



ISTRUZIONI PER L'USO
INSTRUCTION MANUAL
BETRIEBSANWEISUNG
MANUEL D'INSTRUCTIONS
INSTRUCCIONES DE USO
MANUAL DE INSTRUÇÕES

GEBRUIKSAANWIJZING
BRUKSANVISNING
BRUGERVEJLEDNING
BRUKSANVISNING
KÄYTTÖOHJEET
ΟΔΗΓΙΕΣ ΧΡΗΣΗΣ



Tecno plasma 52

USE AND MAINTENANCE MANUAL

This manual is an integral part of the unit or machine and must accompany it when it changes location or is resold. The user must assume responsibility for maintaining this manual intact and legible at all times.

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Edition '02

CONFORMITY CERTIFICATE CE

Company

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hereby declares that the apparatus type

TECNOPLASMA 52

to which this declaration pertains conforme to the :

73/23/CEE
89/336 CEE
92/31 CEE
93/68 CEE

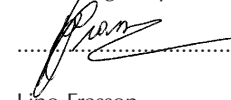
and that the regulations have been duly applied :

EN 50199
EN 60974-1

Any operation or modification that has not been previously authorized by **SELCO s.r.l.** shall invalidate this certificate.

Onara di Tombolo (PADOVA)

Selco's legal representative



Lino Frasson

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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.

1.0 SAFETY



WARNING



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.

The producer 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 Operator and other persons' protection

The welding (cutting) process is a noxious source of radiations, noise, heat and gas emissions. Persons fitted with pacemakers must consult their doctor before undertaking arc welding or plasma cut operations. If the above prescription is not observed, the manufacturer accepts no liability for any damages sustained in the event of an accident.

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 (cutting).

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:

- Position 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.

1.2 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 supports, 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.
- Don't use this machine to defrost pipes.

1.3 Protection against fumes and gases

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

- **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 weld 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.

1.4 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 10° with respect to the horizontal plane.

1.5 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 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 the area to be welded (cut) as possible.
- 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.**

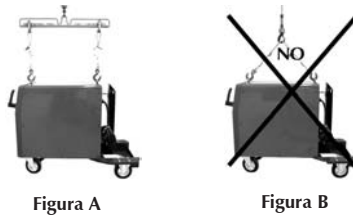
1.6 Precautions against risks connected with the use of compressed air

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.

1.7 Attention: method of lifting



To correctly lift the machine, follow the diagram in Figure A. Avoid absolutely lifting it at any angle different from 90°.



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



Be careful not to cause damage during lifting.

The manufacturer accepts no liability if the above prescription is not duly observed and complied with at all times.

2.0 ELECTROMAGNETIC COMPATIBILITY (EMC)



WARNING



This device is built in compliance with the indications contained in the harmonized standard EN50199, to which the operator must refer 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 applications only, in industrial environments. It is important to remember that it may be difficult to ensure the electromagnetic compatibility in other environments.**

2.1 Installation, use and area examination

- The user must be an expert in the sector and as such is responsible for 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 fitted with pacemakers or hearing aids.

2.2 Emission reduction methods

MAINS POWER SUPPLY

- **The welding power source 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.

WELDING POWER SOURCE MAINTENANCE

The welding power source 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.

The welding power source 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 work-piece 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 emission. 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.

3.0 RISK ANALYSIS

Risks posed by the machine	Solutions adopted to prevent them
Risk of wrong installation.	A manual with the instructions for use has been produced for this purpose.
Electrical risks.	Application of the EN 60974-1 Standard.
Risks connected with electromagnetic disturbances produced by the welding power source and induced on the welding power source.	Application of the EN 50199 Standard.

The contents of this chapter are of vital importance and therefore necessary for operation of the warranties. The manufacturer accepts no liability if the operator fails to observe the above precautions and instructions.

4.0 MACHINE DESCRIPTION

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 12/15 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.

The generator is equipped with:

- one torch fitting,
- an earth socket,
- front panel,
- rear panel.

4.1 Front control panel



Fig. 1

- * **A1:** Hole with rubber lining for the cable bundle of the torch.
- * **A2:** Ground cable socket.
- * **A3:** Front control panel.

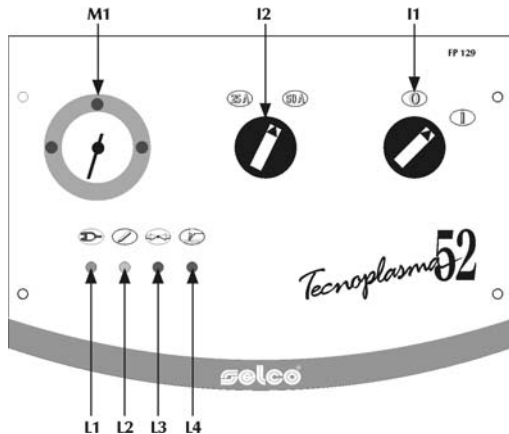




Fig. 2

* **I1: Off/On switch**

Turns on the electric power to the power source. It has two positions, "O" off, and "I" on.



WARNING



* **With the I1 switch in the "I" on position, the power source is operational.**

* **The power source is connected to the mains supply even if the I1 switch is in the "O" position, and therefore there are electrically live parts inside it. Carefully follow the instructions given in this manual.**

* **I2: Switch .**

It changes over the output current. To position "1" 25A are obtained, to position "2" 50A.

* **L1 : Voltage warning light green led.**

Comes on with the start switch (Fig.2) "I1" in position "I" and indicates that the plant is on and there is voltage.

* **L2 : Safety device warning light yellow led.**

Indicates that the safety devices like thermal cutout.

With "L2" on, the power source remains connected to the supply mains, but does not supply output power.

"L2" remains on until the fault has been removed and in any case until the inner temperatures are not within the normal values; in this case it is necessary to leave the power source on to exploit the operating ventilator and reduce the time when it is not active.


