

EN IT FR ES DE RU  
PT EL NL HU RO SV  
DA NO FI CS SK SL  
HR-SR LT ET LV BG PL

(EN) INSTRUCTION MANUAL  
(IT) MANUALE D'ISTRUZIONE  
(FR) MANUEL D'INSTRUCTIONS  
(ES) MANUAL DE INSTRUCCIONES  
(DE) BEDIENUNGSANLEITUNG  
(RU) РУКОВОДСТВО ПОЛЬЗОВАТЕЛЯ  
(PT) MANUAL DE INSTRUÇÕES  
(EL) ΕΓΧΕΙΡΙΔΙΟ ΧΡΗΣΗΣ  
(NL) INSTRUCTIEHANDLEIDING  
(HU) HASZNÁLATI UTASÍTÁS  
(RO) MANUAL DE INSTRUCȚIUNI  
(SV) BRUKSANVISNING  
(DA) INSTRUKTIONSMANUAL  
(NO) BRUKERVEILEDNING  
(FI) OHJEKIRJA  
(CS) NÁVOD K POUŽITÍ  
(SK) NÁVOD NA POUŽITIE  
(SL) PRIROČNIK Z NAVODILI ZA UPORABO  
(HR-SR) PRIRUČNIK ZA UPOTREBU  
(LT) INSTRUKCIJŲ KNYGELĖ  
(ET) KASUTUSJUHEND  
(LV) ROKASGRĀMATA  
(BG) РЪКОВОДСТВО С ИНСТРУКЦИИ  
(PL) INSTRUKCJA OBSŁUGI



TIG (DC) (AC/DC) HF/LIFT • MMA



- ▶ (EN) Professional TIG (DC) (AC/DC) HF/LIFT, MMA welding machines with inverter.
- ▶ (IT) Saldatrici professionali ad inverter TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (FR) Postes de soudage professionnels à inverseur TIG (DC) (CA/CC) HF/LIFT, MMA.
- ▶ (ES) Soldadoras profesionales con inverter TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (DE) Professionelle Schweißmaschinen WIG (DC) (AC/DC) HF/LIFT, MMA mit Invertertechnik.
- ▶ (RU) Профессиональные сварочные аппараты с инвертером TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (PT) Aparelhos de soldar profissionais com variador de frequência TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (EL) Επαγγελματικοί συγκολλητές με ινβέρτερ TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (NL) Professionele lasmachines met inverter TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (HU) Professzionális TIG (DC) (AC/DC) HF/LIFT, MMA inverthegezők.
- ▶ (RO) Aparate de sudură cu inverter pentru sudură TIG (DC) (AC/DC) HF/LIFT, MMA destinate uzului profesional.
- ▶ (SV) Professionella svetsar med växelriktare TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (DA) Professionelle svejsemaskiner med inverter TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (NO) Profesjonelle sveisebrenner med inverter TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (FI) Ammattihihtauslaitteet vaihtosuuntaajalla TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (CS) Profesionální svařovací agregáty pro svařování TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (SK) Profesionálne zväracie agregáty pre zváranie TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (SL) Profesionalni varilni aparati s frekvenčnim menjalnikom TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (HR-SR) Profesionalni stroj za varenje sa inverterom TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (LT) Profesionalūs suvirinimo aparatai su Inverteriu TIG (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (ET) Inverter TIG (DC) (AC/DC) HF/LIFT, MMA professionaalsed keevitusaparaadid.
- ▶ (LV) Profesionālie metināšanas aparāti ar inverteru un līdzstrāvas TIG (DC) (AC/DC) HF/LIFT, MMA metināšanai.
- ▶ (BG) Професионални инверторни електрожени за заваряване ВИГ (TIG) (DC) (AC/DC) HF/LIFT, MMA.
- ▶ (PL) Profesjonalne spawarki inwerterowe TIG (DC) (AC/DC) HF/LIFT, MMA.







	<b>INSTRUCTIONS FOR USE AND MAINTENANCE</b> .....pag. 5 WARNING! BEFORE USING THE WELDING MACHINE READ THE INSTRUCTION MANUAL CAREFULLY!	<b>EN</b>
	<b>ISTRUZIONI PER L'USO E LA MANUTENZIONE</b> .....pag. 10 ATTENZIONE! PRIMA DI UTILIZZARE LA SALDATRICE LEGGERE ATTENTAMENTE IL MANUALE DI ISTRUZIONE!	<b>IT</b>
	<b>INSTRUCTIONS D'UTILISATION ET D'ENTRETIEN</b> .....pag. 15 ATTENTION! AVANT TOUTE UTILISATION DU POSTE DE SOUDAGE, LIRE ATTENTIVEMENT LE MANUEL D'INSTRUCTIONS!	<b>FR</b>
	<b>INSTRUCCIONES PARA EL USO Y MANTENIMIENTO</b> .....pág. 21 ATENCIÓN! ANTES DE UTILIZAR LA SOLDADORA LEER ATENTAMENTE EL MANUAL DE INSTRUCCIONES!	<b>ES</b>
	<b>BETRIEBS- UND WARTUNGSANLEITUNG</b> .....s. 27 ACHTUNG! VOR GEBRAUCH DER SCHWEISSMASCHINE LESEN SIE BITTE SORGFÄLTIG DIE BETRIEBSANLEITUNG!	<b>DE</b>
	<b>ИНСТРУКЦИИ ПО РАБОТЕ И ТЕХОБСЛУЖИВАНИЮ</b> .....стр. 33 ВНИМАНИЕ! ПЕРЕД ТЕМ, КАК ИСПОЛЬЗОВАТЬ МАШИНУ, ВНИМАТЕЛЬНО ПРОЧИТАТЬ РУКОВОДСТВО ПОЛЬЗОВАТЕЛЯ!	<b>RU</b>
	<b>INSTRUÇÕES DE USO E MANUTENÇÃO</b> .....pág. 39 CUIDADO! ANTES DE UTILIZAR A MÁQUINA DE SOLDA LER CUIDADOSAMENTE O MANUAL DE INSTRUÇÕES !	<b>PT</b>
	<b>ΟΔΗΓΙΕΣ ΧΡΗΣΗΣ ΚΑΙ ΣΥΝΤΗΡΗΣΗΣ</b> .....σελ. 45 ΠΡΟΣΟΧΗ! ΠΡΙΝ ΧΡΗΣΙΜΟΠΟΙΗΣΕΤΕ ΤΟ ΣΥΓΚΟΛΗΤΗ ΔΙΑΒΑΣΤΕ ΠΡΟΣΕΚΤΙΚΑ ΤΟ ΕΓΧΕΙΡΙΔΙΟ ΧΡΗΣΗΣ!	<b>EL</b>
	<b>INSTRUCTIES VOOR HET GEBRUIK EN HET ONDERHOUD</b> .....pag. 51 OPGELET! VOORDAT MEN DE LASMACHINE GEBRUIKT MOET MEN AANDACHTIG DE INSTRUCTIEHANDLEIDING LEZEN!	<b>NL</b>
	<b>HASZNÁLATI UTASÍTÁSOK ÉS KARBANTARTÁSI SZABÁLYOK</b> .....oldal 57 FIGYELEM: A HEGESZTŐGÉP HASZNÁLATÁNAK MEGKEZDÉSE ELŐTT OLVASSA EL FIGYELMESEN A HASZNÁLATI UTASÍTÁST!	<b>HU</b>
	<b>INSTRUCȚIUNI DE FOLOSIRE ȘI ÎNTREȚINERE</b> .....pag. 63 ATENȚIE: CITIȚI CU ATENȚIE ACEST MANUAL DE INSTRUCȚIUNI ÎNAINTE DE FOLOSIREA APARATULUI DE SUDURĂ!	<b>RO</b>
	<b>INSTRUKTIONER FÖR ANVÄNDNING OCH UNDERHÅLL</b> .....sid. 68 VIKTIGT! LÄS BRUKSANVISNINGEN NOGGRANT INNAN NI ANVÄNDER SVETSEN!	<b>SV</b>
	<b>BRUGS- OG VEDLIGEHOJDELSESVEJLEDNING</b> .....sd. 73 GIV AGT! LÆS BRUGERVEJLEDNINGEN OMHYGGELIGT, FØR MASKINEN TAGES I BRUG!	<b>DA</b>
	<b>INSTRUKSER FOR BRUK OG VEDLIKEHOLD</b> .....s. 78 ADVARSEL! FØR DU BRUKER SVEISEBRENNEREN MÅ DU LESE BRUKERVEILEDNINGEN NØYE!	<b>NO</b>
	<b>KÄYTTÖ- JA HUOLTO-OHJEET</b> .....s. 83 HUOM! ENNEN HITSAUSKONEEN KÄYTTÖÄ LUE HUOLELLISESTI KÄYTTÖOHJEKIRJA!	<b>FI</b>
	<b>NÁVOD K POUŽITÍ A ÚDRŽBĚ</b> .....str. 88 UPOZORNĚNÍ: PŘED POUŽITÍM SVAŘOVAČIHO PŘÍSTROJE SI POZORNĚ PŘEČTĚTE NÁVOD K POUŽITÍ!	<b>CS</b>
	<b>NÁVOD NA POUŽITIE A ÚDRŽBU</b> .....str. 93 UPOZORNENIE: PRED POUŽITÍM ZVÁRACIEHO PŘÍSTROJA SI POZORNE PREČÍTAJTE NÁVOD NA POUŽITIE!	<b>SK</b>
	<b>NAVODILA ZA UPORABO IN VZDRŽEVANJE</b> .....str. 98 POZOR: PRED UPORABO VARILNE NAPRAVE POZORNO PREBERITE PRIROČNIK Z NAVODILI ZA UPORABO!	<b>SL</b>
	<b>UPUTSTVA ZA UPOTREBU I SERVISIRANJE</b> .....str. 103 POZOR: PRIJE UPOTREBE STROJA ZA VARENJE POTREBNO JE PAŽLJIVO PROČITATI PRIRUČNIK ZA UPOTREBU!	<b>HR SR</b>
	<b>EKSPLOATAVIMO IR PRIEŽIŪROS INSTRUKCIJOS</b> .....psl. 108 DĖMESIO: PRIEŠ NAUDOJANT SUVIRINIMO APARATĄ, ATIDŽIAI PERSKAITYTI INSTRUKCIJŲ KNYGELĘ!	<b>LT</b>
	<b>KASUTUSJUHENDID JA HOOLDUS</b> .....lk. 113 TÄHELEPANU: ENNE KEEVITUSAPARAADI KASUTAMIST LUGEGE KASUTUSJUHISED TÄHELEPANELIKULT LÄBI!	<b>ET</b>
	<b>IZMANTOŠANAS UN TEHNISKĀS APKOPES ROKASGRĀMATA</b> .....lpp. 118 UZMANĪBU: PIRMS METINĀŠANAS APARĀTA IZMANTOŠANAS UZMANĪGI IZLASIET ROKASGRĀMATU!	<b>LV</b>
	<b>ИНСТРУКЦИИ ЗА УПОТРЕБА И ПОДДРЪЖКА</b> .....стр. 123 ВНИМАНИЕ: ПРЕДИ ДА ИЗПОЛЗВАТЕ ЕЛЕКТРОЖЕНА, ПРОЧЕТЕТЕ ВНИМАТЕЛНО РЪКОВОДСТВОТО С ИНСТРУКЦИИ ЗА ПОЛЗВАНЕ.	<b>BG</b>
	<b>INSTRUKCJE OBSŁUGI I KONSERWACJI</b> .....str. 129 UWAGA: PRZED ROZPOCZĘCIEM SPAWANIA NALEŻY UWAŻNIE PRZECZYTAĆ INSTRUKCJĘ OBSŁUGI!	<b>PL</b>

(EN) GUARANTEE AND CONFORMITY - (IT) GARANZIA E CONFORMITÀ - (FR) GARANTIE ET CONFORMITÉ - (ES) GARANTÍA Y CONFORMIDAD - (DE) GARANTIE UND KONFORMITÄT - (RU) ГАРАНТИЯ И СООТВЕТСТВИЕ - (PT) GARANTIA E CONFORMIDADE - (EL) ΕΓΓΥΗΣΗ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗ ΣΤΙΣ ΔΙΑΤΑΞΕΙΣ - (NL) GARANTIE EN CONFORMITEIT - (HU) GARANCIA ÉS A JOGSZABÁLYI ELŐÍRÁSOKNAK VALÓ MEGFELELŐSÉG - (RO) GARANȚIE ȘI CONFORMITATE - (SV) GARANTI OCH ÖVERENSSTÄMMELSE - (DA) GARANTI OG OVERENSSTEMMELSE/SERKLÆRING - (NO) GARANTI OG KONFORMITET - (FI) TAKUU JA VAATIMUSTENMUKAISUUS - (CS) ZÁRUKA A SHODA - (SK) ZÁRUKA A ZHODA - (SL) GARANCIJA IN UDOBJE - (HR-SR) GARANCIJA I SUKLADNOST - (LT) GARANTIJA IR ATITIKTIS - (ET) GARANTIJA JA VASTAVUS - (LV) GARANTIJA UN ATBILSTĪBA - (BG) ГАРАНЦИЯ И СЪОТВЕТСТВИЕ - (PL) GWARANCJA I ZGODNOŚĆ.....142 - 144

precise adjustment, result in excellent quality welds.

The inverter system of regulation at the power supply input (primary) also leads to a drastic decrease in the volume of both the transformer and the levelling reactance so that it is possible to build a considerably smaller, lighter welding machine, highlighting its advantages of easy handling and transport.

## 2.2 OPTIONAL ACCESSORIES

- Argon bottle adapter.
- Welding current return cable complete with earth clamp.
- Manual remote control with 1 potentiometer.
- Manual remote control with 2 potentiometers.
- Pedal remote control.
- MMA welding kit.
- TIG welding kit.
- Self-darkening mask: with fixed or adjustable filter.
- Gas connector and pipe for hook-up with Argon bottle.
- Pressure reducing valve with gauge.
- Torch for TIG welding.
- TIG torch with potentiometer.
- G.R.A. 4500 water cooling unit.
- ARCTIC Trolley.

## 3. TECHNICAL DATA

### 3.1 DATA PLATE (FIG. A)

The most important data regarding use and performance of the welding machine are summarised on the rating plate and have the following meaning:

- 1- Protection rating of the covering.
- 2- Symbol for power supply line:
  - 1~: single phase alternating voltage;
  - 3~: three phase alternating voltage.
- 3- Symbol **S** : indicates that welding operations may be carried out in environments with heightened risk of electric shock (e.g. very close to large metallic volumes).
- 4- Symbol for welding procedure provided.
- 5- Symbol for internal structure of the welding machine.
- 6- EUROPEAN standard of reference, for safety and construction of arc welding machines.
- 7- Manufacturer's serial number for welding machine identification (indispensable for technical assistance, requesting spare parts, discovering product origin).
- 8- Performance of the welding circuit:
  - $U_0$  : maximum no-load voltage (open welding circuit).
  - $I_0/U_0$  : current and corresponding normalised voltage that the welding machine can supply during welding.
  - **X** : Duty cycle: indicates the time for which the welding machine can supply the corresponding current (same column). It is expressed as %, based on a 10 minutes cycle (e.g. 60% = 6 minutes working, 4 minutes pause, and so on). If the usage factors (on the plate, referring to a 40°C environment) are exceeded, the thermal safeguard will trigger (the welding machine will remain in standby until its temperature returns within the allowed limits).
  - **A/V-A/V** : shows the range of adjustment for the welding current (minimum maximum) at the corresponding arc voltage.
- 9- Technical specifications for power supply line:
  - $U_1$  : Alternating voltage and power supply frequency of welding machine (allowed limit  $\pm 10\%$ ).
  - $I_{1max}$  : Maximum current absorbed by the line.
  - $I_{1eff}$  : Effective current supplied.
- 10-  $I_{1off}$  : Size of delayed action fuses to be used to protect the power line.
- 11- Symbols referring to safety regulations, whose meaning is given in chapter 1 "General safety considerations for arc welding".

Note: The data plate shown above is an example to give the meaning of the symbols and numbers; the exact values of technical data for the welding machine in your possession must be checked directly on the data plate of the welding machine itself.

### 3.2 OTHER TECHNICAL DATA

- **WELDING MACHINE:** see table 1 (TAB.1).
  - **TORCH:** see table 2 (TAB.2).
- The welding machine weight is shown in table 1 (TAB. 1).

## 4. DESCRIPTION OF THE WELDING MACHINE

### 4.1 BLOCK DIAGRAM

The welding machine consists basically of power and control modules made on PCB's and optimised to achieve perfect reliability and reduced maintenance.

This welding machine is controlled by a microprocessor that allows a large number of parameter settings so as to achieve perfect welding in any condition and with any material. However, to make the best use of its properties it is necessary to be fully aware of its possibilities.

