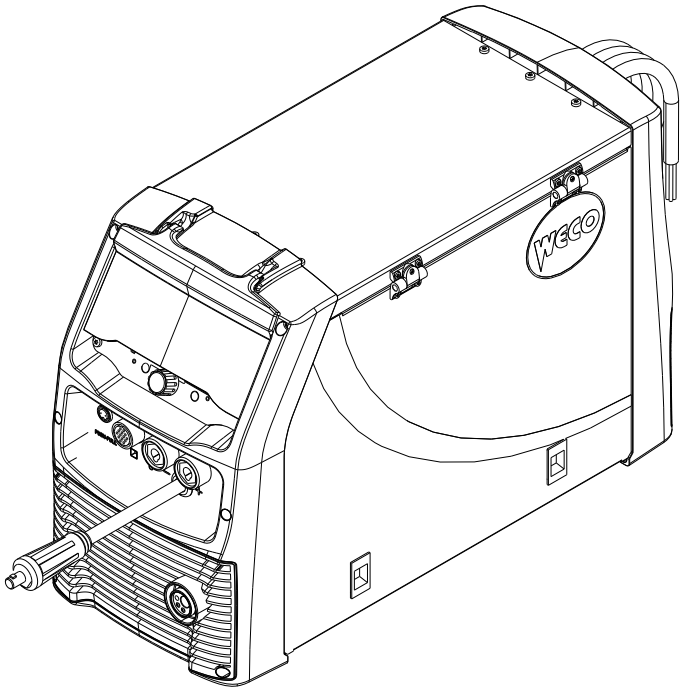
WELD THE WORLD

Power Pulse 3200K/4000K

Instruction Manual

ENGLISH

Translation of the original instructions



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INDEX

1 GENERAL INFORMATION

IMPORTANT!
For your safety

This handbook must be consigned to the user prior to installation and commissioning of the unit.
Read the manual "GENERAL INSTRUCTIONS FOR USE" provided separately from this manual before installation and commissioning of the equipment.
The meaning of the symbols in this manual and the associated precautionary information are given in the "GENERAL INSTRUCTIONS FOR USE".
If the "GENERAL INSTRUCTIONS FOR USE" are not present, it is mandatory to request a replacement copy from the manufacturer or from your dealer.
Retain these documents for future consultation.

Meaning of the symbols

DANGER!
This pictogram warns of danger of death or serious injury.

WARNING!
This pictogram warns of a risk of injury or damage to property.

CAUTION!
This pictogram warns of a potentially hazardous situation.

WARNING!
This pictogram gives important information concerning the execution of the relevant operations.

Information
This pictogram indicates additional information or refers to another section of the manual with the related information.

- in the illustrations:
  - press
  - turn the encoder
  - press the encoder

- **Note:** 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

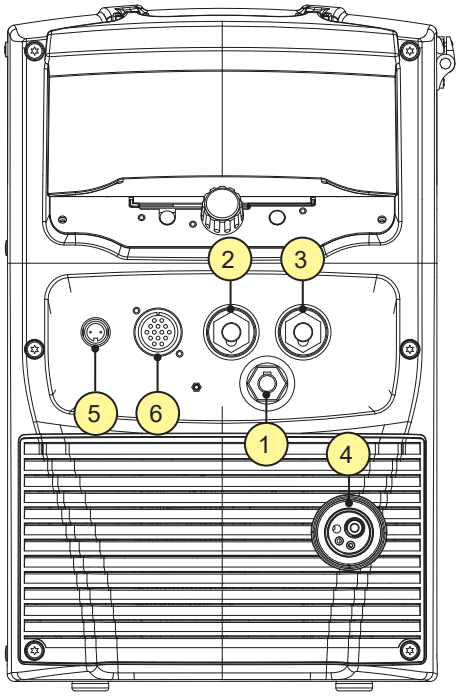
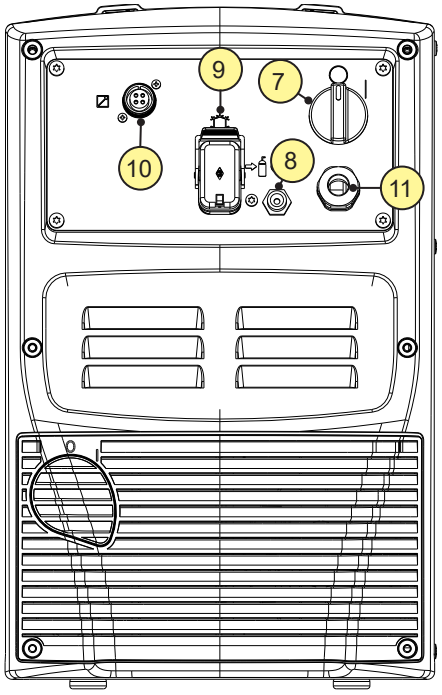
Power Pulse 3200K/4000K are multifunction current generators for MIG/MAG, MMA and TIG welding (with contact striking).
They are compact electronic devices, managed by high-performance digital control systems, suitable for professional quality welding.

- **Fan.** The fan is switched on only during the welding phase, at the end of which it remains switched on for a preset time and in the MMA process.
  - The fan is controlled by special thermal sensors that guarantee proper cooling of the machine.

- **Accessories/auxiliary devices that can be connected to the equipment:**
  - Generator carriage for multifunction configuration (MIG/MAG).
  - Liquid cooling unit for MIG/MAG torches.

Information For an up-to-date list of accessories and the latest news available, contact your dealer.

1.2 CONNECTIONS AND SOCKETS

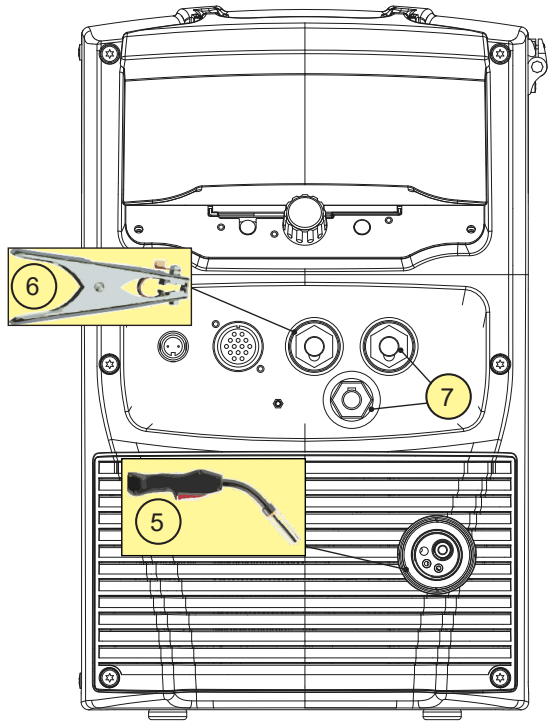
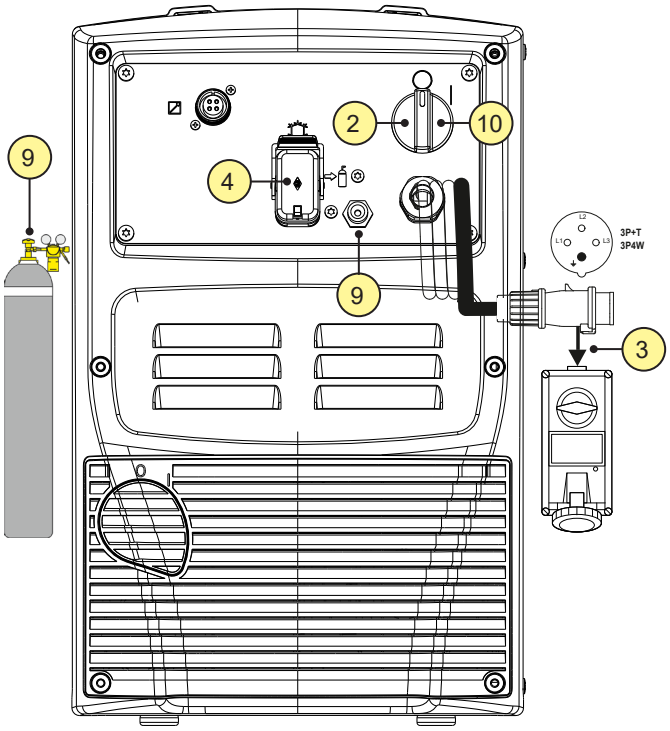
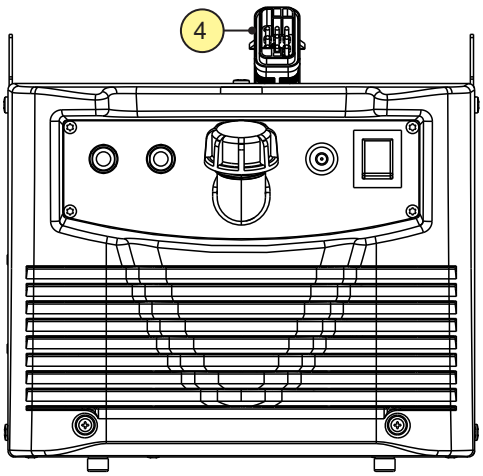
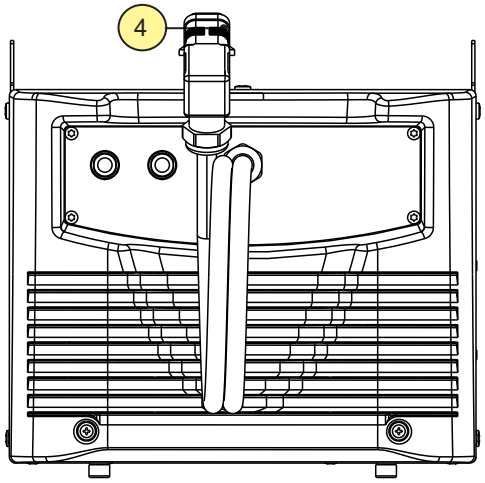
FRONT VIEW	REAR VIEW
	

- [1] Polarity selector cable.
- [2] Negative polarity welding socket.
- [3] Positive polarity welding socket.
- [4] EURO TORCH welding socket.
- [5] Push-pull torch connector.
- [6] Remote control connector.
- [7] Switch for switching the generator off and on.
- [8] Connector for the gas supply hose between the cylinder and the generator.
- [9] Connector for powering the cooling unit.
  - Voltage: 400 Va.c.
  - Current Dispensed: 0.8 A
  - IP protection class: IP20 (cap open) / IP66 (cap closed)

⚠ **DANGER!** **Dangerous voltage!** If no equipment is connected to the socket, always keep the cover closed.

- [10] Connector for CAN-BUS devices.
  Devices communicating via CAN-BUS (Remote Control, Data Manager, IR robot interface, etc.), can be connected to this connector.
- [11] Power cable.
  - Length: 4.5 m.
  - Number and section of conductors: 4 x 4 mm^2
  - Type of electrical plug: not fitted.

1.3 PREPARING FOR MIG/MAG WELDING

FRONT VIEW	REAR VIEW
	
	

1. Assemble the various units as described in the instruction manual of the power source trolley.
2. Place the current generator switch in position “O” (equipment off).
3. Connect the power source mains supply cable to the mains socket outlet.
4. If cooling unit is provided:
   - connect the power supply cable of the cooling unit to the auxiliary power socket on the power source.
   - Connect the MIG/MAG torch coolant supply and return pipes (for water-cooled torch models) to the connections in the cooling unit.

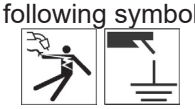
NOTE: For the cooler to power source assembly procedure refer to the cooler instruction manual.

5. Connect the MIG/MAG torch plug to the EURO welding socket
6. Connect the earth clamp plug to the power source earth socket.

DANGER!

Electric shock hazard!

Read the warnings highlighted by the following symbols in the “General instructions for use”.



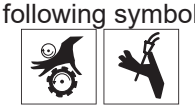
7. Connect the polarity selection cable to the positive pole socket.
8. Connect the ground clamp to the workpiece.
9. Connect the welding gas pipe between the machine and the gas cylinder or centralised system.
10. Set the welding power source ON/OFF switch to “I” (unit powered).

1.4 POSITIONING THE WIRE SPOOL AND THE WIRE IN THE WIRE FEEDER

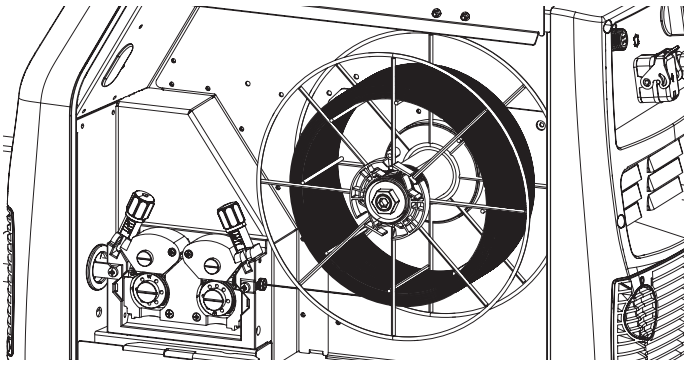
WARNING!

Mechanical risks

Read the warnings highlighted by the following symbols in the “General instructions for use”.

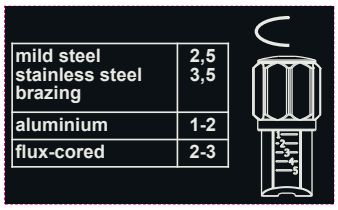


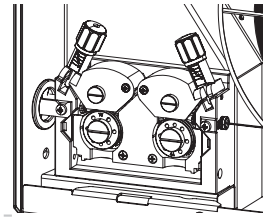
1. Fit the spool in the spool holder, ensuring it is located correctly.
2. Lock the coil with the ring nut.
3. Adjust the spool holder braking system by tightening/loosening the screw in such a way that the wire feed force is not excessive and when the spool stops rotating no excess wire is released.



4. Check that the feed rolls are suitable for the wire gauge.
   - 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.
5. Feed the wire between the wire feeder rolls and insert it into the MIG/MAG TORCH connector plug.
6. Make sure the wire is located correctly in the roll grooves.

7. 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.

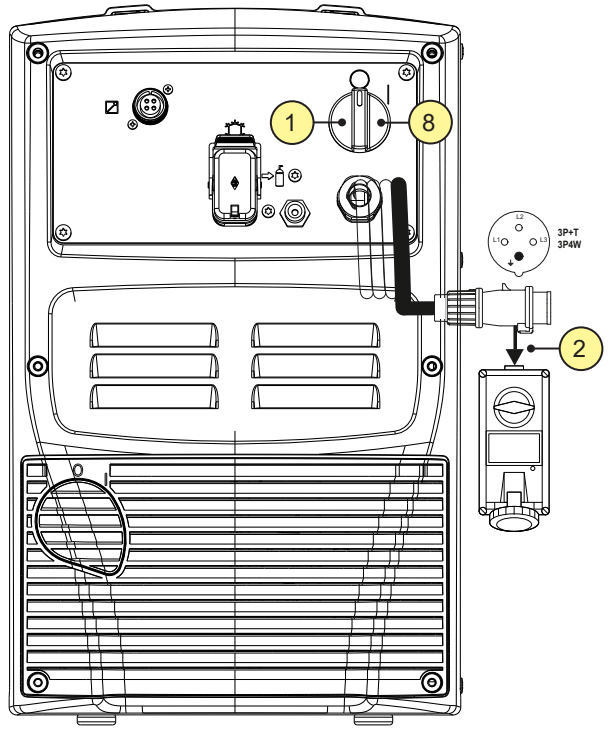
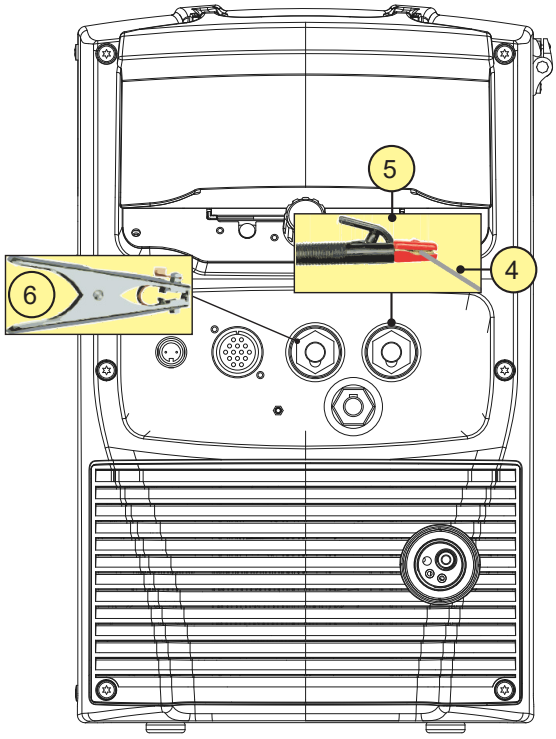




It is also possible to activate the wire feed via the torch trigger in this way:

- press the key  and the torch trigger at the same time;
- release the key  while still keeping the torch trigger pressed down. The wire will continue to run;
- releasing the torch trigger stops the wire from running.

1.5 Preparation for MMA welding

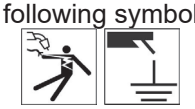
REAR VIEW	FRONT VIEW
	

1. Place the current generator switch in position “O” (equipment off).
2. Plug the power cable plug into a mains socket outlet.
3. Choose the electrode based on the type of material and thickness of the workpiece to be welded.
4. Insert the electrode in the electrode holder.
5. Connect the electrode holder cable to the welding socket based on the polarity requested by the type of electrode used.
6. Connect the plug of the ground clamp to the welding socket on the basis of the polarity required.
7. Connect the ground clamp to the workpiece.

DANGER!

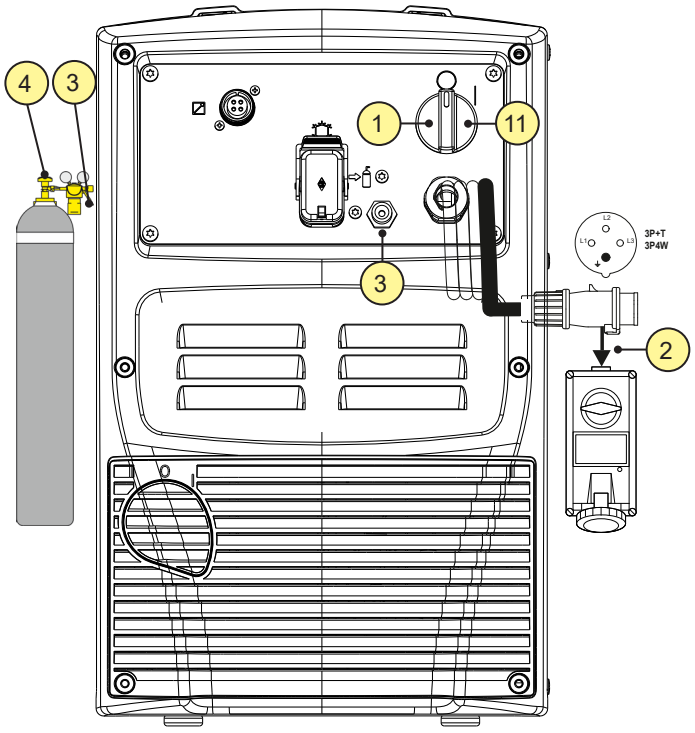
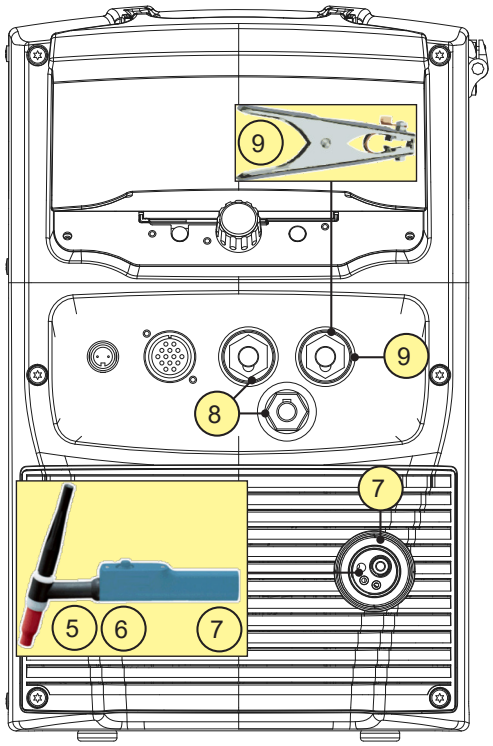
Electric shock hazard!

Read the warnings highlighted by the following symbols in the “General instructions for use”.



8. Set the welding power source ON/OFF switch to “I” (unit powered).

1.6 PREPARATION FOR TIG WELDING

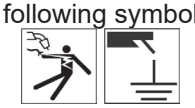
REAR VIEW	FRONT VIEW
	

1. Place the current generator switch in position “O” (equipment off).
2. Plug the power cable plug into a mains socket outlet.
3. Connect the gas hose from the welding gas cylinder to the rear gas socket.
4. Open the cylinder gas valve.
5. Choose the electrode based on the type of material and thickness of the workpiece to be welded.
6. Insert the electrode in the TIG torch.
7. Connect the torch plug to the EURO welding socket.
8. Plug the polarity change cable into the Negative polarity welding socket
9. Connect the ground clamp plug to the Positive polarity welding socket.
10. Connect the ground clamp to the workpiece.

DANGER!

Electric shock hazard!

Read the warnings highlighted by the following symbols in the “General instructions for use”.

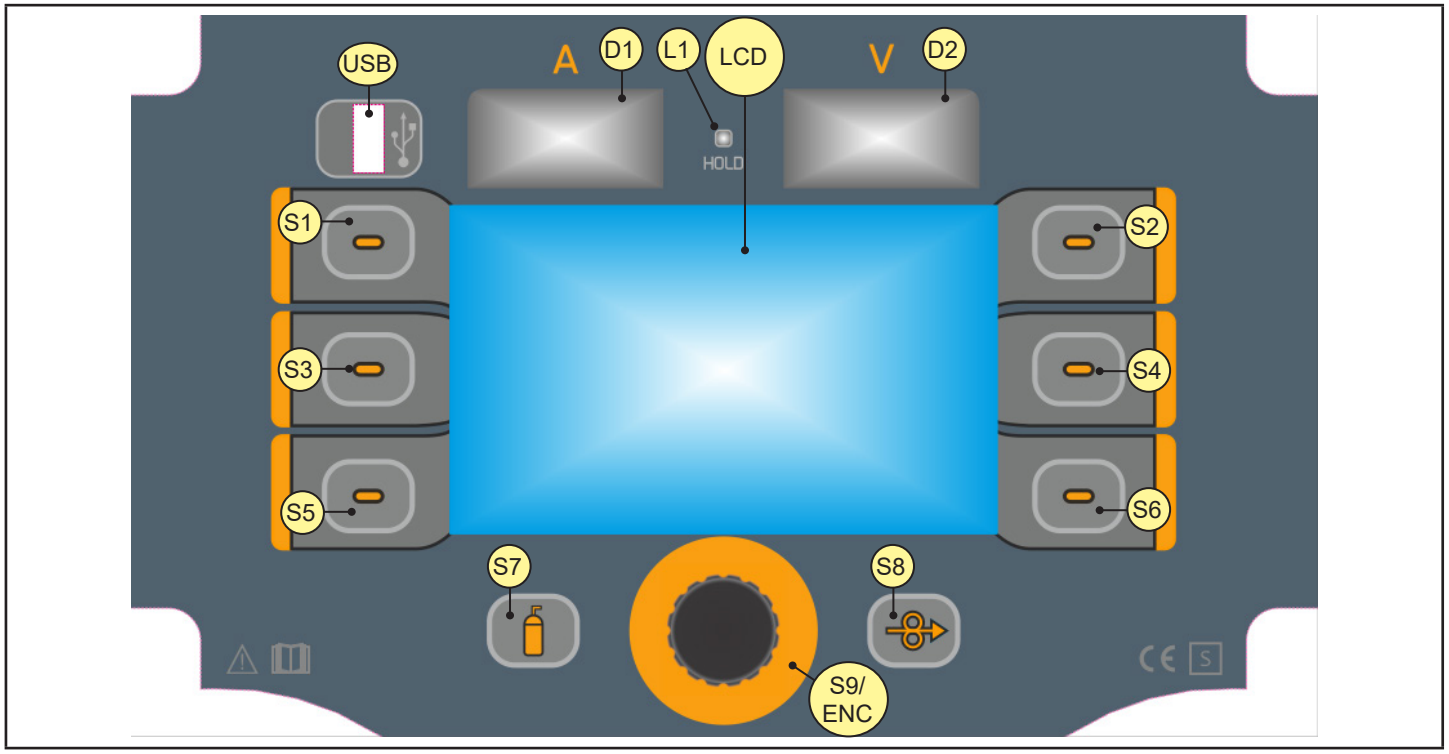


11. Set the welding power source ON/OFF switch to “I” (unit powered).

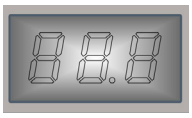
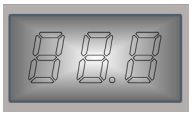
2 USER INTERFACE

Power Pulse 3200K/4000K

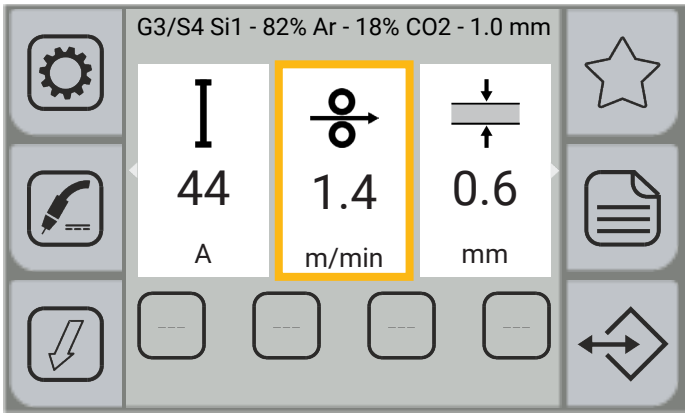
User Interface



ELEMENT	FUNCTION
S1,S2,S3 S4,S5,S6 	**Multifunction keys:** these keys are assigned specific functions that change according to the menu and settings screens they are in. The function assigned to each key is identified by the icon that appears next to it.
S7 	This button opens the gas solenoid valve to fill the circuit and calibrate the pressure with the regulator on the gas cylinder.
S8 	This button activates wire feed to insert it through the MIG/MAG torch.
S9/ENC 	**ENCODER WITH BUILT-IN BUTTON** **In the menu screens:** The list of parameters/settings is scrolled through the encoder. Pressing the encoder (ENCODER KEY) selects the highlighted setting. **During welding:** the encoder changes the value of the active parameter.
USB 	Port provided to connect a USB pen drive to export/import JOBs. Thanks to the USB port, it is possible to update the system firmware.
LCD 	The display shows the menus for setting up the welding machine and its functions. **During welding:** The display shows the set welding parameters.

ELEMENT	FUNCTION
D1 	**During welding:** The display shows the actual Amps. **With LED HOLD access:** The display shows the latest measured current value.
D2 	**During welding:** The display shows the actual Volts. **With LED HOLD access:** The display shows the latest measured voltage value.
L1 	When it lights up, it indicates the display of the latest voltage and current value measured during welding on displays **D1** and **D2**. The LED switches off when a new welding procedure is started, or when any of the welding settings is modified.

MAIN SCREEN

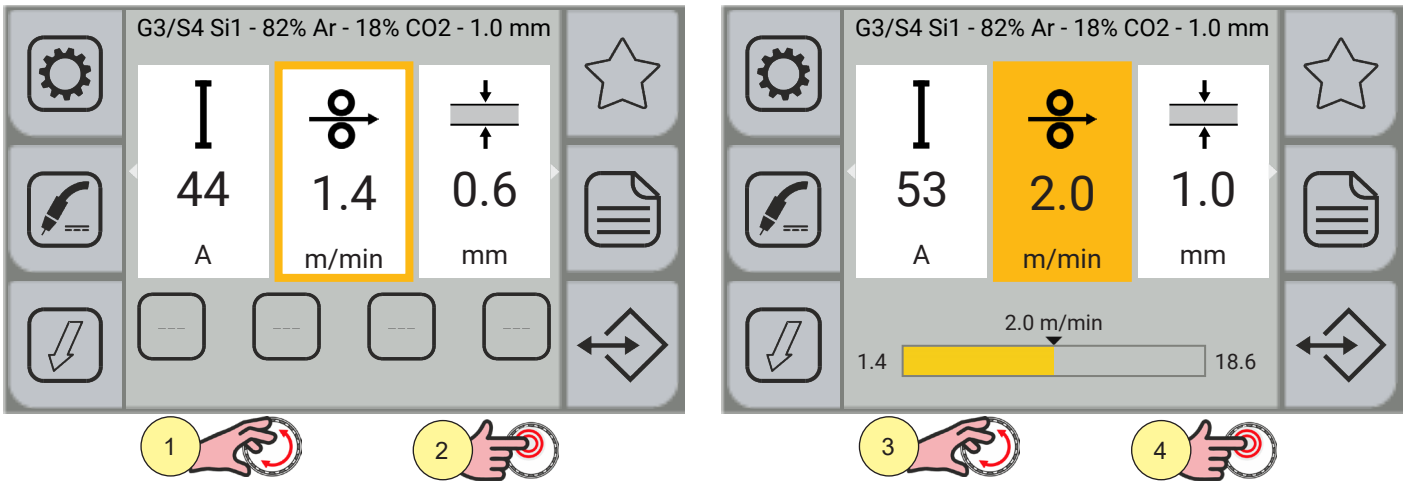


Graphic keys

	- (MIG/MAG): The [PROGRAM] key gives access to a sequence of screens in which it is possible to program the parameters required to define the welding curve. - (MMA): The [PROGRAM] key displays the screen in which the [MATERIAL] type of electrode can be selected.
	The [FAVOURITES] key gives access to the BUTTON menu by means of which it is possible to associate a specific function to the  [SHORTCUT] keys, among those available.
	The [PROCESS] key allows for the welding process to be selected. The processes that can be selected are: PULSED MIG/MAG, SHORT/SPRAY MIG/MAG, POWER MIX, MMA, AIR, TIG LIFT. In MIG/MAG, it is possible to select, by means of a sequence of screens, only the welding processes compatible with the material, wire diameter and gas values previously set via the program key.
	The [PARAMETERS MENU] key gives access to the menu by means of which the main characteristics of the weld are set. It also contains special functions such as: welding circuit calibration, system menu, import/export.
	The [MODE] key gives access to the menu by means of which the torch trigger mode is selected.
	The [JOB] key gives access to the JOB management menu.
	The [SHORTCUT] key gives direct access to the associated function. Pressing the key activates the function (yellow background); pressing the key deactivates the function. It only works with the touch screen. Press and hold the desired  [SHORTCUT] key for 3 seconds to directly enter the function assignment screen.

Welding parameters setting

This area of the screen displays the welding parameters that can be set directly from the main screen.



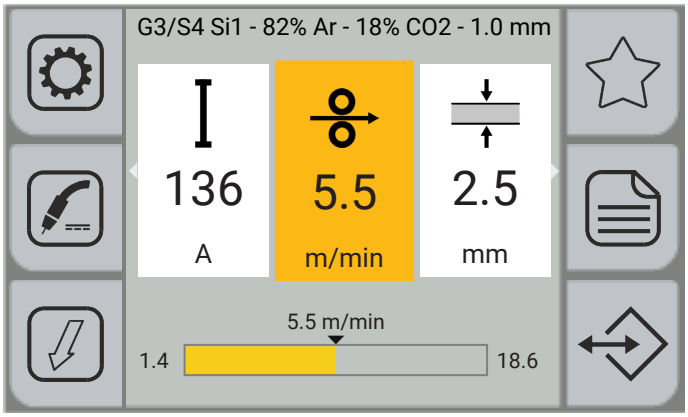
1. Turn the encoder to select the parameter to be changed; the selection is highlighted by a thicker border around the box.
2. Press the [ENCODER] key; the background of the box will change colour.
3. Turn the encoder to set the desired value.
4. Press the [ENCODER] key again to re-select the parameters.

The parameters that can be set are:

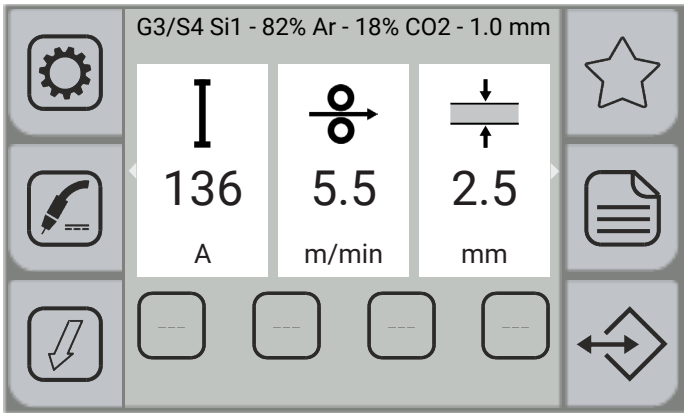
U 20.0 V	(MIG/MAG) Welding voltage Sets the welding voltage.
I 140 A	(MIG/MAG, MMA, TIG LIFT) Welding current Sets the welding current.
 10.4 m/min	(MIG/MAG) Wire speed Sets the wire speed for welding.
 3.4 mm	(MIG/MAG) Material thickness Sets the thickness of the material to be welded.
 0.5	(MIG/MAG) Arc length correction Sets the adjustment of the welding arc length, with respect to the value pre-set by the synergic curve.
 0.0	(MIG/MAG) Inductance (in the short-spray process) Conditions the energy at the time of the short circuit.
 0.0	(MIG/MAG) Dynamics (in the pulsed process) Corrects the pulse energy of the pulsed arc.

 1	(MIG/MAG, MMA, TIG LIFT) Selected JOB Displays the currently loaded JOB. The icon appears only if a JOB is loaded.
 50%	(MMA) Hot-start Sets the HOT-START peak current value to facilitate the striking of electrode welding.
 40%	(MMA) Arc-force Sets the ARC-FORCE peak current value to facilitate electrode sliding during welding and prevent the electrode from sticking.
 DC	(MMA) Dynamics (in the electrode welding process) Conditions the short-circuit energy at the time of drop detachment

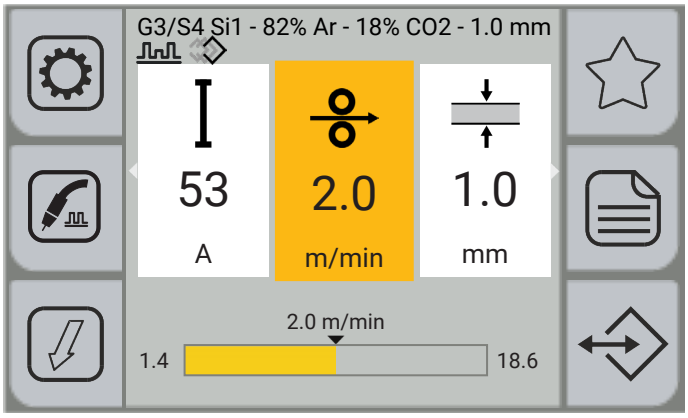
ADDITIONAL INFORMATION DISPLAY



When setting a parameter
The bar displays the minimum, currently set and maximum value of the selected parameter.



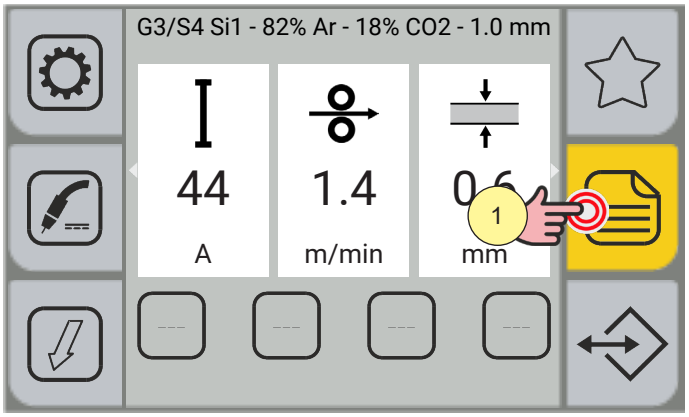
Main page
The active welding settings are displayed (filler wire material, gas, thickness of material to be welded, b-level activation, double-pulsed activation, the loaded JOB).

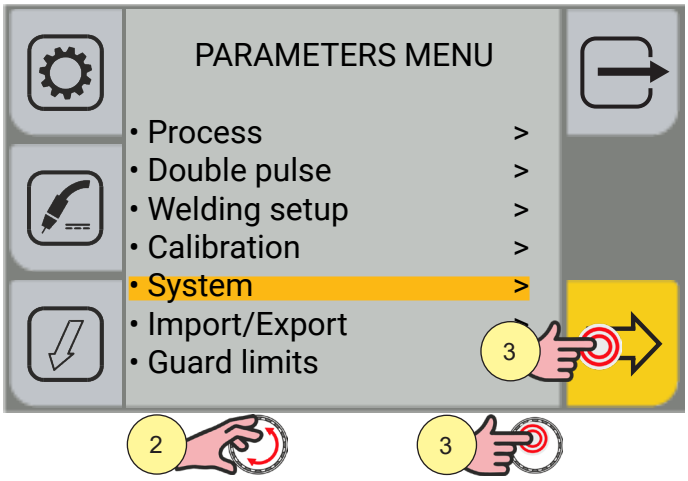


After activating a function
Below the wording of the active synergic curve, at the top of the screen, the icons of the active functions appear.

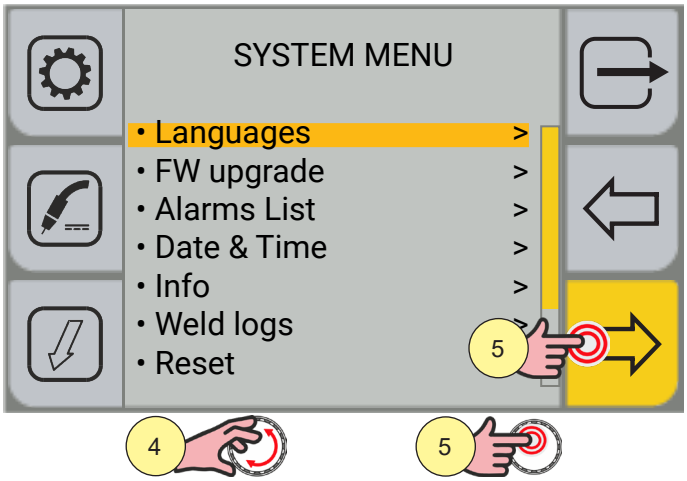
3 PRELIMINARY SETTINGS

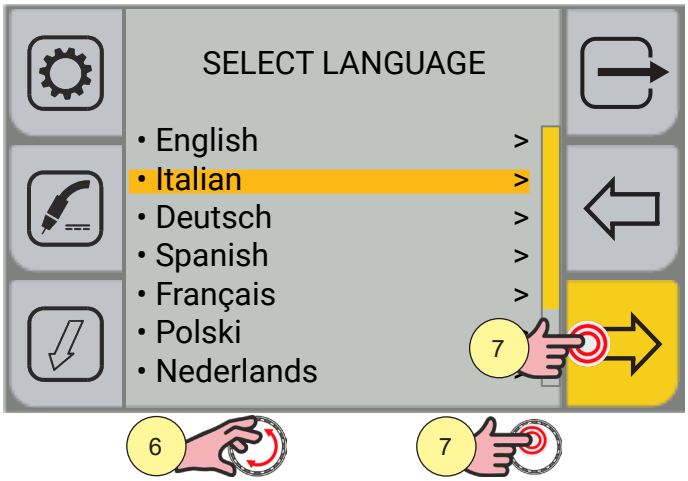
3.1 LANGUAGE SETTING





1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: System>
3. Press the encoder key or the [NEXT] key to confirm.





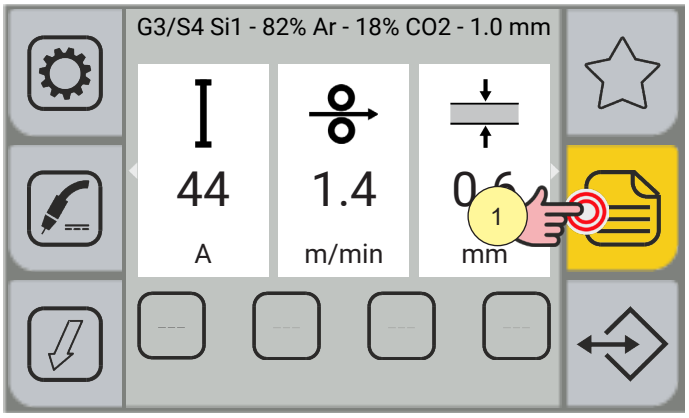
4. Turn the encoder to select the desired setting.
   Select the following path: Languages>
5. Press the encoder key or the [NEXT] key to confirm.
6. Turn the encoder to select the desired language.

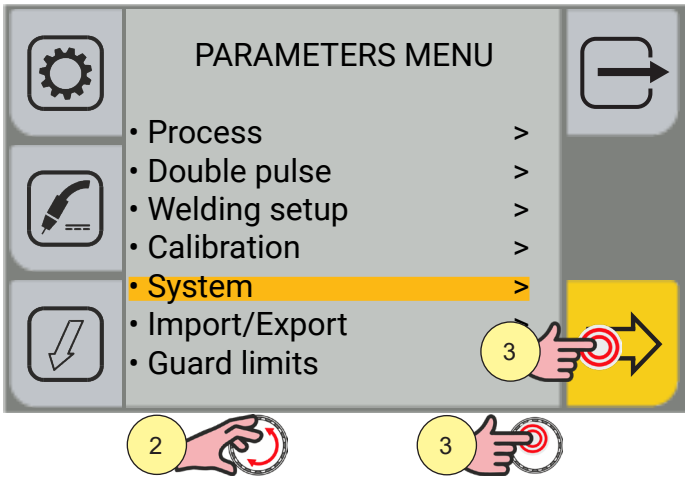
○ (English, Italian, Deutsch, Espanol, Francais, Polski, Nederlands, Romana, Hrvatski, etc.)

7. Press the encoder key or the [NEXT] key to confirm.

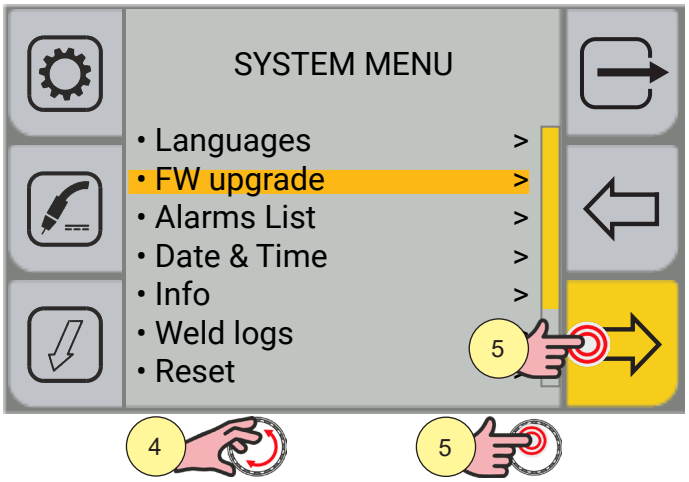
Press the [EXIT] key to exit the screen.

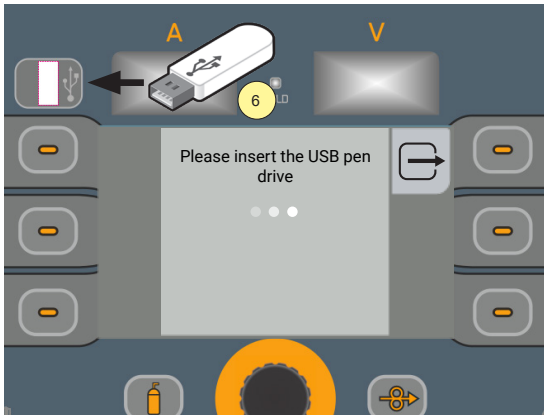
3.2 FIRMWARE UPDATE



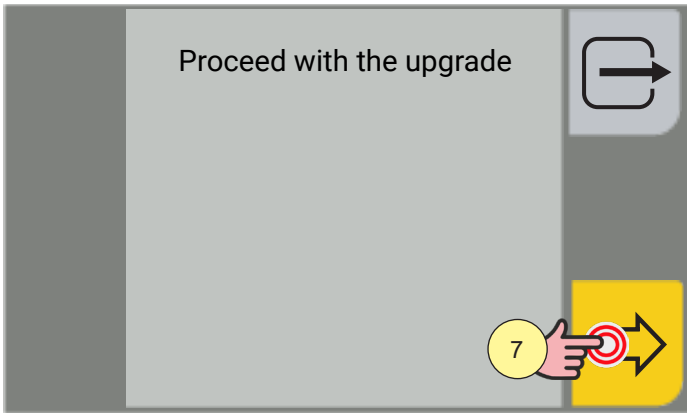


1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: System>
3. Press the encoder key or the [NEXT] key to confirm.

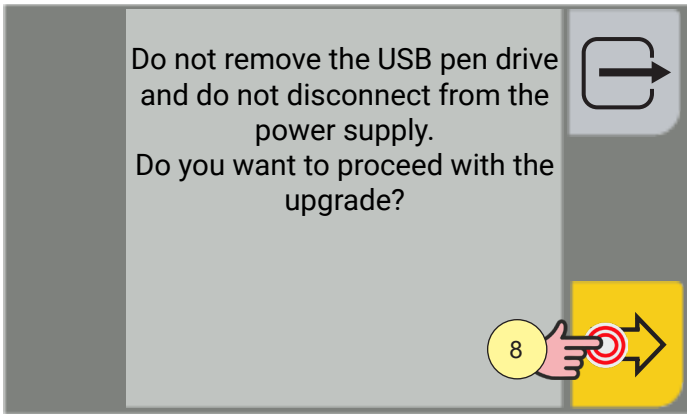


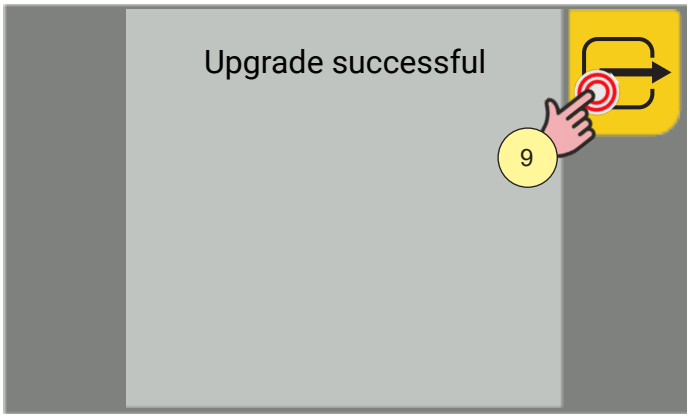


4. Turn the encoder to select the desired setting.
   Select the following path: FW update>
5. Press the encoder key or the [NEXT] key to confirm.
6. Insert the USB pen drive with the firmware loaded on it into the appropriate port.



7. Press the [YES] key

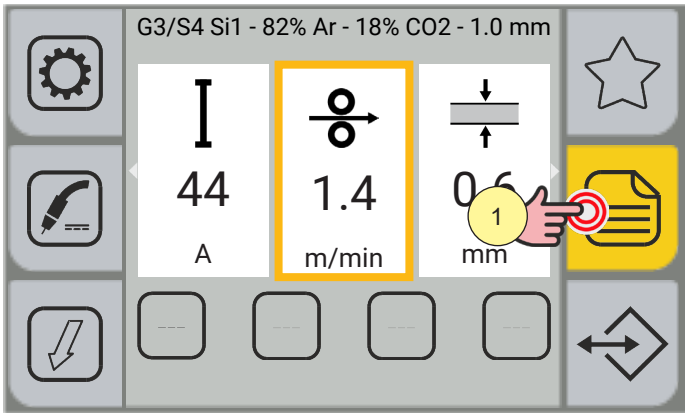


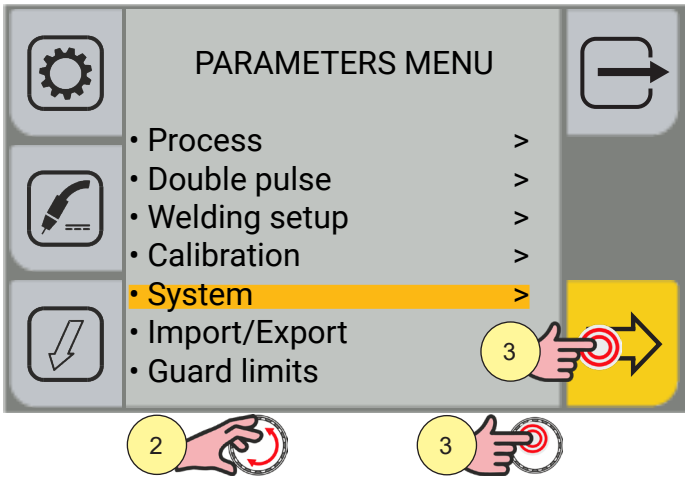


8. Press the [OK] key.
   Press the [EXIT] key to go back to the main screen.
   Wait for the update procedure to finish.
9. Press the [OK] key.
   If problems are found in the update, the display shows a notice.

