



WECO srl  
Via S. Antonio, 22 - BELVEDERE  
36050 TEZZE SUL BRENTA (VICENZA) ITALY  
Tel.+39 0424 561943 - Fax +39 0424 561944  
www.weco.it - E-mail info@weco.it

# Discovery 200 AC/DC





---

**CONTENTS**

---

<b>1</b>	<b>INTRODUCTION .....</b>	<b>4</b>
<b>2</b>	<b>INSTALLATION .....</b>	<b>5</b>
2.1	CONNECTIONS TO THE ELECTRICAL MAINS NETWORK .....	5
2.2	FRONT PANEL .....	5
2.3	REAR PANEL .....	5
2.4	PREPARING FOR MMA WELDING .....	6
2.5	PREPARING FOR TIG WELDING .....	8
<b>3</b>	<b>COMMISSIONING .....</b>	<b>10</b>
3.1	USER INTERFACE .....	10
3.2	UNIT POWER-UP .....	12
3.3	RESET (LOAD FACTORY SETTINGS) .....	12
3.4	TORCH LOADING .....	12
3.5	ALARMS MANAGEMENT .....	12
<b>4</b>	<b>WELDING SETTINGS .....</b>	<b>13</b>
4.1	TORCH TRIGGER MODES .....	13
4.2	SELECTION OF THE WELDING MODE AND TORCH TRIGGER PROCEDURE .....	14
4.3	WELDING PARAMETERS .....	15
4.4	PARAMETERS ACTIVATION .....	17
4.5	PARAMETERS SETTING: (1ST LEVEL) .....	18
4.6	PARAMETERS SETTING: (2ND LEVEL) .....	18
<b>5</b>	<b>TECHNICAL DATA .....</b>	<b>19</b>
<b>6</b>	<b>SPARE PARTS .....</b>	<b>20</b>
<b>7</b>	<b>ELECTRICAL DIAGRAM .....</b>	<b>22</b>
7.1	TORCH CONNECTOR .....	23
7.2	REMOTE CONTROLLER CONNECTOR .....	23

## 1 INTRODUCTION



### IMPORTANT!

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.  
The meaning of the symbols in this manual and the associated precautionary information are given in the "General prescriptions for use".  
If the "General prescriptions for use" are not present, it is mandatory to request a replacement copy from the manufacturer or from your dealer.  
Retain these documents for future consultation.

### KEY



#### DANGER!

This pictogram warns of danger of death or serious injury.



#### WARNING!

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







#### CAUTION!

This pictogram warns of a potentially hazardous situation.



#### INFORMATION

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

-  This symbol identifies an action that occurs automatically as a result of a previous action.
-  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.
-  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.

## INTRODUCTION

Discovery 200 AC/DC is an advanced technology single-phase welding power source for AC and DC TIG welding operations. AC TIG functions are ideal for aluminum, magnesium and related alloys welding.  
AC TIG welding is optimized thanks to:  
Synergic arc ignition selection located on the front panel, it modifies the ignition according to electrode diameter.  
Advanced Soft AC-Square Waveform for outstanding welding quality through faster welding speed, better pool control and noise reduction.  
Mild steel, stainless steel and copper can be easily welded in DC TIG. Slow Pulse (0.1Hz-5.0 Hz) and Fast Pulse (5.0 Hz-250 Hz) are available in TIG DC.  
Special HF control provides 100 % rapid and precise arc ignition. Up to 3,25 mm diameter electrode welding is possible in MMA.

#### Accessories that can be connected to the unit:

- Overcut device to protect the power source from power supply voltage spikes that could damage the electrical components.
- Manual remote controller for remote adjustment of the welding current.
- Foot-pedal remote controller for TIG torch arc striking and remote adjustment of welding current.
- Liquid cooler for TIG torches.
- 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".





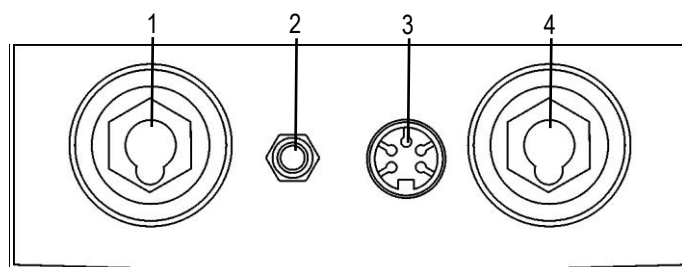

### 2.1 CONNECTIONS TO THE ELECTRICAL MAINS NETWORK

The characteristics of the mains power supply to which the equipment shall be connected are given in the section entitled "Technical data" on page 19.

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

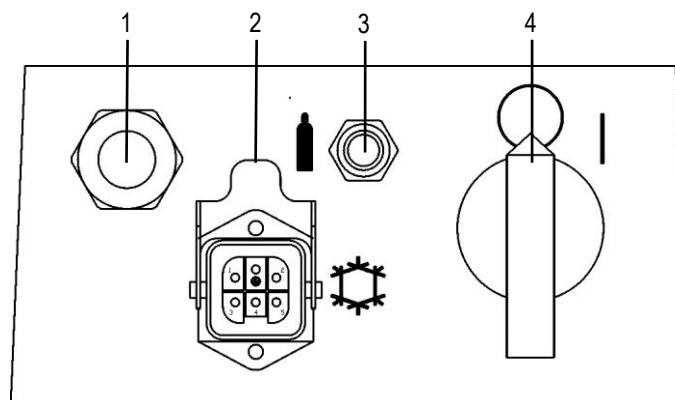
Connect/disconnect the various devices with the machine switched off.

### 2.2 FRONT PANEL




1. Negative pole welding socket.
2. Connector for gas feed hose:  
power source → torch
3. Connector for logic signals of TIG torch.
4. Positive pole welding socket.

### 2.3 REAR PANEL



1. Power cable.  
Total length (including internal part): 2,5 m  
 ⓘ Number and cross section of wires: 3 x 2,5 mm<sup>2</sup>  
 Type of plug supplied: Schuko
2. Cooler power feeding connector.  
Voltage: 230 V a.c.  
 ⓘ Current output: 1.0 A  
 IP protection rating: IP20 (cap open) / IP66 (cap closed)


**DANGER!**  
**High voltage!**

If the socket is not connected to any devices always close the cap:  
presence of hazardous voltage levels!