### Description (FIG. B)

- 1- Three-phase power supply input, rectifier unit and levelling capacitors.
- 2- Transistor (IGBT) switching bridge and drivers; commutes the rectified power supply voltage to high frequency alternating voltage and adjusts the power according to the required welding current/voltage.
- 3- High frequency transformer; the voltage converted by block 2 powers the primary winding; its function is to adjust the voltage and current to the values needed for the arc welding procedure and at the same time to form galvanic separation of the welding circuit from the power supply line.
- 4- Secondary rectifier bridge with levelling inductance; commutes the alternating voltage / current supplied by the secondary winding into very low ripple direct current / voltage.
- 5- Transistor (IGBT) switching bridge and drivers; transforms the secondary output current from DC to AC for TIG AC welding (if present).
- 6- Control and adjustment electronics; controls the welding current value instantaneously and compares it with the operator's setting; modulates the control impulses from the IGBT drivers that make the adjustment.
- 7- Welding machine operation control logic; sets the welding cycles, controls the actuators, supervises the safety systems.
- 8- Settings panel and display of parameters and operating modes.
- 9- HF strike generator (if present).
- 10- Protective gas solenoid valve EV (if present).
- 11- Welding machine cooling fan.
- 12- Remote control.

## 4.2 CONTROL, ADJUSTMENT AND CONNECTING DEVICES

### 4.2.1 Rear panel (FIG. C)

- 1- Main switch O/OFF - I/ON.
- 2- Power cable (2 P + T (Single-phase)), (3 P + T (Three-phase)).
- 3- Coupler for connecting the gas hose (bottle - welding machine pressure reducer) (if present).
- 4- Fuse (if present).

- 5- Connector for water cooling unit (if present).
- 6- Connector for remote control:
  - Three different types of remote control can be connected to the welding machine using the relative 14-pole connector at the back. Each device is recognised automatically and can be used to adjust these parameters:
    - **Remote control with one potentiometer:** rotating the potentiometer knob varies the main current from minimum to maximum. The main current can only be adjusted with the remote control.
    - **Pedal remote control:** the current value is determined by the position of the pedal. When in the TIG 2 STROKE mode, pressing the pedal starts the machine instead of pressing the torch push-button (if present).
    - **Remote control with two potentiometers:** the first potentiometer adjusts the main current, the second potentiometer adjusts another parameter that depends on the welding mode being used. Rotating this potentiometer displays the parameter being varied (which can no longer be controlled using the panel knob). The meaning of the second potentiometer is: ARC FORCE if in the MMA mode and END SLOPE if in the TIG mode.
  - **TIG torch with potentiometer.**

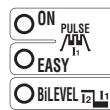


It is obligatory to use a 5-pole torch adapter for any TIG TORCH with an on-board adjustment potentiometer in order to protect the welding machine from internal breakage.

### 4.2.2 Front panel FIG. D

- 1- Positive (+) fast coupling for connecting the welding cable.
- 2- Negative (-) fast coupling for connecting the welding cable.
- 3- Connector for connecting the torch push-button.
- 4- Coupler for connecting the TIG torch gas hose.
- 5- Control panel.
- 6- Welding mode selection push-buttons:

#### 6a PULSE - PULSE EASY - BiLEVEL



When in the TIG mode, you can choose between pulsed (ON PULSE), automatic pulse (EASY PULSE), and Bi-LEVEL. None of these processes is active if the LED is off.

**PULSE:** manual pulse mode where the following parameters can be set: MAIN CURRENT ( $I_2$ ), BASE CURRENT ( $I_1$ ), PULSE FREQUENCY AND BALANCE.

**EASY PULSE** automatic pulsed mode where only the MAIN CURRENT ( $I_2$ ) needs to be set. The other parameters, BASE CURRENT ( $I_1$ ), PULSE FREQUENCY and BALANCE, are adjusted automatically according to the preset values ( $I_1 = 70\% I_2$ , FREQUENCY = 2Hz, BALANCE = 0). These values can be modified.

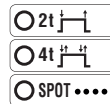
The PULSE and EASY PULSE modes are indicated for welding thin material.

**Note:** "G.R.A. SETTING":

G.R.A. ON: Operation with G.R.A. management enabled.

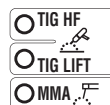
G.R.A. OFF: Operation with G.R.A. management disabled, DEFAULT setting. This specific machine setting can be accessed by holding the right push-button (6a) down during the switching on and initial test phase (phase that follows the switching off of the main switch).

#### 6b 2T - 4T - SPOT



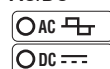
When in the TIG mode, use to select either 2 stroke, 4 stroke or timed spot welding.

#### 6c TIG - MMA



Operation mode: welding with coated electrode (MMA), TIG welding with high frequency arc striking (TIG HF) and TIG welding with arc striking upon contact (TIG LIFT).

#### 6d AC/DC



Use to select between direct current welding and alternate current welding when in the TIG mode (only present in AC/DC models).

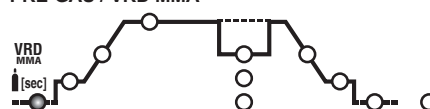
- 7- Welding parameters that can be adjusted using the encoder knob (9), associated with the previous setting of 6a, 6b, 6c, 6d.

To set each parameter:

- a) select the parameter to be adjusted (by pressing the knob (9)), which is indicated by the corresponding lit LED;
- b) rotate the knob (9) and set the required value;
- c) press the knob (9) again to adjust the next parameter.

**N.B.:** The parameters can be set as desired by the operator. There are, however, value combinations that do not have a practical meaning for welding; in this case the welding machine may not operate correctly.

#### 7a PRE-GAS / VRD MMA

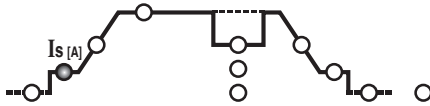


This is the PRE-GAS time in seconds (adjustment from 0 - 5 seconds) when



in the TIG/HF mode. Improves welding starting.  
When in the MMA mode, use to insert the Voltage Reduction Device "VRD".

### 7b INITIAL CURRENT ( $I_{START}$ )

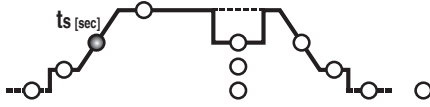


When in the TIG 2 stroke and SPOT modes it represents the initial current  $I_s$  that is maintained for a fixed time with the torch push-button pressed (adjustment in Amperes).

When in the TIG 4 stroke mode, it represents the initial current  $I_s$  that is maintained for the whole time during which the torch push-button is pressed (adjustment in Amperes).

When in the MMA mode, it represents the "HOT START" dynamic overcurrent (adjustment  $0 \div 100\%$ ). With indication on the display of the percentage increase as to the pre-selected welding current value. This adjustment improves welding fluidity.

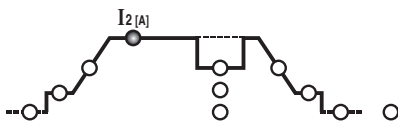
### 7c INITIAL SLOPE ( $t_{START}$ )



When in the TIG mode this is the initial slope time of the current (from  $I_s$  to  $I_2$ ) (adjustment  $0.1 \div 10$  s). When at OFF there is no ramp.

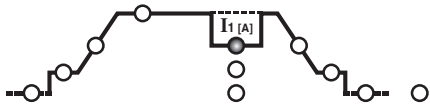
The  $I_{START}$  and  $t_{START}$  parameters can be used even with remote commands given from the pedal, but the adjustment must be made before activating the command.

### 7d MAIN CURRENT ( $I_2$ )



In the TIG AC/DC or in the MMA mode,  $I_2$  is the output current; in the PULSED and BI-LEVEL mode  $I_2$  is the maximum current. The parameter is measured in Amperes.

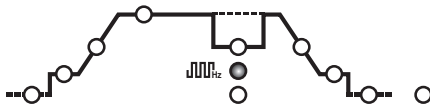
### 7e BASE CURRENT - ARC FORCE



When in the TIG 4 stroke, BI-LEVEL and PULSED mode,  $I_1$  is the current value that can be alternated with the main one,  $I_2$ , during welding. The value is measured in Amperes.

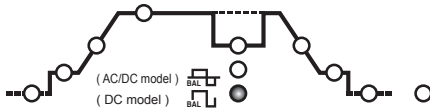
When in the MMA mode, this is the dynamic "ARC-FORCE" overcurrent (adjustment  $0 \div 100\%$ ); the display shows the percentage increase as to the value of the pre-selected welding current. This adjustment improves welding fluidity and stops the electrode from sticking to the workpiece.

### 7f FREQUENCY



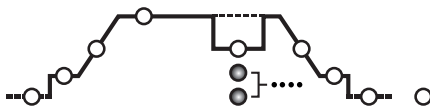
This is the pulse frequency when in the TIG PULSED mode. For AC/DC models in the TIG AC mode (with pulsing disabled), it is the frequency of the welding current.

### 7g BALANCE



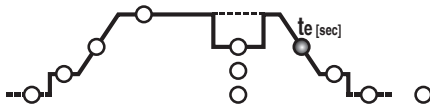
When in the TIG PULSED mode, this is the ratio (as a percentage) between the time during which the current is at its highest level (main welding current) and the total pulse period. In addition, when the AC/DC models are in the TIG AC mode (with pulsing disabled), the parameter represents a ratio between the time with positive current and the time with negative current: if the parameter value is negative heating and workpiece penetration increase, if the parameter value is positive surface cleaning is greater and electrode heat increases, while if the parameter value is null there is balance between the negative and positive currents during the AC frequency period. (TAB. 4).

### 7h SPOT TIME



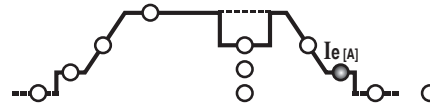
When in the TIG (SPOT) mode it represents the welding duration (adjustment  $0.1 \div 10$  s).

### 7k END SLOPE ( $t_{END}$ )



When in the TIG mode it represents the end slope time of the current (from  $I_s$  to  $I_2$ ) (adjustment  $0.1 \div 10$  s). When at OFF there is no ramp.

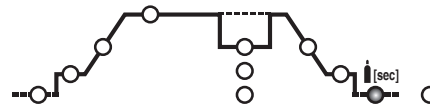
### 7l END CURRENT ( $I_{END}$ )



When in the TIG 2 stroke mode it represents the end current  $I_e$ , but only if the END RAMP (7k) has been set at a value higher than zero ( $> 0.1$  s).

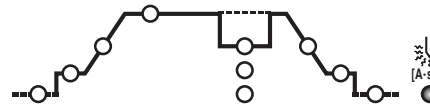
When in the TIG 4 stroke mode it represents the end current  $I_e$  for the whole time during which the torch push-button is pressed. The sizes are expressed in Amperes.

### 7m POSTGAS



When in the TIG mode, it represents the POSTGAS time in seconds (adjustment  $0.1 - 10$  s), and protects electrodes and pool welding from oxidation.

### 7n ELECTRODE PREHEATING



When in the TIG AC mode, this adjusts electrode preheating to make welding starting easier (adjustment  $2.6 \div 53$  A-sec.). The higher the value set, the higher the preheating energy. When at OFF there is no preheating.

8- REMOTE CONTROL LED. Used to transfer control of the welding parameters to the remote control.

9- Parameter setting (7) encoder knob and parameter selection key (7).

10- Alphanumeric display.

11- Green LED, power on.

12- ALARM signalling LED (the machine is blocked).

Resetting is automatic when the reason for alarm activation stops.

Alarm messages shown on the display (10) FIG. D:

- "AL.1" : the primary circuit safety thermal switch has been triggered (if installed).
- "AL.2" : general protection has been triggered (thermal switch or network overvoltage or network undervoltage).
- "AL.9" : protection triggered due to malfunction of the torch water cooling circuit. Resetting is not automatic.

When the welding machine is switched off, the signal "AL.2" may appear for a few seconds.

### 4.2.3 Front panel (FIG. D1)

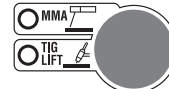
1- Positive (+) fast coupling for connecting the welding cable.

2- Negative (-) fast coupling for connecting the welding cable.

3- Control panel.

4- Welding mode selection push-button:

#### MMA - TIG LIFT



Operation mode: welding with coated electrode (MMA), TIG welding with arc strike upon contact (TIG LIFT).

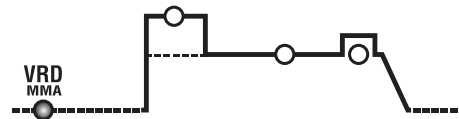
5- Welding parameters that can be adjusted using the encoder knob (6), associated with the previous setting of 4.

To set each parameter:

- a) select the parameter to be adjusted (by pressing the knob (6)), which is indicated by the corresponding lit LED.
- b) rotate the knob (6) and set the required value.
- c) press the knob (6) again to adjust the next parameter.

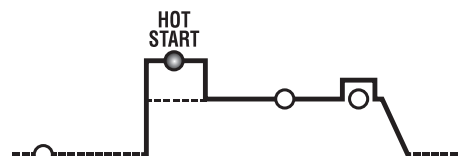
**NB:** The parameters can be set as desired by the operator. There are, however, value combinations that do not have a practical meaning for welding; in this case the welding machine may not operate correctly.

### 5a VRD MMA



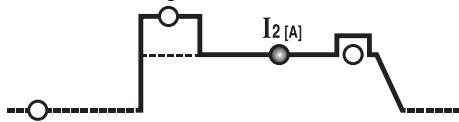
When in the MMA mode, it allows to insert the Voltage Reduction Device "VRD".

### 5b HOT START



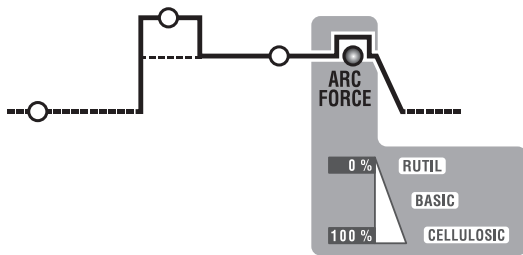
When in the MMA mode, it represents the "HOT START" dynamic overcurrent (adjustment  $0 \div 100\%$ ). With indication on the display of the percentage increase as to the pre-selected welding current value. This adjustment improves welding fluidity.

### 5c MAIN CURRENT (I<sub>2</sub>)



When in TIG mode, MMA represents the output current I<sub>2</sub>. The parameter is measured in Amperes.

### 5d ARC FORCE



When in the MMA mode, this is the dynamic "ARC-FORCE" overcurrent (adjustment 0 + 100%); the display shows the percentage increase as to the value of the pre-selected welding current. This setting improves welding fluidity and prevents the electrode from sticking to the metal piece.

- 6- Parameter setting (5) encoder knob and parameter selection key (5).
- 7- Alphanumeric display.
- 8- REMOTE CONTROL LED. Used to transfer control of the welding parameters to the remote control.
- 9- ALARM signalling LED (the machine is blocked).  
Resetting is automatic when the reason for alarm activation stops.  
Alarm messages shown on the display (7) FIG. D1:
  - "AL. 1" : the primary circuit protection thermal switch has been triggered (if installed).
  - "AL. 2" : the secondary circuit protection thermal switch has been triggered
  - "AL. 3" : power line overvoltage protection has been triggered
  - "AL. 4" : power line undervoltage protection has been triggered
  - "AL. 8" : auxiliary voltage out of range
- 10- Green LED, power ON.

### 4.3 G.R.A. water cooling unit ENABLING and DISABLING instructions (where applicable)

#### Enabling procedure:

- 1- Press the main switch (1) simultaneously with the right button on the front panel (6a) to turn the machine on.
- 2- The code "G.r.a - OFF" will appear on the display after the machine is turned on (factory settings: cooling unit disabled).
- 3- Turn the encoder knob (9) until the code "G.r.a - on" appears on the display.
- 4- Press the encoder button (9) once to confirm the selection.  
The cooling unit is now enabled.

#### Disabling procedure:

Repeat the same sequence confirming the code "G.r.a. - OFF" to disable the unit.

**NB:** If the welding machine is set to "G.r.a. - on" mode, but no cooling unit has been connected, the cooling circuit malfunction protection will be triggered after a couple of seconds of operation (code "AL.9").

## 5. INSTALLATION

**WARNING!** CARRY OUT ALL INSTALLATION OPERATIONS AND ELECTRICAL CONNECTIONS WITH THE WELDING MACHINE COMPLETELY SWITCHED OFF AND DISCONNECTED FROM THE POWER SUPPLY OUTLET. THE ELECTRICAL CONNECTIONS MUST BE MADE ONLY AND EXCLUSIVELY BY AUTHORISED OR QUALIFIED PERSONNEL.

### 5.1 PREPARATION

Unpack the welding machine, assemble the separate parts contained in the package.

