GB

Origo™ TA24

Instruction manual

0459 945 174 GB 100820

Valid from program version 1.01

GB

1 INTRODUCTION

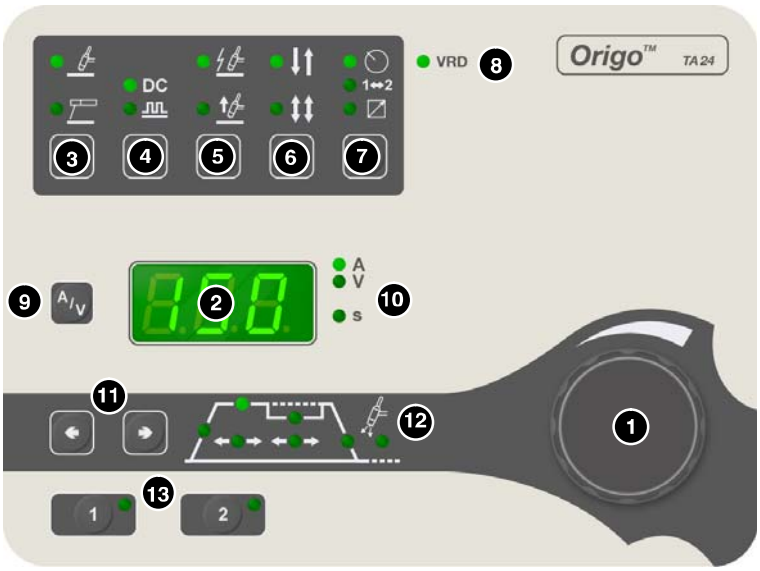
The manual describes use of **TA24** control panel.

For general information about operation see the 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

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

1.1 Control panel TA24



1. Knob for setting data: current (A), voltage (V) or seconds (s)
2. Display
3. Choice of welding method TIG or MMA
4. Choice of TIG welding with constant current DC or
   TIG welding with pulsed current
5. Choice of HF start or LiftArc™
6. Choice of 2-stroke or 4-stroke
7. Setting from panel , program change with torch trigger switch 1↔2 or
   connecting remote control unit

bi13d1ea

8 Display of VRD function (*reduced open-circuit voltage*) is active or inactive. *Not valid for all power sources.*

9 Choice of current indication (A) or voltage indication (V) during welding, in the display

10 Indication of which parameter is shown in the display (current, voltage or seconds)

11 Choice of setting parameter

12 Indication of selected setting parameter, see page 5

13 Buttons for weld data memory. See page 11

2 TIG WELDING

2.1 Settings

TIG without pulsing and TIG with 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
Changing trigger data	OFF or ON
Remote control unit	OFF or ON
Min current remote control [2]	0 - 99%
VRD	-

TIG with pulsing

Function	Setting range
Pulse current	4 A -max [3]
Pulse time	0.01 -2.5 s
Micro pulse [2]	0.001 -0.250 s
Background current	4 A -max [3]
Background time	0.01 -2.5 s
Micro pulse [2]	0.001 -0.250 s

[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.

DC, Direct current

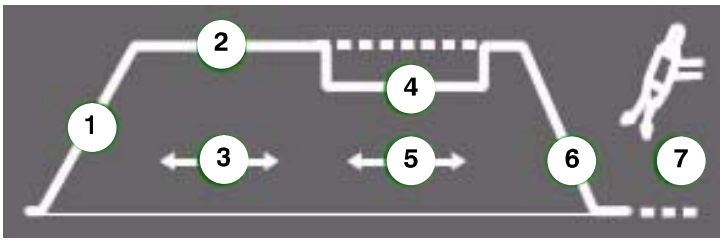
A higher current produces a wider weld pool, with better penetration into the workpiece.

Pulsed current

Pulsing is used for improved control of the weld pool and the solidification process. The pulse frequency is set so slow that the weld pool has time to solidify at least partially between each pulse. In order to set pulsing, four parameters are required: pulse current, pulse time, background current and background time.

