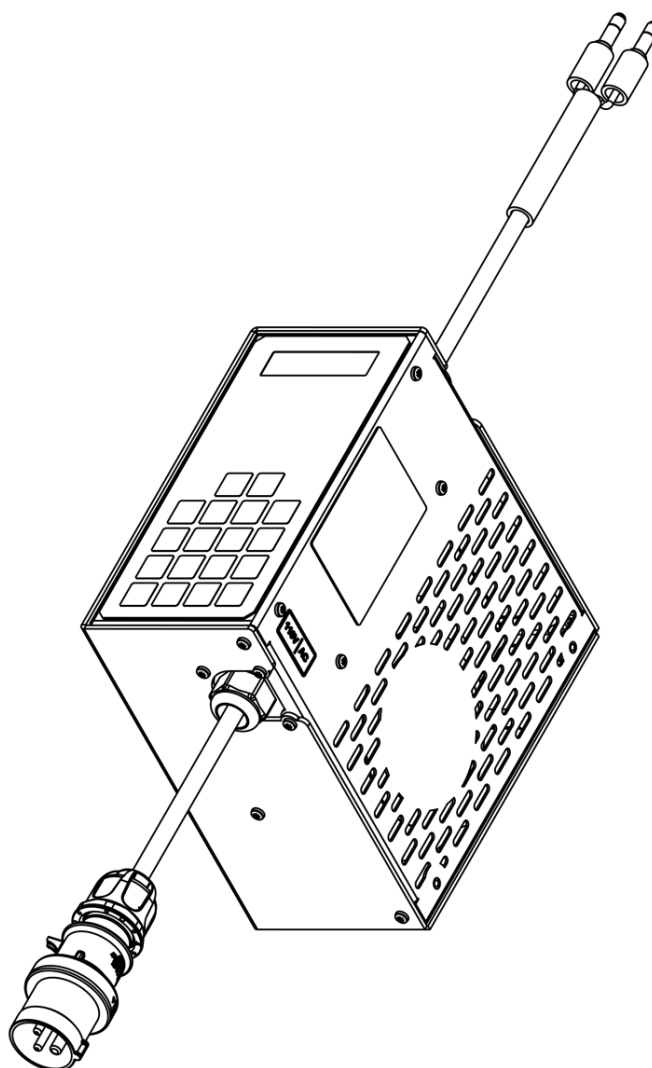
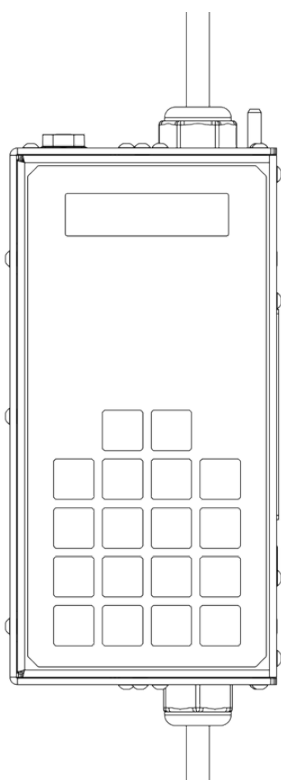




Operating Manual

VI 2025.05





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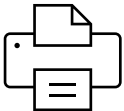
Searching for Keywords

Search for keywords such as "Battery" or Specification" to find a topic. If you are using Adobe Acrobat Reader to read this document, press Ctrl+F on Windows or Command+F



Navigating to a Topic

View a complete list of topics in the table of contents. Click on a topic to navigate to that section.



Printing this Document

This document supports high-resolution printing.

Read Before Use

Before using the product for the first time, it is recommended to follow these steps:

1. **Read the Safety Guidelines:**
 - Carefully read the safety guidelines. These guidelines are crucial for understanding how to use the product safely and avoiding any potential hazards.
2. **Refer to the User Manual for More Information:**
 - For detailed instructions and additional information, refer to the user manual. The manual will offer comprehensive guidance on all aspects of using the product, troubleshooting tips, and maintenance advice.

By following these recommendations, you will ensure a safe and efficient first-time use of the product.

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Introduction

The Advance Lite has been designed to weld constant voltage electrofusion fittings for PE and PP pipe work systems from 16mm to 180mm diameter. It can weld fittings in Manual mode and Smart-Welding mode through the app. (8v to 48V).

