

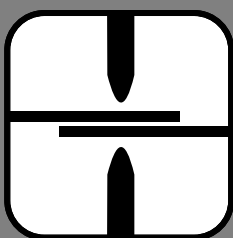
INSTRUCTION MANUAL
 MANUALE D'ISTRUZIONE
 MANUEL D'INSTRUCTIONS
 BEDIENUNGSANLEITUNG
 MANUAL DE INSTRUCCIONES
 MANUAL DE INSTRUÇÕES
 INSTRUCTIEHANDLEIDING
 INSTRUKTIONSMANUAL
 ΟΗΓΕΚΙΡΙΑ
 BRUKERVEILEDNING
 BRUKSANVISNING
 ΕΓΧΕΙΡΙΔΙΟ ΧΡΗΣΗΣ

РУКОВОДСТВО ПОЛЬЗОВАТЕЛЯ
 HASZNÁLATI UTASÍTÁS
 MANUAL DE INSTRUȚIUNI
 INSTRUKCJA OBSŁUGI
 NÁVOD K POUŽITÍ
 PRIROČNIK Z NAVODILI ZA UPORABO
 PRIRUČNIK ZA UPOTREBU
 INSTRUKCIJŲ KNYGELĖ
 KASUTUSJUHEND
 ROKASGRĀMATA
 РЪКОВОДСТВО С ИНСТРУКЦИИ

GB I F D E P
 NL DK SF N S GR RU
 H RO PL CZ SK SI
 HR/SCG LT EE LV BG



- ▶ *Spot welders*
- ▶ *Puntatrici*
- ▶ *Postes de soudage par points*
- ▶ *Punktschweißmaschinen*
- ▶ *Soldadoras por puntos*
- ▶ *Aparelhos para soldar por pontos*
- ▶ *Puntlasmachines*
- ▶ *Punktsvejsemaskinens*
- ▶ *Pistehitsauskoneet*
- ▶ *Punktsveisemaskiner*
- ▶ *Häftsvetsar*
- ▶ *Πόντες*
- ▶ *Точечные контактные сварочные машины*
- ▶ *Ponthegeztő*
- ▶ *Aparat de sudură în puncte*
- ▶ *Spawarka punktowa*
- ▶ *Bodovačka*
- ▶ *Bodovačka*
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APPLIANCES FOR RESISTANCE WELDING FOR INDUSTRIAL AND PROFESSIONAL USE

Note: In the following text the term "spot-welder" will be used.

1. GENERAL SAFETY RULES FOR RESISTANCE WELDING

The operator should be properly trained to use the spot-welder safely and should be informed of the risks connected with resistance welding procedures, of related protection measures and of emergency procedures.



- Electrical installation should be carried out following accident-prevention legislation and standards.
 - The spot-welder should be connected only and exclusively to a power supply with the neutral conductor connected to earth.
 - Make sure the power supply outlet is correctly connected to the earth protection.
 - Do not use cables with worn or damaged insulation or with loosened connections.
 - Do not use the spot-welder in damp or wet environments or in the rain.
 - When connecting the welding cables or carrying out any routine maintenance operation on the arms and/or electrodes the spot-welder should be switched off and disconnected from the power supply.
- The same procedure should be followed when making connections to the water supply or to a closed circuit cooling unit (water-cooled spot-welders) and whenever repairs are made (extraordinary maintenance).



- Do not weld on containers, receptacles or piping that contain or have contained flammable liquid or gas products.
- Do not operate on materials cleaned with chlorinated solvents or near such substances.
- Do not weld on pressurised containers.
- Remove all flammable substances from the work area (e.g. wood, paper, rags etc.).
- Make sure there is sufficient ventilation or provide means for removing welding fumes near the electrodes; a systematic approach is necessary to evaluate limits of exposure to the welding fumes depending on their composition and concentration and on the length of exposure.



- Always protect the eyes with suitable eye protectors.
- Wear protective gloves and clothing suitable for resistance welding work.
- Noise levels: if the personal daily exposure level (LEPd) is found to be greater than 85db(A) due to particularly intensive welding operations, wearing personal protection devices is compulsory.



- The strong magnetic fields generated by resistance welding processes (very high currents) may damage or interfere with:
 - CARDIAC STIMULATORS (PACE MAKERS)
 - ELECTRONICALLY CONTROLLED IMPLANTED DEVICES

- METAL PROSTHESES
 - Data transmission or local telephone networks
 - Instrumentation
 - Clocks and watches
 - Magnetised cards
- WEARERS OF VITAL ELECTRICAL OR ELECTRONIC DEVICES AND PEOPLE WITH METAL PROSTHESES SHOULD NOT BE ALLOWED TO USE THE SPOT-WELDER. SUCH PERSONS SHOULD TAKE MEDICAL ADVICE BEFORE STOPPING IN THE VICINITY OF SPOT-WELDERS AND/OR WELDING CABLES.**



- This spot-welder complies with all requirements of the technical standard for the product, which to be used only and exclusively in industrial environments and for professional purposes.
- Electromagnetic compatibility with a domestic environment cannot be guaranteed.



RESIDUAL RISKS



- **RISK OF UPPER LIMBS BEING CRUSHED**
Both the operating method for the spot-welder and the variability in shape and size of the piece being welded make it impossible to provide integrated protection against the danger of the upper limbs being crushed: fingers, hands, forearm.
The risk should be reduced by appropriate preventive measures:
 - The operator should either be expert or trained in resistance welding procedures using this type of appliance.
 - There should be risk evaluation for every type of job to be done; equipment and masking should be provided to support and guide the work-piece (unless a portable spot-welder is used).
 - Whenever the shape of the piece allows it, adjust the electrode distance so that the stroke does not exceed 6 mm.
 - Do not allow more than one person to work on the same spot-welder at the same time.
 - Unauthorised persons should not be allowed in the working area.
 - Do not leave the spot-welder unattended: in such a case it should be disconnected from the power supply.
- **RISK OF BURNS**
Some parts of the spot-welder (electrodes arms and nearby areas) may reach temperatures of over 65°C: suitable protective clothing must be worn.
- **RISK OF TIPPING AND FALLING**
 - Place the spot-welder on a level horizontal surface that is able to support its weight; confine the spot-welder to the support surface (when required in the "INSTALLATION" section of this manual). Otherwise with inclined or uneven floors or moveable supporting surfaces there is the danger of tipping.
 - Never lift the spot-welder unless explicitly required by the "INSTALLATION" section of this handbook.
- **IMPROPER USE**
It is dangerous to use the spot-welder for any other purpose than that for which it is designed (spot resistance welding).



