Ritmo
PLASTIC WELDING TECHNOLOGY

SINCERT
Sistema di Gestione per la Qualità certificato
Certificato N° 206
IIS
UNI EN ISO 9001

MULTIPURPOSE ELECTROFUSION MACHINE

ELEKTRA LIGHT

USE AND MAINTENANCE HANDBOOK

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Ritmo PLASTIC WELDING TECHNOLOGY **S.p.A.**

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Dear Customer

Thank you for having chosen a ***Ritmo*** machine.

This handbook will show you all the features and operating instructions for the ***ELEKTRA LIGHT***. In this book you will also find all the information and suggestions needed to use the machine in a proper, safe and professional manner. We therefore recommend its complete reading before start using the machine. We also recommend to keep it for future consultations and/or new users.

Please remember that this machine is a professional device; its use must be limited to skilled and certified personnel only.

Certain of your complete satisfaction.

Best regards, ***Ritmo S.p.A****.*

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Machine description

Elektra Light is a multipurpose (*) low voltage (8÷48V) electrofusion machine capable of fusing any brand of HDPE, PP,PP-R couplers available in the market for the transport of gas, water, and other fluids under pressure, up to OD 125mm.

The **Elektra Light** can be used in two different manners:

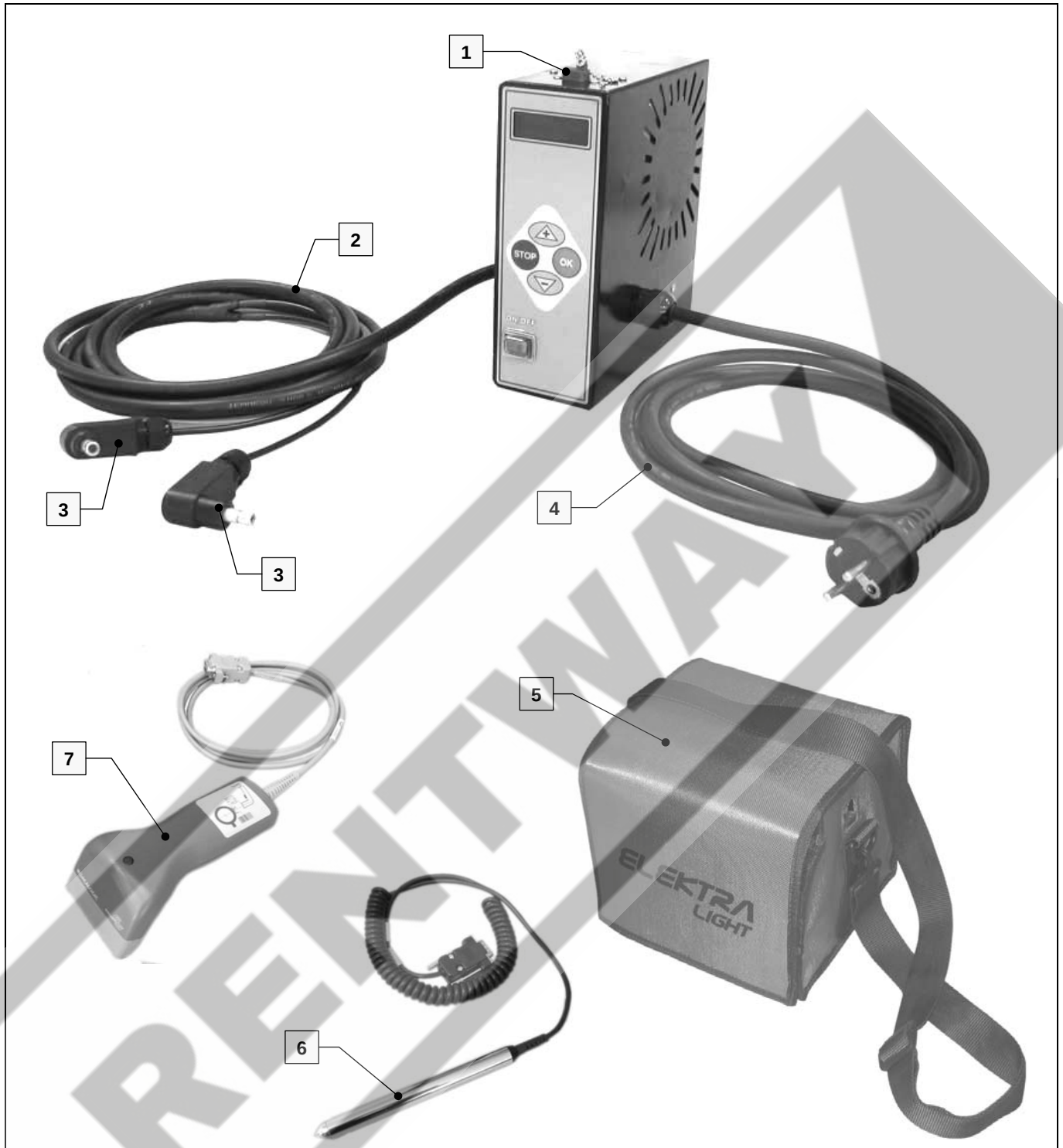
- With the scan reader, in which case the machine automatically sets the welding parameters by reading off the information contained on the bar code (**) - whether the operator reads the bar code with the scan reader or inserts the characters underneath it, manually.
- Without the scan reader, in which case the operator must set in the voltage and the welding time, as per the instructions given by the manufacturer of the coupler.

The **Elektra Light** has a memory capacity of up to 350 welding cycles, downloadable to a USB flash drive or a serial printer (via adapter DB9M-USB on request).

(*) when operating with scan reader.

(**) according to the ISO13950 Standard.

