



WELD THE WORLD

Cruiser 200

Instruction manual







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ENGLISH

1 INTRODUZIONE

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

LEGENDA

	DANGER!
<i>This pictogram warns of danger of death or serious injury.</i>	
	WARNING!
<i>This pictogram warns of a risk of injury or damage to property.</i>	
	CAUTION!
<i>This pictogram warns of a potentially hazardous situation.</i>	
	INFORMATION!
<i>This pictogram gives important information concerning the execution of the relevant operations.</i>	

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

NOTES

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

1.1 INTRODUCTION

Cruiser 200 is an inverter DC TIG/MMA portable welding power source.

The solidity of the components of this unit makes it a reliable working companion for workshop and outdoor applications.

The available DC TIG functions and digital control make this unit ideal for maintenance, building construction, and light metalwork.

In MMA welding the Hot Start and Arc Force functions are adjustable and they allow improved arc striking, a flatter bead and more uniform weld.

The Anti Sticking function makes it possible to detach the electrode rapidly from the workpiece in the event of accidental sticking.

Up to 5 mm diameter electrode welding is possible in MMA.

In DC TIG welding the pulse frequency (0.5 Hz-250 Hz) and base current are adjustable by the welder, making it possible to focus the arc, reduce heat transfer and limit deformation of the material.

Accessories that can be connected to the unit:

- Manual remote controller for remote adjustment of the welding current.
- Power source trolley

Consult your dealer for an updated list of accessories and the latest available new products.

2 INSTALLATION



DANGER!
Lifting and positioning

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



2.1 CONNECTIONS TO THE ELECTRICAL MAINS NETWORK

The characteristics of the mains power supply to which the equipment shall be connected are given in the section entitled "TECHNICAL DATA" on page 12.

The machine can be connected to motorgenerators provided their voltage is stabilised.

Connect/disconnect the various devices with the machine switched off.

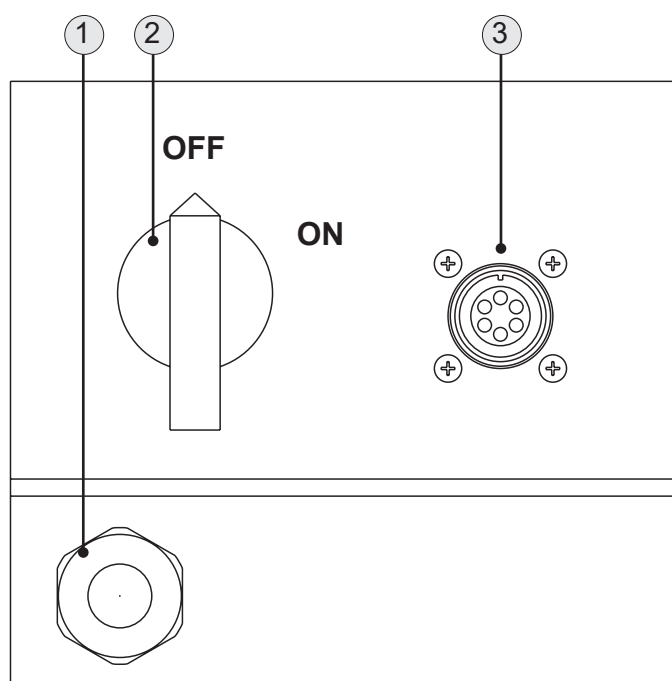
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2.2 FRONT PANEL



- Negative pole welding socket [Part. 1].
- Positive pole welding socket [Part. 2].

2.3 REAR PANEL



- Power cable [Part. 1].
 - Total length (including internal part): 3,5 m
 - Number and cross section of wires: 4 x 1,5 mm²
 - Power plug type: not supplied
- Welding power source ON/OFF switch [Part. 2].
- Remote controller connector [Part. 3].

2.4 PREPARING FOR MMA WELDING

1. Set the welding power source ON/OFF switch to "O" (unit de-energized).
2. Plug the power cable plug into a mains socket outlet.
3. Choose the electrode based on the type of material and thickness of the workpiece to be welded.
4. Insert the electrode in the electrode holder.
5. Connect the electrode holder cable to the welding socket based on the polarity requested by the type of electrode used.
6. Connect the plug of the ground clamp to the welding socket on the basis of the polarity required.
7. Connect the earth clamp to the workpiece being processed.

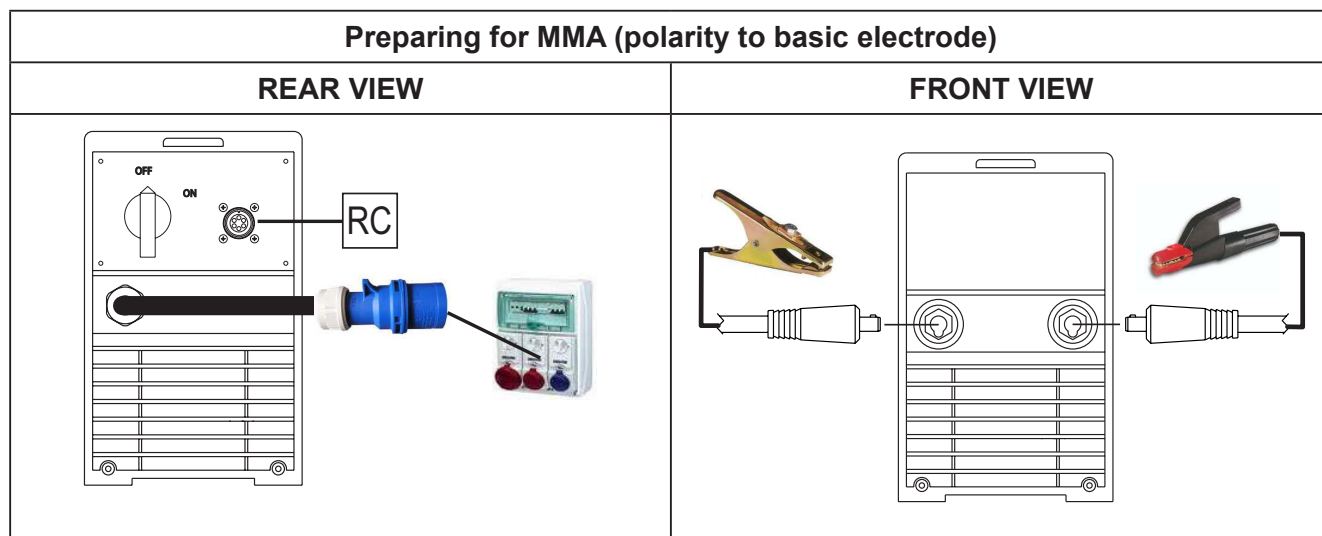


DANGER!
Electric shock hazard!

