



## UPP Welder 230 Volts

*EWIE7/230V*

## *User Manual*

*Issue 1*



PetroTechnik Ltd, PetroTechnik House, Olympus Close, Whitehouse Industrial Estate,  
Ipswich, Suffolk, IP1 5LN, United Kingdom.

tel. +44 (0) 1473 243300

fax. +44 (0) 1473 243301

email. [info@upp.co.uk](mailto:info@upp.co.uk)

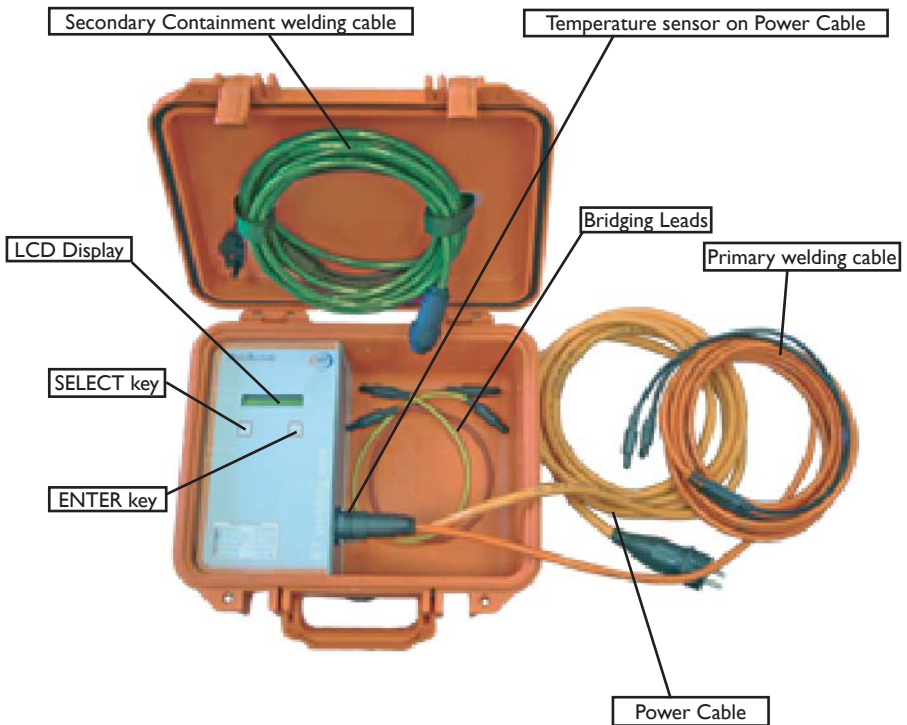
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### 1. Construction of the welding machine



## 2. General

### 2.1. Application

The UPP welding machine EW/E7/230V is designed for automatic welding of Primary and Secondary UPP welding sockets and Primary electrofusion fittings. It is suitable for use with environment temperatures between  $-10^{\circ}\text{C}$  and  $+45^{\circ}$

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### 2.2. Operating The Machine

UPP welding sockets and electrofusion fittings are welded using a constant current. The welding machine automatically applies the correct amount of energy for the fitting being welded.

The machine takes into account the ambient temperature when welding. For this reason the machine should always be at the same ambient temperature as the fitting that is to be welded. The temperature sensor is on the power cable inside the unit.

The machine has a back light LCD display with 2 lines of 16 characters each. The user-guided menu is available in 8 different languages.

During the welding process, the following key value will be shown on the display:

- Applied current
- Remaining welding time (counting down)

The welding machine operates on standard alternating current. Normal, fixed power connections can be used or an electrically stable portable generator with a rated output of at least 4 kW.

The power input must be maintained between the following values:

$$230\text{V} \sim \pm 15\% (195,5\text{V} - 264,5\text{V}) \text{ and } 45 - 65\text{ Hz}$$

The input voltage will be automatically measured by the machine and can be shown on the display by keeping the SELECT key pressed down. At the same time the following information will be shown:

- Welding mode                      Primary Mode (Primry) or Secondary Mode (Secndr) depending on which welding cable is connected.
- Actual welding time, depending on the ambient temperature
- Measured temperatures:
  - # I: Temperature measured inside the machine
  - # O: Ambient temperature measured by the sensor temperature

When the SELECT key is pressed for more than 10 seconds, the display will show the number of faulty and good welds completed with the machine. Release the SELECT key to return to the previous display.