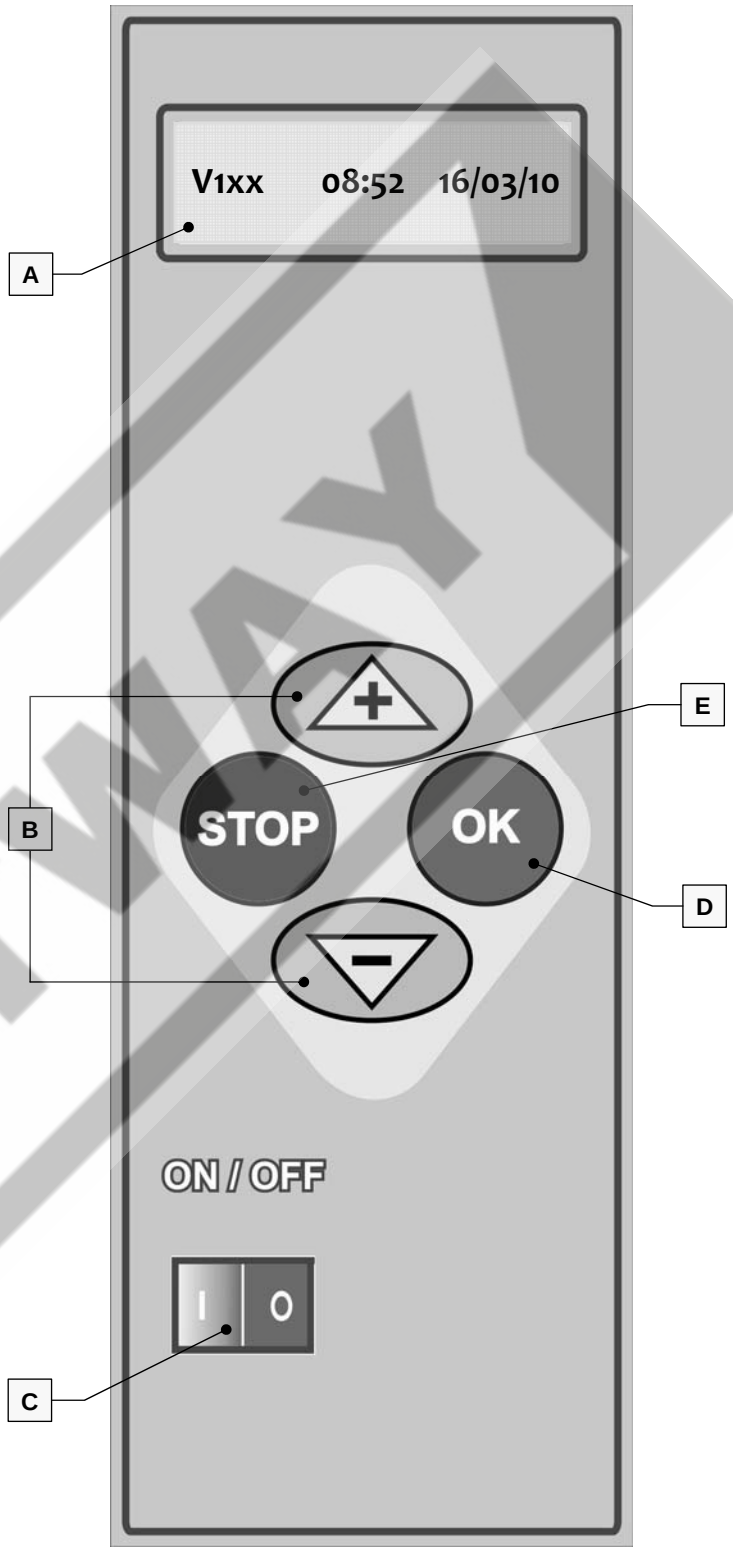
Parts description



1. Scan reader/optical pen/printer connector
2. Welding cable
3. Welding connectors
4. Power supply cable
5. Transport bag
6. Optical pen
7. Scan reader

Control panel

A. Display
B. Increase/Decrease pushbuttons (used to scroll the menu / change the values of each one of the parameters)
C. ON/OFF switch
D. OK pushbutton (Confirms the setting / proceeds to the next screen / starts the welding)
E. STOP pushbutton (Exits the screen without saving the changes / moves the cursor back / stops the welding)



Technical Features

	ELEKTRA LIGHT	
	110V	**230V**
Diameters range (OD)	20 ÷ 125 **(*)**	
Weldable materials	PE / PP / PP- R	
Dimensions (W x D x H)	200 x 250 x 210 mm	
Weight	8 kg	
Power supply	110 V ± 10%	230 V ± 15%
Frequency	50 ÷ 60 Hz	
Maximum absorbed power	2000W	
Nominal absorbed current	16A	8A
Welding nominal current Duty cycle 60% (ISO 12176-2)	23A	
Working temperature	–10 °C ÷ + 40 °C	
Welding voltage	8 ÷ 48 V	
Peak current	60 A	
Precision of the ambient thermometer	± 1 °C	
Protection degree	IP 54	
Connectors diameter	F 4 mm	
Adapters diameter	F 4,7 mm	
Memory capacity	350 reports	

(*) OD 160mm couplers can also be welded but with precaution; wait for the machine to cool off completely after each welding cycle.

FEATURES

- Terminal adapters kit - M 4 mm / F 4,7 mm
- Transport bag
- Manual scraper

OPTIONS

- Building site serial printer kit (serial printer and cable included)
- Serial/USB data transfer adapter cable
- Ritmo Transfer Software (multi-language)
- Scan reader
- Optical pen

Safety Standards

IMPORTANT: PLEASE READ CAREFULLY AND FOLLOW ALL THE INSTRUCTIONS HEREIN BEFORE START USING THE MACHINE!

- **ATTENTION PLEASE!** Safety instructions against electrocution and fire hazards must be respected at all times when using electrical appliances.

- **KEEP THE WORKSPACE CLEAN, TIDY AND PROPERLY ILLUMINATED**. Clutter and/or lack of proper light on the workspace may cause accidents. Always keep a suitable and sufficient lighting in the workspace.