* **L3: Compressed air alarm red led.**

Means that the pressure of compressed air is below 3 bar, too low for proper functioning. The generator has no power output.

* **L4: Power output light red led.**

Comes on when the arc is sparked, both during cutting and when not cutting, and goes out as soon as the arc finishes.

* **M1 : displays the air pressure value for the cutting process.**

 **In the event of an alarm, the operating conditions are restored only if the cause is removed.**

4.2 Rear control panel

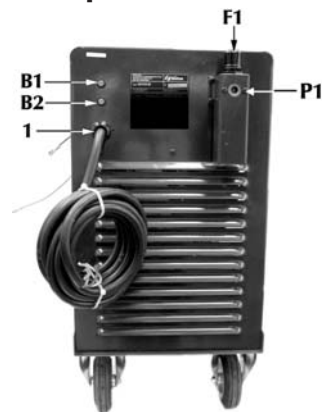


Fig. 3

* **1: Supply cable.**

* **B1:** 4A, 250V TYPE T (slow-blowing) auxiliary protection fuse .

* **B2:** 4A, 250V TYPE T (slow-blowing) auxiliary protection fuse .

* **F1: Pressure regulator.**

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).

4.3 Technical characteristics

TECNOPLASMA 52	
Power supply cable	4x4 mmq
Power supply voltage (50/60 Hz)	3x230/400V ±15%
Line fuse (delayed)	35A (230V) - 20A (400V)
Maximum input power (x=30%)	12.5 kVA
Power factor (x=100%)	0.8
Efficiency (x=30%)	0.74
Cutting current (x=30%)	50A
(x=100%)	25A
Open circuit voltage	260V
Pilot arc current	25A
Current range	25/50A
Operating pressure	4.5/5 bar
Flow rate	165 l/min
Torch to be used	PLASMA torch 81.20.030
Protection class	IP21S
Insulation class	H
Construction regulations	EN60974-1/EN50199
Dimensions (lpxh)	349x687x714 mm
Weight	66 Kg

Above data are referred to environment at 40°C

5.0 TRANSPORT - UNLOADING



See "1.7 Attention: method of lifting"



Never underestimate the weight of the equipment, (see technical specifications).



Never make the cargo pass or leave it suspended over people or things.



Neither let the equipment or the single unit fall, nor put it down with force.

6.0 INSTALLATION



Choose an adequate installation area by following the criteria provided in Section "1.0 SAFETY" and "2.0 ELECTROMAGNETIC COMPATIBILITY (EMC)".



Do not position the power source and the equipment on surfaces with inclination exceeding 10° with respect to the horizontal plane. Protect the installation from heavy rain and sun.

7.0 CONNECTION

7.1 Mains supply voltage



The generator is pre-set for 400V ~ mains voltage, for delivery.

The equipment is guaranteed to operate for voltages ranging ±15% above or below the nominal value; (e.g.: NomV 400V ~ the working voltage ranges from 340V~ to 460V~).

The equipment is provided with a single electric connection with 4mmq cable positioned in the rear part of the power source.



CAUTION: to avoid damaging people or the installation, you need to control the selected mains voltage and the fuses BEFORE connecting the power source to the mains. Furthermore, you need to make sure that the cable is connected to a socket fitted with an earth contact.

7.1.1 Selection of the mains voltage



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

The voltage of the network should only be modified by qualified personnel and while the machine is disconnected from the power source, by simply removing the lateral panel and correctly positioning the connections onto the terminal box (fig. 4).

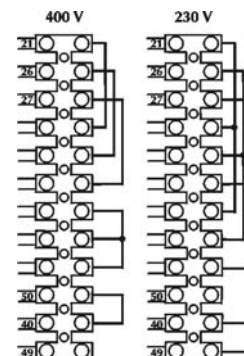


Fig. 4 Voltage change terminal box configuration.

7.1.2 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.



WARNING



- * The electrical system must be made by skilled technicians with the specific professional and technical qualifications and in compliance with the regulations in force in the country where the equipment is installed.
- * The welding power source supply cable is provided with a yellow/green wire that must ALWAYS be earthed. This yellow/green wire must NEVER be used with other voltage conductors.
- * Verify the existence of the earthing in the used plant and the good condition of the socket/s
- * Install only plugs that are homologated according to the safety regulations.

8.0 CONNECTING THE EQUIPMENT COMPONENTS



Keep to the safety regulations contained in section "1.0 SAFETY".



Connect the components carefully, in order to avoid power losses.

9.0 SETTING UP

For installation of the system, follow the instructions below:

- Place the generator in a dry, clean place with suitable ventilation.
- Connect up the compressed air supply with a 1/4 inch to the air inlet P1 in the filter unit F1 (Fig.3). The pressure must ensure at least 5 bars with a flow rate of 165 litres a minute. Securely connect the earth cable connector to the generator as shown in figure 6.
- Position the earthing clamp onto the piece to be cut, ensuring that it makes a good electric connection (Fig. 6).
- Check that all the components of the torch are present and correctly fitted and connect the torch fitting to the connector on the generator as shown in figure 5.
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 the nut.
Connect up the fast-on devices of the torch button on the connector C1.
Close the cover again.

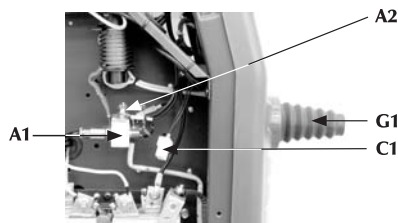


Fig. 5

- Switch the power source on, checking correct operation of the indicator led.
If there are operating faults with the power source, it will be inhibited until normal operating conditions have been restored; raise and turn the knob to adjust the pressure (F1 in Fig. 3) until you read a pressure of 5 bars on M1 (keep the torch button pressed during this operation so that the adjustment is performed with the air circuit open).
- Set the value of the cutting current via switch I2, taking account of the thickness of the piece.
- 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 6 seconds.
In the case where a fault is found during the above phases check the LED's and if necessary consult the chapter "Possible electrical faults" in the manual.

