SEALEY POWER WELDERS

INSTRUCTIONS FOR

ARC WELDERS

Models:

150XL
150XTC
160XTC
200XTC
250XT
250XT/DV

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, OR PERSONAL INJURY, AND WILL INVALIDATE THE WARRANTY.**

(The use of symbols in this document is to attract your attention to possible danger, and reminders, the symbols and warnings themselves do not eliminate any danger, nor are they substitutes for proper accident prevention measures).

INTRODUCTION

This instruction manual contains the information required to prepare your arc welding set for welding. For Individual model specifications refer to part 2. If you have no previous experience the instructions are not intended to show you how to become a welder . Should 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 under supervision 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 user's responsibility to read, understand and comply with the following: You must check all electrical equipment and appliances to ensure 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. We also recommend that an RCD (Residual Current Device) is used with all electrical products. It is particularly important to use an RCD together with portable products that are plugged into an electrical supply not protected by an RCCB. If in doubt consult a professional 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 all portable electrical appliances, if used on a business premises, to be tested by a qualified Electrician at least once a year by using a Portable Appliance Tester (PAT).

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 the insulation on all cables and the product itself is safe before connecting to the mains power supply. See 1.1.1. & 1.1.2. above and use a Portable Appliance Tester (PAT).

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

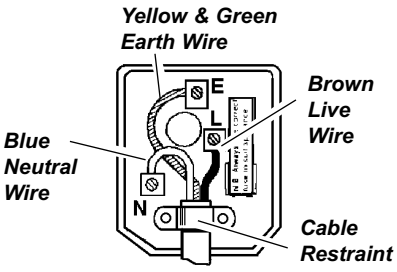
1.1.5. Regularly inspect power supply, leads, plugs and all electrical connections for wear and damage, especially power connections, to ensure that none are loose.

1.1.6. ***Important:*** Ensure the voltage marked on the product is the same as the electrical power supply to be used, and check that plugs are fitted with the correct capacity fuse. A 13Amp plug may require a fuse smaller than 13Amps for certain products (*subject to 1.1.10. below)* see fuse rating at right.

1.1.7. DO NOT pull or carry the powered appliance by its power supply lead. Products such as welders must not be pulled or carried by their 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. A U.K. 3 pin plug with ASTA/BS approval is fitted. In case of damage, cut off and fit a new plug according to the following instructions (discard old plug safely).
(UK only - see diagram at right). ***Ensure the unit is correctly earthed via a three-pin plug.***



FUSE RATING
THIS PRODUCT MUST BE FITTED WITH A:
13 AMP FUSE minimum

a) Connect the GREEN/YELLOW earth wire to the earth terminal 'E'.
b) Connect the BROWN live wire to live terminal 'L'.
c) Connect the BLUE neutral wire to the neutral terminal 'N'.
After wiring, check there are no bare wires, that all wires have been correctly connected and that the wire restraint is tight.
Double insulated products are often fitted with live (BROWN) and neutral (BLUE) wires only. Double insulated products are always marked with this symbol ⧈ . ***To re-wire, connect the brown & blue wires as indicated above. DO NOT*** *connect the brown or blue to the earth terminal.*

1.1.10. Some products require more than a 13 amp supply. In such a case, NO plug will be fitted. You must contact a qualified Electrician to ensure a 30 amp fused supply is available. We recommend you discuss the installation of a industrial round pin plug & socket with your electrician.

1.1.11. **Cable extension reels**. When a cable extension reel is used it should be fully unwound before connection. A cable reel with an RCD fitted is recommended since any product which is plugged into the cable reel will be protected. The section of the cable on the cable reel is important. We recommend that at least 1.5mm² section cable but to be absolutely sure that the capacity of the cable reel is suitable for this product and for others that may be used in the other output sockets, we recommend the use of 2.5mm² section cable.

