece will increase the risk that the operator could receive a shock by touching these metallic components and the electrode at the same time. The operator should be insulated from all such bonded metallic components.

10.9. **Earthing of the workpiece.** It is important that the workpiece is separately bonded to earth **in addition to** the welder/cutter return cable. Where the workpiece is not bonded to earth for electrical safety reasons or because of its size and position, e.g. ship's hull or building steelwork, a connection bonding the workpiece to earth may reduce emissions in some, but not all instances. Care should be taken to prevent the earthing of the workpiece increasing the risk of injury to others or damage to other electrical equipment.
Where necessary, the connection of the workpiece to earth should be made by a direct connection to the workpiece, but in some countries where direct connection is not permitted, the bonding should be achieved by a suitable capacitance, selected according to national regulations..

10.10. **Screening and shielding.** Selective screening and shielding of other cables and equipment in the surrounding area may alleviate problems of interference. Screening of the entire welding/cutting installation may be considered for special applications.

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 equipment.
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 01284 757525 and leave your full name and address, including postcode.

SEALEY POWER WELDERS
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01284 757500 *01284 703534* *sales@sealey.co.uk* www.sealey.co.uk

SEALEY POWER WELDERS

ARC WELDERS

MODELS:

150XL
150XTC
160XTC
200XTC

DECLARATION OF CONFORMITY

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

ARC WELDERS Models:
150XL, 150XTC, 160XTC, 200XTC

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

The construction files for these products are held by the Manufacturer and may be inspected, by a national authority, upon request to Jack Sealey Ltd.

CE

Signed by Mark Sweetman
29th May 2003

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

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 equipment.

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 01284 757525 and leave your full name and address, including postode.

SEALEY POWER WELDERS

Sole UK Distributor,
Sealey Group,
Bury St. Edmunds, Suffolk.

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