

Calder Pegasus

Electrofusion Welding Unit
Operator Instruction Manual



Revision: 19-06-2015

Software Version: 2.06

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Specifications

Operating mode	Bar Code Entry *
	Fusamatic Time Entry **
	Manual Time Entry
Weld Record memory capacity	2000 weld records
Weld Record download	USB flash disk
Languages	Symbolic (some English)
Display	Alphanumeric with backlight
Input voltage	110 V ac (85 to 150)
	<u>or</u> 230 V ac (195 to 270)
Input frequency	50 Hz (40 to 70)
Input current	1 A to 30 A for 110V variant
	<u>or</u> 1 A to 15 A for 230V variant
Input power	110 VA to 3360 VA (apparent) 110V variant
	<u>or</u> 230 VA to 3450 VA (apparent) 230V variant
Power factor	0.72 (apparent)
Output voltage	8 to 48V ac rms
	39.5V ac rms (default in Fusamatic mode)
Output stability	+/- 1.5% of welding voltage
Output current	1 A ac rms to 60 A ac rms (continuous)
Output power	40 W to 2880 W
	40 W to 2370 W (in Fusamatic mode)
Operating temperature	-20°C to +50°C
Weight / dimensions	22.0kg / 38,5 x 27,5 x 21.5cm
Output current	1 A ac rms to 60 A ac rms (continuous)
Protection level / class	IP55 / Class II

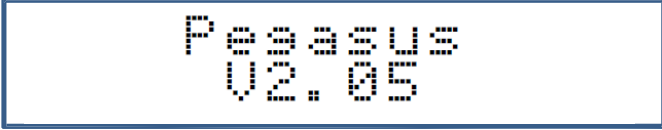
* Barcode time entry only active when barcode reader is connected.

** Fusamatic time entry only active with welding units fitted with Fusamatic output leads.

Startup information and screens:

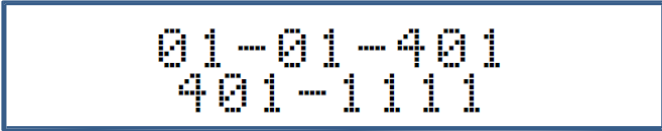
When the welding unit is first turned on the welding unit performs a number of initial measurements and tests. The following information will be displayed during this period.

Screen 1: Model and version of software running.



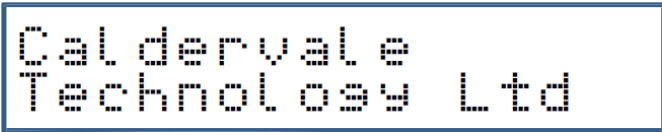
Peasus
V2.05

Screen 2: Product code (line 1) and serial number (line 2).



01-01-401
401-1111


Screen 3: Owner name.



Caldervale
Technology Ltd

Screen 4: Caldersafe or Bluebox bluetooth data transfer activated.

If Caldersafe data transfer is activated then the screen below is shown.



CALDERSAFE ✓

If Bluebox data transfer is activated then the screen below is shown.



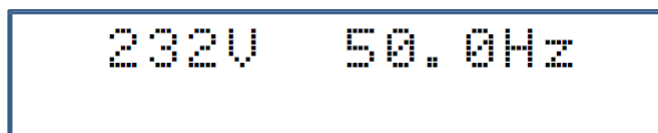
BLUEBOX ✓

Screen 5: Supply voltage and supply frequency.

The supply voltage and frequency is measured and checked against the supply limits which are:

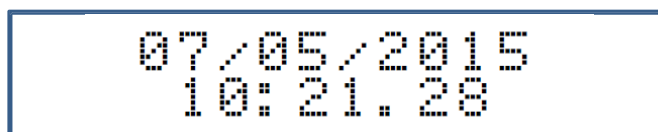
For 230V units - 195V ~ 270V a.c; 40 ~ 60Hz

For 110V units - 85V ~ 150V a.c; 40 ~ 60Hz

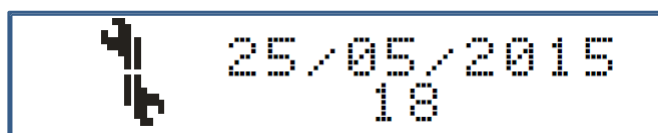


If the supply measurement is outside the limits the error code is displayed on line 2 (refer to the error codes on page 15).