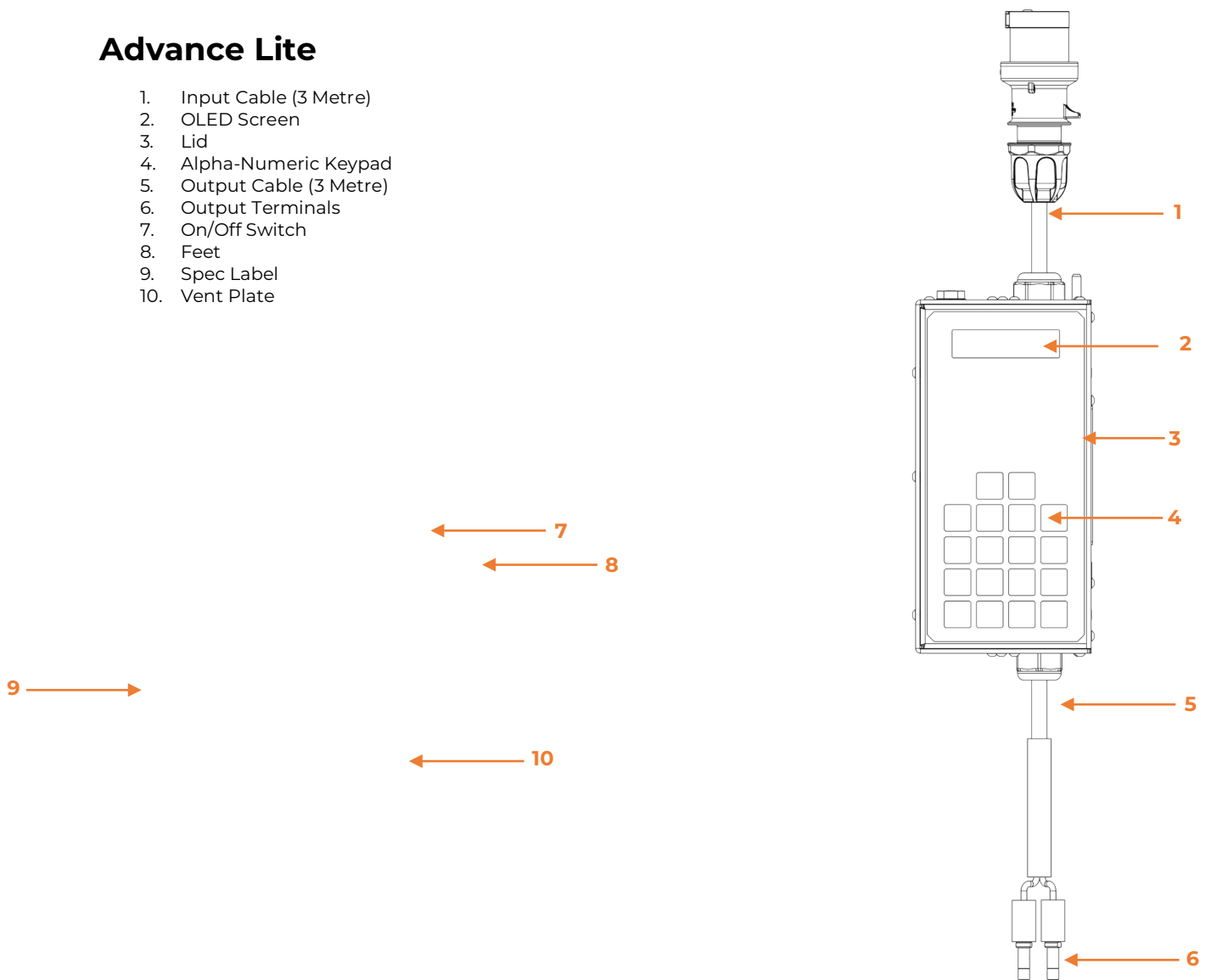
It has been designed especially for the house-connection market where a small, lightweight, and rugged unit is required for reliably welding multiple small-diameter connections back-to-back.

It has a Bluetooth connection to allow remote control Smart-Welding with a mobile phone app, allowing GPS location and online web storage of the data.

Product Profile

Advance Lite

1. Input Cable (3 Metre)
2. OLED Screen
3. Lid
4. Alpha-Numeric Keypad
5. Output Cable (3 Metre)
6. Output Terminals
7. On/Off Switch
8. Feet
9. Spec Label
10. Vent Plate



1] The illustrations in the user manual may differ from the actual product, depending on the country or region. Please refer to the actual product

Delivered Items

Carefully remove the welding unit from its packaging and check that you have the following items:

- Advance Lite
- Input / Output Cable
- Bag
- Barcode Scanner
- Instruction provided via QR Code

Intended Use

This equipment is designed for welding constant voltage electrofusion fittings suitable for low, medium, and high-pressure pipe work systems, with a maximum diameter of 180mm.

This welding unit has been designed to comply with the International Organisation for Standardisation standard ISO12176-2:2000 "Plastic pipes and fittings, equipment for fusion jointing polyethylene systems, part 2, electrofusion".

Product Specification

Operating Mode:	Manual, Smart weld
Welding Range:	16mm to 180mm
Operating Temperature:	-20°C to +45°C
Welding Voltage:	39.5V (8V to 48V)
Welding Current:	1a to 60A
Supply Voltage:	230v
Weight:	10 kg
Size:	234 x 126 x 259mm
Environmental Protection:	IP 54
Phone App:	Android and iOS
OLED Screen:	3.12" 256 x 94

[2] Advance Welding has a policy of continuously improving product design and, as such, reserves the right to change the specification of its products without prior notice and with impunity.

Safety Precautions & Terms of Use



RISK OF EXPLOSION! This welding unit must not be used in a gaseous atmosphere.



RISK OF ELECTRIC SHOCK! Do not open. No user-serviceable parts inside.



Before using, always visually inspect the unit to see that the cables and connectors are not worn or damaged. Replace the damaged part before welding.



Before using, visually inspect the fan area to ensure the bag is clean and undamaged.



Switch off and remove the plug from the mains before adjusting, cleaning, or if the cables are entangled and before leaving the equipment unattended for any period.



To avoid damaging the unit, do not interrupt the supply voltage or disconnect the welding cable while the unit is welding a fitting.



Do not lift or pull the equipment by its cables.



Do not disconnect the welding cables by pulling on them; always pull off the connectors from the fitting.



Do not start a weld without the pipe correctly inserted into the fitting.



Do not touch the fitting while welding.



Do not weld in the rain or leave the equipment outdoors whilst it is raining.



Weld only in daylight or in good artificial light.



The operator is responsible for accidents or hazards occurring to other people or their property while using this equipment. Keep the work area is safe!



Keep bystanders a safe distance away from the machine while welding.



Never allow people unfamiliar with these instructions to use the welding unit.