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



8. Set the welding power source ON/OFF switch to "I" (unit powered).
 9. Select the following welding mode on the user interface: MMA
 10. Set the required welding parameter values on the user interface.
- ➡ When the remote controller [RC] is connected and the relative locking screw is tightened, welding current can be adjusted using the remote controller.
- The system is ready to start welding.



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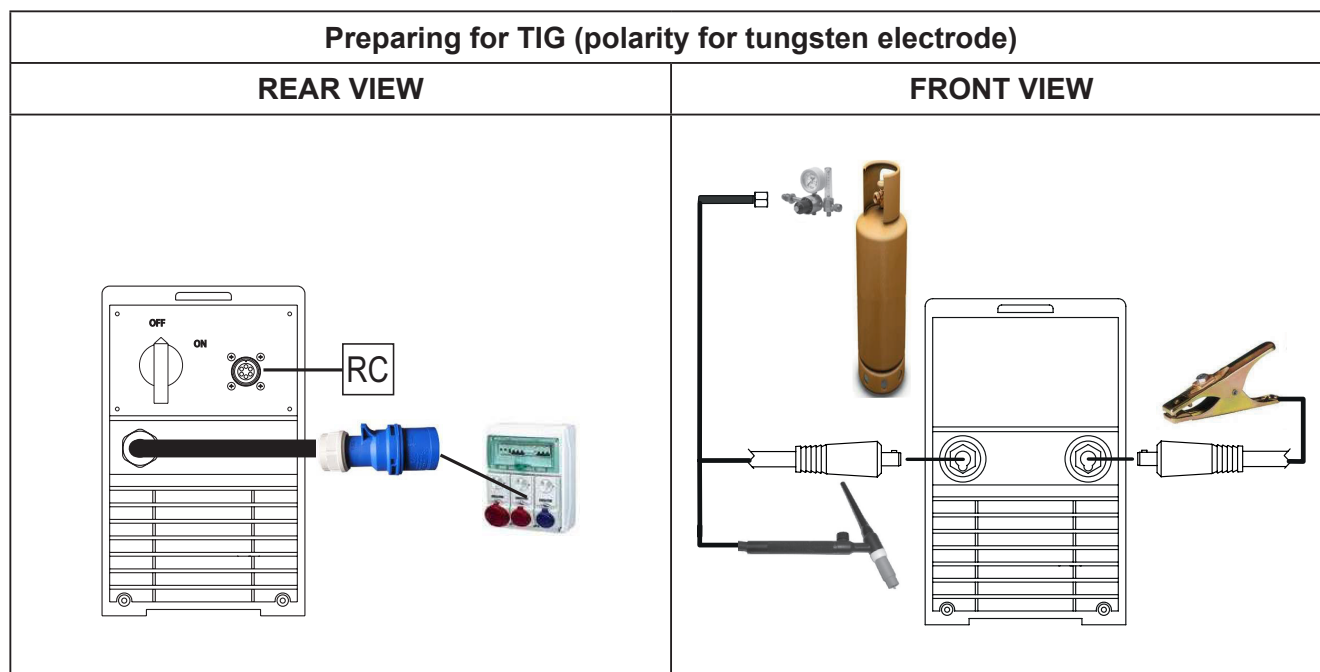
2.5 PREPARING FOR TIG WELDING

1. Set the welding power source ON/OFF switch to "O" (unit de-energized).
2. Plug the power cable plug into a mains socket outlet.
3. Choose the electrode based on the type of material and thickness of the workpiece to be welded.
4. Insert the electrode in the TIG torch.
5. Connect the torch plug to the welding socket on the basis of the polarity required by the type of electrode in question.
6. Connect the plug of the ground clamp to the welding socket on the basis of the polarity required.
7. Connect the earth clamp to the workpiece being processed.
8. Set the welding power source ON/OFF switch to "I" (unit powered).
9. Select the following welding mode on the user interface: DC TIG
- ① This model of welding machine has not been provided either with the control for gas flow (solenoid valve) or with the torch button.

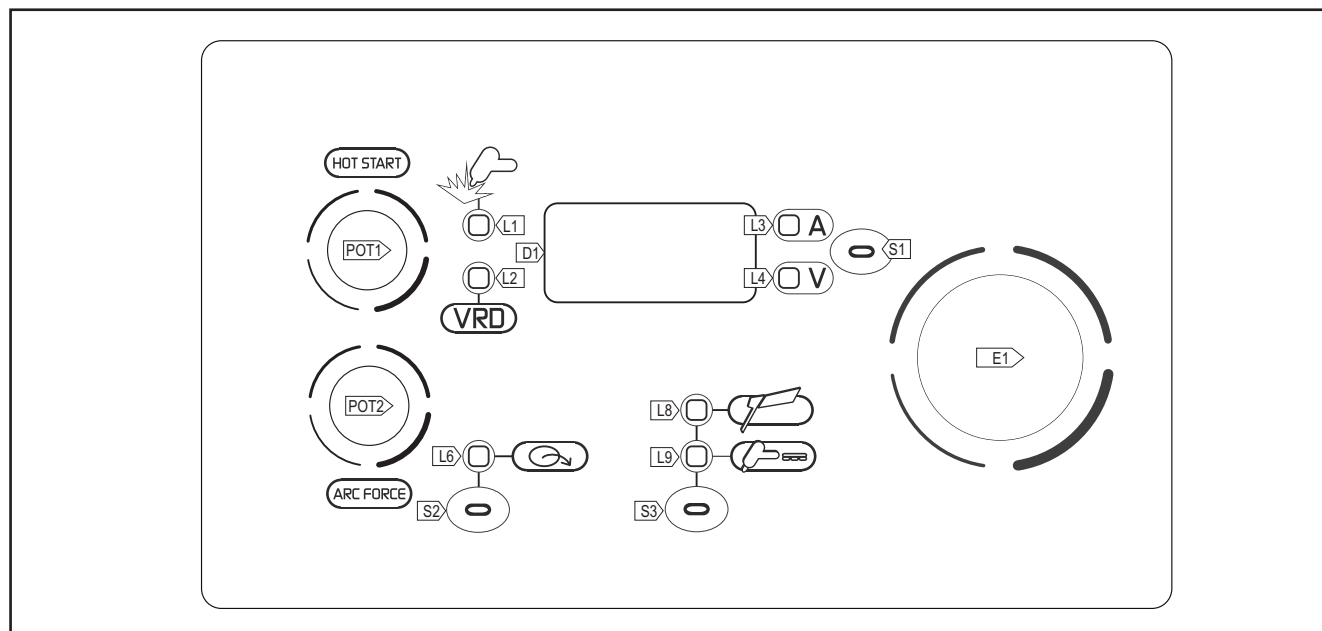
The system is ready to start welding.









