

Instruction Manual

UNIMIG 172 MINIMIG 120



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Handbook

FYBER WELDING SHIELD

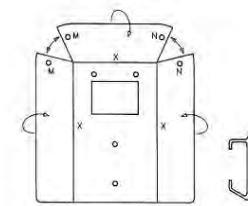


Fig. 4

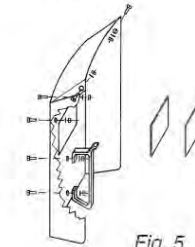


Fig. 5

- Remove the shield, the handle and the screws bag from the packaging.
- Bend the two sides and the upper part of the shield along the "X" marked traces till the holes "M" and "N" will match (fig.4).
- In the holes "M" and "N" fasten with screws the sides of the shield (fig.5).
- Place the handle "H" in the internal part of the shield and fasten it with its screws (fig.5).
- For the mounting of the glass follow the instructions of the plastic welding shield (fig.3).
- Enlever l'écran, la poignée et les vis de l'emballage.
- Plier les deux côtés et la partie supérieure de l'écran le long des traces marquées "X", jusqu'à les trous "M" et "N" coïncident (fig.4).
- Fixer les côtés de l'écran avec les vis dans les trous "M" et "N" (fig.5).
- Positionner la poignée "H" dans la partie intérieure de l'écran et la fixer avec les vis (fig.5).
- Monter le verre comme indiqué pour la masque en plastique (fig.3).
- Den Schirm, den Griff und das Schraubenset aus der Verpackung nehmen.
- Die zwei Seiten und den oberen Teil des Schirms längs der mit "X" markierten Spuren biegen, bis die Bohrungen "M" und "N" zusammentreffen (Abb.4).
- Die Schirmseiten mittels Schrauben in die entsprechenden Bohrungen "M" und "N" festschrauben (Abb.5).
- Den Griff "H" auf der inneren Seite des Schirms positionieren und sie mit den Schrauben festschrauben (Abb.5).
- Zur Glasmontage beziehen Sie sich auf die Anweisungen für Kunststoffschirm (Abb.3).
- Het scherm, de schroeven en het handvat uit de verpakking halen
- De zijanten en de bovenkant van het scherm plooiën langs de lijnen "X" tot dat de gaten "M" en "N" overeenkomen
- De kanten vastschroeven zoals aangegeven op Fig.4
- Plaats het handvat "H" aan de binnenkant van het scherm en bevestig het met schroeven zoals aangegeven op Fig.5
- De glazen monteren zoals hierboven aangegeven voor het plastieken scherm
- Quite la pantalla, la empuñadura y el paquete de tornillos del embalaje.
- Pliegue los dos lados y la parte superior de la pantalla a lo largo de las marcas indicadas con "X", hasta que los agujeros "M" y "N" coincidan (fig.4).
- Fije los lados de la pantalla a los agujeros "M" y "N" con tornillos (fig.5).
- Coloque la empuñadura "H" en la parte interior de la pantalla y sujétela con los tornillos respectivos (fig.5).
- Montaje del vidrio como máscara de plástico (fig.3).
- Rimuovere lo schermo, l'impugnatura e la confezione di viti dall'imballo.
- Piegare i due lati e la parte superiore dello schermo lungo le tracce segnate con "X", fino a che i fori "M" e "N" coincidano (fig.4).
- Fissare con viti nei fori "M" e "N" i lati dello schermo (fig.5).
- Posizionare l'impugnatura "H" nella parte interna dello schermo e fissarla con le apposite viti (fig.5).
- Montaggio vetro come maschera in plastica (fig.3).

CERTIFICATO DI GARANZIA - CERTIFICAT DE GARANTIE - GARANTIEBEWIJS GARANTIEKARTE - CERTIFICATE OF GUARANTEE - CERTIFICADO DE GARANTIA

MOD.....

VOLT.....

NR.....

Data di acquisto
Date d'achat
Date of buying
Kaufdatum
Datum van aankoop
Fecha de compra

Ditta rivenditrice (Timbro e firma)
Revendeur (Cachet et signature)
Sales company (Name and signature)
Händler (Stempel und Unterschrift)
Voortverkoper (Stempel en handtekening)
Vendedor (Nombre y sello)



18.0 WELDING DISCONTINUITIES AND DEFECTS

- Defect: The wire pushes the torch back from the workpiece.
Cause: Excessive wire speed.
- Defect: The wire sticks on the contact tip.
Cause: Low wire feeding.
- Defect: Excessive welding spatters
Cause: Erratic wire feeding, improper torch position (too inclined)
- Defect: Arc is unstable
Cause: Low voltage, erratic wire feeding, inadequate gas flow rate.
- Defect: Inadequate penetration.
Cause: Welding current too low, excessive travel speed, torch travel direction should be reversed.
- Defect: Cracking
Cause: Base material dirty, welding current too low, excessive welding voltage, rust on the electrode wire.
- Defect: Porosity
Cause: Cylinder of shielding gas empty, leaky gas hoses, wrong adjustment of gas flow rate.

