INSTRUCTION FOR USE OF THREE PHASE D.C. WELDING MACHINES

GENERAL INFORMATION

This manual has been prepared in order to help personnel with the installation, use and maintenance of this wire welder.
When you receive the welder and before connecting it to the mains, mount the trailer support (No. 49-50) and the reel holder (No. 1) into their seats by means of the supplied screws. Extract the cylinder holder, set it accordingly to the exploded view and fix it with the proper screws, then note the two following basic rules:

1) Make sure that there are no missing, broken or faulty parts (every complaint has to be addressed directly to the retailer).

2) Read carefully all instructions before operating the welder.

DESCRIPTION

This D/C welder has been planned for welding with stainless steel wires, aluminium wires and flux-cored wires using CO_2, Argon or Gasmixtures.
Turning the main switch either on position 1 or on position 2 the fan is set in motion and the auxiliary transformer is supplied with current. Only when pressing the knob on the torch grip the power transformer and the welding clamps are supplied with the line voltage.
The welder is equipped with a voltmeter and a D/C anmeter showing instantaneously no-load voltage, arc voltage and welding current. On the rear of the welder there are the cylinder holder and the cylinder support which, being telescopic, enable the cylinder to be moved also in case the cooling unit (supplied on request) is mounted on the welder.

CAUTION

Before connections, replacements or repairs are carried out, make sure that the welder is disconnected from the mains.

PLACING

For a good functioning a correct installation of the welder is absolutely necessary.
The fan inside the welder keeps the various parts at a proper temperature. Therefore ventilation should not be obstructed eihter from the foreside or from the rear of the welder.
On the basis of these warnings we advise you to keep a distance of 50 cm. at least from the wall.
Do not put directly into the welder grinding dust, which could damage the isolations of the electric parts.

Notice that the trailer placed on the upper side of the welder can be decentralized up to 5 mt.

CONNECTIONS

This D/C welder is a three-phase unit and has therefore to be connected to a three phase earthed supply line.

MAIN CONNECTIONS

The welder is equipped with a three polar earth cable.
Make sure that the supply voltage corresponds to the rated voltage of the welder.
During welding operations the supply voltage shall not decrease below 10% of the rated voltage.

SECONDARY CONNECTIONS

This welder has been planned for welding with reverse polarity (+ at the torch).
The earth clamp has to be connected with one of the three sockets located on the foreside of the welder (Fig. 1). The choice of one of these clamps depends on the kind of weld that has to be carried out i.e. position A narrow and deep weld (lowest impedance), position C wide and surface weld (highest impedance). With impedance position No. C sprinkles are reduced up to a minimum and the «bath» is warmer.

Caution: a high degree of impedance can cause irregular welds.

CONNECTIONS BETWEEN GENERATOR AND TRAILER

This welder is made up of 2 basic parts: generator and trailer, which have to be connected one another by means of an extension allowing the latter to be decentralized up to 5 mt.
On the rear side of the generator, namely on the right you will find: a ten-pole plug (D), a power socket (E) and 2 single-phase sockets (220 V 150 VA) for the connection of a cooling and a CO_2 preheating unit (F).

Warning: do not connect other tools in addition to the abovementioned. On trailer's rear side you will find: a 10-pole socket (G) and a one-pole socket (H) for the power clamp. The two connectors, i.e. the one needed for the connection with the generator and the one needed for the connection with the trailer, have only one fixed connection, so that mistakes could be avoided.

Caution: once the connectors are inserted close again the locks fixed on the sockets.

Moreover on the trailer's backside you will find the gas inlet, which has to be connected to the shortest extension's cable.

Warning: these connections have to be carried out when the welder is switched off.

When installing the welder the yellow-green cable has to be necessarily connected to a safe earthed socket.