#### 5.1.1 Assembling the return cable-clamp (FIG. E)

#### 5.1.2 Assembling the welding cable-electrode holder clamp (FIG. E)



### 5.2 POSITION OF THE WELDING MACHINE

Choose the place to install the welding machine so that the cooling air inlets and outlets are not obstructed (forced circulation by fan, if present); at the same time make sure that conductive dusts, corrosive vapours, humidity etc. will not be sucked into the machine.

Leave at least 250mm free space around the welding machine.

**WARNING!** Position the welding machine on a flat surface with sufficient carrying capacity for its weight, to prevent it from tipping or moving hazardingly.

### 5.3 CONNECTION TO THE MAIN POWER SUPPLY

- Before making any electrical connection, make sure the rating data of the welding machine correspond to the mains voltage and frequency available at the place of installation.
- The welding machine should only be connected to a power supply system with the neutral conductor connected to earth.
- To ensure protection against indirect contact use residual current devices of the following types:
  - Type A (  ) for single phase machines;
  - Type B (  ) for 3-phase machines.
- In order to satisfy the requirements of the EN 61000-3-11 (Flicker) standard we recommend connecting the welding machine to the interface points of the main power supply that have an impedance of less than:
  - Z<sub>max</sub> = 0.234 Ohm (3P+T 230V)
  - Z<sub>max</sub> = 0.286 Ohm (3P+T 400V)

Z<sub>max</sub> = 0.234 Ohm (1/N/PE 230V) 200A AC/DC  
Z<sub>max</sub> = 0.218 Ohm (1/N/PE 230V) 220A DC

- The IEC/EN 61000-3-12 Standard does not apply to the welding machine.
- If the welding machine is connected to an electrical grid, the installer or user must make sure that the machine can indeed be connected (if necessary, consult the company that manages the electrical grid).

### 5.3.1 Plug and outlet

Connect a normalised plug (2P + P.E) (1~); (3P + P.E) (3~) - having sufficient capacity to the power cable and prepare a mains outlet fitted with fuses or an automatic circuit-breaker; the special earth terminal should be connected to the earth conductor (yellow-green) of the power supply line. Table (TAB.1) shows the recommended delayed fuse sizes in amps, chosen according to the max. nominal current supplied by the welding machine, and the nominal voltage of the main power supply.

**WARNING!** Failure to observe the above rules will make the (Class 1) safety system installed by the manufacturer ineffective with consequent serious risks to persons (e.g. electric shock) and objects (e.g. fire).

### 5.4 CONNECTION OF THE WELDING CABLES

**WARNING!** BEFORE MAKING THE FOLLOWING CONNECTIONS MAKE SURE THE WELDING MACHINE IS SWITCHED OFF AND DISCONNECTED FROM THE POWER SUPPLY OUTLET.

Table (TAB. 1) gives the recommended values for the welding cables (in mm<sup>2</sup>) depending on the maximum current supplied by the welding machine.

#### 5.4.1 TIG welding

##### Connecting the torch

- Insert the torch current cable into the appropriate quick terminal (-)/~. Connect the three-pin connector (torch button) to the appropriate socket. Connect the torch gas pipe to the appropriate connector.

##### Connecting the welding current return cable

- This is connected to the piece to be welded or to the metal bench on which it rests, as close as possible to the joint being made.  
This cable is connected to the terminal with the (+) symbol (~ for TIG machines designed for AC welding).

##### Connecting the gas bottle

- Screw the pressure reducing valve to the gas bottle valve, first inserting the special reduction accessory supplied when argon gas is used.
- Connect the gas inflow hose to the pressure reducing valve and tighten the hose clamp supplied.
- Loosen the ringnut for adjusting the pressure reducing valve before opening the valve on the bottle.
- Open the valve on the bottle and adjust the quantity of gas (l/min) according to the suggestions for use given in the table (TAB. 4); if it is necessary to adjust the gas flow during welding this should always be done by adjusting the ring nut on the pressure reduction valve. Make sure there are no leaks in the piping and connectors.  
**WARNING! Always close the gas bottle valve at the end of the job.**

#### 5.4.2 MMA WELDING

Almost all coated electrodes are connected to the positive pole (+) of the power source; as an exception to the negative pole (-) for acid coated electrodes.

##### Connecting the electrode-holder clamp welding cable

On the end take a special terminal that is used to close the uncovered part of the electrode.

This cable is connected to the terminal with the symbol (+)

##### Connecting the welding current return cable

This is connected to the piece being welded or to the metal bench supporting it, as close as possible to the joint being made.

This cable is connected to the terminal with the symbol (-)

##### Warnings:

- Turn the welding cable connectors right down into the quick connections (if present), to ensure a perfect electrical contact; otherwise the connectors themselves will overheat, resulting in their rapid deterioration and loss of efficiency.
- The welding cables should be as short as possible.
- Do not use metal structures which are not part of the workpiece to substitute the return cable of the welding current: this could jeopardise safety and result in poor welding.

## 6. WELDING: DESCRIPTION OF THE PROCEDURE

### 6.1 TIG WELDING

TIG welding is a welding procedure that exploits the heat produced by the electric arc that is struck, and maintained, between a non-consumable electrode (tungsten) and the piece to be welded. The tungsten electrode is supported by a torch suitable for transmitting the welding current to it and protecting the electrode itself and the weld pool from atmospheric oxidation, by the flow of an inert gas (usually argon: Ar 99.5) which flows out of the ceramic nozzle (FIG. G).

To achieve a good weld it is absolutely necessary to use the exact electrode diameter with the exact current, see the table (TAB. 3).

The electrode usually protrudes from the ceramic nozzle by 2-3mm, but this may reach 8mm for corner welding.

Welding is achieved by fusion of the edges of the joint. For properly prepared thin pieces (up to about 1mm) weld material is not needed (FIG. H).

For thicker pieces it is necessary to use filler rods of the same composition as the base material and with an appropriate diameter, preparing the edges correctly (FIG. I). To achieve a good weld the pieces should be carefully cleaned and free of oxidation, oil, grease, solvents etc.

#### 6.1.1 HF and LIFT strike

##### HF strike:

The electric arc is struck without contact between the tungsten electrode and the piece being welded, by means of a spark generated by a high frequency device. This strike mode does not entail either tungsten inclusions in the weld pool or electrode wear and gives an easy start in all welding positions.

##### Procedure:

Press the torch button, bringing the tip of the electrode close to the piece (2 -3mm), wait for the arc strike transferred by the HF pulses and, when the arch has struck, form the weld pool on the piece and proceed along the joint.

If there are difficulties in striking the arc even though the presence of gas is confirmed and the HF discharges are visible, do not insist for long in subjecting the electrode to HF action, but check the integrity of the surface and the shape of the tip, dressing it on the grinding wheel if necessary. At the end of the cycle the current will fall at the slope down setting.

##### LIFT strike:

The electric arc is struck by moving the tungsten electrode away from the piece to be welded. This strike mode causes less electrical-radiation disturbance and reduces

tungsten inclusions and electrode wear to a minimum.

**Procedure:**

Place the tip of the electrode on the piece, using gentle pressure. Press the torch button right down and lift the electrode 2-3mm with a few moments' delay, thus striking the arc. Initially the welding machine supplies a current  $I_{LIFT}$ , after a few moments the welding current setting will be supplied. At the end of the cycle the current will fall to zero at the slope down setting.

**6.1.2 TIG DC welding**

TIG DC welding is suitable for all low- and high-carbon steels and the heavy metals, copper, nickel, titanium and their alloys.

For TIG DC welding with the electrode to the (-) terminal the electrode with 2% thorium (red band) is usually used or else the electrode with 2% cerium (grey band).

It is necessary to sharpen the tungsten electrode axially on the grinding wheel, as shown in **FIG. L**, making sure that the tip is perfectly concentric to prevent arc deviation. It is important to carry out the grinding along the length of the electrode. This operation should be repeated periodically, depending on the amount of use and wear of the electrode, or when the electrode has been accidentally contaminated, oxidised or used incorrectly. In TIG DC mode 2-stroke (2T) and 4-stroke(4T) operation are possible.

**6.1.3 TIG AC welding**

This type of welding can be used to weld metals such as aluminium and magnesium, which form a protective, insulating oxide on their surface. By reversing the welding current polarity it is possible to "break" the surface layer of oxide by means of a mechanism called "ionic sandblasting". The voltage on the tungsten electrode alternates between positive (EP) and negative (EN). During the EP period the oxide is removed from the surface ("cleaning" or "pickling") allowing formation of the pool. During the EN period there is maximum heat transfer to the piece, allowing welding. The possibility of varying the balance parameter in AC means that it is possible to reduce the EP current period to a minimum, allowing quicker welding.

Higher balance values give quicker welding, greater penetration, a more concentrated arc, a narrower weld pool and limited heating of the electrode. Lower values give a cleaner piece. If the balance value is too low this will widen the arc and the de-oxidised part, overheat the electrode with consequent formation of a sphere on the tip making it more difficult to strike the arc and control its direction. If the balance value is too high this will create a "dirty" weld pool with dark inclusions.

The table (**TAB. 4**) summarises the effects of parameter changes in AC welding.

In TIG AC mode 2-stroke (2T) and 4-stroke (4T) operation are possible.

The instructions for this welding procedure are also valid.

The table (**TAB. 3**) shows suggested values for welding on aluminium; the most suitable electrode is a pure tungsten electrode (green band).

**6.1.4 Procedure**

- Use the knob to adjust the welding current to the desired value; if necessary adjust during welding to the actual required heat transfer.
- Press the torch button and make sure the gas flow from the torch is correct; if necessary, adjust pre-gas and postgas times; these times should be adjusted according to operating conditions, the postgas delay in particular should be long enough to allow the electrode and weld pool to cool at the end of welding without coming into contact with the atmosphere (oxidation and contamination).

**TIG mode with 2T sequence:**

- Press the torch button (P.T.) right down to strike the arc with a current of  $I_{START}$ . The current will increase according to the START SLOPE UP setting to the welding current value.

- To interrupt welding, release the torch button so that either the current gradually decreases (if the FINAL SLOPE DOWN parameter has been enabled) or the arc is extinguished immediately, followed by postgas.

**TIG mode with 4T sequence:**

- The first time the button is pressed it will strike the arc with a current equal to  $I_{START}$ . When the button is released the current will increase according to the START SLOPE UP setting to the welding current value; this value is maintained even with the button is released. When the button is pressed again the current will decrease according to the FINAL SLOPE DOWN setting, until it reaches  $I_{END}$ . The  $I_{END}$  current will be maintained until the button is released to terminate the welding cycle and start the postgas phase. If, on the other hand, the button is released while the FINAL SLOPE DOWN function is proceeding, the welding cycle will terminate immediately and the postgas phase will start.

**TIG mode with 4T and BI-LEVEL sequence:**

- The first time the button is pressed it will strike the arc with a current equal to  $I_{START}$ . When the button is released the current will increase according to the START SLOPE UP setting to the welding current value; this value is maintained even when the button is released. Now, every time the button is pressed (the time between pressure and release should be short) the current will change between the setting for the BI-LEVEL  $I_1$  parameter and the main current value  $I_2$ .

- When the button is kept pressed down for a longer space of time the current will decrease according to the FINAL SLOPE DOWN setting, until it reaches  $I_{END}$ . The  $I_{END}$  current will be maintained until the button is released to terminate the welding cycle and start the postgas phase. If, on the other hand, the button is released while the FINAL SLOPE DOWN function is proceeding, the welding cycle will terminate immediately and the postgas phase will start (**FIG. M**).

**TIG SPOT mode:**

- Welding is carried out by keeping the torch push-button pressed until the pre-set time has been reached (spot time).

**6.2 MMA WELDING**

- It is most important that the user refers to the maker's instructions indicated on the stick electrode packaging. This will indicate the correct polarity of the stick electrode and the most suitable current.

- The welding current must be regulated according to the diameter of the electrode in use and the type of the joint to be carried out: see below the currents corresponding to various electrode diameters:

Ø Electrode (mm)	Welding current (A)	
	Min.	Max.
1.6	25	50
2	40	80
2.5	60	110
3.2	80	160
4	120	200
5	150	280
6	200	350

- The user must consider that, according to the electrode diameter, higher current values must be used for flat welding, whereas for vertical or overhead welds lower

current values are necessary.

- As well as being determined by the chosen current intensity, the mechanical characteristics of the welded joint are also determined by the other welding parameters i.e. arc length, working rate and position, electrode diameter and quality (to store the electrodes correctly, keep them in a dry place protected by their packaging or containers).

- The properties of the weld also depend on the ARC-FORCE value (dynamic behaviour) of the welding machine. The setting for this parameter can be made either on the panel or using the remote control with 2 potentiometers.

- It should be noted that high ARC-FORCE values achieve better penetration and allow welding in any position typically with basic electrodes, low ARC-FORCE values give a softer, spray-free arc typically with rutile electrodes.

The welding machine is also equipped with HOT START and ANTI STICK devices to guarantee easy starts and to prevent the electrode from sticking to the piece.

**6.2.1 Procedure**

- Holding the mask IN FRONT OF THE FACE, strike the electrode tip on the workpiece as if you were striking a match. This is the correct strike-up method.

**WARNING:** do not hit the electrode on the workpiece, this could damage the electrode and make strike-up difficult.

- As soon as arc is ignited, try to maintain a distance from the workpiece equal to the diameter of the electrode in use. Keep this distance as much constant as possible for the duration of the weld. Remember that the angle of the electrode as it advances should be of 20-30 grades.

- At the end of the weld bead, bring the end of the electrode backward, in order to fill the weld crater, quickly lift the electrode from the weld pool to extinguish the arc (**CHARACTERISTICS OF THE WELD BEAD - FIG. N**).

**7. MAINTENANCE**



**WARNING! BEFORE CARRYING OUT MAINTENANCE OPERATIONS MAKE SURE THE WELDING MACHINE IS SWITCHED OFF AND DISCONNECTED FROM THE MAIN POWER SUPPLY.**

**7.1 ROUTINE MAINTENANCE**

**ROUTINE MAINTENANCE OPERATIONS CAN BE CARRIED OUT BY THE OPERATOR.**

**7.1.1 Torch**

- Do not put the torch or its cable on hot pieces; this would cause the insulating materials to melt, making the torch unusable after a very short time.
- Make regular checks on the gas pipe and connector seals.
- Accurately match collet and collet body with the selected electrode diameter in order to avoid overheating, bad gas diffusion and poor performance.
- At least once a day check the terminal parts of the torch for wear and make sure they are assembled correctly: nozzle, electrode, electrode-holder clamp, gas diffuser.

**7.2 EXTRAORDINARY MAINTENANCE**

**EXTRAORDINARY MAINTENANCE MUST ONLY BE CARRIED OUT BY TECHNICIANS WHO ARE EXPERT OR QUALIFIED IN THE ELECTRIC-MECHANICAL FIELD, AND IN FULL RESPECT OF THE IEC/EN 60974-4 TECHNICAL DIRECTIVE.**



**WARNING! BEFORE REMOVING THE WELDING MACHINE PANELS AND WORKING INSIDE THE MACHINE MAKE SURE THE WELDING MACHINE IS SWITCHED OFF AND DISCONNECTED FROM THE MAIN POWER SUPPLY OUTLET.**

**If checks are made inside the welding machine while it is live, this may cause serious electric shock due to direct contact with live parts and/or injury due to direct contact with moving parts.**

- Periodically, and in any case with a frequency in keeping with the utilisation and with the environment's dust conditions, inspect the inside of the welding machine and remove the dust deposited on the electronic boards with a very soft brush or with appropriate solvents.

- At the same time make sure the electrical connections are tight and check the wiring for damage to the insulation.

- At the end of these operations re-assemble the panels of the welding machine and screw the fastening screws right down.

- Never, ever carry out welding operations while the welding machine is open.

- After having carried out maintenance or repairs, restore the connections and wiring as they were before, making sure they do not come into contact with moving parts or parts that can reach high temperatures. Tie all the wires as they were before, being careful to keep the high voltage connections of the primary transformer separate from the low voltage ones of the secondary transformer.

Use all the original washers and screws when closing the casing.

