



USE AND MAINTENANCE MANUAL

POWER SOURCES FOR PLASMA CUTTING

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Tecno Plasma 52

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The user must assume responsibility for maintaining this manual intact and legible at all times. **SELCO s.r.l.** reserves the right to modify this manual at any time without notice.

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1.0 WARNINGS - PRECAUTIONS-GENERAL ADVICE

1.1 SAFETY

Prior to performing any operation on the machine, make sure that you have thoroughly read and understood the contents of this manual.

Do not perform modifications or maintenance operations which are not prescribed. For any doubt or problem regarding the use of the machine, even if not described herein, consult qualified personnel or SELCO s.r.l., which is always at your disposal.

SELCO s.r.l. cannot be held responsible for damage to persons or property caused by the operator's failure to read or apply the contents of this manual.

1.1.1 Symbols



Imminent danger of serious bodily harm and dangerous behaviours that may lead to serious bodily harm.



Important advice to be followed in order to avoid minor injuries or damage to property.



The notes preceded by this symbol are mainly technical and facilitate operations.

1.1.2 Operator and other persons' protection

The welding (cutting) process is a noxious source of radiations, noise, heat and gas emissions. The persons fitted with vital electronic devices (pacemakers) should consult a doctor before attending any arc welding or plasma arc cutting operation.

Personal protection:

- Do not wear contact lenses!!!
- Keep a first aid kit ready for use.



Do not underestimate any burning or injury.

- Wear protective clothing to protect your skin from the arc rays, sparks or incandescent metal, and a helmet or a welding cap.
- Wear masks with side face guards and suitable protection filter (at least NR10 or above) for the eyes.
- Use headphones if dangerous noise levels are reached during the welding.

Always wear safety goggles with side guards, especially during the manual or mechanical removal of welding (cutting) slags.

If you feel an electric shock, interrupt the welding (cutting) operations immediately.

Other persons' protection:

- Put up a fire-retardant partition to protect the surrounding area from rays, sparks and incandescent slags.
- Advise any person in the vicinity not to stare at the arc or at the incandescent metal and to get an adequate protection.
- If the noise level exceeds the limits prescribed by the law, delimit the work area and make sure that anyone getting near it is protected with headphones or earphones.

1.1.3 Fire/explosion prevention

The welding (cutting) process may cause fires and/or explosions.

- Compressed gas cylinders are dangerous; consult the supplier before handling them.

Protect them from:

- direct exposure to sun rays;
- flames;
- sudden changes in temperature;
- very low temperatures.

Compressed gas cylinders must be fixed to the walls or to other sup-

ports, in order to prevent them from falling.

- Clear the work area and the surrounding area from any inflammable or combustible materials or objects.
- Position a fire-fighting device or material near the work area.
- Do not perform welding or cutting operations on closed containers or pipes.
- If said containers or pipes have been opened, emptied and carefully cleaned, the welding (cutting) operation must in any case be performed with great care.
- Do not weld (cut) in places where explosive powders, gases or vapours are present.
- Do not perform welding (cutting) operations on or near containers under pressure.

1.1.4 Protection against fumes and gases

Fumes, gases and powders produced during the welding (cutting) process can be noxious for your health.



Important: do not use oxygen for the ventilation

- Provide for proper ventilation, either natural or forced, in the work area.
- In case of welding (cutting) in extremely small places the work of the operator carrying out the welding should be supervised by a colleague standing outside.
- Position gas cylinders outdoors or in places with good ventilation.
- Do not perform welding (cutting) operations near degreasing or painting stations.



Do not perform welding (cutting) operations on painted plates

1.1.5 Positioning the power source

Keep to the following rules:

- Easy access to the equipment controls and connections must be provided.
- Do not position the equipment in reduced spaces.
- Do not place the generator on surfaces with inclination exceeding 15° with respect to the horizontal plane.

1.1.6 Installing the apparatus

- Comply with the local safety regulations for the installation and carry out the maintenance service of the machine according to the constructor's directions.
- Any maintenance operation must be performed by qualified personnel only.
- The connection (series or parallel) of the SELCO generators is prohibited.
- Before operating inside the generator, disconnect the power supply.
- Carry out the routine maintenance on the equipment.
- Make sure that the supply mains and the earthing are sufficient and adequate.
- The earth cable must be connected as near as possible to the area of welding (cutting).
- Take the precautions relevant to the protection degree of the power source.
- Before welding (cutting), check the condition of the electric cables and of the torch, and if they are damaged repair or change them.
- Neither get on the material to be welded (cut), nor lean against it.



The operator must not touch two torches or two electrode holders at the same time.

1.1.7 Precautions against risks connected with the use of compressed air

Connect the air supply to the coupling provided, making sure pressure is at least 6 bars (0.6 MPa) with a minimum flow rate of 200 l/min. If the air supply comes from pressure reducer of a compressor or a central system, the reducer must be set to the maximum outlet pressure that must not, however, exceed 8 bars (0.8 MPa). If the air supply comes from a compressed air canister it must be equipped with a pressure regulator.



A compressed air canister must never be directly coupled to the machine pressure reducer. Pressure might exceed the capacity of the reducer which might consequently explode.

1.2 ELECTROMAGNETIC COMPATIBILITY (EMC)

1.2.1 General information

This device is built in compliance with the indications contained in the harmonized standard EN50199, which the operator must refer to for the use of this apparatus.



Install and use the apparatus keeping to the instructions given in this manual.



This device must be used for professional application only, in industrial environments. It is important to remember that it may be difficult to ensure the electromagnetic compatibility in other environments.

1.2.2 Installation, use and area examination

- The user is responsible for the installation and use of the equipment according to the manufacturer's instructions. If any electromagnetic disturbance is noticed, the user must solve the problem, if necessary with the manufacturer's technical assistance.
- In any case electromagnetic disturbances must be reduced until they are not a nuisance any longer.
- Before installing this apparatus, the user must evaluate the potential electromagnetic problems that may arise in the surrounding area, considering in particular the health conditions of the persons in the vicinity, for example of persons with pacemakers or hearing aids.

1.2.3 Emission reduction methods

MAINS POWER SUPPLY



This device must be connected to the supply mains according to the manufacturer's instructions.

In case of interference, it may be necessary to take further precautions like the filtering of the mains power supply. It is also necessary to consider the possibility to shield the power supply cable.

MAINTENANCE

This device needs routine maintenance according to the manufacturer's instructions.

When the equipment is working, all the access and operating doors and covers must be closed and fixed.

