GUÍA DE USO FÁCIL

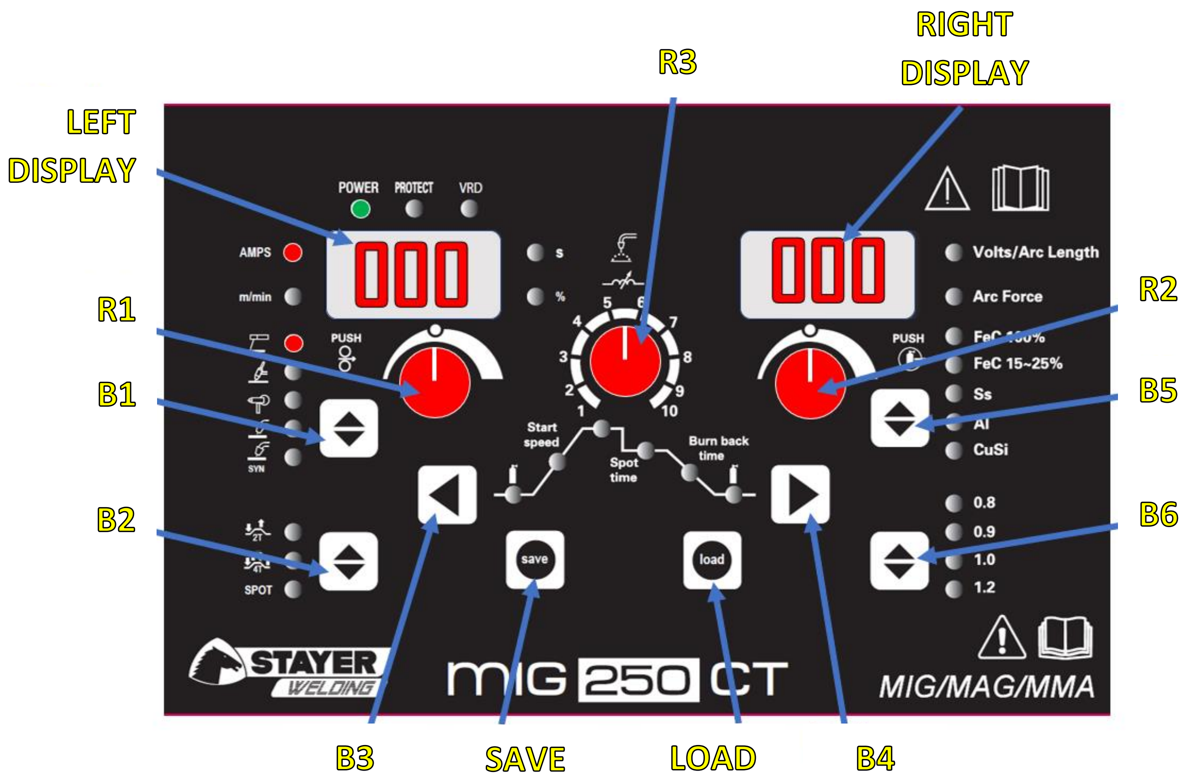
EASY USE GUIDE
GUIDA DI FACILE UTILIZZO
GUIDE FACILE À UTILISER

Mod.
MIG250 CM / CT

www.stayer.es

EASY USE GUIDE FOR MIG 250 CT / CM

CONTROL PANEL:



General LEDS:

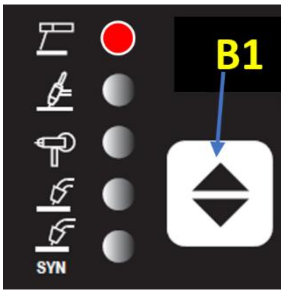
Power: a green light is on while the machine is working when the general switch is connected.

Protect: a yellow light is on in case the equipment is protecting itself due to overheat. The equipment will not be functional until the temperature is the appropriate one. Only then, the LED will turn off.

VRD (only in MMA mode): a red light is on whenever the VRD function is active. In MMA mode, this function will be automatically active when not welding.

Operation modes:

Press B1 for switching between the different operation modes of the equipment until choosing the desired one. A LED light will appear right next to the selected mode. The different meanings of each symbol are the following:



 1.MMA, electrode welding

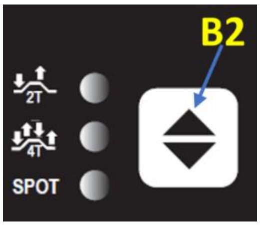
 2.TIG

 3.MIG/MAG with spool gun

 4.MIG/MAG

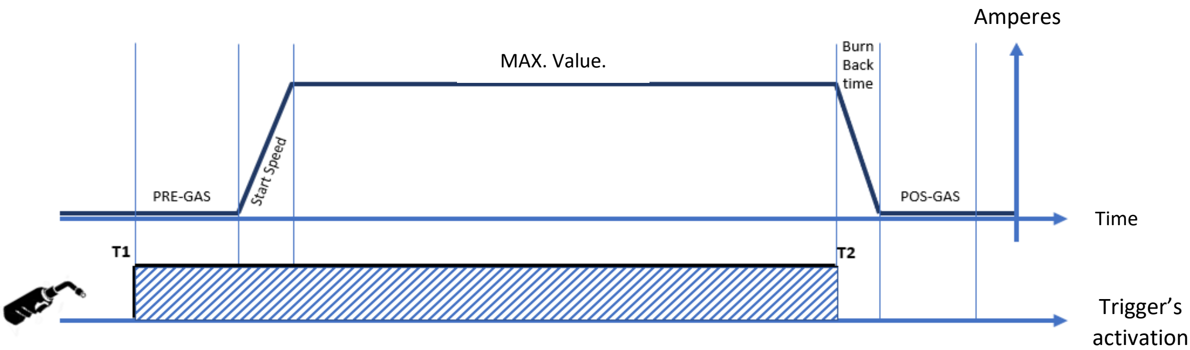
 5.Synergic MIG/MAG

MIG/MAG activation modes (Only for operation modes 3, 4 and 5):