3. Connector for gas feed hose:  
cylinder → power source
4. Welding power source ON/OFF switch.

## **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!**

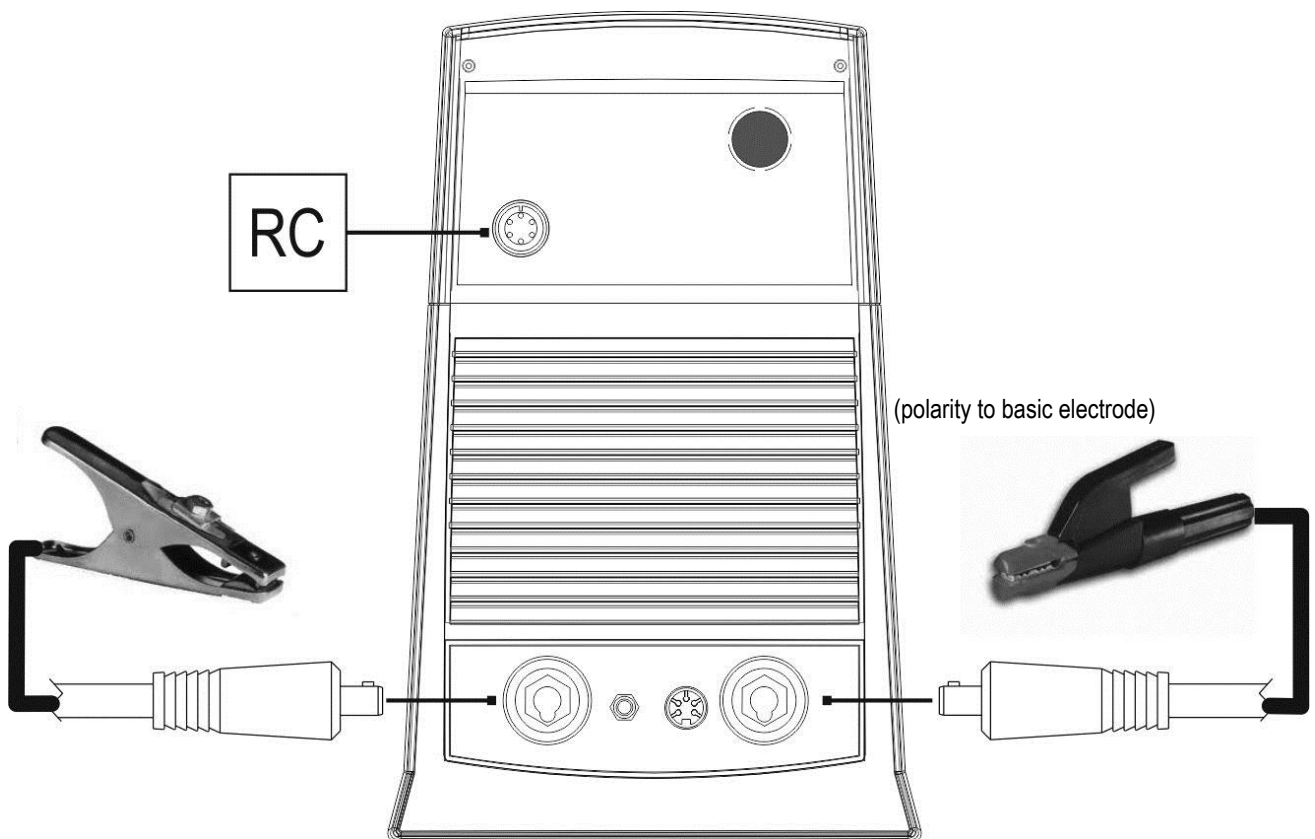
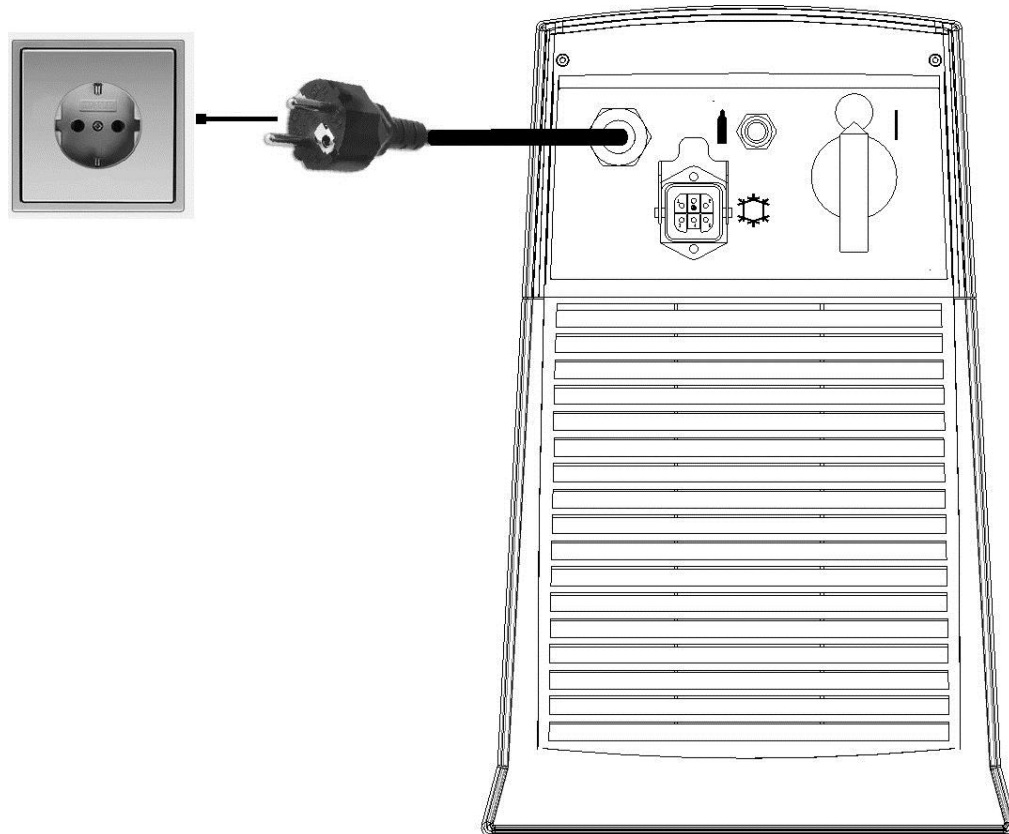
Read the warnings highlighted by the following symbols in the "General prescriptions for use".



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.



