

# INSTRUCTION MANUAL FOR PORTABLE MIG WELDERS

## GENERALITIES

This manual is meant to describe the correct use of the welder and to inform you about the rudiments of welding technique. Therefore please read the following directions carefully.

One of the best known systems which has made it possible for users, even for unskilled ones, to produce excellent welds as well as to join with ease materials considered hard to be welded, is the process based on a continued fed wire with gas shielding, commonly known as MIG/MAG. The welder you have bought works with the above system and has been conceived and simplified in such a way as to be practical, easy to operate, light and transportable with one hand only together with the gas cylinder. It gives excellent performances on mild steel, stainless steel and aluminium.

The welder we supply is prepared and equipped with what is necessary to weld mild steel.

## INSTALLATION AND MILD STEEL WELDING

By welders provided with side-mounted **B** holder **A**, act as follows:

- Take off the holder by pressing the lock **C** and move it to the rear of the welder, where you will screw it into the holes **D** using the screws supplied along (Fig. 1).

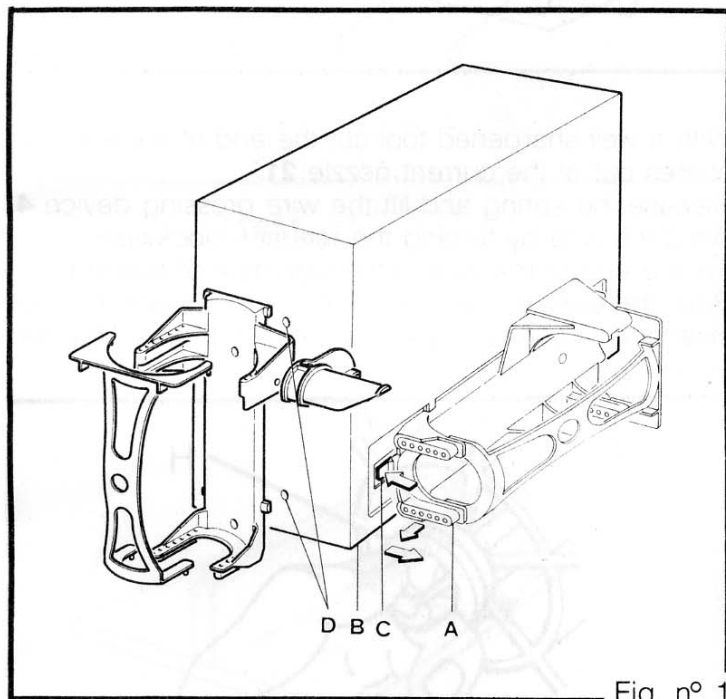


Fig. n° 1

The cylinder holder is suitable for 50 Ø up to 85 mm Ø cylinders. Another cylinder holder, with diameter adjustable from 110 mm. to 140 mm., is available on request. It is supplied with a kit including also accessories necessary to make the welder wheel-mounted. The cylinder holder is to be assembled like the other, but screwed into holes **E** (Fig. 2).