This device must not be modified in any way.

WELDING AND CUTTING CABLES

The welding (cutting) cables must be kept as short as possible, positioned near one another and laid at or approximately at ground level.

EQUIPOTENTIAL CONNECTION

The earth connection of all the metal components in the welding (cutting) installation and near it must be taken in consideration.

However, the metal components connected to the workpiece will increase the risk of electric shock for the operator, if he touches said metal components and the electrode at the same time.

Therefore, the operator must be insulated from all the earthed metal components.

The equipotential connection must be made according to the national regulations.

EARTHING THE WORKPIECE

When the workpiece is not earthed for electrical safety reasons or due to its size and position, the earthing of the workpiece may reduce the emissions. It is important to remember that the earthing of the workpiece should neither increase the risk of accidents for the operators, nor damage other electric equipment.

The earthing must be made according to the national regulations.

SHIELDING

The selective shielding of other cables and equipment present in the surrounding area may reduce the problems due to interference. The shielding of the entire welding (cutting) installation can be taken in consideration for special applications.

1.2.4 Attention: method of lifting

To correctly lift the machine, follow the diagram in Figure 1.

Avoid absolutely lifting it at any angle different from 90°.



Never lift the machine in the way shown in figure 2: this could damage the eyebolts.



Be careful not to cause damage during lifting.

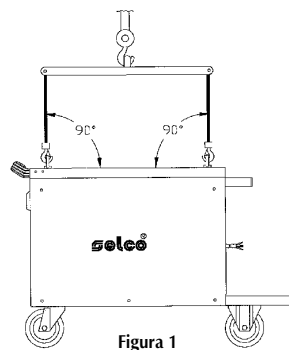


Figure 1
Correct lifting method

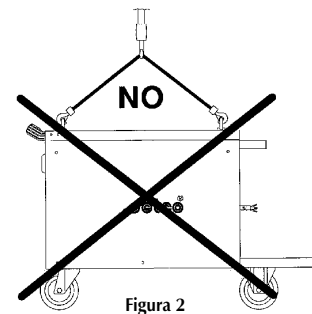


Figure 2
Incorrect lifting method

2.0 INTRODUCTION

The Tecno plasma 52 is a generator for plasma cutting ideal for medium and light structural work.

The Tecno plasma 52 uses compressed air as its only gas source, which can be supplied from a normal compressor or from a suitably sized centralized plant. It is able to carry out, cheaply, cuts of a high quality up to a thickness of 12 mm in carbon steel.

The generator is robust, and all the operations are electronically controlled. There are safety systems that cut off the power circuit when the operator comes into contact with live parts of the machine, as well as protection devices that trigger if the air flow is insufficient, or the internal temperature is too high. The ignition of the cutting arc takes place with the use of a high frequency voltage discharge, that is automatically cut off, thus limiting the emission of radio interference during the rest of the cutting process.

2.1 TECHNICAL DETAILS

	TECNOPLASMA 52
Mains supply voltage* (50/60Hz)	3x230V ±15% 3x400V ±15%
Line fuse (delayed)	40A (230V) 25A (400V)
Maximum input power (x=35%)	12,6kVA
Power factor	0.6
Efficiency	0.76
Cutting current (x=35%) (x=100%)	50A 25A
Pilot arc current	21A
Current range	20/50A
Open circuit voltage	255V
Working pressure	4.5-5 bars
Capacity	120 litres/min
Protection rating	IP21
Insulation class	H
Dimensions: (LxDxH)	349x687x714
Weight	66 Kg.
* different input voltages on request	

IP 21 Casing protection degree in compliance with the EN 60529 Standard:

IP2X Casing protected against access to dangerous component with fingers and against the introduction of foreign matters with diameter 12.5 mm.

IPX1 Casing protected against rain falling at 0° on the vertical line.

3.0 CONNECTION

3.1 SUPPLY VOLTAGE

Both the specification plate of the generator and the guarantee test sheet shows the voltage the apparatus requires.

Operation is guaranteed for voltages which vary up to ±15% of the nominal value (e.g. Nom. V.=400V., the working voltage is within 340 and 460V).

CAUTION: Check that the cable is connected to a socket that is provided with an earth connection. Also check that the fuses of the socket correspond to the value indicated on the table of supply fuses.

3.1.1 Choice of supply voltage

The mains voltage can be altered via the voltage change terminal board inside the machine on the input transformer side. Near this there is a table showing the connections to be made.

3.1.2 Protection fuses

Tecnoplasma 52 is equipped with two protective fuses. To replace or check the fuses, rotate the fuse holder on the control panel anti-clockwise. Reinsert the fuse holder and turn it clockwise, until the fuse locks.

CAUTION: to prevent damage to people, detach the supply cable before fitting or replacing a fuse.

3.1.3 Line fuse

MODEL	SUPPLY VOLTAGE	DELAYED FUSE	CABLE SECTION (sq.mm)
Tecnoplasma 52	3x230/400V	40/25A	2.5mm ²

3.1.4 Earthing

For the protection of the users, the plant must be correctly connected to the earth. The power supply lead is provided with a (green and yellow) conductor for earthing, which must be connected to a plug fitted with an earth connection.

CAUTION: before carrying out any operation inside the generator, physically disconnect the machinery from the mains electricity supply, by removing the plug.

4.0 SETTING UP



Carefully read sections 9.0 and 5.0 before starting up the unit.

To set up the plant, follow these instructions:

- Place the generator in a dry, clean place with suitable ventilation.
- Connect the compressed air supply using the 1/4-inch connector to the filter unit located at the back of the machine (see position 030 in the spare parts details). The pressure must be guaranteed to be at least 5 bars with a minimum flow rate of 120 litres a minute.

N.B.

The air must be filtered and maintained to a high level of purity; damp air, oil and other contaminating agents must be removed.

- Install the torch as described in the enclosed instruction manual.
- Position the earthing clamp onto the piece to be cut, ensuring that it makes a good electric connection.
- Check that all the components of the torch are present and correctly fitted.
- Turn on the apparatus, ensuring the signal LED is working correctly. Press the torch button so as to check for the presence of compressed air and pilot arc, then lift and turn the knob to adjust the pressure (F1 Fig.2) so that the reading on the manometer M1 shows a pressure of 4.8 bars; then lock the adjustment knob again.
- Set up, with commutator I2, the value of the cutting current, bearing in mind the thickness to be cut.
- Press for a moment the torch button so as to generate the pilot arc; release the control, checking the machine is correctly operating with the display panel.