EMC

Before installing the unity, carry out an inspection of the surrounding area, observing the following guide-lines:

1. Make sure that there are no other power supply cables, control lines, telephone leads or other equipment near the unit.
2. Make sure that there are no radio receivers or television appliances.
3. Make sure there are no computers or other control systems.
4. Make sure there are no -one with a pacemaker or hearing aid in the area around the unit.
5. Check the immunity of any other equipment operating in the same environment. In certain cases additional protective measures may be required.

Interference can be reduced in the following ways:

1. If there is interference in the power supply line, an E.M.C. filter should be inserted between the mains and the unit.
2. The output cables of the unit should be shortened; these should be kept close together and stretched along the ground.
3. All the panels of the unit should be correctly closed after carrying out maintenance.

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14.0 REPLACEMENT OF THE WIRE SPOOL

Your welding power source is supplied with a mini wire spool of about 0.5 Kg of 0.6mm diameter wire. When the wire spool is finished it can be replaced with a wire spool of 0.8Kg or 5.0Kg.

The wire is pushed by a roll (FIG.3, M) which is moved by a series of mechanisms. The roll has two grooves one marked by 0.9mm and the other marked by 0.7mm. It is very important to use the correct groove as explained in page 10 – “PREPARATION FOR WELDING” – otherwise the wire will not be fed regularly or it will be crashed; make sure that the torch tip matches with the wire diameter. Your welding power source is supplied with a torch complete of tip for the wire included with the power source. For all the other wire spools mount a tip that matches with the wire diameter.

Make reference to figure 3 and follow the procedure described at page 8 – “INSTALLATION OF THE WELDING WIRE” for the replacement of the wire spool.

15.0 WELDING TIPS

1. Keep the torch handle with an angle of 45° with respect to the workpiece and maintain the nozzle about 6mm from the surface.
2. Move the torch handle with prudence and steadiness.
3. Avoid welding in areas with too much air. The air that blows away the shielding gas from the weld pool mainly causes porosity in the weld.
4. Keep the wire and its cover clean. Do not use rusted wire.
5. Avoid sharp bends and kinks on the welding hose.
6. If possible, clean with compressed air the wire liner when replacing the wire spool.
7. Periodically remove the dust, using low pressure (3-4bar / 20-30 PSI) from the inside of the power source, to assure adequate heat dissipation from power source during operation.

16.0 SPOT WELDING

Spot welding is possible by replacing the welding torch with a spot welding kit (not included). You can buy the spot welding kit by any supplier of welding material. Spot welding can be performed on carbon steel sheets of 0.8mm thickness.

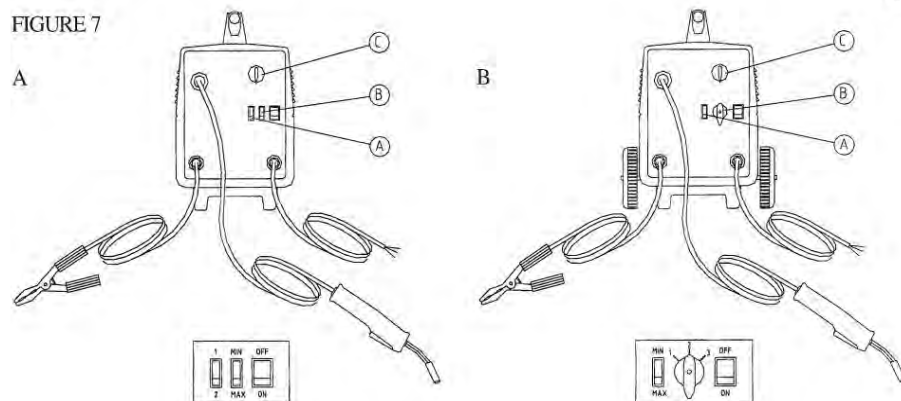
Place the spot welding nozzle on the upper sheet, push the torch and press the trigger to point the first sheet with the second one. For spot welding the machine must be set at maximum current and maximum wire speed. 0.8mm welding wire is suggestable.

17.0 ADJUSTMENT OF THE POWER SOURCE

Set the voltage: use the correct “stick out”. The wire “stick out” is the distance between the contact tip and the workpiece. The wire “Stick out” (sometimes improperly called arc length) should remain in the range 5mm ÷ 10 mm in order to obtain best welding (and sound) performances.

1. Position the voltage switch in the desired position (TAB. 13.1, 13.2). Select lower position for lower thickness and higher settings for higher thickness.
2. Adjust the wire speed. Start using a trial metal sheet thoroughly cleaned from layers of rust or paint. Connect the ground cable to the workpiece. Adjust the wire speed at high setting. Press the torch switch (note: The torch switch must be pressed thoroughly in order to perform its three functions, gas flow, wire feed and welding current). Start welding and decrease the wire speed gradually. Continue to decrease the wire speed and listen to the sound. The sound will change from a crackling noise to a regular and strong buzzing (similar to the sound of frying bacon). This buzzing sound indicates the correct wire speed for the workpiece being welded. When the current regulation is changed set again the wire speed. Start always from a higher wire speed. This operation prevents from damaging the contact tip during welding. During welding the torch should be kept with the 45° angle from the workpiece. Keep the top of the nozzle at 5-10mm from the work-piece.