DO NOT allow anything to lie on top of the unit.



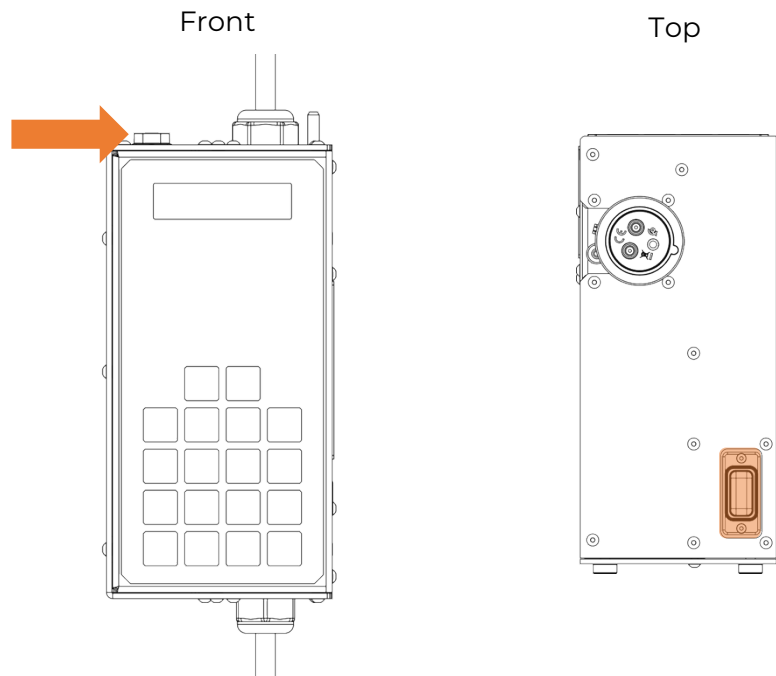
Secured in transit.



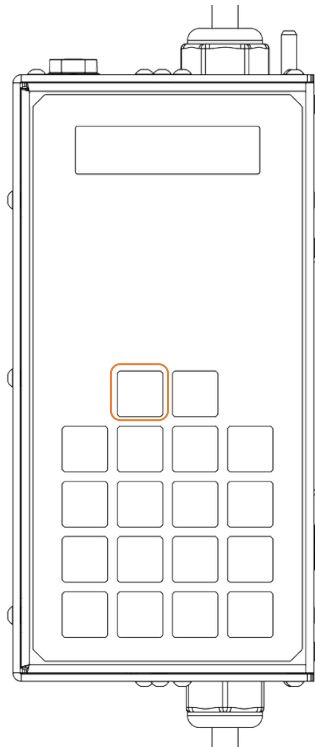
DO NOT use a high-pressure washer/hose to clean. Refer to Maintenance (page) for further details.

Initial Setup

1. Turn on Advance Lite by pressing the on/off switch on the top of the unit.



2. Hold down the green button (Left-hand button) until the screen is activated



Using the Equipment – On / Off

Turning the machine ON.

To turn the machine on, press the switch. The display will show:

The product logo



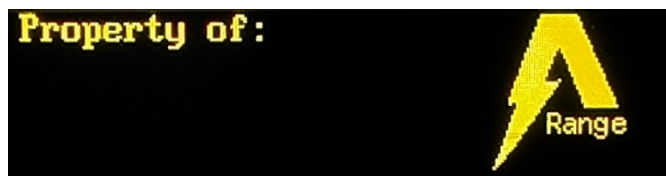
The manufacturer logo.



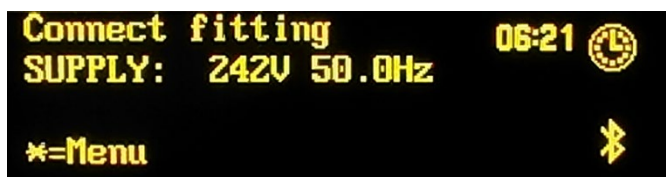
The firmware version.



The owner details.



The main screen.



Turning the machine OFF.

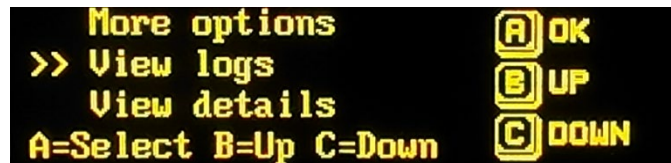
To turn the machine off, press the switch. The display will turn off.

Using the Equipment – Main Menu

When the screen shows, press the star key to enter the main menu.



Three options are shown on the screen. Use the B and C keys to select the required option, then press A.



Using the Equipment - Manual Welding (Optional)

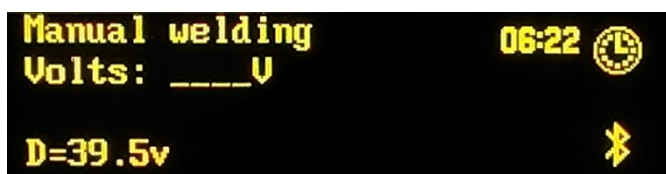
Connect the welding cable to the fitting.



Enter the welding time and press the A key.



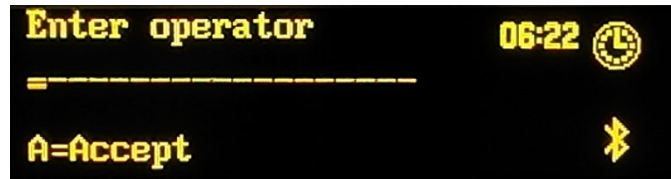
Enter the welding voltage or press the D key to select 39.5 volts.