It is advisable not to keep the arc lit to no purpose without making contact, so as to prevent wear on the electrode and the nozzle. If you continue to use it like this the apparatus itself will turn off the pilot light after about 5 seconds.

In the case where a fault is found during the above phases, check the display LED's, and if necessary consult the chapter "Possible electrical faults" in the manual.

5.0 CONTROL FUNCTION

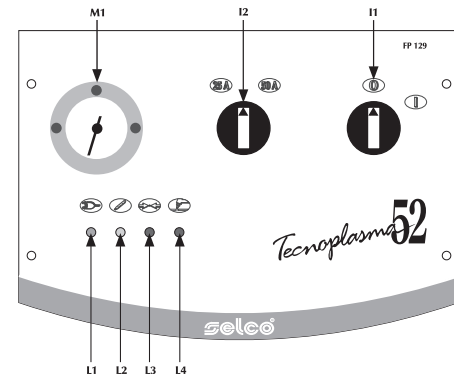


Fig. 2 Front control panel

Switch I1: By turning the On/off switch to position "O" or "I" (for clarification, see the chapter relating to the Connecting up) the electrical supply is turned on and the LED L1 comes on as a result.

Switch I2: it changes over the output current. To position "1" 25A are obtained, to position "2" 50A.



LED L1: comes on when the generator has power.



LED L2: shows that the thermal cut-out has triggered.

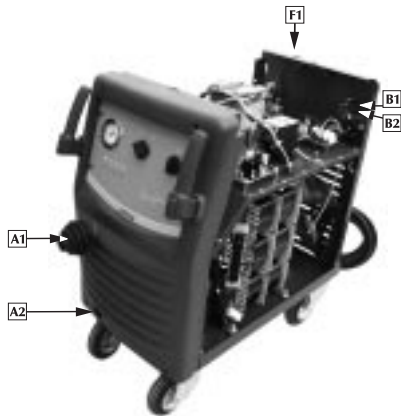


LED L3: shows that the air pressure is insufficient for cutting (lower than 3 bars).



Led L4: comes on as soon as the cutting process starts, and goes off as soon as it is finished.

Manometer M1: shows the pressure of the compressed air circuit.



Hole A1: hole with rubber lining for the cable bundle of the torch.

Hole A2: hole with cable clamp for earthing cable.

Auxiliary protection fuse B1: 2.5A, 250V TYPE T (slow-blowing).

Auxiliary protection fuse B2: 2.5A, 250V TYPE T (slow-blowing).

Pressure regulator F1: is located on the rear of the machine, on the left corner; allows the compressed air pressure to be adjusted so as to take it to the value most suitable for cutting, and filters the air from any impurity (e.g. humidity).

5.1 NOMINAL DATA

SELCO S.R.L. Via Palladio, 19 - ONARA (PADOVA) - ITALY Telefono +39 0499413111 Fax +39 0499413311					
Type TECNOPLASMA 52		N°			
		EN 60974-1			
25A/90V - 50A/100V					
	U ₀	V	I ₂	35%	100%
	265		50A		25A
	U ₂	V	I ₂	100V	90V
			18.1A		9.7A
	U ₁	V	I ₁		
	400		31.5A		16.8A
COOLING A.F.	U ₁	V	I ₁		
	230		7.3kW		5.3kW
	50/60 Hz		P ₁	7.4kW	5.4kW
	U ₁	V	I ₁		
	230		31.5A		16.8A
	50/60 Hz		P ₁	7.3kW	5.3kW
I.C.L.	H	IP 21	CE		S

6.0 THEORETICAL OUTLINE OF PLASMA CUTTING

A gas assumes the plasma state when it is brought to an extremely high temperature and ionizes wholly or partly, thus becoming electrically conductive.

Although the plasma exists in every electric arc, by the term "plasma arc" we refer specifically to a torch for welding or cutting that uses an electric arc, made to pass through the constricting neck of a suitable nozzle, to heat a gas coming out of this, so as to take it to the plasma state.

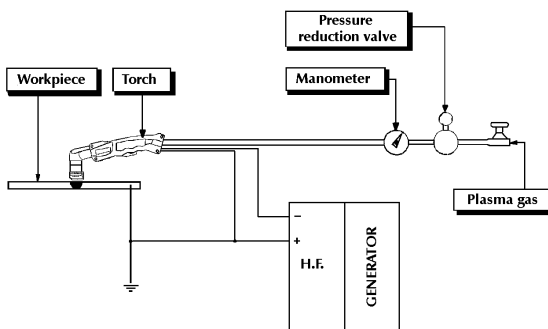


Fig. 3 Manual plasma cutting plant

6.1 Plasma cutting torch

Initially, for plasma cutting, a torch was used with a front end structure as in Fig.4 and two types of gas: a first one for the formation of the plasma (A) that passes between the electrode (1) and nozzle (2) and is forced to exit in an ionized form through the hole, and a second one (B), that acts to cool the torch and further thins out the dimensions of the plasma arc, which at its centre (C), easily manages to reach the temperature of 10.000°C.

With new types of torch and with medium-low power levels (processes that use less than 150A for cutting), today it is possible to use only compressed air as the cutting gas, as well as the cooling gas: the complete process thus becomes much cheaper (Fig.5).

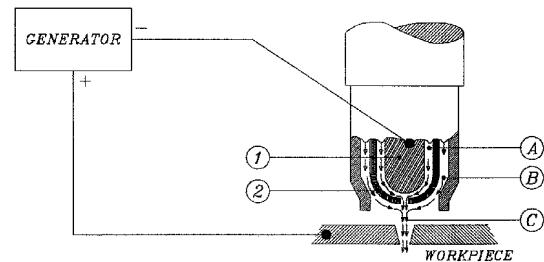


Fig. 4 Functional diagram of a first-generation torch

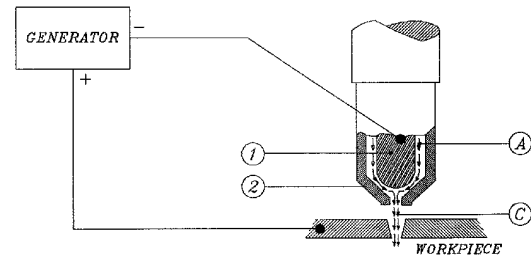


Fig. 5 Functional diagram of an up-to-date torch for small and medium power

6.1.1 Plasma cutting process

The cutting action is obtained when the plasma arc, made very hot and highly concentrated by the design of the torch, transfers onto the conductive piece to be cut, closing the electrical circuit with the generator. The material is first melted at a high temperature of the arc, and then removed by the high exit velocity of the ionized gas from the nozzle.