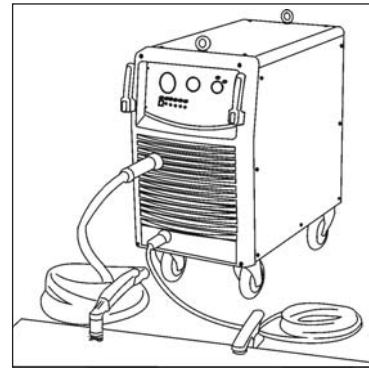


Fig. 6

10.0 PROBLEMS - CAUSES

10.1 Possible cutting defects

FAULT	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 - Cutting speed too low - 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

10.2 Possible electrical failures

FAULT	CAUSE
Apparatus fails to come on (Green LED L1 off)	- Incorrect mains supply - Fuses interrupted
Pilot arc fails to ignite (with green 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)
Pilot arc fails to ignite (with green LED L1 and yellow LED L2 on)	- Torch parts subject to wear out of action - Air pressure too high - Possible problems in control circuits
Lack of power output	- Protective devices triggered (see chapter on "Functions of controls") - Possible problems in control circuits

See also chapter 4.1 for problems with alarm code.
If you have any doubts or problems, do not hesitate to consult your nearest technical service centre.

11.0 NECESSARY ROUTINE MAINTENANCE

Prevent metal powder from accumulating near the aeration fins and over them.



Disconnect the power supply before every operation!



Carry out the following periodic controls on the power source:

- * Clean the power source inside by means of low-pressure compressed air and soft bristle brushes.
- * Check the electric connections and all the connection cables.



For the maintenance or replacement of torch componente and/or earth cables:

- * Check the temperature of the componente and make sure that they are not overheated.
- * Always use gloves in compliance with the safety standards.
- * Use suitable spanners and tools.
- * For torch maintenance, keep carefully to the directions shown under instructions for use of the torch enclosed with this manual.

NOTE: Failure to perform said maintenance will invalidate all warranties and exempt the manufacturer from all liability.

12.0 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.

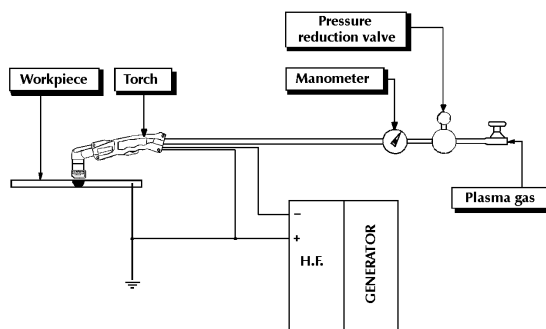


Fig. 7 Manual plasma cutting plant

12.1 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.

13.0 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 as in Fig.8, 9 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.

The cutting tests have been performed in standard operating conditions using a Trafimet CB50 torch.

CARBON STEEL

Thickness (mm)	Current (A)	Speed (mm/min)
1	25	5000*
2	25	2200*
3	25	1000
4	25	400
1	50	12000*
2	50	6000*
3	50	4300*
4	50	2500*
6	50	1600*
8	50	1000
10	50	750
12	50	600
15	50	500

STAINLESS STEEL

Thickness (mm)	Current (A)	Speed (mm/min)
1	25	4000*
2	25	1200
3	25	500
4	25	/
1	50	9000*
2	50	4000*
3	50	2500*
4	50	2000*
6	50	1400
8	50	800
10	50	500
12	50	400
15	50	/

ALUMINIUM

Thickness (mm)	Current (A)	Speed (mm/min)
1	25	6000*
2	25	2000
3	25	/
4	25	/
1	50	14000*
2	50	8000*
3	50	5000*
4	50	3000*
6	50	1400
8	50	900
10	50	600
12	50	500
15	50	/