Parameter settings

1. Slope up
2. Welding current
3. Pulse time
4. Background current
5. Background time
6. Slope down
7. Gas post flow time

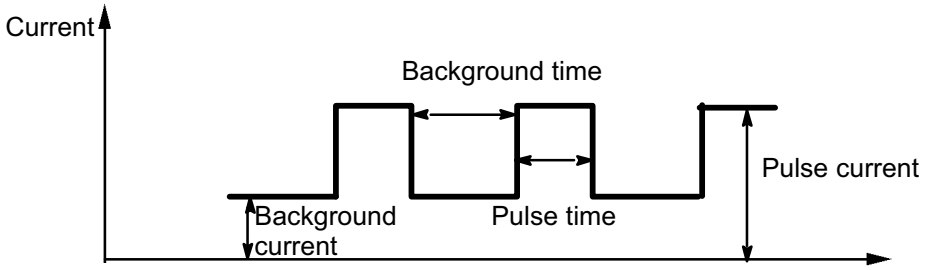


Slope up

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.

Pulse current

The higher of the two current values in the event of pulsed current.



TIG welding with pulsing.

Pulse time

The time the pulse current is *on* during a pulse period.

Background current

The lower of the two current values in the event of pulsed current.

Background time

Time for background current which, along with the time for pulse current, gives the pulse period.

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

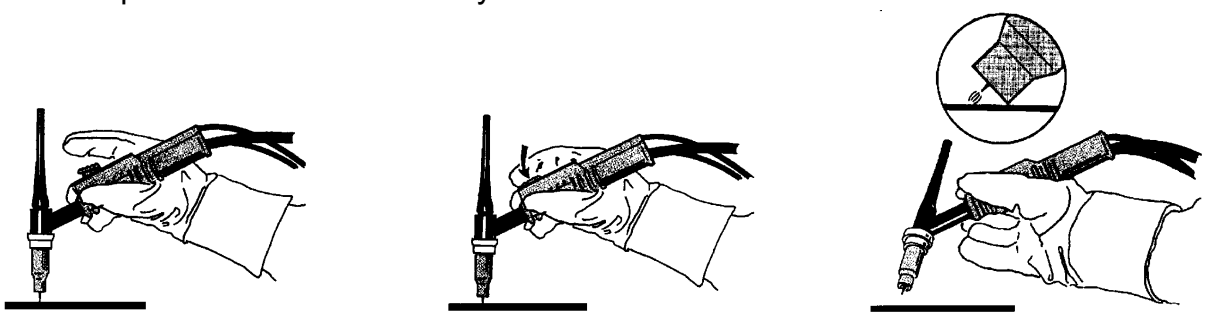
This controls the time during which shielding gas flows after the arc is extinguished.

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.

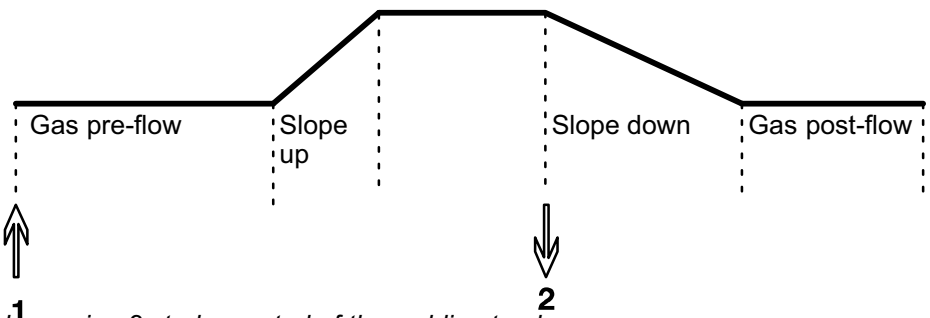
LiftArc™

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 work piece. Step 2: the trigger switch is pressed, and a low current starts to flow. Step 3: the welder lifts the electrode from the work piece: the arc strikes, and the current rises automatically to the set value.

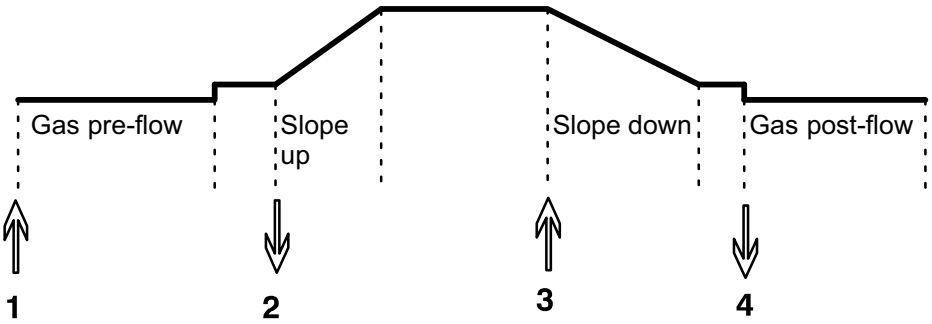
2 stroke



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 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.