FIGURE 7



13.2 REFERENCE TABLE FOR MODELS WITH SIX ADJUSTMENT POSITIONS

STEEL					
WORKPIECE THICKNESS (mm)	0.6 MM GAS WELDING WIRE			0.8 MM GAS WELDING WIRE	
	WELDING POSITION		WIRE SPEED ADJUSTMENT	WELDING POSITION	
	A	B	C	A	B
0.6	Min.	1	Low	PROF. WELD.	Low
0.6 - 0.8	Max.	1	Low	Max.	1
0.8 - 1.0	Min.	2	Medium	Min.	2
1.0 - 1.2	Max.	2	Medium	Max.	2
1.2 - 2.0	Min.	3	Medium	Min.	3
2.0 - 3.0	Max.	3	High	Max.	3

ALUMINIUM			
0.8 MM GAS WELDING WIRE			
WORKPIECE THICKNESS (mm)	WELDING POSITION		WIRE SPEED ADJUSTMENT
	A	B	C
1.0 - 1.5	Max.	1	Medium
1.5 - 2.0	Min.	2	High
2.0 - 2.5	Max.	2	High
2.5 - 3.0	Min.	3	High

SOFT STEEL FOR NO GAS			
0.9 MM GAS WELDING WIRE			
WORKPIECE THICKNESS (mm)	WELDING POSITION		WIRE SPEED ADJUSTMENT
	A	B	C
0.9	Max.	1	Low
0.9 - 1.0	Min.	2	Medium
1.0 - 1.2	Max.	2	Medium
1.2 - 2.0	Min.	3	Medium
2.0 - 3.0	Max.	3	High

1.0 SAFETY NORMS

1.1 GENERAL INSTRUCTIONS

Make sure this manual is carefully read and understood by the welder, and by the maintenance and technical operators

1.2 LOCATION

Welding processes of any kind can be dangerous not only to the operator but to any person situated near the equipment, if safety and operating rules are not strictly observed.

These are the main precautionary measures to observe:

- Operators should protect their body by wearing closed, non-flammable protective clothing, without pockets or turned up trousers.
- The operators should wear a non-flammable welding helmet designed so as to shield the neck and the face, also on the sides. It is necessary to keep the protective lens always clean and to replace it when broken or cracked. It is advisable to interpose a transparent glass between the lens and the welding area. Welding should be done in a closed area that does not open into other working areas.
- The operators should never look at the voltaic arc without the correct protection to the eyes. They should always wear safety glasses with side shields to protect from flying particles.
- The welding process must be performed on metal coatings thoroughly cleaned from layers of rust or paint, to avoid production of harmful fumes. The parts degreased with a solvent must be dried before welding.
- Welding should never be done on metals or coated metals containing zinc, mercury, chromium, graphite, lead, cadmium or beryllium unless the operator and the people standing in the same area use an air-supplied respirator.

1.3 SAFETY INSTRUCTIONS

For your safety, before connecting the power source to the line, closely follow these instructions:

- An adequate two-pole switch must be inserted before the main outlet; this switch must be equipped with time-delay fuses;
- The single-phase connection with ground must be made with a two-pole plug compatible with the above mentioned socket;
- The two wires of the two-pole input cable are used for the connection with the single-phase line while the yellow – green wire for the compulsory connection to the ground in the welding area;
- When working in a confined space, the power source must be kept outside the welding area and the ground cable should be fixed to the workpiece. Never work in a damp or wet area, in these conditions.
- Do not use damaged input or welding cables;
- The welding torch should never be pointed at the operator's or at other persons' body;
- The power source must never be operated without its panels; this could cause serious injury to the operator and could damage the equipment.

1.4 FIRE PREVENTION

- Make sure that appropriate fire prevention devices are available near to the welding area;
- All combustible material must be removed from the welding area.

1.5 SHIELDING GAS

Use the correct shielding gas for the welding process. Make sure that the regulator mounted on the cylinder is working well. Remember to keep away the cylinder from any source of heat.

1.6 ELECTROMAGNETIC COMPATIBILITY

Before installing a MIG/MAG power source, inspect the surrounding area checking the following points:

- Make sure that close to the power source there are no other power supply cables, control lines, telephone cables or other devices;
- Make sure that telephones or TV, computers or other control systems are not in the working area;

- **People with pace-maker or hearing-prosthesis should keep far from the power source.**
! In particular cases special protection measures may be required.

Interference can be reduced following these suggestions:

- If there is interference in the power source line, an E.M.T. filter can be mounted between the power supply and the power source;
- The output cables of the power source should be shortened, kept together and connected to ground;
- After the maintenance all the panels of the power source must be securely fastened in place.

1.7 ELECTRIC SHOCK

DANGER – ELECTRIC SHOCK CAN BE FATAL.

A qualified person first aid technique should always be present in the working area.

If person is unconscious and electric shock is suspected, do not touch the person if he or she is in contact with commands. Disconnect power from the machine and then use First Aid. Dry wood, and other insulating material can be used to move cables, if necessary, away from the person.