*High quality cut

CURRENT 25A

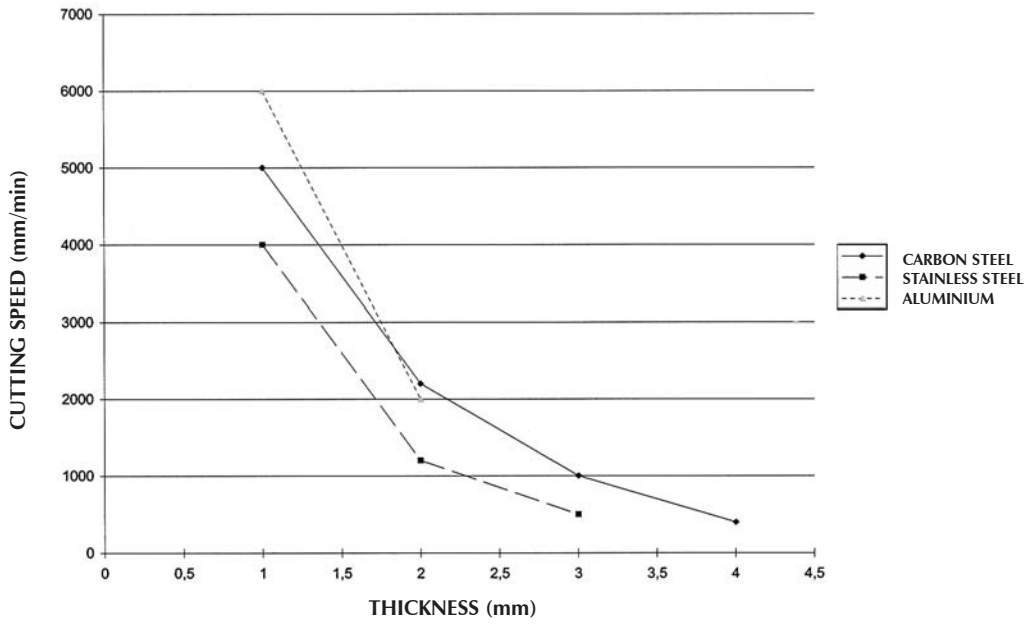


Fig. 8

CURRENT 50A

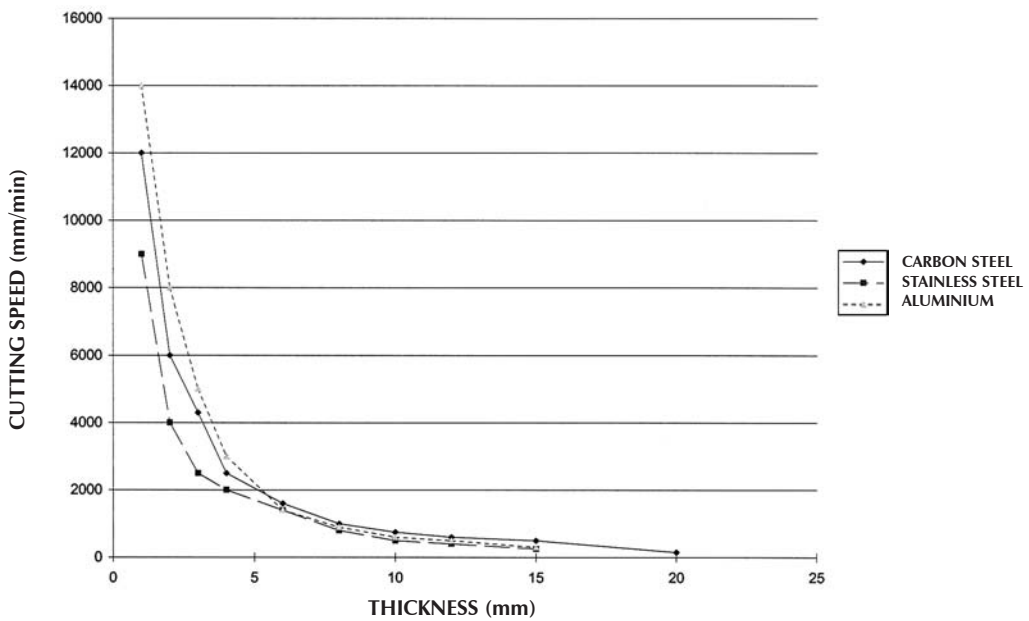







Fig. 9

Targa dati, Nominal data, Leistungsschilder, Plaque des données, Placa de características, Placa de dados, Technische gegevens, Märklåt, Dataskilt, Identifikasjonsplate, Arvokilpi, ΠΙΝΑΚΙΔΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΩΝ

		SELCO S.R.L. Via Palladio,19 - ONARA (PADOVA) - ITALY				
Type TECNOPLASMA 52		N°				
		EN 60974-1 EN 50199				
		25A/90V - 50A/100V				
		X(40°C)	30%		100%	
U ₀	V	I ₂	50A		25A	
265		U ₂	100V		90V	
 50/60 Hz	U ₁	V	I _{1max}	A	I _{1eff.}	A
	230		31.5		17.3	
	U ₁	V	I _{1max}	A	I _{1eff.}	A
	400		18.1		10	
IP 21 S						

Significato targa dati del generatore, Meaning of POWER SOURCE data plate, Bedeutung der Angaben auf dem Leistungsschild des Generators, Signification des données sur la plaque du générateur, Significado da chapa de dados do gerador, Significacão da chapa de dados do gerador, Betekenis gegevensplaatje van de generator, Innebörden av uppgifterna på GENERATORNS märkplåt, Betydning af dataskiltet for Strømkilden, Betydning av informasjonsteksten på Generatorms skilt, Generaattorin arvokilven tiedot, Σημασία πινακίδας χαρ ακτηριστικών της ΓΕΝΗΤΡΙΑΣ

1		2			
3		4			
5		6			
7	9	11			
8	10	12	15	16	17
		13	15 A	16 A	17 A
		14	15 B	16 B	17 B
18		19		20	
22					

ITALIANO

- Marchio di fabbricazione
- Nome ed indirizzo del costruttore
- Modello dell'apparecchiatura
- N° di serie
- Simbolo del tipo di saldatrice
- Riferimento alle norme di costruzione
- Simbolo del processo di saldatura/taglio
- Simbolo per le saldatrici idonee a lavorare in un ambiente a rischio accresciuto di scossa elettrica
- Simbolo della corrente di saldatura/taglio
- Tensione assegnata a vuoto
- Gamma della corrente assegnata di saldatura/taglio massima e minima e della corrispondente tensione convenzionale di carico
- Simbolo del ciclo di intermittenza
- Simbolo della corrente assegnata di saldatura/taglio
- Simbolo della tensione assegnata di saldatura/taglio
- 15-16-17 Valori del ciclo di intermittenza
- 15A-16A-17A Valori della corrente assegnata di saldatura/taglio
- 15B-16B-17B Valori della tensione convenzionale di carico
- Simbolo per l'alimentazione
- Tensione assegnata d'alimentazione
- Massima corrente assegnata d'alimentazione
- Massima corrente efficace d'alimentazione
- Grado di protezione
- IP21 S** Grado di protezione dell'involucro in conformità alla EN 60529:
- IP2XX** : Involucro protetto contro l'accesso a parti pericolose con un dito e contro corpi solidi estranei di diametro maggiore/uguale a 12.5 mm.
- IPX1X** : Involucro protetto contro la caduta verticale di gocce d'acqua.