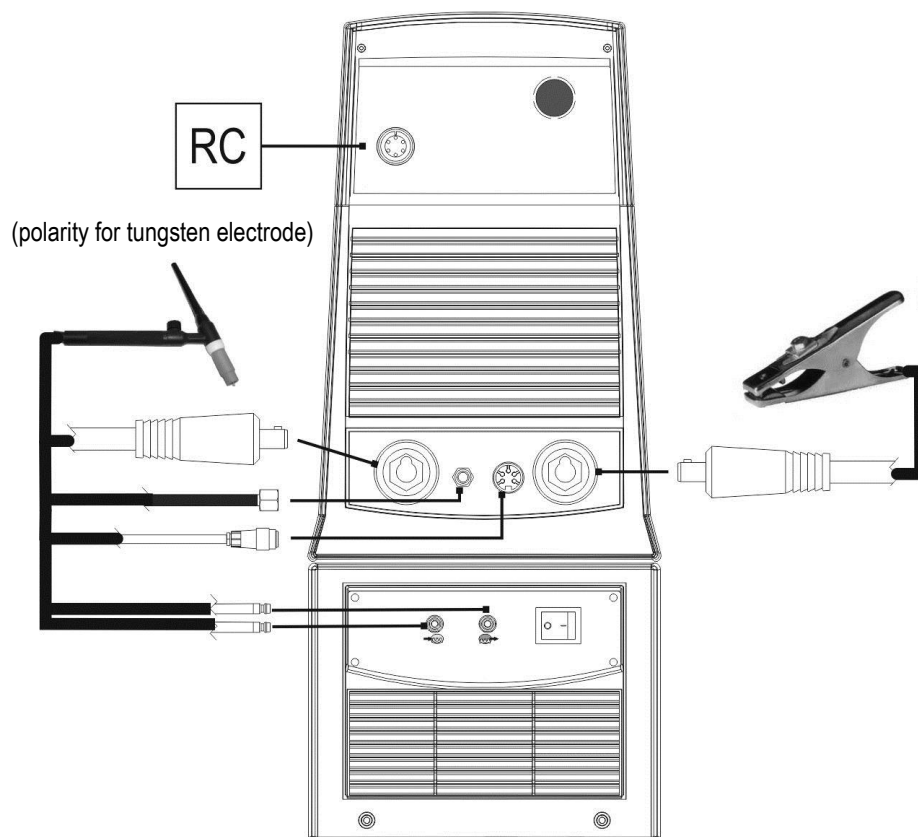
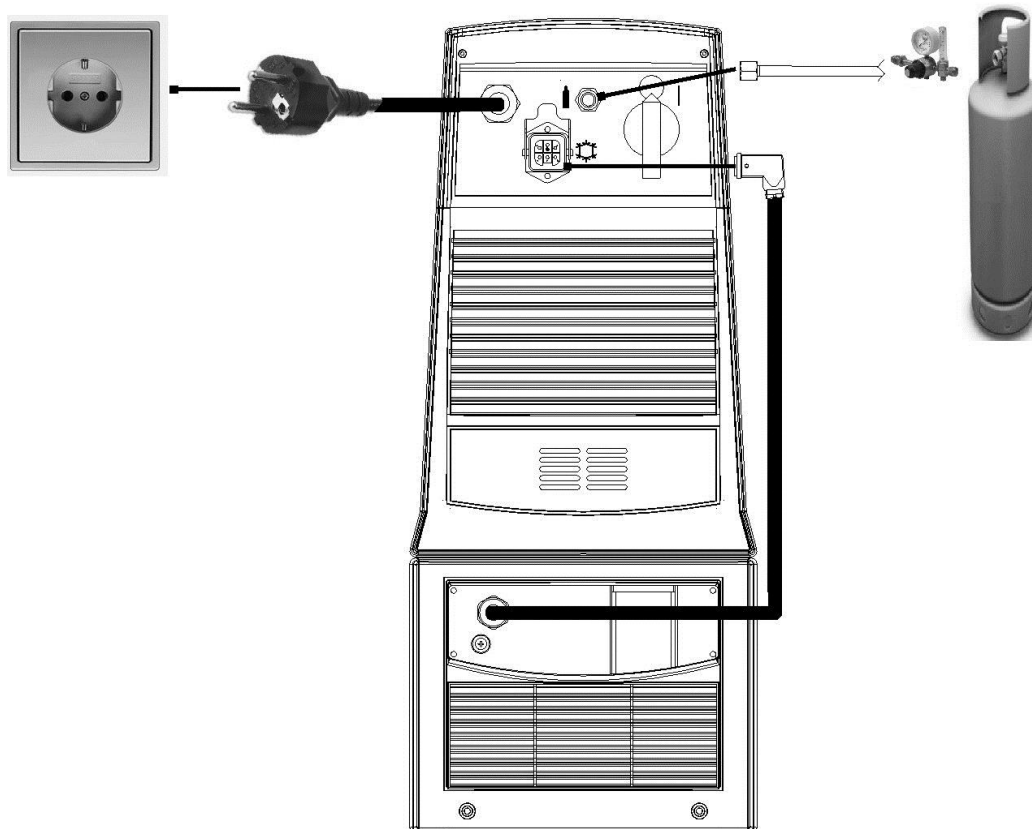


## 2.5 PREPARING FOR TIG WELDING

① NOTE: For the cooler to power source assembly procedure refer to the cooler instruction manual.

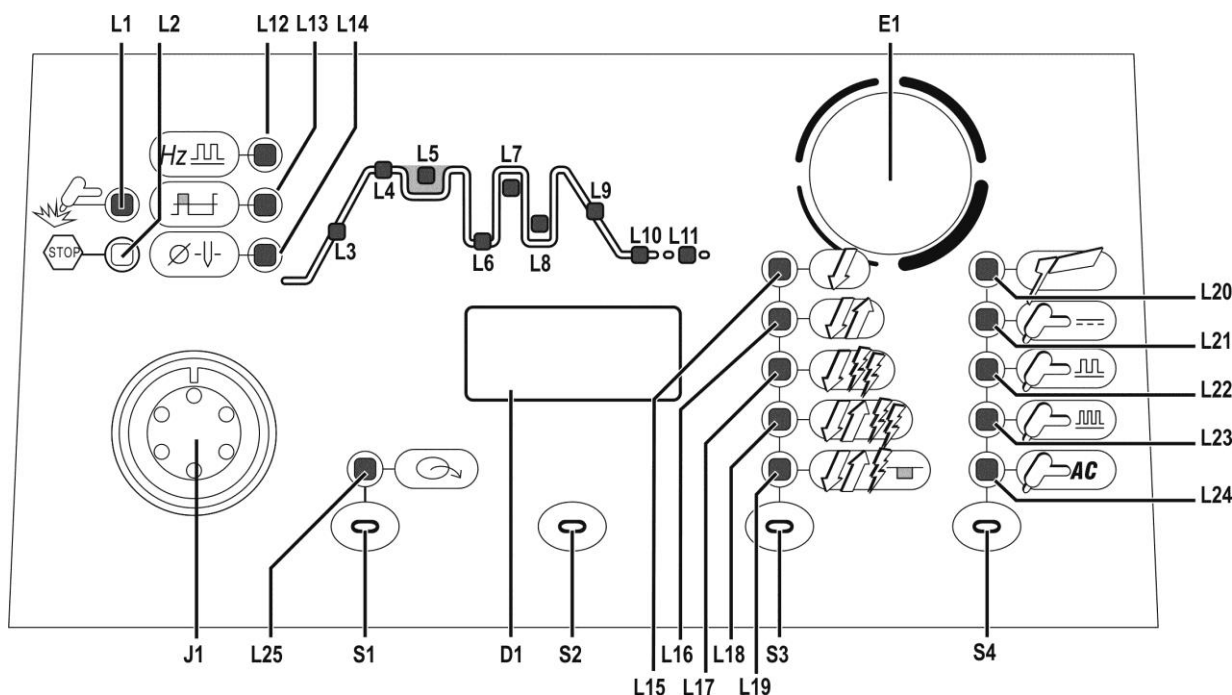
1. Set the welding power source ON/OFF switch to "O" (unit de-energized).
  2. Plug the power cable plug into a mains socket outlet.
  3. Connect the gas hose from the welding gas cylinder to the rear gas socket.
  4. Open the cylinder gas valve.
  5. Choose the electrode based on the type of material and thickness of the workpiece to be welded.
  6. Insert the electrode in the TIG torch.
  7. Connect the torch plug to the welding socket on the basis of the polarity required by the type of electrode in question.
  8. Connect the plug of the ground clamp to the welding socket on the basis of the polarity required.
  9. Connect the gas hose from the welding torch to the front gas socket.
  10. Couple the welding torch connector to the TIG torch signals connector.
  11. Connect the earth clamp to the workpiece being processed.
  12. Set the welding power source ON/OFF switch to "I" (unit powered).
  13. Select the following welding mode on the user interface: TIG DC / TIG AC
  14. Press the torch trigger with the torch well clear of any metal parts. This serves to open the gas solenoid valve without striking the welding arc.
  15. Use the flow control valve to adjust the flow of gas as required while the gas is flowing out.
  16. Set the required welding parameter values on the user interface.
- ① When the remote control pedal is connected and the relative locking screw is tightened the welding current will vary in relation to the pressure exerted on the pedal.
- The system is ready to start welding.






