The welding machine is equipped with a earth leakage safety switch. This safety switch is in the same part of the circuit as the ON/OFF switch. It is therefore reset when the unit is switched OFF and back ON again.

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## **2.3. Safety Instructions**

- 2.3.1 The welding machine meets all applicable European and International safety standards and is designed specifically for usage on construction sites (protected against water and dust).  
The machine should be handled with the care usually given to electrical equipment especially during transport.
- 2.3.2 Each time the welding machine is used, the condition of the machine, and especially the power cable needs to be checked. If damage is discovered, the machine needs to be returned directly to the supplier or an authorised service centre. It is also advisable to check the welding cables.
- 2.3.3 Before connecting the machine, the power source needs to be checked with regard to the values given above (i.e. 230 V and 45-65 Hz).
- 2.3.4 Never pull and/or lift the machine by its power or welding cables. To disconnect the machine, the connectors need to be pulled off, never pull the cable.
- 2.3.5 The EW/E7/230V welding machine fulfils all applicable safety standards. These approvals can only be maintained if any repairs are done by the supplier or an authorised, service centre. Disobeying this recommendations will invalidate the warranty.

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## **2.4. Liability Restrictions**

In each of the following cases, all liabilities of the supplier are invalidated:

- The machine is used outside the indicated application area
- Welding sockets and electrofusion fittings other than the UPP Primary and Secondary range are being used
- The operator is not trained to weld with this welding machine
- The recommended maintenance intervals are not observed
- The safety instructions are not observed
- Repairs have been performed by other than the supplier or their authorised agent

### 3. Operating Instructions

#### 3.1. Welding

Step	Entry/action by operator	Information on display
1	Connect power cable to power source	
2	Switch the machine on using the ON/OFF switch on the side of the main panel  The welding mode is displayed, depending on the which welding cable is connected the display shows: Orange cable: <b>Primary Mode</b> Green cable: <b>Secondary Mode</b>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>PetroTechnik Primary Mode</b> </div> <p>After approximately 5 seconds</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>Connect welding element</b> </div>
3	Push the connectors firmly on to the terminal pins of the fitting and push down to the stop	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>Welding start with ENTER</b> </div>
4	Welding starts by pressing the ENTER key.  The display shows the current in Amps and the actual welding time in seconds (corrected for ambient temperature), counting down to 0.	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>Welding in prog. 4.0A 168 sec</b> </div> <p>After welding</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>Welding completed</b> </div> <p>After approximately 3 seconds</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>Unplug connectors</b> </div>

#### 3.2. Choosing the language

Step	Entry/action by operator	Information on display
1	Switch on the machine and wait for the information, indicated on the right, to appear on the display. (No welding cables to be connected during the set-up operation)	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>Connect welding element</b> </div>
2	Press the SELECT key and the ENTER key together to enter languages set-up mode	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>→GB DE FR IT NL ES SE PL</b> </div>
3	Choose the desired language by pressing the SELECT key several times	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>GB DE FR→IT NL ES SE PL</b> </div>
4	Complete this operation by pressing the ENTER key.  The language of your choice appears	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>Raccodare elemento</b> </div>

### 3.3. Measuring/display the actual data

Entry/action by operator		Information on display
1	Switch on the machine and wait for the information, indicated on the right, to appear on the display.	<b>Connect welding element</b>
2	Hold down the SELECT key <b>234V:</b> Input voltage <b>Mode:</b> Primary or Secondary (depending on which cable is connected) <b>185s:</b> Actual welding time <b>I:</b> Internal temperature of the machine <b>O:</b> Ambient temperature	<b>234V Mode 185s I: 28°C O: 21°C</b>
3	Press the SELECT key for at least 10 seconds to show the following information  <b>Good:</b> number of succesful welds <b>Faulty:</b> number of faulty welds	<b>Good: 756 Faulty: 11</b>

