



INSTRUCTION BOOK

SOLDAmaq 30 - 40 - 60

BUTT WELDING MACHINE

APPLICABLE TO THE BUTT WELDING MACHINE ELITE:
SOLDAmaq 30 - SOLDAmaq 40 - SOLDAmaq 60



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1. CONTENTS AND USE OF THIS MANUAL

IMPORTANT! This user manual is addressed to the owner, the machine user, the cleaning personnel, the maintenance personnel, the staff responsible for repair services and whoever has access to the machine. Read the whole manual before using the machine.

- **Usefulness of the manual**

The manual provides the necessary instructions for the machine transport and handling, installation, use according to the design specifications, cleaning and maintenance; moreover, it aims to train people, make order of spare parts easier and to indicate the residual risks.

- **Limits of use of the manual**

The machine hereunder described is intended for professional use only; this user manual cannot therefore substitute the operator's adequate experience.

- **Importance and retention of the manual**

This manual is an integral part of the machine and shall be retained up to the machine complete dismantling. Moreover, it shall always be readily available to the operator.

- **Request for a new manual**

In case of loss and/or damage of the manual, the user may request a new copy of it by indicating the following characteristics of the machine: type, model, serial number and year of construction.

- **Manual update**

The manufacturer reserves the right to modify the specifications indicated in this manual and/or the characteristics of each machine. Some figures in this manual may show some partly or totally different details than those assembled on the machines. Technical drawings and data may be modified without notice.

- **Further information and clarification**

The manufacturer may be contacted to ask for further information and clarification on the correct use of the machine and on maintenance and repair at any time.



- Relief from responsibility

The manufacturer considers himself relieved of any responsibility in case of:

- a) improper use of the machine;
- b) use of the machine by non-trained personnel;
- c) lack of maintenance foreseen;
- d) non-authorized interventions or modifications;
- e) use of non-original spare parts and/or non-specific for the model;
- f) partial or total non-observance of the instructions.



2. SAFETY RULES AND CONFORMITY

The non-observance of the following safety rules may cause damage to people, animals and properties. The installation and maintenance of the machines in hand in this manual shall be made by skilled people only, who know the machine functioning as well as the European regulations on the installation of industrial machines. The welding machines herein described shall be used for the blade welding. Any other use is therefore forbidden.

Declaration of Conformity of the welding machines:

SOLDAmaq 30 - SOLDAmaq 40 - SOLDAmaq 60

The “EC” mark on the machines indicates their conformity with other European Community Directives and namely:

- LOW VOLTAGE DIRECTIVE 2006/95/EC AND FOLLOWING AMENDMENTS
- ELECTROMAGNETIC COMPATIBILITY DIRECTIVE 2006/42/EC AND FOLLOWING AMENDMENTS

These warnings do not involve all possible risks resulting from an improper use of the machine. Therefore, the operator shall work with the greatest circumspection and observe the rules.

DANGER: HIGH POWER-LINE VOLTAGE!

The machine shall be installed, maintained and used by skilled people in compliance with regulations concerning the electrical machinery in force in the country of use.

SAFETY SHOES ARE COMPULSORY



EYE PROTECTION IS COMPULSORY

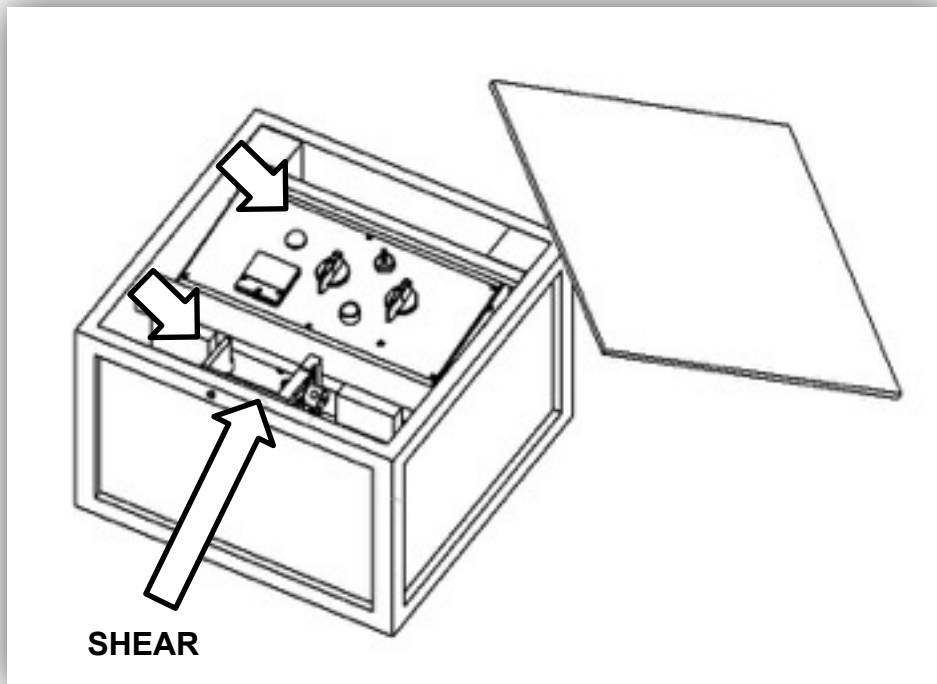
PROTECTIVE GLOVES ARE MANDATORY



3. HANDLING AND UNPACKING



Machines are transported in wooden crates as shown in the figures below.



**REMOVE THE
SECURING WOODEN
PIECES**

Figure A

To unpack the machine, first remove the top panel and take out the shear. Then remove the wooden securing pieces shown in figure A and finally pull out the machine.



4. MAIN PARTS OF THE MACHINE

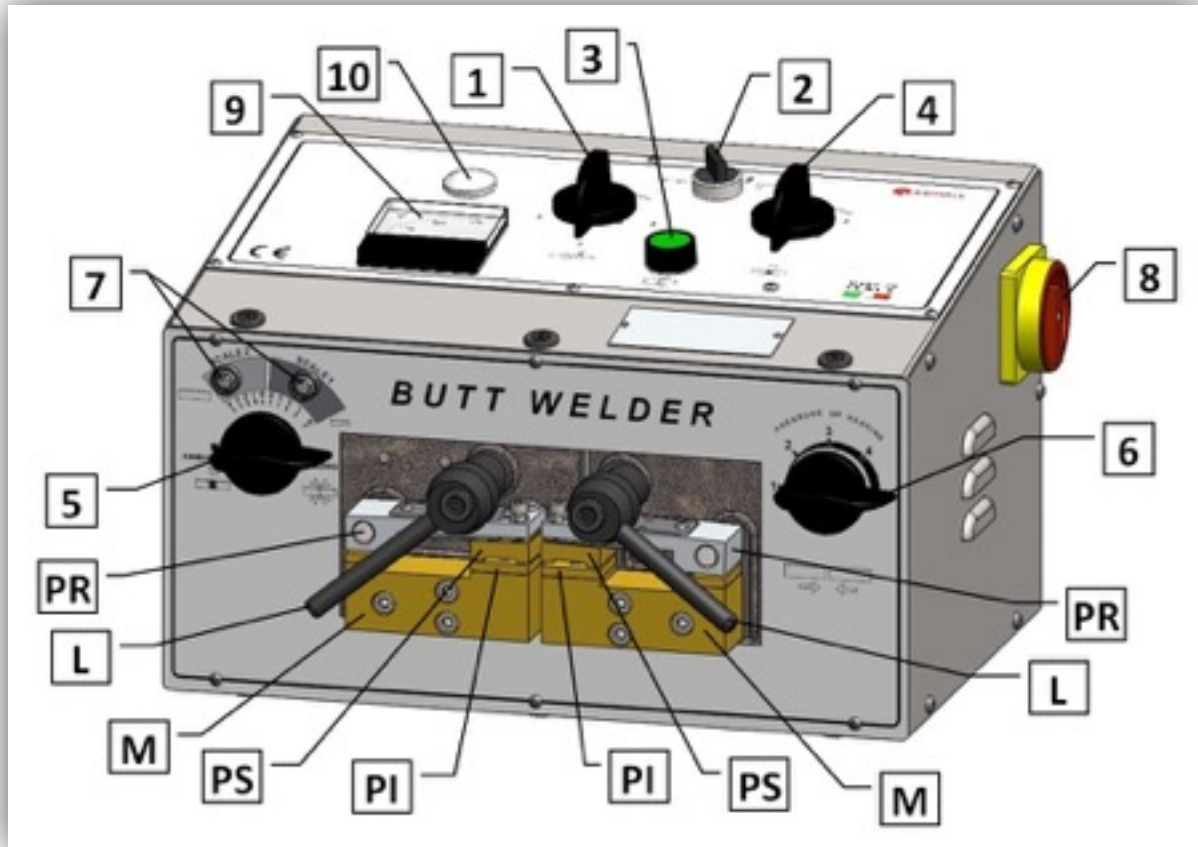


Figure 1

Part description:

1	ROTARY KNOB TO SET THE WELDING CURRENT INTENSITY	ADJUSTMENTS
2	WELDING SCALE SELECTOR SWITCH: POSITION 1 or 2	
4	ROTARY KNOB TO SET THE ANNEALING CURRENT INTENSITY	
5	HEADING PATH ROTARY KNOB	
6	HEADING PRESSURE ROTARY KNOB	CONTROLS
3	WELDING PUSH BUTTON	
8	MAIN POWER SWITCH	SAFETY
10	INDICATOR LIGHTS INDICATING POWER IS ON	



7	WELDING SCALE INDICATOR LIGHTS: SCALE 1 OR 2	INDICATORS
9	VOLTMETER	
M	CLAMP GROUP	MECHANICAL COMPONENTS
L	PRESSER LEVERS	
PS	UPPER PLATES	
PI	LOWER PLATES	
PR	PRESSERS	

5. WIRING



Wiring shall be carried out by skilled people only. Connect the welding machine to only two phases of the three-phase electrical distribution grid through a switchboard provided with residual current device and a magnetothermal circuit breaker (at least 32 A), and however compliant with regulations in force in the country where the machine is installed. For technical data refer to the label positioned on the back of the machine.