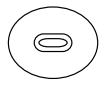
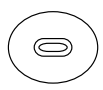
LIFT-ARC WELDING

1. Open the torch valve to let the gas out.
2. Touch the workpiece with the torch electrode.
3. Slowly lift the torch to strike the arc.
- ➡ The WELDING CURRENT reaches the preset value.
4. Quickly move the torch clear of the workpiece to extinguish the welding arc.
5. Close the torch valve to interrupt the gas flow.







3 USER INTERFACE



CODE	SYMBOL	DESCRIPTION
L1		This LED illuminates to confirm the presence of power on the output sockets.
L2		Illumination shows that the following function has been activated: VRD (reduced output voltage). The no-load voltage between the welding sockets is switched from U0 to Ur (see technical data).
L3		Illuminates to indicate a value in the following unit of measurement: AMPERES (A)
L4		Illuminates to indicate a value in the following unit of measurement: VOLTS (V)
L6		This LED indicates that the current reference setting is imposed by the remote controller.
L8		This LED illuminates to show that the following welding mode is selected: MMA
L9		This LED illuminates to show that the following welding mode is selected: CONTINUOUS DC TIG
D1		Data setting: The display shows the acronym of the parameter to be set. Welding: The display shows the effective amperes or volts value during welding.
S1		Welding: This button selects the parameter to be shown on the following display: D1 Possible choices: (A) Effective welding current - (V) Effective welding voltage Parameters/functions setting: This button selects the parameter to be shown on the following display: D1 Possible choices: (A) Effective welding current - (V) Effective welding voltage
S2		Press and release: the button enables the device to receive the welding current control signal from a remote controller. Hold down for 3 seconds: the button activates a connected remote controller, if available, which is then used to manage all functions of the welding power source from a distance.

ENGLISH

CODE	SYMBOL	DESCRIPTION
S3		This button selects the welding mode.
POT1		MMA: The potentiometer sets the value of the following parameter: HOT START
POT2		MMA: The potentiometer sets the value of the following parameter: ARC FORCE
E1		Data setting: The encoder sets the value of the selected parameter. Welding: The encoder sets the value of the following parameter: WELDING CURRENT

4 UNIT POWER-UP

Set the welding power source ON/OFF switch to "I" to switch on the unit.
AL.H. The message appears on the following display: **D1**.

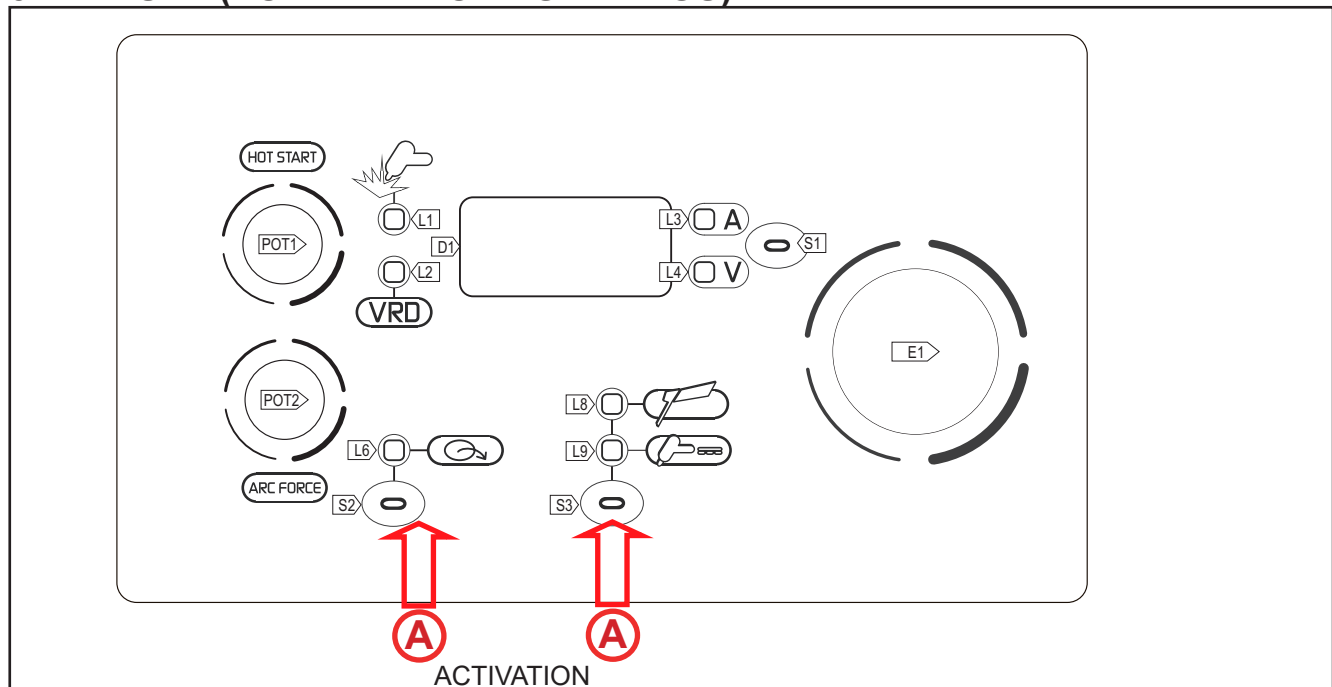
First power-up or power-ups following a RESET procedure

The welding power source sets up for welding with the factory pre-sets.