1.2 GENERAL SAFETY ❐ WARNING! ***Arc welding produces sparks and 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, non authorised parts may be dangerous and will invalidate the warranty).*
✓ Keep the welder clean for best and safest performance.
✓ Locate welder in adequate working area for its function. Ensure area has adequate ventilation as welding fumes are harmful.
✓ Keep work area tidy and free from unrelated materials. Also ensure working 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 arcs ultraviolet rays.
✓ 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 working area. Persons within the working area are subject to the same dangers.
✓ Remove ties, watches, rings, and other jewellery, and contain long hair.
✗ DO NOT use the welder for any purpose other than 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, (see above warning).
▲ **DANGER!** DO NOT weld near inflammable materials, solids, liquids, or gases, (see above warning).
✗ DO NOT operate welder while under the influence of drugs, alcohol or other medication, or if you are fatigued.
✗ DO NOT operate the welder if it or it's 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 & 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.

Model No.	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.

Model No.	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

SUPER DUTY TURBO COOLED ARC WELDERS

Models have Dual Voltage input, allowing use on single phase 230V input up to the maximum that can be achieved on a 30 amp power supply. Higher performance can then be achieved by switching to 415V and connecting to an appropriate supply. *Please consult an electrician.* Model 250XT/DV also has Dual Voltage output allowing use with wider range of electrodes.

Model No.	Welding Current	Electrode Capacity	Cooling	Output Cable Ø	No-Load Voltage	Power Input/ Efficiency	Weight
250XT	35-170A (230V) 50-250A (415V)	Ø2-5mm	Forced Air	25mm²	48V	230V 1ph, 415V 3ph 6 kVA	48 kg
250XT/DV	32-170A (230V) 80-250A (415V)	Ø2-5mm	Forced Air	25mm²	48V/70V	230V 1ph, 415V 3ph 6 kVA	48 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 assembly wheels, handle, feet etc (fig 1a,b,c) and fit the lens inside face mask (fig 2).

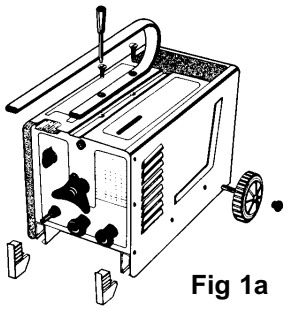


Fig 1a

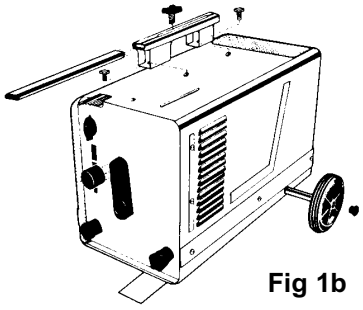


Fig 1b

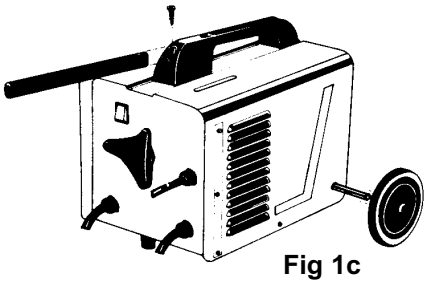


Fig 1c

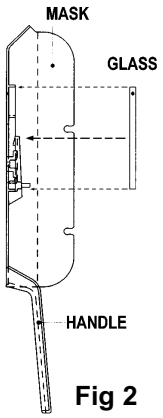
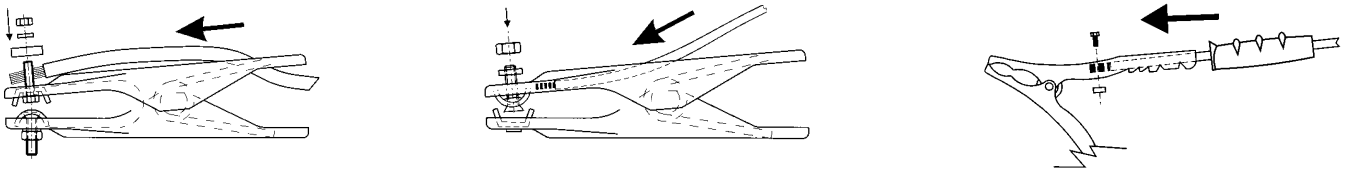


Fig 2

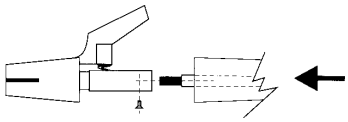
3.2. Where necessary assemble the work clamp supplied with your model to the cable associated with the work collet symbol as indicated below.