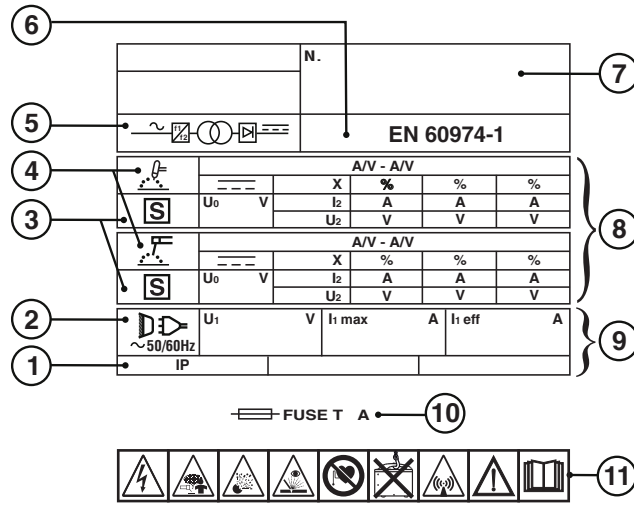
**8. TROUBLESHOOTING**

**IN CASE OF UNSATISFACTORY FUNCTIONING, BEFORE SERVICING MACHINE OR REQUESTING ASSISTANCE, CARRY OUT THE FOLLOWING CHECK:**

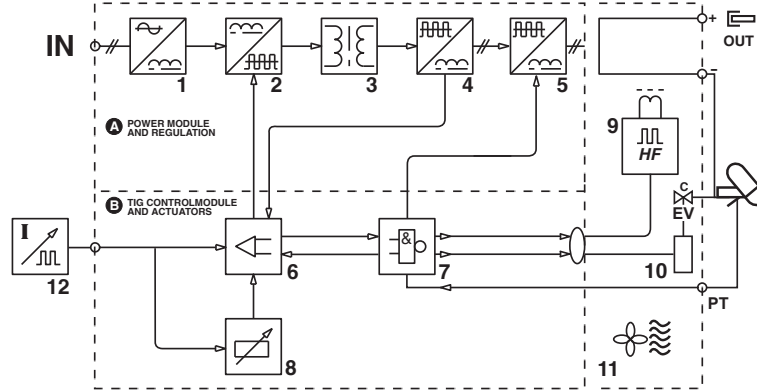
- Check that the welding current is correct for the diameter and electrode type in use.
- Check that when general switch is ON the relative lamp is ON. If this is not the case then the problem is located on the mains (cables, plugs, outlets, fuses, etc.).
- Check that the yellow led (ie. thermal protection interruption- either over or undervoltage or short circuit) is not lit.
- Check that the nominal intermittance ratio is correct. In case there is a thermal protection interruption, wait for the machine to cool down, check that the fan is working properly.
- Check the mains voltage: if the value is too high or too low the welding machine will be stopped.
- Check that there is no short-circuit at the output of the machine: if this is the case eliminate the inconvenience.
- Check that all connections of the welding circuit are correct, particularly that the work clamp is well attached to the workpiece, with no interfering material or surface-coverings (ie. Paint).
- Protective gas must be of appropriate type (Argon 99.5%) and quantity.



**FIG. A**



**FIG. B**



**TAB. 1**

**DATI TECNICI SALDATRICE - WELDING MACHINE TECHNICAL DATA**

MODEL							
$I_2 \text{ max (A)}$	230V	400V	230V	400V	mm <sup>2</sup>	kg	dB(A)
200 (AC/DC)	T20A	-	32A	-	25	11.3	<85
220 (DC)	T20A	-	32A	-	25	9.8	<85
220 (DC)	T16A	-	16A	-	25	10.2	<85
270 (DC)	-	T16A	-	16A	35		
250 (DC)	-	T10A	-	16A	25	11.3	<85
250 (AC/DC)	-	T10A	-	16A	25	14.5	<85
220 (DC)	T16A	-	16A	-	25	13.1	<85
300 (DC)	-	T16A	-	16A	35		

**TAB. 2**

**DATI TECNICI TORCIA - TECHNICAL SPECIFICATIONS FOR THE TORCH**

VOLTAGE CLASS: 113V			
$I \text{ max (A)}$	X (%)		$\varnothing \text{mm}$
140	35	Argon	1 ÷ 1.6
100	35		
180	35	Argon	1 ÷ 2.4
125	35		
320 R.A.	100	Argon	1 ÷ 2.4
225 R.A.	100		

FIG. C

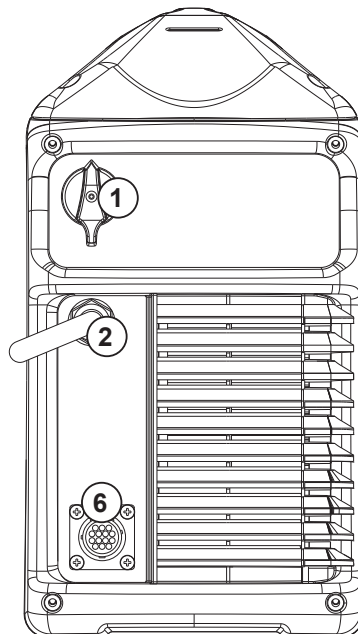
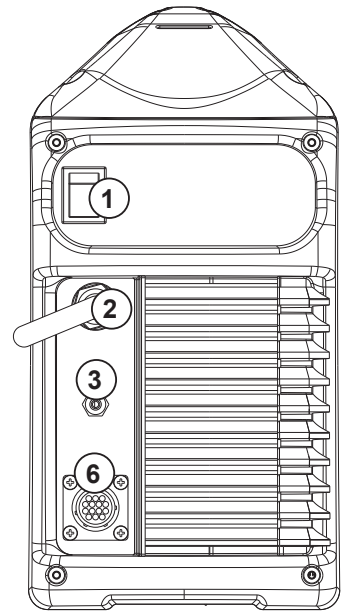
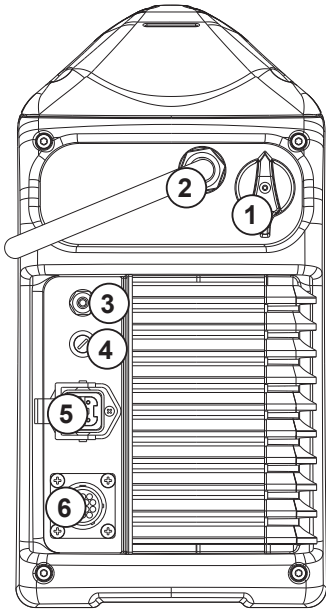
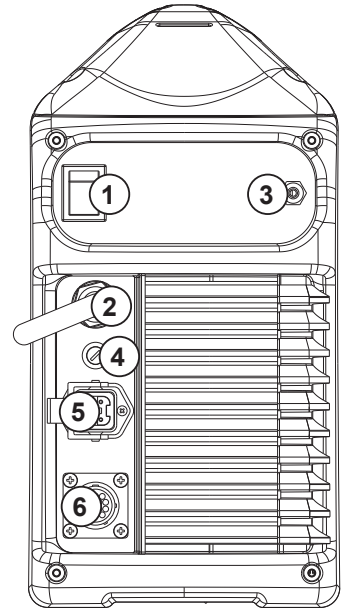
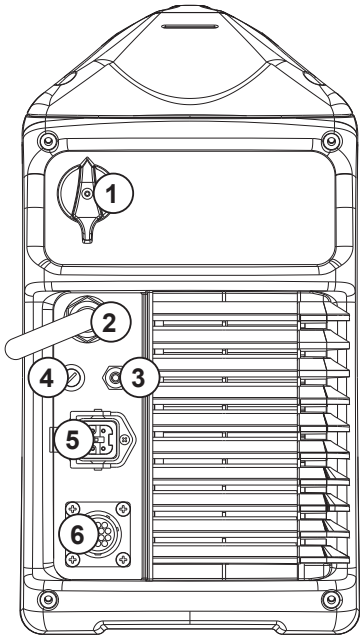
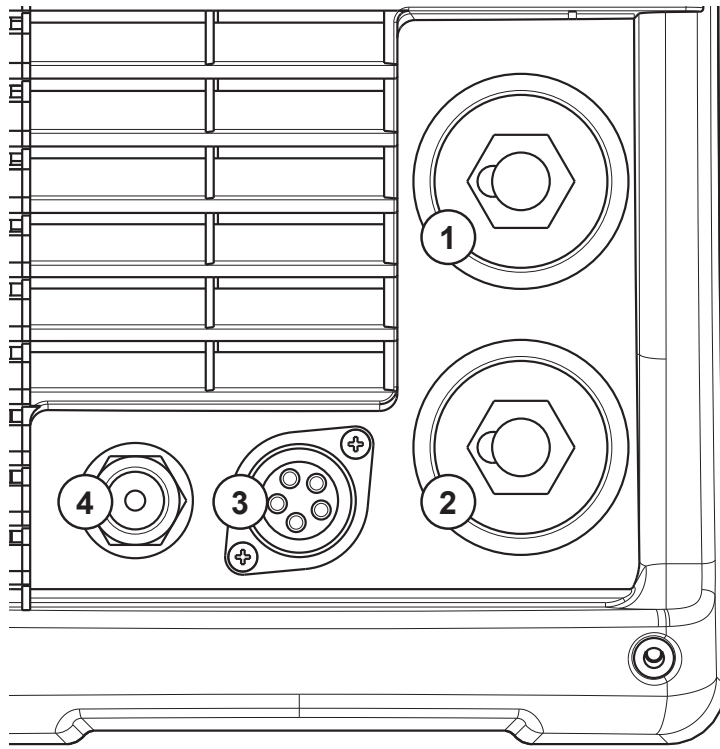
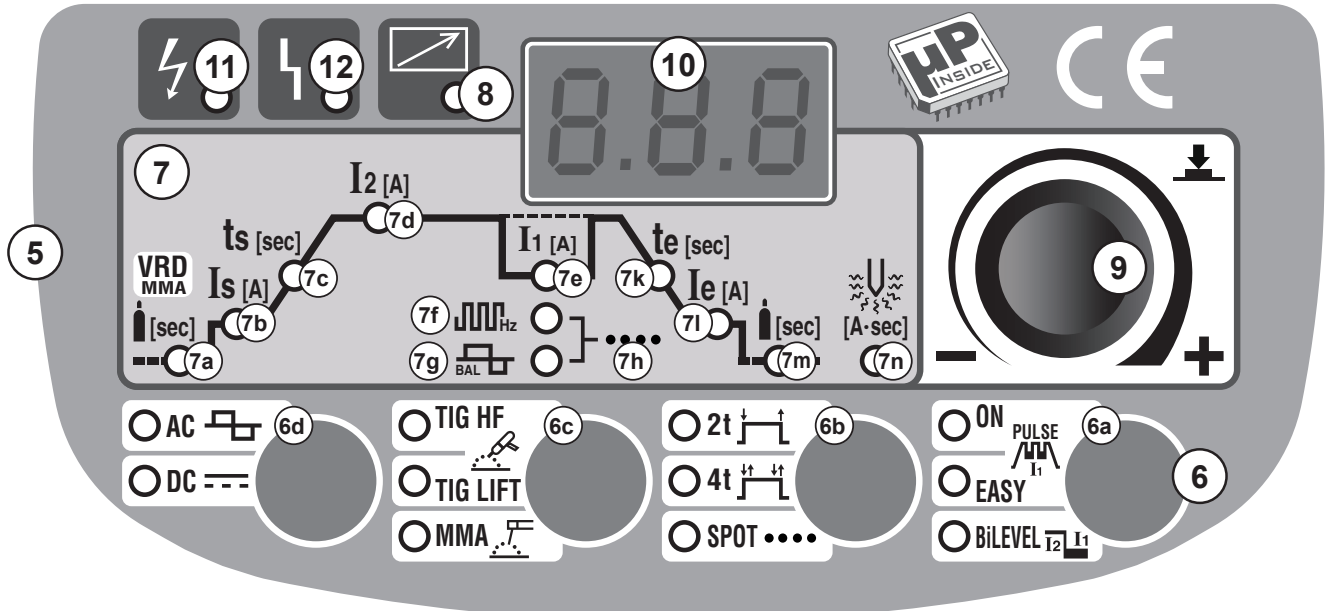


FIG. D



AC/DC model



DC model

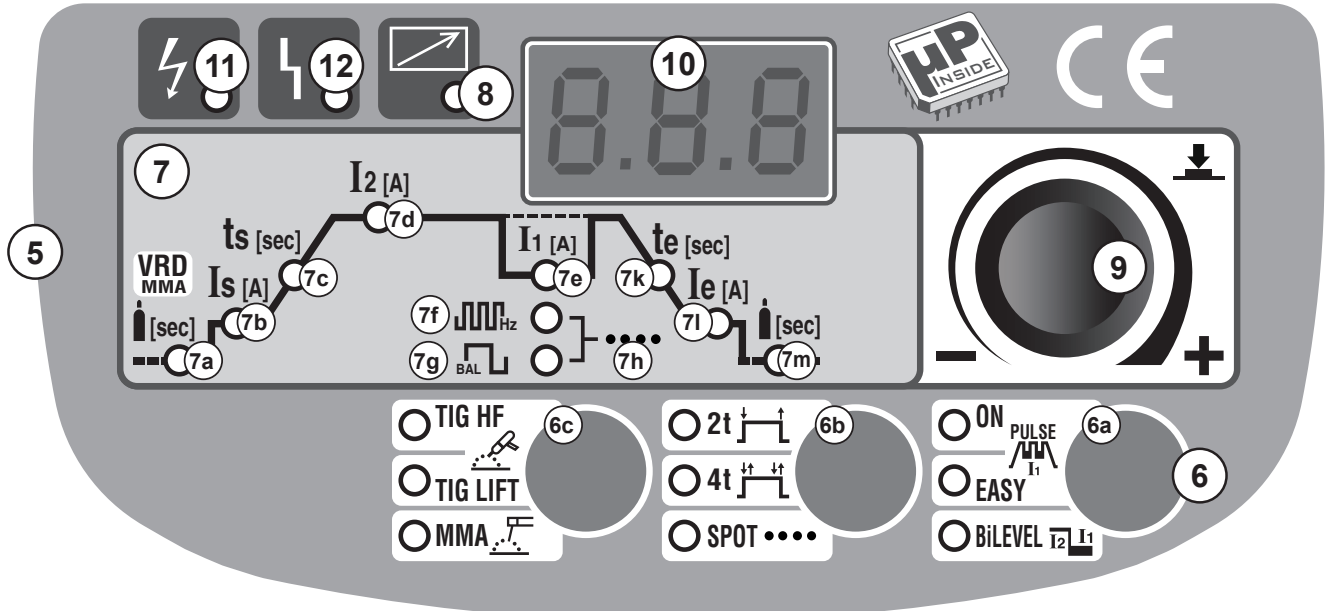
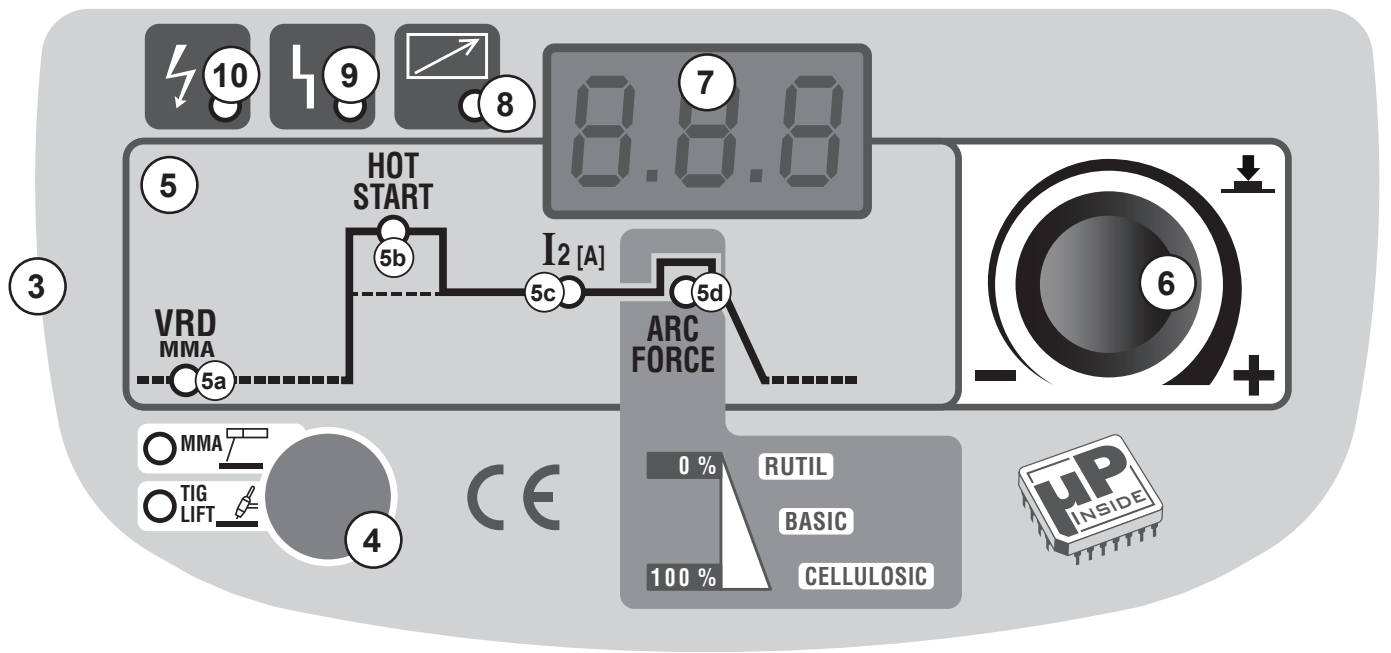
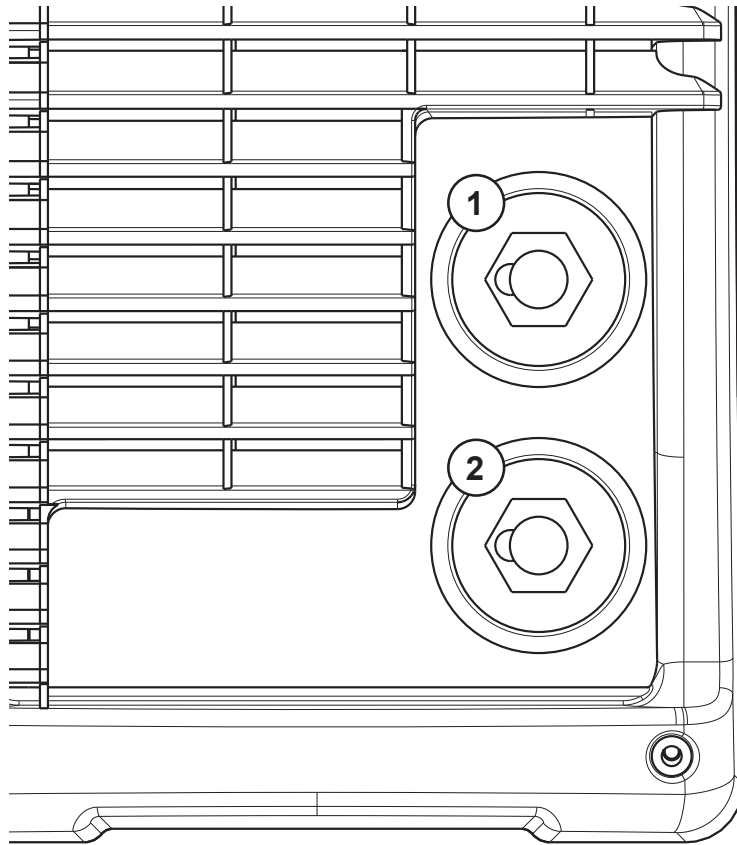
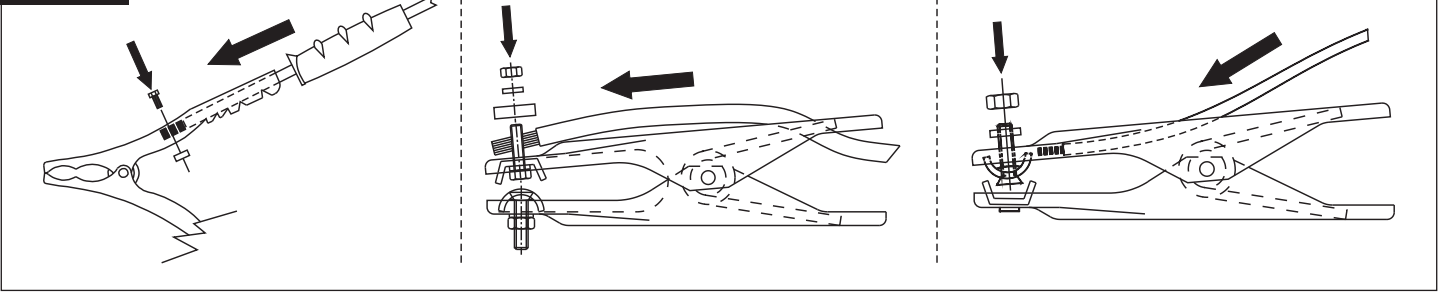