2.0 INSTALLATION

Connect the power supply cable (FIG.1A) to the correct receptacle, single-phase 230V (protected by slow blow fuses).

IMPORTANT: the wires of the supply cable of your power source have the following colour codes: Yellow-Green = Ground, Brown = Phase, Blue = Neutral. If the colours of the wires of the power supply cable do not match with the colour labels identifying the terminals of your receptacle proceed as follows:

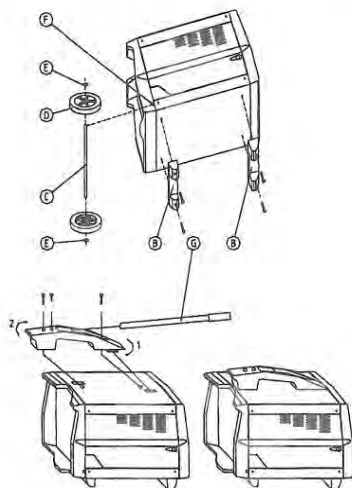
The green wire must be connected to the terminal identified by the letter E or by the ground symbol ($\perp$) or with yellow-green colour.

The brown wire must be connected to the terminal identified by the letter L or with red colour.

Warning: this equipment must be connected to ground.

1. Lay the power source on one side and fix the two rubber feet (B) (front and back) to the base of the machine using the four screws of the kit. For models with wheels remove, using a tool, the film (F) that closes the axle's seat and then insert the axle (C) in the two holes and fix the wheels (D) on the two sides. Fasten the wheels in their position fixing slowly the washers (E) on the two sides of the axle. Bring the power source back to the upright position and insert the handle extension (G) in the front side of the handle fixing it with the screw of the kit (FIG.1).
2. In order to assemble the plastic handle follow the instructions of figure 1.

FIGURE 1



4. Make sure that the wire-feeding roll is correctly positioned (groove matching the wire diameter). Note that each roll has two grooves one marked by 0.9mm and the other marked by 0.7mm.

12.0 ADVANTAGES OF NO GAS WELDING

1. There is no need for gas cylinders.
2. Welding outdoors is easier because there are fewer chances that wind blows away the shielding gas.
3. Welding time is about 50% less compared to the normal electrode welding.
4. The learning time for the operator is very short.
5. Minimum waste of welding material.
6. Most important, this process allows to complete the welding more quickly and efficiently.
7. Less heat, less distortion.
8. Possibility to weld thin materials.

13.0 WELDING PROCEDURES

1. Your welding power source has four or six positions for the regulation of the current in the various conditions.
2. The choice of the position for the welding is determined by the thickness of the material to weld.
3. Also the gas flow rate is determined by the thickness of the material to weld.
4. For the adjustment of the power source make reference to the graphs and of the following pages.

13.1 REFERENCE TABLE FOR MODELS WITH FOUR POSITIONS FOR REGULATION

STEEL					
WORKPIECE THICKNESS (mm)	0.6 MM GAS WELDING WIRE			0.8 MM GAS WELDING WIRE	
	WELDING POSITION		WIRE SPEED ADJUSTMENT	WELDING POSITION	
	A	B	C	A	B
0.6 - 0.8	1	Min.	Low	1	Max.
0.8 - 1.0	1	Max.	Medium	2	Min.
1.0 - 2.0	2	Min.	Medium	2	Max.
2.0 - 3.0	2	Max.	High	2	Max.

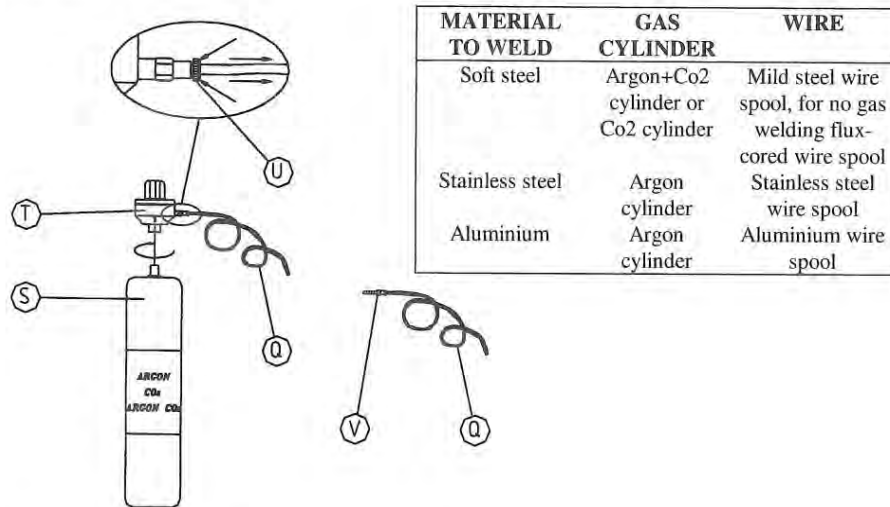
ALUMINIUM			
WORKPIECE THICKNESS (mm)	0.8 MM GAS WELDING WIRE		
	WELDING POSITION		WIRE SPEED ADJUSTMENT
	A	B	C
0.8	1	Min.	Medium
1.0 - 2.0	2	Min.	Medium
2.0 - 3.0	2	Max.	High