## 3 COMMISSIONING

### 3.1 USER INTERFACE



CODE	SYMBOL	DESCRIPTION
L1		This LED illuminates to confirm the presence of power on the output sockets.
L2		This LED illuminates to show an anomaly in the operating conditions. ① See § 3.5 ALARMS MANAGEMENT page 12.
L3		When this LED illuminates the following parameter can be set: SLOPE UP
L4		When this LED illuminates the following parameter can be set: WELDING CURRENT
L5		When this LED illuminates the following parameter can be set: SECOND CURRENT B-LEVEL
L6		When this LED illuminates the following parameter can be set: BASE CURRENT
L7		<b>Slow pulsed DC TIG:</b> When this LED illuminates the following parameter can be set: PEAK TIME
L8		<b>Slow pulsed DC TIG:</b> When this LED illuminates the following parameter can be set: BASE TIME
L7+L8		<b>Fast pulsed DC TIG:</b> When this LED illuminates the following parameter can be set: PULSED CURRENT FREQUENCY
L9		When this LED illuminates the following parameter can be set: DOWN SLOPE
L10		When this LED illuminates the following parameter can be set: FINAL CURRENT
L11		When this LED illuminates the following parameter can be set: POST-GAS
L12		<b>AC TIG:</b> When this LED illuminates the following parameter can be set: AC FREQUENCY
L13		<b>AC TIG:</b> When this LED illuminates the following parameter can be set: AC BALANCE
L14		<b>AC TIG:</b> When this LED illuminates the following parameter can be set: ELECTRODE DIAMETER

CODE	SYMBOL	DESCRIPTION
L15		Illumination shows that the following function has been activated: 2 stroke procedure.
L16		Illumination shows that the following function has been activated: 4 stroke procedure.
L17		Illumination shows that the following function has been activated: 2 stroke procedure + high frequency arc strike (HF).
L18		Illumination shows that the following function has been activated: 4 stroke procedure + high frequency arc strike (HF).
L19		Illumination shows that the following function has been activated: 4 stroke B-level procedure + high frequency arc strike (HF).
L20		This LED illuminates to show that the following welding mode is selected: MMA
L21		This LED illuminates to show that the following welding mode is selected: TIG DC CONTINUOUS
L22		This LED illuminates to show that the following welding mode is selected: SLOW PULSED DC TIG
L23		This LED illuminates to show that the following welding mode is selected: FAST PULSED DC TIG
L24		This LED illuminates to show that the following welding mode is selected: AC TIG
L25		This LED indicates that the current reference setting is imposed by the remote controller.
D1		<b>Data setting:</b> The display shows the value of the selected parameter. <b>Welding:</b> The display shows the effective amperes value during welding.
S1		<b>Press and release:</b> the button enables the device to receive the welding current control signal from a remote controller.
S2		<b>Press and release:</b> press the button to select the parameter to be set.
S3		This button selects the torch trigger procedure. ① See § 4.1 page 13.
S4		This button selects the welding mode.
E1		<b>Data setting:</b> The encoder sets the value of the selected parameter. <b>Welding:</b> The encoder sets the value of the following parameter: WELDING CURRENT
J1		Remote controller connector.

### 3.2 UNIT POWER-UP

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

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

The welding power source sets up for welding with the factory presets.

#### 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.



### 3.3 RESET (LOAD FACTORY SETTINGS)

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

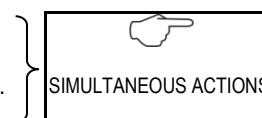
The reset procedure is useful in the following cases:

- 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.

Set the welding power source ON/OFF switch to "O" to switch the unit off.

S2  S4  Hold down both buttons simultaneously.

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



### 3.4 TORCH LOADING



#### WARNING!

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

### 3.5 ALARMS MANAGEMENT



This LED illuminates if an incorrect operating condition occurs.

Tab. 1 - Alarm messages

MEANING	EVENT	CHECKS
<b>Overheating alarm</b> 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. Exceptions: <ul style="list-style-type: none"><li>- Cooling fan.</li><li>- Cooler (if switched on).</li></ul>	<ul style="list-style-type: none"><li>- Make sure that the power required by the welding process is lower than the maximum rated power output.</li><li>- Check that the operating conditions are in compliance with the welding power source data plate specifications.</li><li>- Check for the presence of adequate air circulation around the welding power source.</li></ul>

## 4 WELDING SETTINGS

### 4.1 TORCH TRIGGER MODES

#### 2 STROKE LIFT-ARC WELDING (2T)

1. Touch the workpiece with the torch electrode.
2. Press (1T) and keep the torch trigger pressed.
3. Slowly lift the torch to strike the arc.
  - ➡ The welding current reaches the preset value, by way of a up slope time, if programmed.
4. 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.

#### 2 STROKE WELDING WITH HIGH FREQUENCY ARC STRIKE (2T HF)

1. Bring the torch up to the work until the electrode tip is approximately 2 or 3 mm away.
2. Press (1T) and keep the torch trigger pressed.
  - ➡ The arc strikes without contact with the workpiece and the voltage discharges (HF) cease automatically.
  - ➡ The welding current reaches the preset value, by way of a up slope time, if programmed.
3. 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.

#### 4 STROKE LIFT-ARC WELDING (4T)

1. Touch the workpiece with the torch electrode.
2. Press (1T) and release (2T) the torch trigger.
3. Slowly lift the torch to strike the arc.
  - ➡ The welding current reaches the preset value, by way of a up slope time, if programmed.
4. Press (3T) the trigger and keep it pressed 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 continues and the current output will be the value set in the end current parameter.
  - ⓘ In these conditions the weld pool can be closed (crater filler current).
5. Release (4T) the trigger to extinguish the arc.
  - ➡ Gas delivery continues for the time set in the post gas parameter.

#### 4 STROKE WELDING WITH HIGH FREQUENCY ARC STRIKE (4T HF)

1. Bring the torch up to the work until the electrode tip is approximately 2 or 3 mm away.
2. Press (1T) and release (2T) the torch trigger.
  - ➡ The arc strikes without contact with the workpiece and the voltage discharges (HF) cease automatically.
  - ➡ The welding current reaches the preset value, by way of a up slope time, if programmed.
3. Press (3T) the trigger and keep it pressed 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 continues and the current output will be the value set in the end current parameter.
  - ⓘ In these conditions the weld pool can be closed (crater filler current).
4. Release (4T) the trigger to extinguish the arc.
  - ➡ Gas delivery continues for the time set in the post gas parameter.

#### 4 STROKE B-LEVEL WELDING WITH HIGH FREQUENCY ARC STRIKE (4T B-L HF)

1. Bring the torch up to the work until the electrode tip is approximately 2 or 3 mm away.
2. Press (1T) and release (2T) the torch trigger.
  - ➡ The arc strikes without contact with the workpiece and the voltage discharges (HF) cease automatically.
  - ➡ The welding current reaches the preset value, by way of a up slope time, if programmed.
3. Press and immediately release the torch trigger to switch to the second welding current.
  - ⓘ The trigger must not be pressed for more than 0.3 seconds; otherwise, the weld completion stage will start.
  - ⓘ When the trigger is pressed and released immediately, the system returns to the welding current.
4. Press (3T) the trigger and keep it pressed 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 continues and the current output will be the value set in the end current parameter.
  - ⓘ In these conditions the weld pool can be closed (crater filler current).
5. Release (4T) the trigger to extinguish the arc.
  - ➡ Gas delivery continues for the time set in the post gas parameter.

## 2 STROKE TACKING WELDING WITH HIGH FREQUENCY ARC STRIKE (2T SPOT HF)

All our generators TIG HF have been provided with the spot-welding function. After having switched the machine to 2T HF, set the final welding current to a value close but not equal to the welding current and set the desired spot-welding time on the descent ramp time.

1. Bring the torch up to the work until the electrode tip is approximately 2 or 3 mm away.
2. Press (1T) the torch trigger.
- ➡ The arc strikes without contact with the workpiece and the voltage discharges (HF) cease automatically.
3. Release (2T) the torch trigger.
- ➡ The welding current reaches the preset value, by way of a up slope time, if programmed.
- ➡ 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.

