



WELD THE WORLD

WF-104
WF-108

Instruction Manual





INDEX

1	INTRODUCTION	4
1.1	PRESENTATION.....	5
2	INSTALLATION	6
2.1	FRONT PANEL.....	7
2.2	REAR PANEL.....	8
2.3	MIG/MAG INSTALLATION	9
2.4	WIRE SPOOL POSITIONING	11
2.5	POSITIONING THE WIRE IN THE WIRE FEEDER	12
3	USER INTERFACE	13
4	UNIT POWER-UP	16
4.1	POWER SOURCE MANAGEMENT BY REMOTE CONTROL.....	17
5	RESET (LOAD FACTORY SETTINGS)	17
5.1	PARTIAL RESET.....	18
5.2	TOTAL RESET	19
6	SET-UP (INITIAL SET-UP OF THE WELDING POWER SOURCE)	20
6.1	OPERATING HOUR COUNTER.....	22
6.2	TRIGGER TYPE.....	23
6.3	LOCKING PROCEDURE	24
6.4	GAS FLOW ADJUSTMENT	26
6.5	TORCH LOADING	27
6.6	WELDING CIRCUIT CALIBRATION	27
7	ALARM MANAGEMENT	30
8	PARAMETERS ACTIVATION	32
8.1	WELDING PARAMETERS	33
9	CHARACTERISTICS OF THE MENU LEVELS	38
9.1	1ST LEVEL.....	38
9.2	2ND LEVEL.....	38
9.3	3RD LEVEL.....	39
10	WELDING SETTINGS	39
10.1	WELDING CURVES SELECTION	39
10.1.1	Special curves: HIGH SPEED, HIGH CONTROL, POWER FOCUS and POWER ROOT	39
10.2	MANUAL MIG/MAG WELDING.....	42
10.2.1	Manual MIG/MAG parameters setting (1st level): inductance setting	43
10.2.2	MANUAL MIG/MAG PARAMETERS SETTING (2ND LEVEL)	43
10.3	SYNERGIC MIG/MAG WELDING.....	44
10.3.1	Synergic MIG/MAG parameters setting (1st level): synergic curve setting	45
10.3.2	Manual MIG/MAG parameters setting (2nd level).....	45
10.4	PULSED SYNERGIC MIG/MAG WELDING	48
10.4.1	Pulsed Synergic MIG/MAG parameters setting (1st level): synergic curve setting	50
10.4.2	Pulsed Synergic MIG/MAG parameters setting (2nd level).....	50
10.5	DOUBLE PULSED SYNERGIC MIG/MAG WELDING	52
10.5.1	Double pulsed synergic MIG/MAG parameters setting (1st level): synergic curve setting.....	53
10.5.2	Double pulsed synergic MIG/MAG parameters setting (2nd level)	53
11	JOBS MANAGEMENT	56
11.1	SAVING A JOB	56
11.2	NAMING JOBS	58

11.3	LOADING A USER JOB	59
11.4	DELETING A JOB	60
11.5	EXPORTING/IMPORTING JOBS (through a USB memory stick).....	61
11.6	EXPORTING A JOB	62
11.7	IMPORTING A JOB	63
11.8	SELECTING JOBS USING THE TORCH BUTTONS	64
12	TORCH TRIGGER MODES	65
12.1	2T MIG/MAG WELDING	65
12.2	2T SPOT MIG/MAG WELDING.....	65
12.3	4T MIG/MAG WELDING	65
12.4	4T B-LEVEL MIG/MAG WELDING.....	65
12.5	2T - 3 LEVEL MIG/MAG WELDING	66
12.6	2T SPOT - 3 LEVEL MIG/MAG WELDING	66
12.7	4T - 3 LEVEL MIG/MAG WELDING	66
12.8	4T B-LEVEL - 3 LEVEL MIG/MAG WELDING	67
13	TECHNICAL DATA	68
13.1	WF-104 TECHNICAL DATA	68
13.2	WF-108 TECHNICAL DATA	68
14	WIRING DIAGRAM.....	69
14.1	WF-104 WIRING DIAGRAM	69
14.2	WF-108 WIRING DIAGRAM	74
14.3	POWER SOURCE → WF-104.....	80
14.4	REMOTE CONTROL CONNECTOR (front panel).....	80
14.4.1	RC03: Wiring diagram.....	81
14.4.2	RC04: Wiring diagram.....	81
14.4.3	RC05: Wiring diagram.....	81
14.4.4	RC06: Wiring diagram.....	81
14.5	PUSH-PULL (OPTIONAL).....	81
15	SPARES.....	82
15.1	WF-104	82
15.2	WF-108	84
15.3	KIT WF-108.....	86
15.4	WIRE FEEDER MOTOR (WF-104).....	88
15.5	WIRE FEEDER MOTOR (WF-108).....	90
15.6	WIRE FEEDER ROLLS	92

1 INTRODUCTION

 	IMPORTANT!
<p><i>This handbook must be consigned to the user prior to installation and commissioning of the unit. Read the "General prescriptions for use" handbook supplied separately from this manual before installing and commissioning the unit.</i></p> <p><i>The meaning of the symbols in this manual and the associated precautionary information are given in the "General prescriptions for use".</i></p> <p><i>If the "General prescriptions for use" are not present, it is mandatory to request a replacement copy from the manufacturer or from your dealer.</i></p> <p><i>Retain these documents for future consultation.</i></p>	

KEY

	DANGER!
<p><i>This pictogram warns of danger of death or serious injury.</i></p>	

	WARNING!
<p><i>This pictogram warns of a risk of injury or damage to property.</i></p>	

	CAUTION!
<p><i>This pictogram warns of a potentially hazardous situation.</i></p>	

	INFORMATION!
<p><i>This pictogram gives important information concerning the execution of the relevant operations.</i></p>	

- ⦿ This symbol identifies an action that occurs automatically as a result of a previous action.
- ① This symbol identifies additional information or a reference to a different section of the manual containing the associated information.
- § This symbol identifies a reference to a chapter of the manual.
- *1 The symbol refers to the associated numbered note.










NOTES

The figures in this manual are purely guideline and the images may contain differences with respect to the actual equipment to which they refer.

1.1 PRESENTATION

Wire feeder **WF-104/WF-108** is designed for connection to a power source for MIG/MAG welding.

The welding modes and procedures available are those indicated in the table.

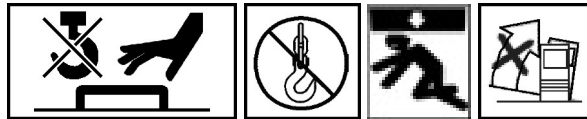
MODE		PROCEDURE	
	MANUAL MIG/MAG		TWO STROKE (2T) TWO SPOT STROKE (2T-SPOT)
			FOUR STROKE (4T)
  	SYNERGIC MIG/MAG		TWO STROKE (2T) TWO SPOT STROKE (2T-SPOT)
	PULSED SYNERGIC MIG/MAG		FOUR STROKE (4T)
	DOUBLE PULSED SYNERGIC MIG/MAG		THREE LEVEL (3T)

2 INSTALLATION

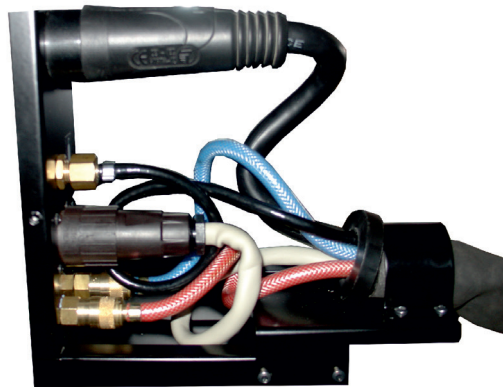


DANGER! **Lifting and positioning**

Read the warnings highlighted by the following symbols in the "General prescriptions for use".

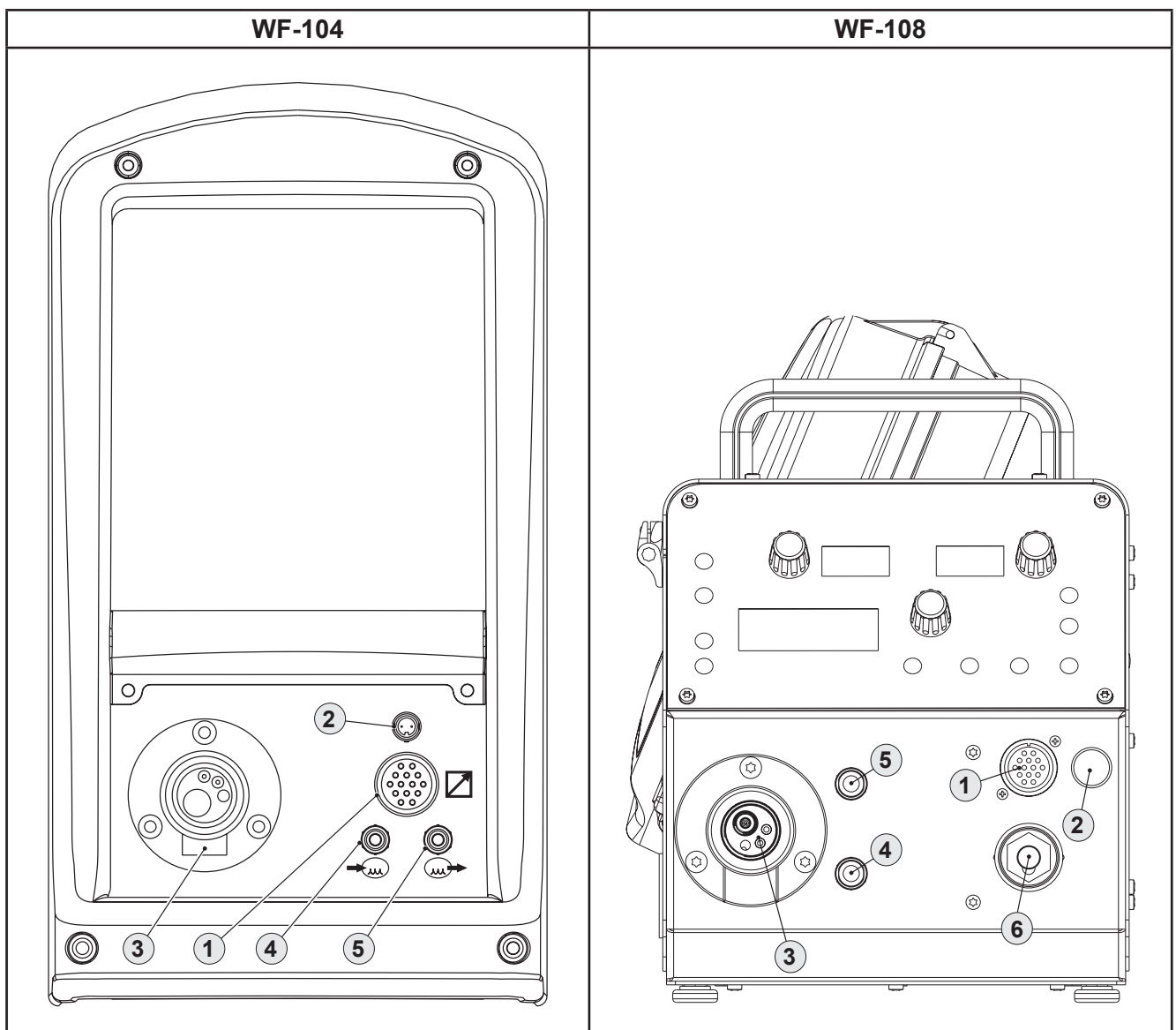


1. Assemble the various units as described in the instruction manual of the power source trolley.
2. Set the welding power source ON/OFF switch to "O" unit switched off).
3. Connect the power source mains supply cable to the mains socket outlet.
4. Secure the cable bundle connectors to the wire feeder.
5. Secure the cable bundle connectors to the welding power source.
6. Connect the power supply cable of the cooling unit to the auxiliary power socket on the power source.
7. Connect the MIG/MAG torch coolant outlet and return hoses to the coolant fittings on the wire feeder.
8. Connect the MIG/MAG torch coolant outlet and return hoses of the cable bundle to the fittings on the cooling unit and on the wire feeder.
9. Secure the cable bundle by fastening the locking device.



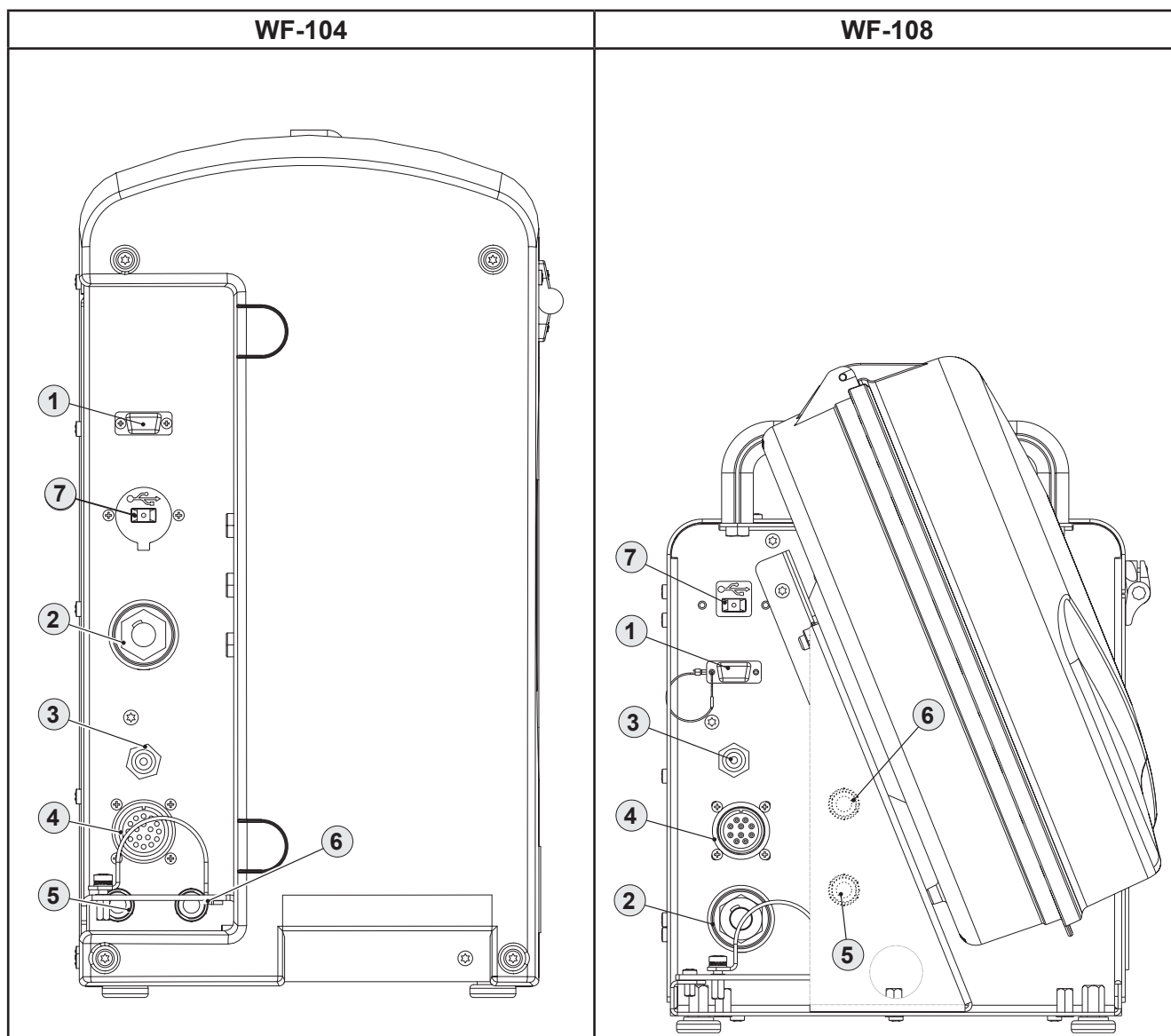
10. Connect the earth clamp plug to the power source earth socket.
11. Connect the earth clamp to the workpiece being processed.
12. Connect the MIG/MAG torch plug to the EURO TORCH welding socket.

2.1 FRONT PANEL



- 1: Remote controller connector.
- 2: Provision for connection of the push pull torch (purchasing and installing the relative kit).
- 3: EURO TORCHwelding socket.
- 4: Connector for coolant hose.
Torch → Power source
- 5: Connector for coolant hose.
Power source → Torch
- 6: Negative pole welding socket.

2.2 REAR PANEL



1: Connector for connection to the programmer.

You can update the software of the equipment using the programming kit.

2: Male socket for the connection of the power cable coming from the cable bundle.

3: Gas rear connector.

This is for the connection of the gas pipe coming from the cable bundle.

4: Cable bundle signal connector.

5: Connector for coolant hose.

Power source → Cooler

6: Connector for coolant hose.

Cooler → Power source

7: Port provided to connect a USB memory stick to export/import JOBs.

2.3 MIG/MAG INSTALLATION

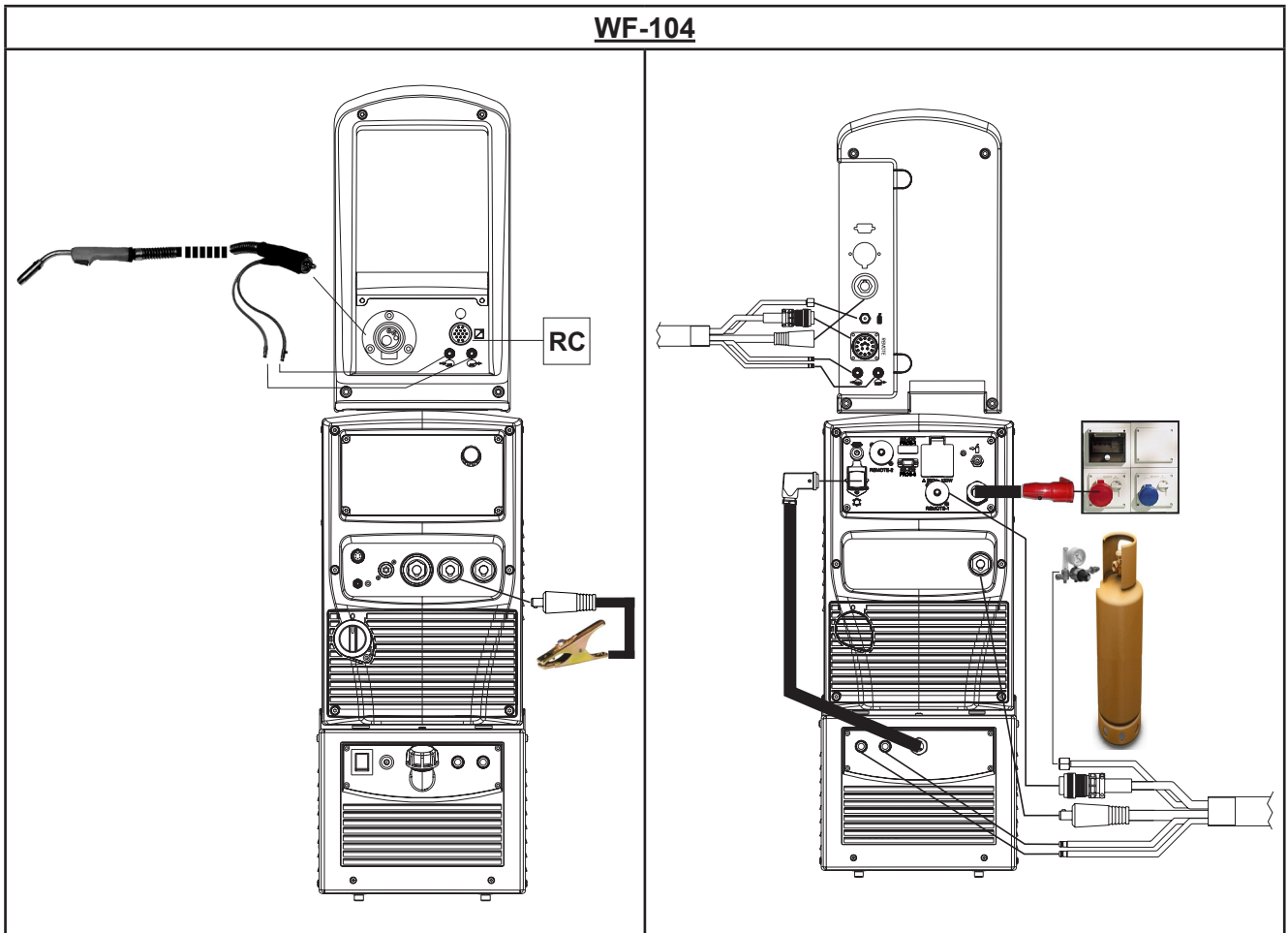


DANGER!

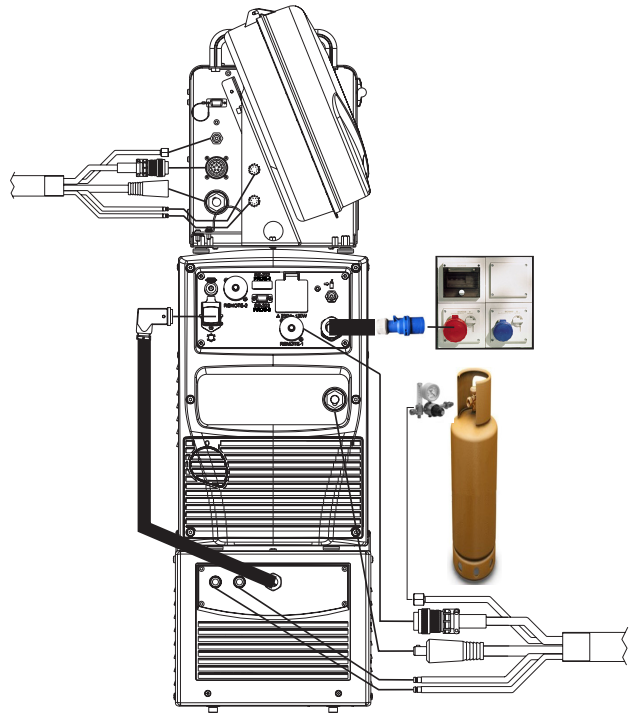
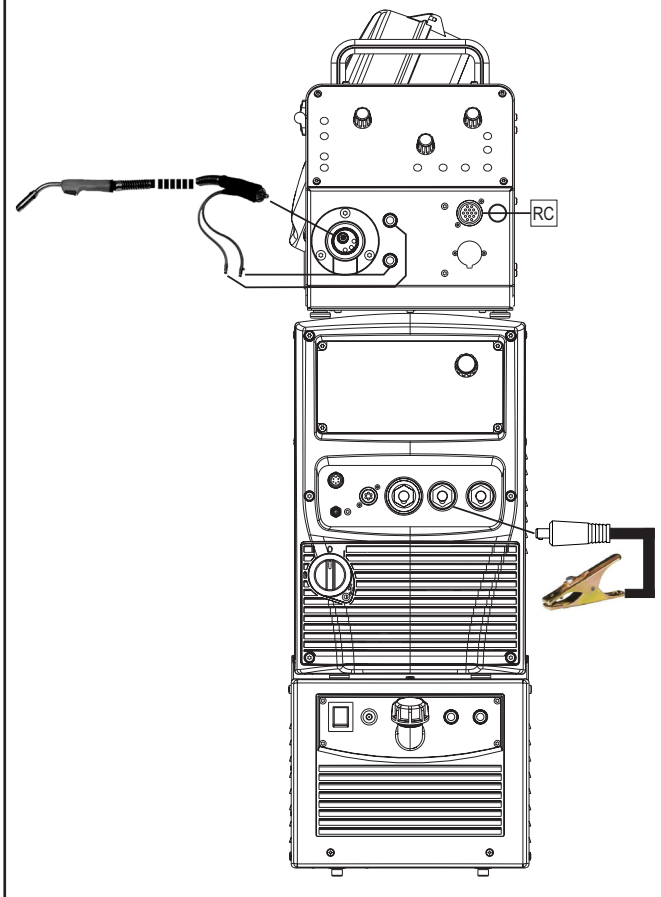
Electric shock hazard!
Read the warnings highlighted by the following symbols in the "General prescriptions for use".



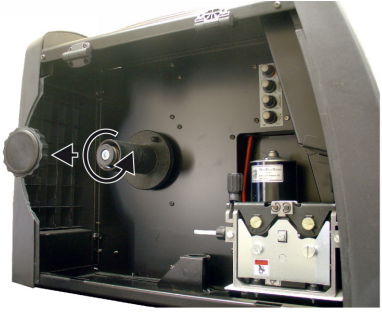
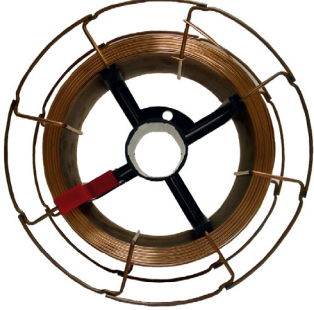
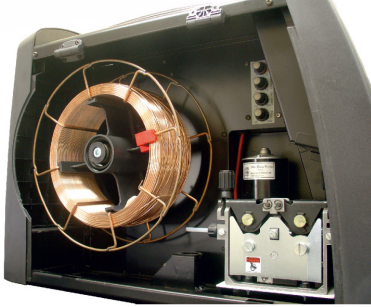
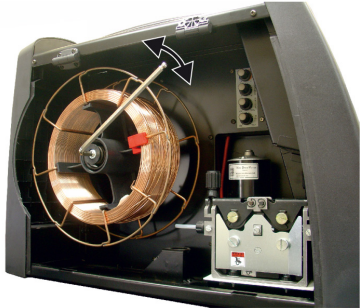
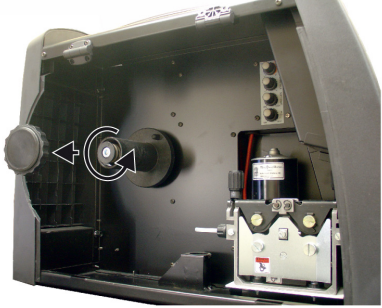
WF-104



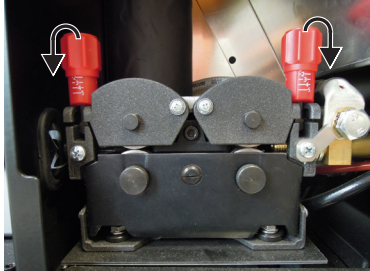
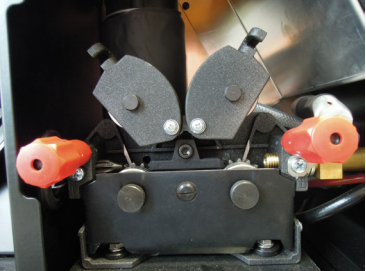
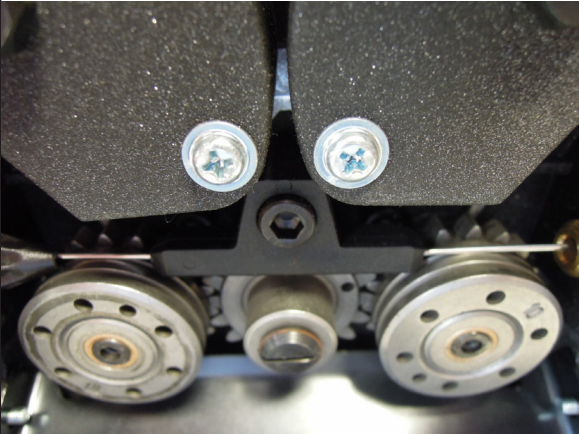
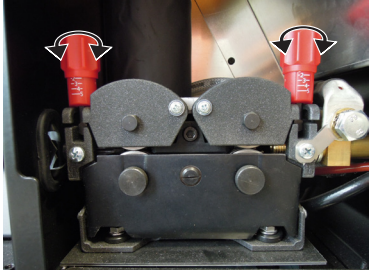

WF-108



2.4 WIRE SPOOL POSITIONING

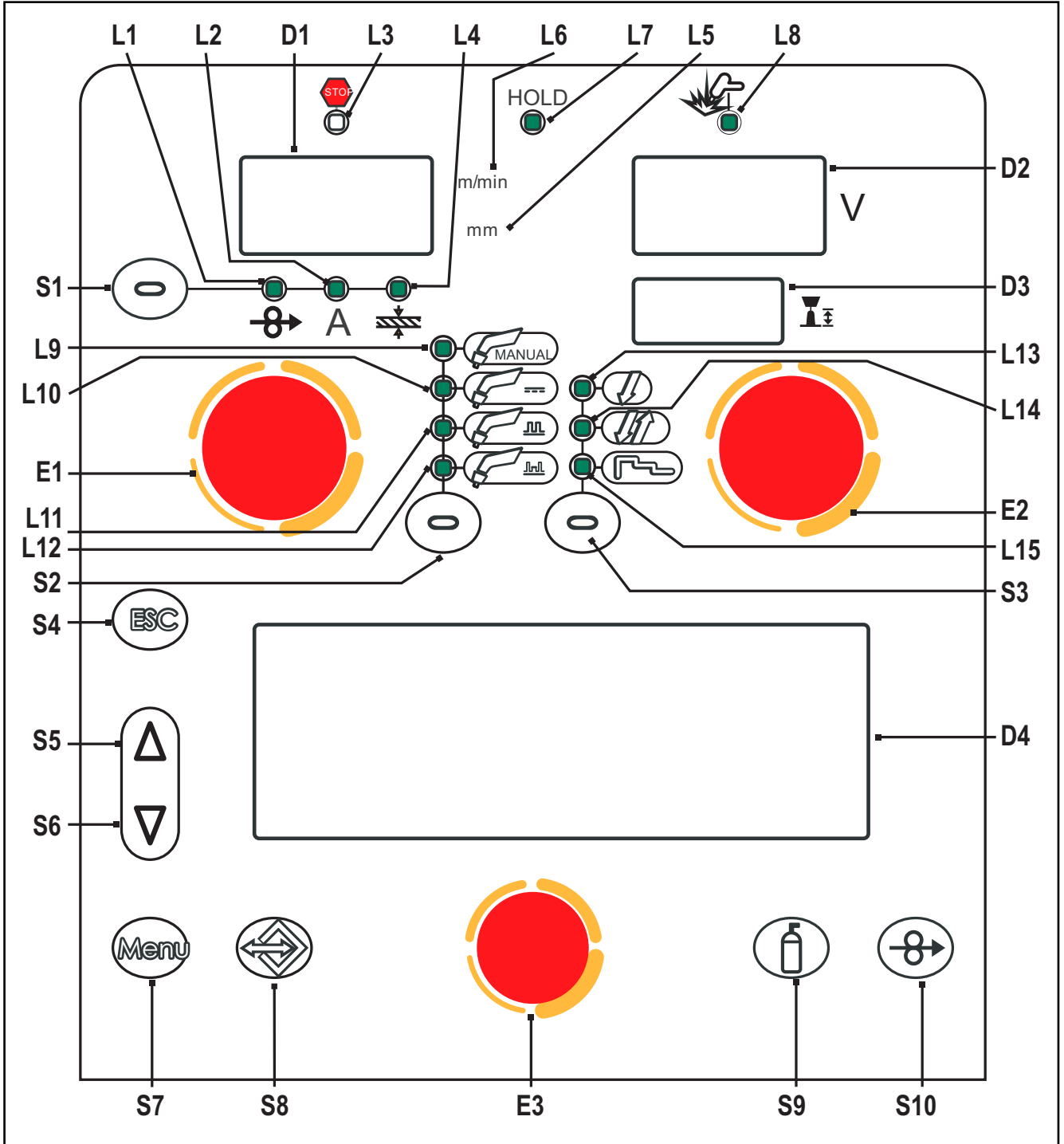
<ol style="list-style-type: none">1. Open the unit side door to gain access to the spool compartment.2. Unscrew the cap of the spool holder.	
<ol style="list-style-type: none">3. If necessary, fit an adapter for the wire spool.	
<ol style="list-style-type: none">4. Fit the spool in the spool holder, ensuring it is located correctly.	
<ol style="list-style-type: none">5. Adjust the spool holder braking system by tightening/loosening the screw in such a way that the wire feed force is not excessive and when the spool stops rotating no excess wire is released.	
<ol style="list-style-type: none">6. Refit the plug.	

