GB

Origo™ TA23

Instruction manual

0460 032 174 GB 100702

Valid from program version 1.01

GB

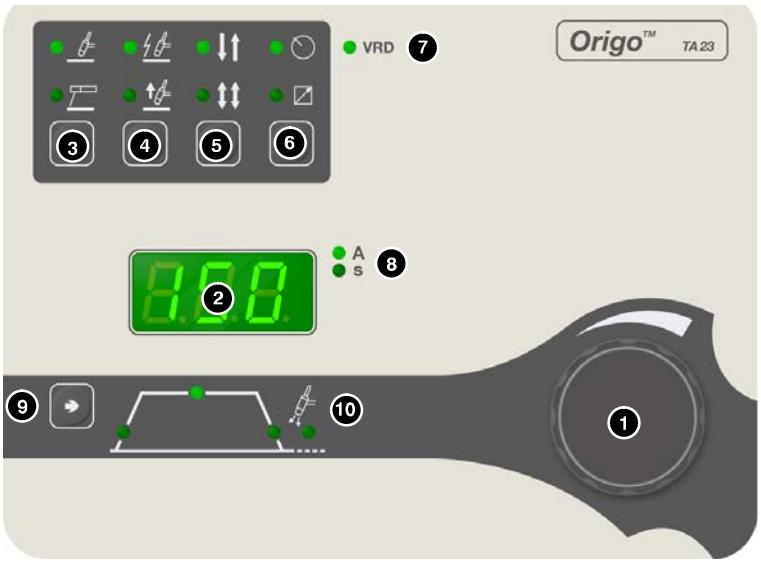
1 INTRODUCTION

The manual describes the use of **TA23** control panel.

For general information about operation see user's instructions 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 0.18A

1.1 Control panel TA23



1. Knob for setting current (A) or time (s)
2. Display
3. Choice of welding method TIG or MMA
4. Choice of HF start or LiftArc™
5. Choice of 2-stroke or 4-stroke
6. Setting from panel or for connecting remote control unit
7. Display of VRD function (*reduced open-circuit voltage*) is active or inactive.
8. Indication of which parameter is shown in the display (current or seconds)
9. Choice of setting parameter, see page 4
10. Indication of selected setting parameter, see page 4

2 TIG WELDING

2.1 Settings

TIG without pulsing

Function	Setting range
HF / LiftArc ™ [1]	HF or LiftArc™
2/4-stroke [1]	2 stroke or 4 stroke
Gas pre flow time [2]	0 -5 s
Slope up-time	0 -10 s
Slope down time	0 -10 s
Gas post flow time	0 -25 s
Current	4 A -max [3]
Active panel	OFF or ON
Remote control unit	OFF or ON
VRD	-

[1] *These functions cannot be changed while welding is in progress*

[2] *These functions are hidden TIG functions, see description point 2.3.*

[3] *The setting range is dependent on the power source used.*

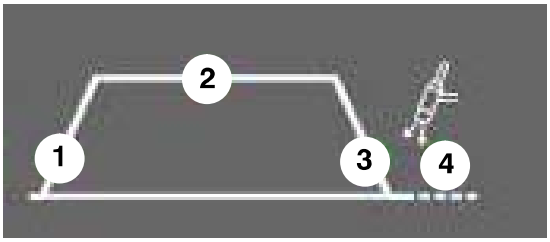
2.2 Symbol and Function explanations

TIG welding

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

Parameter settings

1. Slope up
2. Welding current
3. Slope down
4. Gas post flow time



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.

Welding current

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

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

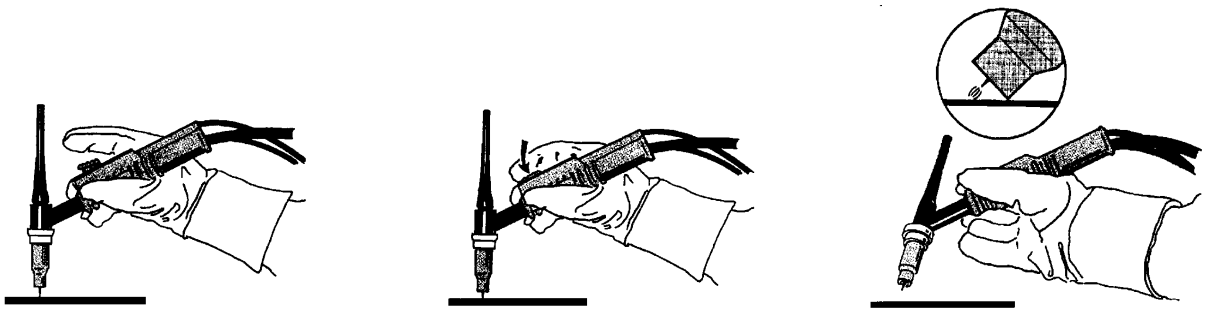
This controls the time during which shielding gas flows after the arc is extinguished.

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.