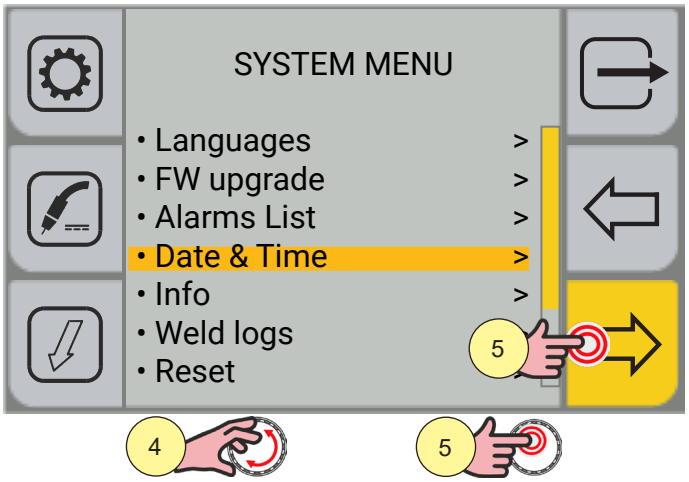
NOTICE	MEANING
Update file not found	File not present in the USB pen drive.
USB/SD card not found	USB pen drive not recognised (there isn't one or it is inserted incorrectly). Check the correct insertion of the USB pen drive. Use a different USB pen drive.
Could not decrypt release file	File corrupt or with changed name (never rename the provided update file).
Could not inflate release file	File corrupt or with changed name (never rename the provided update file).
Update directory and/or script not found	File corrupt or with changed name (never rename the provided update file).
Update procedure failed	Contact the customer service.
Upgrade package is not for this board	The file uploaded to the USB pen drive is not compatible with the electronic board.
Could not find readme file not found in upgrade package	Contact the customer service.
Installed version and upgrade package version do not match	You cannot downgrade the installed software.
Could not upgrade generator	Contact the customer service.
Could not upgrade the wf	Contact the customer service.
Could not upgrade boost	Contact the customer service.

3.3 DATE AND TIME SETTING



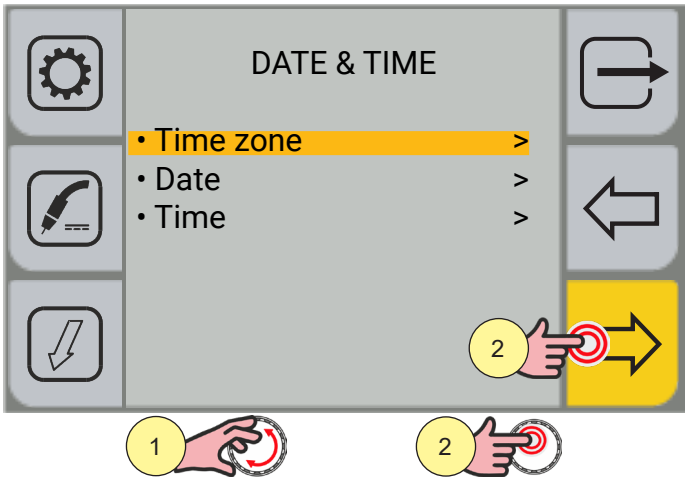


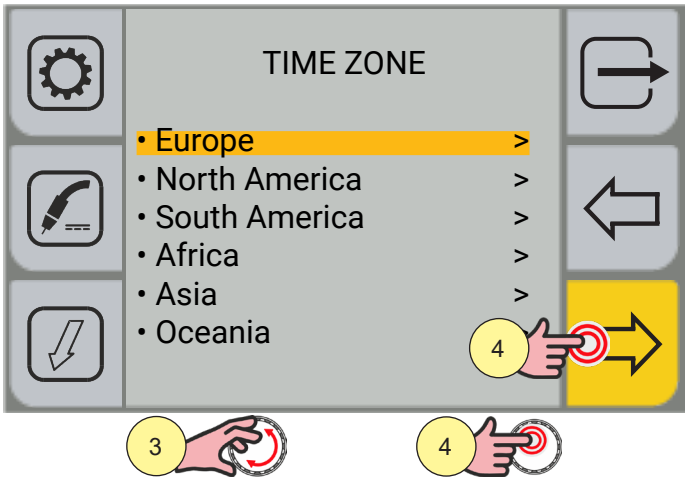
1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: System>
3. Press the encoder key or the [NEXT] key to confirm.



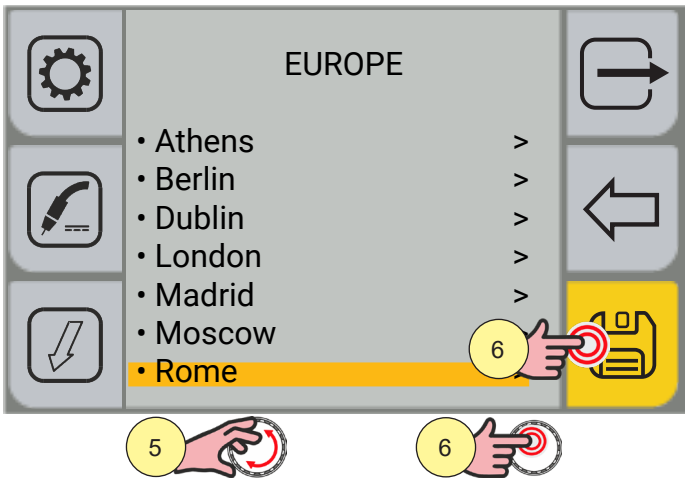
4. Turn the encoder to select the desired setting.
   Select the following path: Date & Time>
5. Press the encoder key or the [NEXT] key to confirm.

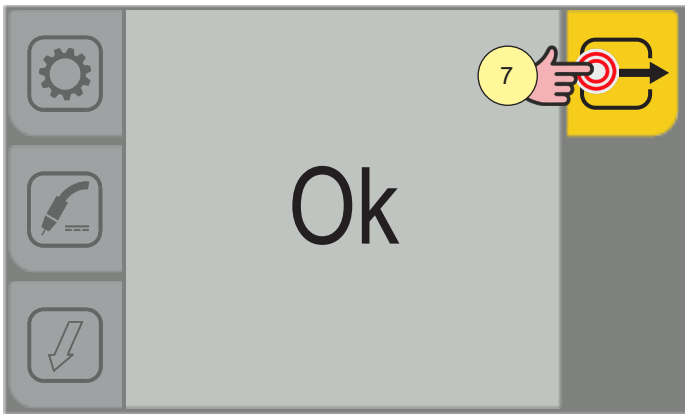
Time zone setting





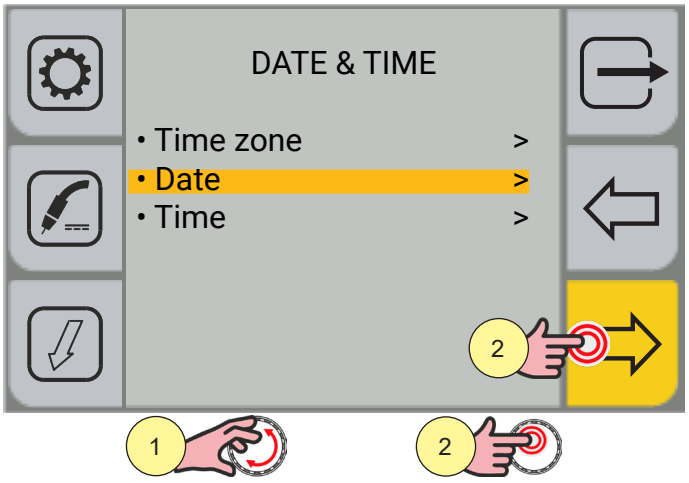
1. Turn the encoder to select the desired setting.
   Select the following path: Time zone>
2. Press the encoder key or the [NEXT] key to confirm.
3. Turn the encoder to select the desired time zone.
4. Press the encoder key or the [NEXT] key to confirm.

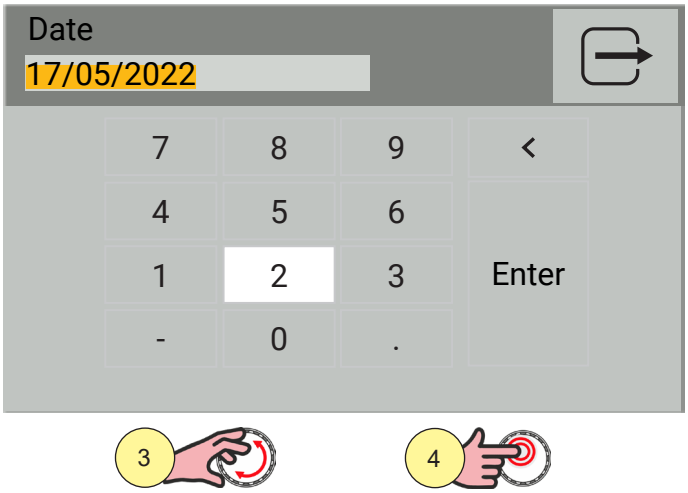




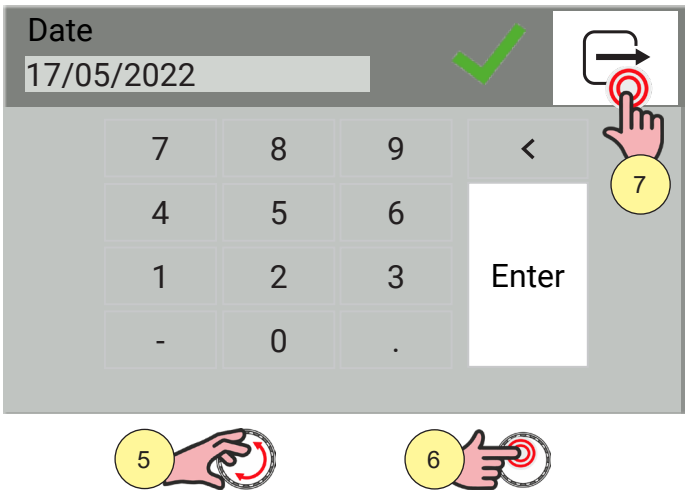
5. Turn the encoder to select the desired city.
6. Press the encoder key or the [SAVE] key to confirm.
7. Press the [OK] key to confirm and exit the screen.

Date setting



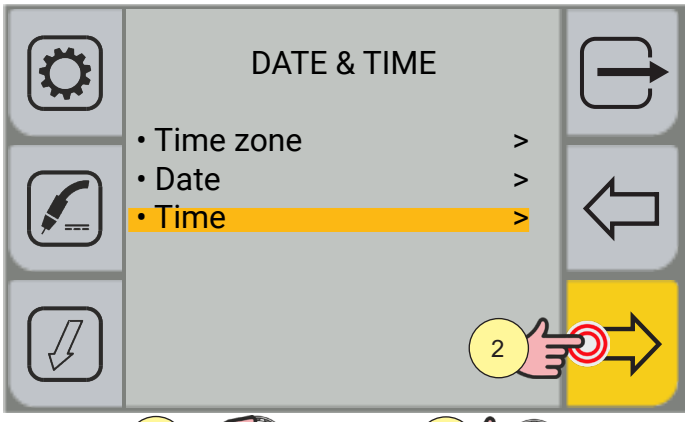


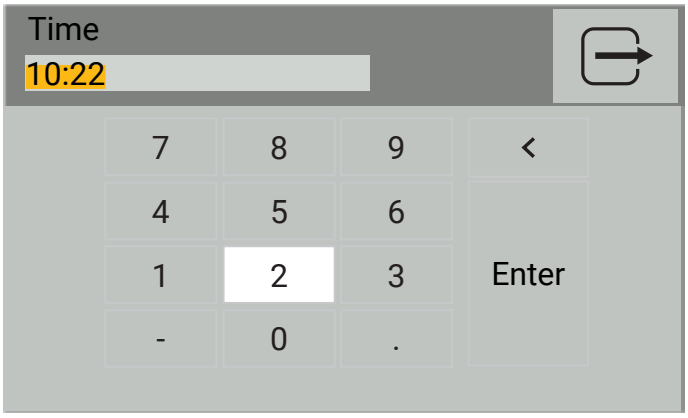
1. Turn the encoder to select the desired setting.
   Select the following path: Date>
2. Press the encoder key or the [NEXT] key to confirm.
   Information The panel is of the touch screen type; settings can be made both by means of the mechanical keys and by touching the icons that appear on the screen.
3. Turn the encoder to select the number on the keyboard.
4. Press the encoder key to confirm the selection.



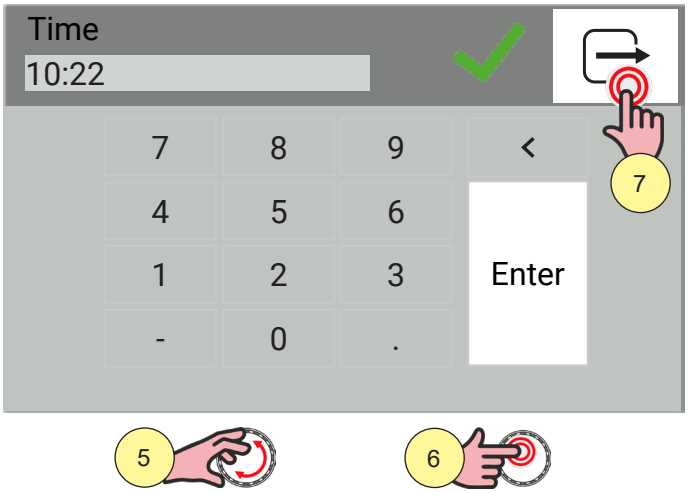
5. Turn the encoder to select the [ENTER] symbol on the keyboard.
6. Press the encoder key to confirm.
   The green check box appears, confirming the operation.
7. Press the [EXIT] key to exit the screen.

Time setting



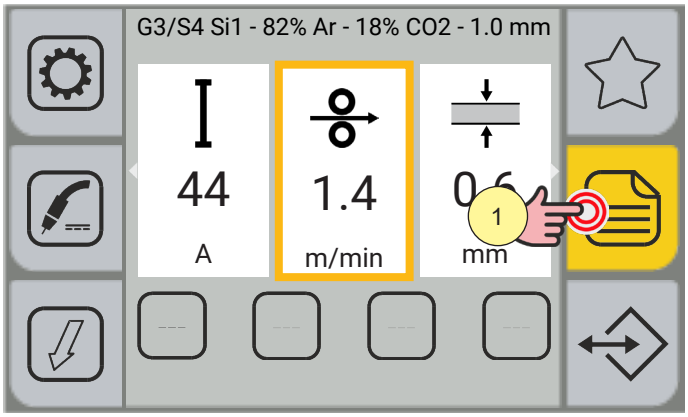


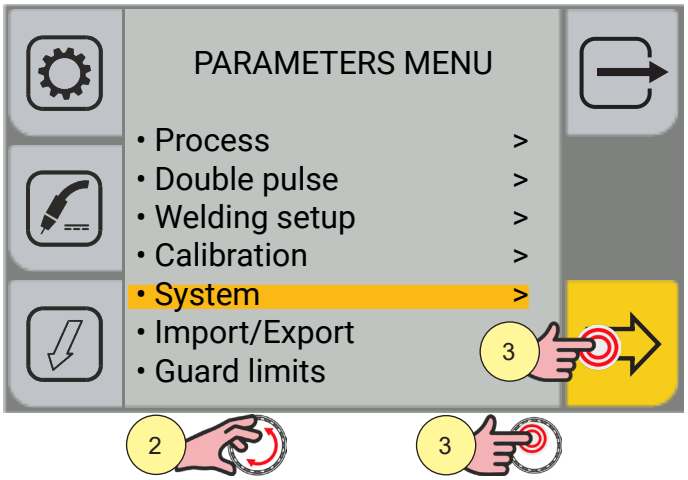
1. Turn the encoder to select the desired setting.
   Select the following path: Now>
2. Press the encoder key or the [NEXT] key to confirm.
   Information The panel is of the touch screen type; settings can be made both by means of the mechanical keys and by touching the icons that appear on the screen.
3. Turn the encoder to select the number on the keyboard.
4. Press the encoder key to confirm the selection.



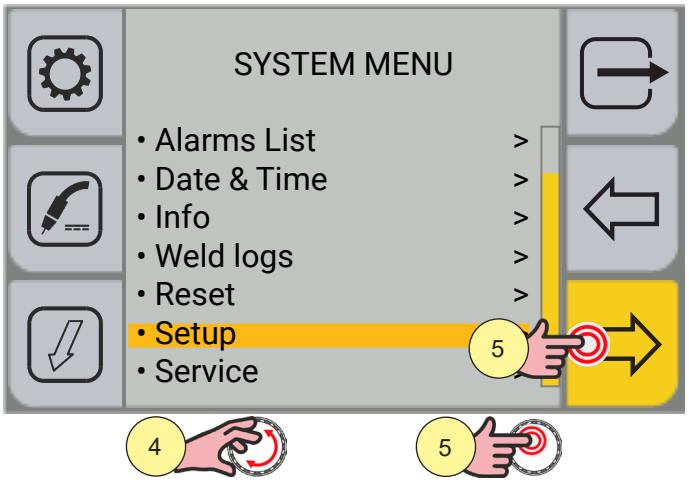
5. Turn the encoder to select the [Enter] symbol on the keyboard.
6. Press the encoder key to confirm.
   The green check box appears, confirming the operation.
7. Press the [EXIT] key to exit the screen.

3.4 System Settings





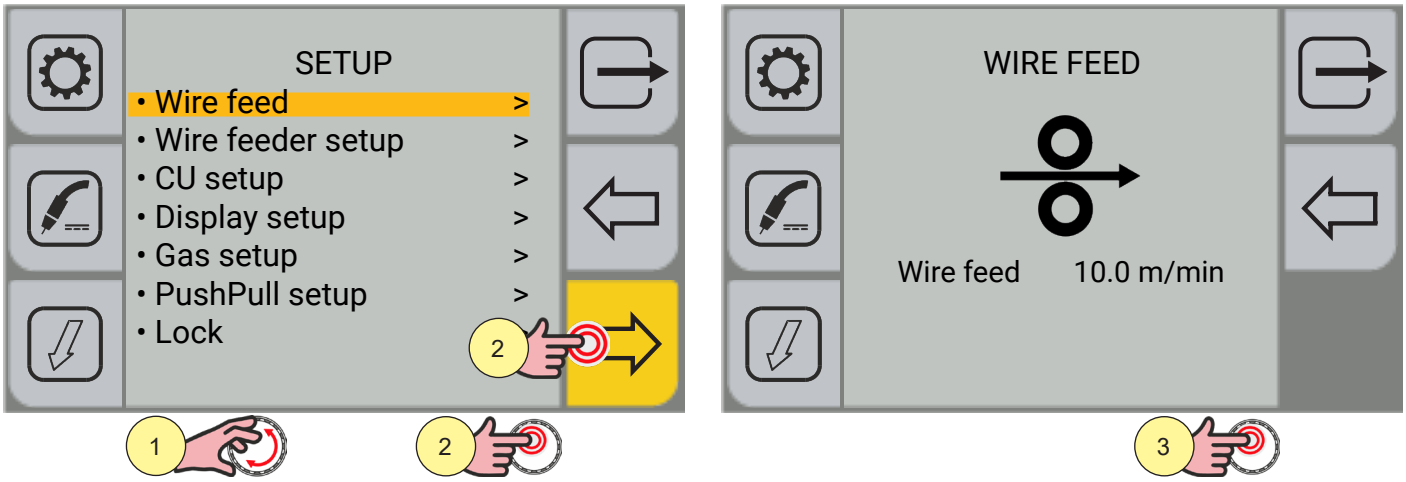
1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: System>
3. Press the encoder key or the [NEXT] key to confirm.



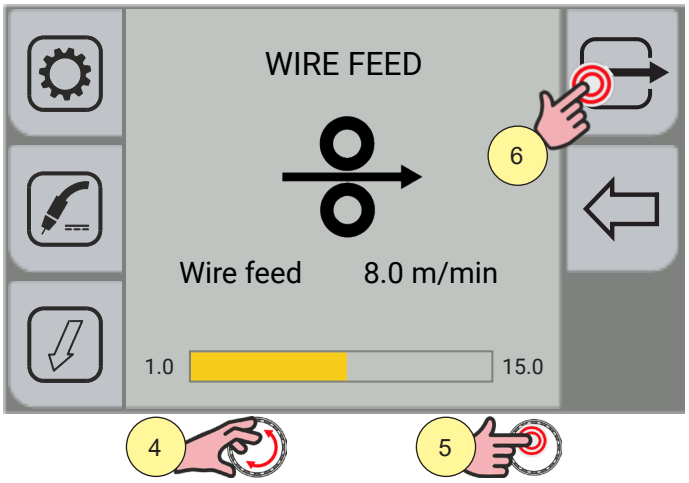
4. Turn the encoder to select the desired setting.
   Select the following path: Setup>
5. Press the encoder key or the [NEXT] key to confirm.

Wire feed setting

The WIRE FEED parameter sets the wire threading speed when the [THREADING] key is set.



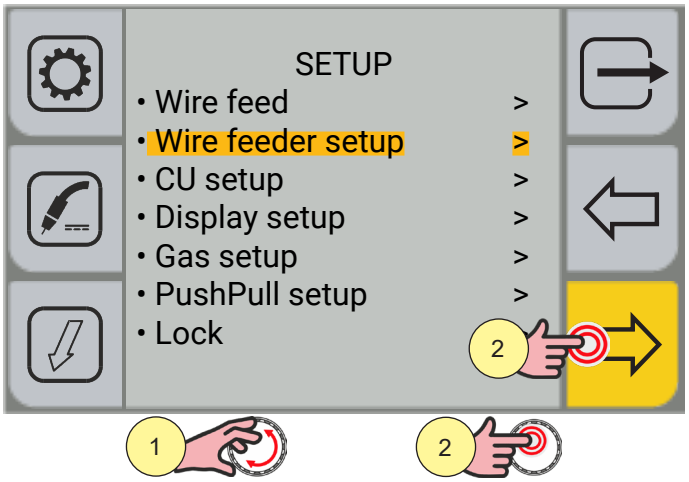
1. Turn the encoder to select the desired setting.
   Select the following path: Wire feed>
2. Press the encoder key or the [NEXT] key to confirm.
3. Press the encoder key to activate the parameter change.

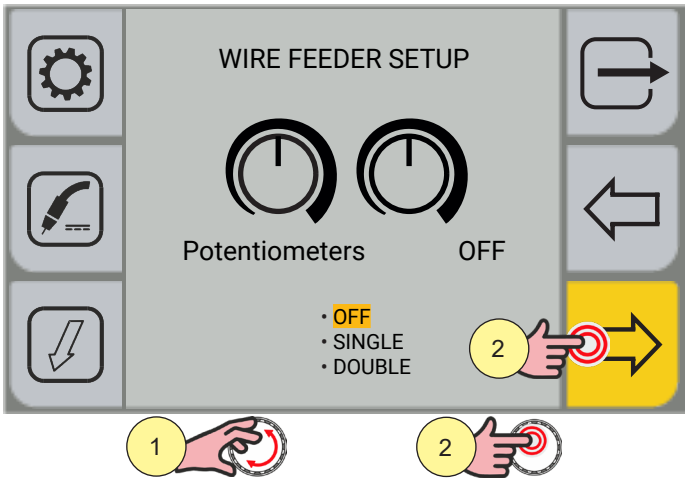


4. Turn the encoder to set the desired value.
5. Press the encoder key to confirm.
6. Press the [EXIT] key to exit the screen

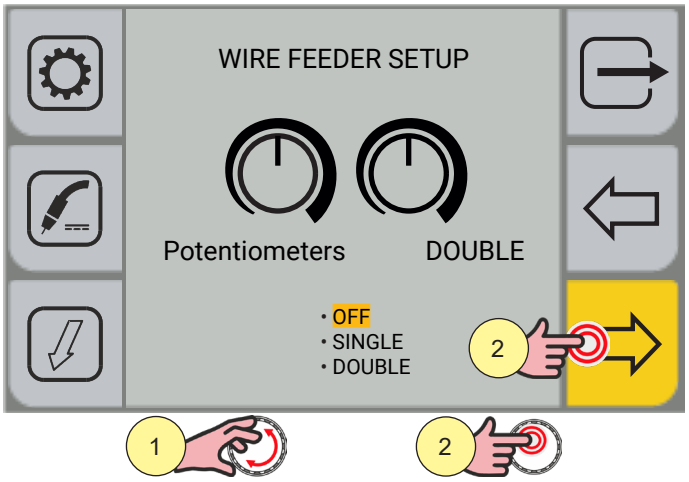
Wire feeder setup

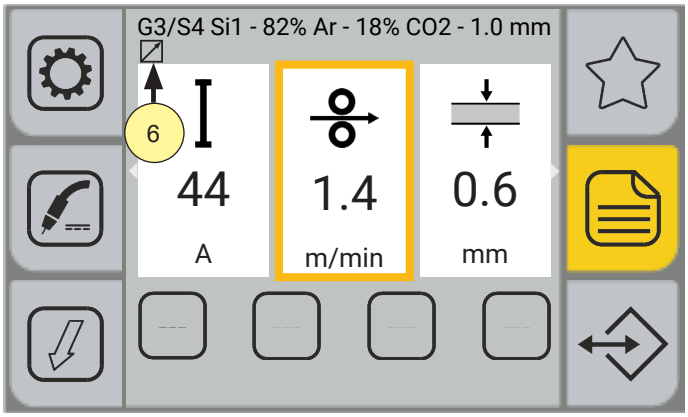
The [Wire feeder setup] enables the reception of commands from the potentiometers of a remote device.





7. Turn the encoder to select the desired setting.
   Select the following path: Wire feeder setup>.
8. Press the [ENCODER] key or the [NEXT] key to confirm.
9. Press the [ENCODER] key to activate the parameter change.





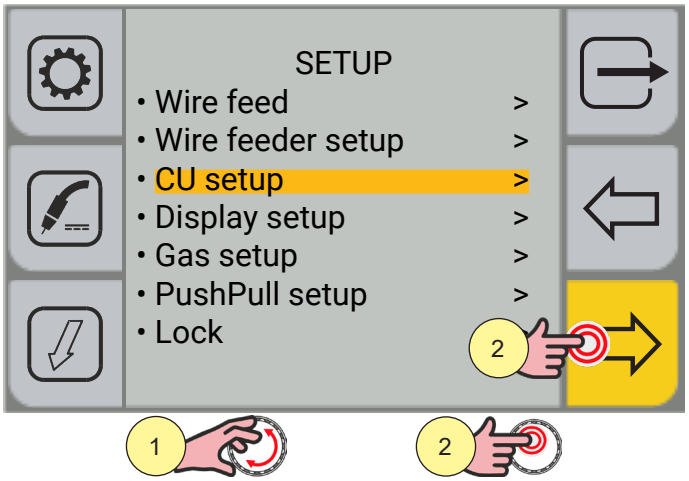
10. Turn the encoder to set the desired value.
11. Press the [ENCODER] key or the [NEXT] key to confirm.

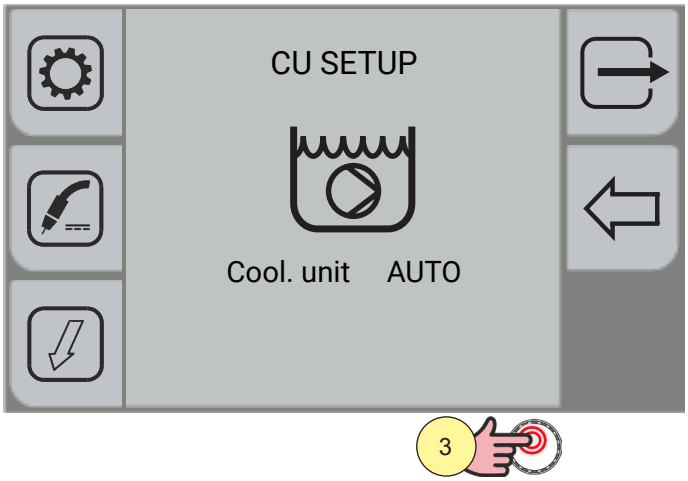
Press the  key to exit the screen.

12. The  (REMOTE) symbol appears on the main screen when the parameters that can be set using the wire feeder potentiometers are selected.

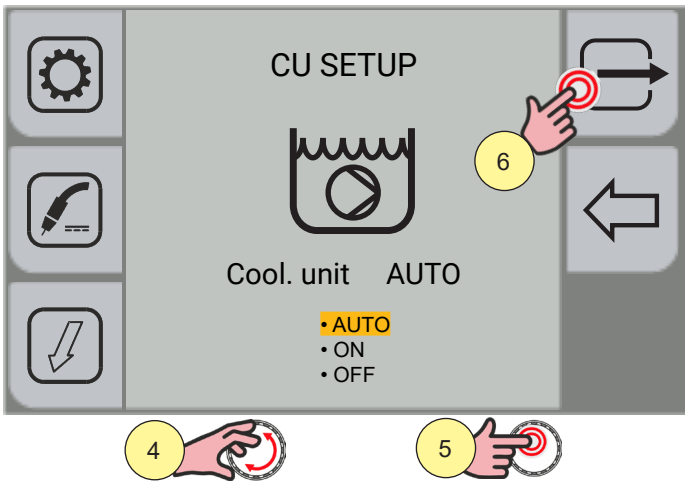
Information POT1 sets the adjustment of the parameters (wire speed/current/voltage/material thickness) with respect to the value pre-set by the synergic curve.
POT2 sets the adjustment of the welding arc length, with respect to the value pre-set by the synergic curve.

Cooling unit setup





1. Turn the encoder to select the desired setting.
   Select the following path: CU setup>
2. Press the encoder key or the [NEXT] key to confirm
3. Press the encoder key to activate the parameter change.

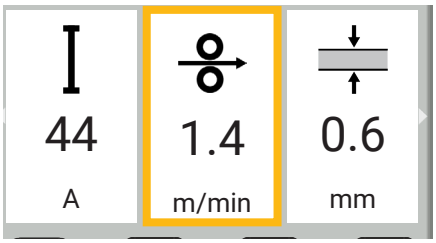


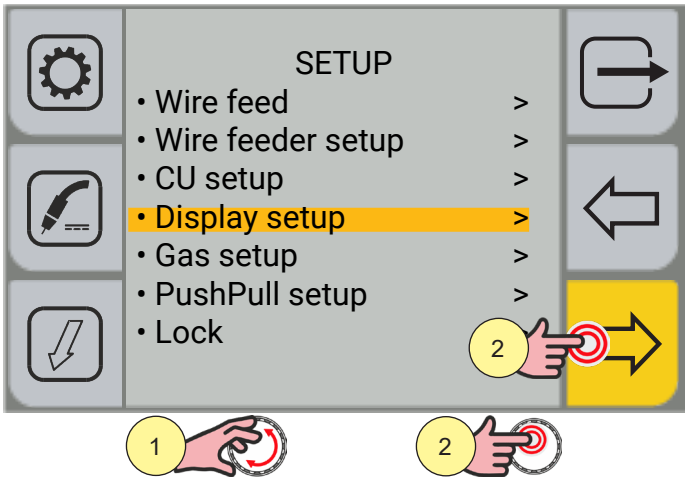
4. Turn the encoder to select the desired setting.
5. Press the encoder key to confirm.
6. Press the [EXIT] key to exit the screen

- **AUTO:** When the unit is switched on, the cooling system is switched on for 30 s. During welding procedures, the cooling system runs constantly. At the end of welding, the unit remains on for a predefined time.
- **ON:** The cooling unit is always switched on when the current generator is also switched on. This mode is preferable for heavy duty and automatic welding procedures.
- **OFF:** The cooling unit is always disabled; to be selected if you are using an air-cooled torch.

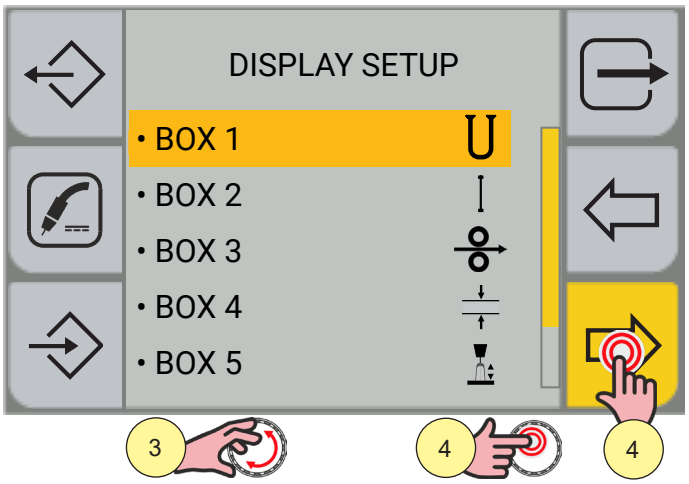
Display setup

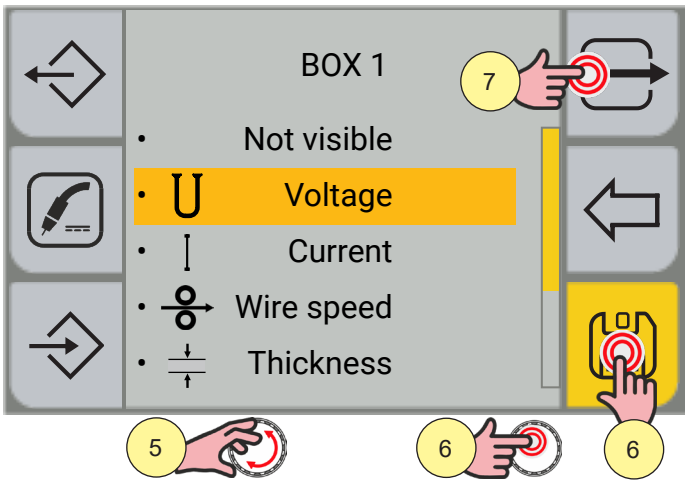
By means of the display setup, it is possible to choose which parameters to display on the main screen and their display order.



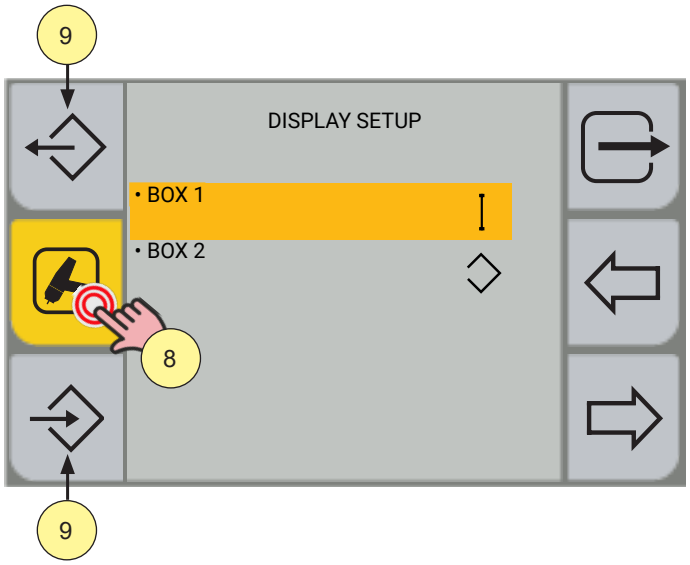


1. Turn the encoder to select the desired setting.
   Select the following path: Display setup>
2. Press the encoder key or the [NEXT] key to confirm.





3. Turn the encoder to select the desired box.
4. Press the encoder key or the [NEXT] key to confirm.
5. Turn the encoder to select the desired parameter.
6. Press the encoder key or the [SAVE] key to confirm.
7. Press the [EXIT] key to exit the screen



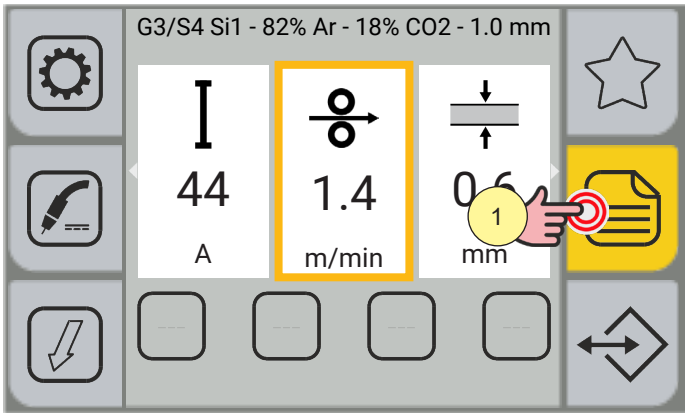
8. The display setup screen is linked to the welding process. Pressing the process selection key repeatedly scrolls through the different display setup screens of the various welding processes.
9. Customised display setups can be exported or imported using the export/import keys.
(see chapter “IMPORT / EXPORT” page 40)

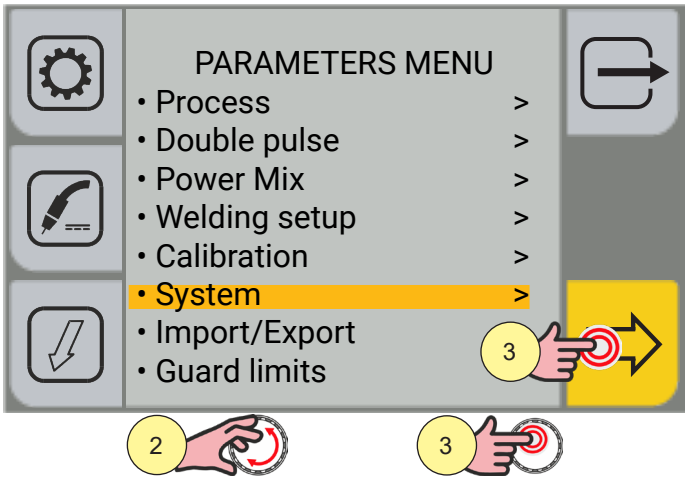
Gas Setup - (Version with Flow Meter)

It is possible to install an external flow meter (gas kit) to measure the volume (litres/minute) of gas used. When the flow meter is installed, it is possible to correct the gas measurement by adjusting a coefficient.
The volume of gas used is automatically calculated based on the selected welding curve. If a particular gas is used (e.g. a ternary gas or special mixtures), that is not included in the GAS MENU list, it may be necessary to correct the measurement via the GAS SETUP parameter. It is necessary to read the value of the gas volume on the external volume meter and adjust the GAS SETUP in such a way that the value on the display corresponds to the value read on the volume meter.

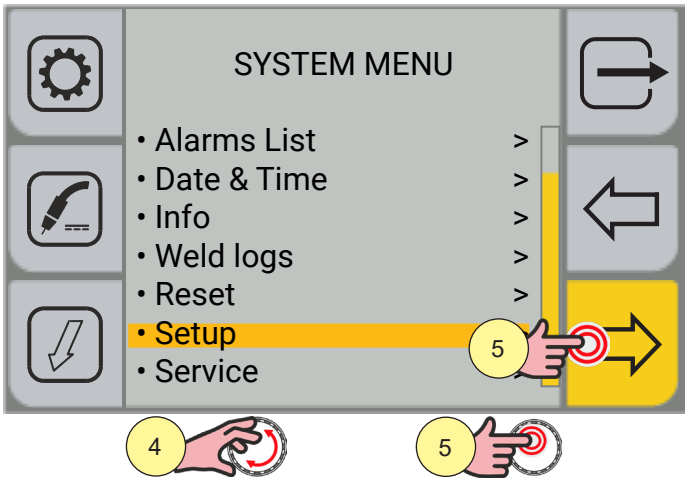
To correctly measure the volume of gas exiting the torch, it is recommended to use a gas flow meter, to be applied directly to the torch outlet.

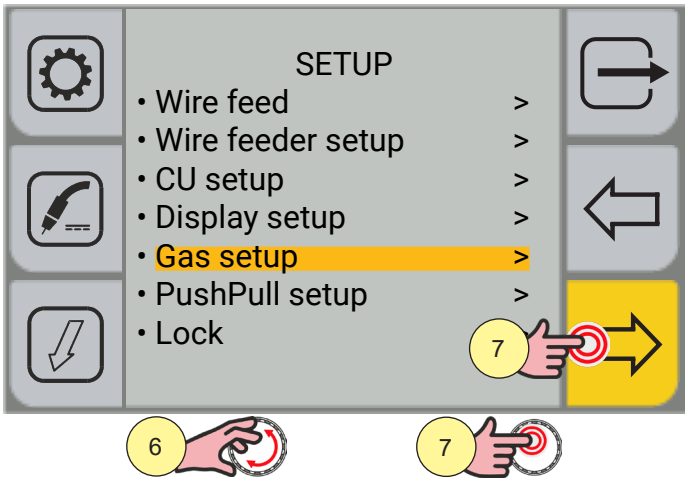
- Open the gas solenoid valve by pressing and releasing the [GAS] key.
- Read the volume of the gas detected with the gas flow meter.
- Follow the procedure below to configure the gas measurement correction.



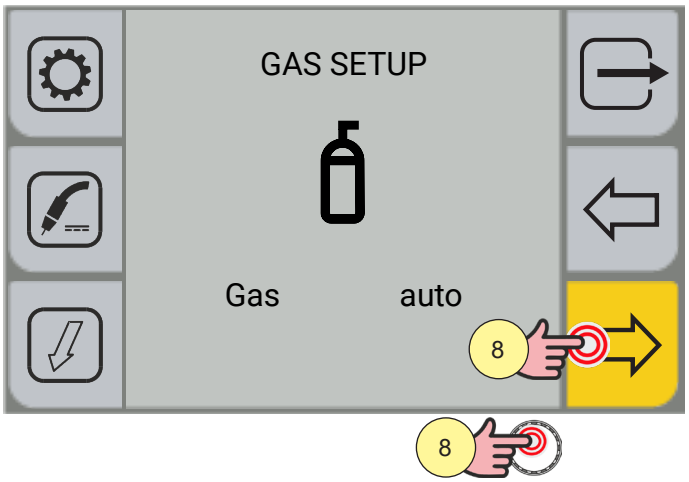


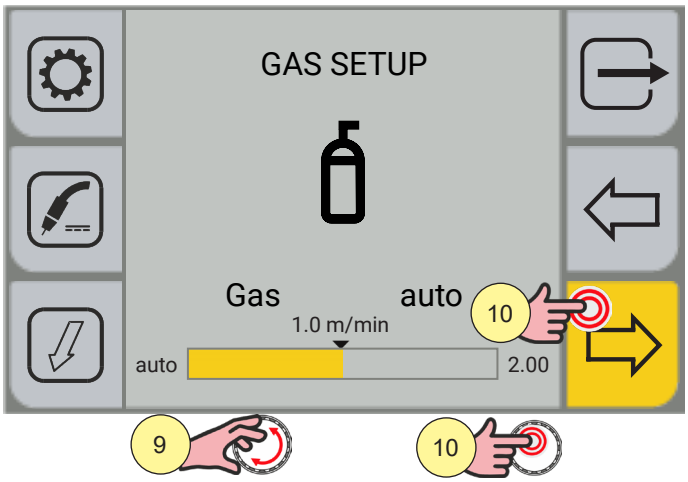
1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: System>
3. Press the [ENCODER] key or the [NEXT] key to confirm.





4. Turn the encoder to select the desired setting.
   Select the following path: Setup>
5. Press the [ENCODER] key or the [NEXT] key to confirm.
6. Turn the encoder to select the desired setting.
   Select the following path: Gas setup>
7. Press the [ENCODER] key or the [NEXT] key to confirm.





8. Press the [ENCODER] key to activate the parameter change.
9. Turn the encoder to set the desired value. The gas flow value (litres/minute) shown on the display must correspond to that read on the flow meter
10. Press the [ENCODER] key or the [NEXT] key to confirm.

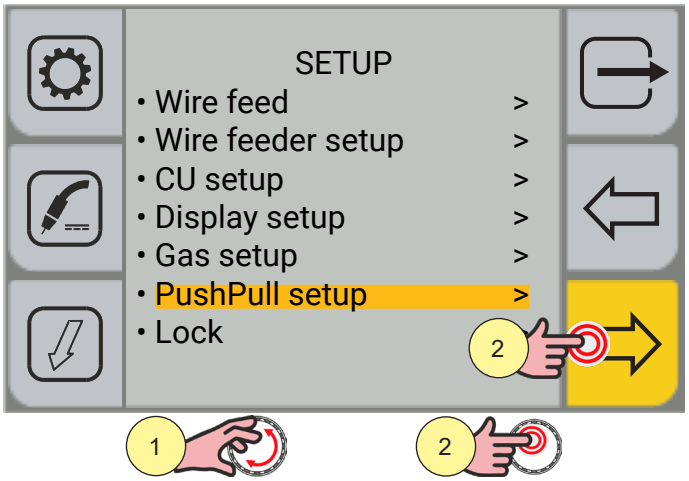
Press the  key to exit the screen.

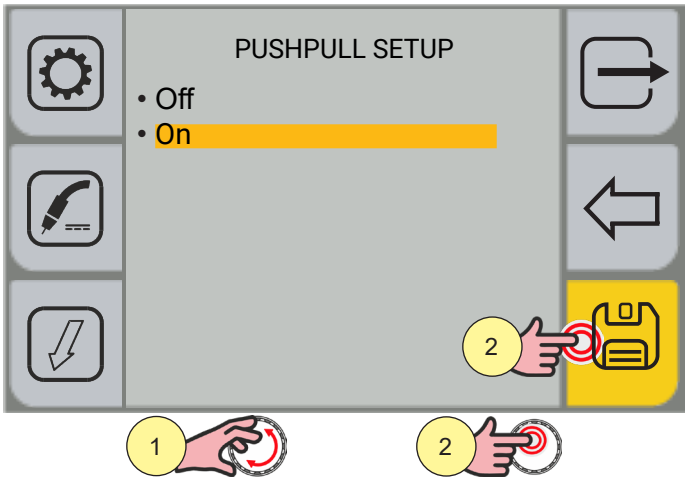
PushPull Setup

WARNING!

This menu item is always present. However, to use the PushPull torch, the PushPull kit (board, torch connector) must be installed in the wire feeder.

A PushPull torch can be installed.
To enable the power supply of the PushPull torch motor, this function must be enabled.

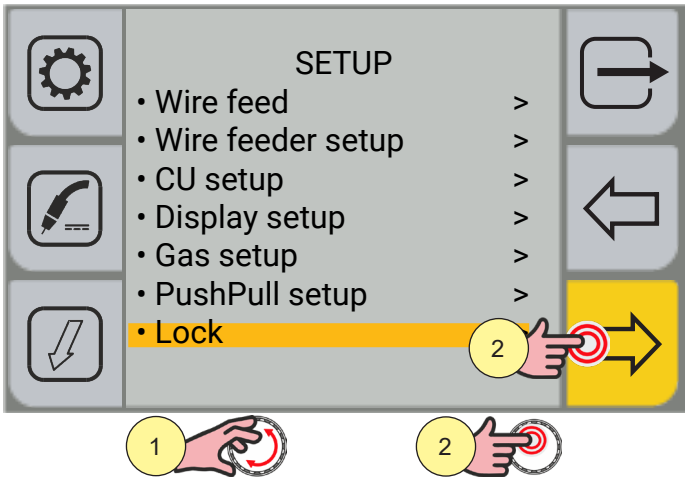


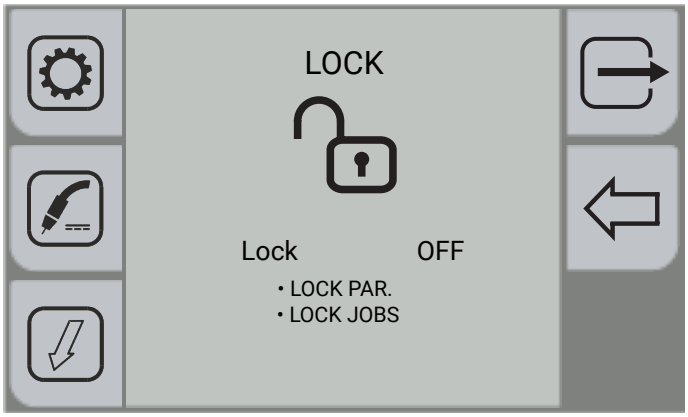


1. Turn the encoder to select the desired setting.
   Select the following path: PushPull Setup>
2. Press the [ENCODER] key or the [NEXT] key to confirm.
3. Turn the encoder to select the desired setting.
4. Press the [ENCODER] key or the [SAVE] key to confirm.