PROTECTIONS

- The safeguards and moveable parts of the spot-welder casing should all be in position before connection to the power supply.
- WARNING:** All manual operations on moveable accessible parts of the spot welder, for example:
- Electrode replacement or maintenance
 - Adjusting the position of the arms or electrodes
- SHOULD BE CARRIED OUT WITH THE SPOT-WELDER SWITCHED OFF AND DISCONNECTED FROM THE POWER SUPPLY.**

2. INTRODUCTION AND GENERAL DESCRIPTION

2.1 INTRODUCTION

Portable spot-welder for resistance welding.

The series consists of 3 models:

- **Modular 20T1:**

Portable spot-welder with electronic timer. Used for precision spot-welding with electronic control of spot-welding time, and electrode force adjustment. Spot welding capacity on low carbon steel sheet (standard arms) up to 1+1 mm thick.

- **Digital Modular 230:**

Portable spot-welder with digital microprocessor control. The most important properties managed by the control panel are:

- Selection of the thickness of the sheet to be spot-welded.
- Correction of spot-welding time.
- Possibility of enabling pulsed welding current.
- Adjustment of spot-welding force.
- Spot welding capacity on low carbon steel sheet (standard arms) up to 2+2 mm thick.

- **Digital Modular 400:**

Portable spot-welder with digital microprocessor control. The same features as the Digital Modular 230 model, but operating with a power supply voltage of 400V(380V-415V).

2.2 STANDARD ACCESSORIES:

The standard spot-welder includes 120 mm arms and standard electrodes.

2.3 OPTIONAL ACCESSORIES

- Electrode arm pairs of different lengths and/or shapes, also in kits of several pairs.
- Trolley for arms: to carry the spot-welder and accessories.

3. TECHNICAL DATA

3.1 RATING PLATE (FIG. A)

The main data relating to use and performance of the spot-welder are summarised on the rating plate and have the following meanings:

- 1- Number of phases and frequency of power supply.
- 2- Power supply voltage.
- 3- Rated mains power with 50% duty cycle.
- 4- Mains power with permanent running (100%).
- 5- Maximum loadless voltage over electrodes.
- 6- Maximum current when electrodes are shorted.
- 7- Maximum electrode force:
- 8- Current to secondary when running permanently (100%).

Note: The rating plate shown is an example to show the meaning of the symbols and numbers; the exact values of the technical specifications for your spot-welder can be found on the rating plate of the spot-welder itself.

3.2 OTHER TECHNICAL DATA

General specifications TAB. 1.

Weight of the spot-welder TAB. 7.

4. DESCRIPTION OF THE SPOT-WELDER

4.1 PRINCIPAL COMPONENTS AND ADJUSTMENTS (FIG.B)

- 1- Electrode force adjustment screw.
- 2- Left/right hand positionable handgrip.
- 3- Hole for eyebolt if used.
- 4- Movable welding arm.
- 5- Fixed welding arm.
- 6- Power supply cable.
- 7- Rating plate.
- 8- Microswitch.
- 9- Spot-welding time adjustment (only on 20T1 models (FIG. B1)) ; for "DIGITAL" models see 4.2: CONTROL PANEL.
- 10-Spot-welding lever.

4.2 CONTROL PANEL (only for "DIGITAL" models) (FIG. C)


1- Key for correcting spot-welding time.

- adjusts spot-welding time with respect to the factory default setting.

2- Key for selecting sheet thickness.

- selects the thickness of the sheet to be welded.

3- Key for selecting spot-welding mode.


 : the welding current is pulsed.
Making this selection will improve spot-welding capacity on high yield point sheets or on sheets with special protective film. The length of the pulse is automatic and requires no regulation.

 : Normal spot welding.

4- LED's for indicating triggering of thermal safeguard .

The two LED's flash alternately, the remaining LED's are off, indicating that the spot-welder is shut down due to overheating; reset is automatic when the temperature returns within the allowed limits.

5. INSTALLATION

 **WARNING! CARRY OUT ALL INSTALLATION OPERATIONS AND ELECTRICAL AND PNEUMATIC CONNECTIONS WITH THE SPOT-WELDER COMPLETELY SWITCHED OFF AND DISCONNECTED FROM THE POWER SUPPLY OUTLET.**

THE ELECTRICAL AND PNEUMATIC CONNECTIONS MUST BE MADE ONLY AND EXCLUSIVELY BY EXPERT OR SKILLED PERSONNEL.

5.1 PRELIMINARY OPERATIONS

Unpack the spot-welder, assemble the separate parts included in the package.

5.2 LIFTING THE SPOT-WELDER

WARNING: None of the spot-welders described in this handbook have lifting devices; when required attach an eyebolt to suspend the spot-welder using the hole made for this purpose (FIG. F (2)), take care to insert the threaded bolt to a depth of no more than 8mm.

5.3 POSITION

The installation area must be sufficiently large and without obstacles, suitable for ensuring completely safe access to the control panel, to the main switch and to the working area.

When not in use position the spot-welder on a plane surface able to support the weight (see the "technical data") so as to prevent it from tipping or moving dangerously.

5.4 CONNECTION TO THE MAIN POWER SUPPLY

5.4.1 Warnings

Before making any electrical connection, make sure the rating data of the spot-welder correspond to the mains voltage and frequency available at the place of installation.

The spot-welder should be connected only and exclusively to a power supply with the neutral conductor connected to earth.