ENGLISH

- Trademark
- Name and address of manufacturer
- Machine model
- Serial no.
- Welder type symbol
- Reference to construction standards
- Welding/cutting process symbol
- Symbol for welders suitable for operation in environments with increased electrical shock risk
- Welding/cutting current symbol
- Assigned loadless voltage
- Range of maximum and minimum assigned welding /cutting current and corresponding conventional load voltage
- Intermittent cycle symbol
- Assigned welding/cutting current symbol
- Assigned welding/cutting voltage symbol
- 15-16-17 Intermittent cycle values
- 15A-16A-17A Assigned welding/cutting current values
- 15B-16B-17B Conventional load voltage values
- Power supply symbol
- Assigned power supply voltage
- Maximum assigned power supply current
- Maximum effective power supply current
- Protection rating
- IP21 S** Casing protection rating in compliance with EN 60529:
- IP2XX** Casing protected against access to dangerous parts with fingers and against solid foreign bodies with diameter greater than/equal to 12.5 mm.
- IPX1X** Casing protected against vertical drops of water.

DEUTSCH

- Marke
- Herstellername und -adresse
- Gerätemodell
- Seriennr.
- Symbol des Schweißmaschinentyps
- Bezugnahme auf die Konstruktionsnormen
- Symbol des Schweißprozesses/Schneidprozesses
- Symbol für die Schweißmaschinen, die sich zum Betrieb in Räumen mit großer Stromschlaggefahr eignen
- Symbol des Schweißstroms/Schneidstroms
- Zugeteilte Leerlaufspannung
- Bereich des zugeteilten Höchst- und Mindestschweißstroms/Mindestschneidstroms und der entsprechenden Ladespannung
- Symbol für den intermittierenden Zyklus
- Symbol des zugeteilten Schweißstroms/Schneidstroms
- Symbol der zugeteilten Schweißspannung/Schneidspannung
- 15-16-17 Werte des intermittierenden Zyklus
- 15A-16A-17A Werte des zugeteilten Schweißstroms/Schneidstroms
- 15B-16B-17B Werte der üblichen Ladespannung
- Symbol der Versorgung
- Zugeteilte Versorgungsspannung
- Zugeteilter, maximaler Versorgungsstrom
- Maximaler, wirksamer Versorgungsstrom
- Schutzart
- IP21 S** Schutzart des Gehäuses in Konformität mit EN 60529:
- IP2XX** Gehäuse mit Schutz vor Zutritt zu gefährlichen Teilen mit einem Finger und vor Fremdkörpern mit einem Durchmesser von/über 12.5 mm.
- IPX1X** Gegen vertikale Wassertropfen geschütztes Gehäuse.