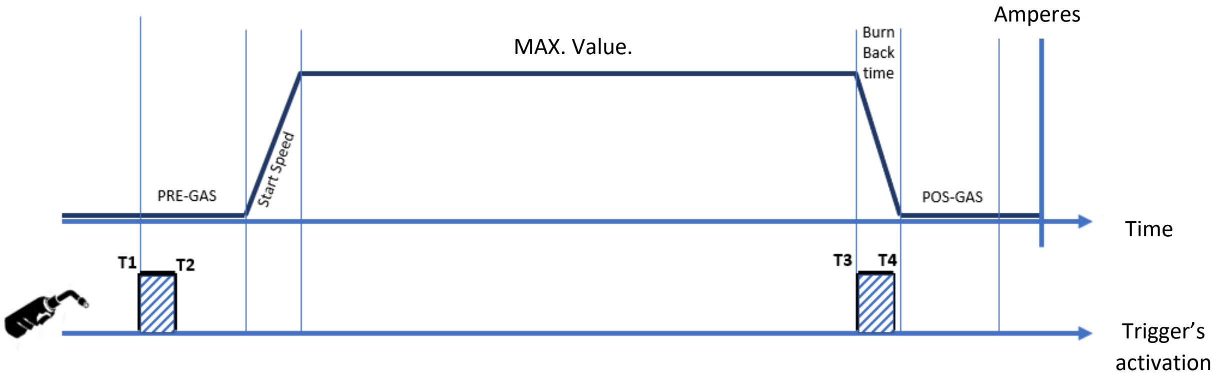


Press the button B2 to switch between the different activation modes of MIG/MAG operation modes.

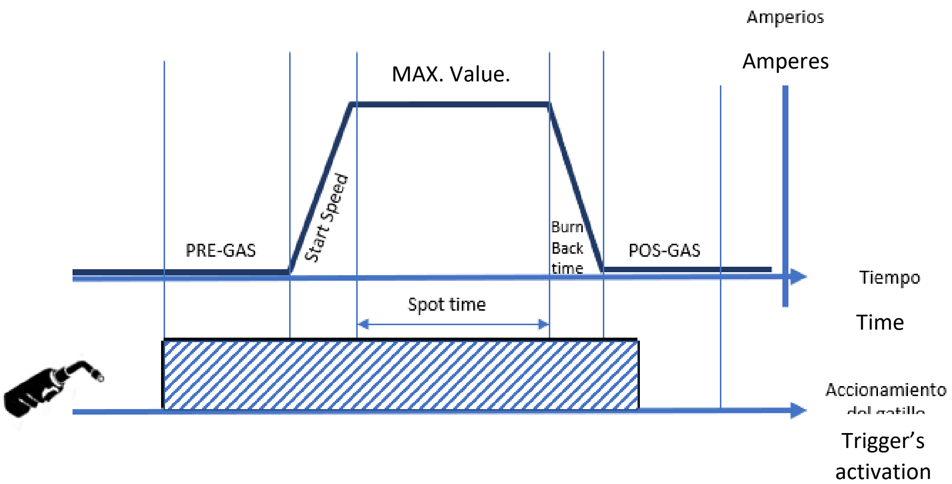
2T: two-touch setting. MIG/MAG welding gets activated while the MIG/MAG gun's trigger is pressed. Once it is released, the welding will stop.



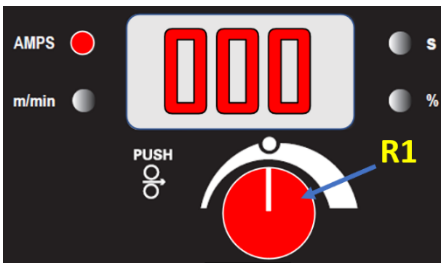
4T: four-touch setting. MIG/MAG welding gets activated once the MIG/MAG gun's trigger is pulsed once. To stop the welding, it is necessary to press the MIG/MAG gun's trigger again.



SPOT: Spot welding. In this mode, spot welding time is set, and the spot is made.



Left display



In the left display the information is shown and the welding values are regulated by the regulator R1.

AMPS: if all MMA, TIG and synergic MIG/MAG modes are selected, the welding current value can be modified with the regulator R1. A red light will appear next to AMPS while that parameter can be modified.

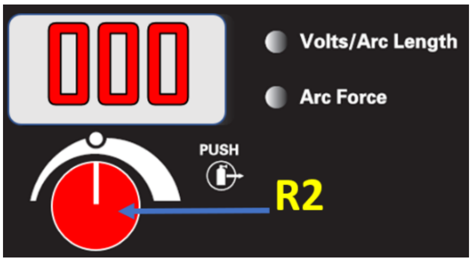
m/min: wire speed in MIG/MAG modes with a spool gun. Is the parameter that can be configurable to get more or less power while welding.

S: time in seconds while the setting options of MIG/MAG modes are shown in the display (operating modes 3,4 and 5)

%: welding start speed percentage of MIG/MAG modes (operating modes 3, 4 and 5). It activates when the parameter "Start Speed" is modified.

R1: is the regulator of the values shown on the left display. If pulsed, a motor test will be activated to check if the wire correctly goes from the motor to the torch in MIG/MAG modes (operating modes 3. 4 and 5).

Right display



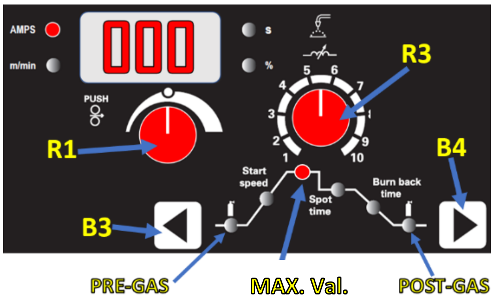
In the right display the information is shown and the welding values are regulated by the regulator R2.

Volts/Arc Length: The LED activates when the current voltage value is shown in the right display. In MMA and TIG modes this value cannot be modified. In MIG/MAG modes with a spool gun (3) and MIG/MAG (4), turning R2, the output voltage can be selected. In the synergic MIG/MAG mode (5), as this LED is already active in this mode, the output voltage can be read in the display but cannot be modified. With R2, the “Arc Length” parameter can be controlled, which goes from -5V up to +5V, increasing or decreasing up to 5V at voltage output, producing a more or less fluid weld.