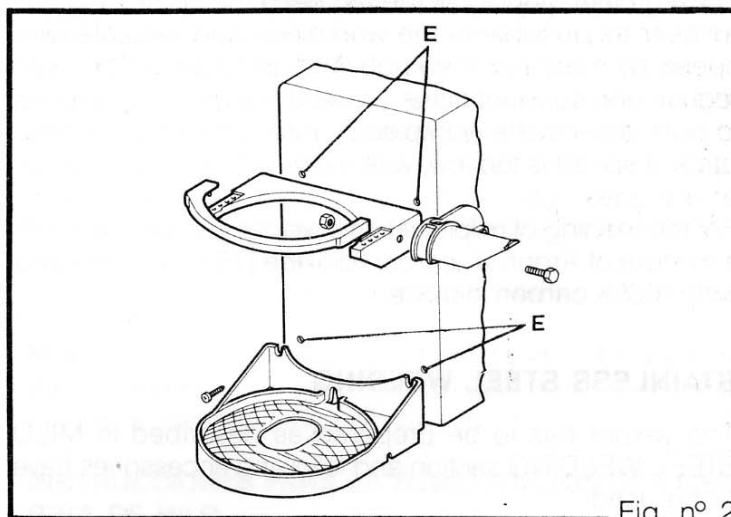


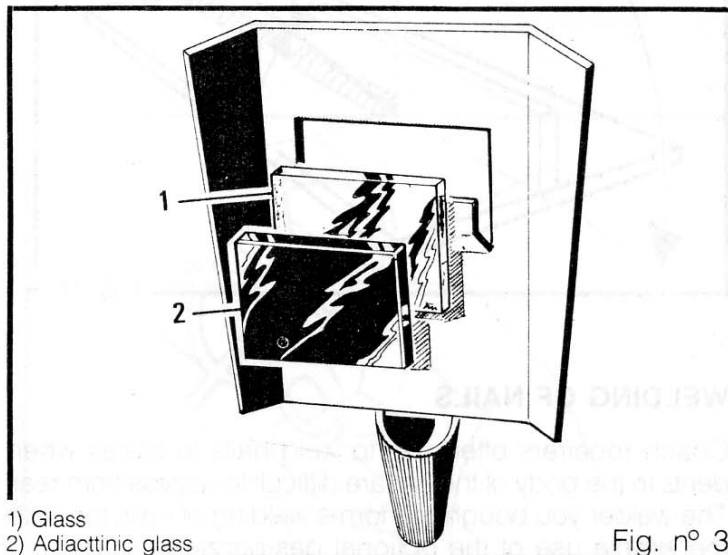
Fig. n° 2

Both cylinder holders are so designed as to carry an optional support **43** for 5 Kg. (200 mm. Ø) wire reels (Fig. 1). **N.B.:** The 5 kg. reel does not allow to fit the plastic case onto the welder.

- Screw the cylinder in the flowmeter following the procedure given at the section «Instructions for use of different cylinder types».
- Make sure that the mains voltage corresponds to that indicated in the rating plate of the welder and connect supply cable to current socket (PROVIDED WITH EARTH WIRE IN PERFECT WORKING ORDER).
- Connect earth clamp to workpiece, making sure that there is a good contact.
- Make sure that the workpieces are clean and well approached.
- Switch ON the main switch.

## THE MACHINE IS READY TO WELD!!

- Select the welding position by means of the switches **32** according to the thickness of workpieces, as per instructions written on the panel of the machine.
- The steel wire (suitable for welding mild steel) is already inserted in the torch.
- Approach the torch to the welding point.
- Protect your eyes with the mask prepared as shown in fig. 3.



1) Glass  
2) Adiactinic glass

Fig. n° 3

— Press the torch lever all the way to strike the welding arc. For a greater stability of the arc keep the tip of the torch as near as possible to the workpiece and regulate wire speed by means of the knob **7** so as to get an arc with regular and constant noise. If speed is too high wire tends to push against the workpiece causing the torch to jump back; if speed is too low, wire melts with desultory drops or arc goes out.

For the welding of mild steel, this welder can be used with a mixture of Argon + carbon dioxide (75% + 25%) and with 100% carbon dioxide.

## STAINLESS STEEL WELDING

The welder has to be prepared as described in MILD STEEL WELDING section and following accessories have to be used:

- Cylinder with Argon + carbon dioxide (75%+25%)
- Reel of 0,6 mm Ø stainless steel wire.

The inclination of the torch and the direction of the motion we recommend are shown in Fig. 4.

## ALUMINIUM WELDING

The welder has to be prepared as described in MILD STEEL WELDING section and following accessories have to be used:

- Cylinder with pure Argon
- Reel of 0,8 mm Ø aluminium wire
- 1 mm Ø current nozzle.

The inclination of the torch and the direction of the motion have to be those shown in Fig. 4.

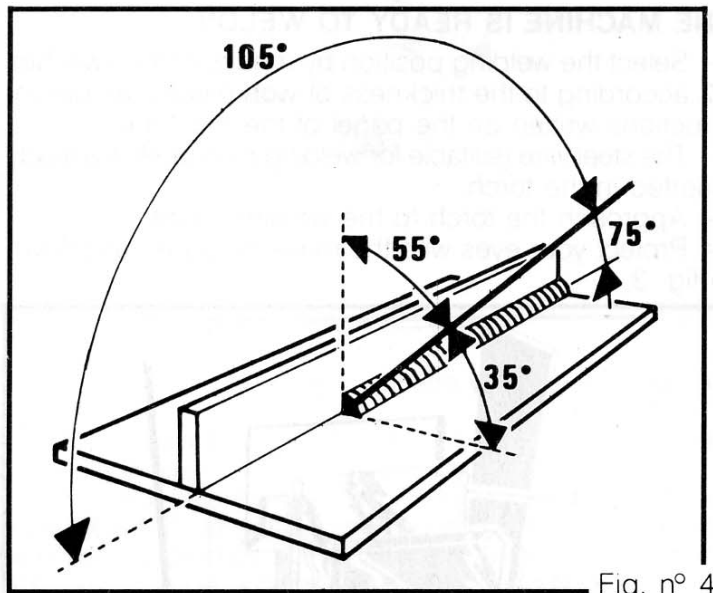


Fig. n° 4

## WELDING OF NAILS

Coach repairers often use to weld nails to plates when dents in the body of the car are difficult to access from rear. The welder you bought performs welding of nails too, with the simple use of the optional gas-nozzle for nails.