Changing trigger data

This function permits changing between different welding data memories by a double press on the trigger of the welding gun. *Only applies for TIG welding.*

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.

For other power sources 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 concealed functions, press  for 5 seconds.

Control panel TA24

Function	Settings
A = gas pre-flow	0 - 5 s
b = micro pulse	**0** = OFF; **1** = ON
I = min current	0 - 99%

 **Gas pre-flow**

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

Micro pulse

In order to select micro pulse, the machine must be in the pulsed current function  . The value for pulse time and background current is normally 0.01 – 2.50 seconds. By using the micro pulse, the time can go down to 0.001 seconds. When the micro pulse function is active, times that are shorter than 0.25 seconds are shown in the display without decimal points.

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 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%.

This function also applies when setting background current with pulsed TIG.

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
Min current remote control [2]	0 - 99%
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.

For other power sources 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 concealed functions, press  for 5 seconds.

Control panel TA24

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
I = min current	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.

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 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%.

GB

4 WELDING DATA MEMORY

Two different welding data programs can be stored in the control panel memory.

Press button  or  for 5 seconds to store the welding data in the memory. The welding data is stored when the green indicator lamp starts to flash.

To switch between the different welding data memories press button  or  .

The welding data memory has a back-up battery so that the settings remain even if the machine has been switched off.

5 FAULT CODES

The fault code is used to indicate that a fault has occurred in the equipment. It is given in the display with 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.

5.1 List of fault codes

U 0	= weld current unit	**U 2**	= power source
U 1	= cooling unit	**U 4**	= remote control unit

5.2 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 to 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 to 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 weld data unit has lost contact with the cooling unit. The welding process is stopped. **Action:** Check the wiring. If the fault persists, send for a service technician.

6 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 773 883	Control panel Origo™ TA24
0459 945 170	Instruction manual SE
0459 945 171	Instruction manual DK
0459 945 172	Instruction manual NO
0459 945 173	Instruction manual FI
0459 945 174	Instruction manual GB
0459 945 175	Instruction manual DE
0459 945 176	Instruction manual FR
0459 945 177	Instruction manual NL
0459 945 178	Instruction manual ES
0459 945 179	Instruction manual IT
0459 945 180	Instruction manual PT
0459 945 181	Instruction manual GR
0459 945 182	Instruction manual PL
0459 945 183	Instruction manual HU
0459 945 184	Instruction manual CZ
0459 945 185	Instruction manual SK
0459 945 189	Instruction manual EE
0459 945 190	Instruction manual LV
0459 945 191	Instruction manual SI
0459 945 192	Instruction manual LT
0459 945 186	Instruction manual RU
0459 839 024	Spare parts list

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

NOTES

NOTES

ESAB subsidiaries and representative offices

Europe

AUSTRIA
ESAB Ges.m.b.H
Vienna-Liesing
Tel: +43 1 888 25 11
Fax: +43 1 888 25 11 85

BELGIUM
S.A. ESAB N.V.
Brussels
Tel: +32 2 745 11 00
Fax: +32 2 745 11 28

THE CZECH REPUBLIC
ESAB VAMBERK s.r.o.
Vamberk
Tel: +420 2 819 40 885
Fax: +420 2 819 40 120

DENMARK
Aktieselskabet ESAB
Herlev
Tel: +45 36 30 01 11
Fax: +45 36 30 40 03

FINLAND
ESAB Oy
Helsinki
Tel: +358 9 547 761
Fax: +358 9 547 77 71

FRANCE
ESAB France S.A.
Cergy Pontoise
Tel: +33 1 30 75 55 00
Fax: +33 1 30 75 55 24

GERMANY
ESAB GmbH
Solingen
Tel: +49 212 298 0
Fax: +49 212 298 218

GREAT BRITAIN
ESAB Group (UK) Ltd
Waltham Cross
Tel: +44 1992 76 85 15
Fax: +44 1992 71 58 03