### 3.4. Error messages

Information on the display	Meaning	Solution
<b>Input voltage too high</b> alternating with <b>Switch off welding kit</b>	The input voltage of the power source is too high and outside the tolerances of the welding unit	Check the connection. Get the generator checked by a service centre and reset. If necessary connect a load, approx 500 Watt in parallel with the unit
<b>Input voltage too low</b> alternating with <b>Switch off welding kit</b>	The input voltage of the power source is too low and outside the tolerances of the welding unit	Check the connection. Get the generator checked by a service centre and reset. Fully unwind the extension cable to minimise resistance
<b>Input voltage variable</b> alternating with <b>Switch off welding kit</b>	The input voltage of the power source is fluctuating. The voltage regulation of the power source interfeeres with the electronics of the machine	Get the generator checked by a service centre and reset.  If necessary connect a load of approximately 300 to 500 Watt in parallel with the machine.
<b>Current below lower limit</b> alternating with <b>Switch off welding kit</b>	The resistance value of the connected fitting is too high and is outside the tolerances of the machine (wrong element)  In Primary mode: too many fittings connected in series Input voltage too low Regulation error in the electronics	Use only UPP welding sockets and electrofusion fittings and the correct welding cables.  Check the resistance values. The sum must not exceed 10 See input voltage too low Send machine for service

Information on the display	Meaning	Solution
<div data-bbox="176 172 359 225" style="border: 1px solid black; padding: 2px;"><b>Current above upper limit</b></div> alternating with <div data-bbox="176 248 359 301" style="border: 1px solid black; padding: 2px;"><b>Switch off welding kit</b></div>	Regulation error in the electronics	If this error occurs several times in succession the machine should be sent back to the supplier. Switch off machine and switch it on again after 5 seconds
<div data-bbox="176 347 359 400" style="border: 1px solid black; padding: 2px;"><b>Open secondary circuit</b></div> alternating with <div data-bbox="176 424 359 477" style="border: 1px solid black; padding: 2px;"><b>Switch off welding kit</b></div>	Loose contact in the welding circuit or a poor connection to fitting terminal pin	Check welding cable. Push connectors firmly on to terminal pins of the fitting and push down to the stop. Switch off the machine and switch it on again after 5 seconds
after switching on machine <div data-bbox="176 560 359 612" style="border: 1px solid black; padding: 2px;"><b>Weld was faulty</b></div> alternating with <div data-bbox="176 636 359 689" style="border: 1px solid black; padding: 2px;"><b>Repeat after one hour</b></div>	The previous weld has been interrupted for one of the reasons mentioned above	Let the fitting cool down for at least one hour, before a new, full welding process is started with the same fitting. By pressing the ENTER key, the machine will be reset for welding
<div data-bbox="176 743 359 796" style="border: 1px solid black; padding: 2px;"><b>Box internal temp. too high</b></div>	The internal temperature of the machine has reached the critical value. This can happen especially in the Primary mode, after a large number of welds	Switch off the machine and let it cool down in the shade for a few minutes
<div data-bbox="176 927 359 979" style="border: 1px solid black; padding: 2px;"><b>General hardware error</b></div>	Software or hardware of the machine has been damaged	Sent the machine for service and repair at PetroTechnik
<div data-bbox="176 1038 359 1091" style="border: 1px solid black; padding: 2px;"></div>	Machine switches off during welding	Wrong power supply, incorrect input voltage, electrical instability. Resolve temporary or permanent interruption

### **3.5. Other useful tips**

#### **Positioning the machine**

Always place the welding machine in the same ambient temperature to the fittings to be welded. The rear of the machine needs to be free and it should not be directly exposed to the sun.

The welding machine should only be operated in areas outside zones 0, 1 and 2

Switch off the machine during breaks in the work and at the end of the job.

#### **Connectors**

The connectors at the end of the welding cables need to be pushed firmly onto the UPP welding sockets and electrofusion fittings down to the stop. Disconnecting the cable from the UPP welding sockets and electrofusion fittings must not be done by pulling the cable.