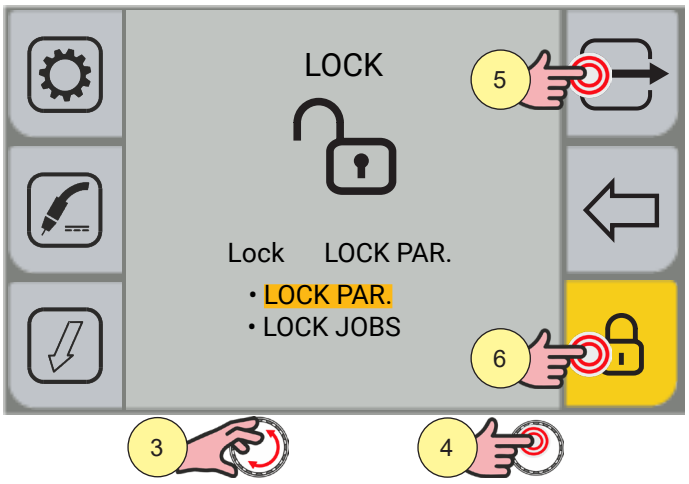
Press the key to exit the screen.

LOCK (lock/unlock changes)





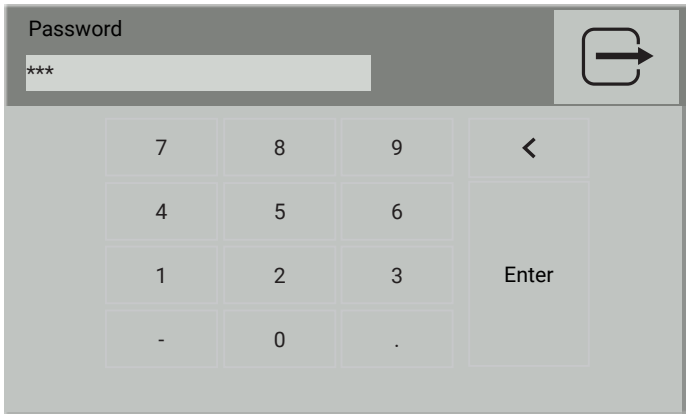
1. Turn the encoder to select the desired setting.
   Select the following path: Lock>
2. Press the encoder key or the [NEXT] key to confirm.

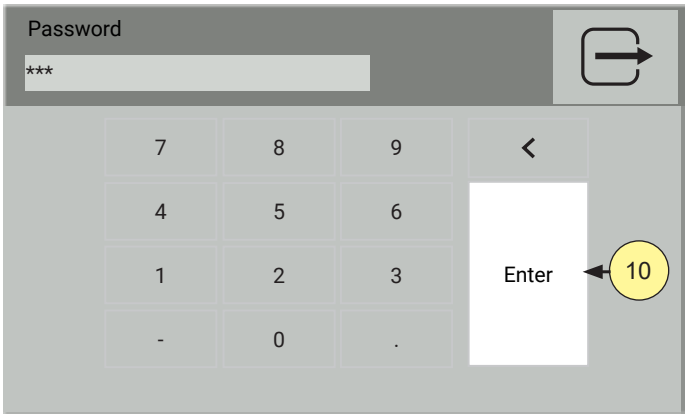


3. Turn the encoder to select the desired setting.

- LOCK PAR.: locks the change of all parameters except for: arc length, torch trigger mode.
- LOCK JOBS: locks the change of job parameters; it is possible to scroll through the saved jobs and load them.

4. Press the encoder key or the [NEXT] key to confirm.
5. Press the [EXIT] key to exit the screen.
6. Press the [LOCK/UNLOCK] key to change the password.

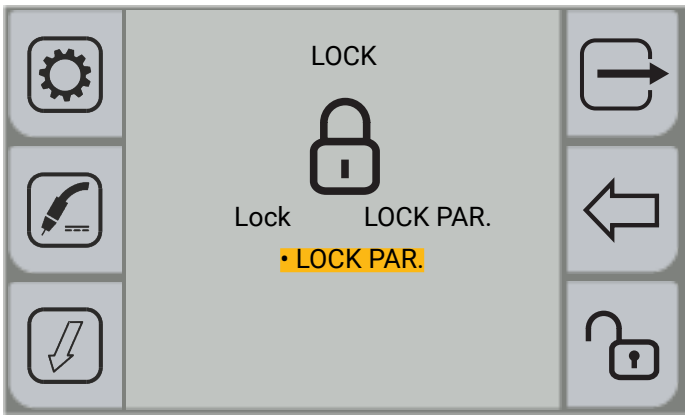




Type a 3-digit password.

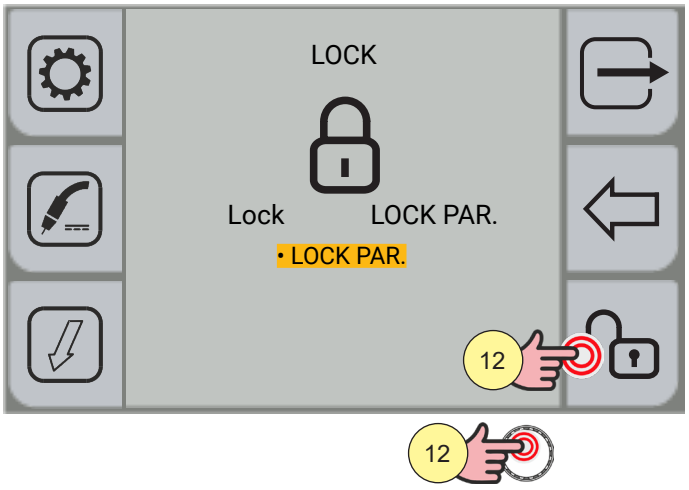
WARNING! Keep a note of the saved password as in case of loss it will be necessary to request the intervention of our Service department.

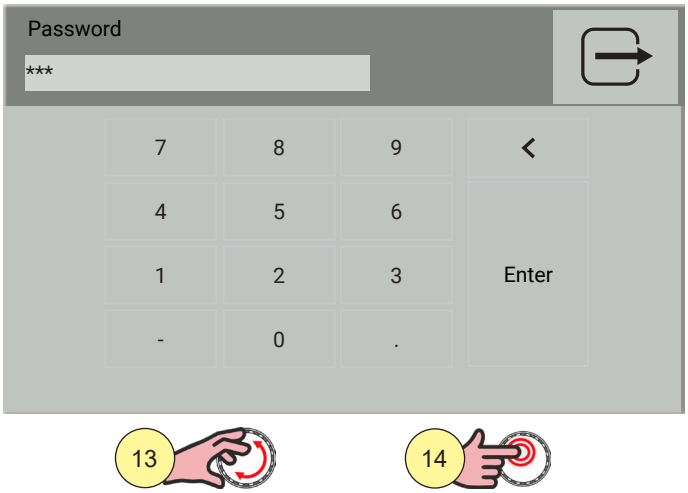
7. Turn the encoder to select the number on the keyboard.
8. Press the [ENCODER] key to confirm the selection.
   Repeat steps 7 and 8 three times until the full password is entered.
9. Turn the encoder to select the [Enter] key on the keyboard.
10. Press the [ENCODER] key to confirm the password entered.
    Press the [Menu] key to go back to the previous screen without confirming the password entered.
11. The [Unlock] item displayed indicates that the change lock is active for the chosen setting.



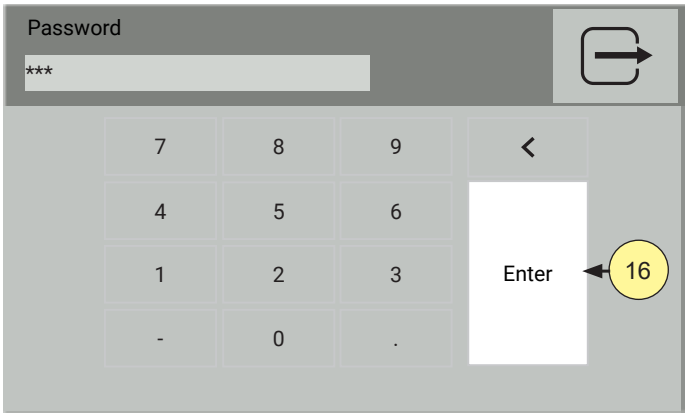
Information The closed padlock symbol indicates that the change lock is active for the chosen setting.

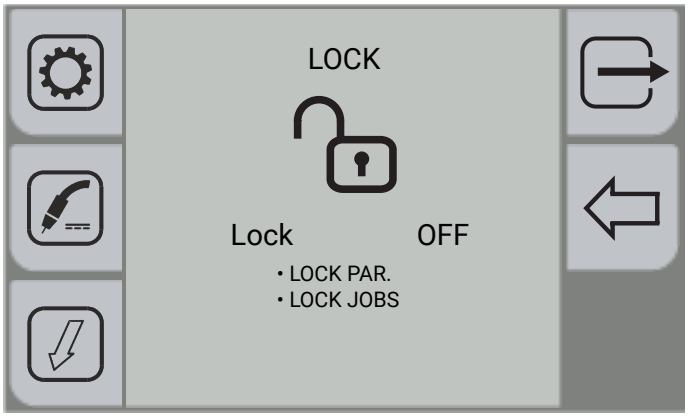
To unlock the changes it is necessary to enter the LOCK screen.





12. Press the encoder key or the [NEXT] key to confirm.
    Type the 3-digit password.
    ⓘ **Information** The panel is of the touch screen type; settings can be made both by means of the mechanical keys and by touching the icons that appear on the screen**.**
13. Turn the encoder to select the number on the keyboard.
14. Press the [ENCODER] key to confirm.

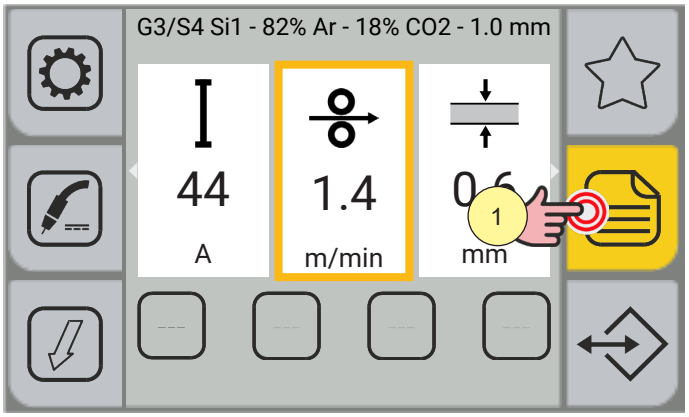


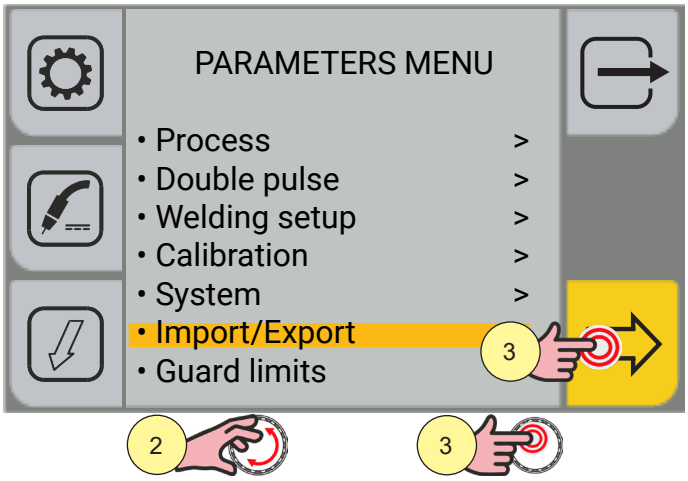


15. Turn the encoder to select the [Enter] symbol on the keyboard.
16. Press the encoder key to confirm. Press the [EXIT] key to exit the screen.

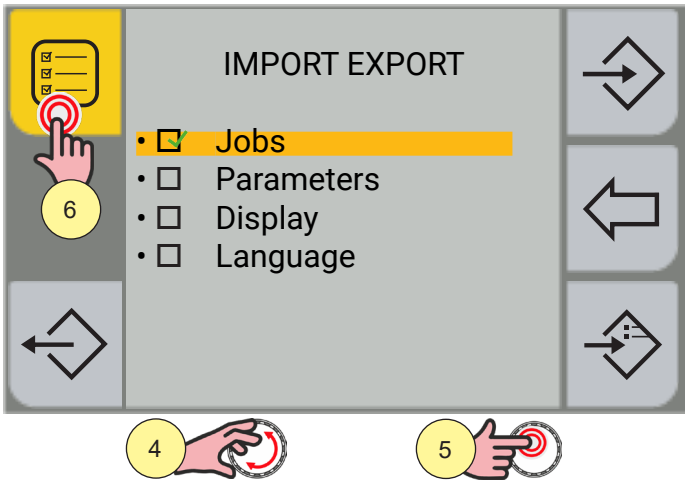
ⓘ **Information** The open padlock symbol indicates that the change lock is disabled.

3.5 IMPORT / EXPORT





1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: Import/Export>
3. Press the encoder key or the [NEXT] key to confirm.

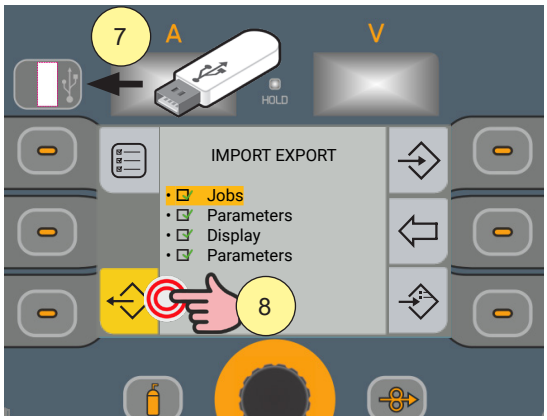


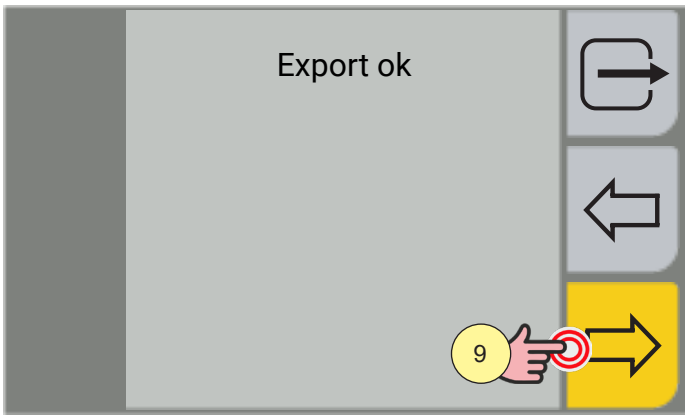
4. Turn the encoder to select the desired setting.

- ○ Jobs: import/export jobs only
- ○ Parameters: import/export the operating parameters of the equipment only
- ○ Display: import/export the display setup only
- ○ Language

5. Press the [ENCODER] key to confirm.
6. To select/deselect all the boxes, press the [SELECT ALL] / [DESELECT ALL] key.

EXPORT





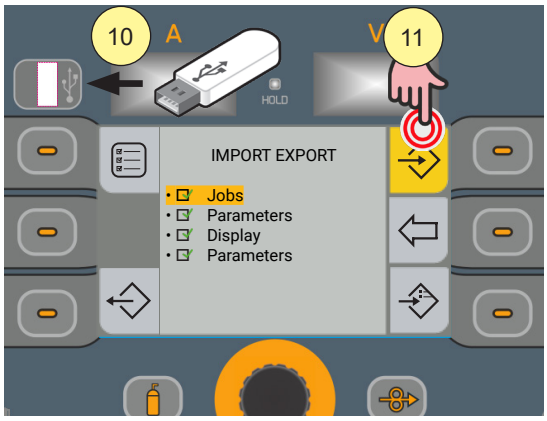
7. Please insert the USB pen drive into the USB port.
8. Press the [EXPORT] key to export the files to the USB pen drive.
   If the export is successful, the "Export OK" message will appear.
9. Press the [Ok] key.

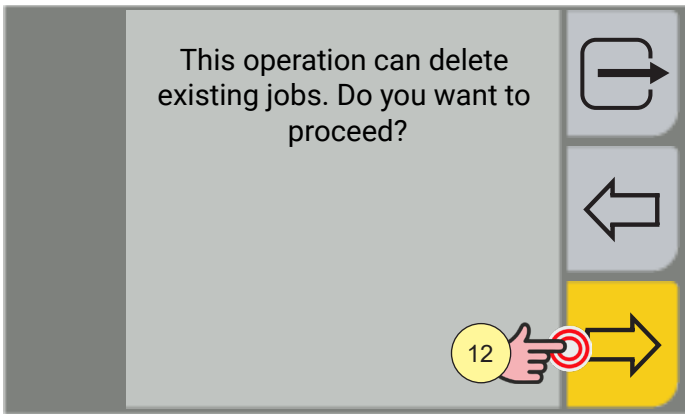
Press the ⇦ [PREV.] key to go back to the previous screen.

Press the ⇨ [EXIT] key to go back to the main screen.

IMPORT

Use the [IMPORT] key to import files and JOBS from the USB pen drive.
If the JOB files on the USB pen drive occupy the same position (number before the name) as those on the equipment, the latter will be overwritten by those on the pen drive.





10. Please insert the USB pen drive into the USB port.
11. Press the [IMPORT] key to import the files from the USB pen drive.
12. Press the [YES] key to confirm.

Press the ⇦ [NO] key to go back to the previous screen.

Press the ⇨ [EXIT] key to go back to the main screen.

ADDING JOBS

Use the [ADD] key to add the files in the USB pen drive to the JOBS in the equipment.
The files in the USB pen drive will be added to those in the equipment, renumbering them and placing them at the bottom of the list.

13. Please insert the USB pen drive into the USB port.
14. Press the [ADD] key to import the files from the USB pen drive.

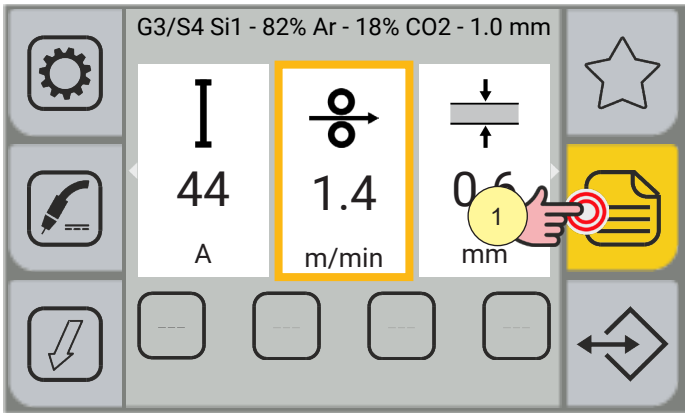
Press the ⇦ [PREV.] key to go back to the previous screen.

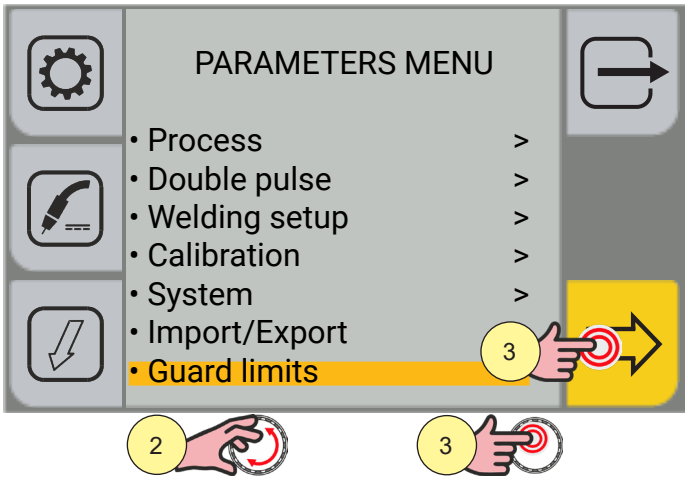
3.6 SETTING GUARD LIMITS

For some parameters, it is possible to set guard limits which, if exceeded, the generator:
- generates a "WARNING" and continues the welding operations;
- generates an "alarm" alarm and stops the welding operations.

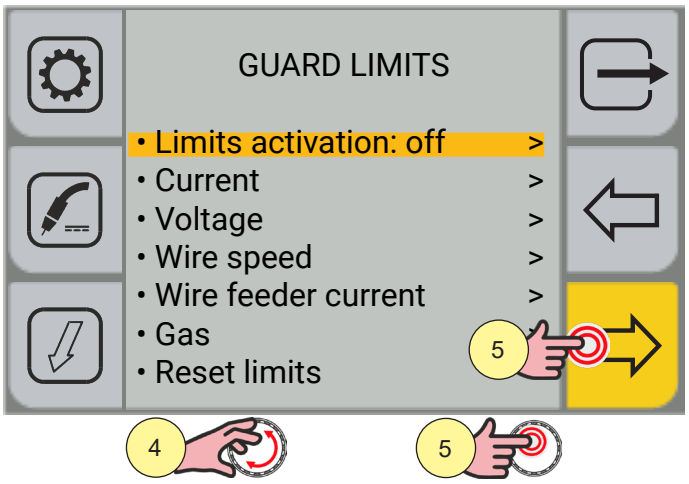
The warnings can be reset directly from the warning screen by pressing the [OK] key.
A message showing the type of limit exceeded is displayed on the screen. The exceeding of these limits is displayed on the log screen.

GUARD LIMITS ACTIVATION

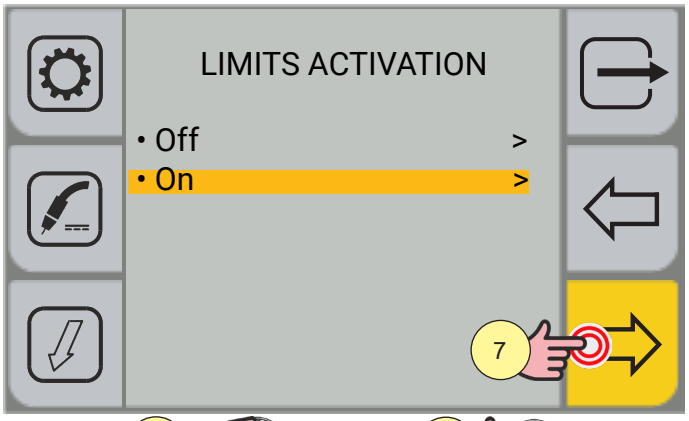


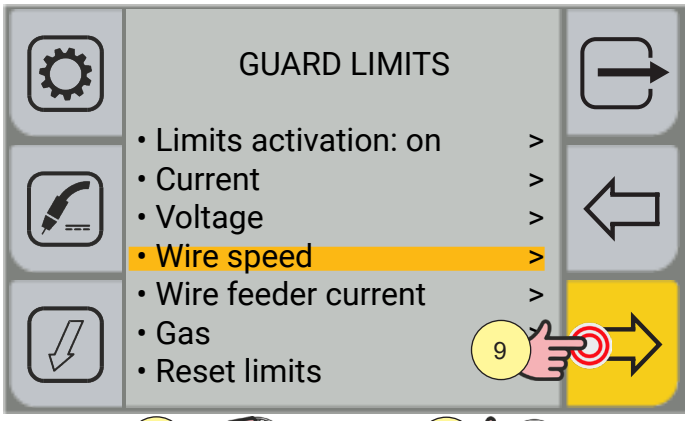


1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: Guard limits>
3. Press the encoder key or the [NEXT] key to confirm.

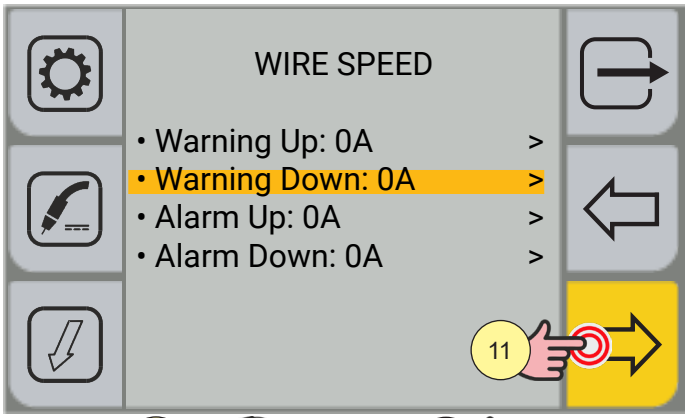


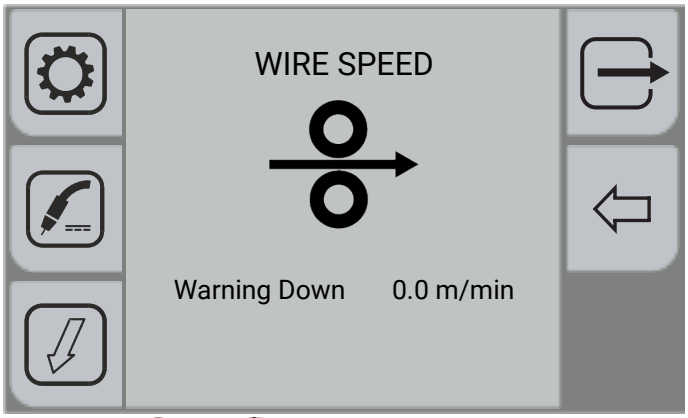
4. Turn the encoder to select the desired setting.
   Select the following path: Limits activation>
5. Press the encoder key or the [NEXT] key to confirm.



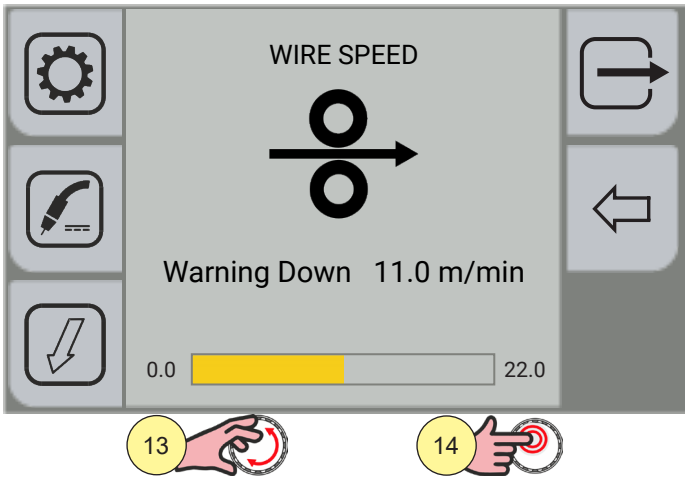


6. Turn the encoder to select the desired setting.
   Select the following path: On
7. Press the encoder key or the [NEXT] key to confirm.
8. Turn the encoder to select the parameter to be activated.
   (GUARD LIMITS: Current, Voltage, Wire Speed, Wire Feeder Current, Gas)
9. Press the encoder key or the [NEXT] key to confirm.
   Thresholds that can be set for each parameter:
   - Warning Up: upper warning threshold (a warning appears on the display)
   - Warning Down: lower warning threshold (a warning appears on the display)
   - Alarm Up: upper alarm threshold (welding is blocked)
   - Alarm Down: lower alarm threshold (welding is blocked)





10. Turn the encoder to select the threshold type.
11. Press the encoder key or the [NEXT] key to confirm.
12. Press the encoder key to activate the parameter change.
    When the threshold is set to 0, the parameter is not active.



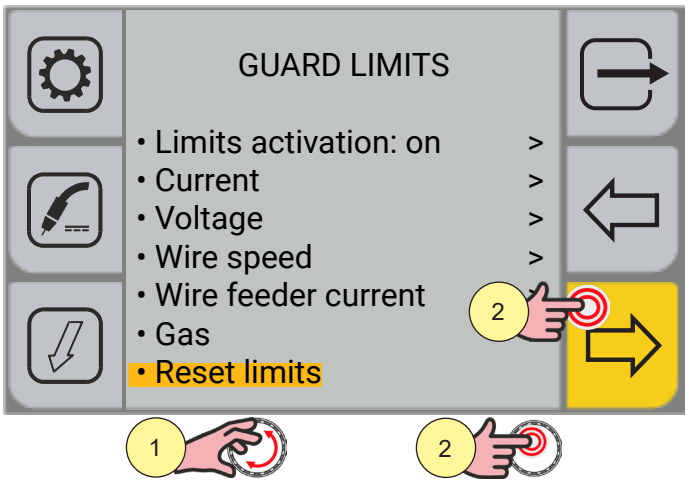
13. Turn the encoder to set the desired value.
14. Press the encoder key to confirm.

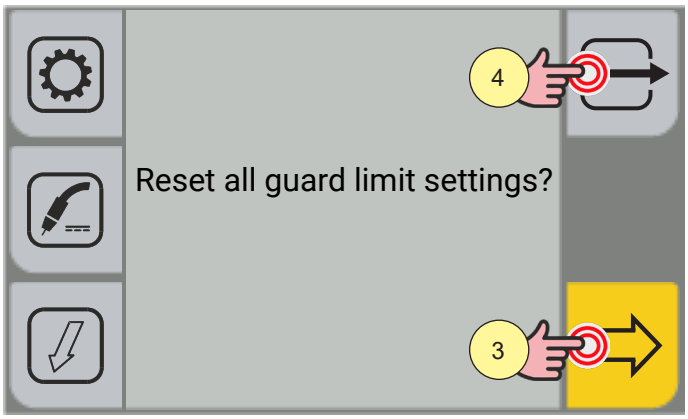
Press the ⇦ [PREV.] key to go back to the previous screen.

Press the ⇨ [EXIT] key to go back to the main screen.

GUARD LIMITS RESET

This function sets the threshold of all guard limit parameters to 0.
The status of the "Limits activation" parameter is not reset.



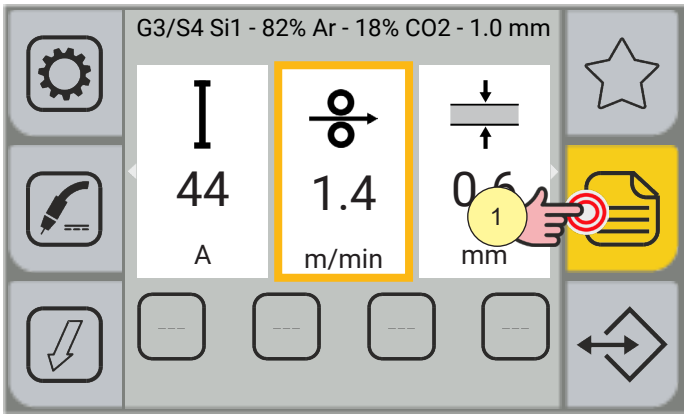


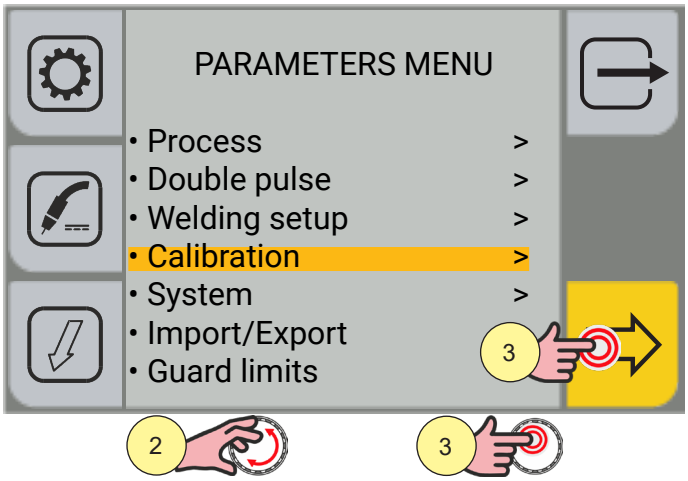
1. Turn the encoder to select the desired setting.
   Select the following path: Reset limits>
2. Press the encoder key or the [NEXT] key to confirm.
3. Press the [YES] key to confirm
4. Press the [NO] key to not confirm

4 MIG/MAG WELDING

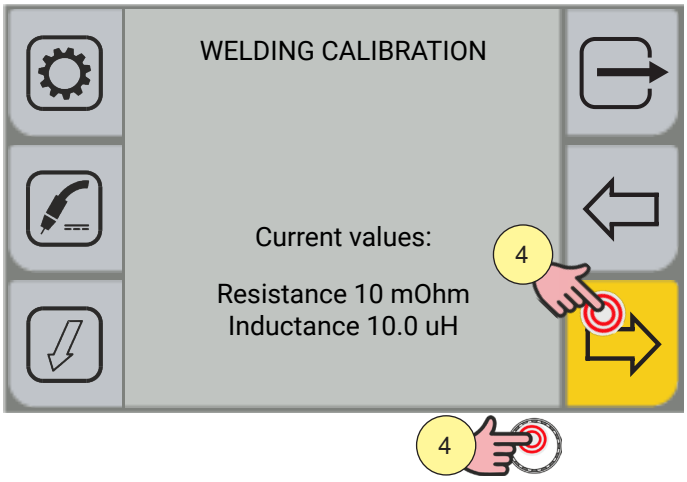
4.1 WELDING CIRCUIT CALIBRATION

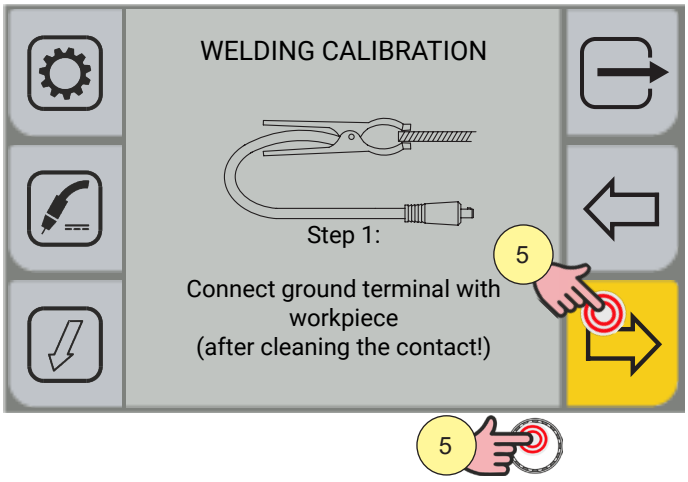
By means of the WELDING CIRCUIT CALIBRATION wizard, the resistance and inductance values of the welding circuit are detected. This procedure is used to adapt the operation of the generator to the welding circuit in use. In this way, it is possible to obtain a constant quality weld as the length of the ground cable and the torch change. It is advisable to repeat the calibration procedure when these components are changed.
If the power source total RESET is carried out, the calibration value will be replaced by the default value.
If a partial RESET SETUP is carried out, the measured value will be stored. Calibration is not mandatory, therefore, should the user decide not to carry it out, the machine will keep a default value.
The welding power source must be on and not set up for welding.



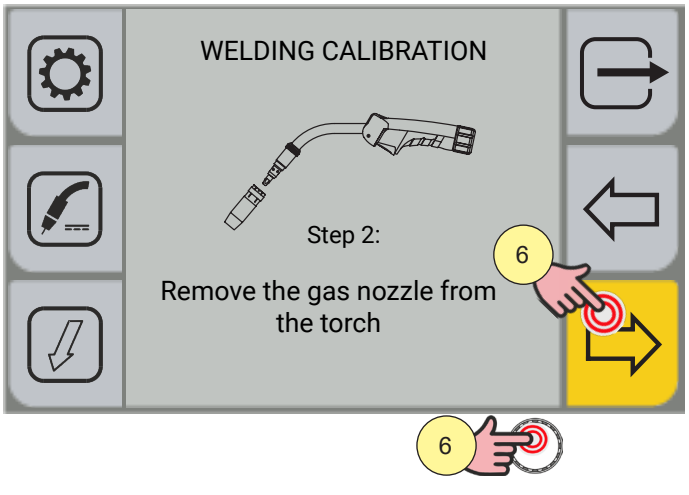


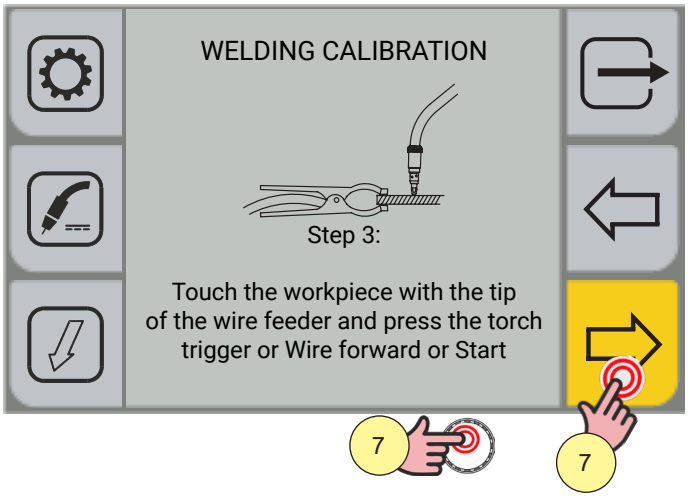
1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: Calibration>
3. Press the encoder key or the [NEXT] key to confirm.





4. Press the encoder key or the [NEXT] key, or the torch trigger to confirm, or the [Wire forward] key
5. Press the encoder key or the [NEXT] key, or the torch trigger to confirm, or the [Wire forward] key.



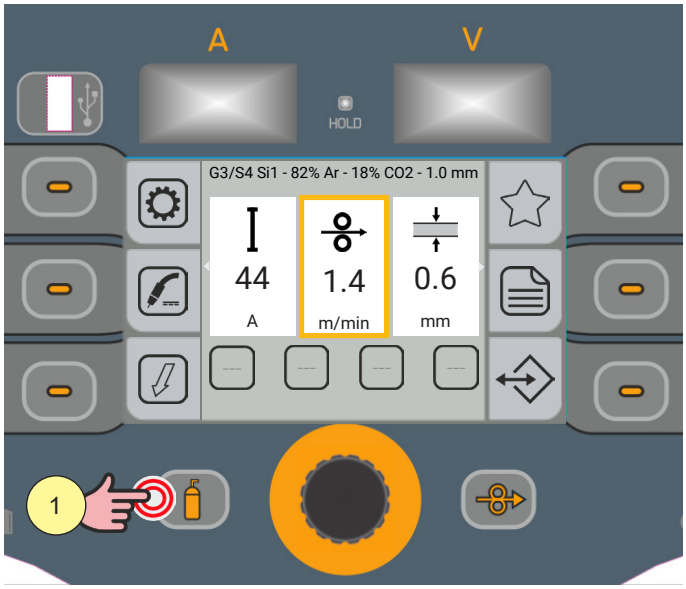


6. Press the encoder key or the [NEXT] key, or the torch trigger to confirm, or the [Wire forward] key.
7. Press the encoder key or the [START] key, or the torch trigger to confirm, or the [Wire forward] key.

At the end of the procedure, the measured resistance and inductance values of the welding circuit will be displayed.
In this way it is possible to obtain a constant quality weld as the length of the cable bundle, ground cable and torch varies.
If the measurement is unsuccessful, the "CALIBRATION ERROR" message will appear.

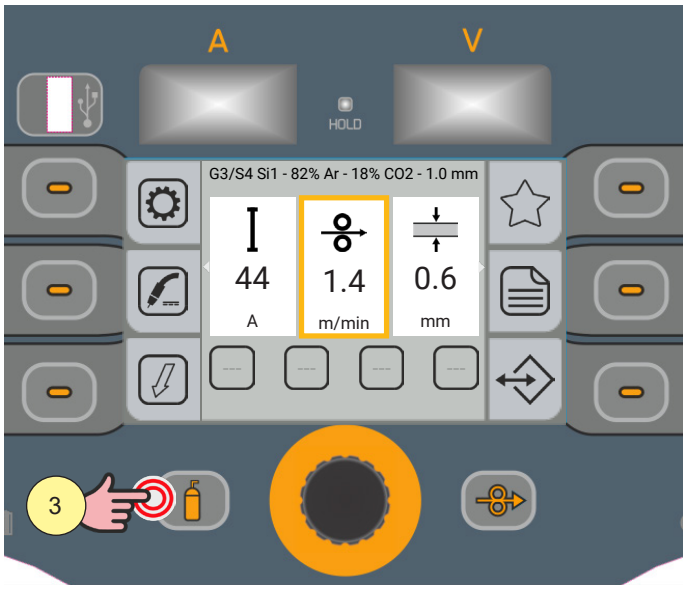
4.2 GAS FLOW ADJUSTMENT

When the unit is powered on, straight after program update, the solenoid valve opens for 1 second.
This serves to fill the gas circuit.



1. Open the gas solenoid valve by pressing and releasing the [GAS] key.

2. Adjust the pressure of gas flowing from the torch by means of the flow meter connected to the gas cylinder.



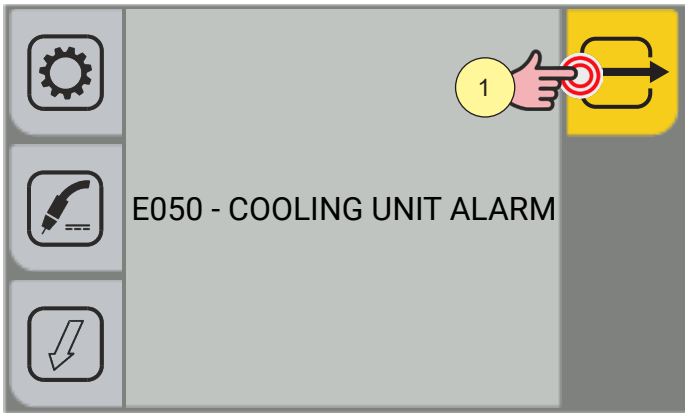
3. Close the gas solenoid valve by pressing and releasing the [GAS] key.
The solenoid valve closes automatically after 30 seconds.

4.3 TORCH FILLING

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.

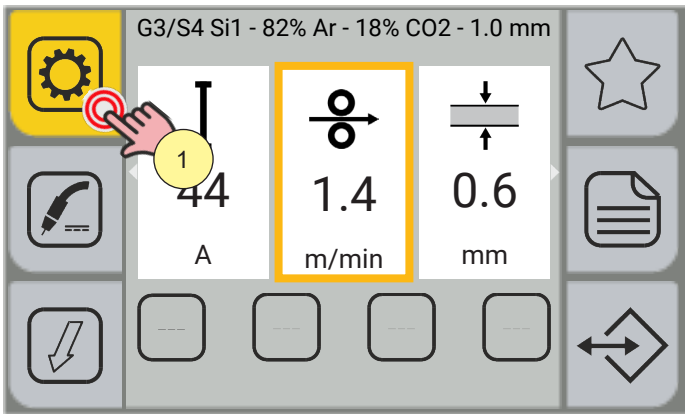
When the generator is switched on, an automatic check is performed for the presence of liquid in the cooling circuit and the cooling unit is switched on for 30 seconds.
If the coolant circuit is full, the power source sets up in the most recent stable welding configuration.
If the coolant circuit is not full, all functions are inhibited and there will be no output power present.
The following alarm message is displayed: E050 - COOLING UNIT ALARM

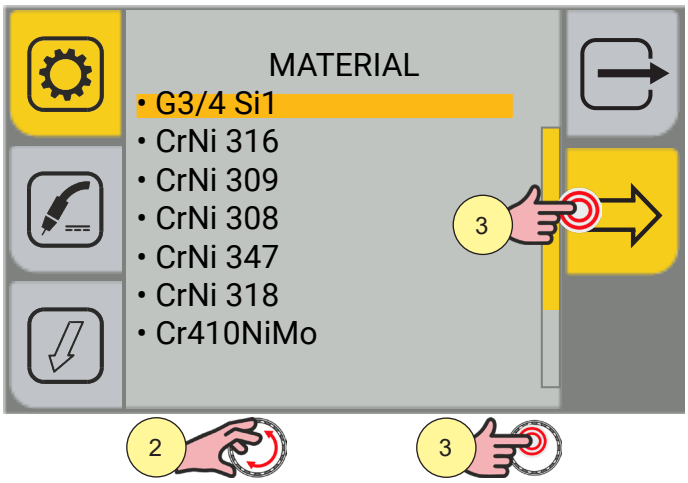


1. Press the [EXIT] key to repeat the torch filling procedure, until the alarm is no longer displayed.

4.4 WELDING PROGRAM SETTING

The [PROGRAM] key gives access to a sequence of screens by means of which the welding program can be chosen.



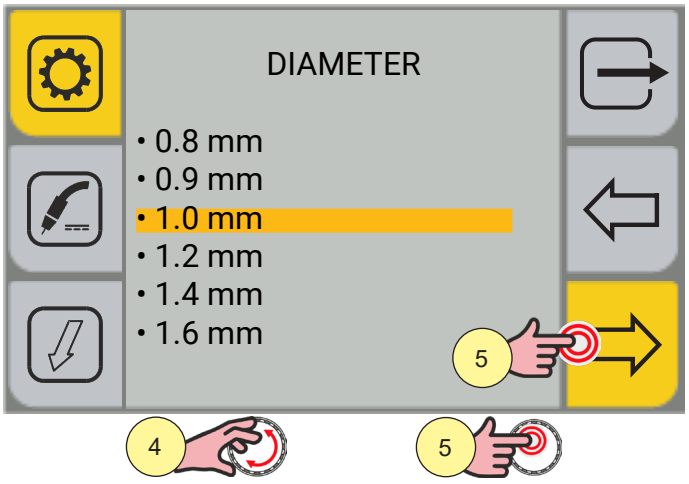


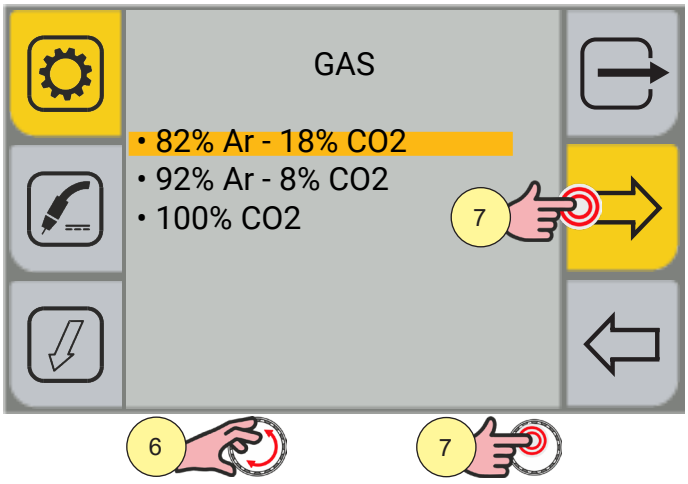
1. Press the [PROGRAM] key.
   Program all the screens that follow one another in sequence.

MATERIAL: allows you to select the material of the filler wire for welding.

- (G3/4 Si1, CrNi 316, CrNi 309, CrNi 308, CrNi 347, CrNi 318, Cr410NiMo, CrNi 307, AlMg5, AlSi5, AlMg4.5Mn-Zr, Metal Cored, FCW Rutil, FCW Basic, Self Shielded, Metal Cored SS, CuSi3, CuSn, CuAl8, Duplex, Super Duplex, Duplex FCW, NiCrMo3, GZ 21 33 MnNb)

2. Turn the encoder to select the desired setting.
3. Press the encoder key or the [NEXT] key to confirm.





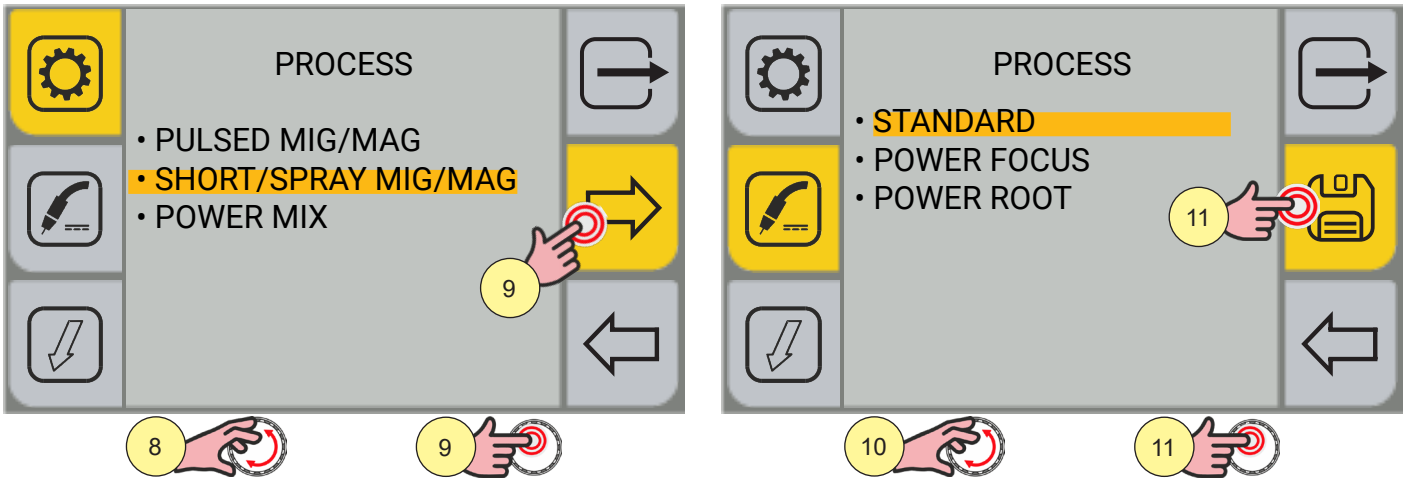
DIAMETER: allows you to select the diameter of the filler wire for welding. The available wire diameters depend on the material selected.

