

# Calder Comet

## Electrofusion Processor

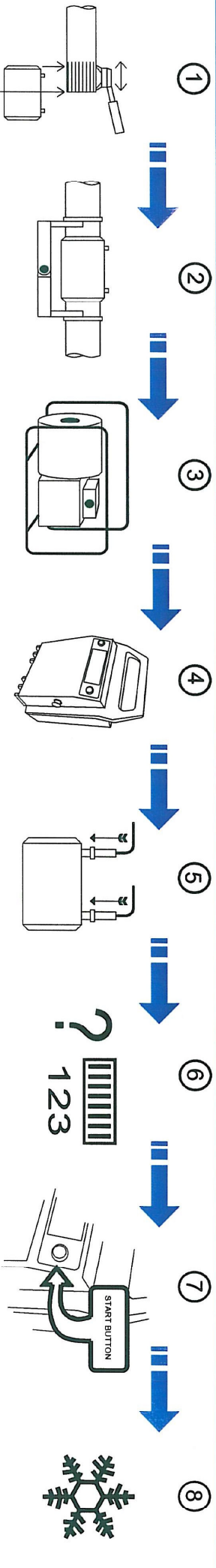
### Operator Instruction Manual



*Helping you make the right connections™*

Revision: 07-06-2010  
Software Version: 1.17 onwards

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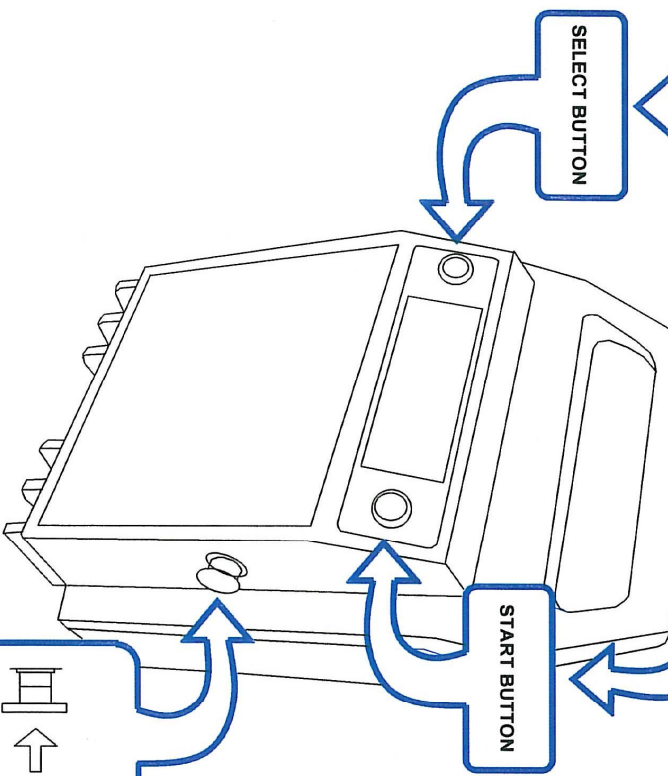
PREPARE THE PIPE      CLAMP THE JOINT      START UP THE GENERATOR      PLUG THE CONTROL UNIT      CONNECT THE OUTPUT LEAD      SELECT MODE OF OPERATION      PRESS THE START BUTTON      ALLOW JOINT TO COOL

ALLOW THE GENERATOR TO STABILISE INTO THE GENERATOR

BARCODE - MANUAL

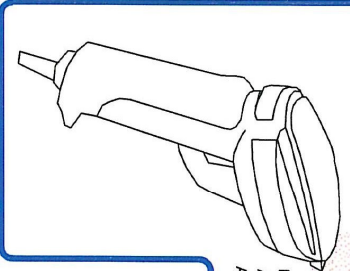
TO COMMENCE WELDING

**IN MANUAL MODE:**  
 USE THE SELECT BUTTON TO SELECT EACH OF THE TIME DIGITS TO CONFIRM EACH INDIVIDUAL DIGIT THEN PRESS THE START BUTTON TO CONFIRM WELD TIME