## 4.2 SELECTION OF THE WELDING MODE AND TORCH TRIGGER PROCEDURE

Specific torch trigger procedures are available in accordance with the selecting welding mode.

### KEY

- 2T: 2 STROKE LIFT-ARC  
2T HF: 2 STROKE WITH HIGH FREQUENCY ARC STRIKE (HF)  
4T: 4 STROKE LIFT-ARC  
4T HF: 4 STROKE WITH HIGH FREQUENCY ARC STRIKE (HF)  
4T B-L HF: 4 STROKE B-LEVEL WITH HIGH FREQUENCY ARC STRIKE (HF)

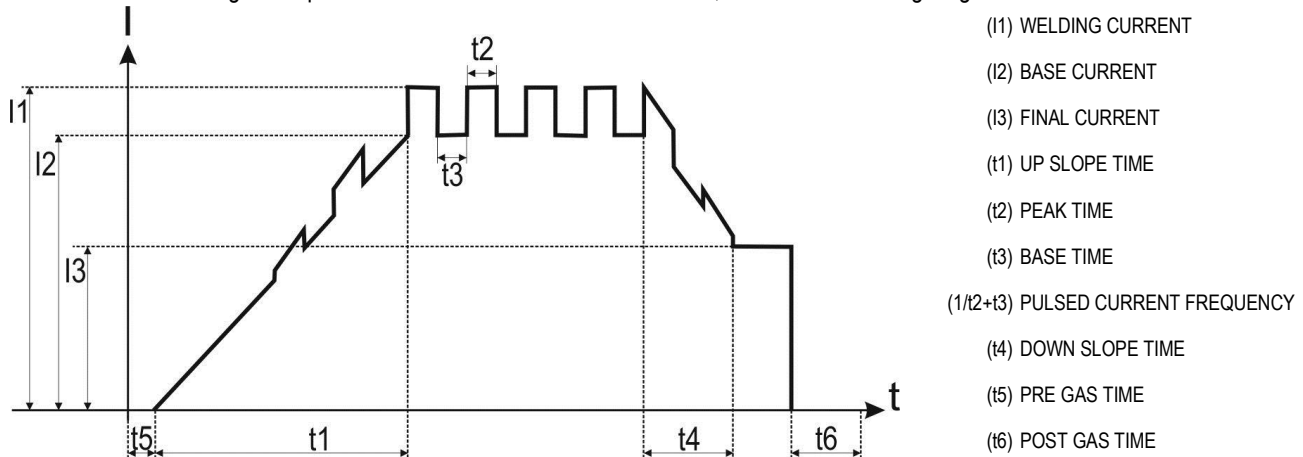
S4 Use this button to select one of the following welding modes.

S3 Use this button to select one of the following torch trigger procedures.

MODE	PROCEDURE				
MMA					
TIG DC CONTINUOUS	✓	✓	✓	✓	✓
SLOW PULSED DC TIG	✓	✓	✓	✓	✓
FAST PULSED DC TIG	✓	✓	✓	✓	✓
AC TIG	✓	✓	✓	✓	✓

### 4.3 WELDING PARAMETERS

For a better understanding of the parameter functions described in the table, refer to the following diagram.



#### WELDING CURRENT

Output current value during welding.

Consequences of a lower value:

- Reduction of heat-affected zone.
- Difficult to create a weld pool.

#### PRE-GAS TIME

Time of gas delivery before the arc strike.

This adjustment is required when fixing points must be created or when welding in hard-to-reach positions that call for the presence of inert atmospheres before striking the arc.

Consequences of a higher value:

- This parameter allows a shielded environment to be created, thereby eliminating contaminants at the start of the welding pass.

#### PULSED CURRENT FREQUENCY

Consequences of a higher value:

- Slower melt speed.
- Reduction of heat-affected zone.

#### SLOPE UP

Time during which the current changes from the starting value to the welding value by means of a slope.

This setting is used to avoid damaging the edges of the joint with excessively high current values at the moment of arc striking. The value of the main welding current is increased gradually in order to control the uniformity of material deposition and weld penetration.

#### BASE TIME

Time during which current output is at the base value.

Consequences of a higher value:

- The filler material is spread more evenly.
- Increase of heat-affected zone.

#### DOWN SLOPE

Time during which the current changes from the welding value to the end value by means of a slope.

#### SECOND CURRENT B-LEVEL

With a rapid press and release (less than 0.5 seconds) of the torch trigger during welding, the output current value switches to the value set by means of the "B-level second current" parameter.

This function makes it possible to avoid interrupting the welding process when the geometry of the workpiece changes; alternatively, the welding current can be reduced to decrease heating of the part if it becomes too hot during execution of the welding process.

In DC TIG welding, the parameter is useful when welding different gauge workpieces during the same pass; when moving between different gauges the output current can be changed simply by pressing the torch trigger.

#### FINAL CURRENT

During electrode welding the parameter makes it possible to obtain a uniform deposit of filler material from the start to the end of the welding process, closing the deposition crater with a current such as to deposit a final droplet of filler material.

By keeping the torch trigger pressed during the 3rd time, the crater filler current is maintained thereby ensuring optimal crater filling, until the post gas time is started by releasing the torch trigger (4th time).

#### BASE CURRENT

Pulsed wave minimum current.

Consequences of a higher value:

- Faster creation of weld pool.
- Increase of heat-affected zone.

#### POST GAS TIME

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

Consequences of a higher value:

- More effective pickling (improved appearance of workpiece at the end of the welding pass).
- Higher gas consumption.

Consequences of a lower value:

- Lower gas consumption.
- Oxidation of electrode tip (more difficult arc strike).

#### PEAK TIME

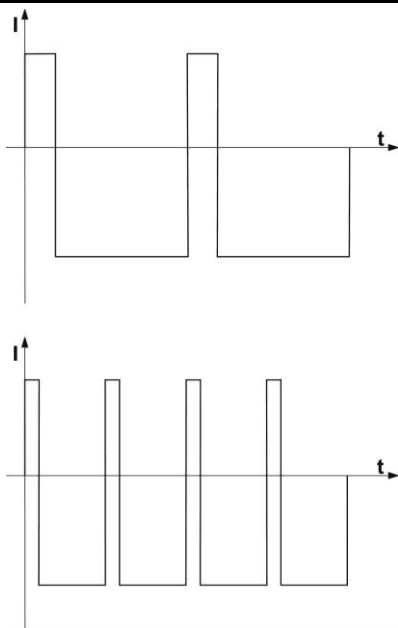
Time for which the current pulse is at the maximum value.

Consequences of a higher value:

- Greater weld penetration.
- Facility to make deeper cuts.

#### AC FREQUENCY

The picture below shows the example where the wave on the second graph has a double frequency compared with the first.

**ELECTRODE DIAMETER**

The parameter optimizes the AC TIG welding arc strike on the basis of the diameter of the chosen electrode.

Consequences of a higher value:

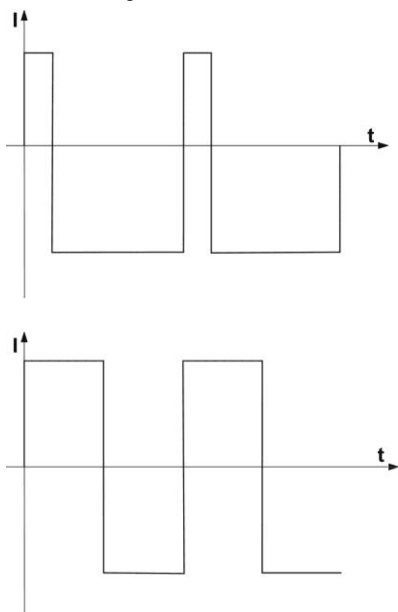
- Arc concentration.
- Reduction of heat-affected zone.
- Slower melt speed.