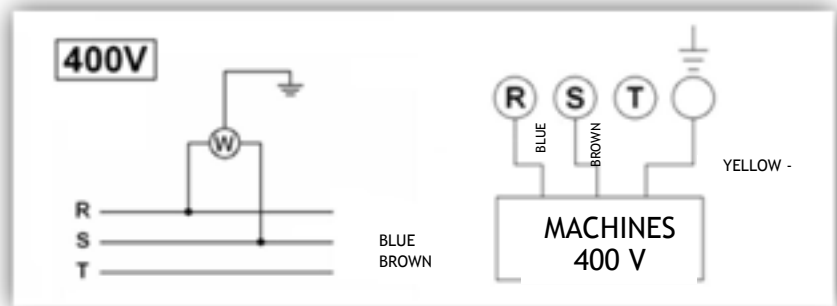


Figure 2

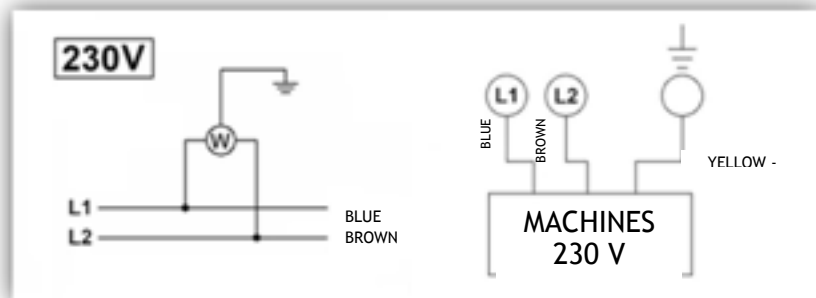


Figure 3



ELITE does not assume any responsibility in case of wrong electrical connection non compliant with regulations in force and which may cause a bad performance of the machine and damage to people, animals and properties.

To switch the welding machine on turn the main power switch clockwise (Switch 8, Figure 1).

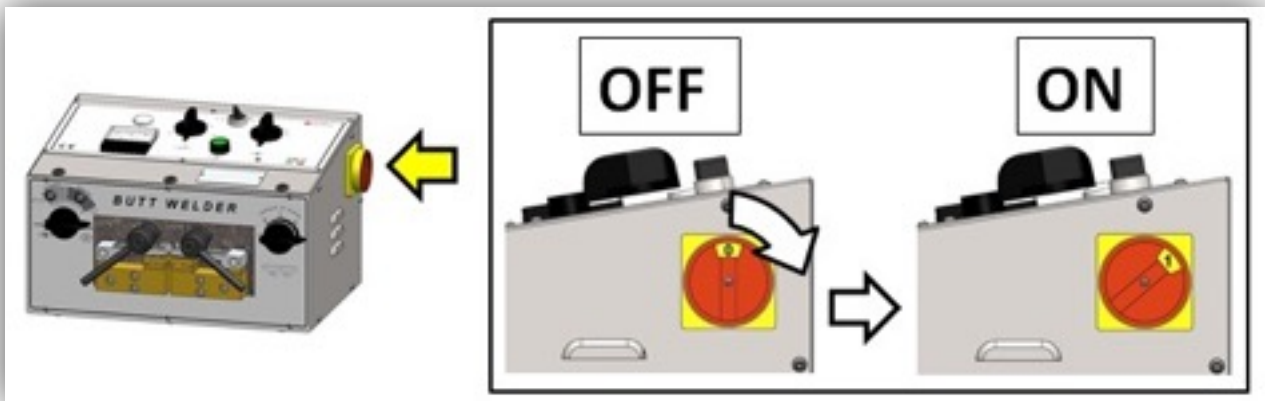


Figure 4

Make sure the machine is on checking if the power on/off indicator light on the control panel (indicator light 10, Figure 1) is on.

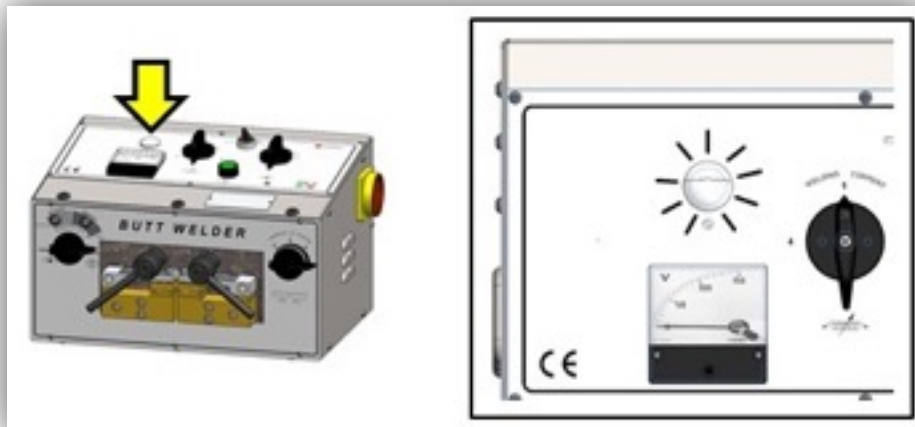


Figure 5



6. BLADE CUTTING



Be careful when handling the band saw and positioning it into the machine; wear safety gloves to avoid getting hurt during contact with it.

Before welding, cut the two ends of the band saw to be welded using the shear supplied with the machine.

The cutting shall be right-angled (90°) in relation to the band saw profile so that the two ends to be welded match up perfectly. To cut the blade put it into the shear as shown in Figure 6. Then adjust the alignment by means of the screw indicated by arrow 1. Then raise the shear lever to cut the blade. Check the cutting has been carried out properly. Otherwise, repeat the operation.

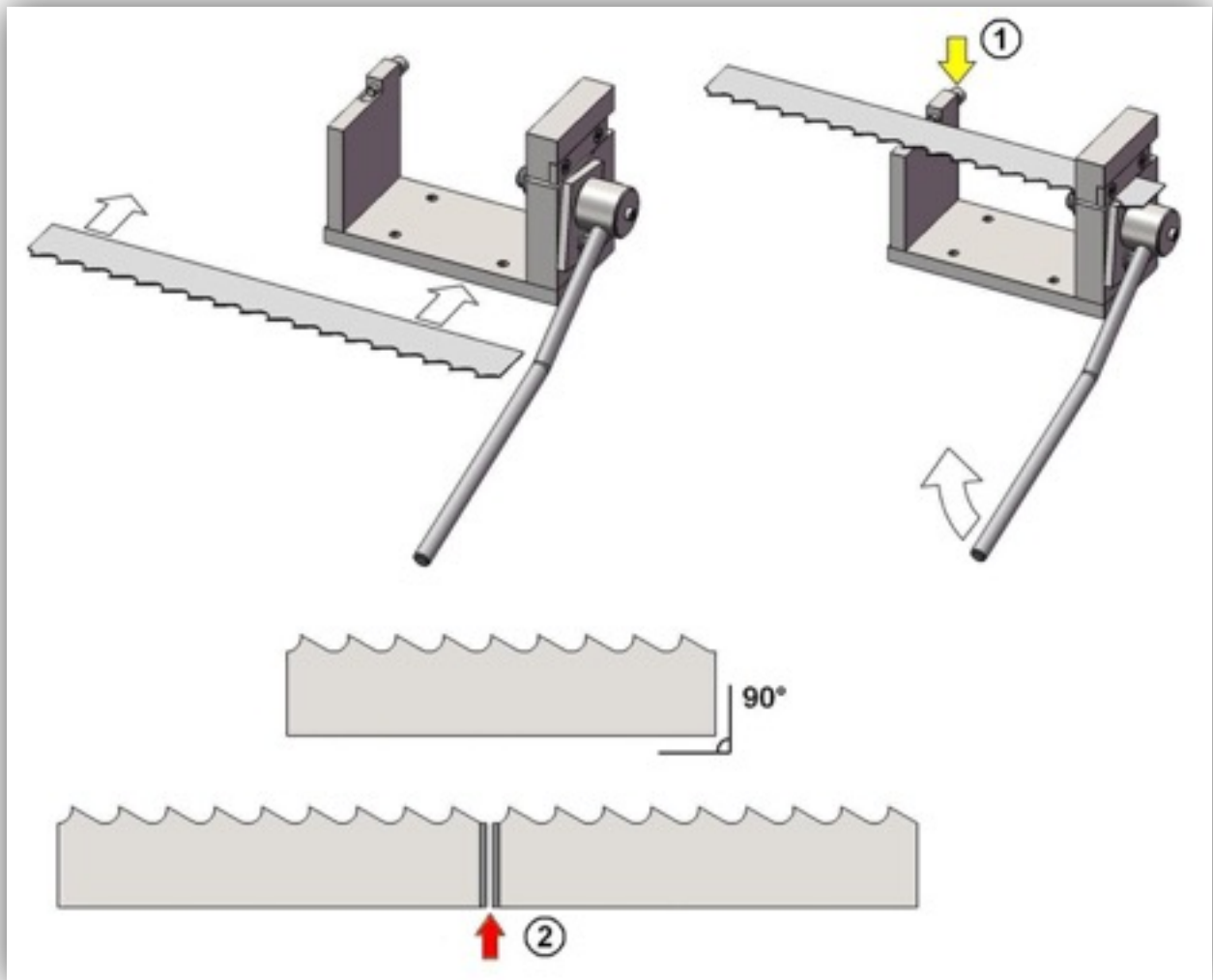


Figure 6



NOTE To keep the original tooth pitch when cutting the band saw consider that during the welding operation the machine consumes a little material (indicated by arrow 2 in Figure 6). The material 'burnt' may be a few to some millimetres wide depending on the heading path, on the current and on the heading pressure which have been set.