AN AUDIBLE SOUND INDICATES THAT THE BARCODE HAS BEEN READ

POINT THE BARCODE SCANNER AT THE BARCODE LABEL AND ACTIVATE THE SCANNER

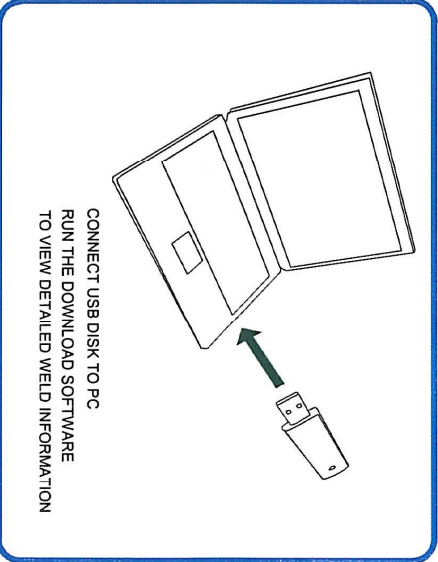
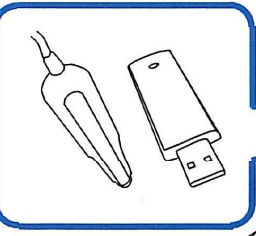
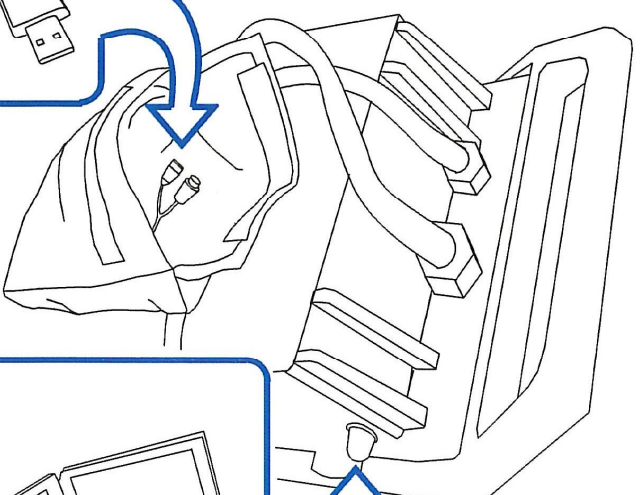


PLACE THE WAND ON THE BARCODE LABEL STARTING AT ONE END SWIPE THE WAND ACROSS THE LENGTH OF THE LABEL

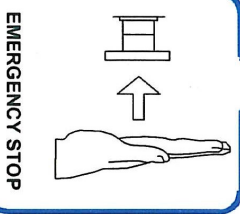
YELLOW BARCODES INDICATE PRE-HEAT CYCLES  
 WHITE BARCODES INDICATE WELD CYCLES



RESETABLE THERMAL CIRCUIT BREAKER



CONNECT USB DISK TO PC  
 RUN THE DOWNLOAD SOFTWARE  
 TO VIEW DETAILED WELD INFORMATION



EMERGENCY STOP

## Comet Operation Process.



~U = 230Vac  
~f = 50.0Hz


Supply voltage and frequency reading



01010101 ✓  
5.27%

Memory capacity used

OR



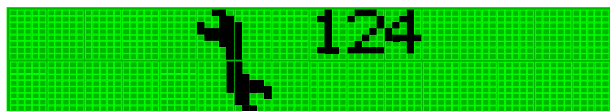
01010101 ✗  
100.00%

Memory capacity full  
(see download records)



11/05/09  
09:17.18

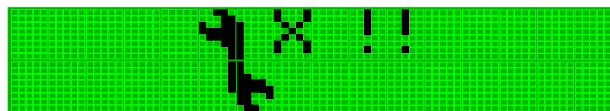
Current date and time



124

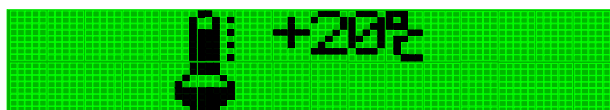
Days left until next service

OR



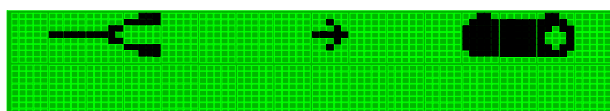
✗ !!