SOFT STEEL FOR NO GAS			
WORKPIECE THICKNESS (mm)	0.9 MM WIRE NO-GAS WELDING		
	WELDING POSITION		WIRE SPEED ADJUSTMENT
	A	B	C
0.6 - 0.8	1	Min.	Low
0.8 - 1.0	1	Max.	Medium
1.0 - 1.2	2	Min.	Medium
1.2 - 2.0	2	Max.	High

9.0 CONNECTION OF THE GAS CYLINDER AND REGULATOR

1. When using disposable gas cylinders (S), remove the protective cap from the top of the gas cylinder and screw the gas regulator (T) rotating it clockwise and fixing it tightly (do not force).
2. Connect the gas hose (fig. 2,Q) to the regulator (insert it completely). Note: To disconnect the gas hose from the regulator hold back the ring (U) and pull. The pressure regulator used with disposable gas cylinders operates through a needle controlled by a knob. The knob, positioned on a graduated plate marked from 0 to 6, regulates the gas gauge. When the knob is on 0 there is no gas flow; before starting to weld, position the knob on 3 or 4, the gas flow in this case is 2/3 lt/min. In order to better use the gas cylinder, always keep the minimum gas flow (2/3 lt/min.) that can grant a good welding without porosity. The gas regulator is equipped with a security valve that intervenes automatically when the gas flow changes.
1. For security and cost reasons, make sure that the regulator is well closed (turn counterclockwise to the end) when not welding and/or before changing the gas cylinder.
2. When using rechargeable gas cylinders, connect the plastic gas hose (Q) to an adapter for big gas cylinders (V). Connect the end of the adapter to a 6mm flexible gas hose and to the exit of the pressure regulator/flowmeter mounted on the gas cylinder. The regulator/flowmeter serves to control the gas flow, which should be ca. 2/3 litres per minute.

FIGURE 6

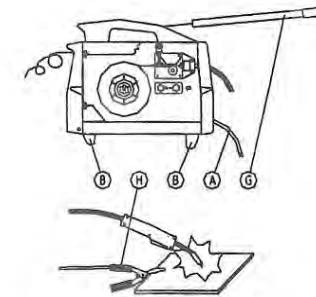


10.0 NO GAS WELDING

In the "NO GAS welding" the torch is connected to the negative pole and the ground cable to the positive pole. By gas welding the shielding gas is used to protect the weld pool from oxidation and porosity. By NO GAS welding this protection is given by a special wire called "flux cored wire", this technique simplifies the use of these machines compared to the machines with standard wire, on which the gas flow must be adjusted separately.

11.0 PREPARATION FOR WELDING

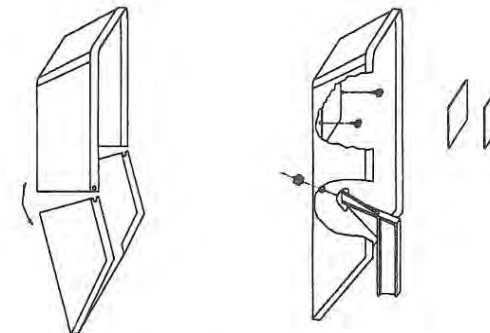
1. Connect the welding machine to the 230V 50/60Hz line;
2. **IMPORTANT:** make sure that the polarity of torch and ground cable is correctly set (FIG.5). For NO GAS welding the ground cable must be connected to the positive terminal (+), while the torch must be connected to the negative terminal (-) (FIG.5).
3. Connect the ground cable to the workpiece and make sure that the contact is good;



3. In order to assemble the handheld shield (Fig.2); insert the plastic protection shield in the special opening fixing it with the two screws. Place the handle fixing it in the slit of the protection mask, push it and rotate it by 90° until it enters into the hole inside the protection mask.

CAUTION: Never look at an electric arc without eye protection, the arc rays can injure the eyes permanently. Use always the protection shield supplied with the power source or any other protection mask or welding helmet.

FIGURE 2



3.0 WELDING SHIELD MAINTENANCE

USE: The shield are for personal use and must only be used to protect the welder from the optical radiation produced by the electric welding arc.

CLEANING AND MAINTENANCE: Clean the shield after each time it is used. The shield should only be cleaned using a soft cloth or compressed air; check whether any parts of the shield are worn and replace these if damaged. The materials used to make the shield are usually compatible but can cause allergic reactions in particularly sensitive people. Disinfecting should be performed using solutions of benzil-lauryl-dimethyl-ammonium chloride or UV germicide lamps.

LEVELS OF PROTECTION: Only use the shield in accordance with the operating instructions and make sure that the protection filter is suited to the type of welding. Remember that the filters are NOT shatterproof and therefore they should be protected by colourless plates of same size. To obtain a better level of the protection against welding spatter, wear gloves and protective clothing.

SPARE PARTS: Replace any parts that seem damaged or deformed immediately. Only original spare parts must be used. Do not use filter glass as replacements if these are not certified or do not have a declared

optical class. Ensure that any replacement filter is the correct safety shade. If in doubt consult your local supplier.

