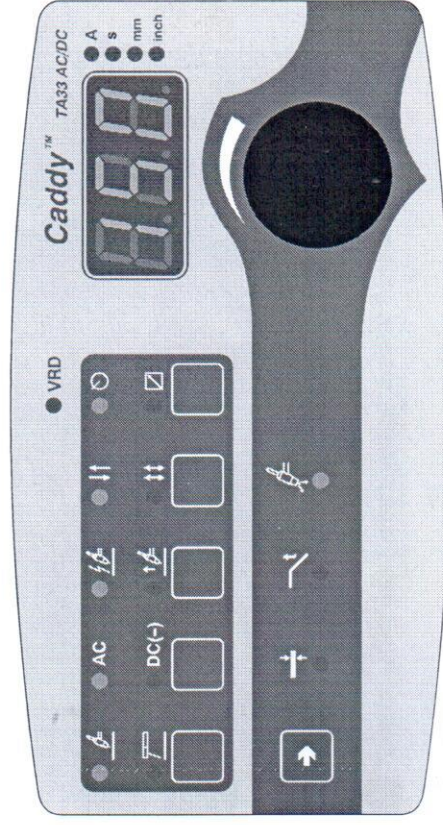


GB



Caddy® TA33 AC/DC



Instruction manual

1 INTRODUCTION

The manual describes the use of **TA33 AC/DC** control panel.

For general information about operation see instruction manual for the power source.
When mains power is supplied the unit runs a self diagnosis of the LEDs and the display, the program version is displayed and in this example the program version is 0.18.



NOTE! Differences in the panel function may occur, depending on in which product it is installed.

Instruction manuals in other languages can be downloaded from the website, www.esab.com.

1.1 Control panel



1 Knob for setting data (current, voltage, material thickness or seconds)

2 Display

3 Choice of welding method TIG or MMA







4 Pushbutton for selection of TIG-welding with:

- Alternating current AC
- Direct current DC -

Pushbutton for selection of MMA-welding with:

- Alternating current AC
- Direct current DC -
- Direct current DC +

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- 5 Choice of HF start  or LiftArc™ 
- 6 Choice of 2-stroke  or 4-stroke 
- 7 Setting from panel  and connecting remote control unit 
- 8 Display of VRD function (reduced open-circuit voltage) is active or inactive.
NOTE! This function works for power sources where it is implemented.
- 9 Choice of current indication (A) or seconds (s) during welding, in the display.
Indication of which unit of measurement is used (mm or inch)
- 10 Choice of parameter for material thickness slope down or gas post flow
- 11 Indication of selected material thickness (mm/inch)
- 12 Indication of selected slope down time (s)
- 13 Indication of selected gas post flow time (s).

Measured value in the display for welding current A, is arithmetic average value = rectified average value.

2 TIG WELDING

2.1 Settings

TIG AC/DC

Function	Setting range	In steps of	Default value
HF / LiftArc™ 2)	HF or LiftArc™	-	LiftArc™
2/4-stroke 2)	2 stroke or 4 stroke	-	2 stroke
Gas pre flow time 1)	0 - 5 s	0.1 s	0.5 s
Material thickness 1)	0.1 - 7.3 mm	0.1 mm	2 mm
Slope up-time 1)	0 - 9.9 s	0.1 s	0.0 s
Slope down time	0 - 10 s	0.1 s	1.0 s
Gas post flow time	0 - 25 s	0.1 s	10.0 s
Current	4 - 220 A	1 A	60 A
Active panel	OFF or ON	-	ON
Remote control unit	OFF or ON	-	OFF
Min current 1)	0-99%	-	0%
Unit of measurement 1)	0 = inch, 1 = mm	-	1

1) These functions are hidden TIG functions, see description point 2.3.
2) These functions cannot be changed while welding is in progress

2.2 Symbol and Function explanations



VRD (Voltage Reducing Device)

The VRD function ensures that the open-circuit voltage does not exceed 35 V when welding is not being carried out. This is indicated by a lit VRD LED.

The VRD function is blocked when the system senses that welding has started.

If the VRD function is activated and the open-circuit voltage exceeds the 35 V limit, this is indicated by an error message (16) appearing in the display and welding cannot be started whilst the error message is displayed.

Contact an authorised ESAB service technician to activate the function.



TIG welding

TIG welding melts the metal of the workpiece, using an arc struck from a tungsten electrode, which does not itself melt. The weld pool and the electrode are protected by shielding gas.

AC Alternating current

The advantages of alternating current are reduced risk of magnetic arc blow and good oxide break-up capacity when welding aluminium.

DC(-) Direct current

A higher current produces a wider weld pool, with better penetration into the workpiece.



