DOGMA 272 - 322 - 402 XV / W
DOGMA 276 - 326 - 406 PULSE XV / W

EN *Operator's manual*

READ CAREFULLY

WELDING TOGETHER

CEA COSTRUZIONI ELETTROMECCANICHE ANNETTONI S.p.A.

C.so E. Filiberto, 27 - 23900 Lecco - Italy
Tel. +39.0341.22322 - Fax +39.0341.422646
Cas. Post. (P.O.BOX) 205
E-mail: cea@ceaweld.com - web: www.ceaweld.com

1020HF31B-EN-04/2025 SN - GR xxxxxx

EN ENGLISH

Introduction

Thank you for buying our product.
In order to get the best performance out of the plant and ensure the maximum lifespan of its parts, the use and maintenance instructions contained in this manual must be read and strictly complied with, as well as **the safety instructions contained in the relevant folder**. If repairs to the plant are required, we recommend that our clients contact our service centre workshops, as they have the necessary equipment and personnel that are specifically trained and constantly updated.
All our machines and equipment are constantly developed and so changes may be made in terms of their construction and features.

Description

DOGMA is a newly concept welding system, really unique in gender in the multi-process compact MIG market, with its revolutionary design, breaks with the betrayal.
It was born by keeping the comfort of the welder at the center of its development and each of its cups is aimed at reducing preparation themes and simplifying the avivities of the operator for greater satisfaction and consequent better results.
DOGMA is unique and incurable in its ability to combine an ergonomic design with leccellerini of welding characteristics of its precise and stable archery counterpart. Present lens perfect for all qualified welding applications and in all industrial sectors.
They are equipped with Sereie of the new interface for vision, simple and complete, for the control and monitoring of all the welding parameters.
DOGMA allows you to settle in synergistic Mig/Mag Tig Lift and MMA. DOGMA is also available in the Dogma Impulse version with Mig Pusato and Mig Double Pulls Back Welding processes.

Operating features

The main features of the **DOGMA / DOGMA PULSE** welding unit are::
- The vertical development of the equipment saves space and surface.
- Visor protected commands.
- Multi -process generators: MMA - Tig Lift - Synergistic and manual Mig/Mag and for Dogma Pulse also pulsed and double pulsate Mig.
- Excellent trigger of the arch, always precise and efficient.
- Digital control of the welding parameters with preset synergistic curves.
- Control panel in the inclined front position.
- Easy wire coil to load thanks to the upper front ergonomic position of the coil support.
- Easy control and insertion of the welding wire in the dragging mechanism thanks to its high frontal position.
- Great front visibility of the traine-filled compartment and the control panel.
- High position of the torch connector with inclined output to optimize the sliding of the welding wire.
- Compartment for the drag rollers next to the wire power mechanism for rapid replacement.
- Traine-Filo with 4 large diameter rollers for a precise and constant drive of the wire.
- Double cava rollers replaceable without any tool.
- “Energy Saving” function that activates the fan ventilation and cooling of the torch only when necessary.
- Integrated water cooling group in the generator (W version).
- Possibility to partially or totally block the equipment via password.
- X Vision Control Display with “Two Click Knob” encoder for the preset and monitoring of all welding parameters:
  - Intuitive interface.
  - “Cycle” welding methods.
  - Memorization and recall of customizable welding programs.
  - Possibility to easily copy the “Jobs” (welding settings) from one machine to another via USB.
  - Advanced setting infographic.

Technical data

The general technical data of the system are summarized in table 1.

Table 1A

Model		DOGMA 272 XV / DOGMA 276 PULSE XV		
		MIG/MAG	TIG	MMA
Three-phase 50/60Hz power supply	V	400 ± 20%		
Mains supply: Z_{max}	Ω	0,051		
Power input (I_2 Max)	kVA	12,8	10,5	12,4
Delayed fuse (I eff)	A	16		
Power factor / cosφ		0,74 / 0,99		
Efficiency degree	η	0,89		
Input power at IDLE state	W	25		
Voltage without load	V	60		
Current range	A	10 - 270	5 - 270	10 - 250
Duty cycle @ 100% (40°C)	A	180		180
Duty cycle @ 60% (40°C)	A	200		200
Duty cycle @ x% (40°C)	A	270 (30%)		250 (35%)
Wires diameter	mm	0,6 - 1,6	-	-
Spool Diameter / Weight	mm / kg	300 / 15	-	-
N° rollers		4	-	-
Power output of feeder motor	W	55	-	-
Rated wire feeding speed	m/min	1,5 ÷ 22	-	-
MMA electrodes	mm	-	-	1,6 - 5,0
TIG electrodes	mm	-	1,0 - 3,2	-
Protection gas		• Carbon dioxide • Pure Argon • Argon - Carbon dioxide - Oxygen • Argon and Carbon dioxide blends	• Pure Argon • Inert gas mixtures	-
Standards		IEC 60974-1 - IEC 60974-2 - IEC 60974-5 - IEC 60974-10		
Protection class		IP 21 S		
Insulation class		H		
Dimensions	mm	792 - 1047 - 463		
Weight	kg	45 /54 (cooled version)		

WARNING: *This equipment complies with* **EN/IEC 61000-3-12** *provided that the maximum permissible system impedance Z_{max} is less than or equal to 0,051 Ω at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with maximum permissible system impedance Z_{max} less than or equal to 0,051 Ω.*

This system, tested according to **EN/IEC 61000-3-3**, *meets the requirements of* **EN/IEC 61000-3-11**.

Table 1B

Model		DOGMA 322 XV / DOGMA 326 PULSE XV		
		MIG/MAG	TIG	MMA
Three-phase 50/60Hz power supply	V	400 ± 20%		
Mains supply: Z_{max}	Ω	0,037		
Power input (I_2 Max)	kVA	14,5	12,1	14,6
Delayed fuse (I eff)	A	16		
Power factor / cosφ		0,8 / 0,99		
Efficiency degree	η	0,88		
Input power at IDLE state	W	30		
Voltage without load	V	63		
Current range	A	10 - 320	5 - 320	10 - 320
Duty cycle @ 100% (40°C)	A	240		
Duty cycle @ 60% (40°C)	A	270		
Duty cycle @ 35% (40°C)	A	320		
Wires diameter	mm	0,6 - 1,6	-	-
Spool Diameter / Weight	mm / kg	300 / 15	-	-
N° rollers		4	-	-
Power output of feeder motor	W	55	-	-
Rated wire feeding speed	m/min	1,5 ÷ 22	-	-
MMA electrodes	mm	-	-	1,6 - 5,0
TIG electrodes	mm	-	1,0 - 3,2	-
Protection gas		• Carbon dioxide • Pure Argon • Argon - Carbon dioxide - Oxygen • Argon and Carbon dioxide blends	• Pure Argon • Inert gas mixtures	-
Standards		IEC 60974-1 - IEC 60974-2 - IEC 60974-5 - IEC 60974-10		
Protection class		IP 21 S		
Insulation class		H		
Dimensions	mm	792 - 1047 - 463		
Weight	kg	48 / 57 (cooled version)		

WARNING: *This equipment complies with* **EN//IEC 61000-3-12** *provided that the maximum permissible system impedance Z_{max} is less than or equal to 0,037 Ω at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with maximum permissible system impedance Z_{max} less than or equal to 0,037 Ω.*

This system, tested according to **EN/IEC 61000-3-3**, *meets the requirements of* **EN/IEC 61000-3-11**.

Table 1C

Model		DOGMA 402 XV / DOGMA 406 PULSE XV		
		MIG/MAG	TIG	MMA
Three-phase 50/60Hz power supply	V	400 ± 20%		
Mains supply: Z_{max}	Ω	0,037		
Power input (I_2 Max)	kVA	21,3	17,7	21,9
Delayed fuse (I eff)	A	25		
Power factor / cosφ		0,74 / 0,99		
Efficiency degree	η	0,88		
Input power at IDLE state	W	30		
Voltage without load	V	63		
Current range	A	10 - 400	5 - 400	10 - 400
Duty cycle @ 100% (40°C)	A	300		
Duty cycle @ 60% (40°C)	A	340		
Duty cycle @ 35% (40°C)	A	400		
Wires diameter	mm	0,6 - 1,6	-	-
Spool Diameter / Weight	mm / kg	300 / 15	-	-
N° rollers		4	-	-
Power output of feeder motor	W	55	-	-
Rated wire feeding speed	m/min	1,5 ÷ 22	-	-
MMA electrodes	mm	-	-	1,6 - 6,0
TIG electrodes	mm	-	1,0 - 3,2	-
Protection gas		• Carbon dioxide • Pure Argon • Argon - Carbon dioxide - Oxygen • Argon and Carbon dioxide blends	• Pure Argon • Inert gas mixtures	-
Standards		IEC 60974-1 - IEC 60974-2 - IEC 60974-5 - IEC 60974-10		
Protection class		IP 21 S		
Insulation class		H		
Dimensions	mm	792 - 1047 - 463		
Weight	kg	53 / 62 (cooled version)		

WARNING: *This equipment complies with* **EN//IEC 61000-3-12** *provided that the maximum permissible system impedance Z_{max} is less than or equal to 0,037 Ω at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with maximum permissible system impedance Z_{max} less than or equal to 0,037 Ω.*

This system, tested according to **EN/IEC 61000-3-3**, *meets the requirements of* **EN/IEC 61000-3-11**.

Usage limits (IEC 60974-1)

The use of a welder is typically discontinuous as it consists of effective work periods (welding) and rest periods (Piece positioning, wire replacement, molating operations, etc.).
This welder is sized to deliver the nominal I_2 max current, in complete safety, for a period of work of the X% compared to the time of total employment. The rules in force establish the employment time in 10 minutes total. As a work cycle, the x% of this interval is considered. Overcoming the permitted work cycle, the intervention of thermal protection is caused that preserves the internal components of the welder from dangerous overheating. The intervention of the thermal protection is reported on the display (see the X Vision Control Panel manual). After a few minutes the thermal protection is automatically regained and the welder is ready for use again.

How to lift up the system

Strap the system safely and securely in the slings working from the bottom, then lift up from the ground.
This welding machine has a robust handle built into the frame for moving the equipment.

NOTE: *These hoisting and transportation devices conform to European standards. Do not use other hoisting and transportation systems.*

Opening the packaging

The system essentially consists of:
- **DOGMA/DOGMA PULSE** weld unit.
- Separately:
  - MIG-MAG welding torch (optional).
  - Unit for cooling the welding torch integrated into the generator (cooled version).

Perform the following operations on receiving the apparatus:
- Remove the welding generator and all accessories and components from the packaging.
- Check that the welding apparatus is in good condition; otherwise immediately inform the retailer or distributor.
- Check that all the ventilation grilles are open and that there is nothing to obstruct the correct air flow.

Installation and connections

The installation site for the system must be carefully chosen in order to ensure its satisfactory and safe use. The user is responsible for the installation and use of the system in accordance with the producer's instructions contained in this manual. Before installing the system the user must take into consideration the potential electromagnetic problems in the work area. In particular, we suggest that you should avoid installing the system close to:
- Signalling, control and telephone cables.
- Radio and television transmitters and receivers.
- Computers and control and measurement instruments.
- Security and protection instruments.

Persons fitted with pace-makers, hearing aids and similar equipment must consult their doctor before going near a machine in operation. The equipment's installation environment must comply to the protection level of the frame.
The welding unit is characterized by the following classes:
- IP 21 S protection class indicates that the system can only be used in internal environments.
- The "S" usage class indicates that the generator can be employed in environments with a high risk of electrical shocks.

This system is cooled by means of the forced circulation of air, and must therefore be placed in such a way that the air may be easily sucked in and expelled through the apertures made in the frame.
Assemble the system in the following way:
- Connect up the welder to the mains.
- Connect up the welding cables.

Instructions for fitting the individual components / optional extras are contained in the relevant packaging.

Connection to the electrical supply

Connection of the machine to the user line (electrical current) must be performed by qualified personnel.

Before connecting the welding machine to the mains power supply, make sure that rated voltage and frequency correspond to those provided by the mains power supply and that the welding machine's power switch is turned to "O".

Use the welder's own plug to connect it up to the main power supply. Proceed as follows if you have to replace the plug:
- 3 conducting wires are needed for connecting the machine to the supply.
- The fourth, which is YELLOW GREEN in colour is used for making the "GROUND" connection.

Before connecting the welding machine to the mains power supply, make sure that rated voltage and frequency correspond to those provided by the mains power supply and that the welding machine's power switch is turned to "O".

Tables 2A-2B-2C show the recommended capacity values for time-delay line fuses.

Table 2A

Model		DOGMA 272 XV / DOGMA 276 PULSE XV		
		MIG/MAG	TIG	MMA
Power input (I_2 Max)	kVA	12,8	10,5	12,4
Delayed fuse (I eff)	A	16		
Duty cycle @ 30% (40°C)	A	270		
Mains cable				
Length	m	4		
Section	mm^2	2,5		
Ground cable				
Length	m	4		
Section	mm^2	35		

Table 2B

Model		DOGMA 322 XV / DOGMA 326 PULSE XV		
		MIG/MAG	TIG	MMA
Power input (I_2 Max)	kVA	14,5	12,1	14,6
Delayed fuse (I eff)	A	16		
Duty cycle @ 35% (40°C)	A	320		
Mains cable				
Length	m	4		
Section	mm^2	2,5		
Ground cable				
Length	m	4		
Section	mm^2	50		

Table 2C

Model		DOGMA 402 XV / DOGMA 406 PULSE XV		
		MIG/MAG	TIG	MMA
Power input (I_2 Max)	kVA	21,3	17,7	21,9
Delayed fuse (I eff)	A	25		
Duty cycle @ 35% (40°C)	A	400		
Mains cable				
Length	m	4		
Section	mm^2	4		
Ground cable				
Length	m	4		
Section	mm^2	50		

NOTE: *Any extensions to the power cable must be of a suitable diameter, and absolutely not of a smaller diameter than the special cable supplied with the machine.*

Loading wire

- Put the spool (Ø 300 mm max) on the appropriate support in such a way that the wire takes place counter-clockwise.
- Thread the end of the wire into the back guide (Pos. 1, Fig. A) on the drawing mechanism.
- Lift up the idle rolls (Pos. 4, Fig. A) releasing the roll pressure device (Pos. 2, Fig. A). Make sure that the drive rolls (Pos. 7, Fig. A) have the diameter corresponding to the wire being used stamped on the outside.
- Insert the wire in the central guide and in the guide of the centralized attack (Pos. 5, Fig. A) for a few centimeters. Lower the arms of the idler rollers, ensuring that the wire enters the groove of the drive roller. Eventually adjust the pressure between the rollers by acting on the appropriate knob (Pos. 2, Fig. A). The correct pressure is the minimum that does not allow the rollers to slip on the wire. Excessive pressure is the cause of deformation of the wire and tangling at the entrance of the sheath, insufficient pressure brings irregularities in welding as a consequence.

Assembly of drive rollers

Unscrew the two screws (Pos. 6, Fig. A). Lift up the idle rollholder arm (Pos. 3, Fig. A) and proceed as follows:
- Each roller shows the type of wire and diameter on the two external sides.
- Install the right rolls (Pos. 7, Fig. A) making sure the groove is in the correct position for the diameter of the wire being used.

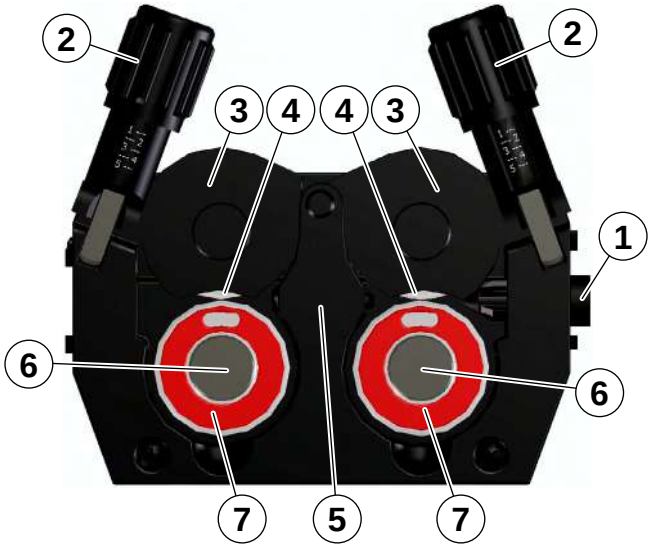


FIG. A

Control apparatus

➤ **Fig. B**

Pos. 1 Control panel.
Pos. 2 Centralized torch connection.
Pos. 3 Remote control connector.
Pos. 4 Rapid coupling neutral position, used only for MMA and TIG electrode welding.
Pos. 5 Fast coupling positive polarity.
Pos. 6 Cable to change polarity.
Pos. 7 Fast coupling negative polarity.
Pos. 8 Power supply switch. In the “O” position the welder is off.
Pos. 9 Mains cable.
Pos. 10 Gas hose.
Pos. 11 Tank cap only for cooled version.

FIG. B

MIG-MAG / PULSE MIG / DOUBLE PULSE MIG welding with GAS

To begin MIG-MAG / PULSE MIG / DOUBLE PULSE MIG welding, carry out the following tasks (with the machine switched off).

1 - Connecting the cables (Fig. C1)

1) Connect the gas hose to the pressure reducer fitted on the cylinder beforehand. Gas cylinders are supplied with a pressure reducer to adjust pressure of the gas used for welding.
2) Screw the torch to the centralised connection on the front panel.
3) Connect the mass cable to the quick connection marked by the symbol - (negative), placed on the front panel and then the relative corner mass to the piece to be welded in the free area of rust, paint and fat. The use of particularly long welding cables causes voltage falls and some problems due to the greater resistance and inductance of the cables that can cause welding defects.
   Follow instructions to avoid these problems:
   • Use appropriate welding cable cross-sections.
   • Lay out the cables as a flat as possible to prevent them from coiling up.
4) Connect the reverse polarity cable to the positive terminal only for DOGMA 272-276 PULSE (Fig. C2).

2 - Welding

1) Switch the welding machine on by moving the power supply switch to I.
2) Make the adjustments and do the parameter settings on the control panel.
3) Load the wire using the torch button, after having removed the wire guide nozzle from the torch to allow the wire to come out freely, while loading.
4) Open the tap on the cylinder slowly and adjust the reducer knob to obtain a pressure of about 1,3 to 1,7 bar, and regulate the flow to a value between 14 and 20 lit/min to suit the current used for welding.
5) The welding machine is ready to weld. Start welding by moving close to the welding point and press the torch button.
6) Once welding has been completed remove any slag, switch off the machine and close the gas cylinder.

FIG. C1

FIG. C2

MIG-MAG / PULSE MIG / DOUBLE PULSE MIG welding without GAS (only for DOGMA 272 XV and DOGMA 276 PULSE XV models)

To begin MIG-MAG / PULSE MIG / DOUBLE PULSE MIG welding, carry out the following tasks (with the machine switched off).

1 - Connecting the cables (Fig. D1)

1) Screw the torch to the centralised connection on the front panel of the welding machine.
2) Connect up the earthing system cable to the rapid coupling marked by a + (positive) symbol and then the relevant ground clamps to the piece being welded in an area free from rust, paint and grease. Using particularly long welding cables reduces the voltage and causes some problems from increased resistance and inductance of the cables that could cause faulty welding. Follow instructions to avoid these problems:
   - Use appropriate welding cable cross-sections.
   - Lay out the cables as a flat as possible to prevent them from coiling up.
3) Connect the reverse polarity cable to the negative terminal (Fig. D2).

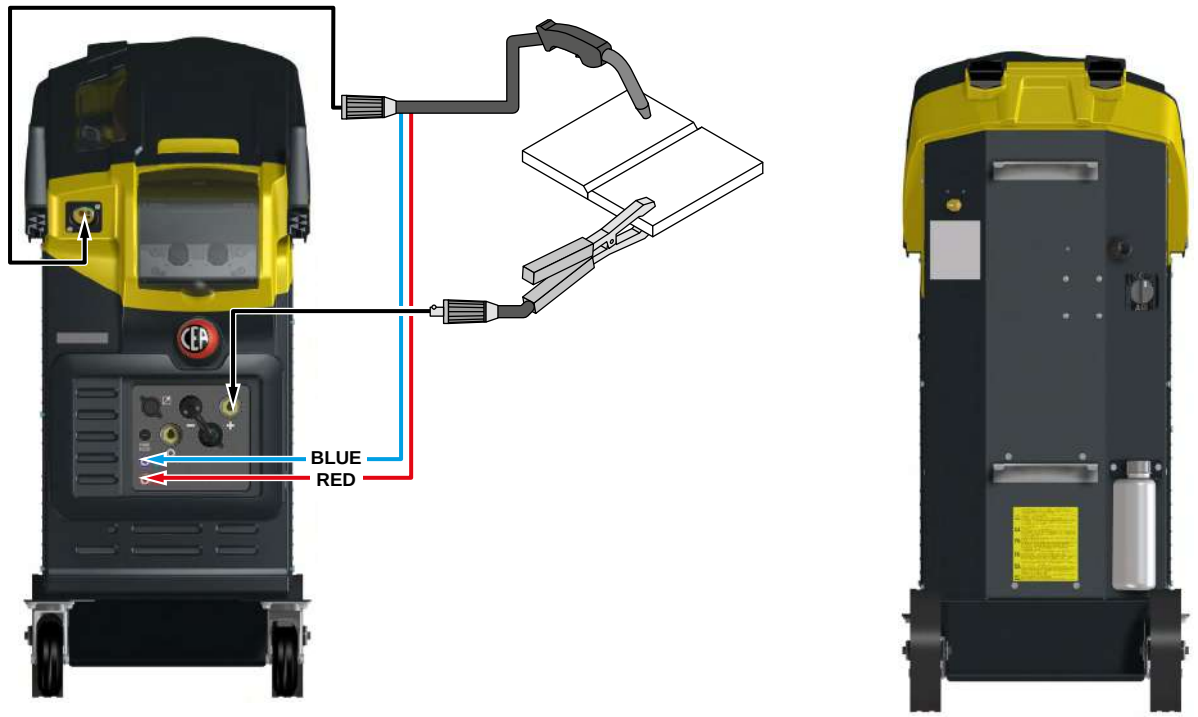


FIG. D1

FIG. D2

2 - Welding

1) Switch the welding machine on by moving the power supply switch to I.
2) Make the adjustments and do the parameter settings on the control panel.
3) Load the wire using the torch button, after having removed the wire guide nozzle from the torch to allow the wire to come out freely, while loading.
4) The welding machine is ready to weld. Start welding by moving close to the welding point and press the torch button.
5) Once welding has been completed remove any slag, switch off the machine.

