INSTRUCTIONS MANUAL
PV-350
(1219291)

CE

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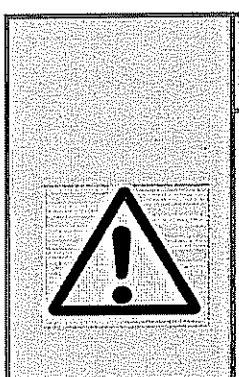
Vendedor / Seller / Vendeur:

TECHNICAL MANUAL

PV 350
PACKAGING MACHINE

WARNING

THE SAFETY OF THE PEOPLE INVOLVED IN OPERATING INDUSTRIAL MACHINERY CAN ONLY BE ENSURED BY MEANS OF A WELL DESIGNED SAFETY PROGRAMME THAT IS, IN TURN, STRICTLY OBSERVED BY THE USERS OF THE MACHINE..



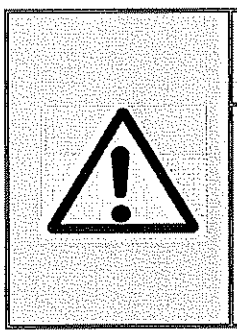
WARNING

THE SERVICING OF THE MACHINE BY QUALIFIED PERSONNEL ONLY IS EQUALLY AS IMPORTANT. ADVISORY GUIDELINES MUST ALSO BE OBSERVED TO ENSURE THAT THE STRICT SAFETY REGULATIONS THAT THIS MANUAL IS BASED ON ARE COMPLIED

SAFETY REQUIREMENTS

AND

RECOMMENDATIONS



WARNING

DO NOT ATTEMPT TO INSTALL, ADJUST OR OPERATE THE MACHINE WITHOUT FIRST READING THE CONTENTS OF THIS MANUAL. DESPITE THE FACT THAT THIS MACHINE IS FITTED WITH SAFETY GUARDS TO PROTECT USERS AND SERVICE PERSONNEL, CARE MUST BE TAKEN WHEN OPERATING, ADJUSTING AND SERVICING IT.

WARNING

THE MACHINE SHOULD BE INSPECTED CAREFULLY AFTER IT HAS BEEN UNPACKED TO CHECK IF IT HAS BEEN DAMAGED DURING TRANSPORT. IF THE MACHINE HAS BEEN DAMAGED IN ANY WAY INFORM THE HAULAGE COMPANY IMMEDIATELY AND DO NOT TOUCH IT UNTIL THE HAULAGE COMPANY AGENT HAS CARRIED OUT AN INSPECTION, WRITTEN A REPORT, ETC.

The requisite safety features have been incorporated into the design of the machine in order to eliminate the risk of accidents whilst it is being used or serviced.

Safety regulations currently in force in the EU have been observed in designing and constructing this machine.

A number of different hazard areas are referred to in this document.

It is strongly recommended that the warnings given in this document are read carefully.

SAFETY RECOMMENDATIONS

CERTAIN SMALL MODIFICATIONS MADE BY THE USER MAY INCREASE THE RISK OF DAMAGE AND/OR ACCIDENTS.

THE FOLLOWING RECOMMENDATIONS MUST BE STRICTLY OBSERVED TO ENSURE THAT THE MACHINE IS INSTALLED, OPERATED AND SERVICED SAFELY:

1) Do not attempt to start or operate the machine until all the safety notices, installation instructions, operating guide and service procedures have been read, fully understood and implemented.

2) Only qualified service personnel can carry out checks, repairs and servicing. In doing so they must follow the instructions contained in this manual and perform lockout/tagout procedures.

3) Machine operators must never put their hands or any cloths, etc. inside the machine whilst it is operating.

4) Do not put any tools, parts or other objects on top of or inside the machine.

5) Always switch the machine off at the mains before cleaning or servicing it.

6) Always keep the machine clean, lubricated, greased and in good working condition.

LOCKOUT/TAGOUT PROCEDURE

WARNING

This regulation applies to the control of energy sources whilst equipment and machinery is being repaired and/or serviced.