Screen 6: Current date and time.



Screen 7: Calibration expiry date.



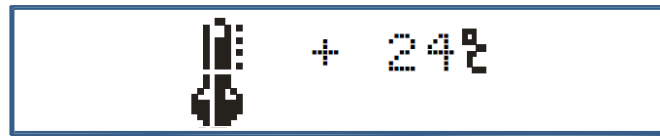
The calibration expiry date is shown on line 1. If the calibration expiry date has less than one month remaining then the number of days left before the calibration period expires is shown on line 2. If the calibration period has elapsed then the text "Expired!" will be displayed on line 2.

Screen 8: Weld record memory capacity remaining.



The used memory capacity of the weld record storage is shown as a percentage; the welding unit can store up to 2000 weld records. If 100% of the storage capacity has been used then the download prompt screen will be shown (refer to downloading weld records on page 14).

Screen 9: Outside air temperature.



The outside air temperature is measured and checked against the working temperature limits which are:

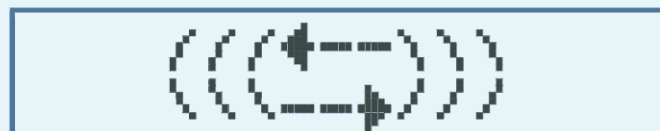
-20 ~ +50°C

Screen 10: Transformer temperature.



If the transformer inside the welding unit has become too hot the welding unit will stop displaying the screen above. Only when the transformer has returned to a working temperature will the screen clear.

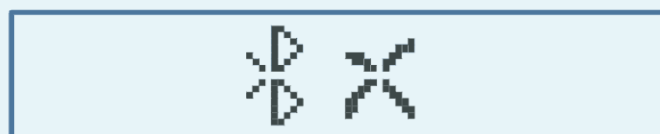
Screen 11. Bluetooth connection.



If either the Caldersafe or Bluebox bluetooth data transfer is active this screen will be shown.

During this time the welding unit will try to establish a bluetooth connection.

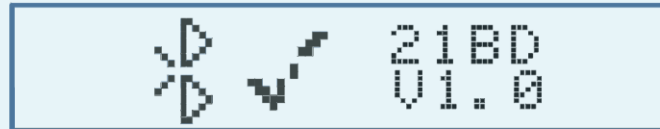
Screen 12. Bluetooth connection not found.



If either the Caldersafe or Bluebox bluetooth data transfer is active and a bluetooth connection is not found this screen will be shown.

During this time the welding unit will try to establish a bluetooth connection.

Screen 13. Bluetooth connection found.



If either the Caldersafe or Bluebox bluetooth data transfer is active and a bluetooth connection is established this screen will be shown indicating the bluetooth module number and the software version of the mobile application.

Screen 14. User automatically retrieved from the mobile application.



If either the Caldersafe or Bluebox bluetooth data transfer is active and connected the user name is automatically retrieved from the mobile application and saved within the welding unit. Screen 16 is shown next.

Screen 15: Entering the user name.



Use the ↑ and ↓ arrows to select a character
Pressing the green button moves the cursor one place to the right. Pressing the red button moves the cursor one place to the left.

Press and hold the green button to exit the screen, release the green button when the screen goes blank.

Screen 16: Entering the location.



Use the ↑ and ↓ arrows to select a character
Pressing the green button moves the cursor one place to the right. Pressing the red button moves the cursor one place to the left.
Press and hold the green button to exit the screen, release the green button when the screen goes blank.

Screen 17: Entering the reference.



Use the ↑ and ↓ arrows to select a character
Pressing the green button moves the cursor one place to the right. Pressing the red button moves the cursor one place to the left.

Press and hold the green button to exit the screen, release the green button when the screen goes blank.

Screen 18: Connect the accessory (fitting).



If an accessory (or fitting) is not connected the screen above will be shown until a connection is made.

Note: If a barcode reader is not connected the program will go to screen 22 on page 9. Screens 19 to 21 are only shown when a barcode reader is detected.

Screen 19: Reading the accessory (fitting) traceability barcode information.