- **BEWARE OF WEATHER CONDITIONS**. Do not expose the machine or any other electrical tool to rain and/or extreme heat. Do not use the machine or any other electrical tool in moist places and/or near liquids or inflammable gases.

- **PROTECT YOURSELF AGAINST ELECTROCUTION**. Avoid body contact with earthed objects. Pay attention to cables put under tension.

- **DO NOT ALLOW UNAUTHORISED PERSONNEL IN THE WORKPLACE.** Only authorized personnel must have access to the working place and equipment.

- **KEEP ALL WORKING EQUIPMENT IN A SAFE PLACE.** Tools, machines, all working devices in general must be stored in a dry place, inaccessible to unauthorized personnel.

- **DO NOT OVERWORK THE EQUIPMENT.** Respect the performance limits given by the manufacturer in order to guarantee the equipment a good quality service life at the best safety conditions.

- **USE PROPER EQUIPMENT AND ACCESSORIES.** Use only compatible and/or recommended accessories - ***pay particular attention to generator sets, power supply cables, extensions, pin cables, pins***. Electrical tools must cool off before being used again, specially after long working cycles. The use of accessories and/or tools not compatible and/or not recommended by the manufacturer may cause harm to the operator, compromise the working of the machine and/or other tools, besides invalidating the machine warranty.

- **DO NOT USE THE CABLES IMPROPERLY.** Do not pull the cables to transport the machine or to unplug it. Protect the cables from heat and cutting edges.

- **USE THE ALIGNERS.** Always lock the pipes/fittings/couplers with the proper aligner before start welding; besides assuring the conditions necessary to a good quality welding, it also prevents possible harm to the operator.

- **ATTENTION PLEASE! BE SURE TO AVOID ACCIDENTAL START-UP OF MACHINE AND/OR ANY OTHER ELECTRICAL DEVICE.** When turning on the generator, be sure that the machine is not plugged to it. Wait until the generator has stabilized to plug the machine - the generator may create spurious voltages during ignition, which would cause irreparable damage to the printed circuit board and other electronic components of the machine. Keep the machine disconnected from the power source during insertion of pins. Before connecting the machine to the power source, be sure the machine ON/OFF switch is **OFF** - this is of utmost importance specially when using a device without a safety microswitch. Never move a device from one place to another when it is still connected to the power source; it could accidentally turn itself on.

- **BE SURE THE MACHINE IS NOT DAMAGED BEFORE START USING IT.** Before starting to weld, ***be sure that all safety devices are working perfectly***. Be sure the cables (power source and welding ones) are intact and devoid of cuts or abrasions. Be sure the pins and the terminals connect perfectly and that their surface contacts are clean. Be sure that the machine hasn't suffered any incidental impacts that may have irreparably damaged the chassis (which could cause water infiltration).

- **ANY REPAIRS AND/OR OVERHAULS TO THE MACHINE AND/OR ITS ACCESSORIES ARE TO BE DONE EXCLUSIVELY BY THE MANUFACTURER OR BY A SERVICE CENTER AUTHORIZED BY THE MANUFACTURER.** The machine indicated in this handbook respects the safety regulations in force; any and all intervention to the machine done by a non authorized service center will automatically invalidate any warranty claims and any liability on the part of the machine manufacturer.

- **NEVER MODIFY THE MACHINE.**

- **USERS MUST BE QUALIFIED AND DULY TRAINED**. Only qualified and trained personnel shall be allowed to use the machine indicated in this handbook as well as any and all working equipment.

- **USE ONLY NEW OR OVERHAULED EQUIPMENT.** Remember that the machine indicated in this handbook must be maintained and overhauled exclusively by an authorized service center.

- **DO NOT USE THE MACHINE IN ATMOSPHERES SUBJECT TO EXPLOSION FOR THE PRESENCE OF INFLAMMABLE VAPORS, GAZES, ETC.**

RESPECT THE APPLICABLE LOCAL/NATIONAL/INTERNATIONAL HEALTH AND SAFETY LAWS, REGULATIONS, STANDARDS AND REQUIREMENTS, AT ALL TIMES.

Generator set
Features and connections

The welding machine indicated in this handbook can operate with an alternate current between a minimum value of 195V and a maximum value of 265V; the frequency range goes from 50Hz to 60Hz.

Always use earth connection with a residual current device with a 16A slow curve magnetothermic switch (for the 230V version), or a 20A slow curve magnetothermic switch (for the 110V version). The power peak at the very first instant of the welding may achieve 3500VA.

The machine can work in an ambient temperature between –10 °C and +40°C.

Dimensions of the electrical couplers, and the condition and cleanliness of the connectors, pins and terminals, they all determine the power required. The characteristics of the generator are to be taken into consideration, as well.

ATTENTION PLEASE! No other device besides the welding machine must be plugged to the generator during the welding cycle.

ATTENTION PLEASE! The power output of the generator decreases of approximately 10% for every 1000 m altitude increase.

Acceptable extensions:

For the 230V version
The section of the electric wires of the power supply cables varies according to their length:

- Section of 2,5 mm^2 for a maximum length of 70 m
- Section of 1,5 mm^2 for a maximum length of 35 m

For the 110V version
The section of the electric wires of the power supply cables varies according to their length:

- Section of 2,5 mm^2 for a maximum length of 30 m
- Section of 1,5 mm^2 for a maximum length of 10m

The power supply cable must be completely laid out and stretched before being used.

ALWAYS RESPECT THE APPLICABLE LOCAL/NATIONAL/INTERNATIONAL LAWS, REGULATIONS, STANDARDS AND REQUIREMENTS FOR GENERATOR SETS.

Before and After Welding

Before plugging the machine and starting to weld, check the following:

NOMINAL VOLTAGE AND FREQUENCY OF THE POWER SOURCE: be sure they correspond to the ones of the machine (see page 7 – "Technical Features").

OUTLETS AND EXTENSION CABLES: they must be adequate to the power absorbed by the machine (see pages 7 and 10).