2.5 POSITIONING THE WIRE IN THE WIRE FEEDER

<p>1. Lower the wire feeder pressure devices.</p>	
<p>2. Raise the wire feeder pressure arms. 3. Remove the protective cover.</p>	
<p>4. Check that the feed rolls are suitable for the wire gauge.</p> <p>① § "15.5 WIRE FEEDER ROLLS"</p> <ul style="list-style-type: none">• The diameter of the roll groove must be compatible with the diameter of the welding wire.• The roll must be of suitable shape in relation to the composition of the wire material.• The groove must be "U" shaped for soft materials (Aluminium and its alloys, CuSi3).• The groove must be "V" shaped for harder materials (SG2-SG3, stainless steels).• Rolls with a knurled groove profile are available for flux-cored wire. <p>5. Feed the wire between the wire feeder rolls and insert it into the MIG/MAG TORCH connector plug.</p> <p>6. Make sure the wire is located correctly in the roll grooves.</p>	
<p>7. Close the wire feeder pressure arms. 8. Adjust the pressure system so that the arms press the wire with a force that does not deform it while also ensuring constant feed rate without slipping.</p>	
<p>9. Refit the protective cover. 10. Set the welding power source ON/OFF switch to "I" (unit powered). 11. Feed the wire through the torch until it protrudes from the tip, pressing button  on the unit front panel.</p>	

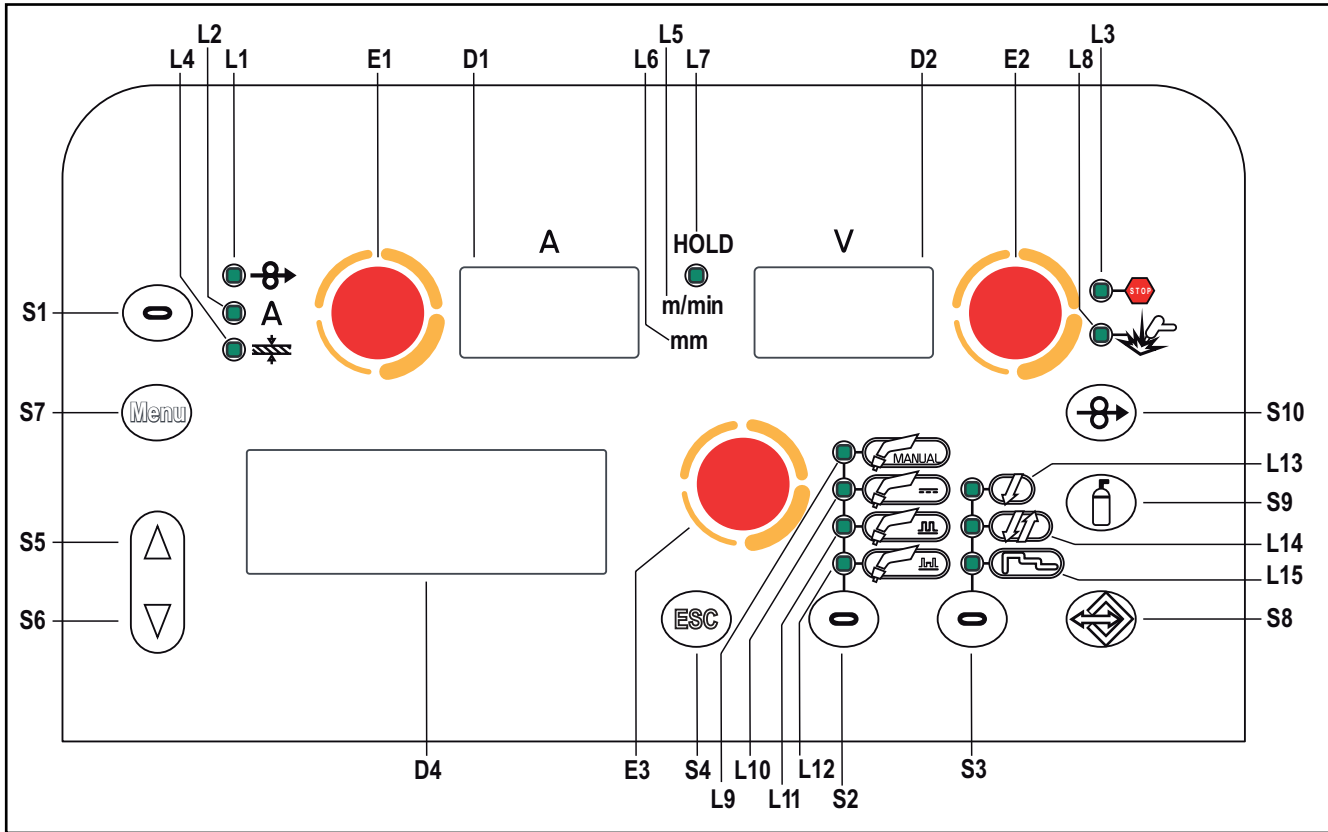
3 USER INTERFACE

WF-104








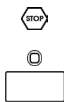


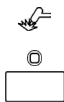



















ENGLISH

WF-108




CODE	SYMBOL	DESCRIPTION
L1		illumination shows that the following parameter can be set: WIRE FEED RATE The value appears on the following display: D1
L2	A	Short-Spray, pulsed and synergic MIG/MAG welding: illumination shows that the following parameter can be set: WELDING CURRENT HOLD function (at welding end): Illuminates to show a value in the following unit of measurement: AMPERES The value appears on the following display: D1
L3		This LED illuminates to show an anomaly in the operating conditions. An alarm message appears on the following display: D4 ① § "7 ALARM MANAGEMENT"
L4		illumination shows that the following parameter can be set: WELDING THICKNESS (Reference is made to "T" fillet welds on identical thicknesses. The relative value is purely guideline). The value appears on the following display: D1
L5	mm	Illuminates to show a value in the following unit of measurement: MILLIMETRES Illuminates together with the following LED: The value appears on the following display: D1
L6	m/min	Illuminates to show a value in the following unit of measurement: METRES PER MINUTE Illuminates together with the following LED: The value appears on the following display: D1
L7	HOLD	Illuminates to show the last voltage and current values measured during welding. The LED switches off when a new welding procedure is started, or when any of the welding settings is modified. The value appears on the display : D1-D2
L8		This LED illuminates to confirm the presence of power on the output sockets.

CODE	SYMBOL	DESCRIPTION
L9		This LED illuminates to show that the following welding mode is selected: MANUAL MIG/MAG
L10		This LED illuminates to show that the following welding mode is selected: SYNERGIC MIG/MAG
L11		This LED illuminates to show that the following welding mode is selected: PULSED SYNERGIC MIG/MAG
L12		This LED illuminates to show that the following welding mode is selected: DOUBLE PULSED SYNERGIC MIG/MAG
L13		Illumination shows that the following function has been activated: 2 stroke procedure ① § "12.1 2T MIG/MAG WELDING" A flashing signal means the following function is activated: 2 stroke procedure ① § "12.2 2T SPOT MIG/MAG WELDING"
L14		Illumination shows that the following function has been activated: 4 stroke procedure ① § "12.3 4T MIG/MAG WELDING" / § "12.4 4T B-LEVEL MIG/MAG WELDING"
L15		Illumination shows that the following function has been activated: 3 levels procedure ① § "12.5 2T - 3 LEVEL MIG/MAG WELDING" / § "12.6 2T SPOT - 3 LEVEL MIG/MAG WELDING" / § "12.7 4T - 3 LEVEL MIG/MAG WELDING" / § "12.8 4T B-LEVEL - 3 LEVEL MIG/MAG WELDING".
D1		During illumination of the following LEDs:  / A / 
		The display shows the value of the selected parameter.
		Welding: The display shows the effective amperes value during welding. HOLD function (at welding end): The display shows the latest measured current value.
D2		Data setting: The display shows the value, in Volts, of the selected welding voltage.
		Welding: The display shows the effective voltage value during welding.
		HOLD function (at welding end): The display shows the latest measured voltage value.
D3		Manual MIG/MAG welding: The display is not active. The display shows "- - -".
		Synergic MIG/MAG welding: The display shows the arc correction value imposed by the operator with respect to the default value of the synergic curve.
D4		Data setting: The display shows the various welding menus relative to the selected processes. The display shows the selected parameter.
S1		Manual MIG/MAG mode: The button is not active.
		Synergic MIG/MAG mode: The button cycles through the following LEDs in sequence, selecting only one:  / A / 
S2		This button selects the welding mode.
S3		This button selects the torch trigger procedure. ① § "12 TORCH TRIGGER MODES"
S4		The button restores the main menu of display D4, starting from any other page. The button serves to exit any menu without saving any changes.
S5		The button scrolls the selection made on the menus upwards or to the right.
S6		The button scrolls the selection made on the menus downwards or to the left.
S7		The button selects the various submenus visible in the following display: D4
S8		The button enables management of the personalised programs that can be shown on the following display: D4 ① § "11 JOBS MANAGEMENT"
S9		This button opens the gas solenoid valve to fill the circuit and calibrate the pressure with the regulator on the gas cylinder. ① § "6.4 GAS FLOW ADJUSTMENT"

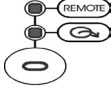
CODE	SYMBOL	DESCRIPTION
S10		This button activates wire feed to insert it through the MIG/MAG torch. The insertion speed is 2 m/min for 3 seconds, subsequently increasing to 10 m/min. This function produces a slower feed rate and hence greater precision when inserting the wire when it enters the torch nozzle.
E1		Data setting: The encoder adjusts the main welding (and synergy) parameter, shown on the following display: D1 During welding operations with an active JOB: The encoder temporarily modifies the main welding parameter, shown on the following display: D1
E2		Manual MIG/MAG mode: The encoder adjusts the welding voltage, and the relative value is shown, in volts, on the following display: D2
		Synergic MIG/MAG mode: The encoder is used to correct the factory-set value of the selected synergic curve, the value of which is shown on the following display: D3 During welding operations with an active JOB: The encoder temporarily modifies the main welding parameter, shown on the following display: D2
E3		The encoder changes the setting of the selected parameter shown on the following display: D4 The selected parameter is shown by the following symbol: ➔.
		Not welding, with a loaded JOB: jobs to be scrolled regardless of the sequence they belong to.

4 UNIT POWER-UP

Set the welding power source ON/OFF switch to “I” to switch on the unit.

	WF 104/WF 108 NOT SELECTED	<u>The message will appear on display: D4</u>
	The message appears only when the wire feeder is not selected as the remote control on the power source.	

4.1 POWER SOURCE MANAGEMENT BY REMOTE CONTROL

	<p>Hold down the button for 3 seconds. [OPERATION TO BE PERFORMED ON THE POWER SOURCE USER INTERFACE]</p>
---	---

- ➡ The following LED illuminates on the power source panel:
- ➡ The following message appears on the power source displays: - - -
- ➡ The power source is managed by the remote control connected to it.
- ➡ The welding power source sets up for welding.

First power-up or power-ups following a RESET procedure

- ➡ The welding power source sets up for welding with the factory preset values..

Subsequent power-ups

- ➡ The welding power source sets up for welding in the latest stable welding configuration that was active at the time of power-off.
- ➡ During power-up all functions are inhibited and the following displays remain blank: D1, D2, D3
- ➡ D4: The following messages will appear in sequence on this display:

Tab. 1- Messages at power-up

WF-104/WF-108 FW: XX.XX.XXX	XX.XX.XXX= wire feeder software version.
PROGRAM UPDATE	The welding power source is synchronising the wire feeder and power source software.
POWER PULSE ZZZ FW: YY.YY.YYY WELDING MACHINE OK	ZZZ= Ampere value of the power source. YY.YY.YYY= power source software version.

If communication with the IR (robot interface) board has been enabled, the following additional messages will appear:

IRxx - Modbus FW: XX.XX.XXX	XX.XX.XXX= software version.
IR UPDATE	The welding unit is synchronising the wire feeder software with the robot interface one. This message appears every time a synchronisation occurs.

5 RESET (LOAD FACTORY SETTINGS)

To perform a reset the power source must be managed via the remote control.

The reset procedure involves complete restoration of the default values, parameters and memory settings set in the factory.

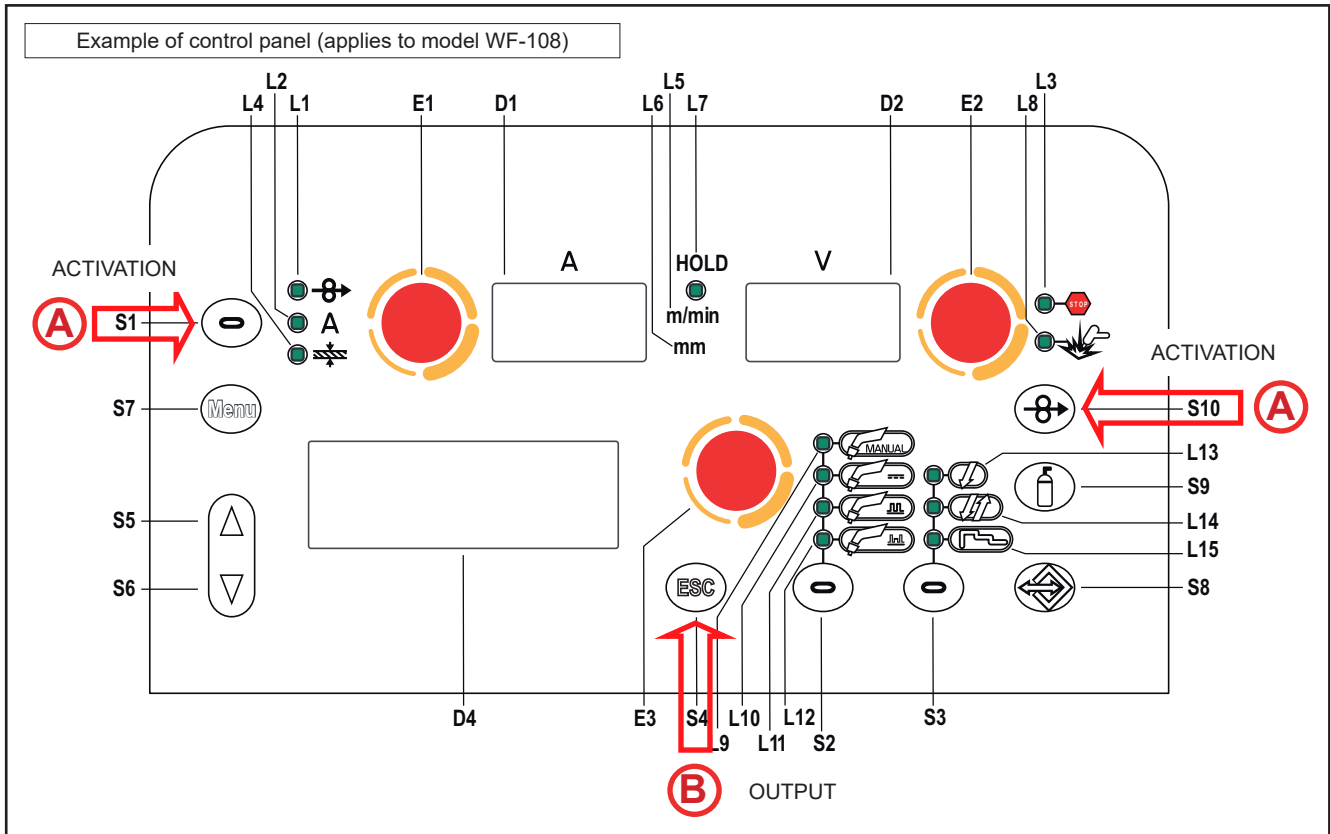
The reset procedure is useful in the following cases:

- Too many changes made to the welding parameters so user finds it difficult to restore defaults.
- Unidentified software problems that prevent the welding power source from functioning correctly.

5.1 PARTIAL RESET

The reset procedure involves restoration of the parameter values and settings, except the following settings:

- Settings of the SETUP menu.
- saved JOBS.



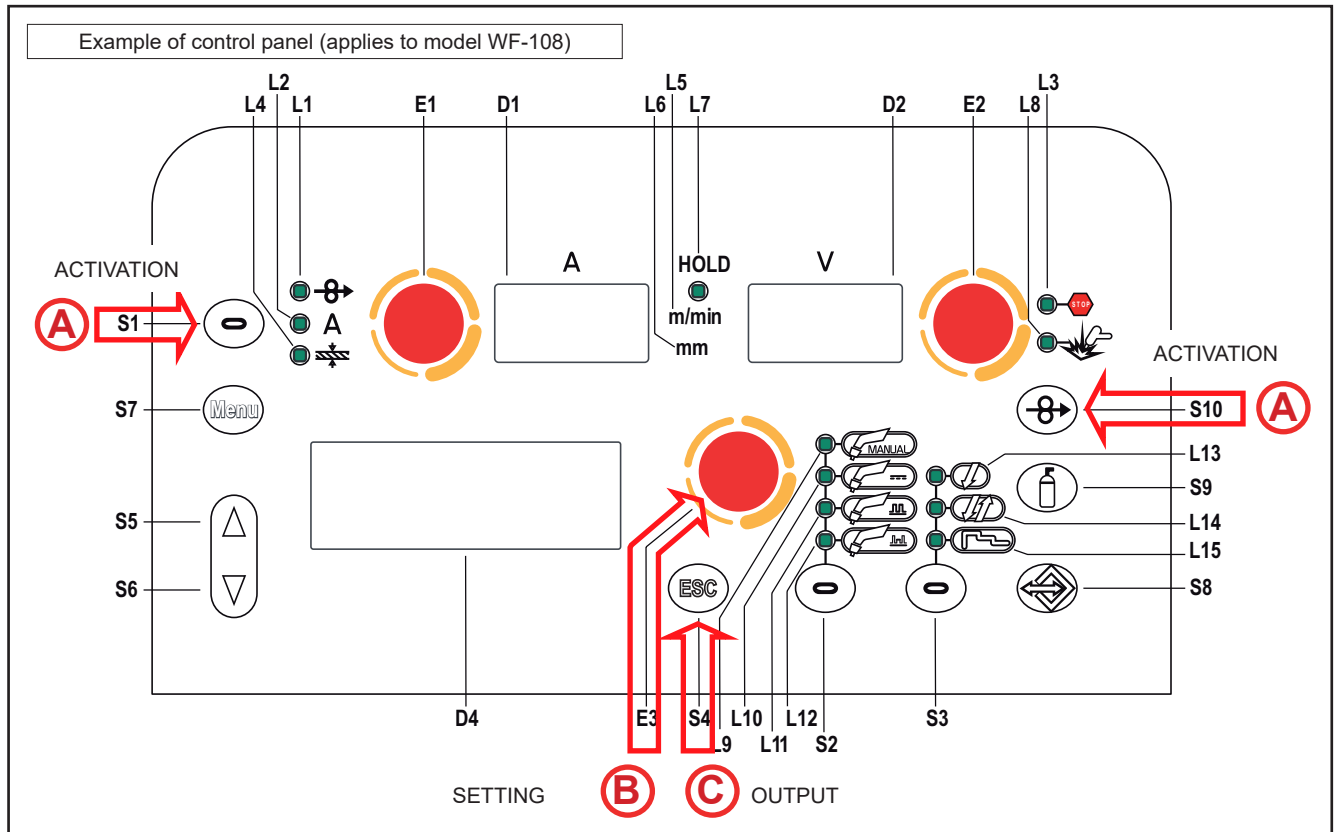
- Set the welding power source ON/OFF switch to “O” to switch the unit off.
- Set the welding power source ON/OFF switch to “I” to switch on the unit.
- (A)** ○ Simultaneously press the keys **S1** (power off) and **S10** (power on) [⚠ This operation must be carried out before the wording “PROGRAM UPDATE” appears in the following display: D4]
- **➡ PARTIAL RESET SELECT TYPE OF RESET** : The message will appear on display: D4

- **Exit without confirmation**
 - Set the welding power source ON/OFF switch to “O” to switch the unit off.
 - Set the welding power source ON/OFF switch to “I” to switch on the unit.
- (B)** ○ **Exit with confirmation**
 - Press **S4** (ESC) to save the setting and quit the menu.
 - ➡ The display **D4** will show the message: **MEMORY CLEANING**
 - Wait for the memory clear procedure to terminate.
 - ➡ The unit restarts with the power-up procedure.

5.2 TOTAL RESET

The reset procedure involves complete restoration of the default values, parameters and memory settings set in the factory.

All memory locations will be reset and hence all your personal welding settings will be lost!



- (A)**
- Set the welding power source ON/OFF switch to “O” to switch the unit off.
 - Set the welding power source ON/OFF switch to “I” to switch on the unit.
 - Simultaneously press the keys **S1** and **S10** [**This operation must be carried out before the wording “PROGRAM UPDATE” appears in the following display: D4**]
 ➔ **PARTIAL RESET SELECT TYPE OF RESET** : The message will appear on display: D4

- (B)**
- Use the **encoder E3** , to select the following **“TOTAL RESET”**.

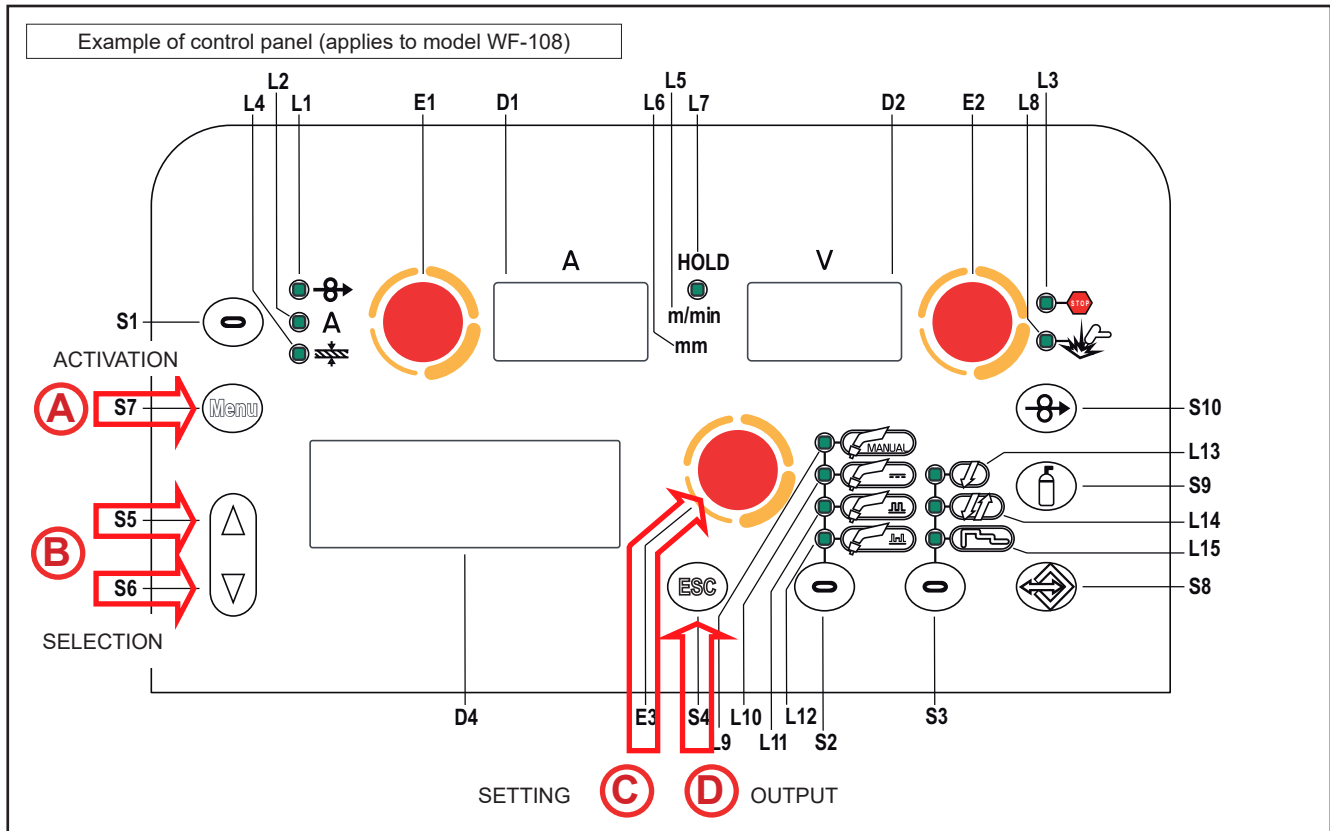
- (C)**
- **Exit without confirmation**
 - Set the welding power source ON/OFF switch to “O” to switch the unit off.
 - Set the welding power source ON/OFF switch to “I” to switch on the unit.
 - **Exit with confirmation**
 - Press **S4** to save the setting and quit the menu.
 - ➔ The display **D4** will show the message: **MEMORY CLEANING**
 - Wait for the memory clear procedure to terminate.
 - ➔ The unit restarts with the power-up procedure.

6 SET-UP (INITIAL SET-UP OF THE WELDING POWER SOURCE)



With locked status active it is not possible to access this function.

① § “6.3 LOCKING PROCEDURE”.




SET UP at machine power on

- Set the welding power source ON/OFF switch to “O” to switch the unit off.
- Set the welding power source ON/OFF switch to “I” to switch on the unit.
- (A)** ○ Simultaneously press button **S7** (Menu) [⚠ This operation must be carried out before the wording “PROGRAM UPDATE” appears on the following display: **D4**]
 - **SET UP X/Y** : The message will appear for a few seconds on display **D4**.
 - X = number of the currently displayed menu page.
 - Y = total number of menu pages.

- (B)** ○ Press buttons **S5** (▲) and **S6** (▼) to scroll down the list of settings to edit.
 - Activation of the ADJUSTMENTS BLOCK calls for a specific procedure.
 - ① § “6.3 LOCKING PROCEDURE”

- (C)** ○ Using the **encoder E3** (◀▶), edit the value of the selected setting.

- (D)** ○ Press **S4** (ESC) to save the setting and quit the menu.
 - The unit restarts with the power-up procedure..

NOTE: During the normal operation, the operator can enter the SET UP menu by pressing the key **S7**  for 5 seconds (SET UP can therefore be accessed with machine on).

Tab. 2 - Setup settings

MENU PAGE	SETTING	MIN	DEFAULT	MAX	NOTES	
SET UP 1/11	SELECT LANGUAGE				ENGLISH, ITALIANO, FRANÇAIS, DEUTSCH, ESPAÑOL, PORTUGUES, DUTCH, CESKY SRBSKI, POLSKI, SUOMI	
SET UP 2/11	COOLING TYPE	ON	AUTO	AUTO		
SET UP 3/11	DISPLAY CONTRAST	0 %	50 %	100 %		
SET UP 4/11	CONTROL TYPE	OFF	OFF	RC08	OFF	No control
					RC03	n°1 potentiometer
					RC04	n°2 potentiometers
					RC05	n°1 UP/DOWN
					RC06	n°2 UP/DOWN
SET UP 5/11	LOCK STATUS	OFF	OFF	LOCK 2	OFF	All adjustments enabled.
					LOCK 1	All adjustments are disabled with the exceptions shown in "Tab. 3 - Functions not disabled by Locks" on page 25.
					LOCK 2	
SET UP 6/11	ARC CORRECTION	VOLTS	VOLTS	m/min		
SET UP 7/11	HOUR COUNTER	0.0 h	0.0 h	0.0 h		
SET UP 8/11	CONNECTION TYPE	OFF	OFF	NC02	OFF	Communication with the IR is disabled
					NC01	Data is being sent to the IR
					NC02	Data is being sent to and received by the IR
SET UP 9/11	TRIGGER TYPE	OFF	OFF	T01	OFF	Normal operation of torch button.
					T01	Enable Job scroll function in welding by pressing the torch button.
SET UP 10/11	SERVICE	CUR- RENT VAL.	C U R - R E N T VAL.	CALI- BRA- TION		Access to the submenu of the calibration and validation services
SET UP 11/11	PUSH-PULL	OFF	OFF	ON		

Cooler activation

- ON= The cooler is always running when the power source is switched on. This mode is preferable for heavy duty and automatic welding procedures.
- OFF= The cooler is always disabled because an air-cooled torch is in use.
- AUT= When the unit is switched on the cooler is switched on for 15 s. During welding procedures the cooler runs constantly. When welding is terminated the cooler continues to run for 90 s plus a number of seconds equivalent to the average current value shown using the HOLD function.

Service

This setting enables the machine validation (VAL.) and calibration (CALIBRATION) operations.

- **CURRENT VAL.**
 - o The validation procedure allows the current value (Ampere) to be correctly detected and displayed on the equipment display. The validation procedure requires the equipment to be connected to a suitable static load.
- **VOLTAGE VAL.**
 - o The validation procedure allows the voltage value (Volt) to be correctly detected and displayed on the equipment display. The validation procedure requires the equipment to be connected to a suitable static load.
- **WIRE S. VAL.**
 - o The validation procedure allows the wire feed rate (m/min) to be correctly detected and displayed on the equipment display.
- **CALIBRATION**
 - o The calibration procedure allows the machine current to be calibrated.

The SERVICE procedure is not described in this manual as it can be carried out only by specialised, suitably trained and equipped technical staff.
The testing methods and the equipment required are set out in the relevant technical standards.

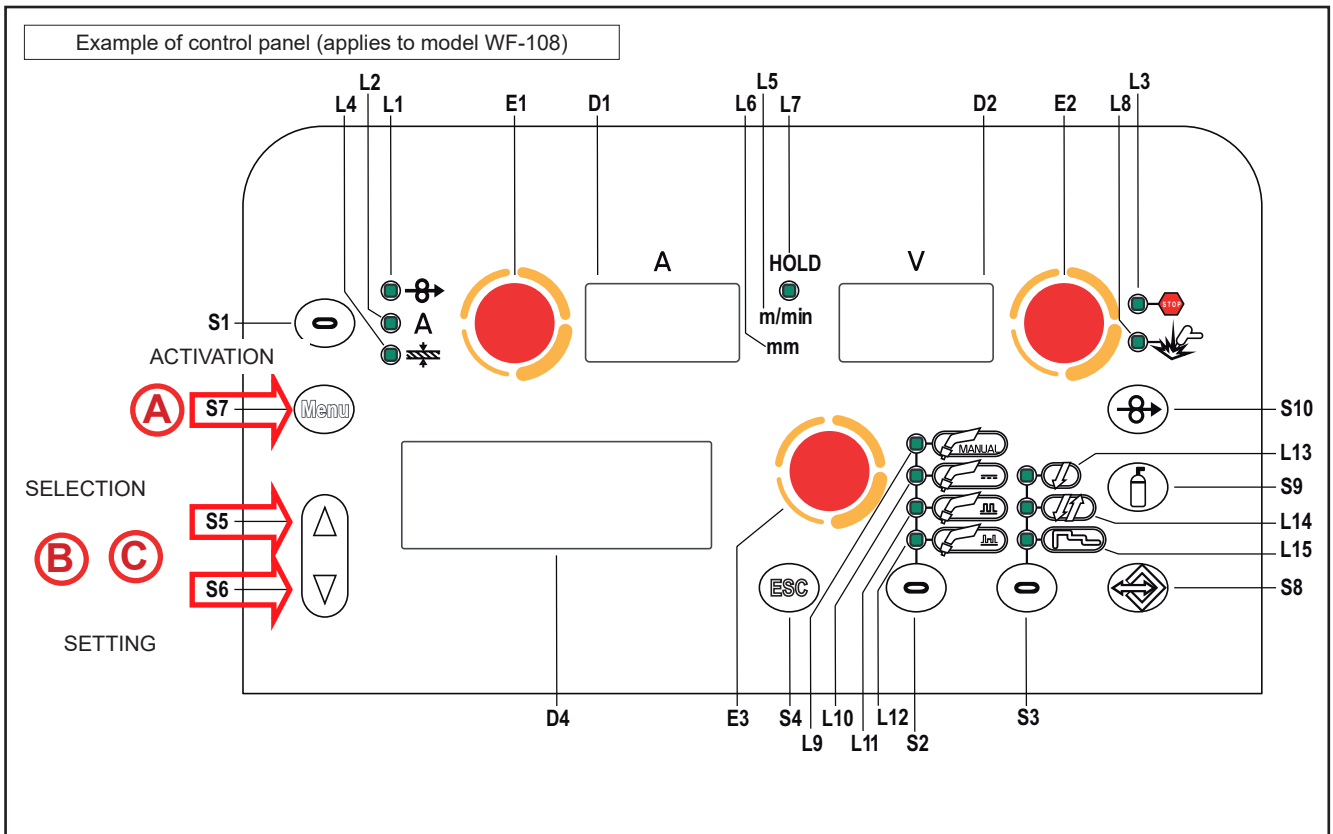
6.1 OPERATING HOUR COUNTER

The menu page shows the processing hour counters.

- **POWER ON** = Total number of hours the machine has been on (mains powered).
- **T.ARC ON** = Total number of hours of welding arc on.
- **P.ARC ON** = Partial number of hours of welding arc on.

SET UP	7/11
POWER ON	7.2 h
T. ARC. ON	5.3 h
P. ARC ON	0.7 h

The reading is carried out as follows: 7 hours and (0.2x60) 12 minutes.



- | | |
|----------|--|
| A | <p>Partial count reset</p> <ul style="list-style-type: none"> ○ Press and hold down the key S7 (Menu) for 3 seconds (SET UP with machine on). |
| B | <ul style="list-style-type: none"> ○ Press keys S5 (▲) and S6 (▼) to select line "SET UP 7/11". |
| C | <ul style="list-style-type: none"> ○ Simultaneously hold down keys S5 (▲) and S6 (▼) for 3 seconds. <ul style="list-style-type: none"> ● The value P.ARC ON will be taken to 0.0 h |

6.2 TRIGGER TYPE

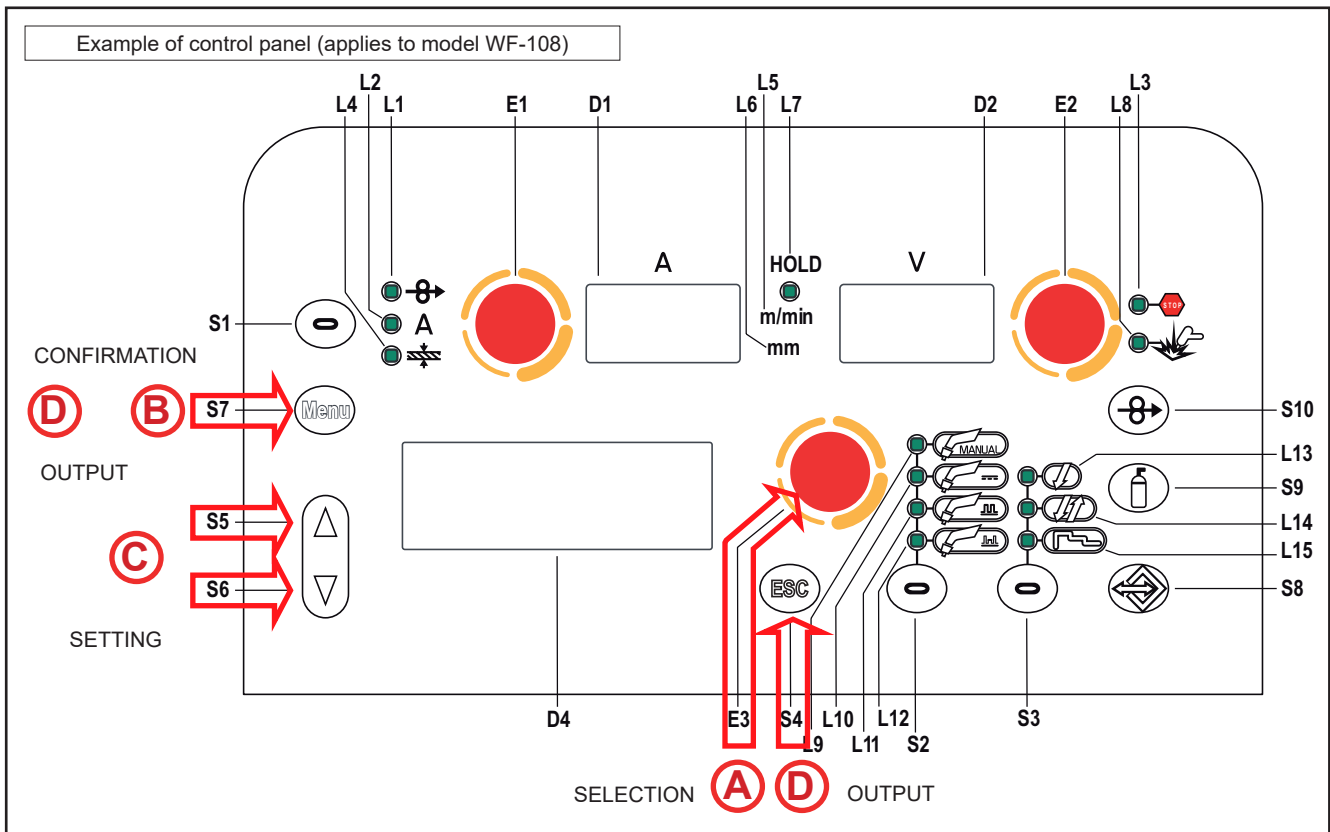
If T01 mode is activated, the job scroll function in welding is enabled by pressing the torch button. In T01 mode, the torch button operates in 4 strokes or 4 strokes 3 levels with Bilevel functions disabled. Therefore, if jobs are saved with different modes, they are automatically provided according to these conditions (which are not saved).

