

LP315

(Welding unit for Low Pressure Fittings)

Operating manual

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Operating Controls

1. Welding Unit
2. Temperature Sensor
3. Supply Cable
4. Yellow Welding Cable
5. Blue Welding Cable
6. Supply RCD Breaker
7. Protective Case
8. Welding Socket





Safety Notes

- ◆ **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.
- ◆ 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 safe!
- ◆ Keep bystanders a safe distance away from the machine while welding.
- ◆ Never allow people unfamiliar with these instructions to use the welding unit.

Product Specification

Operating Mode:	Yellow 32-160mm
Controlled Welding Current:	5 A ac (true rms)
Welding Voltage:	28 to 186 V ac
Welding Power:	140 VA to 930 VA
Welding Time:	80 seconds (@ 20°C)
Apparent Power Factor:	0.16 to 1.81
Operating Mode:	Blue 200-315mm
Controlled Welding Voltage:	220 V ac
Welding Current:	4 to 9 A ac (true rms)
Welding Power:	880 VA to 1980 VA
Welding Time:	420 seconds (@ 20°C)
Apparent Power Factor:	1.00
Operating Mode:	Red 200-315mm
Controlled Welding Voltage:	220 V ac
Welding Current:	4 to 9 A ac (true rms)
Welding Power:	880 VA to 1980 VA
Welding Time:	Thermal fuse in fitting
Apparent Power Factor:	1.00
Operating Temperature:	-10°C to +40°C
Supply Voltage:	230 V ac (+/- 20%) 40 to 60 Hz
Supply Current:	1 to 10 A ac (true rms)
Supply Power:	2,500 W (peak at 0.16 APF)
Supply Protection:	Class 1 – Earthed
Weight:	1.3 kg
Size:	23 cm x 12 cm x 7 cm
Protection Level:	IP65

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

Intended Use

This equipment is intended to weld low pressure PE fittings, designed for drainage and ducting work.

Yellow mode is designed to weld fittings from 32mm to 160mm manufactured by Akatherm, Wavin WaviDuo, Valsir and Geberit.

Blue mode is designed to weld fittings from 200mm to 315mm manufactured by Akatherm, Wavin WaviSolo and Valsir.

Red mode is designed to weld fittings from 200mm to 315mm manufactured by Geberit.

Introduction

This manual gives instructions on the correct assembly and safe use of your welding unit. It is important that you read these instructions carefully, and keep these instructions for the life of the unit.

This manual **does not** detail the specific welding procedure for the fittings: scraping, clamping and assembly of joints. For this information you must contact the manufacturer of the fittings.

Delivered Items

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

- ◆ Welding unit.
- ◆ Yellow welding cable.
- ◆ Blue welding cable.
- ◆ Supply RCD breaker
- ◆ Protective case.

When parts are missing or damaged, please contact your dealer.

Optional extras (not supplied):

- ◆ **Yellow link cable**
- ◆ **Red welding cable**



Electrical Safety

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.

The operating voltage is 230 volts ac 50 Hz, and a power source capable of 2500 Watts is required.

Extension cables should only be used if they comply with the H07RNF harmonized 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. The cable dimensions should be as follows:

- ◆ 1.5mm² cable = 25m
- ◆ 2.5mm² cable = 50m
- ◆ 4.0mm² cable = 75m

The welding unit **must** be used with the supplied 30mA RCD breaker. This breaker must always be plugged directly into the supply to protect the unit and any extension leads that are used with the equipment. Always check the 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.

Using the equipment

This welding unit takes the ambient temperature into account when calculating the energy required to weld the fitting. It must therefore be allowed to reach ambient temperature before use and must be at the same temperature as the fitting to be welded.