Spot welding

Welding can be done with or without gas. The substantial difference with MIG-MAG welding is essentially related to the torch and the adjustments that must be made on the control panel.

- Depending on the torch chosen and the work to be done, a gas guide nozzle can be fitted on the torch that is specifically for spot welding (see Fig. E).
- Use the control panel to select the spot-welding mode and, if necessary, make the changes to the related “Special functions - Fx” (for further information see the control panel manual), which allows the machine to do this specific type of welding.

To begin spot welding:

- Place the gas guiding nozzle on the workpiece to be spot welded.
- Press the torch button to start the welding current and wire feed.
- When the spot welding time expires (SPOT WELD TIME), the wire feed stops automatically.
- When the torch button is pushed again a new welding cycle starts.
- Release the torch button.

FIG. E

Interval welding (Stitch)

The substantial differences with the spot welding mainly concern the adjustments that must be carried on the welding machine.

Use the control panel to select the interval welding mode and then make the changes to the related “Special functions - Fx” (for further information see the control panel manual), which allows the machine to do this specific type of welding.

To begin interval welding:

- Press the torch button to start the welding current and wire feed.
- At this point the welding machine automatically carries out a succession of welded portions (STITCH WELD TIME) followed by a pause (STITCH WELD PAUSE), according to the times entered previously. This procedure stops automatically only when the TORCH BUTTON is released.
- When the torch button is pushed again the torch begins a new interval welding cycle.

Aluminium welding

Welding aluminum in MIG/MAG mode requires some specific considerations due to the unique characteristics of this metal. Here is a general guide on how to perform MIG/MAG welding of aluminium:

1) **Material Preparation**: Make sure the surfaces to be welded are clean and free of grease, oil or other contamination. Use a wire brush or sandpaper to clean the area to be soldered.
2) **Choice of shielding gas**: For welding aluminum with the MIG/MAG process, it is necessary to use pure argon or a mixture of argon with helium. This gas helps protect the weld from oxidation. It uses a pressure between 1.3 and 1.7 bar and adjusts the flow according to the current used to weld. A gas flow of between 14 and 20 liters per minute is generally appropriate to ensure effective protection during the welding process.
3) **Choice of wire**: Use a welding wire specifically for aluminum. The wire must be designed for use with inert gas such as argon. Make sure the wire diameter is suitable for the application.
4) **Welding machine settings**: Before you start welding, make sure you have replaced the machine's drive rolls with ones specifically designed for aluminum wire. This is essential to ensure smooth wire feeding during the process. Furthermore, it uses a 3 meter long torch and carbon teflon sheath with bronze tip to allow greater flow of the wire.
   Set the pressure of the drive rollers to the minimum necessary, adjusting it using the appropriate screw. This helps avoid deformation of the aluminum wire during feeding.
   Adjust wire feed speed and voltage based on recommendations from the manufacturer of the welding wire and material being welded. These settings may vary depending on the thickness of the material and the type of joint being welded.
5) **Welding Technique**: When welding aluminum, it is important to maintain a constant distance between the torch nozzle and the material. The "weaving" technique (zig-zag movement) can be useful for evenly distributing heat and preventing the formation of craters.
6) **Cooling**: After completing welding, it is advisable to allow the piece to cool gradually to avoid unwanted distortions or strains.
7) **Check for porosity**: Check the weld carefully to make sure there are no porosities or defects. If porosity occurs, you may need to adjust welding settings or examine the material for contamination.
8) **Practice and Experience**: Welding aluminum can be a little more complex than welding other metals, so it's important to practice and gain experience to improve your skills.

Remember that welding aluminum requires some experience and expertise. If you feel unsure, it may be helpful to take a training course or consult an expert before proceeding with critical projects.

Electrode welding (MMA)

The machine, electrode welding is used to weld most metals (different types of steel, etc.) using coated rutilic and basic electrodes with diameters ranging from Ø 1.6 mm to Ø 6 mm, and devices that the user can adjust for “Arc Force”, “Hot Start”, and Anti-sticking functions to avoid the electrodes sticking.

1) Connecting the welding cables (Fig. F):
   Disconnect the machine from the mains power supply and connect the welding cables to the output terminals (Positive and Negative) of the welding machine, attaching them to the clamp and ground with the polarity specified for the type of electrode being used (Fig.F). Always follow the electrode manufacturer’s instructions. The welding cables must be as short as possible, they must be near to one another, positioned at or near floor level. Do not touch the electrode clamp and the ground clamp simultaneously.
2) Switch the welding machine on by moving the power supply switch to I.
3) Make the adjustments and do the parameter settings on the control panel.
4) Carry out welding by moving the torch to the workpiece. Strike the arc (press the electrode quickly against the metal and then lift it) to melt the electrode, the coating of which forms a protective residue. Then continue welding at an inclination of about 60° compared with the metal in relation to the direction of welding.

FIG. F

PART TO BE WELDED

The part to be welded must always be connected to ground in order to reduce electromagnetic emission. Much attention must be afforded so that the ground connection of the part to be welded does not increase the risk of accident to the user or the risk of damage to other electric equipment. When it is necessary to connect the part to be welded to ground, you should make a direct connection between the part and the ground shaft. In those countries in which such a connection is not allowed, connect the part to be welded to ground using suitable capacitors, in compliance with the national regulations.

WELDING PARAMETERS

Table 3 shows some general indications for the choice of electrode, based on the thickness of the parts to be welded. The values of current to use are shown in the table with the respective electrodes for the welding of common steels and low-grade alloys. These data have no absolute value and are indicative data only. For a precise choice follow the instructions provided by the electrode manufacturer.

The current to be used depends on the welding positions and the type of joint, and it increases according to the thickness and dimensions of the part.

The current intensity to be used for the different types of welding, within the field of regulation shown in table 4 is:

- High for plane, frontal plane and vertical upwards welding.
- Medium for overhead welding.
- Low for vertical downwards welding and for joining small pre-heated pieces.

A fairly approximate indication of the average current to use in the welding of electrodes for ordinary steel is given by the following formula:

$$I = 50 \times (Øe - 1)$$

Where:
I = intensity of the welding current
Øe = electrode diameter
Example:
For electrode diameter 4 mm

$$I = 50 \times (4 - 1) = 50 \times 3 = 150A$$

Table 3

Welding thickness (mm)	Ø electrode (mm)
1,2 ÷ 2	1,6
1,5 ÷ 3	2
3 ÷ 5	2,5
5 ÷ 12	3,25
≥ 12	4
≥ 20	≥ 5

Table 4

Ø electrode (mm)	Current (A)
1,6	30 ÷ 60
2	40 ÷ 75
2,5	60 ÷ 110
3,2	95 ÷ 140
4	140 ÷ 190
5	190 ÷ 240
6	220 ÷ 330

TIG welding with “Lift”

In the TIG process welding is achieved by melting the two metal pieces to be joined, with the possible addition of material from the outside, using an arc ignited by a tungsten electrode. The “Lift” type ignition makes it possible to reduce tungsten inclusions on ignition to a minimum. The molten bath and the electrode are protected by and inert gas (for example, Argon). This type of welding is used to weld thin sheet metal or when elevated quality is required.

1) Connecting the welding cables (Fig. G):
   - Connect one end of the gas hose to the gas connecter on the TIG torch and the other end to the pressure reducer on the inert gas cylinder (Argon or similar).
   - With the machine switched off:
     - Connect the ground cable to the snap-on connector marked + (positive).
     - Connect the relative ground clamp to the workpiece in an area free of rust, paint, grease, etc..
     - Connect the TIG torch power cable to the snap-on connector marked - (negative).
2) Switch the welding machine on by moving the power supply switch to I.
3) Make the adjustments and do the parameter settings on the control panel.
4) Open the gas cylinder and regulate the flow by adjusting the valve on the TIG torch by hand.
5) Ignite the electric arc by contact, using a decisive, quick movement without dragging the tungsten electrode on the piece to be welded (“Lift” type ignition).
6) The welder has a SWS “Smart Welding Stop” system for the end of TIG welding. Lifting up the torch without switching off the arc will introduce a slope down and it will switch off automatically.
7) When you have finished welding remember to shut the valve on the gas cylinder.

Table 5 shows the currents to use with the respective electrodes for TIG DC welding. This input is not absolute but is for your guidance only; read the electrode manufacturers' instructions for a specific choice. The diameter of the electrode to use is directly proportional to the current being used for welding.

Table 5

Ø ELECTRODE (mm)	ELECTRODE TYPE Current adjustment field (A)	
	TIG DC	
	Tungsten Ce 1% Grey	Tungsten Rare ground 2% Turchoise
1	10-50	10-50
1,6	50-80	50-80
2,4	80-150	80-150
3,2	150-250	150-250
4	200-400	200-400

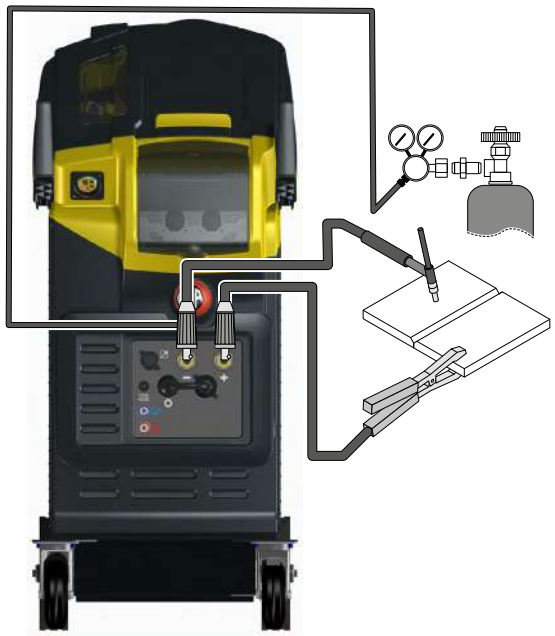


FIG. G

Maintenance

ATTENTION: *Cut off the power supply to the equipment before effecting any internal inspection.*

IMPORTANT: *For fully electronic welding machines, removing the dust by sucking it into the machine by the fans, is of utmost importance.*

In order to achieve correct functioning of the machine, proceed as described:

- Periodic removal of accumulations of dirt and dust inside the equipment using compressed air. Do not point the jet of air directly at the electrical parts as this could damage them.
- Periodical inspection for worn cables or loose connections that could cause overheating.

TORCH

The torch is subjected to high temperatures and is also stressed by traction and torsion. We recommend not to twist the wire and not to use the torch to pull the welder. As a result of the above the torch will require frequent maintenance such as:

- Cleaning welding splashes from the gas diffuser so that the gas flows freely.
- Substitution of the contact point when the hole is deformed.

- Cleaning of the wire guide liner using trichloroethylene or specific solvents.
- Check of the insulation and connections of the power cable; the connections must be in good electrical and mechanical condition.

SPARE PARTS

Original spares have been specifically designed for our equipment. The use of spares that are not original may cause variations in the performance and reduce the safety level of the equipment. We are not liable for damage due to use of spare parts that are not original.

Optional

WARNING: *The digital control unit of the generator is fitted with a control recognition device which allows it to identify which device is connected and take action accordingly.*

REMOTE CONTROL ANALOG RC

This command:

- Completely replaces the ENCODER - SX knob on the front panel.
- Partially (depending on the welding process selected) replaces the ENCODER - DX knob on the front panel.

AIR AND/OR WATER COOLED UP/DOWN TORCH

This command and works as an alternative:

- To the ENCODER - SX knob on the welding machine's control panel. In "synergic" MIG MAG and "manual" MIG MAG welding processes, by pressing the two right (+) and left (-) buttons you can regulate the values for the synergic welding parameters.
- To the ENCODER - DX knob on the welding machine's control panel. In the JOB welding process, by pressing the two right (+) and left (-) buttons you can scroll the welding points set previously.

AIR AND/OR WATER COOLED TORCH WITH DISPLAY (DIGITORCH)

With the new Digitorch you can have all the information at your fingertips. Thanks to the innovative microcontroller with display integrated into the handle you can view and adjust the main welding parameters:

- Current.
- Material thickness.
- Wire speed.
- Arc length.
- Electronic inductance.
- Stored program number.

By simply pressing the buttons, depending on the operating mode selected, it is possible to switch from one program to another or increase or decrease the parameters on the synergic curves in use.

Simple automation

This paragraph describes how to interface the welding machine with an automatic welding plant. The connection signs are marked and available on the "17-pole connector for accessory / optional extra connections" (Connector **CA** - see the "Wiring diagram" and "Wiring Diagram Legend" paragraphs).

DIGITAL INPUTS

Activating a digital input signal means applying a clean closed contact to it.

- TORCH BUTTON • Terminals **C / D (COM)**
  When this signal is activated, the welding machine starts the welding process.
- UP SIGNAL • Terminals **D (COM) / F**
  When this signal is activated, the welding machine increases the value set beforehand for the welding synergy parameters.
- DOWN SIGNAL • Terminals **D (COM) / E**
  When this signal is activated, the welding machine decreases the value set beforehand for the welding synergy parameters.

ANALOGUE INPUTS

These inputs must be piloted by a direct voltage that can be regulated between 0V and 10V.
Their input impedance exceeds 400 kΩ (to enable functionality of these inputs the voltage between terminals **P(-)** and **R (+)** must exceed 0,5V).

- PARAMETER REGULATION - A • Terminals **P(-) / R (+)**
  By regulating the voltage on this input between 1V and 10V the welding synergy parameters (WELDING WORKPIECE THICKNESS, WELDING CURRENT, WIRE SPEED) are regulated from the minimum to the maximum value.
- PARAMETER REGULATION - V • Terminals **P(-) / S (+)**
  By regulating the voltage on this input between 1V and 10V the welding parameters (ARC LENGTH, WELDING VOLTAGE, ELECTRONIC INDUCTANCE) are regulated from the minimum to the maximum value.

DIGITAL OUTPUTS

Activating the digital output signals means closing an NPN opto-isolator.

- ARC ON • Terminals **T / L**
  The welding machine activates this signal when it detects current passing through the welding circuit.
  There are two ways of connecting the detector circuit of this signal. If this is a relay coil, use the equivalent type A or type B systems (see FIG. H).
  IMPORTANT: the direct voltage cannot exceed 60VDC and the current on the load has a maximum limit of 50mA.

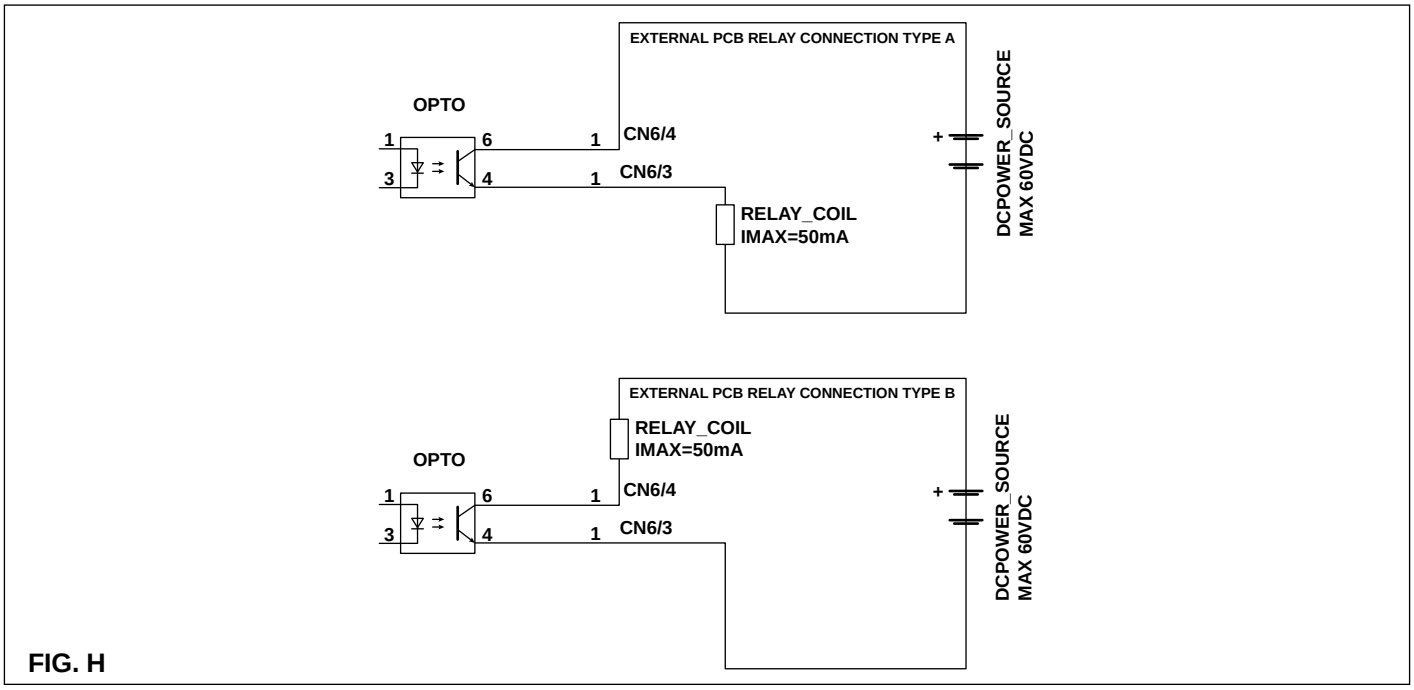


FIG. H

The pointing out of any difficulties and their elimination

The supply line is attributed with the cause of the most common difficulties. In the case of breakdown, proceed as follows:

1) Check the value of the supply voltage.
2) Check that the power cable is perfectly connected to the plug and the supply switch.
3) Check that the power fuses are not burned out or loose.
4) Check whether the following are defective:
   - The switch that supplies the machine
   - The plug socket in the wall
   - The generator switch

NOTE: *Given the required technical skills necessary for the repair of the generator, in case of breakdown we advise you to contact skilled personnel or our technical service department.*

Replacing the digital interface PCB

Proceed as follows:

- Unscrew the 4 screws fastening the front rack panel.
- Remove both the adjustment knobs.
- Extract wiring connectors from the digital interface PCB.
- Unscrew the nuts and washers on the support.
- Remove the digital interface PCB by lifting it out of its supports.
- Proceed vice versa to assemble the new digital interface PCB.

Troubleshooting table

WARNING: *Any internal inspections or repairs are only to be done by qualified personnel!*

IMPORTANT: *Remember to disconnect the mains power supply and wait for the internal capacitors to discharge (about 2 minutes) before starting to check and repair the machine if necessary.*

Defect	Solution
The welding machine does not switch on, control panel switched off.	• Check that the welding machine is installed correctly and that the mains supply has sufficient power to supply the welding machine. • Check the switch, cable and plug on the power supply line and replace them if necessary. • Check, and if necessary replace, the digital interface PCB or the control PCB.
Line fuses fused “instantaneously”.	• Check that the welding machine is installed correctly. • Check and if necessary replace the motor, transformer, or the inverter.
Line fuses fused after a work period.	• Check that you have fitted line fuses of adequate absorption capacity.
Welding machine on, control panel on, fan stopped.	• Check the wiring that powers the fans. • Check that there are no mechanical impediments blocking the fans. • Check and if necessary replace the digital interface PCB.
Welding machine on, display does not show correct values.	• See the error codes and signals shown in the manual for the control panel. • Check the wiring that powers the various boards. • Check, and if necessary replace, the digital interface PCB or the control PCB.
No gas coming out of the torch.	• Check and if necessary replace the solenoid valve or gas hose. • Check the wiring that powers the gas solenoid valve. • Check, and if necessary replace, the digital interface PCB or the control PCB.
The wire feed motor does not work during MIG-MAG welding.	• Check the wiring that powers the wire feed motor. • Check that there are no mechanical impediments blocking the motor. • Check that the motor is working correctly and if necessary replace it. • Check and if necessary replace the digital interface PCB.
Welding current insufficient or not constant.	• Check the power supply line. • Check and if necessary replace the wires (section or length inadequate). • Check the line voltage using a voltmeter.
Arc ignition difficult, the arc switches off immediately after ignition during MIG-MAG welding.	• Use the control panel manual to make sure you have set the various welding parameters correctly. • Check compatibility of the torch and the wire used. • Check that the torch and all its components are working correctly and replace them if necessary (e.g. worn components). • Check and if necessary replace the digital interface PCB.
The wire sticks to the workpiece to be welded.	• Check that there are no mechanical impediments blocking correct unwinding of the wire. • Check that the motor is working correctly and if necessary replace it. • Check and if necessary replace the digital interface PCB.