The arc can have two different states: that of the transferred arc when the current passes through the piece to be cut, that of the pilot arc or non-transferred arc, when this is sustained between the electrode and the nozzle.

6.1.2 Characteristics of a generator for plasma cutting

A generator for plasma cutting carries out the following operations:

- ignites the pilot arc (for this you can use either a discharge of high frequency between electrode and nozzle, or special torches with retractable electrode);
- supplies the current and voltage to the pilot arc necessary to sustain it;
- checks the transition from the pilot arc to the cutting arc;
- supplies the current required for cutting to the cutting arc;
- oversees all the operations and suitably controls the air valve, line contactors and alarms.

The piece to be cut is connected to the positive pole of the cutting circuit, as is the nozzle, while the electrode is connected to the negative pole.

The above-mentioned process allows cutting of all conductive materials, and thus also the non-ferrous metals for which cutting by an oxyacetylene process is impossible.

7.0 CUTTING SPECIFICATIONS

In plasma cutting, the thickness of the material to be cut, the speed of cutting and the current supplied by the generator have values which are related to each other; these depend on the type and quality of the material, type of torch as well as the type and condition of the electrode and nozzle, distance between nozzle and piece, pressure and impurity of the compressed air, cut quality required, temperature of the piece to be cut, etc.

In the diagrams, which are by nature generalised, as in Fig.6, we can see that the thickness to be cut is inversely proportional to the cutting speed, and that both these values can be increased with an increase in current.

In Fig.7, you can see how, at a constant current, the cutting speed and the material thickness vary as the material type varies.

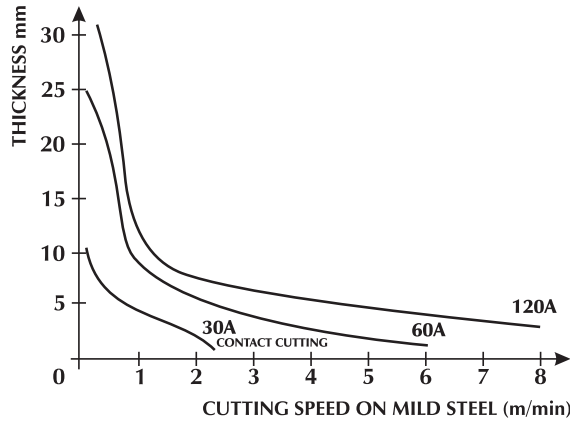
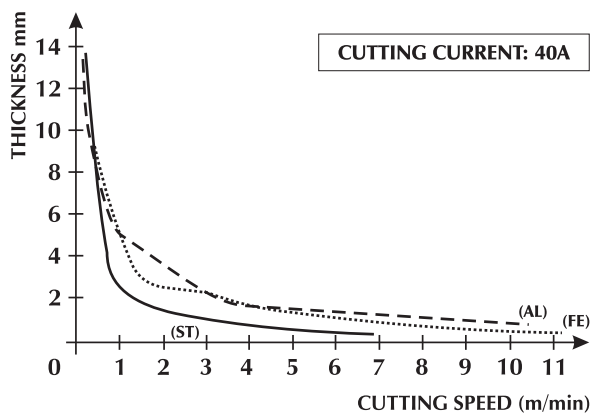


Fig.6 Correlation between material thickness and the cutting speed at various levels of current on mild steel.



FE= MILD STEEL
AL= ALUMINIUM
ST= STAINLESS STEEL

Fig.7 Correlation between the thickness of material and the cutting speed at a fixed current and with three types of material.

8.0 ORDINARY MAINTENANCE



Caution: disconnect the power supply from the machine before any maintenance operations!

Carry out the following periodic checks:

- Periodically (depending on the work environment) clean the inside, by using low-pressure compressed air soft bristle brushes, taking off the hood;
- Check all electric connections and all connection cables;
- Check the operation of the LED indicators.
- Check the automatic condensate drainage system located under the filter-regulator.

For torch maintenance, keep carefully to the directions shown under instructions for use of the torch enclosed with this manual.

9.0 POSSIBLE CUTTING DEFECTS

DEFECT	CAUSE
Insufficient penetration	- Cutting speed too high - Current set too low - Earth clamp with inefficient contact - Thickness of piece excessive
The cutting arc goes out	- Electrode, nozzle or diffuser worn - Air pressure too high - Insufficient air flow - Defective pressure switch - Supply voltage too low
Substantial burr formation	- Inadequate air pressure - Cutting speed too low - Nozzle eroded
Nozzle overheating	- Electrode eroded - Insufficient air quantity

10.0 POSSIBLE ELECTRICAL FAULTS

DEFECT	CAUSE
Apparatus fails to come on (LED L1 off)	- Incorrect mains supply - Fuses triggered
Pilot arc fails to ignite (with LED L1 on)	- Break in the contacts of the torch button (check the connection of the torch attachment is working after having cut off the power supply) Check that the external nozzle is properly tightened (see the enclosed manual on the torch, under chapter "Setting up for use").
Pilot arc fails to ignite (with LED L1 and LED L4 on)	- Torch parts subject to wear out of action - Air pressure too high - Board 15.14.016 defective - Problems with board 15.14.017
Lack of power output	- Protective devices triggered (see chapter on "Functions of controls") - Possible problems in control circuits

CB50 TORCH WITH 1/4 GAS COUPLING

1.0 TECHNICAL DETAILS

Principle of operation	Ignition of pilot arc with high frequency. Cutting with nozzle on contact with workpiece.
Version	Single air
Protection device	"External nozzle not screwed" signal
Current (x = 60%) (x = 100%)	50A 40A
Pilot arc current	18÷20A
Pressure	4.5-5.5 bars
Air quantity	165 litres/min

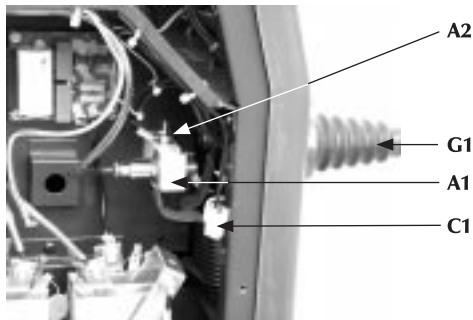
2.0 INSTALLATION

Disconnect the electrical supply line and remove the cover of the generator. Pass the cable unit through the rubber-lined entry G1 located on the front.