When the voltage is entered, press the A key.



Enter the Operator details (if required), then Press A to Accept.



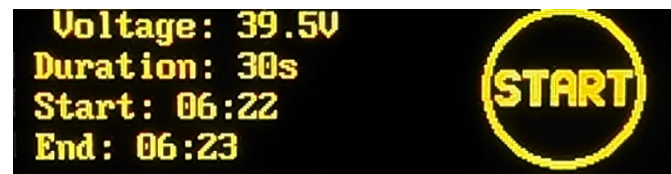
Enter the Job Info details (if required), then Press A to Accept.



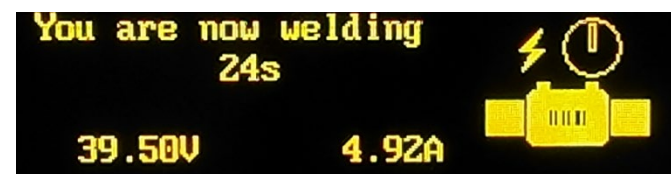
Adhere to the scraped and clamped instruction to successfully perform an electrofusion weld.



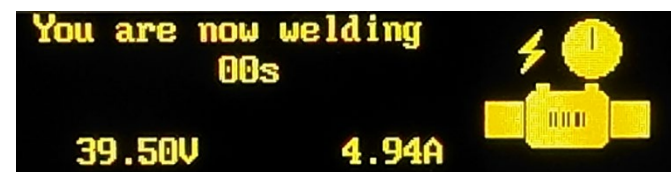
The weld details are shown. Press the green START button to begin the weld.



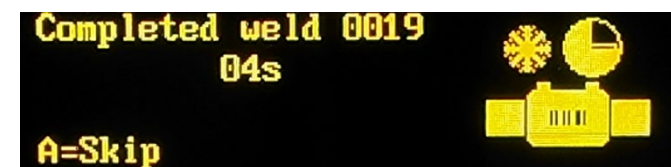
As the weld progresses, the welding voltage and current are shown.



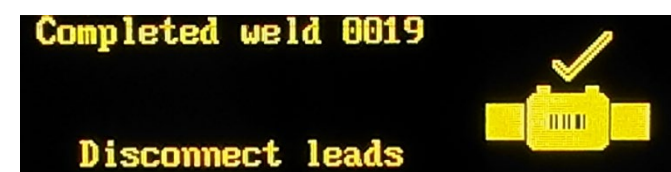
The time counts down to zero, and the clock on the graphic fills up to show the weld progress.



When the weld is complete, the cooling time is shown the weld number is also shown. This will count upwards; press the A key to stop.



Disconnect the welding leads from the fitting to reset the machine.

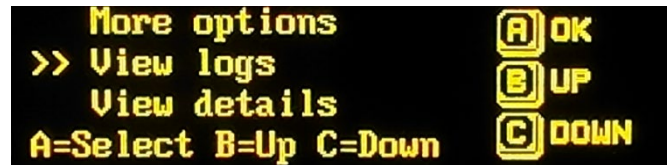


Using the Equipment - Locate Welding (Optional)

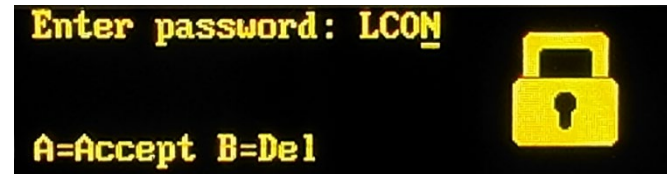
To enable Locate mode, press * for menu.



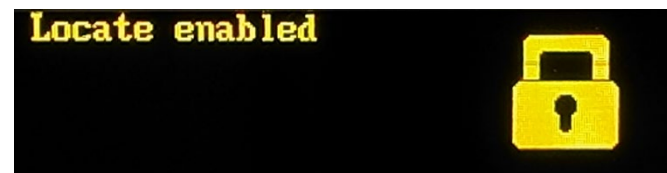
Now press D to navigate to the password entry section.



Enter "LCON" then press A to activate Locate mode.

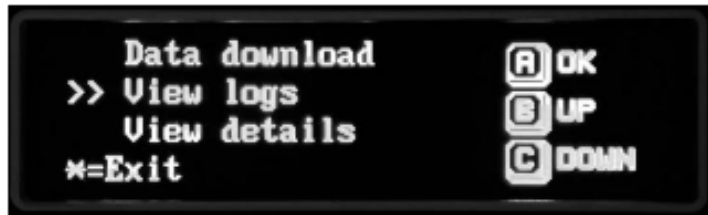


Locate mode now enabled.

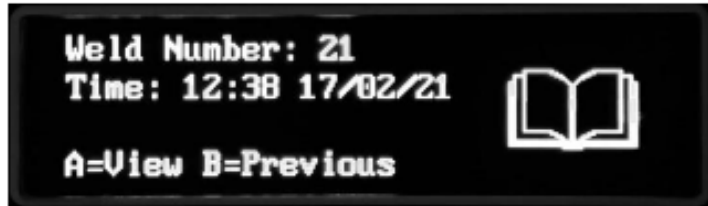


Using the Equipment – View Logs

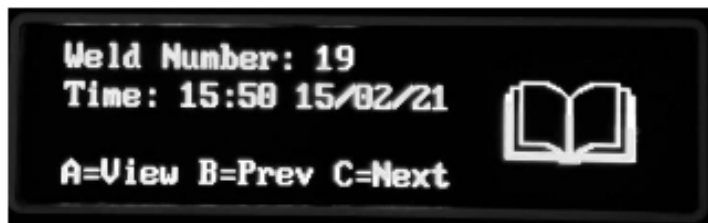
Select view logs from the menu.