CABLES: their insulating must be intact. Cables must not be exposed to the passage of vehicles and/or passers-by, and/or to chemical substances and/or any and all mechanical strain.

CHASSIS: must be isolated and positioned in a stable manner.

Keep the machine and correspondent cables clean and dry at all times. Before starting a cleaning operation, unplug the machine from the power source. Use a soft cloth moist with water or alcohol (avoid any type of solvents).

ELEKTRA is an electronic device, therefore it must be handled with caution, avoiding violent impacts and abrupt changes in temperature.

In order to assure a long lasting reliability of the machine, the user must do some periodical check-ups, paying special attention to:

- Pins and connectors
- Welding and power supply cables
- Display
- Mechanical structure (case, chassis)

Whenever the user unveils an abnormality or malfunction in one or more components of the machine, it is absolutely necessary to take the machine and its components to the manufacturer or to an authorized service center.

Nonetheless, the machine must undergo inspection and overhaul <u>at least</u> once every two years - or more frequently, if the national regulation requires so. The inspection and overhaul must be performed by the manufacturer or an authorized service center, only.

In no event shall ***Ritmo S.p.A.*** be liable for any direct, indirect, incidental, or consequential damages of any kind whatsoever with respect to the use of a machine that did not undergo regular maintenance/overhaul.

In no event shall ***Ritmo S.p.A.*** be liable for any direct, indirect, incidental, or consequential damages of any kind whatsoever with respect to an improper use (i.e., not according to the instructions herein given) of the machine.

SET UP

The quality of the joint depends on many factors; we recommend that the following indications are respected in a meticulous manner, in order to give the user the surety of a perfect welding.

STORAGE OF PIPES/FITTINGS/COUPLERS

During the welding cycle, the pipes/fittings/couplers must have the same temperature as the ambient one (as read by the thermal probe of the machine).

Therefore, pipes/fittings/couplers must not be exposed to major weather conditions, such as strong winds or direct sun rays, before or during the welding; their temperature could change dramatically (from the ambient temperature), which would compromise the welding.

Protect the pipes/fittings/couplers to be welded for as long as it's necessary so they reach the ambient temperature before the welding cycle starts.

PREPARATION

Cut both pipe ends square (make a right angle cut). Use a proper pipe cutter.
Be sure to eliminate any bending and/or ovalization of the pipes.

CLEANLINESS

Scrape evenly the oxidized layer from the pipe ends to be welded. Use a proper pipe scraper.

Be sure to make a **total and uniform scraping** of the surfaces of the pipe ends for a length superior of at least 1 cm with respect to the semi-length of the coupler; lack of such an operation will result in a superficial gluing (the important molecular interpenetration won't take place) hence the welding is not acceptable.

It is **strictly forbidden** to use abrasive paper, rasp, emery wheel, or other improper tools to scrape the pipes.

Unwrap the coupler only minutes before welding it. Clean its inner surface following the manufacturer's instructions.

POSITIONING

Insert the pipe ends into the coupler. Support the pipes with proper aligners; this is of absolute importance because:

- it assures that both pipes remain in position during the welding and cooling phases;
- it prevents any mechanical strain during the welding and cooling phases.

WELDING

The area where the welding takes place must be protected from adverse climate conditions, such as humidity, very low temperatures (inferior to -10°C) or very high temperatures (superior to +40°C), strong winds, direct sun rays.

The pipes/fittings/couplers to be welded must be made of the same material, or at least compatible materials; proof of compatibility must be given by the coupler manufacturer.

COOLING

The cooling time varies according to the diameter of the coupler and the ambient temperature. Cooling time suggested by the coupler manufacturer must be respected.

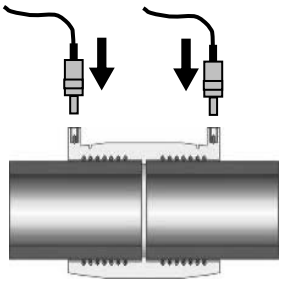
In order to avoid mechanical strain (e.g., flexion, traction, torsion) on the joint just made, disconnect the pins from the coupler with caution. Remove the aligner only after the cooling phase is completed.

IN PICTURES – GETTING READY TO WELD

Clean and scrape the pipe ends to be welded.

Position pipes/fittings/coupler on the aligners.

Insert the welding connectors into the coupler pins.

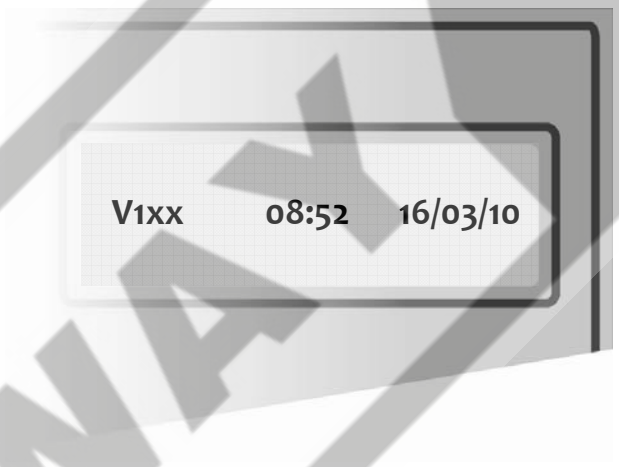
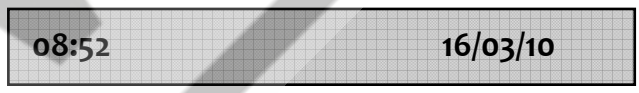
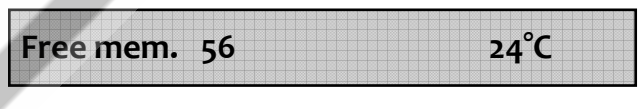
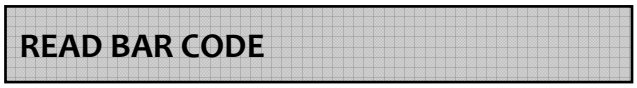
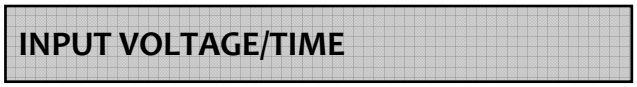


Operating Instructions - Introduction

Operating instructions with scan reader:
Before turning on the machine, connect the scan reader and follow instructions on page 15.

