

Power TIG 170 DC Pulse

GeKaMac®

GEDIK WELDING MACHINES

INVERTER DC-TIG WELDING MACHINE USER'S GUIDE



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Introduction

Thank you for purchasing one of our products. Please read instructions on use in this manual **as well as the safety rules given in the attached booklet** and follow them carefully to get the best performance from the plant and be sure that the parts have the longest service life possible. In the interest of customers, you are recommended to have maintenance and, where necessary, repairs carried out by the workshops of our service organisation, since they have suitable equipment and specially trained personnel available. All our machinery and systems are subject to continual development. We must therefore reserve the right to modify their construction and properties.

Description

PoWer TIG 170 DC Pulse with analogue control represents the very latest evolution in direct current weld generators with INVERTER technology. This powerful 100 KHz generator, based on the latest generation IGBT, fitted with a planar transformer, makes it possible to TIG weld any metal except for aluminium and its alloys.

PoWer TIG 170 DC Pulse, also excellent for electrode welding, with its lightness and compactness and first-rate welding characteristics, is ideal for using for maintenance, erection and light steel structural works.

Main features are:

- Precise and efficient TIG arc striking by high frequency.
- High performance on thin metal sheets.
- Automatic compensation for mains voltage within +15% -20%.
- Low energy consumption and high efficiency.
- The inverter resists ample current variations (MAX 290V) and can be utilized with very long electric cables (MAX 100 m).

- Innovative and compact design.
- Load bearing structure in impact-resistant material.
- Control panel protected against accidental impact.
- Robust handle integrated into the chassis.
- Sloping front control panel, easy to read and adjust and highly visible from any direction.
- Reduced weight and dimensions, easy-to-carry.
- The generator also conforms to all European Union standards and directives in force.

Technical data

The general technical data of the system are summarized in table 1.

Usage limits (IEC 60974-1)

The use of a welder is typically discontinuous, in that it is made up of effective work periods (welding) and rest periods (for the positioning of parts, the replacement of wire and underflushing operations etc. This welder is dimensioned to supply a I_2 max nominal current in complete safety for a period of work of 25% of the total usage time. The regulations in force establish the total usage time to be 10 minutes. The work cycle is considered to be 25% of this period of time. If the permitted work cycle time is exceeded, an overheat cut-off occurs to protect the components around the welder from dangerous overheating. Intervention of the overheat cut-off is indicated by the lighting up of yellow thermostat LED. After several minutes the overheat cut-off rearms automatically (and the yellow LED turns itself off) and the welder is ready for use again. This generator is constructed in compliance with the IP 23 S protection level, meaning:

- That it is protected against the penetration of solid foreign bodies with diameters in excess of \varnothing 12 mm.

Table 1

Model	PoWer TIG 170 DC Pulse	
	TIG DC	MMA
Single-phase power supply 50/60 Hz	V	230
Mains supply: Z_{max} (*)	Ω	0,21
Power input @ I_2 Max	kVA	7,2 7,9
Delayed fuse (I_2 @ 100%)	A	16
Power factor / $\cos\phi$		0,61 / 0,99
Maximum efficiency degree	η	0,65
Open circuit voltage	V	88
Current range	A	5÷170 5÷150
Duty cycle @ 100% (40°C)	A	95
Duty cycle @ 60% (40°C)	A	115
Duty cycle @ X% (40°C)	A	170 (20%) 150 (25%)
Standards	IEC 60974-1 IEC 60974-10 CE	
Insulation class	IP 23 S	
Protection class	F	
Dimensions	mm	390-300-135
Weight	kg	7

(*) Mains supply Z_{max} : maximum impedance value allowed for the grid according to the EN/IEC 61000-3-11 standard.

WARNING: This equipment does not comply with EN/IEC 61000-3-12. If it is connected to a public low voltage 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 may be connected.

- That it is protected against water spray hitting the surface with an angle of incidence up to 60°.
- That the welding machine has been tested for withstanding harmful effects due to water getting in when the moving parts on the equipment are moving.

Installation

The installation site for the system must be carefully chosen in order to ensure its satisfactory and safe use.

The user is responsible for the installation and use of the system in accordance with the producer's instructions contained in this manual.

Before installing the system the user must take into consideration the potential electromagnetic problems in the work area. In particular, we suggest that you should avoid installing the system close to:

- Signalling, control and telephone cables.
- Radio and television transmitters and receivers.
- Computers and control and measurement instruments.
- Security and protection instruments.

Persons fitted with pace-makers, hearing aids and similar equipment must consult their doctor before going near a machine in operation. The equipment's installation environment must comply to the protection level of the frame i.e. IP 23 S (IEC 60529 publication). The system is capable of working in environments where working conditions are particularly hard. This system is cooled by means of the forced circulation of air, and must therefore be placed in such a way that the air may be easily sucked in and expelled through the apertures made in the frame.

Connection to the electrical supply

Before connecting the welder to the electrical supply, check that the machine's plate rating corresponds to the supply voltage and frequency and that the line switch of the welder is in the "O" position.

Use the welder's own plug to connect it up to the main power supply. Proceed as follows if you have to replace the plug:

- 2 conducting wires are needed for connecting the machine to the supply
- The third, which is YELLOW GREEN in colour is used for making the "EARTH" connection.

RAINBOW 170 HF works with circuit breaker or fusible power switches.

Table 2 shows the recommended load values for retardant supply fuses.

Table 2

Model		PoWer TIG 170 DC Pulse	
		TIG DC	MMA
Power input @ I ₂ Max	kVA	7,2	7,9
Delayed fuse (I ₂ @ 100%)	A	16	
Duty cycle @ X% (40°C)	A	170 (20%)*	150 (25%)*
Supply connection cable			
Length	m	2,2	
Section	mm ²	2,5	
Earth cable			
Section	mm ²	16	

* Factor of efficiency

NOTE 1: Any extensions to the power cable must be of a suitable diameter, and absolutely not of a smaller diameter than the special cable supplied with the machine.

NOTE 2: It is not advisable to plug up the welder to motor-driven generators, as they are known to supply an unstable voltage.

Usage norms

CONTROL APPARATUS (Fig. A)

- Pos. 1 Supply switch. In the "O" position the welder is off.
- Pos. 2 Weld gas inlet coupling.
- Pos. 3 Welder cable.
- Pos. 4 Fast coupling TIG torch gas tube .
- Pos. 5 Fast coupling reverse polarity .
- Pos. 6 TIG connector torch button.
- Pos. 7 Fast coupling straight polarity.

FRONT PANEL (Fig. B)

- Pos. 1 "Slope-down" potentiometer (0+5 sec).
- Pos. 2 "Welding process" selector:
 - TIG "HF" for TIG weld with high frequency arc strike.
 - "Lift" type TIG for "Lift" type TIG weld without high frequency.
 - ELECTRODE for basic electrode welding with automatic "Arc Force" and "Hot Start" devices.
- Pos. 3 "Welding mode" selector: 2 stroke, 4 stroke.
- Pos. 4 Welding current adjust potentiometer.
- Pos. 5 Post-gas time adjustment potentiometer (0,5+25 sec).
- Pos. 6 Yellow THERMOSTAT LED. When this LED switches on it indicates that the trip switch has tripped because you are working beyond the work cycle. Wait for a few minutes before starting to weld again.
- Pos. 7 Green POWER SUPPLY LED. When this LED is on, it means that the power supply to the welding machine is on, and it is ready to work.

MMA electrode welding (Fig. C)

Electrode welding is used to weld most metals (different types of steel, etc.) using coated rutile and basic electrodes with diameters ranging from Ø 1.6 mm to Ø 4 mm.

- Connecting the welding cables:

Disconnect the machine from the mains power supply and connect the welding cables to the output terminals (Positive and Negative) of the welding machine, attaching them to the clamp and earth with the polarity specified for the type of electrode being used (Fig. C). Always follow the electrode manufacturer's instructions. The welding cables must be as short as possible, they must be near to one another, positioned at or near floor level.
- Adjust the welding current using the potentiometer (Pos. 4, Fig. B).
- Turn the process selector (Pos. 2, Fig. B) to the ELECTRODE position (for basic electrode welding using automatic "Arc Force" and "Hot Start" devices).
- Start the welding machine by selecting position 1 on the line switch (Pos. 1, Fig. A).
- The green LED (Pos. 7, Fig. B) shows that the power supply to the welding machine is on, and it is ready to work.
- Carry out welding by moving the torch to the workpiece. Strike the arc (press the electrode quickly against the metal and then lift it) to melt the electrode, the coating of which forms a protective residue. Then continue welding by moving the electrode from left to right, inclining it by about 60° compared with the metal in relation to the direction of welding.

PART TO BE WELDED

The part to be welded must always be connected to earth in order to reduce electromagnetic emission. Much attention must be afforded so that the earth connection of the part to be welded does not increase the risk of accident to the user or the risk of damage to other electric equipment. When it is necessary to connect the part to be welded to earth, you should make a direct connection between the part and the earth shaft. In those countries in which such a connection is not allowed, connect the part to be welded to earth using suitable capacitors, in compliance with the national regulations.



FIG. A



FIG. C

Table 3

WELDING THICKNESS (mm)	Ø ELECTRODE (mm)
1,2+2	1,6
1,5 + 3	2
3 + 5	2,5
5 + 12	3,2
≥ 12	4

Table 4

Ø ELECTRODE (mm)	CURRENT (A)
1,6	30 ÷ 60
2	40 ÷ 75
2,5	60 ÷ 110
3,2	95 ÷ 140
4	140 ÷ 190

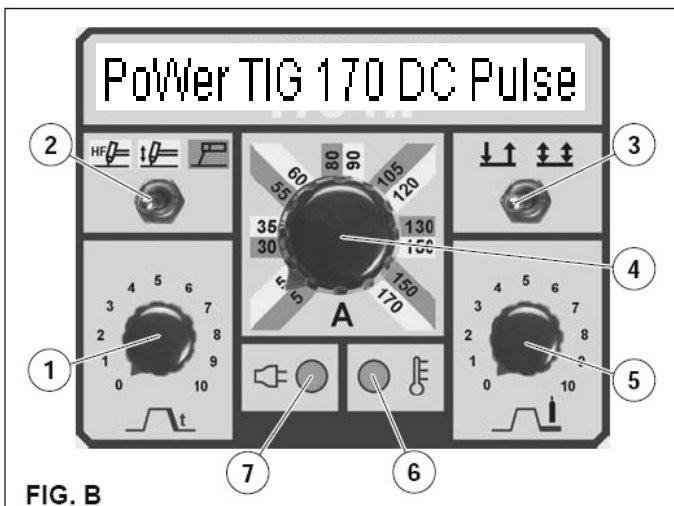


FIG. B

WELDING PARAMETERS

Table 3 shows some general indications for the choice of electrode, based on the thickness of the parts to be welded. The values of current to use are shown in the table with the respective electrodes for the welding of common steels and low-grade alloys. These data have no absolute value and are indicative data only. For a precise choice follow the instructions provided by the electrode manufacturer.