6.3 LOCKING PROCEDURE

The procedure inhibits unit adjustments, allowing the user to modify only certain settings depending on the selected lock status. The procedure is used to prevent accidental alteration of the unit settings and welding settings by the operator.

Enabling

If no locking status is selected (LOCK STATUS = OFF) and if you wish to set up a limitation on use of the welding power source, display page 5/10 of the SETUP menu.



- (A)** ○ Use the **encoder E3** to select the required lock status.
- (B)** ○ Press the **S7** (Menu) button to confirm.
 ● **ENTER PASSWORD: 0000** - The message will appear on display: **D4**
 - ⓘ Default password: 0000
- (C)** ○ Enter a 4 digit numerical password.
 ○ Use buttons **S5** (▲) and **S6** (▼) to select the digit to be changed.
 ● The selected digit will flash .
 ○ Use **encoder E3** to set up the value.

D	<ul style="list-style-type: none"> ○ Exit without confirmation <ul style="list-style-type: none"> - Press the S4 (ESC) button. ➔ This action will automatically close the menu ○ Exit with confirmation <ul style="list-style-type: none"> - Press the S7 (Menu) button. ➔ The unit restarts with the power-up procedure. ⓘ The password becomes active. Make a note of the password you set!
----------	---

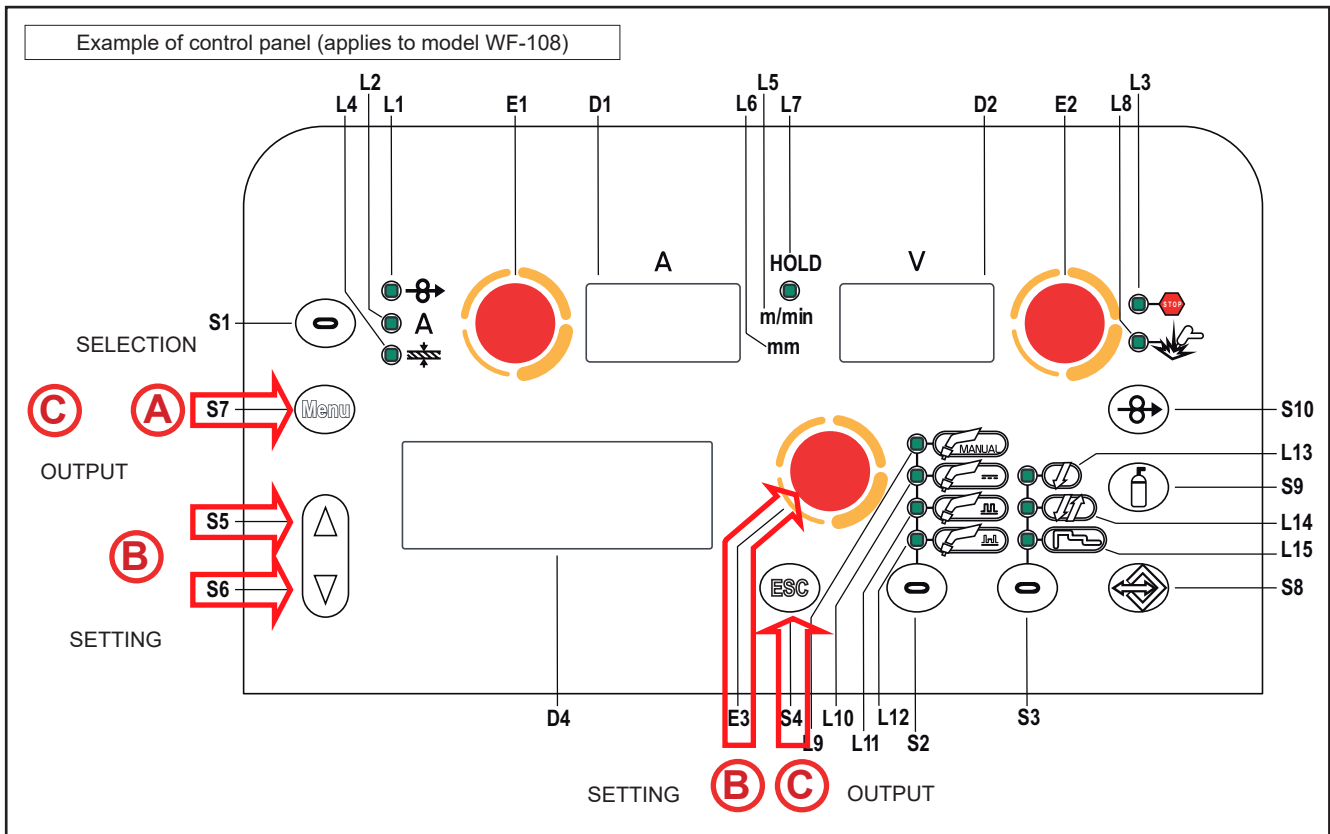
Tab. 3 - Functions not disabled by Locks

LOCK	TYPE OF REMOTE CONTROL					NOTES
	USER INTERFACE/RC08	RC03	RC04	RC05	RC06	
OFF	All adjustments enabled.	All adjustments enabled.	All adjustments enabled.	All adjustments enabled.	All adjustments enabled.	
1	Selection of torch trigger procedure (button S3) Display of main welding parameters (button S1) Arc correction (encoder E2) Wire insertion (button S10) Gas test (button S9)		Arc correction (Potentiometer Pot2)		Arc correction (UP/DOWN lever 2)	
2	Selection of torch trigger procedure (button S3) Display of main welding parameters (button S1) Arc correction (encoder E2) Synergy (encoder E1) Wire insertion (button S10) Gas test (button S9)	All adjustments enabled.	All adjustments enabled.	All adjustments enabled.	All adjustments enabled.	

Disabling

If a lock status is selected, you can only edit parameters permitted by the currently active lock status. If you cannot recall the password the only way to exit lock status is to perform the welding power source RESET procedure.

NOTE: The welding power source must be on and set up for welding.



- A**
 - Press and hold down the button **S7** (Menu) for 5 second.
 - ➡ The SET UP menu will be accessed, with the machine on.
 - ➡ **LOCK...WRITE PASSWORD : 0000** - The message will appear on display: **D4**
 - Enter the active 4 digit numerical password.
- B**
 - Use buttons **S5** (▲) and **S6** (▼) to select the digit to be changed.
 - ➡ The selected digit will flash..
 - Use **encoder E3** (◯) to set up the value.
- C**
 - **Exit without confirmation**
 - Press the **S4** (ESC) button.
 - ➡ This action will automatically close the menu
 - **Exit with confirmation**
 - Press the **S7** (Menu) button.
 - ➡ The unit restarts with the power-up procedure.

Quit lock status.

6.4 GAS FLOW ADJUSTMENT

When the unit is powered on the solenoid valve opens for 1 second.
This serves to fill the gas circuit.

- Open the gas solenoid valve by pressing and releasing button **S9** (🔧).
- Adjust the pressure of gas flowing from the torch by means of the flow meter connected to the gas cylinder.
- Close the gas solenoid valve by pressing and releasing the button **S9** (🔧).
- The solenoid valve closes automatically after 30 seconds.

6.5 TORCH LOADING



WARNING!

Make sure the torch in use is correctly sized in relation to the welding current required and for the available and selected cooling type. This prevents the risk of burns to which the operator is potentially exposed, potential faults, and irreversible damage to the torch and the system.
If a torch is installed or replaced while the unit is running, the circuit of the newly installed must be filled with coolant to avoid the risk of damage to the torch in the case of high voltage arc strikes without any liquid in the circuit.



Power-up with operation of the cooler set to "ON" or "AUTO" mode

A check is performed automatically of the presence of liquid in the cooling circuit and the cooler is switched on for 30 seconds.

If the coolant circuit is full, the power source sets up in the most recent stable welding configuration.

If the coolant circuit is not full, all functions are inhibited and there will be no output power present.

☛ CHECK COOLING UNIT - The message will appear in display: **D4**

- Press button **S4**  or torch trigger to repeat the checking procedure for an additional 30 seconds.
 - If the problem persists rectify the cause of the alarm.
 - During this checking operation, the setup menu can be accessed by pressing button **S7**  for 5 seconds.

Power-up with operation of the cooler set to "OFF"

- ☛ Operation of the cooler and the cooler alarm are disabled.
- ☛ Welding is performed without liquid cooling of the torch.

Torch change-over with operation of the cooler set to "AUTO"

Press and release the torch trigger.

- ☛ This serves to start the cooler for 80 seconds to fill the torch cooling circuit.

6.6 WELDING CIRCUIT CALIBRATION

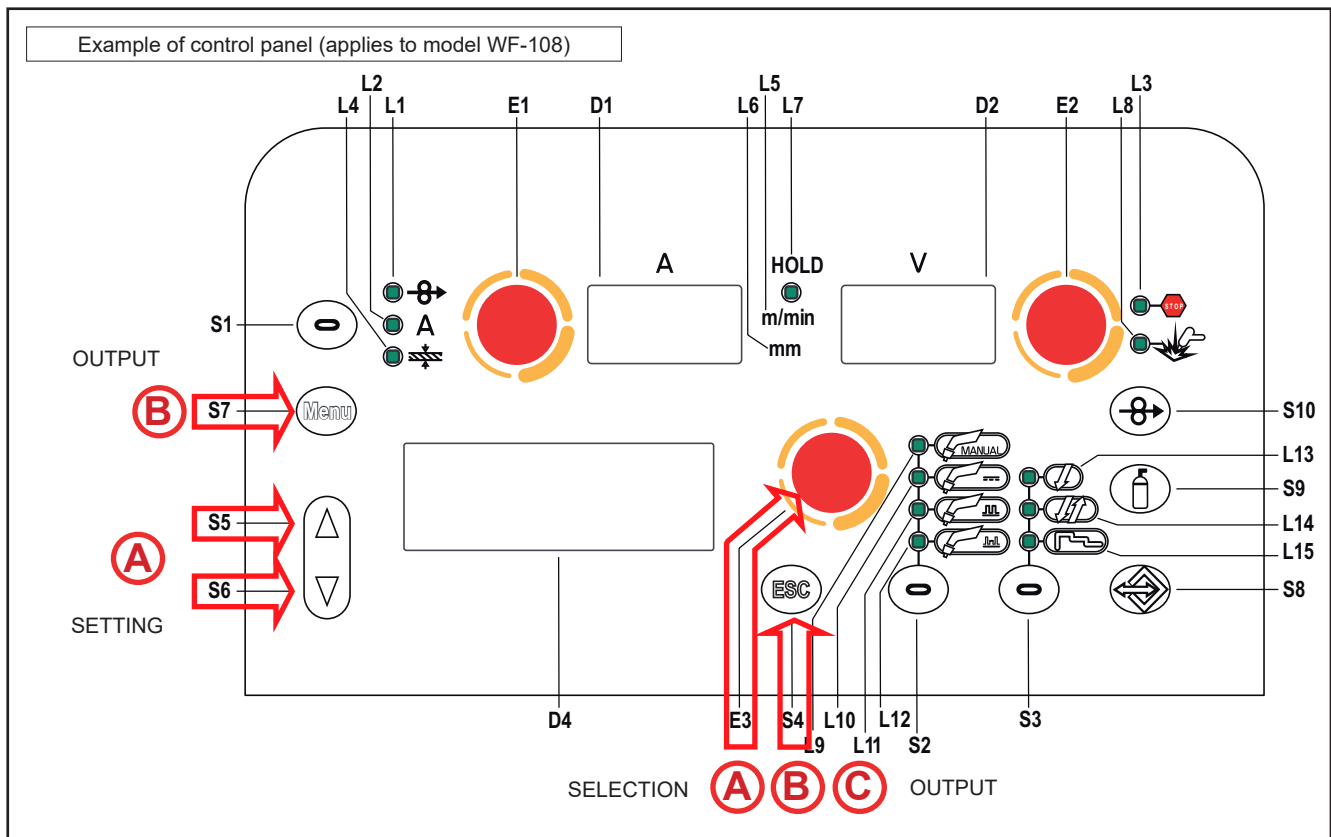
When the wire feeder is used with the associated cable bundle, the welding circuit "r" resistance must be measured by using the calibration function. This allows to achieve a consistent welding quality when the cable bundle length and the torch is changed. The welding circuit resistance depends on the cable bundle and the torch used, therefore the calibration procedure must be repeated when these components are changed.

CALIBRATION after power source RESET

If the power source total RESET is carried out, the calibration value will be replaced by the default value. If a partial RESET is carried out, the measured value will be stored.

Calibration is not compulsory therefore, should the user decide not to carry it out, the machine will keep the default value.

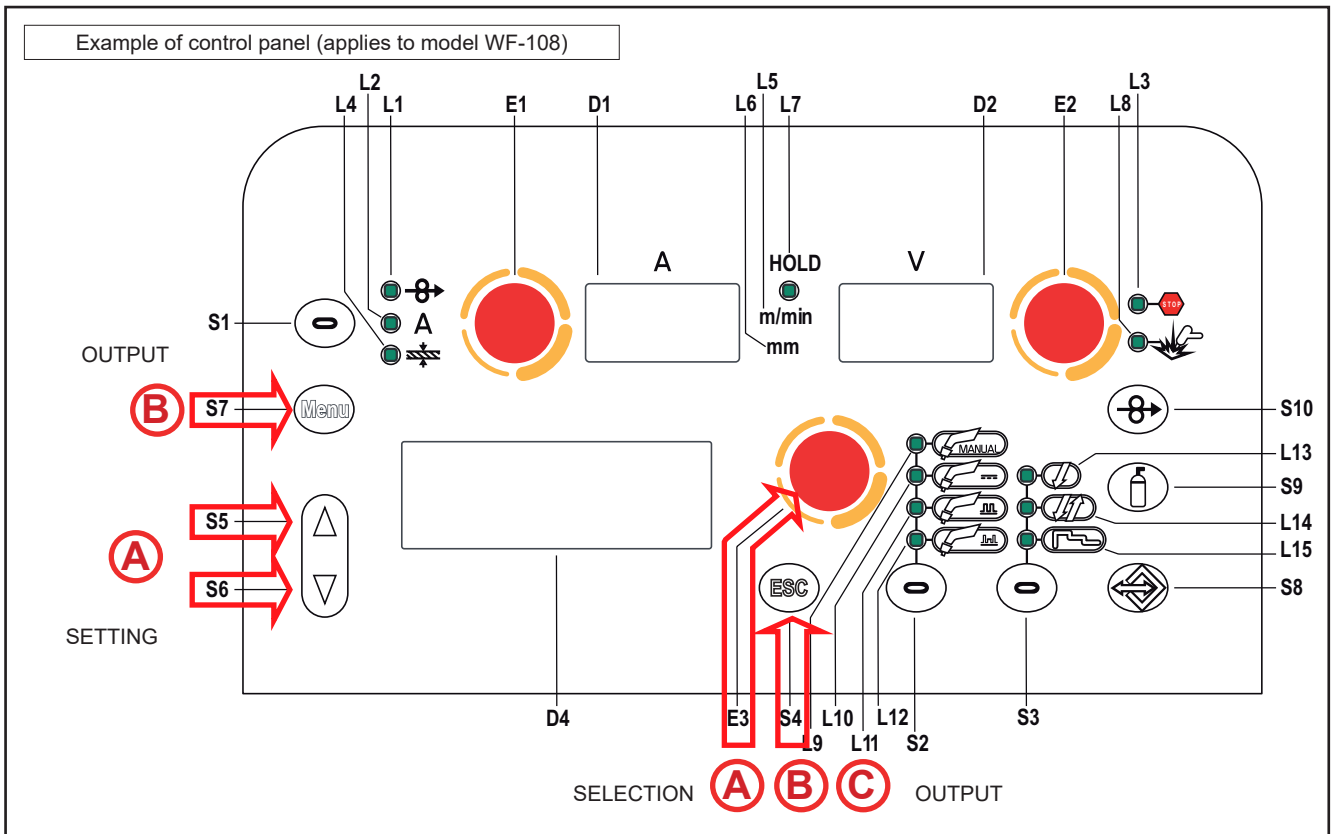
CALIBRATION PROCEDURE



The welding power source must be on and not set up for welding.
The power source remote control must be enabled.

- Press and hold down for 3 seconds buttons **S5** and **S6** .
- **TOUCH THE WORKPIECE WITH THE GUIDE WIRE TIP AND PRESS THE TORCH TRIGGER-** The message will appear on display: **D4**
- **CAL** - The message will appear on display: **D1**
- Display D2 will show the welding circuit resistance value (mΩ) measured during the last calibration. After a total RESET, the default value will appear.

Remove the gas nozzle from the torch and lean the guide wire tip (without the wire) onto the surface of the workpiece, making sure it sticks well; check that the contact between the guide wire tip and the workpiece is on a clean area of the piece's surface. Press the torch button to perform the calibration.



Calibration carried out correctly

(B)

- ➔ **CALIBRATION SUCCESSFULLY COMPLETED** - The message will appear on display: **D4**.
- ➔ The calibration value appears on display : **D2**.

You can make several subsequent calibrations by pressing and releasing the torch trigger. In this case the last value revealed is memorized.

- **Exiting without saving**
 - Press the **S4** (ESC) button.
- **Exit and save**
 - Press the **S7** (Menu) button.

Calibration carried out incorrectly

(C)

- ➔ **CAL. Err.** - The message will appear on display: **D1 - D2**.
- ➔ **REPEAT THE MEASUREMENT** The message will appear on display: **D4**.

Press the torch trigger to perform the calibration.

- **Exiting without saving**
 - Press the **S4** (ESC) button.



7 ALARM MANAGEMENT




This LED illuminates if an incorrect operating condition occurs.

- ➡ An alarm message will appear on display **D4**.

Tab. 4 - Alarm messages

MESSAGE	MEANING	EVENT	CHECKS
WARNING POWER SOURCE	Indicates tripping of the welding power source thermal protection. Leave the unit running so that the overheated components cool as rapidly as possible. When the problem is solved, the welding power source will reset automatically.	All functions disabled. <u>Exceptions:</u> • cooling fan. • cooler (if switched on).	<ul style="list-style-type: none"> • Make sure that the power required by the welding process is lower than the maximum rated power output. • Check that the operating conditions are in compliance with the welding power source data plate specifications. • Check for the presence of adequate air circulation around the welding power source.
WARNING NO COMMUNICATION	Indicates the presence of problems in data communication between the power source and wire feeder. When the problem is solved, the welding power source will reset automatically. Exit the alarm state by performing one of the following actions: • Switch the power source off.	All functions disabled. <u>Exceptions:</u> • cooling fan. • cooler (if switched on).	<ul style="list-style-type: none"> • Check that the connecting cable between power source and wire feeder is intact and make sure the connectors are securely tightened. • Check the data transmission wiring inside the power source and the wire feeder. • Check for correct operation of the control board in the power source and the Motor Board in the wire feeder.
WARNING TRIGGER	Indicates that when the wire feeder was powered up a short circuit was detected on the torch trigger input. When the problem is solved, the welding power source will reset automatically.	All functions disabled.	<ul style="list-style-type: none"> • Make sure the torch trigger is not pressed, jammed, or short circuiting. • Make sure the torch and MIG/MAG torch connector are intact.
WARNING COOLING SYSTEM	Indicates insufficient pressure in the torch liquid cooling circuit. To exit the alarm condition and perform an operating check of the cooling unit press the following button: 	All functions disabled. <u>Exceptions:</u> • cooling fan.	<ul style="list-style-type: none"> • Check that the connection to the cooler is correct. • Check that the O/I switch is set to I and that it illuminates when the pump is running. • Check that the cooler is filled with coolant. • Check that the cooling circuit is intact, notably the torch hoses and the internal connections of the cooler.
WARNING PROTECTION CURRENT	Indicates tripping of the welding power source current surge protection. Exit the alarm state by performing one of the following actions: • Switch the power source off. • Press the following button: 	All functions disabled. <u>Exceptions:</u> • cooling fan. • cooler (if switched on).	<ul style="list-style-type: none"> • Check that the programmed arc voltage value is not too high in relation to the thickness of the work to be welded.

MESSAGE	MEANING	EVENT	CHECKS
WARNING CAN BUS	<p>Indicates a CAN communication problem.</p> <p>Exit the alarm state by performing one of the following actions:</p> <ul style="list-style-type: none"> • Press the following button:  	<p>All functions disabled.</p> <p><u>Exceptions:</u></p> <ul style="list-style-type: none"> • cooling fan. • cooler (if switched on). 	<ul style="list-style-type: none"> • Make sure the IR board is powered on. • Make sure the LEDs on the interface board go on. • Check the correct connection and integrity of the cabling between the wire feeder and the IR board. • Switch off the machine, then switch it on again.

8 PARAMETERS ACTIVATION
















The welding parameters are available in accordance with the selected welding mode and procedure. Certain parameters are available only after other parameters or functions of the unit have been enabled or set.

The table shows the settings required to enable each parameter.

√ : always available.

1: available in HSL line power sources on selecting one of the "PF" curves (e.g.: SG2/SG3 **PF**)

2: Available selecting one of the "PR" curves (e.g.: SG2/SG3 **PR**)

MENU ↓	MODE →											
	PROCEDURE →											
	PARAMETER ↓											
-	Arc correction in Volts			✓	✓	✓	✓	✓	✓	✓	✓	✓
-	Arc correction in metres per minute			✓	✓	✓	✓	✓	✓	✓	✓	✓
-	Arc correction with Power Root			2	2	2						
1st	Inductance	✓	✓									
2nd	Inductance			✓	✓	✓						
2nd	PR Start			2	2	2						
2°	Arc Set						✓	✓	✓	✓	✓	✓
2°	Pre Gas	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2°	Soft Start	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2°	Burn back	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2°	Post gas	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2°	Power focus			1	1	1						
2°	Spot time	✓		✓			✓			✓		
2°	B-level				✓	✓		✓	✓		✓	✓
2°	Start 3lev					✓			✓			✓
2°	Crater 3lev					✓			✓			✓
2°	Slope 3lev 1					✓			✓			✓
2°	Slope 3lev 2					✓			✓			✓
2°	Freq 2puls									✓	✓	✓
2°	Range 2puls									✓	✓	✓
2°	Cycle 2puls									✓	✓	✓
2°	Arc2 2puls									✓	✓	✓
2°	Arc2 2puls									✓	✓	✓

8.1 WELDING PARAMETERS

• Arc correction in volts

- This parameter corrects the synergic voltage value relative to the synergic point of the synergic and pulsed MIG/MAG processes, while it manages correction of the voltage of the high value in the MIG/MAG double pulsed process.
- The default value for horizontal and frontal welding is 0.0 V.
- NOTE: A value >0 produces an increase in the length of the welding arc, while a value <0 produces a shorter arc.

• Arc correction in metres per minute

- This parameter corrects the wire feed rate synergic value relative to the synergic point of the synergic and pulsed MIG/MAG processes, while it manages the wire feed rate of the high value in the MIG/MAG double pulsed process.
- The default value for horizontal and frontal welding is 0.0 V.
- NOTE: A value <0 produces an increase in the length of the welding arc, while a value >0 produces a shorter arc.

• Arc correction with Power Root

- The parameter corrects the arc dynamics in the POWER ROOT process.
- The default value is 0.
- NOTE Values >0 produce a «softer» weld, while values <0 produce a «harder» weld.

• INDUCTANCE (MIG/MAG manual welding)

- Consequences of a higher value:
 - "Softer" welding.
 - Less spatter.
 - Less positive starting.
- Consequences of a lower value:
 - "Harder" welding.
 - More spatter.
 - More reliable starting.

• INDUCTANCE

- The value SYN=100 denotes the optimal synergic inductance value chosen by the manufacturer.
- IMPORTANT NOTE: This inductance value does not correspond to the equivalent number set in manual MIG/MAG welding.
- Consequences of a higher value:
 - "Softer" welding.
 - Less spatter.
 - Less positive starting.
- Consequences of a lower value:
 - "Harder" welding.
 - More spatter.
 - More reliable starting.

• PR START

- The value SYN=100 denotes the optimal synergic inductance value chosen by the manufacturer.
- IMPORTANT NOTE: This inductance value corresponds to start-up with the POWER ROOT curves.
- Consequences of a higher value:
 - Less positive starting.

ENGLISH

- Consequences of a lower value:
 - More reliable starting.

• ARC SET

- In pulsed synergic welding this parameter directly influences the size of the welding pulses.
- The value SYN=100 denotes the optimal synergic value chosen by the manufacturer.
- IMPORTANT NOTE: This parameter should be adjusted as little as possible. To correct synergy it is advisable to use arc correction by means of the voltage parameter. This parameter can be useful if the material or gas used is different from that of the synergic curve.
- If you set a value other than SYN, this value is stored and fixed.
- Consequences of a higher value:
 - Hotter welding.
- Consequences of a lower value:
 - Cooler welding.

• PRE GAS

- Time of gas delivery before the arc strike.
- CAUTION: an excessively long value will slow the welding procedure. Other than in the presence of special requirements the value should generally be kept at 0.0 s or anyway very low.
- Consequences of a higher value:
 - This parameter allows a shielded environment to be created, thereby eliminating contaminants at the start of the welding pass.

• SOFT START (MIG/MAG manual welding mode)

- The SOFT START is the wire approach speed to the workpiece.
- The value is expressed as a percentage of the set feed rate.
- Consequences of a lower value:
 - The start of welding is "softer".
- Consequences of a higher value:
 - The welding start may prove difficult.

• SOFT START

- The SOFT START IS THE WIRE APPROACH SPEED TO THE WORKPIECE.
- The value is expressed as a percentage of the set feed rate.
- In synergic welding the optimal SOFT START value (indicated with SYN) varies in general with variations of the synergic parameters.
- In synergic welding, if the value SOFT START = SYN is selected the welding power source will always have the optimal SOFT START value set when the main welding parameter changes.
- If you set a value other than SYN, this value is stored and fixed.
- Consequences of a lower value:
 - The start of welding is "softer".
- Consequences of a higher value:
 - The welding start may prove difficult.

• BURN BACK (MIG/MAG manual welding mode)

- The BURN BACK value is associated with the quantity of wire that is burnt at the end of the welding procedure.
 - Consequences of a higher value:
 - Wire significantly retracted into the torch nozzle.
 - Consequences of a lower value:
 - Stick-out at welding start is longer.
-

• BURN BACK

- The BURN BACK VALUE IS ASSOCIATED WITH THE QUANTITY OF WIRE THAT IS BURNT AT THE END OF THE WELDING PROCEDURE.
- In synergic welding the optimal BURN BACK value (indicated with SYN) varies in general with variations of the synergic parameters.
- In synergic welding, if the value BURN BACK = SYN is selected the welding power source will always have the optimal BURN BACK value set when the main welding parameter changes.
- If you set a value other than SYN, this value is stored and fixed.
 - Consequences of a higher value:
 - Wire significantly retracted into the torch nozzle.
 - Consequences of a lower value:
 - Stick-out at welding start is longer.

• POST GAS

- Time of post gas delivery when the welding arc is extinguished.
- This is useful when welding at high current values or with materials that oxidise readily to cool the weld pool in an uncontaminated atmosphere.
- In the absence of specific requirements the value should generally be kept low.
 - Consequences of a higher value:
 - More effective pickling (improved appearance of workpiece at the end of the welding pass).
 - Higher gas consumption.
 - Consequences of a lower value:
 - Lower gas consumption.
 - Oxidation of electrode tip (more difficult arc strike).

• POWER FOCUS

- The parameter changes the concentration of the electric arc, increasing or reducing the energy transferred to the workpiece.
 - Consequences of a higher value:
 - Welding arc concentration.
 - Penetration increase.

• SPOT TIME

- When the torch trigger is pressed the welding arc persists for the time set in the parameter.
- Press the torch trigger again to resume the welding process.
- The welding process cannot be interrupted once it has been started.
- When the torch trigger is pressed, if the arc does not strike within 10 seconds, the process is deactivated.
- The welding parameters can be modified during the welding process.

• B-LEVEL

- The parameter enables a special torch trigger function.
- Pressing and releasing the torch trigger rapidly in welding mode (in time 2) serves to switch from the main welding current to a secondary current.
- Pressing and releasing the torch trigger again switches from the secondary current to the main current. This switching can be performed repeatedly at the discretion of the operator.
- To close the welding cycle (time 3) operate the torch trigger with a prolonged press. When the trigger is released the welding cycle will close (time 4).

• START 3LEV

• Start in 3 levels operation

- The parameter adjusts the 1st level wire feed rate as a percentage of the wire feed rate set for

ENGLISH

welding (2nd level).

- The time is determined by the operator on the basis of the time he presses the torch trigger during the third time.
- This is helpful to start the weld run with different heat input compared to steady state welding conditions.
- High values (e.g. 130 %) are generally required by aluminium alloys to create a weld pool.

• CRATER 3LEV

• Crater in 3 levels operation

- The parameter adjusts the 3rd level wire feed rate as a percentage of the wire feed rate set for welding (2nd level).
- The time is determined by the operator on the basis of the time he presses the torch trigger during the third time.
- This is helpful to finish the weld run with different heat input compared to steady state welding conditions.
- This function is generally required with aluminium alloys, in which the final crater must be filled.
- Consequences of a lower value:
 - Less formation of the welding final crater (crater filler).

• SLOPE 3LEV 1

• Initial slope in 3-level operation

- The parameter controls the slope time connecting the HOT START level and the welding level.
- The setting is dependent on the specific needs of the operator.
- Values from 0.5 s to 1.0 s are suitable for the vast majority of applications.

• SLOPE 3LEV 2

• Final slope in 3-level operation

- The parameter controls the slope time connecting the welding level and the crater filler level.
- The setting is dependent on the specific needs of the operator.
- Values from 0.5 s to 1.0 s are suitable for the vast majority of applications.

• FREQ 2PULS

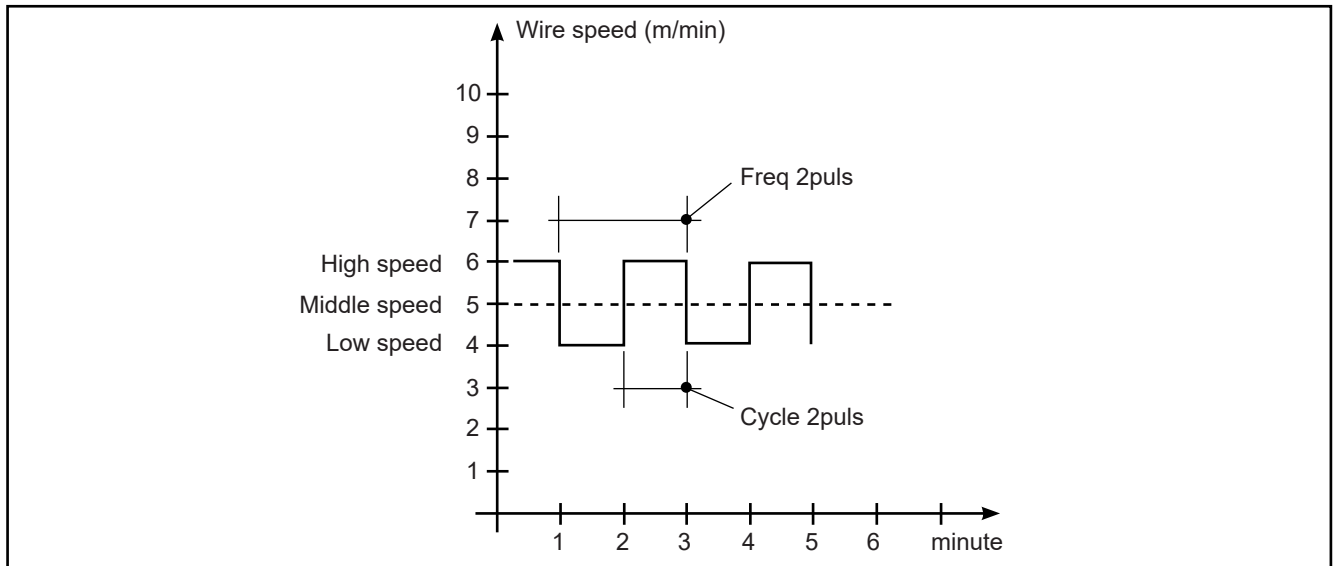
• Double pulsed frequency

- This parameter adjusts the frequency of alternation of the two wire feed rates set with RANGE 2PULS parameter.
- The setting is dependent on the specific needs of the operator.
- The best results are obtained with frequencies of approximately 1.5 Hertz.