Connect up the air-current connector on the main connector A1.

Connect the end of the pilot arc cable to the screw A2, using a cap nut with 1/8 gas thread to prevent the compressed air from escaping.

Connect up the fast-on devices of the torch button on the connector C1. Close the cover again.



3.0 SETTING UP FOR USE

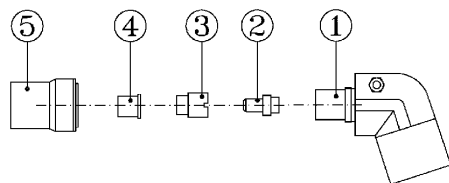


Fig.1 Torch body assembly

Before starting work, it is necessary to carry out the following checks and work:

- 1) Check that the generator is turned off.
- 2) Check that all the parts of the torch are working. For the various parts that make up the torch body (Fig.1), the sequence of correct assembly is 1-2-3-4-5.
- 3) Fit the electrode (No.2) into its place in the torch body. The electrode must only be removed after the post-cutting gas air flow is completed and therefore the electrode itself has already cooled.
- 4) Check that the air diffuser, or "swirl-bush" (No.3) is working correctly, which must always show access holes free of obstruction; the use of a defective air diffuser would cause overheating, with consequent damage to the components of the torch body.
- 5) Check that by unscrewing the external nozzle (No.5) from the torch body, the torch button is prevented from operating.
- 6) Elongated electrode and tip are available on request for cutting into corners (see exploded diagram of spare parts).
- 7) The compressed air used must be filtered and maintained at a high level of purity; humid air, oil and other contaminative agents must be removed, by making use of suitable driers and anti-oil filters.

Thus the torch is set up for the cutting operation.

In any case it is necessary to also follow what is shown in the instruction manual for the generator, above all in the paragraphs "General precautions", "Connecting up" and "Normal maintenance".

4.0 USING THE TORCH

4.1 Inclination and speed of the torch during cutting

The torch is generally held perpendicular to the workpiece during all the cutting phases; obviously, whenever it is required to carry out chamfering or inclined cutting, the torch must be tilted to a suitable inclination.

The speed must be adjusted so that the outflow of the arc below the workpiece is perpendicular (5-10 degrees of slope are acceptable).

A slow speed start is advisable to prevent spray of material which could damage the tip.

4.1.1 Puncturing

In some cases it is necessary to puncture a hole in the material using plasma cutting. In this way, the wear on the parts which are subject to deterioration will be increased, and it becomes very important to try to work to avoid the return of spray, which can be dangerous, especially with sheet metal over 10 mm. thick.



We suggest starting with the torch inclined sideways, so as to point the spray outside the cutting area, avoiding damage and overheating of the torch body.



Immediately remove any material accumulated on the tip or on the ceramic hood.



Caution: plasma cutting is a process with a high thermal element, which takes both the piece to be cut and the end parts of the torch to extremely high temperatures.

4.1.2 Circular cutting

For the preparation of flanges and opening holes, it is possible to use a pair of compasses, equipped with rotating heads and movement on wheels. The centering is simplified by the presence of three different guides, one magnetic, one pointed, and one passing through the central hole.

4.1.3 Practical advice

We advise you to ignite the pilot arc away from the workpiece and then approach it until the starting of the cutting arc.

Avoid switching from 50A to 20A and vice versa during cutting of the piece as this can lead to rapid wear on the switch.

Avoid turning off the generator before the end of the post-cutting coolant flow to prevent overheating of the components of the torch.

5.0 MAINTENANCE AND INSPECTION

The efficiency of the electrode is determined not only by the cutting time, but also by the pilot arc time. It is thus advisable not to stay too long in the pilot arc phase, which is unproductive and can damage to the torch body. It is advisable to replace the electrode before the tungsten insert in the point is completely worn out.

The tip has an average life similar to that of an electrode, and is replaced when an irregular hole is present which is larger than the nominal one (this can cause slanted cuts of poor quality).

Electrode and tip are replaced simultaneously to prolong their active life. Working with electrode and tip which are too spoiled can cause damage to the torch body.

It is important to pay special attention to the fitting of the electrode and tip in order not to irreparably damage the torch.



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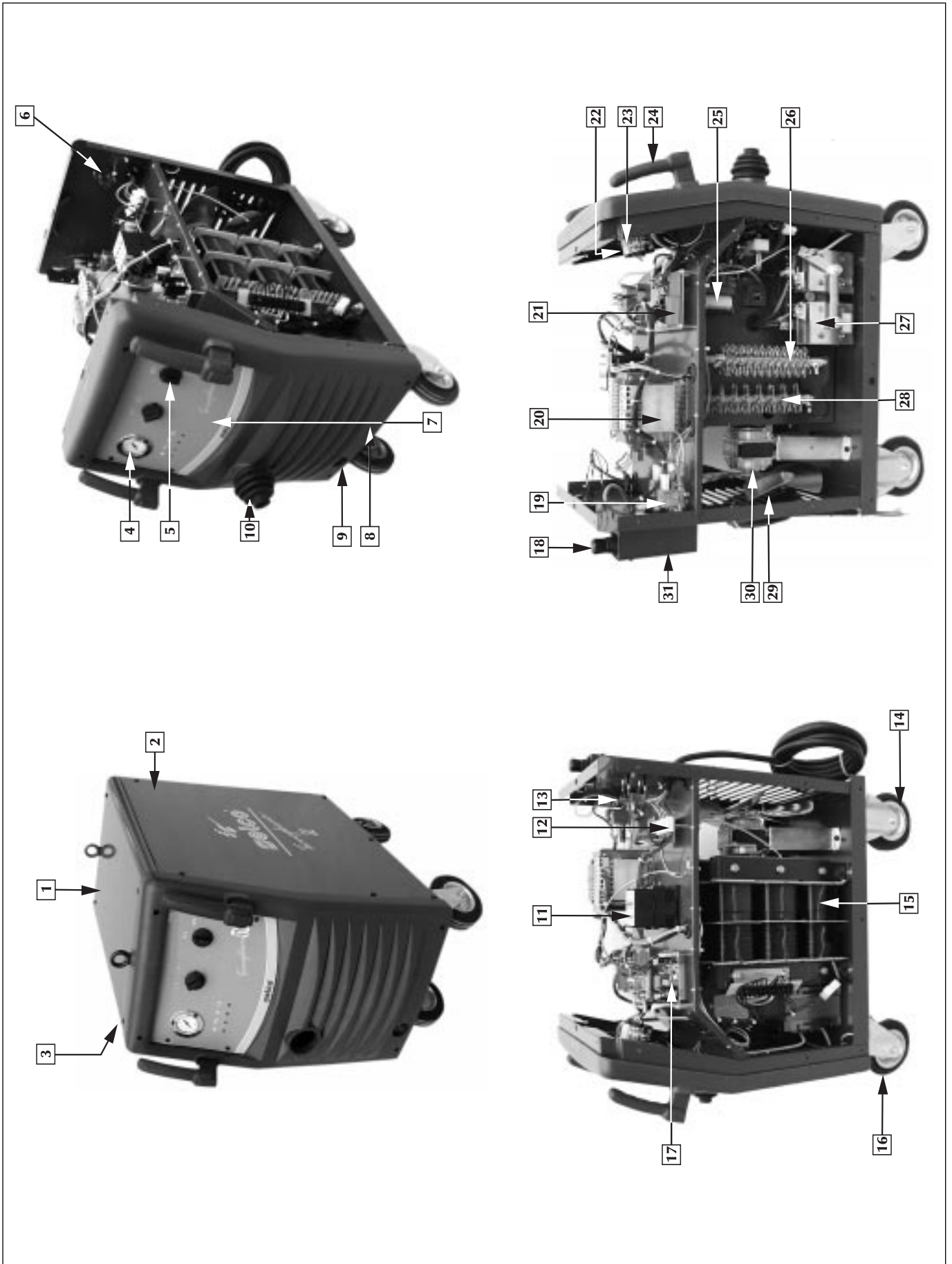
SPARE PARTS TABLES

