

INSTRUCTION MANUAL FOR ARC WELDING MACHINE

IMPORTANT: BEFORE STARTING THE EQUIPMENT, READ THE CONTENTS OF THIS MANUAL, WHICH MUST BE STORED IN A PLACE FAMILIAR TO ALL USERS FOR THE ENTIRE OPERATIVE LIFE-SPAN OF THE MACHINE. THIS EQUIPMENT MUST BE USED SOLELY FOR WELDING OPERATIONS.

1 SAFETY PRECAUTIONS



WELDING AND ARC CUTTING CAN BE HARMFUL TO YOURSELF AND OTHERS.

The user must therefore be educated against the hazards, summarized below, deriving from welding operations. For more detailed information, order the manual code 3.300.758

NOISE



This machine does not directly produce noise exceeding 80dB. The plasma cutting/welding procedure may produce noise levels beyond said limit; users must therefore implement all precautions required by law.

ELECTRIC AND MAGNETIC FIELDS - May be dangerous.

- Electric current following through any conductor causes localized Electric and Magnetic Fields (EMF). Welding/cutting current creates EMF fields around cables and power sources.
- The magnetic fields created by high currents may affect the operation of pacemakers. Wearers of vital electronic equipment (pacemakers) shall consult their physician before beginning any arc welding, cutting, gouging or spot welding operations.
- Exposure to EMF fields in welding/cutting may have other health effects which are now not known.
- All operators should use the following procedures in order to minimize exposure to EMF fields from the welding/cutting circuit:

- Route the electrode and work cables together - Secure them with tape when possible.
- Never coil the electrode/torch lead around your body.
- Do not place your body between the electrode/torch lead and work cables. If the electrode/torch lead cable is on your right side, the work cable should also be on your right side.
- Connect the work cable to the workpiece as close as possible to the area being welded/cut.
- Do not work next to welding/cutting power source.

EXPLOSIONS



- Do not weld in the vicinity of containers under pressure, or in the presence of explosive dust, gases or fumes.
- All cylinders and pressure regulators used in welding operations should be handled with care.

ELECTROMAGNETIC COMPATIBILITY

This machine is manufactured in compliance with the instructions contained in the standard IEC 60974-10 (CL. A), **and must be used solely for professional purposes in an industrial environment. There may be potential difficulties in ensuring electromagnetic compatibility in non-industrial environments.**



DISPOSAL OF ELECTRICAL AND ELECTRONIC EQUIPMENT

Do not dispose of electrical equipment together with normal waste! In observance of European Directive 2002/96/EC on Waste Electrical and Electronic Equipment and its implementation in accordance with national law, electrical equipment that has reached the end of its life must be collected separately and returned to an environmentally compatible recycling facility. As the owner of the equipment, you should get information on approved collection systems from our local representative. By applying this European Directive you will improve the environment and human health!

IN CASE OF MALFUNCTIONS, REQUEST ASSISTANCE FROM QUALIFIED PERSONNEL.

1.1 WARNING LABEL

The following numbered text corresponds to the label numbered boxes.



- B. Drive rolls can injure fingers.
- C. Welding wire and drive parts are at welding voltage during operation — keep hands and metal objects away.
- 1 Electric shock from welding electrode or wiring can kill.
- 1.1 Wear dry insulating gloves. Do not touch electrode with bare hand. Do not wear wet or damaged gloves.

- 1.2 Protect yourself from electric shock by insulating yourself from work and ground.
- 1.3 Disconnect input plug or power before working on machine.
- 2 Breathing welding fumes can be hazardous to your health.
 - 2.1 Keep your head out of fumes.
 - 2.2 Use forced ventilation or local exhaust to remove fumes.
 - 2.3 Use ventilating fan to remove fumes.
- 3 Welding sparks can cause explosion or fire.
 - 3.1 Keep flammable materials away from welding.
 - 3.2 Welding sparks can cause fires. Have a fire extinguisher nearby and have a watchperson ready to use it.
 - 3.3 Do not weld on drums or any closed containers.
- 4 Arc rays can burn eyes and injure skin.
 - 4.1 Wear hat and safety glasses. Use ear protection and button shirt collar. Use welding helmet with correct shade of filter. Wear complete body protection.
- 5 Become trained and read the instructions before working on the machine or welding.
- 6 Do not remove or paint over (cover) label.