The current to be used depends on the welding positions and the type of joint, and it increases according to the thickness and dimensions of the part.

The current intensity to be used for the different types of welding, within the field of regulation shown in table 4 is:

- High for plane, frontal plane and vertical upwards welding.
- Medium for overhead welding.
- Low for vertical downwards welding and for joining small pre-heated pieces.

A fairly approximate indication of the average current to use in the welding of electrodes for ordinary steel is given by the following formula:

$$I = 50 \times (\text{Øe} - 1)$$

Where:

I = intensity of the welding current

Øe = electrode diameter

Example:

For electrode diameter 4 mm

$$I = 50 \times (4 - 1) = 50 \times 3 = 150A$$



FIG. D

TIG welding (Fig. D-E-F)

TIG welding melts the metal of the workpiece, using an arc struck by a tungsten electrode. The fusion bath and the electrode are protected by gas (Argon). This type of welding is used to weld thin sheet metal or when elevated quality is required.

- 1) Connecting the welding cables:
 - Connect the gas pipe at the rear of the machine to the Argon gas cylinder then open it (Pos. 5, Fig. D).
 - With the machine switched off:
 - Connect the earth cable to the snap-on connector marked + (positive) (Pos. 3, Fig. D).
 - Connect the relative earth clamp to the workpiece or to the workpiece support in an area free of rust, paint, grease, etc..
 - Connect the TIG torch power cable to the snap-on connector marked - (negative) (Pos. 1, Fig. D).
- 2) Connect the torch gas tube to the connection (Pos. 4, Fig. D).
- 3) Insert the torch button connector in the 6 poles holder (Pos. 2, Fig. D).

- 4) Start the welding machine by selecting Pos. 1 on the line switch (Pos. 1, Fig. A).
- 5) The green LED (Pos. 7, Fig. B) shows that the power supply to the welding machine is on, and it is ready to work.

TIG WELDING WITH HIGH FREQUENCY STRIKING

- 6a) Turn the process selector (Pos. 2, Fig. B) to the TIG "HF" position for TIG welding with high frequency striking.
- 7a) Adjust the welding current by turning the relevant knob (Pos. 4, Fig. B).
- 8a) Open the gas cylinder and flow regulator.
- 9a) Put the electrode at the point at which welding is to begin, put the TIG torch at an angle so that the edge of the gas nozzle is not on top of the piece to be welded, keeping a 2-3 mm gap between the point of the electrode and the piece to be welded (Fig. E-1).
- 10a) Press the torch button.
- 11a) The voltaic arc strikes even without contact between the TIG torch electrode and the workpiece (Fig. E-2).
- 12a) To continue welding put the torch back in its normal position (Fig. E-3).

IMPORTANT: The high frequency switches off automatically after switching on.

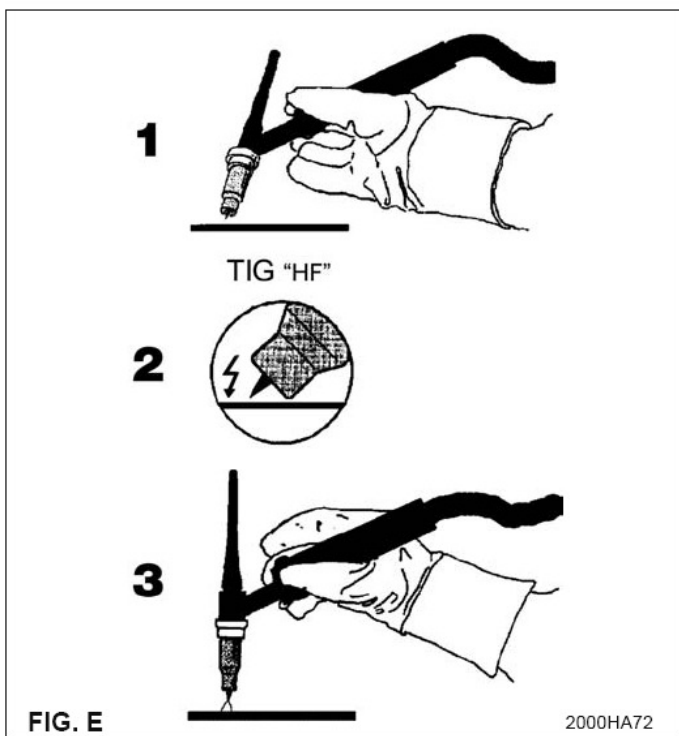


FIG. E

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TIG WELDING WITH "Lift" TYPE STRIKING

- 6b) Turn the process selector (Pos 2, Fig. B) to the TIG "Lift" type position for TIG "Lift" welding without high frequency.
- 7b) Adjust the welding current by turning the relevant knob (Pos. 4, Fig. B).
- 8b) Open the gas cylinder and flow regulator.
- 9b) Put the electrode at the point at which welding is to begin, put the TIG torch at an angle so that the edge of the gas nozzle is not on top of the piece to be welded, keeping contact between the point of the electrode and the piece to be welded (Fig. F-1).
- 10b) Press the torch button.
- 11b) The "Lift" function strikes the arc when the TIG torch electrode comes into contact with the workpiece and is then removed (Fig. F-2).
- 12b) Carry out TIG welding (Fig. F-3).

PART TO BE WELDED

The part to be welded must always be connected to earth in order to reduce electromagnetic emission. Much attention must be afforded so that the earth connection of the part to be welded does not increase the risk of accident to the user or the risk of damage to other electric equipment. When it is necessary to connect the part to be welded to earth, you should make a direct connection between the part and the earth shaft. In those countries in which such a connection is not allowed, connect the part to be welded to earth using suitable capacitors, in compliance with the national regulations.

Maintenance

WARNING: Before carrying out any inspection of the inside of the generator, disconnect the system from the supply.

SPARE PARTS

Original spare parts have been specially designed for our equipment. The use of non-original spare parts may cause variations in performance or reduce the foreseen level of safety. We decline all responsibility for the use of non-original spare parts.

GENERATOR

As these systems are completely static, proceed as follow:

- Periodic removal of accumulated dirt and dust from the inside of the generator, using compressed air. Do not aim the air jet directly onto the electrical components, in order to avoid damaging them.
- Make periodical inspections in order to individuate worn cables or loose connections that are the cause of overheating.

The pointing out of any difficulties and their elimination

The supply line is attributed with the cause of the most common difficulties. In the case of breakdown, proceed as follows:

- 1) Check the value of the supply voltage.
- 2) Check that the power cable is perfectly connected to the plug and the supply switch.
- 3) Check that the power fuses are not burned out or loose.
- 4) Check whether the following are defective:
 - The switch that supplies the machine.
 - The plug socket in the wall.
 - The generator switch.

NOTE: Given the required technical skills necessary for the repair of the generator, in case of breakdown we advise you to contact skilled personnel or our technical service department.

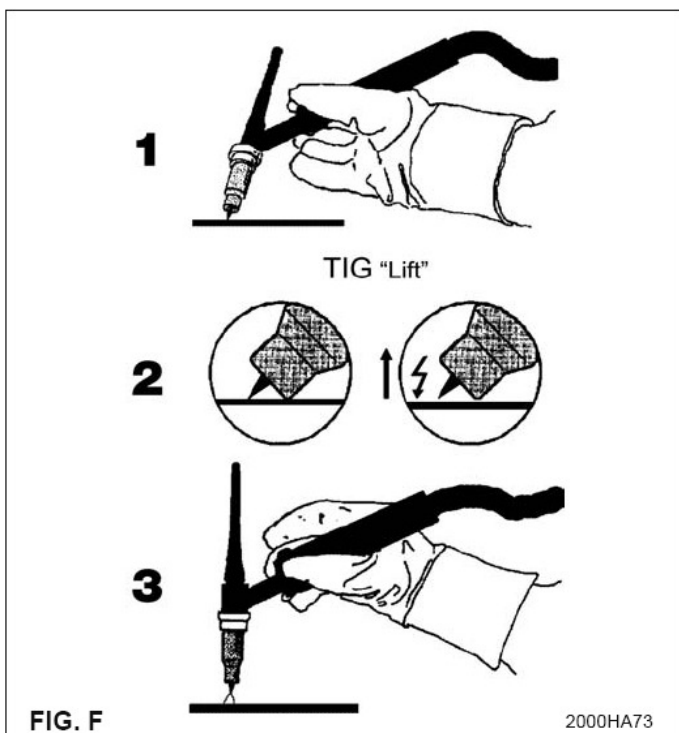
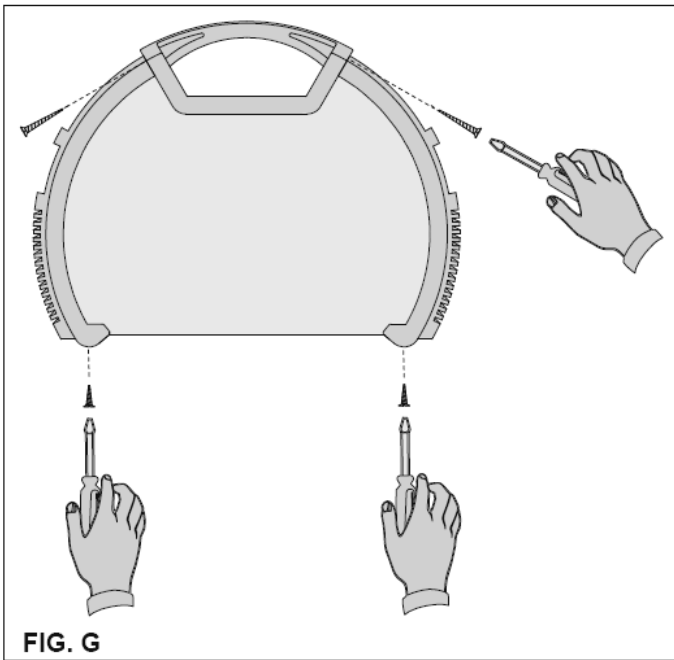


FIG. F

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Procedure for welder assembly and disassembly

Proceed as follows (Fig. G):

- Unscrew the 4 screws holding the front and back panels.
- Unscrew the 2 screws holding the handle.
- Proceed the other way round to re-assemble the welder.