Subsequent power-ups

The welding power source sets up for welding in the latest stable welding configuration that was active at the time of power-off.




5 RESET (LOAD FACTORY SETTINGS)



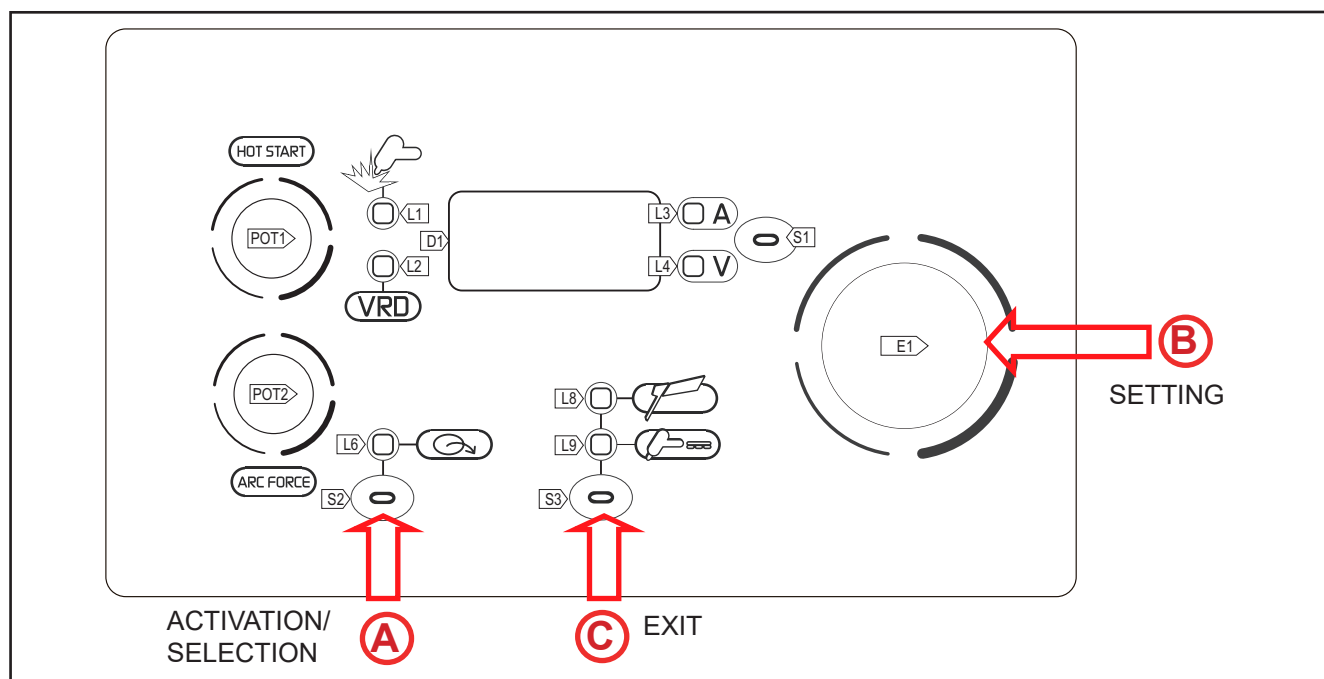
The reset procedure involves complete restoration of the default values, parameters and memory settings set in the factory.





The reset procedure is useful in the following cases:

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

A	<ul style="list-style-type: none"> Set the welding power source ON/OFF switch to “O” to switch the unit off. Keeping both the S2  and S3  buttons pressed, set the generator power source switch to “I” to turn on the equipment [ SIMULTANEOUS ACTIONS] <ul style="list-style-type: none"> rEC : The message appears on the following displays: D1. Wait for the memory clear procedure to terminate.
----------	---

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



A	<ul style="list-style-type: none"> Set the welding power source ON/OFF switch to “O” to switch the unit off. Holding the S2  button down, turn the power source switch to “I” to start the equipment. [ SIMULTANEOUS ACTIONS] <ul style="list-style-type: none"> Vrd: The message appears on the following displays: D1.
B	<ul style="list-style-type: none"> Using the encoder E1 , edit the value of the selected setting.
C	<ul style="list-style-type: none"> Exit with confirmation <ul style="list-style-type: none"> Press any button (except S2). This action will automatically close the menu.
D	<ul style="list-style-type: none"> Exit without confirmation <ul style="list-style-type: none"> Press the S2 button . This action will automatically close the menu.

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Tab. 1 - Parameters of the 2nd level menu: MMA mode

SETTING	MIN	DEFAULT	MAX	NOTES
OUTPUT VOLTAGE REDUCTION	OFF	OFF	ON	
LONG ARC VOLTAGE	37	*SYN	65	Only MMA

***SYN:** This code indicates that parameter control is synergic. The optimal value of this parameter is set automatically by the microprocessor on the basis of the pre-set welding current value.

- When SYN is installed, to display the synergic value press the following button: **S1**.
- This value can be displayed but it is not user-adjustable.

- OUTPUT VOLTAGE REDUCTION (VRD)

- This parameter reduces the potential across the welding sockets when welding is not in progress.
- The arc strike procedure is as follows:
 - Touch the workpiece with the electrode tip.
 - Raise the electrode.
 - Power is released for several seconds.
 - Touch the workpiece with the electrode tip.
 - The welding arc will strike.

- LONG ARC VOLTAGE

- This parameter inhibits power output when the potential between electrode and workpiece exceeds the pre-set threshold level.
- Consequences of a higher value:
 - The welding arc is kept triggered also with the electrode detached from the workpiece being soldered.
- Consequences of a lower value:
 - Faster exit from weld.