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

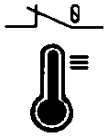


4. CONTROLS & SYMBOLS

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 (1^2) may be read on the amp graduated scale, this corresponds to the voltage of the arc (U^2) according to the equation: $U^2 = (18+0{,}041^2)$ V (EN 50060).

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

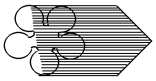
THERMOSTATIC PROTECTION
Lights up when the machine overheats and cuts out. The machine can be used again when cooled.



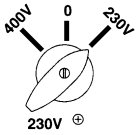
REGULATION SCALE

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

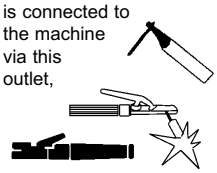
ELECTRO-FAN
Cools the machine when running.



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 ↓

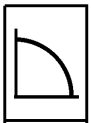
1~ — 1~	EN 50060
U_0 45-49V / 50/60Hz	I_2 55 - 160±10% A

Rated no load ↑ voltage (min & max)

Frequency ↑ of alternating current

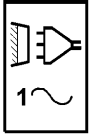
Max & min rated ↑ value for weld current

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.

∅ 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

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

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.

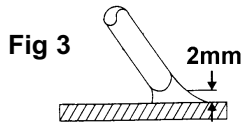
5. OPERATING INSTRUCTIONS

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

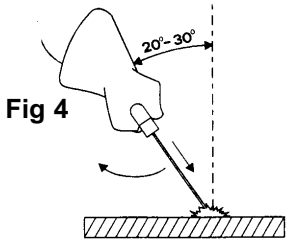
5. 1. Ensure the machine is turned off from the mains power supply.
5. 2. Create a complete circuit by joining the earth clamp to a point on the workpiece that has been cleanly ground to provide good contact. DO NOT join the clamp to other surfaces such as a wooden bench or painted surface, as there 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.



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.



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

IMPORTANT - THERMOSTATIC CONTROL:

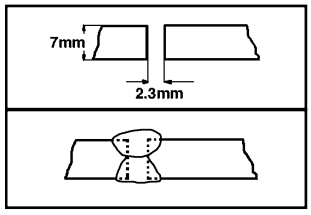
Your welder is cooled by the circulation of air. As you use larger welding rods you will experience a temporary current shut off. This is to protect your transformer from overheating. The larger the welding rod, the greater the current required, consequently, the hotter the machine will become and the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

5.6. VARIOUS WELDING METHODS

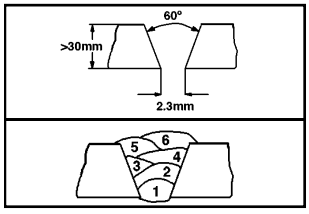
IMPORTANT.

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

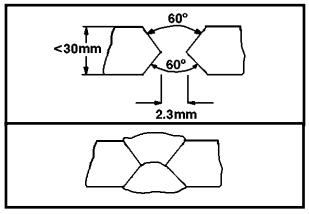
5.6.1 Metal up to 7mm thick, keep pieces 2-3mm apart. A 2nd run can go underneath for extra strength.



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 rod.

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: Call us for a copy of our latest catalogue on 01284 757525 and leave your full name and address including your postcode.

SEALEY POWER WELDERS

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

01284 757500 *01284 703534* ***E-mail:*** *sales@sealey.co.uk*

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

ARC WELDERS Models:
150XL, 150XTC, 160XTC, 200XTC, 250XT, 250XT/DV,

Low Voltage Directive (S.I. 1994/3260)
89/336/EEC
EMC Directive (S.I. 1992/2372 & Amendments).

CE

The construction files for these products are held by the Manufacturer and may be inspected on request by contacting Jack Sealey Ltd

Signed by Mark Sweetman 7th June 2001

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

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Sole UK Distributor,
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Bury St. Edmunds, Suffolk.

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