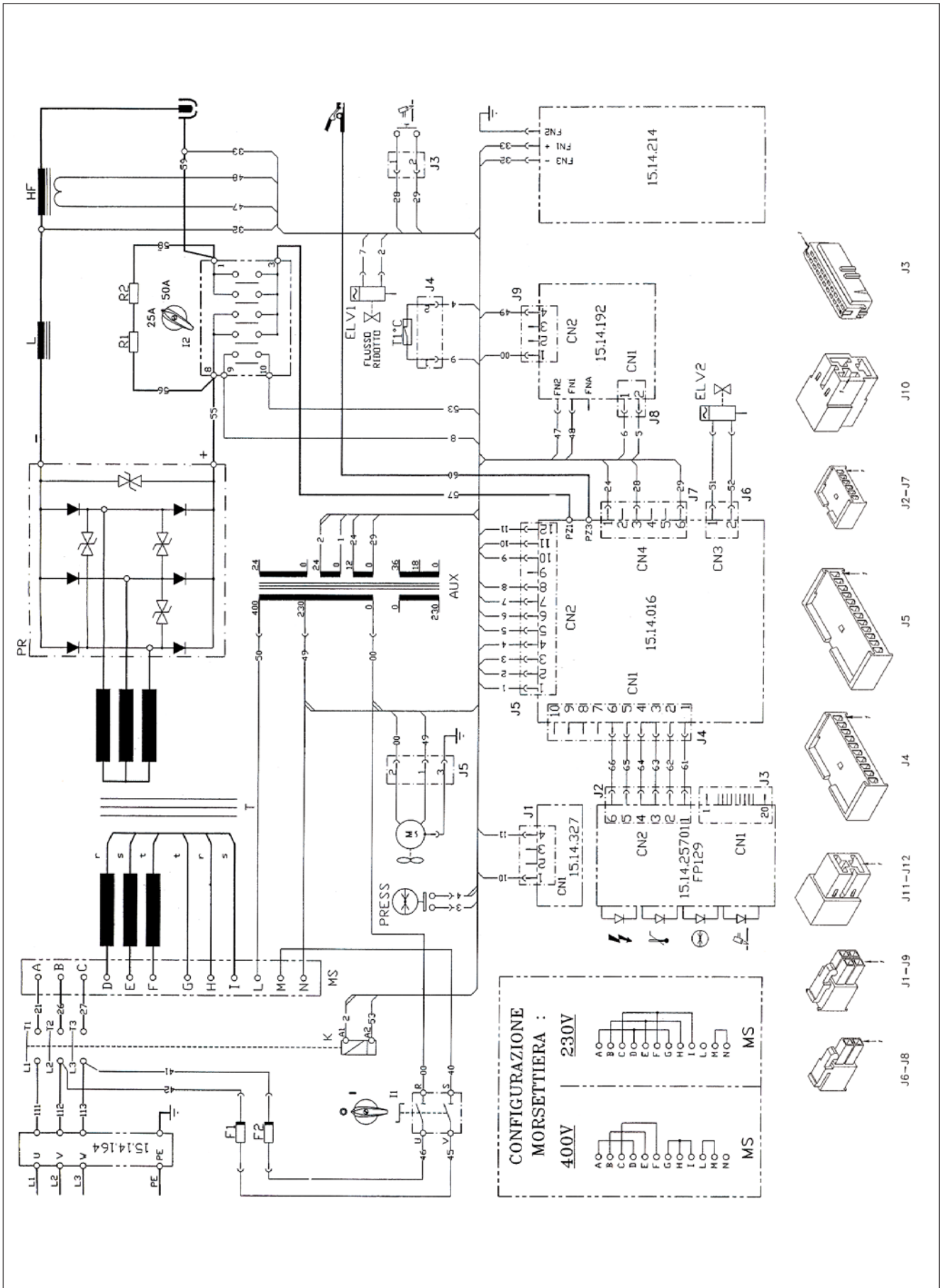
FRANÇAIS

- Marque de fabriquer
- Nom et adresse du constructeur
- Modèle de l'appareil
- Numéro de série
- Symbole du type de soudeuse
- Référence aux normes de construction
- Symbole du processus de soudure/découpage
- Symbole pour les soudeuses en mesure de travailler dans un local où il y a un gros risque de secousse électrique
- Symbole du courant de soudure/découpage
- Tension attribuée à vide
- Gamme du courant de soudure/découpage maximum et minimum attribué et de la tension conventionnelle de charge correspondante
- Symbole du cycle d'intermittence
- Symbole du courant attribué de soudure/découpage
- Symbole de la tension attribuée de soudure/découpage
- 15-16-17 Valeurs du cycle d'intermittence
- 15A-16A-17A Valeurs du courant attribué de soudure/découpage
- 15B-16B-17B Valeurs de la tension conventionnelle de charge
- Symbole pour l'alimentation
- Tension attribuée d'alimentation
- Courant maximum attribué d'alimentation
- Courant maximum efficace d'alimentation
- Degré de protection
- IP21 S** Degré de protection du boîtier conformément à la norme EN 60529:
- IP2XX** Boîtier de protection contre l'accès aux parties dangereuses avec un doigt et contre les corps solides étrangers ayant un diamètre supérieur/égal à 12.5 mm.
- IPX1X** Boîtier de protection contre la chute verticale de gouttes d'eau.