IT Regolazione scheda elettronica interfaccia

- 1) Regolazione PRE-GAS
- 2) Regolazione della corrente massima in elettrodo
- 3) Regolazione della corrente minima
- 4) Regolazione della corrente massima in TIG

EN Adjustment of electronic interface board

- 1) Adjustment PRE-GAS
- 2) Adjustment of the maximum current on electrode
- 3) Adjustment of the minimum current
- 4) Adjustment of the maximum current on TIG

FR Réglage fiche d'interface électronique

- 1) Réglage PRÉ-GAZ
- 2) Réglage du courant maximum à électrode
- 3) Réglage du courant minimum
- 4) Réglage du courant maximum à TIG

DE Einstellung der Elektronische Schnittstellenkarte

- 1) Einstellung VOR-GAS
- 2) Einstellung des Höchstschweisstromes beim Elektrodenschweissen
- 3) Einstellung des Mindestschweisstromes
- 4) Einstellung des Höchstschweisstromes beim TIG

ES Regulación tarjeta electrónica interfaz

- 1) Regulación PRE-GAS
- 2) Regulación de la corriente máxima por electrodo
- 3) Regulación de la corriente mínima
- 4) Regulación de la corriente máxima por TIG

NL Afstellen elektronische kaart grensvlak

- 1) Afstellen PRE-GAS
- 2) Afstellen van de stroom maximaal met elektroden
- 3) Afstellen van de stroom minimaal
- 4) Afstellen van de stroom maximaal met TIG

PT Regulação da cartão electrónico interface

- 1) Regulagem PRÉ-GÁS
- 2) Regulagem da corrente máxima com eletrodo
- 3) Regulagem da corrente mínima
- 4) Regulagem da corrente máxima com TIG

SV Reglering av elektroniskt kort för gränssnitt

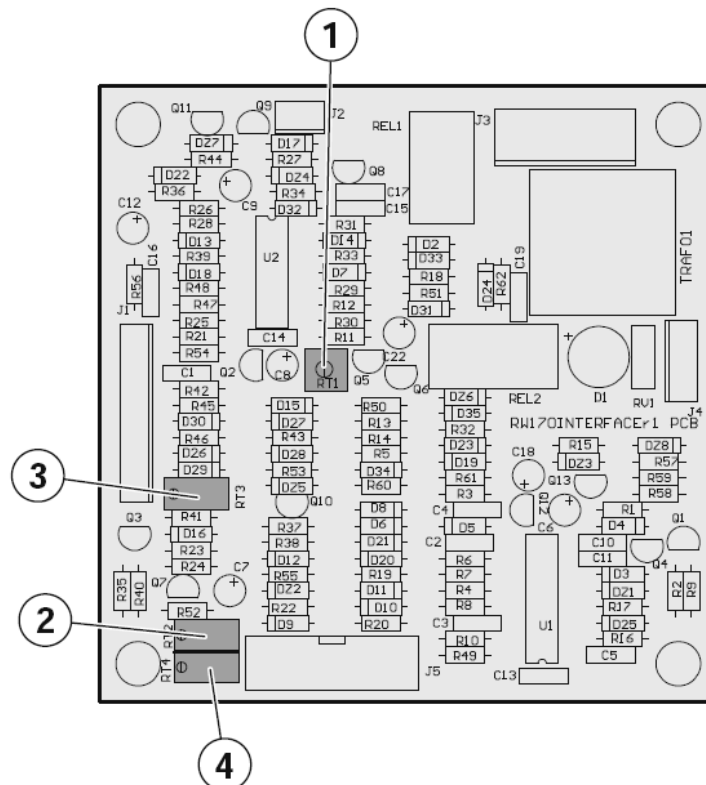
- 1) Reglering FÖR-GAS
- 2) Reglering av maximal ström med elektrod
- 3) Reglering av minimal ström
- 4) Reglering av maximal ström med TIG

N Regulering av det elektronisk grensesnittkort

- 1) Regulering PRE-GASS
- 2) Regulering av maksimalstrøm med elektrode
- 3) Regulering av minimalstrøm
- 4) Regulering av maksimalstrøm med TIG

RU Регулирование электронная интерфейсная плата

- 1) Регулирование PRE-GAS
- 2) Регулирование максимального тока при сварке электродом
- 3) Регулирование минимального тока
- 4) Регулирование максимального тока при сварке TIG