Exceeded service date  
(this will be shown on weld record)



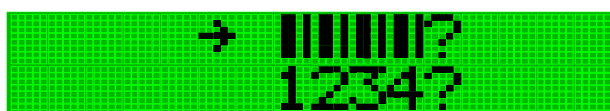
+20°C

Ambient air temperature reading



→

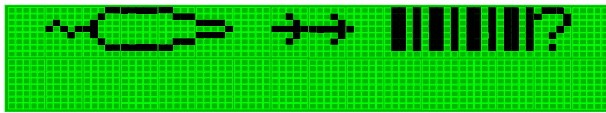
Connect the accessory



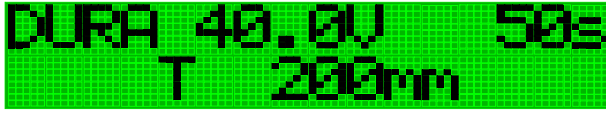
→ [barcode icon] ?  
1234 ?

Select barcode or manual mode.  
Use SELECT to move arrow.  
Use START to select option.

# Comet Operation Process – Barcode Mode.



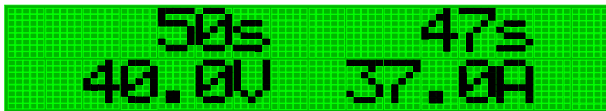
Read the weld barcode  
(white label only)



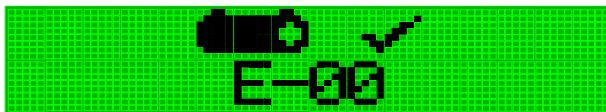
Accessory manufacturer,  
welding voltage, welding  
time and accessory  
type and size shown



Press START to begin the  
welding cycle

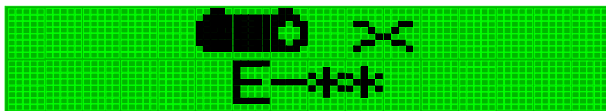


Welding time, time remaining, output voltage  
and current shown during welding cycle

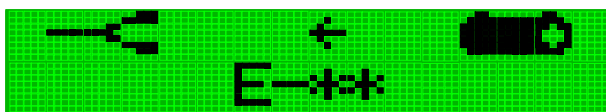


Weld cycle complete

OR



Error during weld cycle  
(refer to table for E-\*\* definition)



Disconnect the output lead from the accessory  
(refer to table for E-\*\* definition)

## Comet Operation Process – Manual Mode.

A green LCD display showing the text "U = 39.5?".

Use SELECT to select welding voltage (8 to 48 volts).  
Press START to continue.

A green LCD display showing "U = 39.5?". Below the text are two navigation icons: a left arrow with an equals sign and a right arrow with an equals sign.

Entered welding voltage shown.  
Press START to confirm or  
SELECT to re-enter.

A green LCD display showing "t = 000s". A small upward-pointing arrow (cursor) is positioned under the first zero.

Use SELECT to input each digit.  
Press START to confirm each  
each digit.

A green LCD display showing "t = 120s". Below the text are two navigation icons: a left arrow with an equals sign and a right arrow with an equals sign.

Entered welding time shown  
Press START to confirm or  
SELECT to re-enter.

A green LCD display showing "39.5V" on the left and "120s" on the right. A right-pointing arrow is between them, with a right arrow with an equals sign icon below it.

Welding time and default welding voltage (39.5V) shown.  
Press START to begin the welding cycle.

A green LCD display showing "120s" and "77s" on the top line, and "39.5V" and "37.0A" on the bottom line.

Welding time, time remaining, output voltage  
and current shown during welding cycle.

A green LCD display showing a battery icon, a checkmark, and the text "E-00" below.

Weld cycle complete.

OR

A green LCD display showing a battery icon, an error symbol (an equals sign with a diagonal slash), and the text "E-\*\*" below.

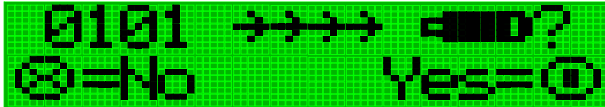
Error during weld cycle  
(refer to table for E-\*\* definition)

A green LCD display showing a plug icon, an error symbol (an equals sign with a diagonal slash), and a battery icon. The text "E-\*\*" is positioned between the plug icon and the battery icon.

Disconnect the output lead from the accessory  
(refer to table for E-\*\* definition)

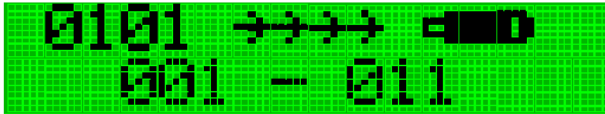
## Comet Operation Process – Download Memory.

Insert the USB disk stick to activate the download process.