**AC BALANCE**

This parameter establishes the positive wave vs. negative wave time ratio.

The following figure shows two graphs with different balance value: the first graph represents the curve of the current with a negative value balance (more penetration) in which it can be seen that there is a low percentage of positive wave compared with the negative.

In the second graph the current curve is shown with a positive value balance (more cleaning); in this case the percentage of the positive wave is greater than the negative one.
















Consequences of a higher value:













- Greater weld penetration.
- Less cleanliness.



#### 4.4 PARAMETERS ACTIVATION




The welding parameters are available in accordance with the selected welding mode and procedure.  
The table shows the settings required to enable each parameter.

MENU	MODE →											
↓	PROCEDURE →											
	PARAMETER ↓											
1°	WELDING CURRENT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1°	SECOND CURRENT B-LEVEL					✓						✓
1°	BASE CURRENT							✓	✓	✓	✓	✓
1°	PEAK TIME							✓	✓	✓	✓	✓
1°	BASE TIME							✓	✓	✓	✓	✓
1°	PULSED CURRENT FREQUENCY											
1°	DOWN SLOPE		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1°	FINAL CURRENT		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1°	POST GAS TIME		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1°	SLOPE UP		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1°	AC FREQUENCY											
1°	AC BALANCE											
1°	ELECTRODE DIAMETER											
2°	PRE-GAS TIME			✓		✓	✓		✓		✓	✓

MENU	MODE →										
↓	PROCEDURE →										
	PARAMETER ↓										
1°	WELDING CURRENT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1°	SECOND CURRENT B-LEVEL					✓					✓
1°	BASE CURRENT	✓	✓	✓	✓	✓					
1°	PEAK TIME										
1°	BASE TIME										
1°	PULSED CURRENT FREQUENCY	✓	✓	✓	✓	✓					
1°	DOWN SLOPE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1°	FINAL CURRENT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1°	POST GAS TIME	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1°	SLOPE UP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1°	AC FREQUENCY						✓	✓	✓	✓	✓
1°	AC BALANCE						✓	✓	✓	✓	✓
1°	ELECTRODE DIAMETER						✓	✓	✓	✓	✓
2°	PRE-GAS TIME		✓		✓	✓		✓		✓	✓



## 4.5 PARAMETERS SETTING: (1ST LEVEL)

- S2  Press this button to scroll the list of settings to edit.
-  The value relative to the selected setting appears on the following displays: D1
- E1  Using the encoder, edit the value of the selected setting.
- The value is saved automatically.

**Tab. 2 - MMA mode**

PARAMETER	MIN	DEFAULT	MAX
WELDING CURRENT	7 A	80 A	150 A

**Tab. 3 - CONTINUOUS DC TIG mode**

PARAMETER	MIN	DEFAULT	MAX
WELDING CURRENT	7 A	80 A	200 A
SECOND CURRENT B-LEVEL	10 %	50 %	200 % *1
DOWN SLOPE	0.0 s	0.0 s	25.0 s
FINAL CURRENT	5 A	5 A	80 A
POST GAS TIME	0.0 s	10.0 s	25.0 s
SLOPE UP	0.0 s	0.0 s	25.0 s

**Tab. 4 - SLOW PULSED DC TIG mode**

PARAMETER	MIN	DEFAULT	MAX
WELDING CURRENT	7 A	80 A	200 A
SECOND CURRENT B-LEVEL	10 %	50 %	200 % *1
BASE CURRENT	10 %	40 %	90 % *1
PEAK TIME	0.1 s	0.1 s	5.0 s
BASE TIME	0.1 s	0.1 s	5.0 s
DOWN SLOPE	0.0 s	0.0 s	25.0 s
FINAL CURRENT	5 A	5 A	80 A
POST GAS TIME	0.0 s	10.0 s	25.0 s
SLOPE UP	0.0 s	0.0 s	25.0 s

**Tab. 5 - FAST PULSED DC TIG mode**




PARAMETER	MIN	DEFAULT	MAX
WELDING CURRENT	7 A	80 A	200 A
SECOND CURRENT B-LEVEL	10 %	50 %	200 % *1
BASE CURRENT	10 %	40 %	90 % *1
PULSED CURRENT FREQUENCY	5 Hz	100 Hz	250 Hz
DOWN SLOPE	0.0 s	0.0 s	25.0 s
FINAL CURRENT	5 A	5 A	80 A
POST GAS TIME	0.0 s	10.0 s	25.0 s
SLOPE UP	0.0 s	0.0 s	25.0 s

**Tab. 6 - AC TIG mode**

PARAMETER	MIN	DEFAULT	MAX
WELDING CURRENT	7 A	80 A	200 A
SECOND CURRENT B-LEVEL	10 %	50 %	200 % *1
DOWN SLOPE	0.0 s	0.0 s	25.0 s
FINAL CURRENT	5 A	5 A	80 A
POST GAS TIME	0.0 s	10.0 s	25.0 s
AC FREQUENCY	20 Hz	64 Hz	208 Hz
AC BALANCE	- 11	0	15
ELECTRODE DIAMETER	1,0 mm	2,4 mm	3,2 mm
SLOPE UP	0.0 s	0.0 s	25.0 s

\*1: This parameter is set as a percentage referred to the value of the following parameter: WELDING CURRENT







## 4.6 PARAMETERS SETTING: (2ND LEVEL)

- S2  Hold down the button for 3 seconds to gain access to the 2nd level menu.
-  **P 0.0** The message appears on the following displays: D1
- E1  Using the encoder, edit the value of the selected setting.
- The value is saved automatically.