Objective:

This procedure sets out the minimum requirements for the lockout/ tagout of energy isolating devices. It is implemented to ensure that the machine is not connected to any potentially dangerous energy source and that it is locked out and tagged out before maintenance personnel undertake any service or repair work.

Liability:

The corresponding personnel (maintenance and start-up technicians) must be trained in the safety aspects of the lockout procedure. Any technicians that have recently been appointed or hired to carry out such operations must first have received the appropriate training.

Lockout/tagout procedure: preparatory steps:

Identify all the mechanisms and energy sources (switches, valves, etc.) so that they can be easily located when undertaking lockout/ tagout procedures:

1) **Electrical control boxes**: Cut the electricity supply and remove fuses.

2) **Compressed air system**: This must also be disconnected.

3) **Place a tag on the machine** stating that it is not connected to the power supply and is currently out of use.

Lockout/tagout procedure: sequence:

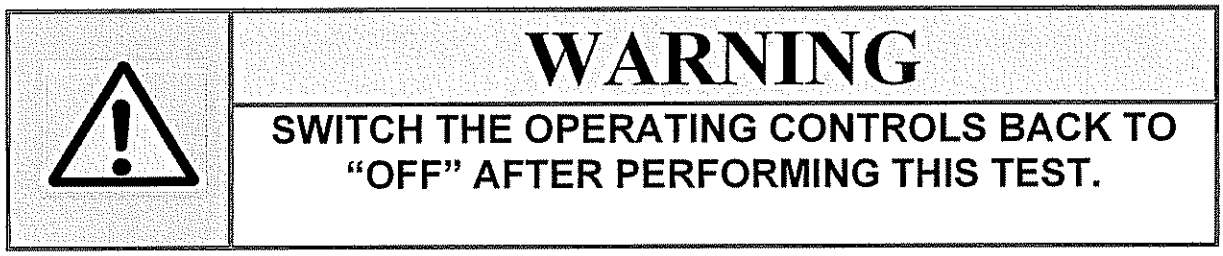
1. Inform all personnel involved that a lockout/tagout procedure is being carried out and the reasons why.

2. Stop the machine by following the usual disconnection procedure.

3. Deactivate the switch and the compressed air system and unplug the machine at the mains.

4. Lock out and tag out the energy isolating devices, assigning a lock or tag to each one. When deactivating a switch, tag and/or lock it. Plugs should also be tagged after being disconnected.

5. After checking that there are no people within close proximity of the machine, and as a means of checking that the power supply has been disconnected, press the start button or other controls to check that the machine does not start.



6. Once the procedures described in the previous sections have been carried out the machine will be locked out and tagged out.

Returning the machine to normal operating mode

1. Once the machine has been repaired, serviced, cleaned or other procedures have been performed, and once it has been checked to ensure it is ready to operate, inspect the area around the machine to ensure there is no one within close proximity of it.

2. Once all the machine tools have been removed, the guards have been repositioned and the technicians and other personnel are at a safe distance, remove the locks and tags, reactivate the fuses and operate the energy isolating devices to restore the electricity supply to the machine.

Steps to be taken if more than one person is involved in the procedure

If more than one person is involved in the procedures described in the sections above, each technician shall lock out and tag out energy isolating devices. Service personnel shall use multiple locks.

When an electrician and a mechanic work together both of them must lock out and tag out and no one, apart from the people placing the tag, can remove it. The machine must not be connected to the power supply while a tag is in place.

Basic guidelines for lockout/tagout procedures

All machines must be locked out and tagged out to prevent the machine starting accidentally or inadvertently and to prevent any possible accidents or damage.

Do not attempt to operate any switch, valve or other energy isolating devices whilst they are locked out and tagged out.