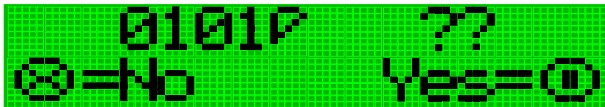
0101 →→→→ [Battery Icon] ?  
⊗=No Yes=⊙

Press START to copy the weld records to the USB disk.  
Press SELECT if records are not to be copied.



0101 →→→→ [Battery Icon]  
001 - 011

The on-board weld records are being copied to the USB disk.



0101? ??  
⊗=No Yes=⊙

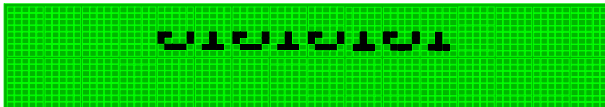
Press START to erase the weld records stored in the on-board memory.  
Press SELECT if the on-board memory is not to be erased.



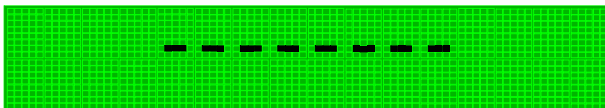
01010101



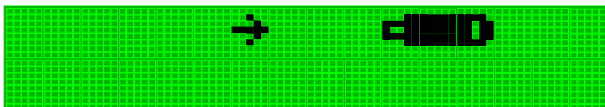
01010101



01010101




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→ [Battery Icon]

Disconnect the USB disk from the socket inside the accessory bag.



Erasing weld records from the internal memory.  
Note: it takes 25 seconds to erase the on-board memory.  
Once erased the weld records are no longer available for downloading.



## Comet Error Code Table.

- E-00** Weld cycle completed with no error.
  - E-01** Supply voltage too high.
  - E-02** Supply voltage too low.
  - E-03** Supply frequency too high.
  - E-04** Supply frequency too low.
  - E-05** Fitting open circuit (disconnected).
  - E-06** Fitting short circuit.
  - E-07** Accessory resistance is greater than barcode resistance upper limit.
  - E-08** Accessory resistance is less than barcode resistance lower limit.
  - E-09** Excessive output voltage (more than 6% of accessory voltage).
  - E-10** High output voltage (more than 1.5% of accessory voltage).
  - E-11** Low output voltage (less than 1.5% of accessory voltage).
  - E-12** Output current surge (accessory heating coil short circuited).
  - E-13** Low output current (output current is less than 0.8 amps).
  - E-14** Operator stop.
  - E-15** Loss of supply voltage (only shown on weld record).
  - E-16** Ambient air temperature too high (default limit of +50 °C).
  - E-17** Ambient air temperature too low (default limit of -10 °C).
  - E-18** Accessory power requirement too high.
  - E-19** Low output current (the output current has fallen more than 90% of the stabilized starting current value within 2 seconds).
- 
- E-100** Barcode information incorrect.
  - E-104** Barcode not recognised.

## Comet Specifications.

Operating mode:	Bar Code Entry Manual Time Entry
Record memory capacity:	2000 welds
Memory download:	USB Flash Disk (supplied with EDU download utility software)
Languages:	Symbolic
Display:	Alphanumeric with backlight
Input voltage:	110 V ac (88 to 132) <b>or</b> 240 V ac (184 to 276)
Input frequency:	50 Hz (40 to 70)
Input current:	1 A to 30 A with 110V input 1 A to 14 A with 240V input
Input power:	110 VA to 3300 VA (apparent)
Power factor:	Apparent 0.72
Output voltage:	8 to 42V ac rms 39.5V ac rms (default in manual mode)
Output stability:	+/- 1.5%
Output current:	1 A ac rms to 60 A ac rms (continuous)
Output power:	40 W to 2880 W
Operating temperature:	-10°C to +45°C
Weight:	20.6 kg
Dimensions:	38,5 x 27,5 x 21.5cm
Protection level:	IP55
Protection class:	Class 1 (equipment must be earthed)
Data output:	USB
Barcode reader type:	PS/2 serial



## 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 fusion cycle.

**Caution.**

This apparatus must be earthed (grounded).

## 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:

Safety of Electrical Products:

- **ISO 12176-2 Equipment for fusion jointing polyethylene systems. Part 2 : Electrofusion.**
- **Italian National Standard UNI 10566**
- **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**



This product conforms to the RoHS directive.



Not to be disposed of in domestic waste.  
Contact your Caldervale Technology Limited or your local authority for the disposal of this product.

Notes:

**Caldervale Technology Limited**  
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