2 GENERAL DESCRIPTIONS


2.1 SPECIFICATIONS


This welding machine is a constant current generator built using INVERTER technology, designed to weld with covered electrodes and for TIG procedures, with contact starting. IT MUST NOT BE USED TO DEFROST PIPES.

2.2 EXPLANATION OF THE TECHNICAL SPECIFICATIONS LISTED ON THE MACHINE PLATE.

This machine is manufactured according to the following international standards: IEC 60974.1 - IEC 60974.3 - IEC 60974.10 CL. A - IEC 61000-3-12 - IEC 61000-3-11 (see note 2).

N°. Serial number, which must be indicated on any type of request regarding the welding machine.

 Single-phase static transformer-rectifier frequency converter.

 Drooping characteristic.

SMAW. Suitable for welding with covered electrodes.

TIG Suitable for TIG welding.

U0. Secondary open-circuit voltage

X. Duty cycle percentage. % of 10 minutes during which the welding machine may run at a certain current without overheating.

I2. Welding current

U2. Secondary voltage with current I2

U1. Rated supply voltage

The machine has an automatic supply voltage selector.

1~ 50/60Hz 50- or 60-Hz single-phase power supply

I1 max. This is the maximum value of the absorbed current.

I1 eff. This is the maximum value of the actual current absorbed, considering the duty cycle.

IP23S Protection rating for the housing.

Grade 3 as the second digit means that this

equipment may be stored, but it is not suitable for use outdoors in the rain, unless it is protected.

S Suitable for hazardous environments.

Note:

- 1- The machine has also been designed for use in environments with a pollution rating of 1. (See IEC 60664).
- 2- This equipment complies with IEC 61000-3-11 provided that the maximum permissible system impedance Z_{max} is less than or equal to 0,29 (art. 261) - 0,362 (art. 257) at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with maximum permissible system impedance Z_{max} less than or equal to 0,29 (art. 261) - 0,362 (art. 257).

2.3 DESCRIPTION OF PROTECTIVE DEVICES

2.3.1 Thermal protection

This equipment is protected by a thermostat. When the thermostat is tripped, the machine stops delivering current but the fan continues to run. The yellow led (**B**) lights to indicate when it is tripped.

Do not shut off the welding machine until the led has gone off.

2.3.2 Motor-driven generators

These must have a power equal to or greater than 6KVA, and must not deliver a voltage greater than 265V.

2.3.3 Protection against short-circuits (antistick)

If a short-circuit occurs lasting more than two seconds when welding with coated electrodes, the current is reduced to harmless levels.

3 INSTALLATION

This must be carried out by skilled personnel. All connections must be carried out according to current regulations, and in full observance of safety laws (regulation CEI 26-23 - CEI CLC 62081).

- Make sure that the supply voltage matches the voltage indicated on the specifications plate.

- When mounting a plug, make sure it has an adequate capacity, and that the yellow/green conductor of the power supply cable is connected to the earth pin.

WARNING! Extension cords of up to 30m must have a cross-section of at least 2.5 mm².

3.1 DESCRIPTION OF THE EQUIPMENT

A) Current adjustment.

B) Yellow led (see 2.3).

C) Power ON led.