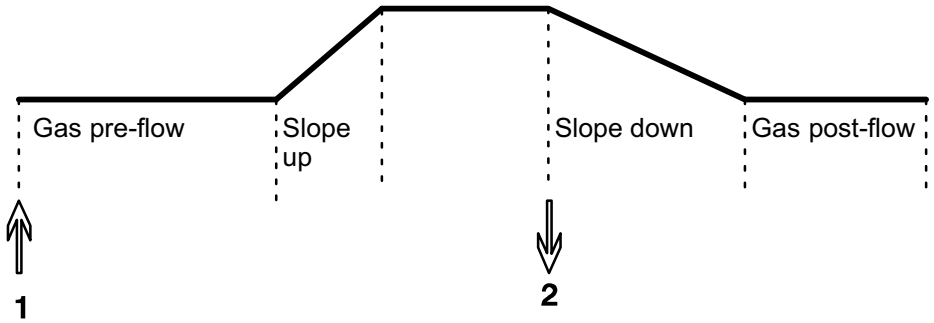
LiftArc™

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



Striking the arc with the LiftArc function ™. 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.

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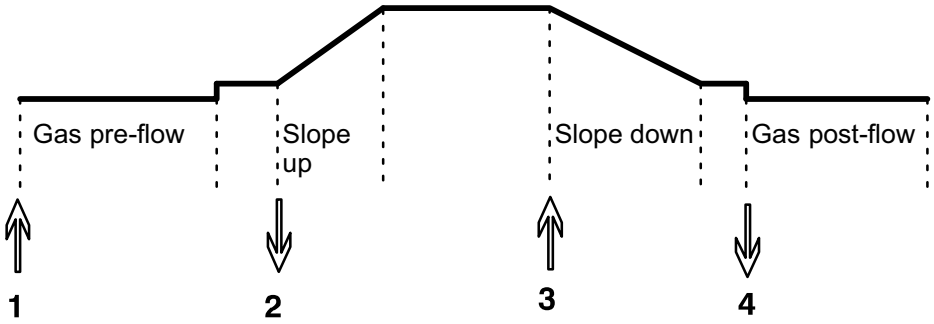
4 stroke



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 ampere), 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.

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.

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.

To access hidden functions, press  for 5 seconds.

Control panel TA23

Function	Settings
A = gas pre-flow	0 - 5 s
I = min current	0 - 99%

 **Gas pre-flow**

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

Min current

Used to set the minimum current for the remote control T1 Foot CAN.

If the max current is 100 A and the min current is to be 50 A, set the hidden 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
Current	16 A -max [1]
Hotstart [2]	0 - 99
Arc force [2]	0 - 99
Drop welding [2]	0=OFF or 1=ON
Weld regulator [2]	1=ArcPlus™ II or 0=ArcPlus™
Active panel	OFF or ON
Remote control unit	OFF or ON
VRD	-

[1] *The setting range is dependent on the power source used.*

[2] *These functions are hidden functions, see description point 3.3.*

3.2 Symbol and Function explanations

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.

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.

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.

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.

To access hidden functions, press  for 5 seconds.

Control panel TA23

Function	Settings
C = Arc Force	0 - 99
d = drop welding	**0** = OFF; **1** = ON
F = regulator type	**1** = ArcPlus™ II; **0** = ArcPlus™
H = Hotstart	0 - 99

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

Welding regulator is a 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.

- ArcPlus™ (0) is recommended with basic type of electrode
- ArcPlus™ II (1) is recommended with rutile and cellulosic type of electrode

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.

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 1	= cooling unit	**U 4**	= remote control unit

4.2 Fault code descriptions

Below are described event codes at which the user himself can take corrective action. If any other code is shown, send for a service technician.

Fault code	Description
E 5	**Intermediate DC voltage outside limits** The mains power supply is too high or too low. Too high a voltage can be due to severe transients on the mains power supply or to a weak power supply (high inductance of the mains power supply or a phase missing). **Action:** Send for a service technician.
E 6	**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 12	**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	**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 16	**High open-circuit voltage** 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 29	**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	**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. Send for a service technician if the fault persists.

5 ORDERING SPARE PARTS

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

Ordering number

Ordering no.	Denomination
0459 773 884	Control panel Origo™ TA23
0460 032 170	Instruction manual SE
0460 032 171	Instruction manual DK
0460 032 172	Instruction manual NO
0460 032 173	Instruction manual FI
0460 032 174	Instruction manual GB
0460 032 175	Instruction manual DE
0460 032 176	Instruction manual FR
0460 032 177	Instruction manual NL
0460 032 178	Instruction manual ES
0460 032 179	Instruction manual IT
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0460 032 181	Instruction manual GR
0460 032 182	Instruction manual PL
0460 032 183	Instruction manual HU
0460 032 184	Instruction manual CZ
0460 032 185	Instruction manual SK
0460 032 186	Instruction manual RU
0460 032 189	Instruction manual EE
0460 032 190	Instruction manual LV
0460 032 191	Instruction manual SI
0460 032 192	Instruction manual LT
0459 839 003	Spare parts list

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

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