

DESCRIPTION

Thank you for choosing this machine. To get the best from your machine, please read the following carefully :
The SPARK MIG is a traditional machine for welding semi-automatic MIG/MAG (DC current). This machine can weld all types of wire : Steel, Stainless Steel, Aluminium, flux (no gas).

ELECTRICITY SUPPLY

This machine is supplied with a 16A plug (type CEE7/7). The absorbed current (I_{eff}) is indicated on the device at maximum usage.
The SPARK MIG 160 must be connected to a 230V 1PH with EARTH protected by a 16A circuit breaker (a 13A circuit breaker for the SPARK MIG 140).

DEVICE PRESENTATION (FIG-I)

- | | |
|--|--|
| 1- Power Switch Off/On | 8- Drive Reel |
| 2- Power Cable | 9- Fixed Power Cable |
| 3- Rear handle | 10- Case protected against polarity reversal |
| 4- Wire Reel Support | 11- EURO torch connector (160 only) |
| 5- Quick Gas Connector | 12- Front Wheels (160 only) |
| 6- Front Handle | 13- Rear Wheels (160 only) |
| 7- Control panel and table for feature | |

SEMI-AUTOMATIC WELDING FOR STEEL / STAINLESS STEEL (MAG MODE)

These machines can weld Steel and Stainless Steel wires of 0.6/0.8 or 1.0mm (except SPARK MIG 140).
The machine is delivered equipped to function with Ø 0.8mm Steel/Stainless steel wire, and the contact tip, roller throat and the sleeve of the torch supplied are suitable for this application.
Should you wish to use 0.6mm wire, you will need to change the contact tip. The wire reel is reversible (0.6 / 0.8mm) and will need to be inserted into the machine so that the figure 0.6 is visible. For welding with Ø 1.0mm wire, you will need to use a specific roller and contact tip.
For use with Steel/Stainless Steel, the gas requirement is Argon + CO₂. (Ar+CO₂). The proportion of CO₂ required will vary depending on the use. For specific gas requirements, please contact your gas distributor. The gas flow in steel is between 12 and 18 Litres/minute depending on the environment and experience of the welder.

SEMI-AUTOMATIC WELDING FOR ALUMINIUM (MIG MODE)

The SPARK MIG 160 is delivered equipped for welding with Aluminium wire Ø 0.8 or 1.0mm (fig II-B).
The SPARK MIG 140 is delivered equipped for welding Aluminium of Ø 0.8mm (Occasional and non-intensive). In this case the wire used should be stiff to facilitate wire feeding.
For use with aluminium, the gas requirement is pure argon (Ar). For the specific gas requirements please contact your distributor. The gas flow in Aluminium is between 20 and 30 Litres/minute depending on the environment, and the experience of the welder.
Below are the differences between welding with Steel and Aluminium :
- Specific rollers are needed for welding with Aluminium.
- Adjust the pressure of the drive rolls to prevent the wire being crushed.
- Only use a capillary tube for welding with Steel or Stainless Steel.
- Use a special Aluminium Torch with a teflon sheath to reduce friction. DO NOT cut the sheath close to the joint, it is used to guide the wire from the rollers.
- Contact Tube : Use a special aluminium contact tube specific to the diameter of wire being used.

GASLESS WIRE WELDING (FIG. II)

These machines are capable of "Gasless" wire welding (cored wire) provided that the polarity is reversed.
To do this, turn the machine off, open up the machine (10) and make the electrical connections described in Figure II of the page below. The Machines are originally configured for Gas welding.

PROCESS OF REELS AND TORCHES ASSEMBLY (FIG-IV)

Remove the Nozzle (fig IV-E) from the torch by turning clockwise and then remove the contact tip, leaving the support and the spring on the torch (fig IV-D).
• Open the door of the machine
FIG IV-A : Position the reel on to the support.
• In case of 100mm wire reel use, do not install the adapter (1).
• Adjust the reel break (2) to avoid reel movement tangling the wire when welding stops. Be careful not to tighten too much - the reel must rotate without straining the motor.
• Tighten the plastic screw (3).

FIG IV-B : Installing the drive roller.

• Choose the correct diameter reel for the type of wire. The visible diameter indicated on the roller when fitted in place is the diameter currently in use (ie. 0.8mm is visible for use with 0.8mm wire).

FIG IV-C : To select the adjustment of the drive rollers, proceed as follows :

- Loosen the drive roller knob as far as possible.
- Insert the wire until it exits the other side by about 2cm, tighten the knob again slightly.
- Start the motor by pressing the trigger of the torch.
- Tighten the knob (fig IV-C) whilst pressing the trigger until the wire starts to move.

Nb : When welding with Aluminium, use the minimum possible pressure to avoid crushing the wire

• Pull the wire out of the end of the torch by approximately 5cm, then attach the contact tip suitable for the wire used and then the nozzle (fig IV-E).

The SPARK MIG 140 and 160 machines can accommodate coils of 100 or 200mm diameter.

Below are the different combinations possible :

Spark MIG	140	160	gaz
steel/ stainless steel	0.6/0.8	0.6/0.8/1.0	Argon + CO ₂
Alu*	0.8	0.8/1.0	Pure Argon
No Gas	0.9	0.9/1.2	-
Electrodes	-	-	-

* We recommend a teflon sheath (ref. 041578) and special Aluminium contact tip (Ø 0.8 ref. 041059 - Ø 1.0 ref. 041066)

To help you select the diameter of wire suitable for the job you want to perform, refer to the table on page 4 (FIG III).

GAS COUPLING

- Connect a pressure regulator to the gas bottle. Connect the welding machine using the pipes supplied, and place the two clamps to avoid leakages.
 - Set the gas flow by adjusting the dial located on the pressure regulator.
 - NB : to help facilitate the adjustment of the gas flow, operate the drive rollers by pressing the trigger of the torch (ensure that the drive roller is completely loose so the wire is not fed through).
- This procedure does not apply to "Gasless" welding mode.

CONTROL PANEL (FIG. VI)

Spark MIG
1- Voltage selection button A / B
2- Voltage selection button min/max.
3- Wire speed regulator.
4- « SMART » settings table MIG/MAG
5- Thermal Protection light.
6- positions switch

DIRECTIONS OF USE (FIG V)

Spark MIG 140/160 feature allows you to adjust the voltage and the wire speed.
Use the SMART table to find the correct settings based on the type of wire, and the thickness of the metal workplace.
Then based on the recommendation indicated, simply select :

- The voltage (buttons A/ B & min/max)
- Wire speed - adjust the regulator (3) to the colour zone indicated.

Examples :

- To weld 0.8mm thick steel, use 0.6 mm diameter steel wire :
- Move button (1) to the « A » position
- Move button (2) to the « min » position
- Move the regulator (3) to the zone of lightest colour and adjust « by sound » if required

ADVICE AND THERMAL PROTECTION

- Respect the normal rules of welding
- Leave the machine plugged in after welding to allow it to cool