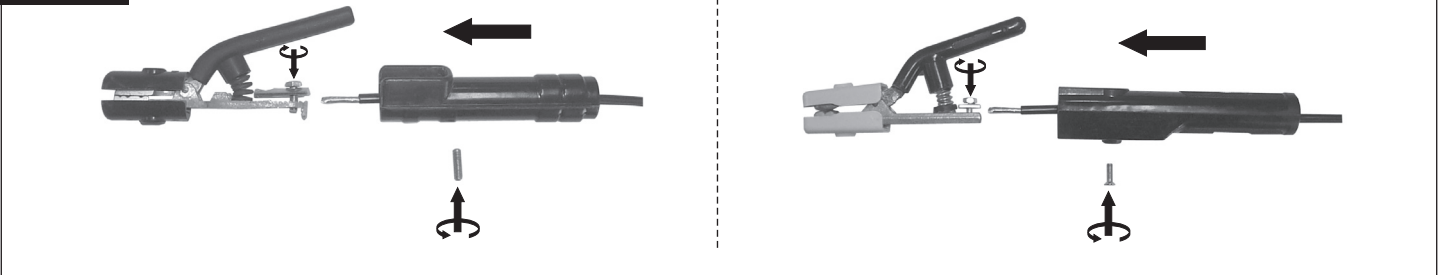
FIG. D1



**FIG. E**





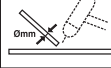


**FIG. F**



**TAB. 3**

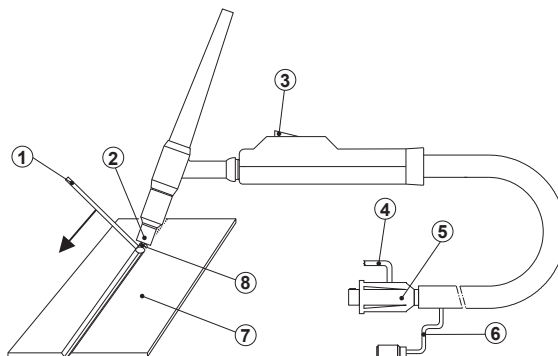
**SUGGESTED VALUES FOR WELDING - DATI ORIENTATIVI PER SALDATURA**

			$I_2$				
		(mm)	(A)	(mm)	(mm)	(l/min)	(mm)
TIG DC	Ss	0.3 - 0.5	5 - 20	0.5	6.5	3	-
		0.5 - 0.8	15 - 30	1	6.5	3	-
		1	30 - 60	1	6.5	3 - 4	1
		1.5	70 - 100	1.6	9.5	3 - 4	1.5
		2	90 - 110	1.6	9.5	4	1.5 - 2.0
	Cu	3	120 - 150	2.4	9.5	5	2 - 3
		4	140 - 190	2.4	9.5 - 11	5 - 6	3
		5	190 - 250	3.2	11 - 12.5	6 - 7	3 - 4
		0.3 - 0.8	20 - 30	0.5 - 1	6.5	4	-
		1	80 - 100	1	9.5	6	1.5
TIG AC	Al	1.5	100 - 140	1.6	9.5	8	1.5
		2	130 - 160	1.6	9.5	8	1.5
		1	30 - 45	1 - 1.6	6.5	4 - 6	1.2 - 2
		1.5	60 - 85	1.6	9.5	4 - 6	2
		2	70 - 90	1.6	9.5	4 - 6	2
		3	110 - 160	2.4	11	5 - 6	2

**FIG. G**

TORCH  
TORCIA  
TORCHE  
BRENNER  
SORLETE  
ТОЧА  
TOORTS

BRÆNDER  
POLTIN  
SVEISEBRENNER  
SKÅRBRÄNNARE  
ΛΑΜΠΑ  
ГОРЕЛКА

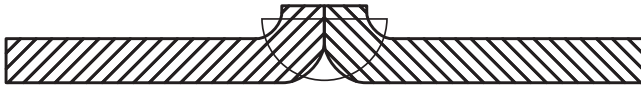


- 1- FILLER ROD IF NEEDED - EVENTUALE BACCHETTA D'APPORTO - BAGUETTE D'APPORT EVENTUELLE - BEDARFSWEISE EINGESETZTER SCHWEISSSTAB MIT ZUSATZWERKSTOFF - EVENTUAL VARILLA DE APORTE - EVENTUAL VARETA DE ENCHIMENTO - EVENTUEEL STAAFJE VAN TOEVOER - EVENTUEL TILSATSSTAV - MAHDOLLINEN LISÄAINESAUVA - STÖTTERPINNE - EVENTUELL STAV FÖR PÅSVETSNING - ΕΝΔΕΧΟΜΕΝΗ ΡΑΒΔΟΣ ΕΙΣΑΓΩΓΗΣ - ВОЗМОЖНАЯ ПАЛОЧКА ДЛЯ ПРИПОЯ.
- 2- NOZZLE - UGELLO - TUYÈRE - DÜSE - BOQUILLA - BICO - SPROEIER - DYSE - SUUTIN - SMØRENIPPEL - MUNSTYCKE - МПЕК - СОПЛО.

- 3- PUSHBUTTON - PULSANTE - BOUTON - DRUCKKNOPF - PULSADOR - BOTÃO - DRUCKKNOP - TRYKKNAP - PAINIKE - TAST - KNAPP - ΠΛΗΚΤΡΟ - КНОПКА.
- 4- GAS - GAS - GAZ - GAS - GAS - GAS - GAS - GAS - GAS - GASS - GASEN - ΑΔΡΑΝΕΣ ΑΕΡΙΟ - ΓАЗ.
- 5- CURRENT - CORRENTE - COURANT - STROM - CORRIENTE - CORRENTE - STROOM - STRØM - STRØM - STRÖM - ΡΕΥΜΑ - ТОК.
- 6- TORCH BUTTON CABLES - CAVI PULSANTE TORCIA - CÂBLES POUSSOIR TORCHE - KABEL BRENNERKNOPF - CABLES DEL PULSADOR SORLETE - CABOS BOTÃO TOCHA - KABELS DRUCKKNOP TOORTS - BRÆNDERKNAPKABEL - PURISTIMEN PAINONAPIN KAAPELIT - KABLER TIL SVEISEBRENNERENS TAST -

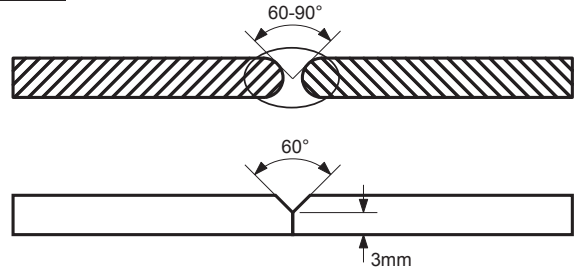
- 7- PIECE TO BE WELDED - PEZZO DA SALDARE - PIÈCE À SOUDER - WERKSTÜCK - PIEZA A SOLDAR - PEÇA A SOLDAR - TE LASSEN STUK - EMNE, DER SKAL SVEJSES PÅ - HITSATTAVA KAPPALE - STYKKE SOM SKAL SVEISES - STYCKE SOM SKA SVETSAS - ΜΕΤΑΛΛΟ ΠΡΟΣ ΣΥΓΚΟΛΗΣΗ - СВАРИВАЕМАЯ ДЕТАЛЬ.
- 8- ELECTRODE - ELETTRODO - ÉLECTRODO - ELEKTRODE - ELEKTRODE - ELEKTRODI - ELEKTROD - ELEKTROD - ΗΛΕΚΤΡΟΔΙΟ - ЭЛЕКТРОД.

**FIG. H**



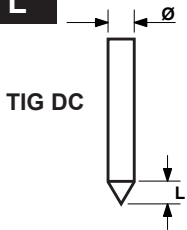
- Preparation of the folded edges for welding without weld material.
- Preparazione dei lembi rivoltati da saldare senza materiale d'apporto.
- Préparation des bords relevés pour soudage sans matériau d'apport.
- Herrichtung der gerichteten Kanten, die ohne Zusatzwerkstoff geschweißt werden.
- Preparación de los extremos rebordeados a soldar sin material de aporte.
- Preparação das abas viradas a soldar sem material de entrada.
- Voorbereiding van de te lassen omgekeerde randen zonder lasmateriaal.
- Forberedelse af de foldede klapper, der skal svejses uden tilført materiale.
- Hitsattavien käännettyjen reunojen valmistelu ilman lisämateriaalia.
- Forberedelse av de vendte fløkene som skal sveises uten ekstra materialer.
- Förberedelse av de vikta kanterna som ska svetsas utan påsvetsat material.
- Προετοιμασία των γυρισμένων χειλίων που θα συγκολληθούν χωρίς υλικό τροφοδοσίας.
- Подготовка подвернутых свариваемых краев без материала припоя.

**FIG. I**



- Preparation of the edges for butt weld joints to be welded with weld material.
- Preparazione dei lembi per giunti di testa da saldare con materiale d'apporto.
- Préparation des bords pour joints de tête pour soudage avec matériau d'apport.
- Herrichtung der Kanten für Stumpfstöße, die mit Zusatzwerkstoff geschweißt werden.
- Preparación de los extremos para juntas de cabeza a soldar con material de aporte.
- Preparação das abas para juntas de cabeça a soldar com material de entrada.
- Voorbereiding van de te lassen randen x kopverbindingen met lasmateria.
- Forberedelse af klapperne til stumpsømme, der skal svejses med tilført materiale.
- Hitsattavien liitospäiden reunojen valmistelu lisämateriaalia käyttämällä.
- Forberedelse av fløkene per hodeskjøyter som skal sveises med ekstra materialer.
- Förberedelse av kanter för stumsvetsning med påsvetsat material.
- Προετοιμασία των χειλίων για συνδέσεις κεφαλής που θα συγκολληθούν με υλικό τροφοδοσίας.
- Подготовка свариваемых краев для торцевых соединений с материалом припоя.

**FIG. L**



TIG DC

- CORRECT
- CORRETTO
- COURANT
- EXACT
- KORREKT
- CORRECTO
- CORRECTO
- CORRECTO
- CORRECT
- KORREKT
- ΟΙΚΕΙΝ
- KORREKT
- ΣΩΣΤΟ
- ПРАВИЛЬНО



- INSUFFICIENT CURRENT
- CORRENTE SCARSA
- COURANT INSUFFISANT
- ZU WENIG STROM
- CORRIENTE ESCASA
- CORRENTE INSUFICIENTE
- WEINIG STROOM
- FOR LAV STRØMSTYRKE
- LIIAN VÄHÄN VIRTAA
- DÄRLIG STRØM
- FÖR LAG STRÖM
- ΑΝΕΠΑΡΚΕΣ ΡΕΥΜΑ
- НЕДОСТАТОЧНЫЙ ТОК



- EXCESSIVE CURRENT
- CORRENTE ECCESSIVA
- COURANT EXCESSIF
- ZU VIEL STROM
- CORRIENTE ECCESSIVA
- CORRENTE ECCESSIVA
- EXCESSIEVE STROOM
- FOR HØJ STRØMSTYRKE
- LIIKAA VIRTAA
- ALTFOR HØY STRØ
- FÖR HÖG STRÖM
- ΥΠΕΡΒΟΛΙΚΟ ΡΕΥΜΑ
- ИЗБИТОЧНЫЙ ТОК

- CHECK OF THE ELECTRODE TIP
  - CONTROLLO DELLA PUNTA DELL'ELETTRODO
  - CONTROLE DE LA POINTE DE L'ELECTRODE
  - KONTROLLE DER ELEKTRODENSPIITZE
  - CONTROL DE LA PUNTA DEL ELECTRODO
  - CONTROLLO DA PUNTA DO ELECTRODO
  - CONTROLE VAN DE PUNT VAN DE ELEKTRODE
  - KONTROL AF ELEKTRODENS SPIDS
  - ELEKTRODIN PÄÄN TARKISTUS
  - KONTROLL AV ELEKTRODENS SPISS
  - KONTROLL AV ELEKTRODENS SPETS
  - ΕΛΕΓΧΟΣ ΑΙΧΜΗΣ ΗΛΕΚΤΡΟΔΙΟΥ
  - КОНТРОЛЬ НАКОНЕЧНИКА ЭЛЕКТРОДА
- L = Ø IN DIRECT CURRENT  
IN CORRENTE CONTINUA  
EN COURANT CONTINU  
BEI GLEICHSTROM  
EN CORRIENTE CONTINUA  
EM CORRENTE CONTINUA  
IN CONTINUE STROOM  
VED JÆVNSTRØM  
TASAVIRRASSA  
MED LIKSTRØM  
I LIKSTRØM  
ΣΕ ΣΥΝΕΧΟΜΕΝΟ ΡΕΥΜΑ  
ПРИ ПОСТОЯННОМ ТОКЕ