Prepare your welder as for mild steel welding, and replace the gas-nozzle with the gas-nozzle for nails. Then act as follows:

- Let in the nail into the special pipe and make sure that there is no contact between wire and nail.
- Set switches **32** on the more suitable welding position according to thickness of plate.
- Press the lever as long as it is necessary to spot the nails.

N.B. Before performing spot of nails we suggest to make a trial welding in order to properly adjust wire speed.

## INSTRUCTIONS FOR WIRE REEL REPLACEMENT

Switch OFF the switch **34**.

Remove the plastic case by forcing the release unit **G** (Fig. 5).

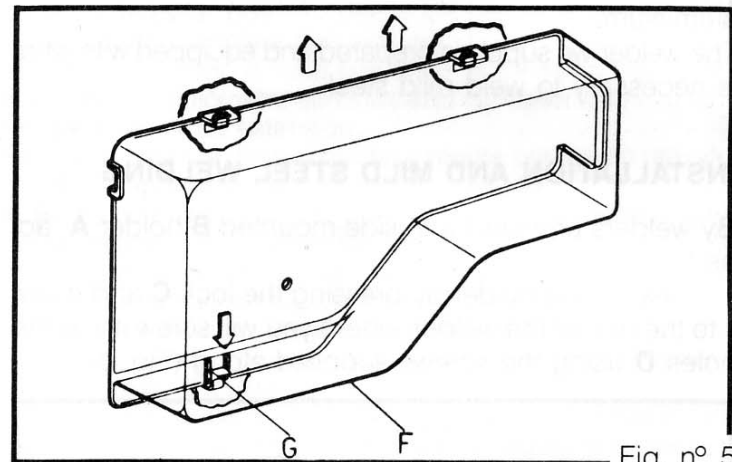


Fig. n° 5

With a well sharpened tool cut the end of the wire that comes out of the current nozzle **21**.

Release the spring and lift the wire pressing device **4**. Wind the wire by turning the reel anti-clockwise.

Fix the end of the wire in the side-hole of reel spool. Push the ends of the reel holder swift, replace the reel, insert the friction spring and fit the lock washer **H** as per fig. 6.

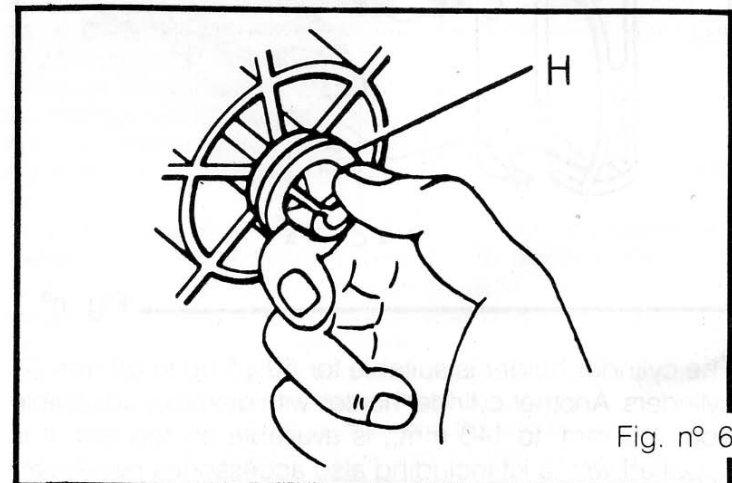


Fig. n° 6

Take off the wire from the hole of the spool and cut as much of it as it is necessary for the end of the wire to be straight.

Slip the wire into the inlet hole, pass it on the shaft of the motor and insert it at least 50/60 cm. in the sheath **2**. Lower the wire pressing device and lock the spring making sure that the wire stays in the groove of the shaft.

Slip off the gas nozzle **20**, unscrew the current nozzle **21**. Select 1-MIN welding position.

Switch ON the main switch.

Hold straight and without curves the sheath of the torch. Press torch lever till wire has come out some cm. of the torch.

Insert the coil spring **19** if it has come out during this operation.

Screw the current nozzle.

Insert the gas nozzle.

Fit the plastic case on the welder.