Cooling system

The plant is an integral part of the welding plant, particularly suited for cooling by means of liquid circulation utilised in particularly heavy welding operations, is composed in its essential parts of:

- A electric pump.
- A tank.
- A radiator.
- A pressure switch.
- A protection fuse.

Technical data

The general technical data of the system are summarized in table 6.

Table 6

Model		**DOGMA 272 - 322 - 402 W XV DOGMA 276 - 326 - 406 W PULSE XV**
Single-phase input	V	400
Frequency	Hz	50 / 60
Max power supply	kW	0,3
Max current absorbed	A	0,9
Delayed fuse	A	1,6
Coolant		• Cooling liquid CEA CL-1100 • Code 402275A • Working temperature -20°C to +120°C
Cooling power Φ_1 @ 1 l/min	kW	0,95
Max pressure	bar	4,3
Protection class		IP 21S
Insulation class		F
Tank capacity	l	3,5

Usage limits

The cooling device is sized for cooling by means of liquid circulation in the welder in a continuous manner. As a work cycle, it is considered at 100%.

Usage norms

CONTROL APPARATUS (Fig. I)

Pos. 1 Red snap-in connector for liquid intake.

Pos. 2 Blue snap-in connector for liquid outlet.

Pos. 3 Minimum level indicator of the refrigerant liquid in the tank (the liquid level must never be lower than the indicated notch).

Pos. 4 Protection fuse.

Pos. 5 Cap for filling of the tank with coolant.

FIG. I

Start-up / drainage

Before connecting the equipment to the utilities check the rating plate to make sure the voltage and frequency of the mains correspond and check that the main circuit breaker on the equipment is turnedto "O".

Upon the first usage following a period of extended inactivity of the device or in the case in which the electropump does not go under pressure (slight whistle), it is necessary to undertake drainage in order to eliminate all the air bubbles present within the hydraulic circuit.

Carry out the following operations following the assembly instructions indicated here (Fig. J) and also contained in the accessories packet:

1) Unscrew the cap on the tank and, using a funnel, fill the tank with CEA CL-1100 code 402275A cooling liquid (working temperature -20°C to +120°C). Close the tank cap.
2) Connect the tube provided to the blue rapid mount and insert the other end of the tube into a container.
3) Start up the welder by rotating the main switch to the 1 position and wait approximately 30 seconds so that the cooling device can allow the liquid to circulate.
4) Wait for the exit of the liquid. The operation will be terminated when the liquid exits in a constant way and without any traces of air bubbles.
5) Upon the completion of the operation, turn the welder off.
6) After that, screw the tank's cap shut and connect the welder prior to beginning operation.

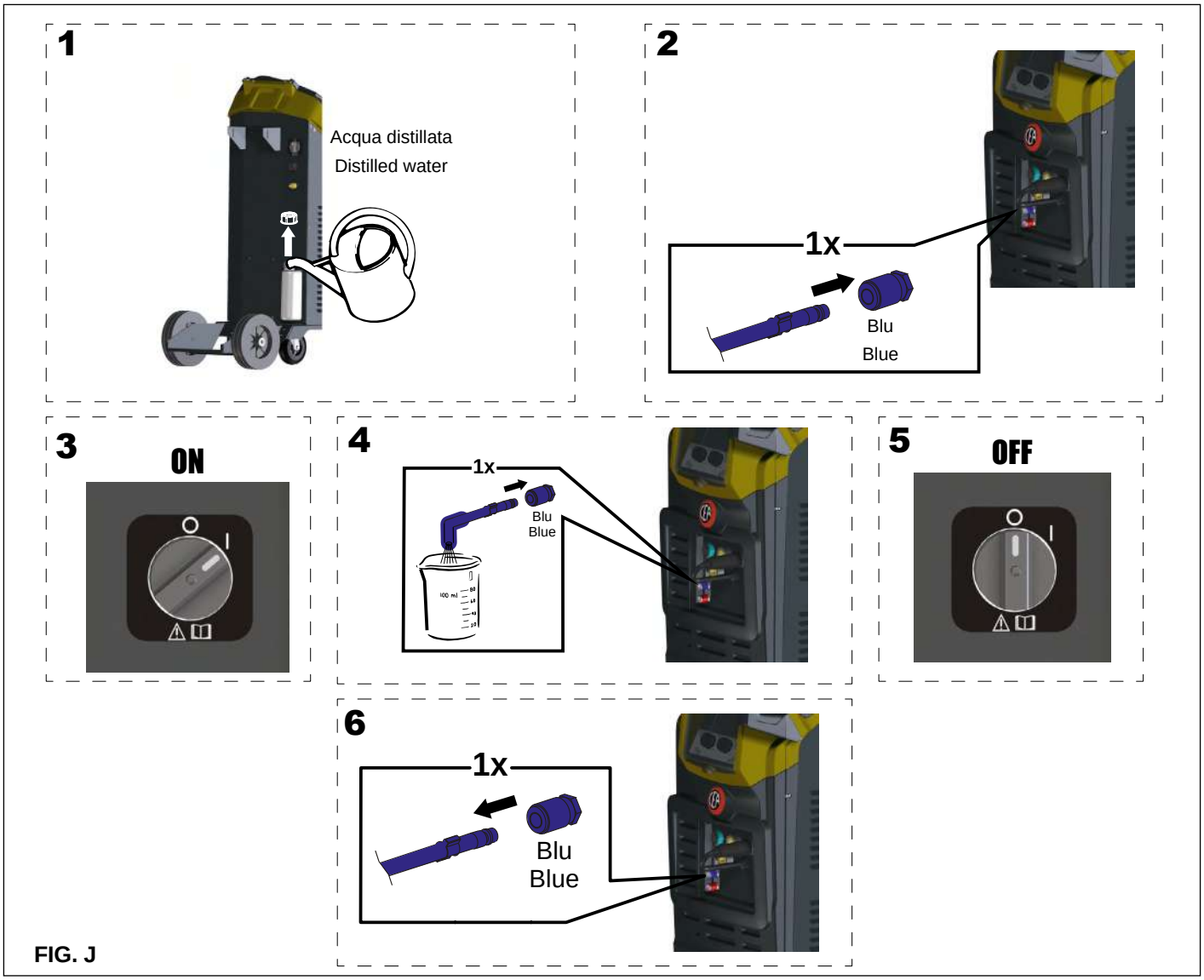


FIG. J

Cooling liquid

We recommend using only CEA **CL-1100** code 402275A cooling liquid (working temperature -20°C to +120°C).
The CEA **CL-1100** cooling liquid does not contain ethyl alcohol and is 100% biodegradable (Green Line).
It facilitates lubrication of rotating parts, does not form lime scale, and protects all metals against corrosion. It does not need to be diluted with water.

WARNING: *Mixing with other liquids or using unsuitable cooling liquids can cause damage to materials, resulting in the manufacturer's guarantee being rendered null and void!*

In particular:

- Only use CEA **CL-1100** cooling liquid.
- Do not mix it with other cooling liquids.
- When changing the cooling liquid, all the liquid must be replaced.

WARNING: *The coolant must be disposed of in accordance with current legal provisions, and with the corresponding safety schedules.*

In particular:

- It must not be disposed of with domestic waste!
- It must not end up in ground water!

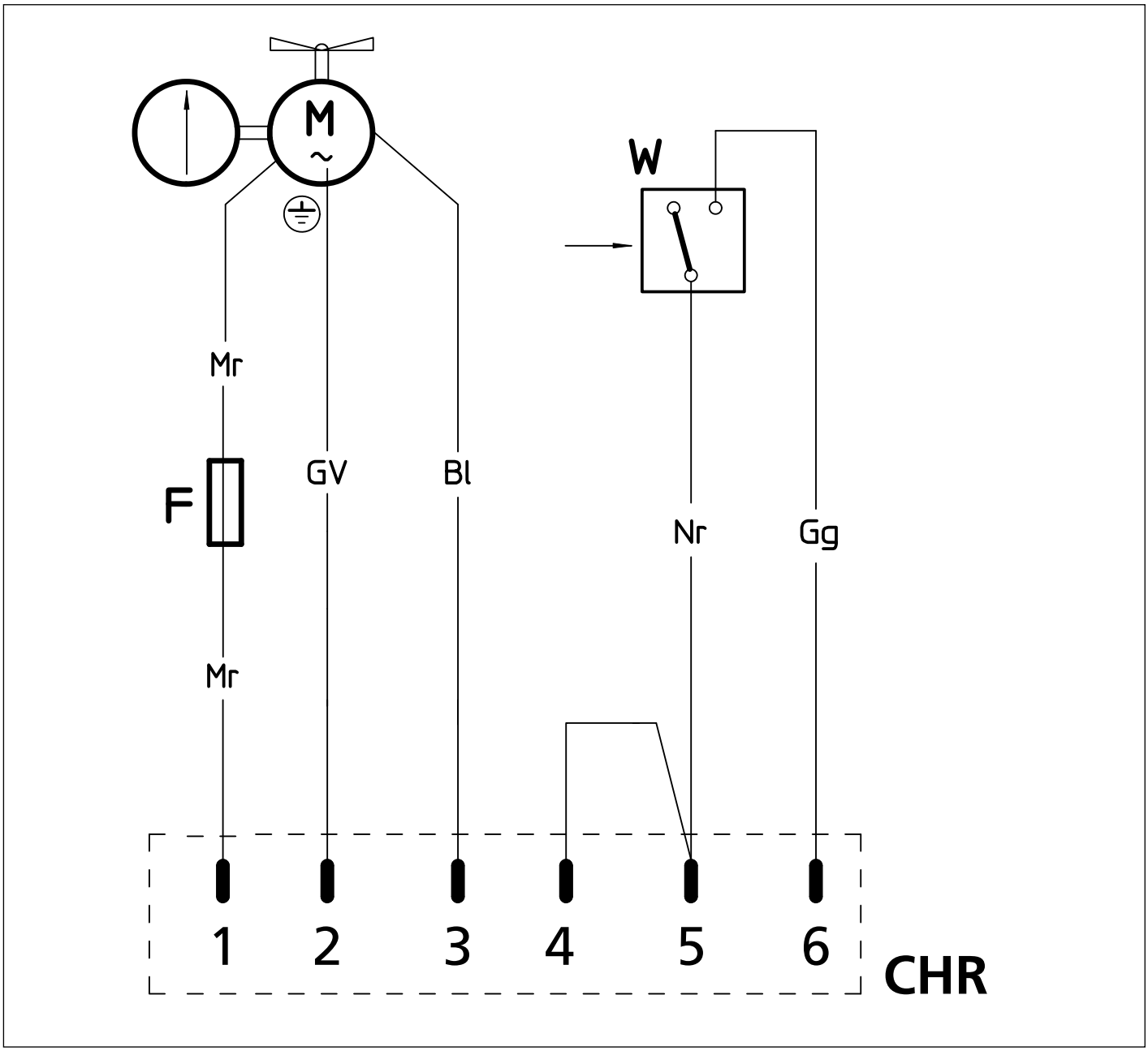
Maintenance

WARNING: *Prior to undertaking any kind of inspection within the machine, unplug the device from feed.*

- Periodically check the level of the cooling fluid.
- Add fluid whenever it drops below the minimum level indicated.
- We recommend using only CEA **CL-1100** code 402275A cooling liquid (working temperature -20°C to +120°C).
- Make sure all joints are tight and that there areno leaks
- Periodically clean the radiator with compressed air to eliminate the dust that reduces the cooling capacity.

IMPORTANT: *Original spare parts have been specially designed for our equipment. The use of non-original spare parts may cause variations in performance or reduce the foreseen level of safety. We decline all responsibility for the use of non-original spare parts.*

Wiring diagram 400V 50/60 Hz



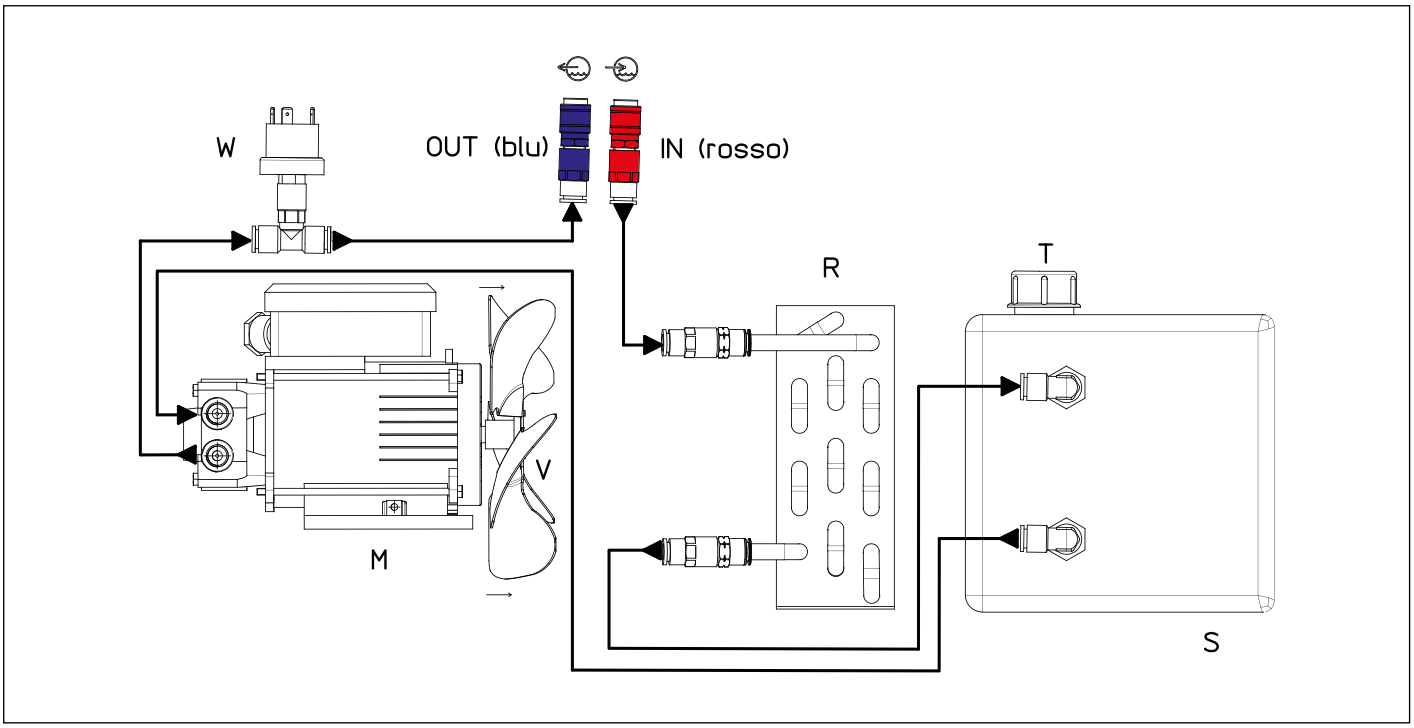
Key to the electrical diagram

CHR	Power supply connector
F	Fuse
M	Electric pump
W	Pressure switch

Colour key

Bl	Blue
Gg	Grey
GV	Yellow Green
Mr	Brown
Nr	Black

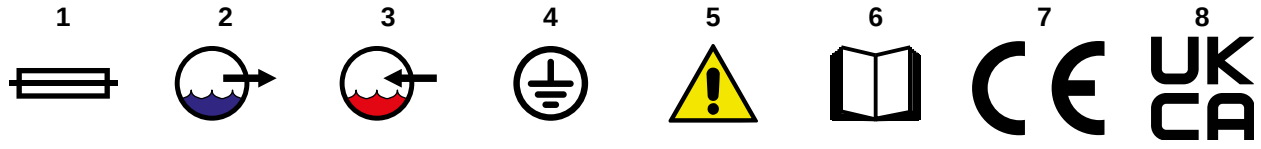
Hydraulic diagram



Key to hydraulic diagram

IN	Torch outlet (red)
M	Electric pump
OUT	Torch intake (blue)
R	Radiator
S	Tank
T	Tank cap
V	Ø172 fan pressing on the radiator side
W	Pressure switch

Meaning of graphic symbols on machine



SYMBOL	DESCRIPTION
1	Fuse
2	Cold liquid outlet
3	Hot liquid intake for cooling in the unit
4	Grounding
5	Warning!
6	Before using the equipment you should carefully read the instructions included in this manual
7	Product suitable for free circulation in the European Community
8	Product suitable for free circulation in Great Britain

Meaning of graphic symbols on machine

SYMBOL	DESCRIPTION
	Power switch
	System that can be used in environments with increased risk of electric shocks
	Product aimed at circulating freely in the European Community
	Product suitable for free circulation in the UK
	Dangerous voltage
	Earth
	Quick positive polo attack
	Quick negative pole attack
	Attention!
	Before using the system, it is necessary to carefully read the instructions contained in this manual
	Danger! Moving parts
	Prohibition use gloves
	Special disposal

Wiring diagram

Key to the electrical diagram

BP	Primary transformer coil
BS	Secondary coil transformer
CA	17 pole accessories connector
CHR	HR power connector
C-LINK	Primary capacitor
CT	Connector torch
CT 1-2-3	Push-Pull Transformer Connectors
D-D1-D2	Diode in4007
DW	"Down" button
EC	Euro connector
EMCF	EMC filter
EVG	Gas solenoid valve
IL	Line switch
L	Secondary inductance
F	Fuse
F 1-2-3	Ferrite
M	Electric pump
MT	Motor
MP	Primary IGBT motor
MV	Fan motor
PM	Earthing clamp
PT	Torch button
PFADJ	Precision voltage regulation potentiometer
PSYN	Synergy regulation potentiometer
QBW2	Integrated cooling unit (where present)
RF	Frontal rack panel
RP	Primary rectifier
SC	Control board
SDF	Digital front panel board
SP	Main inverter board
S-PP	Push-Pull PCB (optional)
SRP	Pump control board
S-TFT	TFT display board
TA	Current transformer
TAUX	Auxiliary transformer
TEL	MMA Torch
TIG	Tig Torch
TM	MIG / MAG Torch
TP	Main transformer
TRS	Secondary diodes thermostat
UP	"UP" button
W	Pressure switch

Colour key

AN	Orange-black
Ar	Orange
Az	Sky blue
Bc	White
Bl	Blue
Gg	Grey
Gl	Yellow
GV	Yellow green
Mr	Brown
NA	Black-blue
Nr	Black
Ro	Rose
RN	Red-black
Rs	Red
Vd	Green
Vl	Purple

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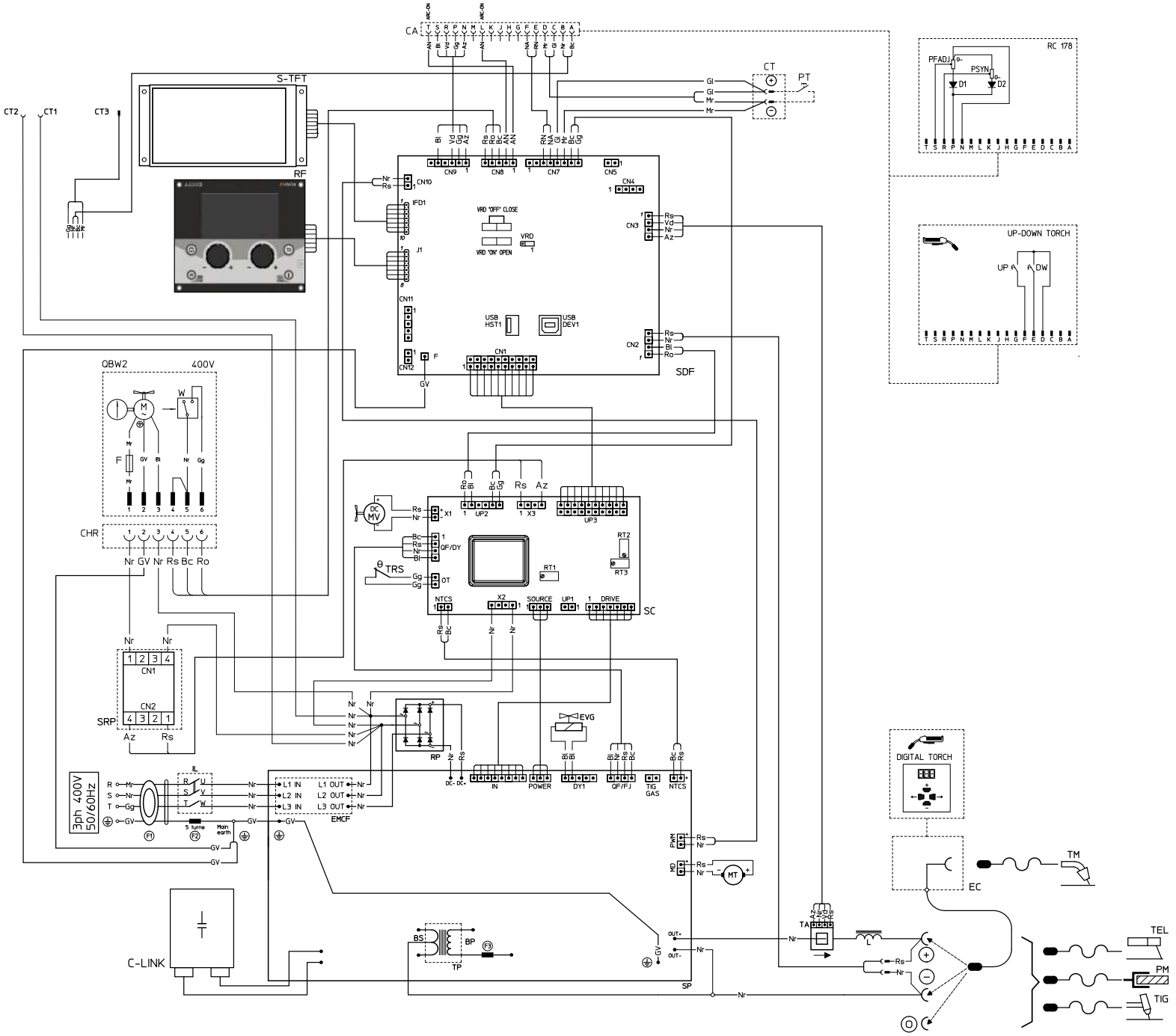
DOGMA 272 XV
DOGMA 276 PULSE XV