Slope up

The slope up function means that, when the TIG arc strikes, the current rises slowly to the set value. This provides 'gentler' heating of the electrode, and gives the welder a chance to position the electrode properly before the set welding current is reached.



Slope down

TIG welding uses 'slope down', by which the current falls 'slowly' over a controlled time, to avoid craters and/or cracks, when a weld is finished.



Gas post-flow

This controls the time during which shielding gas flows after the arc is extinguished.

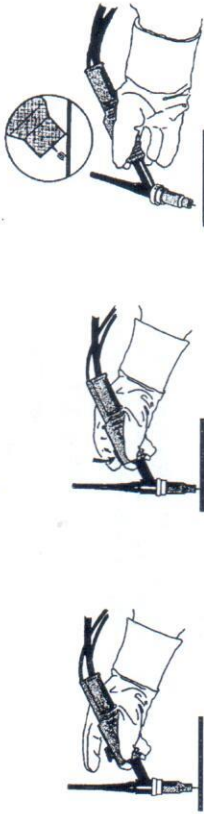


HF

The HF function strikes the arc by means of a spark from the electrode to the workpiece as the electrode is brought closer to the workpiece.

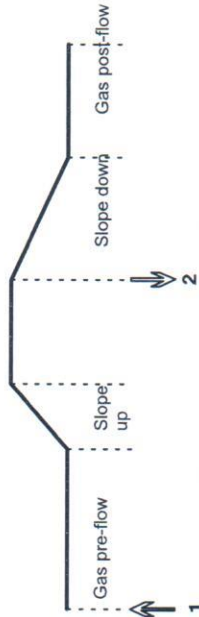
↑ LiftArc™

The LiftArc™ function strikes the arc when the electrode is brought into contact with the workpiece and then lifted away from it.



Striking the arc with LiftArc™. Step 1: the electrode is touched on to the workpiece. Step 2: the trigger switch is pressed, and a low current starts to flow. Step 3: the welder lifts the electrode from the workpiece: the arc strikes, and the current rises automatically to the set value.

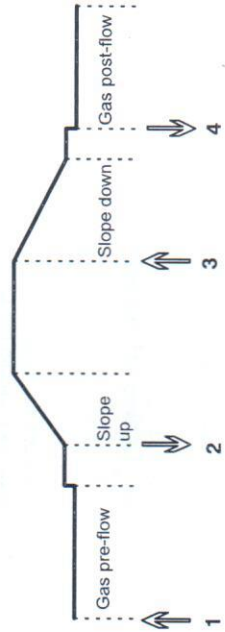
↕ 2 stroke



Functions when using 2 stroke control of the welding torch.

In the 2 stroke control mode, pressing the TIG torch trigger switch (1) starts gas pre-flow (if used) and strikes the arc. The current rises to the set value (as controlled by the slope up function, if in operation). Releasing the trigger switch (2) reduces the current (or starts slope down if in operation) and extinguishes the arc. Gas post-flow follows if it is in operation.

↕ 4 stroke



Functions when using 4 stroke control of the welding torch.

In the 4 stroke control mode, pressing the trigger switch (1) starts gas pre-flow (if used). At the end of the gas pre-flow time, the current rises to the pilot current (a few amperes), and the arc is struck. Releasing the trigger switch (2) increases the current to the set value (with slope up, if in use). When the trigger switch is pressed in (3) the current returns to the set pilot current (with "slope down" if in use). When the trigger switch is released again (4) the arc is extinguished and any gas post flow occurs.

○ Active panel

Settings are made from the control panel.

▢ Remote control unit

Settings are made from the remote control unit.

The remote control unit must be connected to the remote control unit socket on the machine before activation. When the remote control unit is activated the panel is inactive.

2.3 Hidden TIG functions

There are hidden functions in the control panel.




To access the functions, press  for 5 seconds. The display shows a letter and a value. Select function by pressing the right arrow. The knob is used to change the value of the selected function.

Function

- A** = gas pre-flow
0 - 5 s
- b** = slope up
0 - 9.9 s
- C** = unit of measurement
0 = inch, 1 = mm
- I** = min current
0 - 99%

Settings



To leave hidden functions, press  for 5 seconds.

Gas pre-flow

This controls the time during which shielding gas flows before the arc is struck.

Slope up

The slope up function means that, when the TIG arc strikes, the current rises slowly to the set value. This provides 'gentler' heating of the electrode, and gives the welder a chance to position the electrode properly before the set welding current is reached.

Unit of measurement

0 = inch/min, 1 = mm/min, Default value = 1

Min current

Used to set the minimum current for the remote control.