Arc Force: a parameter only configurable in MMA mode (1): working with MMA mode, the “Arc Force” LED activates while regulating with R2 so it is possible to set a value between 0 and 100. Arc Force helps to maintain the arc continuity so, the higher the value, the more it helps.

R2: is the regulator of the values shown in the right display. If pulsed, it activates the gas output test in MIG/MAG modes (operating modes 3, 4 and 5).

Advanced MIG/MAG controls



Advanced MIG/MAG mode controls (in operating modes 3, 4 and 5) allow the setting of the equipment to get an optimal weld.

The parameters of the MIG/MAG wave are selected with the buttons B3 and B4, and their value is modified with the regulator R1.

PRE-GAS: Selectable between 0.1s and 10s. This is the time of the gas flow before the electric arc. It secures a clean protection atmosphere.

Start Speed: Selectable between a 20% and a 100%. It shows the speed at which the electric arc is generated. The higher the value, the quicker it gets to “Max. Val.” The lower the value, the slower the power gets to “MAX. Val.”

MAX value: It refers to the power output while welding in MIG/MAG mode. While welding in MIG/MAG modes with a spool gun (operating modes 3 and 4), the MAX Value will be expressed in the wire speed m/min, selectable between 2 and 18m/min and it can be set with R1. While working in synergic MIG/MAG mode, the value is expressed in amperes, selectable from 60A up to 250A.

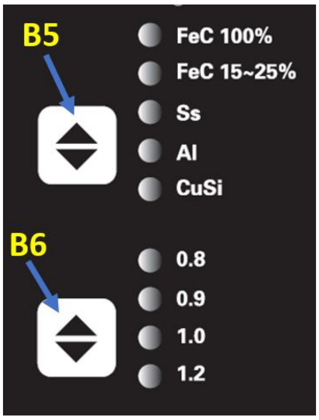
Spot time: Selectable from 0,5s and 10s. In any case of the MIG/MAG modes (operation modes 3,4 and 5), if the activation mode “SPOT”, it habilitates the option “Spot Time” that sets how long the spot welding takes.

Burn back time: Selectable between 0,05s and 0,3s. It refers to the time the output power takes to decrease from its MAX Val to 0. This countdown begins when the trigger is not pressed, in the 2T activation mode or when the trigger is pressed for a second time, to conclude the welding process, in the 4T activation mode.

POST-GAS: Selectable between 0.5s and 10s. This is the time that the gas flow continues to exit at the end of the weld seam. As the gas supply is not interrupted abruptly, it avoids oxidation and provides better finishes.

Inductance: R1 is responsible for setting the inductance values between 1 and 10 within the MIG/MAG modes (operating modes 3, 4 and 5). The inductance modifies the amplitude value of the electric arc, depending on the material to be welded we will obtain different penetrations and more or less projections.

Synergic MIG/MAG setting (5)



Within the Synergic MIG/MAG mode, the wire material and wire thickness selection options are enabled.

B5 is used to change the wire material used:

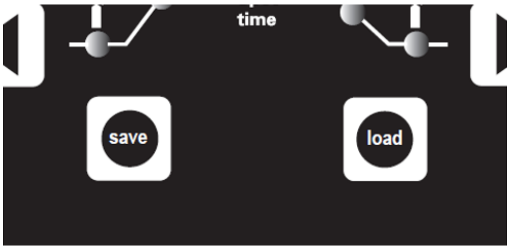
- FeC 100%(AWS:ER70S-6): Carbon iron wire using 100% argon shielding gas.
- FeC 15-25%(AWS:ER70S-6): Carbon iron wire using argon (85-75%) + CO2 (15-25%) shielding gas.
- Ss (AWS: ER 316L SI): Stainless steel wire using 100% argon shielding gas
- Al (AWS: ER1050): Aluminum wire using 100% argon shielding gas.
- CuSi (AWS: ERCuSi-A): Zinc copper alloy wire using 100% Argon shielding gas.

B6 is used to select the wire thickness, which is the measurement of the wire diameter in millimeters, where 0.8, 0.9, 1.0 and 1.2 can be selected.

Storing MIG/MAG settings in memory

Within the MIG/MAG modes (operating modes 3, 4 and 5), the equipment can save predefined configurations to be able to access them easily.

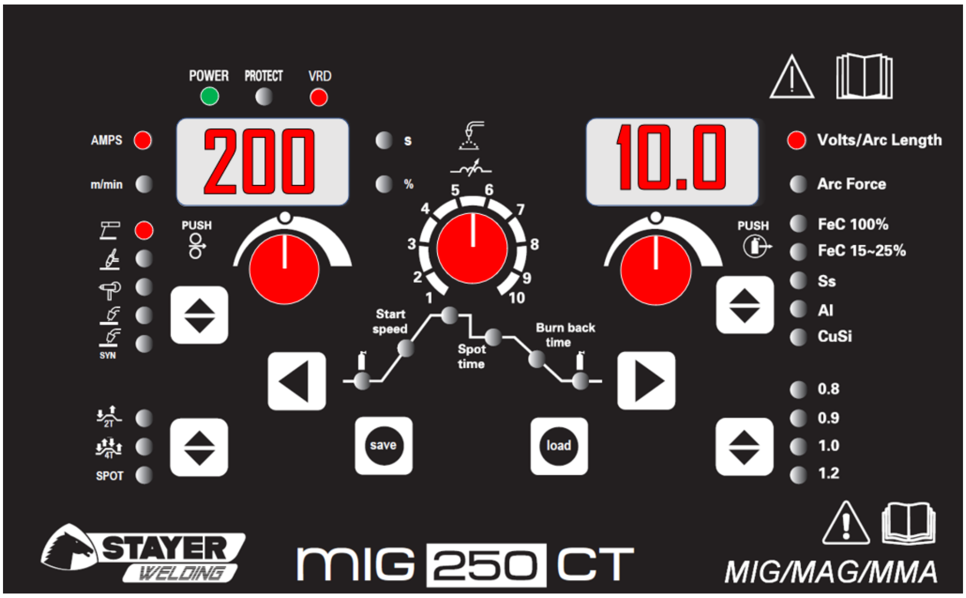
To save a configuration it is necessary to press the "save" button, in the left display will appear "CH-" and in the right display the memory number where we want to save that configuration, we can select the memory bank from 0 to 9, by means of the R2 regulator, once selected the memory bank that we want to use, press "save" again to confirm the saving.