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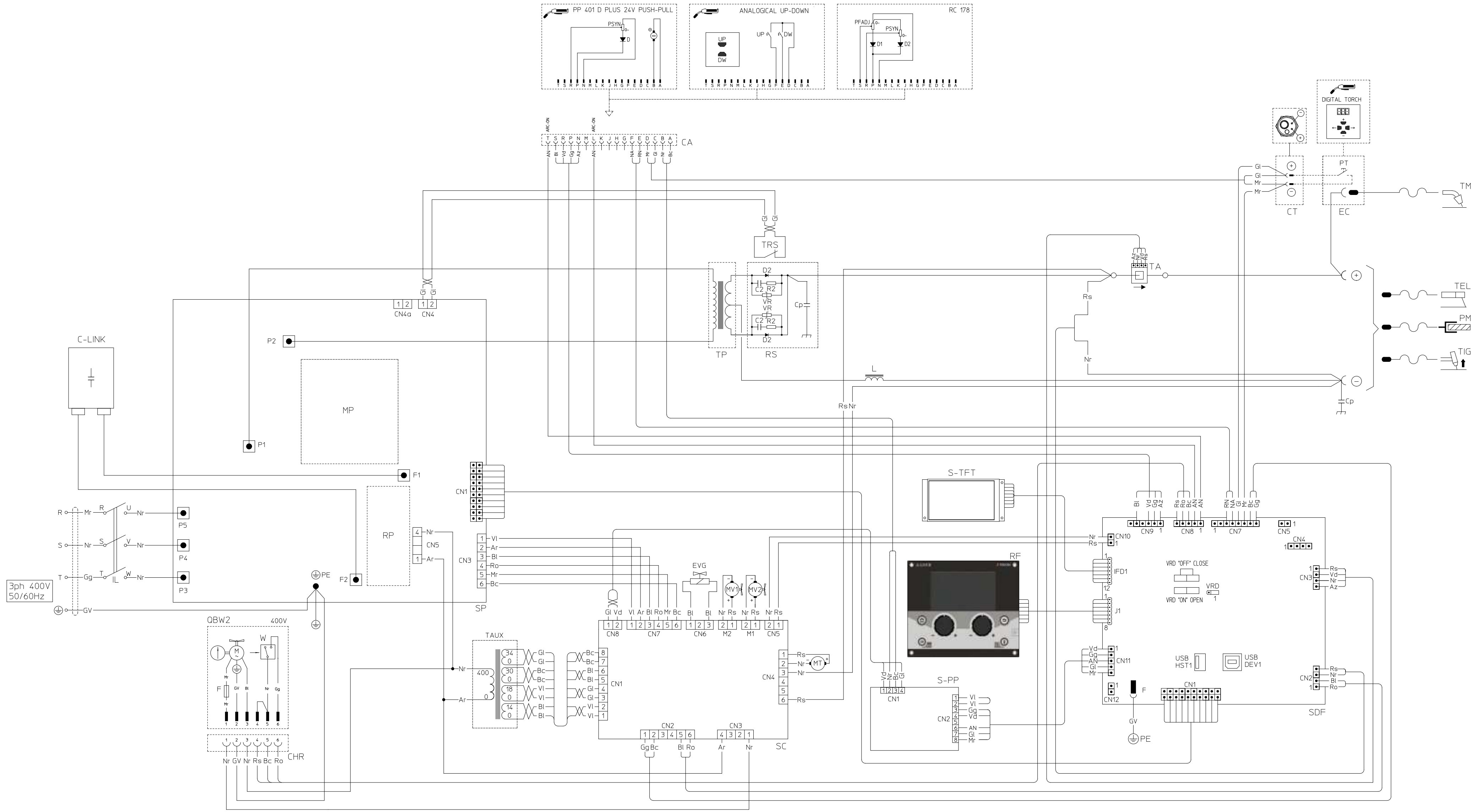
DOGMA 322 - 402 XV
DOGMA 326 - 406 PULSE XV



DOGMA 272 - 322 - 402 XV / W
DOGMA 276 - 326 - 406 PULSE XV / W

IT *Lista ricambi* — LEGGERE ATTENTAMENTE

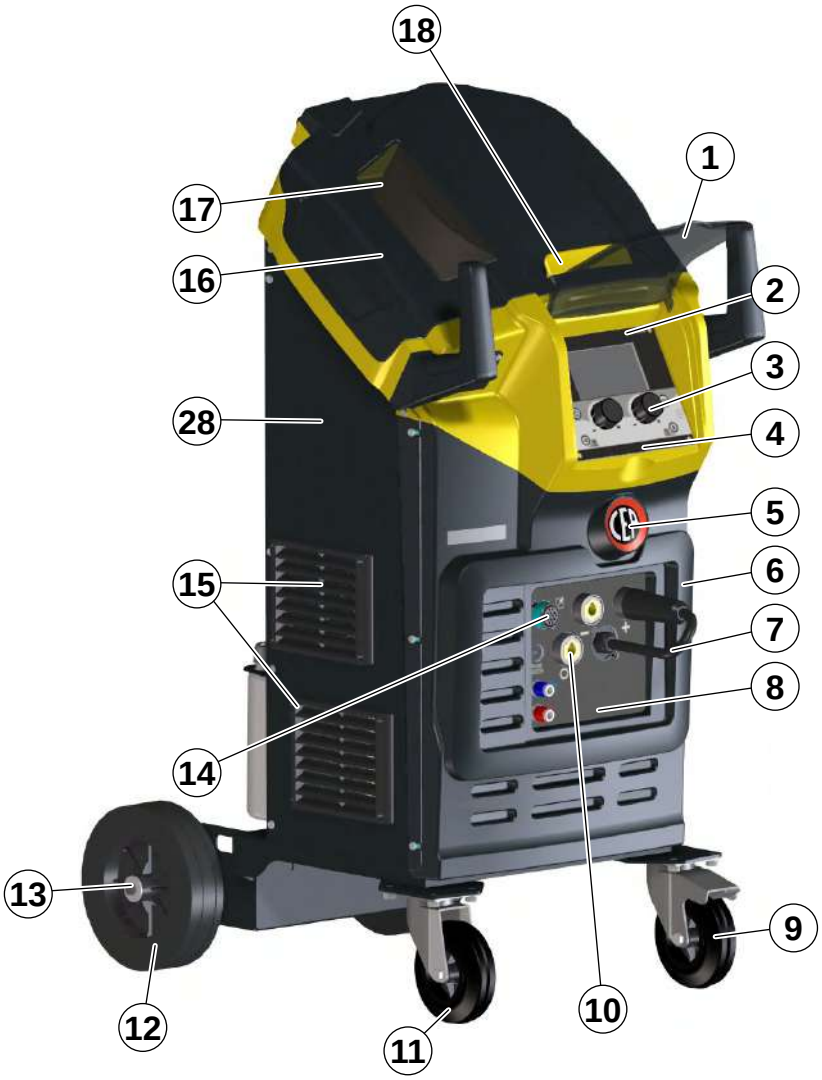
EN *Spare parts list* — READ CAREFULLY

WELDING TOGETHER

CEA COSTRUZIONI ELETTROMECCANICHE ANNETTONI S.p.A.

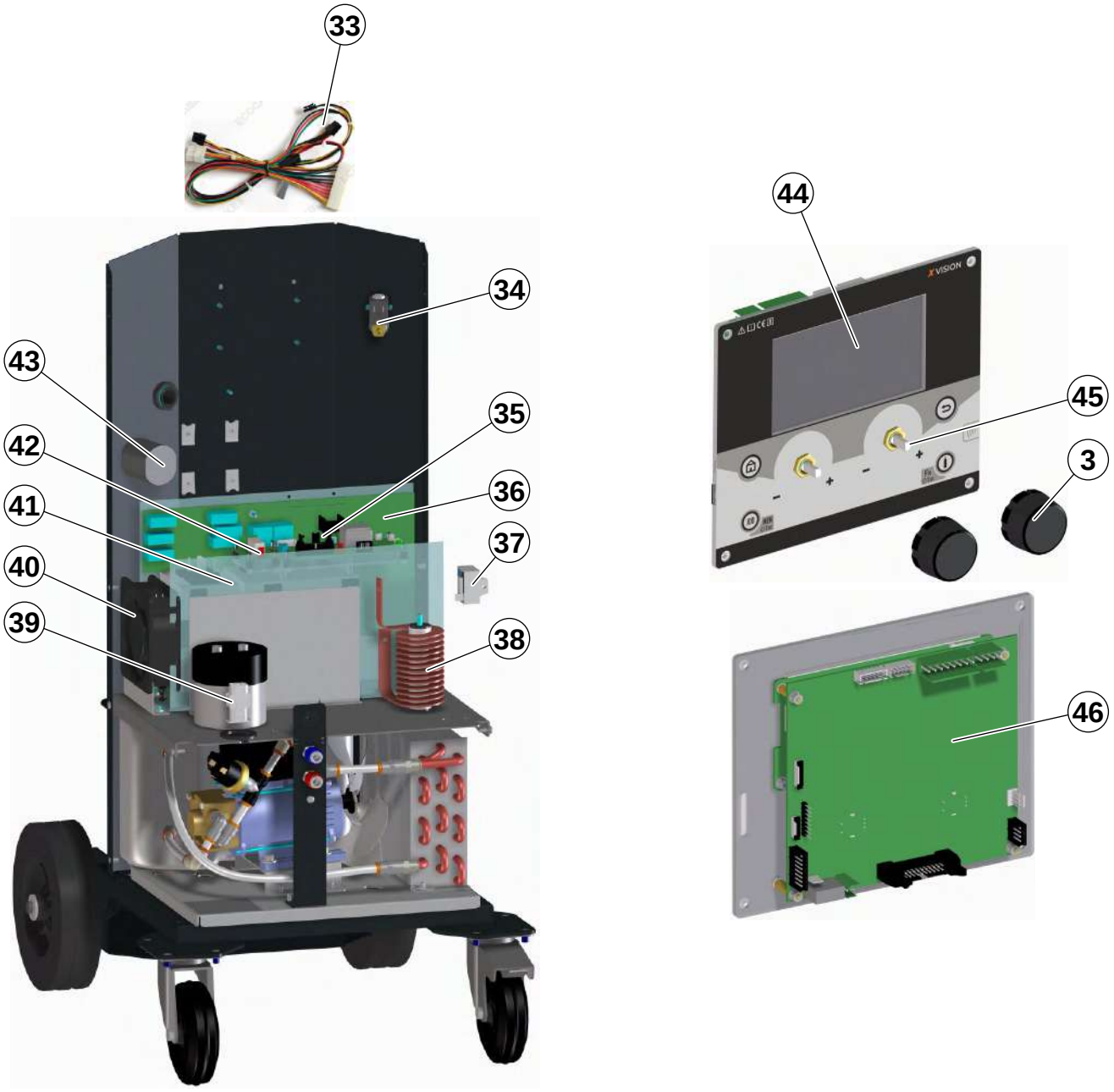
C.so E. Filiberto, 27 - 23900 Lecco - Italy
Tel. +39.0341.22322 - Fax +39.0341.422646
Cas. Post. (P.O.BOX) 205
E-mail: cea@ceaweld.com - web: www.ceaweld.com

DOGMA 272 XV
DOGMA 276 PULSE XV

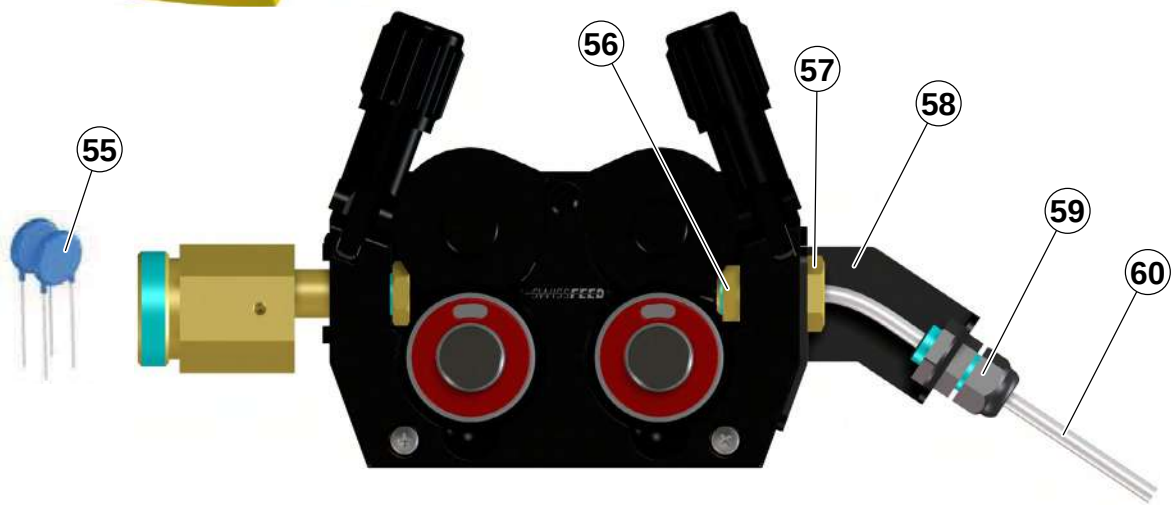


Pos.	DOGMA 272 XV	DOGMA 272 W XV	DOGMA 276 XV	DOGMA 276 W XV	Descrizione	Description
1	352588	352588	352588	352588	Visiera	Visor
2	447929	447929	447929	447929	Tastiera a membrana	Membrane keyboard
3	438884	438884	438884	438884	Manopola	Knob
4	466717	466717	466722	466722	Adesivo nome macchina	Name machine sticker
5	468796	468796	468796	468796	Adesivo logo	Logo sticker
6	352587	352587	352587	352587	Pannello frontale	Front panel
7	235307	235307	235307	235307	Cavo inversione polarità	Reverse polarity cable
8	466743	466742	466743	466742	Adesivo frontale	Front sticker
9	459696	459696	459696	459696	Ruota pivottante + freno	Pivotting wheel + brake
10	403611	403611	403611	403611	Attacco rapido	Quick connection
11	459695	459695	459695	459695	Ruota pivottante	Pivotting wheel
12	459960	459960	459960	459960	Ruota fissa	Wheel
13	402571	402571	402571	402571	Assale	Axle
14	419051	419051	419051	419051	Connettore comando a distanza	Remote control connector
15	352314	352314	352314	352314	Alette di aerazione	Air-cooling fins
16	352586	352586	352586	352586	Cofano bobina filo	Wire spool hood
17	352589	352589	352589	352589	Schermo ispezione	Inspection screen
18	352592	352592	352592	352592	Maniglia cofano bobina filo	Wire spool hood handle

Pos.	DOGMA 272 XV	DOGMA 272 W XV	DOGMA 276 XV	DOGMA 276 W XV	Descrizione	Description
19	414333	414333	414333	414333	Cerniera	Hinge
20	447229	447229	447229	447229	Ancoraggio bombola gas	Gas cylinder holder
21	412921	412921	412921	412921	Catena fissaggio bombola	Cylinder fixing chain
22	466215	466215	466215	466215	Pannello posteriore	Rear panel
23	427883	427883	427883	427883	Pressacavo con ghiera	Cable clamp with nut
24	235948	235948	235948	235948	Cavo di linea	Mains cable
25	468286	468286	468286	468286	Adesivo interruttore di rete	Mains switch sticker
26	438710	438710	438710	438710	Manopola interruttore	Switch knob
27	404794	404794	404794	404794	Basamento	Base
28	420634	420634	420634	420634	Pannello laterale	Side panel
29	485040	485040	485040	485040	Tubo gas	Gas hose
30	404040	404040	404040	404040	Attacco tubo gas	Gas hose connection
31	455422	455422	455422	455422	Ghiera ¼ gas	Lock ring ¼ gas
32	423117	423117	423117	423117	Dado ¼ gas	Nut ¼ gas



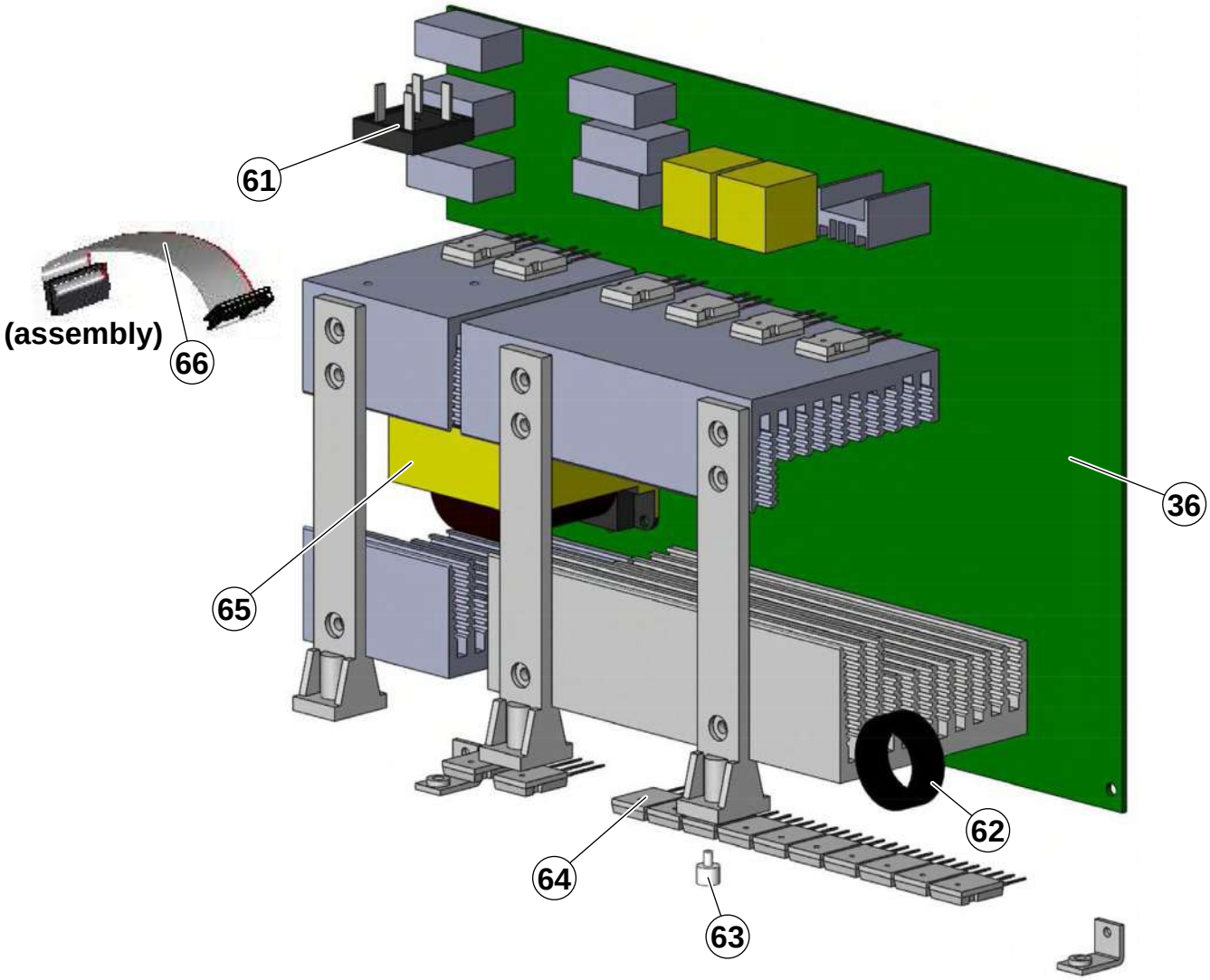
Pos.	DOGMA 272 XV	DOGMA 272 W XV	DOGMA 276 XV	DOGMA 276 W XV	Descrizione	Description
33	413320	413320	413320	413320	Cablaggio elettrico ausiliario	Electric auxiliary harness
34	425987	425987	425987	425987	Elettrovalvola gas	Gas solenoid valve
35	377288	377288	377288	377288	Scheda controllo	Control PCB
36	241269	241269	241269	241269	Scheda potenza inverter	Power inverter PCB
37	481954	481954	481954	481954	Trasformatore di corrente	Current transformer
38	247494	247494	247494	247494	Induttore	Inductor
39	418746	418746	418746	418746	Condensatore	Capacitor
40	444527	444527	444527	444527	Ventilatore	Fan
41	353449	353449	353449	353449	Isolamento laterale	Cover insulation
42	-	377204	-	377204	Scheda comando pompa raffreddamento	Cooling pump control PCB
43	435755	435755	435755	435755	Interruttore principale	Main switch
44	258404	258404	258404	258404	Display LCD + firmware	LCD Display + firmware
45	454153	454153	454153	454153	Encoder	Encoder
3	438884	438884	438884	438884	Manopola	Knob
46	258405A	258405A	-	-	DOGMA 272 scheda digitale + firmware	DOGMA 272 digital PCB + firmware
	-	-	258405B	258405B	DOGMA 276 P. scheda digitale + firmware	DOGMA 276 P. digital PCB + firmware
	-	-	258405C	258405C	DOGMA 276 PR scheda digitale + firmware	DOGMA 276 PR digital PCB + firmware