RESTRICTIONS OF USE: The shields only provide adequate protection for the forehead, the sides of the face and the neck if used for the stated purpose.

4.0 INSTALLATION OF THE WELDING WIRE

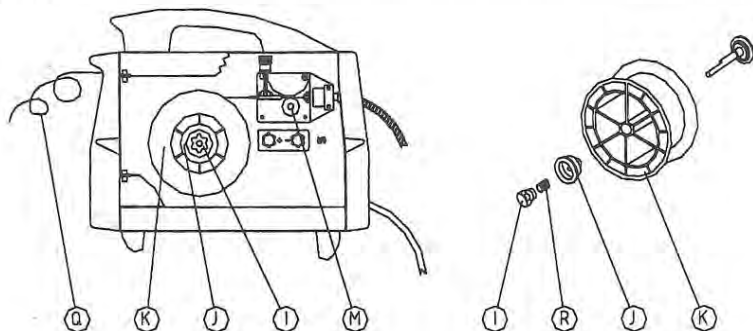
The power source is supplied with a welding wire spool. In order to install this wire into the feeding system, follow the instructions hereafter described and refer to Figure 3.

1. Loosen the nut (I) of the spool holder (brake drum) and remove the spring (R) and the external ring.
2. Remove the plastic protection from the spool (K) and place it on the spool holder again. Mount the external ring (J), the spring (R) and the plastic lock nut (I) again. These parts form the braking system of the wire spool speed. **NOTE:** Do not tighten the nut too much, excessive pressure strains the wire feeding motor, while too little pressure does not allow the immediate stop of the wire spool at the end of the welding.
3. Loosen and lower the plastic knob (L), release the upper roll of the feeder (N) and extract the wire from the torch liner.
4. When the wire is disconnected, keep it with pliers so that it cannot exit from the spool, and if necessary straighten it before inserting it in the wire input guide (O).
Insert the wire on the lower roll (M) and in the torch liner.

WARNING: The torch must be kept straight. When feeding a new wire through the liner, make sure the wire is cut cleanly (no burrs or angles) and at least 5cm of the end is straight (no curves). Failure to follow these instructions could lead to the wire damaging the liner.

5. Lower the upper roll (N) and the knob (L) and tighten slightly (if there is too much pressure the wire gets locked and the motor could get damaged, if too loose the wire will not be fed by the rolls). **NOTE:** The roll (M) has two different grooves. The machine is set for the diameter of the wire supplied with it. For No-Gas welding the roll must be reversed in order to have the correct groove for the flux-cored wire diameter.
6. Connect the power supply cable to the 230V 50Hz line and turn on the switch, then press the torch switch. The wire fed by the wire feeding motor at variable speed must slide through the liner; when it exits from the torch neck, release the torch switch, turn off the machine and mount the contact tip and the nozzle.

FIGURE 3



The wire is connected to a constant voltage pole while the workpiece is connected to the other pole. When the wire is fed and touches the workpiece, an electric arc is produced. The arc melts the wire that is deposited on the workpiece.

7.0 GAS WELDING

In order to weld Stainless steel or Aluminium the power source must be set for gas welding.*

This operation is very simple, you only need the following spare parts and items (please contact your welding supplier):

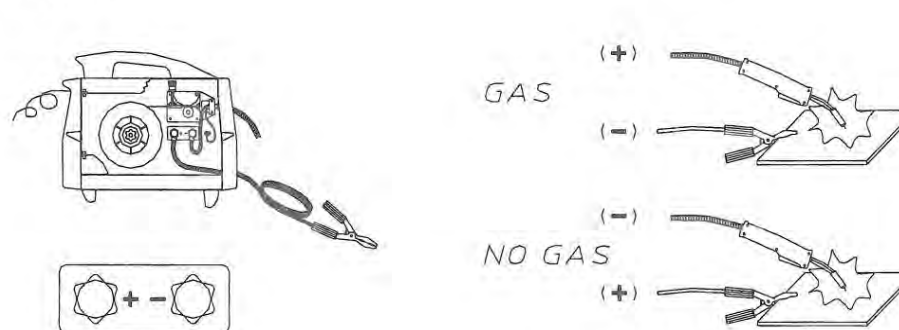
1. Wire – All these power sources work with 5Kg-wire spools (wire diameter 0.6mm or 0.8mm).
2. Tip – The tip is correct when it matches with the wire diameter. (Note: when using aluminium wire of diameter 0.8mm the tip must be 1.0mm)
3. Gas – You can buy disposable gas cylinders from the local distributor or from a reseller of spare parts, while rechargeable gas cylinders can be supplied by the local re-seller of spare parts.
4. Gas regulators - You can buy the regulator suited for the gas cylinder from the local distributor or from a re-seller of spare parts for welding equipment. **Note:** As first thing you should decide if you want to use rechargeable or disposable gas cylinders because this will affect the choice of the regulator.
5. Adapters – For the use of rechargeable gas cylinders you need an adapter for big gas cylinders (FIG.6).