7. WELDING SETUP

According to the width and thickness of the band saw, welding parameters, i.e. current intensity, heading pressure and heading path, shall be adjusted on the machine. Each blade has its own set of parameters; general information is given on the table below the setting operation description.

NOTE: Values in the table have been empirically obtained. Parameters strongly depend on the type of blade to be welded and mainly on its chemical composition and dimensions.

- i) **Select the welding scale using the scale selectors switch: 1 or 2 (selector switch 2, Figure 1)**

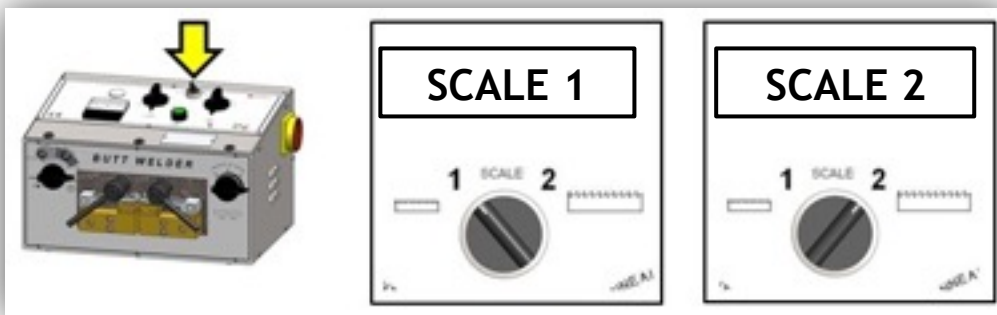


Figure 7

Check your choice by observing which of the lights over the heading paths is on (indicator lights 7, Figure 1). Select scale 1 for thin and narrow blades; select scale 2 for bigger blades.

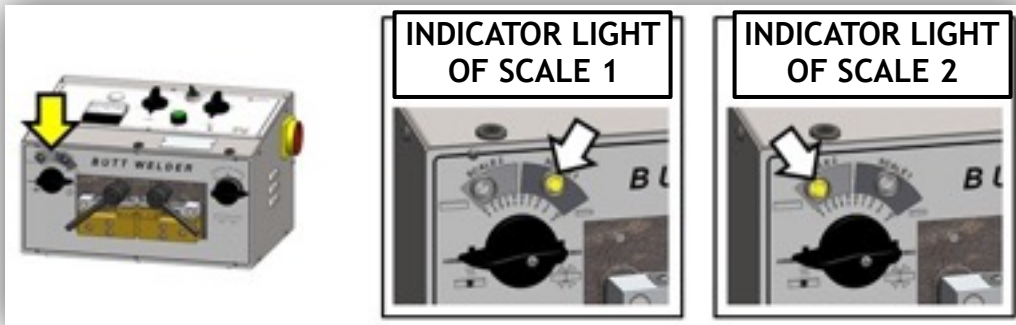


Figure 8

WARNING: before starting make sure the indicator light above the selected scale is on (Figure 8).

- ii) Set the heading pressure from within the range 1 to 5 (rotary knob 6, Figure 1)



Figure 9

The heading pressure depends on the blade thickness; the thicker the blade is, the higher the heading pressure shall be (see table at Section 8).

- iii) Adjust the heading path (rotary knob 5, Figure 1)

FIGURE 10

Figure 10

PATH ON SCALE
1

PATH ON SCALE
2

Select scale 1 or 2 according to the choices previously made; starting from the WELDING position, turn the rotary knob in an anticlockwise direction to the desired value within the selected scale (see above Figure 10).

- iv) Set the welding current from within the range 1 to 4 (rotary knob 1 Figure 1)

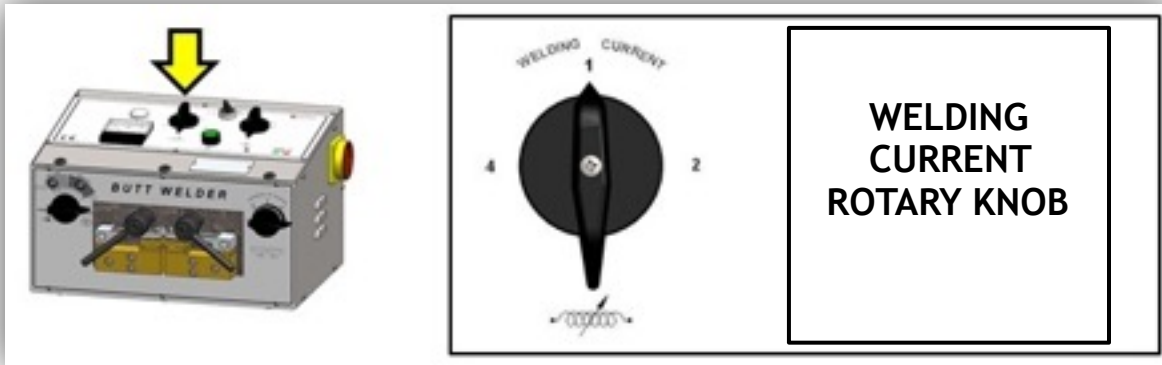


Figure 11

The welding current intensity depends on the blade width and thickness. For small and thin blades set lower values (typically 1, 2); for bigger and thicker blades set higher values (3 or 4).



8. TABLE OF OPERATING CHARACTERISTICS

BUTT WELDING MACHINES SOLDAmag 30 5 mm to 30 mm

Blade width (mm)	Scale	Welding Current	Heading Pressure	Heading Path
5	1	1	1	2
10	1	2	1	2
20	2	3	2	3
30	2	4	3	4

BUTT WELDING MACHINES SOLDAmag 40 10 mm to 40 mm

Blade width (mm)	Scale	Welding Current	Heading Pressure	Heading Path
10	1	1	1	2
20	1	1	1	3
30	2	3	2	3
40	2	4	3	4

BUTT WELDING MACHINES SOLDAmag 60 20 mm to 60 mm

Blade width (mm)	Scale	Welding Current	Heading Pressure	Heading Path
20	1	1	1	3
35	2	3	2	3
45	2	4	3	4
60	2	4	4	4



REMARK

Remember that values given in the tables are empiric, hence merely approximate. The thickness, chemical composition and technological process used in the band saw production will greatly influence the parameters you have to set for the welding operation.

You are advised to carry out some tests on your band saws starting from the values shown in the table. If results are not satisfactory make the suitable adjustments. Compare your test results with those in the table and, if necessary, replace values indicated with the results obtained from your tests.

Remember that nothing and nobody can compare to one's personal experience.



9. WELDING



Wear safety goggles and protective gloves. During welding beware of sparks.

Open the clamps by lifting levers **L** (Figure 1). Then insert the two band ends under pressers **PR** (Figure 1) with the teeth turned towards the machine, as shown in the picture below.

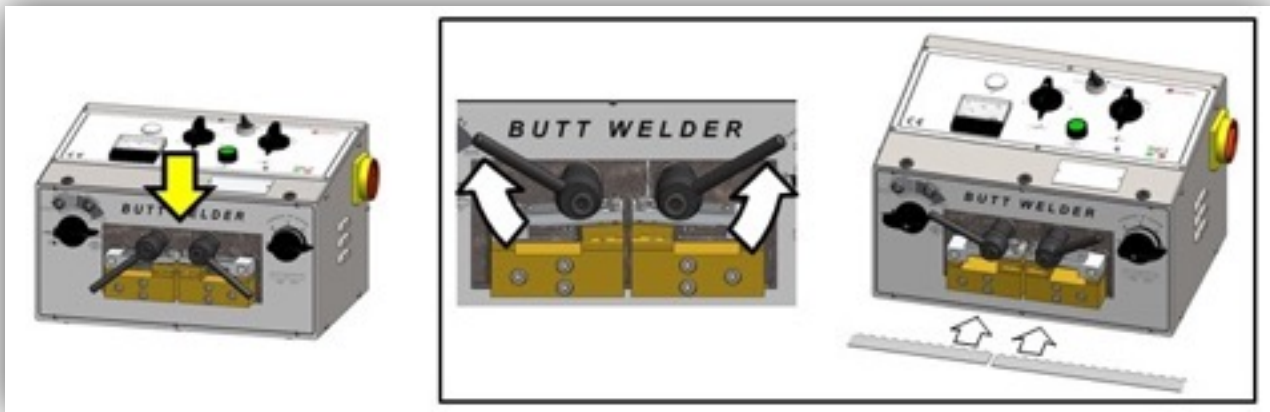


Figure 12

Align the bands longitudinally against the back plate and match the two band ends midway. The band ends shall match perfectly. Block them using clamping levers **L** (Figure 1).