- ◆ Prepare the pipe and fittings inline with the manufacturers recommendations.
- ◆ Connect the supply cable to 230 volts and switch the unit on. The green power light will illuminate.
- ◆ The unit will self test and show each indicator light in turn. Any initial faults will be shown.
- ◆ Select the correct colour welding cable for the type of fittings to be welded. See the chart of the front on the front of the unit.
- ◆ Connect the welding cable to the unit and it will detect the type of lead fitted and flash light 3 (Yellow), 4 (Blue) or 5 (Red). Check that the correct lead has been identified.
- ◆ The welding parameters have now been set automatically by the selection of the correct welding cable.
- ◆ Connect the welding cable to the fitting.
- ◆ Press and hold the orange button until the first amber light comes on (about one second).
- ◆ During the weld, the lights will indicate the progress of the weld from 0% to 100%. If at any time a fault is detected, the weld will stop and the red fault light will be shown. The weld can be stopped by pressing the orange button.
- ◆ At the end of the weld, the green 100% light will be shown. Disconnect the welding cable from the fitting.

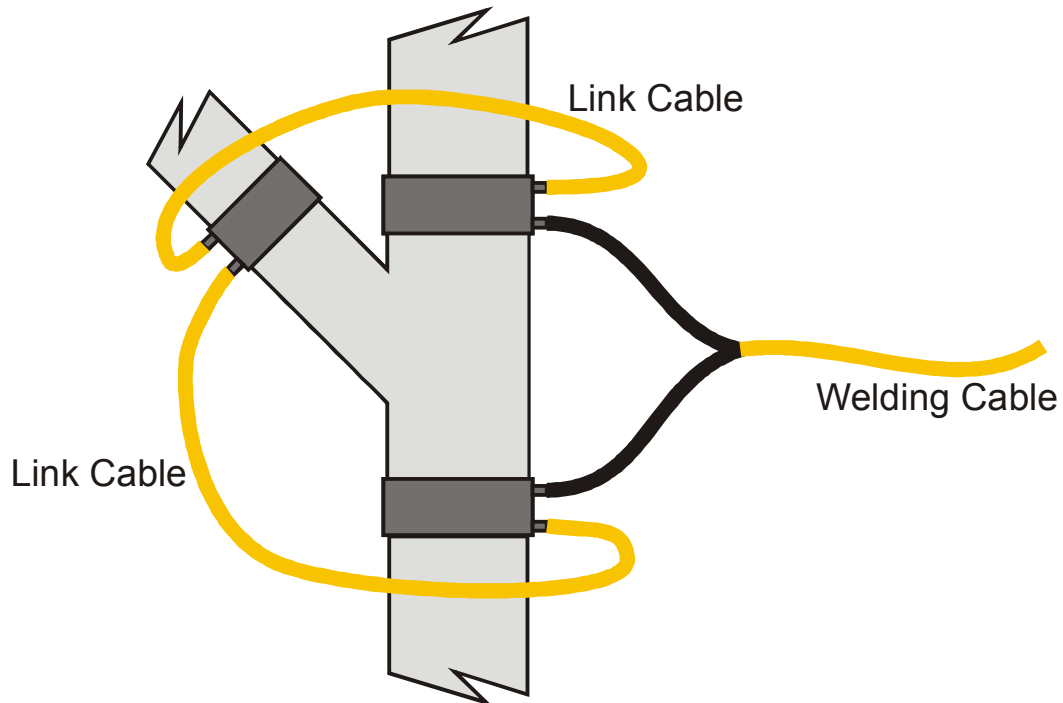
The unit can now be reset by holding in the start button for three seconds or by powering the unit off.

Multiple Welds

In **Yellow mode**, the unit can simultaneously weld multiple fittings connected in series using the optional yellow link cable.

The combined diameters of the fittings to be joined must not exceed 200mm. For example, a 45° 75/50mm tee can have both main pipe 75mm fittings and the branch 50mm fitting welded together:

$$75\text{mm} + 75\text{mm} + 50\text{mm} = 200\text{mm}.$$





Fault Finding

If a fault happens with the unit, the red fault light will illuminate along with one other indicator light to show the error number. Information on the causes of these faults is shown below. If this does not identify or remedy the problem, contact your service agent.