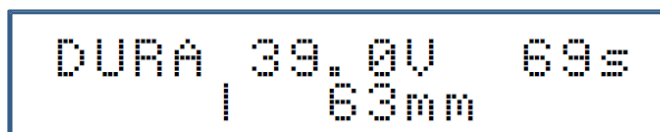
The option to scan up to three traceability barcodes is permitted. If no traceability barcode is to be scanned press the green button to continue. After each traceability barcode is scanned the option to exit this stage is available by pressing the green button, otherwise scan the next traceability barcode.

Screen 20: Reading the accessory (fitting) welding barcode information.



Next the prompt to scan the welding information barcode is shown.

Screen 21: Accessory (fitting) welding barcode information.



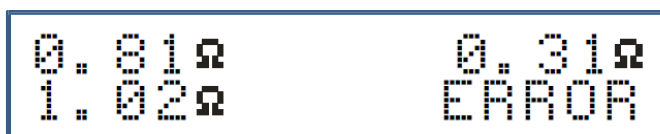
When the welding information barcode is successfully read the welding information barcode is shown.

The information displayed is the accessory (fitting) manufacturer, the welding voltage, the welding time, the accessory (fitting) type and the size.

Go to screen 28 on page 11

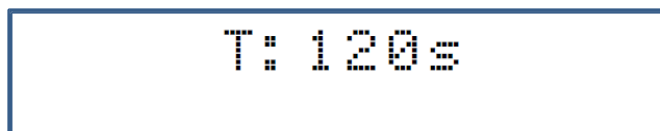
Note: If the measured resistance value is outside of the accessory (fitting) resistance limits read from the barcode the welding unit will display the screen below, showing the upper and lower resistance limit values on the top line of the display with the measured resistance value displayed on the right on line 2.

The resistance is re-measured up to 20 times if the error is still present the program goes back to screen 18 on page 8.



Screen 22: Reading the Fusamatic accessory (fitting) welding time.

Note: If the welding unit is not fitted with a Fusamatic output lead or a Fusamatic accessory (fitting) is not connected the program will go to screen 23 on page 10. Screen 22 is only shown when a Fusamatic accessory is detected.

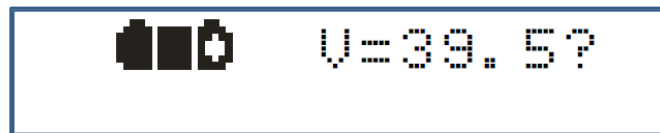


If a Fusamatic accessory (fitting) is recognised then the welding time of the accessory (fitting) will be shown.
The welding voltage in this mode of operation is fixed at 39.5V a.c.



Go to screen 26 on page 11.

Screen 23: Entering the accessory (fitting) welding voltage.

Note: If a barcode reader is not detected (connected) or the welding unit is not fitted with a Fusamatic output lead or a Fusamatic accessory (fitting) is not connected the program will enter the manual entry option.

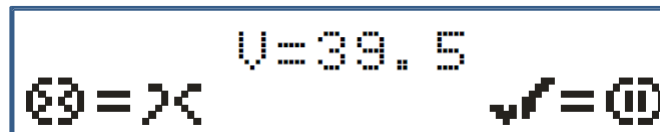


The default welding voltage of 39.5V is shown as above.

By pressing the  and  buttons a welding voltage from 8 to 48 volts can be selected.

When the welding voltage has been selected press the green button.

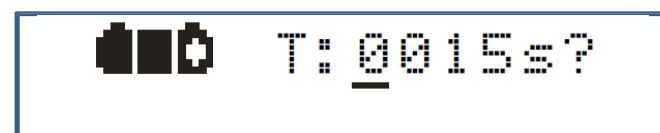
Screen 24: Confirming the accessory (fitting) welding voltage.





The next screen allows the user to confirm the selected welding voltage by pressing the green button.

Pressing the red button gives the user the option to re-select the welding voltage where, screen 23 will be displayed again.

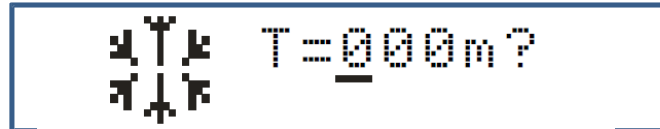
Screen 25: Entering the accessory (fitting) welding time.