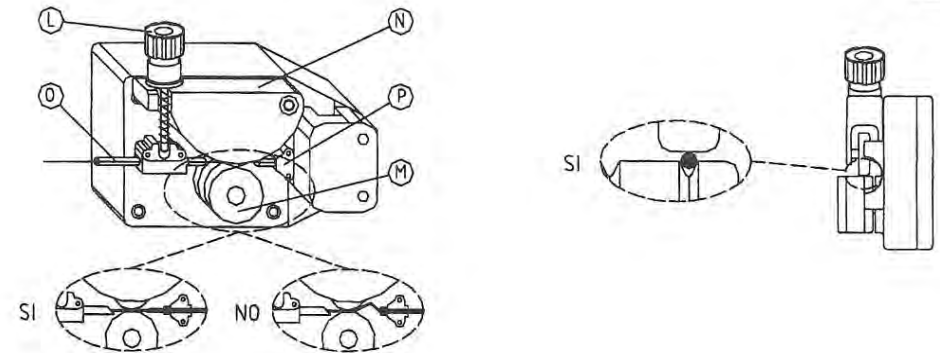
8.0 PREPARATION FOR WELDING

1. Connect the welding machine to the 230V 50/60Hz line;
2. **IMPORTANT:** make sure that the polarity is correctly set. For GAS welding the ground cable must be connected to the negative terminal (-), while the torch must be connected to the positive terminal (+) (FIG.5).*
3. Connect the ground clamp to the workpiece and make sure that the contact is good;
4. Make sure that the wire-feeding roll is correctly positioned (groove matching the wire diameter). Use the groove marked by 0.9mm for all the wires with diameter 0.8mm and the groove marked by 0.7mm for all the wires of diameter 0.6mm. In order to change the groove loosen the screw that locks the roll, turn the roll and fix it again with the screw;
5. Open the gas using the pressure regulator and adjust the flow rate. (**NOTE:** The gas flow may need adjustments in order to obtain a better welding, this depends on the type and thickness of the metal used, anyway the gas flow should be maintained as low as possible).

* Operation valid only for Gas - No gas models.

FIGURE 5





WARNING: The rolls, when in movement, may crush the fingers. Periodically check the rolls and replace them when they are worn and compromise the regular feeding of the wire.

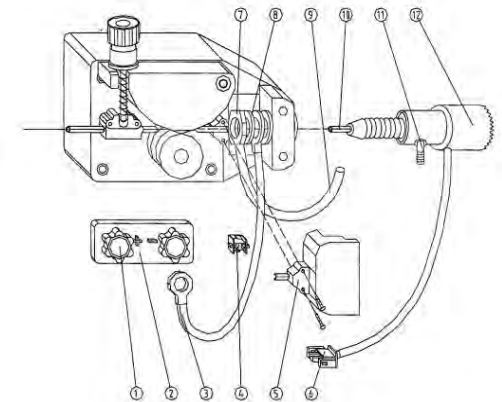
5.0 ASSEMBLING OF THE TORCH (Models with separate torch)

The Assembly of the torch is done only on models with separate torch kit.

- Open the left side panel of the power source;
- Insert the torch in the appropriate seat, lock it in the wire feeder motor (using the nut of the kit) and make sure that the hole of the liner is lined up with the channel between the two rolls and the wire feeder. For better comprehension follow the drawings of FIGURE 4. Connect the gas hose to the receptacle on the torch and fix it with a metal clamp. Joint the two connectors of the torch switch, and cover with the insulation cover (5).

FIGURE 4

- 1) Hand-wheel
- 2) Base for GAS-NO GAS selection *
- 3) Power cable
- 4) Torch switch contacts (power source side)
- 5) Insulation cover
- 6) Torch switch contacts (Mig torch side)
- 7) Locking nut
- 8) Brass washer
- 9) Gas hose
- 10) Wire liner
- 11) Gas connector on the torch
- 12) Torch



The torch is the part of the equipment that needs most maintenance. We recommend to check periodically the contact tips and the nozzle, these parts must be clean and not worn-out. The torch liner must be replaced when the wire does not run smoothly.