ERSATZTEILTAFELN

VUES DES PIECES DETACHEES

TABLAS DES REPUESTOS

Tecnoplasma 52



ITALIANO

POS.DESCRIZIONE	CODICE
1 Cofano superiore	01.02.085
2 Pannello laterale sinistro	03.07.065
3 Pannello laterale destro	03.07.066
4 Manometro	24.02.001
5 Manopola	09.11.010
6 Portafusibile	08.25.250
7 Pannello comandi FP129	15.22.129
8 Pannello plastico frontale	01.04.260
9 Presa fissa	10.13.001
10 Soffietto circolare	21.04.050
11 Teleruttore	09.02.013
12 Scheda filtro	15.14.164
13 Pressostato	09.08.003
14 Ruota gommata	04.04.001
15 Trasformatore di potenza	05.01.151
16 Ruota gommata	04.03.001
17 Scheda H.F.	15.14.192
18 Filtro-regolatore	24.02.010
19 Elettrovalvola	09.05.001
20 Trasformatore ausiliario	05.11.203
21 Scheda logica	15.14.016
22 Interruttore bipolare	09.01.001
23 Commutatore	09.01.107
24 Maniglia	01.15.030
25 Scheda filtro out	15.14.214
26 Resistenza 2 Ohm	11.13.502
27 Raddrizzatore	14.10.118
28 Resistenza 1.6 Ohm	11.13.501
29 Ventola	07.11.003
30 Motore	07.13.002
31 Supporto per filtro regolatore	01.14.235

ENGLISH

POS.DESCRPTION	CODE
1 Cover	01.02.085
2 Side panel left	03.07.065
3 Righthand side panel	03.07.066
4 Manometer	24.02.001
5 Hnob	09.11.010
6 Fuse carrier	08.25.250
7 Control panel FP129	15.22.129
8 Front plastic panel	01.04.260
9 Fixed socket	10.13.001
10 Circular cable inlet protection	21.04.050
11 Contactor	09.02.013
12 Filterboard	15.14.164
13 Pressure switch	09.08.003
14 Tired wheel	04.04.001
15 Power transformer	05.01.151
16 Tired wheel	04.03.001
17 H.F. board	15.14.192
18 Regulator-filter	24.02.010
19 Solenoid valve	09.05.001
20 Auxiliary transformer	05.11.203
21 Logic board	15.14.016
22 Bipolar switch	09.01.001
23 Change-over switch	09.01.107
24 Handle	01.15.030
25 Filter out card	15.14.214
26 Resistor 2 Ohm	11.13.502
27 Rectifier	14.10.118
28 Resistor 1.6 Ohm	11.13.501
29 Fan	07.11.003
30 Motor	07.13.002
31 Regulator-filter holder	01.14.235

DEUTSCH

POS.BESCHREIBUNG	CODE
1 Deckel	01.02.085
2 Seitenteil links	03.07.065
3 Rechte Seitentafel	03.07.066
4 Manometer	24.02.001
5 Drehknopf	09.11.010
6 Abschmelzsicherungshalter	08.25.250
7 Bedienungsfeld FP129	15.22.129
8 Stirnplastiktafel	01.04.260
9 Feste Steckdose	10.13.001
10 Kreisförmiger Schutzbalg an der Kabeleinführung	21.04.050
11 Schütz	09.02.013
12 Filterplatine	15.14.164
13 Druckwächter	09.08.003
14 Gummirad	04.04.001
15 Leistungstransformator	05.01.151
16 Gummirad	04.03.001
17 H. F. - Karte	15.14.192
18 Regler-Filter	24.02.010
19 Solenoidventil	09.05.001
20 Hilstransformator	05.11.203
21 Logikkarte	15.14.016
22 Zweipoliger Schalter	09.01.001
23 Umschalter	09.01.107
24 Griff	01.15.030
25 Karte filter out	15.14.214
26 Widerstand 2 Ohm	11.13.502
27 Gleichrichter	14.10.118
28 Widerstand 1.6 Ohm	11.13.501
29 Flügelrad	07.11.003
30 Motor	07.13.002
31 Halterung für Reglerfilter	01.14.235