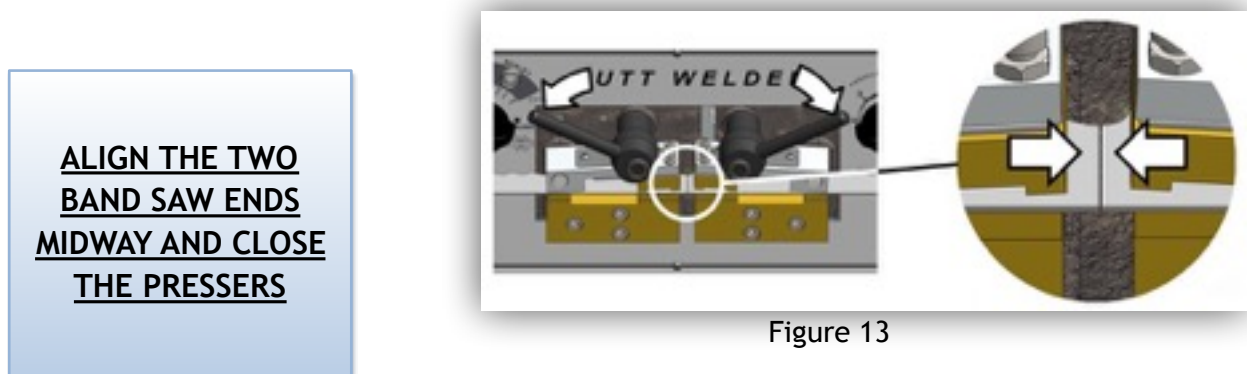


Figure 13

**ALIGN THE TWO
BAND SAW ENDS
MIDWAY AND CLOSE
THE PRESSERS**

Turn the heading path rotary knob (rotary knob 5, Figure 1) back to the 'WELDING' position.

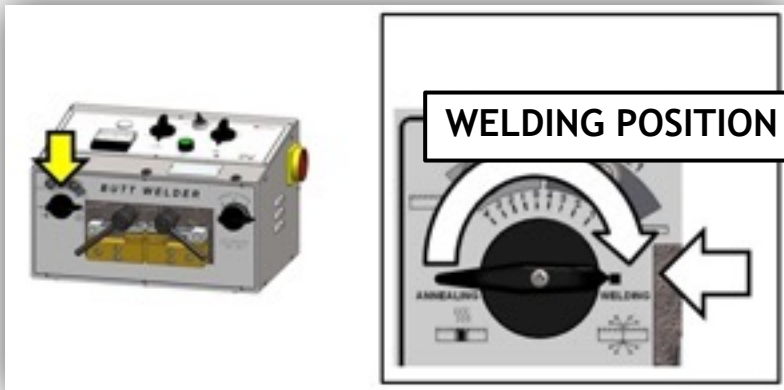


Figure 14

CAUTION!!!

**TURN THE HEADING PATH
ROTARY KNOB BACK TO THE
'WELDING' POSITION**

WARNING!!!
**IF THIS OPERATION IS NOT
CARRIED OUT THE MACHINE
CANNOT WELD**

Press the welding push button (push button 3, Figure 1) bewareing of the until the machine stops automatically (see Figure 15 below).

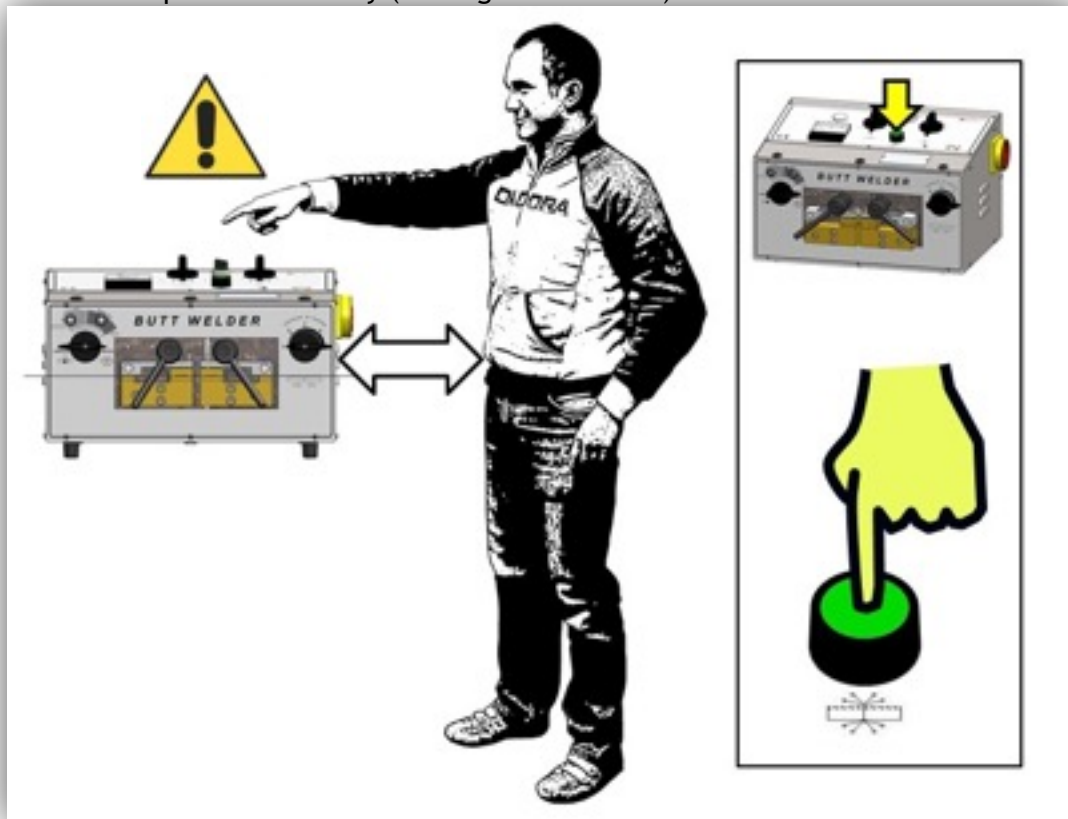


Figure 15

BEWARE OF SPARKS! KEEP AWAY FROM THE CLAMPS!

PRESS AND KEEP PRESSED!



Upon completion of the welding cycle, loosen levers L (Figure 1) of pressers PR (Figure 1) and remove the blade. Carefully clean the support plates of the blade, i.e. the internal part of clamp group M (Figure 13), using compressed air or, failing that, a rough cloth (see Figure 16).

**CLEAN AFTER
EACH WELDING**

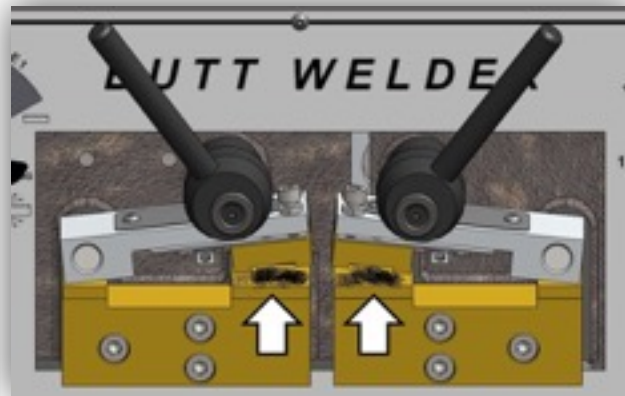


Figure 16

We would like to draw your attention to the importance of this cleaning operation which, if carried out properly and on a regular basis will ensure the long life of the machine and good performance.

10. ANNEALING

After each welding the welded zone must be annealed to give the material part of the elasticity lost back. Turn the heading path rotary knob (rotary knob 5, Figure 1) to the ANNEALING position (see Figure 17).

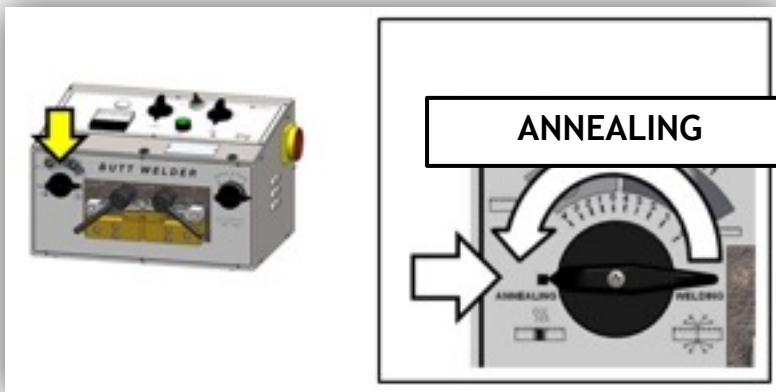


Figure 17

CAUTION!

**TURN THE
HEADING PATH
ROTARY KNOB TO
THE ANNEALING
POSITION**

Lock the blade under the clamps making sure the weld bead is well centered between the clamps (see Figure 18).

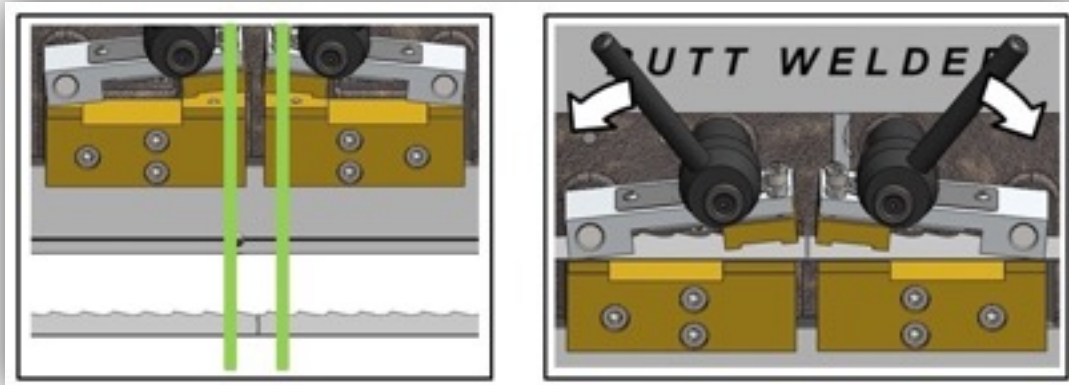


Figure 18

ALIGN THE
WELD BEAD
MIDWAY
BETWEEN THE
PRESSERS

Turn the annealing current rotary knob (rotary knob 4, Figure 1) intermittently between position 1 (or position 2) and the rest position; during this operation look at the band weld bead.