6.0 MIG WELDING

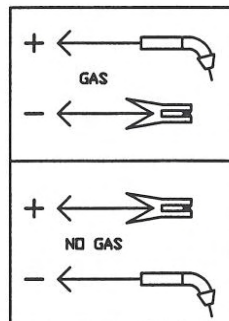
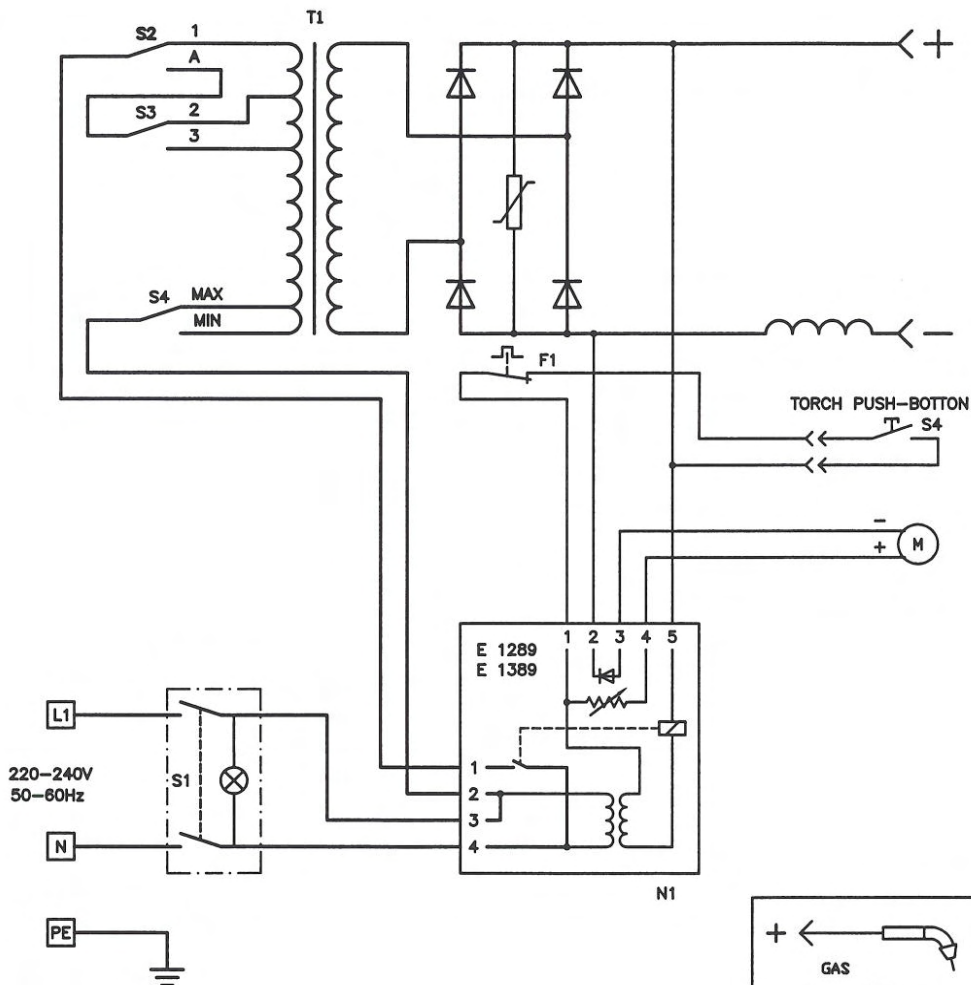
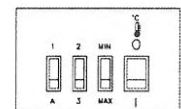
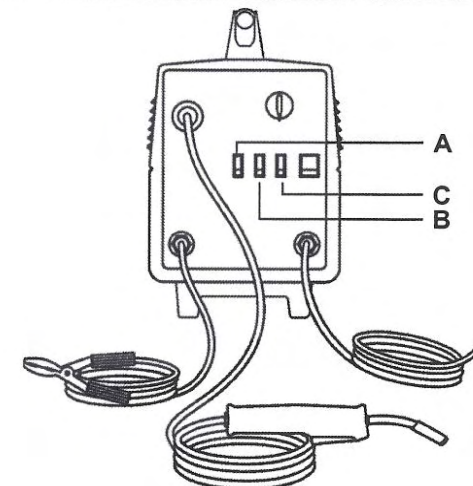
In MIG welding (Metal Inert Gas) a continuously fed metal electrode is melted into a welding pool at constant and controlled speed.

REGULATION REFERENCE TABLE FOR MINIMIG 120 GAS NO GAS

STEEL	0.6mm Gas Welding Wire				0.8mm Gas Welding Wire			
	Welding Position			Wire Speed Adjustment	Welding Position			Wire Speed Adjustment
Workpiece Thickness (mm)	A	B	C	D	A	B	C	D
0.6	1	2	MIN	LOW	Professional welding			LOW
0.6 - 0.8	1	2	MAX	LOW	1	2	MAX	LOW
0.8 - 1.0	A	2	MIN	MEDIUM	A	2	MIN	LOW
1.0 - 1.2	A	2	MAX	MEDIUM	A	2	MAX	MEDIUM
1.2 - 2.0	A	3	MIN	MEDIUM	A	3	MIN	MEDIUM
2.5 - 3.0	A	3	MAX	HIGH	A	3	MAX	MEDIUM

ALUMINIUM	0.8mm Gas Welding Wire			
	Welding Position			Wire Speed Adjustment
Workpiece Thickness (mm)	A	B	C	D
1.0 - 1.5	1	2	MAX	MEDIUM
1.5 - 2.0	A	2	MIN	HIGH
2.0 - 2.5	A	2	MAX	HIGH
2.5 - 3.0	A	3	MIN	HIGH

SOFT STEEL FOR NO GAS	0.8mm Gas Welding Wire			
	Welding Position			Wire Speed Adjustment
Workpiece Thickness (mm)	A	B	C	D
0.9	1	2	MAX	LOW
0.9 - 1.0	A	2	MIN	MEDIUM
1.0 - 1.2	A	2	MAX	MEDIUM
1.2 - 2.0	A	3	MIN	MEDIUM
2.0 - 3.0	A	3	MAX	HIGH



MINIMIG 120 GAS - NO GAS