INSTALLATION

After all abovementioned controls have been carried out (hereunder summed up briefly):

1) make sure that the supply voltage corresponds to the rated voltage;

2) insert the connections of the extension;

3) mount the wire of the required diametre on the trailer and adjust carefully the strain of the wire-pressing device;

4) connect the earthcable to the most suitable socket (placed on the foreside of the machine) for the weld you require (A,B,C);

5) connect the welder to the mains;

6) turn on the gas cylinder;

7) turn the commutator (I) on position 1 (minimum) or position 2 (maximum);

8) press the button on the torch grip and the voltmeter will show a certain voltage which can be adjusted by means of knob (L);

9) start welding operations and find the best welding condition turning on knob 2 (wire speed);

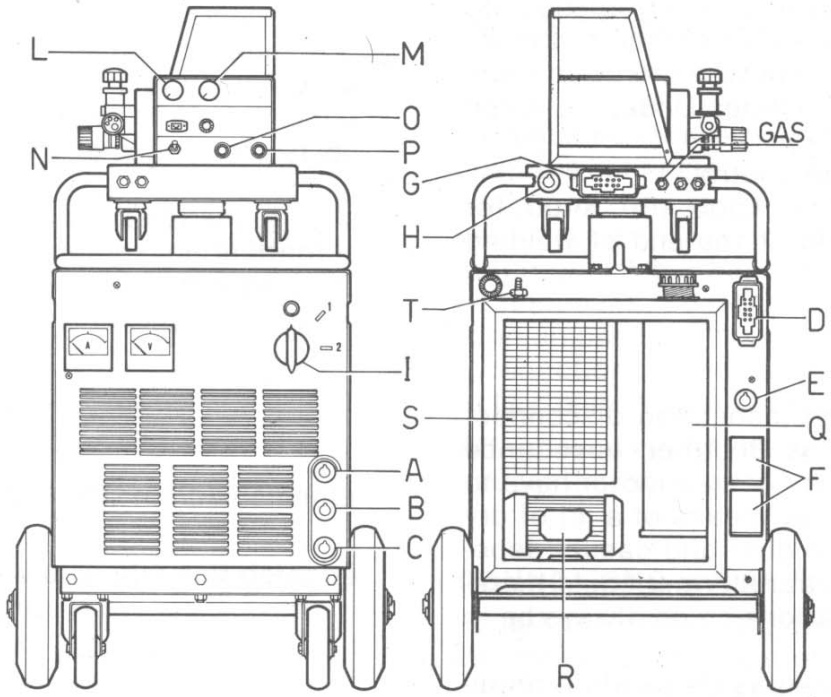
10) if the welder is equipped with a cooling unit, fill the tank with coolants for closed circuits only.

END OF THE WELDING OPERATIONS

1) Turn the welder commutator on position O.

2) Turn off the power supply switch.

3) Turn off the gas cylinder.



FEATURES

— Adjustment of two different welding ranges by means of knob 3.

— Electronic adjustment of welding voltage and current.

— Quick positioning of parameters.

— Gas fore and after flow to assure welding protection.

— Suitable for welding with any kind of wires.

— Forced ventilation.

— Three impedance positions satisfying the various requirements needed for the welding arc.

— Rotating wire-feeder unit.

— Extention allowing the trailer to be decentralized up to 5 mt.

— Anmeter and Voltmeter enabling parameters voltage and current control during the welding.

— Box having the following functions:
  — Voltage adjustment (L). By means of this knob welding voltage of both ranges can be adjusted from 0 to Maximum.
  — Wire speed adjusting knob (M) (current).
  — Automatic/manual utilization (N). On position (MAN) the welder is ready to manual welding. On position (AUT) the welding operation begins by pushing the torch knob and ends only when the knob is pushed again.
  — Aluminium wire guide (O). Knob enabling the adjustment of the acceleration of the wire feed motor. This improves the performance of aluminium welding. Under common conditions set on (FE).
  — Preset for remote control.
  — Burn-off adjusting knob (P). Knob for changing wire lenght at the end of welding operation (Stick-out).

MAINTENANCE

Caution: before starting inspection disconnect the welder from the mains. Rectifier - impedance - transformer - ventilator - geared motor have to be periodically cleaned by means of a jet of dry compressed air, so that dust and casual deposits settled around the transformer could be removed and welder isolations could always be in perfect working order.
Clean the welder as often as its location requires.
Warning: keep gas nozzle always clean.

OPTIONALS

Cooling unit which can be connected to the welder enabling the utilization of cooled torches.
Balancing device which can be mounted on the trailer enabling the utilisation of 3-4 mt long normal or cooled torches equipped with a strain and height adjusting device.

Figure showing the cooling unit.

The cooling unit is made up of:
Q) tank
R) pump
S) dissipator
T) water connections

The cooling unit has to be installed on the back side of the welder. The ventilator inside the generator cools the circulating liquid.
Fill the tank with coolants for closed circuits only.