4. Turn the encoder to select the desired setting.
5. Press the encoder key or the [NEXT] key to confirm.

GAS: allows you to select the type of gas for welding. The gas mixtures available depend on the material selected.

6. Turn the encoder to select the desired setting.

Press the encoder key or the [NEXT] key to confirm.



PROCESS (1 LEVEL): allows you to select only the welding processes compatible with the settings previously made.

7. Turn the encoder to select the desired setting.
8. Press the encoder key or the [NEXT] key to confirm.

PROCESS (2 LEVEL): allows you to select a specific mode of the previously selected welding process.

9. Turn the encoder to select the desired setting.
10. Press the encoder key or the [SAVE] key to confirm the program.

Press the ⇦ [PREV.] key to go back to the previous screen.

Press the ⇨ [EXIT] key to go back to the main screen, without saving the changes.

MIG/MAG welding processes

MANUAL MIG/MAG WELDING

Welding is of the Short/Spray type.
- short arc: drop detachment takes place due to a short circuit at low amperage.
- globular: this is a transition phase between the short arc and the spray arc.
- spray arc: the deposit of material takes place without short circuits at high amperage.

The adjustment of the main welding parameters, wire speed, voltage and inductance, is entirely left to the operator. The optimal work point must be identified for the desired welding type.

SYNERGIC MIG/MAG WELDING

Welding is of the Short/Spray type.
- short arc: drop detachment takes place due to a short circuit at low amperage.
- globular: this is a transition phase between the short arc and the spray arc.
- spray arc: the deposit of material takes place without short circuits at high amperage.

The welding data (material, wire diameter, gas type) must be set, and only one welding parameter, between wire speed, current, material thickness and voltage.
The generator automatically adjusts the other secondary parameters useful for the quality of the weld.

PULSED MIG/MAG WELDING

The pulsed process is a welding mode in which the material is deposited in a controlled manner through a precise regulation of the current pulse.
The welding data (material, wire diameter, gas type) must be set, and only one welding parameter, between wire speed, current, material thickness and voltage.
The generator automatically adjusts the other secondary parameters useful for the quality of the weld.

MIG/MAG welding functions

DOUBLE-PULSED SYNERGIC MIG/MAG WELDING

DOUBLE-PULSED is a function that can be activated in the synergic MIG/MAG and pulsed MIG/MAG welding process. This function allows for the control of two wire feeder speeds.
The welding data (material, wire diameter, gas type) must be set, and only one welding parameter, between wire speed, current, material thickness and voltage.
The generator automatically adjusts the other secondary parameters useful for the quality of the weld.

SYNERGIC MIG/MAG WELDING PF (POWER FOCUS)

The difference between a Standard MIG MAG arc and POWER FOCUS lies in 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 weld, without overheating the sides of the weld. The area thermally altered with the POWER FOCUS arc is less extensive.
The benefits in welding are:

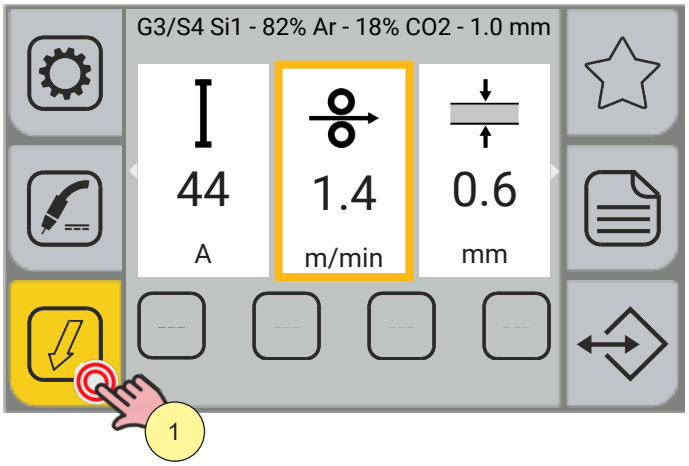
- greater penetration and less risk of sticking.
- faster execution speed.
- greater arc stability even with long stick-outs.
- lower joint preparation costs.
- reduction in the volumes of the weld joints to be filled.

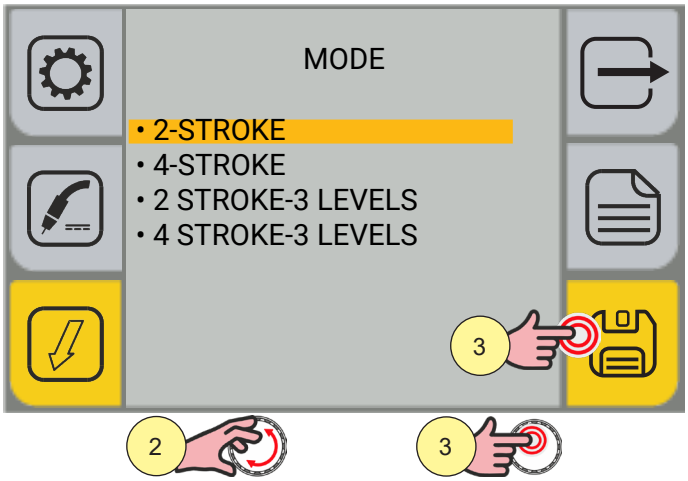
SYNERGIC MIG/MAG WELDING PR (POWER ROOT)

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.
The benefits in welding are:

- optimisation of the first pass.
- downward vertical welding quality.
- excellent operation.
- cold transfer of the drop.
- perfect union of thin sheets.
- ideal for welding joints with high gaps.

4.5 MIG/MAG TORCH TRIGGER MODE SETTING



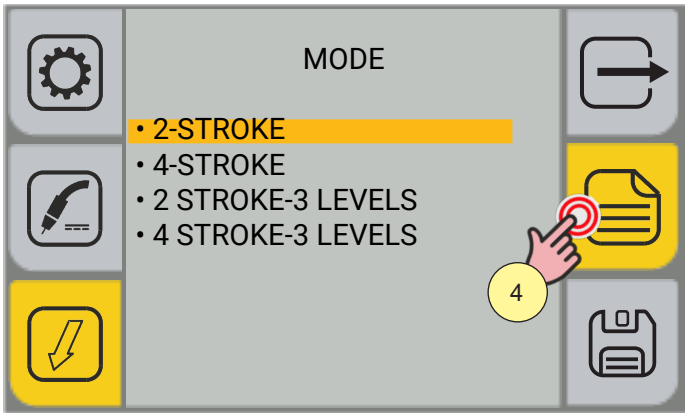


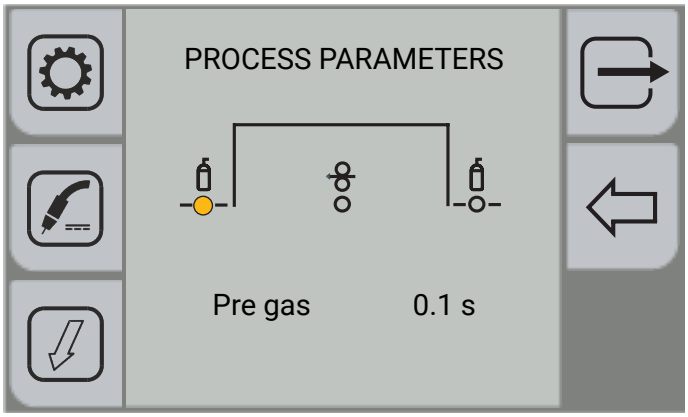
1. Press the [MODE]key.

○ Within the menu screen, it is possible to select the torch trigger mode.

[2 STROKE] - [4 STROKES] - [2 STROKES-3 LEVELS] - [4 STROKES-3 LEVELS]

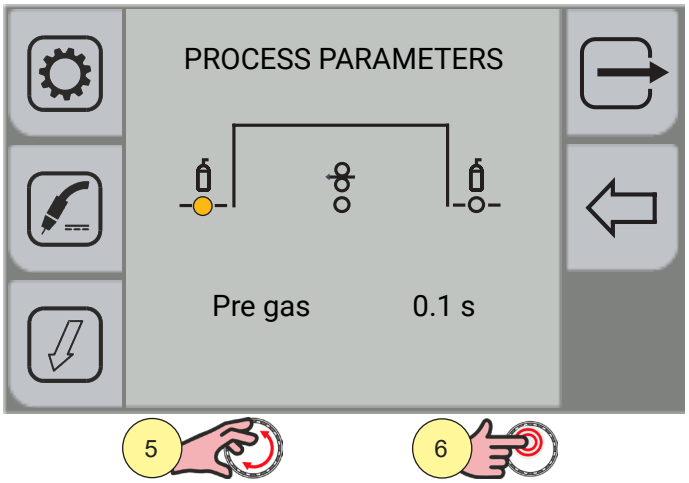
2. Turn the encoder to select the desired setting.
3. Press the encoder key or the [SAVE] key if you only want to set the torch trigger mode, otherwise continue with the action in step (4).

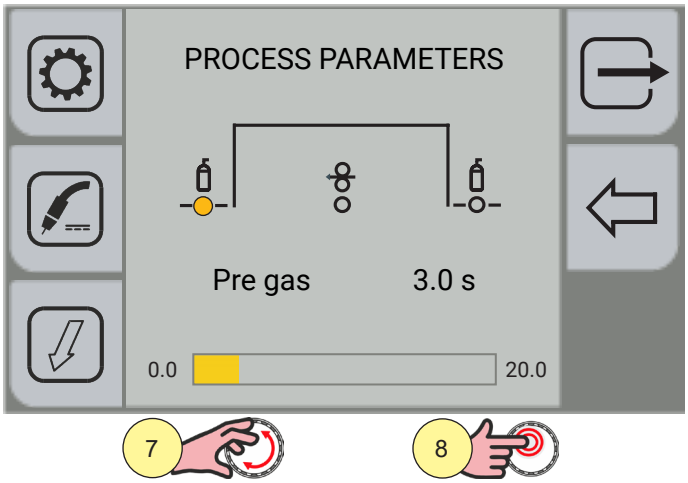




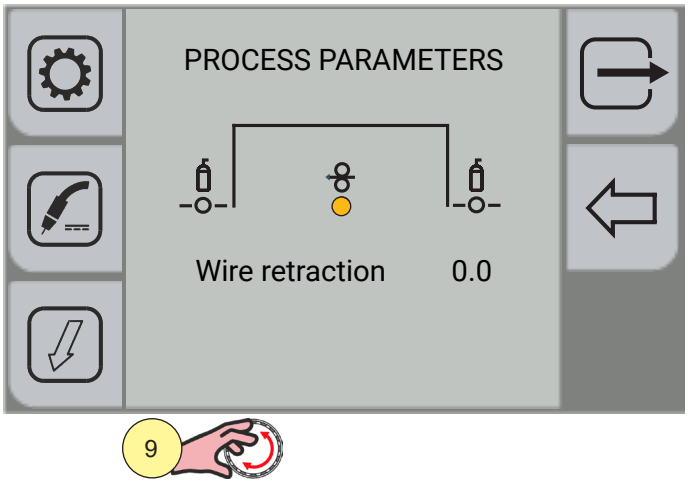
4. Press the [MENU]key.

Depending on the mode of the selected torch trigger, different process parameters can be set.





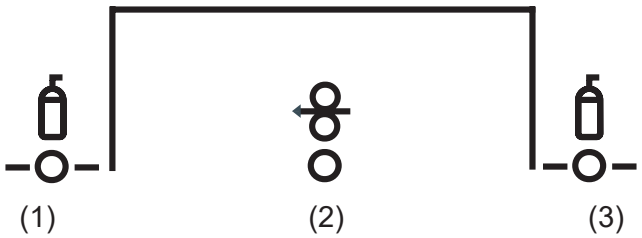
5. Turn the encoder to select the parameter to be modified.
6. Press the encoder key to confirm.
7. Turn the encoder to set the desired value.
8. Press the encoder key to confirm.



9. Turn the encoder again to select other parameters.

Press the [EXIT] key to go back to the main screen.

Process parameters with torch trigger in 2 STROKES AND 4 STROKES mode



(1) PRE GAS

► Time of gas delivery before the arc strike.
NOTE: if it is too long, it slows down 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.
► Adjustment range: minimum (0.0 s) - default (0.1 s) - maximum (20.0 s)

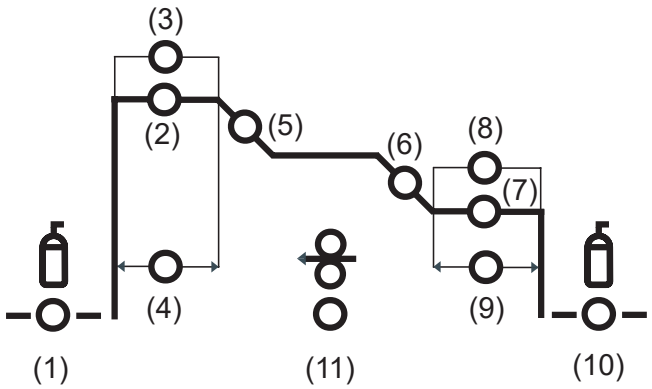
(2) WIRE RETRACTION

► The value is related to the amount of wire that is retracted at the end of welding.
► Adjustment range: minimum (0.0 s) - default (0.0 s) - maximum (10.0 s)

(3) POST GAS

► Time of post gas delivery when the welding arc is extinguished.
► Adjustment range: minimum (0.0 s) - default (2.0 s) - maximum (20.0 s)

Process parameters with torch trigger in 2 STROKES-3 LEVELS mode



(1) PRE GAS

► Time of gas delivery before the arc strike.
NOTE: if it is too long, it slows down 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.
► Adjustment range: minimum (0.0 s) - default (0.1 s) - maximum (20.0 s)

(2) STARTING CURRENT

► The parameter adjusts the 1st level wire speed as a percentage of the wire speed set for welding (2nd level).
► Adjustment range: minimum (10%) - default (130%) - maximum (200%)

(3) STARTING ARC LENGTH CORR.

► This parameter corrects the synergic voltage value relative to the synergic point of the synergic and pulsed MIG/MAG processes, while it manages the correction of the voltage of the high value in the MIG/MAG double-pulsed process.
► Adjustment range: minimum (-10) - default (0.0) - maximum (10)

(4) STARTING CURRENT TIME

► The parameter adjusts the dwell time at the starting current.
► Adjustment range: minimum (0.0 s) - default (0.5 s) - maximum (10.0 s)

(5) SLOPE1

► The parameter adjusts the time of the connecting slope between the HOT START level and the welding level.
► Adjustment range: minimum (0.1 s) - default (0.5 s) - maximum (10.0 s)

(6) SLOPE2

► The parameter adjusts the time of the connecting slope between the welding level and the crater filler level.
► Adjustment range: minimum (0.1 s) - default (0.5 s) - maximum (10.0 s)

(7) FINAL CURRENT

► The parameter adjusts the wire speed of the 3rd level as a percentage of the wire speed set for welding

(2nd level).
► Adjustment range: minimum (10%) - default (80%) - maximum (200%)

(8) FINAL ARC LENGTH CORR.

► This parameter corrects the synergic voltage value relative to the synergic point of the synergic and pulsed MIG/MAG processes, while it manages the correction of the voltage of the high value in the MIG/MAG double-pulsed process**.**
► Adjustment range: minimum (-10.0) - default (0) - maximum (10.0)

(9) FINAL CURRENT TIME

► The parameter adjusts the time for which you stay at the final current.
► Adjustment range: minimum (0.0 s) - default (0.5 s) - maximum (10.0 s)

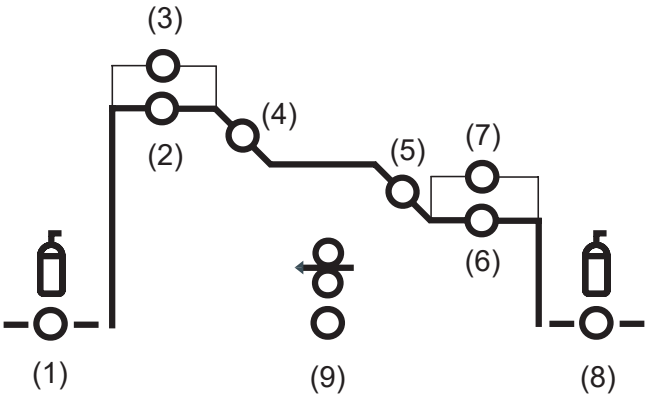
(10) POST GAS

► Time of post gas delivery when the welding arc is extinguished.
► Adjustment range: minimum (0.0 s) - default (2.0 s) - maximum (20.0 s)

(11) WIRE RETRACTION

► The value is related to the amount of wire that is retracted at the end of welding.
► Adjustment range: minimum (0.0) - default (0.0) - maximum (10.0)

Process parameters with torch trigger in 4 STROKES-3 LEVELS mode



(1) PRE GAS

► Time of gas delivery before the arc strike.
NOTE: if it is too long, it slows down 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.
► Adjustment range: minimum (0.0 s) - default (0.1 s) - maximum (20.0 s)

(2) STARTING CURRENT

► The parameter adjusts the 1st level wire speed as a percentage of the wire speed set for welding (2nd level).
► Adjustment range: minimum (10%) - default (130%) - maximum (200%)

(3) STARTING ARC LENGTH CORR.

► 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.
► Adjustment range: minimum (-10) - default (0.0) - maximum (10)

(4) SLOPE1

► The parameter adjusts the time of the connecting slope between the HOT START level and the welding level.
► Adjustment range: minimum (0.1 s) - default (0.5 s) - maximum (10.0 s)

(5) SLOPE2

► The parameter controls the slope time connecting the welding level and the crater filler level.
► Adjustment range: minimum (0.1 s) - default (0.5 s) - maximum (10.0 s)

(6) FINAL CURRENT

► The parameter adjusts the wire speed of the 3rd level as a percentage of the wire speed set for welding (2nd level).
► Adjustment range: minimum (10%) - default (80%) - maximum (200%)

(7) FINAL ARC LENGTH CORR.

► 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.
► Adjustment range: minimum (-10.0) - default (0) - maximum (10.0)

(8) POST GAS

► Time of post gas delivery when the welding arc is extinguished.
► Adjustment range: minimum (0.0 s) - default (2.0 s) - maximum (20.0 s)

(9) WIRE RETRACTION

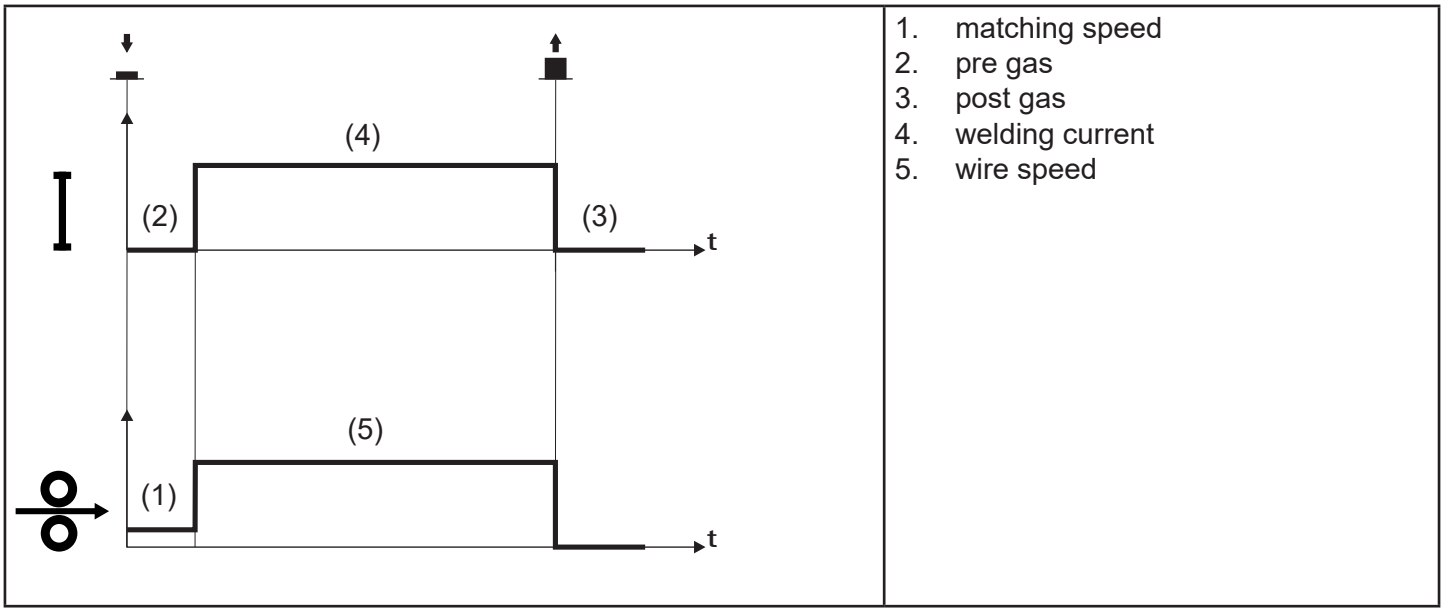
► The value is related to the amount of wire that is retracted at the end of welding.
► Adjustment range: minimum (0.0) - default (0.0) - maximum (10.0)

MIG/MAG 2T operation

: press the torch trigger

: release the torch trigger

: press and release the torch trigger



1. matching speed
2. pre gas
3. post gas
4. welding current
5. wire speed

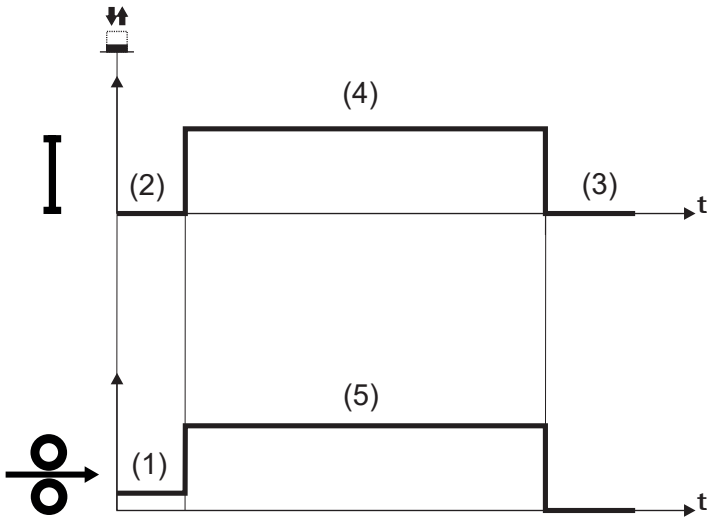
- Bring the torch up to the workpiece.
- Press (1T) and keep the torch trigger pressed.
  - The wire advances at the approach speed until it makes contact with the material. If the arc does not strike after 10 cm wire protrusion, wire feeding is locked and the welding unit outputs are de-energized.
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

MIG/MAG 2T SPOT operation

: press the torch trigger

: release the torch trigger

: press and release the torch trigger



1. matching speed
2. pre gas
3. post gas
4. welding current (SPOT time)
5. wire speed

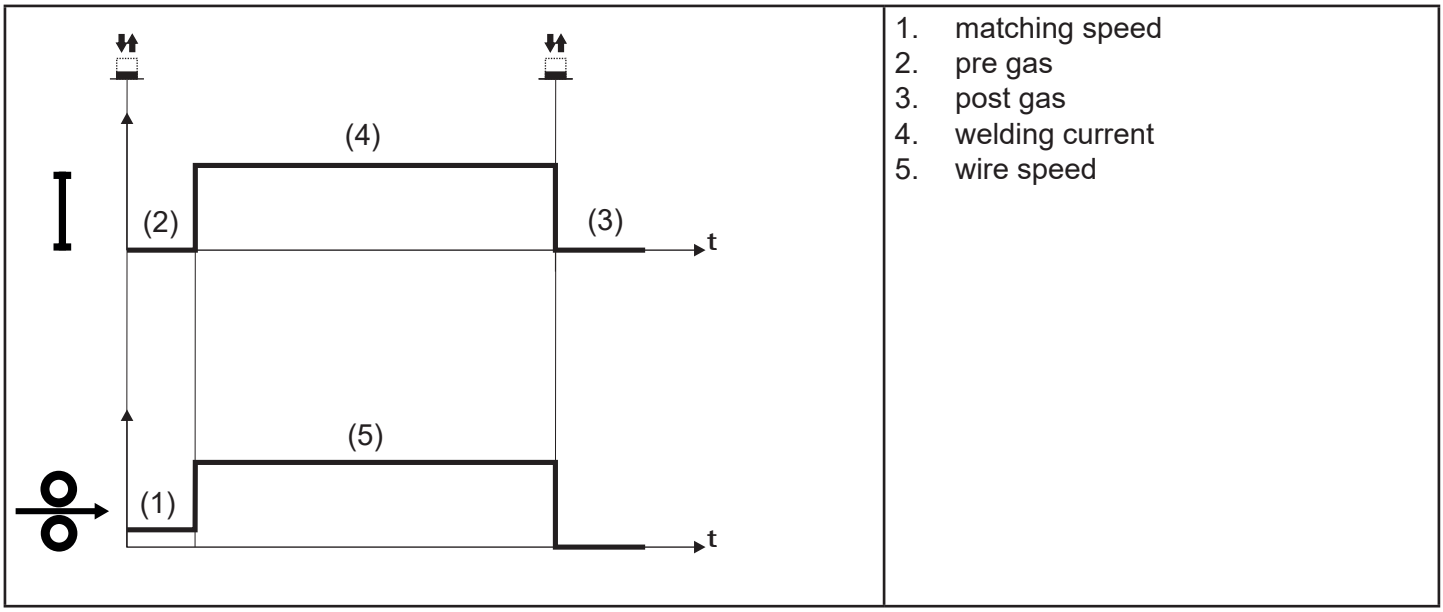
○ Bring the torch up to the workpiece.
○ Press (1T) and keep the torch trigger pressed.
- The wire advances at the approach speed until it makes contact with the material. If the arc does not strike after 10 cm wire protrusion, wire feeding is locked and the welding unit outputs are de-energized.
- The 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.
- After the SPOT time has elapsed, the welding ends automatically.
- Gas flow continues for the time set in the post gas parameter (adjustable time).

MIG/MAG 4T operation

: press the torch trigger

: release the torch trigger

: press and release the torch trigger



1. matching speed
2. pre gas
3. post gas
4. welding current
5. wire speed

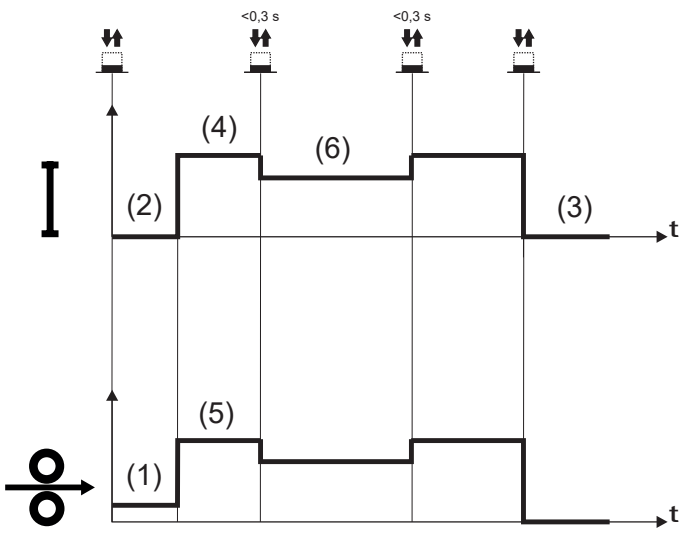
- Bring the torch up to the workpiece.
- Press (1T) and release (2T) the torch trigger.
  - The wire advances at the approach speed until it makes contact with the material. If the arc does not strike after 10 cm wire protrusion, wire feeding is locked and the welding unit outputs are de-energized.
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

MIG/MAG 4T B-LEVEL operation

: press the torch trigger

: release the torch trigger

: press and release the torch trigger



1. matching speed
2. pre gas
3. post gas
4. welding current
5. wire speed
6. B-level current

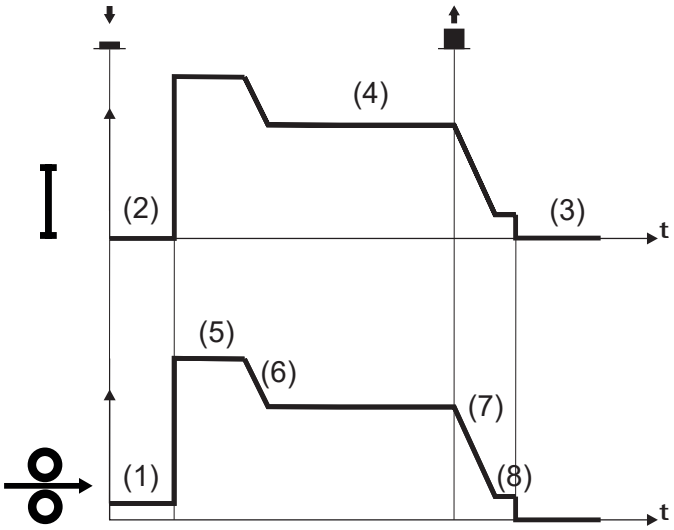
- Bring the torch up to the workpiece.
- Press (1T) and release (2T) the torch trigger.
  - The wire advances at the approach speed until it makes contact with the material. If the arc does not strike after 10 cm wire protrusion, wire feeding is locked and the welding unit outputs are de-energized.
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

MIG/MAG 2T - 3 LEVELS operation

: press the torch trigger

: release the torch trigger

: press and release the torch trigger



1. matching speed
2. pre gas
3. post gas
4. welding current
5. hot start
6. start slope
7. crater slope
8. crater time

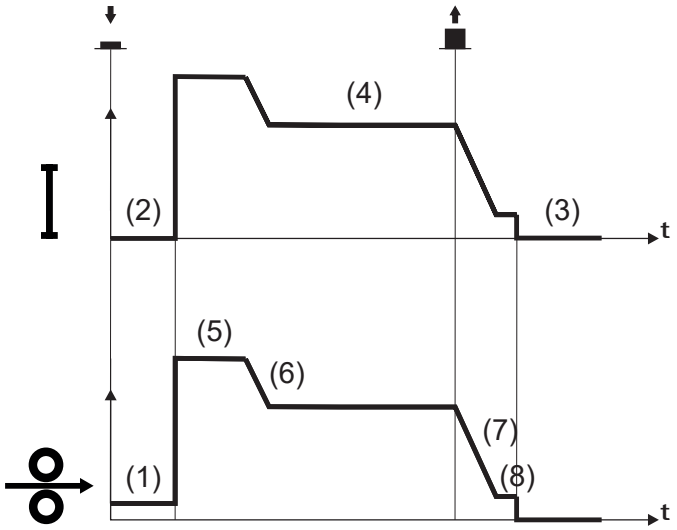
- Bring the torch up to the workpiece.
- Press (1T) torch trigger.
  - The wire advances at the approach speed until it makes contact with the material. If the arc does not strike after 10 cm wire protrusion, wire feeding is locked and the welding unit outputs are de-energized.
  - The welding arc strikes 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.
  - 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.
- Release (2T) the torch trigger to switch to the third welding level (crater filler), which is set as a percentage of the normal welding feed rate.
  - 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.
  - 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.

MIG/MAG 2T SPOT - 3 LEVELS operation

: press the torch trigger

: release the torch trigger

: press and release the torch trigger



1. matching speed
2. pre gas
3. post gas
4. welding current (SPOT time)
5. hot start
6. start slope
7. crater slope
8. crater time

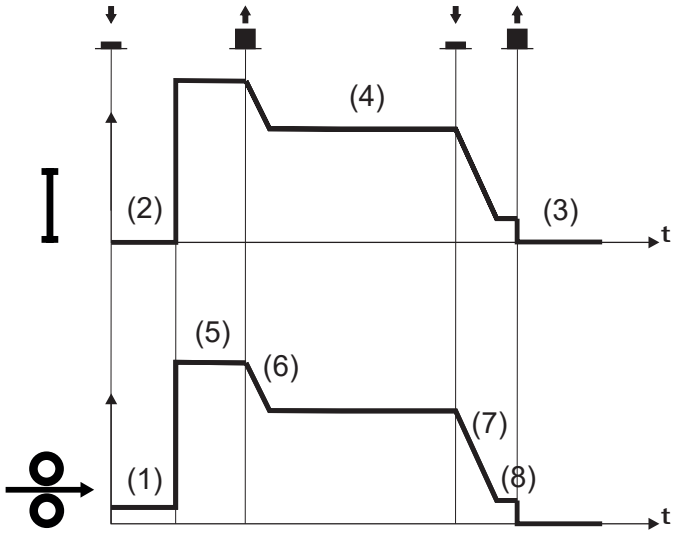
The welding process is the same as the 2T - 3 LEVELS process, except that the welding procedure continues, at the preset current, for the time set with the spot time parameter.
The weld is closed in the same way as with the 2T - 3 LEVELS process.

MIG/MAG 4T - 3 LEVELS operation

: press the torch trigger

: release the torch trigger

: press and release the torch trigger



1. matching speed
2. pre gas
3. post gas
4. welding current
5. hot start
6. start slope
7. crater slope
8. crater time

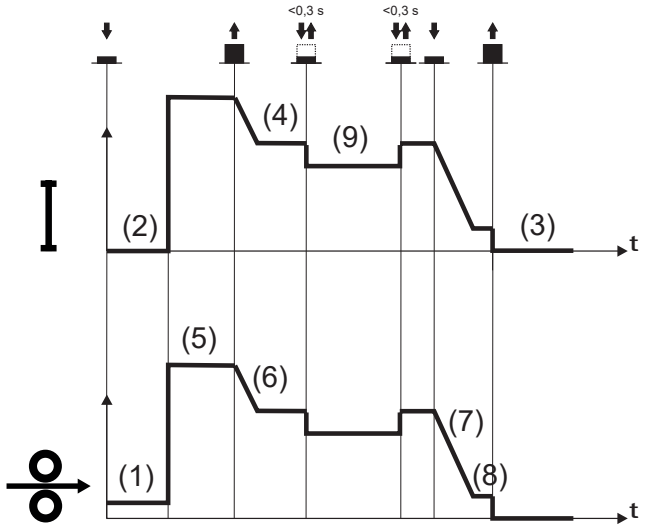
- Bring the torch up to the workpiece.
- Press (1T) torch trigger.
  - The wire advances at the approach speed until it makes contact with the material. If the arc does not strike after 10 cm wire protrusion, wire feeding is locked and the welding unit outputs are de-energized.
  - The welding arc strikes 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.
  - This first level is used to create the weld pool: for example, when welding aluminium a value of 130 % is recommended.
- 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.
- 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.
  - The transition from welding level to crater level takes place via 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.
- Release the torch trigger a second time (4T) to close the weld and run the post gas procedure.

MIG/MAG 4T B-LEVEL - 3 LEVELS operation

: press the torch trigger

: release the torch trigger

: press and release the torch trigger

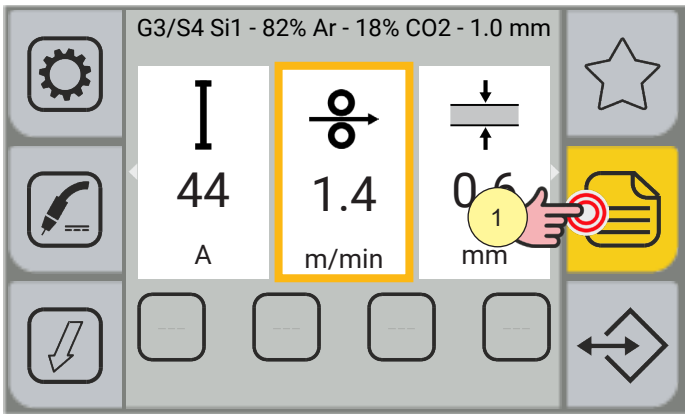


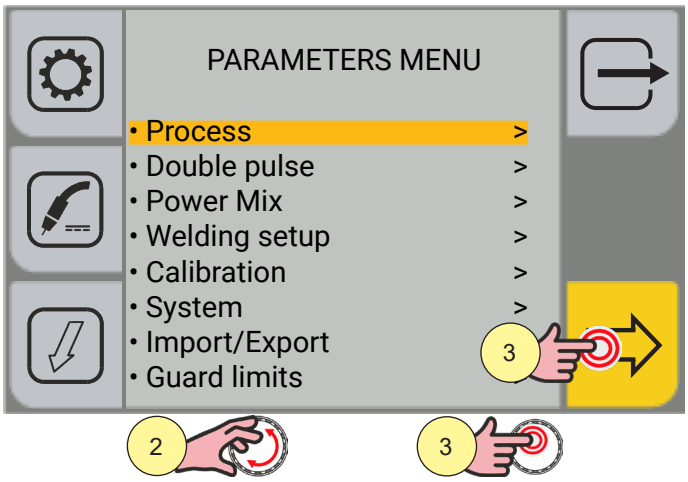
1. matching speed
2. pre gas
3. post gas
4. welding current
5. hot start
6. start slope
7. crater slope
8. crater time

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.
Press (3T) trigger and keep it pressed to start the crater filler procedure.
The weld is closed in the same way as with the 4T - 3 LEVELS process.

5 PARAMETER SETTING

The [MENU] key gives access to the menu by means of which the main characteristics of the weld are set. It also contains special functions such as welding circuit calibration and system menu.





Press the [MENU] key.
1. Turn the encoder to select the desired setting.
2. Press the [ENCODER] key or the [NEXT] key.

Program all the screens that follow one another in sequence in this way:

- PROCESS

By means of the PROCESS PARAMETERS menu, it is possible to set the values of the parameters relating to the set torch trigger mode.

- DOUBLE-PULSED

By means of the DOUBLE-PULSED PARAMETERS menu, it is possible to set the values of the parameters relating to the DOUBLE-PULSED welding process.

- POWER MIX

By means of the POWER MIX PARAMETERS menu, it is possible to set the values of the parameters relating to the POWER MIX welding process.

- WELDING SETUP

By means of the WELDING SETUP menu, it is possible to activate the different operating modes of the torch trigger and set the parameters of the torch trigger.

- CALIBRATION

By means of the WELDING CIRCUIT CALIBRATION wizard, the resistance and inductance values of the welding circuit are detected.

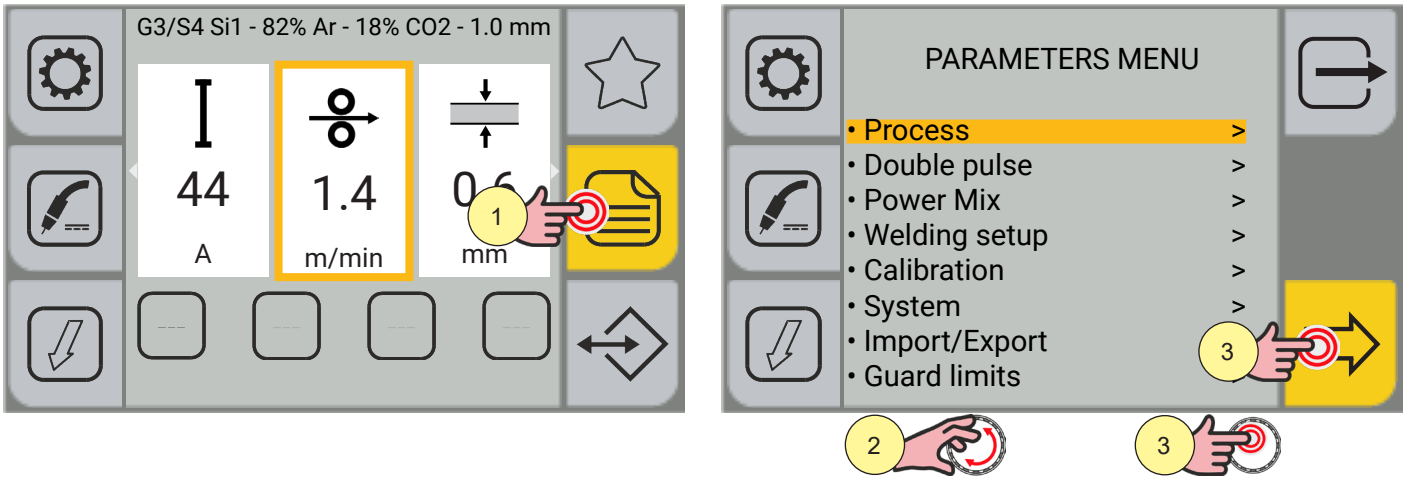
- SYSTEM

The SYSTEM menu includes several submenus:
- LANGUAGES: to set the language in which messages are displayed
- FW UPGRADE: to update the equipment software via USB.
- ALARMS LIST: to display any alarm messages.

- DATE & TIME: to set the time zone, the date and the time.
- INFO: information is provided regarding the use of the equipment (hours ON, hours welding)
- RESET: by means of the reset procedure, it is possible to delete the stored data.
- SETUP: this menu includes the following items:
- Wire feed;
- Wire feeder setup;
- CU setup;
- Display setup;
- Gas setup;
- PushPull setup;
- Lock;
- SERVICE: reserved for personnel assigned to the technical assistance of the device.

- IMPORT/EXPORT
  By means of the import/export procedure, some equipment setups (Jobs, parameters, display setup, language) can be exported or imported via USB pen drive.
- GUARD LIMITS
  For some parameters, it is possible to set guard limits which, if exceeded, the generator:
  - generates a "WARNING" and continues the welding operations;
  - generates an "alarm" alarm and stops the welding operations.

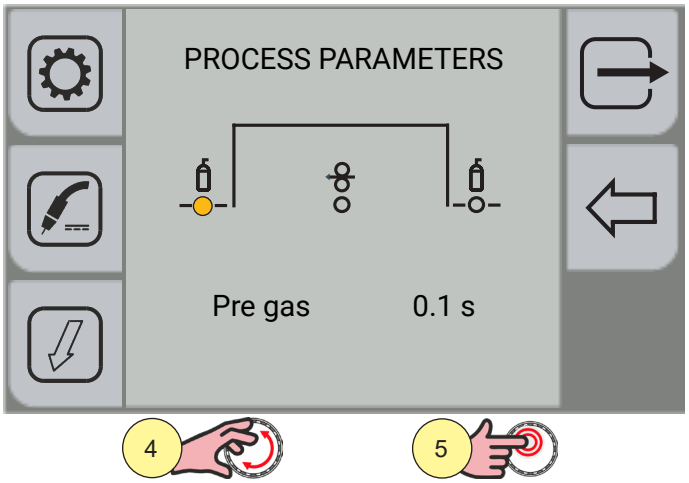
5.1 PROCESS PARAMETERS SETTING

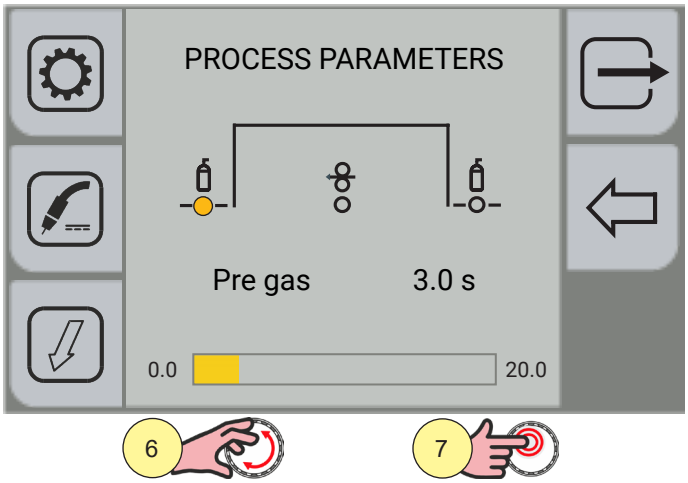


1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: Process>
3. Press the [ENCODER] key or the [NEXT] key to confirm.

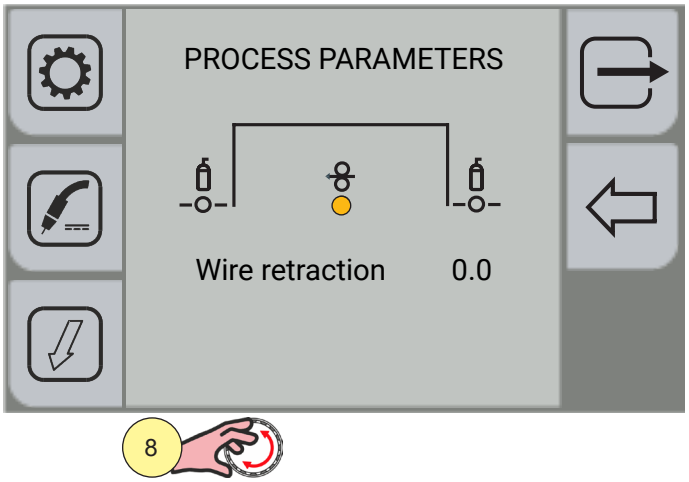
Depending on the mode of the selected torch trigger, process parameters are available to be set.

ⓘ **Information** For the list of process parameters, refer to:
- "Process parameters with torch trigger in 2 STROKES AND 4 STROKES mode" on page 56
- "Process parameters with torch trigger in 2 STROKES-3 LEVELS mode" on page 57
- "Process parameters with torch trigger in 4 STROKES-3 LEVELS mode" on page 58





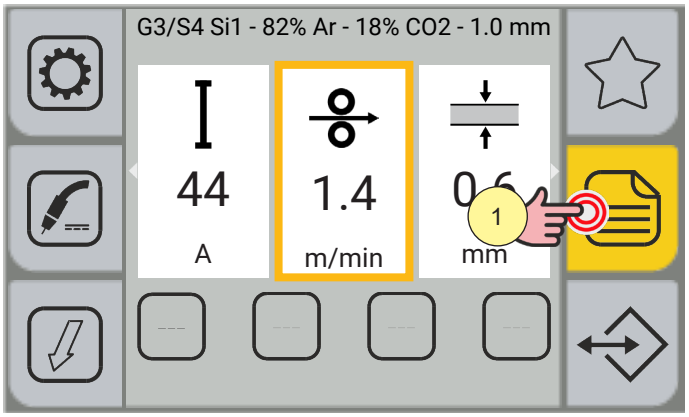
4. Turn the encoder to select the parameter to be modified.
5. Press the [ENCODER] key to confirm.
6. Turn the encoder to set the desired value.
7. Press the [ENCODER] key to confirm.

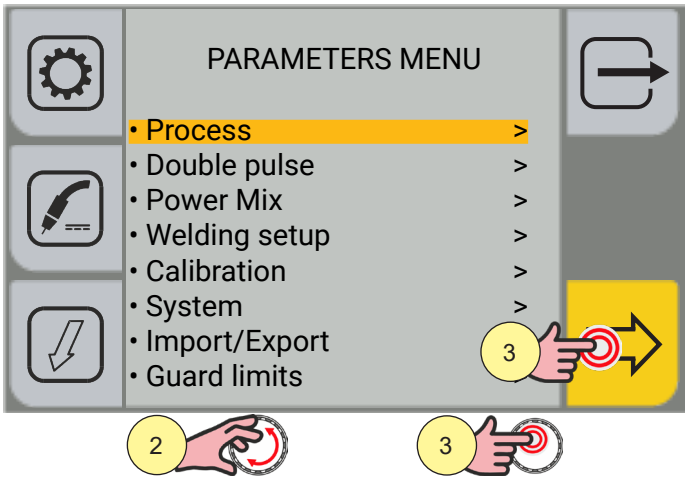


8. Turn the encoder again to select other parameters.

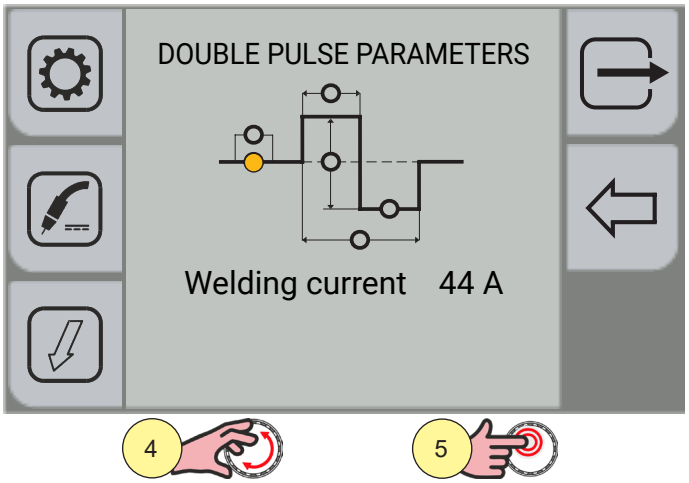
Press the (EXIT) key to go back to the main screen.