Operating instructions <u>without</u> scan reader:
Without the scan reader, welding voltage and time data must be inserted manually. Follow instructions on page 22.

Turning on the machine

Switch on the machine.  	
Main data will be displayed, in the following order:	
Time and date.	
Free memory and ambient temperature.	
With optical pen menu (go to page 15)	
Without optical pen menu (go to page 22)	

Operating instructions with scan reader

Menu 1/5 (Bar code reading – scan reader)

READ BAR CODE

Keep the trigger pressed and make sure the laser beam aims at the welding bar code. Information about the coupler manufacturer is displayed. ***Important: in case of malfunction of the laser scanner, it is possible to work in manual mode (see page 16)***

Press **OK** to start welding.

I CPL xxx 32mm 40.0V 160s

The display will show the information regarding the coupler manufacturer and diameter, welding voltage and time. If the information is correct press **OK** to confirm; otherwise, repeat the bar code reading as explained above.

HAVE YOU SCRAPED AND ALIGNED?

Most Important!
Before-welding operations (scraping and cleaning) are compulsory to obtain a good welding. Don't press ***OK*** *until you have performed these operations. Once you press* ***OK*** *you will assume all responsibilities.*

WELDING ... 40.0V 160s

Attention please! *You can stop the welding at any time by pressing* ***STOP*** *but you must absolutely contact the coupler manufacturer to know if the coupler may still be welded once cooled off.*

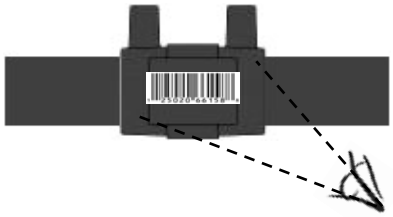
WELDING CORRECT!

The good outcome of the welding cycle is confirmed by the message "WELDING CORRECT!" on the display.
Press **STOP** to return to the main menu.

Menu 2/5 (Manual insertion of bar code)

INPUT BAR-CODE

Press **OK** to access the manual insertion of the bar code characters.



Read the 24 characters underneath the bar code and type them using the **B (Increase/Decrease)** pushbuttons. Press **OK** to confirm each value typed. Proceed like this for all the 24 characters. To cancel the last number press **STOP.**
As soon as all the characters are inserted, press **OK** to start welding.

_ _

The display will show the information regarding the coupler manufacturer and diameter, welding voltage and time. If the information is correct press **OK** to confirm; otherwise, repeat the insertion of the bar code as explained above.

I CPL xxx 32mm 40.0V 160s

Most Important!
*Before-welding operations (scraping and cleaning) are compulsory to obtain a good welding. Don't press **OK** until you have performed these operations. Once you press **OK** you will assume all responsibilities.*

HAVE YOU SCRAPED AND ALIGNED?

> ***Attention please!** You can stop the welding at any time by pressing **STOP** but you must absolutely contact the coupler manufacturer to know if the coupler may still be welded once cooled off.*

WELDING ... 40.0V 160s

The good outcome of the welding cycle is confirmed by the message "WELDING CORRECT!" on the display.
Press **STOP** to return to the main menu.

Menu 3/5 (Manual insertion of voltage and welding time)

Note: This operating mode requires the knowledge of the **voltage/time** parameters suggested by the coupler manufacturer **(*)**, prior to the beginning of welding. If, for whichever reason, that information is not available, please contact the coupler manufacturer before starting to weld.

INPUT VOLTAGE/TIME

Press **OK** to access the manual mode (in which you will be required to enter voltage and time).

40.0V

The last voltage value set in will be displayed. Press **B (Increase/Decrease)** to set the correct voltage. Press **OK** to confirm.

160s

The last time value set in will be displayed. Press **B (Increase/Decrease)** to set the correct time. Press **OK** to confirm.

Most Important!
*Before-welding operations (scraping and cleaning) are compulsory to obtain a good welding. Don't press **OK** until you have performed these operations. Once you press **OK** you will assume all responsibilities.*

HAVE YOU SCRAPED AND ALIGNED?

***Attention please!** You can stop the welding at any time by pressing **STOP** but you must absolutely contact the coupler manufacturer to know if the coupler may still be welded once cooled off.*

WELDING ... 40.0V 160s

WELDING CORRECT!

The good outcome of the welding cycle is confirmed by the message "WELDING CORRECT!" on the display.
Press **STOP** to return to the main menu.

(*) Usually raised, printed in a label attached to the coupler, or indicated on a badge/card supplied with the coupler.

Menu 4/5 (Printing and USB connection)

Note: *This section requires the use of a **printer** or a **USB flash drive**.*
Before proceeding with the operations hereunder described, be sure to have at hand the serial/USB adapter cable, the USB flash drive and, in case you want to print the welding reports, the serial printer.

PRINTS AND USB

Press **OK** to access the submenu. Use the **B** pushbuttons to choose the option you want. Press **OK** to confirm.

SAVE DATA VIA USB

Press **OK**.

INSERT MEMORY AND WAIT COPY

Connect the USB flash drive to start the automatic transfer of the data. Wait until "**OK!**" is displayed.

PRINT LAST REPORT	Connect the printer and press **OK.** Wait print completion.
PRINT ALL REPORTS	Connect the printer and press **OK.** Wait print completion. ***Note:*** *If* ***OK*** *is pressed before the printer is connected, or when the USB flash drive is connected, the message* ***"NOT READY"*** *is displayed.* Press **STOP** to return to the main menu.