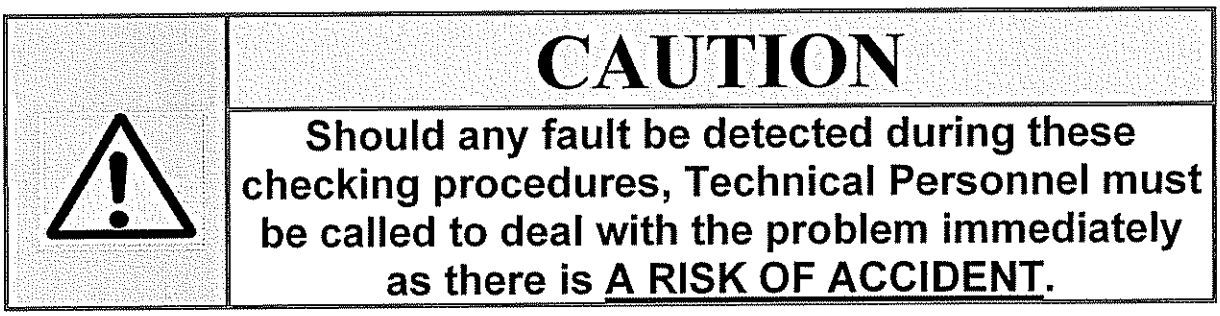
NOISE LEVEL

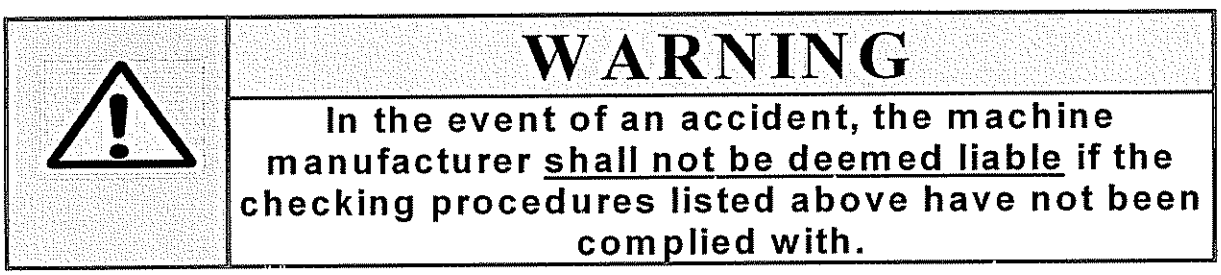
Continuous noise levels in the workplace must not exceed a Time Weighted Average of 70 dBA.

(VERY IMPORTANT)

The following checks should be carried out every week:

- Main switch in proper working order.
- Emergency stop push button in proper working order.
- Micro-sensors on the upper, side, and cleaning safety guards in proper working order.
- Check to ensure that the guards prevent arms and hands from coming into contact with danger areas while the machine is operating.
- Check to ensure that the guards are properly secured to the machine and do not present any danger for users.
- Check to ensure that the electrical control box, push button and inspection box covers are all properly closed.