Pos.	DOGMA 272 XV	DOGMA 272 W XV	DOGMA 276 XV	DOGMA 276 W XV	Descrizione	Description
47	466824	466824	466824	466824	Adesivo meccanismo trascinamento	Wire feed mechanism sticker
48	352585	352585	352585	352585	Alloggiamento bobina filo	Wire spool housing
49	241843	241843	241843	241843	Mozzo bobina	Spoot holder
50	352591	352591	352591	352591	Maniglia	Handle
51	236658	236658	236658	236658	Attacco Euro	Euro connection
52	434247	434247	434247	434247	Tubetto guidafilo	Wire guide tube
53	428110	428110	428110	428110	Flangia	Flange
54	240618	240618	240618	240618	Meccanismo di trascinamento con motore	Wire feed mechanism assembly with drive motor
55	488315	488315	488315	488315	Condensatore EMC	EMC capacitor
56	423071	423071	423071	423071	Dado bloccaggio guidafilo	Wire guide locking nut
57	434279	434279	434279	434279	Nipplo guidafilo	Wire guide nipple
58	466220	466220	466220	466220	Supporto guidafilo	Thread guide support
59	427866	427866	427866	427866	Pressacavo con ghiera	Cable clamp with nut
60	432433	432433	432433	432433	Guaina	Sheath

IT Complessivo inverter di potenza

EN Power inverter assembly

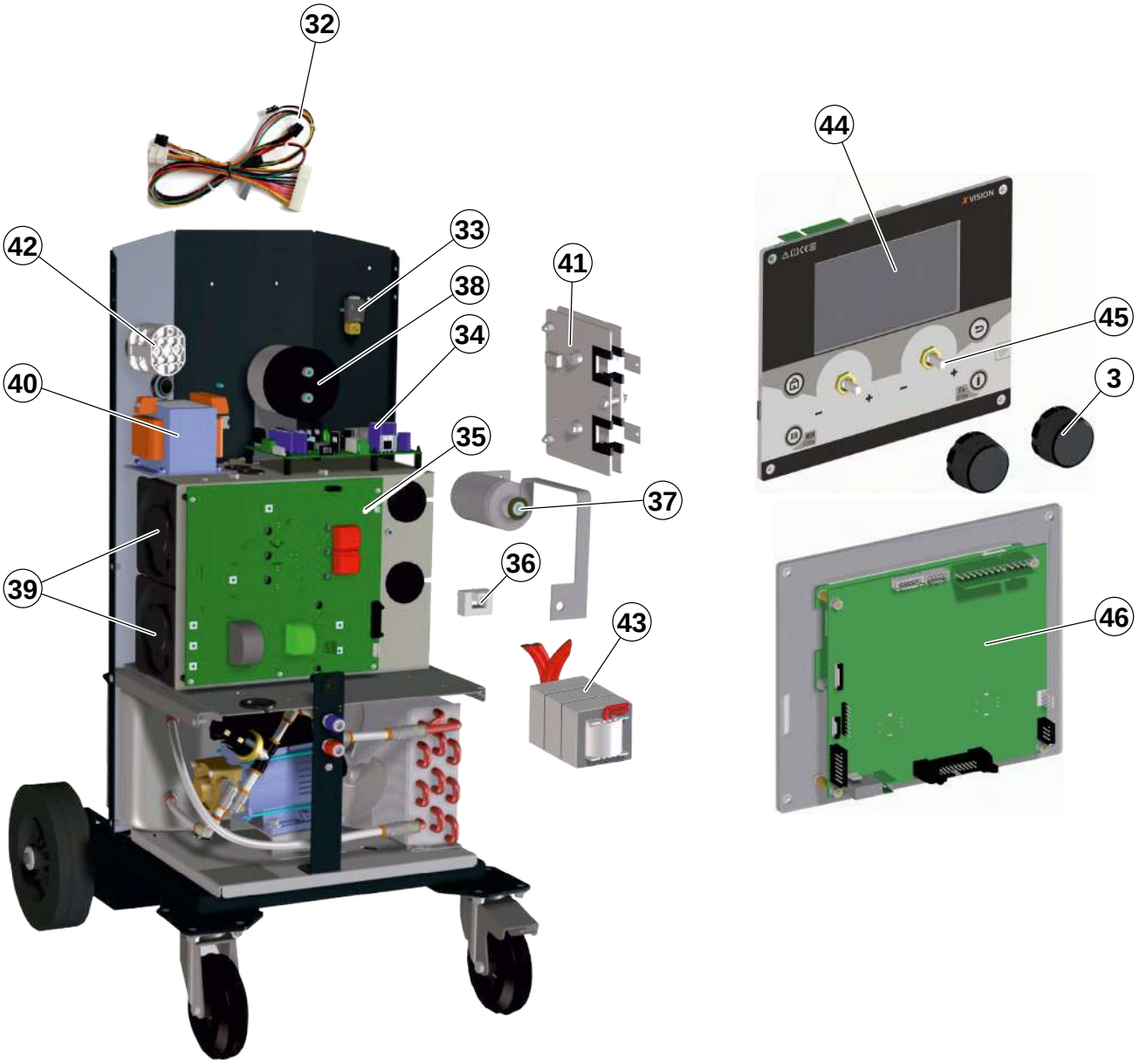


Pos.	DOGMA 272 XV	DOGMA 272 W XV	DOGMA 276 XV	DOGMA 276 W XV	Descrizione	Description
36	241269	241269	241269	241269	Scheda inverter di potenza	Power inverter PCB
61	455514	455514	455514	455514	Raddrizzatore trifase	Three phase rectifier
62	240249	240249	240249	240249	Induttanza	Inductance
63	478777	478777	478777	478777	Termostato secondario NTC	Secondary NTC thermostat
64	423252	423252	423252	423252	Diodo secondario 60A 300V	Secondary diode 60A 300V
65	481451	481451	481451	481451	Trasformatore principale	Main transformer
66	413351	413351	413351	413351	Flat cable	Flat cable

DOGMA 322 - 402 XV
DOGMA 326 - 406 PULSE XV

Pos.	DOGMA 322 XV	DOGMA 326 PULSE XV	DOGMA 402 XV	DOGMA 406 PULSE XV	Descrizione	Description
1	352588	352588	352588	352588	Visiera	Visor
2	447929	447929	447929	447929	Tastiera a membrana	Membrane keyboard
3	438884	438884	438884	438884	Manopola	Knob
4	466718	466723	466720	466719	Adesivo nome macchina	Name machine sticker
5	468796	468796	468796	468796	Adesivo logo	Logo sticker
6	352587	352587	352587	352587	Pannello frontale	Front panel
7	466743	466742	466743	466742	Adesivo frontale	Front sticker
8	459696	459696	459696	459696	Ruota pivottante + freno	Pivotting wheel + brake
9	403611	403611	403611	403611	Attacco rapido	Quick connection
10	459695	459695	459695	459695	Ruota pivottante	Pivotting wheel
11	459960	459960	459960	459960	Ruota fissa	Wheel
12	402571	402571	402571	402571	Assale	Axle
13	419051	419051	419051	419051	Connettore comando a distanza	Remote control connector
14	352314	352314	352314	352314	Alette di aerazione	Air-cooling fins
15	352586	352586	352586	352586	Cofano bobina filo	Wire spool hood
16	352589	352589	352589	352589	Schermo ispezione	Inspection screen
17	352592	352592	352592	352592	Maniglia cofano bobina filo	Wire spool hood handle

Pos.	DOGMA 322 XV	DOGMA 326 PULSE XV	DOGMA 402 XV	DOGMA 406 PULSE XV	Descrizione	Description
18	414333	414333	414333	414333	Cerniera	Hinge
19	447229	447229	447229	447229	Ancoraggio bombola gas	Gas cylinder holder
20	412921	412921	412921	412921	Catena fissaggio bombola	Cylinder fixing chain
21	466215	466215	466215	466215	Pannello posteriore	Rear panel
22	427883	427883	427883	427883	Pressacavo con ghiera	Cable clamp with nut
23	235994	235994	414165	414165	Cavo di linea	Mains cable
24	468286	468286	468286	468286	Adesivo interruttore di rete	Mains switch sticker
25	438710	438710	438710	438710	Manopola interruttore	Switch knob
26	404794	404794	404794	404794	Basamento	Base
27	420635	420635	420635	420635	Pannello laterale	Side panel
28	485040	485040	485040	485040	Tubo gas	Gas hose
29	404040	404040	404040	404040	Attacco tubo gas	Gas hose connection
30	455422	455422	455422	455422	Ghiera ¼ gas	Lock ring ¼ gas
31	423117	423117	423117	423117	Dado ¼ gas	Nut ¼ gas

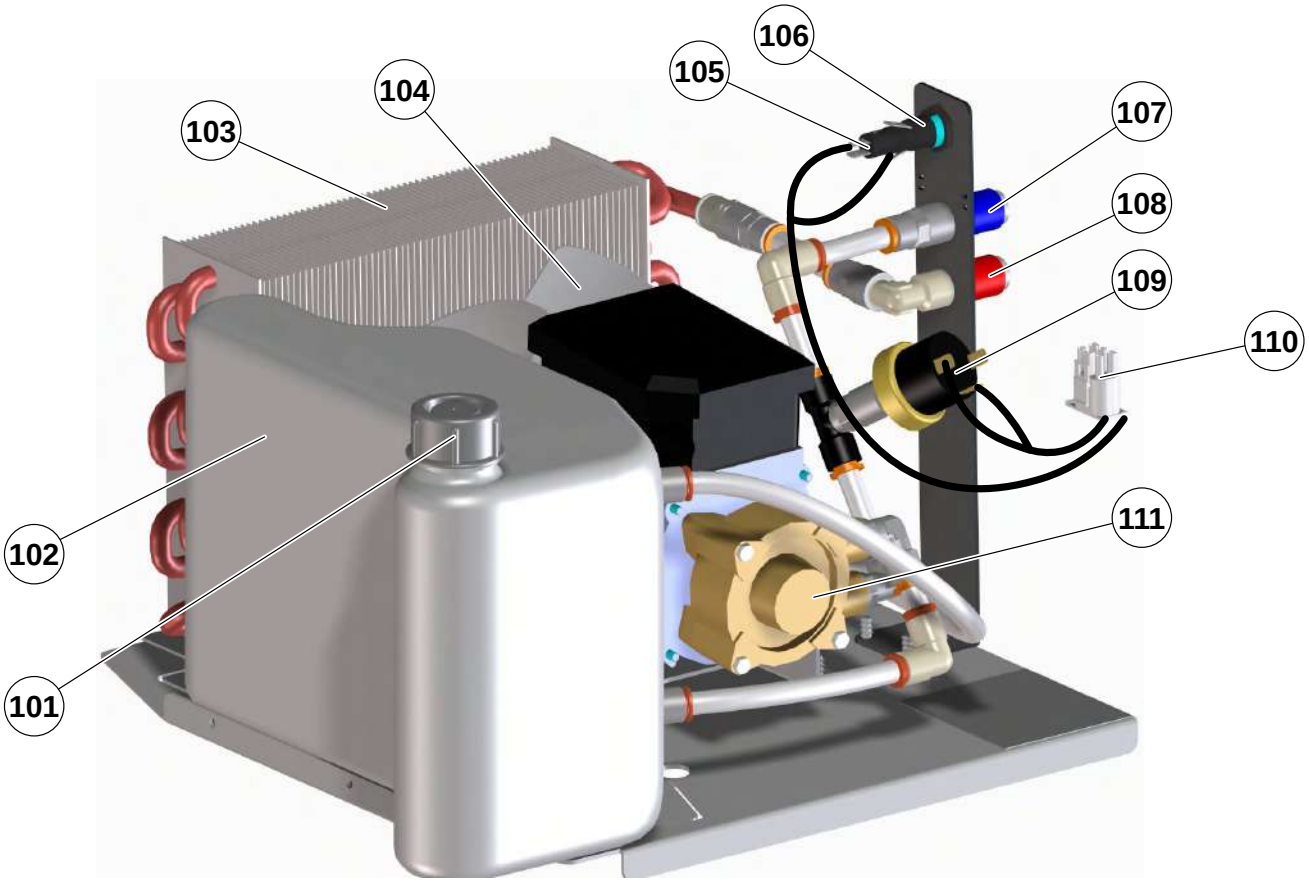


Pos.	DOGMA 322 XV	DOGMA 326 PULSE XV	DOGMA 402 XV	DOGMA 406 PULSE XV	Descrizione	Description
32	413313	413313	413313	413313	Cablaggio elettrico ausiliario	Electric auxiliary harness
33	425987	425987	425987	425987	Elettrovalvola gas	Gas solenoid valve
34	377307	377307	377307	377307	Scheda alimentazioni e controllo motore	Motor control and power source PCB
35	377295	377295	377296	377296	Scheda potenza inverter	Power inverter PCB
36	481954	481954	481954	481954	Trasformatore di corrente	Current transformer
37	247501	247501	247501	247501	Induttore	Inductor
38	418746	418746	418746	418746	Condensatore	Capacitor
39	444527	444527	444527	444527	Ventilatore	Fan
40	481396	481396	481396	481396	Trasformatore ausiliario	Auxiliary transformer
41	456081	456081	456084	456084	Raddrizzatore secondario	Secondary rectifier
42	435760	435760	435760	435760	Interruttore principale	Main switch
43	481581	481581	481582	481582	Trasformatore principale	Main transformer
44	258404	258404	258404	258404	Display LCD + firmware	LCD Display + firmware
45	454153	454153	454153	454153	Encoder	Encoder
3	438884	438884	438884	438884	Manopola	Knob
46	258405H	258405I	258405J	258405K	DOGMA / PULSE scheda digitale + firmware	DOGMA / PULSE digital PCB + firmware
	-	258405L	-	258405M	DOGMA / PULSE PR scheda digitale + firmware	DOGMA / PULSE PR digital PCB + firmware

Pos.	DOGMA 322 XV	DOGMA 326 PULSE XV	DOGMA 402 XV	DOGMA 406 PULSE XV	Descrizione	Description
47	466824	466824	466824	466824	Adesivo meccanismo trascinamento	Wire feed mechanism sticker
48	352585	352585	352585	352585	Alloggiamento bobina filo	Wire spool housing
49	241843	241843	241843	241843	Mozzo bobina	Spoot holder
50	352591	352591	352591	352591	Maniglia	Handle
51	236658	236658	236658	236658	Attacco Euro	Euro connection
52	434247	434247	434247	434247	Tubetto guidafilo	Wire guide tube
53	428110	428110	428110	428110	Flangia	Flange
54	240618	240618	240618	240618	Meccanismo di trascinamento con motore	Wire feed mechanism assembly with drive motor
55	488315	488315	488315	488315	Condensatore EMC	EMC capacitor
56	423071	423071	423071	423071	Dado bloccaggio guidafilo	Wire guide locking nut
57	434279	434279	434279	434279	Nipplo guidafilo	Wire guide nipple
58	466220	466220	466220	466220	Supporto guidafilo	Thread guide support
59	427866	427866	427866	427866	Pressacavo con ghiera	Cable clamp with nut
60	432433	432433	432433	432433	Guaina	Sheath

IT **Versione raffreddata "W"**

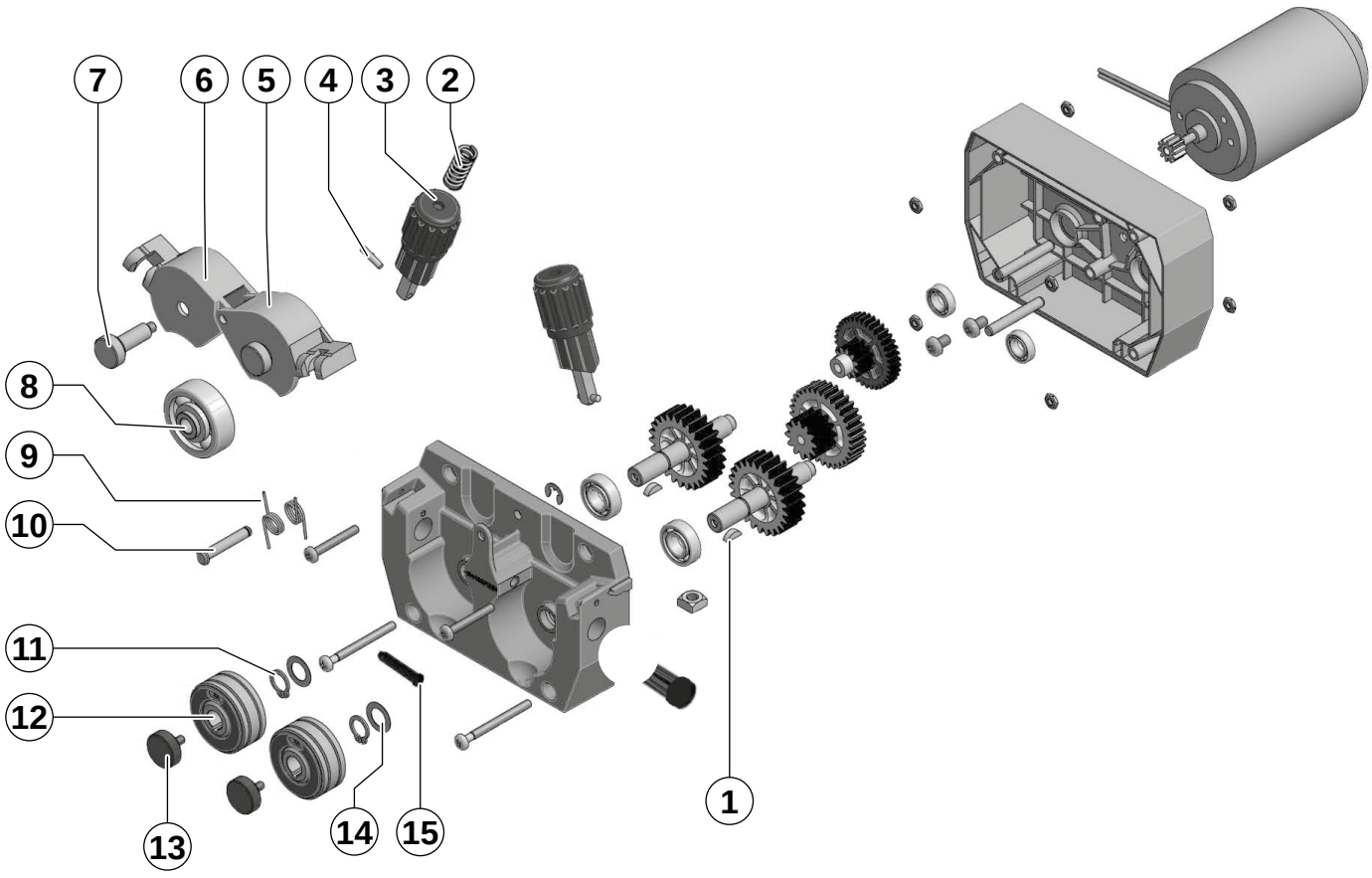
EN **Cooled version "W"**



Pos.	DOGMA W XV	Descrizione	Description
101	466398	Tappo serbatoio	Tank cap
102	460366	Serbatoio	Tank
103	418847	Radiatore	Radiator
104	486560	Ventola	Impeller
105	451740	Portafusibile	Fuse holder
106	429049	Fusibile	Fuse
107	403636	Attacco rapido blu	Blue quick connection
108	403626	Attacco rapido rosso	Red quick connection
109	453248	Pressostato	Pressure switch
110	413385	Cablaggio ausiliario	Wiring auxiliary
111	345469	Elettropompa	Electric pump

IT Complessivo meccanismo di trascinamento a 4 rulli

EN Wire feeder unit assembly with 4 rolls



Pos.	Cod.	Descrizione	Description
1	449041	Chiavetta	Woodruff Key
2	441210	Molla di pressione Ø 2 mm	Pressure spring Ø 2 mm
3	437075	Dispositivo di pressione rulli (con molla 2 mm)	Pressure Adjustment Unit (2 mm spring)
4	676510	Spina elastica	Tapered Pin
5	356971	Complessivo leva di pressione destra	Pressure Arm right assembly
6	356966	Complessivo leva di pressione sinistra	Pressure Arm left assembly
7	449027	Perno fissaggio rullo di pressione	Pressure Roll Axle
8	Tab. A	Rullo superiore Ø 37 mm	Pressure Roll Ø 37 mm
9	441208	Molla per leva di pressione	Pressure Arm Spring
10	449034	Perno fissaggio leva di pressione	Pressure Arm Axle
11	600201	Anello seeger Ø10 mm	Circlip Ø 10 mm
12	Tab. A	Rullo inferiore Ø 37 mm	Feed Roll Ø 37 mm
13	487803	Vite fissaggio rullo inferiore	Roll Fixation Screw
14	424039	Rondella distanziale	Shim Washer
15	434273	Guida filo intermedio	Intermediate Wire Guide

Tabella A - RULLI UTILIZZABILI

Table A - SUITABLE ROLLS

RULLI STANDARD SOLO PER ACCIAIO		STANDARD ROLLS FOR HARD WIRE ONLY
Rullo superiore piatto per tutti i diametri con boccola		Pressure flat roll for all diameters with bushing
Rullo inferiore a doppia cava Ø 37 mm con chiavetta e anello colorato		Feed roll double groove Ø 37 mm with keyway and coloured front ring

IT Filo EN Wire	IT Diametro filo EN Wire diameter	IT Rullo superiore EN Upper roller	IT Rullo inferiore Ø 37 mm colorato EN Colored lower roller Ø 37 mm	IT Cava EN Groove
IT Acciaio EN Hard wire	0,6 ÷ 0,8 mm	459001 Cuscinetto a sfera Ø 37 mm e boccola Ball bearing Ø 37 mm with bushing	459002 verde/blu - green/blue	"V" 35°
	0,8 ÷ 0,9 mm		459005 blu/nero - blue/black	
	0,8 ÷ 1,0 mm		459003 blu/rosso - blue/red	
	1,0 ÷ 1,2 mm		459004 rosso/arancio - red/orange	
	1,2 ÷ 1,6 mm		459006 Arancio/Giallo - Orange/Yellow	

RULLI TWIN		TWIN ROLLS
Rulli combinati con colore di codifica per un corretto accoppiamento. Questi rulli non possono essere ordinati senza boccole colorate.		Combined Rolls with color coding mate only with other combined Rolls. Combined Rolls cannot be ordered without color coded bushings.
Rullo superiore mono cava Ø 37 mm con cuscinetti e boccola colorata		Pressure roll single groove Ø 37 mm with ball-bearing and coloured bushing
Rullo inferiore mono cava Ø 37 mm con chiavetta e boccola colorata		Feed roll single groove Ø 37 mm with keyway and coloured bushing

IT Filo EN Wire	IT Diametro filo EN Wire diameter	IT Rullo superiore EN Upper roller	IT Rullo inferiore Ø 37 mm colorato EN Colored lower roller Ø 37 mm	IT TWIN kit EN TWIN kit
IT Alluminio EN Aluminium	0,8 mm	459008 blu - blue	459009 blu - blue	031013
	1,0 mm	459010 rosso - red	459013 rosso - red	030866
	1,2 mm	459011 arancio - orange	459014 arancio - orange	030867
	1,6 mm	459012 giallo - yellow	459015 giallo - yellow	031014
IT Filo animato EN Cored wire	1,0 mm	459020 rosso - red	459022 rosso - red	/
	1,2 mm	459021 arancio - orange	459023 arancio - orange	/
	1,6 mm	459019 giallo - yellow	459024 giallo - yellow	/

IT Manutenzione trainafilo

Parte	Frequenza di manutenzione	Azione
Rulli	Ogni 500 ore o quando necessario	Ispezione, pulizia o sostituzione
Guide filo	Ogni 500 ore o quando necessario	Ispezione, sostituzione
Viti di Fissaggio x rulli	Ogni 2500 ore o quando necessario	Ispezione, sostituzione

EN Wire feeder maintenance

Item	Interval of maintenance	Action
Rolls	Every 500 hours or as needed	Inspect, clean or replace
Wire Guides	Every 500 hours or as needed	Inspect, replace
Roll Fixation Screw	Every 2500 hours or as needed	Inspect, replace

IT Ordinazione dei pezzi di ricambio

Per la richiesta di pezzi di ricambio indicare chiaramente:
1) Il numero di codice del particolare
2) Il tipo di impianto
3) La tensione e la frequenza che rileverete dalla targhetta dei dati posta sull'impianto
4) Il numero di matricola

ESEMPIO
N° 2 pezzi, codice n. 414333 - per l'impianto DOGMA 272 XV - 400V - 50/60 Hz - Matricola n° .....