5.4.2 Plug and socket

Connect a standard plug with adequate capacity to the power supply cable and prepare a power outlet protected by fuses or by an automatic circuit-breaker; the appropriate earth terminal should be connected to the (yellow-green) earth conductor of the power line.

The power supply connection and the number of poles on the plug, which depend on the distribution system and the power supply voltage of your spot-welder, should correspond with the indications given in the tables (TAB. 2; 3; 4; 5).

The capacity of the plug and specifications of the fuses and circuit-breaker are given in the tables TAB. 1 and TAB. 7.


Should more than one spot-welder be installed, distribute the power cyclically among the three phases in order to obtain amore balanced load; e.g.

230V spot-welders:

- Spot-welder 1: power supply L1-N.
- Spot-welder 2: power supply L2-N.
- Spot-welder 3: power supply L3-N.
- etc.

400V spot-welders:

- Spot-welder 1: power supply L1-L2.
- Spot-welder 2: power supply L2-L3.
- Spot-welder 3: power supply L3-L1.
- etc.

 **WARNING! Failure to observe the rules given above will invalidate the (class I) safety system provided by the manufacturer, causing serious risks to people (e.g. electric shock) and objects (e.g. fire).**

6. (SPOT) WELDING

6.1 PRELIMINARY OPERATIONS

Before carrying out any spot-welding operation, it is necessary to carry out a series of checks and tests with the spot-welder disconnected from the main power supply.

1- Ensure that the electrical connections are correct, in accordance with the above instructions.

2- Electrode force and alignment

- lock the lower electrode securely in the most suitable position for the job to be done,
- loosen the fastening screw on the top electrode so that it is able to slide in the hole in the arm,
- between the electrodes place a shim with the same thickness as the sheets to be spot-welded,
- **FIG. D** close lever 2 until the arms are parallel and the electrode tips coincide; insert screw 3 (d.M6) which is supplied into hole 1 and tighten it to lock the lever in a suitable position for adjusting the electrode force,
- lock the top electrode in the correct position, tightening the screw securely,
- regulate the force exerted by the electrodes during spot-welding **FIG.E**, by adjusting the screw (1) fitted for this purpose using the key supplied; the value of the setting, according to the position of the indicator on the graduated scale, is shown in **FIG. F**.

TAB. 6 shows the value of the force that can be obtained with different arm lengths.

Turn it clockwise to increase the force in proportion to the increase in sheet thickness but make the adjustment so that the clamp is able to close, and trigger the corresponding microswitch, with very little effort.

6.2 ADJUSTING THE PARAMETERS

6.2.1 Digital Models

- select the thickness of the sheet to be spot-welded using the key (2 - **FIG. C**) on the spot-welder control panel.
- select the type of spot-welding (continuous or pulsed) using the key (3 - **FIG. C**).
When necessary it is possible to correct the default spot-welding time upwards or downwards using key (1 - **FIG. C**).

6.2.2 Model T1

- regulate the spot-welding time using the potentiometer (9 - **FIG.B1**) on the back of the spot-welder; using the lowest possible values compatible with correct execution of the spot-weld (see 6.3 PROCEDURE).

6.3 PROCEDURE

To make a spot-weld, power the spot-welder then follow the instructions below:

- place the bottom electrode on the sheet to be spot-welded;
- pull the clamp lever to the end of its stroke, and hence until the microswitch is pressed (8 - **FIG.B**) so that:
 - a) the sheets close between the electrodes with the preset force;
 - b) the welding current passes for the preset time.

- release the clamp lever shortly afterwards. This delay (holding) improves the mechanical properties of the spot-weld.

When specific experience is lacking we recommend carrying out a number of test welds using sheet of the same thickness and quality as that of the workpiece. The spot-welding operation is deemed correct when a tensile test causes the spot-welding core to come out of one of the two sheets.

7. MAINTENANCE

⚠ WARNING! BEFORE CARRYING OUT ANY MAINTENANCE OPERATION MAKE SURE THE SPOT-WELDER HAS BEEN SWITCHED OFF AND DISCONNECTED FROM THE MAIN POWER SUPPLY.

7.1 ROUTINE MAINTENANCE ROUTINE MAINTENANCE CAN BE CARRIED OUT BY THE OPERATOR

- adjustment/reset of electrode tip diameter and profile;
- electrode alignment checks;
- efficiency checks on electrodes and arms.

7.2 EXTRAORDINARY MAINTENANCE EXTRAORDINARY MAINTENANCE OPERATIONS SHOULD BE CARRIED OUT ONLY AND EXCLUSIVELY BY EXPERT OR SKILLED ELECTRICAL-MECHANICAL PERSONNEL.

⚠ WARNING! BEFORE REMOVING THE SPOT-WELDER PANELS AND WORKING INSIDE IT MAKE SURE IT IS SWITCHED OFF AND DISCONNECTED FROM THE MAIN POWER SUPPLY.

If checks are made inside the spot-welder 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.

If you are inspecting the inside of the machine for repairs or cleaning take care of the following:

- remove dust and metal particles deposited on the transformer, on the parts inside the machine etc. using a jet of dry compressed air (max. 5 bar).
- Do not direct the compressed air jet on the electronic boards:** clean them using a very soft brush or with the appropriate solvents.

Take the opportunity to:

- Ensure that the wiring insulation is not damaged and the connections are tight and free of oxidation.
- Ensure that the screws connecting the flexible component to the transformer secondary and to the top support arm are tightly secured and that there are no signs of oxidation or overheating.

IF SPOT-WELDER OPERATION IS UNSATISFACTORY, BEFORE PERFORMING MORE SYSTEMATIC CHECKS OR CONTACTING YOUR SERVICE CENTRE CHECK WHETHER:

- **when the welding lever was pulled** the microswitch was actually pressed to enable the electronic board for welding.
- **the thermal safeguards have triggered.**
- **the parts making up the secondary circuit** (arm-holder castings arms electrode holders) are inefficient due to loose screws or oxidation.
- **the welding parameters** (electrode force and diameter, welding time) are unsuitable for the job being done.