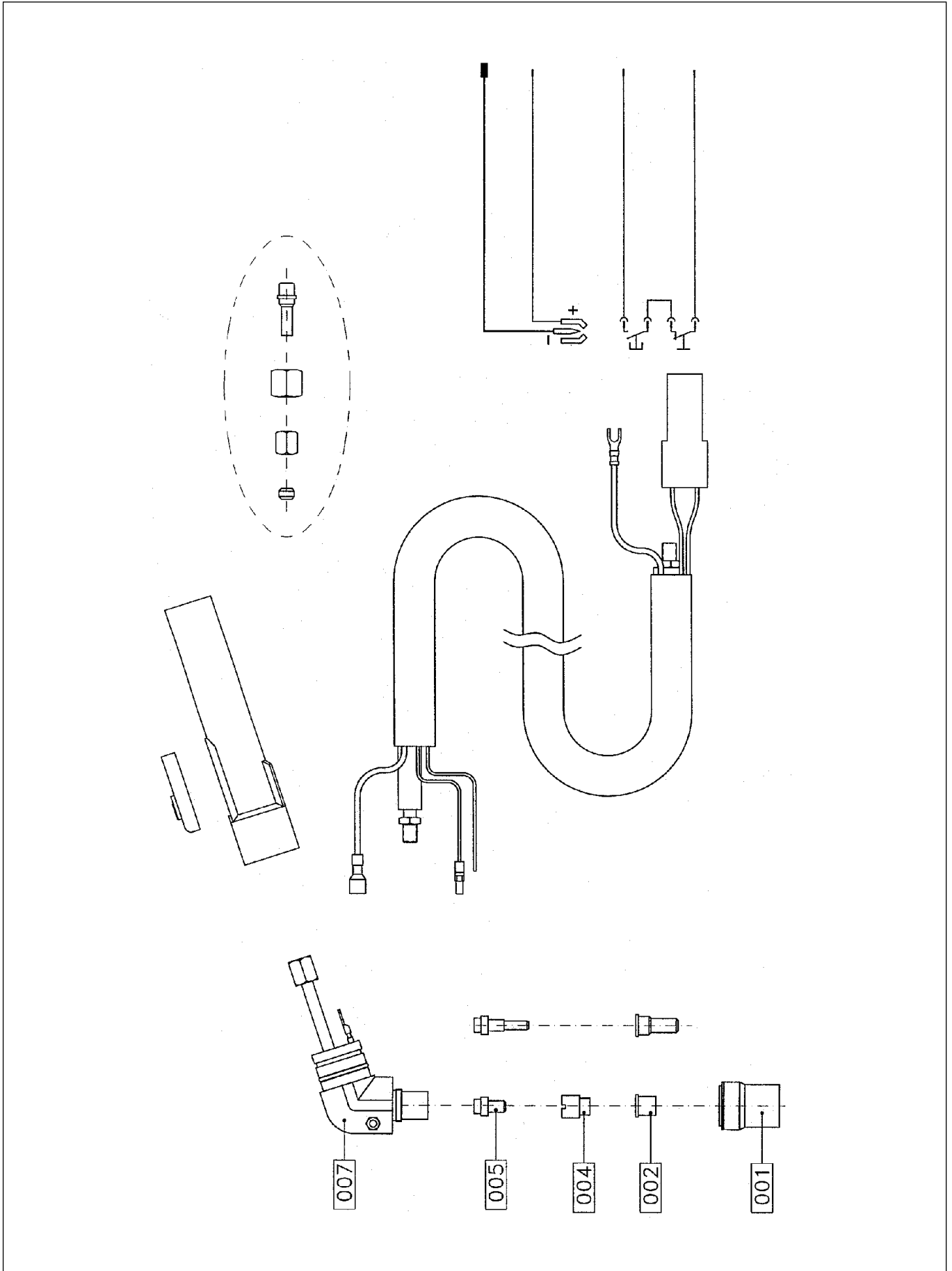
FRANÇAIS

POS.DESCRPTION	CODE
1 Couvercle	01.02.085
2 Panneau latéral gauche	03.07.065
3 Panneau latéral droit	03.07.066
4 Manomètre	24.02.001
5 Bouton	09.11.010
6 Porte-fusible	08.25.250
7 Panneau de réglage FP129	15.22.129
8 Panneau plastique antérieur	01.04.260
9 Prise fixe	10.13.001
10 Protection circulaire de l'entrée du câble	21.04.050
11 Télérupteur	09.02.013
12 Platine filtre	15.14.164
13 Pressostat	09.08.003
14 Roue caoutchoutée	04.04.001
15 Transformateur de puissance	05.01.151
16 Roue caoutchoutée	04.03.001
17 Carte H.F.	15.14.192
18 Filtre-régulateur	24.02.010
19 Electrovanne	09.05.001
20 Transformateur auxiliaire	05.11.203
21 Carte logique	15.14.016
22 Interrupteur bipolaire	09.01.001
23 Commutateur	09.01.107
24 Poignée	01.15.030
25 Carte filter out	15.14.214
26 Résistance 2 Ohm	11.13.502
27 Redresseur	14.10.118
28 Résistance 1.6 Ohm	11.13.501
29 Ventilateur	07.11.003
30 Moteur	07.13.002
31 Support pour filtre-régulateur	01.14.235

ESPAÑOL

POS.DESCRIPCION	CODIGO
1 Tapa	01.02.085
2 Panel lateral izquierdo	03.07.065
3 Panel lateral derecho	03.07.066
4 Manómetro	24.02.001
5 Botón	09.11.010
6 Portafusible	08.25.250
7 Panel de control FP129	15.22.129
8 Panel plastico anterior	01.04.260
9 Enchufe fijo	10.13.001
10 Protección circular de la entrada del cable	21.04.050
11 Telerruptor	09.02.013
12 Tarjeta filtro	15.14.164
13 Presóstato	09.08.003
14 Rueda engomada	04.04.001
15 Transformador de potencia	05.01.151
16 Rueda engomada	04.03.001
17 Ficha H.F.	15.14.192
18 Filtro regulador	24.02.010
19 Electroválvula	09.05.001
20 Transformador auxiliar	05.11.203
21 Ficha lógica	15.14.016
22 Interruptor bipolar	09.01.001
23 Conmutador	09.01.107
24 Mango	01.15.030
25 Ficha filtro out	15.14.214
26 Resistencia 2 Ohm	11.13.502
27 Rectificador	14.10.118
28 Resistencia 1.6 Ohm	11.13.501
29 Rueda de paletas	07.11.003
30 Motor	07.13.002
31 Soporte para filtro regulador	01.14.235