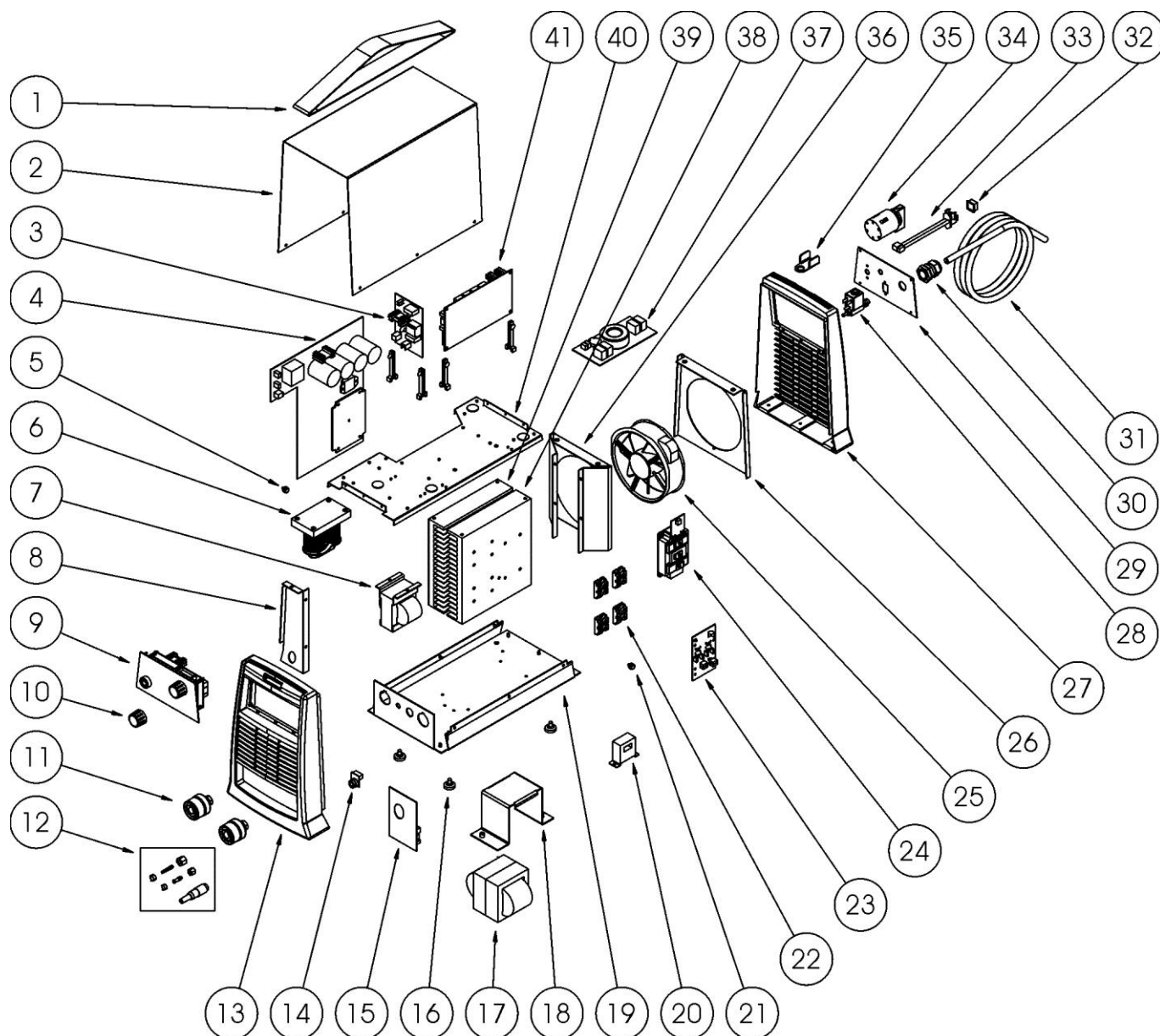
**Tab. 7 - CONTINUOUS DC TIG, SLOW PULSED DC TIG, FAST PULSED DC TIG, AC TIG mode**

PARAMETER	MIN	DEFAULT	MAX
PRE-GAS TIME	0.0 s	0.0 s	9.9 s

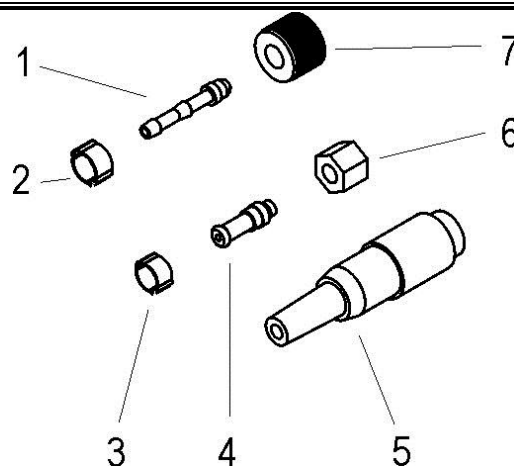
## 5 TECHNICAL DATA

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 60974-3; EN 60974-10 Class A		
Conformity markings		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	1 x 230 Va.c. ± 15 % / 50-60 Hz		
Mains protection	16 A Delayed		
Z <sub>max</sub>	This equipment complies with IEC 61000-3-12 provided that the maximum permissible system impedance is less than or equal to 30 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 30 mΩ.		
Dimensions ( L x D x H )	230 x 460 x 325 mm		
Weight	16.0 kg		
Insulation class	H		
Protection rating	IP23S		
Cooling	AF: Air-over cooling (fan assisted)		
Maximum gas pressure	0,5 MPa (5 bar)		
Static characteristic	MMA		Drooping characteristic
	TIG		Drooping characteristic
Current and voltage adjustment range	MMA	7 A / 20.3 V - 150 A - 26.0 V	
	TIG	7 A / 10.3 V - 200 A - 18.0 V	
Welding current / Working voltage	MMA	40 % (40° C)	150 A - 26.0 V
		60 % (40° C)	130 A - 25.2 V
		100 % (40° C)	120 A - 24.8 V
	TIG	30 % (40° C)	200 A - 18.0 V
		60 % (40° C)	150 A - 16.0 V
		100 % (40° C)	130 A - 15.2 V
Maximum input power	MMA	40 % (40° C)	6.1 kVA
		60 % (40° C)	5.1 kVA
		100 % (40° C)	4.6 kVA
	TIG	30 % (40° C)	6.3 kVA
		60 % (40° C)	4.6 kVA
		100 % (40° C)	3.6 kVA
Maximum supply current	MMA	40 % (40° C)	26.5 A
		60 % (40° C)	22.2 A
		100 % (40° C)	20.0 A
	TIG	30 % (40° C)	27.4 A
		60 % (40° C)	20.0 A
		100 % (40° C)	15.6 A
Maximum effective supply current	MMA	40 % (40° C)	16.7 A
		60 % (40° C)	17.2 A
		100 % (40° C)	20.0 A
	TIG	30 % (40° C)	15.0 A
		60 % (40° C)	15.5 A
		100 % (40° C)	15.6 A
No-load voltage (U <sub>0</sub> )	MMA	88 V	
Reduced no-load voltage (U <sub>r</sub> )	TIG	10 V	
Rated HF peak voltage (U <sub>p</sub> )	13.5 kV		
	Arc striking device designed to work with manual guided torch.		