ITALIANO

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3.1 TARGA DATI	8	5.4.2 Spina e presa	8
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APPARECCHIATURE PER SALDATURA A RESISTENZA PER USO PROFESSIONALE E INDUSTRIALE.
Nota: Nel testo che segue verrà impiegato il termine "puntatrice".

1. SICUREZZA GENERALE PER LA SALDATURA A RESISTENZA

L'operatore deve essere sufficientemente edotto sull'uso sicuro della puntatrice ed informato sui rischi connessi ai procedimenti per saldatura a resistenza, alle relative misure di protezione ed alle procedure di emergenza.



- Eseguire l'installazione elettrica secondo le previste norme e leggi antinfortunistiche.
 - La puntatrice deve essere collegata esclusivamente ad un sistema di alimentazione con conduttore di neutro collegato a terra.
 - Assicurarsi che la presa di alimentazione sia correttamente collegata alla terra di protezione.
 - Non utilizzare cavi con isolamento deteriorato o con connessioni allentate.
 - Non utilizzare la puntatrice in ambienti umidi o bagnati o sotto la pioggia.
 - La connessione dei cavi di saldatura e qualunque intervento di manutenzione ordinaria sui bracci e/o elettrodi devono essere eseguiti a puntatrice spenta e scollegata dalla rete di alimentazione.
- La stessa procedura dev'essere rispettata per l'allacciamento alla rete idrica o ad una unità di raffreddamento a circuito chiuso (puntatrici raffreddate ad acqua) ed in ogni caso di interventi di riparazione (manutenzione straordinaria).



- Non saldare su contenitori, recipienti o tubazioni che contengano o che

abbiano contenuto prodotti infiammabili liquidi o gassosi.

- Evitare di operare su materiali puliti con solventi clorurati o nelle vicinanze di dette sostanze.
- Non saldare su recipienti in pressione.
- Allontanare dall'area di lavoro tutte le sostanze infiammabili (p.es. legno, carta, stracci, etc.).
- Assicurarsi un ricambio d'aria adeguato o di mezzi atti ad asportare i fumi di saldatura nelle vicinanze degli elettrodi; è necessario un approccio sistematico per la valutazione dei limiti all'esposizione dei fumi di saldatura in funzione della loro composizione, concentrazione e durata dell'esposizione stessa.



- Proteggere sempre gli occhi con gli appositi occhiali di protezione.
- Indossare guanti e indumenti di protezione adatti alle lavorazioni con saldatura a resistenza.
- Rumorosità: Se a causa di operazioni di saldatura particolarmente intensive viene verificato un livello di esposizione quotidiana personale (LEPd) uguale o maggiore a 85db(A), è obbligatorio l'uso di adeguati mezzi di protezione individuale.



- I campi magnetici intensi generati dal processo di saldatura a resistenza (correnti molto elevate) possono danneggiare od interferire con:
 - STIMOLATORI CARDIACI (PACE MAKER)
 - DISPOSITIVI IMPIANTABILI A CONTROLLO ELETTRONICO
 - PROTESI METALLICHE
 - Reti di trasmissione dati o telefoniche locali
 - Strumentazione
 - Orologi
 - Schede magnetiche
- DEV'ESSERE PROIBITA L'UTILIZZAZIONE DELLA PUNTATRICE AI PORTATORI DI DISPOSITIVI ELETTRICI O ELETTRONICI VITALI E PROTESI METALLICHE.
QUESTE PERSONE DEVONO CONSULTARE IL MEDICO PRIMA DI SOSTARE NELLE VICINANZE DELLE PUNTATRICI E/O DEI CAVI DI SALDATURA.