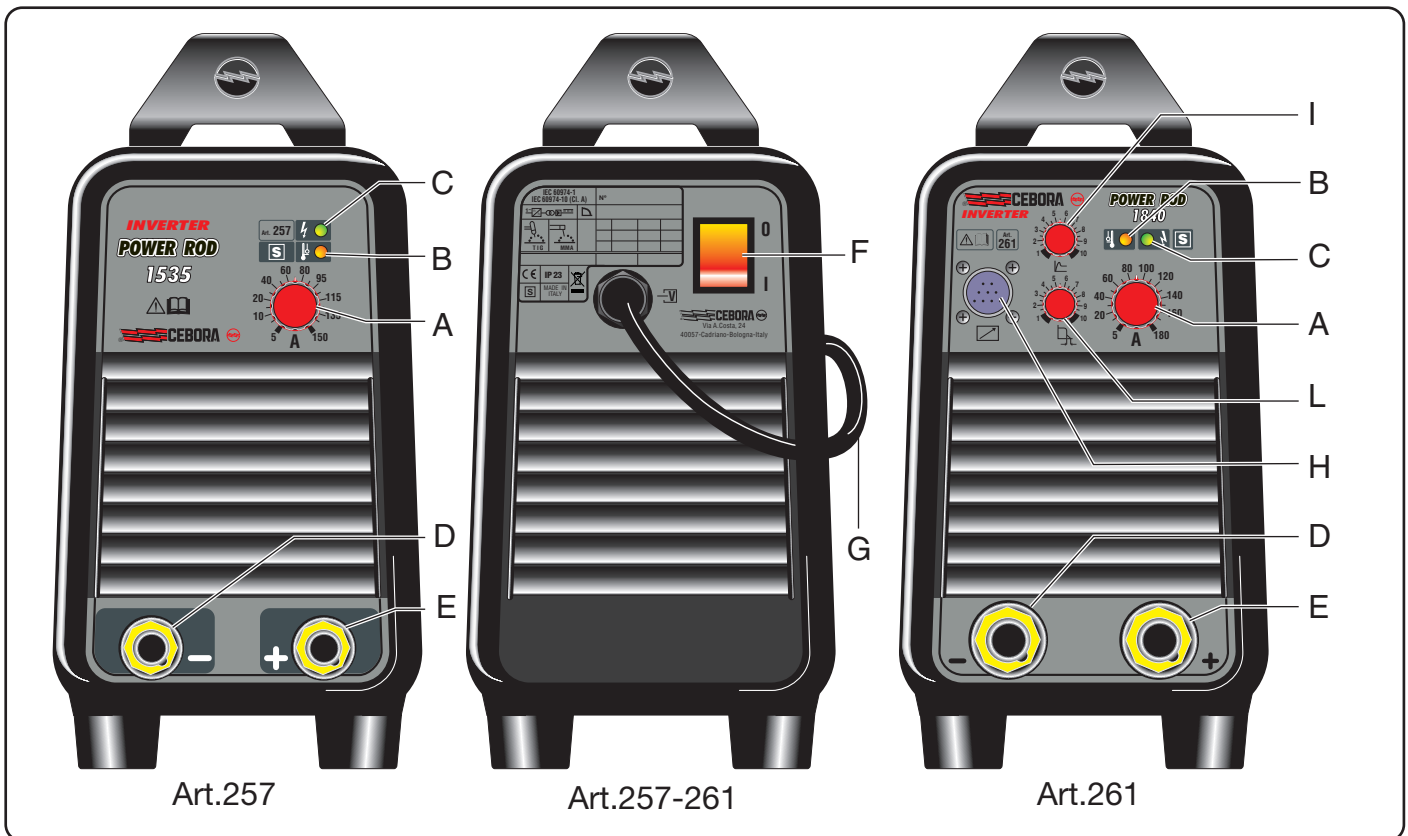
D) Output terminal (-).

E) Output terminal (+).

F) Switch.

G) Mains cable.

H) Connector (Art. 261).



I) Adjusts an overcurrent that may be inserted to aid in striking the arc. This function is active in both MMA and TIG modes (Art. 261).

L) Adjusts an overcurrent that makes it possible to maximize transferring the electrode drop to the workpiece. This function is not active in TIG welding (Art. 261).

3.2 MMA WELDING

- This welding machine is suitable for welding all types of electrodes, with the exception of cellulosic (AWS 6010).

- Make sure that the switch (F) is in position 0, then connect the welding cables, matching the polarity required by the manufacturer of the electrodes you will be using.

VERY IMPORTANT: Connect the terminal of the grounding cable to the workpiece, making sure that contact is good to ensure smooth equipment operation and avoid voltage dips with the workpiece.

- Do not touch the torch or electrode clamp simultaneously with the mass terminal.

- Turn the machine on using the switch (F).

- Adjust the welding current using the knob (A), the hot start using the knob (I), and the arc force using the knob (L).

Always remember to shut off the machine and remove the electrode from the clamp after welding.

3.3 TIG WELDING

- This welding machine is suitable for welding the following materials using the TIG procedure: stainless steel, iron, copper.