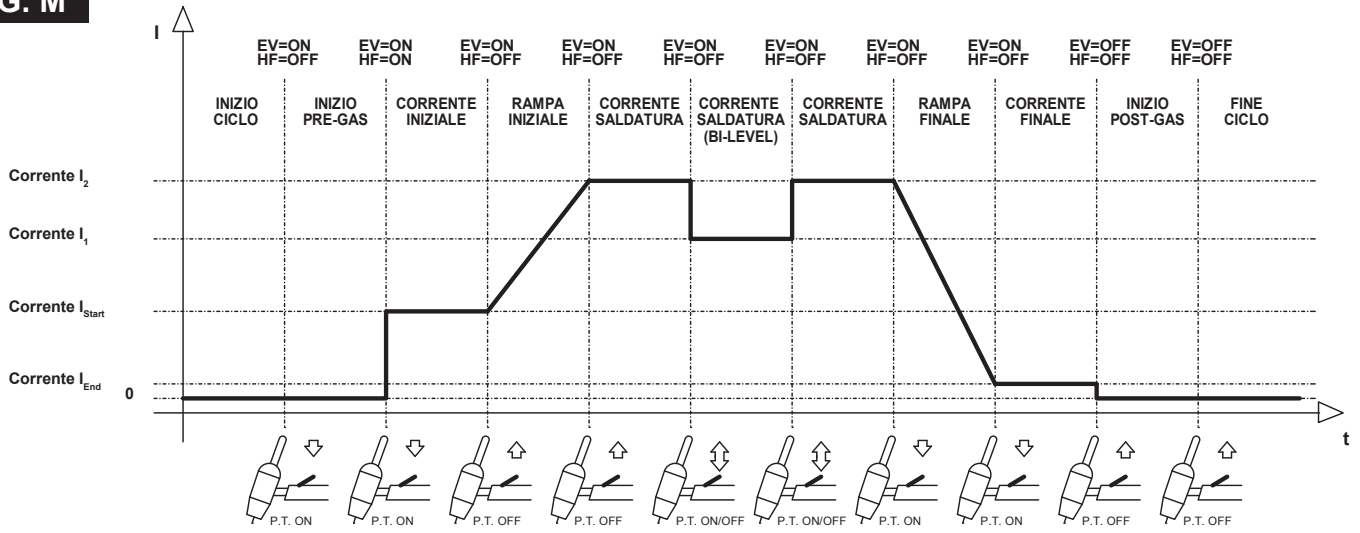
**TAB. 4**

**TIG AC**

<p>NEGATIVE BALANCE'S VALUE VALORE BALANCE NEGATIVO VALEUR BALANCE NEGATIVE VALOR DE BALANCE NEGATIVO BALANCE-WERT NEGATIV БАЛАНС ОТРИЦАТЕЛЬНЫЙ</p>		<ul style="list-style-type: none"> <li>- MAX PENETRATION</li> <li>- MIN CLEANESS</li> <li>- MIN CONSUMPTION OF TUNGSTEN ELECTRODE</li> <li>- MAX EFFICIENCY (FAST WELDING)</li> <li>- MAX PENETRAZIONE</li> <li>- MIN PULIZIA</li> <li>- MIN CONSUMO ELETTRODO TUNGSTENO</li> <li>- MAX RENDIMENTO (SALDATURA VELOCE)</li> <li>- MAX PENETRATION</li> <li>- MIN NETTOYAGE</li> <li>- MIN CONSOMMATION D'ELECTRODE DE TUNGSTENE</li> <li>- MAX RENDEMENT (SOUDAGE RAPID)</li> </ul>	<ul style="list-style-type: none"> <li>- MAX PENETRACIÓN</li> <li>- MIN LIMPIEZA</li> <li>- MIN CONSUMO ELECTRODO DE TUNGSTENO</li> <li>- MÁXIMO RENDIMIENTO (SOLDADURA RÁPIDA)</li> <li>- HÖCHSTES DURCHDRINGEN</li> <li>- GERINGSTE REINIGUNG</li> <li>- GERINGSTER VERBRAUCH VON WOLFRAM ELEKTRODE</li> <li>- HÖCHSTE LEISTUNG (SCHNELLES SCHWEISSEN)</li> <li>- МАКС. ПРОНИКНОВЕНИЕ</li> <li>- МИН. ЧИСТОТА</li> <li>- МИН. ПОТРЕБЛЕНИЕ ВОЛЬФРАМОВОГО ЭЛЕКТРОДА</li> <li>- МАКС. ПРОИЗВОДИТЕЛЬНОСТЬ (БЫСТРАЯ СВАРКА)</li> </ul>
<p>VALORE BALANCE 0 Standard</p>		<ul style="list-style-type: none"> <li>- STANDARD VALUE (RECOMMENDED)</li> <li>- BEST BALANCE BETWEEN EP+ AND EN- (50-50)</li> <li>- VALORE STANDARD (RACCOMANDATO)</li> <li>- OTTIMO BILANCIAMENTO TRA EP+ E EN- (50-50)</li> <li>- VALEUR STANDARD (RECOMMANDÉE)</li> <li>- EQUILIBRE OPTIMAL ENTRE LE EP+ ET EN- (50-50)</li> <li>- VALOR ESTÁNDAR (RECOMENDADO)</li> <li>- SALDO ÓPTIMO ENTRE EL EP + Y EN- (50-50)</li> </ul>	<ul style="list-style-type: none"> <li>- STANDARD WERT (EMPFOHLEN)</li> <li>- SEHR GUTE AUSGLEICH ZWISCHEN EP + UND EN- (50-50)</li> <li>- СТАНДАРТНОЕ ЗНАЧЕНИЕ (РЕКОМЕНДУЕМОЕ)</li> <li>- ВЕЛИКОЛЕПНАЯ БАЛАНСИРОВКА МЕЖДУ EP+ И EN- (50/50)</li> </ul>
<p>POSITIVE BALANCE'S VALUE VALORE BALANCE POSITIVO VALEUR BALANCE POSITIVE VALOR DE BALANCE POSITIVO BALANCE-WERT POSITIV БАЛАНС ПОЛОЖИТЕЛЬНЫЙ</p>		<ul style="list-style-type: none"> <li>- MAX CLEANESS</li> <li>- MIN PENETRATION</li> <li>- MAX CONSUMPTION OF TUNGSTEN ELECTRODE</li> <li>- MIN EFFICIENCY (SLOW WELDING)</li> <li>- MAX PULIZIA</li> <li>- MIN PENETRAZIONE</li> <li>- MAX CONSUMO ELETTRODO TUNGSTENO</li> <li>- MIN RENDIMENTO (SALDATURA LENTA)</li> <li>- MAX NETTOYAGE</li> <li>- MIN PENETRATION</li> <li>- MAX CONSOMMATION D'ELECTRODE DE TUNGSTENE</li> <li>- MIN RENDEMENT (SOUDAGE LENT)</li> </ul>	<ul style="list-style-type: none"> <li>- MAX LIMPIEZA</li> <li>- MIN DE PENETRACIÓN</li> <li>- MAX CONSUMO ELECTRODO DE TUNGSTENO</li> <li>- MIN RENDIMIENTO (SOLDADURA)</li> <li>- HÖCHSTE REINIGUNG</li> <li>- GERINGSTES DURCHDRINGEN</li> <li>- HÖCHSTER VERBRAUCH VON WOLFRAM ELEKTRODE</li> <li>- GERINGSTE LEISTUNG (LANGSAMES SCHWEISSEN)</li> <li>- МАКС. ЧИСТОТА</li> <li>- МИН. ПРОНИКНОВЕНИЕ</li> <li>- МАКС. ПОТРЕБЛЕНИЕ ВОЛЬФРАМОВОГО ЭЛЕКТРОДА</li> <li>- МИН. ПРОИЗВОДИТЕЛЬНОСТЬ (МЕДЛЕННАЯ СВАРКА)</li> </ul>



**FIG. M**

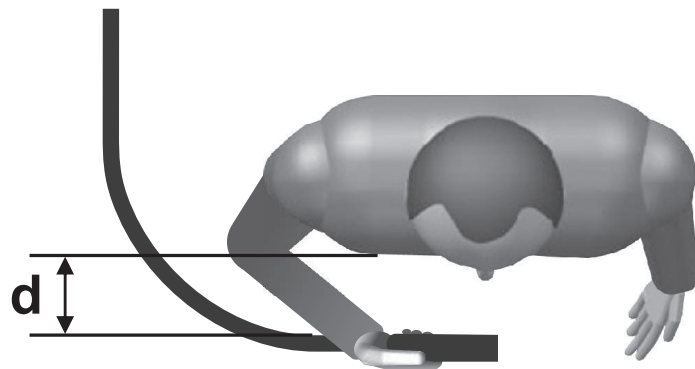


LEGENDA: EV = Elettrovalvola  
 PT = Pulsante torcia  
 HF = Alta frequenza (se attiva)

**FIG. N**

<p>(EN) ADVANCEMENT TOO SLOW                  (IT) AVANZAMENTO TROPPO LENTO                  (FR) AVANCEMENT TROP FAIBLE                  (ES) LASSNELHEID TE LAAG                  (DE) ZU LANGSAMES ARBEITEN                  (RU) МЕДЛЕННОЕ ПЕРЕМЕЩЕНИЕ НИЖЕ ЭЛЕКТРОДА                  (PT) AVANCE DEMASIADO VELOZ                  (EL) ΠΟΛΥ ΑΡΤΟ ΠΡΟΧΩΡΙΜΑ                  (NL) AVANÇO MUITO LENTO                  (HU) AZ ELŐTOLÁS TÚLSÁGOSAN LASSÚ                  (RO) AVANSARE PREA LENTA                  (SV) FÖR LÅNGSAM FLYTTNING                  (DA) GÅR FOR LANGSOMT FREMAD                  (NO) FOR SAKTE FREMDRIFT                  (FI) EDISTYS LIIAN HIDAS                  (CS) PŘILÍŠ POMALÝ POSUV                  (SK) PRILÍŠ POMALÝ POSUV                  (SL) PREPOCASNO NAPREDOVANJE                  (HR-SR) PRESPORO NAPREDOVANJE                  (LT) PER LETAS JUDEJIMAS                  (ET) LIIGA AEGLANE EDASIMINEK                  (LV) KUSTĪBA UZ PRIEKŠU IR PARĀK LENA                  (BG) ПРЕКАЛЕНО БАВНО ПРЕДВИЖВАНЕ НА ЕЛЕКТРОДА                  (PL) POSUW ZBYT WOLNY</p>	<p>(EN) ARC TOO SHORT                  (IT) ARCO TROPPO CORTO                  (FR) ARC TROP COURT                  (ES) LICHTBOOG TE KORT                  (DE) ZU KURZER BOGEN                  (RU) СЛИШКОМ КОРОТКАЯ ДУГА                  (PT) ARCO DEMASIADO CORTO                  (EL) ΠΟΛΥ ΚΟΝΤΟ ΤΟΞΟ                  (NL) ARCO MUITO CURTO                  (HU) AZ ÍV TÚLSÁGOSAN RÖVID                  (RO) ARC PREA SCURT                  (SV) BÅGEN ÄR FÖR KORT                  (DA) LYSBUEN ER FOR KORT                  (NO) FOR KORT BUE                  (FI) VALOKAARI LIIAN LYHYT                  (CS) PŘILÍŠ KRÁTKÝ OBLOUK                  (SK) PRILÍŠ KRÁTKÝ OBLÚK                  (SL) PREKRATEK OBLOK                  (HR-SR) PREKRATAK LUK                  (LT) PER TRUMPAS LANKAS                  (ET) LIIGA LÜHIKE KAAR                  (LV) LOKS IR PARĀK ISS                  (BG) МНОГО КЪСА ДЪГА                  (PL) LUK ZBYT KRÓTKI</p>	<p>(EN) CURRENT TOO LOW                  (IT) CORRENTE TROPPO BASSA                  (FR) COURANT TROP FAIBLE                  (ES) LASSTROOM TE LAAG                  (DE) ZU GERINGER STROM                  (RU) СЛИШКОМ СЛАБЫЙ ТОК СВАРКИ                  (PT) CORRIENTE DEMASIADO BAJA                  (EL) ΟΙΟΛΑΤ ΧΑΜΗΛΟ ΡΕΙΜΑ                  (NL) CORRENTE MUITO BAIXA                  (HU) AZ ÁRAM ÉRTEKE TÚLSÁGOSAN                  (RO) CURENT CU INTENSITATE PREA SCAZUTĂ                  (SV) FÖR LITE STRÖM                  (DA) ALACSONY                  (NO) FOR LILLE STRØMSTYRKE                  (FI) VIRTÄ LIIAN ALHAINEN                  (CS) PŘILÍŠ NÍZKÝ PROUD                  (SK) PRILÍŠ NÍZKY PRÚD                  (SL) PREŠIBEK ELEKTRIČNI TOK                  (HR-SR) PRESLABA STRUJA                  (LT) PER SILPNĄ SROVĖ                  (ET) LIIGA MADAL VOOL                  (LV) STRĀVA IR PĀRĀK VĀJA                  (BG) МНОГО НИСЪК ТОК                  (PL) PRĄD ZBYT NISKI</p>	<p>(EN) CURRENT CORRECT                  (IT) CORDONE CORRETTO                  (FR) CORDON CORRECT                  (ES) CORDON CORRECTO                  (DE) RICHTIG                  (RU) НОРМАЛЬНЫЙ ШОВ                  (PT) CORRENTE CORRECTA                  (EL) ΣΩΣΤΟ ΚΟΡΔΟΝΙ                  (NL) JUISTE LASSTROOM                  (HU) A ZÁRÓVONAL PONTOS                  (RO) CORDON DE SUDURĂ CORECT                  (SV) RÄTT STRÖM                  (DA) KORREKT STRØMSTYRKE                  (NO) RIKTIG STRØM                  (FI) VIRTÄ OIKEA                  (CS) SPRÁVNÝ SVAR                  (SK) SPRÁVNÝ ZVAR                  (SL) PRAVILNE ZVAR                  (HR-SR) ISPRAVLJENI KABEL                  (LT) TAISYKLINGA SIULĖ                  (ET) KORREKTNE NÕÖR                  (LV) PAREIZA ŠUVE                  (BG) ПРАВИЛЕН ШЕВ                  (PL) PRAWIDLOWY ŚCIEG</p>
<p>(EN) ADVANCEMENT TOO FAST                  (IT) AVANZAMENTO TROPPO VELOCE                  (FR) AVANCEMENT EXCESSIF                  (ES) LASSNELHEID TE HOOG                  (DE) ZU SCHNELLES ARBEITEN                  (RU) БЫСТРОЕ ПЕРЕМЕЩЕНИЕ ЭЛЕКТРОДА                  (PT) AVANCE DEMASIADO LENTO                  (EL) ΠΟΛΥ ΤΡΗΓΟΡΟ ΠΡΟΧΩΡΙΜΑ                  (NL) AVANÇO MUITO RAPIDO                  (HU) AZ ELŐTOLÁS TÚLSÁGOSAN GYORS                  (RO) AVANSARE PREA RAPIDĂ                  (SV) FÖR SNABB FLYTTNING                  (DA) GÅR FOR HURTIGT FREMAD                  (NO) FOR RASK FREMDRIFT                  (FI) EDISTYS LIIAN NOPEA                  (CS) PŘILÍŠ RYCHLÝ POSUV                  (SK) PRILÍŠ RÝCHLÝ POSUV                  (SL) PREHITRO NAPREDOVANJE                  (HR-SR) PREBRZO NAPREDOVANJE                  (LT) PER GREITAS JUDEJIMAS                  (ET) LIIGA KIIRE EDASIMINEK                  (LV) KUSTĪBA UZ PRIEKŠU IR PĀRĀK ĀTRA                  (BG) ПРЕКАЛЕНО БЪЗО ПРЕДВИЖВАНЕ НА ЕЛЕКТРОДА                  (PL) POSUW ZBYT SZYDKI</p>	<p>(EN) ARC TOO LONG                  (IT) ARCO TROPPO LUNGO                  (FR) ARC TROP LONG                  (ES) ARCO DEMASIADO LARGO                  (DE) ZU LANGER BOGEN                  (RU) СЛИШКОМ ДЛИННАЯ ДУГА                  (PT) ARCO MUITO LONGO                  (EL) ΠΟΛΥ ΜΑΚΡΥ ΤΟΞΟ                  (NL) LICHTBOOG TE LANG                  (HU) AZ ÍV TÚLSÁGOSAN HOSSZÚ                  (RO) ARC PREA LUNG                  (SV) BÅGEN ÄR FÖR LÅNG                  (DA) LYSBUEN ER FOR LANG                  (NO) FOR LANG BUE                  (FI) VALOKAARI LIIAN PITKÄ                  (CS) PŘILÍŠ DLOUHÝ OBLOUK                  (SK) PRILÍŠ DLHÝ OBLÚK                  (SL) PREDOLG OBLOK                  (HR-SR) PREDUGI LUK                  (LT) PER ILGAS LANKAS                  (ET) LIIGA PIKK KAAR                  (LV) LOKS IR PĀRĀK GARŠ                  (BG) ПРЕКАЛЕНО ДЪЛГА ДЪГА                  (PL) LUK ZBYT DŁUGI</p>	<p>(EN) CURRENT TOO HIGH                  (IT) CORRENTE TROPPO ALTA                  (FR) COURANT TROP ELEVE                  (ES) SPANNING TE HOOG                  (DE) ZU VIEL STROM                  (RU) СЛИШКОМ БОЛЬШОЙ ТОК СВАРКИ                  (PT) CORRIENTE DEMASIADO ALTA                  (EL) ΠΟΛΥ ΨΗΛΟ ΡΕΙΜΑ                  (NL) CORRENTE MUITO ALTA                  (HU) AZ ÁRAM ÉRTEKE TÚLSÁGOSAN MAGAS                  (RO) CURENT CU INTENSITATE PREA RIDICATĂ                  (SV) FÖR MYCKET STRÖM                  (DA) FOR STOR STRØMSTYRKE                  (NO) FOR HØY STRØM                  (FI) VIRTÄ LIIAN VOIMAKAS                  (CS) PŘILÍŠ VYSOKÝ PROUD                  (SK) PRILÍŠ VYSOKÝ PRÚD                  (SL) PREMOČAN ELEKTRIČNI TOK                  (HR-SR) PREJAKA STRUJA                  (LT) PER STIPRI SROVĖ                  (ET) LIIGA TUGEV VOOL                  (LV) STRĀVA IR PĀRĀK STIPRA                  (BG) МНОГО ВИСОК ТОК                  (PL) PRĄD ZBYT WYSOKI</p>	<p>(EN) CURRENT CORRECT                  (IT) CORDONE CORRETTO                  (FR) CORDON CORRECT                  (ES) CORDON CORRECTO                  (DE) RICHTIG                  (RU) НОРМАЛЬНЫЙ ШОВ                  (PT) CORRENTE CORRECTA                  (EL) ΣΩΣΤΟ ΚΟΡΔΟΝΙ                  (NL) JUISTE LASSTROOM                  (HU) A ZÁRÓVONAL PONTOS                  (RO) CORDON DE SUDURĂ CORECT                  (SV) RÄTT STRÖM                  (DA) KORREKT STRØMSTYRKE                  (NO) RIKTIG STRØM                  (FI) VIRTÄ OIKEA                  (CS) SPRÁVNÝ SVAR                  (SK) SPRÁVNÝ ZVAR                  (SL) PRAVILNE ZVAR                  (HR-SR) ISPRAVLJENI KABEL                  (LT) TAISYKLINGA SIULĖ                  (ET) KORREKTNE NÕÖR                  (LV) PAREIZA ŠUVE                  (BG) ПРАВИЛЕН ШЕВ                  (PL) PRAWIDLOWY ŚCIEG</p>