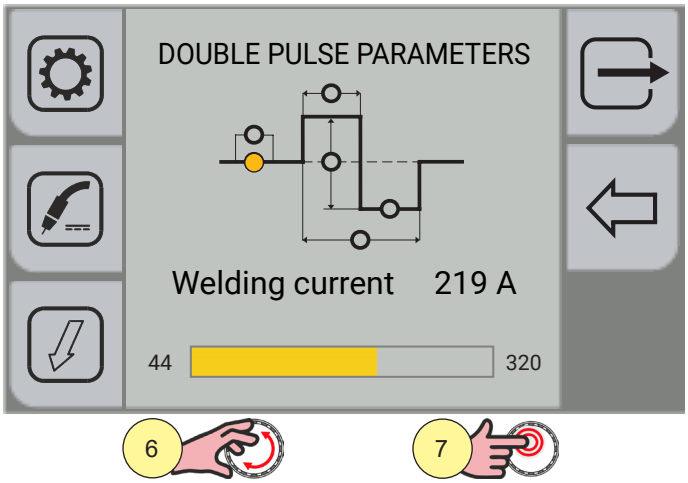
5.2 DOUBLE-PULSED PARAMETER SETTING



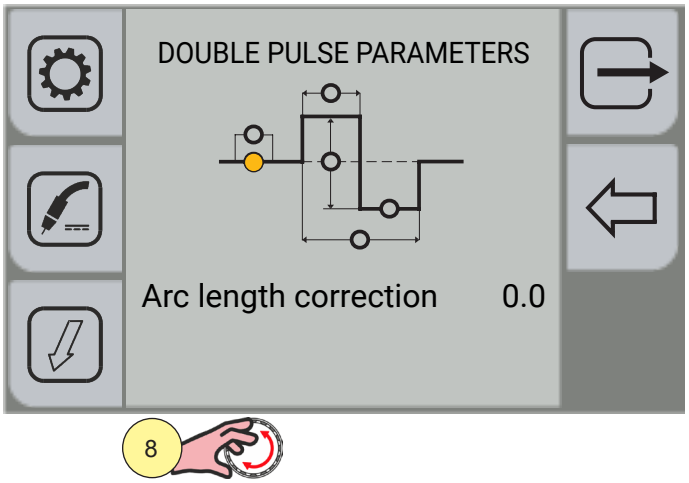


1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: Double pulse>
3. Press the [ENCODER] key or the [NEXT] key to confirm.





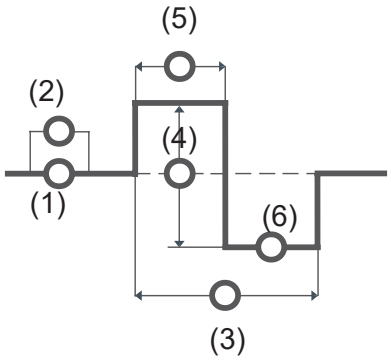
4. Turn the encoder to select the parameter to be modified.
5. Press the [ENCODER] key to confirm.
6. Turn the encoder to set the desired value.
7. Press the [ENCODER] key to confirm.



8. Turn the encoder again to select the parameters.

Press the (EXIT) key to go back to the main screen.

Double-pulsed parameters



DOUBLE SPEED ACTIVE
The parameter activates/disables the double pulse.

1. WELDING CURRENT
The parameter adjusts the average current of the welding arc by selecting a value within the adjustment range relating to the selected synergic program.

Adjustment range: minimum (min synergy) - default (currently in use) - maximum (max synergy)

2. ARC LENGTH CORRECTION
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.

Adjustment range: minimum (-10) - default (0.0) - maximum (10)

3. DOUBLE SPEED FREQ.
The parameter adjusts the frequency with which the two wire speeds set with the DOUBLE SPEED AMPL. parameter alternate.

Regulation range: minimum (0.1 Hz) - default (2.0 Hz) - maximum (5.0 Hz)

4. DOUBLE SPEED AMPL.
This parameter generates the two wire speeds (high and low) used in double pulse, which alternate with the frequency defined by the DOUBLE SPEED FREQ. parameter.

Adjustment range: minimum (0%) - default (50%) - maximum (100%)

5. DOUBLE SPEED DUTY
The parameter adjusts the high feed rate time.

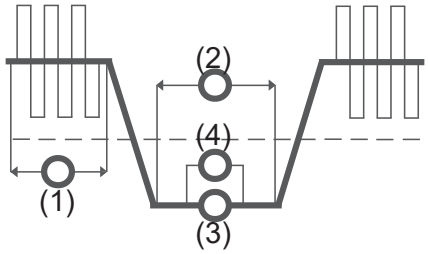
Adjustment range: minimum (10%) - default (50%) - maximum (90%)

6. DOUBLE SPEED ARC LEN.
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 low value in the MIG/MAG double pulsed process.

Adjustment range: minimum (-10) - default (0.0) - maximum (10)

Power Mix parameters

The parameters that can be adjusted from this menu only affect the POWER MIX welding process and do not change the "Arc length correction" and "Dynamics" parameters displayed on the main screen that refer only to the pulsed arc welding process.



1. PULSED ARC TIME CORRECTION

The parameter corrects the synergic value of the pulsed arc time.

Adjustment range: minimum (-0.20s) - default (0.00s) - maximum (1.00s)

2. SHORT ARC TIME CORRECTION

The parameter corrects the synergic value of the short arc time.

Adjustment range: minimum (-0.20s) - default (0.00s) - maximum (1.00s)

3. SHORT ARC WIRE SPEED CORRECTION

The parameter corrects the synergic value of the wire speed during the short arc period.

Adjustment range: minimum (0.0m/min) - default (0.0m/min) - maximum (5.0m/min)

4. SHORT ARC LENGTH CORRECTION

The parameter corrects the synergic value of the voltage.

Adjustment range: minimum (-10) - default (0.0) - maximum (+10)

5.3 JOB SELECTION SETTING

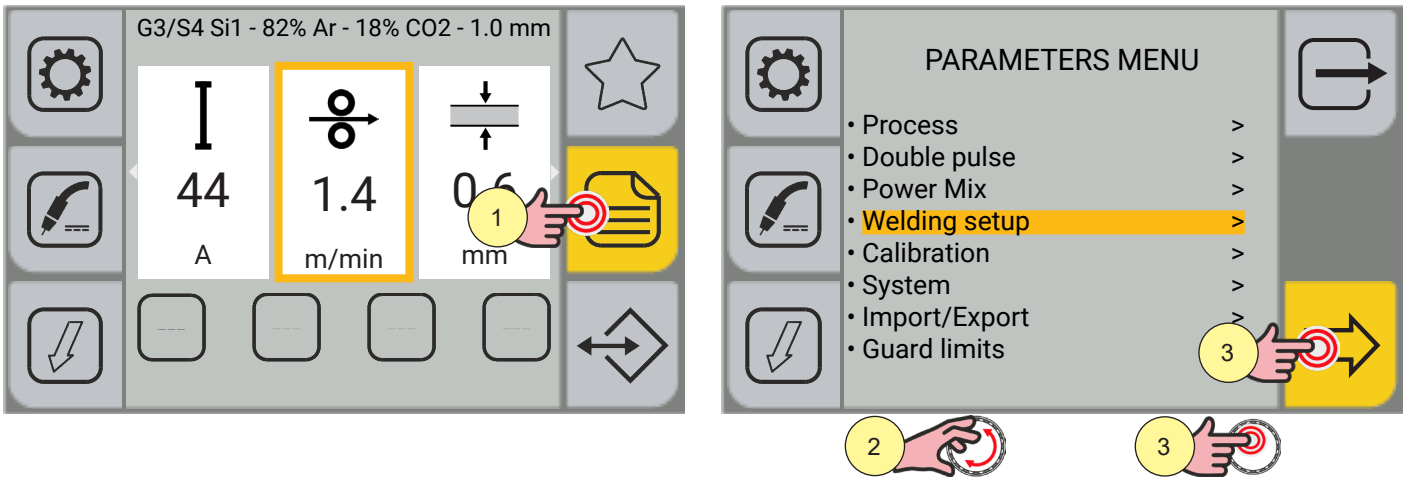
When the JOB SEL function is active, the torch trigger operates in 4-strokes or 4-strokes 3 levels with Bilevel functions disabled. Therefore, if jobs are saved with different modes, they are automatically provided according to these conditions (which are not saved).
It is possible to scroll through the JOBs in a sequence both when you are welding and when you are not welding, by pressing and releasing the torch trigger quickly.

Scrolling through JOBS with torch UP/DOWN keys

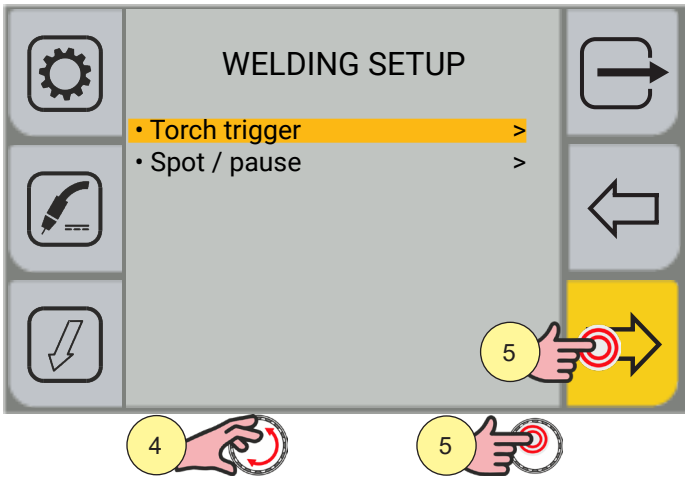
When an UP/DOWN torch is installed, JOBs can be selected in a JOB sequence using the buttons on the welding torch. To create the JOB sequence, leave a free memory location before and after the JOB group for which you want to create the sequence.

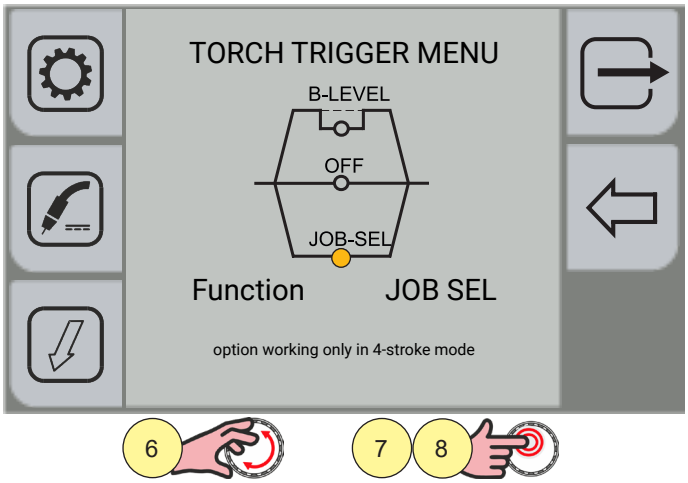
Sequence 1			JOB not saved	Sequence 2			JOB not saved	Sequence 3		
J.01	J.02	J.03		J.05	J.06	J.07		J.09	J.10	J.11

Select and load one of the JOBs belonging to the desired sequence (for example J.06).
Using the UP/DOWN keys on the torch you can now scroll through the JOBs in sequence 2 (J.05, J.06, J.07).
With the second UP/DOWN of the torch, the arc length is adjusted.



1. Press the [MENU] key.
2. Turn the encoder to select the desired item.
   Select the following path: Welding setup>
3. Press the [ENCODER] key to confirm the selection.



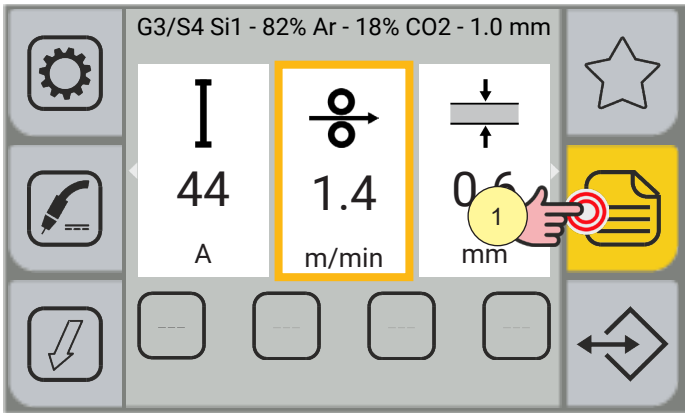


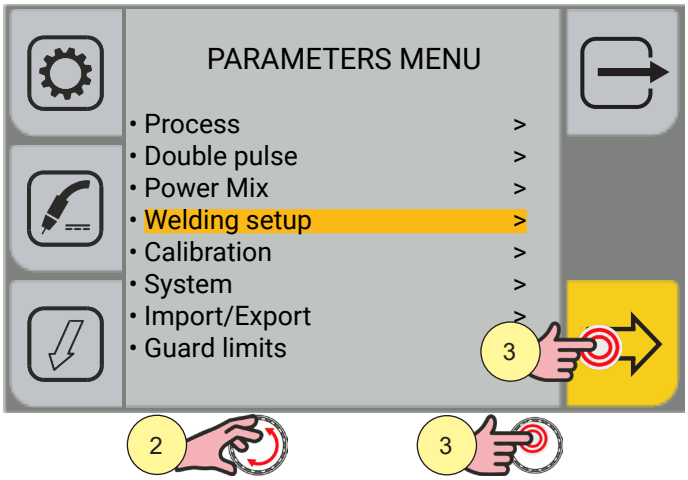
4. Turn the encoder to select the desired item.
   Select the following path: Torch trigger>
5. Press the [ENCODER] key to confirm the selection.
6. Press the [ENCODER] key to activate function selection.
7. Turn the encoder to select the JOB SEL function.
8. Press the [ENCODER] key to confirm the selection.

Press the ⇦ [PREV.] key to go back to the previous screen.

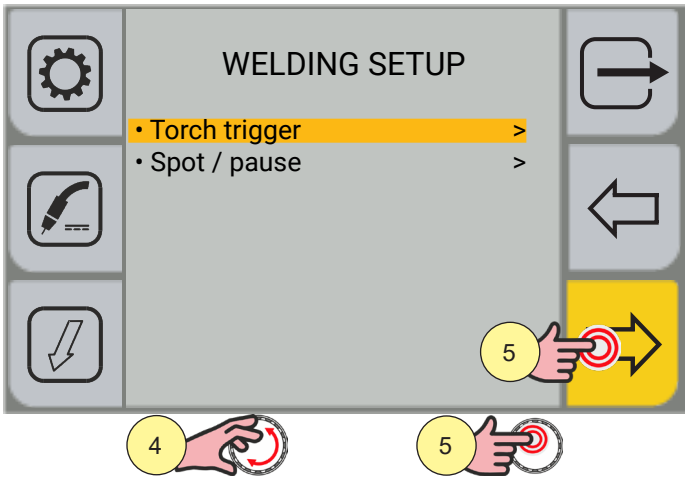
Press the ⇨ [EXIT] key to go back to the main screen.

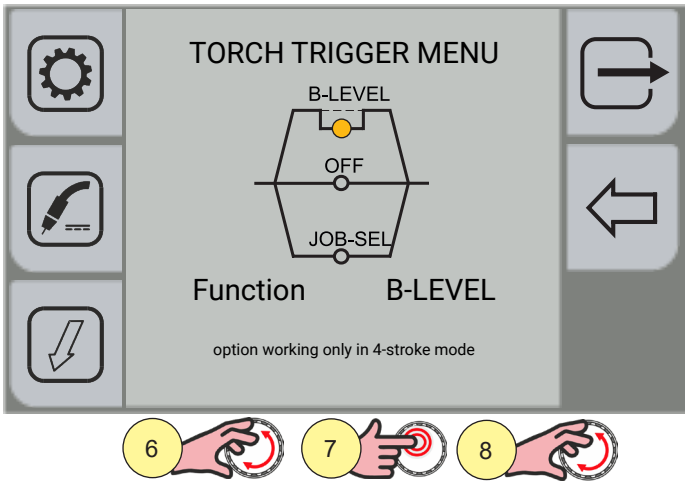
5.4 B-LEVEL SETTING



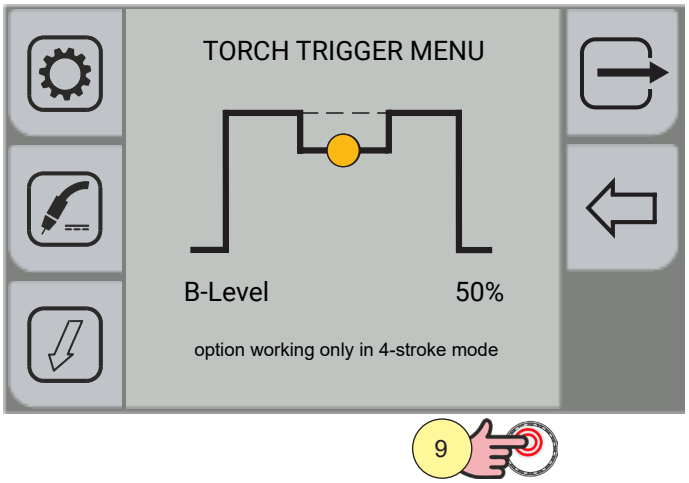


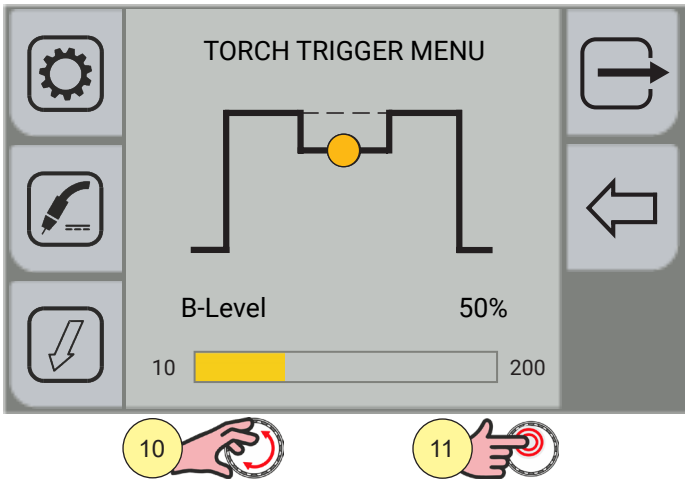
1. Press the [MENU] key.
2. Turn the encoder to select the desired item.
   Select the following path: Welding setup>
3. Press the [ENCODER] key to confirm the selection.





4. Turn the encoder to select the desired item.
   Select the following path: Torch trigger>
5. Press the [ENCODER] key to activate function selection.
6. Turn the encoder to select the B-LEVEL function.
7. Press the [ENCODER] key to confirm the selection.
8. Turn the encoder to display the B-LEVEL parameter graph.





9. Press the [ENCODER] key to activate the parameter change.
10. Turn the encoder to set the desired value.
11. Press the [ENCODER] key to confirm the selection.

Press the ⇦ [PREV.] key to go back to the previous screen.

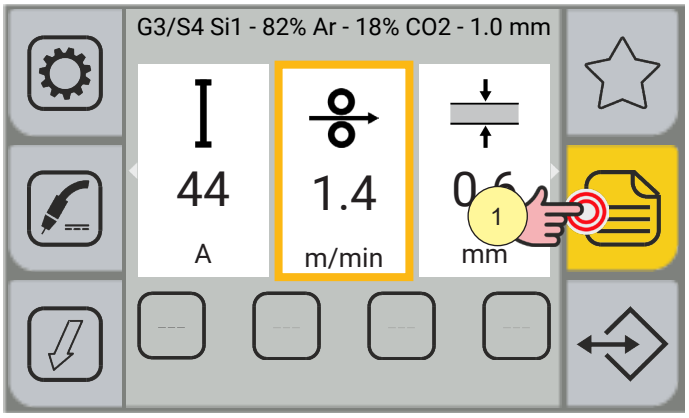
Press the ⇨ [EXIT] key to go back to the main screen.

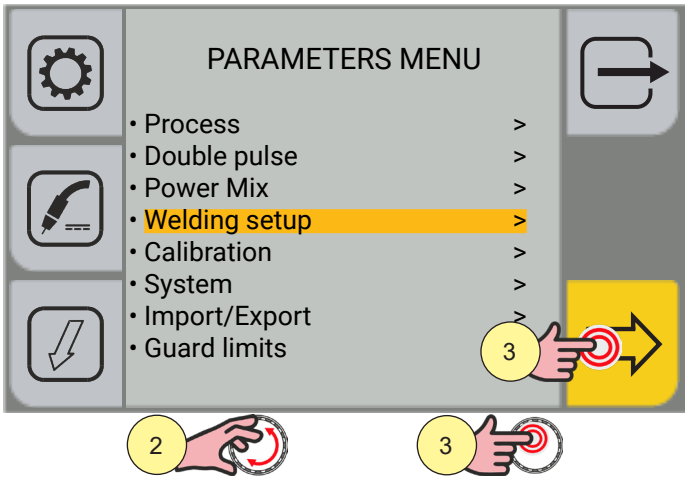
B-LEVEL CURRENT

- The parameter enables a special torch trigger function.
- Pressing and releasing the torch trigger rapidly in welding mode (in 2 strokes) 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 (in 3 strokes) operate the torch trigger with a prolonged press. When the trigger is released the welding cycle will close (4 strokes).

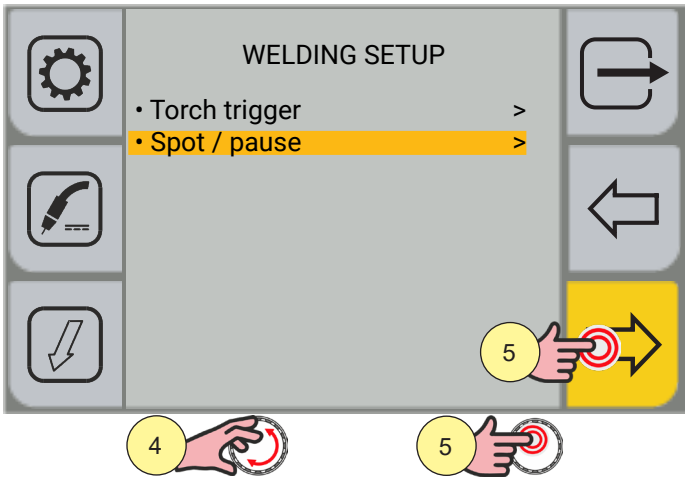
Adjustment range: minimum (10%) - default (50%) - maximum (200%)

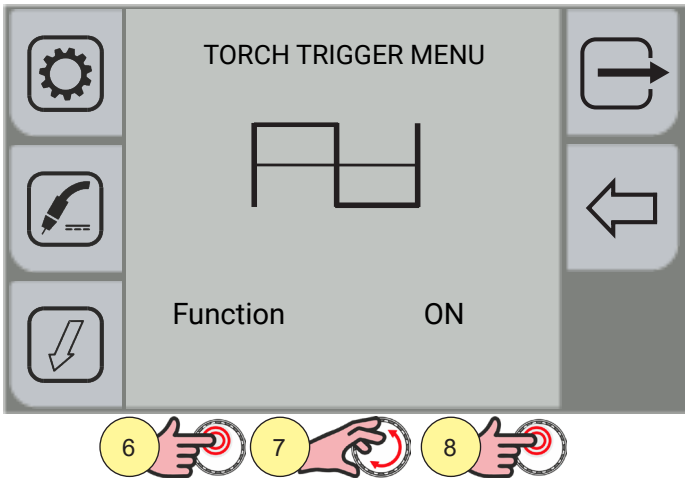
5.5 SPOT/PAUSE FUNCTION SETTING



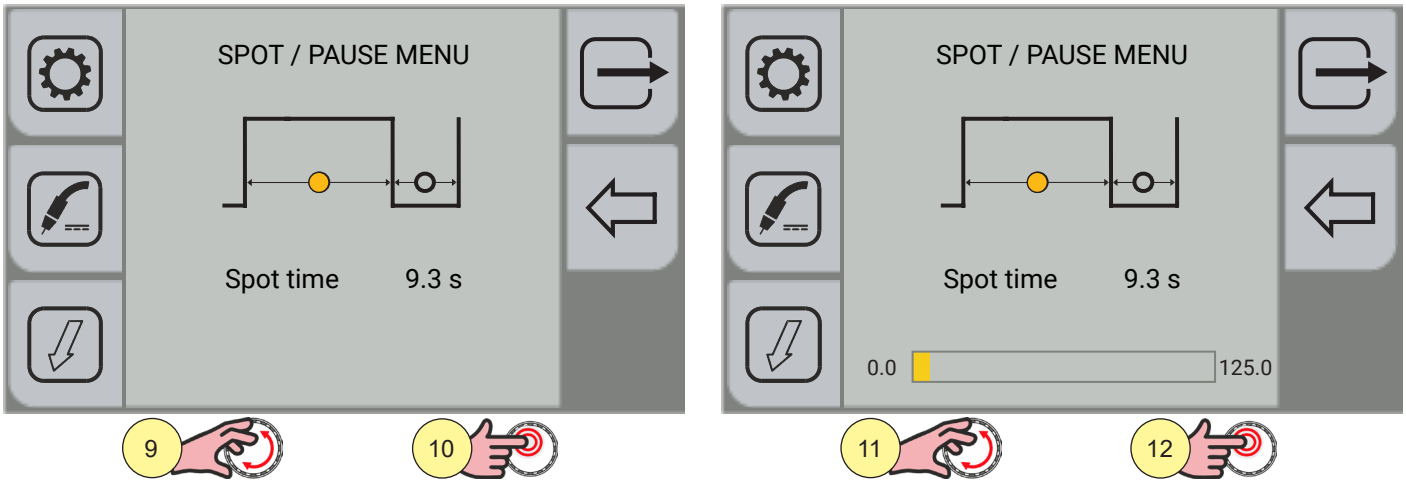


1. Press the [MENU] key.
2. Turn the encoder to select the desired item.
   Select the following path: Welding setup>
3. Press the [ENCODER] key to confirm the selection.





4. Turn the encoder to select the desired item.
   Select the following path: Spot/pause>
5. Press the [ENCODER] key to confirm the selection.
6. Press the [ENCODER] key to activate function selection.
7. Turn the encoder to select the desired item. Select the following path: ON
8. Press the [ENCODER] key to confirm the selection.



9. Turn the encoder to select the desired parameter.
10. Press the [ENCODER] key to activate the parameter change.
11. Turn the encoder to set the desired value.
12. Press the [ENCODER] key to confirm the selection.

Press the [PREV.] key to go back to the previous screen.

Press the [EXIT] key to go back to the main screen.

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.

Adjustment range: minimum (0.0 s) - default (0.0 s) - maximum (125.0 s)

PAUSE TIME

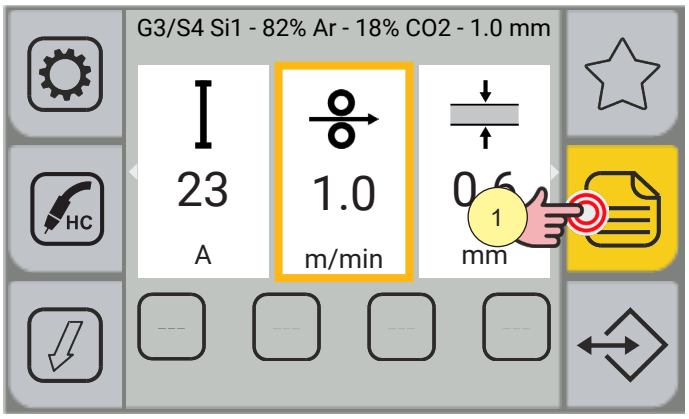
The parameter sets the pause time after the spot pulse.

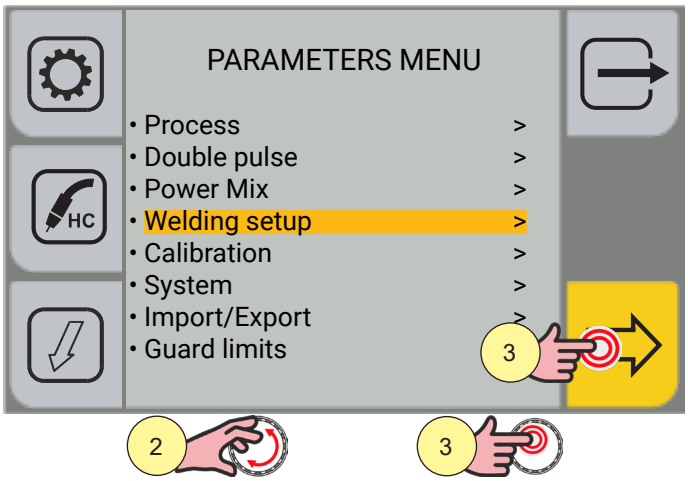
Adjustment range: minimum (0.0 s) - default (0.0 s) - maximum (125.0 s)

5.6 K DEEP PROCEDURE SETTING

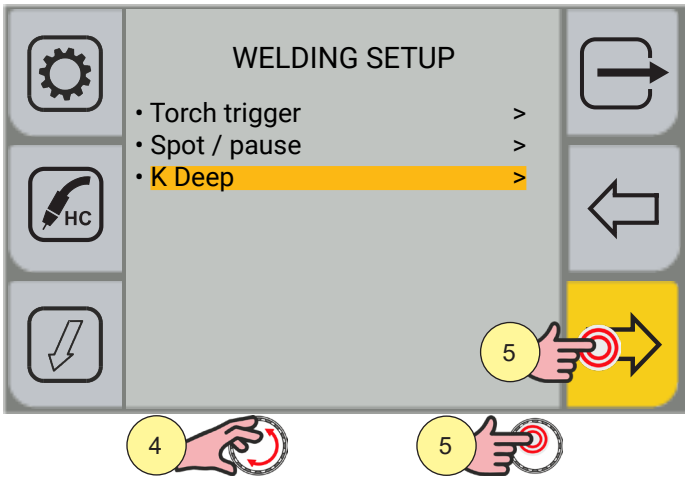
Information: The process can be enabled when a HC curve is loaded.

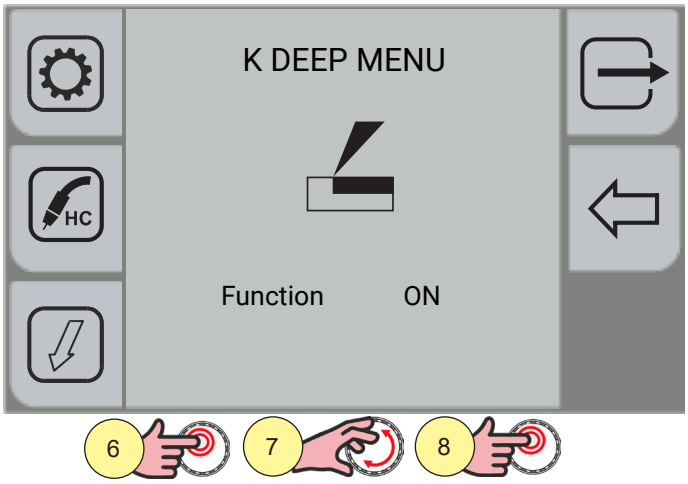
K DEEP is a penetration stabilisation process that uses variation in wire speed to maintain a constant arc height and achieve a more uniform weld bead width and depth.





1. Press the [MENU] key.
2. Turn the encoder to select the desired item.
   Select the following path: Welding setup>
3. Press the [ENCODER] key to confirm the selection.

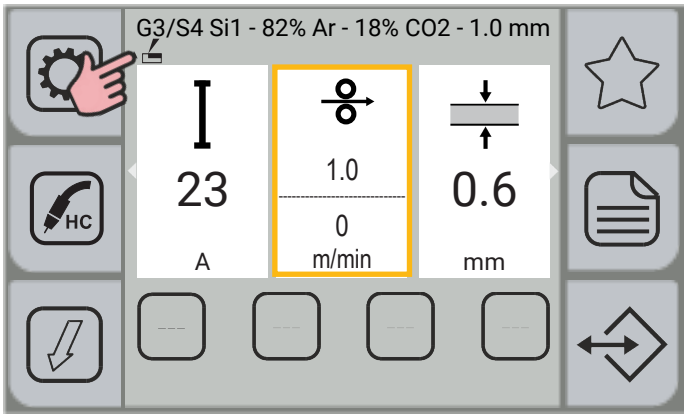




4. Turn the encoder to select the desired item.
   Select the following path: K Deep>
5. Press the [ENCODER] key to confirm the selection.
6. Press the [ENCODER] key to activate function selection.
7. Turn the encoder to select the desired item.
   Select the following path: ON
8. Press the [ENCODER] key to activate the selection.

Press the ⇦ [PREV.] key to go back to the previous screen.

Press the ⇨ [EXIT] key to go back to the main screen.



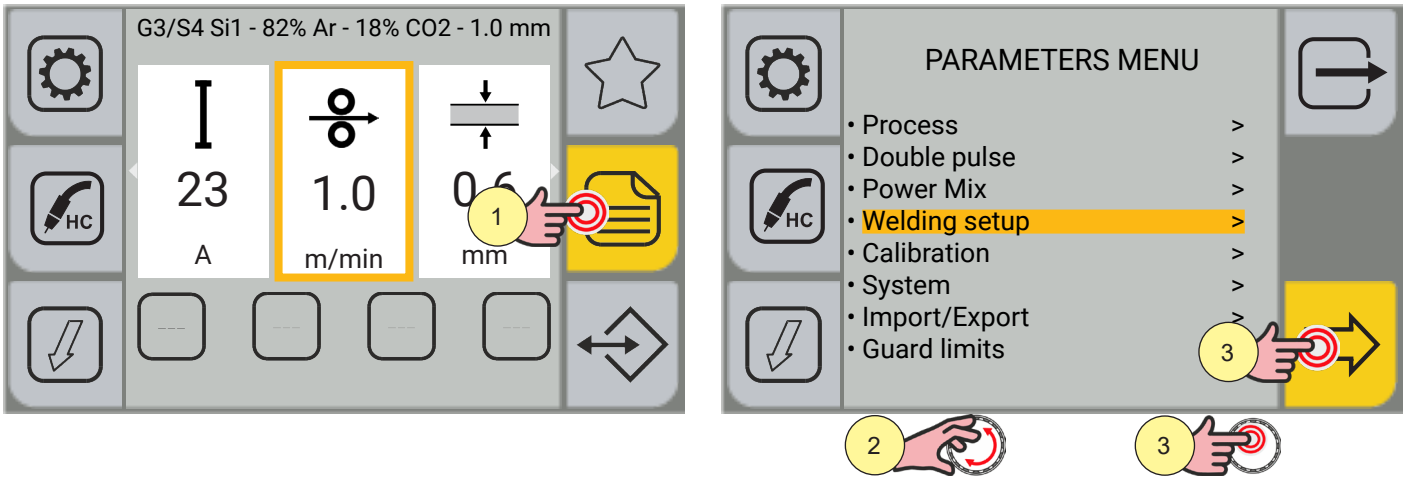
Turn the encoder to select the desired item.
Select the following path: ON
The WIRE SPEED parameters window is divided into two parts; the top part displays the value set by the user, whereas the bottom part displays the actual value delivered by the equipment.

5.7 DSI (DIGITAL SENSE IGNITION) PROCEDURE SETTING

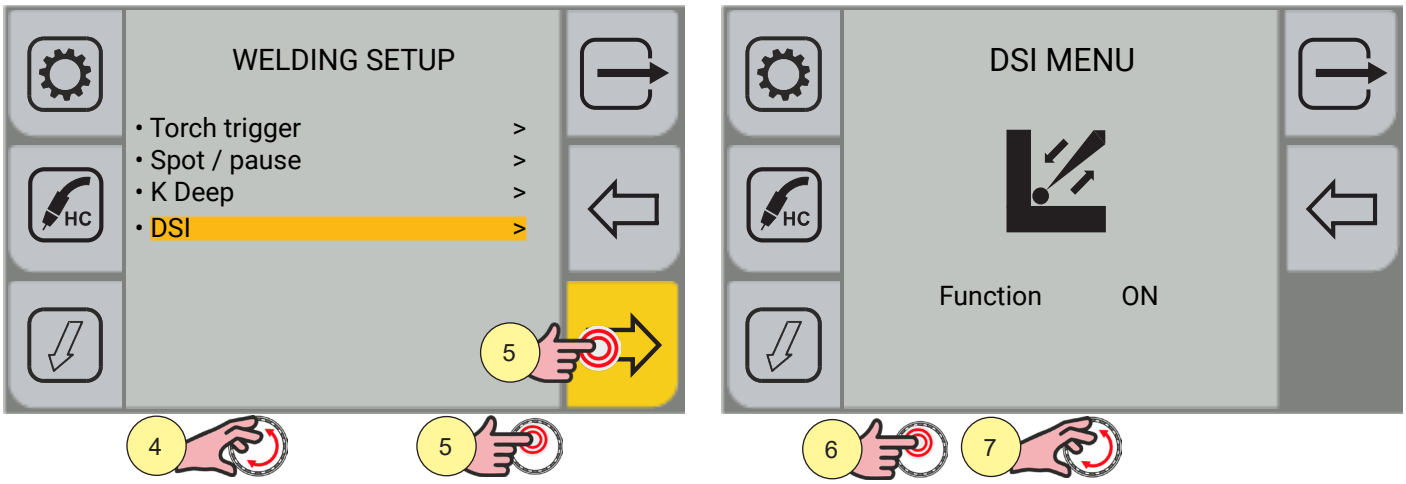
Information: The process can be enabled when a HCcurve is loaded.

Digital Sense Ignition allows for the almost total reduction of spatter and explosions of the wire during the cold striking phase and the energy transmitted to the piece. DSI allows for the following:

- decrease striking projections on stainless steels by 60%;
- decrease striking projections on carbon steels by 30%;
- optimise short-circuit wire striking with a significant reduction in spatter and explosions.



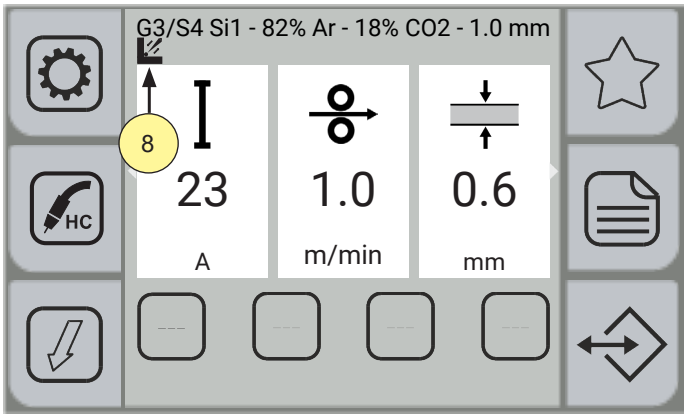
1. Press the [MENU] key.
2. Turn the encoder to select the desired item.
   Select the following path: Welding setup>
3. Press the [ENCODER] key to confirm the selection.



4. Turn the encoder to select the desired item.
   Select the following path: DSI>
5. Press the [ENCODER] key to confirm the selection.
6. Press the [ENCODER] key to activate function selection.
7. Turn the encoder to select the desired item.
   Select the following path: ON

Press the ⇦ [PREV.] key to go back to the previous screen.

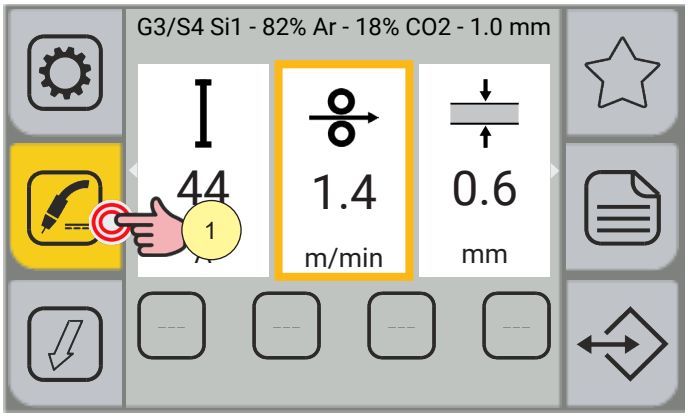
Press the ⇨ [EXIT] key to go back to the main screen.

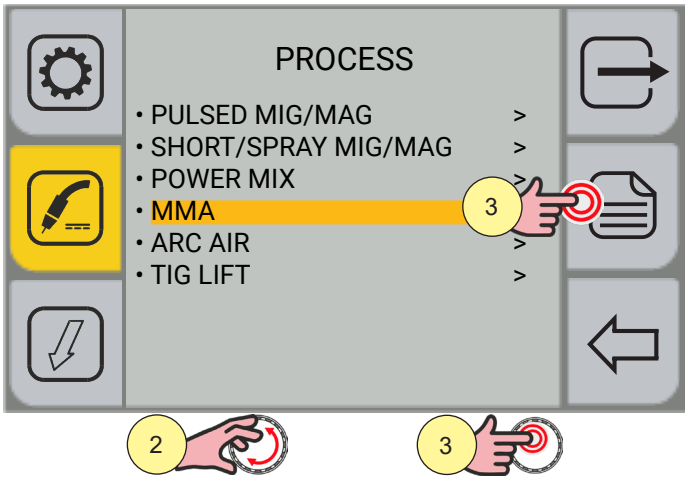


8. Below the wording of the synergic curve, the activated DSI procedure icon appears.

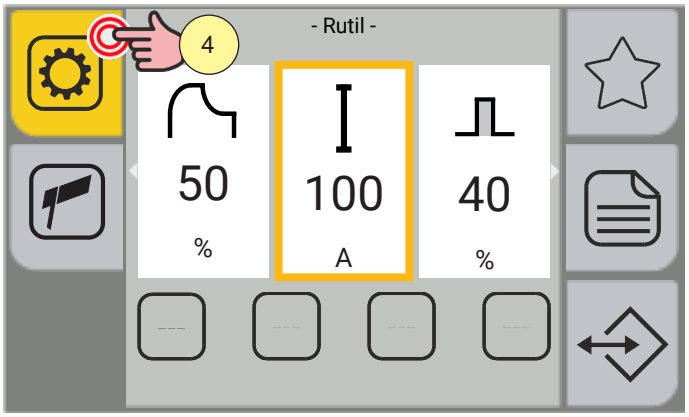
6 MMA WELDING

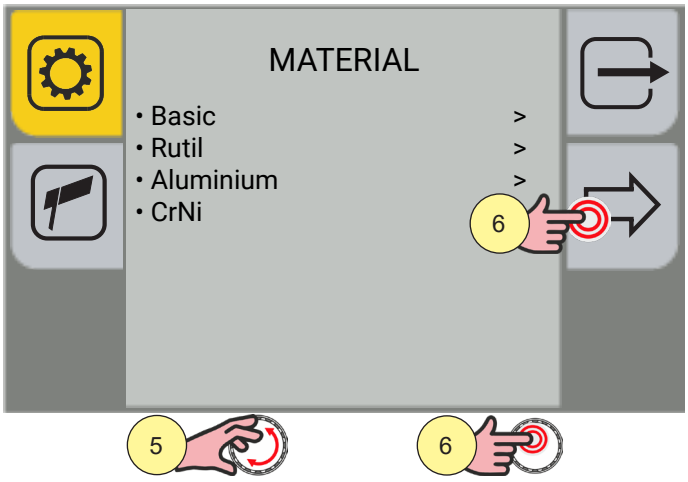
6.1 MMA WELDING PROCESS





1. Press the [PROCESS] key.
2. Turn the encoder to select the desired setting.
   Select the following path: MMA
3. Press the [ENCODER] key or the [SAVE] key to confirm.





4. Press the [PROGRAM] key.
5. Turn the encoder to select the desired setting.

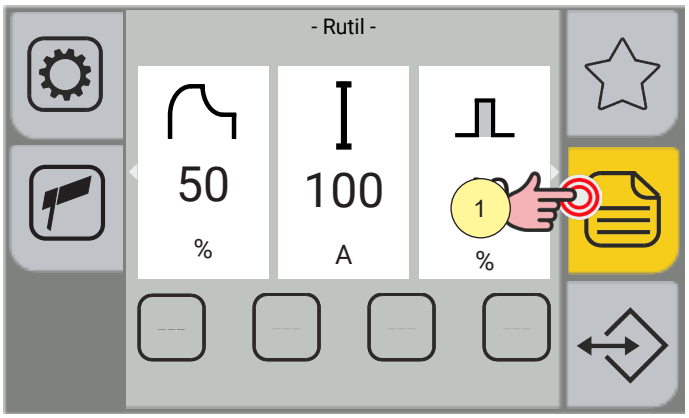
○ (Basic, Rutil, Aluminium, CrNi)

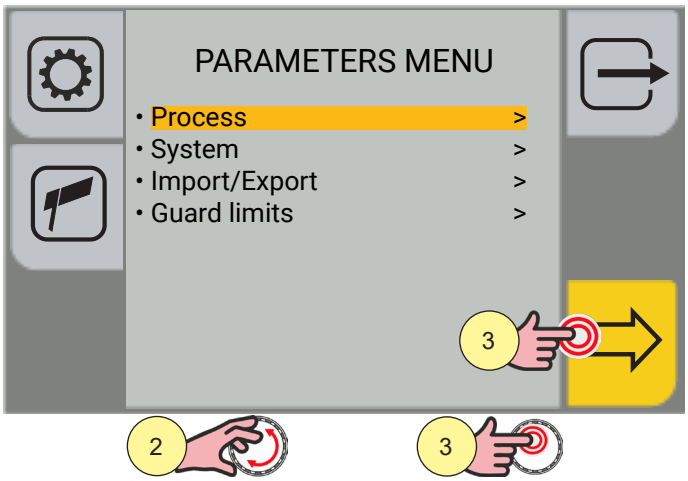
6. Press the [ENCODER] key or the [NEXT] key to confirm.

Press the  key to exit the screen.

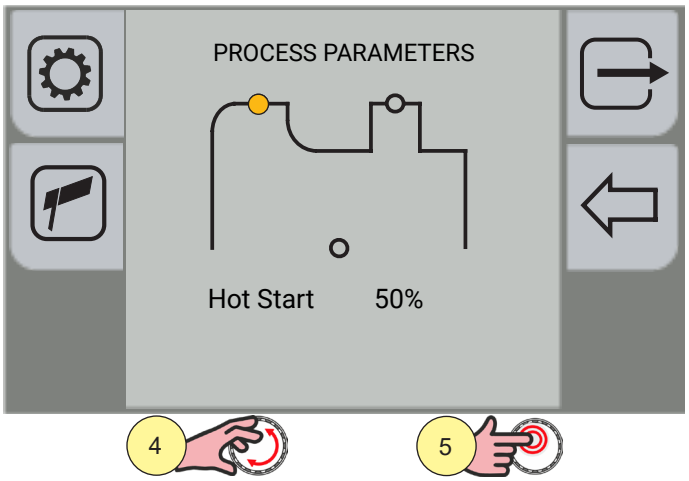
6.2 PROCESS PARAMETERS SETTING

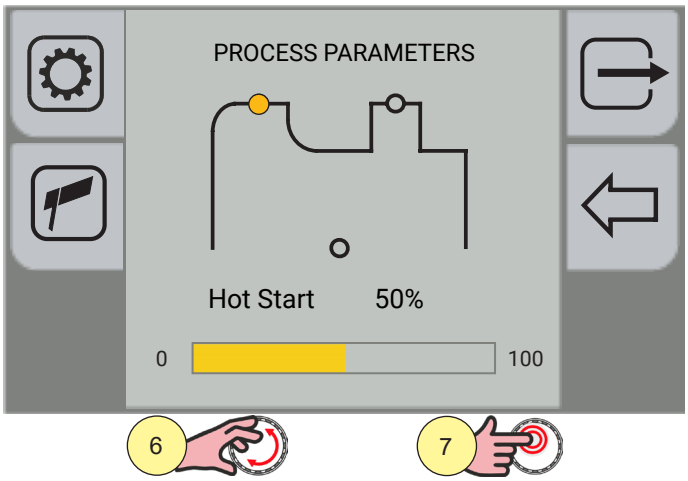
The [PARAMETERS MENU] key gives access to the menu by means of which the main characteristics of the weld are set.