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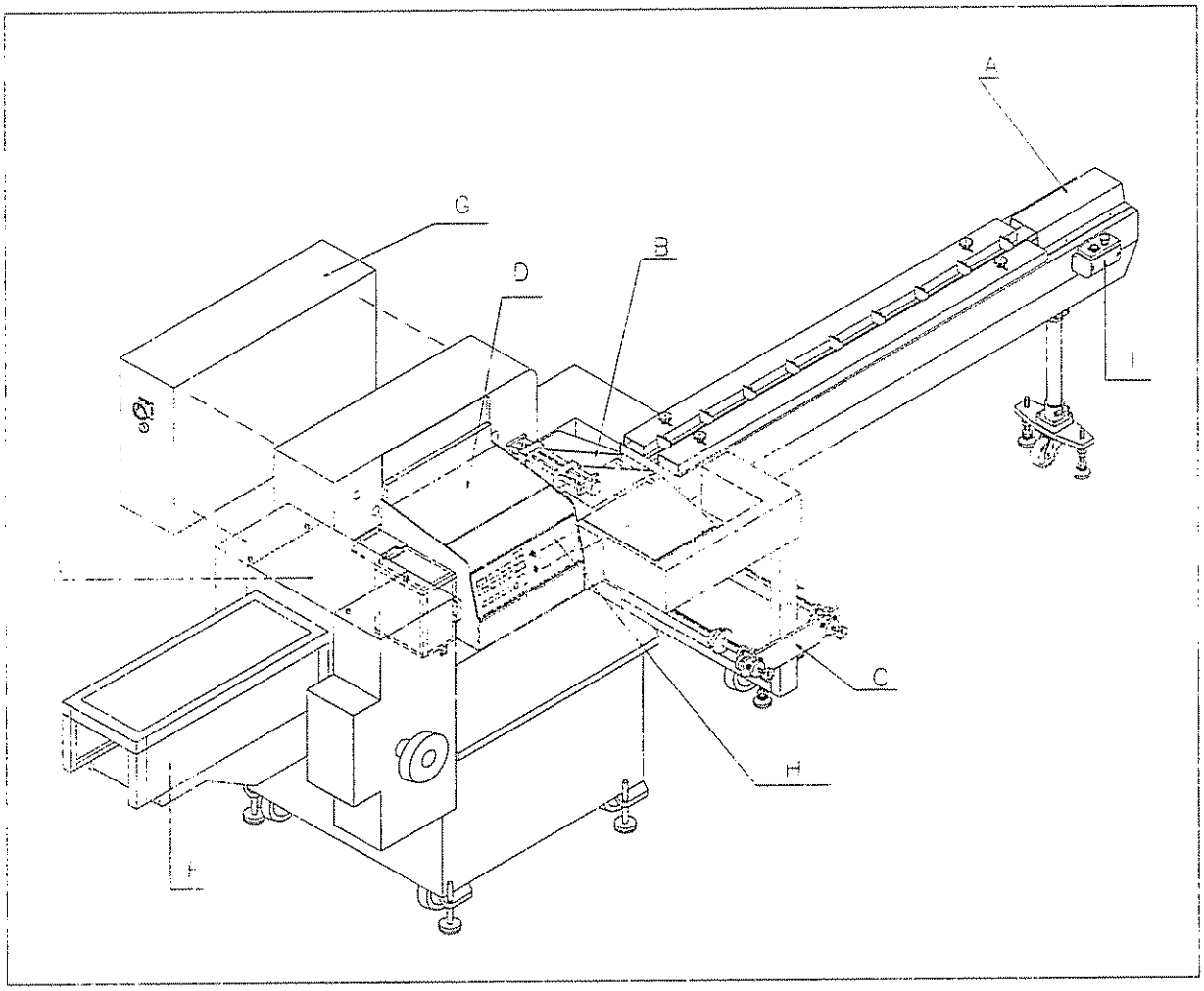
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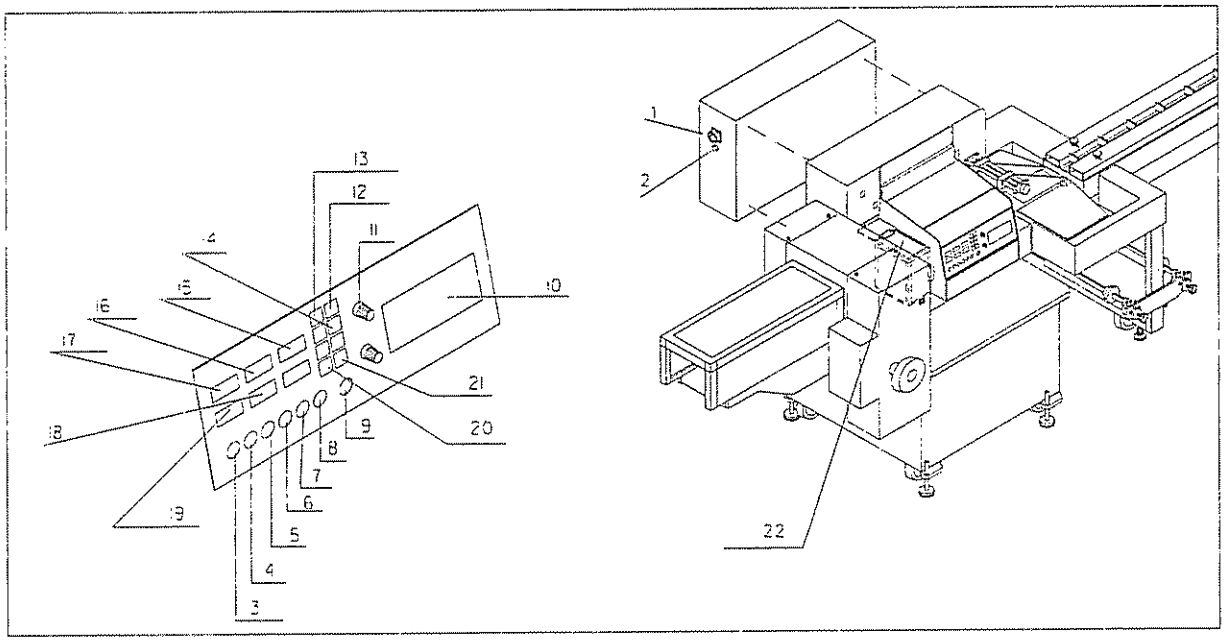
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1. INTRODUCTION TO OPERATION