• RANGE 2PULS

• Double pulsed range

- This parameter generates the two wire feed rates (high and low) utilised in double pulsed mode, which alternate with the frequency defined by the parameter FREQ 2PULS.
- Values that are not excessively high are preferable for stability of the welding arc.
- This value is expressed as a percentage of the set wire feed rate and it determines the high and low feed rate values in compliance with the following rule:
 - High wire feed rate= wire feed rate (D1) + [wire feed rate (D1)*RANGE 2PULS]/2
 - Low wire feed rate= wire feed rate (D1) - [wire feed rate (D1)*RANGE 2PULS]/2
- Example: if a rate of 5 m/min is set on the main adjustment (on display D1) (average feed rate) and 40 % on RANGE 2PULS (on display D4), the wire feed rate will vary between 4 m/min (low feed rate) and 6 m/min (high feed rate).



• **CYCLE 2PULS**

• **Double pulsed duty cycle**

- The parameter adjusts the high feed rate time.
- The value is expressed as a percentage over the pulse frequency period.

• **ARC2 2PULS**

• **Arc2 voltage in double pulsed mode**

- The parameter corrects the synergic voltage value relative to the low wire feed rate of double pulsed mode.
- NOTE: A value >0 produces an increase in the length of the welding arc, while a value <0 produces a shorter arc.

• **ARC2 2PULS**

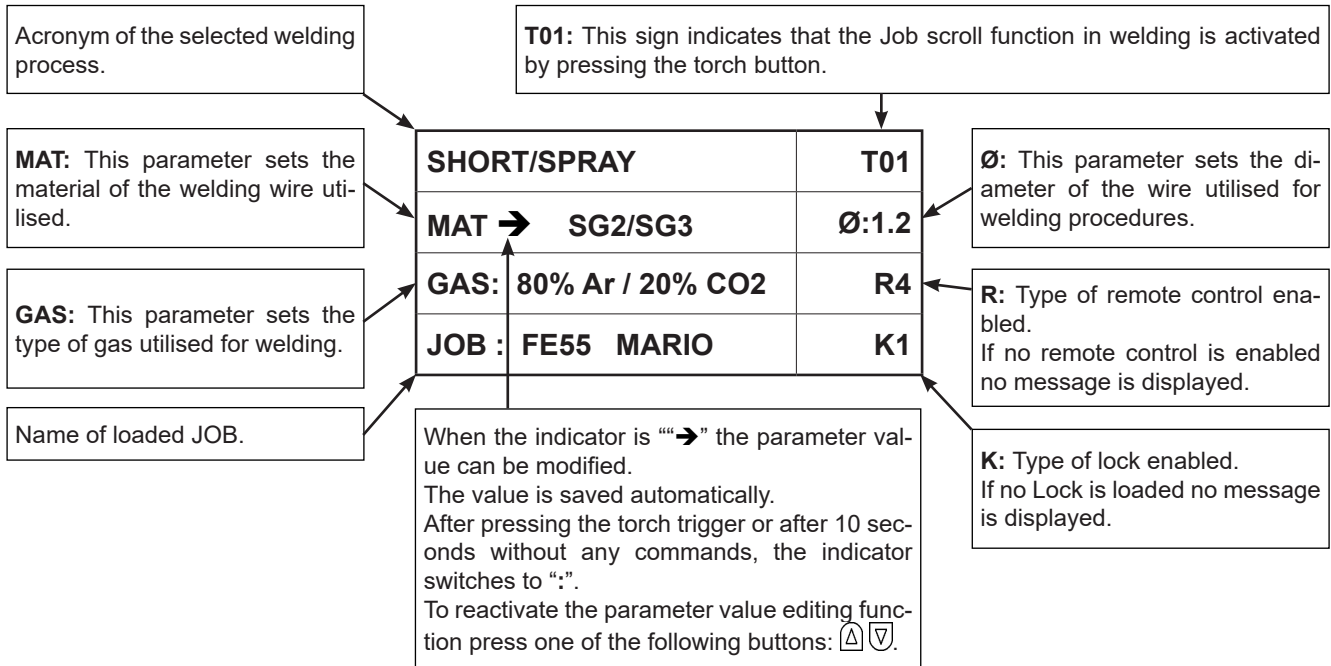
• **Arc2 wire feed rate in double pulsed mode**

- The parameter corrects the synergic value of the wire feed rate relative to the low voltage value of double pulsed mode.
- NOTE: A value <0 produces an increase in the length of the welding arc, while a value >0 produces a shorter arc.

9 CHARACTERISTICS OF THE MENU LEVELS

9.1 1ST LEVEL

The menu shows the setting of the most important welding parameters (or synergic settings) relative to the selected welding process.



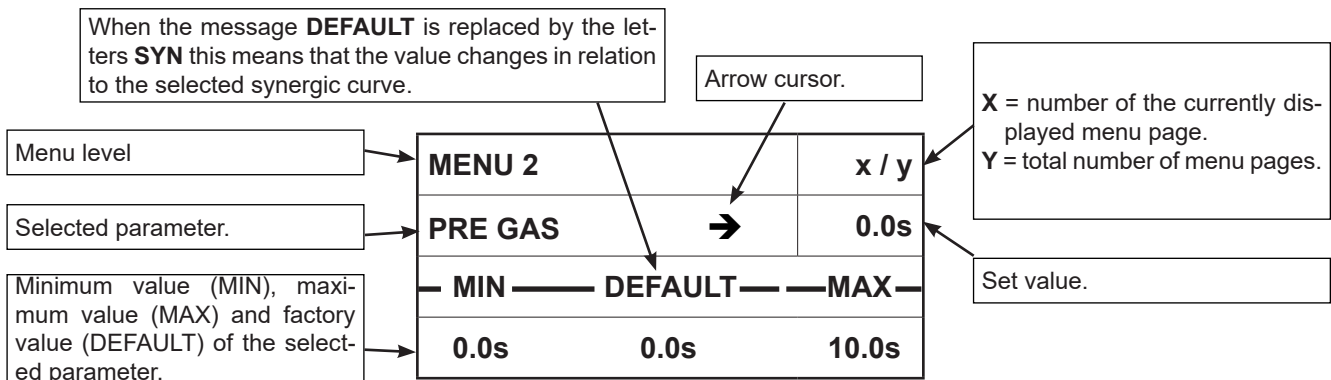
9.2 2ND LEVEL

For each process selection the menu shows the "secondary" welding parameters that can be modified with respect to their synergic values.

If the type of wire, gas, or diameter is changed within a welding process, the second level parameters return to their default values.

The changed parameters remain saved for the relative process selection (manual MIG/MAG, synergic, pulsed synergic, double pulsed synergic).

To save and retrieve the changes made, utilise the JOBS storage procedure.

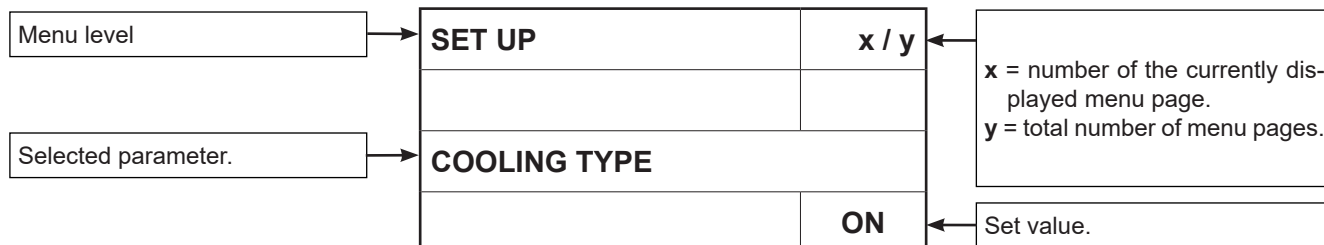


9.3 3RD LEVEL

The menu contains the settings and values that are changed infrequently and are to be set up the first time the unit is powered up.

The changed parameters remain saved until the next modification or reset of the unit.










§ "6 SET-UP (INITIAL SET-UP OF THE WELDING POWER SOURCE)".



10 WELDING SETTINGS

10.1 WELDING CURVES SELECTION

SHORT/SPRAY		
MAT →	SG2/SG3	Ø:1.2
GAS:	80% Ar / 20% CO2	R4
JOB :	FE55 MARIO	K1

- Select parameter **MAT** by pressing buttons **S5**  and **S6** .
 - Using the **encoder E3** , edit the value of the selected parameter.
- Select parameter **Ø** by pressing buttons **S5**  and **S6** .
 - Using the **encoder E3** , edit the value of the selected parameter.
- Select parameter **GAS** by pressing buttons **S5**  and **S6** .
 - Using the **encoder E3** , edit the value of the selected parameter.

10.1.1 Special curves: HIGH SPEED, HIGH CONTROL, POWER FOCUS and POWER ROOT

No specific procedures are required to activate these curves. The special curves appear in the list together with the standard curves.

HIGH SPEED CURVES: the curves are available in HSL series power sources in the PULSED MIG/MAG - DOUBLE PULSED MIG/MAG mode.

Pulsed HS is a special function in the pulsed MIG/MAG mode, featuring a very short and intense arc, EASILY controlled by the welder. HS pulsed, compared to other high deposition welding systems, allows the welder to achieve a comfortable arc without increased stress.

These curves differ from the other standard curves because of the acronym **HS** which is displayed after the reference to the welding wire material.

Example:

PULSED MODE	
MAT → SG2/SG3 HS	Ø:1.2
GAS: 80% Ar / 20% CO2	R4
JOB : FE55 MARIO	K1

HIGH CONTROL CURVES: the curves are available in HSL series power sources in PULSED MIG/MAG - DOUBLE PULSED MIG/MAG welding mode.

The new HC (High Control) Pulsed curve features a very fast arc control in order to achieve a very fast drop detachment with a highly reduced energy. The welding benefits are:

- Increased arc stability
- Very reactive arc to the torch movement
- Reduced energy transmitted to the welded workpiece
- Very linear transfer and optimal edge wettability
- Very fast operation
- Spatters and microprojections almost entirely absent.

These curves differ from the other standard curves because of the acronym **HC** which is displayed after the reference to the welding wire material.

Example:

PULSED MODE	
MAT → SG2/SG3 HC	Ø:1.2
GAS: 80% Ar / 20% CO2	R4
JOB : FE55 MARIO	K1

POWER FOCUS CURVES: the curves are available in HSL series power sources in SYNERGIC SHORT SPRAY MIG/MAG welding mode.

The difference between a standard MIG MAG and Power Focus is its concentration and pressure. The POWER FOCUS arc concentration allows the welder to focus the high temperature of the arc in the central section of the deposition, thus avoiding to overheat the sides of the welding. The thermally changed area with the Power Focus arc is less widespread.

These curves differ from the other standard curves because of the acronym **PF** which is displayed after the reference to the welding wire material.

Example:

SHORT/SPRAY		
MAT → SG2/SG3 PF		Ø:1.2
GAS: 80% Ar / 20% CO2		R4
JOB : FE55 MARIO		K1

POWER ROOT CURVES: the curves are available in SYNERGIC SHORT SPRAY MIG/MAG welding mode.

Power Root is an optimised short arc transfer with the feature of having a cold drop transfer. Power Root allows to achieve a very high quality in root passes.

These curves differ from the other standard curves because of the acronym **PR** which is displayed after the reference to the welding wire material.

Example:

SHORT/SPRAY		
MAT → SG2/SG3 PR		Ø:1.2
GAS: 80% Ar / 20% CO2		R4
JOB : FE55 MARIO		K1

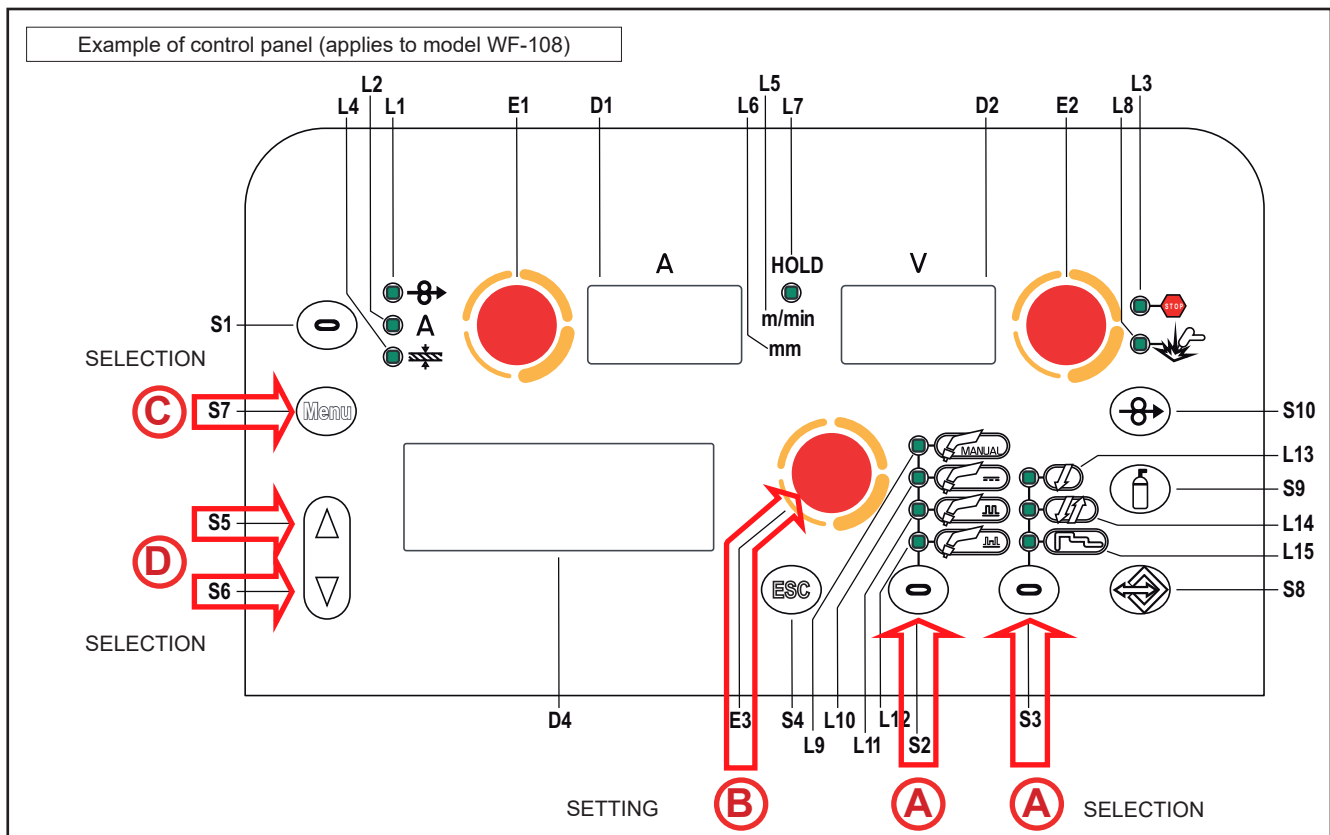
10.2 MANUAL MIG/MAG WELDING

Welding is of the Short/Spray type.

Adjustment of the main welding parameters, wire feed rate and voltage is entirely at the discretion of the operator. The optimal work point must be identified for the required welding type.

During a welding operation with an active JOB, it is possible to temporarily change the parameters shown in the displays D1 and D2 with their encoders to test the temporary changes made to the welding operation. At the end of the welding operation (and HOLD is quit) the values of the loaded JOB are reset.

When the welding operation is not being carried out and a JOB is active through encoder E3, the JOBS belonging to its sequence can be scrolled.




- S2** This button serves to select the following welding mode:
MANUAL MIG/MAG
- A** **S3** Use this button to select one of the following torch trigger procedures:
2 STROKE
2 STROKE SPOT: The procedure is active when the "SPOT TIME" parameter is set to a value other than "OFF".
4 STROKE

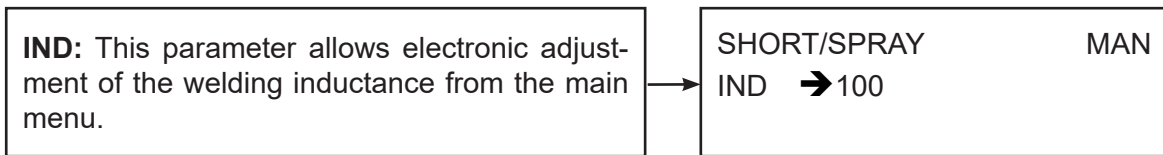
Tab. 5 - Main settings and displays in MANUAL MIG/MAG mode

	DISPLAY D1	DISPLAY D2	DISPLAY D3
Data setting	Shows the wire feed rate setting in m/min, which can be altered by means of the following encoder: (E1).	Shows the set welding voltage, which can be adjusted with the following encoder: (E2).	Shows "---".





Welding	Shows the average current measured during welding.	Shows the average voltage measured during welding.	Shows "----".
HOLD function (At welding end)	Shows the average current measured during the last welding procedure performed.	Shows the average voltage measured during the last welding procedure performed.	Shows "----".

10.2.1 Manual MIG/MAG parameters setting (1st level): inductance setting.



- Ⓑ Using the **encoder E3** , edit the value of the selected parameter
① The value is saved automatically.



10.2.2 MANUAL MIG/MAG PARAMETERS SETTING (2ND LEVEL)

- Ⓒ Press the button **S7**  to enter the 2nd level menu.
- Ⓓ Scroll down the list of parameters to be edited by pressing buttons **S5**  and **S6** 
- Ⓑ Using the **encoder E3** , edit the value of the selected parameter
① The value is saved automatically.

Tab. 6 - 2nd level menu parameters in MANUAL MIG/MAG mode

PROCEDURE	PARAMETER	MIN	DEFAULT	MAX	NOTES
 2 STROKE 2 STROKE SPOT	INDUCTANCE (row 1/6)	1	100	200	
	PRE GAS (row 2/6)	0.0 s	0.0 s	10.0 s	
	SOFT START (row 3/6)	1 %	35 %	100 %	
	BURN BACK (row 4/6)	1 %	25 %	200 %	
	POST GAS (row 5/6)	0.0 s	1.0 s	10.0 s	
	SPOT TIME (row 6/6)	0.1 s	OFF	25.0 s	The parameter value is saved for each welding mode.
 4 STROKE	INDUCTANCE (row 1/5)	1	100	200	
	PRE GAS (row 2/5)	0.0 s	0.0 s	10.0 s	
	SOFT START (row 3/5)	1 %	35 %	100 %	
	BURN BACK (row 4/5)	1 %	25 %	200 %	
	POST GAS (row 5/5)	0.0 s	1.0 s	10.0 s	

10.3 SYNERGIC MIG/MAG WELDING

Set the welding data (material, wire diameter, gas type), shown on display D4 and just one welding parameter, chosen among wire feed rate, Amperes, and workpiece Thickness, shown on display D1. NOTE: The synergic curves were created with reference to a fillet weld in position PB (horizontal-vertical) with 10 mm stick-out (distance from torch to workpiece).

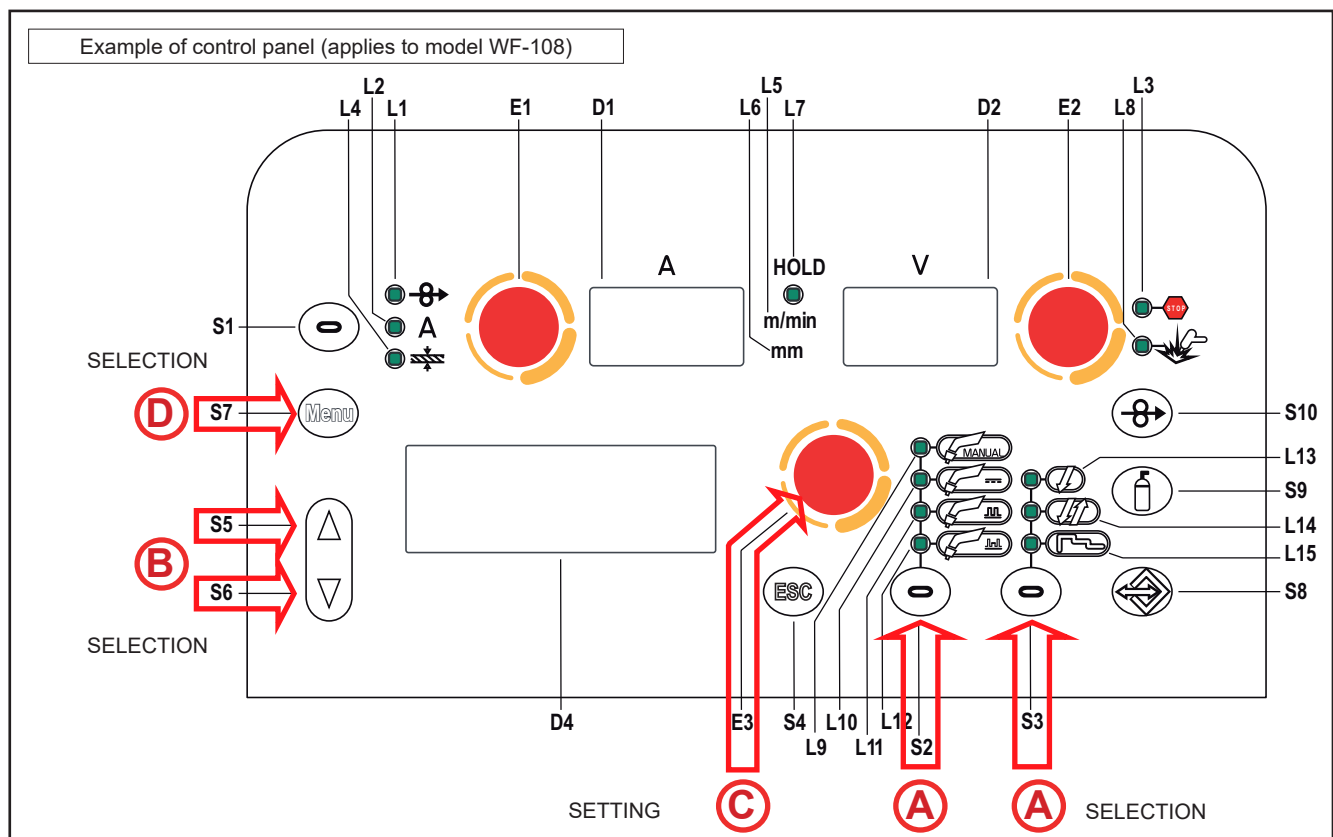
In general, the parameter set is the wire feed rate (associated with the deposition of filler material) and the synergic welding power source automatically sets the most suitable welding voltage.












Encoder E2 can be adjusted to correct the arc shown on display D3, in order to make minor adjustments in accordance with requirements.

During a welding operation with an active JOB, it is possible to temporarily change the parameters shown in the displays D1 and D2 with their encoders to test the temporary changes made to the welding operation. At the end of the welding operation (and HOLD is quit) the values of the loaded JOB are reset.

When the welding operation is not being carried out and a JOB is active through encoder E3, the JOBS belonging to its sequence can be scrolled.

The welding power source also automatically adjusts several secondary parameters that are relevant for welding quality.




A	S2 	This button serves to select the following welding mode:
		SYNERGIC MIG/MAG
	S3 	Use this button to select one of the following torch trigger procedures:
		2 STROKE
		2 STROKE SPOT: The procedure is active when the "SPOT TIME" parameter is set to a value other than "OFF".
		4 STROKE
	4 STROKE B-LEVEL: The procedure is active when the "B-LEVEL" parameter is set to a value other than "OFF"	
	3 LEVEL 2 STROKE	
	3 LEVEL 2 STROKE SPOT: The procedure is active when the "SPOT TIME" parameter is set to a value other than "OFF". If the "SPOT TIME" parameter is active in the 3 LEVELS procedure, its value denotes the time for which the main welding current is supplied.	
	3 LEVEL 4 STROKE	
	3 LEVEL 4 STROKE B-LEVEL: The procedure is active when the "B-LEVEL" parameter is set to a value other than "OFF"	

Tab. 7 - Main settings and displays in SYNERGIC MIG/MAG mode


	DISPLAY D1	DISPLAY D2	DISPLAY D3
Data setting	Shows the main synergy parameter (wire feed rate, Amperes, recommended thickness), which can be adjusted with the following encoder: (E1).	Shows the set welding voltage, which can be adjusted with the following encoder: (E2).	Shows the arc correction executed by the operator with encoder (E2). Displays D2 and D3 change simultaneously, but while display D2 shows the absolute value, display D3 shows the correction with respect to the standard and optimal value proposed by the manufacturer. The parameter corrects the arc dynamics in the POWER ROOT process.
Welding	Shows the average current measured during welding.	Shows the average voltage measured during welding.	Shows the arc correction executed by the operator.
HOLD function (At welding end)	Shows the average current measured during the last welding procedure performed.	Shows the average voltage measured during the last welding procedure performed.	Shows the arc correction executed by the operator.

10.3.1 Synergic MIG/MAG parameters setting (1st level): synergic curve setting

B ○ Scroll down the list of parameters to be edited by pressing buttons **S5**  and **S6** 



C ○ Using the **encoder E3** , edit the value of the selected parameter
① The value is saved automatically.

10.3.2 Manual MIG/MAG parameters setting (2nd level)




D ○ Press the button **S7**  to enter the 2nd level menu.


B ○ Scroll down the list of parameters to be edited by pressing buttons **S5**  and **S6** 



- Using the **encoder E3** , edit the value of the selected parameter
-  The value is saved automatically.

Tab. 8 - 2nd level menu parameters in SYNERGIC MIG/MAG mode

PROCEDURE	PARAMETER	POWER SOURCE TYPE		MIN	DEFAULT	MAX	NOTES
		POWER PULSE	POWER PULSE HSL				
 2 STROKE 2 STROKE SPOT	INDUCTANCE	(row 1/6)	(row 1/7)	1	SYN	200	
	PR START	(row 1/6)	(row 1/7)	1	SYN	200	This parameter is present exclusively with POWER ROOT.
	PRE GAS	(row 2/6)	(row 2/7)	0.0 s	0.0 s	10.0 s	
	SOFT START	(row 3/6)	(row 3/7)	1 %	SYN	100 %	
	BURN BACK	(row 4/6)	(row 4/7)	1 %	SYN	200 %	
	POST GAS	(row 5/6)	(row 5/7)	0.0 s	1.0 s	10.0 s	
	SPOT TIME	(row 6/6)	(row 6/7)	0.1 s	OFF	25.0 s	The parameter value is saved for each welding mode.
POWER FOCUS	-	(row 7/7)	-100 %	SYN	100 %		
 4 STROKE 4 STROKE B-LEVEL	INDUCTANCE	(row 1/6)	(row 1/7)	1	SYN	200	
	PR START	(row 1/6)	(row 1/7)	1	SYN	200	This parameter is present exclusively with POWER ROOT.
	PRE GAS	(row 2/6)	(row 2/7)	0.0 s	0.0 s	10.0 s	
	SOFT START	(row 3/6)	(row 3/7)	1 %	SYN	100 %	
	BURN BACK	(row 4/6)	(row 4/7)	1 %	SYN	200 %	
	POST GAS	(row 5/6)	(row 5/7)	0.0 s	1.0 s	10.0 s	
	B-LEVEL	(row 6/6)	(row 6/7)	1 %	OFF	200 %	The parameter value is saved for each welding mode.
POWER FOCUS	-	(row 7/7)	-100 %	SYN	100 %		
 3 LEVEL 2 STROKE 3 LEVEL 2 STROKE SPOT	INDUCTANCE	(row 1/12)	(row 1/13)	1	SYN	200	
	PR START	(row 1/12)	(row 1/13)	1	SYN	200	This parameter is present exclusively with POWER ROOT.
	PRE GAS	(row 2/12)	(row 2/13)	0.0 s	0.0 s	10.0 s	
	SOFT START	(row 3/12)	(row 3/13)	1 %	SYN	100 %	
	START 3LEV	(row 4/12)	(row 4/13)	10 %	130 %	200 %	
	START TIME	(row 5/12)	(row 5/13)	0.0 s	0.5 s	10.0 s	
	SLOPE 3LEV 1	(row 6/12)	(row 6/13)	0.1 s	0.5 s	10.0 s	
	SLOPE 3LEV 2	(row 7/12)	(row 7/13)	0.1 s	0.5 s	10.0 s	
	CRATER 3LEV	(row 8/12)	(row 8/13)	10 %	80 %	200 %	
	CRATER TIME	(row 9/12)	(row 9/13)	0.0 s	0.5 s	10.0 s	
	BURN BACK	(row 10/12)	(row 10/13)	1 %	SYN	200 %	
	POST GAS	(row 11/12)	(row 11/13)	0.0 s	1.0 s	10.0 s	
	SPOT TIME	(row 12/12)	(row 12/13)	0.1 s	OFF	25.0 s	The parameter value is saved for each welding mode.
POWER FOCUS	-	(row 13/13)	-100 %	SYN	100 %		

PROCEDURE	PARAMETER	POWER SOURCE TYPE		MIN	DEFAULT	MAX	NOTES
		POWER PULSE	POWER PULSE HSL				
 <p>3 LEVEL 4 STROKE B-LEVEL</p>	INDUCTANCE	(row 1/10)	(row 1/11)	1	SYN	200	
	PR START	(row 1/10)	(row 1/11)	1	SYN	200	This parameter is present exclusively with POWER ROOT.
	PRE GAS	(row 2/10)	(row 2/11)	0.0 s	0.0 s	10.0 s	
	SOFT START	(row 3/10)	(row 3/11)	1 %	SYN	100 %	
	START 3LEV	(row 4/10)	(row 4/11)	10 %	130 %	200 %	
	SLOPE 3LEV 1	(row 5/10)	(row 5/11)	0.1 s	0.5 s	10.0 s	
	SLOPE 3LEV 2	(row 6/10)	(row 6/11)	0.1 s	0.5 s	10.0 s	
	CRATER 3LEV	(row 7/10)	(row 7/11)	10 %	80 %	200 %	
	BURN BACK	(row 8/10)	(row 8/11)	1 %	SYN	200 %	
	POST GAS	(row 9/10)	(row 9/11)	0.0 s	1.0 s	<u>10.0 s</u>	
	B-LEVEL	(row 10/10)	(row 10/11)	1 %	OFF	200 %	The parameter value is saved for each welding mode.
	POWER FOCUS	-	(row 11/11)	-100 %	SYN	100 %	

10.4 PULSED SYNERGIC MIG/MAG WELDING

Set the welding data (material, wire diameter, gas type), shown on display D4 and just one welding parameter, chosen among wire feed rate, Amperes, and workpiece Thickness, shown on display D1.

NOTE: The synergic curves were created with reference to a fillet weld in position PB (horizontal-vertical) with 10 mm stick-out (distance from torch to workpiece).

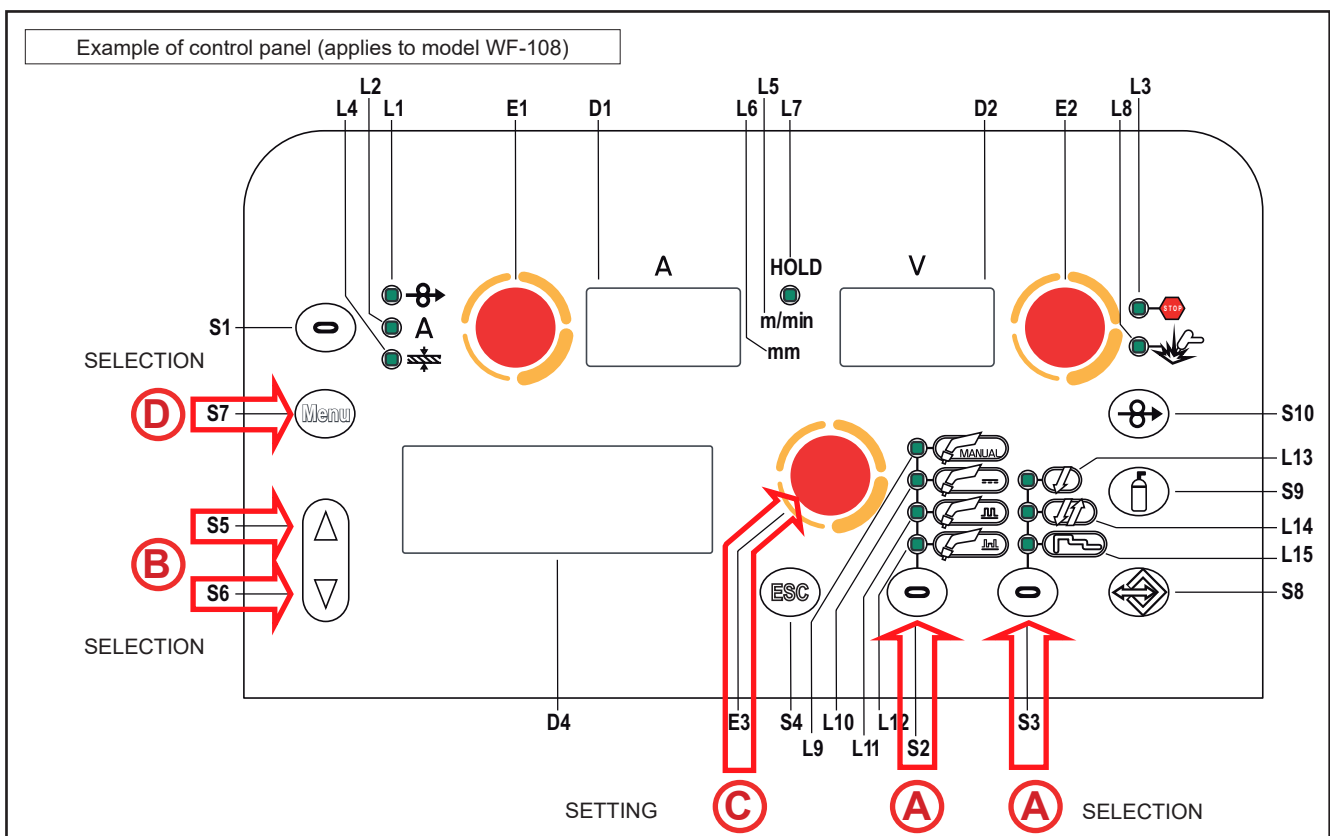
In general, the parameter set is the wire feed rate (associated with the deposition of filler material) and the synergic welding power source automatically sets the most suitable welding voltage.