Details of stored welds are shown. Press the A key to view the details.

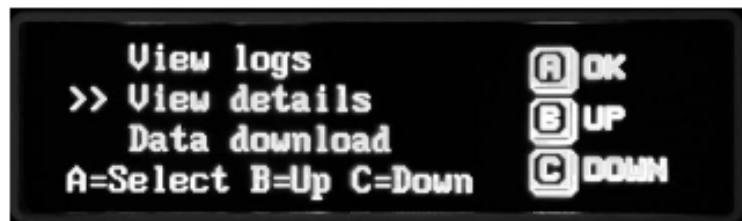


Press the B and C keys to scroll between stored welds.

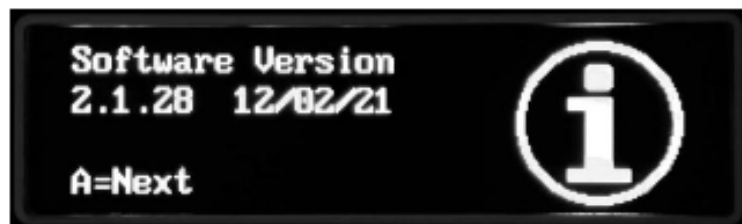


Using the Equipment – View Details

Select view details from the menu.



The software version number is shown.



Press the A key to display the serial number of the machine.

Set Up Options

From the main menu:

Press the D Quick-Key to select options.

From here, the time can be set by the operator. Other changes can be made; however, these are password-protected and must be carried out by an approved service agent. The following options are available:

Date

The date can be set.

Display Language

Available languages can be selected and set.

Modes of Operation

Manual: On/Off, Cooling time on/Off, Data logging on/Off, Variable voltage on/Off.

Bar Code: On/Off, Cooling time on/off, Data logging on/off, Extended traceability codes on/off.

Calibration Period

The calibration period can be set between 1 month and 99 months (or turned off). For 28 days before the calibration expiry date, the unit will prompt that the calibration is due and will count down the remaining days. When the calibration has expired, it can be set to warn the operator or lock the unit.

Owner Details

The owner details, shown when the unit is first switched on, can be entered or changed.

Download Format - Bluetooth

The format of the data log download can be changed from protected PFD to plain text XLS.

Hidden Data Download

Even when data logging is not selected for a weld, details are still recorded but then hidden from the normal data download and not selected when the data is downloaded to a USB memory disk. To aid fault finding, all welds carried out, including those “not logged”, can be downloaded.

Purchase Date

The date the unit was sold to the customer can be set and viewed. This allows more accurate record-keeping.

Warranty Period

The date the unit was first used can be viewed. This allows accurate control of the warranty period.

Clear Data Log

The data log memory can be cleared by entering a password.

Information

Information about the welding unit can be viewed from the options menu. Select more options and then enter the password A I N F, followed by the A

Quick-Key.

The serial number and part number of the unit are shown. The calibration date and calibration period are also shown. Press the A Quick-Key and the following weld counters are shown: Total weld count, weld count at last calibration, welds done since last calibration.

Maintenance

Regularly check for obvious defects such as loose or damaged cables and connectors. Look for worn components and broken covers or housings.

Regularly check that the grills around the fan inlet and outlet are free from dust, dirt and mud.

There are no user-serviceable parts inside the unit. It should be returned to an approved service agent for repair and calibration.

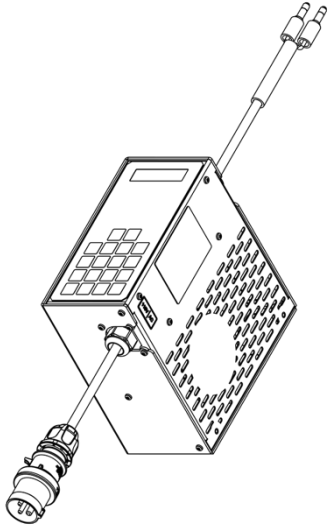
It is recommended that the unit be calibrated and checked for electrical safety every twelve months.

After use, clean the outside of the unit with a soft brush or cloth. Carefully wind up and store the cables around the frame in the location provided.

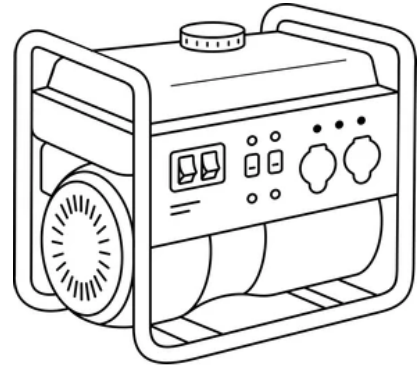
Operational Instructions

Equipment Required:

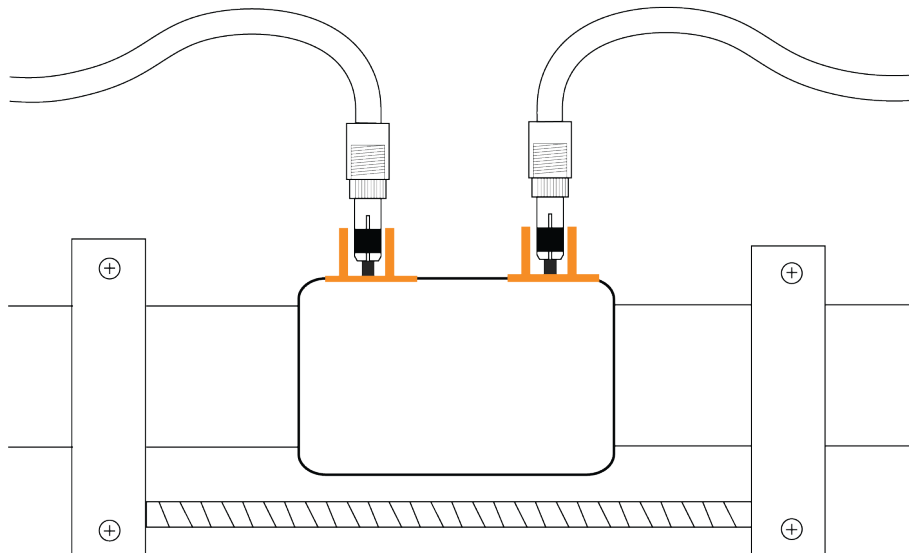
Advance Lite



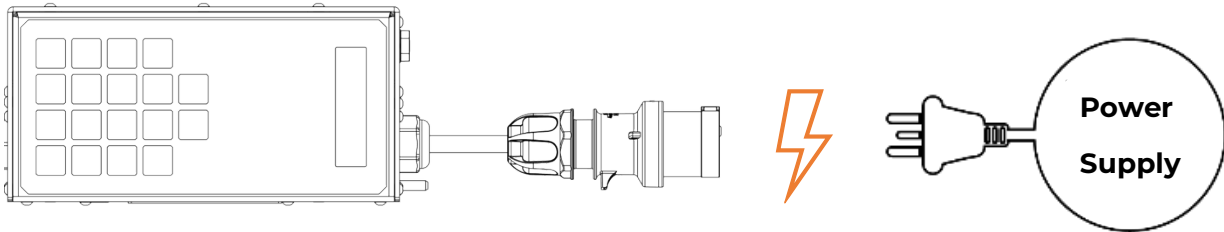
Power Supply (e.g. generator)



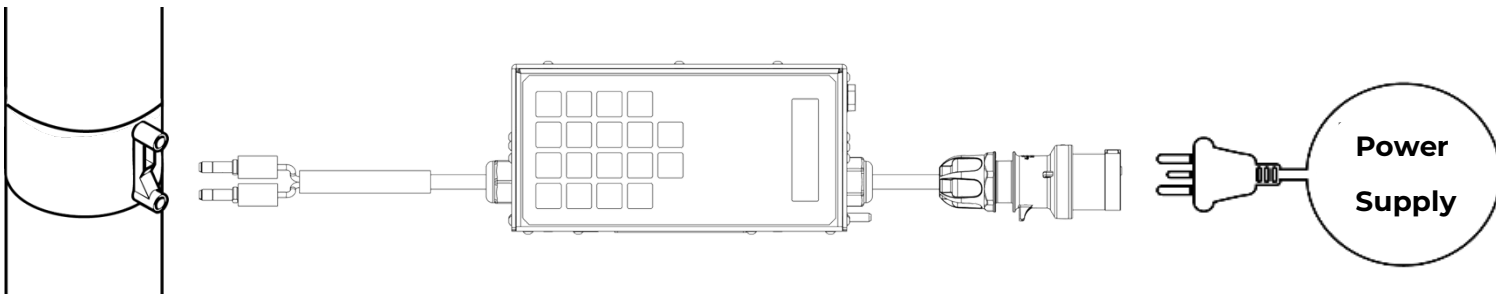
1. Connect the terminal ends of the output cable to the joint fitting on the pipe.



2. Connect the supply cable to the power supply, then switch the unit on



3. The unit is now set up to weld.



Electrical Safety

UK law requires equipment to be properly maintained if a lack of (or poor) maintenance would result in danger. Inspections are necessary for this maintenance, and testing may be required. There is various relevant legislation, including The Electricity at Work Regulations 1989 and The Electrical Equipment (Safety) Regulations 2016, that detail what inspections are required.

WARNING! Switch off and remove the plug from the mains before adjusting, cleaning or if the cable is cut, damaged or entangled.

This welding unit is Class 1 and requires an earthed (grounded) connection. An earth spike must be used with generators.

This unit is supplied in either 110-volt or 230-volt operation. Check the rating plate on the side of the unit for the correct supply voltage.

The power source must be capable of providing 3500 Watts. Extension cables should only be used if they comply with the H07RNF harmonised standard. They must be fitted with connectors to the BS EN 60309-2 standard. All cables must be unwound from the reel to stop inductive heating effects.

It is recommended for increased electrical safety to use a Residual Current Device (RCD) with a tripping current of not more than 30 mA. Always check your RCD every time you use it.

The supply cable must be inspected for signs of damage before each use, and the equipment may only be used if in perfect condition. Damaged cables must be replaced by an approved service agent.

This equipment is classified as “Portable for use on industrial applications” and must undergo a formal electrical safety check (Portable Appliance Test) as per local regulations.

Transport of Dangerous Goods

The equipment has passed all relevant tests to allow it to be transported. This information can be viewed at www.advancewelding.co.uk

If you do not have the original packaging, then please visit www.advancewelding.co.uk/batteries for information on how to ship the Efuze machine.

Fault Finding

During operation, the welding unit monitors all aspects of its operation. If a fault occurs, then an error message will be shown.

0: Weld OK

No Fault, weld completed OK.

1: Stuck button on startup

This fault shows when the power is first switched on. Either the Stop, Start, or a keypad button is stuck in. Free the button to clear the fault.

2: Output fault before weld start

This fault shows when the power is first switched on. The unit will check the output terminals to make sure no voltage is present when first switched on. If this fault happens, then the internal power relays are stuck in the closed position. The unit will need to be returned for service.