## 6 SPARE PARTS

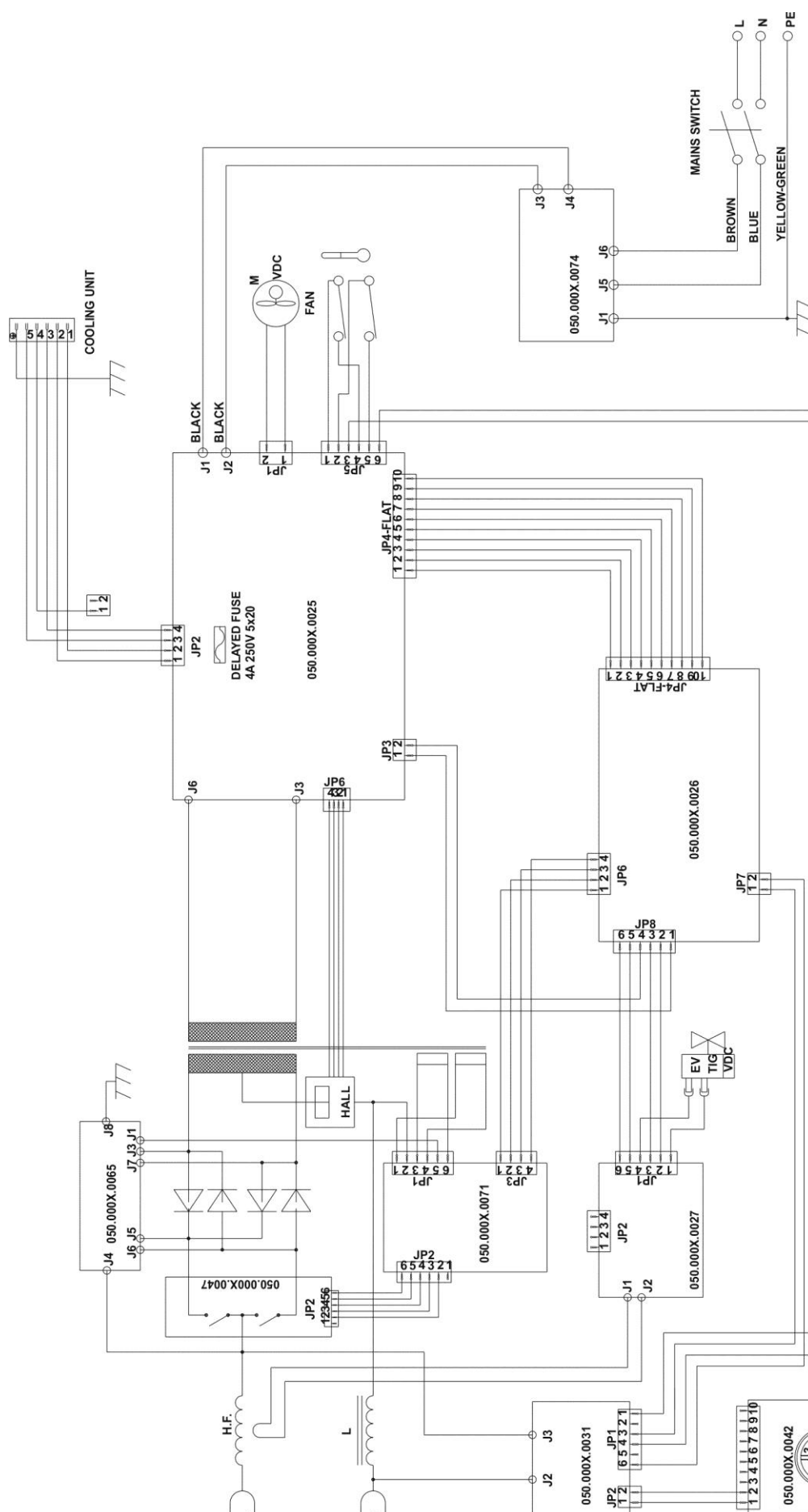


N°	CODE	DESCRIPTION
1	005.0001.0008	BELT
2	011.0000.0161	COVER PLATE
3	050.0002.0027	HF BOARD
4	050.0001.0025	POWER BOARD
5	040.0003.1270	TERMAL SWITCH L= 200 mm
6	010.0002.0004	HF TRANSFORMER
7	044.0004.0004	INDUCTANCE
8	011.0008.0029	LATERAL PLATE
9	050.5154.0000	FRONT PANEL
10	014.0002.0002	KNOB
11	021.0001.0259	FIXED SOCKET
12	021.0000.0001	KIT FOR GAS CONNECTORS
13	010.0006.0033	FRONT PLASTIC
14	050.0001.0042	AMPHENOL CONNECTOR BOARD
15	050.0001.0031	OUTPUT FILTER BOARD
16	016.0009.0001	FOOT
17	042.0003.0029	POWER TRANSFORMER
18	011.0002.0012	TRANSFORMER SUPPORT
19	011.0008.0001	LOWER COVER
20	041.0004.0300	HALL EFFECT SENSOR
21	040.0003.1170	TERMAL SWITCH L= 300 mm
22	032.0002.2006	ISOTOP DIODE
23	050.0002.0065	SNUBBER BOARD
24	050.0001.0099	INVERSION MODULE
25	003.0002.0004	FAN
26	011.0008.0010	EXTERNAL FAN SUPPORT
27	010.0006.0034	REAR PLASTIC PANEL
28	017.0001.5542	SOLENOID VALVE
29	013.0011.0000	REAR PANEL
30	045.0000.0007	CABLE CLAMP
31	045.0002.0010	NEOPRENE CABLE
32	021.0013.0007	C.U. CONNECTOR CUP
33	022.0002.0081	C.U. POWER SUPPLY WIRING
34	040.0001.0010	BI-POLE SWITCH
35	011.0002.0018	SOLENOID VALVE PLATE
36	011.0008.0011	INTERNAL FAN SUPPORT
37	050.0001.0074	MAINS FILTER BOARD
38	015.0001.0008	HEAT SINK S
39	015.0001.0007	HEAT SINK P
40	011.0008.0020	UPPER PLATE
41	050.0002.0071	INVERSION BOARD

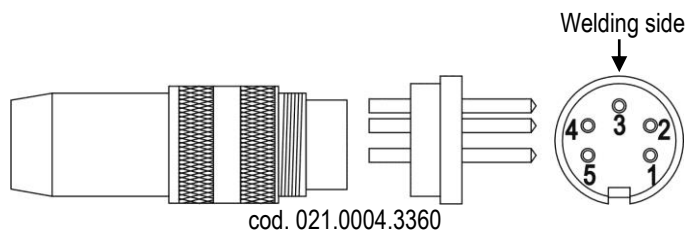


N°	CODE	DESCRIPTION
	021.0000.0001	TORCH CONNECTORS COMPLETE KIT
1	016.5001.0822	SLEEVE HOSE ADAPTER FOR RUBBER HOSE
2	016.0007.1113	HOSE CLAMP Ø=11-13
3	016.0007.0709	HOSE CLAMP Ø=07-09
4	016.5001.0821	SLEEVE HOSE ADAPTER FOR RUBBER HOSE M10
5	021.0004.3360	AMPHT3360-001 M/5V. VOL. CONNECTOR
6	016.5001.1311	NUT M10
7	016.5001.0823	NUT 1/4

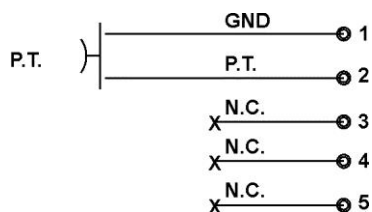
## 7 ELECTRICAL DIAGRAM



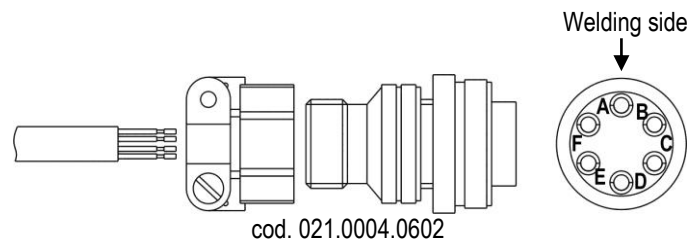
## 7.1 TORCH CONNECTOR



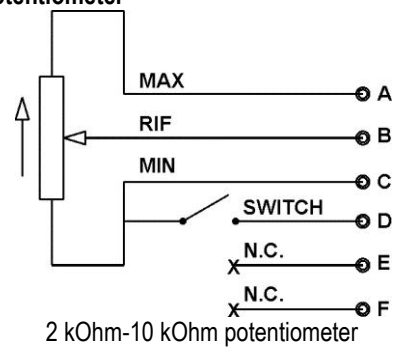
## Torch



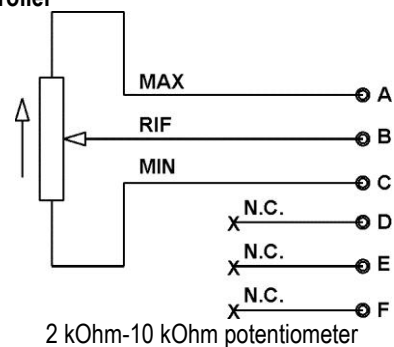
## 7.2 REMOTE CONTROLLER CONNECTOR



## Torch with potentiometer



## Remote Controller



## Foot pedal controller