FIG.A

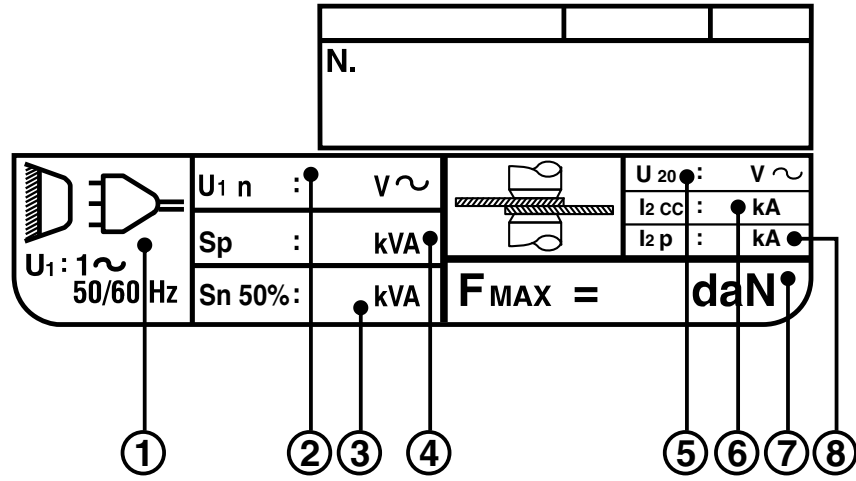


FIG.B

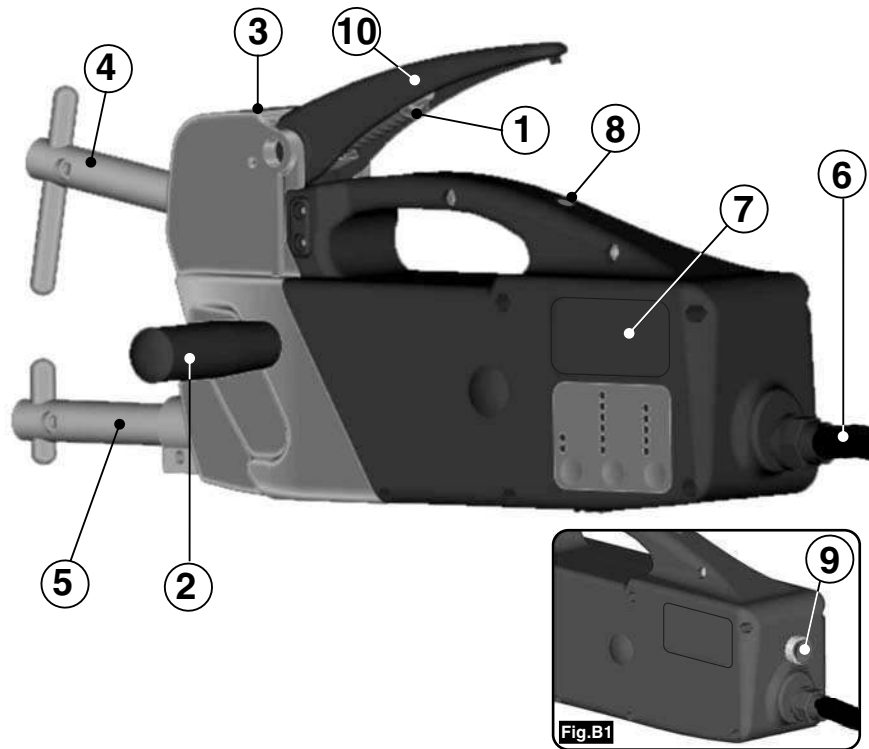


FIG.C

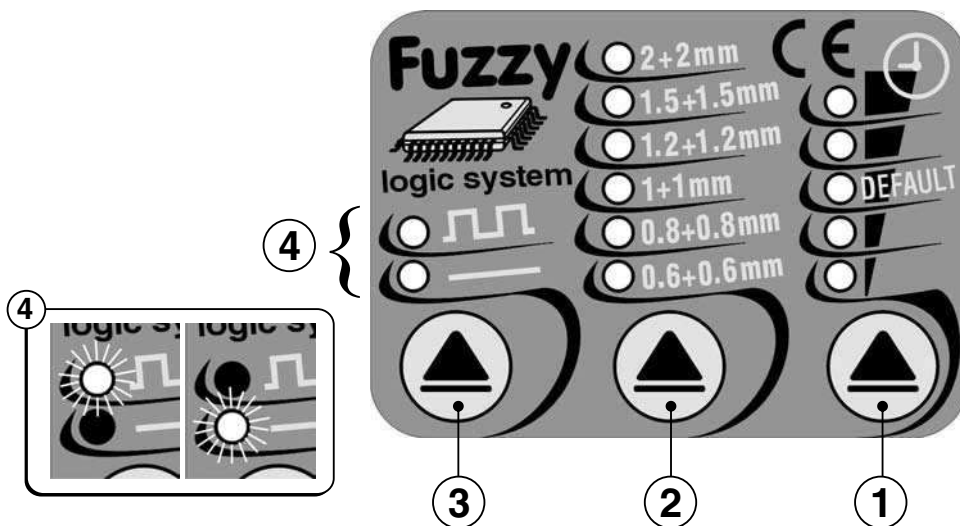


FIG.D

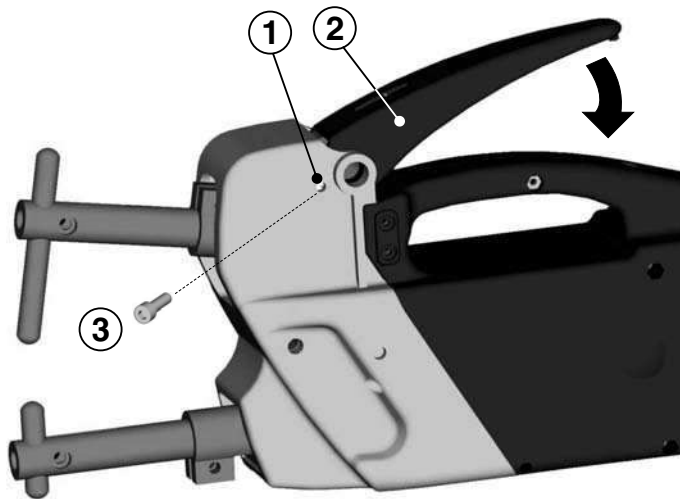


FIG.E

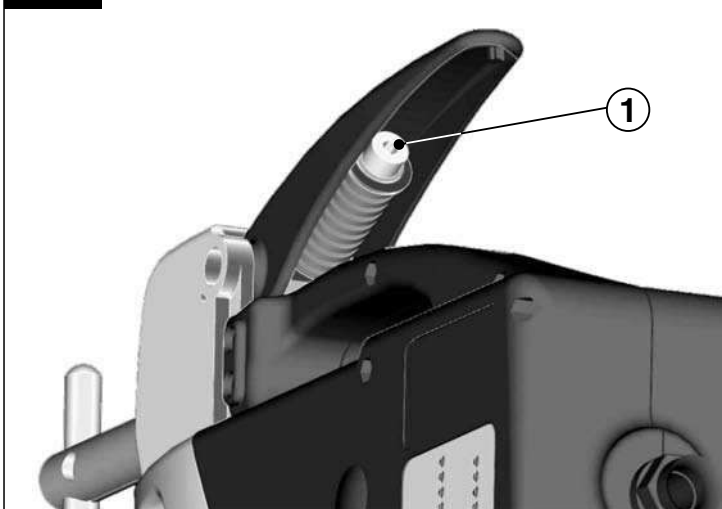
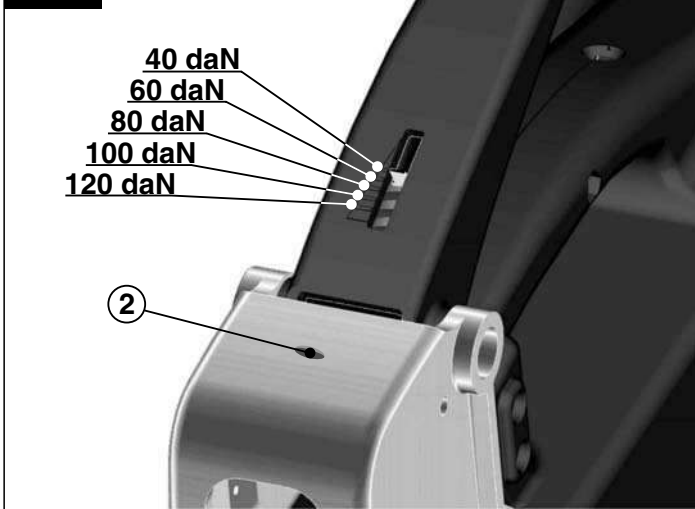