Encoder E2 can be adjusted to correct the arc shown on display D3, in order to make minor adjustments in accordance with requirements.

During a welding operation with an active JOB, it is possible to temporarily change the parameters shown in the displays D1 and D2 with their encoders to test the temporary changes made to the welding operation. At the end of the welding operation (and HOLD is quit) the values of the loaded JOB are reset.

When the welding operation is not being carried out and a JOB is active through encoder E3, the JOBS belonging to its sequence can be scrolled.

The welding power source also automatically adjusts several secondary parameters that are relevant for welding quality.






A	<p>S2  This button serves to select the following welding mode:</p> <p> PULSED SYNERGIC MIG/MAG</p>
	<p>S3  Use this button to select one of the following torch trigger procedures:</p> <p> 2 STROKE 2 STROKE SPOT: The procedure is active when the "SPOT TIME" parameter is set to a value other than "OFF".</p> <p> 4 STROKE 4 STROKE B-LEVEL: The procedure is active when the "B-LEVEL" parameter is set to a value other than "OFF"</p> <p> 3 LEVEL 2 STROKE 3 LEVEL 2 STROKE SPOT: The procedure is active when the "SPOT TIME" parameter is set to a value other than "OFF". If the "SPOT TIME" parameter is active in the 3 LEVELS procedure, its value denotes the time for which the main welding current is supplied.</p> <p> 3 LEVEL 4 STROKE 3 LEVEL 4 STROKE B-LEVEL: The procedure is active when the "B-LEVEL" parameter is set to a value other than "OFF"</p>





Tab. 9 - Main settings and displays in PULSED SYNERGIC MIG/MAG mode

	DISPLAY D1	DISPLAY D2	DISPLAY D3
Data setting	Shows the main synergy parameter (wire feed rate, Amperes, recommended thickness), which can be adjusted with the following encoder: (E1).	Shows the set welding voltage, which can be adjusted with the following encoder: (E2).	Shows the arc correction executed by the operator with encoder (E2). Displays D2 and D3 change simultaneously, but while display D2 shows the absolute value, display D3 shows the correction with respect to the standard and optimal value proposed by the manufacturer. Shows the arc correction executed by the operator with encoder (E2). Displays D2 and D3 change simultaneously, but while display D2 shows the absolute value, display D3 shows the correction with respect to the standard and optimal value proposed by the manufacturer. The parameter corrects the arc dynamics in the POWER ROOT process.
Welding	Shows the average current measured during welding.	Shows the average voltage measured during welding.	Shows the arc correction executed by the operator.
HOLD function (At welding end)	Shows the average current measured during the last welding procedure performed.	Shows the average voltage measured during the last welding procedure performed.	Shows the arc correction executed by the operator.




10.4.1 Pulsed Synergic MIG/MAG parameters setting (1st level): synergic curve setting.


- B** ○ Scroll down the list of parameters to be edited by pressing buttons **S5**  and **S6** 
- C** ○ Using the **encoder E3** , edit the value of the selected parameter
 ⓘ The value is saved automatically.

10.4.2 Pulsed Synergic MIG/MAG parameters setting (2nd level).

- D** ○ Press the button **S7**  to enter the 2nd level menu.
- B** ○ Scroll down the list of parameters to be edited by pressing buttons **S5**  and **S6** 
- C** ○ Using the **encoder E3** , edit the value of the selected parameter
 ⓘ The value is saved automatically.

Tab. 10 - 2nd level menu parameters in PULSED SYNERGIC MIG/MAG mode

PROCEDURE	PARAMETER		MIN	DEFAULT	MAX	NOTES
 2 STROKE 2 STROKE SPOT	ARC SET	(row 1/6)	1	SYN	200	
	PRE GAS	(row 2/6)	0.0 s	0.0 s	10.0 s	
	SOFT START	(row 3/6)	1 %	SYN	100 %	
	BURN BACK	(row 4/6)	1 %	SYN	200 %	
	POST GAS	(row 5/6)	0.0 s	1.0 s	10.0 s	
	SPOT TIME	(row 6/6)	0.1 s	OFF	25.0 s	The parameter value is saved for each welding mode.
 4 STROKE 4 STROKE B-LEVEL	ARC SET	(row 1/6)	1	SYN	200	
	PRE GAS	(row 2/6)	0.0 s	0.0 s	10.0 s	
	SOFT START	(row 3/6)	1 %	SYN	100 %	
	BURN BACK	(row 4/6)	1 %	SYN	200 %	
	POST GAS	(row 5/6)	0.0 s	1.0 s	10.0 s	
	B-LEVEL	(row 6/6)	1 %	OFF	200 %	The parameter value is saved for each welding mode.
 3 LEVEL 2 STROKE 2 STROKE SPOT	ARC SET	(row 1/12)	1	SYN	200	
	PRE GAS	(row 2/12)	0.0 s	SYN	10.0 s	
	SOFT START	(row 3/12)	1 %	SYN	100 %	
	START 3LEV	(row 4/12)	10 %	130 %	200 %	
	START TIME	(row 5/12)	0.0 s	0.5 s	10.0 s	
	SLOPE 3LEV 1	(row 6/12)	0.1 s	0.5 s	10.0 s	
	SLOPE 3LEV 2	(row 7/12)	0.1 s	0.5 s	10.0 s	
	CRATER 3LEV	(row 8/12)	10 %	80 %	200 %	
	CRATER TIME	(row 9/12)	0.0 s	0.5 s	10.0 s	
	BURN BACK	(row 10/12)	1 %	SYN	200 %	
	POST GAS	(row 11/12)	0.0 s	1.0 s	10.0 s	
	SPOT TIME	(row 12/12)	0.1 s	OFF	25.0 s	The parameter value is saved for each welding mode.

 <p>3 LEVEL 4 STROKE 4 STROKE B-LEVEL</p>	ARC SET	(row 1/10)	1	SYN	200	
	PRE GAS	(row 2/10)	0.0 s	SYN	10.0 s	
	SOFT START	(row 3/10)	1 %	SYN	100 %	
	START 3LEV	(row 4/10)	10 %	130 %	200 %	
	SLOPE 3LEV 1	(row 5/10)	0.1 s	0.5 s	10.0 s	
	SLOPE 3LEV 2	(row 6/10)	0.1 s	0.5 s	10.0 s	
	CRATER 3LEV	(row 7/10)	10 %	80 %	200 %	
	BURN BACK	(row 8/10)	1 %	SYN	200 %	
	POST GAS	(row 9/10)	0.0 s	1.0 s	10.0 s	
	B-LEVEL	(row 10/10)	1 %	OFF	200 %	The parameter value is saved for each welding mode.

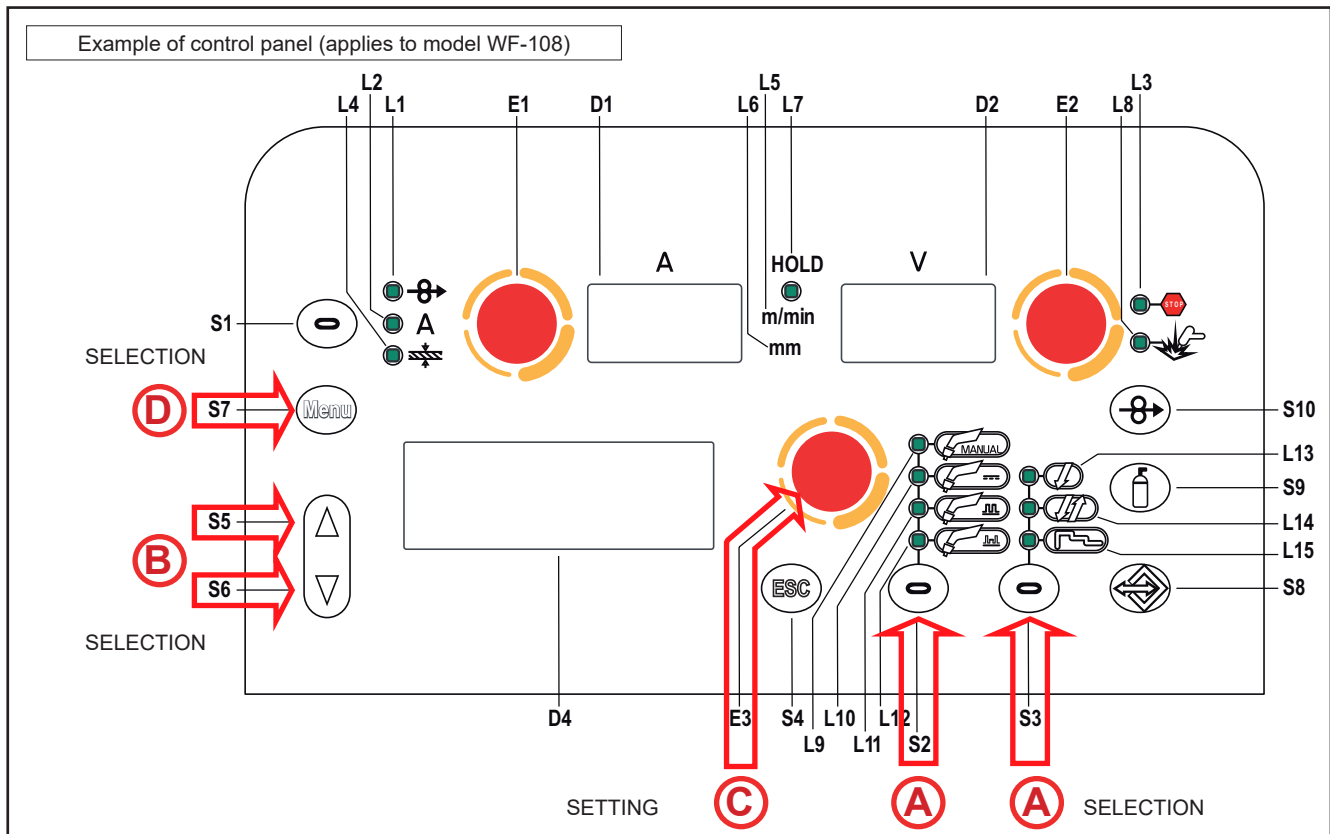
10.5 DOUBLE PULSED SYNERGIC MIG/MAG WELDING












Set the welding data (material, wire diameter, gas type), shown on display D4 and just one welding parameter, chosen among wire feed rate, Amperes, and workpiece Thickness, shown on display D1.

NOTE: The synergic curves were created with reference to a fillet weld in position PB (horizontal-vertical) with 10 mm stick-out (distance from torch to workpiece).

In general, the parameter set is the wire feed rate (associated with the deposition of filler material) and the synergic welding power source automatically sets the most suitable welding voltage. Encoder E2 can be adjusted to correct the arc shown on display D3, in order to make minor adjustments in accordance with requirements. During a welding operation with an active JOB, it is possible to temporarily change the parameters shown in the displays D1 and D2 with their encoders to test the temporary changes made to the welding operation. At the end of the welding operation (and HOLD is quit) the values of the loaded JOB are reset.

When the welding operation is not being carried out and a JOB is active through encoder E3, the JOBS belonging to its sequence can be scrolled. The welding power source also automatically adjusts several secondary parameters that are relevant for welding quality. This mode involves a variable frequency pulse between two parameters of the Pulsed Synergic curve.




(A)	S2 	This button serves to select the following welding mode:
		DOUBLE PULSED SYNERGIC MIG/MAG
	S3 	Use this button to select one of the following torch trigger procedures:
		2 STROKE
		2 STROKE SPOT: The procedure is active when the "SPOT TIME" parameter is set to a value other than "OFF".
		4 STROKE
	4 STROKE B-LEVEL: The procedure is active when the "B-LEVEL" parameter is set to a value other than "OFF"	
	3 LEVEL 2 STROKE	
	3 LEVEL 2 STROKE SPOT: The procedure is active when the "SPOT TIME" parameter is set to a value other than "OFF". If the "SPOT TIME" parameter is active in the 3 LEVELS procedure, its value denotes the time for which the main welding current is supplied.	
	3 LEVEL 4 STROKE	
	3 LEVEL 4 STROKE B-LEVEL: The procedure is active when the "B-LEVEL" parameter is set to a value other than "OFF"	

Tab. 11 - Main settings and displays in DOUBLE PULSED SYNERGIC MIG/MAG mode

	DISPLAY D1	DISPLAY D2	DISPLAY D3
Data setting	Shows the main synergy parameter (wire feed rate, Amperes, recommended thickness), which can be adjusted with the following encoder: (E1).	Shows the set welding voltage, which can be adjusted with the following encoder: (E2).	Shows the arc correction executed by the operator with encoder (E2). Displays D2 and D3 change simultaneously, but while display D2 shows the absolute value, display D3 shows the correction with respect to the standard and optimal value proposed by the manufacturer.
Welding	Shows the average current measured during welding.	Shows the average voltage measured during welding.	Shows the arc correction executed by the operator.
HOLD function (At welding end)	Shows the average current measured during the last welding procedure performed.	Shows the average voltage measured during the last welding procedure performed.	Shows the arc correction executed by the operator.

10.5.1 Double pulsed synergic MIG/MAG parameters setting (1st level): synergic curve setting.

(B) ○ Scroll down the list of parameters to be edited by pressing buttons **S5**  and **S6** 


(C) ○ Using the **encoder E3** , edit the value of the selected parameter
① The value is saved automatically.

10.5.2 Double pulsed synergic MIG/MAG parameters setting (2nd level).




(D) ○ Press the button **S7**  to enter the 2nd level menu.


(B) ○ Scroll down the list of parameters to be edited by pressing buttons **S5**  and **S6** 



- Using the **encoder E3** , edit the value of the selected parameter
- The value is saved automatically.

Tab. 12 - 2nd level menu parameters in DOUBLE PULSED SYNERGIC MIG/MAG mode

PROCEDURE	PARAMETER		MIN	DEFAULT	MAX	NOTES
 2 STROKE 2 STROKE SPOT	ARC SET	(row 1/10)	1	SYN	200	
	PRE GAS	(row 2/10)	0.0 s	0.0 s	10.0 s	
	SOFT START	(row 3/10)	1 %	SYN	100 %	
	BURN BACK	(row 4/10)	1 %	SYN	200 %	
	POST GAS	(row 5/10)	0.0 s	1.0 s	10.0 s	
	SPOT TIME	(row 6/10)	0.1 s	OFF	25.0 s	The parameter value is saved for each welding mode.
	FREQ 2PULS	(row 7/10)	0.1 Hz	1.5 Hz	10.0 Hz	
	RANGE 2PULS	(row 8/10)	10 %	50 %	90 %	
	CYCLE 2PULS	(row 9/10)	10 %	50 %	90 %	
	ARC2 2PULS	(row 10/10)	- 9.9 V - 4.0 m/min	0.0 V 0.0 m/min	9.9 V 4.0 m/min	
 4 STROKE 4 STROKE B-LEVEL	ARC SET	(row 1/10)	1	SYN	200	
	PRE GAS	(row 2/10)	0.0 s	0.0 s	10.0 s	
	SOFT START	(row 3/10)	1 %	SYN	100 %	
	BURN BACK	(row 4/10)	1 %	SYN	200 %	
	POST GAS	(row 5/10)	0.0 s	1.0 s	10.0 s	
	B-LEVEL	(row 6/10)	1 %	OFF	200 %	The parameter value is saved for each welding mode.
	FREQ 2PULS	(row 7/10)	0.1 Hz	1.5 Hz	10.0 Hz	
	RANGE 2PULS	(row 8/10)	10 %	50 %	90 %	
	CYCLE 2PULS	(row 9/10)	10 %	50 %	90 %	
	ARC2 2PULS	(row 10/10)	- 9.9 V - 4.0 m/min	0.0 V 0.0 m/min	9.9 V 4.0 m/min	
 3 LEVELS 2 STROKE 2 STROKE SPOT	ARC SET	(row 1/16)	1	SYN	200	
	PRE GAS	(row 2/16)	0.0 s	SYN	10.0 s	
	SOFT START	(row 3/16)	1 %	SYN	100 %	
	START 3LEV	(row 4/16)	10 %	130 %	200 %	
	START TIME	(row 5/16)	0.0 s	0.5 s	10.0 s	
	SLOPE 3LEV 1	(row 6/16)	0.1 s	0.5 s	10.0 s	
	SLOPE 3LEV 2	(row 7/16)	0.1 s	0.5 s	10.0 s	
	CRATER 3LEV	(row 8/16)	10 %	80 %	200 %	
	CRATER TIME	(row 9/16)	0.0 s	0.5 s	10.0 s	
	BURN BACK	(row 10/16)	1 %	SYN	200 %	
	POST GAS	(row 11/16)	0.0 s	1.0 s	10.0 s	
	SPOT TIME	(row 12/16)	0.1 s	OFF	25.0 s	The parameter value is saved for each welding mode.
	FREQ 2PULS	(row 13/16)	0.1 Hz	1.5 Hz	10.0 Hz	
	RANGE 2PULS	(row 14/16)	10 %	50 %	90 %	
	CYCLE 2PULS	(row 15/16)	10 %	50 %	90 %	
	ARC2 2PULS	(row 16/16)	- 9.9 V - 4.0 m/min	0.0 V 0.0 m/min	9.9 V 4.0 m/min	

 3 LEVELS 4 STROKE 4 STROKE B-LEVEL	ARC SET	(row 1/14)	1	SYN	200	
	PRE GAS	(row 2/14)	0.0 s	SYN	10.0 s	
	SOFT START	(row 3/14)	1 %	SYN	100 %	
	START 3LEV	(row 4/14)	10 %	130 %	200 %	
	SLOPE 3LEV 1	(row 5/14)	0.1 s	0.5 s	10.0 s	
	SLOPE 3LEV 2	(row 6/14)	0.1 s	0.5 s	10.0 s	
	CRATER 3LEV	(row 7/14)	10 %	80 %	200 %	
	BURN BACK	(row 8/14)	1 %	SYN	200 %	
	POST GAS	(row 9/14)	0.0 s	1.0 s	10.0 s	
	B-LEVEL	(row 10/14)	1 %	OFF	200 %	The parameter value is saved for each welding mode.
	FREQ 2PULS	(row 11/14)	0.1 Hz	1.5 Hz	10.0 Hz	
	RANGE 2PULS	(row 12/14)	10 %	50 %	90 %	
	CYCLE 2PULS	(row 13/14)	10 %	50 %	90 %	
	ARC2 2PULS	(row 14/14)		- 9.9 V - 4.0 m/min	0.0 V 0.0 m/min	9.9 V 4.0 m/min

11 JOBS MANAGEMENT

Personalised welding settings, or JOBS, can be saved in memory locations and subsequently uploaded. Up to 99 jobs can be saved (j01-j99).

The settings of the SETUP menu are not saved.

If T01 mode is activated, the torch button is enabled for Job change during welding.

In T01 mode, the torch button operates in 4 strokes or 4 strokes 3 levels with Bilevel functions disabled. Therefore, if jobs are saved with different modes, they are automatically provided according to these conditions (which are not saved).

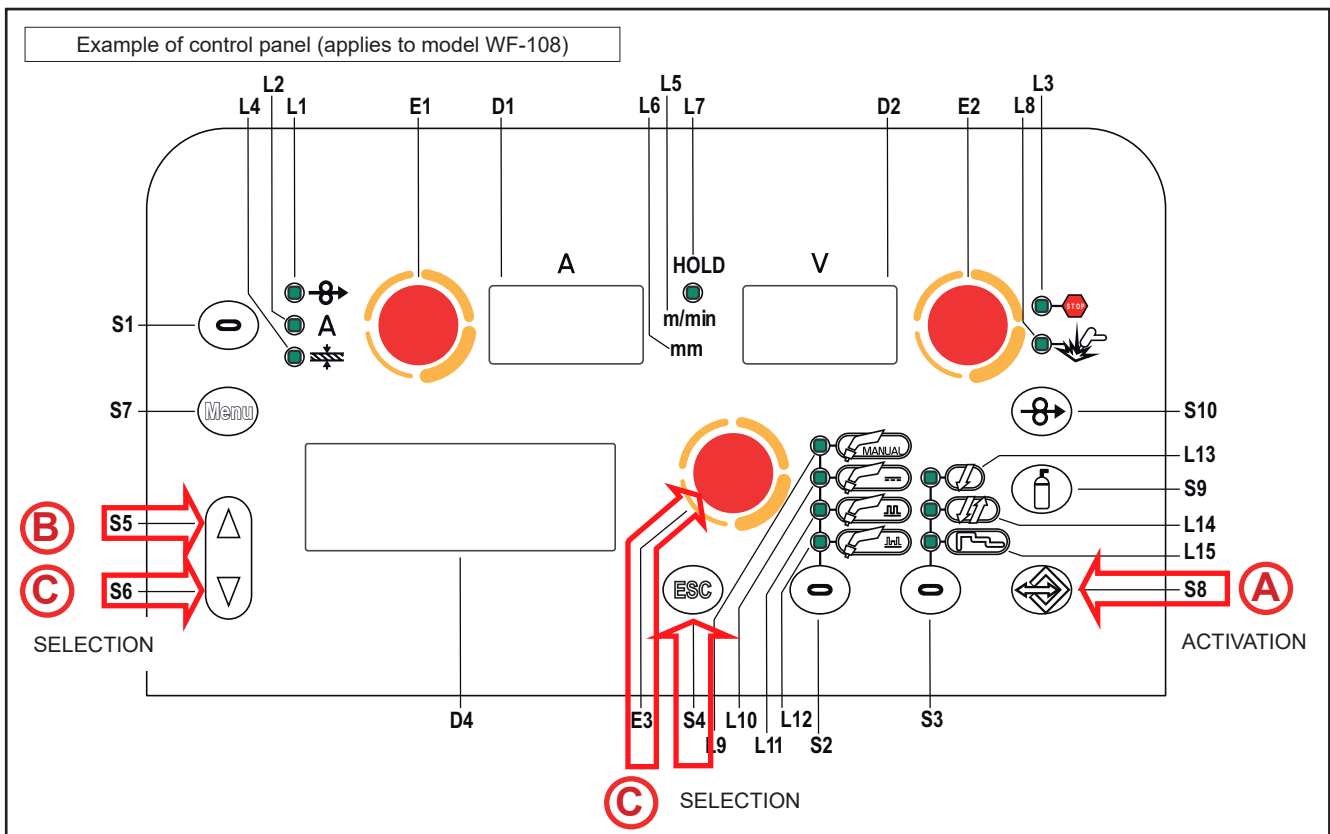
If there are no loaded Jobs, the torch button operates normally.

If there is a Job loaded, the torch button behaves as follows:

- Long pressure: to start and end welding.
- Short pressure: to scroll Jobs in the same sequence (both during welding and otherwise). If power is activated but welding is not being carried out (wire exit only), block wire exit and switch off power.




11.1 SAVING A JOB

This function is available when welding mode is not active.



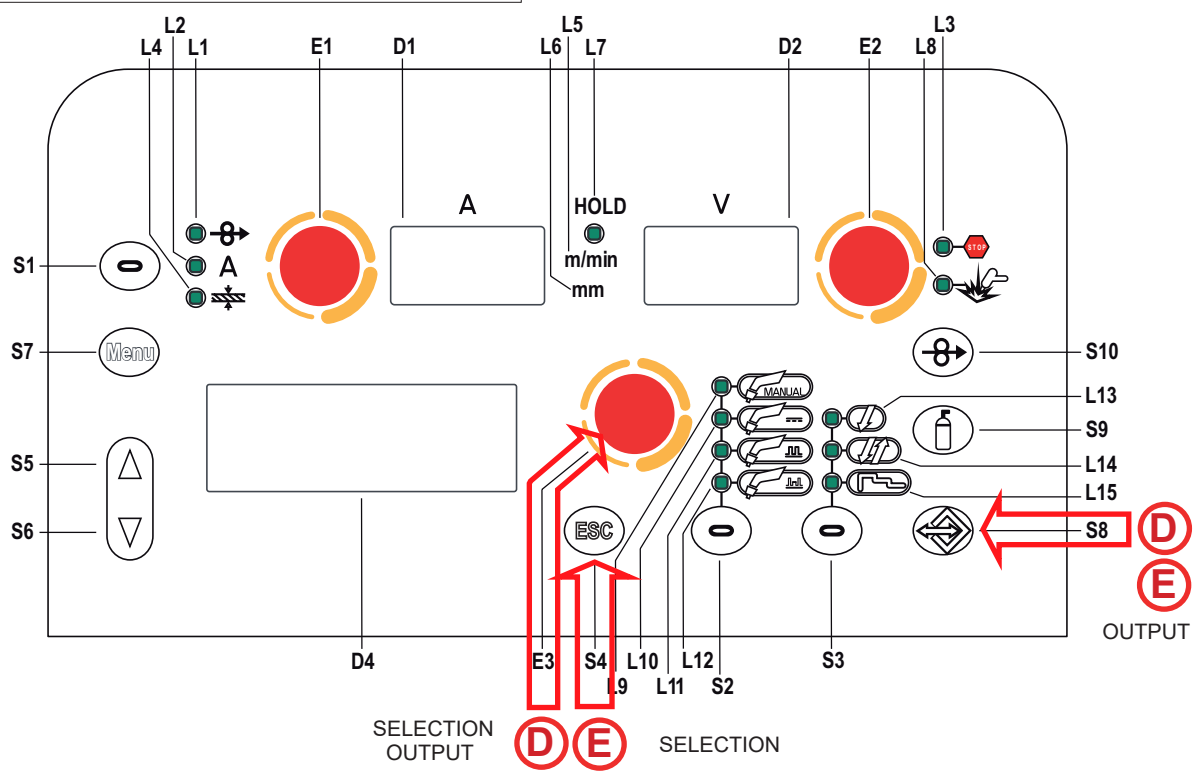
- (A)** ○ Hold down button **S8** to activate the job menu.
● The job menu appears in display: **D4**.

- (B)** ○ Press buttons **S5** and **S6** to select parameter **OPT**.
● The selected parameter is shown by the following symbol “ ”.

- Use the **encoder E3** , to select the **SAVE** function.
- Press buttons **S5**  and **S6**  to select parameter **JOB**.
 - ① The first free memory location is displayed.
 - If all the memory locations are occupied, the word JOB flashes and the first JOB is displayed.
 - If the memory location is already occupied by another job, when a new JOB is written to the location it will overwrite the existing JOB.
 - The names of unnamed jobs are “-” after a space following the number corresponding to the memory location by default
 - § “11.2 NAMING JOBS”.

C


Example of control panel (applies to model WF-108)



Save and keep original

- Using the **encoder E3** , select one of the unoccupied jobs.

Exit without confirmation



- Press the **S4**  button.
 - ➔ This action will automatically close the menu

Exit with confirmation


- Press the **S8** button. 
 - ➔ This action will automatically close the menu


D

Save by overwriting


- Using the **encoder E3** , select one of the occupied jobs.
- Press the **S8** button. 
 - CONFIRM JOB CHANGE:** The message will appear on display **D4**


Exit without confirmation

Use the **encoder E3** , to select the “NO” function

- Press the **S8** button. 
 - This action will automatically close the menu

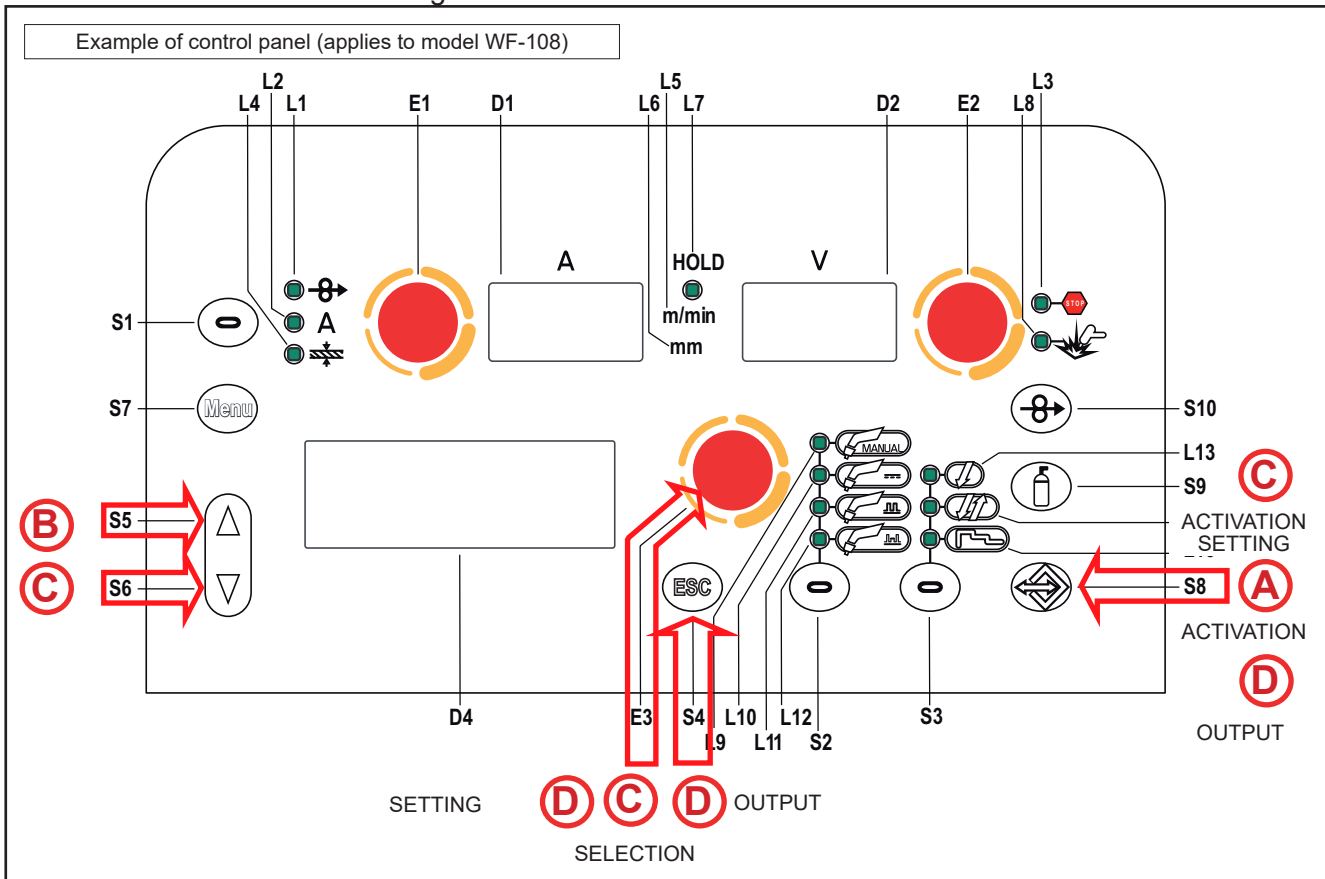
Exit with confirmation


Use the **encoder E3** , to select the “YES” function



- Press the **S8** button. 
 - This action will automatically close the menu

11.2 NAMING JOBS

JOBS can be named and renamed (maximum 9 characters) in the JOB MENU, LOAD, or SAVE. This function is available when welding mode is not active.



(A) ○ Hold down button **S8**  to activate the job menu.
 ● The job menu appears in display: **D4**.

(B) ○ Press buttons **S5**  and **S6**  to select parameter **OPT**.
 ● The selected parameter is shown by symbol “ → ”.

- Use the **encoder E3** to select the **LOAD/SAVE** function.
- Press buttons **S5** and **S6** to select parameter **JOB**.
- Use the **encoder E3** to select the position of the job to be renamed.
- Hold down for 3 seconds button **S8** .
 - ➔ The first letter of the name blinks.
- Use the **encoder E3** to change the letter.
- Press button **S8** to confirm.
- Press buttons **S5** and **S6** to select the character to be changed.

- **Exit without confirmation**
 - Press the **S4** button.
 - ➔ Return to the job menu.
 - Press the **S4** button to exit.
- **Exit with confirmation**
 - Hold down for 3 seconds button **S8** .
 - ➔ Return to the job menu.
 - Press button **S8** again.