Menu 5/5 (Other functions)

OTHER FUNCTIONS	**Note:** In this section you will find the special functions. Press **OK** to access.
	Important! *To access the special functions you must have the correspondent 4 digit code. There is a different code for each function. Press* ***OK*** *to confirm.*
	Celsius/Fahrenheit setting
oooo	Type the code **1110** to set temperature on Celsius or Fahrenheit degrees.
CELSIUS	Press **B (Increase/Decrease)** to select **CELSIUS** or **FAHRENHEIT**. Press **OK** to confirm.
OK!	
	Date and time setting
oooo	Type code **1000** (using the **B** pushbuttons). Press **OK** to confirm.
oo/oo/oo	Insert the date. Press **OK** to confirm.
oo:oo	Insert the time. Press **OK** to confirm.

Language setting

Type code **1100** (using the **B** pushbuttons).

0000

The last language chosen is displayed.
Use the **B** pushbuttons to change the language, then press **OK** to confirm.

1/8 ITALIAN

Reset welding reports

Type code **2110** to reset the welding reports.
Press **OK** to confirm.

OK!

Software Upgrade

You can upgrade the software of the Elektra machine by connecting the serial/USB adapter cable to a USB flash drive (with the upgraded software).

Procedure:

Download the upgrade to a USB flash drive, then connect it to the machine (the machine must be turned off). Press **STOP** and keep it pressed until you turn on the machine.
Wait until the beeping ends. The main menu with the new version will then be displayed.

V1xx 09:40 16/03/10

(Operating instructions without scan reader)

Menu 1/3 (Manual insertion of voltage and welding time)

Note: This operating mode requires the knowledge of the **voltage/time** parameters suggested by the coupler manufacturer **(*)**, prior to the beginning of welding. If, for whichever reason, that information is not available, please contact the coupler manufacturer before starting to weld.

1/3 INPUT VOLTAGE/TIME

Press **OK** to access the manual mode (in which you will be required to enter voltage and time).

40.0V

The last voltage value set in will be displayed. Press **B (Increase/Decrease)** to set the correct voltage. Press **OK** to confirm.

160s

The last time value set in will be displayed. Press **B (Increase/Decrease)** to set the correct time. Press **OK** to confirm.

HAVE YOU SCRAPED AND ALIGNED?

Most Important!
*Before-welding operations (scraping and cleaning) are compulsory to obtain a good welding. Don't press **OK** until you have performed these operations. Once you press **OK** you will assume all responsibilities.*

WELDING... 40.0V 160s

***Attention please!** You can stop the welding at any time by pressing **STOP** but you must absolutely contact the coupler manufacturer to know if the coupler may still be welded once cooled off.*

WELDING CORRECT!

The good outcome of the welding cycle is confirmed by the message "WELDING CORRECT!" on the display.
Press **STOP** to return to the main menu.

(*) Voltage/time parameters are usually raised, printed in a label attached to the coupler, or indicated on a badge/card supplied with the coupler.

Menu 2/3 (Printing and USB connection)

Note: *This section requires the use of a **printer** or a **USB flash drive**.*
Before proceeding with the operations hereunder described, be sure to have at hand the serial/USB adapter cable, the USB flash drive and, in case you want to print the welding reports, the serial printer.

PRINTS AND USB

Press **OK** to access the submenu. Use the **B** pushbuttons to choose the option you want. Press **OK** to confirm.

SAVE DATA VIA USB

Press **OK**.

INSERT MEMORY AND WAIT COPY

Connect the USB flash drive to start the automatic transfer of the data. Wait until "**OK!**" is displayed.

PRINT LAST REPORT	Connect the printer and press **OK.** Wait print completion.
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Menu 3/3 (Other functions)

OTHER FUNCTIONS	**Note:** In this section you will find some special functions. Press **OK** to access.
	Important! *To access the special functions you must have the correspondent 4 digit code. There is a different code for each function. Press* ***OK*** *to confirm.*
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CELSIUS	Press **B (Increase/Decrease)** to select **CELSIUS** or **FAHRENHEIT**. Press **OK** to confirm.
OK!	
	Date and time setting
oooo	Type code **1000** (using the **B** pushbuttons). Press **OK** to confirm.
oo/oo/oo	Insert the date. Press **OK** to confirm.
oo:oo	Insert the time. Press **OK** to confirm.

Language setting

0000	Type code **1100** (using the **B** pushbuttons).
ITALIAN	The last language chosen is displayed. Use the **B** pushbuttons to change the language, then press **OK** to confirm.

Reset welding reports

OK!	Type code **2110** to reset the welding reports. Press **OK** to confirm.

Software Upgrade

You can upgrade the software of the Elektra machine by connecting the serial/USB adapter cable to a USB flash drive (with the upgraded software).

Procedure:

V1xx 09:40 16/03/10	Download the upgrade to a USB flash drive, then connect it to the machine (the machine must be turned off). Press **STOP** and keep it pressed until you turn on the machine. Wait until the beeping ends. The main menu with the new version will then be displayed.

Error codes and their meaning

Attention please! The welding cycle is interrupted whenever an error code is displayed. The interruption may cause the deterioration of the material being welded.
In no event shall ***Ritmo S.p.A.*** be liable for any direct, indirect, incidental, or consequential damages of any kind whatsoever with respect to the use of pipes/fittings/couplers previously involved in welding cycles resulting in error codes.