Error 1. Power failure during weld.

The power to the welding unit went off during the weld.

- Check that the unit is switched on.
- Make sure the supply plug has not come out of the supply socket.
- Check that the supply fuse or breaker has not tripped.
- If using a generator, check the generator is operating and there is enough fuel.
- Check the cables are not damaged or broken.
- Check the fuse is OK in the welding unit.

Error 2. Stop button pressed.

The stop button was pressed while welding.

- Restart the weld after the fitting has returned to ambient temperature.

Error 3. Power supply frequency fault.

The supply frequency is out of limits.

- Check the generator is operating correctly.

Error 4. Ambient temperature fault.

The ambient temperature has been measured as lower than -20°C or higher than +50°C.

- If the temperature is very cold, wait until the ambient rises back into specification.
- If the unit is in direct sunlight, it may have heated up the sensor. Move the unit into the shade and allow it to reach ambient again.

Error 5. No welding current.

The unit has detected that no welding current is passing into the fitting.

- Make sure that the connectors have not come off the fitting.
- Make sure that the welding cable is securely connected to the unit and that it isn't damaged.
- Try welding again, but hold the start button in for three seconds. A short press of the start button can cause this fault.

Error 6. Low welding current.

The unit has detected a low welding current as follows:

1.5% low, fail in 3 seconds.

90% low, fail in 1 second.

- Make sure that the correct fittings are being welded.
- If multiple welding fittings, make sure the combined diameters do not exceed 200mm.
- Make sure the supply is within limits: 230 volts with a capacity of 2500 watts.
- Make sure any extension leads being used are the correct length and rating.

Error 7. High welding current.

The unit has detected a high welding current as follows:

1.5% high, fail in 3 seconds.

6.25% high, fail in 2 seconds.

12.5% high, fail in 1.5 seconds.

25% high, fail in 1 second.

50% high, fail in 0.3 seconds.

- Restart the weld after the fitting has returned to ambient temperature.
- If the fault persists, return the unit to an approved service agent.

Error 8. Power supply unstable.

If the power supply does not have enough capacity or is fluctuating, then this fault will be shown.

- Make sure the supply is within limits: 230 volts with a capacity of 2500 watts.
- Do not use extension leads.
- Make sure that the correct fittings are being welded.
- Try another generator / power supply.

Maintenance

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

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

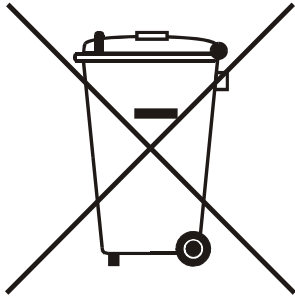
It is recommended that the unit is calibrated every twelve months.

After use, clean the outside of the unit with a soft brush or cloth.

Carefully wind up and store the cables in the protective case.

Disposal

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



DO NOT DISPOSE OF THIS EQUIPMENT INTO HOUSEHOLD WASTE !

According to the European Directive 2002/96/EC 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 2005/95/EC 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.

Calibration and Warranty

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 calibration and 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:

- ◆ 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 products 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 a period of 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 return of the products back to the customer.

This warranty statement gives the customer specific legal rights. The customer may also have other rights which vary from country to country in the world.

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 express or implied, with respect to 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 pipe available at the time of its design and development. Advance Welding can accept NO liability for the equipments ability or otherwise to be used with new or different fittings or pipe that subsequently appear in the market place.

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



This welding unit has been designed to comply with the harmonised standards under the "New Approach" directives, and has been CE marked accordingly.

The applicable standards are:

89/336/EEC Electromagnetic compatibility

73/23/EEC Low voltage equipment

98/37/EC Machinery safety

More detailed information is available on our web site at
www.ElectrofusionWelding.com

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