



EuTronic[®] Gap

Axis



Appendix

Version 07.03.2022

Pioneering Industrial Sustainability

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1.0 FUNCTION DESCRIPTION

1.1 General

Axis for GAP were specifically designed for easy and simple automation. System could be delivered with 1 axis (oscillation axis) or 2 axis (oscillation and AVC). AVC (automated voltage control) allows to keep steady distance between torch and workpiece, even if surface is uneven. System is integrated into GAP device – axis are controlled directly from GAP's touchscreen.

2.0 TECHNICAL SPECIFICATIONS

2.1 GAP Axis

Electricity	
Supply voltage (directly from GAP):	32V
Supply fuse:	10A
Single axis dimensions	
Length:	503 mm
Width:	53 mm
Height:	53 mm
Stroke:	200 mm
Drives/Axis	
Maximum speed for oscillating axis	50 mm/s
Maximum speed for AVC axis	20 mm/s
Maximum payload (horizontal)	20 kg
Maximum payload (vertical)	10 kg

3.0 DESIGN AND FUNCTIONS



Attention!

The power source must only be operated by appropriately trained and qualified personnel!



Warning!

Operating the machine incorrectly can cause serious injury and damage!

Before starting to use the power source, read the section headed "Safety rules"!

Only carry out these preparations if

- the mains switch is in the "0" position,
- the mains cable is unplugged from the mains,

to avoid serious injury and damage!

3.1 GAP 2511 / 3511 / 5011 DC Front

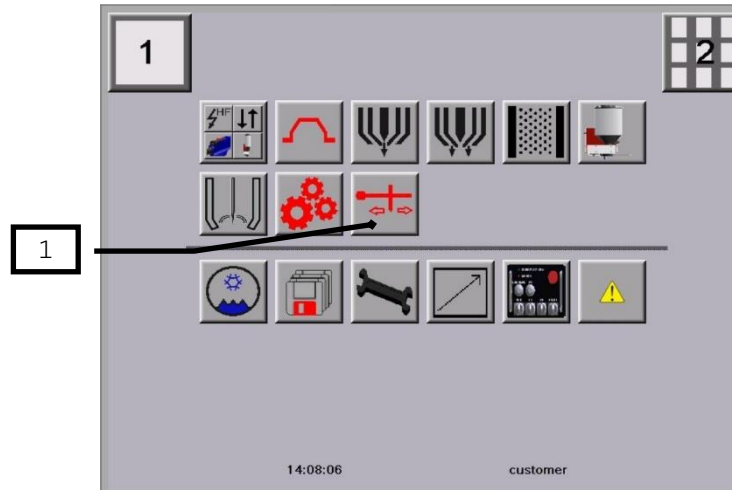


FIG.5.1.a: EuTronic Gap Front

No.	FUNCTION
1	Socket "GAP Axis" for connection of horizontal or horizontal and vertical axis.

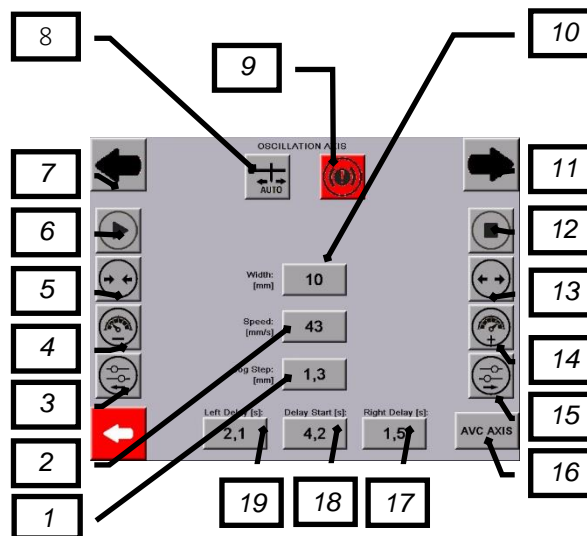
3.2 Start screen

When switching on the machine, the start screen appears after booting.