3: Toroid thermal switch tripped

This fault happens when the toroidal transformer becomes too hot. This will happen if the unit is used for a long period on large fittings. Let the unit cool down, and the fault will clear. If this happens when the unit is cold, then there could be a bad connection on one of the internal plugs. In this case, the unit will need to be returned for repair.

4: No calibration

This fault happens when the unit has no calibration. This will normally not show, and if the unit has been calibrated, it would be caused by a fault with the internal memory. Return the unit for service.

5: Case temperature sensor fault (if fitted)

Some units have a case temperature sensor fitted to switch the unit off if the electronics become too hot. This fault will show if the sensor is faulty. Return the unit for service.

6: Case temperature out of limits (if fitted)

Some units have a case temperature sensor fitted to switch the unit off if the electronics become too hot. This fault will show if the temperature is too hot. Let the unit cool down.

7: Ambient temperature less than -40°C.

The unit has detected that the ambient temperature is very cold or that the sensor has broken. If the temperature is not below -40°C then the unit will need to be returned to a service agent for repair.

8: Ambient temperature more than +50 °c.

The unit has detected that the ambient temperature sensor has broken, or a wire has gone open circuit. The unit must be returned to a service agent for repair.

10: Low supply frequency <40Hz

The unit has detected that the supply frequency is below 40 Hz. This will normally be caused by a poor-quality generator. If this fault happens, then check the supply or change the generator.

11: High supply frequency >70Hz

The unit has detected that the supply frequency is above 70 Hz. This will normally be caused by a poor-quality generator. If this fault happens, then check the supply or change the generator.

12: High supply voltage >140v (or 280v with a 220v supply)

The unit has detected that the supply voltage is more than 140 volts (280 volts with a nominal 220v supply). Check the supply voltage and if necessary, use a different generator.

13: Low supply voltage <95v (or 190v with a 220v supply)

This fault can be caused by a few problems. It could be that the generator is running slowly, and so the supply voltage is low. Try speeding the generator up or using a different generator. It could also be caused by a generator that is too small. If a large fitting is welded, then a large amount of power will be needed from the generator. If it cannot supply this power, then it will stall, and the voltage will drop away. Check that the generator is the correct size; if need be, try another generator. It could be caused by using long extension leads. If a large fitting is welded, then a high current will be taken from the supply. If extension leads are used, there will be a voltage drop down the lead, making the unit sense a low supply voltage. Try not to use extension leads with the unit. If you must, then use just 10 meters of 2.5 mm² cable, the same size fitted to the unit.

14: Relay failed to latch on weld start

This fault could happen when the start button is pressed. If the main power relays do not operate correctly, then this fault will be shown. The unit needs to be returned for service.

20: Low output volts (-1.25%)

This fault will happen if the output voltage is 1.25% lower than the set point for more than 3 seconds. This can be caused by a generator that is not big enough to supply the required power to the fitting. Check the size of the generator and if needed be try another generator. It can also be caused by using long extension leads with the unit. It is recommended that only 10 meters of extension be used, and the cable should be the same thickness as the input lead on the unit (2.5 mm²).

21: High output volts (+1.25%)

This fault will happen if the output voltage is 1.25% higher than the set point for more than 3 seconds. It will normally be caused by a poor-quality generator with the supply voltage fluctuating. Try a different generator.

22: Excess output volts (+6.25%)

This fault will happen if the welding voltage is 6.25% more than the set point for more than 2 seconds. This fault is normally caused by a fault within the unit, a short circuit triac. The unit must be returned for service.

23: Low output current (< 2.5a)

This fault will happen if the welding current is below 2.5 amps for more than 3 seconds. It can be caused by a faulty fitting. Try another fitting. If this doesn't clear the fault, then there is a problem inside the unit, and it must be returned for repair.

24: Shorted turn detected in fitting.

While welding, the unit has detected a sharp increase in welding current. This is normally caused by a shorted turn happening in the fitting. (An increase of 10%). If this happens, then it is most likely a faulty fitting. This must be replaced. If the fault persists, then it could be a fault within the unit.

25: User stop button pressed

The operator has pressed the stop button.

26: Relay unlatched

During welding, if the main power relay disconnects, then this fault will be shown. It could be caused by the unit being knocked or a temporary dip in the power supply. If the fault persists, then the unit should be returned for repair.

27: Fitting an open circuit

This fault is shown if the output lead disconnects from the fitting while welding. Follow the guidelines from the fitting manufacturer and reconnect the lead and try welding again.

30: Bar Code Mode: No fitting connected

This fault is shown if the output lead is not connected to a fitting when a barcode is read. Connect the fitting.

31: Bar Code Mode: Ohms error

This fault is shown if the connected fitting resistance is different from that coded into the barcode. Try another fitting.

35: Bar code Mode: Fitting diameter is too large.

This fault is shown if the connected fitting is bigger than 200mm.

40: Bar Code Invalid: Temperature Compensation.

Digits 22 and 23 of the bar code have been decoded incorrectly.

41: Bar Code Invalid: Resistance Coefficient.

Digit 18 of the bar code has been decoded incorrectly.

42: Bar Code Invalid: Welding Voltage.

Digits 13 and 14 of the bar code have been decoded incorrectly.

43: Bar Code Invalid: Regulation Mode.

Digit 12 of the bar code has been decoded incorrectly.

44: Bar Code Invalid: Fitting Size.

Digits 9, 10 and 11 of the bar code have been decoded incorrectly.

45: Bar Code Invalid: Cooling Time.

