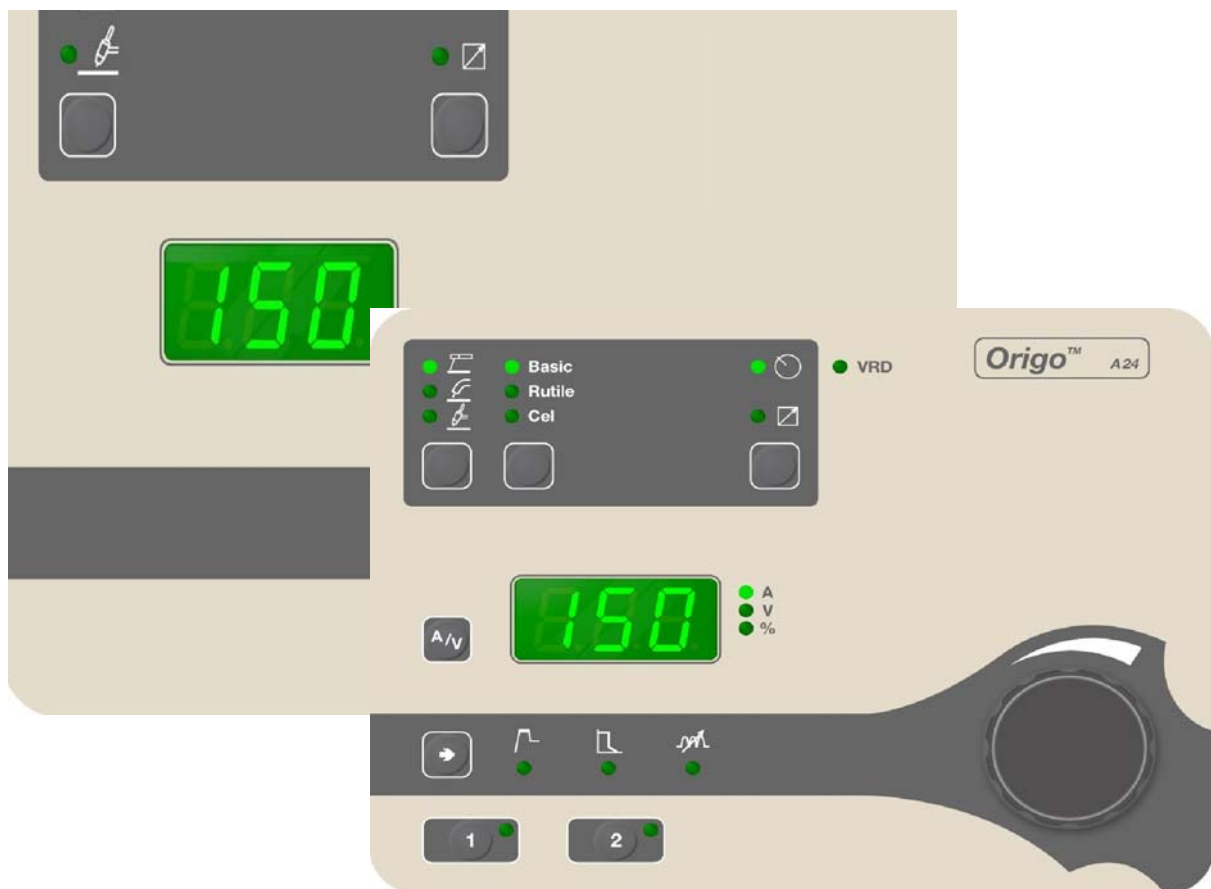


# Origo™ A22, A24



Instruction manual

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# 1 INTRODUCTION

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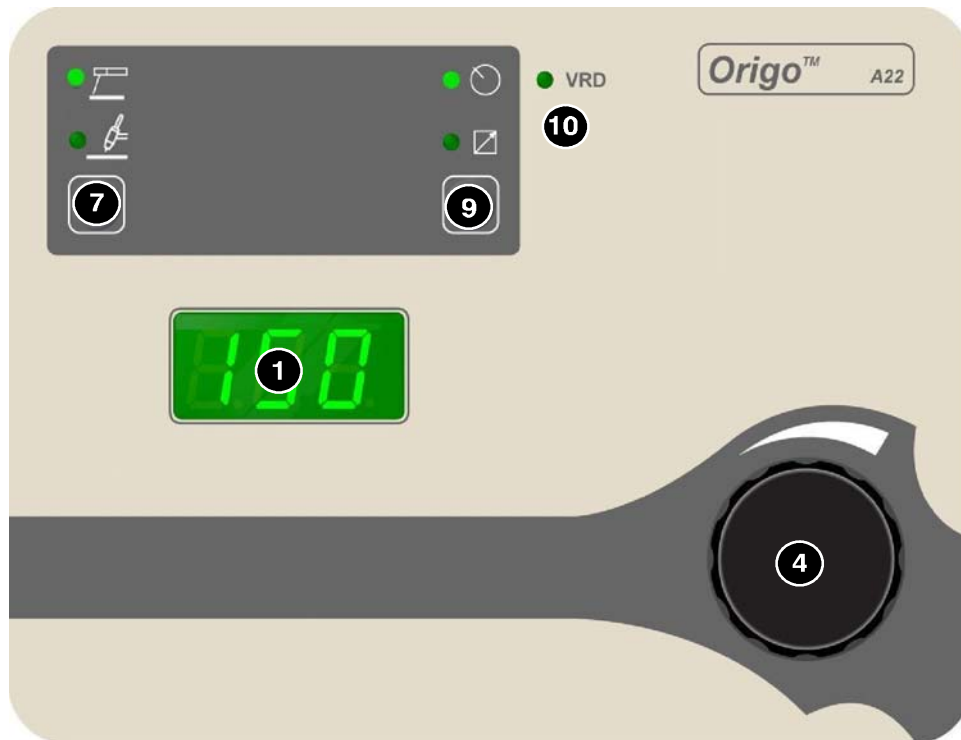
The manual describes use of **A22** and **A24** control panels.





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 soft ware version is displayed and in this example the soft ware version is 0.18.










## 1.1 Control panel A22



- 1** Display
- 4** Knob for setting the current
- 7** Choice of welding method MMA  or TIG 
- 9** Setting from panel  and connecting remote control unit 
- 10** Display of VRD function (reduced open-circuit voltage) *Not valid for all power sources.*

## 1.2 Control panel A24



- 1 Display
- 2 Indication of which parameter is shown in the display (current, voltage or percent)
- 3 Choice of current indication (A) or voltage indication (V) during welding, in the display
- 4 Knob for setting data (current, voltage or percent)
- 5 Buttons for weld data memory settings. See section 5 .
- 6 Button for choosing parameters "Hot start"  or arc pressure "Arc force"   
 when MMA welding or inductance  when MIG/MAG welding
- 7 Selection of welding method MMA , MIG/MAG, FCAW-S  or TIG 
- 8 Choice of electrode type "Basic", "Rutile" or "Cellulose" when MMA welding
- 9 Setting from panel  and connecting remote control unit 
- 10 Display of VRD function (reduced open-circuit voltage) *Not valid for all power sources.*

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## 2 MMA WELDING

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### 2.1 Settings

Function	Setting range	A22	A24
Current	4 A - max <sup>1)</sup>	X	X
Active panel	0 = Off 1 = On	X	X
Remote control unit	0 = Off 1 = On	X	X
Hot start	0 - 99%	X <sup>2)</sup>	X
Arc force	0 - 99%	X <sup>2)</sup>	X
Welding data memory <sup>3)</sup>	1 and 2		X
Drop welding	0 = Off 1 = On	X <sup>2)</sup>	X <sup>2)</sup>
VRD	-	X	X

<sup>1)</sup> The setting range is dependent on the power source used.