Likewise, if we want to load a configuration already stored in a memory bank, we must press "load", select the memory bank we want to load with the R2 controller and press "load" again.

WELDING MODES

1. MMA coated electrode welding



In the MMA operating mode (1), a screen like the one above appears. We must follow the steps below:

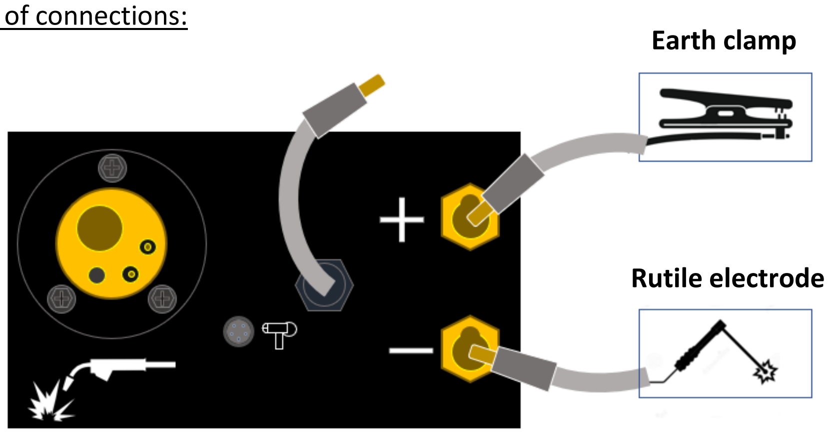
a. Select MMA option (1) 
b. Until we start welding the VRD option is activated by default, once the welding starts, this option will be automatically deactivated.
c. Adjust the output current between 15A and 200A.
d. To set this option it is only necessary to use the R2 regulator and automatically the Arc Force value will appear on the right display and the "Arc Force" LED will light up, and once the value has been chosen, wait 2 seconds for the right display to show the volts again and the "Volts" LED will light up again.

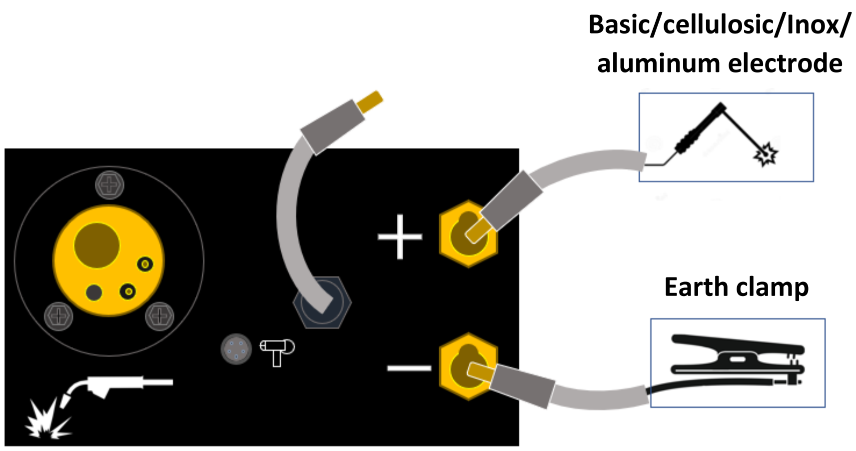
When using an electrode, it will be necessary to connect to the equipment a cable with a ground clamp and a cable with an electrode holder.

As a recommendation, the following table can be used to connect the electrodes:

Electrode type	Electrode holder clamp	Earth clamp
Rutile	Socket -	Socket +
Basic/cellulosic/Inox/ Aluminum	Socket +	Socket -

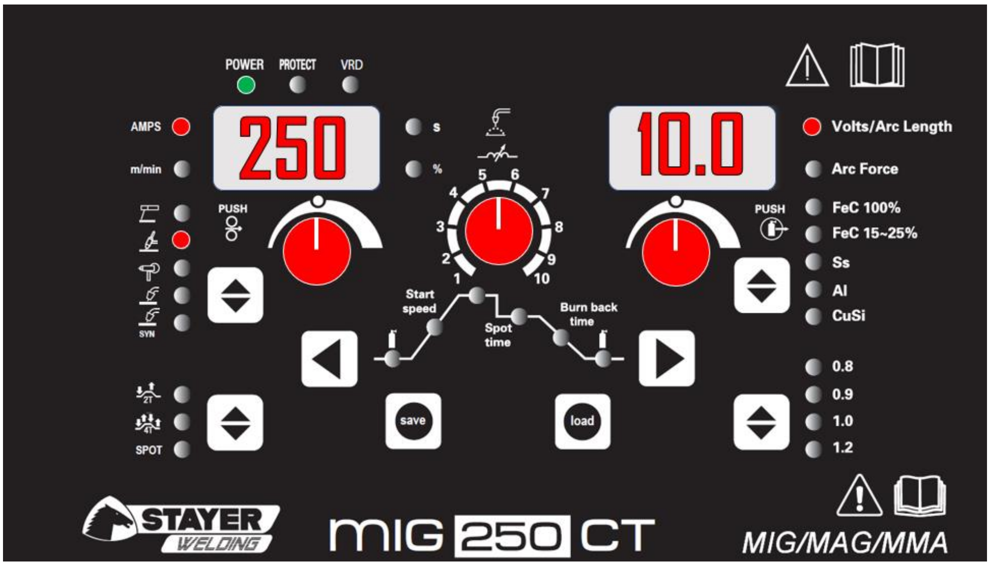
Diagram of connections:





Options “sabe” and “load” cannot be used within MMA mode.