## INSTRUCTIONS FOR USE OF DIFFERENT CYLINDER TYPES

### Non refillable cylinders (fig. 7).

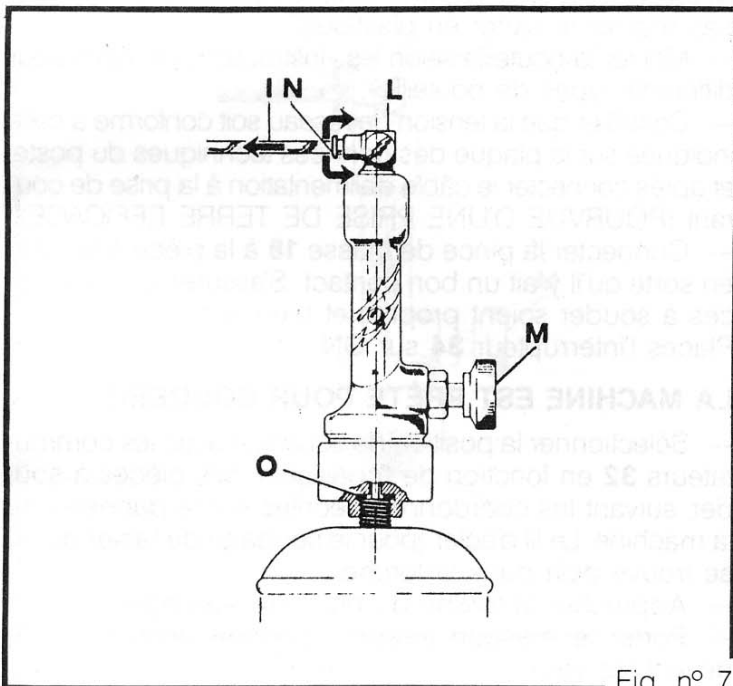


Fig. n° 7

Screw the cylinder in the flowmeter and tighten it only with the hands.

Push the gas flexible line all the way into the connector **L** of the flowmeter.

Press the torch lever and regulate the gas flow at 2L/min by means of the knob **M** (in airy places it is a good thing to increase to 3÷4 litres per minute).

For cylinder replacement compress ring **N** to arrow direction and remove gas hose from quick coupling.

Unscrew the cylinder from flowmeter, carry out the replacement and retighten with hands only.

**N.B.:** Check every now and then the wear rate of the packing **O** and, if necessary, replace it with the spare packing supplied with the welder.

**CAUTION!!!** THE NON REFILLABLE CYLINDERS CAN NOT ABSOLUTELY BE REFILLED.

### Refillable cylinders (fig. 8)

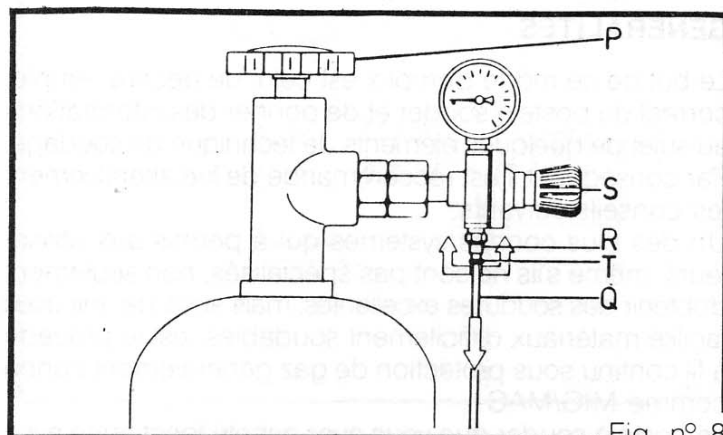


Fig. n° 8

Screw the cylinder in the flowmeter and tighten it with a suitable key, to avoid any gas leaks.

Open the cylinder valve **P**, if any.

Push the gas flexible line **Q** all the way into the connector **R** of the flowmeter. In case the gas hose supplied is too short, ask for the extension kit.

Press the torch lever and regulate the gas flow at 2L/min.

**N.B.:** It is normal that, when releasing the torch lever, the indicator of the pressure gauge rises. Gas flow must be adjusted when gas flows out of the torch, i.e. when the lever is being pressed. In order to avoid useless solicitations to the pressure gauge, it is important to stop gas flow by unscrewing the knob **S** before opening the cylinder valve. To detach the flexible line from the flowmeter connector compress the ring **T** and remove gas hose from quick coupling **R**.

In order to save gas it is possible, particularly at low welding currents, to decrease the gas flow at less than 2L/min., provided that the welding arc is sufficiently shielded and that weld does not show porosity.

### SERVICING AND USEFUL ADVICES

**CAUTION!!!** Before starting inspection disconnect the welder from the mains.

**DO NOT BRING THE TORCH NEAR THE FACE TO CHECK WHETHER GAS OR WIRE COME OUT.**

Always switch off the welder after the use to avoid useless waste of power.

Always shut off the gas after the use.

The welder is provided with a thermal protection. Should it be activated, wait a few minutes as to let the generator cool down.

When any extension cable is used, its cross section must be the same or greater, never narrower, than the existing cable on the welder.

Cut the welding wire with tools that do not bend it.

During the welding very small drops of molten metal make a deposit inside the gas nozzle and therefore it is a good thing to detach the slag in case it should have formed. After cleaning make sure that the gas outlets are not stopped up.

Every now and then check that the hole of the current nozzle has not become too large.

Inside the torch hose there is the wire guide sheath, that we recommend to clean every now and then by blowing a jet of dry and clean air. Never hit the torch strongly against other objects nor let it receive violent blows.

Periodically check electric and gas connections.