#### **Repeating a weld**

Adding extra energy after the welding process (immediate repetition of a weld) by disobeying the repetition lock and without allowing the fitting to cool down is strictly prohibited. Overheating of the fitting can damage the components and cause hot material to be ejected from the weld zone causing severe burns of the skin. In addition power-conducting elements could become touchable.

In case of doubt about the weld, UPP welding sockets and electrofusion fittings, can be welded again after allowing them to cool for at least one hour.

#### **Welding in series, Primary (Primry) mode**

In the Primary (Primry) mode the welding machine can simultaneously weld two to three (maximum) UPP welding sockets fittings provided the following rules are applied:-

- The sum of the connected resistance values (circled figure on UPP sockets) must not be higher than 10.
- The UPP welding sockets to be welded need to be connected in series, using the coloured bridging leads (red or yellow), in such a way that each fitting is always connected by two cables of a different colour (red or yellow).
- To ensure that it is OK check that all the fittings get warm during the welding process.

#### **Welding in Secondary (Secndr) Mode**

UPP Secondary welding socket may not be welded in series. These fittings can be recognised by their special smaller terminal pins. These connections require the use of a green Secondary welding cable.

## 4. Technical Details

### 4.1 *Welding machine*

UPP Combi Welder Unit 230V (with European Style plug)	EW/E7/230V
Voltage	230V~ ± 15% (195.5V to 264.5V)
Frequency	50 Hz (45 to 65 Hz)
Power rating	1000 W
Fuses input side	min. 10 A slow
Welding voltage	8V to 230V
Switching power of the FI safety switch	10 mA
Protection class	IP 65
II (reinforced isolation)	
Ambient temperature limits	- 10°C to + 45°C
Dimensions	
width	340 mm
depth	300 mm
height	150 mm
total weight	4.68 kgs

### 4.2 *Accessories*

#### **Included:**

<b>Description</b>	<b>PetroTechnik Code</b>
Primary UPP Welding Cable	EW/BC/C
Secondary UPP Welding Cable	EW/BC/SC
UPP Bridging Lead red or yellow	EW/BC/BL
Operating Manual	

#### **Available as spare parts:**

<b>Description</b>	<b>PetroTechnik Code</b>
Primary UPP Welding Cable	EW/BC/C
Secondary UPP Welding Cable	EW/BC/SC
UPP Bridging Lead red or yellow	EW/BC/BL

### **4.3 Approval**

This machine has the safety mark of the Swiss Approval Board. Furthermore the machine carries the CE mark for European conformity.

### **4.4 Guarantee**

This guarantee includes the repair or replacement of the machine provided it has been used as described in this manual. The guarantee period is one year from the date of purchase.

## **5. Maintenance and Service**

From a safety point of view, all cables need to be checked each time before use. The other parts of the machine are maintenance free.

To clean the frame and the display, only use soapy water or other non-acid and non-scratching cleaning liquids.

To ensure a long lifetime of the machine, it is recommended that the machine is returned for service on a regular basis for a check by the PetroTechnik service organisation. Maximum service interval: 3 years.

Repairs to the machine may only be carried out by PetroTechnik or by their authorised service centres.





### **Waste Electrical Electronic Equipment**

Within the European Union, this symbol indicated that this product should not be disposed of with household waste. It should be taken to an appropriate recycling facility.



### **Certificate 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/EEC - Machinery safety

	PetroTechnik UK (head office)	+44 1473 243 300
	PetroTechnik Australia	+61 3 95 50 18 74
	PetroTechnik do Brasil	+55 11 3159 0909
	PetroTechnik France	+33 1 69 21 41 41
	PetroTechnik AB	+46 8 767 86 34
	PetroTechnik Inc.	+1 201 871 73 00
	P&D Japan	+81 3 32 97 78 70

PetroTechnik Ltd  
PetroTechnik House, Olympus Close,  
Whitehouse Ind. Estate,  
Ipswich  
Suffolk, IPI 5LN, UK  
t: +44 (0) 1473 243300  
f: +44 (0) 1473 243301  
e: [info@upp.co.uk](mailto:info@upp.co.uk)