ITALIANO

POS.DESCRIZIONE

000 Torcia plasma CB50 mt.6
001 Ugello esterno
002 Tip
004 Diffusore aria
005 Elettrodo
007 Corpo torcia CB50

CODICE

81.20.030
82.24.082
82.21.031
82.21.032
82.21.030
82.24.001

ENGLISH

POS.DESCRPTION

000 Plasma torch CB50, 6 metre
001 External nozzle
002 Tip
004 Air diffuser
005 Electrode
007 CB50 torch body

CODE

81.20.030
82.24.082
82.21.031
82.21.032
82.21.030
82.24.001

DEUTSCH

POS.BESCHREIBUNG

000 Plasmabrenner CB50 6 m
001 Äußere Düse
002 Tip
004 Luftverteiler
005 Elektrode
007 Brennerkörper CB50

CODE

81.20.030
82.24.082
82.21.031
82.21.032
82.21.030
82.24.001

FRANÇAIS

POS.DESCRPTION

000 Torche plasma CB50 6 m
001 Injecteur externe
002 Tip
004 Diffuseur d'air
005 Electrode
007 Torche CB50

CODE

81.20.030
82.24.082
82.21.031
82.21.032
82.21.030
82.24.001

ESPAÑOL

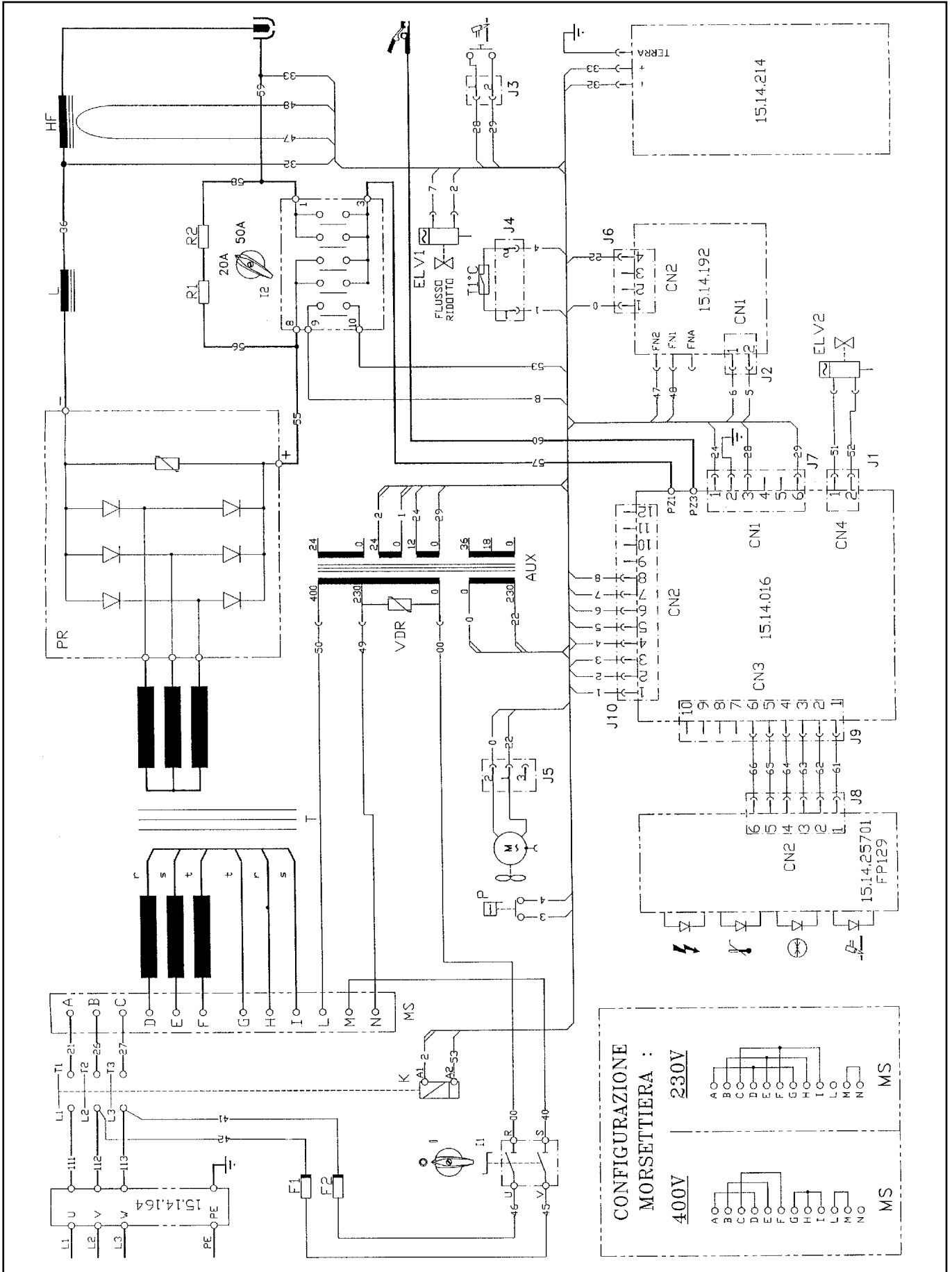
POS.DESCRIPCION

000 Portaelectrodo plasma CB50 6m.
001 Inyector externo
002 Tip
004 Difusor aire
005 Electrodo
007 Cuerpo portaelectrodo CB50

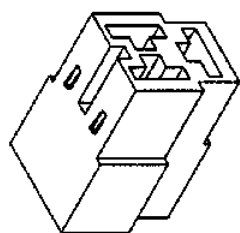
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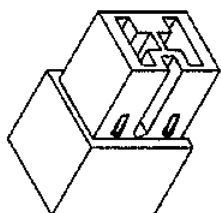




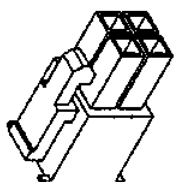
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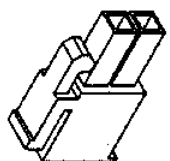
J5



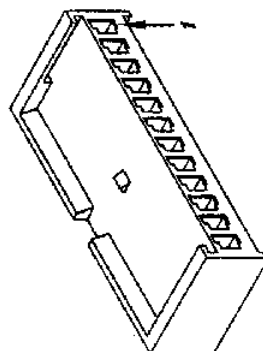
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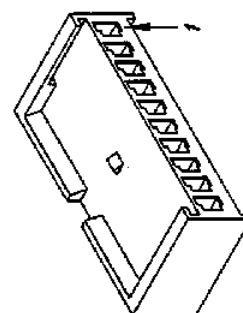
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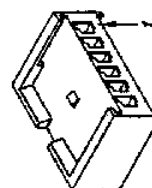
J1-J2



J10



J9



J7-J8

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KONFORMITÄTSERKLÄRUNG
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DECLARACIÓN DE CONFORMIDAD

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conforms to the standards:
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est conforme aux directives:
es conforme a las directivas:

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89/336/CEE
92/31/CEE
93/68/CEE

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