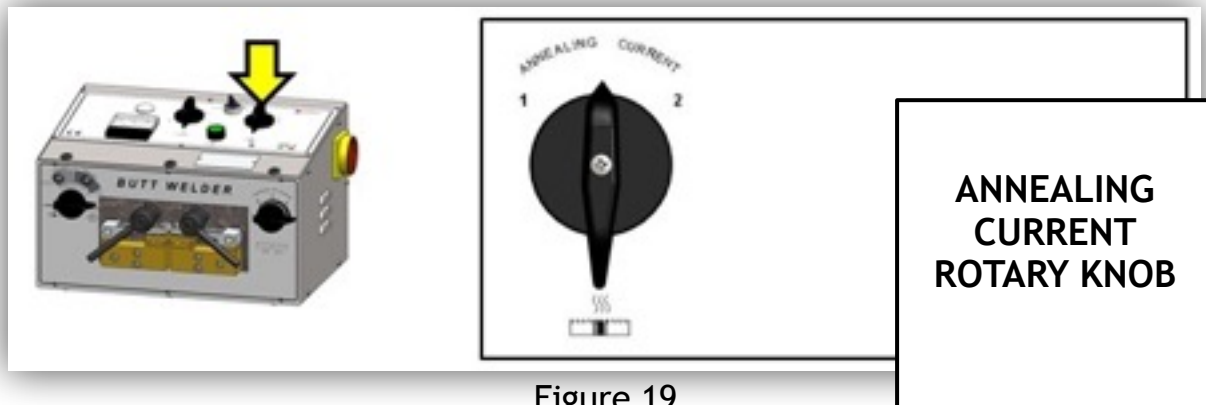
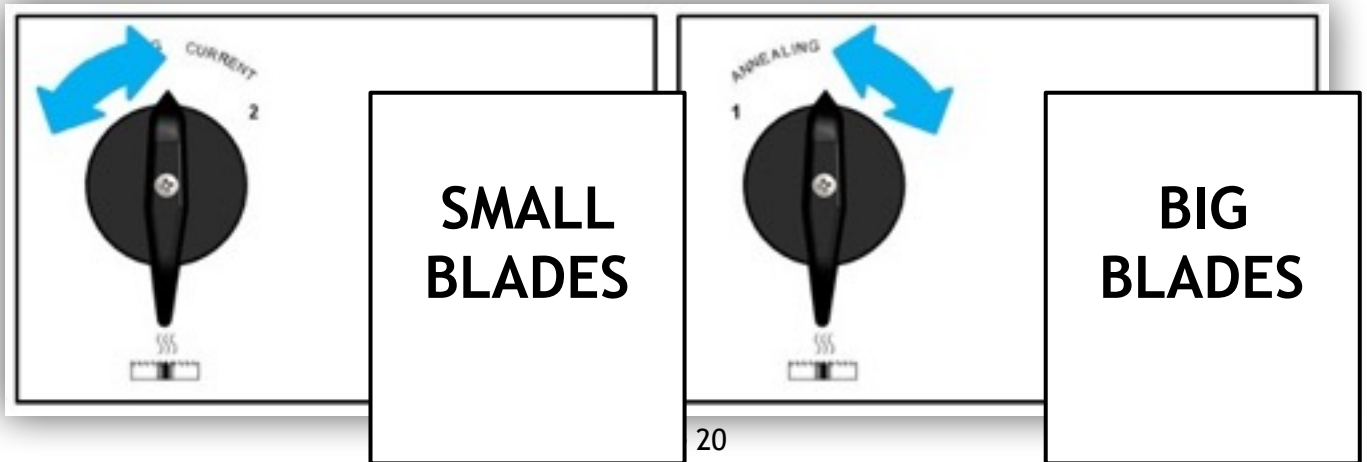


Figure 19

Mainly use value 1 (value 2 is only needed for very big and thick bands). Keep doing it until the blade turns to a colour between bluish and dark red.

THE ANNEALING TEMPERATURE, HENCE THE BLADE COLOUR DURING ITS CARRYING OUT, DEPENDS ON THE CHEMICAL COMPOSITION OF THE BLADE



CHECK THE COLOUR CHANGE ON THE BLADE TAKES PLACE IN A UNIFORM WAY, STARTING FROM THE WELD BEAD TO THE PRESSERS



Figure 21

WARNING: If the color change is not uniform see section: 'PROBLEMS AND SOLUTIONS'. It is worth keeping in mind that annealing is a very delicate operation and that its result depends on the condition of plates and pressers, on the pressure exerted on the blade and on the chemical composition of the blade.

Now simply remove the weld bead using Elite special deburring machine SOLDAmag EC (Figure 22).



11. ALIGNMENT OF THE UPPER PLATES

Proceed as follows: turn rotary knob 5 (Figure 1) to the 'ANNEALING' position.

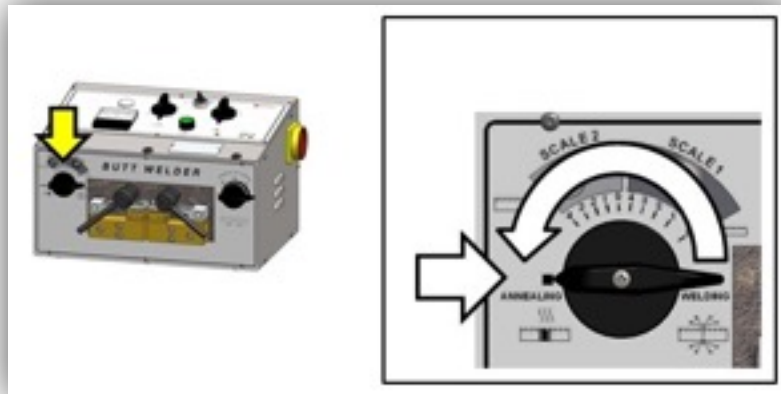


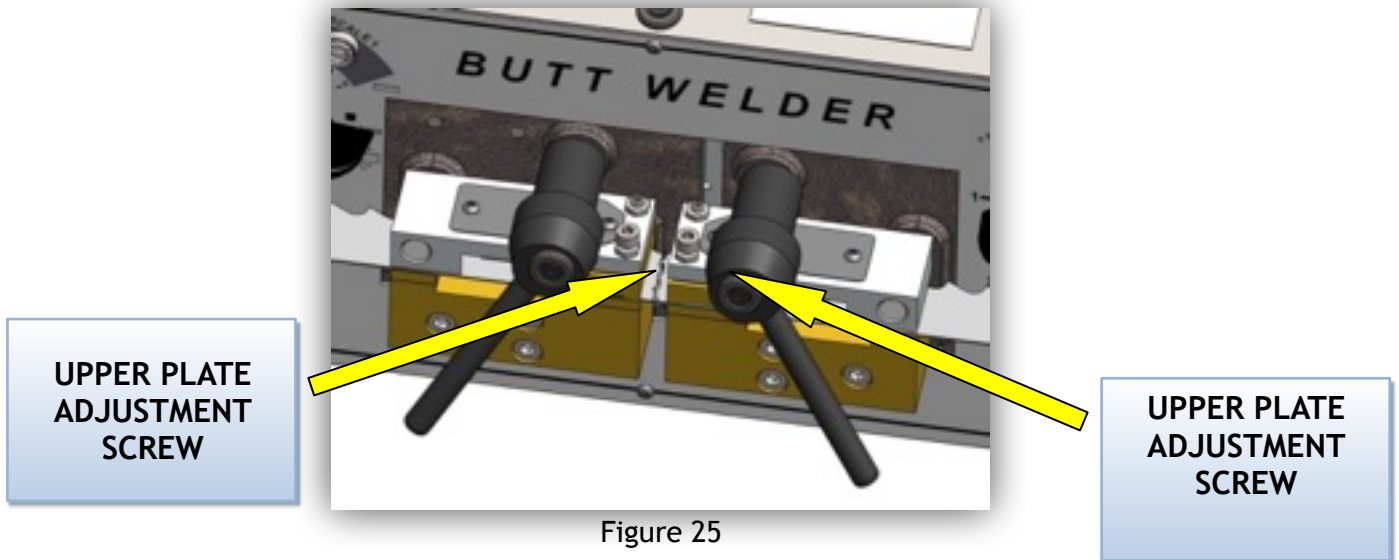
Figure 23

Insert a piece of band between the two clamps and close the pressers. Carry out annealing (see Section 10, ANNEALING). Check the blade heats up in a uniform way.