EN Ordering spare parts

To ask for spare parts clearly state:
1) The code number of the piece
2) The type of device
3) The voltage and frequency read on the rating plate
4) The serial number of the same

EXAMPLE
N. 2 pieces code n. 414333 - for DOGMA 272 XV - 400V - 50/60 Hz - Serial number .....

FR Commade des pièces de rechange

Pour commander des pièces de rechange indiquer clairement:
1) Le numéro de code de la pièce
2) Le type d'installation
3) La tension et la fréquence que vous trouverez sur la petite plaque de données placée sur l'installation
4) Le numéro de matricule de la même

EXEMPLE
N. 2 pièces code 414333 - pour l'installation DOGMA 272 XV - 400V - 50/60 Hz - Matr. Numéro .....

DE Bestellung Ersatzeile

Für die Anforderung von Ersatzteilen geben Sie bitte deutlich an:
1) Die Artikelnummer des Teiles
2) Den Anlagentyp
3) Die Spannung und Frequenz, die Sie auf dem Datenschild der Anlage finden
4) Die Seriennummer der Schweißmaschine

BEISPIEL
2 Stück Artikelnummer 414333 - für Anlage DOGMA 272 XV - 400V - 50/60 Hz - Seriennummer .....

ES Pedido de las piezas de repuesto

Para pedir piezas de repuesto indiquen claramente:
1) El número de código del particular
2) El tipo de instalación
3) La tensión y la frequencia que se obtien de la chapa datos colocada sobre la instalación
4) El número de matrícula de la soldadora misma

EJEMPLO
N. 2 piezas código 414333 - para instalación DOGMA 272 XV - 400V - 50/60 Hz - Matrícula N. .....

NL Bestelling van reserveonderdelen

Voor het bestellen van onderdelen duidelijk aangeven:
1) Het codenummer van het onderdeel
2) Soort apparaat
3) Spanning en frequentie op het gegevensplaatje te vinden
4) Het serienummer van het lasapparaat

VOORBEELD
N. 2 stuks code 414333 - voor apparaat DOGMA 272 XV - 400V - 50/60 Hz - Serie Nummer .....

PT Requisição de peças sobressalentes

Ao pedir as peças de substituição indique claramente:
1) O número de código da peça
2) O tipo de equipamento
3) A tensão e a frequência indicadas na la placa de dados do equipamento
4) O número de matrícula da própria máquina de soldar

EXEMPLO
N° 2 peças código n. 414333 - para o equipamento DOGMA 272 XV - 400V - 50/60 Hz
Matrícula n. .....

DA Bestilling af reservedele

For at bestille reservedele skal man nøjagtigt angive:
1) Reservedelens kodenummer
2) Anlæggets type
3) Spænding og frekvens, som står på anlæggets typeskylt
4) Selve svejsemaskinens registreringsnummer

EKSEMPEL
2 stk. nummer 414333 - til anlæg model DOGMA 272 XV - 400V - 50/60 Hz - Registreringsnummer Nr. .....

SV Beställning af reservdelar

Vid förfrågan av reservdelar ange tydligt:
1) Detaljens kodnummer
2) Typ av apparat
3) Spänning och frekvens - den står bland tekniska data påapparatens märkplåt
4) Svetsens serienummer

EXEMPEL
2 st. detaljer kod 414333 - för apparat DOGMA 272 XV - 400V - 50/60 Hz - Serienummer .....

FI Varaosien tilaus

Tiedustellessanne varaosia, ilmoittakaa selvästi:
1) Osan koodinumero
2) Laitteiston tyyppi
3) jännite ja taaiuus, jokta on ilmoitettu laitteistolle sijoitetusta tietokyltistä
4) Hitsauskoneen sarjanumero

ESIMERKKI
2 osaa, koodi 414333 - laitteistoon DOGMA 272 XV - 400V - 50/60 Hz - Sarjanumero .....

N Bestilling av reservedeler

Ved bestilling av reservedeler må du oppgi:
1) Delenes kodenummer
2) Type apparat
3) Apparatets spenning og frekvens som finnes på merkeplaten for data på apparatet
4) Sveiseapparatets serienummer

EKSEMPEL
2 stk. kode 414333 - for apparat DOGMA 272 XV - 400V - 50/60 Hz - Serienummer.....

EL Παραγγελία των ανταλλακτικών

Οταν ξητάτε ανταλλκτκά παρακαλείσθε να ημειώνετε καθαρά:
1) τον κωδικό της λεπτομέρειας
2) τον τύπο της μονάδας ψύξης
3) την τάση και τη σχνότητα που αναγράφονται στηνπινακίδα των τεχνικών χαρακτηριοτικών
4) τον αριθμό μητρώου της μηχανής

Αριθ.
2 τεμάχια κωδικό 414333 για τη μαονάδα ψύξης
DOGMA 272 XV - 400V - 50/60 Hz - Αριθ.
Μητρώου .....

RU Заказ запасных частей

Для запроса запасных частей укажите точно:
1) код запчасти,
2) модель машины,
3) напряжение и частоту, написанные на пластине,
4) ее серийный номер.

ПРИМЕР
2 шт., код № 414333
для сварочной машины DOGMA 272 XV - 400V - 50/60 Hz
Серийный номер .....

SK Objednávanie náhradných dielov

Pri požiadavke na náhradné diely jasne uveďte:
1) Číslo dielu
2) Typ systému
3) Napätie a frekvenciu, ktoré nájdete na údajovom štítku umiestnenom na systéme
4) Sériové číslo

PRÍKLAD
N° 2 kusy, kód č. 414333 - pre systém DOGMA 272 XV - 400V - 50/60 Hz - Sériové číslo č. .....

PL Zamów części zamienne

Zamawiając części zamienne, należy wyraźnie wskazać:
1) Numer kodu części
2) Typ systemu
3) Napięcie i częstotliwość znajdziesz na tabliczce znamionowej systemu
4) Numer seryjny

PRZYKŁAD
Nr 2 szt., nr kat. 414333 - dla systemu DOGMA 272 XV - 400V - 50/60 Hz - Numer seryjny .....

RO Comanda piese de schimb

Când solicitați piese de schimb, indicați clar:
1) Numărul de cod al piesei
2) Tipul de sistem
3) Tensiunea și frecvența pe care le veți găsi pe plăcuța cu date de pe sistem
4) Numărul de serie

EXEMPLU
N° 2 buc, cod nr. 414333 - pentru sistemul DOGMA 272 XV - 400V - 50/60 Hz - Număr de serie .....

CZ Objednávání náhradních dílů

Při poptávce náhradních dílů jasně uveďte:
1) Číslo dílu
2) Typ systému
3) Napětí a frekvenci najdete na štítku umístěném na systému
4) Sériové číslo

PŘÍKLAD
N° 2 kusy, kód n. 414333 - pro systém DOGMA 272 XV - 400V - 50/60 Hz - Sériové číslo .....

XVISION DOGMA

EN *Operator's manual*

READ CAREFULLY

WELDING
TOGETHER

CEA COSTRUZIONI ELETTROMECCANICHE ANNETTONI S.p.A.

C.so E. Filiberto, 27 - 23900 Lecco - Italy
Tel. +39.0341.22322 - Fax +39.0341.422646
Cas. Post. (P.O.BOX) 205
E-mail: cea@ceaweld.com - web: www.ceaweld.com

EN ENGLISH

Introduction

This manual describes the functions and how to use the **XVISION** Dogma control panel.

Control panel

POSITION	SYMBOL	FUNCTION
1		TFT colour display.
2		Left knob/button, for adjustment, selection and confirmation of the following parameters: - The parameters in the left section on the welding page. - Select the subsections (PROCESS, PRG, MODE, FX, JOB, MENU) in the setup menu. - All parameters except those dedicated to the right knob.
3		Right knob/button, for adjustment, selection and confirmation of the following parameters: - The parameters in the right section on the welding page. - In the “FX” submenu it allows you to switch from one tab to another - In the “JOB” submenu it allows you to switch from the JOB tab to the SEQUENCES tab. - While viewing the JOB list, you can access the JOB edit menu by holding down the right knob for 3 seconds.
4		HOME Key From any screen, this key takes you back to the welding page. If you are already in the welding page, it provides access to the process configuration menu.
5		BACK Key Allows you to return to the previous screen (**if I change a parameter in any menu and then press back I confirm the changes**). If you are using a Job, pressing the BACK button returns you to manual mode maintaining the settings of the Job that was selected.
6	JOB	JOB Key Used to manage all parameters for recurring welding tasks, and to retrieve them quickly and simply whenever they are needed. Push once to access the job list. The knob can be used to select and load a job.
7	MEM 3 SEC	3 sec. JOB MEM Symbol When the JOB key is held down for 3 seconds on the welding panel, the welding settings can be saved in one of the JOBS. If you are using a Job, pressing the Job button for 3 seconds returns you to manual mode while maintaining the settings of the Job that was selected.
8		GAS key It is programmed as “GAS FLOW TEST”  to check the welding gas. By pressing the button again, the process stops early.
9	FX 3 SEC	GAS FX symbol 3 sec. Pressed for 3 seconds allows access to the page with the Fx parameters of the selected process.
10		NFC area for managing users and locking / unlocking the generator with an NFC card (optional).

Switching on the welding machine

Move the power switch on the generator to “**I**” to switch the welding machine on

The welcome page shown below appears for a few seconds.

Switching on for the first time or after a complete reset procedure

- Select the desired language: ENGLISH, ITALIAN…
- Select system: metric or imperial.
- Select wire classification: EN or AWS.
- Press the key ⮌ to move to the welding page.

Preset page

MODIFICATION OF WELDING PARAMETERS

Press a knob, then by rotating it I select the parameter I wish to modify and to confirm the choice, press the knob again (the parameter will move to the top of the monitor).
Now by rotating the knob, I can modify the value (if not modifiable, the orange bar note 4 does not appear).

Parameters that can be modified with the left knob:

1) Welding current

2) Piece thickness

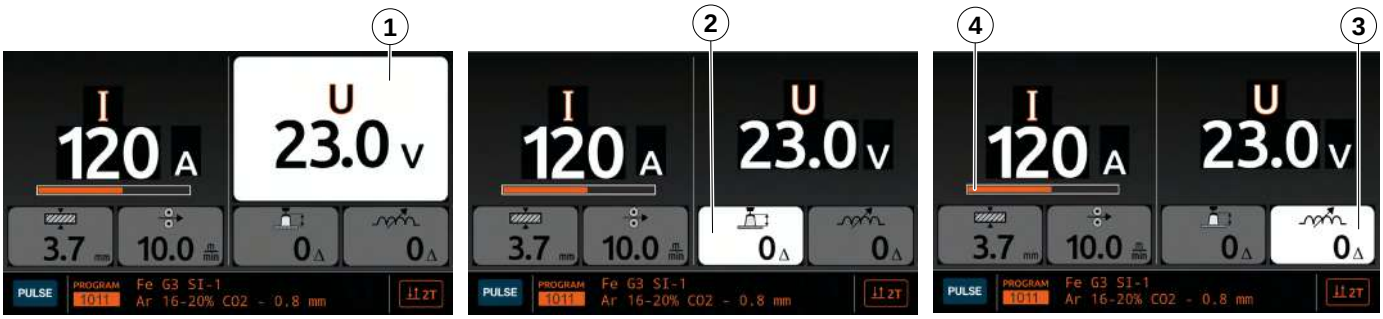
3) Wire speed

Parameters that can be modified with the right knob:

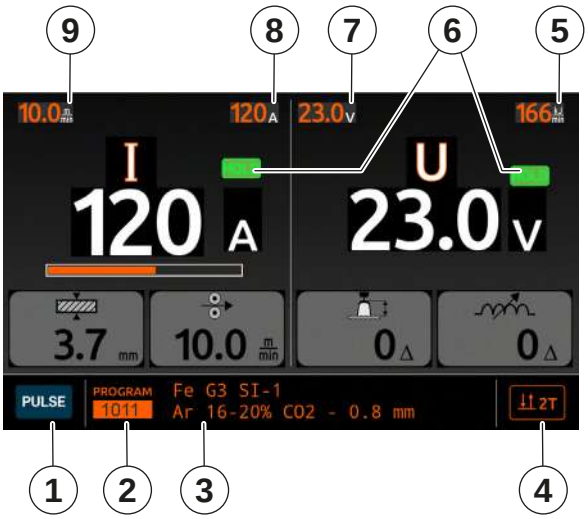
1) Welding voltage

2) Arc length adjustment

3) Electronic inductance



Welding page



The following information is reported on the welding page:

1) Welding process.

2) Welding program code.

3) Material, gas and wire diameter.

4) Welding mode.

5) Measured power value (**during welding**).

6) Hold function (**only at the end of welding, for a few seconds**).

7) Measured voltage value (**during welding**).

8) Current value measured (**during welding**).

9) Measured wire speed value (**during welding**).

HOW TO SET THE WELDING PARAMETERS

- In the process configuration menu, select the appropriate process and program.
- On the welding page, select the thickness of the piece to be welded.
- Proceed with welding and adjust the following parameters:
- Arc length: the correct value is the one that allows optimal welding with an arc that is as short as possible.
- Electronic inductance: the correct value is the one that allows the right heat input to the welding pool (positive values result in a hotter pool and vice versa negative values result in a colder pool).
- For process-specific configurations, see the FX Special Features section.

Welding process configuration menu

If the process is not available because it is not compatible with the wire and gas set, the warning message appears.

Process table

PROCESS OF WELDING	DESCRIPTION
PULSE	MIG PULSE: pulsed MIG welding process
2 DUAL PULSE	MIG DUAL PULSE: double pulsed MIG welding process
SYN MIG/MAG	MIG/MAG SYNERGIC: synergic MIG/MAG welding process
MAN MIG/MAG	MIG/MAG MANUAL: manual MIG/MAG welding process.
vision. COLD	VISION.COLD: MIG/MAG process, with low heat input.
vision. ULTRASPEED	VISION.ULTRASPEED: MIG/MAG process which allows a significant increase in welding speed.
MMA	MMA: electrode welding process
TIG Lift	TIG LIFT: TIG welding process with lift-type arc ignition
TIG Lift PULSE	TIG LIFT PULSE: TIG welding process with pulsed lift arc ignition

Program selection menu

ATTENTION: *the menus (materials, diameter, gas, processes and program) are not independent of each other, the process selection follows a mutually exclusive logic starting from the first parameter and moving downwards.*

Welding mode selection menu

Table of welding methods

WAY OF WELDING	DESCRIPTION
	**TWO-STROKE (2T)** Pressing the TORCH BUTTON carries out the welding cycle while releasing it ends the welding.
	**FOUR STROKE (4T)** 1) Pressing and releasing the TORCH BUTTON starts the welding cycle. 2) Pressing and releasing the TORCH BUTTON ends the welding cycle.
	**CRATER 2T** 1) By pressing the TORCH BUTTON the arc is struck and the welding parameters assume the “initial crater” values for a time set by the INITIAL CRATER DURATION function. Afterwards the parameter values become the main ones in a time defined by the INITIAL SLOPE function. 2) By releasing the TORCH BUTTON, the welding parameters assume, in a time defined by the FINAL SLOPE function, the values of the “final crater” parameters for a time set by the FINAL CRATER DURATION function.

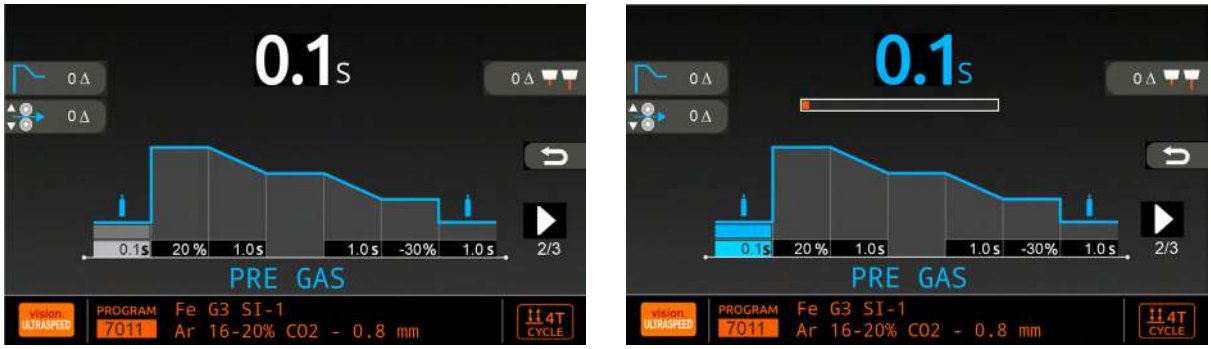
	**CRATER 4T** 1) Pressing the TORCH BUTTON starts the arc and the welding parameters are those of the “initial crater”. 2) When the TORCH BUTTON is released, the welding parameters become the main ones in a time defined by the INITIAL SLOPE function. 3) By pressing the TORCH BUTTON again, the welding parameters assume, in a time defined by the FINAL SLOPE function, the “final crater” values. 4) Releasing the TORCH BUTTON ends the welding cycle.
	**SPOT** It allows you to spot-weld, by pressing the TORCH BUTTON, for a pre-set period of time (in seconds) at the end of which the arc switches off automatically.
	**STICH WELDING** To start stich welding: 1) Press the TORCH BUTTON to start the welding current and wire feed. At this point the welder will automatically execute a succession of a welded section followed by a pause, respecting the times entered previously. The process stops automatically only when the TORCH BUTTON is released. 2) Pressing the TORCH BUTTON again starts a new stich welding cycle.
	**CYCLE** ■ STANDARD 1) Pressing the TORCH BUTTON triggers the arc and the parameters take on the values of the “initial crater” parameters. 2) When the TORCH BUTTON is released, the parameters become those of “welding” with a time defined by the INITIAL SLOPE function. 3) By pressing and releasing the TORCH BUTTON, within 1 second, the parameters become those set by the “cycle” functions; by repeating the operation it is possible to move infinite times between the “cycle” level and the “welding” level. 4) By pressing and holding the TORCH BUTTON again for more than 1 second, the parameters assume, with a time defined by the FINAL SLOPE function, the values of the “final crater” parameters. Releasing the TORCH BUTTON ends the welding cycle. ■ ADVANCED In ADVANCED operation, in addition to the adjustments just described above, the welder is offered the possibility of adjusting the upward (FIRST SLOPE) and downward (SECOND SLOPE) “ramps” of the “cycle” level.
	**TIG LIFT** “Lift” type arc striking without high frequency, for TIG torches with manual gas valve.