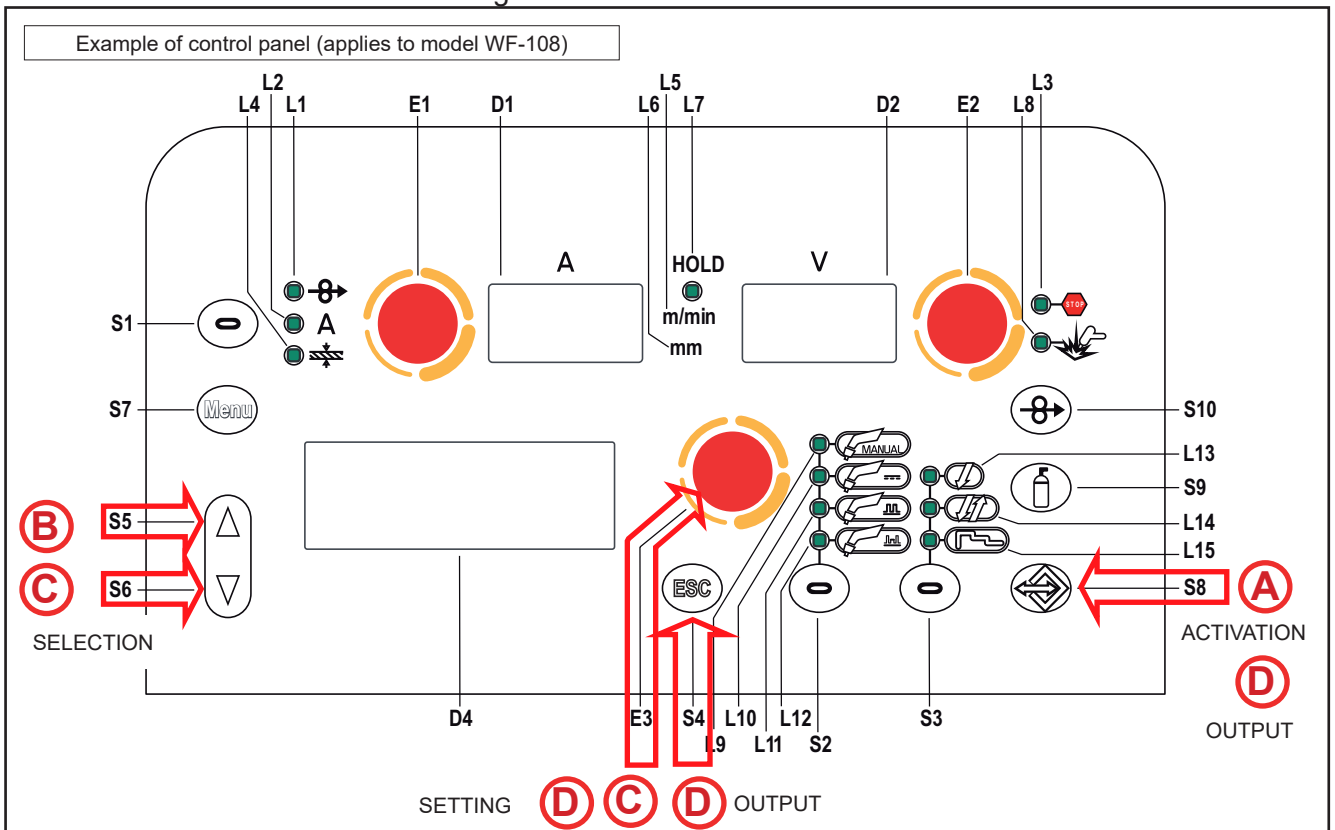
11.3 LOADING A USER JOB














If using a torch with UP/DOWN buttons you can scroll through the uploaded JOBs.

You can quit the uploaded job with the following methods:

- turn encoders **E1 - E2** to change the welding current or voltage.
- press the welding mode selection button (button S2).
- Press the following button:

If there are no JOBS loaded, the UP/DOWN buttons on the torch serve to adjust the welding current. This function is available when welding mode is not active.



B	<ul style="list-style-type: none"> ○ Press buttons S5  and S6  to select parameter OPT. ➔ The selected parameter is shown by symbol “  ”.
C	<ul style="list-style-type: none"> ○ Use the encoder E3 , to select the DELETE function. ○ Press buttons S5  and S6  to select parameter JOB. ➔ The JOB displayed is the one that was most recently used. ➔ When there are no saved jobs the following message appears on the bottom line: NO JOB ○ Using the encoder E3 , select one of the jobs displayed.
D	<p>Exit without confirmation</p> <ul style="list-style-type: none"> ○ Press the S4  button. ➔ This action will automatically close the menu <p>Exit with confirmation</p> <ul style="list-style-type: none"> ○ Press the S8 button.  ➔ The message “CONFIRM JOB ERASURE” appears on display D4. ○ Use the encoder E3 , to select the NO function” ○ Press the S8 button.  ➔ This action will automatically close the menu <p>Exit with confirmation</p> <ul style="list-style-type: none"> ○ Use the encoder E3 , to select the NO function” ○ Press the S8 button.  ➔ This action will automatically close the menu

11.5 EXPORTING/IMPORTING JOBS (through a USB memory stick)

By using a USB memory stick, the JOBS saved on the panel can be imported into another panel. When a USB memory stick is connected, the JOB MENU will display the items related to the importing and exporting procedure.



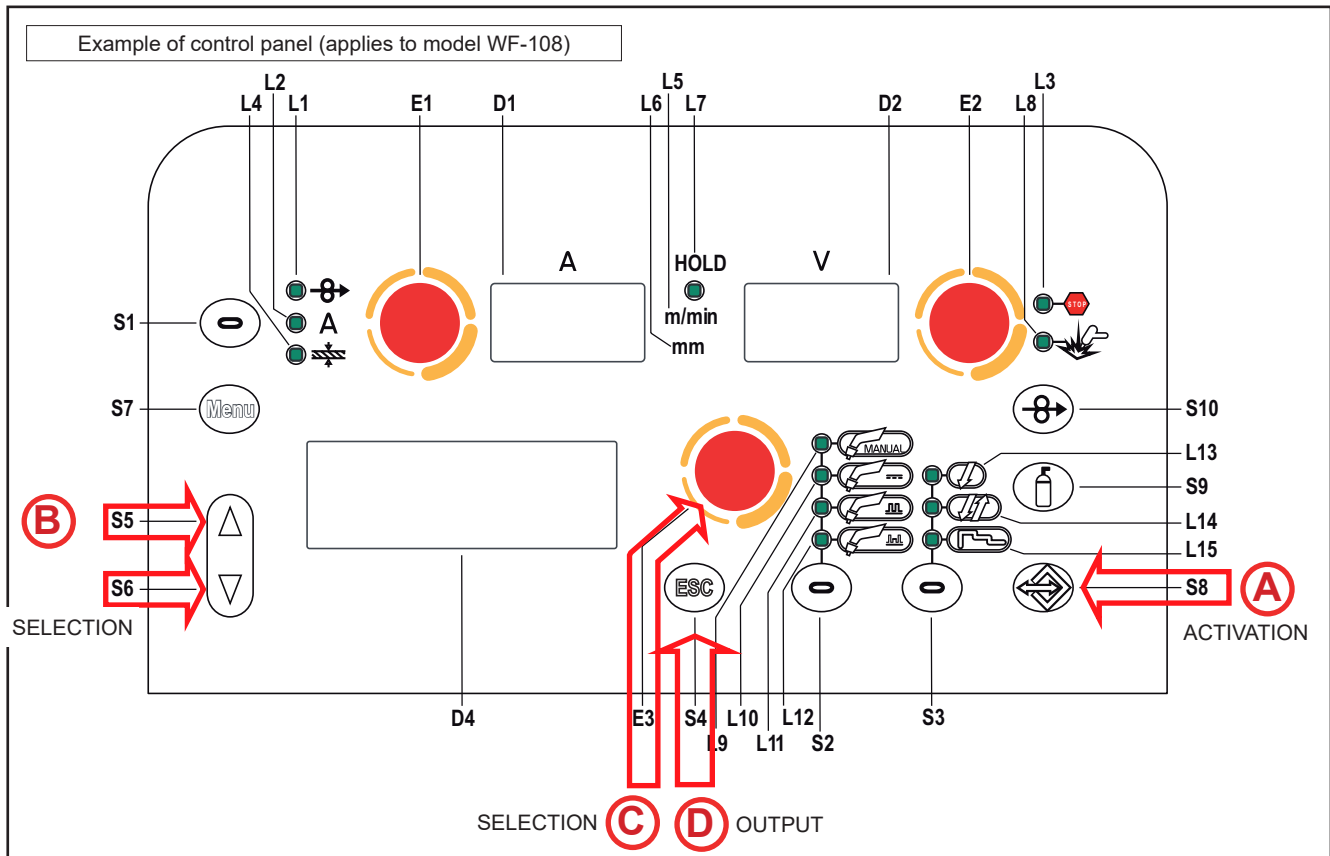
WARNING! The JOBS are exported to the USB memory stick with the name of the location where they are saved on the panel. If the file names of the JOBS saved onto the USB memory stick are changed by using a PC, after they are imported into the destination panel, they will still be saved in their original location. This means that, if the destination panel already contains JOBS saved in the same location as those exported to the memory stick, they will be overwritten.

We recommend not to change the name of the files exported to the USB memory stick. The file extension (.bin) must never be changed.

JOBS to be kept must be moved in a location of the destination panel different from the location of the JOBS exported to the USB memory stick.

To be usable, the memory stick must be formatted as FAT32.

11.6 EXPORTING A JOB



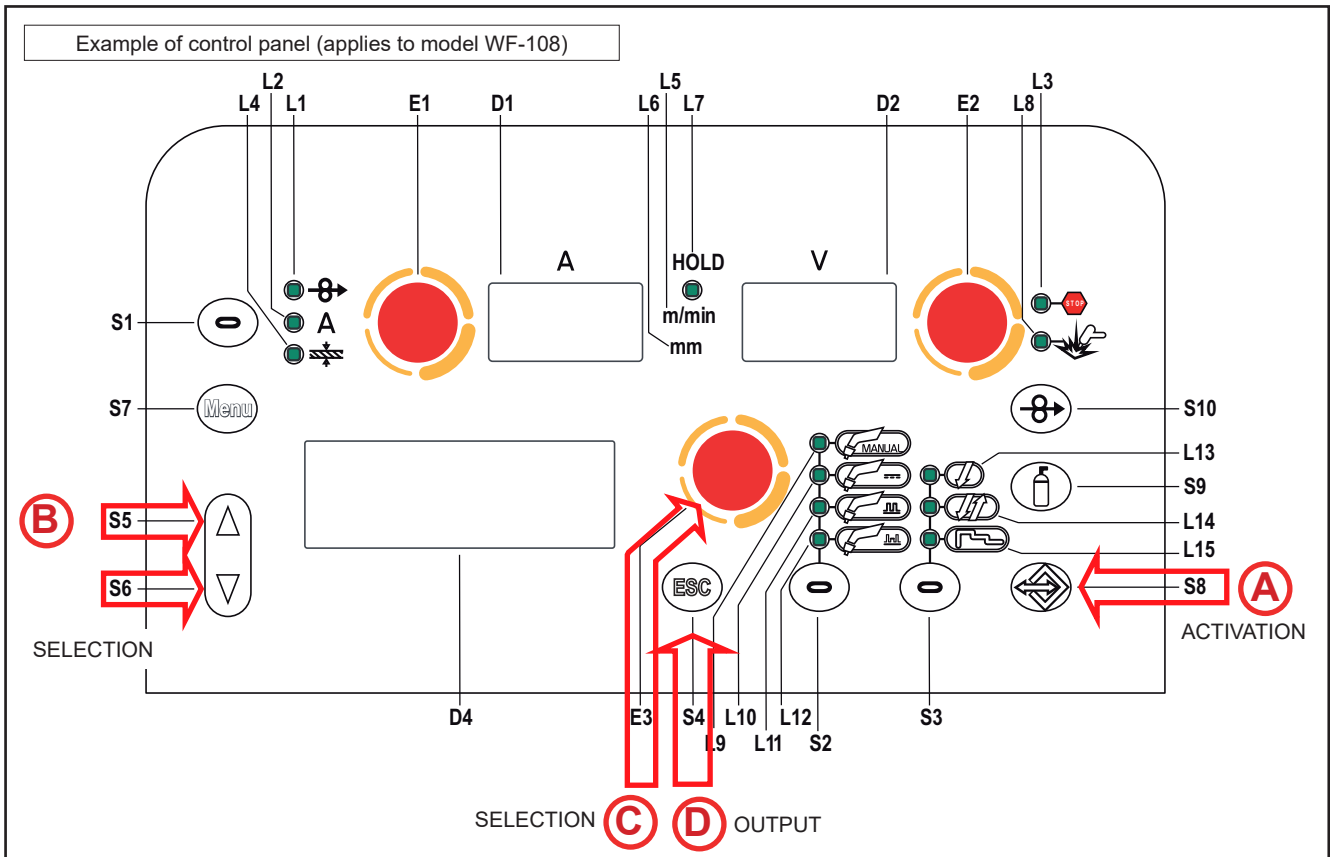
- (A)**
 - Insert the memory stick in the USB port.
 - Hold down button **S8** (ACTIVATION) to activate the job menu.
 - The job menu appears in display: **D4**.
- (B)**
 - Press buttons **S5** (UP) and **S6** (DOWN) to select parameter **OPT**.
 - The selected parameter is shown by symbol " → ".
- (C)**
 - Use the **encoder E3** (SELECTION) to select the **USB EXPORT** function.
 - When there are no saved jobs the following message appears on the bottom line: **NO JOB**
- (D)**
 - Exit without confirmation**
 - Press the **S4** (ESC) button.
 - This action will automatically close the menu
 - Exit with confirmation**
 - Press the **S8** button. (ACTIVATION)

Tab. 13 - JOB exporting operation messages

MESSAGE	MEANING	CHECKS
USB DEVICE NOT FOUND	USB device not found	- incorrectly inserted memory stick - memory stick removed before completing the operation.
EXPORT FAILED	- memory stick removed before completing the operation.	- USB not formatted as FAT32. - unidentifiable generic error: re-insert the memory stick and retry. - the connected USB drive is damaged.

EXPORT IN PROGRESS	The JOBS saved on the panel are being exported	
EXPORT COMPLETE	Exporting procedure completed	

11.7 IMPORTING A JOB



- (A)**
 - Insert the memory stick in the USB port.
 - Hold down button **S8** to activate the job menu.
 - ➡ The job menu appears in display: **D4**.
- (B)**
 - Press buttons **S5** and **S6** to select parameter **OPT**.
 - ➡ The selected parameter is shown by symbol "➔".
- (C)**
 - Use the **encoder E3** , to select the **USB IMPORT** function.
- (D)**
 - Exit without confirmation**
 - Press the **S4** button.
 - ➡ This action will automatically close the menu
 - Exit with confirmation**
 - Press the **S8** button.

Tab. 14 - JOB importing operation messages

MESSAGE	MEANING	CHECKS
USB DEVICE NOT FOUND	USB device not found	- incorrectly inserted memory stick - memory stick removed before completing the operation.
FILE NOT FOUND	File not found	- there are no JOBS loaded onto the USB memory stick.
IMPORT FAILED	Importing procedure failed.	- USB not formatted as FAT32. - unidentifiable generic error: re-insert the memory stick and retry. - the connected USB drive is damaged.
IMPORT IN PROGRESS	The JOBS saved on the USB memory stick are being imported	
IMPORT COMPLETE	Importing procedure completed	

11.8 SELECTING JOBS USING THE TORCH BUTTONS

When an UP/DOWN torch is installed, JOBS can be selected in a JOB sequence using the buttons on the welding torch.

JOBS can be scrolled only when the welding operation is not being carried out.

During the welding operation (with an active JOB) the parameter values displayed can be temporarily changed with the UP/DOWN keys; at the end of the welding operation, the original values are restored. When a DIGIMANAGER torch is installed the operations described above can be carried out, with the following differences:

- a job can be loaded directly from the torch
- jobs can be scrolled regardless of the sequence they belong to.

Sequence 1			JOB not saved	Sequence 2			JOB not saved	Sequence 3		
J.01	J.02	J.03		J.05	J.06	J.07		J.09	J.10	J.11

Select and upload one of the JOBS belonging to the desired sequence (e.g. J.06) through the power source user interface.

Use the torch buttons to scroll through the JOBS of sequence 2 (J.05, J.06, J.07).

12 TORCH TRIGGER MODES

12.1 2T MIG/MAG WELDING

1. Bring the torch up to the workpiece.
2. Press (1T) and keep the torch trigger pressed.
 - ⊖ The wire advances at the approach speed until making contact with the material. If the arc does not strike after 10 cm wire protrusion, wire feeding is locked and the welding unit outputs are de-energized.
The arc strikes and the wire feeder accelerates to the set feed rate value.
3. Release (2T) trigger to start the weld completion procedure.
 - ⊖ Gas flow continues for the time set in the post gas parameter (adjustable time).

12.2 2T SPOT MIG/MAG WELDING

1. Bring the torch up to the workpiece.
2. Press (1T) and keep the torch trigger pressed.
 - ⊖ The wire advances at the approach speed until making contact with the material. If the arc does not strike after 10 cm wire protrusion, wire feeding is locked and the welding unit outputs are de-energized.
The arc strikes and the wire feeder accelerates to the set feed rate value.
The welding procedure continues, at the preset current, for the time set with the spot time parameter.
The welding completion procedure starts.
The arc is extinguished.
Gas flow continues for the time set in the post gas parameter (adjustable time).

12.3 4T MIG/MAG WELDING

1. Bring the torch up to the workpiece.
2. Press (1T) and release (2T) the torch trigger.
 - ⊖ The wire advances at the approach speed until making contact with the material. If the arc does not strike after 10 cm wire protrusion, wire feeding is locked and the welding unit outputs are de-energized.
The arc strikes and the wire feeder accelerates to the set feed rate value.
3. Press (3T) the trigger to start the weld completion procedure.
 - ⊖ Gas flow continues until the torch trigger is released.
4. Release (4T) the torch trigger to start the post gas procedure (adjustable time).

12.4 4T B-LEVEL MIG/MAG WELDING

1. Bring the torch up to the workpiece.
2. Press (1T) and release (2T) the torch trigger.
 - ⊖ The wire advances at the approach speed until making contact with the material. If the arc does not strike after 10 cm wire protrusion, wire feeding is locked and the welding unit outputs are de-energized.
The arc strikes and the wire feeder accelerates to the set feed rate value.
During normal speed welding, press and immediately release the torch trigger to switch to the second welding current.
- ⓘ The trigger must not be pressed for more than 0.3 seconds; otherwise, the weld completion stage will start.

When the trigger is pressed and released immediately, the system returns to the welding current.

3. Press (3T) trigger and keep it pressed to start the weld completion procedure.
- ➡ Gas flow continues until the torch trigger is released.
4. Release (4T) torch trigger to start the post gas procedure (adjustable time).

12.5 2T - 3 LEVEL MIG/MAG WELDING

1. Bring the torch up to the workpiece.
2. Press (1T) torch trigger.
- ➡ The wire advances at the approach speed until making contact with the material. If the arc does not strike after 10 cm wire protrusion, wire feeding is locked and the welding unit outputs are de-energized.
The welding arc strikes and the wire feed rate changes to the first welding level (hot start), which is set as a percentage of the normal welding feed rate.
- ① This first level is used to create the weld pool: for example, when welding aluminium a value of 130 % is recommended.
The hot start level continues for the start time, which is settable in seconds; then switch to normal welding speed is performed in accordance with the start slope, which can be set in seconds.
3. Release (2 T) the torch trigger to switch to the third welding level (crater filler), which is set as a percentage of the normal welding feed rate.
- ① The switch of welding current level in terms of crater filling is performed in accordance with the crater slope, which can be set in seconds.
This third level is used to complete the weld and fill the final crater (crater filler) in the weld pool: for example, when welding aluminium a value of 80 % is recommended.
4. The crater filler level continues for the crater time, which is settable in seconds; at the end of this time welding is interrupted and the post gas stage is performed.

12.6 2T SPOT - 3 LEVEL MIG/MAG WELDING

The welding process is the same as the 2T - 3 LEVELS process, except that the welding procedure continues, at the preset current, for the time set with the spot time parameter.
The weld is closed in the same way as with the 2T - 3 LEVELS process.

12.7 4T - 3 LEVEL MIG/MAG WELDING

1. Bring the torch up to the workpiece.
2. Press (1T) torch trigger.
- ➡ The wire advances at the approach speed until making contact with the material. If the arc does not strike after 10 cm wire protrusion, wire feeding is locked and the welding unit outputs are de-energized.
The welding arc strikes and the wire feed rate changes to the first welding level (hot start), which is set as a percentage of the normal welding feed rate.
- ① This first level is used to create the weld pool: for example, when welding aluminium a value of 130 % is recommended.
3. Release (2T) trigger to switch to normal welding speed; then switch to normal welding speed is performed in accordance with the start ramp, which can be set in seconds.
4. Press the torch trigger again (Level 3) to switch to the third welding level (crater filler), which is set as a percentage of the normal welding feed rate.
- ① The switch of welding current level in terms of crater filling is performed in accordance with the crater slope, which can be set in seconds.
This third level is used to complete the weld and fill the final crater (crater filler) in the weld pool: for example, when welding aluminium a value of 80 % is recommended.


5. Release the torch trigger a second time (4T) to close the weld and run the post gas procedure.

12.8 4T B-LEVEL - 3 LEVEL MIG/MAG WELDING


- ① The welding process is the same as the 4T - 3 LEVELS process except that during normal speed welding pressing and immediately releasing the torch trigger switches the unit to the second welding current.
The trigger must not be pressed for more than 0.3 seconds; otherwise, the weld completion stage will start.
When the trigger is pressed and released immediately, the system returns to the welding current.
1. Press (3T) trigger and keep it pressed to start the crater filler procedure.
- ① The weld is closed in the same way as with the 4T - 3 LEVELS process.

13 TECHNICAL DATA

13.1 WF-104 TECHNICAL DATA

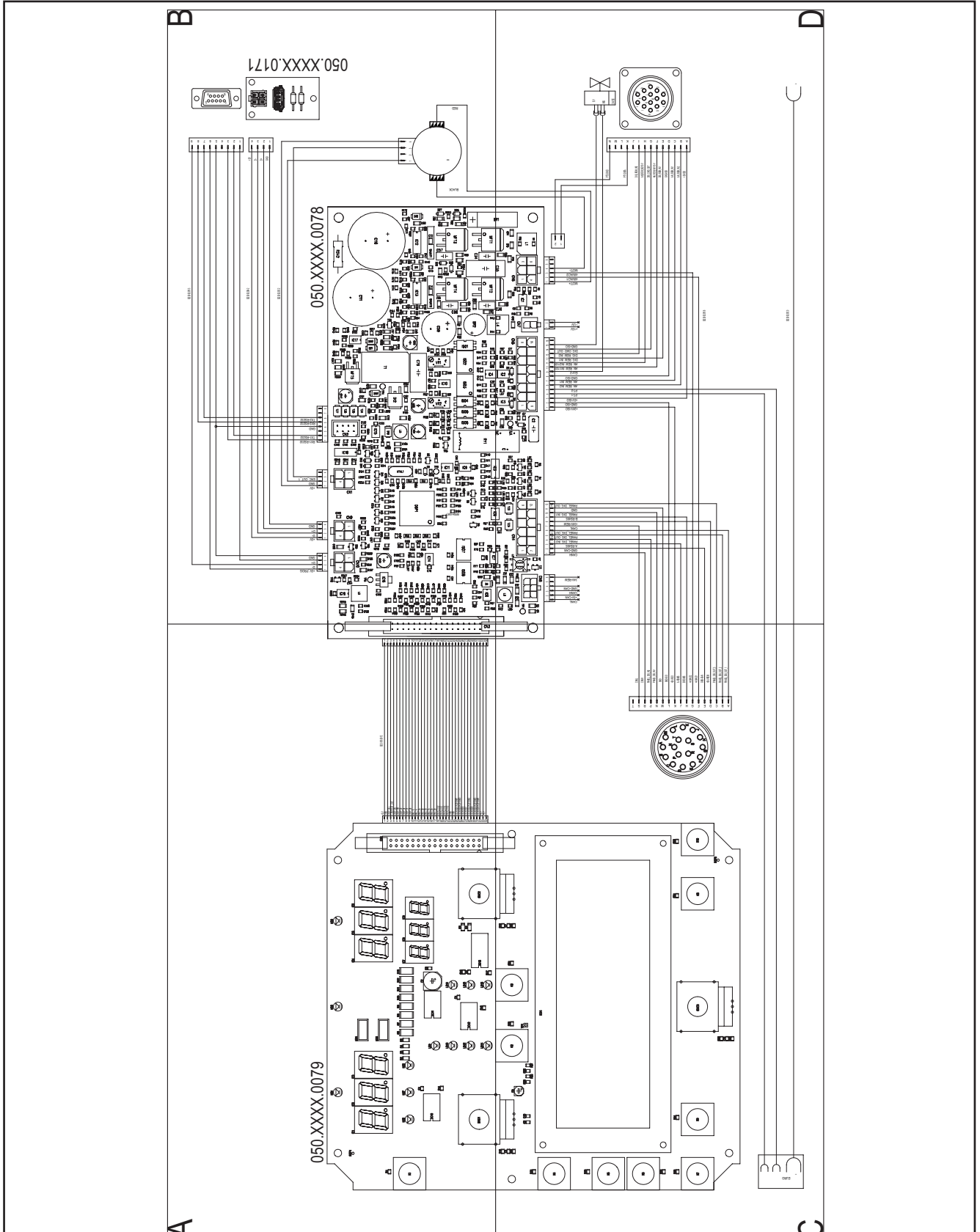
Model	WF-104	
Construction standards	EN 60974-5 EN 60974-10 Class A	
Supply voltage	48 V a.c.	
Dimensions (L x D x H)	245 x 670 x 470 mm	
Weight	21.5 kg	
Protection rating	IP23	
Maximum gas pressure	0,5 MPa (5 bar)	
MIG/MAG welding voltage	14.2 V - 39.0 V	
Motor speed	1.0-24.0 m/min	
Wire spool: (dimensions/weight)	200 mm / 5 kg – 300 mm / 15 kg	
Temperature of the environment	40°C	
Welding mode	MIG/MAG	
Static characteristic		
Work cycle	60 %	100 %
Welding current	450 A	400 A
Working voltage	36.5 V	34.0 V

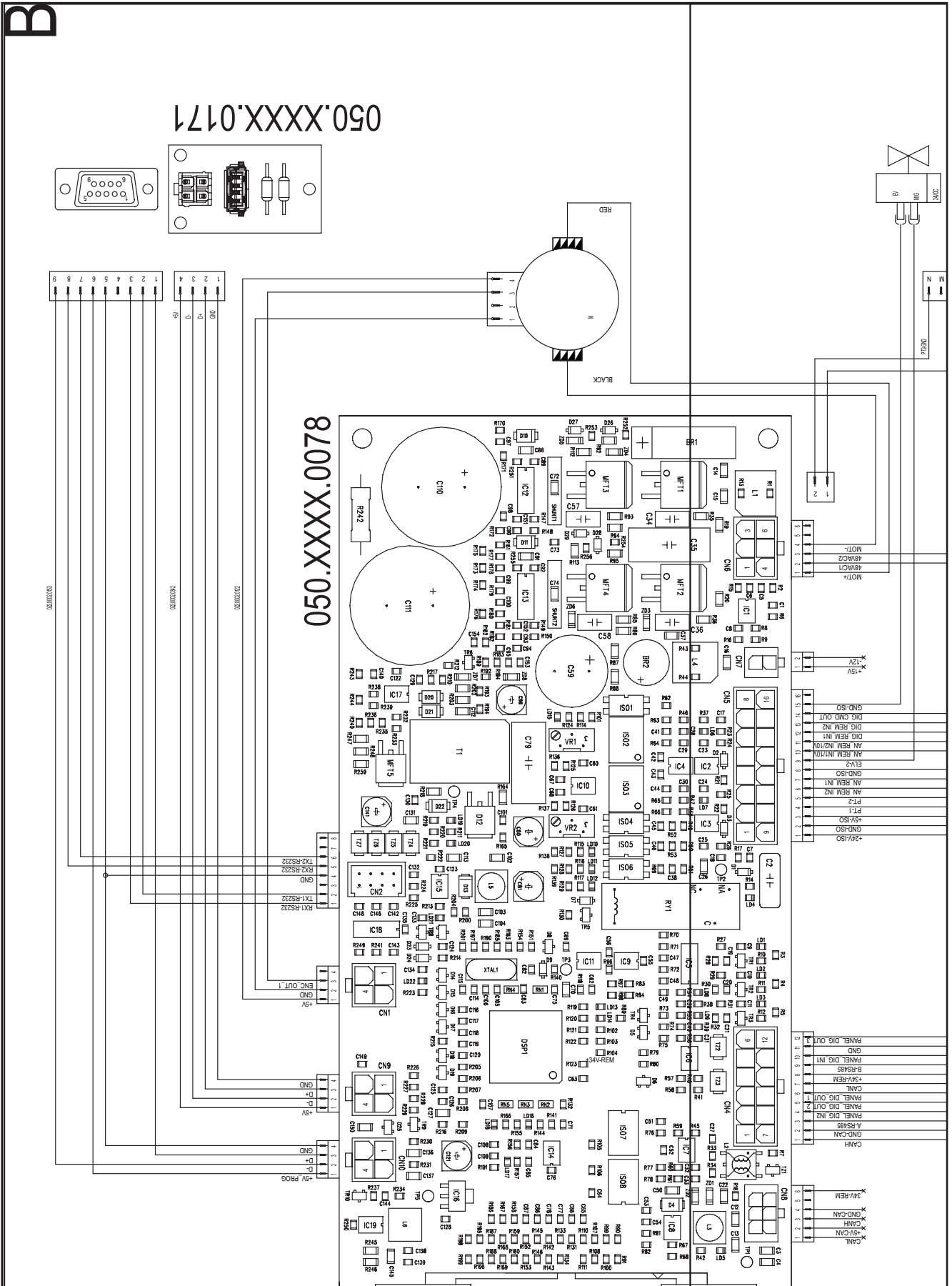
13.2 WF-108 TECHNICAL DATA

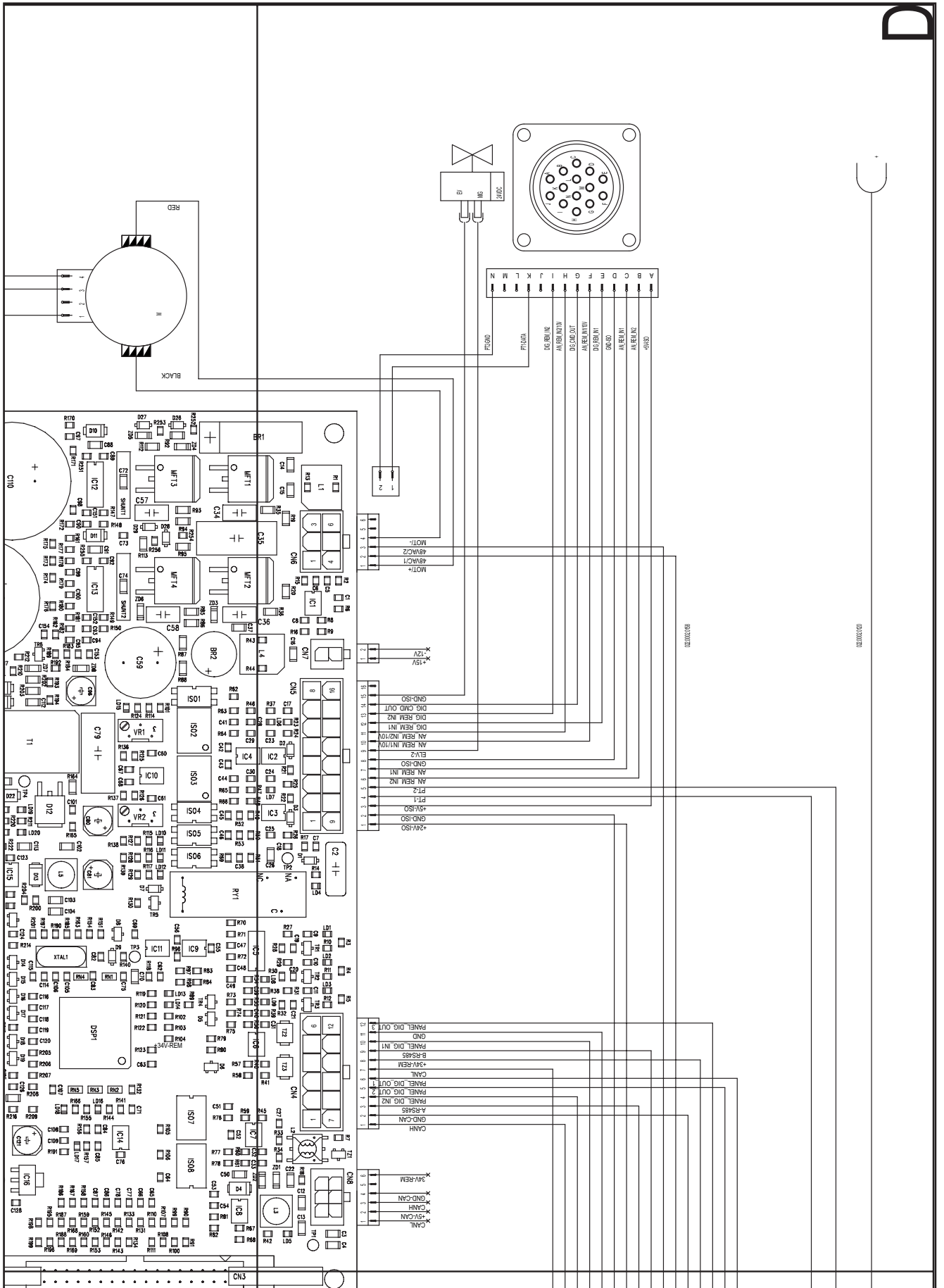
Model	WF-108	
Construction standards	EN 60974-5 EN 60974-10 Class A	
Supply voltage	48 V a.c.	
Dimensions (L x D x H)	385 x 690 x 440 mm	
Weight	15.8 kg	
Protection rating	IP23	
Maximum gas pressure	0,5 MPa (5 bar)	
MIG/MAG welding voltage	14.2 V - 39.0 V	
Motor speed	1.0-24.0 m/min	
Wire spool: (dimensions/weight)	200 mm / 5 kg – 300 mm / 15 kg	
Temperature of the environment	40°C	
Welding mode	MIG/MAG	
Static characteristic		
Work cycle	60 %	100 %
Welding current	450 A	400 A
Working voltage	36.5 V	34.0 V