FIG.F



TAB.1

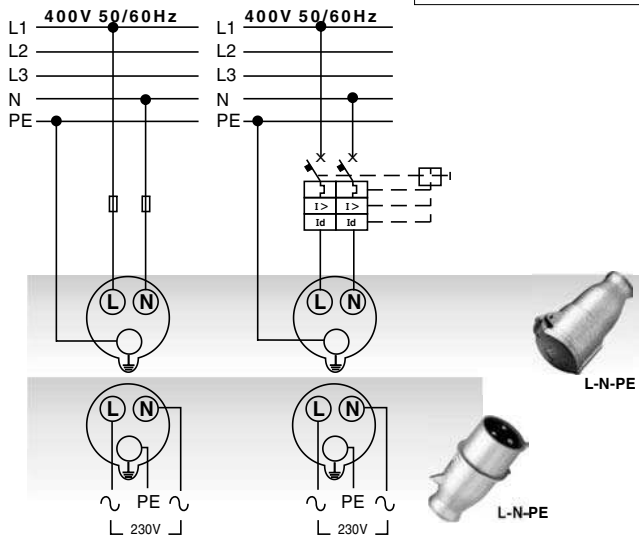
CARATTERISTICHE GENERALI: CARACTÉRISTIQUES GÉNÉRALES: GENERAL FEATURES: ALLGEMEINE EIGENSCHAFTEN: CARACTERISTICAS GENERALES

	Mod. 20 TI	Dig. Mod.
- Tensione e frequenza di alimentazione: / Tension et fréquence d'alimentation: Power supply voltage and frequency: / Versorgungsspannung und-Frequenz: Tensión y frecuencia de alimentación:		(*) 400V(380V-415V) - 1ph-50/60 Hz 230V(220V-240V) ~ 1ph-50/60 Hz 230V(220V-240V) ~ 1ph-50/60 Hz
- Classe di protezione elettrica: / Classe de protection électrique: Electrical protection class: / Elektrische Schutzklasse: / Clase de protección eléctrica:	I	I
- Tipo di raffreddamento: / Type de refroidissement: / Type of cooling: / Kühlungsart: / Tipo de refrigeración:	N (aria naturale)	N (aria naturale)
- Ingombro (LxWxH): / Dimensions(LxWxH): / Dimensions (LxWxH): / Umfang(LxWxH): / Volumen:	440x100x185	440x100x185
- Peso con bracci: / Masse avec bras: / Mass with arms: / Masse mit Armen: / Masa con brazos:	10,5kg	10,5kg
INPUT :		
- Potenza max in puntatura (S_{max}): / Puissance maxi de soudage (S _{max}): Max welding power (S _{max}): / Max. Stromleistung (S _{max}): Potencia maxima en soldadura (S _{max}):	6,6 kVA	14 kVA
- Potenza nominale al 50% (S_n): / Puissance nominale à 50% (S _n): Rated power at 50% (S _n): / Nennleistung bei 50% (S _n): / Potenza nominal al 50% (S _n):	1,3 kVA	2,5 kVA
- Fattore di potenza a S_{max} (cosφ): / Facteur de puissance à S _{max} (cosφ): Power factor at S _{max} (cosφ): / Leistungsfaktor bei S _{max} (cosφ): / Factor de potencia a S _{max} (cosφ):	0,9	0,9
- Fusibili di rete ritardati: / Fusibles de ligne retardés: Delayed mains fuses: / Sicherungen verzögerter Leitung: / Fusibles de línea retardados:	16A(230V)	16A(400V)/25A(230V)
- Interruttore automatico di rete: / Interrupteur automatique de ligne: Automatic mains switch: / Automatischer Stromunterbrecher: / Interruptor automático de línea:	10A(230V)	10A(400V)/16A(230V)
- Spina e presa: / Fiche et prix: / Plug and socket: / Stecker und Dose: / Clavija y base	16A	16A/32A
OUTPUT :		
- Tensione secondaria a vuoto (U₂₀ max): / Tension secondaire à vide (U ₂₀ max): Secondary no-load voltage (U ₂₀ max): / Sekundärspannung unbelastet (U ₂₀ max): Tensión secundaria al vacío (U ₂₀ max):	2V	2,5V
- Corrente max di corto circuito (I₂ cc): / Courant max. de court circuit (I ₂ cc): Max short circuit current (I ₂ cc): / Max. Kurzschlußstrom (I ₂ cc): / Corriente máxima de corto circuito (I ₂ cc):	3,8 kA	6,3 kA
- Capacità di puntatura (acciaio basso tenore carbonio e bracci standard): Capacité de pointage (acier à basse teneur en carbone et bras standards): Spot-welding capacity (low content carbon steel and standard arms): Heftschweißleistung (Stahl mit niedrigem Kohleanteil und Standardarme): Capacidad de punteado (acero bajo contenido en carbono y brazos estándar):	1+1mm	2+2mm
- Punti/minuto su acciaio 1+1mm: / Points/minutes sur de l'acier de 1+1mm: / Spots/minute on steel 1+1mm: Punkte/Minute auf Stahl 1+1mm: / Puntos / minuto sobre acero 1+1 mm:	3	3
- Minimo periodo di riposo tra punti successivi su acciaio 1+1mm: Période minimale de repos entre les points successifs sur de l'acier: Minimum rest period between successive spot-welds on steel: Mindestruhedauer zwischen zwei aufeinander folgenden Punkten auf Stahl 1+1mm: Periodo mínimo de reposo entre puntos sucesivos sobre acero	20s	20s
- Tempo di puntatura: / Temps de pointage: / Spot-welding time: / Heftschweißdauer: / Tiempo de punteado:	100-1100ms	160-1200ms
- Forza massima agli elettrodi: / Force maximale aux électrodes: / Maximum force at the electrodes: Maximaldruck an den Elektroden: / Fuerza máxima en los electrodos:	120kg	120kg
- Sporgenza bracci: / Saillie des bras: / Projection of arms: / Ausladung Arme: / Saliente brazos:	120mm	120mm

(*) La puntatrice può essere fornita con tensione di alimentazione di 400V o 230V; verificare il valore corretto in targa dati.