The minimum welding voltage of 15 seconds is shown as above. The cursor is displayed under the left most digit, by pressing the  and  buttons the digits value can be changed from 0 through to 9, when the required digit has been selected press the green button. The cursor will advance one place to the right, again repeat

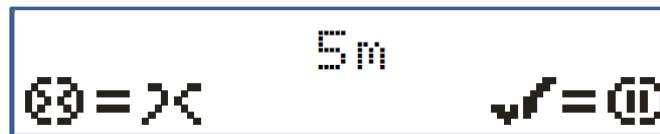
the above process until the welding time displayed is the same as the welding time marked on the accessory (fitting).

Screen 26: Entering the accessory (fitting) cooling time.



The accessory (fitting) cooling time entry screen in minutes is shown. The cursor is displayed under the left most digit, by pressing the  and  buttons the digits value can be changed from 0 through to 9, when the required digit has been selected press the green button. The cursor will advance one place to the right, again repeat the above process until the cooling time displayed is the same as the cooling time marked on the accessory (fitting).

Screen 27: Confirming the accessory (fitting) cooling time.



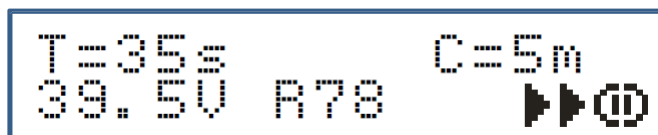
The next screen allows the user to confirm the selected cooling time by pressing the green button. Pressing the red button gives the user the option to re-select the cooling time where, screen 26 will be displayed again.

Screen 28. Taking the photograph of the prepared joint.



If either the Caldersafe or Bluebox bluetooth data transfer is active and connected the screen displayed above prompts the user to take a photograph/s of the prepared joint to be welded. Follow the mobile application instructions whilst taking the photograph/s, when the photograph/s have been accepted the welding process will begin automatically. Go to screen 30 on page 12.

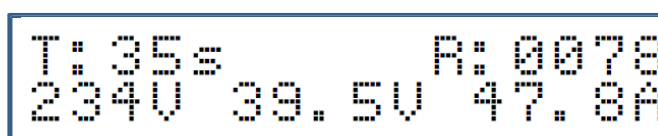
Screen 29: Welding in progress information.



The entered welding information is now displayed showing the entered welding time, cooling time, welding voltage and weld record number.

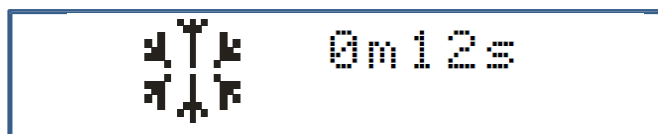
Press the green button to begin the welding process.

Screen 30: Welding in progress information.



During the welding process the welding unit continuously monitors the parameters of the weld. Displaying the supply voltage, the welding voltage and the welding current and the welding time remaining as well as the current weld record number.

Screen 31: Accessory (fitting) cooling time count screen.



When the welding process has been completed without errors the accessory (fitting) cooling time count screen above is shown. The time will count down from the value entered at screen 26 or if no cooling time was entered the cooling time will count up from zero until the output lead is removed from the accessory (fitting).

Screen 32: Disconnect the accessory (fitting) screen.



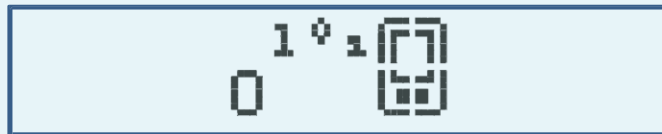
When the cooling time has elapsed or has reached 99 minutes in the case of no cooling time being entered then the screen above is shown until the output lead is removed from the accessory (fitting).

Screen 33 & 34. Uploading the weld record.



If either the Caldersafe or Bluebox bluetooth data transfer is active this screen will be shown.

During this time the welding unit will try to establish a bluetooth connection.