If the max current is 100 A and the min current is to be 50 A, set the concealed function min current to 50%.

If the max current is 100 A and the min current is to be 90 A, set the min current to 90%.

3 MMA WELDING

3.1 Settings

Function	Setting range	In steps of	Default value
Current	16 - max A ¹⁾	1 A	100 A
Hotstart ¹⁾	0 - 99	1	0
Arc force ¹⁾	0 - 99	1	5
Drop welding ¹⁾	0=OFF or 1=ON	-	OFF
Welding regulator ArcPlus™ ¹⁾	1=OFF or 0=ON	-	ON
Active panel	OFF or ON	-	ON
Remote control unit	OFF or ON	-	OFF
Min current ¹⁾	0-99%	-	0%

¹⁾ These functions are hidden functions, see description point 3.3.

^{*)} The setting range is dependent on the power source used.

3.2 Symbol and Function explanations



VRD (Voltage Reducing Device)

The VRD function ensures that the open-circuit voltage does not exceed 35 V when welding is not being carried out. This is indicated by a lit VRD LED.

The VRD function is blocked when the system senses that welding has started.

If the VRD function is activated and the open-circuit voltage exceeds the 35 V limit, this is indicated by an error message (16) appearing in the display and welding cannot be started whilst the error message is displayed.

Contact an authorised ESAB service technician to activate the function.

MMA welding



MMA welding may also be referred to as welding with coated electrodes. Striking the arc melts the electrode, and its coating forms protective slag.

During MMA welding, it is possible to weld with reversed polarity without reconnection of welding cables on the power source.

Select MMA welding  and then press **4** :

- AC, for alternating current
- DC (-) for direct current with negative polarity on the electrode
- No LED is on, for direct current with positive polarity on the electrode



Active panel

Settings are made from the control panel.



Remote control unit

Settings are made from the remote control unit.

The remote control unit must be connected to the remote control unit socket on the machine before activation. When the remote control unit is activated the panel is inactive.

3.3 Hidden MMA functions

There are hidden functions in the control panel.




To access the functions, press  for 5 seconds. The display shows a letter and a value. Select function by pressing the right arrow. The knob is used to change the value of the selected function.

Function

- C** = Arc Force
0 - 99%
- d** = drop welding
0 = OFF; 1 = ON
- F** = welding regulator type ArcPlus™
0 = OFF; 1 = ON
- H** = Hotstart
0 - 99%
- I** = min current
0 - 99%

Settings

To leave hidden functions, press  for 5 seconds.



Arc force

The arc force is important in determining how the current changes in response to a change in the arc length. A lower value gives a calmer arc with less spatter.

Drop welding

Drop welding can be used when welding with stainless electrodes. The function involves alternately striking and extinguishing the arc in order to achieve better control of the supply of heat. The electrode needs only to be raised slightly to extinguish the arc.

Welding regulator ArcPlus™

Welding regulator ArcPlus™ is a new type of control that produces a more intense, more concentrated and calmer arc. It recovers more quickly after a spot short-circuit, which reduces the risk of the electrode becoming stuck. Most welding applications obtain the best results with ArcPlus™ ON (0).



Hot start

Hot start increases the weld current for an adjustable time at the start of welding, thus reducing the risk of poor fusion at the beginning of the joint.

Min current

Used to set the minimum current for the remote control.

If the max current is 100 A and the min current is to be 50 A, set the concealed function min current to 50%.

If the max current is 100 A and the min current is to be 90 A, set the min current to 90%.

4 FAULT CODES

The fault code is used to indicate that a fault has occurred in the equipment. It is indicated in the display by an E followed by a fault code number.

A unit number is displayed to indicate which unit has generated the fault.

Fault code numbers and unit numbers are shown alternately.

If several faults have been detected only the code for the last occurring fault is displayed. Press any function button or turn the knob to remove the fault indication from the display.

NOTE! If the remote control is activated, deactivate the remote control by pressing  to remove the fault indication.

4.1 List of fault codes

U 0 = welding data unit U 2 = power source U 5 = AC-unit
U 1 = cooling unit U 4 = remote control unit