**FIG. O**



#### (EN) GUARANTEE

The manufacturer guarantees proper operation of the machines and undertakes to replace free of charge any parts should they be damaged due to poor quality of materials or manufacturing defects within 12 months of the date of commissioning of the machine, when proven by certification. Returned machines, also under guarantee, should be dispatched CARRIAGE PAID and will be returned CARRIAGE FORWARD. This with the exception of, as decreed, machines considered as consumer goods according to European directive 1999/44/EC, only when sold in member states of the EU. The guarantee certificate is only valid when accompanied by an official receipt or delivery note. Problems arising from improper use, tampering or negligence are excluded from the guarantee. Furthermore, the manufacturer declines any liability for all direct or indirect damages.

#### (IT) GARANZIA

La ditta costruttrice si rende garante del buon funzionamento delle macchine e si impegna ad effettuare gratuitamente la sostituzione dei pezzi che si deteriorassero per cattiva qualità di materiale e per difetti di costruzione entro 12 mesi dalla data di messa in funzione della macchina, comprovata sul certificato. Le macchine rese, anche se in garanzia, dovranno essere spedite in PORTO FRANCO e verranno restituite in PORTO ASSEGNATO. Fanno eccezione, a quanto stabilito, le macchine che rientrano come beni di consumo secondo la direttiva europea 1999/44/CE, solo se vendute negli stati membri della EU. Il certificato di garanzia ha validità solo se accompagnato da scontrino fiscale o bolla di consegna. Gli inconvenienti derivati da cattiva utilizzazione, manomissione o incuria, sono esclusi dalla garanzia. Inoltre si declina ogni responsabilità per tutti i danni diretti ed indiretti.

#### (FR) GARANTIE

Le fabricant garantit le fonctionnement correct des machines et s'engage à remplacer gratuitement les composants endommagés à la suite d'une mauvaise qualité de matériel ou d'un défaut de fabrication durant une période de 12 mois à compter de la mise en service de la machine attestée par le certificat. Les machines rendues, même sous garantie, doivent être expédiées en PORT FRANCO et seront renvoyées en PORT DÙ. Font exception à cette règle les machines considérées comme biens de consommation selon la directive européenne 1999/44/CE et vendues aux états membres de l'EU uniquement. Le certificat de garantie n'est valable que s'il est accompagné de la preuve d'achat ou du bulletin de livraison. Tous les inconvénients dus à une utilisation incorrecte, une manipulation ou une négligence sont exclus de la garantie. La société décline en outre toute responsabilité pour tous les dommages directs ou indirects.

#### (ES) GARANTÍA

La empresa fabricante garantiza el buen funcionamiento de las máquinas y se compromete a efectuar gratuitamente la sustitución de las piezas que se deterioren por mala calidad del material y por defectos de fabricación en los 12 meses posteriores a la fecha de puesta en funcionamiento de la máquina, comprobada en el certificado. Las máquinas entregadas, incluso en garantía, deberán ser enviadas a PORTE PAGADO y se devolverán a PORTE DEBIDO. Son excepción, según cuanto establecido, las máquinas que se consideran bienes de consumo según la directiva europea 1999/44/CE sólo si han sido vendidas en los estados miembros de la UE. El certificado de garantía tiene validez sólo si está acompañado de resguardo fiscal o albarán de entrega. Los problemas derivados de una mala utilización, modificación o negligencia están excluidos de la garantía. Además, se declina cualquier responsabilidad por todos los daños directos e indirectos.

#### (DE) GEWÄHRLEISTUNG

Der Hersteller übernimmt die Gewährleistung für den einwandfreien Betrieb der Maschinen und verpflichtet sich, solche Teile kostenlos zu ersetzen, die aufgrund schlechter Materialqualität und von Herstellungsfehlern innerhalb von 12 Monaten ab der Inbetriebnahme schadhaft werden. Als Nachweis der Inbetriebnahme gilt der Garantieschein. Werden Maschinen zurückgesendet, muß dies - auch im Rahmen der Gewährleistung - FRACHTFREI geschehen. Sie werden anschließend per FRACHTNACHNAME wieder zurückgesendet. Von den Regelungen ausgenommen sind Maschinen, die nach der Europäischen Richtlinie 1999/44/EG unter die Verbrauchsgüter fallen, und nur dann, wenn sie in einem Mitgliedstaat der EU verkauft worden sind. Der Garantieschein ist nur gültig, wenn ihm der Kassenbon oder der Lieferschein beiliegt. Unsere Gewährleistung bezieht sich nicht auf Schäden aufgrund fehlerhafter oder nachlässiger Behandlung oder aufgrund von Fremdeinwirkung. Außerdem wird jede Haftung für direkte und indirekte Schäden ausgeschlossen.

#### (RU) ГАРАНТИЯ

Компания-производитель гарантирует хорошую работу машинного оборудования и обязуется бесплатно произвести замену частей, имеющих неисправности, явившиеся следствием плохого качества материала или дефектов производства, в течении 12 месяцев с даты пуска в эксплуатацию машинного оборудования, проставленной на сертификате. Возвращенное оборудование, даже находящееся под действием гарантии, должно быть направлено на условия ПОРТО ФРАНКО и будет возвращено в УКАЗАННОЕ МЕСТО. Из оговоренного выше исключается машинное оборудование, считающееся товарами потребления, в соответствии с европейской директивой 1999/44/ЕС, только в том случае, если они были проданы в государствах, входящих в ЕС. Гарантийный сертификат считается действительным только при условии, что к нему прилагается товарный чек или товаросопроводительная накладная. Неисправности, возникшие из-за неправильного использования, порчи или небрежного обращения, не покрываются действием гарантии. Дополнительно производитель снимает с себя любую ответственность за какой-либо прямой или непрямо́й ущерб.

#### (PT) GARANTIA

A empresa fabricante torna-se garante do bom funcionamento das máquinas e compromete-se a efectuar gratuitamente a substituição das peças que porventura se deteriorarem devido à má qualidade de material e por defeitos de fabricação no prazo de 12 meses da data de entrada da máquina em funcionamento, comprovada no certificado. As máquinas devolvidas, mesmo se em garantia, deverão ser despachadas em PORTO FRANCO e serão devolvidas com FRETE A PAGAR. São excepção, a quanto estabelecido, as máquinas que são consideradas como bens de consumo segundo a directiva europeia 1999/44/CE, somente se vendidas nos estados-membros da EU. O certificado de garantia tem validade somente se acompanhado pela nota fiscal ou conhecimento de entrega. Os inconvenientes decorrentes de utilização imprópria, adulteração ou descuido, são excluídos da garantia. Para além disso, o fabricante exime-se de qualquer responsabilidade para todos os danos directos e indirectos.

#### (EL) ΕΓΓΥΗΣΗ

Η κατασκευαστική εταιρία εγγυάται την καλή λειτουργία των μηχανών και δεσμεύεται να εκτελέσει δωρεάν την αντικατάσταση τμημάτων σε περίπτωση φθοράς τους εξαιτίας κακής ποιότητας υλικού ή ελαττωμάτων κατασκευής, εντός 12 μηνών από την ημερομηνία θέσης σε λειτουργίας του μηχανήματος επιβεβαιωμένη από το πιστοποιητικό. Τα μηχανήματα που επιστρέφονται, ακόμα και αν είναι σε εγγύηση, θα στέλνονται ΧΩΡΙΣ ΕΠΙΒΑΡΥΝΣΗ και θα επιστρέφονται με έξοδα ΠΛΗΡΩΤΕΑ ΣΤΟΝ ΠΡΟΟΡΙΣΜΟ. Εξαιρούνται από τα οριζόμενα τα μηχανήματα που αποτελούν καταναλωτικά αγαθά σύμφωνα με την ευρωπαϊκή οδηγία 1999/44/EC μόνο αν πωλούνται σε κράτη μέλη της ΕΕ. Το πιστοποιητικό εγγύησης ισχύει μόνο αν συνοδεύεται από επίσημη απόδειξη πληρωμής ή απόδειξη παραλαβής. Ενδεχόμενα προβλήματα οφειλόμενα σε κακή χρήση, παραποίηση ή αμέλεια, αποκλείονται από την εγγύηση. Απορρίπτεται, επίσης, κάθε ευθύνη για οποιαδήποτε βλάβη άμεση ή έμμεση.

#### (NL) GARANTIE

De fabrikant is garant voor de goede werking van de machines en verplicht er zich toe gratis de vervanging uit te voeren van de stukken die afslipen omwille van de slechte kwaliteit van het materiaal en omwille van fabricagefouten, binnen de 12 maanden vanaf de datum van in bedrijfstelling van de machine, bevestigd op het certificaat. De geretourneerde machines, ook al zijn ze in garantie, moeten PORTVRIJ verzonden worden en zullen op KOSTEN BESTEMMELING teruggestuurd worden. Hierop maken een uitzondering de machines die vallen onder de verbruiksartikelen overeenkomstig de Europese richtlijn, 1999/44/EG, alleen indien ze verkocht zijn in de lidstaten van de EU. Het garantiecertificaat is alleen geldig indien het vergezeld is van de fiscale reçu of van het ontvangstbewijs. De inconvenienten te wijten aan een slecht gebruik, schendingen of nalatigheid zijn uitgesloten uit de garantie. Bovendien wijst men alle verantwoordelijkheid af voor alle rechtstreekse en onrechtstreekse schade.

#### (HU) JÓTÁLLÁS

A gyártó cég jótállást vállal a gépek rendeltetésszerű üzemeléséért illetve vállalja az alkatrészek ingyenes kicserélését ha azok az alapanyag rossz minőségéből valamint gyártási hibából erednek a gép üzembe helyezésének a bizonylat szerinti igazolható napjától számított 12 hónapon belül. A cserélendő alkatrészeket még a jótállás keretében is BÉRMENTESEN kell visszaküldeni, amelyek UTÓVÉTTTEL lesznek a vevőhöz kiszállítva. Kivételt képeznek e szabály alól azon gépek, melyek az Európai Unió 199/44/EC irányelve szerint meghatározott fogyasztási cikknek minősülnek, s az EU tagországaiiban kerültek értékesítésre. A jótállás csak a blokki igazolás illetve szállítólevél mellékletével érvényes. A nem rendeltetésszerű használatból, megrongálásból illetve nem megfelelő gondossággal való kezelésből eredő rendellenességek a jótállást kizárják. Kizárt továbbá bárminemű felelősségvállalás minden közvetlen és közvetett kárért.

#### (RO) GARANȚIE

Fabricantul garantează buna funcționare a aparatelor produse și se angajează la înlocuirea gratuită a pieselor care s-ar putea deteriora din cauza calității scădute a materialului sau din cauza defectelor de construcție în max. 12 luni de la data punerii în funcțiune a aparatului, dovedită cu certificatul de garanție. Aparatele restituite, chiar dacă sunt în garanție, se vor expedia FĂRĂ PLATĂ și se vor restitui CU PLATA LA PRIMIRE. Fac excepție, conform normelor, aparatele care se categorisesc ca și bunuri de consum, conform directivei europene 1999/44/EC, numai dacă acestea sunt vândute în statele membre din UE. Certificatul de garanție este valabil numai dacă este însoțit de bonul fiscal sau de fișa de livrare. Nefuncționarea cauzată de o utilizare improprie, manipulare inadecvată sau neglijență este exclusă din dreptul la garanție. În plus fabricantul își declină orice responsabilitate față de toate daunele provocate direct și indirect.

#### (SV) GARANTI

Tillverkaren garanterar att maskinerna fungerar bra och åtar sig att kostnadsfritt byta ut delar som går sönder p.g.a. dålig materialkvalitet och defekter inom 12 månader efter idriftsättningen av maskinen, som ska styrkas av intyg. De maskiner som lämnas tillbaka, även om de täcks av garantin, måste skickas FRAKTFRITT, och kommer att skickas tillbaka PÅ MOTTAGARENS BEKOSTNAD. Ett undantag från detta utgörs av de maskiner som räknas som konsumtionsvaror enligt EU-direktiv 1999/44/EG, och då enbart om de har sålts till något av EU:s medlemsländer. Garantisadeln är bara giltig tillsammans med

kvitto eller leveringsedel. Problem som beror på felaktig användning, åverkan eller världsloshet täcks inte av garantin. Tillverkaren fransäger sig även allt ansvar för direkt eller indirekt skada.

#### **(DA) GARANTI**

Producenten stiller garanti for, at maskinerne fungerer ordentligt, og forpligter sig til vederlagsfrit at udskifte de dele, der måtte fremvise defekter på grund af ringe materialekvalitet eller fabrikationsfejl i løbet af de første 12 måneder efter maskinens idriftsættelsesdato, der fremgår af beviset. Selvom de returnerede maskiner er i garanti, skal de sendes FRANKO FRAGT, mens de tilbageleveres PR. EFTERKRAV. Dette gælder dog ikke for de maskiner, der i henhold til Direktivet 1999/44/EØF udgør forbrugsgoder, men kun på betingelse af at de sælges i EU-landene. Garantibeviset er kun gyldigt, hvis der vedlægges en kassebon eller fragtpapirer. Garantien dækker ikke for forstyrrelser, der skyldes forkert anvendelse, manipulering eller skødesløshed. Producenten fralægger sig desuden ethvert ansvar for alle direkte og indirekte skader.

#### **(NO) GARANTI**

Tilverkeren garanterer maskinens korrekte funksjon og forplikter seg å utføre gratis bytte av deler som blir ødelagt på grunn av en dårlig kvalitet i materialer eller konstruksjonsfeil som oppstår innen 12 måneder fra maskinens igangsetting, i overensstemmelse med sertifikatet. Maskiner som sendes tilbake, også i løpet av garantiperioden, skal skikkes FRAKTFRITT og skal sendes tilbake MED BETALNING AV MOTTAKEREN, unntatt maskinene som tilhører forbrukningsvarer ifølge europadirektiv 1999/44/EC, kun hvis de selges i en av EUs medlemsstater. Garantisertifikatet er gyldig kun sammen med kvittering eller leveringsblankett. Feil som oppstår på grunn av galt bruk, manipulering eller slurv, er utelukket fra garantin. Dessuten frasier seg selskapet alt ansvar for alle direkte og indirekte skader.