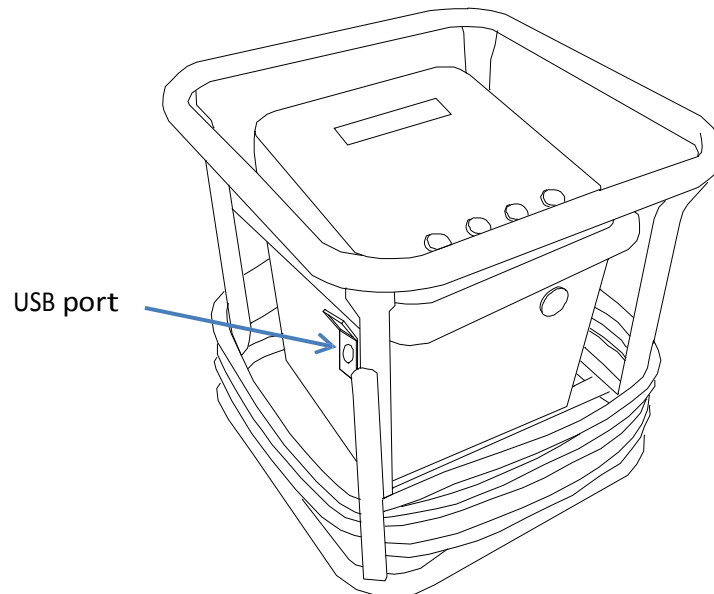
When a bluetooth connection is established the weld record will be automatically uploaded.

Note: If the welding unit is not disconnected from the power source the process will repeat from screen 10 on page 6.

Note: If the welding unit is disconnected from the power source the process will repeat from screen 1 on page 4.

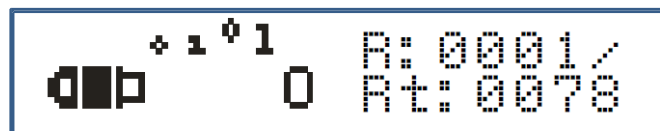
Downloading the weld records:

To activate the record download switch off the welding unit and insert the memory stick into the USB port located on the side of the welding unit.



Switch the welding unit on and wait until the screen below is displayed.

Screen 1: Downloading weld records screen.



When the download is complete the remove memory stick screen is displayed.

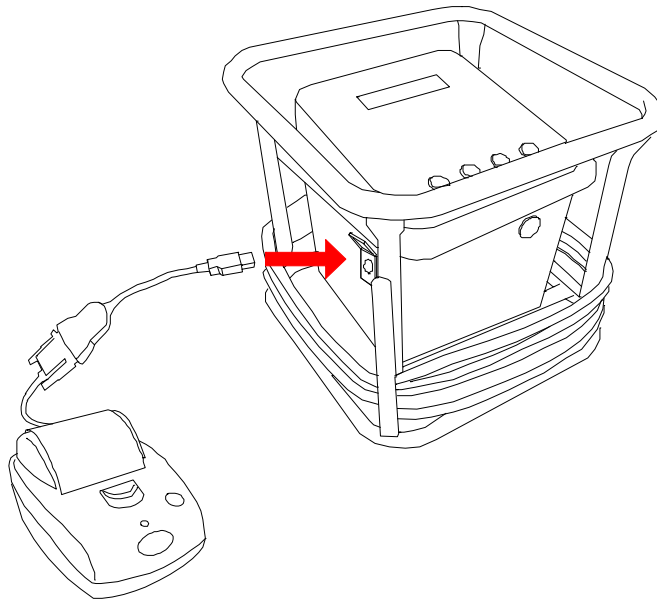
Screen 2: Remove the memory stick screen.



When the download is complete the remove memory stick screen is displayed.

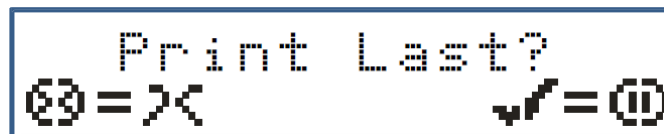
Printing the weld records:

To activate the record printing function switch off the welding unit and insert the printer lead into the USB port located on the side of the welding unit. Switch the printer on.

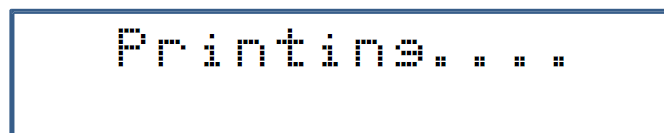


Switch the welding unit on; when the printer is detected the screen below is displayed.