IT Schema elettrico

ES Esquema eléctrico

N Elektriske skjema

EN Wiring diagram

NL Elektrisk skema

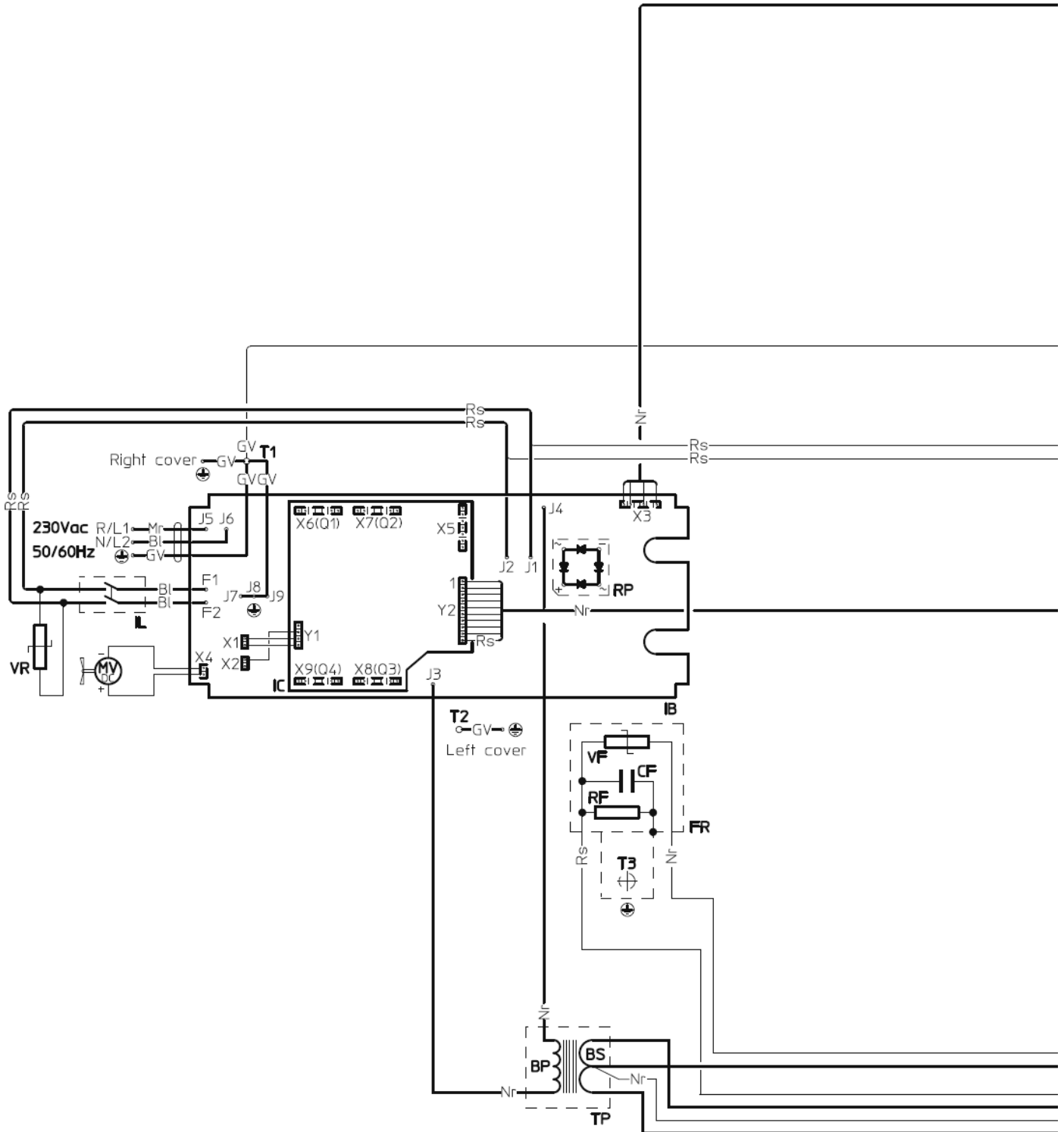
RU Схема электрическая

FR Schéma électrique

PT Esquema eléctrico

DE Schaltplan

SV Elektiska schema



IT Schema elettrico

ES Esquema eléctrico

N Elektriske skjema

EN Wiring diagram

NL Elektrisk skema

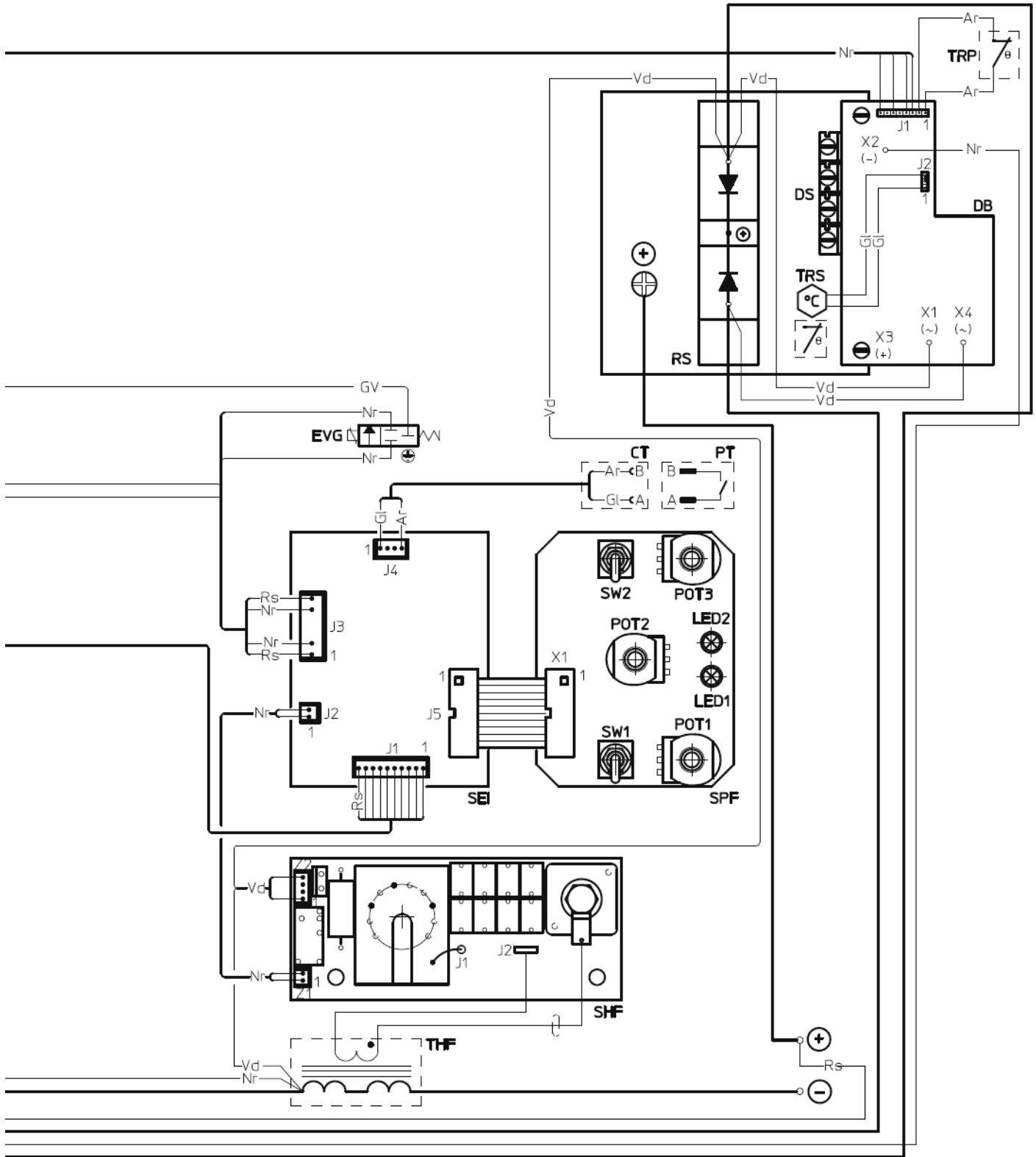
RU Схема электрическая

FR Schéma électrique

PT Esquema eléctrico

DE Schaltplan

SV Elektiska schema



2101A635

•1 BP	•2 BS	•3 CF	•4 CT	•5 DB	•6 DS	•7 EVG	•8 FR	•9 IB	•10 IC	•11 IL
•12 LED1	•13 LED2	•14 MV	•15 POT1	•16 POT2	•17 POT3	•18 PT	•19 RF	•20 RP	•21 RS	•22 SEI
•23 SHF	•24 SPF	•25 SW1	•26 SW2	•27 THF	•28 TP	•29 TRP	•30 TRS	•31 T1-2-3	•32 VF	•33 VR

IT Legenda schema elettrico

•1 Bobina primaria trasformatore •2 Bobina secondaria trasformatore •3 Condensatore filtro HF •4 Connettore torcia TIG •5 Scheda duplicatore •6 Diodi duplicatore secondario •7 Elettrovalvola gas •8 Filtro HF •9 Scheda potenza INVERTER •10 Scheda controllo INVERTER •11 Interruttore di linea •12 Spia presenza alimentazione di rete •13 Spia intervento termostato •14 Motore ventilatore •15 Potenzimetro SLOPE DOWN •16 Potenzimetro corrente di saldatura •17 Potenzimetro post flusso del gas •18 Pulsante torcia TIG •19 Resistore scarica tensione filtro •20 Raddrizzatore primario •21 Raddrizzatore secondario •22 Scheda elettronica interfaccia •23 Scheda alta frequenza •24 Scheda elettronica frontale •25 Commutatore scelta processo di saldatura •26 Deviatore automatico/manuale •27 Trasformatore alta frequenza •28 Trasformatore di potenza •29 Termostato raddrizzatore primario •30 Termostato raddrizzatore secondario •31 Poli di terra •32 Varistore filtro HF •33 Varistore rete di alimentazione

EN Key to the electrical diagram

•1 Primary transformer coil •2 Secondary transformer coil •3 HF filter condenser •4 Torch connector •5 Doubler card •6 Secondary duplicator diodes •7 Gas solenoid valve •8 HF filter •9 INVERTER power card •10 INVERTER control card •11 Supply switch •12 On light •13 Overheat cut-off signal light •14 Blower •15 "slope-down" potentiometer •16 Current potentiometer •17 Post-gas flow potentiometer •18 TIG torch button •19 Filter voltage discharge resistor •20 Primary rectifier •21 Secondary rectifier •22 Electronic interface board •23 High frequency circuit board •24 Frontal electronic circuit board control •25 Process selection commutator •26 Automatic/manual switch •27 High frequency transformer •28 Power transformer •29 Primary rectifier thermostat •30 Secondary rectifier thermostat •31 Earthing pole •32 HF filter varistor •33 Power supply varistor

FR Légende schéma électrique

•1 Bobine primaire du transformateur •2 Bobine secondaire du transformateur •3 Condensateur filtre HF •4 Connecteur torche •5 Carte du duplicateur •6 Diodes duplicateur secondaire •7 Électrovanne gaz •8 Filtre HF •9 Carte de puissance du CONVERTISSEUR •10 Carte de contrôle du CONVERTISSEUR •11 Interrupteur de lignes •12 Voyant alimentation •13 Voyant intervention thermostat •14 Monté ventilé •15 Potentiomètre "slope-down" •16 Potentiomètre courant •17 Potentiomètre post fluage du gaz •18 Bouton poussoir de la torche TIG •19 Résistance de décharge de la tension du filtre •20 Redresseur primaire •21 Redresseur secondaire •22 Fiche d'interface électronique •23 Carte haute fréquence •24 Fiche électronique commandes frontale •25 Commutateur de sélection des procédés •26 Déviateur automatique/manuel •27 Transformateur haute fréquence •28 Transformateur de puissance •29 Thermostat du redresseur primaire •30 Thermostat du redresseur secondaire •31 Pôles de terre •32 Varistor filtre HF •33 Varistance du réseau d'alimentation

DE Schaltplan-Legende

•1 Primäre Trafospule •2 Sekundäre Trafospule •3 Kondensator HF-Filter •4 Steckverbinder WIG-Brenner •5 Vervielfältiger-Karte •6 Dioden Sekundärervielfältiger •7 Elektroventil gas •8 HF-Filter •9 INVERTER-Leistungskarte •10 INVERTER-Steuerkarte •11 Leitungschalter •12 Anzeigelampe Speisung •13 Kontrolleuchte Thermostatauslösen •14 Belüfteter Motor •15 "slope-down" - Potentiometer •16 Strompotentiometer •17 Potentiometer Nachgasströmung •18 WIG-Brennerschalter •19 Widerstand zur Entladung der Filterspannung •20 Primärer Gleichrichter •21 Sekundärer Gleichrichter •22 Elektronische Schnittstellenkarte •23 Hochfrequenzkarte •24 Elektronische Frontkarte Steuerungen •25 Umschalter Prozessauswahl •26 Umsteller automatisch/ manuell •27 Hochfrequenz-Trafo •28 Leistungstrafo •29 Thermostat primärer Gleichrichter •30 Thermostat sekundärer Gleichrichter •31 Massepole •32 Varistor HF-Filter •33 Varistor Speisennetzwerk

ES Leyenda esquema eléctrico

•1 Bobina primaria transformador •2 Bobina secundaria transformador •3 Condensador filtro HF •4 Conector portaelectrodo •5 Tarjeta duplicador •6 Diodos duplicador secundario •7 Electroválvula gas •8 Filtro HF •9 Tarjeta potencia INVERTER •10 Tarjeta control INVERTER •11 Interruptor de línea •12 Lámpara de señalización de la alimentación •13 Testigo intervención termostato •14 Motor ventilador •15 Potenciómetro "slope-down" •16 Potenciómetro corriente •17 Potenciómetro post flujo del gas •18 Pulsador antorcha TIG •19 Resistor descarga tensión filtro •20 Enderezador primario •21 Enderezador secundario •22 Tarjeta electrónica interfaz •23 Tarjeta alta frecuencia •24 Tarjeta electrónica de los comandos frontales •25 Conmutador selección procesos •26 Desviador automático/manual •27 Transformador alta frecuencia •28 Transformador de potencia •29 Termostato enderezador primario •30 Termostato enderezador secundario •31 Polos de tierra •32 Varistor filtro HF •33 Varistor red de alimentación

IT Legenda colori

Ar Arancio
Bc Bianco
Bl Blu
Gg Grigio
Gf Giallo
GV Giallo Verde
Nr Nero
Ro Rosa
Rs Rosso
Vd Verde

EN Colour key

Ar Orange
Bc White
Bl Blue
Gg Grey
Gf Yellow
GV Yellow Green
Nr Black
Ro Pink
Rs Red
Vd Green

FR Légende couleurs

Ar Orange
Bc Blanc
Bl Bleu
Gg Gris
Gf Jaune
GV Jaune Vert
Nr Noir
Ro Rose
Rs Rouge
Vd Vert

DE Farbenlegende

Ar Orange
Bc Weiß
Bl Blau
Gg Grau
Gf Gelb
GV Gelb Grün
Nr Schwarz
Ro Rosa
Rs Rot
Vd Grün

ES Leyenda colores

Ar Anaranjado
Bc Blanco
Bl Azul
Gg Gris
Gf Amarillo
GV Amarillo Verde
Nr Negro
Ro Rosa
Rs Rojo
Vd Verde

•1 BP	•2 BS	•3 CF	•4 CT	•5 DB	•6 DS	•7 EVG	•8 FR	•9 IB	•10 IC	•11 IL
•12 LED1	•13 LED2	•14 MV	•15 POT1	•16 POT2	•17 POT3	•18 PT	•19 RF	•20 RP	•21 RS	•22 SEI
•23 SHF	•24 SPF	•25 SW1	•26 SW2	•27 THF	•28 TP	•29 TRP	•30 TRS	•31 T1-2-3	•32 VF	•33 VR