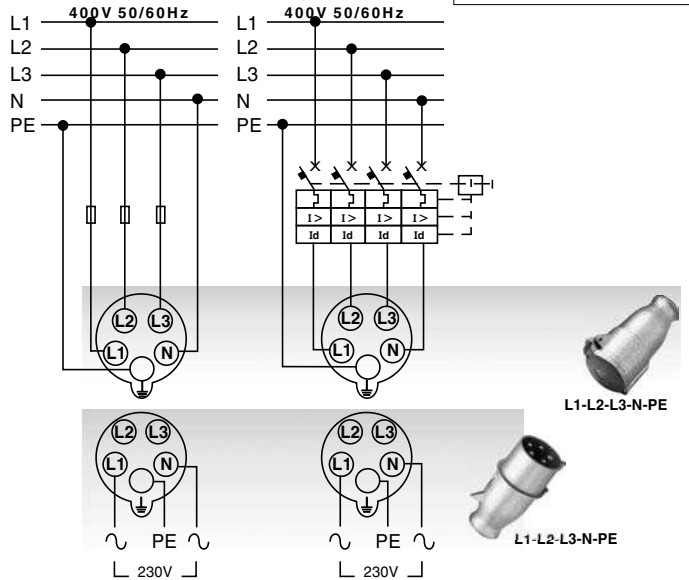
TAB.2

DIGITAL MODULAR 230, MODULAR 20TI



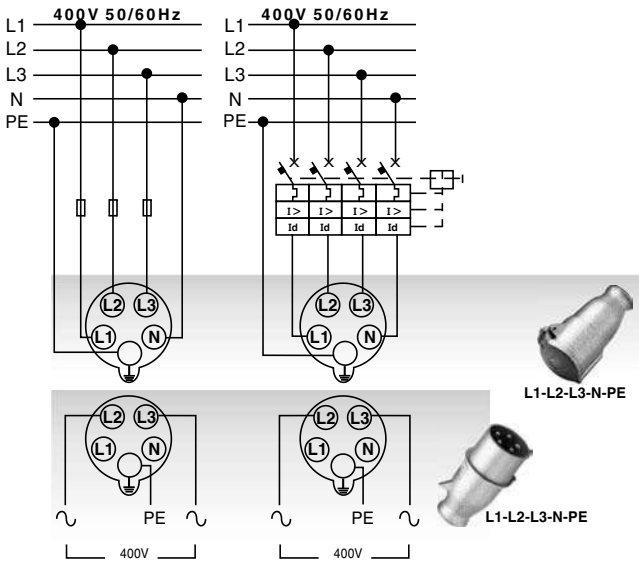
TAB.3

DIGITAL MODULAR 230, MODULAR 20TI



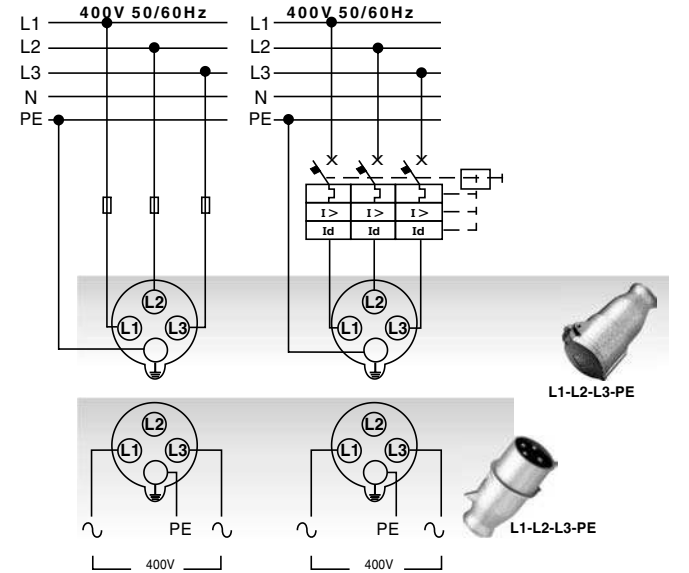
TAB.4

DIGITAL MODULAR 400



TAB.5

DIGITAL MODULAR 400



TAB.6

BRACCI BRAS ARMS ARMEN BRAZOS	VALORE DELLA FORZA VALEUR DE LA FORCE PRESSURE VALUE DRUCKWERT VALOR DE FUERZA				
	daN				
120	120	100	80	60	40
250	77	55	43	32	23
350	47	38	33	23	
500	28	25	18		

TAB.7

I ₂ max					
	230V	400V	230V	400V	Kg
3,8kA	T16A	-	16A	-	10
6,3kA	T25A	T16A	32A	16A	10,5

(LT) GARANTIJA

Gamintojas garantuoja nepriekaiština įrenginio veikimą ir įsipareigoja nemokamai pakeisti gaminio dalis, susidėvėjusias ar susigadinusias dėl prastos medžiagos kokybės ar dėl konstrukcijos defektu 12 mėnesių laikotarpyje nuo įrenginio paleidimo datos, kuri turi būti paliudyta pažymėjimu. Gražinami įrenginiai, net ir galiojant garantijai, turi būti siunčiami ir bus sugražinti atgal PIRKEJO lėšomis. Išimti aukščiau aprašyti sąlygai sudaro prietaisai, kurie pagal 1999/44/EC Europos direktyvą gali būti laikomi plataus vartojimo prekėmis bei yra parduodami 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.