- Make sure that the switch (F) is in position 0.

- Connect the mass cable connector to the positive pole (+) of the welding machine, and the clamp to the workpiece as close as possible to the welding point.

- Use the torch type T150 and connect the power connector to the negative pole (-) of the welding machine (Art. 261).

- Connect the gas hose to the outlet of the pressure regulator, connected to an ARGON cylinder.

. Press the torch trigger and adjust the gas flow.

- Inside the torch is a valve that blocks the gas flow when the trigger is released.

. Use a 2% thorium-covered tungsten electrode (red strip), diameter 1.6 (1/16").

- Turn the machine on using the switch (F).

- Adjust the welding current using the knob (A) and the hot start using the knob (I) (Art. 261).

- Strike the arc by contact using a firm, rapid stroke.

- Remember to shut off the machine and close the gas cylinder valve when you have finished welding.

Note: The machine will set itself for TIG welding only if the required accessories are connected to the adapter H (Art. 261).

This machine is intended for use with the following accessories:

a) torch type T 150 Art. 1567-20 with gas valve and start trigger,

b) torch type T 150 Art. 1567-02 with gas valve, start trigger and current setting potentiometer,

c) Art. 181 pedal with potentiometer for current adjustment,

d) Art. 1180 adapter to simultaneously attach the torch Art. 1567-20 or 1567-02 and the pedal Art. 181.

e) torch Art. 1567.01 (Art. 257).

4 MAINTENANCE

Any maintenance operation must be carried out by qualified personnel in compliance with standard CEI 26-29 (IEC 60974-4).

4.1 GENERATOR MAINTENANCE

In the case of maintenance inside the machine, make sure that the switch **F** is in position "O" **and that the power cord is disconnected from the mains.**

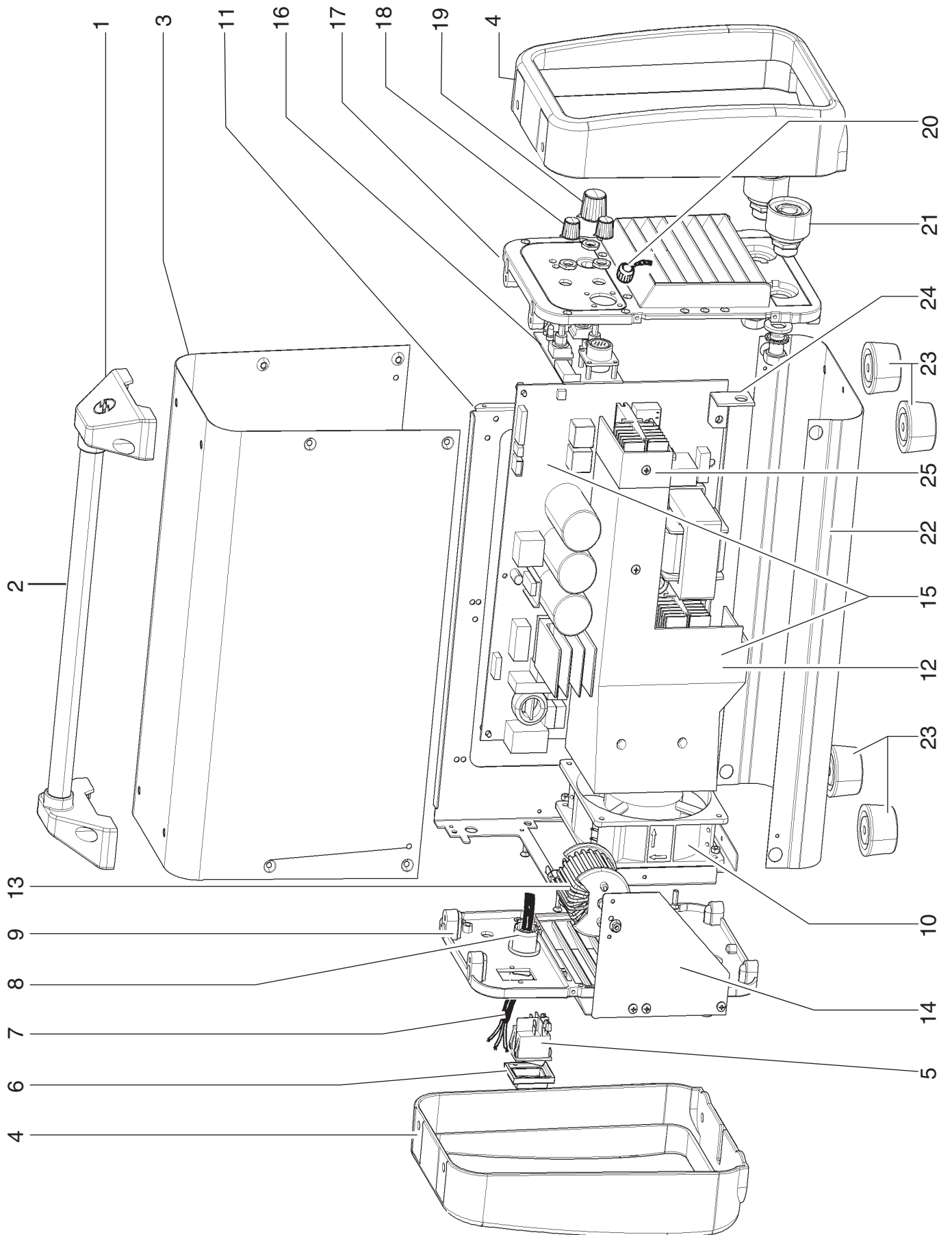
It is also necessary to periodically clean the interior of the machine from the accumulated metal dust, using compressed air.