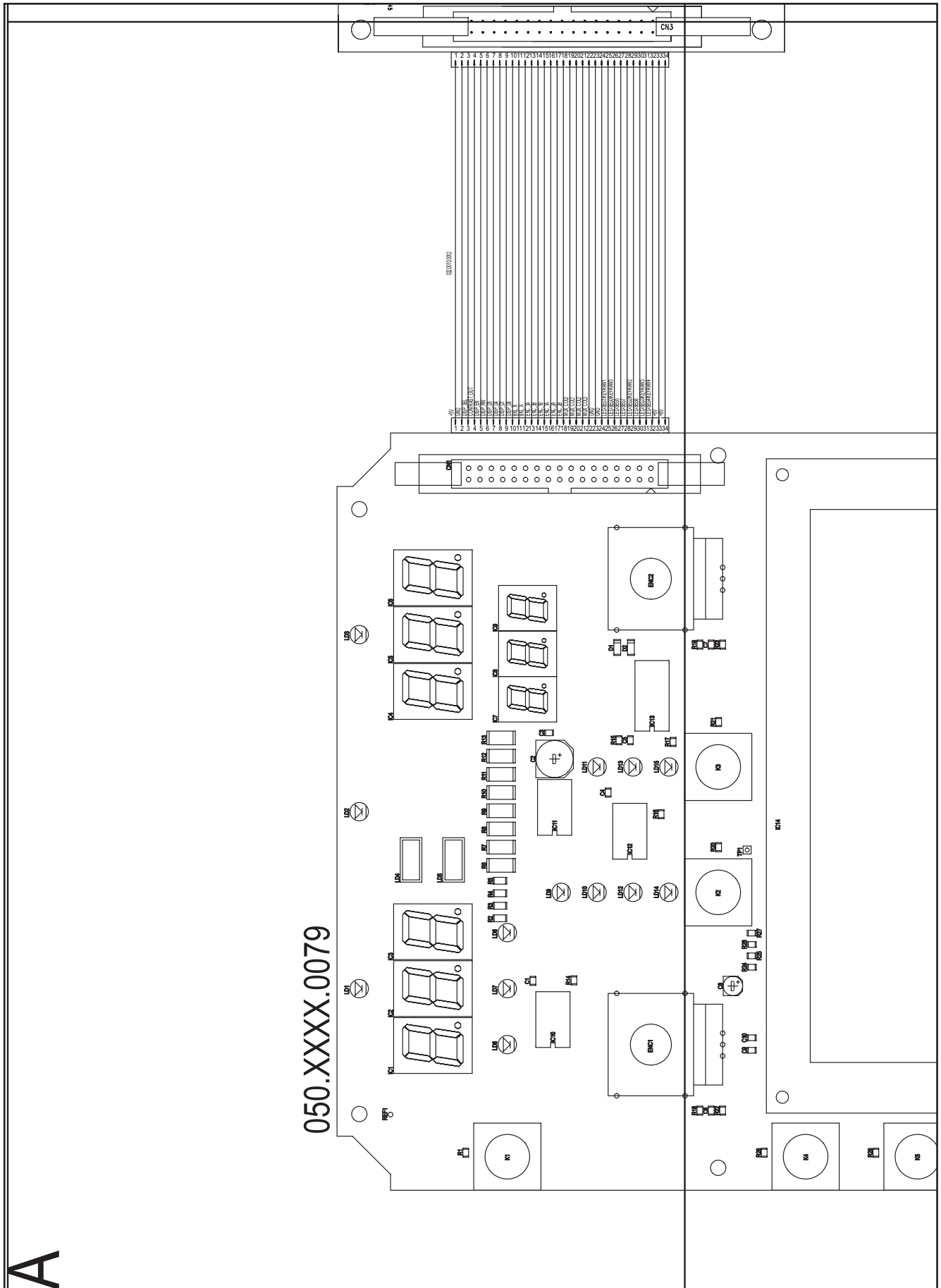
14 WIRING DIAGRAM

14.1 WF-104 WIRING DIAGRAM



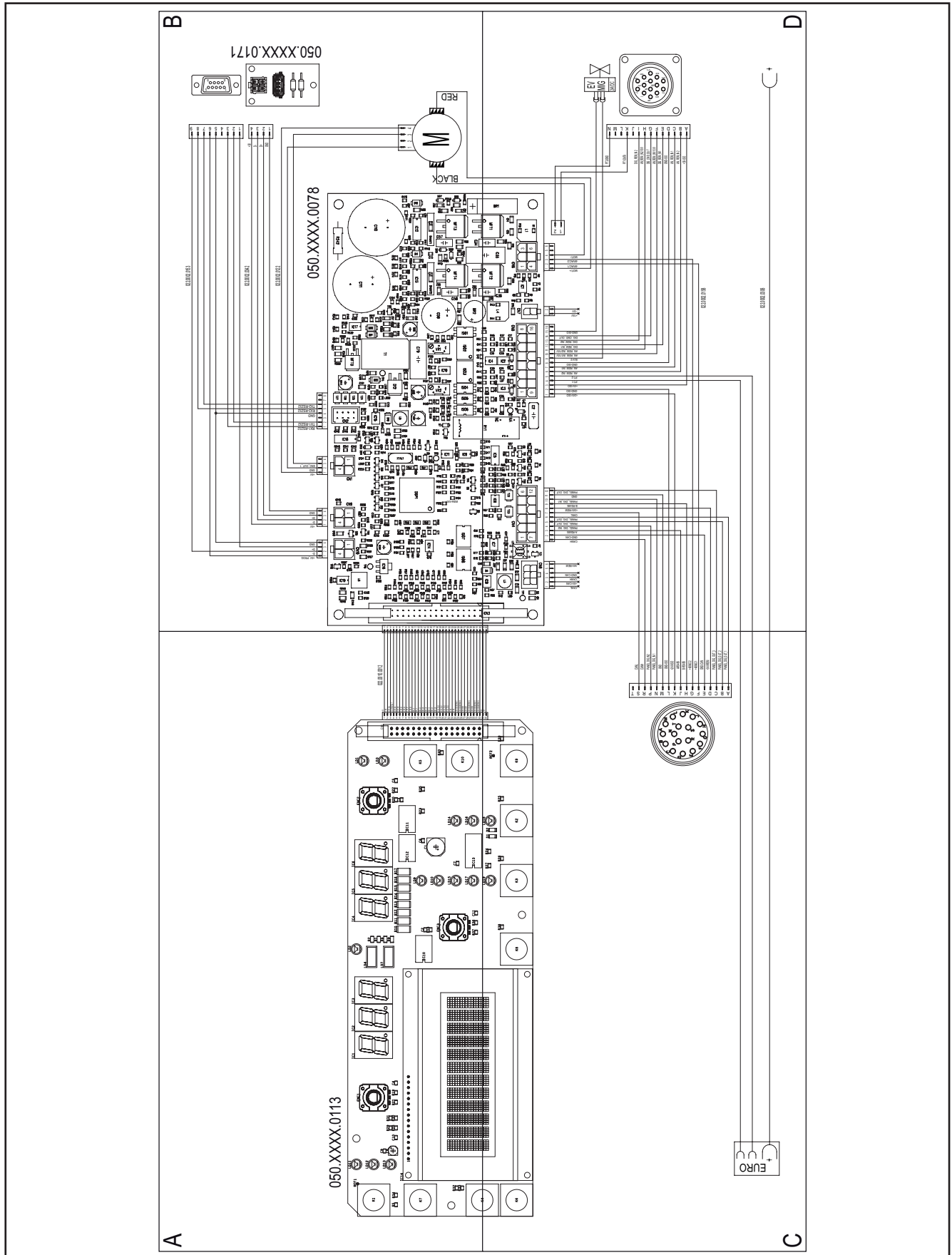






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14.2 WF-108 WIRING DIAGRAM



WF-104
WF-108

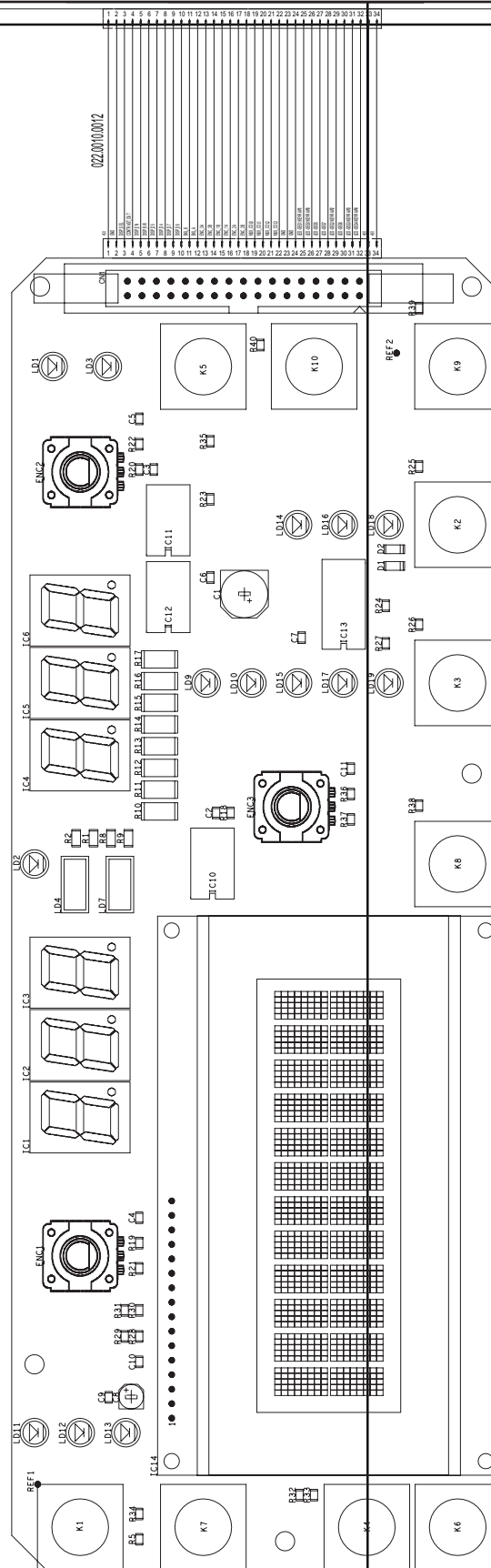


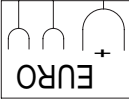
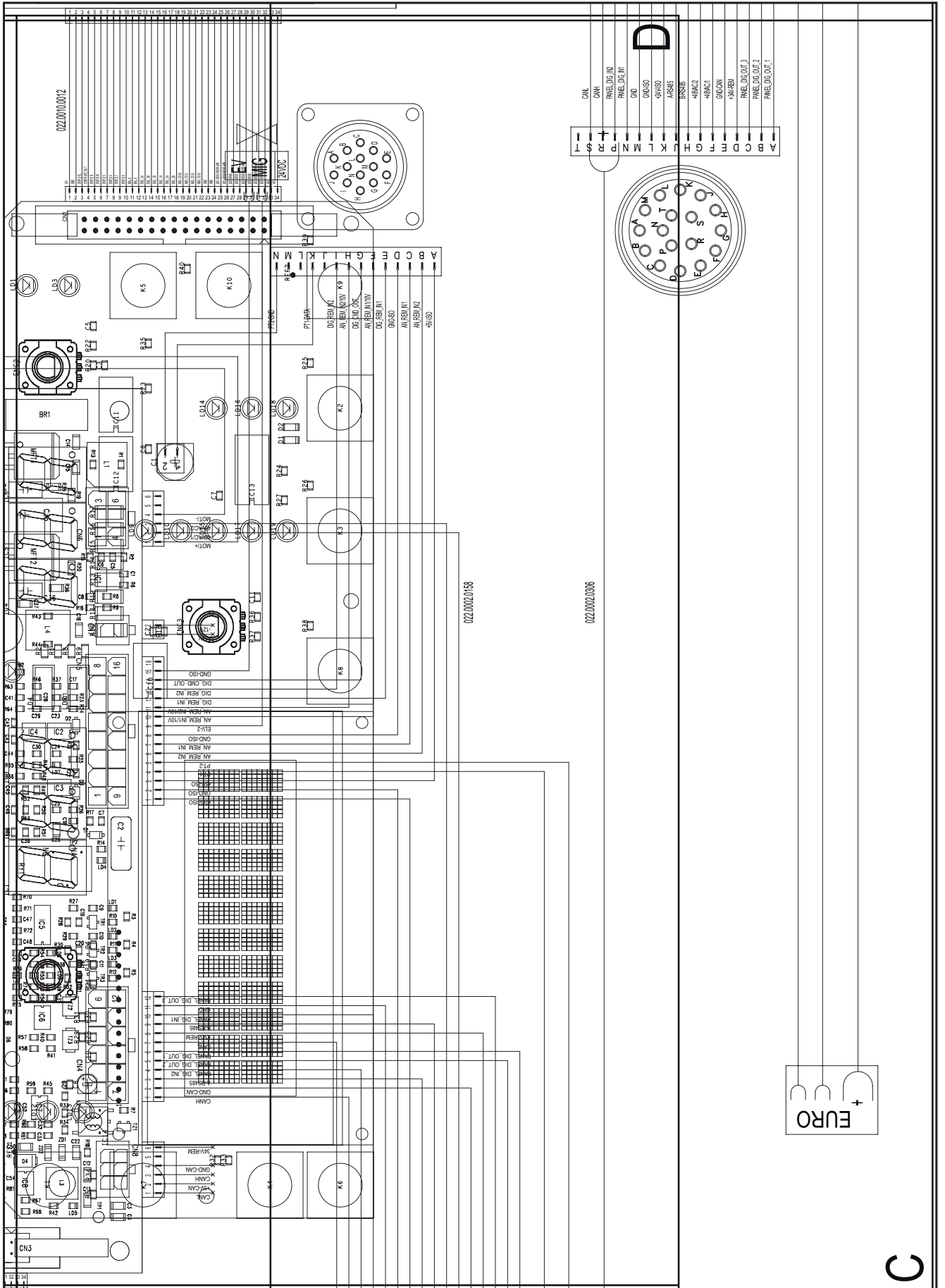
Cod. 006.0001.0940
21/06/2022 V.2.28

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A

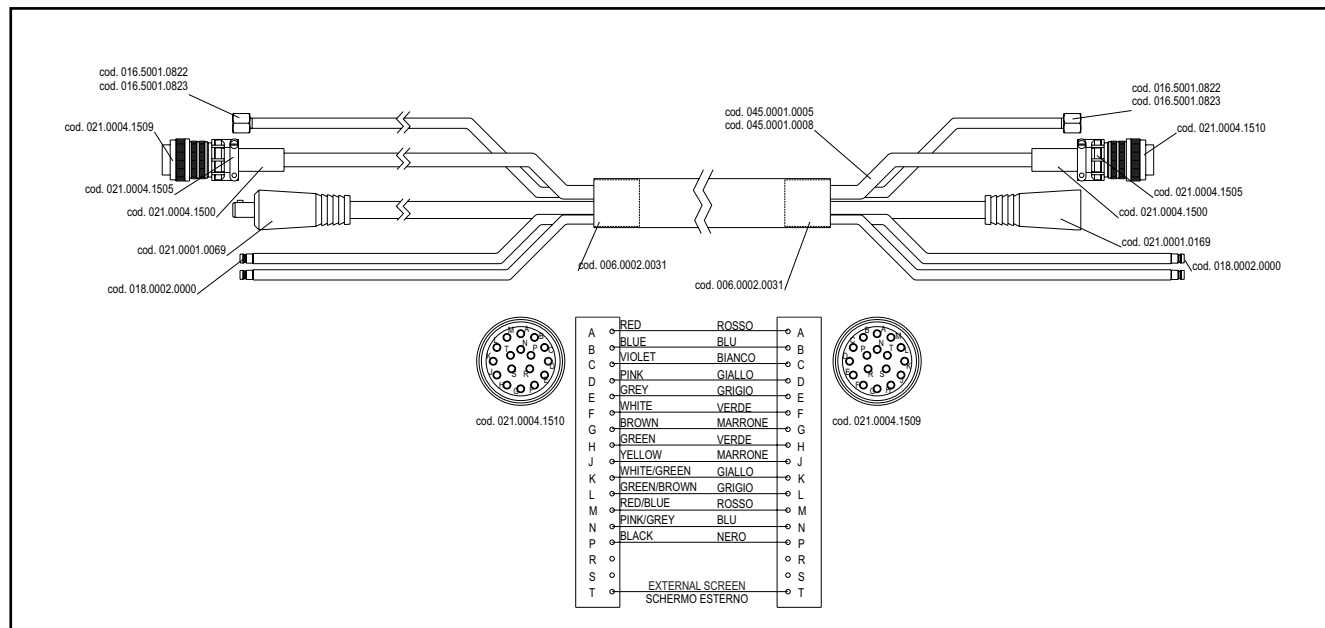
050.XXXX.0113



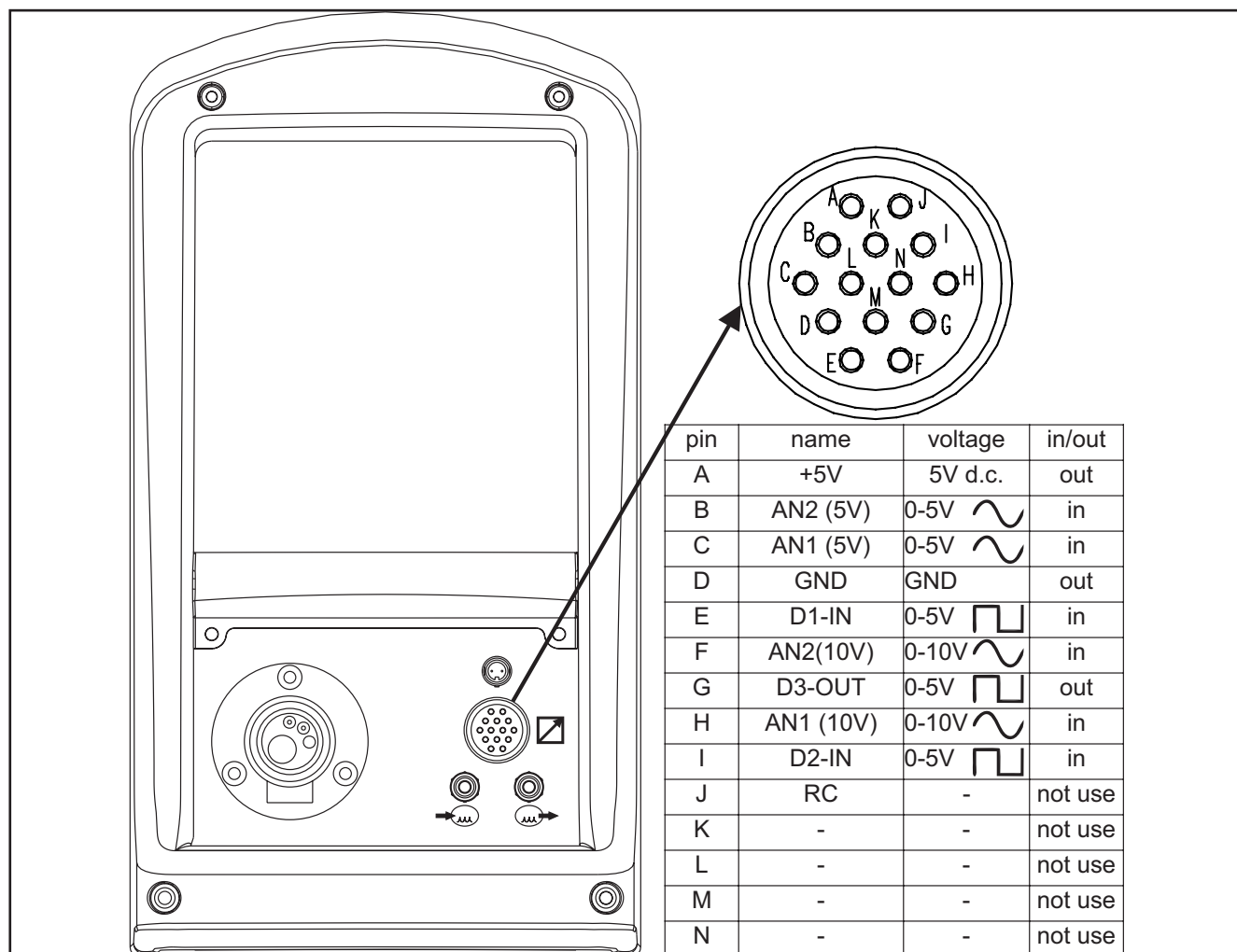


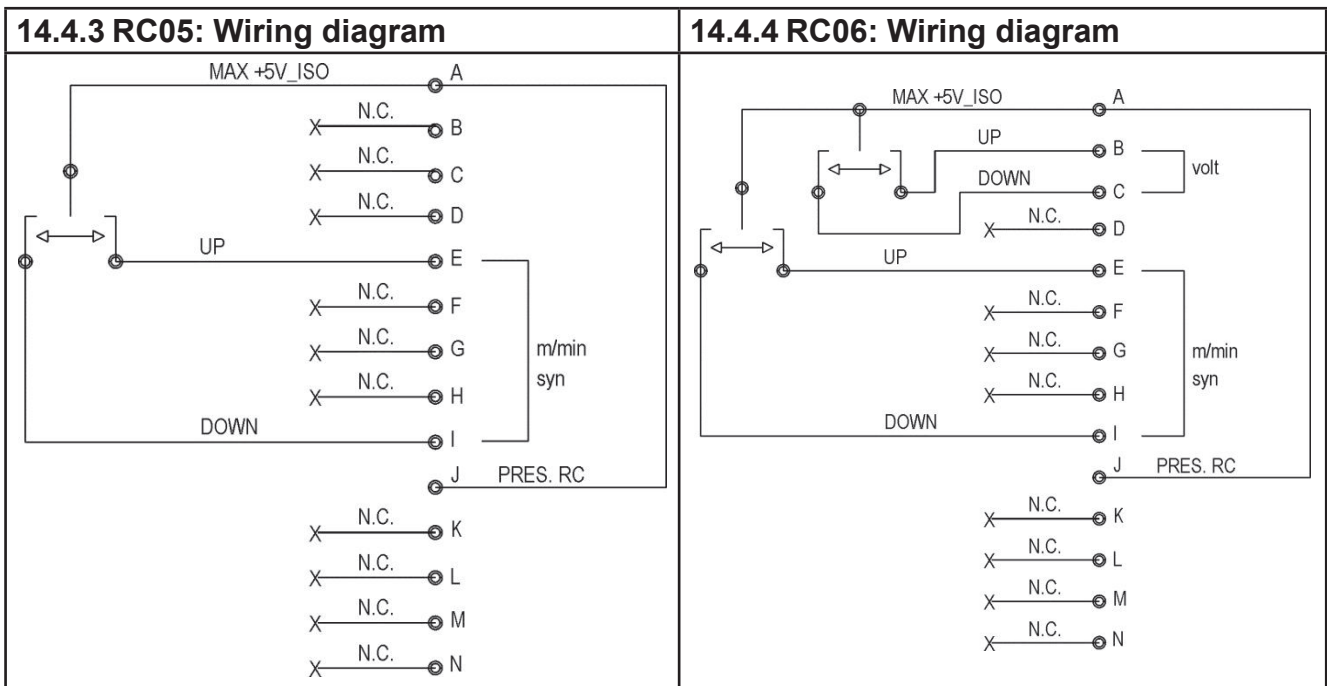
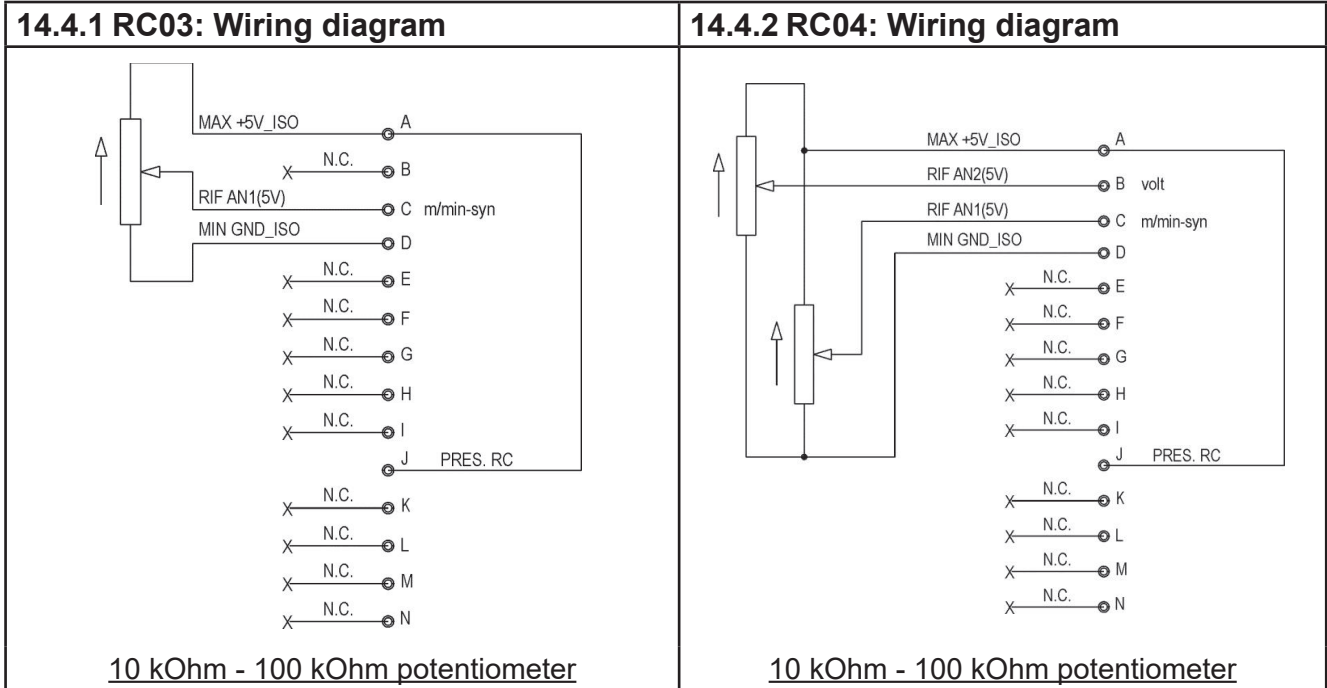
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14.3 POWER SOURCE → WF-104

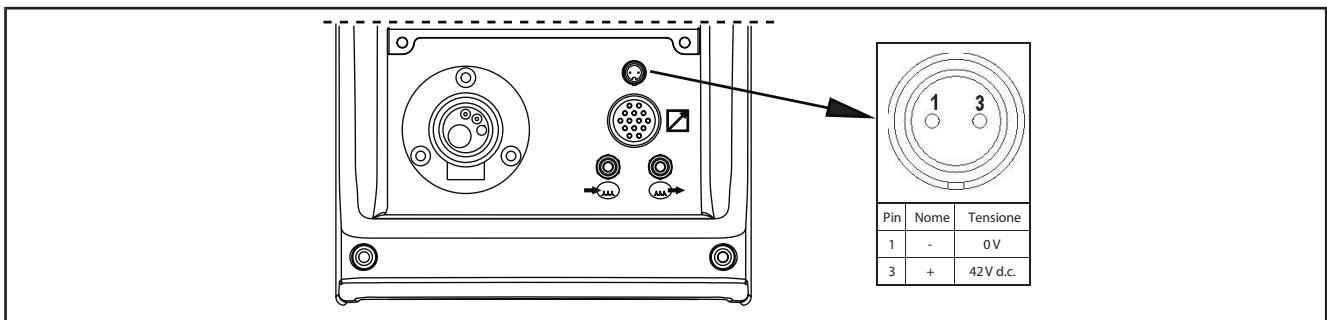


14.4 REMOTE CONTROL CONNECTOR (front panel)





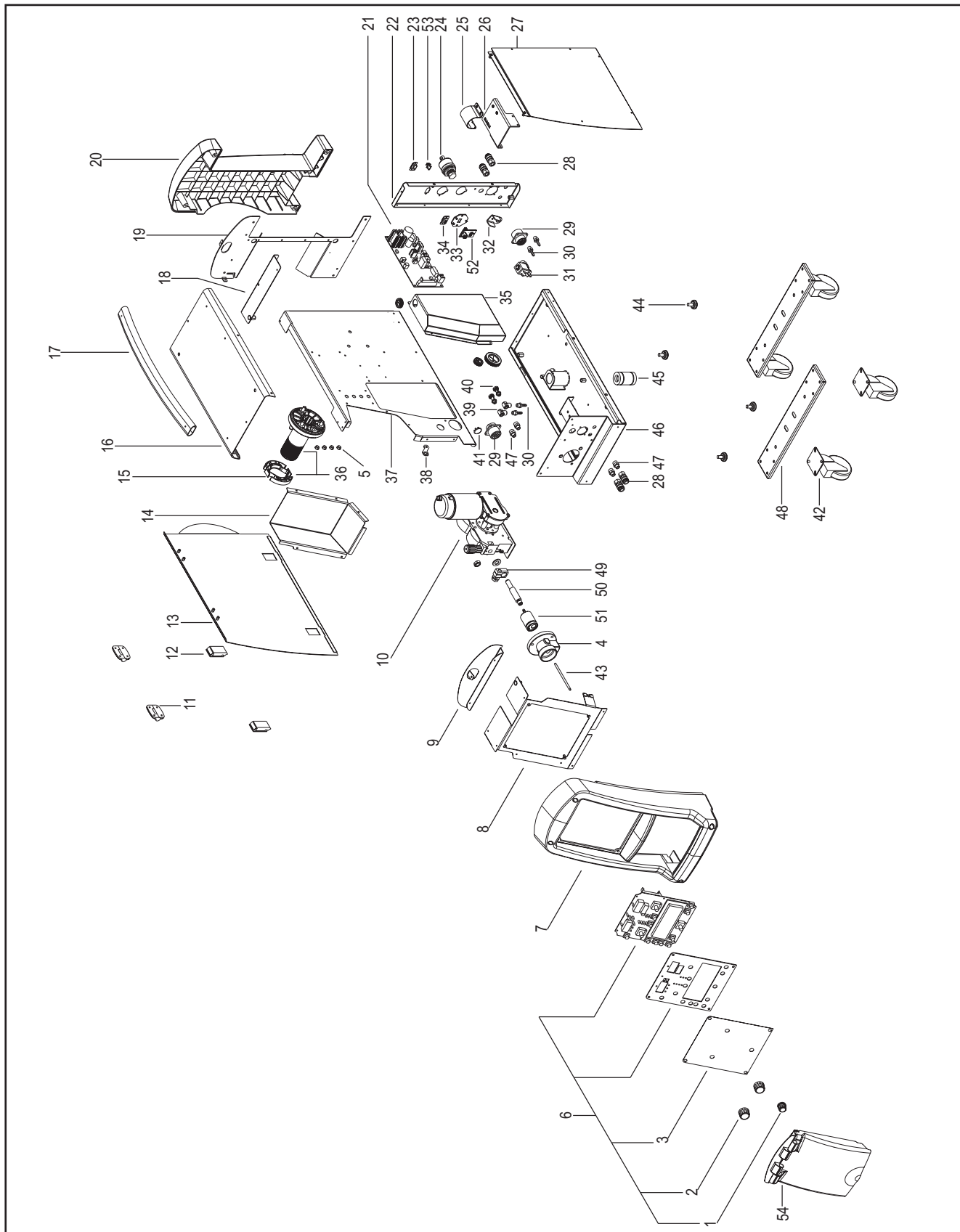
14.5 PUSH-PULL (OPTIONAL)