(EE) GARANTII

Tootjafirma vastutab masinate hea funktsioneerimise eest ja kohustub asendama tasuta osad, mis riknevad halva kvaliteediga materjali ja konstruktisioonidefektide tõttu, 12 kuu jooksul alatés masina käikupanemise sertifikaadil tõestatud kuupäevast. Tagasi saadetavad masinad, ka kehtiva garantiga, 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 müüdad UE liikmesriikides. Garantisisertifikaat 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 otestse 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 NORADĪTO 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 pavādzīmi. Garantija neattiecas uz gadījumiem, kad bojājumi ir radušies nepareizās izmantošanas, noteikumu neievērošanas vai nolaidības dēļ. Turklāt, šajā gadījumā ražotājs nenem jebkādu atbildību par tiesajiem un netiesajiem 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 ПРИБОР и ще бъдат върнати с НА ПОЖЕН 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 продадени 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.

- GB CERTIFICATE OF GUARANTEE
I CERTIFICATO DI GARANZIA
F CERTIFICAT DE GARANTIE
D GARANTIEKARTE
E CERTIFICADO DE GARANTIA
P CERTIFICADO DE GARANTIA
NL GARANTIEBEWIJS
DK GARANTIBEVIS
SF TAKUUTODISTUS
N GARANTIBEVIS
S GARANTISEDEL
GR ΠΙΣΤΟΠΟΙΗΤΙΚΟ ΕΓΓΥΗΣΗΣ

- RU ГАРАНТИЙНЫЙ СЕРТИФИКАТ
H GARANCIALEVÉL
RO CERTIFICAT DE GARANȚIE
PL CERTYFIKAT GWARANCJI
CZ ZÁRUČNÍ LIST
SK ZÁRUČNÝ LIST
SI CERTIFICAT GARANCIJE
HR GARANTNI LIST
LT GARANTINIS PAŽYMĖJIMAS
EE GARANTIISERTIFIKAAT
LV GARANTIJAS SERTIFIKĀTS
BG ГАРАНЦИОННА КАРТА

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

NR./ΑΡΙΘΜ/ Ę./ Ć./НОМЕР:

GB Date of buying - I Data di acquisto - F Date d'achat - D Kaufdatum
E Fecha de compra - P Data de compra - NL Datum van aankoop - DK Købsdato
SF Ostopäivämäärä N Innkjøpsdato - S Inköpsdatum - GR Ημερομηνία αγοράς.
RU Дата продажи - H Vásárlás kelte - RO Data achiziției - PL Data zakupu
CZ Datum zakoupení - SK Dátum zakúpenia - SI Datum nakupa - HR Datum kupnje
LT Pirkimo data - EE Ostu kuupäev - LV Pirkšanas datums - BG ДАТА НА ПОКУПКАТА

- GB Sales company (Name and Signature)
I Ditta rivenditrice (Timbro e Firma)
F Revendeur (Chachet et Signature)
D Händler (Stempel und Unterschrift)
E Vendedor (Nombre y sello)
P Revendedor (Carimbo e Assinatura)
NL Verkoper (Stempel en naam)
DK Forhandler (stempel og underskrift)
SF Jälleenmyyjä (Leima ja Allekirjoitus)
N Forhandler (Stempel og underskrift)
S Återförsäljare (Stämpel och Underskrift)
GR Κατάστημα πώλησης (Σφραγίδα και υπογραφή)
RU ШТАМП И ПОДПИСЬ (ТОРГОВОГО ПРЕДПРИЯТИЯ)
H Eladás helye (Pecset és Aláírás)
RO Reprezentant comercial (Ștampila și semnătura)
PL Firma odsprzedająca (Pieczęć i Podpis)
CZ Prodejce (Razítko a podpis)
SK Predajca (Pečiatka a podpis)
SI Prodajno podjetje (Žig in podpis)
HR Tvrtka prodavatelj (Pečat i potpis)
LT Pardavėjas (Antspaudas ir Parašas)
EE Edasimüügi firma (Tempel ja allkiri)
LV Izplāītājs (Zīmogs un paraksts)
BG ПРОДАВАЧ (Подпис и Печат)



The product is in compliance with:
Il prodotto è conforme a:
Le produit est conforme aux
Diemaschine entspricht:
Het produkt overeenkomstig de
El producto es conforme as:
O produto è conforme as:
At produktet er i overensstemmelse med:
Että laite mallia on yhdenmukainen direktiivissä:

At produktet er i overensstemmelse med:
Att produkten är i överensstämmelse med:
Το προϊόν είναι κατασκευασμένο σύμφωνα με τη:
Заявляется, что изделие соответствует:
A termék megfelel a következőknek:
Produsul este conform cu:
Produkt spełnia wymagania następujących Dyrektyw:
Výrobek je v súlade so:
Výrobek je ve shodě se:

Proizvod je v skladu z:
Proizvod je u skladu sa:
Produktas atitinka:
Toode on kooskõlas:
Izstrādājums atbilst:
Продуктът отговаря на:

DIRECTIVE - DIRETTIVA - DIRECTIVE - RICHTLINIE - RICHTLIJN - DIRECTIVA - DIRECTIVA - DIREKTIV - DIREKTIIVI - DIREKTIV - DIREKTIV - KATEYΘYNTHPPIA OΔHΓIA - IRÁNYELV - DIRECTIVA - DYREKTYWA - SMERNICOU - NAPUTAK - DIRETKIVA - SMĚRNICÍ - DIREKTYVA - DIREKTIIVIGA - DIREKTÍVAI - ДИРЕКТИВА НА ЕС

DIRECTIVE - DIRETTIVA - DIRECTIVE - RICHTLINIE - RICHTLIJN - DIRECTIVA - DIRECTIVA - DIREKTIV - DIREKTIIVI - DIREKTIV - DIREKTIV - KATEYΘYNTHPPIA OΔHΓIA - IRÁNYELV - DIRECTIVA - DYREKTYWA - SMERNICOU - NAPUTAK - DIRETKIVA - SMĚRNICÍ - DIREKTYVA - DIREKTIIVIGA - DIREKTÍVAI - ДИРЕКТИВА НА ЕС

LVD 2006/95/EC + Amdt

EMC 2004/108/EC + Amdt

STANDARD

STANDARD

EN 50063

EN 50240