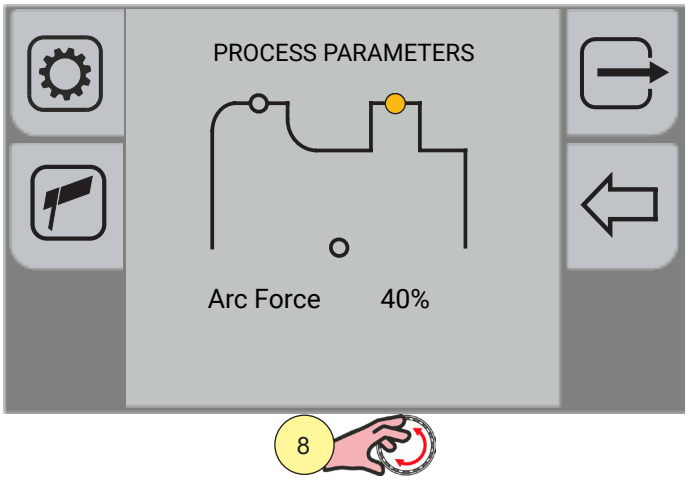


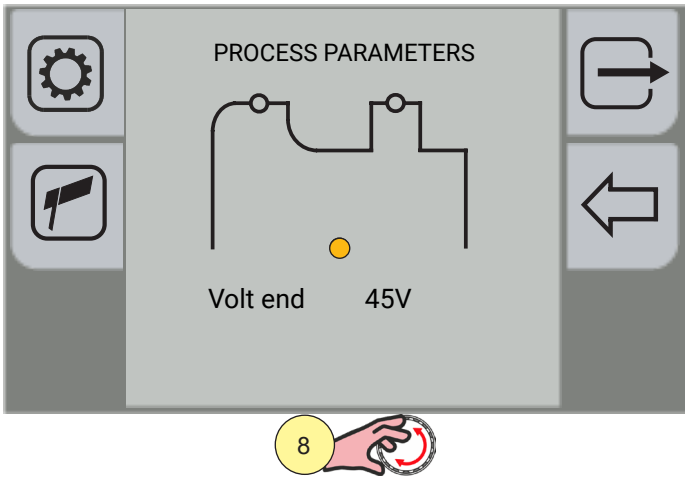
1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: Process>
3. Press the [ENCODER] key or the [NEXT] key.

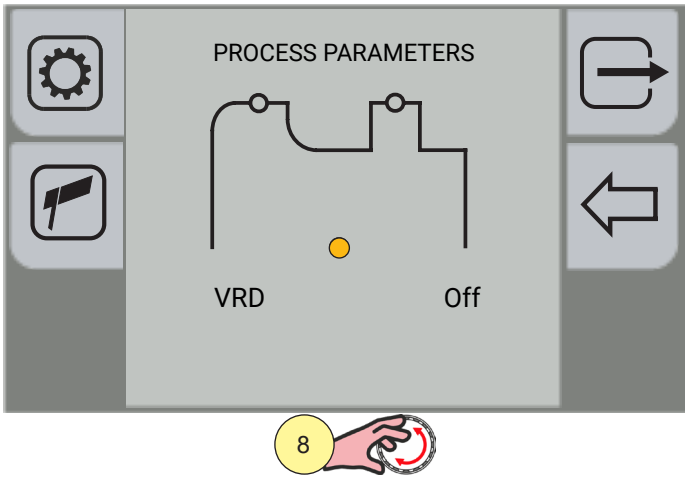




4. Turn the encoder to select the parameter to be modified.
5. Press the [ENCODER] key to confirm.
6. Turn the encoder to set the desired value.
7. Press the [ENCODER] key to confirm.



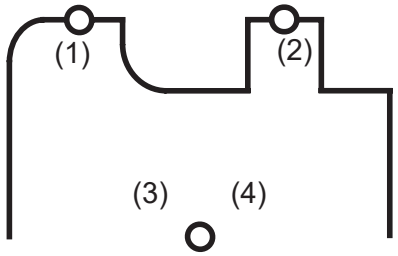




8. Turn the encoder again to select other parameters.

Press the [EXIT] key to go back to the main screen.

MMA Parameters (Parameters Menu)



1. HOT START

This parameter aids electrode melting at the time of arc striking. It is set as a percentage referring to the WELDING CURRENT value. The value is limited to 250A max.

Adjustment range: minimum (0%) - default (50%) - maximum (100%)

2. ARC FORCE

This parameter helps to avoid electrode sticking during welding. It is set as a percentage referring to the WELDING CURRENT value.

Adjustment range: minimum (0%) - default (40%) - maximum (200%)

3. VOLT END

This parameter sets the voltage value for which the weld is exited by lifting the electrode. To exit MMA welding, it is generally necessary to lift the electrode considerably; setting the parameter to a low value ends the welding operation with minimal lifting of the electrode and less spatter is generated and the workpiece remains cleaner.
Pay attention to the fact that too low a value can lead to frequent welding interruptions.

Adjustment range: minimum (20 V) - default (45 V) - maximum (70 V)

4. VRD

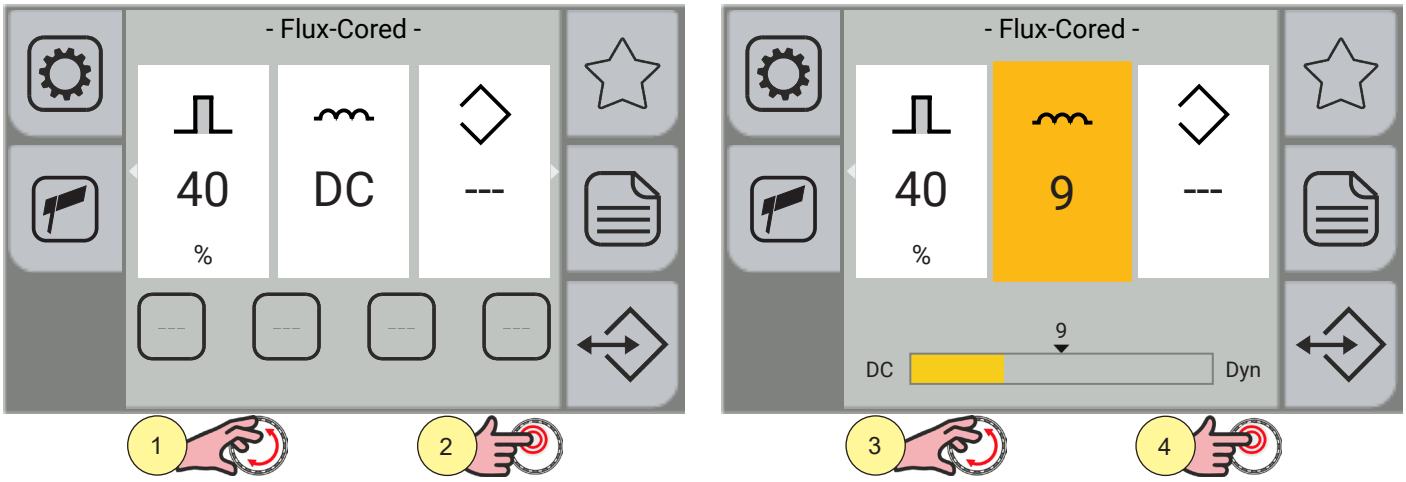
The parameter activates or deactivates the VRD function.
This parameter reduces the voltage between the welding sockets, when not welding.
The arc striking procedure is the following:

- Touch the workpiece with the tip of the electrode.
- Raise the electrode.
- The voltage is released for a few seconds.
- Touch the workpiece with the tip of the electrode.
- The welding arc is triggered.

Adjustment range: minimum (Off) - default (Off) - maximum (On)

MMA parameters (main screen)

From the main screen, it is possible to set other welding parameters in addition to those in the parameters menu.



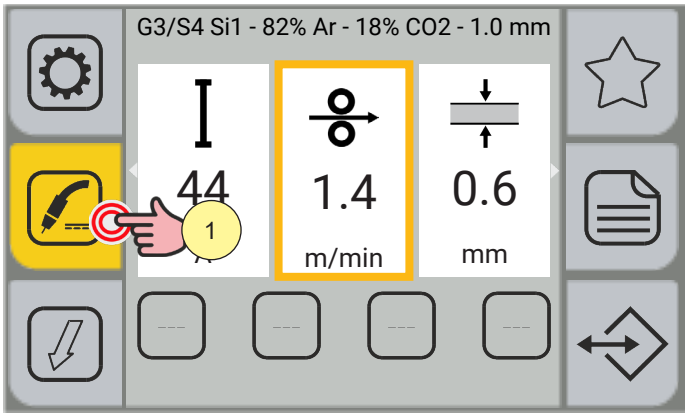
1. Turn the encoder to select the parameter to be modified.
2. Press the encoder key to confirm.
3. Turn the encoder to set the desired value.
4. Press the encoder key to confirm.

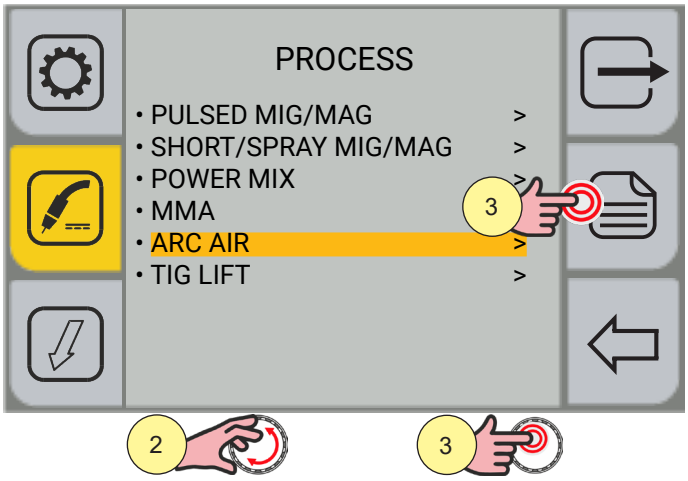
DC	**INDUCTANCE** With low values, this parameter allows for a softer arc with less spatter or, with high values, it allows for a harder and more stable arc. With the "DC" (direct current) setting, the set welding current is supplied in a constant manner. This setting is particularly suitable for welds made with basic, rutil and stainless steel electrodes. With the "dyn" setting, the power delivered is kept constant (lifting the electrode increases the arc voltage but decreases the current delivered) This setting is particularly suitable for welds made with cellulose electrodes for root passes on pipes and aluminium electrodes to improve arc stability, especially at low current values. Adjustment range: minimum (DC direct current) - default (DC) - maximum (Dyn)

Turn the encoder again to select other parameters.

7 ARC AIR WELDING

7.1 ARC AIR PROCESS SETTING

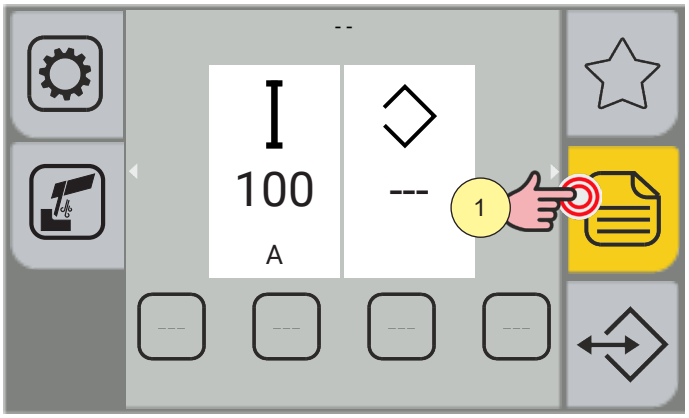


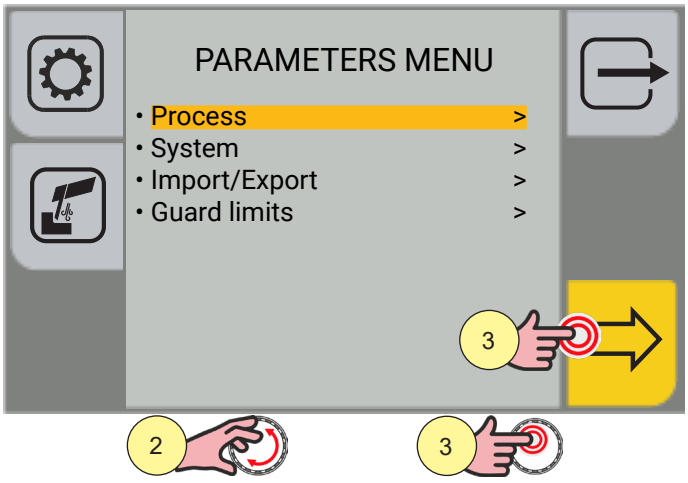


1. Press the [PROCESS] key.
2. Turn the encoder to select the desired setting.
   Select the following path: ARC AIR
3. Press the [ENCODER] key or the [SAVE] key to confirm.

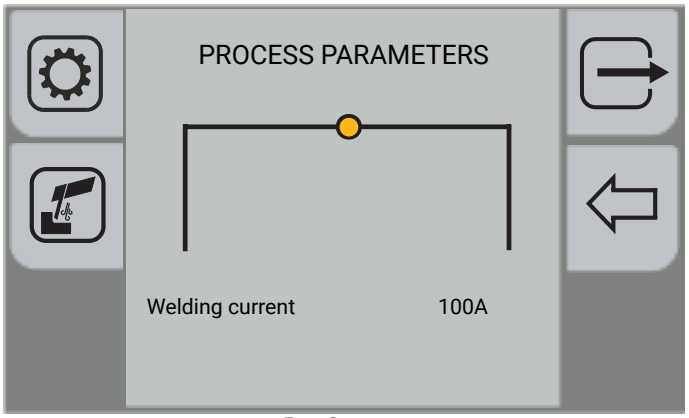
Process Parameters setting

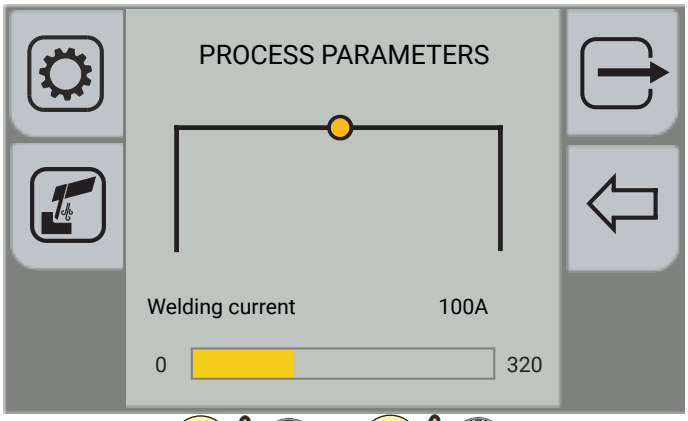
The [PARAMETERS MENU] key gives access to the menu by means of which the main characteristics of the weld are set.





4. Press the [MENU] key.
5. Turn the encoder to select the desired setting.
   Select the following path: Process>
6. Press the [ENCODER] key or the [NEXT] key.



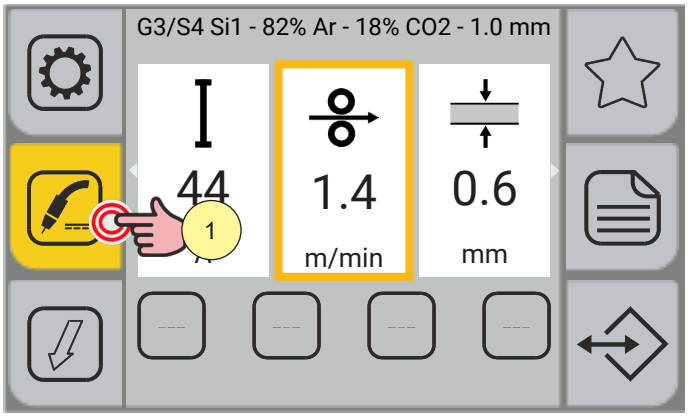


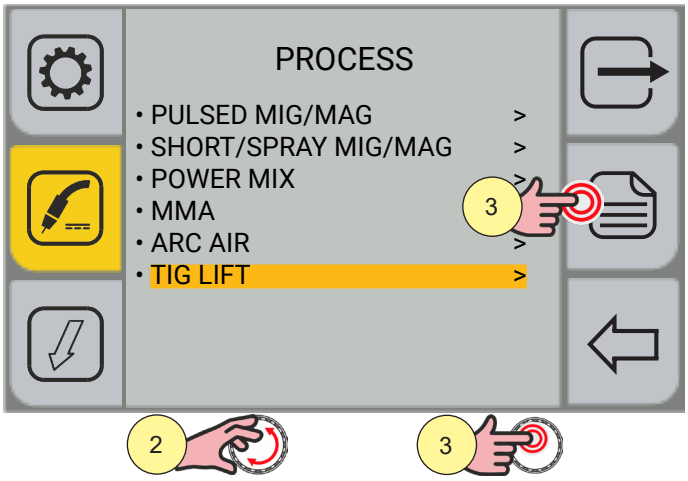
7. Press the [ENCODER] key to confirm.
8. Turn the encoder to set the desired value.
9. Press the [ENCODER] key to confirm.

Press the  [EXIT] key to go back to the main screen.

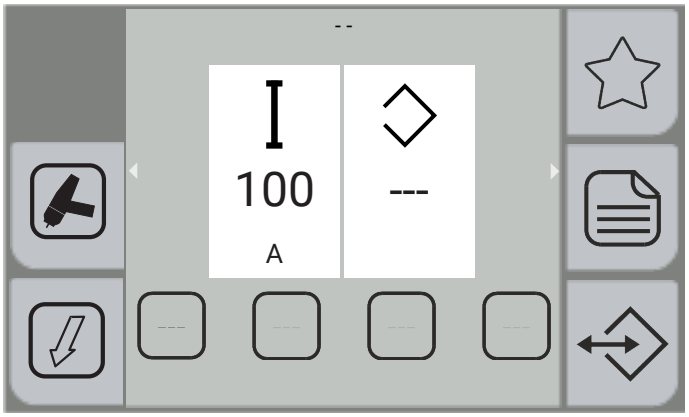
8 TIG LIFT WELDING

8.1 TIG LIFT PROCESS SETTING



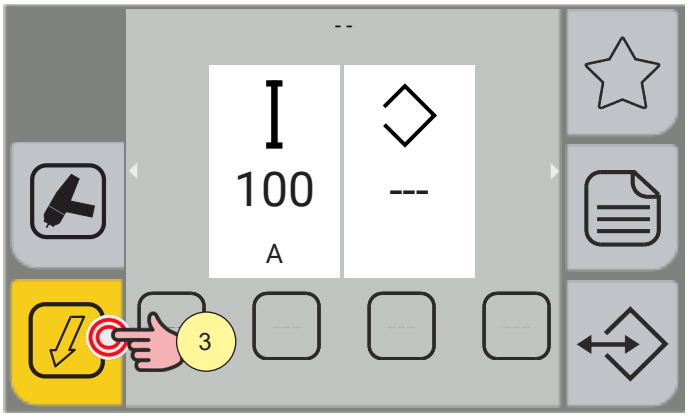


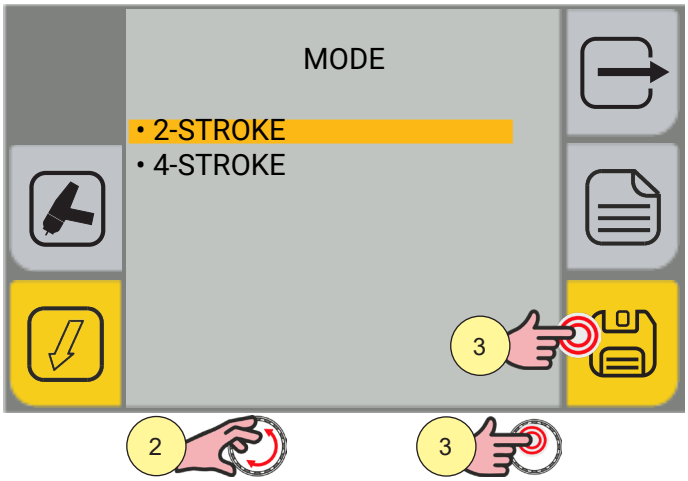
1. Press the [PROCESS] key.
2. Turn the encoder to select the desired setting. Select the following path: TIG LIFT
3. Press the [ENCODER] key or the [SAVE] key to confirm.



Press the  key to exit the screen.

8.2 TIG TORCH TRIGGER MODE SETTING



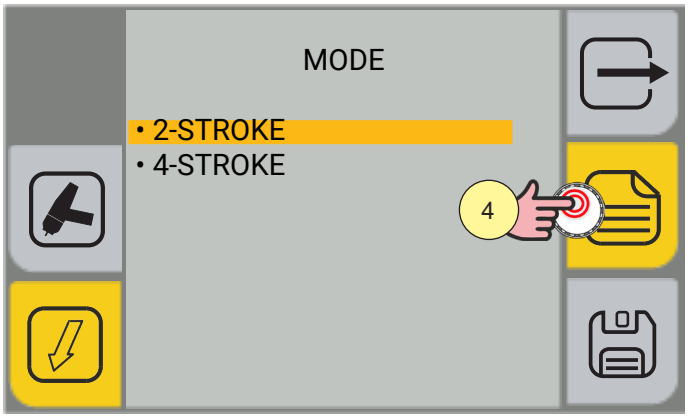


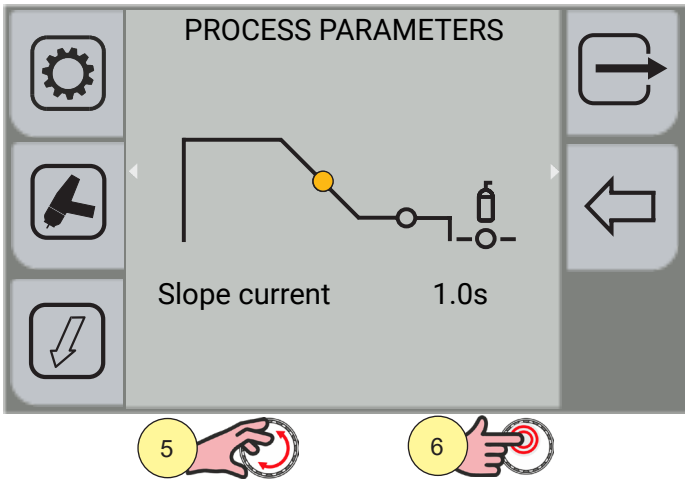
1. Press the [MODE] key.

○ Within the menu screen, it is possible to select the torch trigger mode.

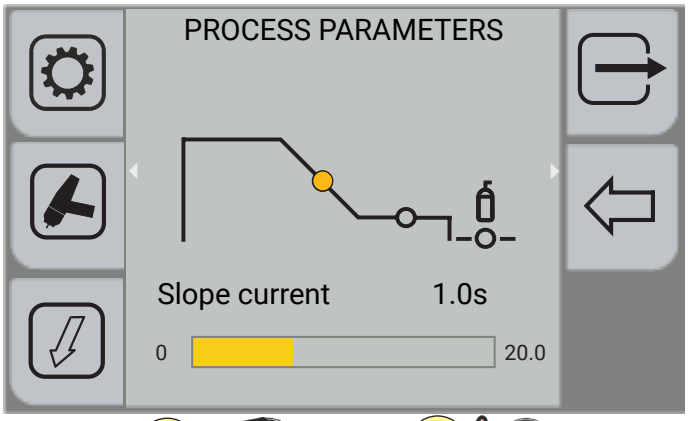
(2-STROKE) - (4-STROKE)

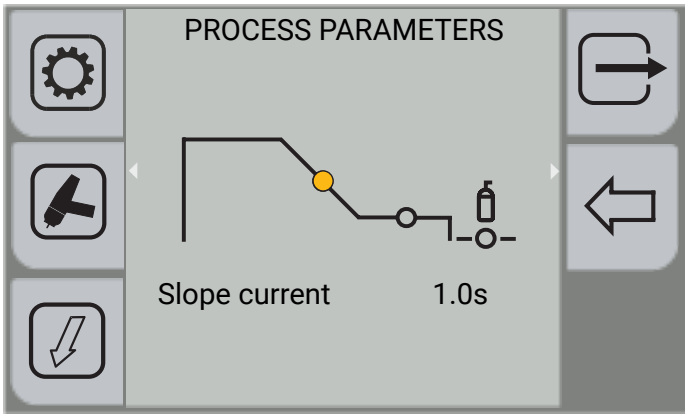
2. Turn the encoder to select the desired setting.
3. Press the [ENCODER] key or the [SAVE] key to set the torch trigger mode only, otherwise continue with the action in step (4).



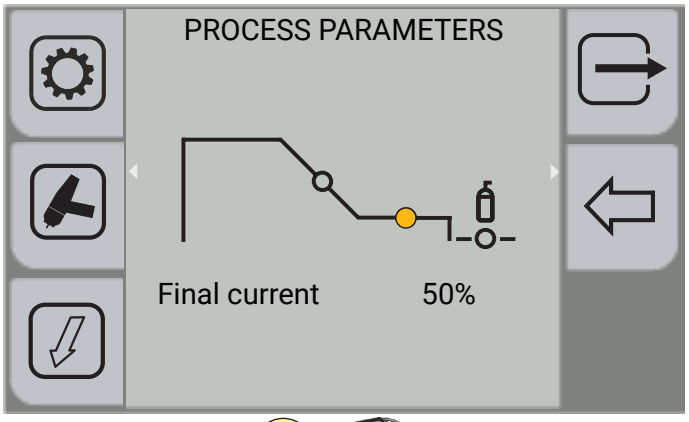


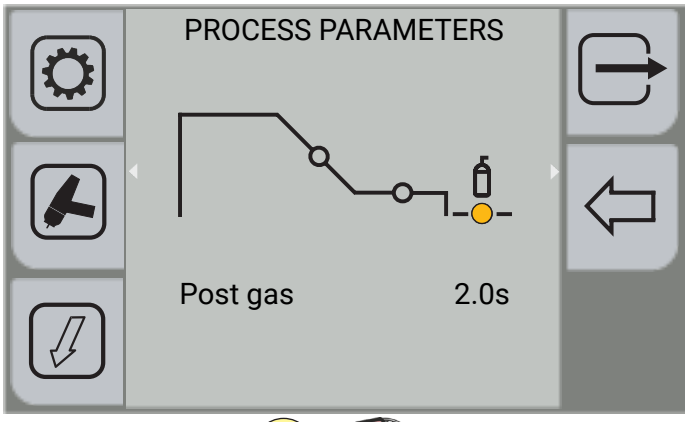
4. Press the [MENU] key.
5. Turn the encoder to select the desired setting.
6. Press the [ENCODER] key or the [NEXT] key.





7. Turn the encoder to set the desired value.
8. Press the [ENCODER] key to confirm.

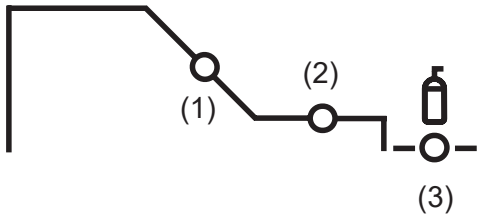




9. Turn the encoder again to select other parameters.
10. Turn the encoder again to select other parameters.

Press the [EXIT] key to go back to the main screen.

Process parameters with torch trigger in 2-strokes and 4-strokes mode



1. SLOPE CURRENT

The parameter sets the time in which the current is brought from the welding current value to the final current value via a slope. Prevents the formation of craters in the process of turning off the arc.

Adjustment range: minimum (0.0 s) - default (1.0 s) - maximum (20.0 s)

2. FINAL CURRENT

The parameter sets the final current value. During filler welding, the parameter makes it possible to achieve a uniform deposit from the start to the end of the welding process, by closing the deposit crater with enough current to deposit a final drop of filler material.

Adjustment range: minimum (5%) - default (50%) - maximum (80%)

3. POST GAS

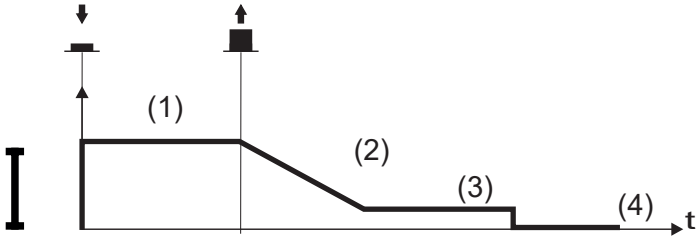
Time of post gas delivery when the welding arc is extinguished.

Adjustment range: minimum (0.0 s) - default (2.0 s) - maximum (20.0 s)

TIG LIFT 2T operation

: press the torch trigger

: release the torch trigger



4. welding current
5. slope current
6. final current
7. post gas

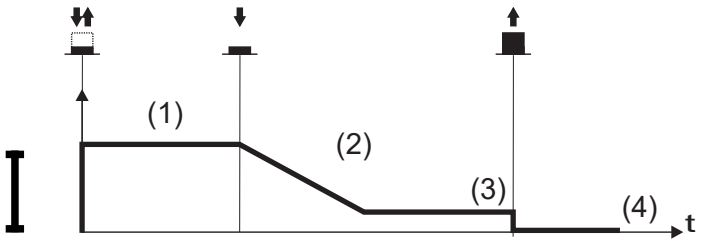
- Touch the workpiece with the torch electrode.
- Press (1T) and keep the torch trigger pressed.
- Slowly raise the torch to trigger the arc.
- The welding current reaches the set value.
- Release (2T) trigger to start the weld completion procedure.
- The current reaches the final current value in a time equal to the descent slope.
- The arc is extinguished.
- The gas flow continues for a time equal to the post gas.

TIG LIFT 4T operation

: press the torch trigger

: release the torch trigger

: press and release the torch trigger

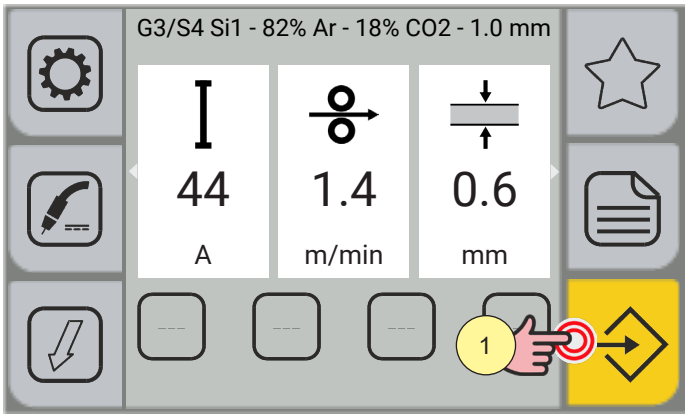


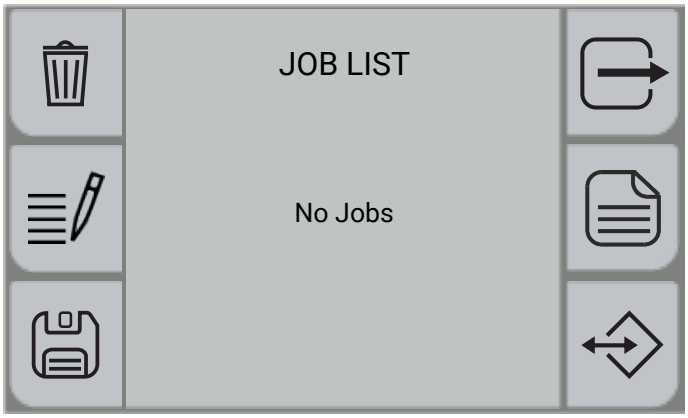
8. welding current
9. slope current
10. final current
11. post gas

- Touch the workpiece with the torch electrode.
- Press (1T) and release (2T) the torch trigger.
- Slowly raise the torch to trigger the arc.
- The welding current reaches the set value.
- Press (3T) trigger and keep it pressed to start the weld completion procedure.
- The current reaches the final current value in a time equal to the descent slope.
- The electric arc remains on and a current equal to the final current is delivered.
- In these conditions it is possible to close the weld pool (crater filler current).
- Release (4T) the button to stop the arc.
- The gas flow continues for a time equal to the post gas.

9 JOB MANAGEMENT

Personalised welding settings, or JOBs, can be saved in memory locations and subsequently uploaded.
The Job is the saving of the image of all the parameters set in the device. By parameters we mean the values of wire speed, welding arc length, inductance/dynamics, slopes, torch trigger mode, process, program used, special functions, guard limits, etc ...
The settings of the SETUP menu are not saved.
There are 100 JOBs available.
This function is available when welding mode is not active.

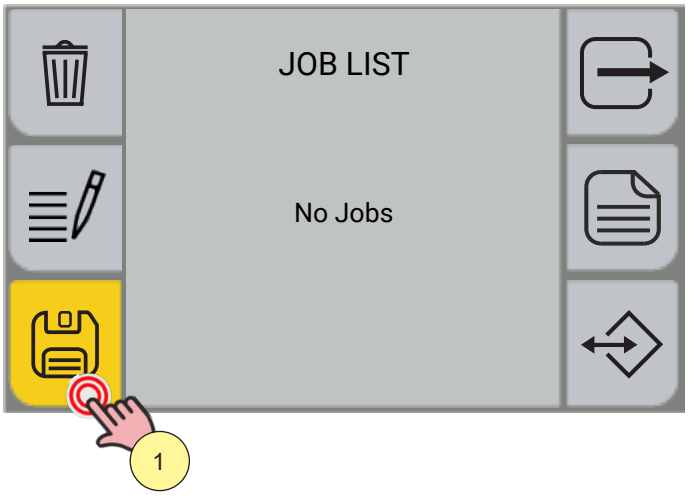


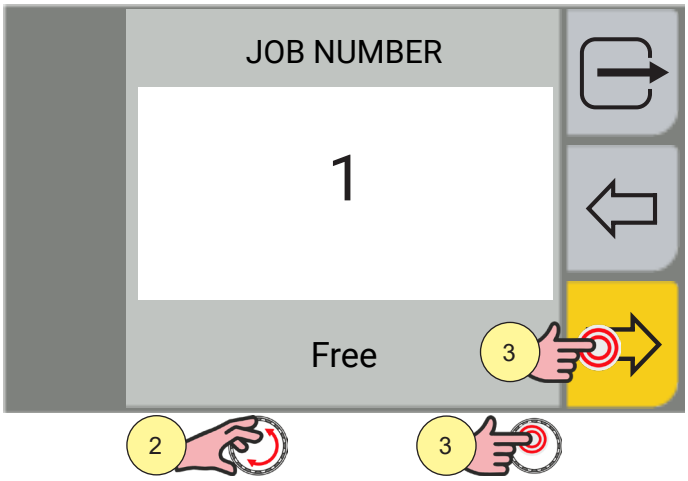


1. To enter the JOB menu, press the [JOB] key.

9.1 CREATE A JOB

Enter the JOB screen.

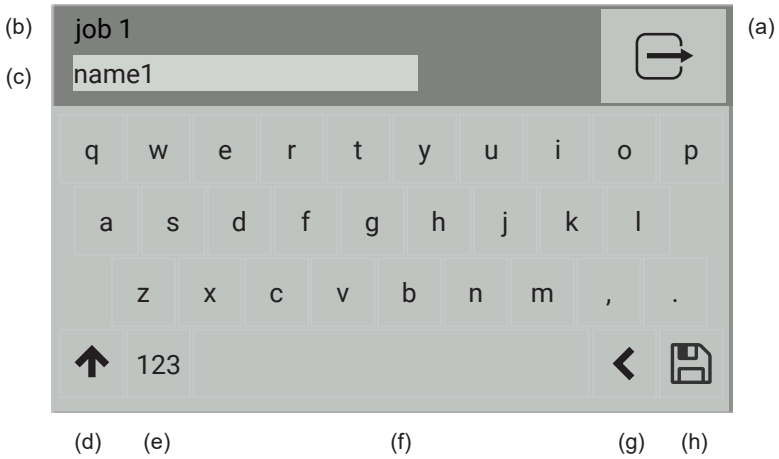




1. Press the [CREATE JOB] key.
   The screen to select the position of the JOB appears.
2. Select the position of the JOB using the encoder.
3. Press the encoder key or the [NEXT] key to confirm the position.
   The keyboard for typing the name appears.

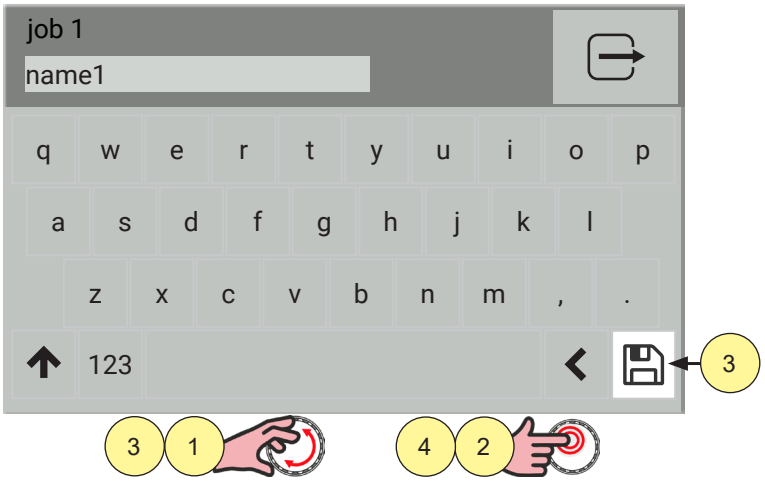
Keyboard functions

a. exit and cancel changes
b. JOB position
c. JOB text
d. uppercase
e. numbers/special characters
f. spacebar
g. delete text
h. save



Information The panel is of the touch screen type; settings can be made both by means of the mechanical keys and by touching the icons that appear on the screen.

Name a job

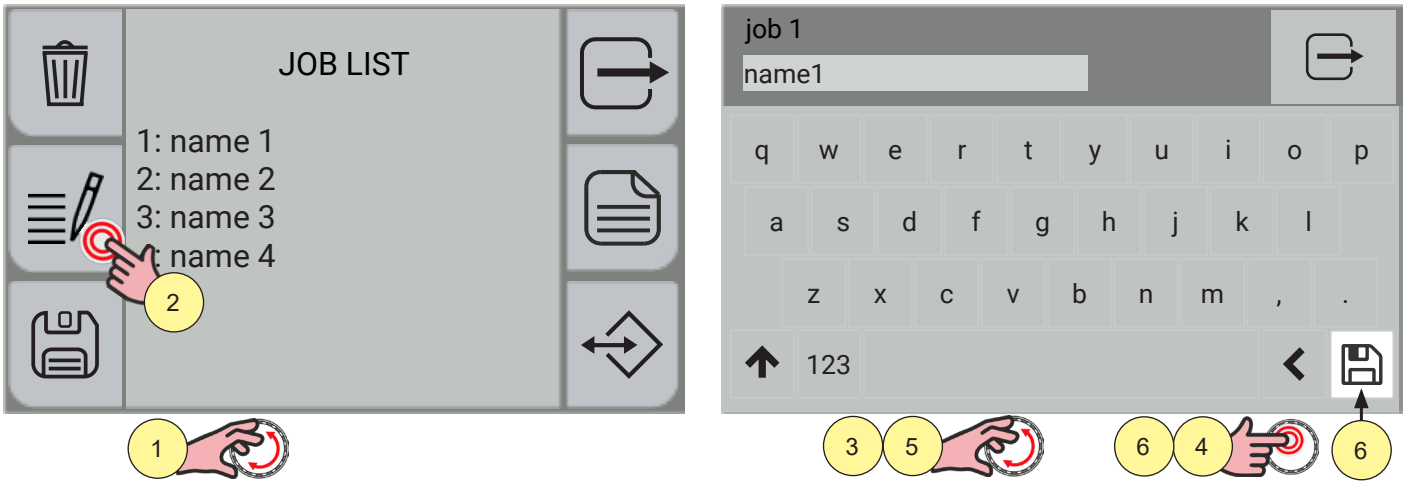


1. Turn the encoder to select the letter on the keyboard.
2. Press the encoder key to confirm the selection.
3. Turn the encoder to select the [SAVE] symbol on the keyboard
4. Press the encoder key to save and exit.

Press the [EXIT] key to exit without saving.

9.2 RENAME A JOB

Enter the JOB screen, with the list of stored JOBs.



1. Select the JOB to be renamed using the encoder.
2. Press the [RENAME] key.
   The keyboard for typing the name appears.

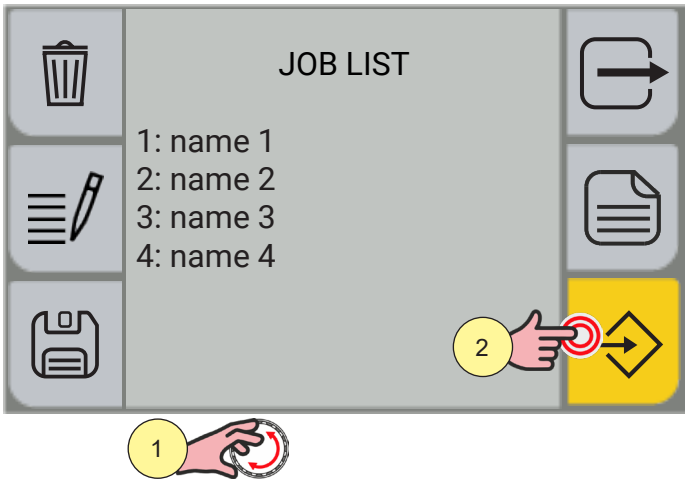
Information The panel is of the touch screen type; settings can be made both by means of the mechanical keys and by touching the icons that appear on the screen.

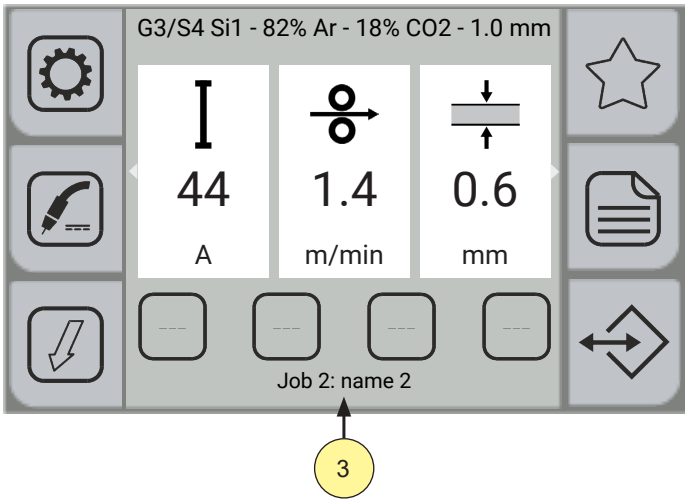
3. Turn the encoder to select the letter on the keyboard.
4. Press the encoder key to confirm the selection.
5. Turn the encoder to select the [SAVE] symbol on the keyboard
6. Press the encoder key to save and exit.

Press the [EXIT] key to exit without saving.

9.3 LOAD A JOB

Enter the JOB screen, with the list of stored JOBs.

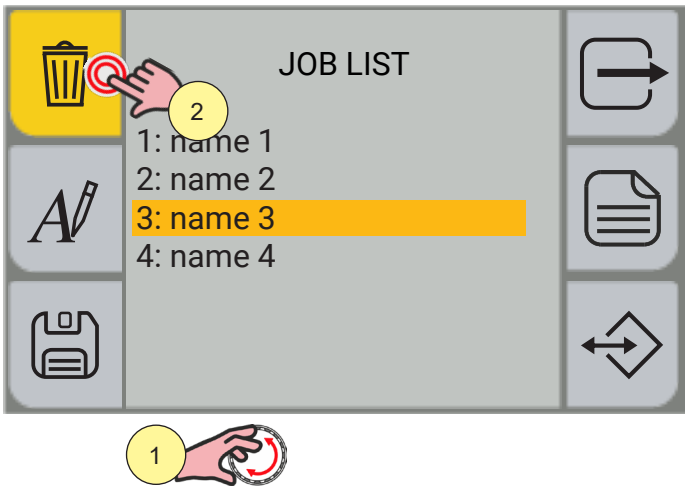


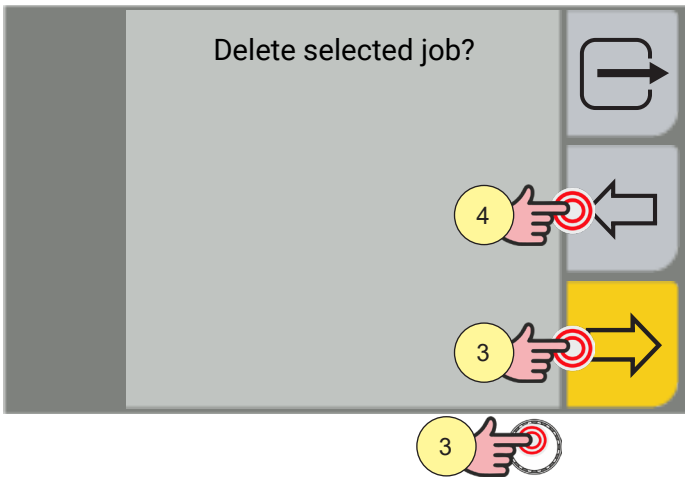


1. Select the JOB to be loaded using the encoder.
2. Press the encoder key or the [LOAD] key to confirm.
3. The name of the uploaded job appears on the main screen.

9.4 DELETE A JOB

Enter the JOB screen, with the list of stored JOBs.

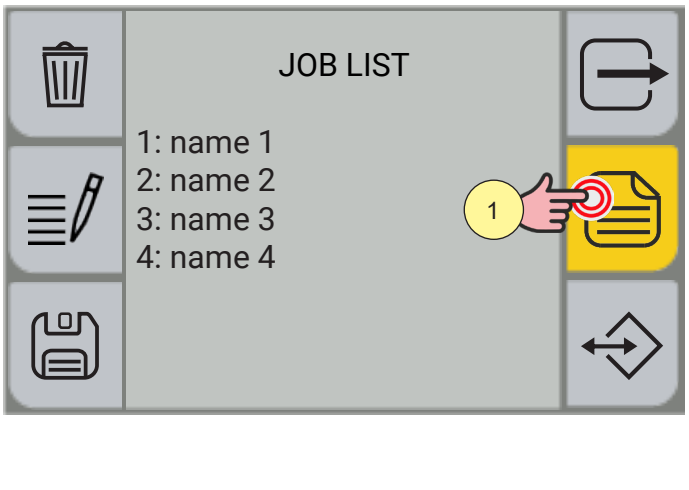


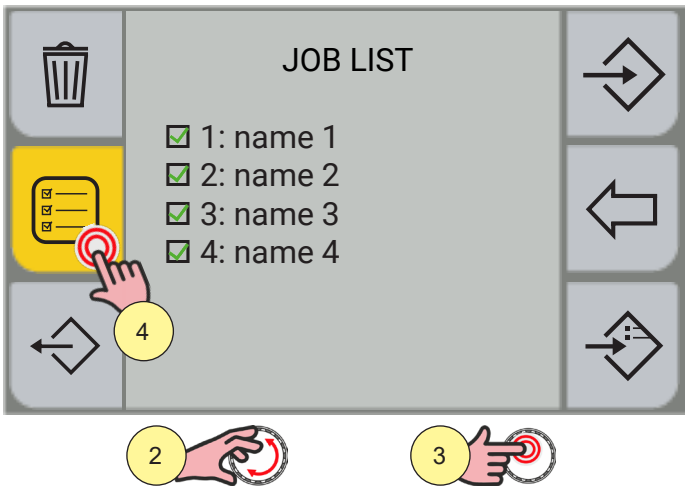


1. Select the JOB to be deleted using the encoder.
2. Press the [DELETE] key.
3. Press the encoder key or the [YES] key to confirm,
4. or press the [NO] key to go back to the previous screen.

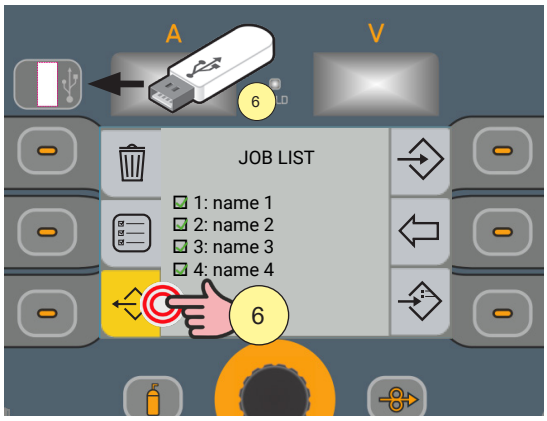
9.5 Export Jobs

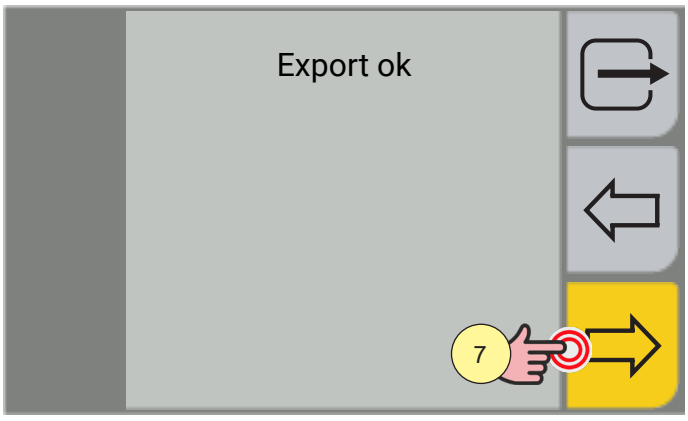
Enter the JOB screen.