<sup>2)</sup> Hidden function

<sup>3)</sup> See chapter 5

### 2.2 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.

#### Setting current

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



#### 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.



#### Hot Start

"Hot start" increases the welding current during a fixed period at the start of the welding process. Set the start current at a % of the set welding current using the knob. This reduces the risk of incomplete fusion at the start of the weld.



## 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.



## VRD (Voltage Reduction 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 deactivated when the system senses that welding has started.

If the VRD function is activated and 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.

The VRD function is not active (LED has gone out) on delivery. Contact an authorised ESAB service technician to activate the function.

## Air carbon arc gouging

When arc gouging, choose  the FCAW-S icon on the panel and adjust with


the knob to achieve the recommended current value for the chosen carbon electrode.

## 2.3 Hidden functions MMA welding


### Control panel A22

Function	Settings
<b>C</b> = ArcForce	0 - 99%
<b>d</b> = Drop welding	0 = Off 1 = On
<b>H</b> = Hotstart	0 - 99%



To access the functions in A22, use the method button, . Keep the button depressed for 5 seconds. The display shows a letter and a value. The correct function is selected by pressing the buttons. The knob is used to change the value of the selected function.



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.




"Hot start" increases the welding current during a fixed period at the start of the welding process. Set the start current at a % of the set welding current using the knob. This reduces the risk of incomplete fusion at the start of the weld.


## Control panel A24

Function	Settings
d = Drop welding	0 = Off 1 = On



To access the function in A24, use button . Keep the button depressed for 5 seconds. The display shows a letter and a value. The knob is used to change the value of the function.



To leave hidden functions, press  for 5 seconds.

## 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.

---

# 3 MIG/MAG WELDING

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## 3.1 Settings

MIG/MAG functions are only available in the A24 panel.

Function	Setting range
Inductance	0 - 100
Active panel	0 = Off 1 = On
Remote control unit	0 = Off 1 = On
Welding data memory <sup>1)</sup>	1 and 2

<sup>1)</sup> See chapter 5

*Note: VRD can not be activated in MIG/MAG mode.*

## 3.2 Symbol and Function explanations

### MIG/MAG and FCAW-S welding

During MIG/MAG welding, an arc melts a continuously supplied wire. The weld pool is protected by shielding gas.

During FCAW-S a powder filled cored wire is used instead of gas to protect the weld pool. The power source provides a Constant Voltage (CV), where the open-circuit voltage of 16.5 - 60 V DC manages to drive the Mobile wire feed units. When welding with these wire feed units, the wire feed is set on the wire feed unit and the voltage on the power source panel.

### Inductance

Higher inductance results in a wider weld pool and less spatter. Lower inductance produces a harsher sound but a stable, concentrated arc.

Control of the inductance is especially important when short arc welding.

### 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.

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## 4 TIG WELDING

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### 4.1 Settings

Function	Setting range	A22	A24
Current	3 A - max <sup>1)</sup>	x	x
Active panel	0 = Off 1 = On	x	x
Remote control unit	0 = Off 1 = On	x	x
Welding data memory <sup>2)</sup>	1 and 2		x
Min current	0 - 99%	x <sup>3)</sup>	x <sup>3)</sup>
VRD	-	x	x

<sup>1)</sup> The setting range is dependent on the power source used.

<sup>2)</sup> See chapter 5

<sup>3)</sup> Hidden function



## 4.2 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.

### ”Live TIG-start”

At a ”Live TIG-start” the tungsten electrode is placed against the workpiece. When the electrode is then lifted away from workpiece, the arc is struck at a limited current level (12 - 15 A).



### 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 Reduction 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 deactivated when the system senses that welding has started.

If the VRD function is activated and 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.


The VRD function is not active (LED has gone out) on delivery. Contact an authorised ESAB service technician to activate the function.