7 ALARM MANAGEMENT

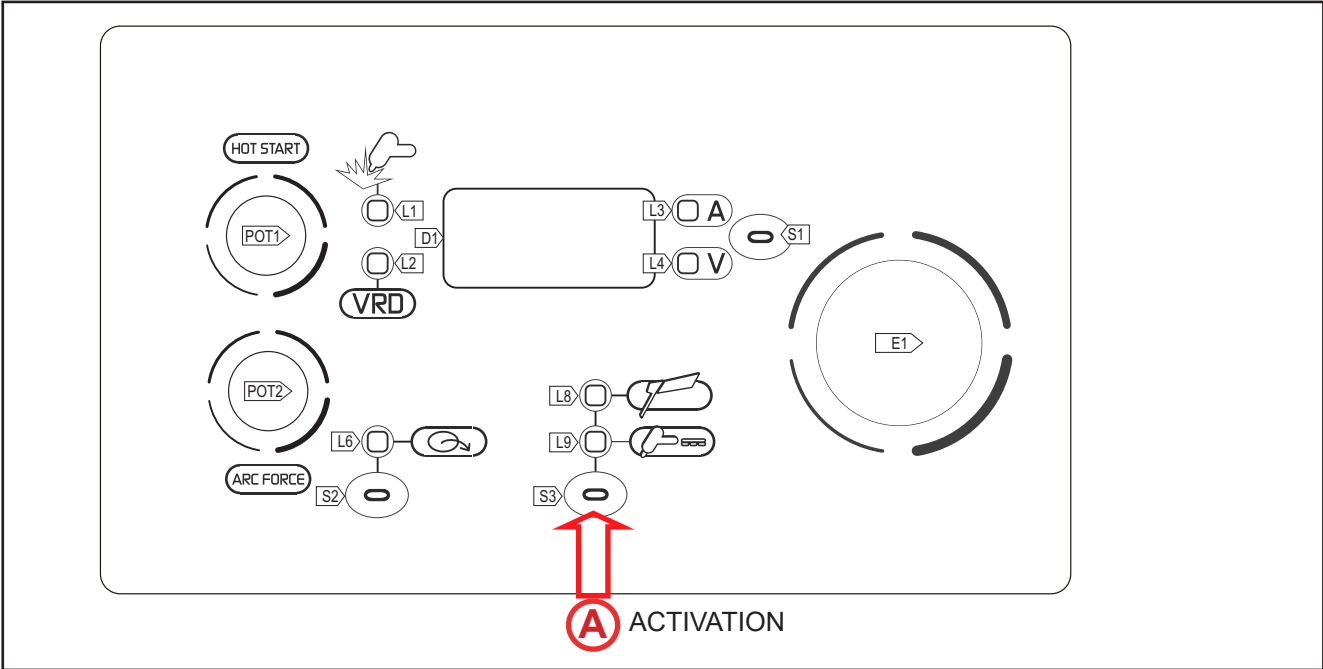
An alarm message appears on the following display: **D1**.


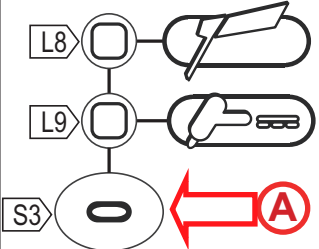
Tab. 2 - Alarm messages

MESSAGE	MEANING	EVENT	CHECKS
AL. HEA.	In start-up phase	Appears for 2-3 seconds	
	Overheating alarm Indicates tripping of the welding power source thermal protection. Leave the unit running so that the overheated components cool as rapidly as possible. When the unit has cooled, the welding power source will reset automatically.	All functions disabled. <u>Exceptions:</u> <ul style="list-style-type: none"> Cooling fan. Cooler (if switched on). 	<ul style="list-style-type: none"> Make sure that the power required by the welding process is lower than the maximum rated power output. Check that the operating conditions are in compliance with the welding power source data plate specifications. Check for the presence of adequate air circulation around the welding power source.
	Phase missing alarm Indicates the absence of a phase in the power supply line. The message appears at the same time as the mains protection activation LED switches on.	All functions disabled. <u>Exceptions:</u> <ul style="list-style-type: none"> Cooling fan. 	<ul style="list-style-type: none"> Check if the equipment power supply line has all the phases. <u>If the problem persists:</u> <ul style="list-style-type: none"> qualified technical personnel are required for repair/maintenance jobs.

8 WELDING

8.1 MMA WELDING



○ Press the S3  button to activate the MMA mode.	
	L 8 MMA

Tab. 3 - Parameters of the 1st level menu: MMA mode

SETTING	MIN	DEFAULT	MAX	NOTES
WELDING CURRENT MAXIMUM CURRENT WITH REMOTE CONTROLLER	10 A	80 A	200 A	
HOT-START	0 %	-	100 %	The value is calculated as a percentage of the preset welding current.
ARC FORCE	0 %	-	200 %	The value is calculated as a percentage of the preset welding current. The value is limited to 200A max.

- WELDING CURRENT

- This parameter regulates the primary welding current value.

- MAXIMUM CURRENT WITH REMOTE CONTROLLER

- The maximum output current value that can be achieved with foot pedal controller external reference.