ERROR 5 – POWER SOURCE VOLTAGE

***Probable cause*:** Power source voltage out of range
V_{min}= 195V÷V_{max}= 265V (230V)

***Solution*:** Verify the power source characteristics

ERROR 10 – POWER SOURCE FREQUENCY

Probable cause: Power source frequency out of range
F_{min}= 50Hz ÷ F_{max}= 60Hz

***Solution*:** Verify the power source characteristics

ERROR 20 – AMBIENT TEMPERATURE OUT OF RANGE (when machine is in stand-by)

***Probable cause*:** The ambient temperature is out of range (-10°C ÷ +40°C)

***Solution*:** Protect the working site where the welding is taking place in order to reach an ambient temperature within the allowable limits

ERROR 25 –TRANSFORMER OVERHEATED (during welding)

***Probable cause*:** The temperature of the transformer is too high

***Solution*:** Wait until the transformer has cooled off and then repeat the welding

ERROR 30 – WELDING VOLTAGE OUT OF CONTROL

***Probable cause*:** The power source is supplying an out-of-range voltage

***Solution*:** Verify the power source characteristics

ERRORS 35 and 40 – MACHINE OVERHEATED (when machine is in stand-by)

***Probable cause*:** The machine reached a too high temperature after a welding cycle

***Solution*:** Wait until the machine has cooled off

ERROR 45 – CURRENT MAXIMUM VALUE WAS OUTPACED

***Probable cause*:** The heating wires inside the coupler are creating a short circuit
***Probable cause*:** The coupler diameter is bigger than allowed

***Solution*:** Repeat the welding with another coupler

ERROR 50 – WELDING CURRENT INFERIOR TO THE MINIMUM VALUE

***Probable cause*:** One or both welding cables were unplugged during the welding

***Solution*:** Repeat the welding with another coupler

***Probable cause*:** The heating wires inside the coupler are interrupted

***Solution*:** Repeat the welding with another coupler

***Probable cause*:** The coupler is too small (the electrical resistance is too high)

***Solution*:** Repeat the welding with a compatible coupler

ERROR 55 – WELDING CYCLE INTERRUPTED BY THE OPERATOR

***Probable cause*:** The operator pressed the STOP pushbutton

Solution: Repeat the welding with another coupler

ERROR 60 – SHORT CIRCUIT

***Probable cause*:** The coupler is damaged

***Solution*:** Repeat the welding with another coupler

ERROR 65 – LACK OF VOLTAGE AT THE POWER SOURCE

***Probable cause*:** Power supply cable unplugged

***Solution*:** Plug the power supply cable

***Probable cause*:** The voltage supply was interrupted

***Solution*:** Wait until the service is restored

***Probable cause*:** The safety microswitches have intervened

***Solution*:** Re-arm the safety microswitches

ERROR 70 – HARDWARE ERROR

***Solution*:** Contact an authorized service center.

ERROR 80 – OVERHAUL EXPIRED

***Solution*:** Contact an authorized service center.

Attention please! If the "**ATTENTION! FREE MEMORY: 5**" message is displayed at the ignition of the machine, follow the procedure on page **26:** "Reset welding reports". If you don't do this and continue to use the machine, the last report will replace the first one in memory, then the second report will be replaced, and so forth.

Ritmo
PLASTIC WELDING TECHNOLOGY

SINCERT
Sistema di Gestione per la Qualità certificato
Certificato N° 206
IIS
UNI EN ISO 9001

CE

I DICHIARAZIONE DI CONFORMITÀ
GB CONFORMITY DECLARATION
E DECLARACION DE CONFORMIDAD
P DECLARAÇÃO DE CONFORMIDADE
D KONFORMITÄTSERKLÄRUNG

Ritmo S.p.A.
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Tel. ++39-(0)49-9901888 Fax ++39-(0)49-9901993

I Dichiara che il prodotto di sua produzione di seguito identificato:
GB Declares that the product of its our production named as follows:
E Declara que los productos identificados mas abajo:
P Declara que as seguintes soldadoras (de sua produção):
D Erklärt daß das Produkt von unserer Produktion wie folgt identifiziert ist:

ELEKTRA LIGHT

I è conforme alle disposizioni delle seguenti Direttive:
GB is made in compliance with the following directives:
E está conforme con lo dispuesto:
P respeitam quanto indicado nas seguintes Directivas e Normativas:
D gemäß den geltenden gesetzlichen Richtlinien:

2006/42/CE
2004/108/CE
2006/95/CE
UNI EN ISO 12100-1 :2005
UNI EN ISO 12100-2 :2005
CEI 44-5
ISO12176-2:2008
UNI 10566:1996

I
La presente dichiarazione perde ogni validità in caso di modifiche apportate al prodotto non approvate esplicitamente e per iscritto dal costruttore.

GB
This declaration becomes null and void in the event of any changes being made to the product without the written and explicit manufacturer's approval.

E
Esta declaración no es válida en caso de aportar modificaciones a los productos sin la expresa autorización escrita del fabricante.

P
Qualquer modificação efectuada ao aparelho, que não tenha sido autorizada *a priori* em modo explícito e por escrito pelo fabricante, anula a presente declaração.

D
Die Gültigkeit der vorliegenden Erklärung ist nichtig im Falle von Änderungen des Gerätes, die nicht ausdrücklich schriftlich vom Hersteller genehmigt wurden.

(Renzo Bortoli): _____
Firma / Signature / Unterschrift / Firma/Assinatura

Bresseo di Teolo, 16/03/10

I Ai sensi dell'art. 13 del decreto legislativo 25 luglio 2005, n.151
" attuazione delle direttive 2002/95/ce, 2002/96/ce e 2003/108/ce, relative alla riduzione dell'uso di sostanze pericolose nelle apparecchiature elettriche ed elettroniche, nonché allo smaltimento dei rifiuti "

Il simbolo del cassonetto barrato riportato sull'apparecchiatura giunta o sulla sua confezione indica che il prodotto alla fine della propria vita utile deve essere raccolto separatamente dagli altri rifiuti.

La raccolta differenziata della presente apparecchiatura giunta a fine vita e' organizzata e gestita dal produttore. L'utente che dovrà disfarsi della presente apparecchiatura dovrà quindi contattare il produttore e seguire il sistema che questo ha adottato per consentire la raccolta separata dell'apparecchiatura giunta a fine vita.