No.	Parameter	Function	Range
1	Button Axis	Button to open the screen page "oscillation".	---

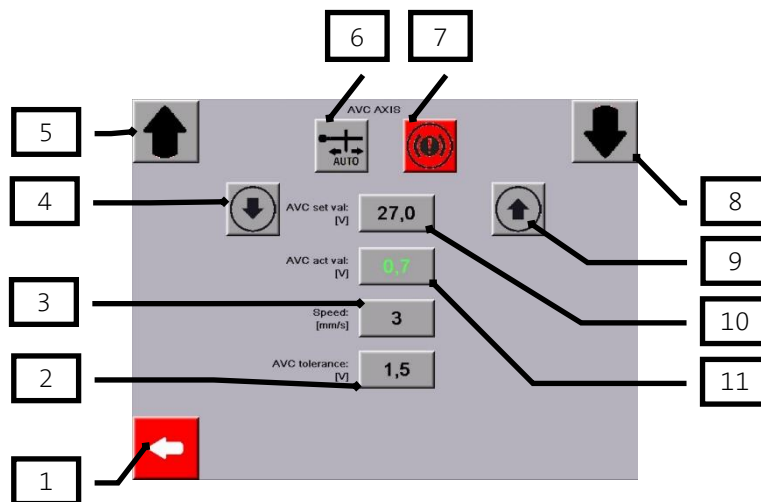
3.3 Oscillation screen



No.	Parameter	Function	Range
1	Button/Indication Jog Step [mm]	Button to set oscillation jog step. By oscillation jog we mean shifting/moving whole oscillation left/right side. For instance, if jog step is set to 1 mm, then by pressing button 3/15 once, oscillation would be moved for 1 mm to the left/right side (during process). All other oscillation parameters remain the same.	0,1 ÷ 3 mm
2	Button/Indication Speed	Button to set oscillation speed.	0 ÷ 50 mm/s
3	Button Jog step left side	Button to move oscillation to the left side according to set jog step.	---
4	Button Decrease speed	Button to decrease oscillation speed (1 mm/s).	---
5	Button Decrease width	Button to decrease oscillation width (1 mm)	---
6	Button Play	Button to start oscillation movement manually	---
7	Button Movement left	Button to manually move axis to the left side	---
8	Button/Indication Auto	When this button is green oscillation movement will start automatically as soon as main arc will be ignited.	---
9	Button/Indication Alarm	This button appears when any error will be present on GAP device. Pressing this button clear the error (if all conditions are fulfilled)	---
10	Button/Indication Width	Button to set oscillation width.	0 ÷ 100 mm
11	Button Movement right	Button to manually move axis to the right side	---

12	Button Stop	Button to stop oscillation movement manually	---
13	Button Increase width	Button to increase oscillation width (1 mm)	---
14	Button Increase speed	Button to increase oscillation speed (1 mm/s).	---
15	Button Jog step right side	Button to move oscillation to the right side according to set jog step.	---
16	Button AVC axis	Button to open the screen page "AVC axis".	---
17	Button Delay on right side	Button to set delay of the axis (pause time) on the right edge.	0 ÷ 5 s
18	Button/Indication Delay start time	Indication of the actual delay of oscillation start (in seconds). For instance, if the written value would be 2 seconds, then after igniting main arc torch would be standing in place for 2 seconds before starting movement.	0 ÷ 5 s
19	Button Delay on left side	Button to set delay of the axis (pause time) on the left edge.	0 ÷ 5 s