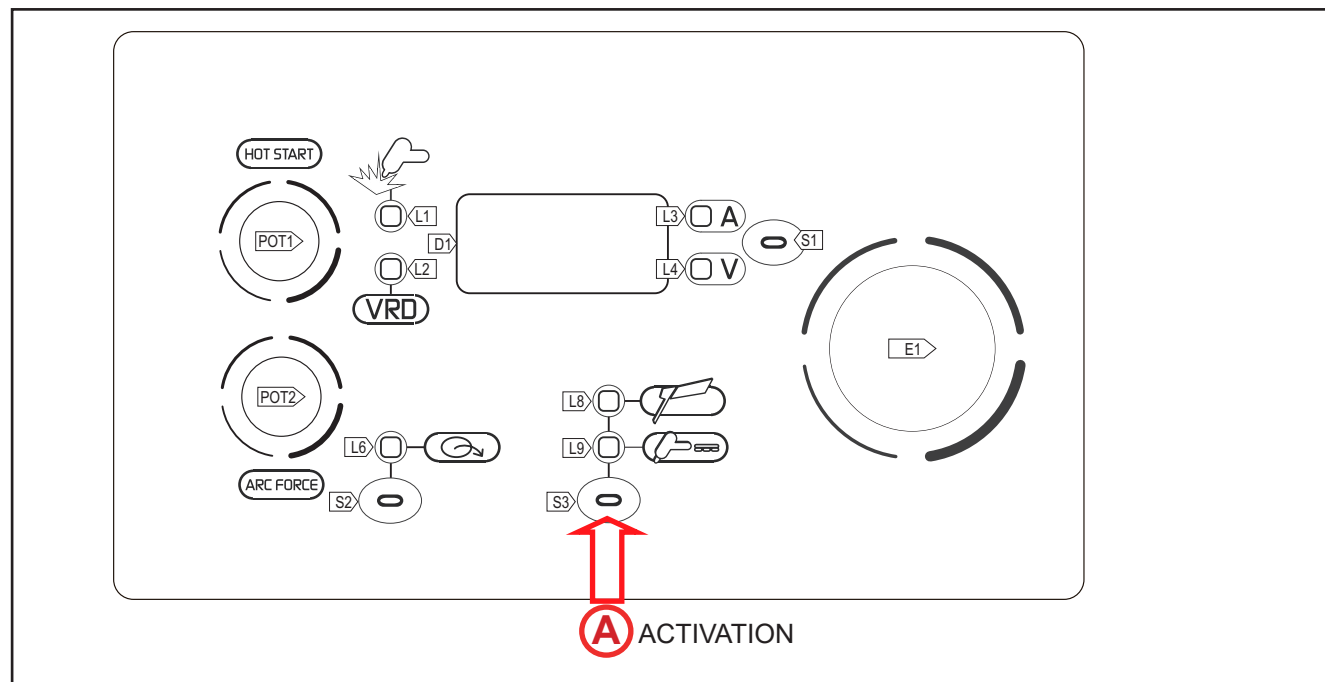
- HOT-START

- This parameter aids electrode melting at the time of arc striking. It is set as a percentage referred to the value of the following parameter: **WELDING CURRENT**.
- Consequences of a higher value:
 - Ease of activation; Greater starting spatter; increase in the activation area.
- Consequences of a lower value:
 - Difficulty of activation; Less starting splatter; Reduction in the activation area.

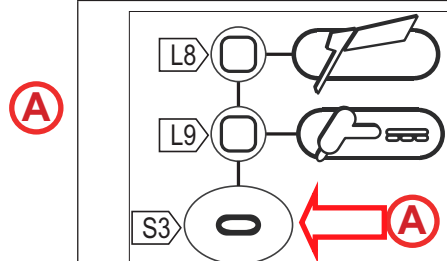
- ARC FORCE

- This parameter helps to avoid electrode sticking during welding. It is set as a percentage referred to the value of the following parameter: **WELDING CURRENT**
- Consequences of a higher value:
 - Fluency factors in welding; Arc welding stability; Increased melting of the electrode within the workpiece; More weld spatter.
- Consequences of a lower value:
 - The arc is extinguished more easily, less welding spatter.

8.2 TIG DC WELDING



- Press the **S3**  button to activate the CONTINUOUS DC TIG mode.



L 9 CONTINUOUS DC TIG

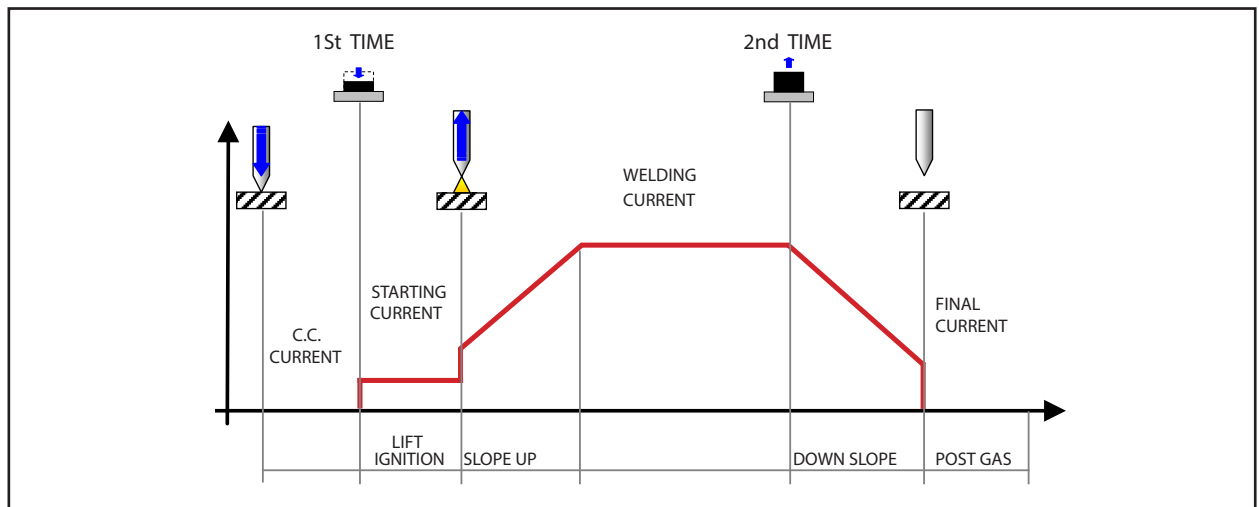
Tab. 4 - Parameters of the 1st level menu: CONTINUOUS DC TIG mode

SETTING	MIN	DEFAULT	MAX	NOTES
WELDING CURRENT	5 A	80 A	200 A	

8.3 TORCH TRIGGER PROCEDURE







- 2 STROKE LIFT:

- Touch the workpiece with the torch electrode.
- Press (1T) and keep the torch trigger pressed.
- Slowly lift the torch to strike the arc.
- The welding current reaches the pre-set value, by way of an up slope time, if programmed.
- Release (2T) the trigger to start the weld completion procedure.
- The current reaches the end current value in the time set in the down slope time parameter.
- The arc is extinguished.
- Gas delivery continues for the time set in the post gas parameter.