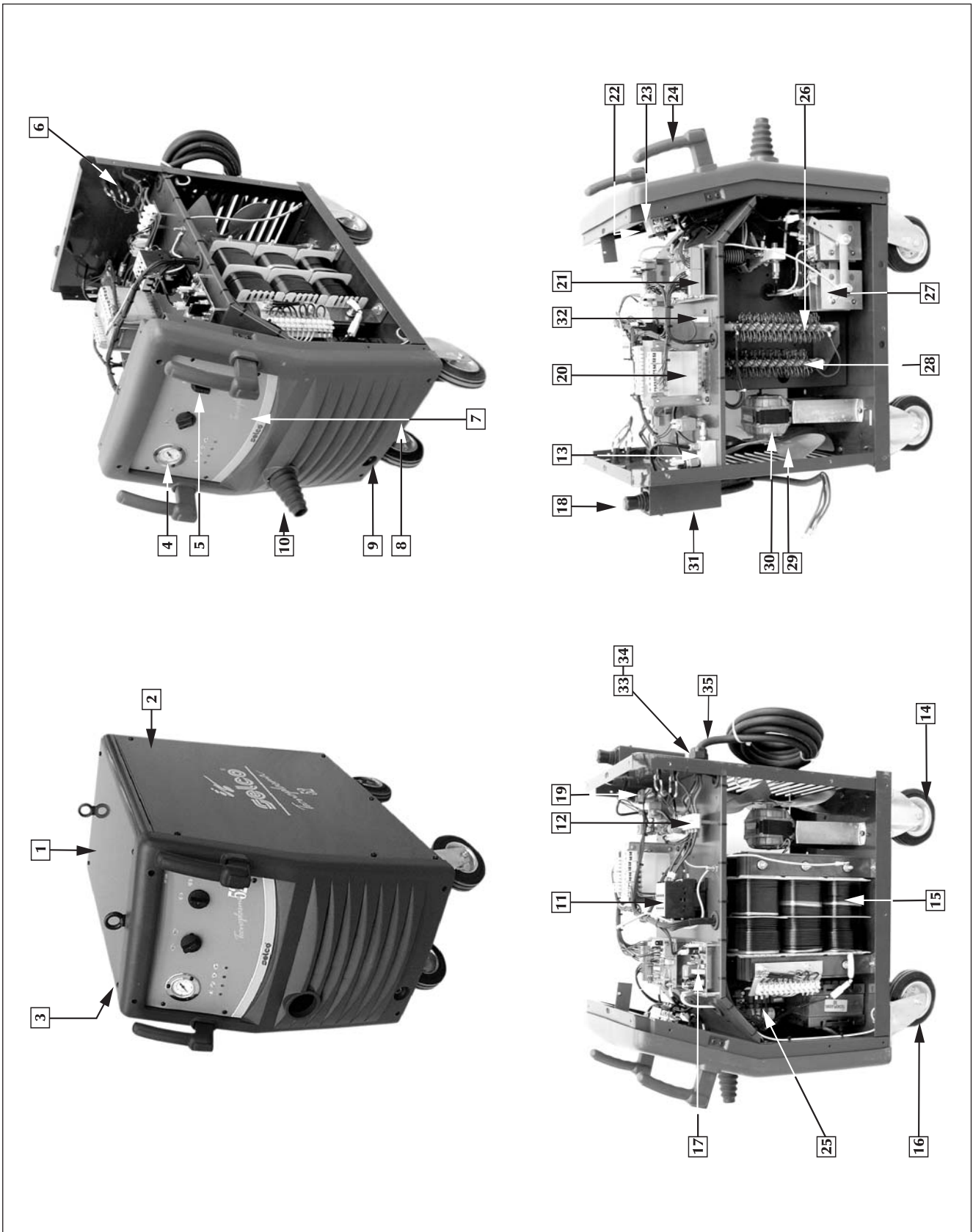
ESPAÑOL

- Marca de fabricación
- Nombre y dirección del fabricante
- Modelo del aparato
- N° de serie
- Simbolo del tipo de soldadora
- Normas de construcción de referencia
- Simbolo del proceso de soldadura/corte
- Simbolo para las soldadoras adecuadas para trabajar en un ambiente en donde existan riesgos de descargas eléctricas
- Simbolo de la corriente de soldadura/corte
- Tensión en vacío asignada
- Gama de la corriente de soldadura/corte máxima y mínima asignada y de la tensión convencional de carga correspondiente
- Simbolo del ciclo de intermitencia
- Simbolo de la corriente de soldadura/corte asignada
- Simbolo de la tensión de soldadura/corte asignada
- 15-16-17 Valores del ciclo de intermitencia
- 15A-16A-17A Valores de la corriente de soldadura/corte asignada
- 15B-16B-17B Valores de la tensión convencional de carga
- Simbolo para la alimentación
- Tensión de alimentación asignada
- Corriente de alimentación máxima asignada
- Corriente de alimentación máxima eficaz
- Clase de protección
- IP21 S** Grado de protección de la envoltura en conformidad con EN 60529:
- IP2XX** Envoltura protegida contra el acceso a partes peligrosas con un dedo y contra cuerpos sólidos extraños de diámetro mayor/igual a 12.5 mm.
- IPX1X** Cubierta protegida contra la caída vertical de gotas de agua.

Schema, Diagram, Schaltplan, Schéma, Esquema, Diagrama, Schema, kopplingschema, Oversigt, Skjema, KytKentäkaavio, ΔΙΑΓΡΑΜΜΑ




Lista ricambi, Spare parts list, Ersatzteilverzeichnis, Liste de pièces détachées, Lista de repuestos, Lista de peças de reposição, Reserveonderdelenlijst, Reservdelistsita, Liste med reservedele, Liste over reservedeler, Varaosaluettelo, ΚΑΤΑΛΟΓΟΣ ΑΝΤΑΛΛΑΚΤΙΚΩΝ