Screen 1: Print the last joint record.

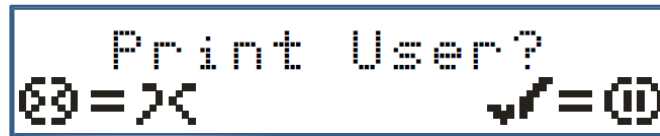


The print last joint record option is now displayed.
Press the green button to begin printing the last joint record. Press the red button to go to the next option.



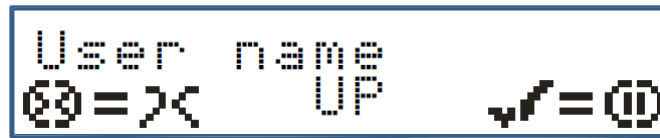
The display will show the printing screen below during the print process.


Screen 2: Print joint records by user.



The print joint record by user option is now displayed.

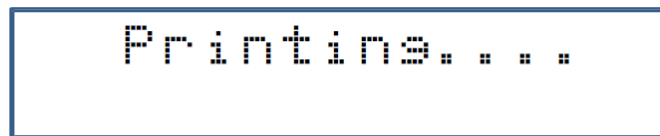
Press the green button to select the print joint records by user name. Press the red button to go back to the print last joint record option.



The last entered user name will be displayed on the top line of the display. Press the  button to select the next user name.

Press the green button to begin printing the joint records which relate to the user name selected.

Press the red button to go back to the print last joint record option.



The display will show the printing screen during the print process.

To exit the print function disconnect the printer and press the red button.

Error codes:

- E01 Supply voltage level too low.
- E02 Supply voltage level too high.
- E03 Supply frequency level less than 40Hz.
- E04 Supply frequency level greater than 60Hz.
- E05 Output voltage < 1.5% of the welding voltage for 6 seconds continuously.
- E06 Output voltage > 1.5% of the welding voltage for 6 seconds continuously.
- E07 Output voltage > 6% of the welding voltage for 4 seconds continuously.
- E08 Accessory (fitting) disconnected during welding cycle.
- E09 Output current less than 0.5 amps for 4 seconds continuously.
- E10 Reserved.
- E11 Stop button pressed during welding cycle.
- E12 Reserved
- E13 Reserved
- E14 Reserved
- E15 Reserved
- E16 Reserved
- E17 Output current increased by +10% for 4 seconds continuously.
- E18 Ambient air temperature level less than -20°C.
- E19 Ambient air temperature level greater than +50°C.
- E20 Transformer temperature level greater than +80°C.

Warnings:

Risk of explosion!

This equipment is not to be used in a gaseous atmosphere.

Caution.

Risk of electric shock! Do not open.

Caution.

To avoid damage to the welding unit do not interrupt the input supply or disconnect the output lead from the welding unit or fitting during a welding cycle.

Caution.

To avoid damage to the welding unit do not start a generator with the welding unit connected.

Allow a minimum of 10 seconds after starting the generator before connecting the welding unit, to allow for the generator output to stabilise.

Certificate of Conformity:

This product has been manufactured in accordance with the following directives:

- 73/23/EEC Low voltage – Electrical Equipment (Safety) Regulations.
- 2002/95/EC Restriction of the use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations.
- 2002/96/EC Waste Electrical and Electronic Equipment (WEEE) Directive.

This product has been manufactured to meet the following standards:

- ISO 12176-2 Equipment for fusion jointing polyethylene systems. Part 2: Electrofusion.
- BS 7540-1,2 & 3:2005, BS 7671:2001, BS 7919:2001, BS EN 1555-3:2002,
- BS EN 60068-2:1993, BS EN 60204-1:2004, BS EN 60309-2:1999,
- BS EN 60529:1992, BS EN 60947-1:2004, BS EN 61558-1:1998,
- BS EN 61558-2 & 23:2001, BS EN 62262:2002



Not to be disposed of in domestic waste.
Contact UPG Pipe Systems or your Local Authority for the disposal of this product.

**Manufactured in the U.K by
Caldervale Technology Ltd**

Distributed in New Zealand by:



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Website: www.upg.nz