4.2 PRECAUTIONS AFTER REPAIRS.

After making repairs, take care to organize the wiring so that there is secure insulation between the primary and secondary sides of the machine. Do not allow the wires to come into contact with moving parts or those that heat up during operation. Reassemble all clamps as they were on the original machine, to prevent a connection from occurring between the primary and secondary circuits should a wire accidentally break or be disconnected.

Also mount the screws with geared washers as on the original machine.

Art. 261



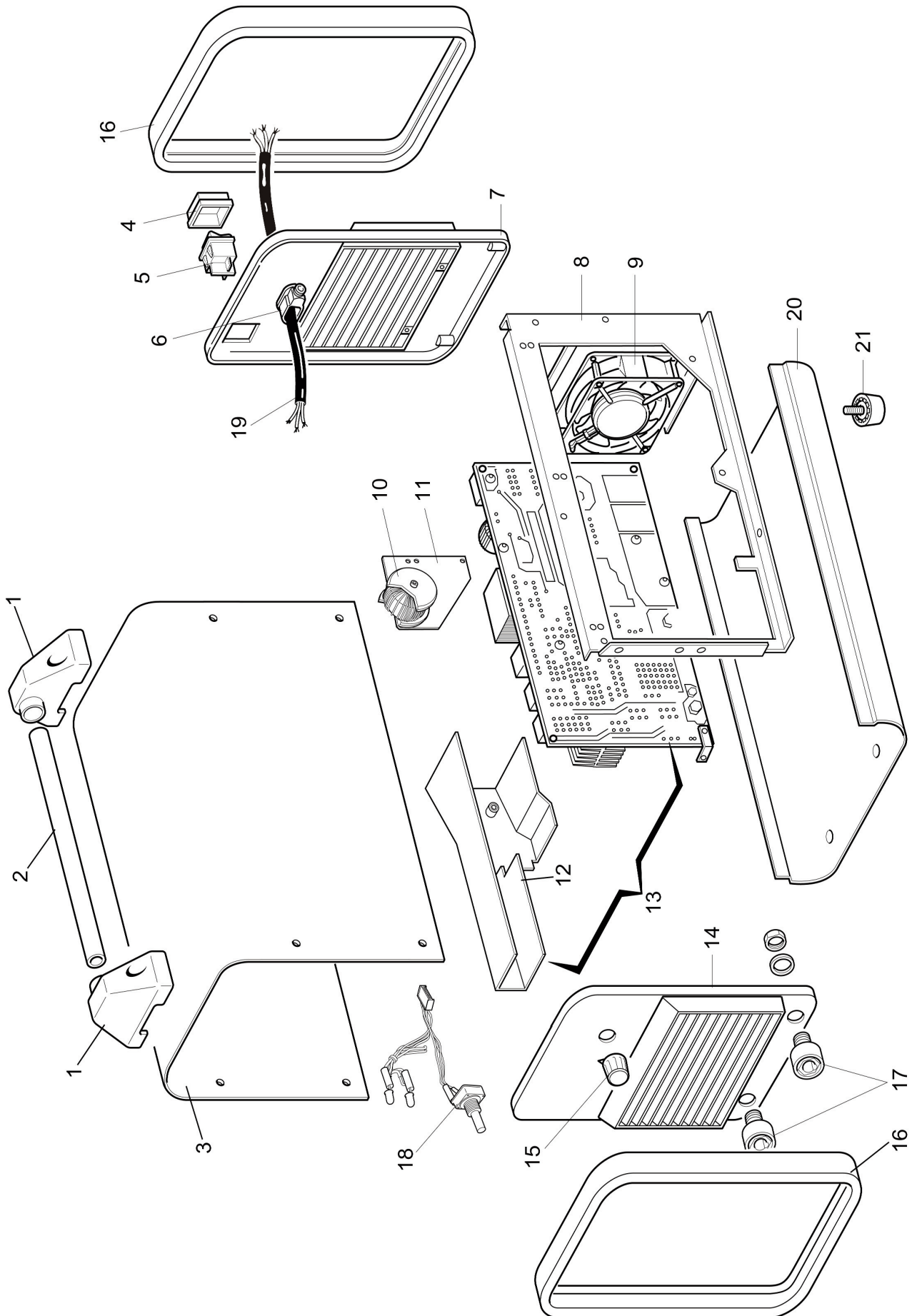
Art. 261

pos	DESCRIZIONE	DESCRIPTION
01	SUPPORTO MANICO	HANDLE SUPPORT
02	MANICO	HANDLE
03	FASCIONE	HOUSING
04	CORNICE	FRAME
05	INTERRUTTORE	SWITCH
06	COPERTURA IN GOMMA	RUBBER MAT
07	CAVO RETE	POWER CORD
08	PRESSACAVO	STRAIN RELIEF
09	PANNELLO POSTERIORE	BACK PANEL
10	MOTORE CON VENTOLA	MOTOR WITH FAN
11	SUPPORTO SCHEDA	CIRCUIT SUPPORT
12	COPERTURA	COVER
13	INDUTTANZA PFC	PFC CHOKE

La richiesta di pezzi di ricambio deve indicare sempre: numero di articolo, matricola e data di acquisto della macchina, posizione e quantità del ricambio.

pos	DESCRIZIONE	DESCRIPTION
14	SUPPORTO INDUTTANZA	CHOKE SUPPORT
15	CIRCUITO DI POTENZA	POWER CIRCUIT
16	CIRCUITO PANNELLO	PANEL CIRCUIT
17	PANNELLO ANTERIORE	FRONT PANEL
18	MANOPOLA	KNOB
19	MANOPOLA	KNOB
20	TAPPO	CAP
21	PRESA	SOCKET
22	FONDO	BOTTOM
23	PIEDE IN GOMMA	RUBBER FOOT
24	CAVALLOTTO	JUMPER
25	COPERTURA	COVER

When ordering spare parts please always state the machine item and serial number and its purchase data, the spare part position and the quantity.