ITALIANO

POS.DESCRIZIONE	CODICE	POS.DESCRPTION	CODE	POS.BESCHREIBUNG	CODE	POS.DESCRPTION	CODE	FRANÇAIS	CODE	ESPAÑOL	CODIGO
1 Colano superiore	01.02.085	1 Cover	01.02.085	1 Deckel	01.02.085	1 Couvercle	01.02.085	1 Tapa	01.02.085	1 Tapa	01.02.085
2 Pannello laterale sinistro	03.07.065	2 Side panel left	03.07.065	2 Seitenteil links	03.07.065	2 Panneau latéral gauche	03.07.065	2 Panel lateral izquierdo	03.07.065	2 Panel lateral izquierdo	03.07.065
3 Pannello laterale destro	03.07.066	3 Righthand side panel	03.07.066	3 Rechte Seitentafel	03.07.066	3 Panneau latéral droit	03.07.066	3 Panel lateral derecho	03.07.066	3 Panel lateral derecho	03.07.066
4 Manometro	24.02.001	4 Manometer	24.02.001	4 Manometer	24.02.001	4 Manomètre	24.02.001	4 Manómetro	24.02.001	4 Manómetro	24.02.001
5 Manopola	09.11.009	5 Knob	09.11.009	5 Drehknopf	09.11.009	5 Bouton	09.11.009	5 Botón	09.11.009	5 Botón	09.11.009
6 Portafusibile	08.25.250	6 Fuse carrier	08.25.250	6 Abschmelzsicherungshalter	08.25.250	6 Porte-fusible	08.25.250	6 Portafusible	08.25.250	6 Portafusible	08.25.250
7 Pannello comandi FP129	15.22.129	7 Control panel FP129	15.22.129	7 Bedienungsfeld FP129	15.22.129	7 Panneau de réglage FP129	15.22.129	7 Panel de control FP129	15.22.129	7 Panel de control FP129	15.22.129
8 Pannello plastico frontale	01.04.260	8 Front plastic panel	01.04.260	8 Stirnplattkafel	01.04.260	8 Panneau plastique antérieur	01.04.260	8 Panel plastico anterior	01.04.260	8 Panel plastico anterior	01.04.260
9 Presa fissa	10.13.013	9 Fixed socket	10.13.013	9 Feste Steckdose	10.13.013	9 Prise fixe	10.13.013	9 Enchufe fijo	10.13.013	9 Enchufe fijo	10.13.013
10 Soffietto circolare	21.04.050	10 Circular cable inlet protection	21.04.050	10 Kreisförmiger Schutzbalg an der Kabeleinführung	21.04.050	10 Protection circulaire de l'entrée du câble	21.04.050	10 Protección circular de la entrada del cable	21.04.050	10 Protección circular de la entrada del cable	21.04.050
11 Teleruttore	09.02.013	11 Contactor	09.02.013	11 Schütz	09.02.013	11 Télerrupteur	09.02.013	11 Telearruptor	09.02.013	11 Telearruptor	09.02.013
12 Scheda filtro	15.14.164	12 Filterboard	15.14.164	12 Filterplatte	15.14.164	12 Plaque filtre	15.14.164	12 Tarjeta filtro	15.14.164	12 Tarjeta filtro	15.14.164
13 Pressostato	09.08.003	13 Pressure switch	09.08.003	13 Druckwächter	09.08.003	13 Pressostat	09.08.003	13 Presostato	09.08.003	13 Presostato	09.08.003
14 Ruota gommata	04.04.001	14 Tired wheel	04.04.001	14 Gummirad	04.04.001	14 Roue caoutchoutée	04.04.001	14 Rueda engomada	04.04.001	14 Rueda engomada	04.04.001
15 Trasformatore di potenza	05.01.1511	15 Power transformer	05.01.1511	15 Leistungstransformator	05.01.1511	15 Transformateur de puissance	05.01.1511	15 Transformador de potencia	05.01.1511	15 Transformador de potencia	05.01.1511
16 Ruota gommata	04.03.001	16 Tired wheel	04.03.001	16 Gummirad	04.03.001	16 Roue caoutchoutée	04.03.001	16 Rueda engomada	04.03.001	16 Rueda engomada	04.03.001
17 Scheda H.F.	15.14.1922	17 H.F. board	15.14.1922	17 H. F. - Karte	15.14.1922	17 Carte H.F.	15.14.1922	17 Ficha H.F.	15.14.1922	17 Ficha H.F.	15.14.1922
18 Filtro-regolatore	24.02.010	18 Regulator-filter	24.02.010	18 Regler-Filter	24.02.010	18 Filtre-régulateur	24.02.010	18 Filtro regulador	24.02.010	18 Filtro regulador	24.02.010
19 Elettrovalvola	09.05.001	19 Solenoid valve	09.05.001	19 Solenoidventil	09.05.001	19 Electrovanne	09.05.001	19 Electroválvula	09.05.001	19 Electroválvula	09.05.001
20 Trasformatore ausiliario	05.11.203	20 Auxiliary transformer	05.11.203	20 Hilfsstromtransformator	05.11.203	20 Transformateur auxiliaire	05.11.203	20 Transformador auxiliar	05.11.203	20 Transformador auxiliar	05.11.203
21 Scheda logica	15.14.0163	21 Logic board	15.14.0163	21 Logikkarte	15.14.0163	21 Carte logique	15.14.0163	21 Ficha lógica	15.14.0163	21 Ficha lógica	15.14.0163
22 Interruttore bipolare	09.01.001	22 Bipolar switch	09.01.001	22 Zweipoliger Schalter	09.01.001	22 Interrupteur bipolaire	09.01.001	22 Interrupitor bipolar	09.01.001	22 Interrupitor bipolar	09.01.001
23 Commutatore	09.01.107	23 Change-over switch	09.01.107	23 Umschalter	09.01.107	23 Commutateur	09.01.107	23 Conmutador	09.01.107	23 Conmutador	09.01.107
24 Maniglia	01.15.030	24 Handle	01.15.030	24 Griff	01.15.030	24 Poignée	01.15.030	24 Mango	01.15.030	24 Mango	01.15.030
25 Scheda filtro out	15.14.2142	25 Filter out card	15.14.2142	25 Karte filter out	15.14.2142	25 Carte filter out	15.14.2142	25 Ficha filtro out	15.14.2142	25 Ficha filtro out	15.14.2142
26 Resistenza 2 Ohm	11.13.502	26 Resistor 2 Ohm	11.13.502	26 Widerstand 2 Ohm	11.13.502	26 Resistance 2 Ohm	11.13.502	26 Resistencia 2 Ohm	11.13.502	26 Resistencia 2 Ohm	11.13.502
27 Raddrizzatore	14.10.118	27 Rectifier	14.10.118	27 Gleichrichter	14.10.118	27 Redresseur	14.10.118	27 Rectificador	14.10.118	27 Rectificador	14.10.118
28 Resistenza 1.6 Ohm	11.13.501	28 Resistor 1.6 Ohm	11.13.501	28 Widerstand 1.6 Ohm	11.13.501	28 Resistance 1.6 Ohm	11.13.501	28 Resistencia 1.6 Ohm	11.13.501	28 Resistencia 1.6 Ohm	11.13.501
29 Ventola	07.11.003	29 Fan	07.11.003	29 Flügelrad	07.11.003	29 Ventilateur	07.11.003	29 Rueda de paletas	07.11.003	29 Rueda de paletas	07.11.003
30 Motore	07.13.002	30 Motor	07.13.002	30 Motor	07.13.002	30 Moteur	07.13.002	30 Motor	07.13.002	30 Motor	07.13.002
31 Supporto per filtro regolatore	01.14.235	31 Regulator-filter holder	01.14.235	31 Halterung für Reglerfilter	01.14.235	31 Support pour filtre-régulateur	01.14.235	31 Soporte para filtro regulador	01.14.235	31 Soporte para filtro regulador	01.14.235
32 Scheda NTC	15.14.327	32 NTC board	15.14.327	32 NTC Karte	15.14.327	32 Plaine NTC	15.14.327	32 Tarjeta NTC	15.14.327	32 Tarjeta NTC	15.14.327
33 Pressacavo	08.22.012	33 Cable clamp	08.22.012	33 Gegenmutter	08.22.012	33 Serre-cable	08.22.012	33 Abrazadera	08.22.012	33 Abrazadera	08.22.012
34 Controdado	08.22.013	34 Counter-nut	08.22.013	34 Kabelklemme	08.22.013	34 Ecrou de blocage	08.22.013	34 Contratuercia	08.22.013	34 Contratuercia	08.22.013
35 Cavo alimentazione	49.04.029	35 Supply main cable	49.04.029	35 Speisekabel	49.04.029	35 Cable d'alimentation	49.04.029	35 Cable de alimentación	49.04.029	35 Cable de alimentación	49.04.029

Legenda simboli, Key to Symbols, Legende der Symbole, Legende des Symboles, Legenda dos símbolos, Legenda dos símbolos, Legenda van de symbolen, Teckenförklaring, Symbolforklaring, Symbolbeskrivelse, Merkkien selitykset, Υπόμνημα συμβόλων

	ITALIANO	ENGLISH	DEUTSCH	FRANÇAIS	ESPAÑOL
	Spegnimento generatore	Power source switch-off	Ausschalten des Generators	Arrêt générateur	Apagado del generador
	Accensione generatore	Power source switch-on	Einschalten des Generators	Allumage générateur	Encendido del generador
	Alimentazione del generatore	Power source power supply	Versorgung des Generators	Alimentation du générateur	Alimentación del generador
	Allarme sovratemperatura	Overtemperature alarm	Übertemperaturalarm	Alarme surchaute	Alarma sobretemperatura
	Allarme pressione aria troppo bassa	Air pressure too low alarm	Alarm für zu niedrigen Luftdruck	Alarme pression de l'air trop basse	Alarma presión aire muy baja
	Impostazione di corrente	Current setting	Stromeinstellung	Réglage du courant	Configuración de corriente
	Impostazione di corrente	Current setting	Stromeinstellung	Réglage du courant	Configuración de corriente
	Potenza sbloccata	Power on	Lichtbogen ein	Puissance libérée	Potencia desbloqueada



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