Digit 7 of the barcode has been decoded incorrectly.

46: Bar Code Invalid: Fusion Cycle Type.

Digit 5 of the bar code has been decoded incorrectly.

47: Bar Code Invalid: Energy Correction.

Digit 3 of the bar code has been decoded incorrectly.

48: Bar Code Invalid: Component Type.

Digits 1 and 2 of the bar code have been decoded incorrectly.

49: Bar Code Invalid: Check Digit.

Digit 24 of the bar code has been decoded incorrectly.

50: USB Memory: Disc full.

This fault will happen if the USB flash memory pen is full. Delete some files from the device.

51: USB Memory: File allocation table full.

This will happen if the USB flash memory pen's file structure becomes fragmented. Follow the instructions with Windows to defragment the memory pen.

52: USB Memory: File not found.

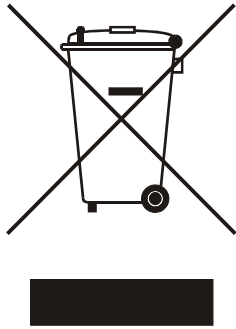
When performing a software upgrade, the required file was not found on the memory drive. Reload the upgrade files onto the memory drive.

127: Power off failure.

If the power is turned off while the unit is welding, this fault will be recorded in the data log.

Disposal – End of Life

The equipment and packaging should be sorted for environmentally friendly recycling.



DO NOT DISPOSE OF THIS EQUIPMENT IN HOUSEHOLD WASTE!

According to the European Directive 2012/19/EU Waste Electrical and Electronic Equipment (WEEE), when no longer suitable for use, this equipment must be separately collected and sent for recycling.



According to the European Directive 2011/65/EU Restriction of Hazardous Substances (RoHS), this equipment does not contain more than the agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.

www.advancewelding.co.uk/batteries for more information.

Calibration and Warranty

IMPORTANT: WARRANTY WILL BE VOIDED IF THE “WARRANTY VOID” STICKERS HAVE BEEN TAMPERED WITH.

This welding unit has been manufactured, inspected and tested in accordance with the quality control systems in place at Advance Welding.

This welding unit has been calibrated using equipment that is traceable to national and international standards through a NAMAS-accredited laboratory. NAMAS (National Accreditation of Measurement and Sampling) is a service of UKAS (United Kingdom Accreditation Service).

This welding unit has a **Twelve-month** warranty period, active from the first use of the unit by the end user customer.

Conditions of Warranty:

This warranty covers only those defects to the product which arise from normal use of the product and will become invalid if any of the following apply:

- The warranty void stickers have been tampered with.
- Failure to follow the operating instructions.
- Improper or inadequate maintenance.
- Unauthorised modification.
- Misuse or any use not in accordance with the operating manual or good industry practice.
- Physical abuse of the product.
- Operation outside the product's specifications.
- Improper site preparation or site maintenance.
- Faulty pipe or fitting.

Extent of Warranty:

Subject to the conditions and limitations of warranty, Advance Welding warrants that its electrical products will be free from defects in materials and workmanship for twelve months and its mechanical products for six months, from the date of purchase by the end-user customer. If, during this period, notice of a defect which is covered by this warranty is received, then Advance Welding will either repair or replace the product at its option. Any replacement product will have functionality at least equal to that of the product being replaced and will, in our opinion, perform consistently with its age and usage.

Unless otherwise agreed, all warranty work will be carried out by Advance Welding or an authorised and approved service facility.

Customers will prepay all shipping charges for products returned under warranty, and Advance Welding will charge for the return of the products to the customer.

Limitations of Warranty:

Advance Welding does not warrant the operation of any product to be uninterrupted or error-free.

Advance Welding specifically disclaims the implied warranties of satisfactory quality and fitness for a particular purpose.

Advance Welding makes no other warranty of any kind, whether expressed or implied, concerning its products.

To the extent that this warranty statement is inconsistent with the law of the locality where the customer uses the product, this warranty statement shall be deemed modified by the minimum necessary to be consistent with such local law.

To the extent allowed by local law, the remedies provided in this warranty statement are the customer's sole and exclusive remedies.

This equipment has been designed for use with the range of fittings and pipes available at the time of its design and development. Advance Welding can accept NO liability for the equipment's ability or otherwise to be used with new or different fittings or pipe that subsequently appear in the marketplace.

This equipment is not intrinsically safe and must not be used in a gaseous or explosive atmosphere. Advance Welding can accept NO liability if the equipment is used in these circumstances.

Declaration of Conformity



In compliance with the 'New Approach Standardisation in the Internal Market', the products manufactured by Advance Welding meet the following relevant directives:

2014/30/EU	Electromagnetic compatibility (EMC)
2014/35/EU	Low Voltage (LVD)
2006/42/EC	Machinery (MD)
94/62/EC	Packaging and packaging waste
2011/65/EU	Restriction of the use of certain hazardous substances (RoHS)
2006/66/EC	Battery directive

The products do not fall within a predefined scope, so CE compliance is self-certified.



The United Kingdom Conformity Assessed mark came into force in the UK on 1st January 2021.

More detailed information is available on our website at www.advancewelding.co.uk

On behalf of

Advance Welding:

K. Wilkinson.

Service and Repair

For all service and repair of this machine, please return it to the manufacturer:

Manufactured in the UK by:

ADVANCE WELDING

Units 1 & 2
Taylor Street
Cleckheaton
West Yorkshire
BD19 5DZ
United Kingdom



Tel: 0844 880 7748

Fax: 0870 752 6139

Email: sales@advancewelding.co.uk

Web: www.advancewelding.co.uk