2. TIG welding

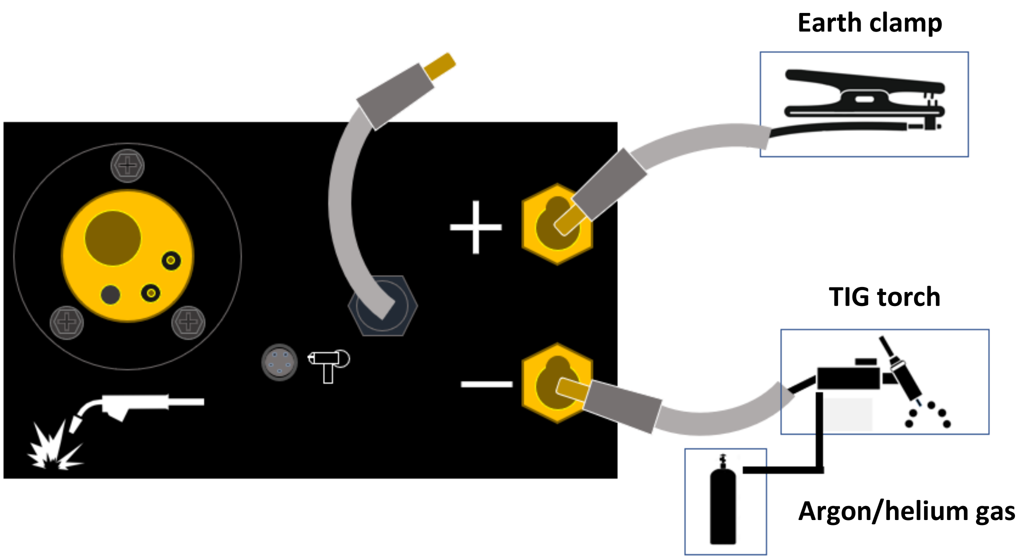


In TIG operating mode (2), a screen like the one above appears, and we must follow the steps below:

a. Select TIG option (2) 
b. Adjust the output current between the values 15A and 250A.

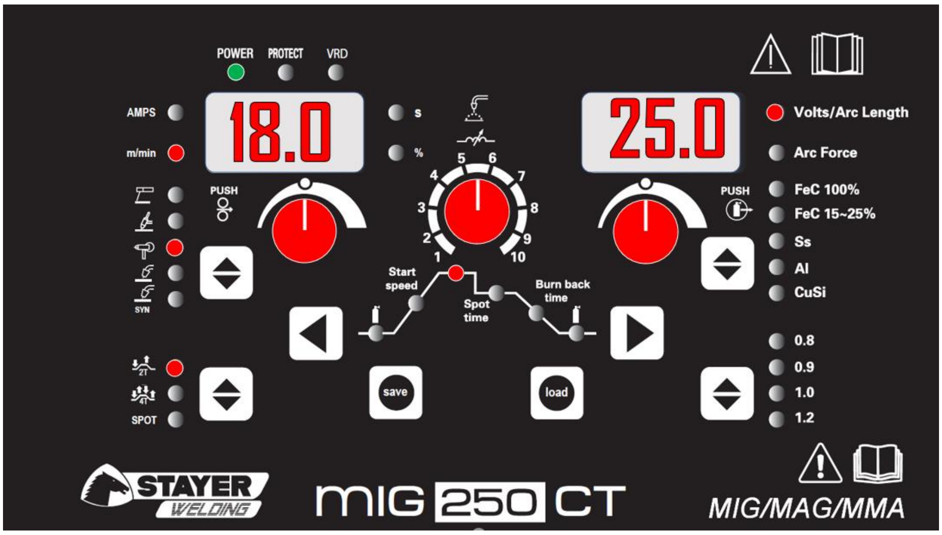
To use TIG welding it is necessary to use a special TIG welding torch, not included in the equipment, which must have an external gas connection. The gas used for this type of welding is either argon or helium.

Diagram of connections:



Options "sabe" and "load" cannot be used within TIG mode.

3. MIG/MAG welding with spool gun



In MIG/MAG welding with spool gun mode (3) a screen like the one above appears, and we must follow the steps below:

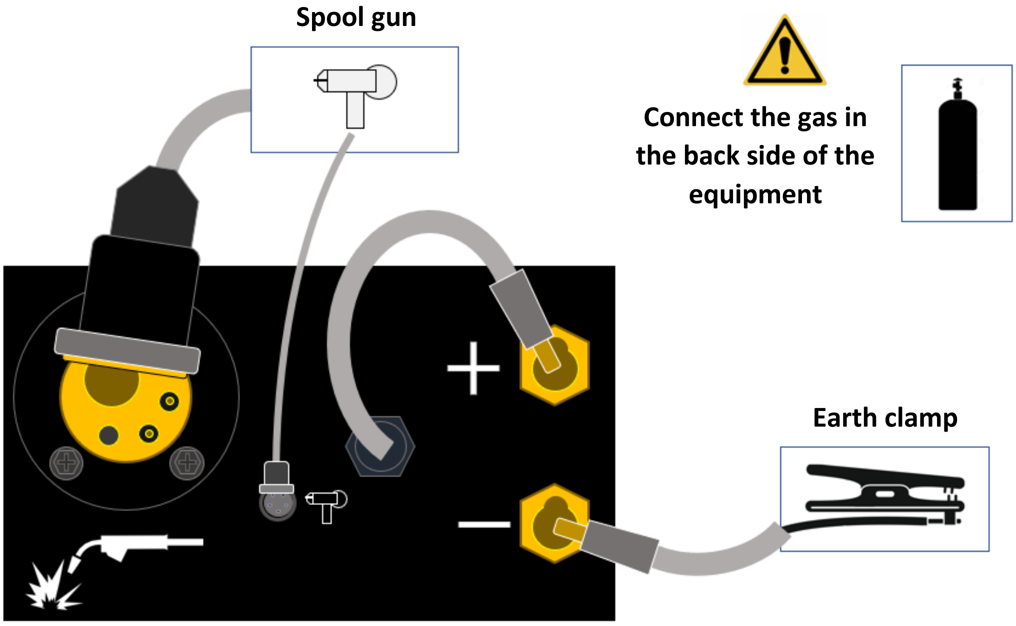
a. Select MIG/MAG with spool gun mode (3)
b. Select the activation mode with button B2, between 2T, 4T and SPOT.
c. Select the welding voltage shown on the right display by means of the regulator R2.
d. Set the advanced MIG/MAG controls, scrolling through them with buttons B3 and B4, and modifying the values with slider R1, the selected value will appear on the display.
e. By default, the MAX value control is selected, if R1 is used without having selected a control, the wire speed, measured in m/min, will be modified and its value will appear continuously on the left display.
f. Adjust the inductance with R3.