NL Legenda elektrisch schema

•1 Primaire bobine transformator •2 Secundaire bobine transformator •3 HF filter voor condensator •4 TIG lasspuit verbindingstuk •5 Kaart verdubbelaar •6 Secundaire verdubbeler van diodes •7 Elektromagnetische gasklep •8 Filter HF •9 Kaart stroom INVERTER •10 Kaart controle INVERTER •11 Lijnonderbreker •12 Lamp verklikker voeding •13 Spionlamp tussenkomst thermostaat •14 Motor ventilator •15 Vermogensmeter "slope-down" •16 Vermogensmeter stroom •17 Potentiometer voor nastroom van gas •18 Toortsknop TIG •19 Weerstand spanningsontlading filter •20 Primaire gelijkrichter •21 Secundaire gelijkrichter •22 Elektronische kaart grensvlak •23 Hoogfrequentie-kaart •24 Elektronische kaart voorste commando's •25 Omschakelaar selectie processen •26 Automatische/ handmatige deviator •27 Hoogfrequentie-transformator •28 Stroomtransformator •29 Thermostaat primaire gelijkrichter •30 Thermostaat secundaire gelijkrichter •31 Aardpolen •32 HF filter voor voltage afhankelijke weerstand •33 Varistor voor stroomvoorzieningsnet

PT Legenda do esquema eléctrico

•1 Bobina primária do transformador •2 Bobina secundária do transformador •3 Condensador filtro HF •4 Conector maçarico •5 Cartão duplicador •6 Diodos duplicador secundário •7 Eletrovalvula gas •8 Filtro HF •9 Cartão potência INVERTER [INVERSOR] •10 Cartão controlo INVERTER [INVERSOR] •11 Interruptor de linha •12 Lâmpada sinal luminoso alimentação do termostato •14 Motor ventilado •15 Potenciômetro "slope-down" •16 Potenciômetro corrente •17 Potenciômetro pós-fluxo do gás •18 Botão da tocha TIG •19 Resistor descarga tensão filtro •20 Rectificador primário •21 Rectificador secundário •22 Cartão electrónico interface •23 Cartão alta frequência •24 Placa eletrônica comandos frontais •25 Computador selecção processos •26 Computador automático / manual •27 Transformador alta frequência •28 Transformador de potência •29 Termóstato rectificador primário •30 Termóstato rectificador secundário •31 Pólos de terra •32 Varistor filtro HF •33 Varistor rede de alimentação

SV Förklaring av elektriskt schema

•1 Primär transformatorspole •2 Sekundär transformatorspole •3 Kondensator HF filter •4 Anslutningsdon TIG lamp •5 Kort för dupliceringsmaskin •6 Dioder sekundär duplikator •7 Magnetventil gas •8 Filter HF •9 Kort för INVERTER energi •10 Kort för INVERTER kontroll •11 Linjeströmbrytare •12 Kontrollampa för energitillförsel •13 Indikator termostat intervention •14 Ventilationsmotor •15 Potensmeter "slope-down" •16 Potensmeter •17 Potentiometer för efterflöde av gas •18 Tryckknapp för TIG skärbrännaren •19 Resistans spänningsurladdning filter •20 Primär likriktare •21 Sekundär likriktare •22 Elektroniskt kort för gränssnitt •23 Kort högsänning •24 Frontalkommando kretskort •25 Kommutator för processval •26 Automatisk/manuell avledare •27 Transformator högsänning •28 Energitransformator •29 Primär likriktar-termostat •30 Sekundär likriktar-termostat •31 Jordningspoler •32 Varistor HF filter •33 Varistor försörjningsnät

N Tegnförklaring av elektrisk skjema

•1 Primær transformatorspole •2 Sekundær transformatorspole •3 Kondensator HF-filter •4 Koplingstykke til TIG-brenner •5 Kort for dupliseringsmaskin •6 Dioder for sekundær duplikator •7 Gas ventil •8 Filter HF •9 Kort for INVERTER-energi •10 Kort for INVERTER-kontroll •11 Linjebryter •12 Varsellampe eltiførsel •13 Varsellampe for termostatinngrep •14 Motor ventilator •15 Potensiometer "slope-down" •16 Potensiometer strøm •17 Potensiometer for etterflyt av gass •18 TIG brennerknapp •19 Resistor spenningsavledning filter •20 Primær ensretter •21 Sekundær ensretter •22 Elektronisk grensesnittkort •23 Høyfrekvenskort •24 Elektronisk kort for frontpanelet •25 Omkopler, prosessvelger •26 Automatisk/manuell deviator •27 Høyfrekvenstransformator •28 Energitransformator •29 Primær ensrettertermostat •30 Sekundær ensrettertermostat •31 Jording-poler •32 Varistor HF-filter •33 Varistor tilførselsnett

RU Обозначения электрической схемы

•1 Первичная обмотка трансформатора •2 Вторичная обмотка трансформатора •3 Конденсатор ВЧ-фильтра •4 Разъем горелки TIG •5 Плата удвоителя •6 Дiodы вторичного удвоителя •7 Газовый электромагнитный клапан •8 ВЧ-фильтр •9 Силовая плата инвертора •10 Плата управления ИНВЕРТОРОМ •11 Выключатель •12 Сигнальная лампочка подачи напряжения •13 Сигнальная лампочка срабатывания термостата •14 Вентилятор •15 Потенциометр SLOPE DOWN •16 Потенциометр сварочного тока •17 Потенциометр потока газа после сварки •18 Кнопка горелки TIG •19 Резистор разрядки напряжения фильтра •20 Выпрямитель первичной обмотки •21 Вспомогательный выпрямитель •22 Электронная интерфейсная плата •23 Высокочастотная плата •24 Плата управления •25 Переключатель выбора процесса сварки •26 Переключатель автоматический/ручной •27 Высокочастотный трансформатор •28 Термостат первичного выпрямителя •29 Термостат выпрямителя первичной обмотки •30 Термостат выпрямителя вторичной обмотки •31 Полюса заземления •32 Варистор ВЧ-фильтра •33 Варистор сети электропитания

NL Kleurenlegenda

Ar Oranje
Bc Wit
Bl Donkerblauw
Gg Grijs
Gl Geel
GV Geel Groen
Nr Zwart
Ro Roze
Rs Rood
Vd Groen

PT Legenda cores

Ar Laranja
Bc Branco
Bl Azul-marinho
Gg Cinza
Gl Amarelo
GV Amarelo Verde
Nr Preto
Ro Cor-de-rosa
Rs Vermelho
Vd Verde

SV Färgförklaring

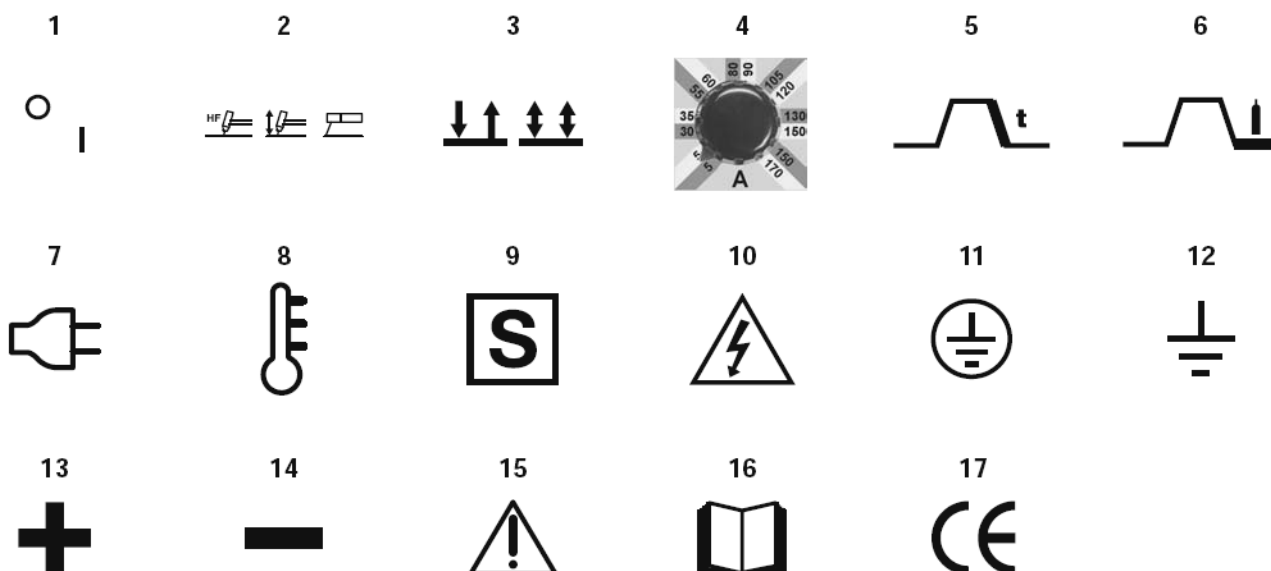
Ar Oransje
Bc Hvit
Bl Blå
Gg Grå
Gl Gul
GV Gul Grønn
Nr Svart
Ro Rosa
Rs Rød
Vd Grønn

N Fargeforklaring

Ar Orange
Bc Vit
Bl Blå
Gg Grå
Gl Gul
GV Gul Grønn
Nr Svart
Ro Rosa
Rs Rød
Vd Grøn
Vd Grønn

RU Цветовая маркировка

Ar Оранжевый
Bc Белый
Bl Синий
Gg Серый
Gl Желтый
GV Желто-зеленый
Nr Черный
Ro Розовый
Rs Красный
Vd Зеленый



IT Significato dei simboli grafici riportati sulla macchina

•1 Interruttore acceso/spento •2 Selettore processo di saldatura •3 Selettore modo di saldatura •4 Scala della corrente di saldatura •5 Scala di regolazione tempo di saldatura •6 Scala di regolazione tempo di post-gas •7 LED verde di segnalazione presenza alimentazione di rete •8 LED giallo di segnalazione intervento protezione termostatica •9 Impianto che può essere utilizzato in ambienti con rischio accresciuto di scosse elettriche •10 Tensione pericolosa •11 Terra di protezione •12 Terra •13 Attacco rapido polo positivo •14 Attacco rapido polo negativo •15 Attenzione! •16 Prima di utilizzare l'impianto è necessario leggere attentamente le istruzioni contenute in questo manuale •17 Prodotto atto a circolare liberamente nella Comunità Europea

EN Meaning of graphic symbols on machine

•1 On/off switch •2 Selector weld procedures •3 Weld mode selector •4 Welding current scale •5 "Slope-down" time adjustment scale •6 Post-gas time adjustment scale •7 Green signal light for power •8 Yellow signal light for overheat cutoff •9 System for use in environments with increased risk of electroshock •10 Danger! high voltage •11 Grounding protection •12 Grounding •13 Positive pole snap-in connector •14 Negative pole snap-in connector •15 Warning! •16 Before using the equipment you should carefully read the instructions included in this manual •17 Product suitable for free circulation in the European Community