## 4.3 Hidden function TIG welding


### Control panel A22 and A24

Function	Settings
I = Min current	0 - 99%




To access the function in A22, use the method button, . Keep the button depressed for 5 seconds. The display shows a letter and a value. The knob is used to change the value of the selected function.




To leave hidden function, press  for 5 seconds.



To access the function in A24, use button . Keep the button depressed for 5 seconds. The display shows a letter and a value. The knob is used to change the value of the selected function.



To leave hidden function, press  for 5 seconds.

### Min current

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

Example:



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%.


## 5 WELDING DATA MEMORY

Two different welding data programs can be stored in the A24 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 so that the settings remain even if the mains supply has been switched off.

## 6 FAULT CODES

Fault codes are 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, for example U 0.

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 unit is activated, deactivate the remote control unit by pressing  to remove the fault indication.

## 6.1 List of fault codes

### Unit number:

**U 0** = welding data unit      **U 1** = cooling unit      **U 2** = power source  
**U 3** = wire feed unit      **U 4** = remote control

## 6.2 Fault code descriptions

The fault codes that the user can correct themselves are given below. If a different code appears, call a service technician.

Fault code	Description
<b>E 6</b>	<b>High temperature</b> The thermal overload cut-out has tripped. The current welding process is stopped and cannot be restarted until the temperature has fallen. <b>Action:</b> 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.
<b>E 12</b>	<b>Communication error (warning)</b> The load on the system's CAN-bus is temporarily too high. The power unit / wire feed unit has lost contact with the control panel. <b>Action:</b> Check the equipment and ensure that only one wire feed unit or remote control unit is installed. If the fault persists, send for a service technician.
<b>E 14</b>	<b>Communication error (bus off)</b> Serious interference on the CAN bus. <b>Action:</b> Check that there are no faulty units connected on the CAN bus. Check the cables. Send for a service technician if the fault persists.
<b>E 15</b>	<b>Messages lost</b> The microprocessor is unable to process incoming messages sufficiently quickly, with the result that information has been lost. <b>Action:</b> Turn off the mains power supply to reset the unit. If the fault persists, send for a service technician.
<b>E 16</b>	<b>High open-circuit voltage</b> Open circuit voltage has been too high. <b>Action:</b> Turn off the mains power supply to reset the unit. Send for a service technician if the fault persists.
<b>E 17</b>	<b>Lost contact</b> The control panel has lost contact with the wire feed unit. The current welding process stops. <b>Action:</b> Check the cables. If the fault persists, send for a service technician.
<b>E 18</b>	<b>Lost contact</b> The control panel has lost contact with the power source. The current welding process stops. <b>Action:</b> Check the cables. If the fault persists, send for a service technician.
<b>E 19</b>	<b>Memory error</b> Content of existing memory is incorrect. Basic data will be used. <b>Action:</b> Turn off the mains power supply to reset the unit. Send for a service technician if the fault persists.

## A22, A24

### Ordering number



Ordering no.	Denomination
0459 773 888	Control panel A22 Origo™
0459 773 887	Control panel A24 Origo™
0460 737 070	Instruction manual SE
0460 737 071	Instruction manual DK
0460 737 072	Instruction manual NO
0460 737 073	Instruction manual FI
0460 737 074	Instruction manual GB
0460 737 075	Instruction manual DE
0460 737 076	Instruction manual FR
0460 737 077	Instruction manual NL
0460 737 078	Instruction manual ES
0460 737 079	Instruction manual IT
0460 737 080	Instruction manual PT
0460 737 081	Instruction manual GR
0460 737 082	Instruction manual PL
0460 737 083	Instruction manual HU
0460 737 084	Instruction manual CZ
0460 737 085	Instruction manual SK
0460 737 089	Instruction manual EE
0460 737 090	Instruction manual LV
0460 737 091	Instruction manual SI
0460 737 092	Instruction manual LT
0460 737 027	Instruction manual RU, GB
0459 839 024	Spare parts list

The instruction manuals are available on the Internet at [www.esab.com](http://www.esab.com).







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