Special functions menu

Inside the menu, the parameters are represented on one or more graphic pages (Tab at the top of the display), which can be selected by turning the right knob. See the example images below with 3 tabs: mode, cycle and dynamic pulse.
Press with a knob to access the graphic page to modify the FX parameters.

Edit FX parameters

By turning a knob I choose the parameter to modify, below the graph I always have a short description. To change the page (in the condition of multiple graphic pages), simply rotate the knob in the direction of the arrow indicating the page (e.g. 2/3).



By pressing a knob on a parameter, the value in white will become blue and the adjustment bar appears underneath. By rotating the knob I can change the value and confirm it by pressing the knob.

Note: *In FX graphs, pressing the button* ⮌ *for 2 seconds returns the parameter to the factory default value.*

The *SPECIAL FUNCTIONS (Fx)* related to the ***MIG-MAG synergic, MIG pulsed, MIG double pulsed, vision.COLD and vision.ULTRASPEED***:

Table A

Fx ADJUSTABLE SPECIAL FUNCTIONS

Special function	PARAMETER DISPLAY		Welding mode							
	Default	Range	TWO STROKE (2T)	FOUR STROKE (4T)	CRATER 2T	CRATER 4T	SPOT WELDING	STITCH WELDING	CYCLE STANDARD	CYCLE ADVANCED
PRE GAS	0.1s	(0.0 - 2.0)s	●	●	●	●	●	●	●	●
STARTING SPEED	0	-30 - +30	●	●	●	●	●	●	●	●
HOT START	0	-30 - +30	●	●	●	●	●	●	●	●
STITCH TIME	1.0s	(0.1 - 20.0)s						●		
STITCH PAUSE	1.0s	(0.1 - 20.0)s						●		
SPOT TIME	3.0s	(0.1 - 20.0)s					●			
INITIAL CURRENT	20%	-50% - +100%			●	●			●	●
INITIAL ARC LENGTH	0	-30 - +30			● (*)	● (*)			● (*)	● (*)
INITIAL CRATER TIME	1.0s	(0.0 - 20.0)s			●					
INITIAL SLOPE	1.0s	(0.0 - 20.0)s			●	●			●	●
FINAL SLOPE	1.0s	(0.0 - 20.0)s			●	●			●	●
FINAL CURRENT	-30%	-99% - +50%			●	●			●	●
FINAL ARC LENGTH	0	-30 - +30			● (*)	● (*)			● (*)	● (*)
FINAL CRATER TIME	0.0s	(0.0 - 20.0)s			●					
BURN BACK	0	-30 - +30	●	●	●	●	●	●	●	●
POST GAS	1.0s	(0.0 - 10.0)s	●	●	●	●	●	●	●	●
FIRST SLOPE (I_1 TO I_2)	0.05s	(0.00 - 2.00)s								●
CYCLE CURRENT	20%	-99% - +100%							●	●
CYCLE ARC LENGTH	0	-30 - +30							●	●

(continued)

Fx ADJUSTABLE SPECIAL FUNCTIONS

Special function	PARAMETER DISPLAY		Welding mode							
	Default	Range	TWO STROKE (2T)	FOUR STROKE (4T)	CRATER 2T	CRATER 4T	SPOT WELDING	STITCH WELDING	CYCLE STANDARD	CYCLE ADVANCED
SECOND SLOPE (I2 TO I1)	0.05s	(0.00 - 2.00)s								●
FIRST SLOPE (I1 TO I2) *	5	(0 - 100)	● (°)	● (°)	● (°)	● (°)	● (°)	● (°)	● (°)	● (°)
DUAL PULSE DELTA CURRENT *	50%	-99% - +500%	●	●	●	●	●	●	●	●
DUAL PULSE ARC LENGTH *	0	-30 - +30	● (°)	● (°)	● (°)	● (°)	● (°)	● (°)	● (°)	● (°)
DUAL PULSE BALANCE *	0%	-40% - +40%	●	●	●	●	●	●	●	●
DUAL PULSE FREQUENCY *	2.7Hz	(0.1 - 5.0)Hz	●	●	●	●	●	●	●	●
SECOND SLOPE (I2 TO I1) *	5	(0 - 100)	● (°)	● (°)	● (°)	● (°)	● (°)	● (°)	● (°)	● (°)
DYNAMICS **	0	-30 - +30	●	●	●	●	●	●	●	●

* Only for the *MIG double pulsed* process.
** Only for the *vision.ULTRASPEED* process.

WARNING:

- The STANDARD CYCLE or ADVANCED welding mode can only be activated by entering the SETTINGS - WELDING - CYCLE - ADVANCED Menu.
- (*) This SPECIAL FUNCTION can only be found if the ADVANCED CRATER function has been activated by entering the SETTINGS - WELDING - CRATER - ADVANCED Menu.
- (°) These SPECIAL FUNCTIONS can be activated in all welding modes present on the welding machine only by entering the SETTINGS - WELDING - DOUBLE PULSE - ADVANCED Menu.
- It is possible to access editing of the *SPECIAL FUNCTIONS (Fx)* during welding.
- Some of the values edited will be used immediately by the operator, while others will be active from when the next welding task begins.
- The *HOLD* function is not active within the *SPECIAL FUNCTIONS Menu (SET UP Fx)*.

The *SPECIAL FUNCTIONS (Fx)* for the ***MIG-MAG*** *manual* process:

Table B

Fx ADJUSTABLE SPECIAL FUNCTIONS

Special function	PARAMETER DISPLAY		Welding mode							
	Default	Range	TWO STROKE (2T)	FOUR STROKE (4T)	CRATER 2T	CRATER 4T	SPOT WELDING	STITCH WELDING	CYCLE STANDARD	CYCLE ADVANCED
PRE GAS	0.1s	(0.0 - 2.0)s	•	•	•	•	•	•	•	•
STARTING SPEED	0	-30 - +30	•	•	•	•	•	•	•	•
HOT START	0	-30 - +30	•	•	•	•	•	•	•	•
STITCH TIME	1.0s	(0.1 - 20.0)s						•		
STITCH PAUSE	1.0s	(0.1 - 20.0)s						•		
SPOT TIME	3.0s	(0.1 - 20.0)s					•			
INITIAL WIRE SPEED	5.0m/min	(0.6-MAX)m/min			•	•			•	•
INITIAL VOLTAGE	25.0V	(10 - MAX)V			•	•			•	•
INITIAL CRATER TIME	1.0s	(0.0 - 20.0)s			•					
INITIAL SLOPE	1.0s	(0.0 - 20.0)s			•	•			•	•
FINAL SLOPE	1.0s	(0.0 - 20.0)s			•	•			•	•
FINAL WIRE SPEED	5.0m/min	(0.6-MAX)m/min			•	•			•	•
FINAL VOLTAGE	25.0V	(10 - MAX)V			•	•			•	•
FINAL CRATER TIME	0.0s	(0.0 - 5.0)s			•					
BURN BACK	0	-30 - +30	•	•	•	•	•	•	•	•
POST GAS	1.0s	(0.0 - 10.0)s	•	•	•	•	•	•	•	•
FIRST SLOPE (I_1 TO I_2)	0.05s	(0.00 - 2.00)s								•
CYCLE WIRE SPEED	5.0m/min	(0.6-MAX)m/min							•	•
CYCLE VOLTAGE	25.0V	(10 - MAX)V							•	•
SECOND SLOPE (I_2 TO I_1)	0.05s	(0.00 - 2.00)s								•

WARNING:

- The STANDARD CYCLE or ADVANCED welding mode can only be activated by entering the SETTINGS - WELDING - CYCLE - ADVANCED Menu.
- It is possible to access editing of the *SPECIAL FUNCTIONS (Fx)* during welding.
- Some of the values edited will be used immediately by the operator, while others will be active from when the next welding task begins.
- The *HOLD* function is not active within the *SPECIAL FUNCTIONS Menu (SET UP Fx)*.

The *SPECIAL FUNCTIONS (Fx)* related to the ***MMA*** process:

Table C

Fx ADJUSTABLE SPECIAL FUNCTIONS		
Special function	**PARAMETER DISPLAY**	
	Default	**Range**
HOT START	50	(0 - 100)
ARC FORCE	50	(0 - 100)

WARNING:

- It is possible to access editing of the *SPECIAL FUNCTIONS (Fx)* during welding.
- Some of the values edited will be used immediately by the operator, while others will be active from when the next welding task begins.
- The *HOLD* function is not active within the *SPECIAL FUNCTIONS Menu (SET UP Fx)*.

The *SPECIAL FUNCTIONS (Fx)* related to the ***TIG LIFT*** process:

Table D

Fx ADJUSTABLE SPECIAL FUNCTIONS		
Special function	**PARAMETER DISPLAY**	
	Default	**Range**
UP SLOPE	0.0s	(0.0 - 5.0)s
DOWN SLOPE	2.0s	(0.0 - 8.0)s
TIG PULSE DELTA CURRENT	-50%	(-100 ÷ 1000)%
TIG PULSE BALANCE	0	(-40 ÷ 40)%
TIG PULSE FREQUENCY	100.0Hz	(0.1 ÷ 500.0)Hz
SWS VOLTAGE THRESHOLD	0	-30 - +30

WARNING:

- It is possible to access editing of the *SPECIAL FUNCTIONS (Fx)* during welding.
- Some of the modified values will be usable immediately by the operator, others will become active at the next welding.
- The *HOLD* function is not active within the *SPECIAL FUNCTIONS Menu (SET UP Fx)*.

Wire loading

The purpose of this menu is to allow the operator to load the welding wire and set the loading speed **only when he is not welding**. By pressing the button for 4 seconds you enable its use.

By rotating the knob it is possible to change the wire loading speed from 1.0 to 25.0 m/min (default 8.0 m/min). The remaining buttons and knobs are inactive.

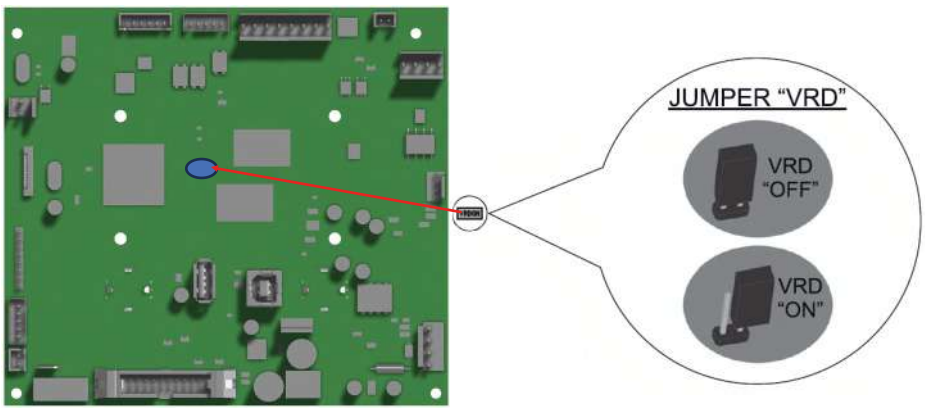
NOTE: *It is not possible to access wire loading if there are errors in the machine or in the setup procedure.*

Activating the VRD device

The “Voltage Reduction Device” (VRD) is a safety device for reducing voltage. It prevents the formation of voltages on the output terminals which could constitute a danger to people. The standard and default settings do not include the VRD device active on the welder and therefore the VISION Display normally does not show any indication.
When the operator wants to weld in MMA, using the VRD device (operation to be carried out with the welder off) he must:

1) Using a specific screwdriver, unscrew the 4 screws that fix the control panel to the welding machine.

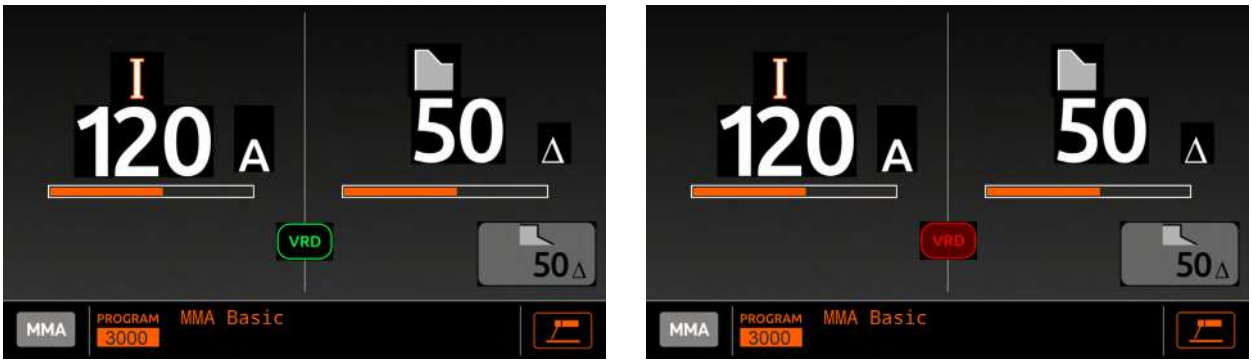
2) Remove the “VRD” JUMPER on the DIGITAL INTERFACE BOARD (see figure below).



3) Fix the control panel on the welding machine using a special screwdriver and the 4 screws.

4) Start the welder by turning the switch on the rear panel to position I.

When turned on, but with the machine at rest, the control panel will show the VRD device active (VRD green colour).

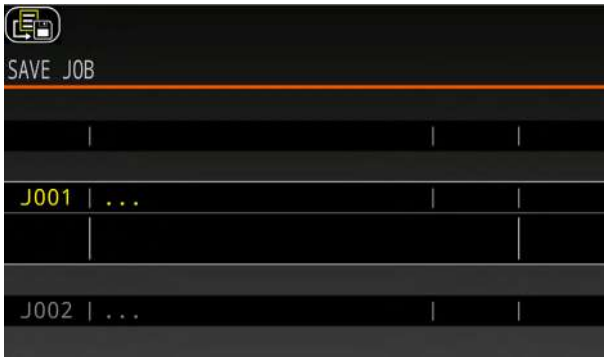


During the welding phase, the VRD device comes into operation (VRD red colour, does not indicate a malfunction of the welding machine) and at the end of the welding operation the voltage will be reduced within a maximum time of 0.3 seconds.

JOB - Creation and storage of welding programs

The welder allows you to save up to 100 welding programs (JOBs).
After having defined the parameters necessary for the operator to carry out his work correctly, it is possible to memorize them by creating a welding program (JOB) by proceeding as follows:

1) Press and hold the JOB MEM 3 SEC button for at least 3 seconds until the figure below appears on the display.



2) The software offers the storage of the first free welding program (e.g. J001...).

3) Press the memorization knob.

It is also possible to overwrite an already stored program. In this case proceed as follows:

1) Rotate the knob to the program you want to overwrite.

2) Press the memorization knob.

3) Follow the wizard to confirm overwriting YES NO.

JOB - View and load a stored program

Proceed as follows:

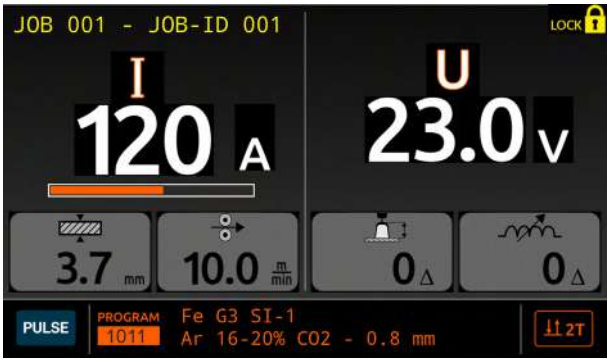
1) By pressing the JOB MEM 3 sec button, the page with the list of stored programs (JOB) is displayed.

2) Rotate and press the knob to load the desired JOB (e.g. J001 JOB-ID 001).

3) It is now possible to carry out a welding with the stored parameters of the loaded JOB.

4) The name of the loaded JOB and the symbol LOCK will appear on the main welding screen.

5) By turning the left knob you can scroll through the list of stored JOBs and enable them.



JOB - Name, delete, move and copy a stored program

On the page of the list of stored programs (JOB) it is possible to carry out the following operations:

SYMBOL	DESCRIPTION
	Assign or rename a JOB
	Set JOB slope
	Copy a JOB
	Move a JOB
	Delete a JOB

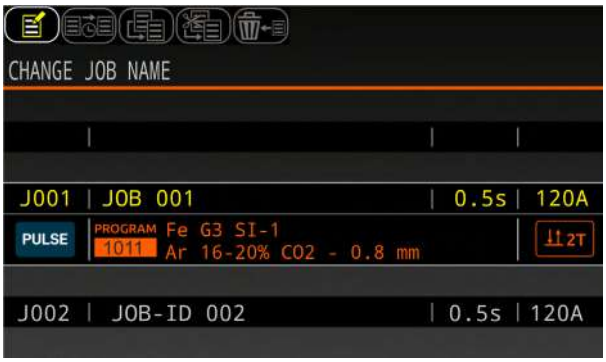
Proceed as follows:

1) Pressing the JOB MEM 3 SEC button displays the page with the list of stored programs (JOB).

2) Press the right knob for at least 3 seconds to enter the page below which allows you to name, set JOB slope, copy, move and delete a stored program (JOB).

3) Select the JOB to modify and press the knob to confirm.

4) Choose the desired operation and follow the guided instructions shown on the display.



5) With the button ⮌ you can cancel the operation in progress.

JOB - Exit JOB mode

To exit JOB programmed mode, proceed as follows:

1) From the welding page, press the JOB MEM 3 SEC key and the page with the list of stored programs (JOBS) is displayed.

2) Rotate and press the knob to load **EXIT JOB MODE**.

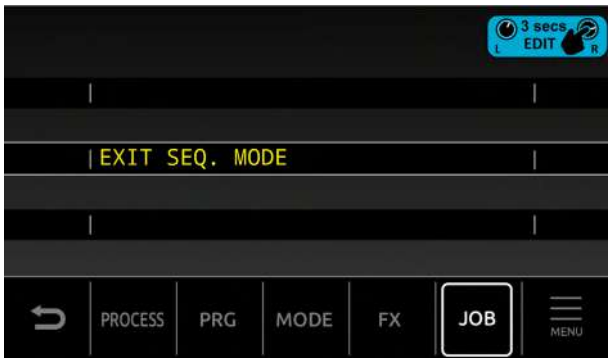
3) The machine returns to the “MANUAL” welding condition. It is now possible to set new parameters or create new programs.

SEQ. - Creating and storing sequences

The welder allows you to save up to 10 sequences (up to 10 JOB welding programs in the desired order).
To store a sequence of JOBs proceed as follows:

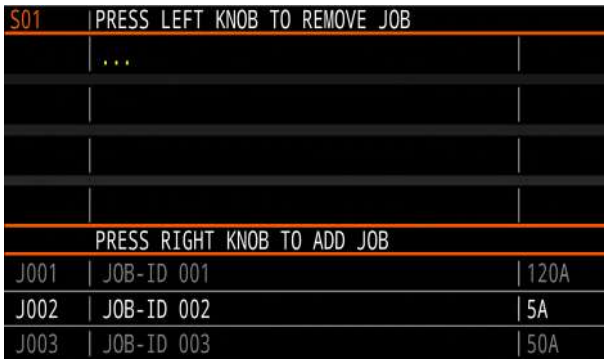
1) Select the JOB menu and then with the right knob select the SEQUENCE TAB.

2) Press a knob to confirm, and then hold down the right knob for at least 3 seconds.



3) Press a knob to confirm the creation of a new sequence

4) Use the right knob to select/add a JOB or the left knob to select/remove.



5) Press the key to return to the welding page or the key to the previous page.

SEQ. - View and load a stored sequence

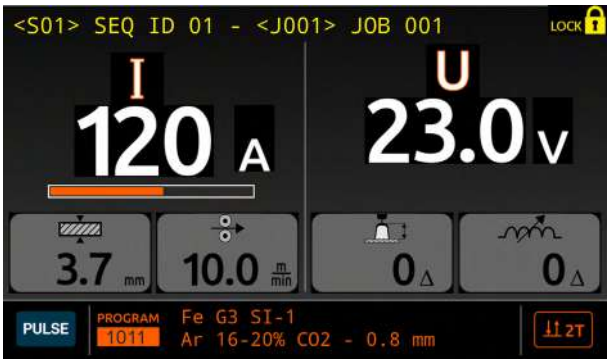
1) If we are on the welding page, press the key to access the process configuration menu (JOB), select the SEQUENCE tab with the right knob.

2) Press a knob to enter and press it again on the sequence to load.

3) Press the key or press the key until you return to the welding page.

4) It is now possible to carry out a welding with the stored JOBS of the loaded SEQUENCE.

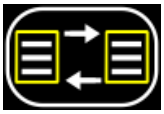
5) The name of the loaded SEQUENCE and the symbol LOCK will appear on the main welding screen.



6) By rotating the left knob it is possible to scroll the list of JOBs present in the sequence.

SEQ - Name, delete, move and copy a stored sequence

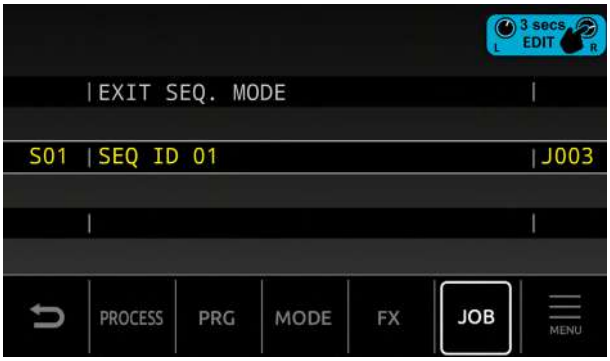
On the page of the list of stored sequences (SEQ) you can perform the following operations:

SYMBOL	DESCRIPTION
	Assign or rename a SEQ
	Edit a SEQ
	Copy a SEQ
	Move a SEQ
	Delete a SEQ

Proceed as follows:

1) Select the JOB menu and then with the right knob select the SEQUENCE TAB.