FR Interprétation des symboles graphiques reportés sur la machine

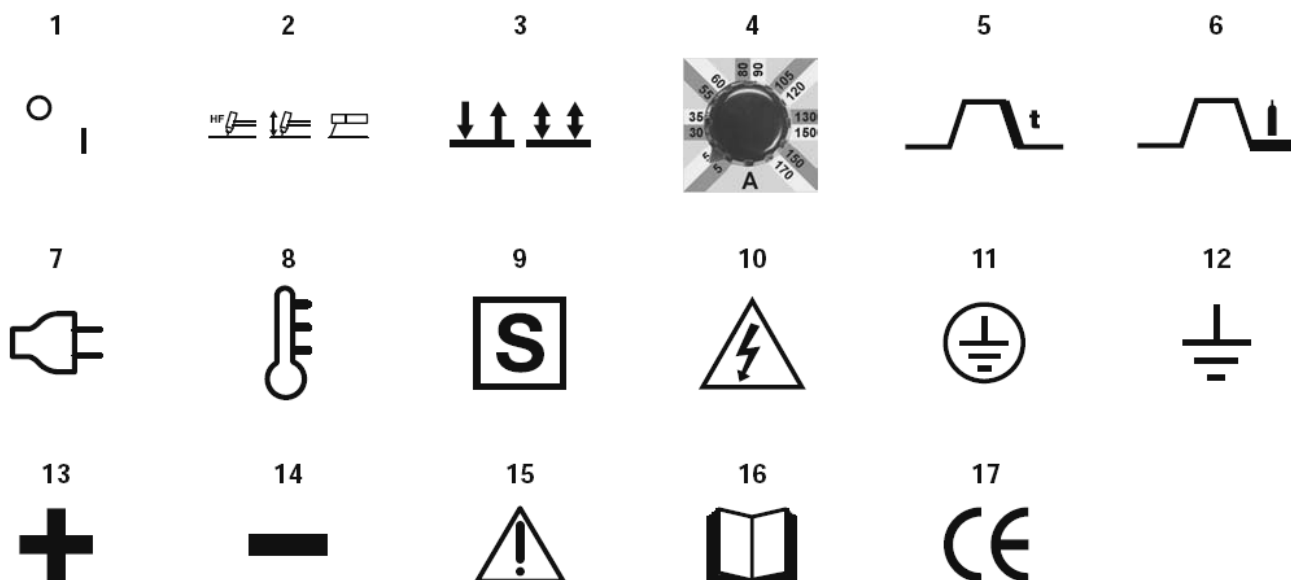
•1 Interrupteur allumé/éteint •2 Commutateur procédé de soudure •3 Sélecteur mode de soudage •4 Echelle réglage de courant de soudure •5 Echelle réglage du temps de soudage •6 Echelle réglage du temps de post-gas •7 LED vert de signalisation présence de réseau •8 LED jaune de signalisation d'intervention de la protection thermostatique •9 Installation pouvant être utilisée dans des milieux avec augmentation du risque de secousses électriques •10 Tension dangereuse •11 Terre de protection •12 Terre •13 Prise rapide pôle positif •14 Prise rapide pôle négatif •15 Attention! •16 Avant d'utiliser l'installation il est nécessaire de lire avec attention les instructions qui se trouvent dans ce manuel •17 Produit pouvant circuler librement dans la Communauté Européenne

DE Bedeutung der grafischen Symbole auf der Maschine

•1 Schalter EIN/AUS •2 Wählschalter für Schweißverfahren •3 Wählschalter Schweißart •4 Skale des Schweißstromes •5 Einstellskala Slope-down-Zeit •6 Einstellskala Nachgaszeit •7 Grüne LED Netzkontrolle •8 Gelbe LED Auslösen Thermoschutz •9 Möglicher Gebrauch der Anlage in Umgebung mit erhöhter Gefahr elektrischer Schläge •10 Gefährliche Spannung •11 Schutzterde •12 Erdung •13 Schnellanschluß Pluspol •14 Schnellanschluß Minuspol •15 Achtung! •16 Vor der Anwendung der Anlage sind die Gebrauchsanweisungen des vorliegenden Handbuches sorgfältig zu lesen •17 Für den freien Warenverkehr in der EU zugelassenes Produkt

ES Significado de los símbolos gráficos referidos en la máquina

•1 Interruptor conectado/apagado •2 Selector procesos de soldadura •3 Selector modo de soldadura •4 Escala corriente de soldadura •5 Escala de regulación tiempo de "slope-down" •6 Escala de regulación tiempo de post-gas •7 LED verde de señalación presencia alimentación de red •8 LED amarillo de señalación intervención protección termostática •9 Instalación que puede ser utilizada en ambientes con grande riesgo de descargas eléctricas •10 Tensión peligrosa •11 Tierra de protección •12 Tierra •13 Toma rápida polo positivo •14 Toma rápida polo negativo •15 Atención! •16 Antes de utilizar la instalación, es necesario leer atentamente las instrucciones contenidas en este manual •17 Producto apto para circular libremente en la Comunidad Europea



NL Betekenis grafische symbolen op het apparaat weergeven

•1 Onderbreker aan-uit •2 Lasprocedures-keuzeschakelaar •3 Lasstand-keuzeschakelaar •4 Schaal van de soldeerstroom •5 Schaal van tijdsregeling "slope-down" •6 Schaal van tijdsregeling na-gas •7 Groene LED aanwezigheid netvoeding •8 Gele LED inschakeling thermostatische beveiliging •9 Apparaat bruikbaar in ruimte met verhoogd risico voor elektrische schokken •10 Gevaarlijke spanning •11 Beschermingsaarding •12 Aarding •13 Snelkoppeling positieve pool •14 Snelkoppeling negatieve pool •15 Let op! •16 Voordat de aansluiting in gebruik genomen wordt is het noodzakelijk om aandachtig de gebruiksaanwijzing in deze handleiding te lezen •17 Produkt mag overal binnen de EEG gebruikt worden

PT Significado dos símbolos gráficos existentes na máquina

•1 Interruptor ligado/desligado •2 Seleccionador processos de solda •3 Seleccionador modo de soldagem •4 Escala da corrente de solda •5 Escala regulação tempo "slope-down" •6 Escala regulação tempo di post-gas •7 Sinalizador luminoso verde de aviso de presença de alimentação de rede •8 Sinalizador luminoso amarelo de aviso de intervenção da protecção termostática •9 Equipamento que pode ser utilizado em ambientes com risco acrescentado de choques eléctricos •10 Tensão perigosa •11 Terra de protecção •12 Terra •13 Encaixe rápido polo positivo •14 Encaixe rápido polo negativo •15 Atenção! •16 Antes de usar a Instalação é necessário ler atentamente as instruções contidas neste manual •17 Produto apto a circular livremente na Comunidade Europeia

SV Förklaring av grafiska symboler på apparaten

•1 Strömbrytare på/avkopplad •2 Väljare med olika svetsningsförlopp •3 Väljare svetsningsläge •4 Skala svetsström •5 Skala för tidsreglering av "slope-down" •6 Skala för tidsreglering av eftergasen •7 Grön lysdiod som signalerar elanslutning •8 Gul lysdiod för start termostat •9 Apparat som kan användas i lokaler med förhöjd risk för elstöt •10 Farlig spänning •11 Skyddsjord •12 Jord •13 Snabbkoppling pluspol •14 Snabbkoppling minuspol •15 Observera! •16 Innan ibruktagandet av anläggningen är det viktigt att uppmärksamt läsa instruktionerna i denna manual •17 Produkt som får cirkulera fritt i EU

N Tegnforklaring av de grafiske symbolene på maskinen

•1 Bryter av/på •2 Velger med sveiseprosedyrer •3 Velger for sveisemåte •4 Målestokk for sveisestrøm •5 Skala for tidsregulering av "slope-down" •6 Skala for tidsregulering av ettergass •7 Grønn LED for signalering av nettilførsel •8 Gul LED for signalering utløsning av termostatisk beskyttelse •9 Anlegg som kan brukes i lokaler hvor der er stor risiko for elektrisk støt •10 Farlig spenning •11 Beskyttelsesjording •12 Jording •13 Hurtigkopling med positiv pol •14 Hurtigkopling med negativ pol •15 Merk! •16 Før du tar sveisemaskinen i bruk, skal du lese nøye igjennom instruksene i denne håndboken •17 Produkt som kan sirkulere fritt i den Europeiske Unionen

RU Значение графических символов на сварочном аппарате

•1 Двухпозиционный выключатель •2 Селектор процесса сварки •3 Селектор режима сварки •4 Шкала сварочного тока •5 Шкала регулирования продолжительности сварки •6 Шкала регулирования подачи газа после сварки •7 Зеленый светодиод сигнализации наличия напряжения •8 Желтый светодиод сигнализации вмешательства термостатической защиты •9 Агрегат, пригодный для использования в средах с повышенной опасностью ударов током •10 Опасное напряжение •11 Защита заземлением •12 Заземление •13 Быстрый соединитель положительного полюса •14 Быстрый соединитель отрицательного полюса •15 Внимание! •16 Перед использованием агрегата необходимо внимательно прочитать инструкции, приведенные в данном руководстве •17 Изделие, предназначенное для свободного перемещения в Европейском Сообществе

IT Significato dei simboli grafici riportati sulla targa dati

•1 Nome e indirizzo costruttore •2 Denominazione impianto •3 Generatore ad inverter monofase •4 Impianto saldatura elettrodo •5 Corrente continua di saldatura •6 Saldatrice utilizzabile in ambienti con rischio accresciuto di scosse elettriche •7 Alimentazione di rete e numero delle fasi •8 Frequenza nominale di rete •9 Saldatura TIG •10 Tensione a vuoto secondaria •11 Raffreddamento ad aria forzata •12 Classe di isolamento •13 Tensione di alimentazione •14 Massimo valore della corrente nominale di alimentazione •15 Grado di protezione dell'involucro •16 Prodotto atto a circolare liberamente nella Comunità Europea •17 Smaltimento speciale •18 Massimo valore della corrente effettiva di alimentazione •19 Tensione nominale del carico •20 Rapporto di intermittenza •21 Corrente nominale di saldatura •22 Minima e massima corrente e tensione di saldatura •23 Normativa di riferimento •24 Numero di matricola