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9 TECHNICAL DATA

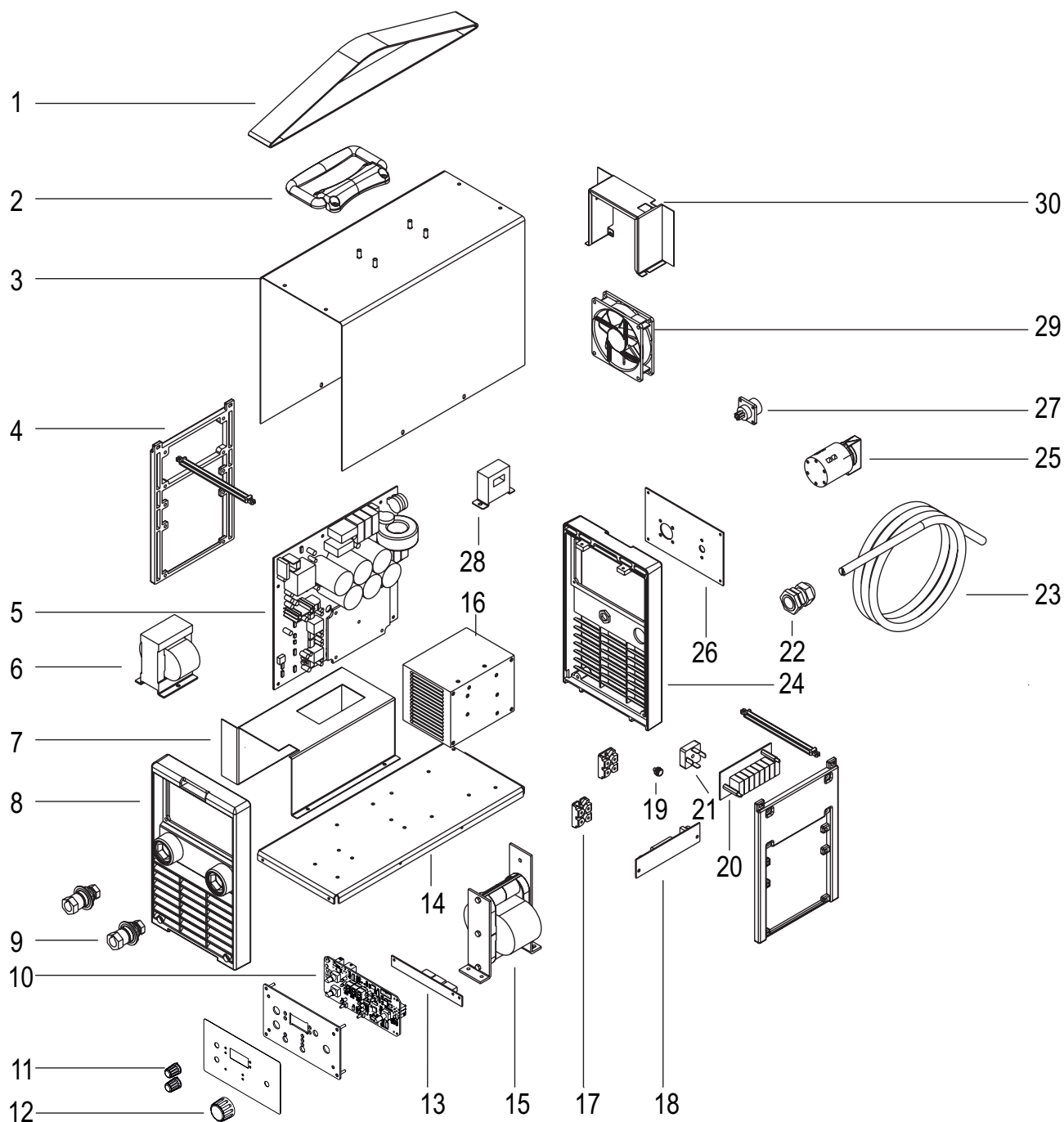
Directives applied	Waste electrical and electronic equipment (WEEE)		
	Electromagnetic compatibility (EMC)		
	Low voltage (LVD)		
	Restriction of the use of certain hazardous substances (RoHS)		
Construction standards	EN 60974-1; EN 60974-10 Class A		
Marcature di conformità	 Equipment compliant with European directives in force		
	 Equipment suitable in an environment with increased hazard of electric shock		
	 Equipment compliant with directive WEEE		
	 Equipment compliant with directive RoHS		
Supply voltage	3 x 400 Va.c. ± 15 % / 50-60 Hz		
Mains protection	16 A Delayed		
Z_{max}	This equipment complies with IEC 61000-3-12 provided that the maximum permissible system impedance is less than or equal to 238 mΩ 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 less than or equal to 238 mΩ.		
Dimensions (L x D x H)	400 x 160 x 260 mm		
Weight	10 kg		
Insulation class	H		
Protection rating	IP23S		
Cooling	AF: Air-over cooling (fan assisted)		
Static characteristic	MMA  Drooping characteristic		
	TIG  Drooping characteristic		
Current and voltage adjustment range		MMA	TIG
		5 A / 20.2 V - 200 A / 28.0 V	5 A / 10.2 V - 200 A / 18.0 V
Welding current / Working voltage	40% (40° C)	200 A / 28.0 V	200 A / 18.0 V
	60% (40° C)	170 A / 26.8 V	170 A / 16.8 V
	100% (40° C)	130 A / 25.2 V	130 A / 15.2 V
Maximum input power	40% (40° C)	6.7 kVA	4.4 kVA
	60% (40° C)	5.7 kVA	3.6 kVA
	100 % (40° C)	4.1 kVA	2.1 kVA
Maximum supply current	40% (40° C)	9.6 A	6.4 A
	60% (40° C)	8.1 A	5.2 A
	100 % (40° C)	5.8 A	3.1 A
Maximum effective supply current	40% (40° C)	6.1 A	4.0 A
	60% (40° C)	6.3 A	4.0 A
	100 % (40° C)	5.8 A	3.1 A
No-load voltage (U₀)		61 V	
Reduced no-load voltage (U_r)		-	13 V
Power source efficiency	Efficiency (200A / 28,0V): 88,5%		
	No-Load condition power consumption (U ₁ = 400 Va.c.): 20 W		