To use MIG/MAG welding with a spool gun, a special torch including a wire spool is required. Therefore, it is not necessary to mount a wire spool inside the equipment. A gas cylinder must be connected in case of using solid wire.

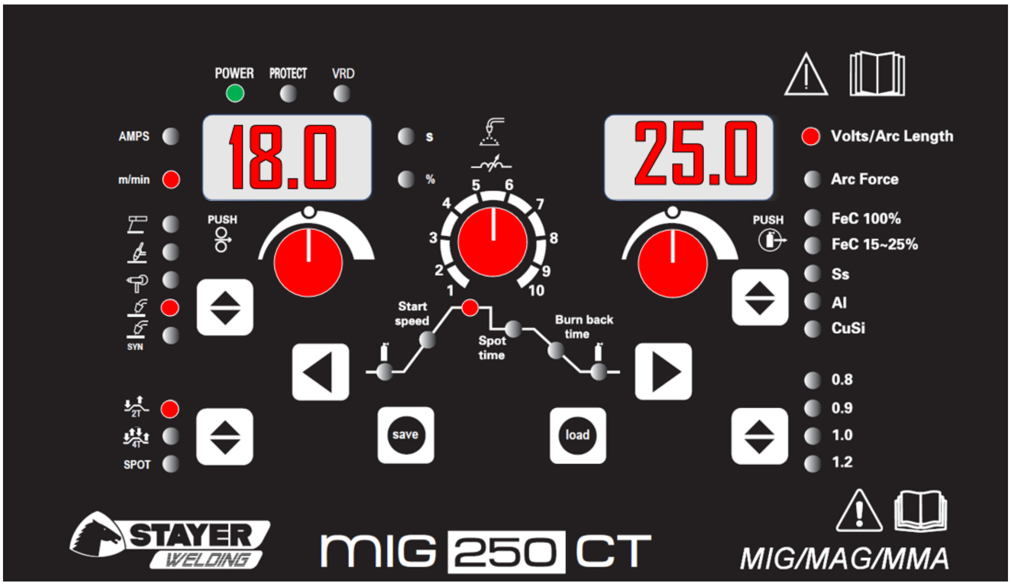
The required connections are the following:

- Torch with spool gun: connected to the Euro torch connector and to the spool gun control connector.
- Torch return cable (cable included in the equipment): connected to the positive (+) terminal.
- Cable with ground clamp: connected to the negative (-) terminal.

Diagram of connections:



4. MIG/MAG welding (with gas)



In MIG/MAG welding mode (4) a screen like the one above appears, and we must follow the steps below:

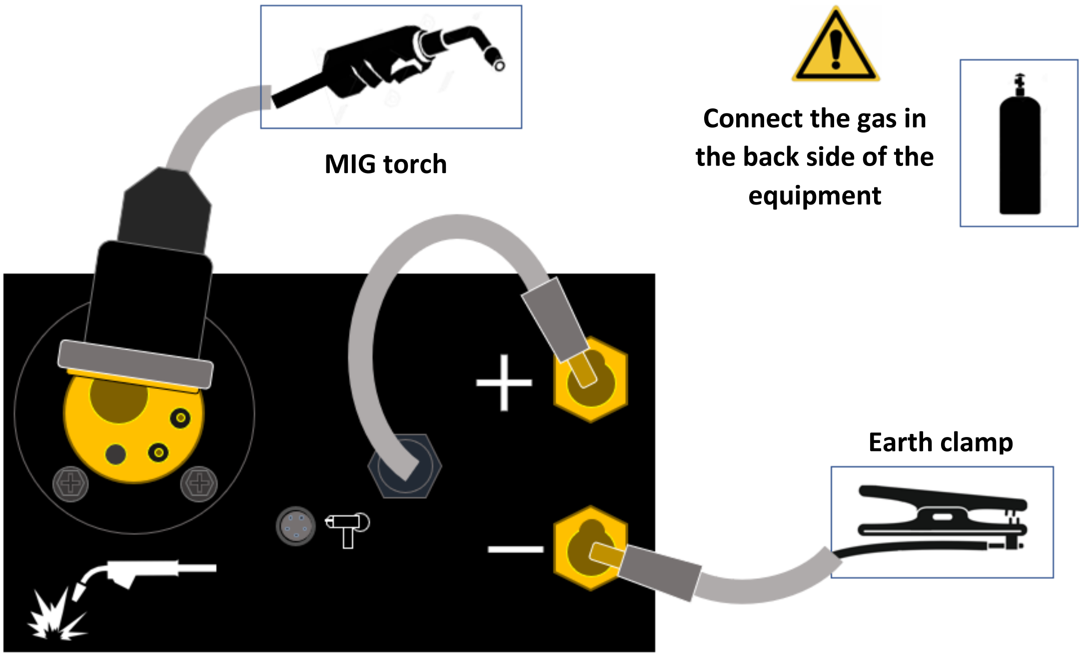
a. Select  MIG/MAG mode (4) 
b. Select the activation mode with button B2, between 2T, 4T and SPOT.
c. Select the welding voltage shown on the right display by means of the regulator R2.
d. Set the advanced MIG/MAG controls, scrolling through them with buttons B3 and B4, and modifying the values with slider R1, the selected value will appear on the display.
e. By default, the MAX value control is selected. If R1 is used without having selected a control, the wire speed, measured in m/min, will be modified and its value will appear continuously on the left display.
f. Adjust the inductance with R3.

To use MIG/MAG gas welding it is necessary to connect the torch included in the equipment. A gas cylinder must be connected. The recommended gas for this type of welding is argon. And a solid wire coil must be mounted for MIG/MAG welding.