2) Press a knob to confirm, then hold down the right knob for at least 3 seconds.



3) Select the sequence to edit.

4) Select the sequence, by pressing a knob I can rename, modify, copy, move and delete a stored sequence (SEQ).

5) Choose the desired operation and follow the guided instructions shown on the display.

6) With the button you can cancel the operation in progress.

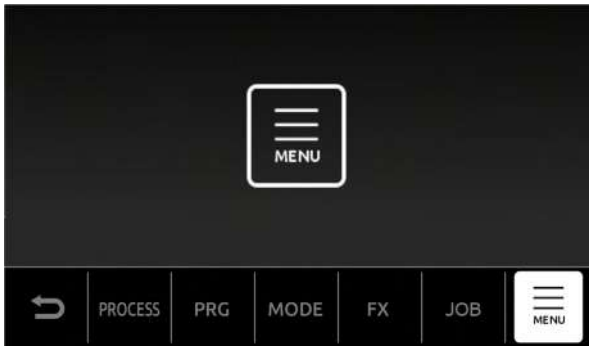
MENU - General

Press a knob on the parameter you want to modify and by turning the knob choose the desired option.

LANGUAGE	***ENGLISH** - ITALIANO - DEUTSCH - ESPAÑOL - FRANÇAIS…
SYSTEM	***METRIC** / IMPERIAL
WIRE CLASSIFICATION	***EN** / AWS
SOUND	***ON** / OFF
MACHINE RESET	***NO** / YES

*** Default value**

MENU - Welding



Confirm the parameter you want to modify and by turning the knob choose the desired option.

ARC LENGTH ADJUSTMENT	***VOLTAGE /** WIRE SPEED
CRATER	***STANDARD** / ADVANCED
CYCLE	***DISABLED** / STANDARD / ADVANCED
DUAL PULSED	***STANDARD** / ADVANCED

*** Default value**

ARC LENGTH ADJUSTMENT	
VOLTAGE	Arc length adjustment with welding voltage
WIRE SPEED	Arc length adjustment with wire speed

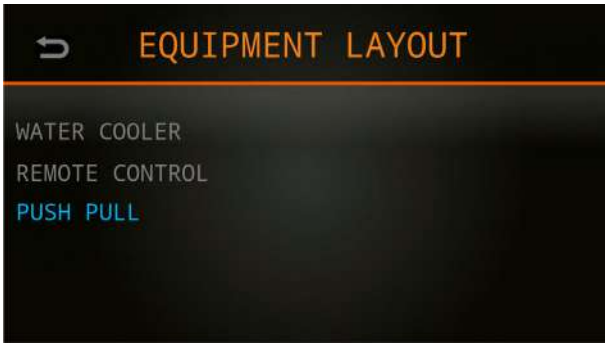
Regulation in **MIG** processes (pulsed, double pulsed, synergic, VISION.COLD and ULTRA.SPEED).

CRATER	
STANDARD	In **MIG** welding processes (pulsed, double pulsed, synergic, VISION.COLD and VISION.ULTRASPEED), the following special functions that allow you to vary the length of the arc in the welding crater: • Initial current • Final current
ADVANCED	In **MIG** welding processes (pulsed, double pulsed, synergic, VISION.COLD and VISION.ULTRASPEED), the following special functions that allow you to vary the length of the arc in the welding crater: • Initial arc length - initial current • Final arc length - final current

CYCLE	
DISABLED	Cycle disabled
STANDARD	In **MIG** welding processes (pulsed, double pulsed, synergic, VISION.COLD and VISION.ULTRASPEED) the following can be varied: • Cycle current • Cycle arc length Manual **MIG** can be varied: • Cycle wire speed • Cycle voltage
ADVANCED	Only for the advanced CYCLE can I adjust the ramps: • First slope (I1 to I2) • Second slope (I2 to I1)

DOUBLE PULSED	
STANDARD	In the standard process the following can vary: • Frequency • Balancing • Current delta
ADVANCED	Only for the advanced process can I adjust the ramps: • First slope (I1 to I2) • Second slope (I2 to I1)

MENU - System configuration



MENU - Water cooling

WATER COOLING	
ON DEMAND	ON DEMAND cooling switched on automatically. During the welding phase or, for a certain period of time, when this is finished
ALWAYS ACTIVE	Cooling always on
ALWAYS INACTIVE	Cooling always off (useful when using an air-cooled TIG torch after using a water-cooled TIG torch)

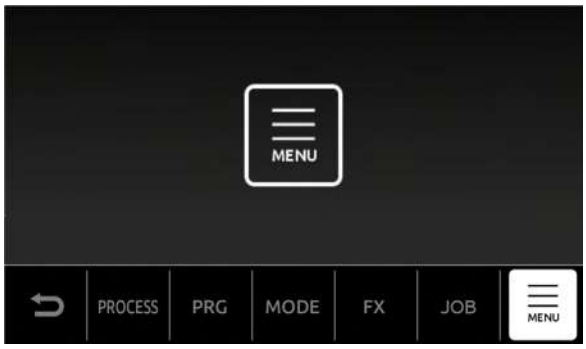
MENU - Remote control

REMOTE CONTROL	
DISABLED	The remote control is not managed.
AUTO	When turned on, the welder checks for the presence of the remote control: • if the remote control is present, the welder is set up as in "**MANDATORY**" mode. • if the remote control is not present, the welder is set up as in "**DISABLED**" mode.
MANDATORY	The remote control must be connected to the welding machine.

MENU - Push Pull

PUSH PULL	
PUSH PULL	Indicates the type of PUSH PULL used. By moving the knob to the OFF position the push pull is not managed.
PUSH PULL CONTROL	Indicates the type of PUSH PULL HARDWARE control present inside the welding machine.
PUSH PULL OFFSET	Indicates the absolute speed deviation of the push pull compared to the factory value (default).
PUSH PULL SPEED	Indicates the % relative deviation of push pull speed compared to the factory value (default).

MENU - Panel lock



SET PASSWORD	***NO** / YES
TYPE OF BLOCK	***NONE** / LEVEL 1 / LEVEL 2 / USER BLOCK

*** Default value**

TYPE OF BLOCK	DESCRIPTION
NONE	NO BLOCK or MACHINE UNBLOCK It does not allow you to activate any lock on the welding machine but allows the operator to unlock the machine if it had previously been locked.
LEVEL 1	PARTIAL BLOCK The operator can weld using the parameters previously set in the block and can make adjustments and/or modifications to the welding parameters using the knobs on the control panel of the welding machine.
LEVEL 2	TOTAL BLOCK The operator can only weld using the parameters previously set in the block and cannot make adjustments and/or modifications to the welding parameters.
USER BLOCK	CUSTOM BLOCK Allows you to block or limit some adjustments and/or functions of the welder.

PASSWORD
Set password: YES
Upon confirmation, the keyboard appears on the screen to enter the password.

Enter a maximum of 9 characters (e.g. DOGMA 272) and press to confirm , or otherwise cancel by pressing ESC.

CHANGE PASSWORD

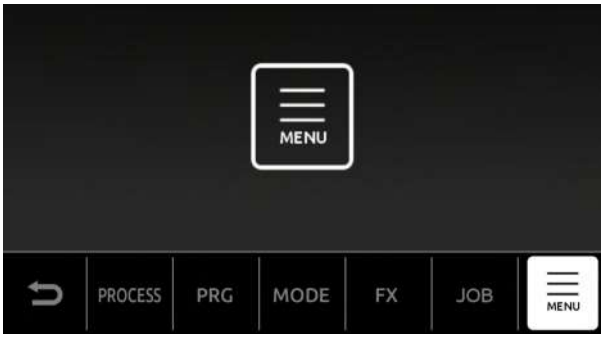
To change your password, proceed as follows:

1) Access the menu using the set password
2) Enter the PANEL LOCK menu.
3) **CHANGE PASSWORD** YES
4) Set the new password and press to confirm.

REMOVE PASSWORD

1) Repeat the first 3 points of the PASSWORD CHANGE procedure.
2) In the SELECT PASSWORD screen, delete all the characters and confirm by pressing , or otherwise cancel by pressing ESC.

MENU - Information



Timers are in hhhh:mm format (h=hours / m=minutes).

INFORMATION	
UPGRADE FW	***NO** / YES
RESET TIMER	***NO** / YES

*** Default value.**

FW UPGRADE

Updating the welder's firmware is possible using a "FAT32" USB pendrive.

NOTE: *For this purpose, use a new "FAT32" USB pendrive dedicated for this purpose.*

To access this function go to the "CONFIGURATION" menu and the "INFORMATION" submenu - "UPGRADE FW".

1) Turn off the machine.

2) Remove the rack panel by unscrewing the 4 fixing screws.

3) Turn on the welding machine

4) Select the "CONFIGURATION" menu and the "INFORMATION" submenu.

5) "UPGRADE FW" confirm YES

6) The writing "CONNECT USB KEY" appears on the display

7) Insert the USB pendrive (FAT 32). into the USB socket located on the back of the welder's front panel. The update firmware is located in the main folder.

8) Rotate the knob to choose the correct .HEX file corresponding to the name of the welding machine in use. Press the knob to confirm your choice.

9) At the end of the update you will hear a confirmation sound. Updating the entire system takes approximately 7 minutes and involves both the welder and display software.

10) Turn off the machine.

11) Extract the USB pendrive

12) Refit the rack panel with the 4 fixing screws.

13) Turn on the machine.

RESET TIMER

RESET TIMER confirm YES, the partial TIMERS of the session will be reset (since you turn on the machine):

- WELDING TIMER.
- WELDING TIMER.

While the TIMER WELDER ON TOT. and TOT WELDING TIME **are not resettable**.

MENU - Welding programs

By turning a knob I can quickly view the summary list of the processes available in the various welding programs.
To exit the WELDING PROGRAMS menu, simply press a knob or press the button.

MENU - Error conditions and protections

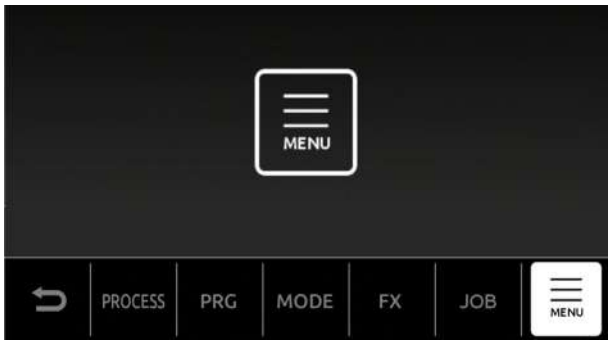
The welder is protected from any inconveniences and when they arise a symbol appears on the display with a short descriptive text of the error that has occurred.

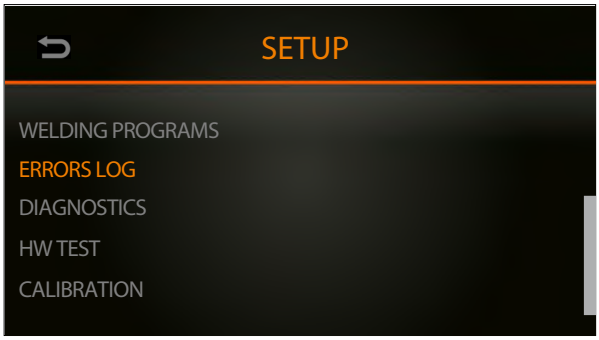
The table below summarizes all the error conditions that can occur on the welding machine and, where possible, the behavior that the operator must adopt to try to resolve the problem.

ERROR	DESCRIPTION
T*C THERMAL PROTECTION	**THERMAL PROTECTION** The welding machine stops due to temperature exceeding the limit (thermostat trip). Automatic recovery error.
H20 COOLING PRESSURE	**PRESSURE SWITCH** The writing appears when the cooling system is connected to the machine and the pressure switch does not close the circuit due to lack of pressure in the hydraulic circuit. Automatic recovery error.
AUT ADJ POWER LIMIT ACTIVE	**POWER LIMITATION** This alarm appears if the power limit is exceeded. The alarm alternates with the standard display every 1.5 seconds, despite this, the machine continues to weld, delivering limited power, while respecting the values indicated on the data plate.
E0.0 POWER SUPPLY FAILURE	**POWER SUPPLY FAILURE** This error can only occur when switching on and not during normal operation of the welding machine. NON-automatic recovery error. Error visible ONLY in the event of a fault on the **VISION display** and NOT within the *ERROR LOG* Menu.
E0.1 OVER AND UNDERVOLTAGE	**VOLTAGE** It is activated when the anomalous condition of simultaneous overvoltage and undervoltage signaling is detected.
E0.2 OVERVOLTAGE	**OVERVOLTAGE** The writing appears when the supply voltage exceeds 500V. If the fault persists, search for the cause of the anomaly and call technical assistance if necessary. Automatic recovery error.
E0.3 UNDERVOLTAGE	**UNDER VOLTAGE** The writing appears when the supply voltage drops below the value of 280V. If the fault persists, search for the cause of the anomaly and call technical assistance if necessary. Automatic recovery error.
E0.4 OVERCURRENT	**OVERCURRENT** Automatic recovery error.
E0.6 WATER COOLER MISSING	**WATER COOLER MISSING** Check the presence of the COOLING SYSTEM - ALWAYS ACTIVE function within the WELDING Menu. After this first check you need to know that this error can only occur in following cases: automatic. • Cooling system not connected to the welding machine. • The welder does not recognize the cooling system even if the latter is connected correctly. • Cooling system disconnected during normal machine operation. Following reactivation of the cooling system, **the error condition is automatically reset! NON-automatic recovery error.** • If the alarm occurs even with the presence of the COOLING SYSTEM - ON DEMAND function in the WELDING Menu, call technical assistance immediately..
E3.2 STICKING WIRE	**STICKING WIRE ERROR** The error appears after there is a short circuit between the output terminals of the machine for more than 1.2 seconds. NON-automatic recovery error. To remove the error condition it is necessary to eliminate the short circuit so that the voltage on the torch rises above the threshold value. At this point the error condition disappears and the welding machine returns to the previous sticking mode. If the torch button is still pressed, you need to release it and then press it again to resume welding.
E3.3 MOTOR SPEED	**MOTOR SPEED ERROR** NON-automatic recovery error. Check that the rollers of the wire feeder mechanism are not blocked and that the welding wire comes out correctly, otherwise call technical assistance immediately.
E3.4 CIRCUIT CALIBRATION WRONG	**CIRCUIT CALIBRATION WRONG** NON-automatic recovery error. The error occurs when the welding circuit measurement procedure has not been carried out.
E7.0 RC ANALOGIC MISSING	**ERROR NO ANALOG RC** Remote control not connected, check the settings in the menu: WELDING / REMOTE CONTROL. Automatic recovery error.

The machine may display an error code not present in the table, in this case contact technical assistance and communicate the error code displayed.

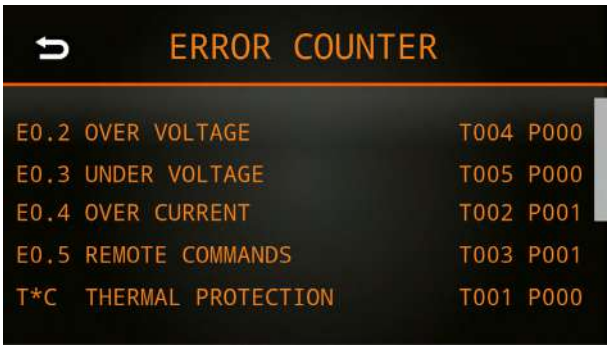
MENU - Error log





ERROR LIST

At each error event, the new error is inserted in position 01, with the brief description and the time in hhhhh:mm format (h=hours / m=minutes TIME WELDER ON TOT.).

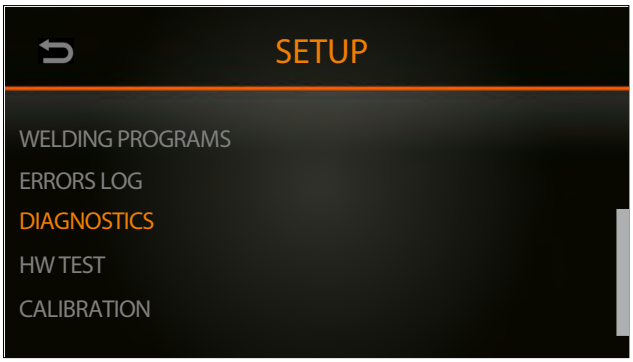


ERROR COUNTER

Inside the menu, for each single error, the following are indicated:

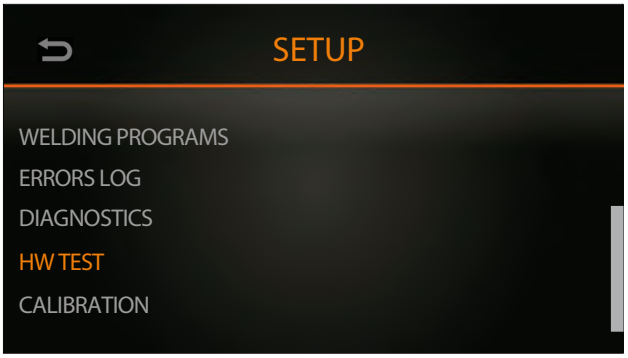
- Your code (Ex. E0.4).
- A brief description (E.g. OVER CURRENT).
- The number of times it has occurred since the machine was last turned on (ES. P001).
- The total number of times it has occurred since the first switch on (ES. T002).
- Errors that have occurred, have not yet been resolved and are therefore still present on the welding system, are highlighted in red.

MENU - Diagnostics



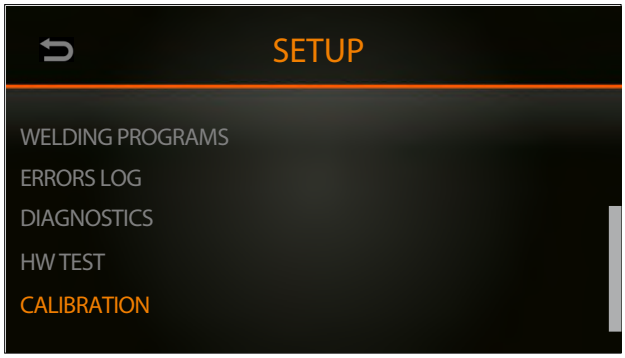
The diagnostic menu provides the service center with a whole series of useful information for detecting any technical problems.
To exit the Diagnostics menu, simply press a knob or press the button.

MENU - HW TEST



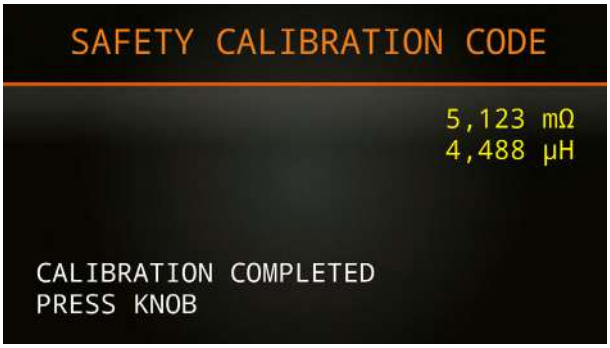
The hardware test menu allows, by setting from OFF to ON and vice versa, to test the functionality of the gas solenoid valve, the fan, the cooling system, the power module and the engine PWM. To exit the HW TEST menu just press a knob or press the button.

MENU - CALIBRATION



SAFETY CALIBRATION CODE (SCC)

ATTENTION: *This operation, if performed, optimizes the efficiency of the welding circuit (only in MIG welding processes).*



MOTOR CALIBRATION

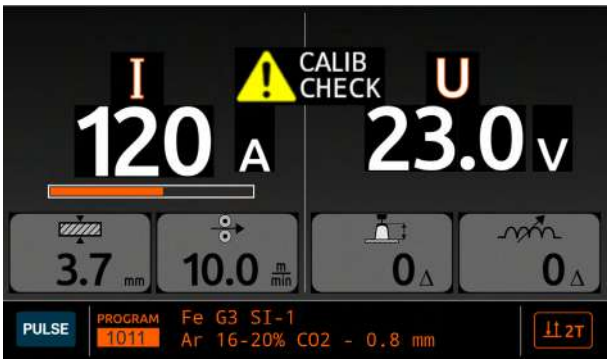
ATTENTION: *This procedure allows you to calibrate the wire speed (only in MIG welding processes).*

There are 3 motor calibration points at different speeds (L1/3-L2/3-L3/3), following the guided procedure, enter the 3 lengths detected. Once the procedure is completed, the software recalculates the characteristic curve of the motor, making it suitable for use.

CALIBRATION CHECK

ATTENTION: *This procedure NO longer compensates for the voltage drop in the torch cable.*

Once the CALIBRATION CHECK procedure has been confirmed, it is no longer possible to access the menu again.
Return to the welding page with the button .



Once the CALIBRATION CHECK procedure has been confirmed, it is no longer possible to deactivate it from the calibration menu, but it is necessary to turn the welder off and on again.

CEA COSTRUZIONI ELETTROMECCANICHE ANNETTONI S.p.A.
C.so E. Filiberto, 27 - 23900 LECCO - ITALY
Cas. Post. (P.O. BOX) 205
Tel. +39 0341 22322 - Fax +39 0341 422646
cea@ceaweld.com
www.ceaweld.com