4.2 Fault code descriptions

Fault code	Description
E 4 U 0 U 5	5 V power supply low The power supply voltage is too low. The current welding process is stopped and starting is prevented. Action: Turn off the mains power supply to reset the unit. Send for a service technician if the fault persists.
E 6 U 1 U 2 U 5	High temperature The thermal overload cut-out has tripped. The current welding process is stopped and cannot be restarted until the temperature has fallen. Action: Check that the cooling air inlets or outlets are not blocked or clogged with dirt. Check the duty cycle being used, to make sure that the equipment is not being overloaded.
E 7 U 5	High temperature The thermal overload cut-out has tripped. The current welding process is stopped and cannot be restarted until the temperature has fallen. Action: Check that the cooling air inlets or outlets are not blocked or clogged with dirt. Check the duty cycle being used, to make sure that the equipment is not being overloaded.
E 8 U 1 U 5	Faulty 24 V/15 V supply voltage The supply voltage is too high or too low. The current welding process is stopped and starting is prevented. Action: Turn off the mains power supply to reset the unit. Send for a service technician if the fault persists.
E 9 U 1 U 5	Faulty -11 V supply voltage The supply voltage is too high or too low. The current welding process is stopped and starting is prevented. Action: Turn off the mains power supply to reset the unit. Send for a service technician if the fault persists.
E 12 U 0 U 1 U 4 U 5	Communication error (warning) Less serious interference on the CAN bus. Action: Check that there are no faulty units connected on the CAN bus. Check the cables. Send for a service technician if the fault persists.
E 14 U 0	Communication error (bus off) Serious interference on the CAN bus. Action: Check that there are no faulty units connected on the CAN bus. Check the cables. Send for a service technician if the fault persists.
E 15 U 0	Communication problems (lost message) The system's CAN bus has been overloaded. Action: Send for a service technician if the fault persists.
E 16 U 2	High open-circuit voltage VRD Open circuit voltage has been too high. Action: Turn off the mains power supply to reset the unit. Send for a service technician if the fault persists.
E 19 U 0	Memory error Content of existing memory is incorrect. Basic data will be used. Action: Turn off the mains power supply to reset the unit. Send for a service technician if the fault persists.

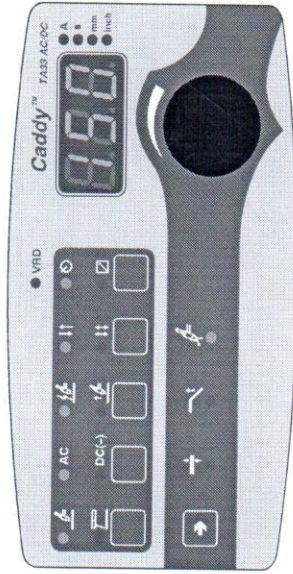
Fault code	Description
E 20 U 2	High inductance in the welding circuit The power source cannot produce the desired current because the measured inductance in the welding circuit is too high. The fault indication is reset if the inductance reading receives a sufficiently low value at weld start. Resetting can also be achieved by turning off the power. Action: Use shorter welding cables and ensure that the cables are not coiled up. Place the welding cable and connector cable next to each other. If possible, the inductance can be reduced by welding with a shorter arc Send for a service technician if the fault persists.
E 25 U 0	Lost contact with AC-unit The control panel has lost contact with the AC unit. The current welding process stops. Action: Send for a service technician if the fault persists.
E 26 U 0	Program operating fault Something has prevented the processor from performing its normal tasks in the program. The program restarts automatically. The current welding process will be stopped. This fault does not disable any functions. Action: Send for a service technician if the fault persists.
E 29 U 0 U 1	No cooling water flow The flow monitor switch has tripped. The current welding process is stopped and starting is prevented. Action: Check the cooling water circuit and the pump.
E 41 U 0	Lost contact with the cooling unit The welding data unit has lost contact with the cooling unit. The welding process stops. Action: Check the wiring. If the fault persists, send for a service technician.

5 ORDERING SPARE PARTS

Spare parts may be ordered through your nearest ESAB dealer, see the last page of this publication.

TA33 AC/DC

Order number



Ordering no.	Denomination
0460 250 881	Control panel Caddy™ TA33 AC/DC
0460 226 070	Instruction manual SE
0460 226 071	Instruction manual DK
0460 226 072	Instruction manual NO
0460 226 073	Instruction manual FI
0460 226 074	Instruction manual GB
0460 226 075	Instruction manual DE
0460 226 076	Instruction manual FR
0460 226 077	Instruction manual NL
0460 226 078	Instruction manual ES
0460 226 079	Instruction manual IT
0460 226 080	Instruction manual PT
0460 226 081	Instruction manual GR
0460 226 082	Instruction manual PL
0460 226 083	Instruction manual HU
0460 226 084	Instruction manual CZ
0460 226 085	Instruction manual SK
0460 226 086	Instruction manual RU
0460 226 087	Instruction manual US
0460 226 089	Instruction manual EE
0460 226 090	Instruction manual LV
0460 226 091	Instruction manual SL
0460 226 092	Instruction manual LT
0460 226 093	Instruction manual CN

Instruction manuals and the spare parts list are available on the Internet at www.esab.com