EN Meaning of graphic symbols on rating plate

•1 Name and address of manufacturer •2 Name of system •3 Single-phase INVERTER generator •4 Electrode welding equipment •5 Continuous welding current •6 Welder usable in environments with enhanced risk of electroshock •7 Mains power supply and number of phases •8 Nominal supply frequency •9 TIG welding •10 Secondary no-load voltage •11 Forced air cooling •12 Insulation class •13 Supply voltage •14 Maximum value of rated supply current •15 Degree of protection of casing •16 Product suitable for free circulation in the European Community •17 Special disposal •18 Maximum value of effective input current •19 Nominal load voltage •20 Duty cycle •21 Nominal welding current •22 Minimum and maximum current and welding voltage •23 Reference standards •24 Serial number

FR Interprétation des symboles graphiques sur la plaque de données

•1 Nom et adresse du fabricant •2 Dénomination de l'installation •3 Générateur à CONVERTISSEUR monophasé •4 Installation soudeuse électrode •5 Courant de soudure continu •6 Soudeuse pouvant être utilisée dans un environnement avec risque croissant de décharges électriques •7 Alimentation de réseau et numéro des phases •8 Fréquence nominale d'alimentation •9 Soudure TIG •10 Tension secondaire à vide •11 Refroidissement à air forcée •12 Classe d'isolation •13 Tension d'alimentation •14 Valeur maximale du courant d'alimentation assigné •15 Degré de protection de l'enveloppe •16 Produit pouvant circuler librement dans la Communauté Européenne •17 Elimination spéciale •18 Valeur maximale du courant effectif d'alimentation •19 Tension nominale de la charge •20 Rapport d'intermittence •21 Courant nominal de soudure •22 Minimum et maximum courant et tension de soudure •23 Réglementation de référence •24 N° de série

DE Bedeutung der grafischen Symbole auf dem Datenschild

•1 Name und Anschrift des Herstellers •2 Bezeichnung der Anlage •3 Einphasiger INVERTER-Generator •4 Anlage Elektrodenschweißen •5 Gleichstrom Schweißen •6 Möglicher Gebrauch in Umgebung mit erhöhter Gefahr elektrischer Schläge •7 Netzspeisung und Phasenzahl •8 Nennwert Versorgungsfrequenz •9 TIG-Schweißen •10 Sekundär-Leerlaufspannung •11 Zwangsluftkühlung •12 Isolationsklasse •13 Versorgungsspannung •14 Höchstwert des zugeführten Nennstromes •15 Gehäuse-Schutzgrad •16 Für den freien Warenverkehr in der EU zugelassenes Produkt •17 Sonderentsorgung •18 Höchstwert des tatsächlich zugeführten Stromes •19 Nennwert Ladespannung •20 Aussetzungsverhältnis •21 Nennwert Schweißstrom •22 Min. und Max. Schweißstrom und Schweißspannung •23 Referenznormen •24 Seriennummer

ES Significado de los símbolos referido en la chapa datos

•1 Nombre y dirección del constructor •2 Denominación sistema •3 Generador de INVERTER monofásica •4 Equipo de soldadura con electrodo •5 Corriente de soldadura continua •6 Soldadora utilizable en lugares con riesgo acrecido de choques eléctricos •7 Alimentación de red y número de las fases •8 Frecuencia nominal de alimentación •9 Soldadura TIG •10 Tensión secundaria en vacío •11 Refrigeración por aire forzado •12 Clase de aislamiento •13 Tensión de alimentación •14 Máximo valor de la corriente nominal de alimentación •15 Grado de protección de la caja •16 Producto apto para circular libremente en la Comunidad Europea •17 Eliminación especial •18 Máximo valor de la corriente efectiva de alimentación •19 Tensión nominal de la carga •20 Relación de intermittenza •21 Corriente nominal de soldadura •22 Corriente y tensión de soldadura mínimas y máximas •23 Normas de referencia •24 N° de matrícula

1	CEA costruzioni elettromeccaniche annettoni S.p.A. Corso E, Filiberto, 27 - 23900 Lecco - Italia - www.ceaweld.com Made in ITALY			
2	Type: PoWer TIG 170 DC Pulse	N°		
3		IEC 60974-1 IEC 60974-10		
4		5A/10V - 170A/16,8V		
5		X 20% 60% 100%		
6		U ₀ = 88V	I ₂ 170A 115A 95A	21
7		U ₁ = 230V	U ₂ 16,8V 14,5V 13,8V	
8		U ₁ = 230V	I _{1 max} = 24,5A I _{1 eff} = 14A	
9		5A/20V - 150A/26V		
10		X 25% 60% 100%		
10		U ₀ = 88V	I ₂ 150A 115A 95A	20
10		U ₁ = 230V	U ₂ 26V 24,5V 23,8V	19
11	COOLING AF	I. CL. F	IP 23 S	18
	12	13	14	15
			16	17

NL Betekenis van de grafische symbolen op gegevensplaat

•1 Naam en adres van de fabrikant •2 Benaming apparaat •3 Eenfasegenerator met INVERTER •4 Aansluiting elektrodensoldeering •5 Doorlopende soldeerstroom •6 lasapparaat bruikbaar in plaatsen met verhoogd risico van elektrische schokken •7 Netvoeding en aantal fasen •8 Nominale netfrequentie •9 TIG lassen •10 Secundaire leegloopspanning •11 Gedwongen luchtafkoeling •12 Isolatieklasse •13 Voedingsspanning •14 Maximumwaarde van de nominale voedingsstroom •15 Beschermingsklasse omhulsel •16 Produkt mag overal binnen de EEG gebruikt worden •17 Speciale verwerking •18 Maximumwaarde van de effectieve voedingsstroom •19 Nominale spanning van de lading •20 Intermittentierapport •21 Nominale lasstroom •22 Minimale en maximale stroom en spanning van het soldeeren •23 Referentienorm •24 Registratienummer

PT Significado dos símbolos gráficos da placa de dados

•1 Nome e endereço do fabricante •2 Denominação do equipamento •3 Gerador de INVERTER [INVERSOR] monofásico •4 Equipamento de solda a eletrodo •5 Corrente de solda contínua •6 Máquina de soldar a utilizar em ambientes com risco acrescido de choques eléctricos •7 Alimentação de rede e número das fases •8 Frequência nominal de alimentação •9 Soldadura TIG •10 Tensão secundária a vácuo •11 Resfriamento a ar forçado •12 Classe de isolamento •13 Tensão de alimentação •14 Valor máximo da corrente de alimentação nominal •15 Grau de protecção do invólucro •16 Produto apto a circular livremente na Comunidade Europeia •17 Eliminação especial •18 Valor máximo da corrente de alimentação efectiva •19 Tensão nominal da carga •20 Relação de intermitência •21 Corrente nominal de soldadura •22 Mínima e máxima corrente e tensão de soldadura •23 Normativa de referência •24 N° de matrícula

SV Förklaring av grafiska symboler för data på märkplåten

•1 Namn och adress konstruktör •2 Apparatens benämning •3 Enfas INVERTER generator •4 Anläggning elektrodsvetsning •5 Ström för fortlöpande svetsning •6 svetsapparat som kan användas i lokaler med förhöjd elstötsrisk •7 Nätmätning och antal faser •8 Märkfrequens •9 svetsning TIG •10 Sekundär tomgångsspanning •11 avkyllning med forcerat drag •12 Isoleringsklass •13 Matarspänning •14 Maximal nominell energitillförsell •15 Skyddsgrad hölje •16 Produkt som får cirkulera fritt i EU •17 Specialavfall •18 Maximal reell energitillförsell •19 Nominell urladdningsspänning •20 Intermittensförhållande •21 Märkström •22 Minimum,- och maximumström och tryck i svetsning •23 Hänvisningsregler •24 Registreringsnummer

N Tegnforklaring av de grafiske symbolene på merkeplaten

•1 Produsentens navn og adresse •2 Benevnelse av anlegget •3 Enfase INVERTER-generator •4 Sveiseanlegg elektrode •5 Likerettet sveisestrøm •6 Sveisemaskinen kan brukes i lokales hvor det er stor risiko for elektrisk støt •7 Elnett og antall faser •8 Nominell tilførselsfrekvens •9 TIG-sveising •10 Sekundær tomgangsspenning •11 Forsert luftavkjøling •12 Isoleringsklasse •13 Tilførselsspenning •14 Maksimalverdi nominell tilførselsstrøm •15 Emballasjens beskyttelsesgrad •16 Produkt som kan sirkulere fritt i den Europeiske Unionen •17 Spesialavsetning •18 Maksimalverdi effektiv tilførselsstrøm •19 Nominell ladespenning •20 Intermittierende forhold •21 Nominell sveisestrøm og -spenning •23 Referansnormer •24 Serienummerr