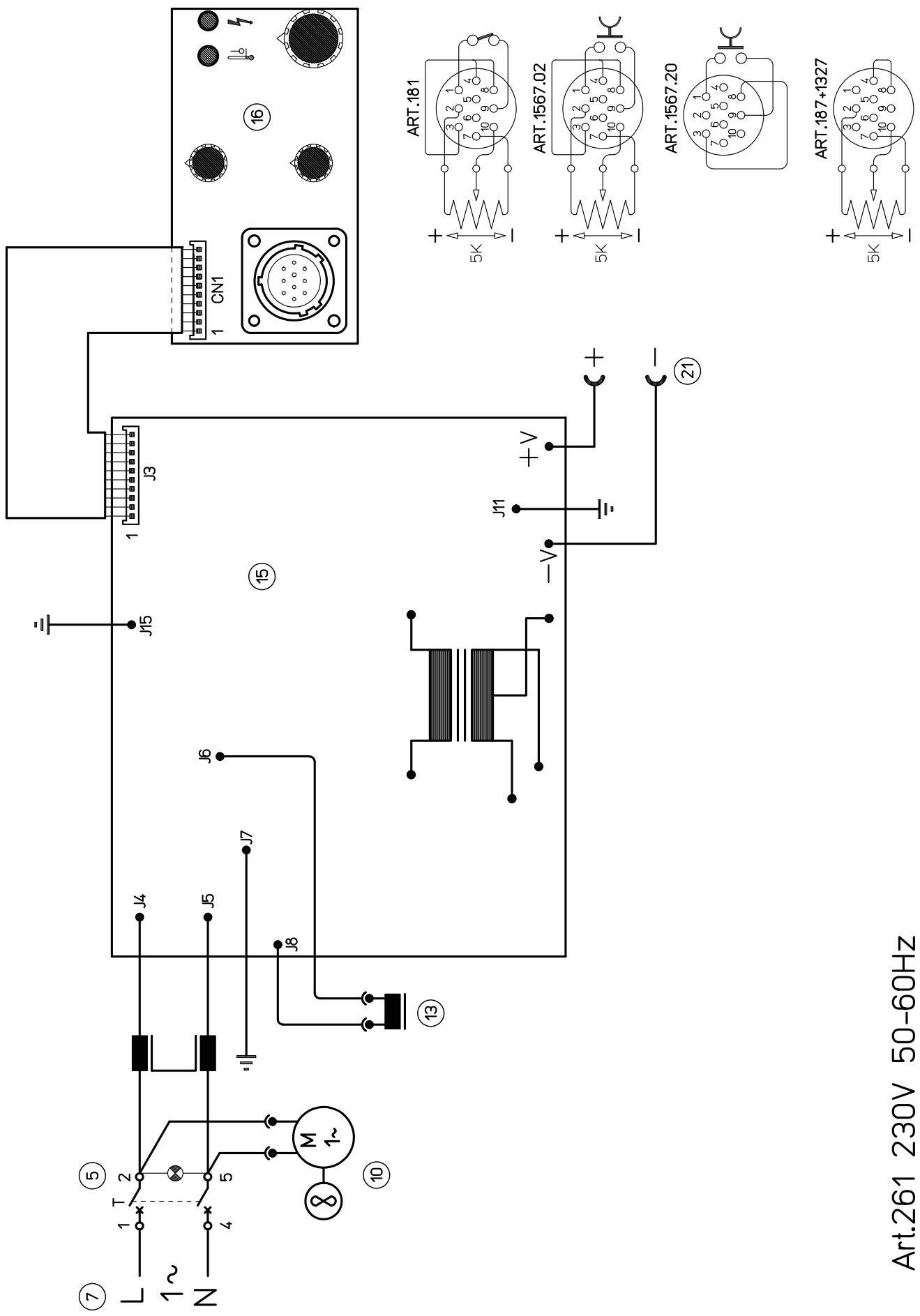
Art. 257

pos	DESCRIZIONE	DESCRIPTION
01	SUPPORTO MANICO	HANDLE SUPPORT
02	MANICO	HANDLE
03	FASCIONE	HOUSING
04	COPERTURA	COVER
05	INTERRUTTORE	SWITCH
06	PRESSACAVO	STRAIN RELIEF
07	PANNELLO POSTERIORE	BACK PANEL
08	SUPPORTO SCHEDA	CIRCUIT SUPPORT
09	MOTORE CON VENTOLA	MOTOR WITH FAN
10	SUPPORTO INDUTTANZA	CHOKES SUPPORT
11	INDUTTANZA PFC	PFC CHOKES