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15 SPARES

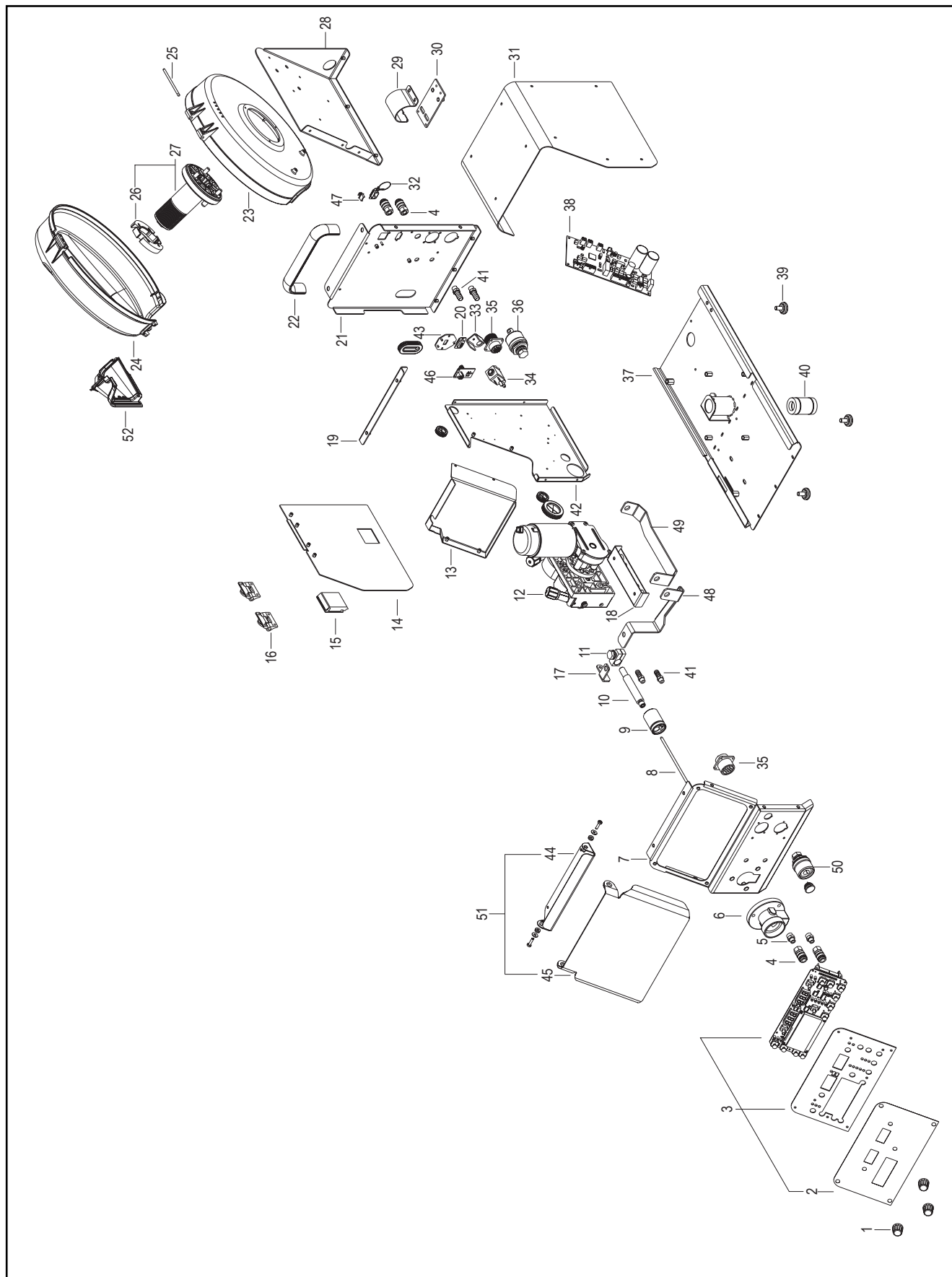
15.1 WF-104



No.	CODE	DESCRIPTION
1	014.0002.0010	KNOB
2	014.0002.0002	KNOB
3	013.0020.0101	FRONT PANEL LABEL
4	013.0000.8010	LOGIC BOARD PLATE
5	016.0011.0001	CAP Ø=10
6	050.5315.0000	COMPLETE LOGIC FRONT PANEL
7	012.0001.0500	FRONT PLASTIC PANEL
8	011.0014.0051	FRONT PLATE
9	011.0014.0066	HANDLE FIXING PLATE
10	010.0008.0003	WIRE FEEDER MOTOR
11	011.0006.0007	PLASTIC HINGE
12	011.0006.0002	SLIDE CLOSURE
13	011.0000.0751	DOOR PLATE
14	011.0014.0060	LOGIC PANEL PROTECTION PLATE
15	002.0000.0287	THREADED RING FOR SPOOL HOLDER
16	011.0000.0740	UPPER COVER
17	011.0014.0061	HANDLE
18	011.0014.0057	UPPER COVER FIXING PLATE
19	011.0014.0056	REAR PLATE
20	012.0001.0502	REAR PLASTIC PANEL
21	050.0021.0078	MOTOR BOARD
22	011.0014.0059	LATERAL SUPPORT PLATE
23	021.0014.0302	RS232 CONNECTOR CAP
24	021.0001.0379	FIX PLUG 500A 95mmq
25	011.0014.0026	SUPPORT CABLE BUNDLE PLATE
26	011.0014.0073	FIXING CABLE BUNDLE PLATE
27	011.0000.0761	COVER PLATE
28	018.0002.0004	QUICK CLUTCH
29	022.0002.0158	REMOTE LOGIC CABLE
30	016.5001.3040	SLEEVE HOSE ADAPTER FOR RUBBER HOSE Ø= 6 mm F= 1/8 M
31	017.0001.5542	SOLENOID VALVE
32	011.0002.0018	SOLENOID VALVE PLATE
33	011.0014.0076	USB PLATE
34	022.0002.0153	RS232 CABLE
35	011.0014.0058	WIRE FEEDER COVER PLATE
36	011.0006.0062	SPOOL SUPPORT
37	011.0014.0052	INTERNAL PLATE
38	011.0002.0037	BRASS GUIDE BLOCK BRACKET
39	017.0003.0025	HYDRAULIC SWIVEL JOINT LF= 1/8
40	017.0003.0023	HOLLOW BOLT M= 1/8
41	016.0011.0011	CAP Ø=18
42	004.0001.0007	WHEEL
43	021.0001.2026	CAPILLARY TUBE
44	016.0009.0003	FOOT
45	046.0004.0013	PLASTIC SUPPORT
46	011.0014.0054	LOWER COVER
47	017.0003.0055	NIPPLE CONNECTOR
48	011.0014.0009	WHEEL FIXING PLATE
49	021.0001.2010	CURRENT CLAMP FOR BRASS GUIDE
50	021.0001.2013	STING
51	021.0001.2000	COUPLING EURO
52	050.0001.0171	USB(A) BOARD
53	021.0015.0002	USB(A) CAP
54	010.0000.0060	PLEXIGLASS PROTECTION

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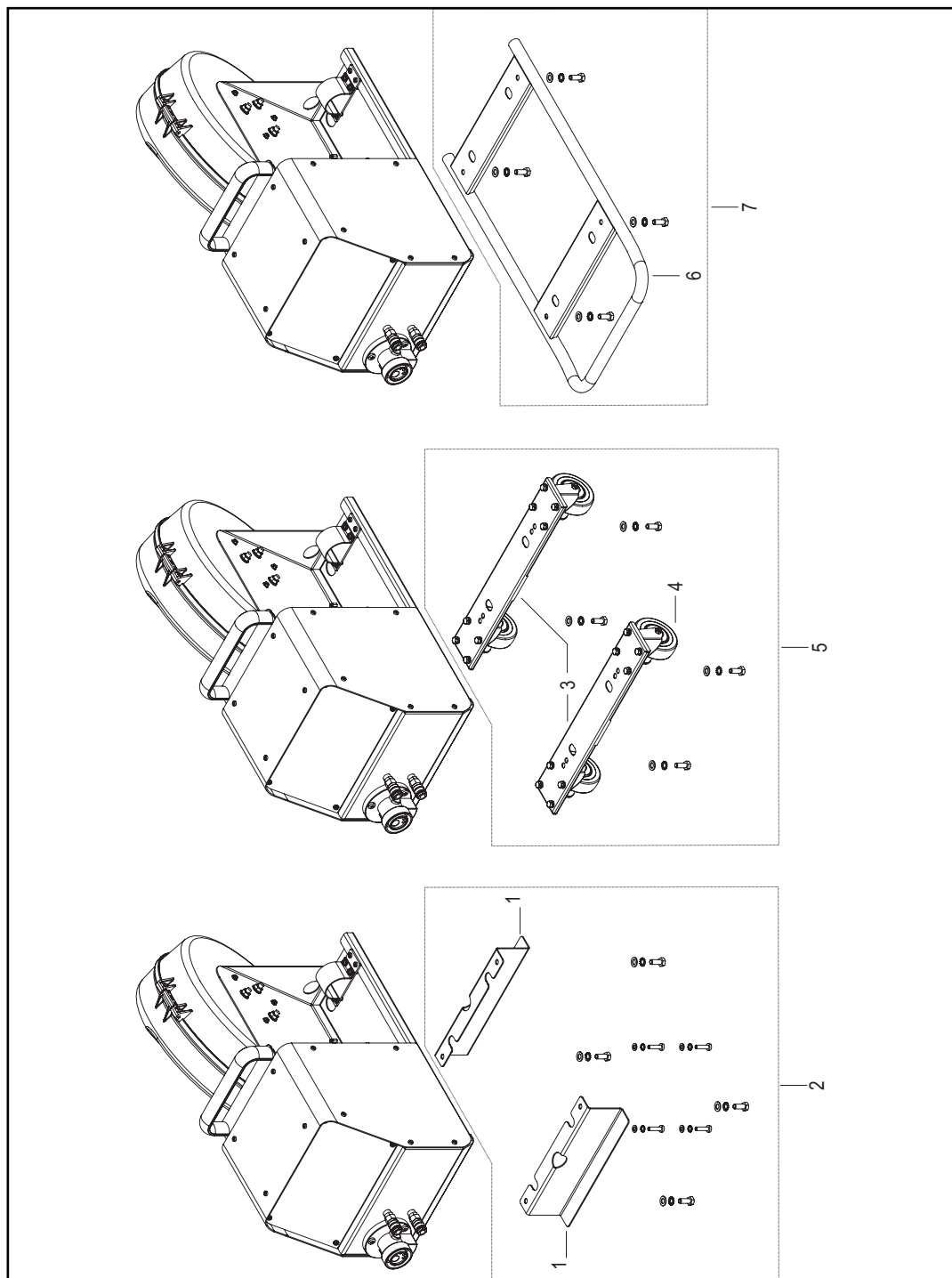
15.2 WF-108



No.	CODE	DESCRIPTION
1	014.0002.0002	KNOB
2	013.0020.0801	FRONT PANEL LABEL
3	050.5325.0000	COMPLETE LOGIC FRONT PANEL
4	018.0002.0004	QUICK CLUTCH
5	017.0003.0055	NIPPLE CONNECTOR
6	021.0001.2004	PLASTIC HOUSING
7	011.0014.0001	FRONT PLATE
8	021.0001.2027	CAPILLARY TUBE
9	021.0001.2000	COUPLING EURO
10	021.0001.2017	STING
11	021.0001.2010	CURRENT CLAMP FOR BRASS GUIDE FOR EURO CONNECTOR
12	002.0000.0022	WIRE FEED MOTOR
13	011.0014.0020	LOGIC PROTECTION PLATE
14	011.0000.0631	DOOR
15	011.0006.0003	SLIDE CLOSURE
16	011.0006.0007	PLASTIC HINGE
17	011.0002.0039	WIRE FEED MOTOR-STING BLOCK BRACKET
18	011.0014.0029	WIRE FEED MOTOR SUPPORT PLATE
19	011.0014.0008	UPPER COVER SUPPORT PLATE
20	022.0002.0153	RS232 CABLE
21	011.0014.0002	POSTERIOR PLATE
22	011.0006.0021	HANDLE
23	012.0000.0003	LOWER SPOOL COVER
24	012.0000.0004	UPPER SPOOL COVER
25	016.0008.0003	CYLINDRICAL PLUG
26	002.0000.0287	CAP FOR SPOOL HOLDER
27	011.0006.0062	COMPLETE SPOOL SUPPORT
28	011.0014.0006	SPOOL SUPPORT PLATE
29	011.0014.0026	SUPPORT CABLE BUNDLE PLATE
30	011.0014.0027	FIXING CABLE BUNDLE PLATE
31	011.0000.0651	UPPER COVER
32	021.0014.0302	RS232 CONNECTOR CAP
33	011.0002.0018	SOLENOID VALVE PLATE
34	017.0001.5542	SOLENOID VALVE
35	022.0002.0158	REMOTE CONNECTOR CABLE
36	021.0001.0379	FIX PLUG 500A 95mmq
37	011.0014.0005	LOWER COVER
38	050.0027.0078	MOTOR BOARD
39	016.0009.0003	RUBBER FOOT
40	046.0004.0013	PLASTIC SUPPORT
41	016.5001.3040	SLEEVE HOSE ADAPTER FOR RUBBER HOSE=6mm F=1/8 F
42	011.0014.0024	INTERNAL PLATE
43	011.0014.0076	USB PLATE
44	011.0014.0025	PANEL PROTECTION SUPPORT
45	012.0000.0016	PLEXIGLASS PROTECTION
46	050.0001.0171	USB(A) BOARD

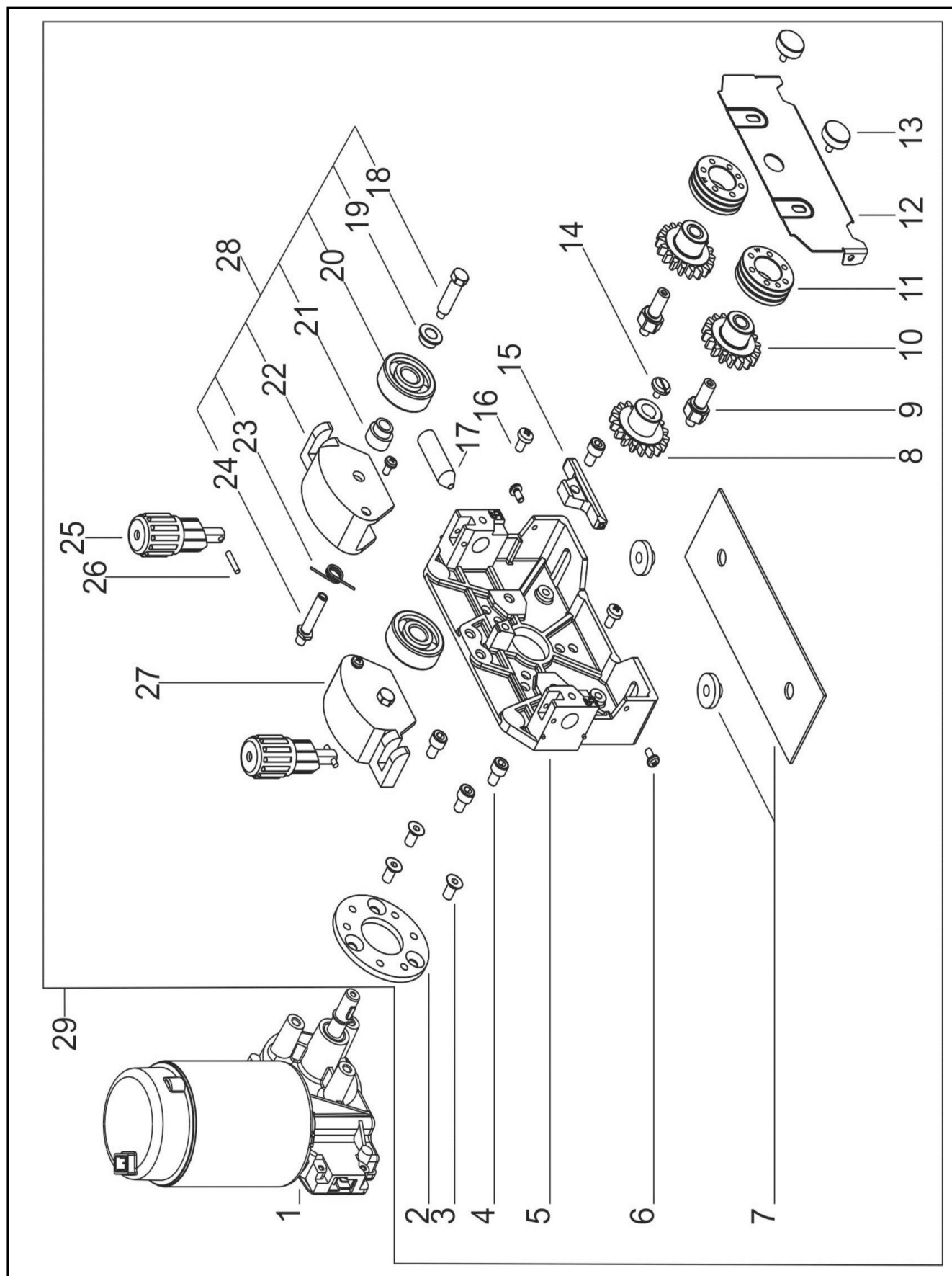
No.	CODE	DESCRIPTION
47	021.0015.0002	USB(A) CAP
48	045.0006.0120	WF-203 MOTOR BRACKET
49	045.0006.0121	WF-203 SOCKET BRACKET
50	021.0001.0479	FIX SOCKET 500A 95mmq
51	010.0000.0066	PLEXIGLASS PROTECTION KIT
52	012.0013.0010	UPPER SPOOL COVER CLOSER

15.3 KIT WF-108



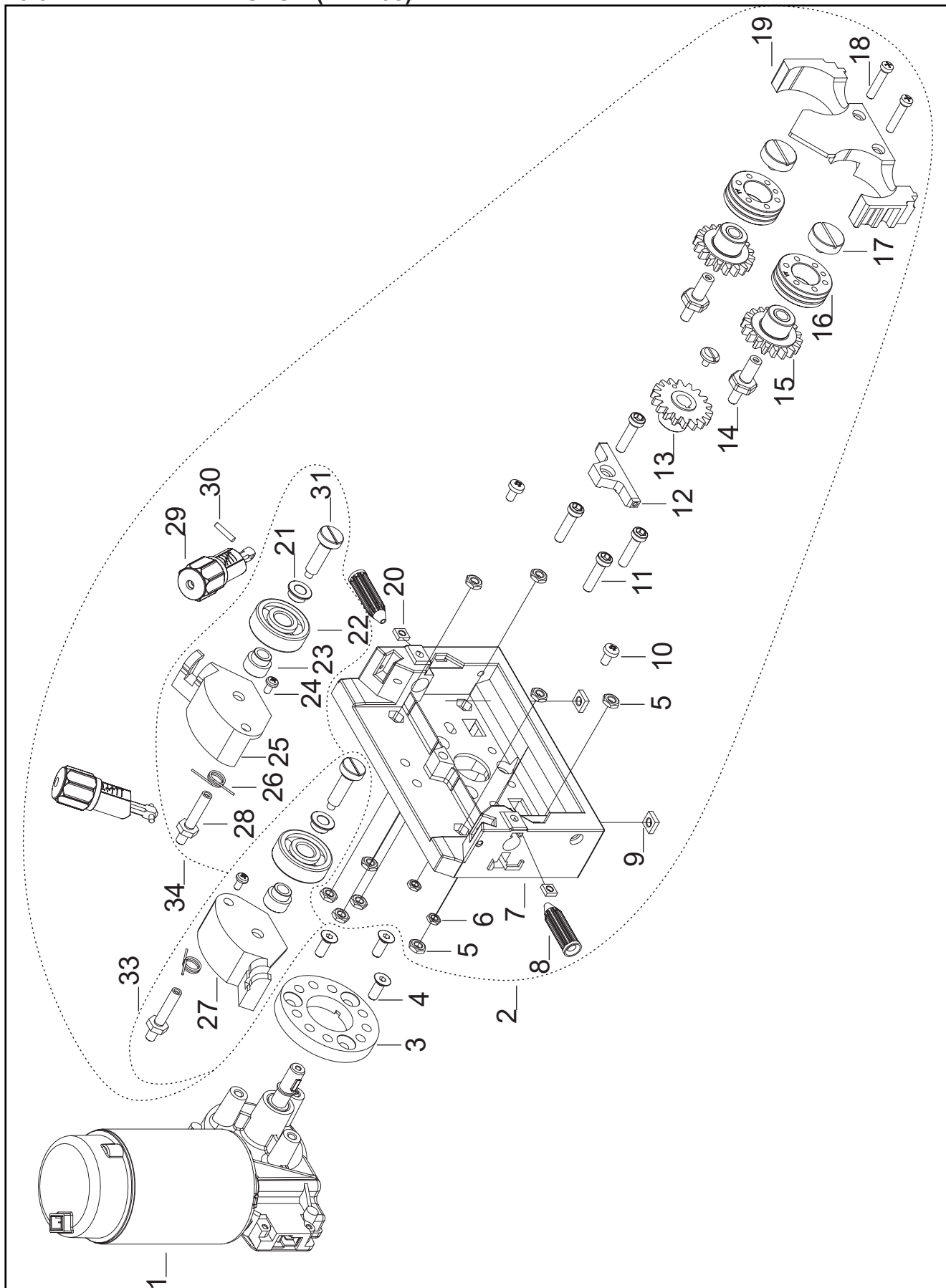
No.	CODE	DESCRIPTION
1	011.0014.0023	SUPPORT PLATE
2	004.0000.0210	WF SUPPORT KIT
3	011.0014.0009	WHEEL PLATE
4	004.0001.0007	WHEEL
5	010.0000.0012	WHEEL KIT
6	011.0014.0012	SLIDE METAL PLATE
7	010.0000.0013	SLIDING KIT

15.4 WIRE FEEDER MOTOR (WF-104)



No.	CODE	DESCRIPTION
1	002.0000.0254	MOTOR COIL
2	002.0000.0308	DISTANCE RING
3	002.0000.0306	COUNTERSUNK SCREW M6x12
4	002.0000.0307	SCREW M6x20
5	002.0000.0295	WIRE FEEDER SUPPORT
6	002.0000.0318	SCREW M4x8
7	002.0000.0291	INSULATIONMOTOR KIT
8	002.0000.0300	MAIN GEAR DRIVE
9	002.0000.0298	SHAFT
10	002.0000.0299	GEAR ADAPTOR FEED ROLL (BRONZE BUSHING)
	002.0000.0309	GEAR ADAPTOR FEED ROLL (BALL BEARING)
11	002.0000.0142	FEED ROLL
12	002.0000.0322	INTERNAL PROTECTION PLATE
13	002.0000.0305	RETAINING SCREW M4
14	002.0000.0304	SCREW M4x10
15	002.0000.0294	INTERMEDIATE GUIDE
16	002.0000.0324	SCREW M5x10
17	002.0000.0297	INLET GUIDE
18	002.0000.0316	PRESSURE ROLL AXLE
19	002.0000.0315	DISTANCE RING 1
20	002.0000.0303	KNURLED DRIVE ROLL
21	002.0000.0314	DISTANCE RING 2
22	002.0000.0313	RIGHT PRESSURE ARM
23	002.0000.0317	SPRING
24	002.0000.0311	JOINT AXLE
25	002.0000.0290	COMPLETE PRESSURE DEVICE
26	002.0000.0319	PIN
27	002.0000.0301	COMPLETE LEFT PRESSURE ARM
28	002.0000.0302	COMPLETE RIGHT PRESSURE ARM
29	002.0000.0057	WIRE FEEDER BODY COMPLETE

15.5 WIRE FEEDER MOTOR (WF-108)



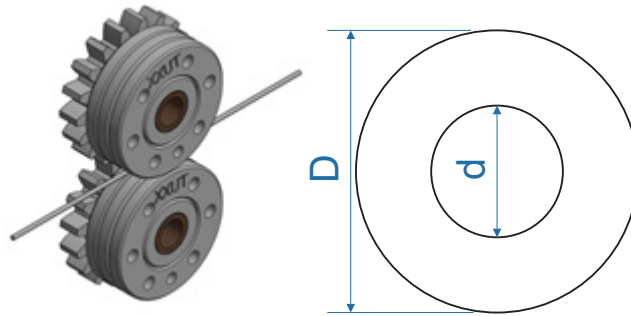
N°	CODE	DESCRIPTION
1	002.0000.0254	MOTOR COIL
2	002.0000.0062	COMPLETE WIRE FEEDER
3	002.0000.0391	SPACER RING
4	016.0300.0411	COUNTERSUNK SCREW M6x12
5	002.0000.0349	M6 HEXAGONAL NUT
6	002.0000.0384	M5 HEXAGONAL NUT
7	002.0000.0373	FEED PLATE
8	002.0000.0297	INLET GUIDE WITH SOFT LINER
9	002.0000.0385	M6 SQUARE NUT
10	002.0000.0324	SCREW M5x10
11	002.0000.0387	SCREW M6x25
12	002.0000.0294	INTERMEDIATE GUIDE
13	002.0000.0300	MAIN GEAR DRIVE
14	002.0000.0374	SHAFT
15	002.0000.0299	GEAR ADAPTOR FEED ROLL (BRONZE BUSHING)
	002.0000.0309	GEAR ADAPTOR FEED ROLL (BALL BEARING)
16	002.0000.0142	FEED ROLL
17	002.0000.0383	RETAINING SCREW M4
18	002.0000.0382	SCREW M5x30
19	002.0000.0388	INTERNAL PROTECTION
20	002.0000.0386	M5 SQUARE NUT
21	002.0000.0315	DISTANCE RING 1
22	002.0000.0303	SMOOTH DRIVE ROLL
23	002.0000.0314	DISTANCE RING 2
24	002.0000.0318	SCREW M4x8
25	002.0000.0379	RIGHT PRESSURE ARM
26	002.0000.0317	SPRING
27	002.0000.0378	LEFT PRESSURE ARM
28	002.0000.0375	JOINT AXLE
29	002.0000.0381	COMPLETE PRESSURE DEVICE
30	002.0000.0319	PIN
31	002.0000.0380	PRESSURE ROLL AXLE
32	002.0000.0304	SCREW M4x10
33	002.0000.0376	COMPLETE LEFT PRESSURE ARM
34	002.0000.0377	COMPLETE RIGHT PRESSURE ARM

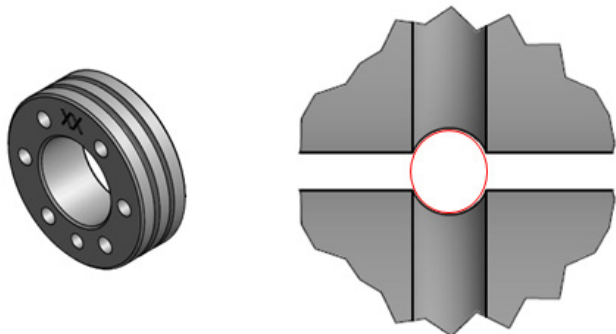
15.6 WIRE FEEDER ROLLS

Standard					
CODE	Ø WIRE	TYPE	Ø ROLL	GROOVE	
002.0000.0140	0.6-0.8	V groove Solid wire	D=37x12/d=19 V	35° V	
002.0000.0141	0.8-1.0				
002.0000.0142	1.0-1.2				
002.0000.0143	1.2-1.6				
002.0000.0144	0.8-1.0	U shape Aluminium wire	D=37x12/d=19 U	90° V	
002.0000.0145	1.0-1.2				
002.0000.0146	1.2-1.6				
002.0000.0147	1.6-2.0				
002.0000.0148	2.4-3.2				
002.0000.0149	1.0-1.2	VK shape	D=37x12/d=19 VK	90° V	
002.0000.0150	1.2-1.6				
002.0000.0151	2.4-3.2				

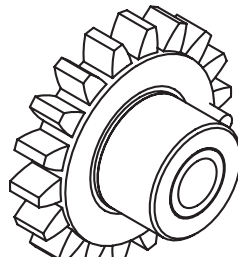
Arm with standard roll	
Smooth	
CODE	Ø ROLL
002.0000.0303	D=37x12/d=12 Smooth standard

Double driving roll (4 roll with groove) - RECOMMENDED CONFIGURATION

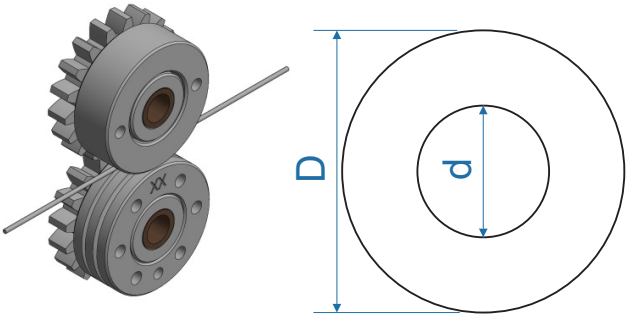
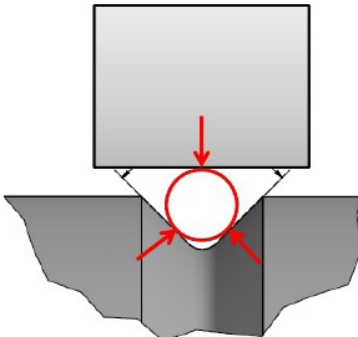
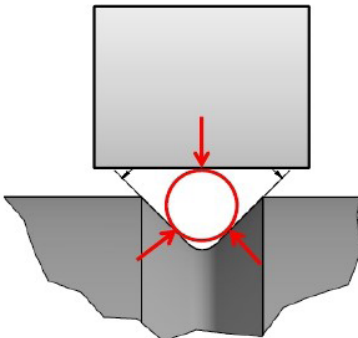
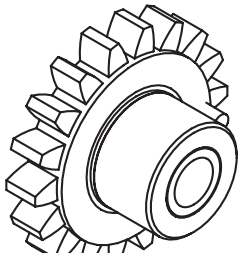



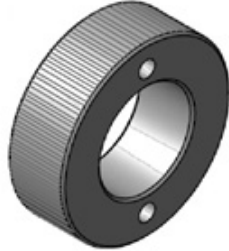
CODE	Ø WIRE	Ø ROLL	
002.0000.0168	1.0-1.2	D=37x12/d=19 U DOUBLE D.	
002.0000.0169	1.2-1.6	D=37x12/d=19 U DOUBLE D.	
002.0000.0171	1.0-1.2	D=37x12/d=19 UT TEFLON.	
002.0000.0172	1.2-1.6	D=37x12/d=19 UT TEFLON	

GEAR ADAPTOR FEED ROLL



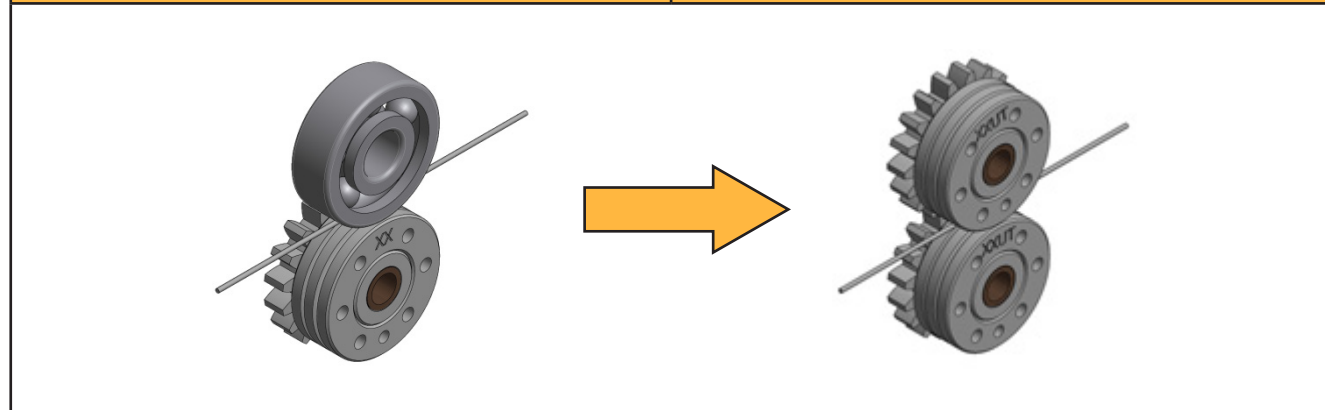
002.0000.0299	GEAR ADAPTOR FEED ROLL (BRONZE BUSHING)
002.0000.0309	GEAR ADAPTOR FEED ROLL (BALL BEARING)

Double driving roll (2 roll with groove + 2 flat roll)			
			
WF-104			
CODE	Ø WIRE	Ø ROLL	
002.0000.0145	1.0-1.2	D=37x12/d=19 U	
002.0000.0146	1.2-1.6	D=37x12/d=19 U	
002.0000.0149	1.0-1.2	D=37x12/d=19 VK	
002.0000.0150	1.2-1.6	D=37x12/d=19 VK	
002.0000.0151	2.4-3.2	D=37x12/d=19 VK	
WF-108			
CODE	Ø WIRE	Ø ROLL	
002.0000.0168	1.0-1.2	D=37x12/d=19 U DOUBLE D.	
002.0000.0169	1.2-1.6	D=37x12/d=19 U DOUBLE D.	
002.0000.0171	1.0-1.2	D=37x12/d=19 UT TEFLON.	
002.0000.0172	1.2-1.6	D=37x12/d=19 UT TEFLON	
GEAR ADAPTOR FEED ROLL			
			
002.0000.0299	GEAR ADAPTOR FEED ROLL (BRONZE BUSHING)		
002.0000.0309	GEAR ADAPTOR FEED ROLL (BALL BEARING)		

Arm with double driving roll			
Smooth		Knurled	
CODE	Ø ROLL	CODE	Ø ROLL
002.0000.0152	D=37x12/d=19 SMOOTH double driving	002.0000.0153	D=37x12/d=19 KNURLED double driving
			

Transformation KIT from STANDARD wire feeder to Double driving roll wire feeder

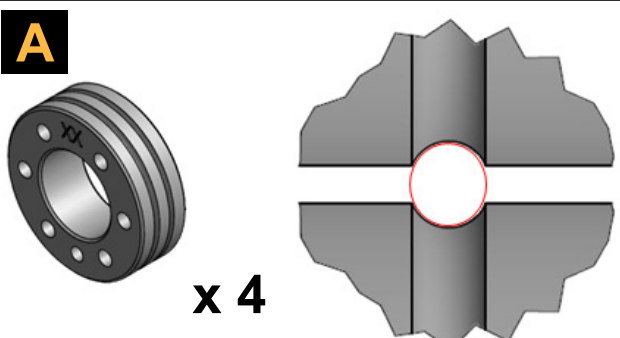
Standard	Double driving roll
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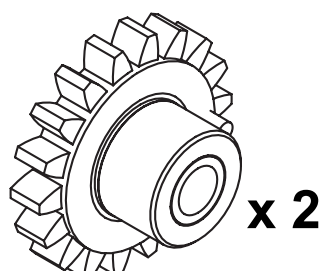
If you want to change the configuration of the STANDARD wire feeder to DOUBLE DRIVE ROLL configuration, you need to order the following items:

N° 4 Special rolls “U DOUBLE D” (see Part. A)

N° 2 Gear adaptor feed rolls (see Part. B) [it is recommended with bronze bushing]

CODE	Ø WIRE	Ø ROLL	
002.0000.0168	1.0-1.2	D=37x12/d=19 U DOUBLE D.	<div style="display: flex; align-items: center;"> <div style="background-color: black; color: white; padding: 5px; margin-right: 10px;">A</div>  <div style="margin-left: 20px; font-size: 24px;">x 4</div> </div>
002.0000.0169	1.2-1.6	D=37x12/d=19 U DOUBLE D.	

GEAR ADAPTOR FEED ROLL for Double driving roll

002.0000.0299	GEAR ADAPTOR FEED ROLL (BRONZE BUSHING)	<div style="display: flex; align-items: center;"> <div style="background-color: black; color: white; padding: 5px; margin-right: 10px;">B</div>  <div style="margin-left: 20px; font-size: 24px;">x 2</div> </div>
002.0000.0309	GEAR ADAPTOR FEED ROLL (BALL BEARING)	

WF-104
WF-108



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