RU Значение графических символов на пластине

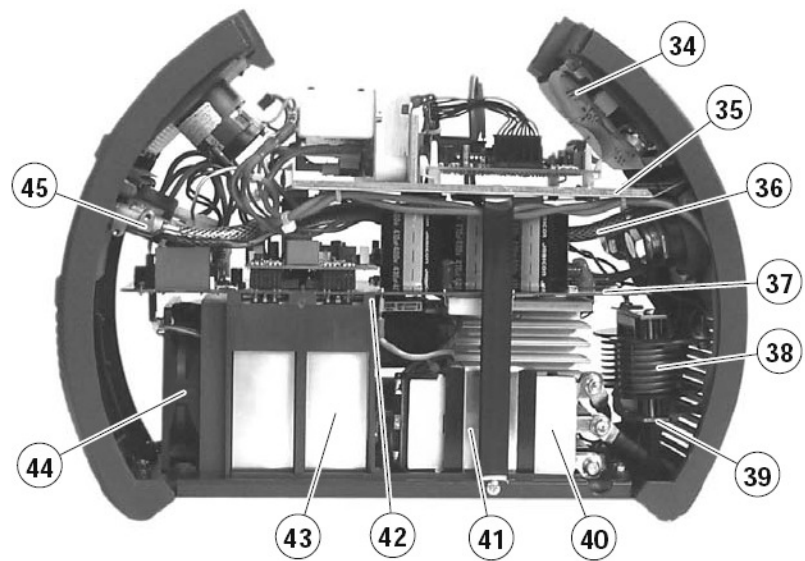
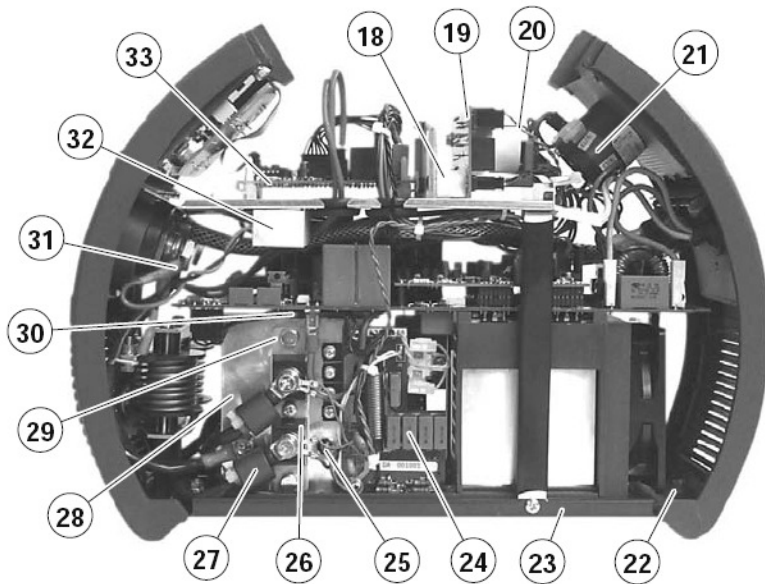
•1 Имя и адрес фирмы-изготовителя •2 Название системы •3 Однофазный инверторный генератор •4 Сварка электродом •5 Постоянный сварочный ток •6 Сварочный аппарат, пригодный для использования в средах с повышенной опасностью ударов током •7 Сетевое электропитание и количество фаз •8 Номинальная частота сети •9 Сварка TIG •10 Напряжение холостого хода вторичной обмотки •11 Принудительное воздушное охлаждение •12 Класс изоляции •13 Напряжение электропитания •14 Максимальное значение эффективного тока на входе •15 Класс защиты корпуса •16 Изделие может свободно перемещаться в пределах Европейского Сообщества •17 По особому распоряжению •18 Максимальное действующее значение тока электропитания •19 Номинальное напряжение нагрузки •20 Отношение прерывистости •21 Номинальное значение сварочного тока •22 Минимальный и максимальный ток и напряжение сварки •23 Стандарт •24 Серийный номер

1	CEA costruzioni elettromeccaniche annettoni S.p.A. Corso E. Filiberto, 27 - 23900 Lecco - Italia - www.ceaweld.com Made in ITALY			
2	Type: PoWer TIG 170 DC Pulse	N°		
3		IEC 60974-1 IEC 60974-10		
4		5A/10V - 170A/16,8V		
5		X	20%	60%
6		I ₂	170A	115A
7		U ₂	16,8V	14,5V
8		U ₁ =230V	I _{1 max} = 24,5A	I _{1 eff} = 14 A
9		5A/20V - 150A/26V		
10		X	25%	60%
11		I ₂	150A	115A
		U ₂	26V	24,5V
		U ₁ =230V	I _{1 max} = 26,5A	I _{1 eff} = 17 A
	COOLING AF	I. CL. F	IP 23 S	

IT	Lista ricambi
EN	Spare parts list
FR	Liste pièces de rechange
DE	Ersatzteilliste
ES	Lista repuestos

NL	Onderdelenlijst
PT	Lista de peças de substituição
SV	Reservdelslista
N	Reservedelliste
RU	Список запчастей

Pos.	Cod.	Descrizione	Description
1	352523	Pannello laterale	Side panel
2	439318	Pannello rack completo di adesivo	Rack panel with sticker
3	467027	Adesivo pannello rack	Rack panel sticker
4	438845	Manopola Ø22	Ø22 Knob
5	438853	Manopola Ø15	Ø15 Knob
6	403635	Attacco rapido gas	Gas quick connection
7	403611	Attacco rapido	Quick connection
8	419002	Pres a 6 poli	6 Contacts connector
9	423134	Dado presa 6 poli	Nut 6 contacts connector
10	352457	Pannello frontale	Front panel
11	438205	Maniglia	Handle
12	365850	Piastrina connessione tracolla	Shoulder bag connection
13	438710	Manopola interruttore	Switch knob
14	467025	Adesivo pannello posteriore	Rear panel sticker
15	427895	Pressacavo con ghiera	Cable clamp
16	235995	Cavo linea	Mains cable
17	352446	Pannello posteriore	Rear panel
18	424009	Distanziale scheda spinterometro	Spark gap board spacer
19	377051	Scheda spinterometro	Spark gap board
20	413758	Cablaggio ausiliario e potenza	Auxiliary and power wiring
21	435375	Interruttore alimentazione	Mains switch
22	352485	Basamento in plastica	Plastic base
23	405014	Basamento metallico	Metallic base
24	377037	Duplicatore	Doubler
25	478786	Termostato raddrizzatore secondario	Secondary rectifier thermostat
26	241116	Raddrizzatore secondario	Secondary rectifier
27	427406	Ferrite soppressione EMI	EMI suppression ferrite ring
28	423519	Dissipatore raddrizzatore secondario	Secondary rectifier heat sink
29	241123	Complessivo raddriz. sec. + duplicatore	Secondary rectifier assembly + doubler
30	353460	Isolamento dissipatore secondario	Secondary heat sink insulation
31	413726	Cablaggio pannello frontale	Front panel wiring
32	427555	Filtro protezione HF	HF protection filter
33	376949	Scheda elettronica interfaccia	Interface electronic PCB
34	376987	Scheda elettronica frontale	Front electronic PCB
35	449547	Piastra circuito HF	HF circuit plate
36	485040	Tubo gas	Gas Tube
37	240490	Complessivo inverter di potenza	Power inverter assembly
38	239990	Trasformatore HF	HF Transformer
39	462804	Staffa fissaggio piastra HF	HF circuit plate locking clamp
40	481420	Trasformatore	Transformer
41	463220	Staffa fissaggio trasformatore	Transformer locking clamp
42	427245	Ancoraggio dissipatori primari	Primary heat sink clamping
43	423520	Dissipatori IGBT primari	Primary IGBT heat sink
44	444508	Ventilatore	Fan
45	425933	Elettrovalvola gas	Gas solenoid valve



IT Ordinazione dei pezzi di ricambio

Per la richiesta di pezzi di ricambio indicare chiaramente:

- 1) Il numero di codice del particolare
- 2) Il tipo di impianto
- 3) La tensione e la frequenza che rileverete dalla targhetta dei dati posta sull'impianto
- 4) Il numero di matricola

ESEMPIO

N° 2 pezzi, codice n. 239900 - per l'impianto PoWer TIG 170 DC Pulse HF - 230 V - 50/60 Hz - Matricola n°

EN Ordering spare parts

To ask for spare parts clearly state:

- 1) The code number of the piece
- 2) The type of device
- 3) The voltage and frequency read on the rating plate
- 4) The serial number of the same

EXAMPLE

N. 2 pieces code n. 239900 - for PoWer TIG 170 DC Pulse - 230 V - 50/60 Hz - Serial number

FR Commande des pièces de rechange

Pour commander des pièces de rechange indiquer clairement:

- 1) Le numéro de code de la pièce
- 2) Le type d'installation
- 3) La tension et la fréquence que vous trouverez sur la petite plaque de données placée sur l'installation
- 4) Le numéro de matricule de la même

EXEMPLE

N. 2 pièces code 239900 - pour l'installation PoWer TIG 170 DC Pulse - 230 V - 50/60 Hz - Matr. Numéro

DE Bestellung Ersatzteile

Für die Anforderung von Ersatzteilen geben Sie bitte deutlich an:

- 1) Die Artikelnummer des Teiles
- 2) Den Anlagentyp
- 3) Die Spannung und Frequenz, die Sie auf dem Datenschild der Anlage finden
- 4) Die Seriennummer der Schweißmaschine

BEISPIEL

2 Stück Artikelnummer 239900 - für Anlage PoWer TIG 170 DC Pulse - 230 V - 50/60 Hz - Seriennummer

ES Pedido de las piezas de repuesto

Para pedir piezas de repuesto indiquen claramente:

- 1) El número de código del particular
- 2) El tipo de instalación
- 3) La tensión y la frecuencia que se obtiene de la chapa datos colocada sobre la instalación
- 4) El número de matrícula de la soldadora misma

EJEMPLO

N. 2 piezas código 239900 - para instalación PoWer TIG 170 DC Pulse - 230 V - 50/60 Hz - Matricula N.

NL Bestelling van reserveonderdelen

Voor het bestellen van onderdelen duidelijk aangeven:

- 1) Het codenummer van het onderdeel
- 2) Soort apparaat
- 3) Spanning en frequentie op het gegevensplaatje te vinden
- 4) Het serienummer van het lasapparaat

VOORBEELD

N. 2 stuks code 239900 - voor apparaat PoWer TIG 170 DC Pulse - 230 V - 50/60 Hz - Serie Nummer

PT Requisição de peças sobressalentes

Ao pedir as peças de substituição indique claramente:

- 1) O número de código da peça
- 2) O tipo de equipamento
- 3) A tensão e a frequência indicadas na la placa de dados do equipamento
- 4) O número de matrícula da própria máquina de soldar

EXEMPLO

N° 2 peças código n. 239900 - para o equipamento PoWer TIG 170 DC Pulse - 230 V - 50/60 Hz

Matrícula n.

SV Beställning af reservdelar

Vid förfrågan av reservdelar ange tydligt:

- 1) Detaljens kodnummer
- 2) Typ av apparat
- 3) Spänning och frekvens - den står bland tekniska data på apparatens märkplåt
- 4) Svetsens serienummer

EXEMPEL

2 st. detaljer kod 239900 - för apparat PoWer TIG 170 DC Pulse - 230 V - 50/60 Hz - Serienummer

N Bestilling av reservedeler

Ved bestilling av reservedeler må du oppgi:

- 1) Delenes kodnummer
- 2) Type apparat
- 3) Apparatets spenning og frekvens som finnes på merkeplaten for data på apparatet
- 4) Sveiseapparatets serienummer

EKSEMPEL

2 stk. kode 239900 - for apparat PoWer TIG 170 DC Pulse - 230 V - 50/60 Hz - Serienummer.....

RU Заказ запасных частей

Для запроса запасных частей укажите точно:

- 1) код запчасти,
- 2) модель машины,
- 3) напряжение и частоту, написанные на пластине,
- 4) ее серийный номер.

ПРИМЕР

2 шт., код № 239900, для сварочной машины PoWer TIG 170 DC Pulse 230 В - 50/60 Hz

Серийный номер