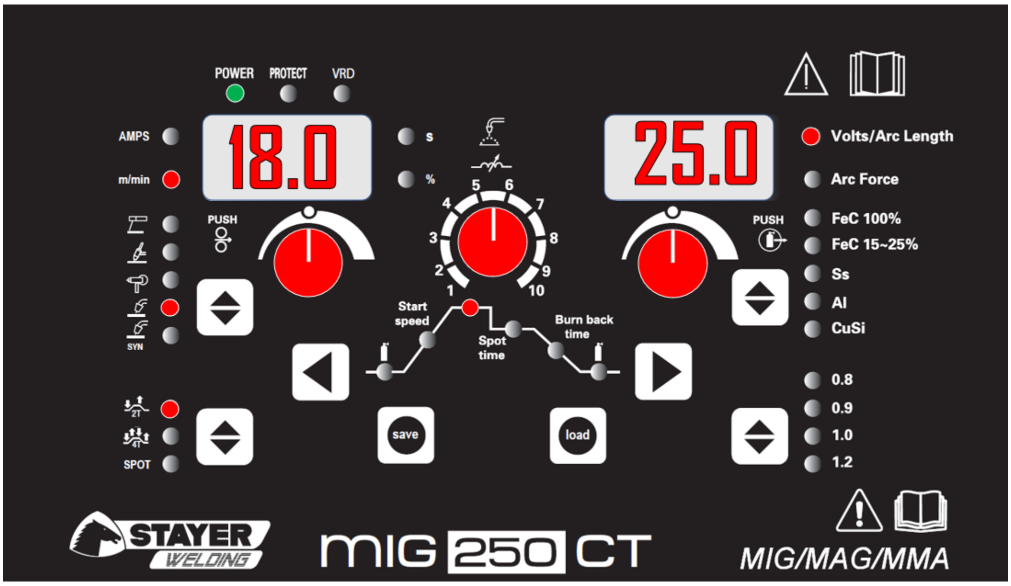
The required connections are as follows:

- Torch: connected to Euro torch connector.
- Torch return cable (cable included in the equipment): connected to the positive (+) terminal.
- Cable with ground clamp: connected to the negative (-) terminal.

Diagram of connections:



4.1 MIG/MAG welding (no gas, with tubular or FLUX Core wire)



In MIG/MAG welding mode (4) a screen like the one above appears, and we must follow the steps below:

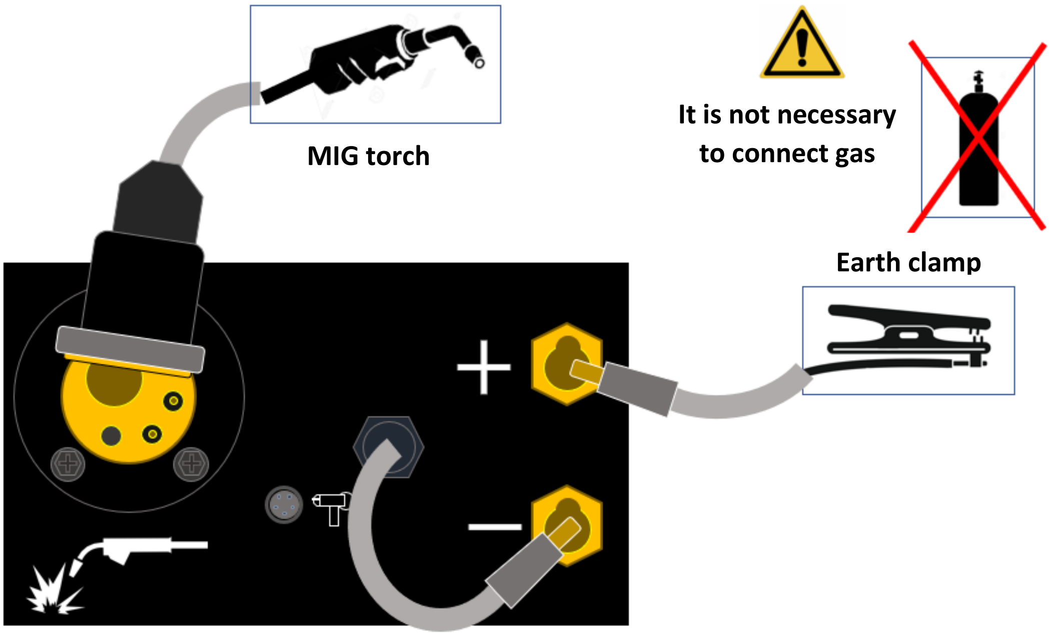
a. Select MIG/MAG option (4) 
b. Select the activation mode with button B2, between 2T, 4T and SPOT.
c. Select the welding voltage shown on the right display by means of regulator R2.
d. Set the advanced MIG/MAG controls by scrolling through them with buttons B3 and B4, and modifying the values with slider R1, the selected value will appear on the display.
e. By default, the MAX value control is selected, if R1 is used without having selected a control, the wire speed, measured in m/min, will be modified and its value will appear continuously on the left display.
f. Adjust the inductance with R3.

To use MIG/MAG welding without gas, it is necessary to connect the torch included in the equipment. It is not necessary to connect the gas cylinder. Instead, a hollow or tubular wire (also known as FLUX Core wire) coil must be mounted inside the equipment.

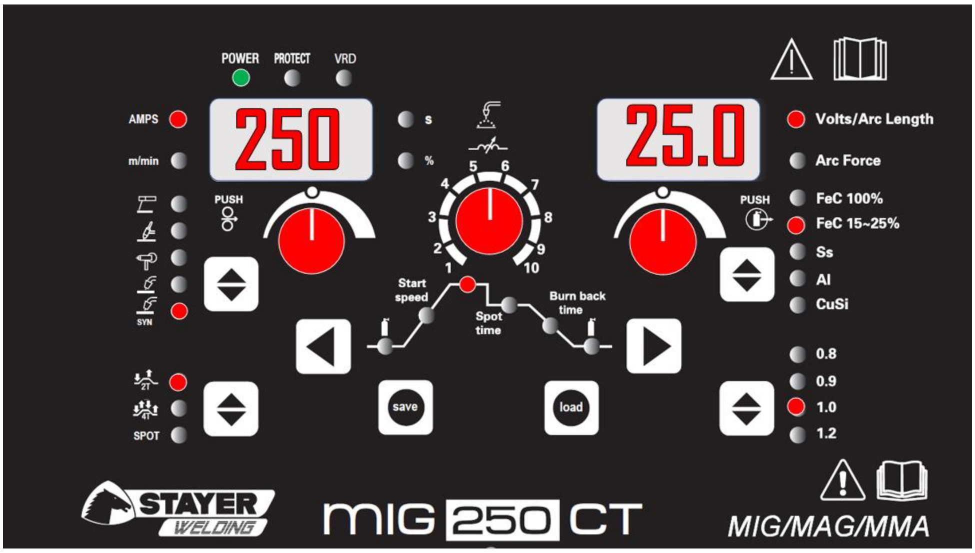
The required connections are the following:

- Torch: connected to Euro torch connector.
- Torch return cable (cable included in the equipment): connected to the negative (-) terminal.
- Cable with ground clamp: connected to the positive (+) terminal.

Diagram of connections:



4.2. Synergic MIG/MAG welding



In the synergic MIG/MAG operating mode (5), a screen like the one above appears, and we must follow the steps below:

a. Select MIG/MAG option (5). 
b. Select the activation mode with button B2, between 2T, 4T and SPOT.
c. Select the wire material with button B5.
d. Select the wire thickness with button B6.
e. Set the advanced MIG/MAG controls by scrolling through them with buttons B3 and B4, and modifying the values with slider R1, the selected value will appear on the display.

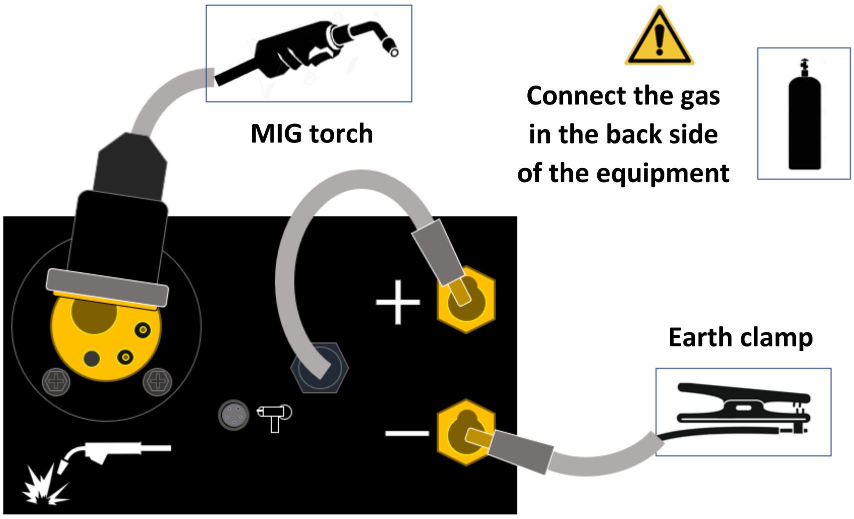
f. By default, the MAX value control is selected, if R1 is used without having selected a control, the welding intensity, measured in amperes, will be modified and its value will appear continuously on the left display.
g. Depending on the chosen material and the thickness of the wire, the admissible limit of the welding current will be one or the other.
h. Once the value of the maximum current or MAX value is chosen, the value of the welding voltage is automatically adjusted, it can be seen on the right display.
i. Adjust the inductance with R3.

To use MIG/MAG welding in a synergic way it is necessary to connect the torch included in the equipment. A gas cylinder must be connected. And a coil of solid wire for MIG/MAG use must be mounted.

The required connections are the following:

- Torch: connected to connector.
- Torch return cable (cable included in the equipment): connected to the positive (+) terminal.
- Cable with ground clamp: connected to the negative (-) terminal.

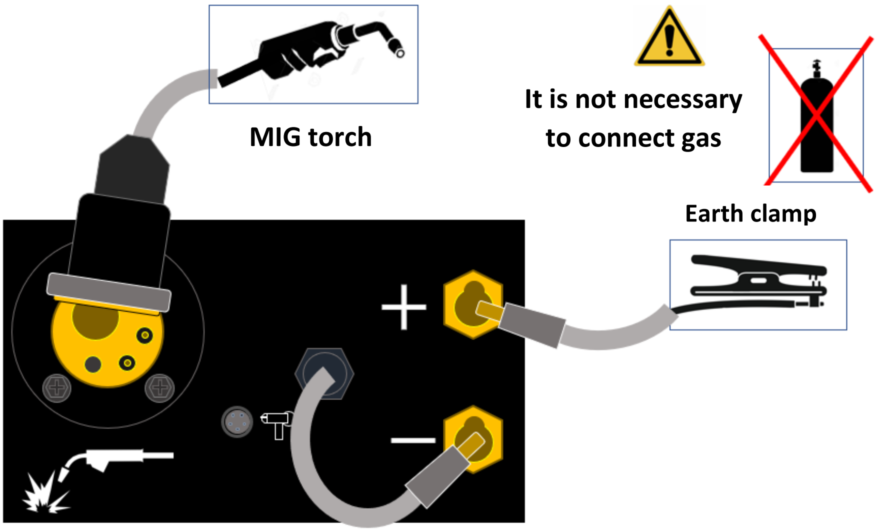
Diagram of connections:



In case of using the synergic MIG/MAG mode (5) and welding with wire and no gas or hollow wire (Flux Core), all the steps indicated in this section must be followed, but the gas must not be connected to the equipment and the connections must be as follows:

- Torch: connected to Euro torch connector.
- Torch return cable (cable included in the equipment): connected to the negative (-) terminal.
- Cable with ground clamp: connected to the positive (+) terminal.

Diagram of connections:



Acronyms:

MIG (Metal Inert Gas): Wire welding with inert gas such as helium or argon.

MAG(Metal Active Gas): Wire welding with active gas such as CO2 or CO2+argon.

MMA(Manual Metal Arc): Arc welding with coated electrode.

VRD(Voltage Reduction Device): Process by which the voltage between the output terminals is reduced to avoid possible electric arcs, especially in humid environments.

AWS (American Welding Society): American Welding Society, defines an established numbering system that indicates welding material specifications.