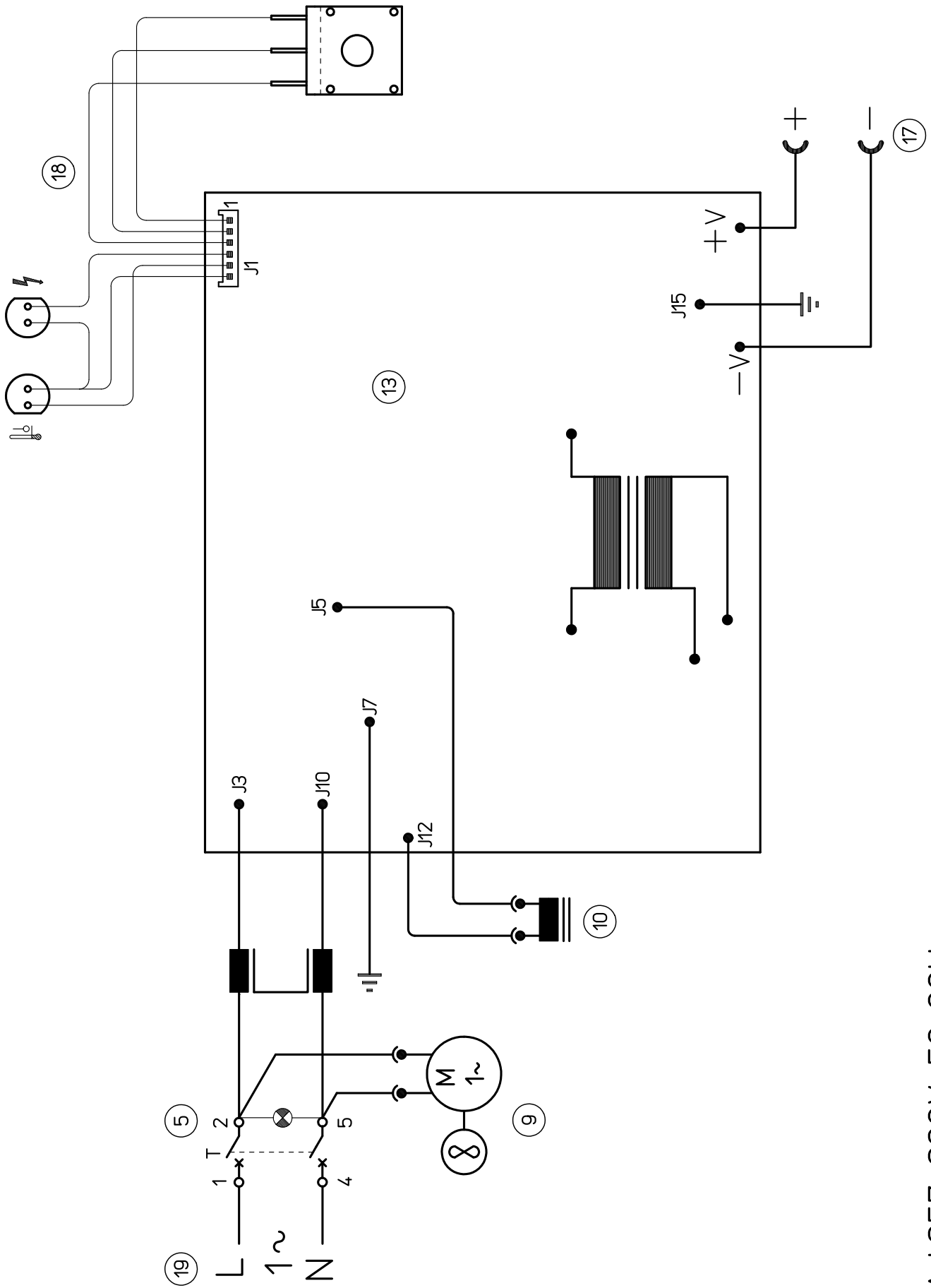
pos	DESCRIZIONE	DESCRIPTION
12	COPERTURA	COVER
13	CIRCUITO DI POTENZA	POWER CIRCUIT
14	PANNELLO ANTERIORE	FRONT PANEL
15	MANOPOLA	KNOB
16	CORNICE	FRAME
17	PRESA	SOCKET
18	CONNESSIONE	CONNECTION
19	CAVO RETE	POWER CORD
20	FONDO	BOTTOM
21	PIEDE IN GOMMA	RUBBER FOOT

La richiesta di pezzi di ricambio deve indicare sempre: numero di articolo, matricola e data di acquisto della macchina, posizione e quantità del ricambio.

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Art.261 230V 50-60Hz



Art.257 230V 50-60Hz