Figure 24

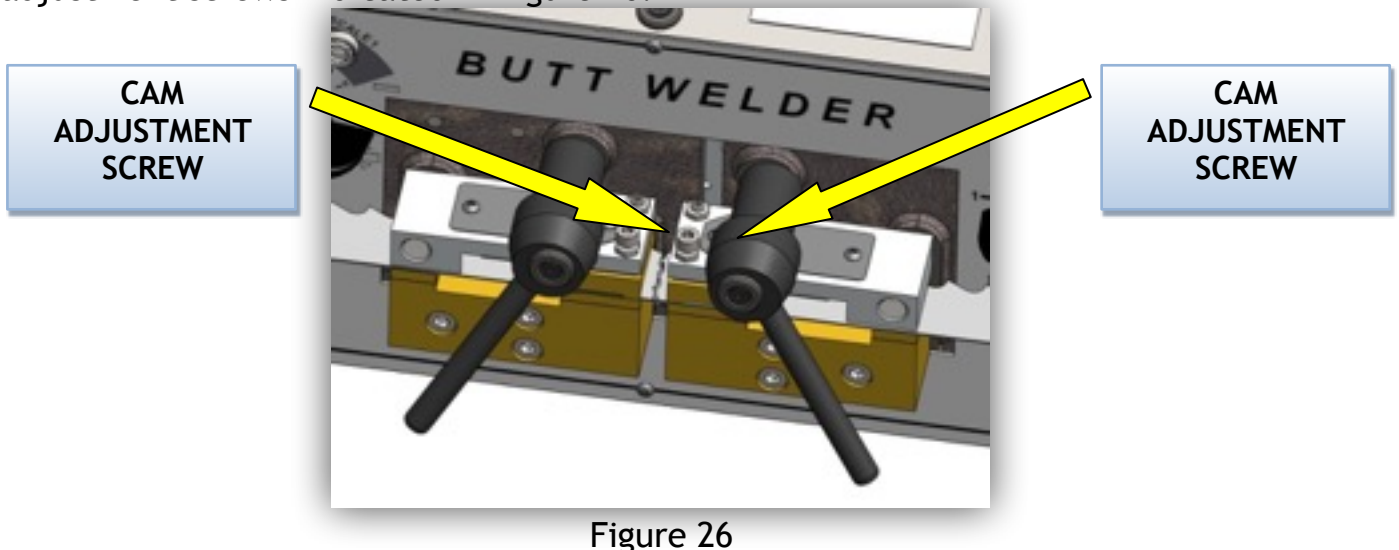
Align the plates using the adjustment screws, if necessary starting from screws adjusting the cam (see Section 11.1) and then those on the upper plates.



Repeat the operation until you achieve acceptable results.

11.1 CLAMP CLOSURE ADJUSTMENT

After grinding the plates always remember to adjust the clamp closure using the adjustment screws indicated in Figure 26.



Carry out the adjustment so that the two levers L tighten the clamp without spinning freely. If so, screws shall be tightened; otherwise if they have a short stroke, they shall be unscrewed.

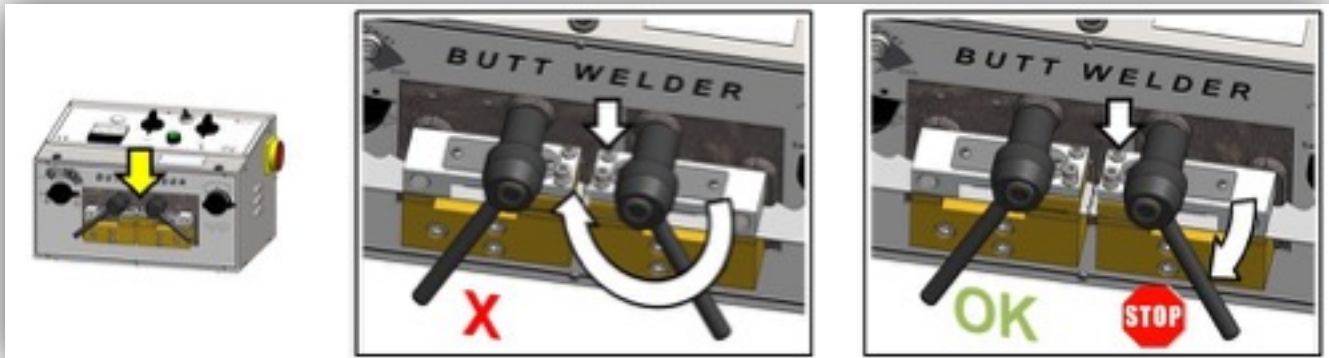


Figure 27



12. MAINTENANCE



Experimental tests have shown our machines do not need any maintenance in the traditional sense of the word. However, it is suggested to carry out periodical and accurate cleaning of the brass plates located on the clamps. Clean after each welding using compressed air or a rough cloth.

Moreover, in case of damage, replace the damaged plates with new ones.

P E R I O D I C C H E C K S		
TYPE OF CHECK	ACTION	WHEN
PLATE CLEANING	CAREFULLY CLEAN THE BRASS PLATE SURFACE (PI AND PS) USING A ROUGH CLOTH OR COMPRESSED AIR.	AFTER EACH WELDING.
PLATE GRINDING	DISASSEMBLE LOWER PLATES PI AND GRIND THEM BOTH MAKING SURE THEY HAVE THE SAME THICKNESS. CARRY OUT THE SAME OPERATION ON UPPER PLATES PS. ONCE THE PLATES HAVE BEEN GROUND ASSEMBLE THEM BACK INTO THE MACHINE.	WHEN THE PLATE SURFACE LOOKS PARTICULARLY RUINED.
PLATE THICKNESS CHECK	CHECK THE PLATES ARE NOT LESS THAN 5 mm THICK USING A THICKNESS GAUGE.	AFTER A NUMBER OF WELDING AND AFTER EACH GRINDING OPERATION.
PLATE REPLACEMENT	DISASSEMBLE THE WORN OUT PLATES AND REPLACE THEM WITH NEW ONES. ALWAYS REMOVE BOTH PLATES TOGETHER.	WHEN PLATES ARE IRREDEMIABLY RUINED OR THEIR THICKNESS IS LESS THEN THE MINIMUM REQUIRED ONE.
CARRIAGE SLIDING	CHECK THE MOVABLE CLAMP (THE LEFT ONE) DOES NOT MOVE JERKILY DURING THE OPENING AND CLOSURE AND STOP AGAINST THE FIXED CARRIAGE.	ON A PERIODICAL BASIS



12.1 CARRIAGE CLEANING

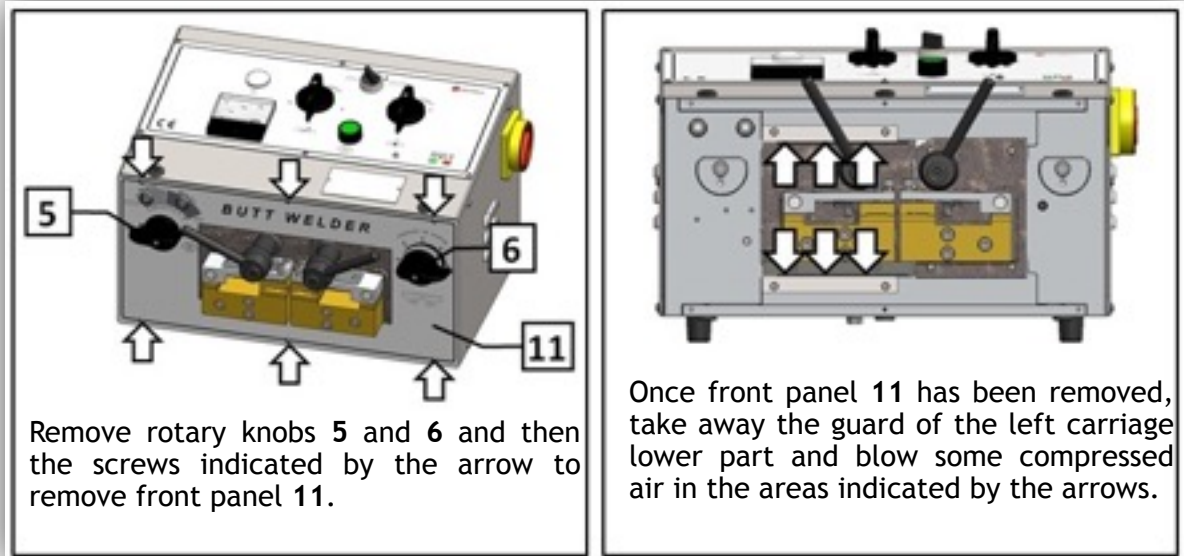


Figure 28



13. PROBLEMS AND SOLUTIONS

P R O B L E M S A N D S O L U T I O N S		
PROBLEM	CAUSE	SOLUTION
THE MACHINE DOES NOT SWITCH ON	LINE VOLTAGE ABSENT	CHECK THE CONNECTION TO THE POWER SUPPLY
	DISCONNECTING SWITCH FAILURE	- CHECK THE DISCONNECTING SWITCH OPERATION
	AUXILIARY TRANSFORMER FAILURE	- CHECK THE AUXILIARY TRANSFORMER FUSE IS NOT BURNT - CHECK THE AUXILIARY TRANSFORMER FUNCTIONING
THE WELD BREAKS UP EASILY	PLATES ARE DIRTY	CLEAN AND/OR REPLACE THE PLATES
	PLATES ARE IMPROPERLY ALIGNED	ADJUST THE ALIGNMENT
	WELDING AND/OR ANNEALING PARAMETERS ARE WRONG	CHECK PARAMETERS
THE TWO ENDS OVERLAP DURING WELDING	THE WELDING CURRENT IS TOO LOW AND/OR THE HEADING PRESSURE IS TO HIGH	CHECK PARAMETERS
PRESENCE OF HOLES IN THE WELD	THE WELDING CURRENT IS TOO HIGH AND/OR THE HEADING PRESSURE IS TOO LOW	CHECK PARAMETERS
THE CLAMP LEVERS SPIN FREELY	UPPER PLATES ARE IMPROPERLY ADJUSTED	REPLACE THE UPPER PLATES
	CAMS ARE WORN OUT	REPLACE THE CAMS
	TEMPERED SHEETS ARE WORN OUT	REPLACE THE SHEETS
THE CARRIAGE DOES NOT SLIDE FLUENTLY	THE CARRIAGE IS DIRTY	CLEAN THE CARRIAGE
THE MACHINE DOES NOT WELD	WELDING PUSH BUTTON FAILURE (PUSH BUTTON 3 Figure 1)	CHECK AND/OR REPLACE THE WELDING PUSH BUTTON
	FAILURE OF THE SELECTOR SWITCH OF THE WELDING CURRENT INTENSITY (ROTARY KNOB 1 Figure 1)	REPLACE THE SELECTOR SWITCH
	FAILURE OF THE POWER TRANSPORTER	REPLACE THE POWER TRANSFORMER