ESAB Automation Ltd
Andover
Tel: +44 1264 33 22 33
Fax: +44 1264 33 20 74

HUNGARY
ESAB Kft
Budapest
Tel: +36 1 20 44 182
Fax: +36 1 20 44 186

ITALY
ESAB Saldatura S.p.A.
Mesero (Mi)
Tel: +39 02 97 96 81
Fax: +39 02 97 28 91 81

THE NETHERLANDS
ESAB Nederland B.V.
Amersfoort
Tel: +31 33 422 35 55
Fax: +31 33 422 35 44

NORWAY
AS ESAB
Larvik
Tel: +47 33 12 10 00
Fax: +47 33 11 52 03

POLAND
ESAB Sp.zo.o.
Katowice
Tel: +48 32 351 11 00
Fax: +48 32 351 11 20

PORTUGAL
ESAB Lda
Lisbon
Tel: +351 8 310 960
Fax: +351 1 859 1277

SLOVAKIA
ESAB Slovakia s.r.o.
Bratislava
Tel: +421 7 44 88 24 26
Fax: +421 7 44 88 87 41

SPAIN
ESAB Ibérica S.A.
Alcalá de Henares (MADRID)
Tel: +34 91 878 3600
Fax: +34 91 802 3461

SWEDEN
ESAB Sverige AB
Gothenburg
Tel: +46 31 50 95 00
Fax: +46 31 50 92 22

ESAB international AB
Gothenburg
Tel: +46 31 50 90 00
Fax: +46 31 50 93 60

SWITZERLAND
ESAB AG
Dietikon
Tel: +41 1 741 25 25
Fax: +41 1 740 30 55

North and South America

ARGENTINA
CONARCO
Buenos Aires
Tel: +54 11 4 753 4039
Fax: +54 11 4 753 6313

BRAZIL
ESAB S.A.
Contagem-MG
Tel: +55 31 2191 4333
Fax: +55 31 2191 4440

CANADA
ESAB Group Canada Inc.
Missisauga, Ontario
Tel: +1 905 670 02 20
Fax: +1 905 670 48 79

MEXICO
ESAB Mexico S.A.
Monterrey
Tel: +52 8 350 5959
Fax: +52 8 350 7554

USA
ESAB Welding & Cutting Products
Florence, SC
Tel: +1 843 669 44 11
Fax: +1 843 664 57 48

Asia/Pacific

CHINA
Shanghai ESAB A/P
Shanghai
Tel: +86 21 2326 3000
Fax: +86 21 6566 6622

INDIA
ESAB India Ltd
Calcutta
Tel: +91 33 478 45 17
Fax: +91 33 468 18 80

INDONESIA
P.T. ESABindo Pratama
Jakarta
Tel: +62 21 460 0188
Fax: +62 21 461 2929

JAPAN
ESAB Japan
Tokyo
Tel: +81 45 670 7073
Fax: +81 45 670 7001

MALAYSIA
ESAB (Malaysia) Snd Bhd
USJ
Tel: +603 8023 7835
Fax: +603 8023 0225

SINGAPORE
ESAB Asia/Pacific Pte Ltd
Singapore
Tel: +65 6861 43 22
Fax: +65 6861 31 95

SOUTH KOREA
ESAB SeAH Corporation
Kyungnam
Tel: +82 55 269 8170
Fax: +82 55 289 8864

UNITED ARAB EMIRATES
ESAB Middle East FZE
Dubai
Tel: +971 4 887 21 11
Fax: +971 4 887 22 63

Representative offices

BULGARIA
ESAB Representative Office
Sofia
Tel/Fax: +359 2 974 42 88

EGYPT
ESAB Egypt
Dokki-Cairo
Tel: +20 2 390 96 69
Fax: +20 2 393 32 13

ROMANIA
ESAB Representative Office
Bucharest
Tel/Fax: +40 1 322 36 74

RUSSIA
LLC ESAB
Moscow
Tel: +7 095 543 9281
Fax: +7 095 543 9280

LLC ESAB
St Petersburg
Tel: +7 812 336 7080
Fax: +7 812 336 7060

Distributors

For addresses and phone numbers to our distributors in other countries, please visit our home page

www.esab.com

ESAB AB
SE-695 81 LAXÅ
SWEDEN
Phone +46 584 81 000

www.esab.com

081016