PV-350 wrapping machine has been designed to automatically wrap a wide range of pruducts.

GENERAL

The machine has been manufactured on the basis of a stainless steel structure on wheels which allow it to be moved around.

On this structure, there is a horizontal plate where you can find all the main operating units, depending on the model.

Strongly joined to the structure you can find a chart to put all the products that you wish to wrap. Also strongly joined to the structure there is the raising system of the longitudinal welding group.

The structure has an SP HEAD on one of its sides, where the cross welding system and the output conveyor are installed.

A. Supply chart

B. Mould

C. Coil system

D. Longitudinal welding

E. Cross welding head

F. Product output system

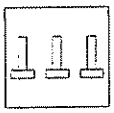
G. Electrical cupboard

H. Control panel

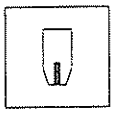
I. Control buttons

1.- General Switch
2.- Tension indicator
3.- Intermittent / continual selector (optional)
4.- First cutting control
5.- Manual / Autom. Work Selector
6.- START push button
7.- STOP push button
8.- First roll couple open
9.- Emergency stop
10.- Screen
11.- Potentiometer (speed control)
12.- Clamp temperature regulation activating button.
13.- Welding roll temperature regulation activating button
14.- OPTIONAL
15.- First roll couple temperature regulator (optional)
16.- Second roll couple temperature regulator
17.- Third roll couple temperature regulator (optional)
18.- Lower clamp temperature regulator
19.- Upper clamp temperature regulator
20.- Welding roll head raising
21.- Welding roll head descent
22.- Clamp input guard

1.1 SWITCH ACTIVATING CONTROLS



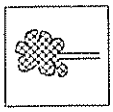
→ Longitudinal welding temperature regulator control



→ Cross welding temperature regulator control

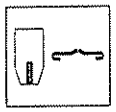
→ Longitudinal welding head raising control

→ Longitudinal welding head descent control

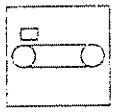


→ Gas injection control (OPTIONAL)

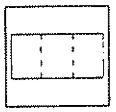
→ Spot correction control (OPTIONAL)



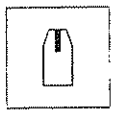
→ Eurolock temperature regulator control (OPTIONAL)



→ Presence in the chart control (OPTIONAL)



→ Pre-cutting control (OPTIONAL)



→ Lower clump cross welding temperature regulation ccontrol (OPTIONAL)