Essential raw materials	According to the information provided by our suppliers, this product does not contain essential raw materials in quantities greater than 1g per component.
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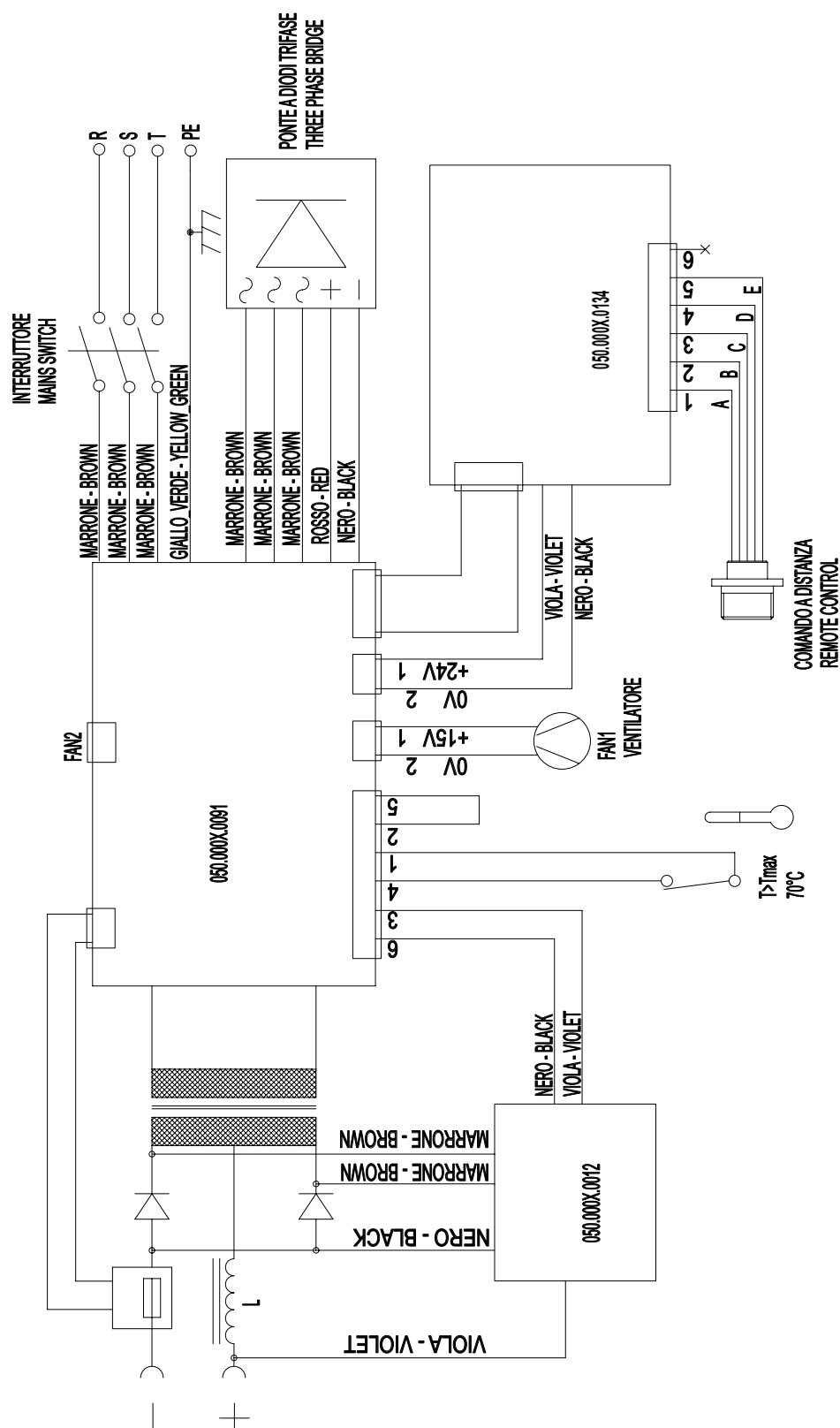
ENGLISH

10 SPARE PARTS

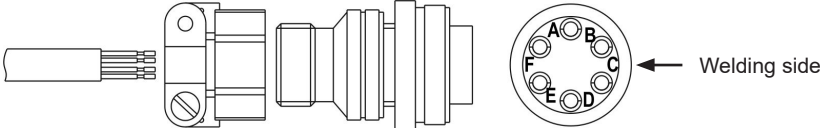
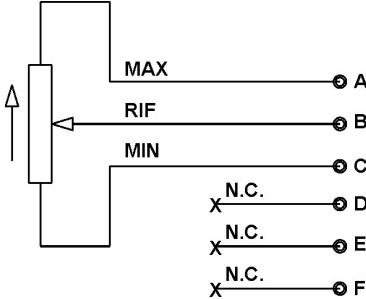


N°	CODE	DESCRIPTION
1	005.0001.0004	BELT
2	011.0006.0031	HANDLE
3	011.0000.0121	COVER PLATE
4	012.0003.0000	INTERNAL FRAMEWORKS
5	050.0013.0091	POWER BOARD
6	044.0004.0001	INDUCTANCE
7	011.0003.0011	DEFLECTOR PLATE
8	010.0006.0041	FRONT PLASTIC
9	021.0001.0260	FIXED SOCKET
10	050.0002.0134	FRONT PANEL
11	014.0002.0012	KNOB WITH CUP WITHOUT INDICATOR
12	014.0002.0010	KNOB WITH CUP WITHOUT INDICATOR
13	050.0004.0013	FILTER BOARD
14	011.0003.0001	LOWER COVER
15	042.0003.0010	POWER TRANSFORMER
16	015.0001.0005	HEAT SINK
17	032.0002.2403	ISOTOP DIODE
18	050.0001.0012	SNUBBER BOARD
19	040.0003.1070	THERMAL CUT-OUT
20	050.0002.0119	CAPACITOR BOARD
21	032.0001.3616	THREE PHASE BRIDGE RECTIFIER
22	045.0000.0007	CABLE CLAMP
23	045.0002.0016	NEOPRENE CABLE
24	010.0006.0009	COMPLETE REAR PLASTIC PANEL
25	040.0001.0015	BI-POLE SWITCH
26	013.0003.0000	REAR PANEL
27	022.0002.0005	REMOTE CONTROL WIRING
28	041.0004.0300	HALL EFFECT SENSOR
29	003.0002.0002	FAN
30	011.0003.0002	FANS SUPPORT

11.1 Cruiser 200



11.2 REMOTE CONTROLLER CONNECTOR

<div></div>		
cod. 021.0004.0602		
	<div><p>Remote Controller 2 kOhm-10 kOhm potentiometer</p><div></div></div>	



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