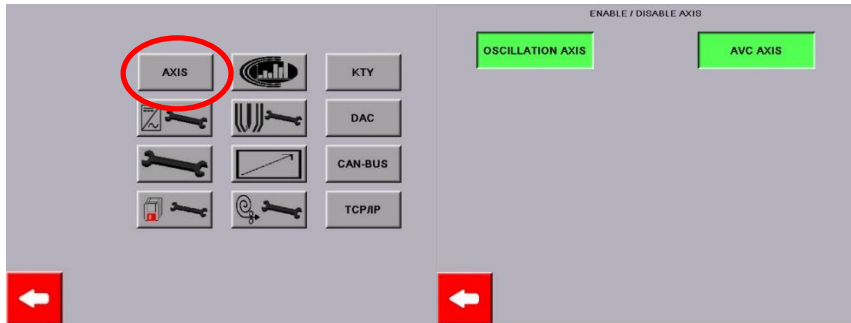
3.4 AVC screen



No.	Parameter	Function	Range
1	Button 	Button to scroll to the previous screen page.	---
2	Button/Indication AVC tolerance	Button to set sensitivity of vertical axis during welding process with AVC mode.	0 ÷ 3 V
3	Button/Indication Speed	Speed of vertical axis correction during welding with AVC mode.	1 ÷ 20 mm/s
4	Button Decrease AVC value	Button to decrease AVC value with accuracy of 0,1 V	---
5	Button Movement up	Button to manually move axis up	---
6	Button/Indication Auto	When this button is green AVC (vertical axis) movement will start automatically together with main arc start.	---
7	Button/Indication Alarm	This button appears when any error will be present on GAP device. Pressing this button clear the error (if all conditions are fulfilled)	---
8	Button Movement down	Button to manually move axis down	---
9	Button Increase AVC value	Button to increase AVC value with accuracy of 0,1 V	---
10	Button/Indication AVC set value	Button to set AVC value (higher value = higher torch position; lower value = lower torch position).	18 ÷ 40 V
11	Indication AVC actual value	Field where actual voltage value is displayed.	---

3.5 Axis enable / disable

In order to active / deactivate axis you must log in as a “Castolin” user and choose which axis is present.



4.0 MAINTENANCE

Regular and careful maintenance of the equipment and its accessories provides the best conditions for longevity of the equipment and quality of the welding.

Observe the following basic rules carefully:

- Disconnect the equipment from the mains supply
- Clean the equipment after use
- Do not use solvents to clean the equipment
- Never use compressed air to clean the equipment

Attention!



Only appropriately trained and qualified personnel must be authorised to:

- carry out maintenance tasks
- remove and install protective devices and covers

The housing cover may only be removed by authorised and trained personnel.

Warning!



Before carrying out any maintenance work on the equipment:

- Switch off main switch
- Disconnect the power supply cable
- Display an easy-to-understand warning sign to prevent anybody from inadvertently switching it on again
- Allow at least two minutes for all capacitors to discharge.
- Using a suitable measuring instrument, check to make sure that electrically charged components (e.g. capacitors) have been discharged

- Check tubes, hoses and connecting lines and cables for defects, failures and leakages, and if necessary, have it replaced/repaired by qualified personnel.

The directions and recommendations provided for operating and maintaining the equipment do not release the operator from the obligation to carefully monitor the equipment and immediately report any malfunction.

The manufacturer does not accept any warranty claim for damages as a consequence of improper maintenance or incorrect operation of the equipment.

There is no guarantee in the case of parts obtained from other manufacturers even if designed and produced in line with stress and safety requirements.

Use only original spare and wear parts (also applies to standardised parts).

Replace components that are not in perfect condition immediately.

Before every start-up:

- Before commissioning a visual check for damage must be carried out. Any damage must be repaired by trained service personnel before commissioning.
- Check equipment, mains plug, mains cable, welding torch, connected accessory, interconnecting hose pack and earth connection for damage
- Check that there is a gap of at least 0.5m all around the machine to ensure that cooling air can flow and escape freely.

5.0 PLUG GAP AXIS



5.1 Plug allocation

GAP Axis	
Pin	Function
A1	A+
A2	A-
A3	B+
A4	B-
A5	+24V
A6	Switch limit CW
A7	GND
A8	+24V
A9	Switch limit CCW
A10	GND

B1	A+
B2	A-
B3	B+
B4	B-
B5	+24V
B6	Switch limit CW
B7	GND
B8	+24V
B9	Switch limit CCW
B10	GND
PE	Screen

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Castolin Sp. z o.o.
ul. Leonarda da Vinci 5
44-109 Gliwice
Poland
Tel. +48 32 230 67 36
Fax +48 32 230 67 39
castolin@castolin.pl

www.castolin.com

www.eutectic.com

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