	FAILURE OF THE WELDING CONTACTOR	REPLACE THE WELDING CONTACTOR
THE MACHINE DOES NOT ANNEAL	FAILURE OF THE POWER TRANSFORMER	REPLACE THE POWER TRANSFORMER
	FAILURE OF THE ANNEALING SELECTOR SWITCH	REPLACE THE ANNEALING SELECTOR SWITCH

- If during welding the two ends of the blade overlap, this means the welding current is too low and the heading pressure is too high (see Figure 29);



BAD WELD: THE TWO ENDS HAVE OVERLAPPED

Figure 29

- Solution: increase the current intensity and/or decrease the heading pressure;
- If during welding the two edges find it difficult to join and tend to reject, this means the current intensity is too high and the heading pressure is too low (see Figure 30);



BAD WELD: THE WELD BEAD SHOWS SOME HOLES

Figure 30

- solution: increase current intensity and/or decrease the heading pressure;

For any other problem do not hesitate to contact us through our site www.elite.es or to send us an email at info@elite.es



14. WARRANTY

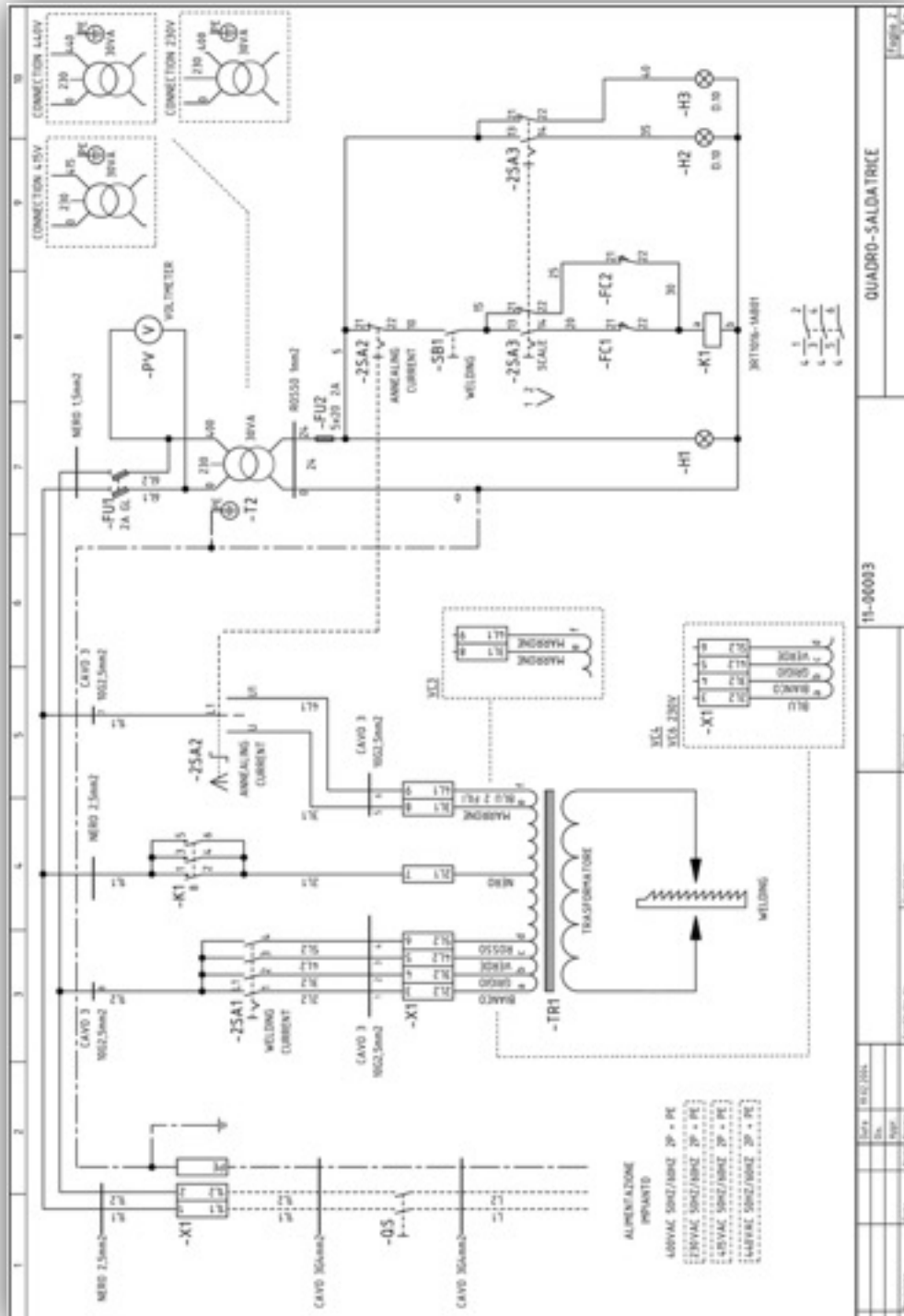
Our machines are guaranteed against any manufacturing defects under normal operating and maintenance conditions. This warranty is valid 12 months from the date of purchase and provides for the replacement of any faulty pieces.

This warranty is not valid if the machine has been tampered with by non-authorized people or companies, or if it has been used for different purposes than those specified in this user manual. Consumables are not covered by this warranty (e.g. plates).

15. TECHNICAL CHARACTERISTICS OF THE MACHINE

For information on the technical characteristics of the machine, see the plate on it.