1. Press the [MENU] key.
2. Select the JOB to be exported using the encoder.
3. Press the encoder key to confirm the selection.
4. To select/deselect all JOBs, press the [SELECT ALL] / [DESELECT ALL] key.





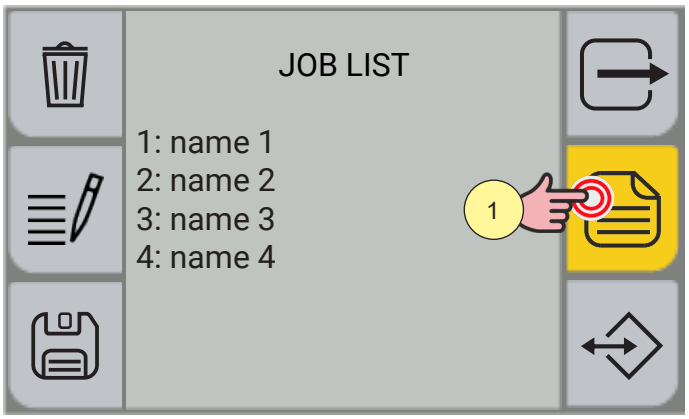
5. Please insert the USB pen drive into the USB port.
6. Press the [EXPORT] key to export the files to the USB pen drive.
   If the export is successful, the "Export OK" message will appear.
7. Press the [OK] key.

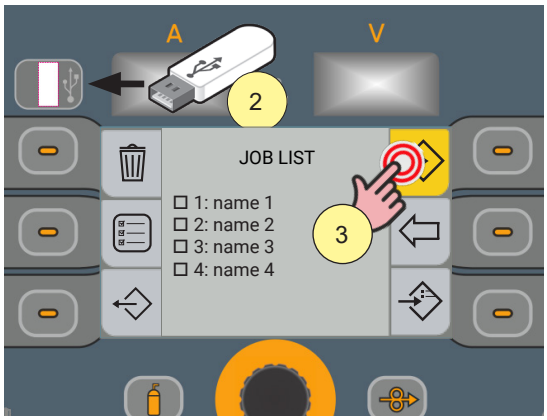
Press the ⇦ [PREV.] key to go back to the previous screen.

Press the ⇨ [EXIT] key to go back to the main screen.

9.6 IMPORT JOBS

Enter the JOB screen.

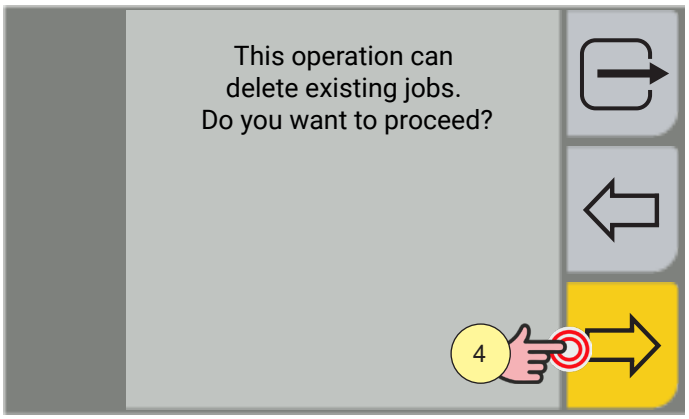




1. Press the [MENU] key.
2. Please insert the USB pen drive into the USB port.
3. Press the [IMPORT] key to import the files from the USB pen drive.

WARNING!

If the files on the USB pen drive occupy the same position (number before the name) as those on the equipment, the latter will be overwritten by those on the pen drive.



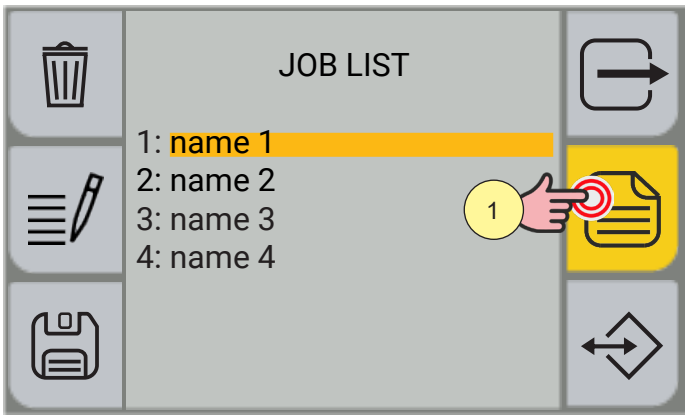
4. Press the [YES] key.

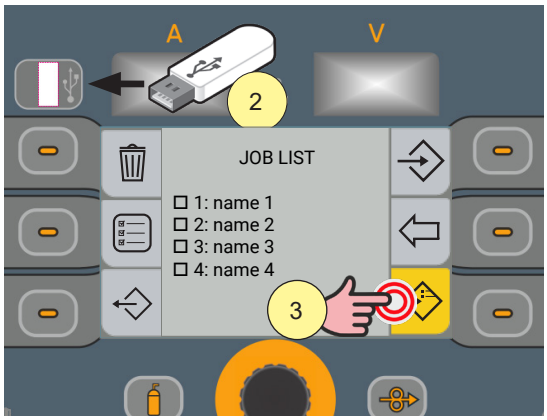
Press the [NO] key to go back to the previous screen.

Press the [EXIT] key to go back to the main screen.

9.7 ADD JOBS

Enter the JOB screen.



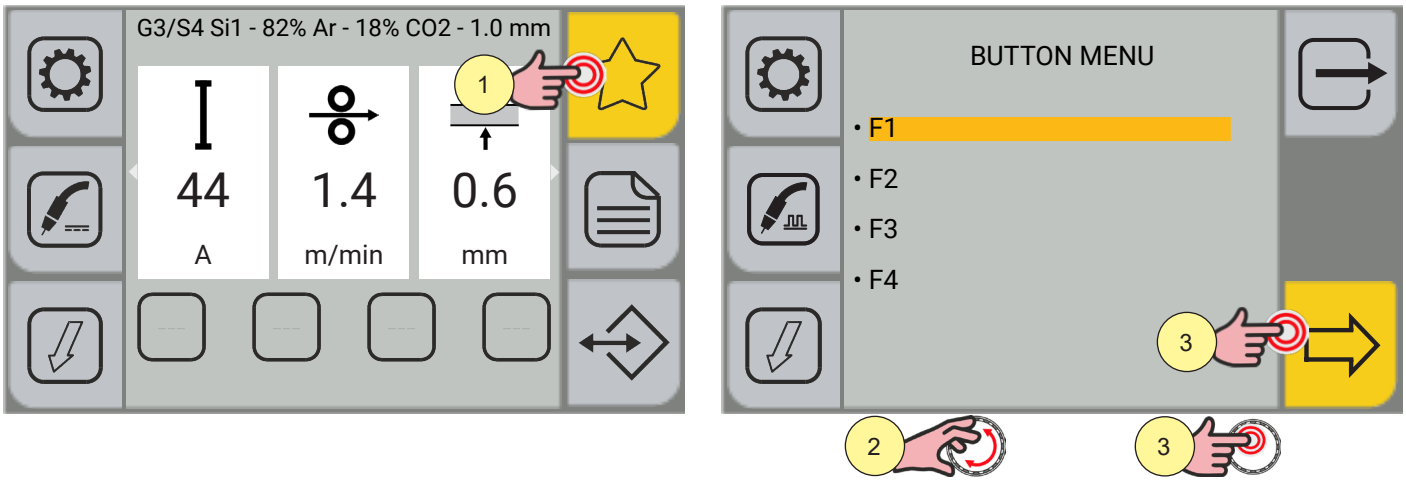


1. Press the [MENU] key.
2. Please insert the USB pen drive into the USB port.
3. Press the [ADD] key to add the USB pen drive files to the JOBs in the equipment.

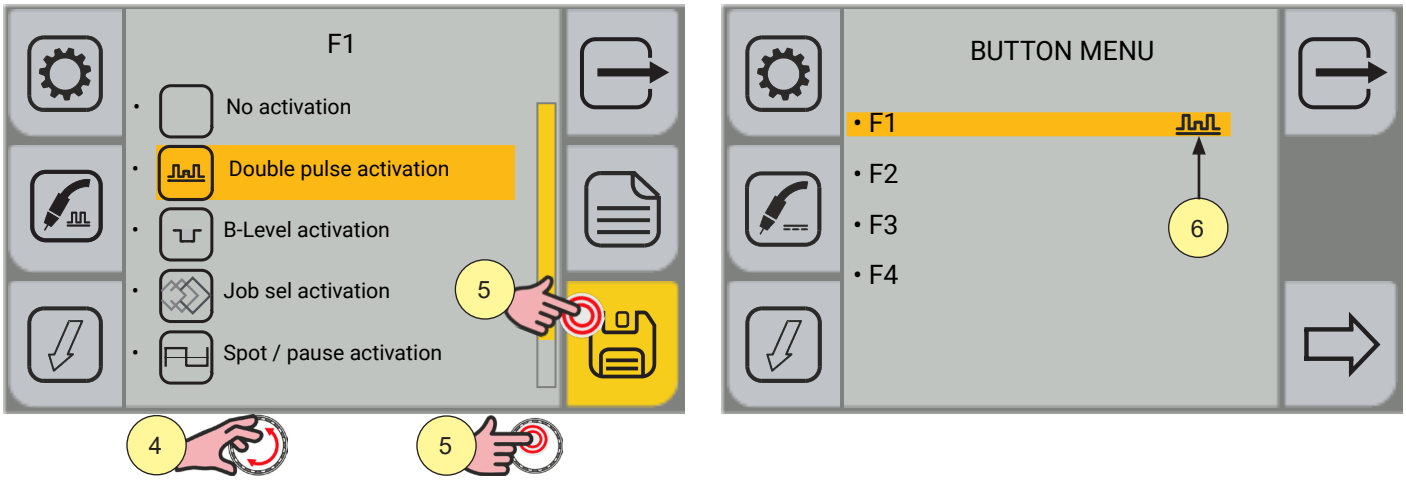
ⓘ **Information**: The files in the USB pen drive will be added to those in the equipment, renumbering them and placing them at the bottom of the list.

10 FAVOURITES KEY SETTING

ITt is possible to associate to the [---] [SHORTCUT] keys a specific function among those that can be selected from a predefined list.

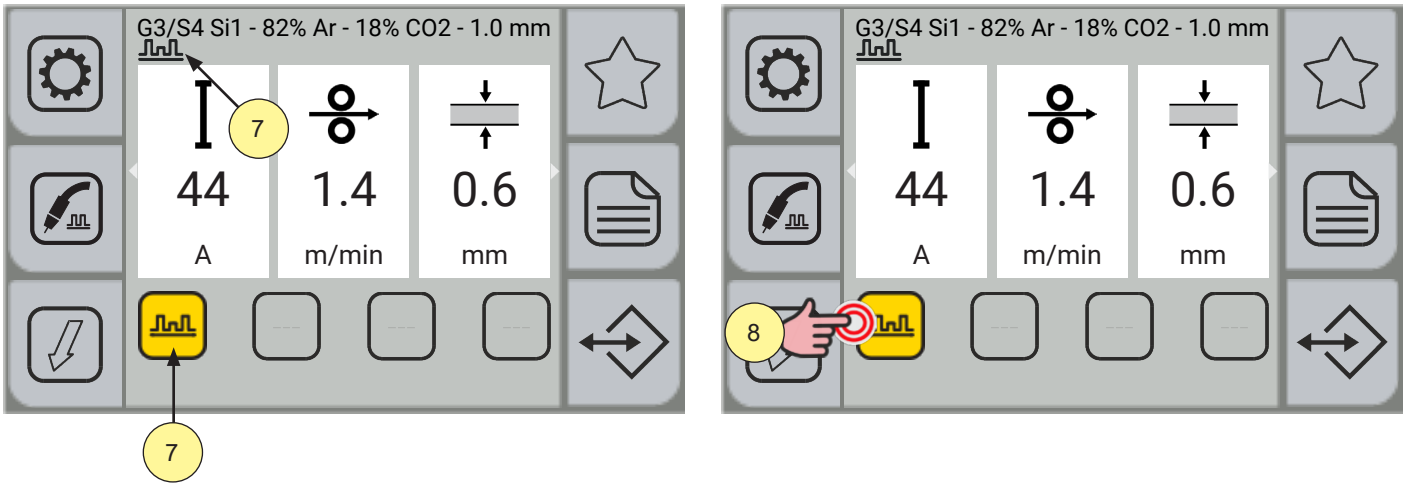


1. Press the [FAVOURITES] key; the BUTTON MENU will appear.
   Information Within the menu screen, it is possible to select the key [Fn°] to which to assign a specific function.
   Press and hold the desired [---] [SHORTCUT] key for 3 seconds to directly enter the function assignment screen.
2. Turn the encoder to select the desired key.
3. Press the encoder key or the [NEXT] key to confirm.



4. Turn the encoder to select the desired function.
   ○ [No Activation, Double-Pulse Activation, B-Level Activation, Job Sel Activation, Time Spot/Pause Activation, K Deep Activation, Job Load Activation].
5. Press the encoder key or the [SAVE] key.
6. The assignment of the function to the shortcut key is displayed.

Press the [EXIT] key to exit the screen.



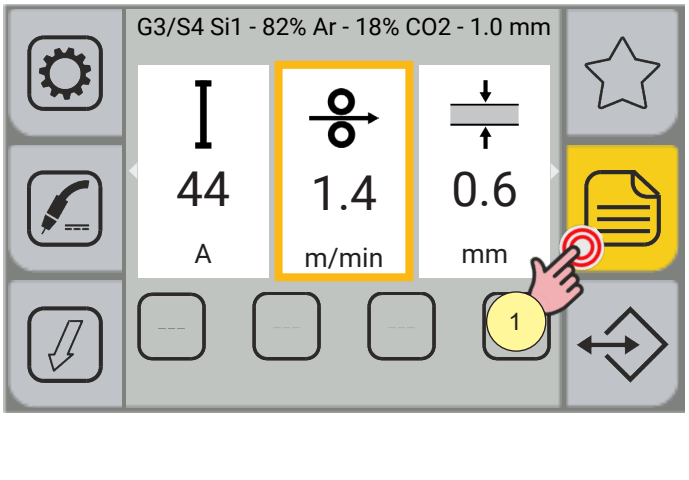
7. Once the desired function is associated with the [SHORTCUT] key, the function icon is displayed both in the [BUTTON] menu and on the key in the main screen.
8. Press the key with the associated function to activate/deactivate the function.
   When the function is active, the key is highlighted in yellow.

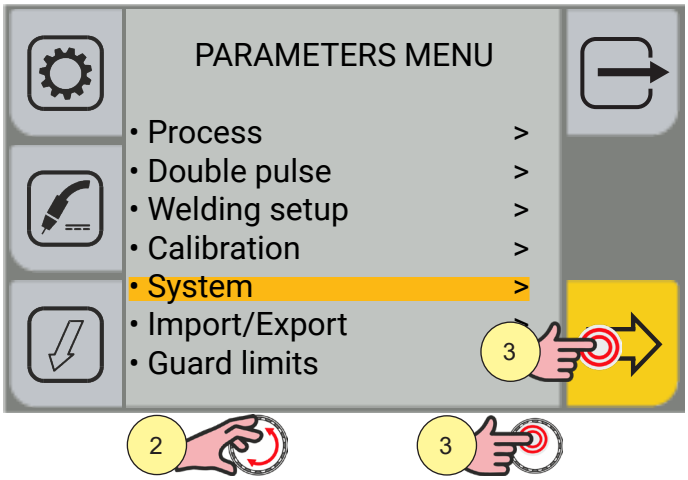
11 RESET

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.

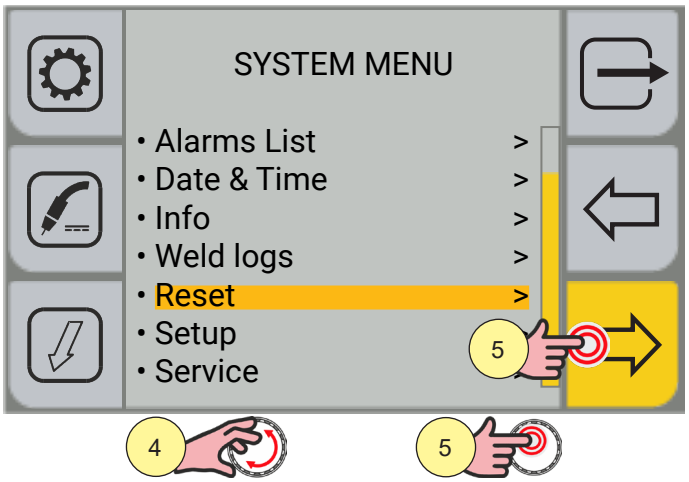
11.1 RESET PARAMETERS

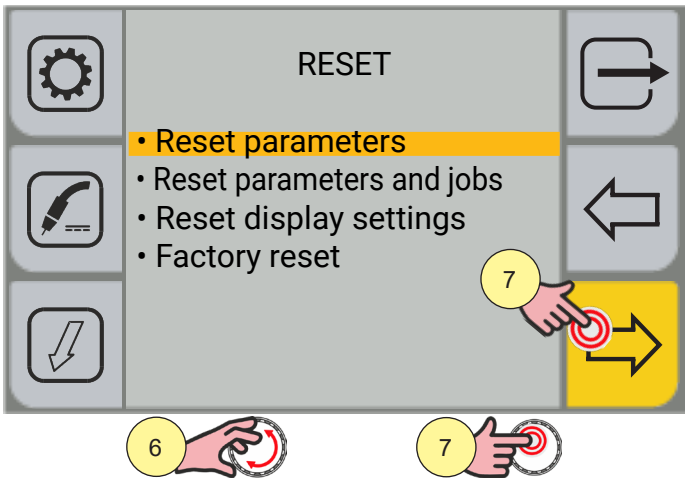
The reset procedure involves restoration of the parameter values and settings, except the following settings:
- System menu settings.
- Saved JOBs.



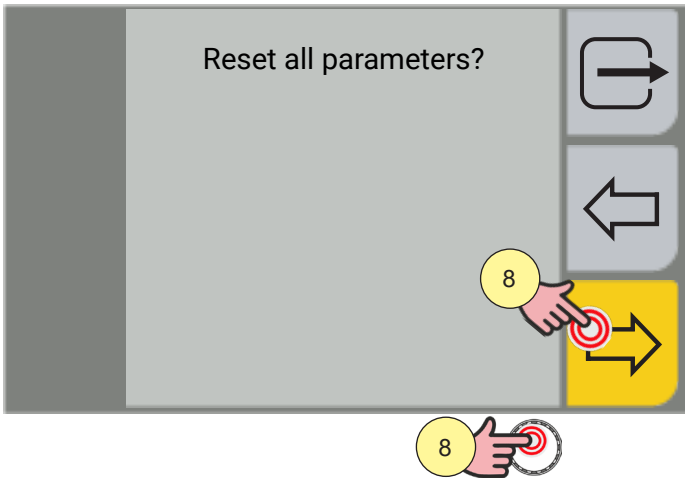


1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: System>
3. Press the encoder key or the [NEXT] key to confirm.





4. Turn the encoder to select the desired setting.
   Select the following path: Reset>
5. Press the encoder key or the [NEXT] key to confirm.
6. Turn the encoder to select the desired setting.
   Select the following path: Reset parameters
7. Press the encoder key or the [NEXT] key to confirm.



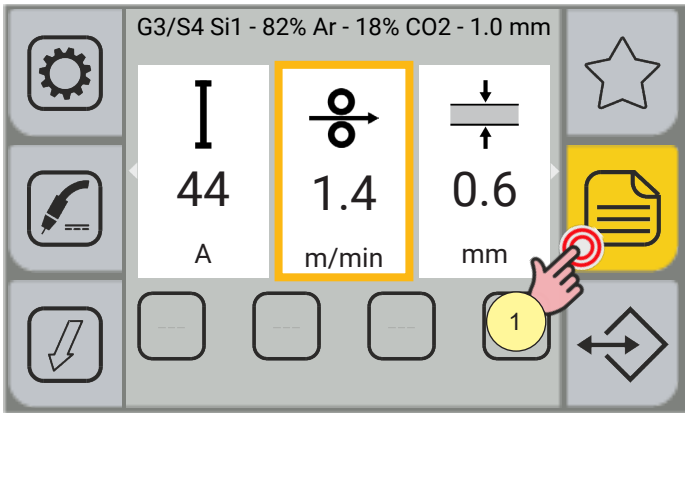
8. Press the encoder key or the [YES] key to confirm.

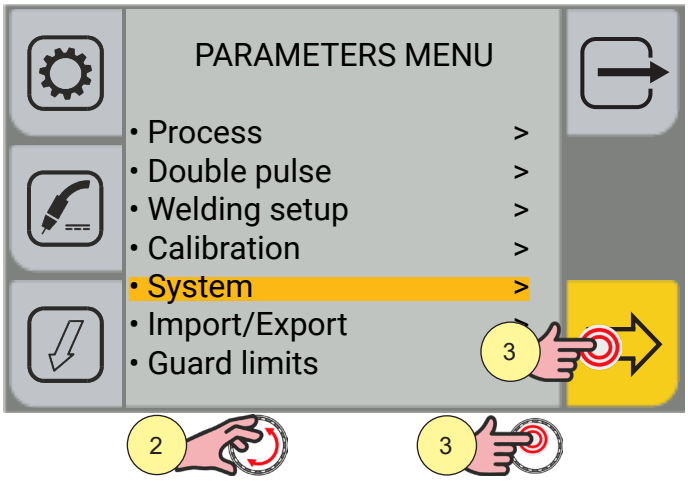
Press the [NO] key to go back to the previous screen.

Press the [EXIT] key to go back to the main screen.

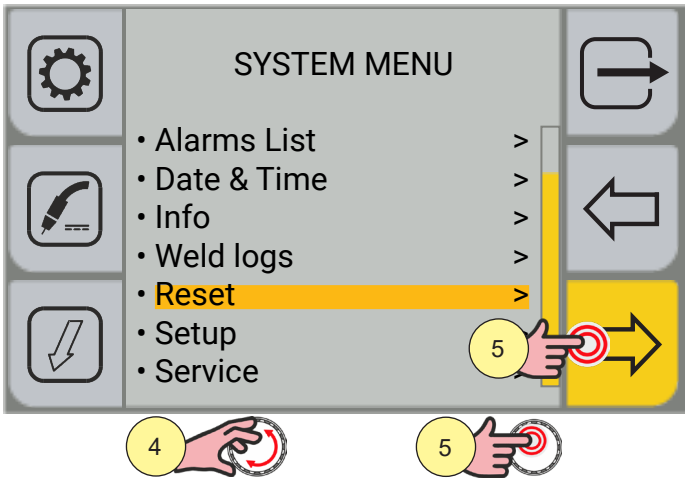
11.2 Reset parameters and jobs

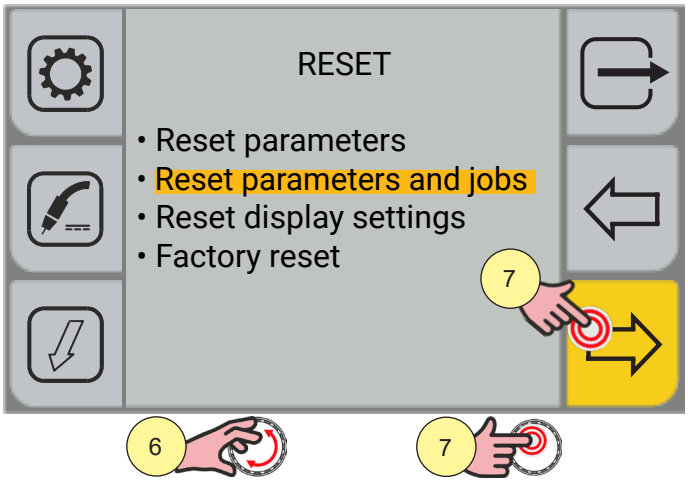
The reset procedure involves complete restoration of the default values, parameters and memory settings set in the factory.
All memory locations will be reset and hence all your personal welding settings will be lost!



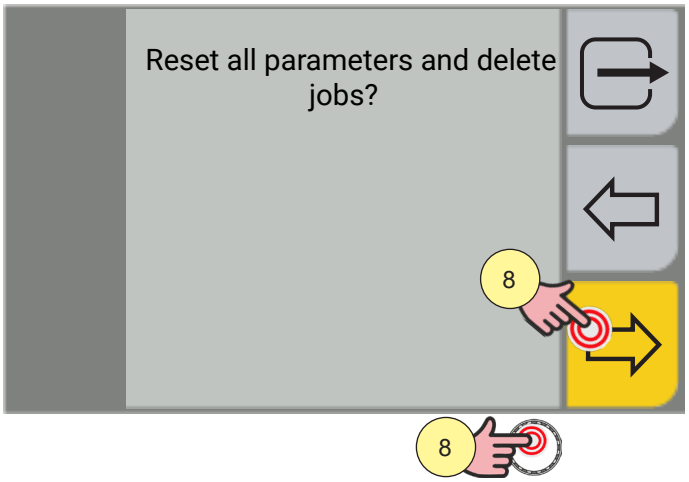


1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: System>
3. Press the encoder key or the [NEXT] key to confirm.





4. Turn the encoder to select the desired setting.
   Select the following path: Reset>
5. Press the encoder key or the [NEXT] key to confirm.
6. Turn the encoder to select the desired setting.
   Select the following path: Reset parameters and jobs
7. Press the encoder key or the [NEXT] key to confirm.



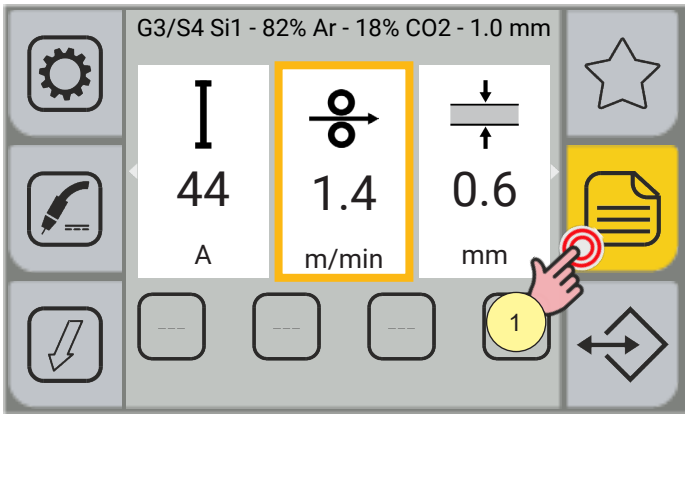
8. Press the encoder key or the [YES] key to confirm.

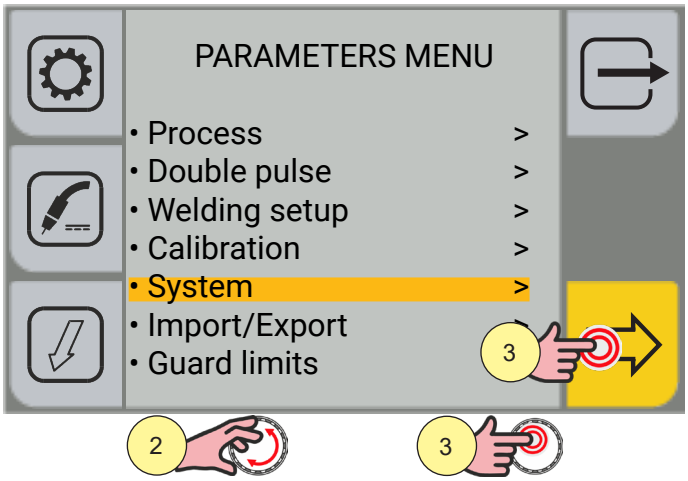
Press the ⇦ [NO] key to go back to the previous screen.

Press the ⇨ [EXIT] key to go back to the main screen.

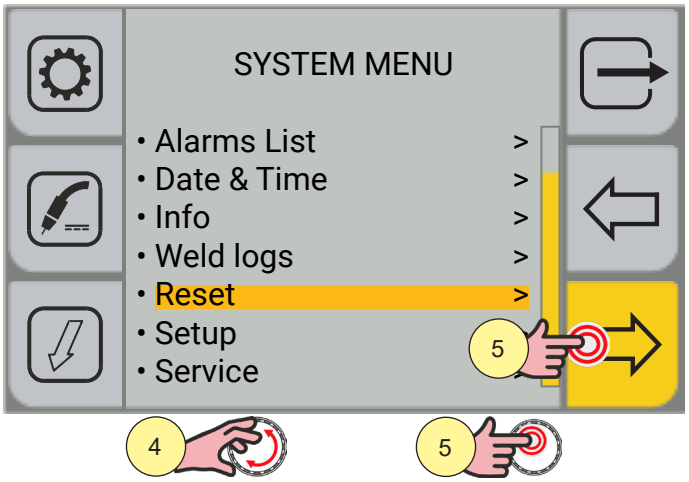
11.3 Reset display settings

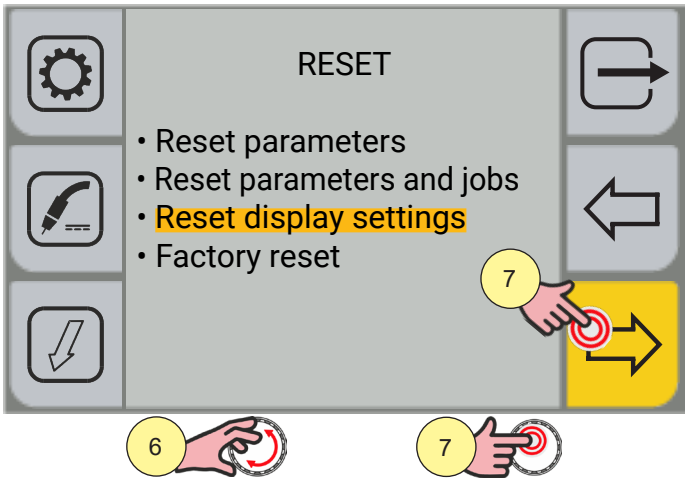
The reset display settings procedure restores the default display settings. The default language is reset [English], the shortcut keys are reset, the parameter display setup is returned to the default.



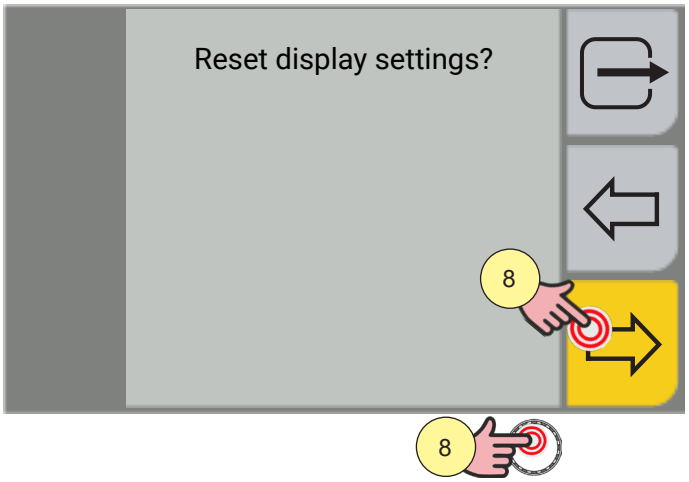


1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: System>
3. Press the encoder key or the [NEXT] key to confirm.





4. Turn the encoder to select the desired setting.
   Select the following path: Reset>
5. Press the encoder key or the [NEXT] key to confirm.
6. Turn the encoder to select the desired setting.
   Select the following path: Reset display settings.
7. Press the encoder key or the [NEXT] key to confirm.



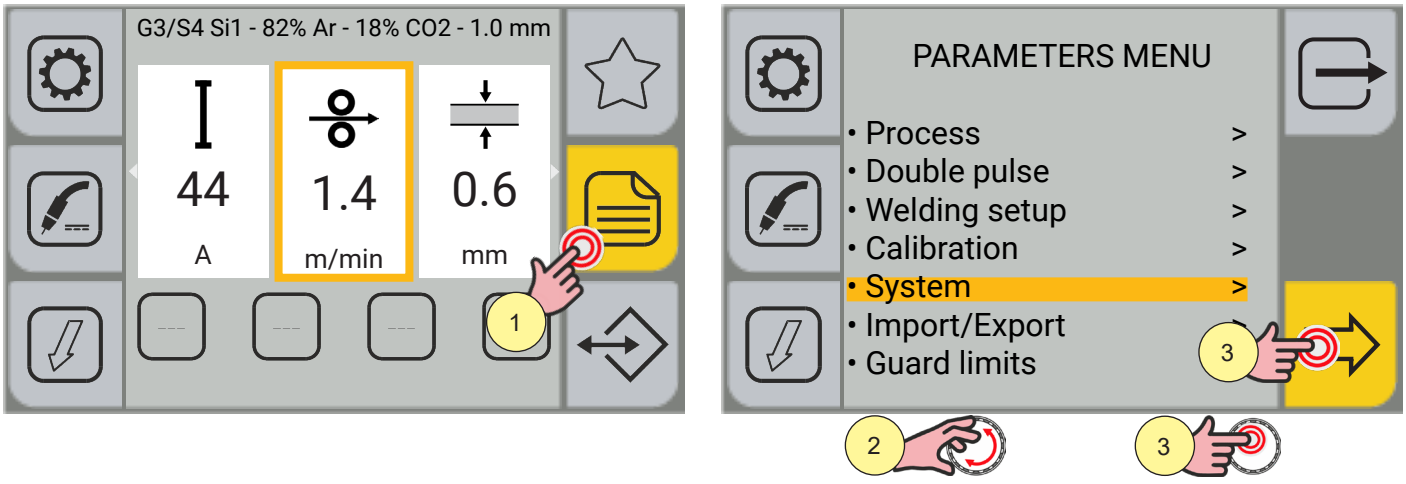
8. Press the encoder key or the [YES] key to confirm.

Press the ⇦ [NO] key to go back to the previous screen.

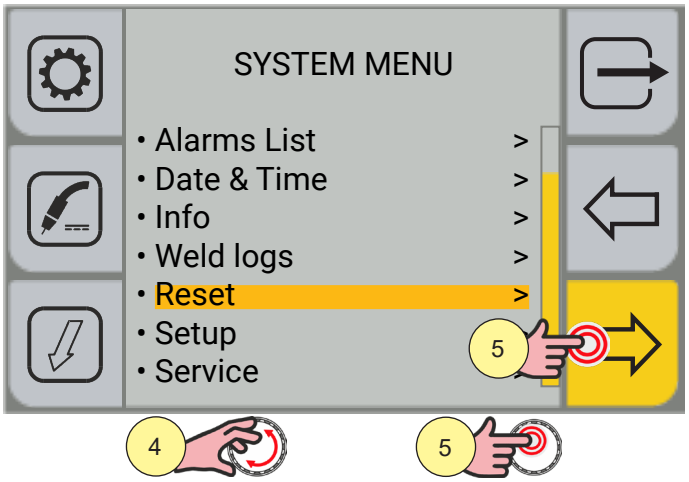
Press the ⇨ [EXIT] key to go back to the main screen.

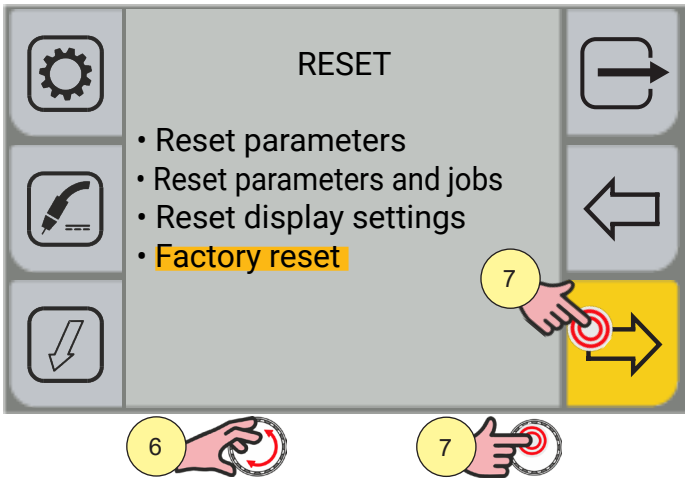
11.4 Factory reset

The factory reset procedure involves the full reset of the default values, parameters and memory settings set at the factory.
All memory locations will be reset and hence all your personal welding settings will be lost!
Only the settings relating to date and time remain saved.

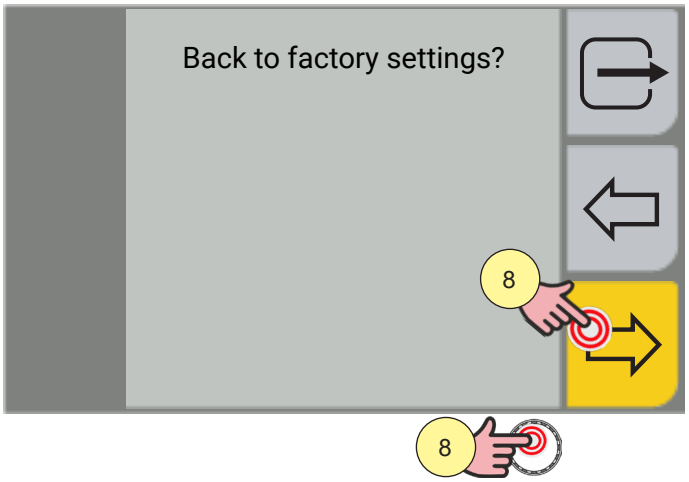


1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: System>
3. Press the encoder key or the [NEXT] key to confirm.





4. Turn the encoder to select the desired setting.
   Select the following path: Reset>
5. Press the encoder key or the [NEXT] key to confirm.
6. Turn the encoder to select the desired setting.
   Select the following path: Factory reset
7. Press the encoder key or the [NEXT] key to confirm.



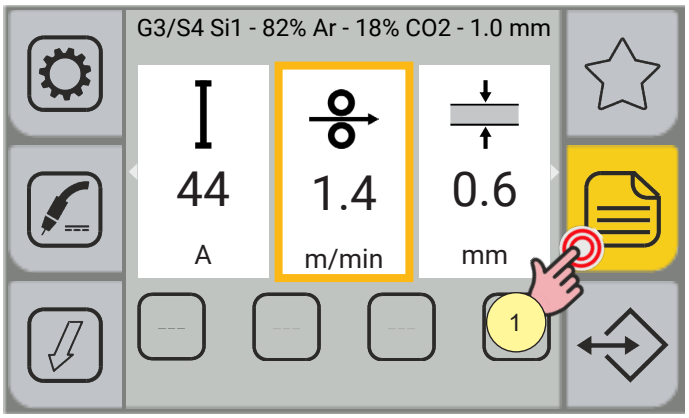
8. Press the encoder key or the [YES] key to confirm.

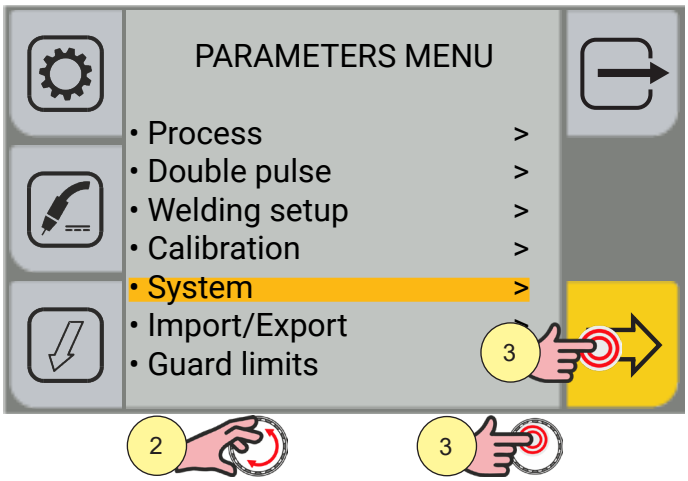
Press the ⇦ [NO] key to go back to the previous screen.

Press the ⇨ [EXIT] key to go back to the main screen.

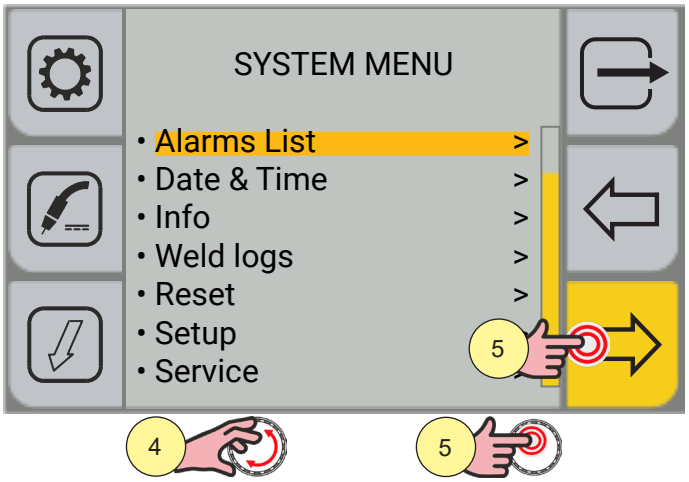
12 ALARM MANAGEMENT

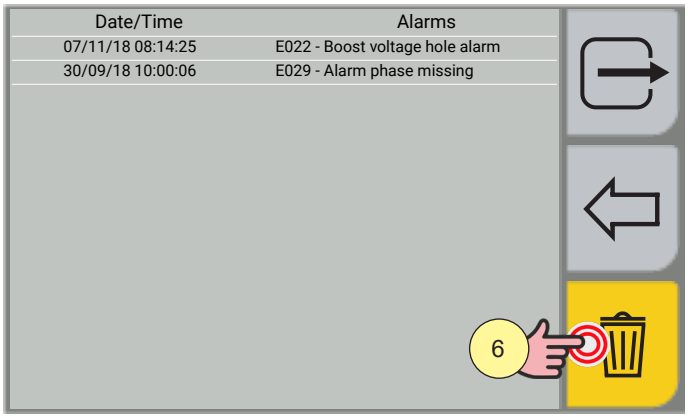
The function is enabled when not welding.





1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: System>
3. Press the encoder key or the [NEXT] key to confirm.





4. Turn the encoder to select the desired setting.
   Select the following path: Alarms list>
5. Press the encoder key or the [NEXT] key to confirm.
   The list of stored alarms is displayed.
6. Press the [RESET ALARMS] key to delete the list.

When an alarm condition occurs, all functions are disabled, except for:
- cooling fan
- cooling unit (if active)

E02: NTC ALARM DISCONNECTED

► Indicates the information interruption between the NTC and the control system.
► Solution:
- The intervention of qualified technical personnel is required.

E04: VOUT DISCONNECTED ALARM

► Indicates that there is a short circuit between the (+) and (-) welding sockets.
► Solution:
- Check that the welding torch is not resting on the piece to be welded connected to the ground.
- Check that when the generator is switched on there is no short circuit between the sockets (the voltage must be greater than/equal to Ur).
- If the problem persists, qualified technical personnel are required for repair/maintenance.

E05: WELD TORCH TRIGGER PRESSED ALARM

► Indicates that when the generator was switched on, a short circuit was detected on the input of the torch trigger.
► Solution:
When the problem ceases, the power generator will reset automatically.
- Make sure that the torch trigger is not pressed, jammed, or short circuiting.
- Check that the torch and torch connector are intact.

E22: BOOST VOLTAGE HOLE ALARM

► Indicates that there has been a rapid lack of voltage in the mains power supply.
► Solution:
When the problem is solved, the welding power source will reset automatically.
- Check the stability of the electric power distribution if the problem occurs frequently.

E23: BOOST CURRENT LIMIT ALARM

► Mains Boost overcurrent.
► Solution:
- The intervention of qualified technical personnel is required.

E25: BOOST CURRENT NOT CALIBRATED ALARM

► Phase absorption unbalance.
► Solution:
- The intervention of qualified technical personnel is required.

E26: ALARM GROUND CURRENT

► Current is re-circulated on the ground circuit.
► Solution:
- The intervention of qualified technical personnel is required.

E27: POWER SUPPLY UNDERVOLTAGE ALARM

► Supply voltage low.
► Solution:
- Check that the mains power supply does not fall below the minimum allowed values.

E02: NTC ALARM DISCONNECTED

► Indicates the information interruption between the NTC and the control system.
► Solution:
- The intervention of qualified technical personnel is required.

E04: VOUT DISCONNECTED ALARM

► Indicates that there is a short circuit between the (+) and (-) welding sockets.
► Solution:
- Check that the welding torch is not resting on the piece to be welded connected to the ground.
- Check that when the generator is switched on there is no short circuit between the sockets (the voltage must be greater than/equal to Ur).
- If the problem persists, qualified technical personnel are required for repair/maintenance.

E05: WELD TORCH TRIGGER PRESSED ALARM

► Indicates that when the generator was switched on, a short circuit was detected on the input of the torch trigger.
► Solution:
When the problem ceases, the power generator will reset automatically.
- Make sure that the torch trigger is not pressed, jammed, or short circuiting.
- Check that the torch and torch connector are intact.

E22: BOOST VOLTAGE HOLE ALARM

► Indicates that there has been a rapid lack of voltage in the mains power supply.
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When the problem is solved, the welding power source will reset automatically.
- Check the stability of the electric power distribution if the problem occurs frequently.

E23: BOOST CURRENT LIMIT ALARM

► Mains Boost overcurrent.
► Solution:
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E25: BOOST CURRENT NOT CALIBRATED ALARM

► Phase absorption unbalance.
► Solution:
- The intervention of qualified technical personnel is required.

E26: ALARM GROUND CURRENT

► Current is re-circulated on the ground circuit.
► Solution:
- The intervention of qualified technical personnel is required.

E27: POWER SUPPLY UNDERVOLTAGE ALARM

► Supply voltage low.
► Solution:
- Check that the mains power supply does not fall below the minimum allowed values.

E28: POWER SUPPLY OVERVOLTAGE ALARM

► High supply voltage.
► Solution:
- Check that the mains power supply does not exceed the maximum allowed values.

E29: ALARM PHASE MISSING

► Lack of a phase.
► Solution:
- Check that all three phases come from the mains.
- Check the integrity of the line fuses on the power supply panel.
- If the problem persists, qualified technical personnel are required for repair/maintenance.

E30: PRIMARY OVERCURRENT ALARM

► Exceeding the current threshold at the primary.
► Solution:
- The welding currents are at the limit of the maximum threshold: lower the welding parameters.
- If the problem persists, qualified technical personnel are required for repair/maintenance.

E31: INVERTER THERMAL ALARM

► It indicates that the welding power source thermal cut-out switch has tripped.
► Solution:
- Leave the equipment running so that the overheated components cool as rapidly as possible. When the problem is solved, the welding power source will reset automatically.
- Check the correct operation of the fans.
- 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.

E32: SECONDARY THERMAL ALARM

► It indicates that the welding power source thermal cut-out switch has tripped.
► Solution:
- Leave the equipment running so that the overheated components cool as rapidly as possible. When the problem is solved, the welding power source will reset automatically.
- Check the correct operation of the fans.
- 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.

E33: GENERIC THERMAL ALARM

► It indicates that the welding power source thermal cut-out switch has tripped.
► Solution:
- Leave the equipment running so that the overheated components cool as rapidly as possible. When the problem is solved, the welding power source will reset automatically.
- Check the correct operation of the fans.

- 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.

E50: COOLING UNIT ALARM

► Indicates insufficient pressure in the torch liquid cooling circuit.
► Solution:
- Check that the connection to the cooling system is correct.
- Check that the O/I switch is in the "I" position and that it lights up when the pump is running.
- Check that the cooling liquid is present in the cooling unit.
- Check that the pump flows the liquid (presence of external by-pass)
- Check that the cooling circuit is liquid tight, notably the torch hoses, the fuse and the internal connections of the cooling unit.
- Check the correct operation of the fans.
- If the problem persists, qualified technical personnel are required for repair/maintenance.

E51: COOLING UNIT THERMAL ALARM

► Temperature of the cooling liquid beyond the threshold.
► Solution:
- Check that the connection to the cooling system is correct.
- Check that the O/I switch is in the "I" position and that it lights up when the pump is running.
- Check that the cooling liquid is present in the cooling unit.
- Check that the pump flows the liquid (presence of external by-pass)
- Check that the cooling circuit is liquid tight, notably the torch hoses, the fuse and the internal connections of the cooling unit.
- Check the correct operation of the fans.
- If the problem persists, qualified technical personnel are required for repair/maintenance.