#### **(FI) TAKUU**

Valmistusyritys takaa koneiden hyvän toimivuuden sekä huolehtii huonolaatuisen materiaalin ja rakennusvirheiden takia huonontuneiden osien vaihdosta ilmaiseksi 12 kuukauden sisällä koneen käyttöönottopäivästä, mikä ilmenee sertifikaatista. Palautettavat koneet, myös takuussa olevat, on lähetettävä LÄHETTÄJÄN KUSTANNUKSELLA ja ne palautetaan VASTAANOTTAJAN KUSTANNUKSELLA. Poikkeuksen muodostavat koneet, jotka asetuksissa kuuluvat kulutushyödykkeisiin eurooppalaisen direktiivin 1999/44/EC mukaan vain, jos ne myydään EU:n jäsen maissa. Takuuodistus on voimassa vain, jos siihen on liitetty verotuskuitti tai todistus tavarantoimituksesta. Takuu ei kata väärinkäytöstä, vaurioittamisesta tai huolimattomuudesta johtuvia haittoja. Lisäksi yritys kieltäytyy ottamasta vastuuta kaikista välittömistä tai välillisistä vaurioista.

#### **(CS) ZÁRUKA**

Výrobce ručí za správnou činnosť strojů a zavazuje se provést bezplatnou výměnu dílů opotřebovaných z důvodu špatné kvality materiálu a následkem konstrukčních vad do 12 měsíců od data uvedení stroje do provozu, uvedeného na záručním listě. Vraćen stroje a to i v záruční době musí být odeslány se ZAPLACENÝM POŠTOVNÝM a budou vráceny na NÁKLADY PŘÍJEMCE. Na základě dohody tvoří výjimku stroje spadající do spotřebního majetku ve smyslu směrnice 1999/44/ES pouze za předpokladu, že byly prodány v členských státech EU. Záruční list má platnost pouze v případě, že je předložen spolu s účtenkou nebo dodacím listem. Poruchy vyplývající z nesprávného použití, úmyslného poškození nebo chybějící péče nespádají do záruky. Odpovědnost se dále nevztahuje na všechny přímé a nepřímé škody.

#### **(SK) ZÁRUKA**

Výrobca ručí za správnú činnosť strojov a zaväzuje sa vykonať bezplatnú výmenu dielov opotrebovaných z dôvodu zlej kvality materiálu a následkom konštrukčných vad do 12 mesiacov od dátumu uvedenia stroja do prevádzky, uvedeného na záručnom liste. Vraćen stroje a to i v podmienkach záručnej doby musia byť odoslané so ZAPLATENÝM POŠTOVNÝM a budú vrátené na NÁKLADY PRIJEMCU. Na základe dohody výnimku tvoria stroje spadajúce do spotrebného majetku, v zmysle smernice 1999/44/ES, len za predpokladu, že boli predané v členských štátoch EÚ. Záručný list je platný len v prípade, keď je predložený spolu s účtenkou alebo dodacím listom. Poruchy vyplývajúce z nesprávneho použitia, neoprávneného zásahu alebo nedostatočnej starostlivosti nespádajú do záruky. Zodpovednosť sa ďalej nevzťahuje na všetky priame i nepriame škody.

#### **(SL) GARANCIJA**

Proizvajalec zagotavlja pravilno delovanje strojev in se zavezuje, da bo brezplačno zamenjal dele, ki se bodo obrabili zaradi slabe kakovosti materiala in zaradi napak pri proizvodnji v roku 12 mesecev od dneva nakupa označenega ne tem certifikatu. Izjema so le aparati, ki so del potrošnih dobrin v skladu z evropsko direktivo 1999/44/EC, le če so bili prodani in državi članici EU. Garancijsko potrdilo je veljavno le, če je priložen veljaven račun. Napake, ki izhajajo iz nepravilne uporabe, posegov ali malomarnosti, garancija ne pokriva. Poleg tega proizvajalec zavrača odgovornost za vse posredne in neposredne poškodbe. Ne delujoč aparat mora pooblaščen servis popraviti v roku 45 dni, v nasprotnem primeru se kupcu izroči nov aparat. Proizvajalec zagotavlja dobavo rezervnih delov še 5 let od nakupa izdelka. Na podlagi zakona o spremembah in dopolnitvah Zakona o varstvu potrošnikov (ZVPot-E) (Ur.l.RS št. 78/2011) podjetje Telwin s.p.a. kot organizator servisne mreže izrecno izjavlja: da velja garancija za izdelek na teritorialnem območju države v kateri je izdelek prodan končnim potrošnikom; opozarja potrošnike, da garancija in uveljavljanje zahtevkov iz naslova garancije ne izključuje pravic potrošnika, ki izhajajo iz naslova odgovornosti prodajalca za napake na blagu. ORGANIZATOR SERVISNE SLUŽBE ZA SLOVENIJO: Itehnik d.o.o., Vanganelška cesta 26a, 6000 Koper, tel: 05/625-02-08.

#### **(HR-SR) GARANCIJA**

Proizvođač garantira ispravan rad strojeva i obvezuje se izvršiti besplatno zamjenu dijelova koji su oštećeni zbog loše kvalitete materijala i zbog tvorničkih grešaka, u roku od 12 mjeseci od dana pokretanja stroja, koji je potvrđen na garantomnom listu. Vraćen strojevi, i ako su pod garancijom, moraju biti poslani bez plaćanja troškova prijevoza. Iznimka su strojevi koji se vraćaju kao potrošni materijal, u skladu sa Europskom odredbom 1999/44/EC, samo ako su prodani zemljama članicama EU-a. Garantni list vrijedi samo ako je popraćen računom ili dostavnom listom. Oštećenja nastala uslijed neispravne upotrebe, izmjena izvrenih na stroju ili nemara nisu pokriveni garancijom. Proizvođač se ujedno odriče bilo kakve odgovornosti za sve izravne i neizravne štete.

#### **(LT) GARANTIJA**

Gamintojas garantuoja nepriekaištingą įrenginio veikimą ir įsipareigoja nemokamai pakeisti gaminio dalis, susidėvėjusias ar susigadinusias dėl prastos medžiagos kokybės ar dėl konstrukcijos defektų 12 mėnesių laikotarpyje nuo įrenginio paleidimo datos, kuri turi būti paliudyta pažymėjimu. Gražinami įrenginiai, net ir galiojant garantijai, turi būti siunčiami ir bus sugrąžinti atgal PIRKĖJO lėšomis. Išimti aukščiau aprašyti sąlygai sudaro prietaisai, kurie pagal 1999/44/EC Europos direktyvą gali būti laikomi plataus vartojimo prekėmis bei yra pardudami tik ES šalyse. Garantinis pažymėjimas galioja tik tuo atveju, jei yra lydimas fiskalinio čekio arba pristatymo dokumento. Į garantiją nėra įtraukti nesklaidumai, susiję su netinkamu prietaiso naudojimu, aplaidumu ar prasta jo priežiūra. Gamintojas taip pat atsiriboja nuo atsakomybės už bet kokius tiesioginius ar netiesioginius nuostolius.

#### **(ET) GARANTII**

Tootjafirma vastutab masinate hea funktsioneerimise eest ja kohustub asendada tasuta osad, mis riknevad halva kvaliteediga materjali ja konstruksioonidefektide tõttu, 12 kuu jooksul alates masina käikupanemise sertifikaadil tõestatud kuupäevast. Tagasi saadetavad masinad, ka kehtiva garantiiga, tuleb saata TASUTUD POSTIMAKSUGA ja nende tagastamise SAATEKULUD ON KAUBASAAJA TASUDA. Nagu kehtestatud, teevad erandi masinad, mis kuuluvad euroopa normatiivi 1999/44/EC kohaselt tarbekauba kategooriasse ja ainult siis, kui müüdu ÜE liikmesriikides. Garantiisertifikaat kehtib ainult koos ostu- või kättetoimetamiskviitungiga. Garantii ei hõlma riknemisi, mis on põhjustatud seadme väärast käsitsemisest, modifitseerimisest või hoolimatust kasutamisest. Peale selle ei vastuta firma kõigi otseste või kaudsete kahjude eest.

#### **(LV) GARANTIJA**

Ražotājs garantē mašīnu labu darbību un apņemas bez maksas nomainīt detaļas, kuras nodilst materiāla sliktas kvalitātes dēļ vai ražošanas defektu dēļ 12 mēnešu laikā kopš sertifikāta norādītā mašīnas ekspluatācijas sākuma datuma. Atpakaļ nosūtāmas mašīnas, pat to garantijas laikā, ir jānosūta saskaņā ar FRANKO-OSTA noteikumiem un ražotājs tās atgriezīs uz NORĀDĪTO OSTU. Minētie nosacījumi neattiecas uz mašīnām, kuras saskaņā ar Eiropas direktīvu 1999/44/EC tiek uzskatītas par patēriņa precī, bet tikai gadījumā, ja tās tiek pārdotas ES dalībvalstīs. Garantijas sertifikāts ir spēkā tikai kopā ar kases čeku vai pavadzīmi. Garantija neattiecas uz gadījumiem, kad bojājumi ir radušies nepareizās izmantošanas, noteikumu neievērošanas vai nolaidības dēļ. Turklāt, šajā gadījumā ražotājs neņem jebkādu atbildību par tiešajiem un netiešajiem zaudējumiem.

#### **(BG) ГАРАНЦИЯ**

Фирмата производител гарантира за доброто функциониране на машините и се задължава да извърши безплатно подмяната на части, които са се повредили, заради некачествен материал или производствени дефекти, до 12 месеца от датата на пускане в действие на машината, доказана с гаранционна карта. Върнатите машини, дори и в гаранция, трябва да бъдат изпратени със ЗАПЛАТЕН ПРЕВОЗ и ще бъдат върнати с НАЛОЖЕН ПЛАТЕЖ. С изключение на машините, които се считат за движимо имущество за постоянно ползване, както е установено от европейската директива 1999/44/EC, само ако машините са продавани в страни членки на Европейския съюз. Гаранционната карта е валидна, само ако е придружена от фискален бон или разписка за доставка. Нередностите, произтичащи от лоша употреба или небрежност, са изключени от гаранцията. Освен това се отклонява всякаква отговорност за директни или индиректни щети.

#### **(PL) GWARANCJA**

Producent gwarantuje prawidłowe funkcjonowanie urządzeń i zobowiązuje się do bezpłatnej wymiany części, które zepsują się w wyniku złej jakości materiału lub wad fabrycznych w ciągu 12 miesięcy od daty uruchomienia urządzenia, poświadczonej na gwarancji. Urządzenia przesłane do Producenta, również w okresie gwarancji, należy wysłać na warunkach PORTO FRANKO, po naprawie zostaną one zwrócone na koszt odbiorcy. Zgodnie z ustaleniami wyjątkiem są te urządzenia, które są odywane jako dobra konsumpcyjne, zgodnie z dyrektywą europejską 1999/44/WE, wyłącznie, jeżeli zostały sprzedane w krajach członkowskich UE. Karta gwarancyjna jest ważna wyłącznie, jeżeli towarzyszy jej kwit fiskalny lub dowód dostawy. Trudności wynikające z nieprawidłowego użytkowania, naruszenia lub niedbałości o urządzenia nie są objęte gwarancją. Producent nie ponosi odpowiedzialności za wszelkie szkody pośrednie i bezpośrednio.



(EN)	CERTIFICATE OF GUARANTEE
(IT)	CERTIFICATO DI GARANZIA
(FR)	CERTIFICAT DE GARANTIE
(ES)	CERTIFICADO DE GARANTIA
(DE)	GARANTIEKARTE
(RU)	ГАРАНТИЙНЫЙ СЕРТИФИКАТ
(PT)	CERTIFICADO DE GARANTIA
(EL)	ΠΙΣΤΟΠΟΙΗΤΙΚΟ ΕΓΓΥΗΣΗΣ
(NL)	GARANTIEBEWIJS
(HU)	GARANCIALEVÉL
(RO)	CERTIFICAT DE GARANȚIE
(SV)	GARANTISEDEL

(DA)	GARANTIBEVIS
(NO)	GARANTIBEVIS
(FI)	TAKUUTODISTUS
(CS)	ZÁRUČNÍ LIST
(SK)	ZÁRUČNÝ LIST
(SL)	CERTIFICAT GARANCIJE
(HR-SR)	GARANTNI LIST
(LT)	GARANTINIS PAŽYMĖJIMAS
(ET)	GARANTIISERTIFIKAAT
(LV)	GARANTIJAS SERTIFIKĀTS
(BG)	ГАРАНЦИОННА КАРТА
(PL)	CERTYFIKAT GWARANCJI

MOD. / MONT / МОД./ ŪRLAP / MUDEL / МОДЕЛ / Št/ Br.

(EN) Date of buying - (IT) Data di acquisto - (FR) Date d'achat - (ES) Fecha de compra - (DE) Kaufdatum - (RU) Дата продажи - (PT) Data de compra - (EL) Ημερομηνία αγοράς - (NL) Datum van aankoop - (HU) Vásárlás kelte - (RO) Data achiziției - (SV) Inköpsdatum - (DA) Købsdato - (NO) Innkjøpsdato - (FI) Ostopäivämäärä - (CS) Datum zakoupení - (SK) Dátum zakúpenia - (SL) Datum nakupa - (HR-SR) Datum kupnje - (LT) Pirkimo data - (ET) Ostu kuupäev - (LV) Pirkšanas datums - (BG) ДАТА НА ПОКУПКАТА - (PL) Data zakupu:

NR. / ARIQM / È. / Č. / HOMEP:

(EN)	Sales company	(Name and Signature)
(IT)	Ditta rivenditrice	(Timbro e Firma)
(FR)	Revendeur	(Chachet et Signature)
(ES)	Vendedor	(Nombre y sello)
(DE)	Händler	(Stempel und Unterschrift)
(RU)	ШТАМП и ПОДПИСЬ	(ТОРГОВОГО ПРЕДПРИЯТИЯ)
(PT)	Revendedor	(Carimbo e Assinatura)
(EL)	Κατάστημα πώλησης	(Σφ ραγίδα και υπογραφή)
(NL)	Verkoper	(Stempel en naam)
(HU)	Eladás helye	(Pecsét és Aláírás)
(RO)	Reprezentant comercial	(Ștampila și semnătura)
(SV)	Återförsäljare	(Stämpel och Underskrift)

(DA)	Forhandler	(stempel og underskrift)
(NO)	Forhandler	(Stempel og underskrift)
(FI)	Jälleenmyyjä	(Leima ja Allekirjoitus)
(CS)	Prodejce	(Razítko a podpis)
(SK)	Predajca	(Pečiatka a podpis)
(SL)	Prodajno podjetje	(Žig in podpis)
(HR-SR)	Tvrtka prodavatelj	(Pečat i potpis)
(LT)	Pardavėjas	(Antspaudas ir Parašas)
(ET)	Edasimüügi firma	(Tempel ja allkiri)
(LV)	Izplāītājs	(Zīmogs un paraksts)
(BG)	ПРОДАВАЧ	(Подпис и Печат)
(PL)	Firma odsprzedająca	(Pieczęć i Podpis)



(EN)	The product is in compliance with:
(IT)	Il prodotto è conforme a:
(FR)	Le produit est conforme aux:
(ES)	Het produkt overeenkomstig de:
(DE)	Die maschine entspricht:
(RU)	Заявляется, что изделие соответствует:
(PT)	El producto es conforme as:
(EL)	Το προϊόν είναι κατασκευασμένο σύμφωνα με τη:
(NL)	O produto è conforme as:
(HU)	A termék megfelel a következőknek:
(RO)	Produsul este conform cu:
(SV)	Att produkten är i överensstämmelse med:

(DA)	At produktet er i overensstemmelse med:
(NO)	At produktet er i overensstemmelse med:
(FI)	Että laite mallia on yhdenmukainen direktiivissä:
(CS)	Výrobek je v súlade so:
(SK)	Výrobek je ve shodě se:
(SL)	Proizvod je v skladu z:
(HR-SR)	Proizvod je u skladu sa:
(LT)	Produktas atitinka:
(ET)	Toode on kooskõlas:
(LV)	Izstrādājums atbilst:
(BG)	Продуктът отговаря на:
(PL)	Produkt spełnia wymagania następujących Dyrektyw:

(EN) DIRECTIVES - (IT) DIRETTIVE - (FR) DIRECTIVES - (ES) DIRECTIVAS - (DE) RICHTLINIEN - (RU) ДИРЕКТИВЫ - (PT) DIRECTIVAS - (EL) ΠΡΟΔΙΑΓΡΑΦΕΣ - (NL) RICHTLIJNEN - (HU) IRÁNYELVEK - (RO) DIRECTIVE - (SV) DIREKTIV - (DA) DIREKTIVER - (NO) DIREKTIVER - (FI) DIREKTIIVIT - (CS) SMĚRNICE - (SK) SMERNICE - (SL) DIREKTIVE - (HR-SR) DIREKTIVE - (LT) DIREKTYVOS - (ET) DIREKTIIVID - (LV) DIREKTĪVAS - (BG) ДИРЕКТИВИ - (PL) DYREKTYWY

LVD 2006/95/EC + Amdt.

EMC 2004/108/EC + Amdt.

RoHS 2011/65/EU + Amdt.