16. WIRING DIAGRAM

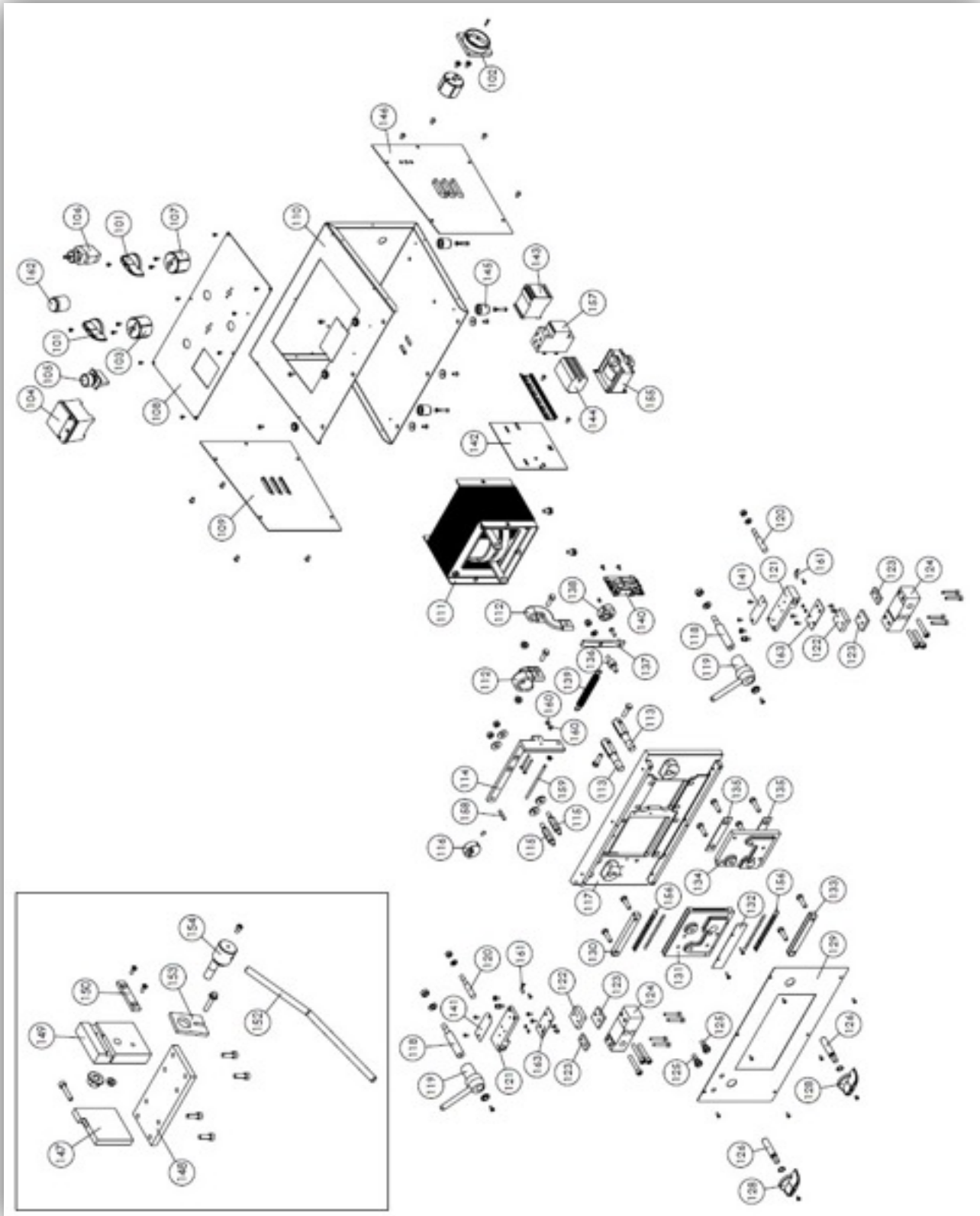


1	2	3	4	5	6	7	8	9	10
	BORINA RELÉ O CONTATTORE RELAY AND CONTACTOR BOBIN BOBINE RELAYS OÙ CONTACTEUR RELAISPAULE ODER KONTAKTORLEID	KH...KA		RELÉ: RITARDO ALL'ECCEZIONE RELAY DELAYED AT ENERGIZING RELAY RETARDE' A L'ECCEZIONE VERSPÄTETER ERREGTES RELAYS	KT...KA		PONTE RADDRIZZATORE BRIDGE RECTIFIER PONT REDRESSEUR RICHTERBRÜCKE		VL
	CONTATTO NORMALMENTE APERTO CONTACT NORMALLY OPEN CONTACT NORMALMENT OUVERT ARBEITSKONTAKT	KH...KA		PULSANTE IN CHIUSURA CLOSING PUSHBUTTON POUSSOIR EN FERMETURE VERSCHLUSSKASTE	SB		ELETTROVALVOLA SOLENOID VALVE ELECTROVANNE ELEKTROVENTIL		YV
	CONTATTOE NORMALMENTE CHIUSO CONTACT NORMALLY CLOSED CONTACT NORMALMENT FERMÉ RUHEKONTAKT	KH...KA		PULSANTE IN APERTURA OPENING PUSHBUTTON POUSSOIR EN OUVERTURE OFFNUNGSKASTE	SB		FRIZIONE ELETTROMEC. FRICTION ELECTROMECC. EMBRAYAGE ELECTROMECANIQUE ELEKTROMECHANISCHE KUPPLUNG		YC
	CONTATTO DI SCAMBIO EXCHANGE CONTACT CONTACT D'ECHANGE WECHSELKONTAKT	KH...KA		CONTATTO NO RELÉ: TERMICO CONTACT OPEN OF THERMAL RELAY CONTACT OUVERT RELAYS THERMIQUE ARBEITSKONTAKT THERMISCHES RELAYS	FR		SENSORE SENSOR CAPTEUR FÜHLER		SO
	CONTATTO A CHIUSURA RITARDATA CONTACT WITH CLOSING DELAY CONTACT A FERMETURE RETARDEE' VERSPÄTETER RUHEKONTAKT	KT...KA		CONTATTO NC RELÉ: TERMICO CONTACT NC OF THERMAL RELAY CONTACT FERMÉ RELAYS THERMIQUE RUHEKONTAKT THERMISCHES RELAYS	FR		SELETORE IN CHIUSURA CLOSING SELECTOR SELECTEUR EN FERMETURE VERSCHLUSSWAHLER		SA
	CONTATTO AD APERTURA RITARDATA CONTACT WITH OPENING DELAY CONTACT A ROUVERTURE RETARDEE' VERSPÄTETER ARBEITSKONTAKT	KT...KA		INT. NC EMERGENZA Sblocco ROTAZIONE EMERGENCY PUSH BUTTON NC POUSSOIR D'URGENCE FERMÉ DÉBLOCAGE ROT. NOT-AUS-TASTE IM RUHEZUSTAND MIT DR.	SB		SELETORE IN APERTURA OPENING SELECTOR SELECTEUR EN OUVERTURE LUFNUNGSSWAHLER		SA
	CONTATTO A RAPPERTURA RITARDATA CONTACT WITH OPENING DELAY CONTACT A ROUVERTURE RETARDEE' VERSPÄTETER ERNEUTER RUHEKONTAKT	KT...KA		FUSIBILE FUSE FUSIBLE SICHERUNG	FU		CONTATTI CONTATTORE BOBBIN CONTACTS CONTACTS DE CONTACTEUR KONTAKTLEISTKONTAKTE		KH
	CONTATTO A RICHISURA RITARDATA CONTACT WITH CLOSING DELAY CONTACT A REFERMETURE RETARDEE' VERSPÄTETER ERNEUTER ARBEITSKONTAKT	KT...KA		MOBILITTO TERMINAL BORNE KLEMPPE	X		INTERUTTORE GENERALE MAIN SWITCH INTERLUTTEUR PRINCIPAL HAUPTSCHALTER		GS
	PIRCECOSA NORMALMENTE APERTO LIMIT SWITCH NORMALLY OPEN PIN DE COURSE NORMALMENT OUVERT ENOSCHALTER IM ARBEITSKONTAKT	SO		LAMPADA SEGNALAZIONE SIGNALLING LAMP VOUTANT DE SIGNALIZATION MELLEUCHTE	HL		INTERUTTORE SALVAMOTORE MANUAL MOTOR STARTER DISJONCTEUR COUPÉ-CIRCUIT MOTORSCHUTZSCHALTER		GM
	PIRCECOSA NORMALMENTE CHIUSO LIMIT SWITCH NORMALLY CLOSED PIN DE COURSE NORMALMENT FERMÉ ENOSCHALTER IM RUHEZUSTAND	SO		CONDENSATORE CONDENSER CONDENSATEUR KONDENSATOR	C		INTERUTTORE AUTOMATICO AUTOMATIC SWITCH DISJONCTEUR AUTOMATIQUE AUTOMATISCHER SCHALTER		GF
	PIRCECOSA DI SCAMBIO EXCHANGE LIMIT SWITCH PIN DE COURSE D'ECHANGE WECHSELNOSCHALTER	SO		DIODI RADDRIZZATORE RECTIFIER DIODE DIODE REDRESSEUR GLEICHRICHTERDIODE	VC		TRASFORMATORE TRANSFORMER TRANSFORMATEUR TRANSFORMATOR		TC

[illegible]



17. EXPLODED DIAGRAM





18. PART LIST

101	ROTARY KNOB
102	DISCONNECTING SWITCH
103	WELDING RHEOSTAT
104	VOLTMETER
105	PUSH BUTTON
106	WELDING SCALE SELECTOR SWITCH
107	ANNEALING RHEOSTAT
108	UPPER PANEL
109	LEFT PANEL
110	FRAME
111/3	TRANSFORMER VC-3
111/4	TRANSFORMER VC-4
111/6	TRANSFORMER VC-6
112/3	COPPER BRAIDS VC-3 (PAIR)
112/4	COPPER BRAIDS VC-4 (PAIR)
112/6	COPPER BRAIDS VC-6 (PAIR)
113	PINS (PAIR)
114	BRACKET
115	HEXAGONAL PIN
116	PATH CAMS
117	PLATE
118/3	CAM PIVOT VC-3
118/4	CAM PIVOT VC-4
118/6	CAM PIVOT VC-6
119/3	CAMS VC-3 (PAIR)
119/4	CAMS VC-4 (PAIR)
119/6	CAMS VC-6 (PAIR)



120/3	PRESSER PIVOT VC-3 (PAIR)
120/4	PRESSER PIVOT VC-4 (PAIR)
120/6	PRESSER PIVOT VC-6 (PAIR)
121/3	PRESSER VC-3 (PAIR)
121/4	PRESSER VC-4 (PAIR)
121/6	PRESSER VC-6 (PAIR)
122/3	UPPER PLATES VC-3
122/4	UPPER PLATES VC-4
122/6	No. 12 UPPER BLOCKS VC-6
123/3	SERIES OF LOWER PLATES
123/4	SERIES OF LOWER PLATES
123/6	SERIES OF LOWER PLATES
124/3	BRASS BLOCKS VC-3
124/4	BRASS BLOCKS VC-4
124/6	BRASS BLOCKS VC-6
125	LAMP (2 PIECES)
126	PATH CAM PIN
127 128	ROTARY KNOB
129	FRONT PANEL
130	UPPER SLIDE RAIL
131	MOVABLE CARRIAGE
132	GUARD
133	LOWER SLIDE RAIL
134	FIXED CARRIAGE
135	GASKETS (PAIR)
136	PIN
137	SPRING TENSIONER
138	HEADING PRESSURE CAMS
139	SPRING
140	END STROKE SWITCH
141/3 163/3	SET OF TEMPERED SHEETS FOR PRESSER VC-3



141/4 163/4	SET OF TEMPERED SHEETS FOR PRESSER VC-4
141/6 163/6	SET OF TEMPERED SHEETS AND SPRINGS FOR PRESSER. VC-6
142	CONTACTOR SUPPORT PLATE
143	CONTACTOR
144	TERMINAL STRIP
145	FOOT (4 PIECES)
146	RIGHT PANEL
147	SHEAR SIDE
148	BASE
149/3	SHEAR BODY VC-3
149/4	SHEAR BODY VC-4
149/6	SHEAR BODY VC-6
150/3 153/3	PAIR OF BLADES VC-3
150/4 153/4	PAIR OF BLADES VC-4
150/6 153/6	PAIR OF BLADES VC-6
152	SHEAR LEVER
154/3	SHEAR CAM PIVOT VC-3
154/4	SHEAR CAM PIVOT VC-4
154/6	SHEAR CAM PIVOT VC-6
155	TRANSFORMER 24V
156	CARRIAGE SLIDING BALLS + FRAME
157	FUSE
158	PIVOT
159	THREADED PIVOT
160	NYLON NUTS (PAIR)
161/3	ELASTIC BAND VC-3 (PAIR)
161/4	ELASTIC BAND VC-4 (PAIR)
161/6	ELASTIC BAND VC-6 (PAIR)
162	POWER INDICATOR LIGHT