E52: COOLING UNIT NTC ALARM

► NTC on CU disconnected.
► Solution:
- The intervention of qualified technical personnel is required.

E60: WF MOTOR CURRENT ALARM

► Current absorbed by the motor high.
► Solution:
- Check if the motor is mechanically blocked by some object.
- If the problem persists, qualified technical personnel are required for repair/maintenance.

E70: ALARM GAS MISSING

► Gas flow not detected.
► Solution:
- Check the gas flow rate in the system connected to the device.
- If the problem persists, qualified technical personnel are required for repair/maintenance.

E81: ALARM HIGH CURRENT LIMIT EXCEEDED

► Solution:
- Check that the guard limit parameter is correct according to the welding parameters set.
- Check that there are no welding problems related to the consumable, gas used, welding position, mass, torch, wire drive, special active functions (K-Deep).

E82: ALARM LOW CURRENT LIMIT EXCEEDED

► Solution:
- Check that the guard limit parameter is correct according to the welding parameters set.
- Check that there are no welding problems related to the consumable, gas used, welding position, mass, torch, wire drive, special active functions (K-Deep).

E83: ALARM HIGH VOLTAGE LIMIT EXCEEDED

► Solution:
- Check that the guard limit parameter is correct according to the welding parameters set.
- Check that there are no welding problems related to the consumable, gas used, welding position, mass, torch, wire drive, special active functions.

E84: ALARM LOW VOLTAGE LIMIT EXCEEDED

► Solution:
- Check that the guard limit parameter is correct according to the welding parameters set.
- Check that there are no welding problems related to the consumable, gas used, welding position, mass, torch, wire drive, special active functions.

E85: ALARM HIGH WIRE SPEED LIMIT EXCEEDED

► Solution:
- Check that the guard limit parameter is correct according to the welding parameters set.
- Check that there are no welding problems related to the consumable, gas used, welding position, mass, torch, wire drive, special active functions (K-Deep).

E86: ALARM LOW WIRE SPEED LIMIT EXCEEDED

► Solution:
- Check that the guard limit parameter is correct according to the welding parameters set.
- Check that there are no welding problems related to the consumable, gas used, welding position, mass, torch, wire drive, special active functions (K-Deep).

E87: ALARM HIGH GAS LIMIT EXCEEDED

► Solution:
- Check the gas flow rate in the system connected to the device.
- If the problem persists, qualified technical personnel are required for repair/maintenance.

E88: ALARM LOW GAS LIMIT EXCEEDED

► Solution:
- Check the gas flow rate in the system connected to the device.
- If the problem persists, qualified technical personnel are required for repair/maintenance.

E89: ALARM HIGH MOTOR CURRENT LIMIT EXCEEDED

► Solution:
- Check that the guard limit parameter is correct according to the welding parameters set.
- Check that there are no welding problems related to the consumable, welding position, torch, wire drive.
- If the problem persists, qualified technical personnel are required for repair/maintenance.

W81: WARNING HIGH CURRENT LIMIT EXCEEDED

► Solution:
- Check that the guard limit parameter is correct according to the welding parameters set.
- Check that there are no welding problems related to the consumable, gas used, welding position, mass, torch, wire drive, special active functions (K-Deep).

W82: WARNING LOW CURRENT LIMIT EXCEEDED

► Solution:
- Check that the guard limit parameter is correct according to the welding parameters set.
- Check that there are no welding problems related to the consumable, gas used, welding position, mass, torch, wire drive, special active functions (K-Deep).

W83: WARNING HIGH VOLTAGE LIMIT EXCEEDED

► Solution:
- Check that the guard limit parameter is correct according to the welding parameters set.
- Check that there are no welding problems related to the consumable, gas used, welding position, mass, torch, wire drive, special active functions.

W84: WARNING LOW VOLTAGE LIMIT EXCEEDED

► Solution:
- Check that the guard limit parameter is correct according to the welding parameters set.
- Check that there are no welding problems related to the consumable, gas used, welding position, mass, torch, wire drive, special active functions.

W85: WARNING HIGH WIRE SPEED LIMIT EXCEEDED

► Solution:
- Check that the guard limit parameter is correct according to the welding parameters set.
- Check that there are no welding problems related to the consumable, gas used, welding position, mass, torch, wire drive, special active functions (K-Deep).

W86: WARNING LOW WIRE SPEED LIMIT EXCEEDED

► Solution:
- Check that the guard limit parameter is correct according to the welding parameters set.
- Check that there are no welding problems related to the consumable, gas used, welding position, mass, torch, wire drive, special active functions (K-Deep).

W87: WARNING HIGH GAS LIMIT EXCEEDED

► Solution:
- Check the gas flow rate in the system connected to the device.
- If the problem persists, qualified technical personnel are required for repair/maintenance.

W88: WARNING LOW GAS LIMIT EXCEEDED

► Solution:
- Check the gas flow rate in the system connected to the device.
- If the problem persists, qualified technical personnel are required for repair/maintenance.

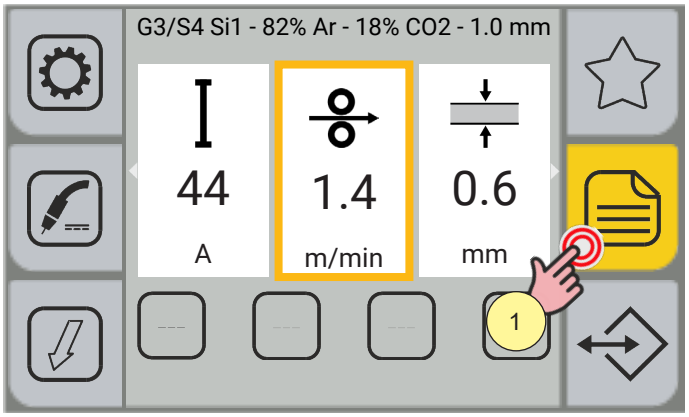
W89: WARNING HIGH MOTOR CURRENT LIMIT EXCEEDED

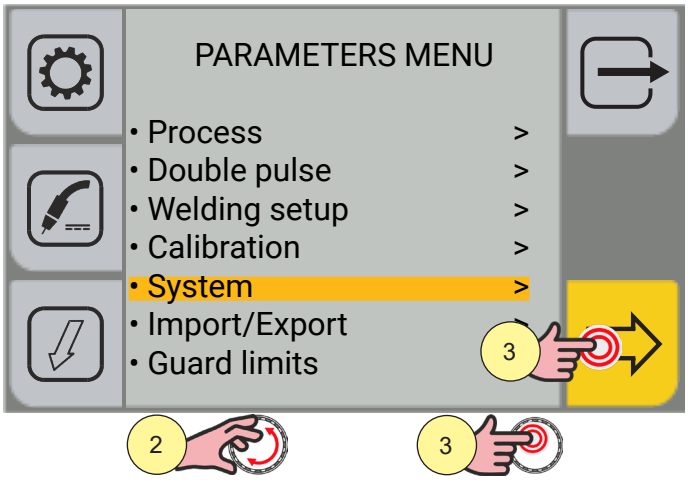
► Solution:
- Check that the guard limit parameter is correct according to the welding parameters set.
- Check that there are no welding problems related to the consumable, welding position, torch, wire drive.
- If the problem persists, qualified technical personnel are required for repair/maintenance.

E99: GENERAL ALARM

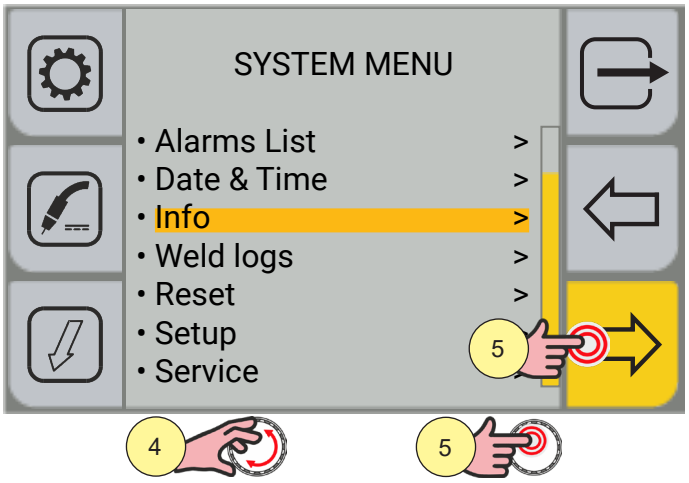
► Indicates the non-recognition of the generator.
► Solution:
- Check the integrity of the connections between generator and remotes (wire feed trolleys, remotes, other devices).
- If the problem persists, qualified technical personnel are required for repair/maintenance.

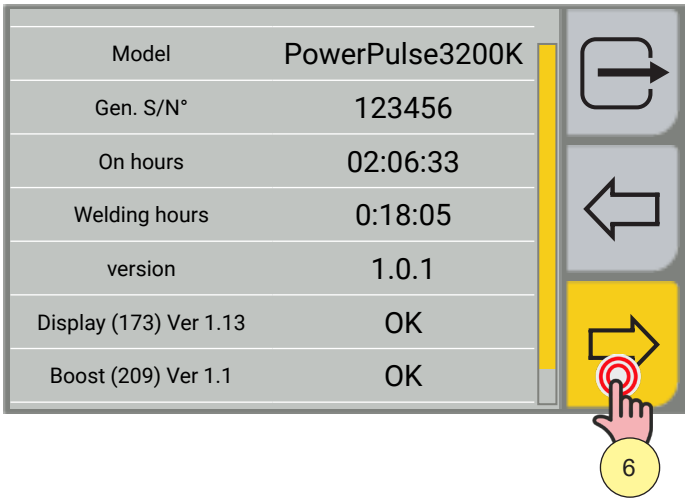
13 SYSTEM INFO





1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: System>
3. Press the encoder key or the [NEXT] key to confirm.





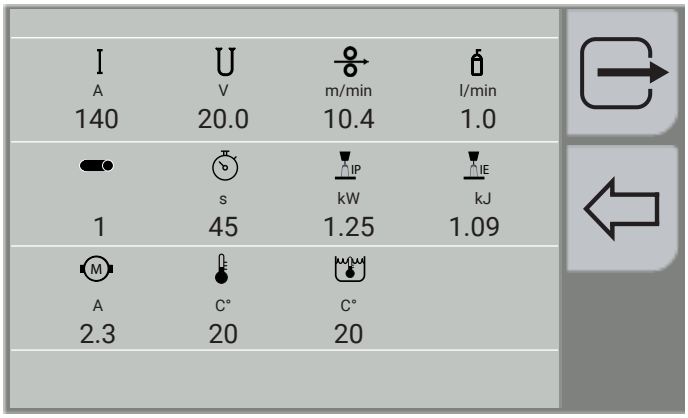
4. Turn the encoder to select the desired setting.
   Select the following path: Info>
5. Press the encoder key or the [NEXT] key to confirm.

The screen shows:
- generator model
- generator serial number
- number of hours of machine on
- number of hours welding

After 10 seconds, the screen shows:
- the list of boards with microcontrollers and the respective firmware version

6. Press the [DATA] key.

This gives access to the screen that shows the system data in real time.



I A 140	Instantaneous value of the welding current.
U V 20.0	Instantaneous value of the welding voltage.
m/min 10.4	Instantaneous value of the wire speed.
l/min 1.0	Gas flow value in litres/minute (only if the sensor is present).
1	Progressive number of the weld bead from the moment the generator is switched on (starts from 1 each time it is switched on).

 s 45	Duration of welding of the single bead.
 kW 1.25	Instantaneous welding arc power in kW. INSTANT POWER: Average value of the instantaneous power that is given by the product of VOLTAGE by CURRENT sampled every 100 micro seconds.
 kJ 1.09	Welding arc energy in kJ. INSTANT ENERGY: Average value of the instantaneous power that is given by the product of VOLTAGE by CURRENT IN THE TIME UNIT sampled every 100 micro seconds.
 A 2.3	Wire drive motor current value. Measures the current drawn by the wire drive motor during welding. Excessive values mean drive problems (jammed wire, dirty sheath, worn or clogged current tube, etc.)
 C° 20.0	Heat sink temperature in the generator.
 C° 20.0	Cooling unit water temperature.

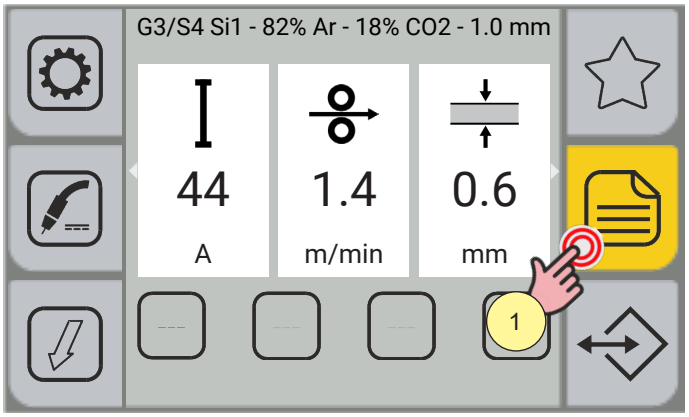
Press the  [PREV.] key to go back to the previous screen.

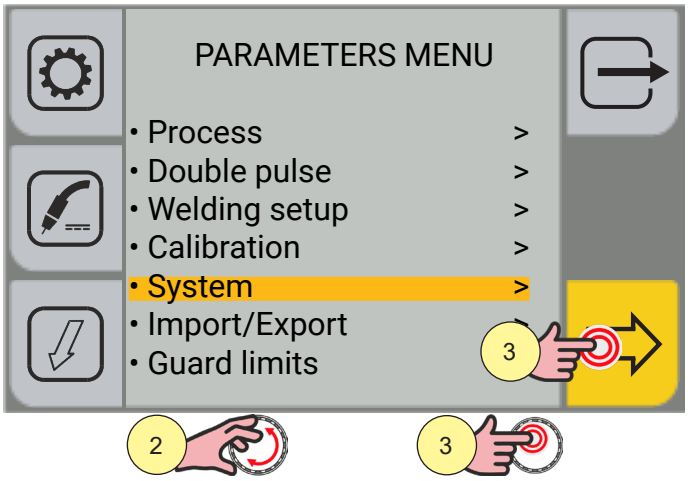
Press the  [EXIT] key to go back to the main screen.

14 WELD LOG

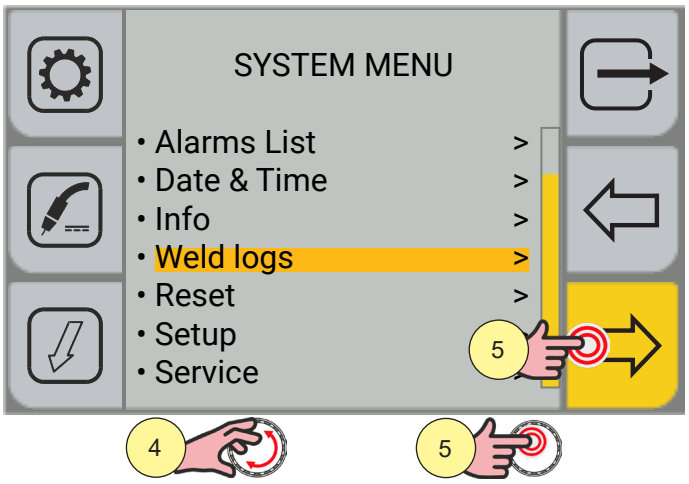
The screen displays the welding data of the last 500 welds carried out.
The data can be exported in .CSV file format to a USB pen drive.

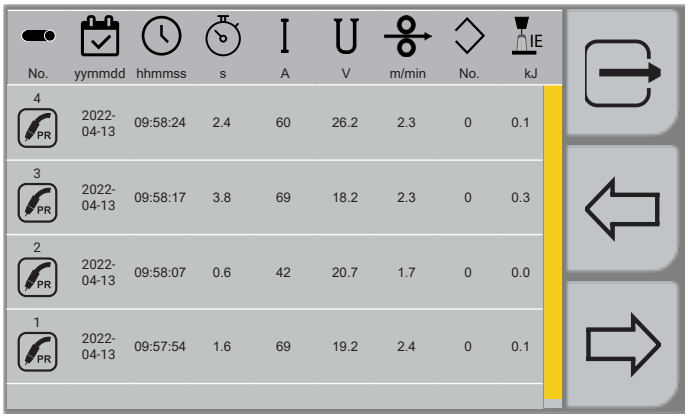
Weld log display





1. Press the [MENU] key.
2. Turn the encoder to select the desired setting.
   Select the following path: System>
3. Press the encoder key or the [NEXT] key to confirm.





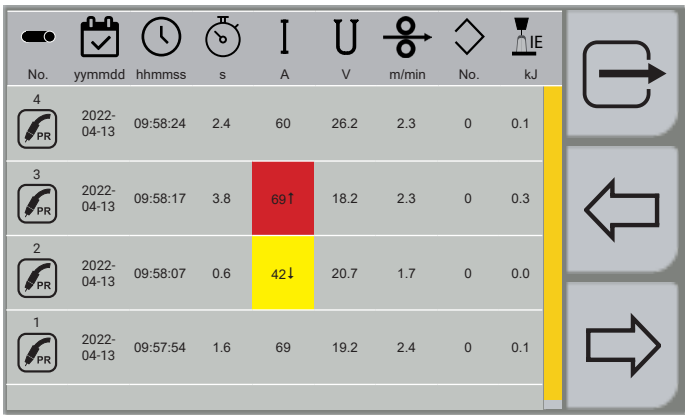
4. Turn the encoder to select the desired setting.
   Select the following path: Weld log>
5. Press the encoder key or the [NEXT] key to confirm.

The screen shows:
- progressive number of the weld bead from the moment the generator is switched on (starts from 1 each time it is switched on)
- date (day/month/year)
- welding start time (hours/minutes/seconds)
- welding duration in seconds (single bead)
- average welding current (bead carried out)
- average welding voltage (bead carried out)
- average wire speed (changes only if with k-deep)

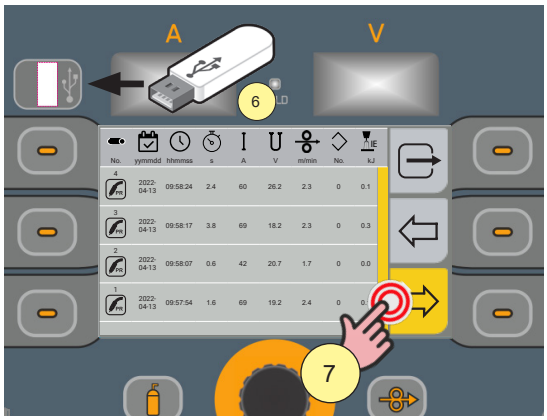
- job number (if loaded)
- instantaneous arc energy in kJ

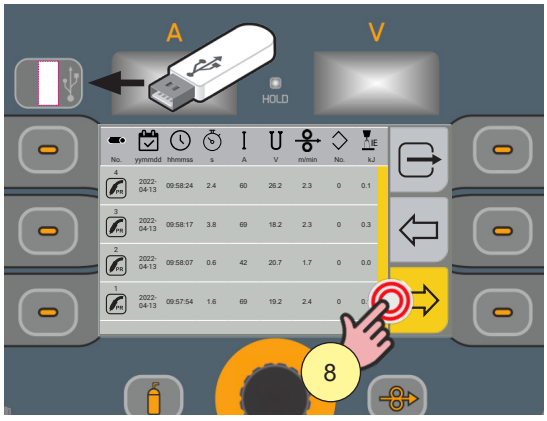
If GUARD LIMITS are active, when an alarm/warning condition occurs, the box corresponding to the controlled parameter changes colour:

- set alarm value limit exceeded (red box + symbol↓ for lower limit or symbol↑ for upper limit)
- set warning limit exceeded (yellow box + symbol↓ for lower limit or symbol↑ for upper limit)

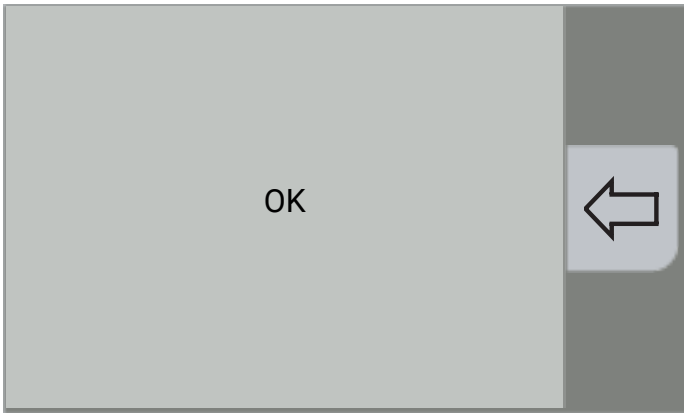


Weld log export





6. Please insert the USB pen drive into the USB port.
7. Press the [EXPORT] key.
8. Press the [csv] key.



The data is saved in .CSV format, which can be imported, for example, using Excel.

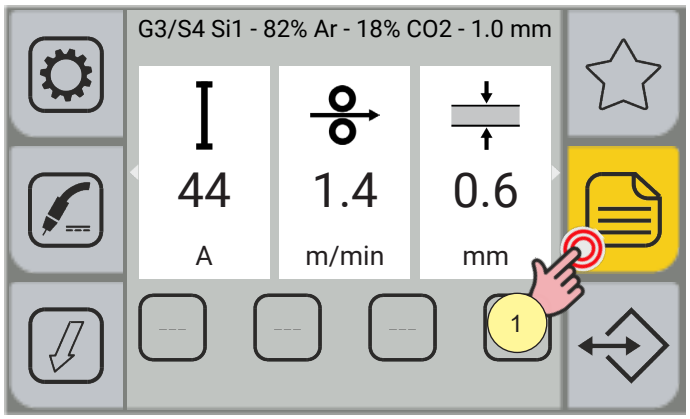
	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Type : weldlogs												
2	Date : 2021/04/01 12:49:43												
3	Machine : 257												
4	NumSer : 180027												
5	Seam	Date	Start	Arc time	Current	Voltage	Speed	Power	Energy	Gas	Job	Alarm	
6				s	A	V	m/min	W	kJ	l/min			
7	6	16/03/2021	10:01:49	5,6	100	20,1	2,3	1435	8	0	0	0	
8	5	16/03/2021	10:00:40	10,2	104	16,2	2,3	1499	15,3	0	0	0	
9	4	16/03/2021	09:57:49	5,6	110	15,2	2,4	895	5	0	0	0	
10	3	16/03/2021	09:52:22	3,4	133	15,8	2,3	887	3	0	0	0	
11	2	16/03/2021	09:27:07	6,8	116	17	2,3	1627	11,1	0	0	0	
12	1	16/03/2021	09:25:56	22,8	114	15,7	2,3	1616	36,8	0	0	0	
13	3	15/03/2021	14:44:55	1,6	110	21,1	2,2	1430	2,3	0	0	0	
14	2	15/03/2021	14:43:58	1,4	114	18,1	2,1	1560	2,2	0	0	0	
15	1	15/03/2021	14:43:01	4,2	113	16,4	2,2	1571	6,6	0	0	0	
16	2	15/03/2021	14:29:50	5,8	113	15,3	2,2	1539	8,9	0	0	0	
17	1	15/03/2021	14:24:43	4,2	107	16,6	2,3	1434	6	0	0	0	
18	3	15/03/2021	14:13:52	1,2	99	22,7	2,1	1407	1,7	0	0	0	
19	2	15/03/2021	14:13:00	2	104	20,7	2,3	1386	2,8	0	0	0	
20	1	15/03/2021	14:11:14	3,2	100	21,7	411,7	1311	4,2	0	0	0	
21	4	15/03/2021	13:52:07	2,6	107	18	2,2	1492	3,9	0	0	0	
22	3	15/03/2021	13:50:49	3	113	16,7	2,3	1438	4,3	0	0	0	
23	2	15/03/2021	13:49:49	3,4	107	18	2,3	1443	4,9	0	0	0	
24	1	15/03/2021	13:48:04	5,8	106	18,2	2,3	1390	8,1	0	0	0	
25	2	15/03/2021	13:35:37	4,6	117	14,8	2,3	1400	6,4	0	0	0	
26	1	15/03/2021	13:07:38	5,8	111	16,2	2,3	1332	7,7	0	0	0	

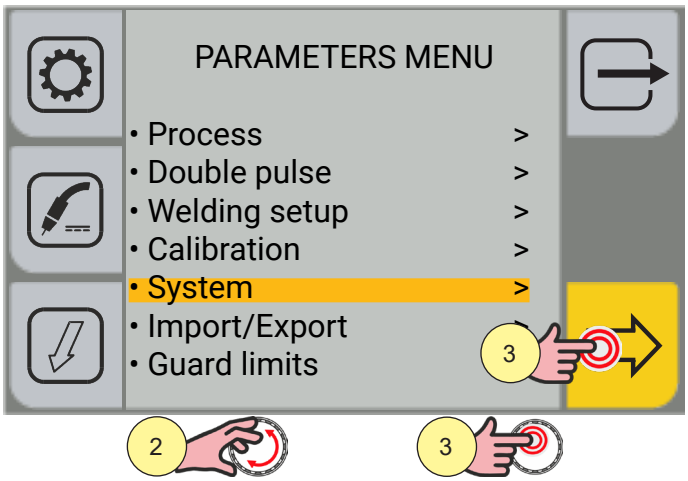
Press the ⇦ [PREV.] key to go back to the previous screen.

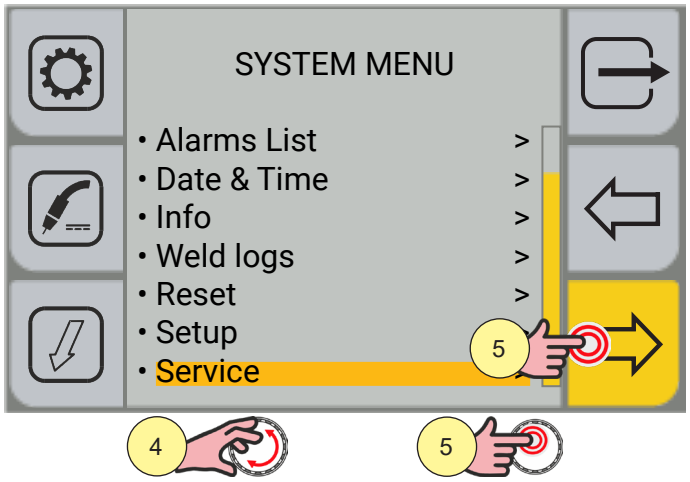
Press the ⇨ [EXIT] key to go back to the main screen.

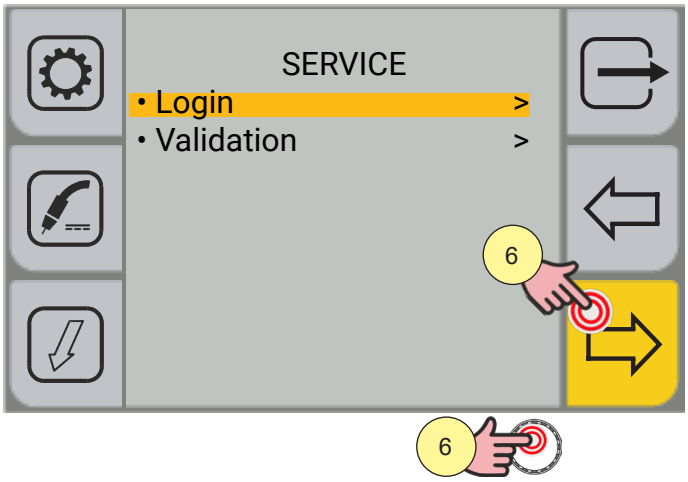
15 SERVICE

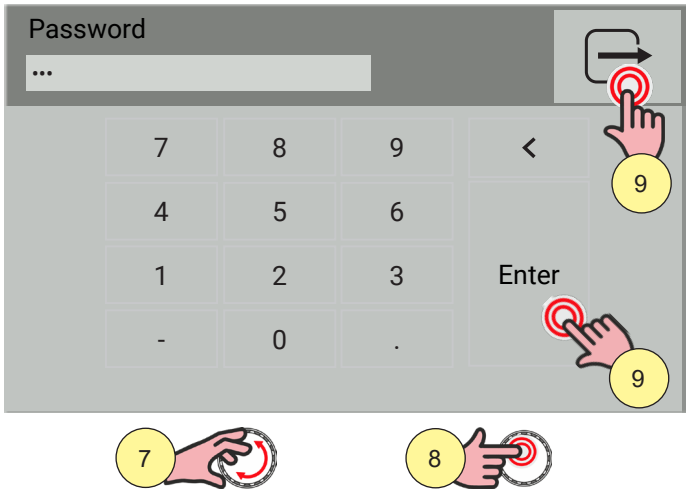
The service menu is used to activate additional functions; the password is not provided to the end user as the activation of these functions is reserved for qualified technical personnel authorised by the manufacturer for maintenance and troubleshooting of the equipment.





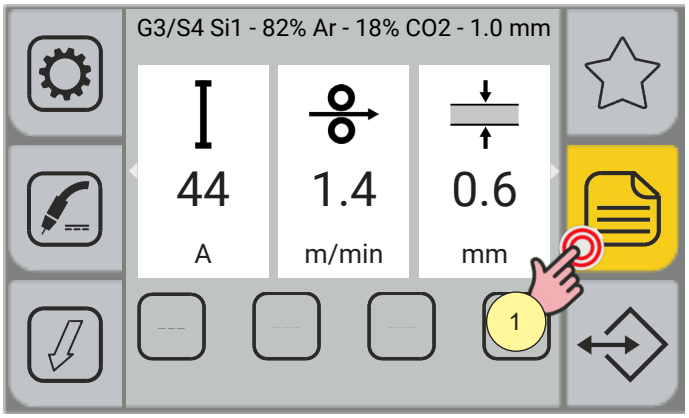


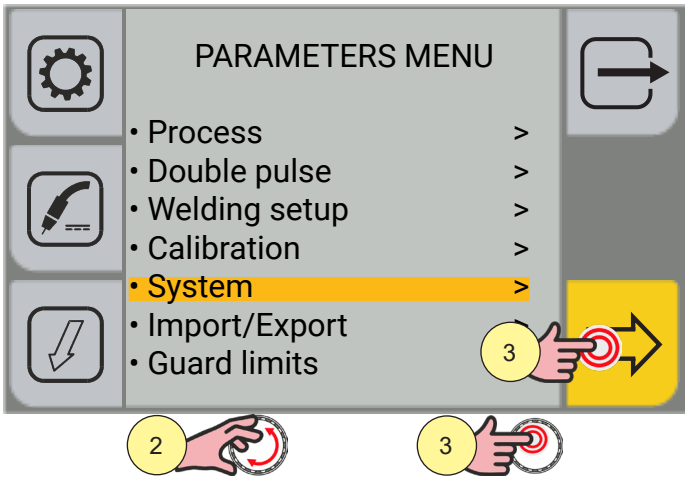




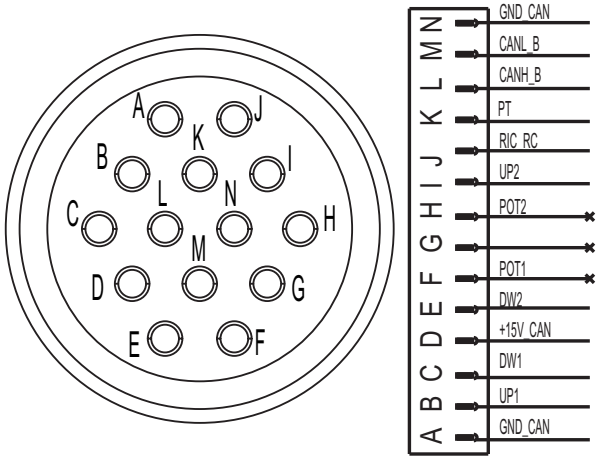
16 VALIDATION

This section is used to carry out verification tests according to current regulations. Please refer to the dedicated manual for operating procedures.



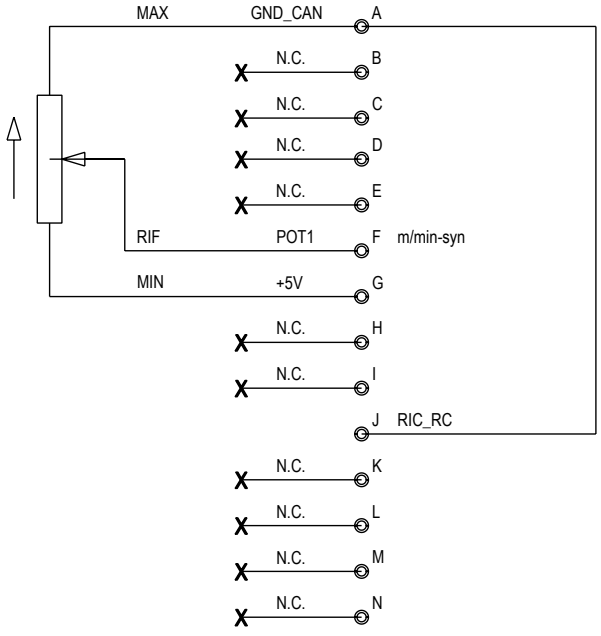


17 REMOTE CONTROL CONNECTOR



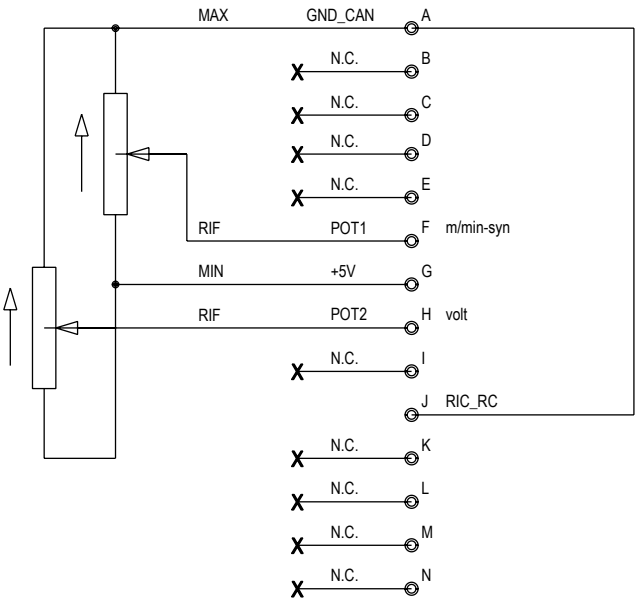
PIN	NAME	SIGNAL DESCRIPTION
A	GND_CAN	COMMON FOR POT/UP-DW/PT/CAN…
B	UP2	UP SIGNAL (Volt)
C	DW2	DOWN SIGNAL (Volt)
D	+15V_CAN	COMMON FOR POWERING DIGIM. or RC08 TORCH
E	UP1	UP SIGNAL (m/min)
F	POT1	SIGNAL FOR POTENTIOMETER (m/min)
G	+5 V	COMMON FOR POT1 AND 2 (min)
H	POT2	SIGNAL FOR POTENTIOMETER (Volt)
I	DW1	DOWN SIGNAL (m/min)
J	RIC_RC	REMOTE RECOGNITION (in bridge with GND_can)
K	PT	TORCH TRIGGER (in common with GND_can)
L	CANH_B	WECO OPTIONS
M	CANL_B	WECO OPTIONS
N	GND_CAN	COMMON (SUCH AS PIN A)

RC03: Wiring diagram



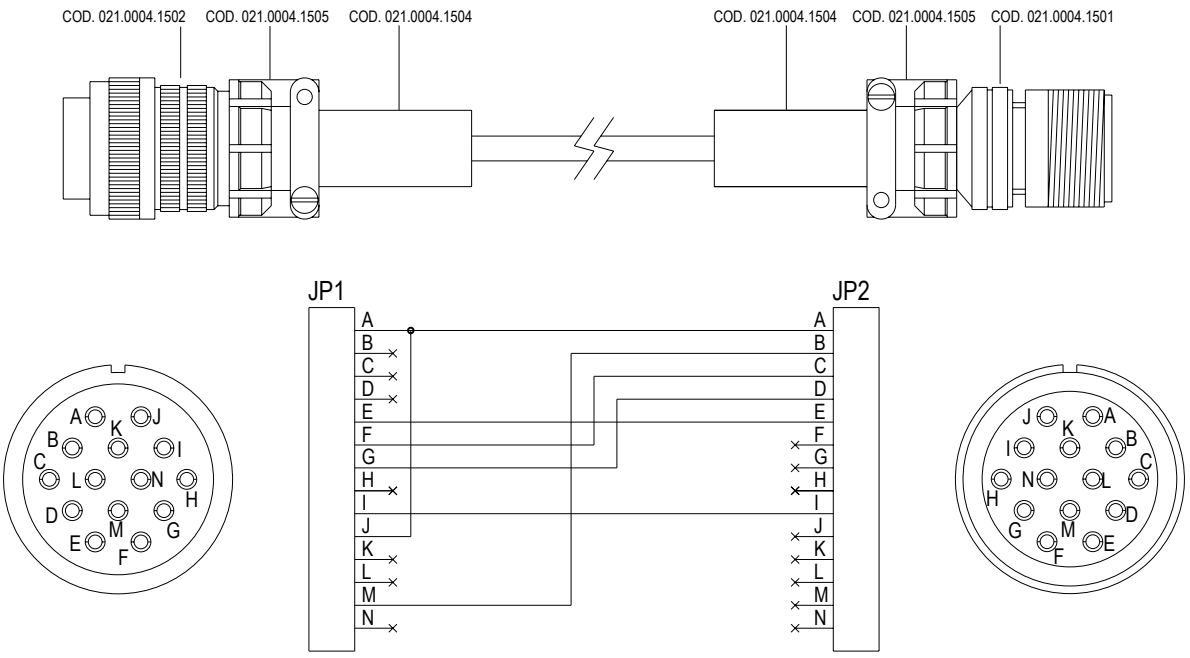
10 kOhm - 100 kOhm potentiometer

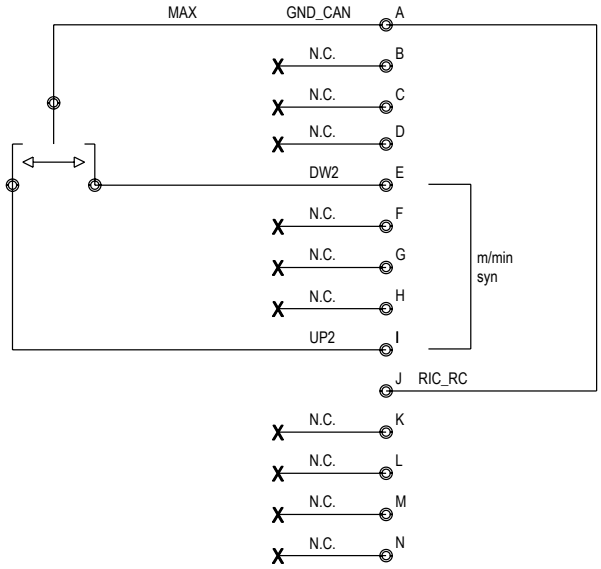
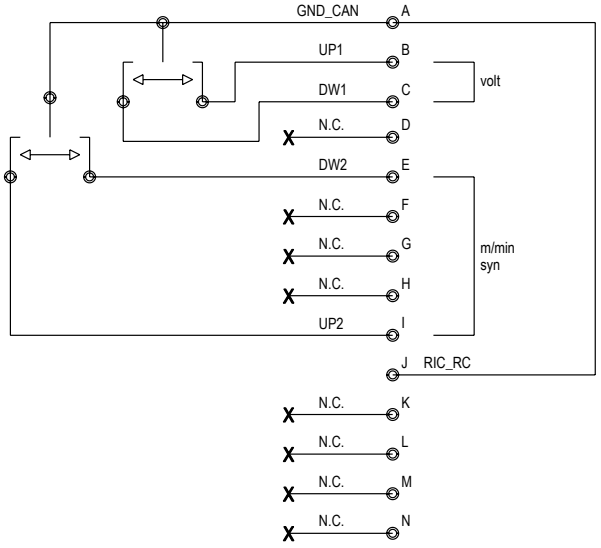
RC04: Wiring diagram



10 kOhm - 100 kOhm potentiometer

To connect the remote control (RC03, RC04) to the equipment, the adapter wiring code 022.0002.0383.



RC05: Wiring diagram	RC06: Wiring diagram
	

18 TECHNICAL DATA

Directives applied	Waste electrical and electronic equipment (WEEE)
	Electromagnetic compatibility (EMC)
	Low voltage (LVD)
	Restriction of the use of certain hazardous substances (RoHS)
	Eco Design of energy-related products
Construction standards	EN 60974-1; EN 60974-5; EN 60974-10 Class A
Conformity markings	CE Equipment compliant with European directives in force
	S Equipment suitable in an environment with increased hazard of electric shock
	Equipment compliant with WEEE directive
	RoHS Equipment compliant with RoHS directive

18.1 POWER PULSE 3200K

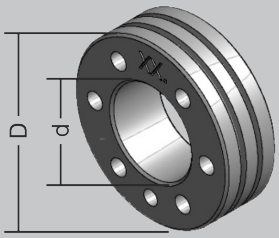
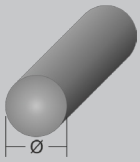
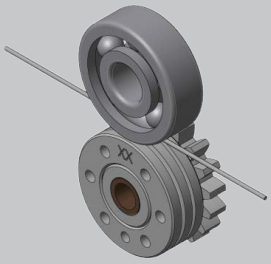
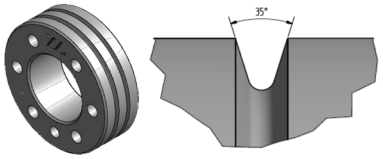
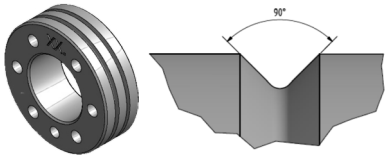
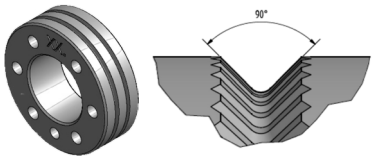
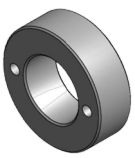
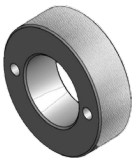
Supply voltage	3 x 400 Va.c. ± 15% 50/60 Hz			
Network protection	20 A Delayed			
Zmax	-			
Dimensions	height: 466 mm / width: 293 mm / depth: 722 mm			
Weight	30.8 kg			
Insulation class	H			
Protection rating	IP23S			
Cooling	AF: Forced air cooling (with fan)			
Maximum gas pressure	0.5 MPa (5 bar)			
Static characteristic	MMA: Falling characteristic			
	TIG: Falling characteristic			
	MIG: Flat characteristic			
Welding mode		MMA	TIG	MIG
Current and voltage regulation range		10 A / 20.4 V 320 A / 32.8 V	5 A / 10.2 V 320 A / 22.8 V	10 A / 14.5 V 320 A / 30.0 V
Welding current / Working voltage	40% (40°C)	-	-	-
	60% (40°C)	320 A / 32.8 V	320 A - 22.8 V	320 A / 30.0 V
	100% (40°C)	260 A / 30.4 V	260 A - 20.4V	260 A / 27.0 V
Maximum power absorbed	40% (40°C)	-	-	-
	60% (40°C)	12.7 KVA - 12.2 KW	9.4 KVA - 8.8 KW	11.8 KVA - 11.2 KW
	100% (40°C)	9.5 KVA - 9.2 KW	7.0 KVA - 6.4 KW	8.7 KVA - 8.3 KW
Maximum current absorbed	40% (40°C)	-	-	-
	60% (40°C)	18.4 A	13.6 A	17.0 A
	100% (40°C)	13.7 A	10.0 A	12.5 A
Actual current absorbed	40% (40°C)	-	-	-
	60% (40°C)	14.3 A	10.5 A	13.2 A
	100% (40°C)	13.7 A	10.0 A	12.5 A
Open voltage (U0)	66 V			
Reduced open voltage (Ur)	6.6 V			
Energy source efficiency	Efficiency (- A / - V): -%			
	Energy consumption under no-load conditions (U1= 400 Va.c.): - W			
Essential raw materials	According to the information provided by our suppliers, this product does not contain essential raw materials in quantities greater than 1 g per component.			

18.2 Power Pulse 4000K

Supply voltage	3 x 400 Va.c. ± 15% 50/60 Hz			
Network protection	32 A Delayed			
Zmax	-			
Dimensions	height: 466 mm / width: 293 mm / depth: 722 mm			
Weight	33.6 kg			
Insulation class	H			
Protection rating	IP23S			
Cooling	AF: Forced air cooling (with fan)			
Maximum gas pressure	0.5 MPa (5 bar)			
Static characteristic	MMA: Falling characteristic			
	TIG: Falling characteristic			
	MIG: Flat characteristic			
Welding mode		MMA	TIG	MIG
Current and voltage regulation range		10 A / 20.4 V 400 A / 36.0 V	5 A / 10.2 V 400 A / 26.0 V	10 A / 14.5 V 400 A / 34.0 V
Welding current / Working voltage	40% (40°C)	400 A / 36.0 V	400 A - 26.0 V	400 A / 34.0 V
	60% (40°C)	350 A / 34.0 V	350 A - 24.0 V	350 A / 31.5 V
	100% (40°C)	280 A / 31.2 V	280 A - 21.2 V	280 A / 28.0 V
Maximum power absorbed	40% (40°C)	17.6 KVA - 16.7 KW	13.2 KVA - 12.5 KW	16.9 KVA - 15.9 KW
	60% (40°C)	14.4 KVA - 13.8 KW	10.5 KVA - 10.1 KW	13.5 KVA - 12.9 KW
	100% (40°C)	10.5 KVA - 10.1 KW	7.5 KVA - 7.2 KW	9.7 KVA - 9.2 KW
Maximum current absorbed	40% (40°C)	25.4 A	19.0 A	24.3 A
	60% (40°C)	20.8 A	15.2 A	19.5 A
	100% (40°C)	15.2 A	10.8 A	14.0 A
Actual current absorbed	40% (40°C)	16.1 A	12.0 A	15.4 A
	60% (40°C)	16.1 A	11.8 A	15.1 A
	100% (40°C)	15.2 A	10.8 A	14.0 A
Open voltage (U0)	66 V			
Reduced open voltage (Ur)	6.6 V			
Energy source efficiency	Efficiency (- A / - V): -%			
	Energy consumption under no-load conditions (U1= 400 Va.c.): - W			
Essential raw materials	According to the information provided by our suppliers, this product does not contain essential raw materials in quantities greater than 1 g per component.			

19 SPARE PARTS

19.1 WIRE FEEDER ROLLS

			
CODE	**DESCRIPTION**	**Ø WIRE**	**TYPE**
002.0000.0140	ROLLER 0.6/0.8 D=37x12/D=19 V	0.6/0.8	 35° V-shaped groove for solid wires (steel, stainless steel)
002.0000.0141	ROLLER 0.8/1.0 D=37x12/D=19 V	0.8/1.0	
002.0000.0142	ROLLER 1.0/1.2 D=37x12/D=19 V	1.0/1.2	
002.0000.0143	ROLLER 1.2/1.6 D=37x12/D=19 V	1.2/1.6	
002.0000.0144	ROLLER 0.8/1.0 D=37x12/D=19 U	0.8/1.0	 90° V-shaped groove for aluminium wires
002.0000.0145	ROLLER 1.0/1.2 D=37x12/D=19 U	1.0/1.2	
002.0000.0146	ROLLER 1.2/1.6 D=37x12/D=19 U	1.2/1.6	
002.0000.0147	ROLLER 1.6/2.0 D=37x12/D=19 U	1.6/2.0	
002.0000.0148	ROLLER 2.4/3.2 D=37x12/D=19 U	2.4/3.2	 90° knurled VK-groove for tubular wires
002.0000.0149	ROLLER 1.0/1.2 D=37x12/D=19 VK	1.0/1.2	
002.0000.0150	ROLLER 1.2/1.6 D=37x12/D=19 VK	1.6/2.0	
002.0000.0151	ROLLER 2.4/3.2 D=37x12/D=19 VK	2.4/3.2	
002.0000.0303	SMOOTH ROLLER WITH BEARINGS		
002.0000.0152	ROLLER D=37x12/D=19 SMOOTH		
002.0000.0153	ROLLER D=37x12/D=19 KNURLED		

► 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 “V 90°” for soft materials (Aluminium and its alloys, CuSi3).
- The groove must be "V 35°" for harder materials (SG2-SG3, stainless steels).
- The groove must be "VK 90°" knurled for fluxed wire.

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