L'adeguata raccolta differenziata per l'avvio successivo dell'apparecchiatura dismessa al riciclaggio, al trattamento e allo smaltimento ambientalmente compatibile contribuisce ad evitare possibili effetti negativi sull'ambiente e sulla salute e favorisce il riepilogo e/o riciclo dei materiali di cui e' composta l'apparecchiatura.
Lo smaltimento abusivo del prodotto da parte del detentore comporta l'applicazione delle sanzioni amministrative previste dalla normativa vigente.

GB According to Article 13 from Italian 'Decreto legislativo' 25 July 2005, n.151, that puts into practice CE Directives 2002/95/ce, 2002/96/ce and 2003/108/ce, regarding the reduction of the use of dangerous substances on electrical and electronic devices, as well as the disposal of waste material, we hereby inform that:

A crossed trash container symbol indicates that the material in which the label is attached must be disposed separately from all other wastes at the end of its service life.

The separate collection of waste after service life is organized and maintained by the manufacturer. All end users who shall get rid of such labeled materials must contact the manufacturer and follow its waste disposal instructions.

A proper disposal of such waste materials is necessary in order to avoid possible negative effects on the environment and on Public Health, besides contributing to the recycling of the materials.

Illicit waste disposal will be punished by law.

E Según articulo n. 13 del decreto ley 25 de Julio 2005, n.151
" actuación de las normas 2002/95/ce, 2002/96/ce y 2003/108/ce, relativas a la reducción del uso de substancias periglosas en los aparatos eléctricos y electrónicos, y de la disposición de basura "

La imagen del basurero barreado sobre el aparato o sobre el embalaje indica que el producto llegado al final de su vida útil tiene que ser recogido separadamente de otros desechos.

La recolección diferenciada de los presentes aparatos que han llegado al final de su vida útil será organizada y gestionada por el fabricante. El usuario que tiene que desechar el aparato tendrá que contactar el productor y seguir las instrucciones sobre el sistema que este último ha tomado para el desecho del aparato que ha llegado al final de su vida útil.

La adecuada recolección diferenciada para el sucesivo envío del aparato al reciclaje, al tratamiento y a la eliminación compatible con el ambiente contribuie a evitar posibles efectos negativos en el ambiente y sobre la salud y favorece el reciclaje de los materiales que componen el aparato.
La eliminación abusiva del producto por parte del tenedor comporta la aplicación de las sanciones administrativas previstas por la norma vigente.

P De acordo com o art. 13 do Decreto-Lei Italiano de 25 Julho 2005, n.151 para a actuação das Directivas comunitárias 2002/95/ce, 2002/96/ce e 2003/108/ce, relativas à redução do uso de substâncias perigosas nos aparelhos eléctricos e electrónicos, para além da gestão da recolha selectiva do lixo, informa-se que:

O símbolo do contentor do lixo barrado com um 'x' indica que o material ao qual está aplicada a etiqueta deve ser recolhido separadamente, uma vez terminada a sua vida útil.

A recolha selectiva desses materiais é organizada e gerida pelo fabricante. O utilizador que deve despejar tais materiais deve portanto contactar o fabricante e seguir as instruções que lhe verão dadas.

A recolha selectiva é necessária para evitar eventuais danos ao ambiente e à Saúde Pública, para além de contribuir à reciclagem do lixo.

O despejo ilegal de tais materiais é punido por lei.

D Laut Gesetzt Artikel Nr. 13 von der Rechtsverordnung vom 25 Juli 2005, N.151
" Verwirklichung von Richtlinie 2002/95/ce, 2002/96/ce und 2003/108/ce, in Bezug auf die Verminderung von den bestimmeten gefahrlichen Stoffen in Elektro-und Elektronikgeraten, sowie von Abfallbeseitigung."

Das Symbol der durchgestrichenen Abfalltonne auf dem Gerat oder bei der Verpackung zeigt dass, das Produkt am Ende Ihres nutzlichen Lebes getrennt gesammelt werden muss.

Die getrennte Sammlung des Gerates am Ende ihres nutzliches Lebens wird aus dem Hersteller entwickelt und organiziert. Der Benutzer, der dieses Gerat zerstoren sollte, muss sich mit dem Hersteller in Verbindung setzen und das selbe System von Produzenten folgen, um die getrennte Sammlung des Gerates am Ende Ihres nutzliches Lebens zu tun.

Die korrekte getrennte Sammlung zum Beginn des Gerates zum Recycling, zur Behandlung zur umweltfreundlichen Werwertung beitragt mogliche und ungunstige Wirkungen auf der Umwelt und auf der Gesundheit zu vermeiden, und fordert den Recycling von den Stoffen , von dem das Gerat hergestellt ist.
Die illegalen Verwendung des Gerates aus dem Besitzer voraussetzt die Anbringung der administrativen Sanktionen.

F Aux sens de l'art. 13 du décret 25 juillet législatif 2005, n.151
réalisation des directives 2002/95/ce, 2002/96/ce et 2003/108/ce, relatives à la réduction de l'usage de substances dangereuses dans les appareillages électriques et électroniques, ainsi qu'à l'écoulement des ordures"

Le symbole du recipient barrè reporté sur l'appareillage assemble ou sur son emballage indique que le produit à la fin de la propre vie utile doit être recueilli par les autres ordures séparément.

La récolte différenciée de l'appareillage assemble à la fin de sa vie et' organisée et gérée par le producteur. L'utilisateur qui devra se défaire de l'appareillage présent faudra contacter ensuite le producteur et suivre le système qui a adopté pour permettre la récolte séparée de l'appareillage assemble arrivè à la fin de vie.
La récolte proportionnée différenciée pour le commencement suivant de l'appareillage en fin de vie au recyclage, au traitement et à l'écoulement environnement compatible contribue à éviter effets négatifs possibles sur le milieu et sur la santé et il favorise la récapitulation et/ou le recycle des matériels dont et' composée l'appareillage.
L'écoulement illégal du produit de la part du tenant comporte l'application des sanctions administratives prévue par le actuelle normatif.