2. MACHINE INSTALLATION

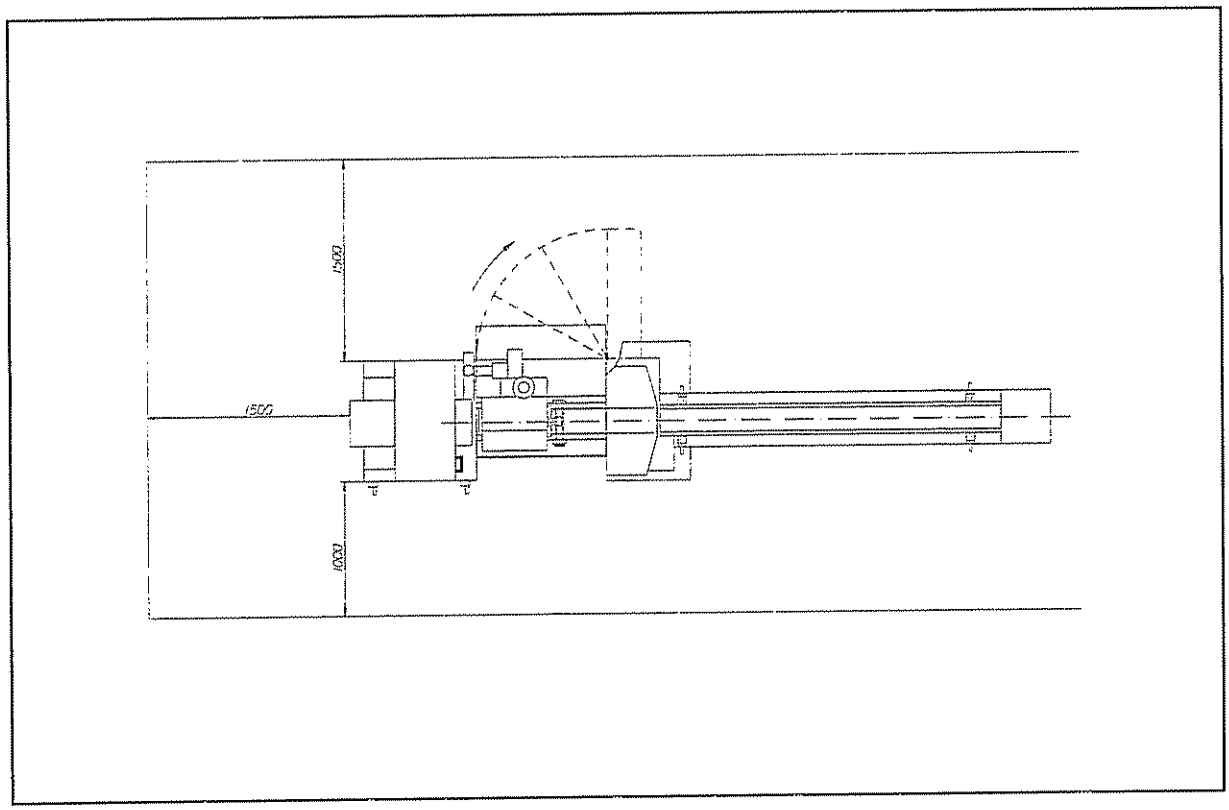
2.1 LOCATION

The machine must be located in order to provide an easy access to all its parts.

At the front, there must be at least 1 metre of free space and at the back 1.5 metres to provide access for maintenance.

A 1.5 metre space will be necessary for the output of products or for the optional connection of an output conveyor.

The supply area of the machine must be free of obstacles in order to permit an easy supply of products.



2.2 BALANCE

For the correct operation of the machine, it must be located on a horizontal surface in order to reduce vibrations to a minimum.

3. VERIFICATIONS PREVIOUS TO CONNECTION

3.1 ELECTRICAL SUPPLY

Always check that the supply tension corresponds to the machine characteristics (see characteristic plate).

Always check the existence of NEUTRAL and EARTH in the supply if you connect at 380 V. If connection is made at 220 V, NEUTRAL will not be used.

Tension maximum tolerance is 10 %.

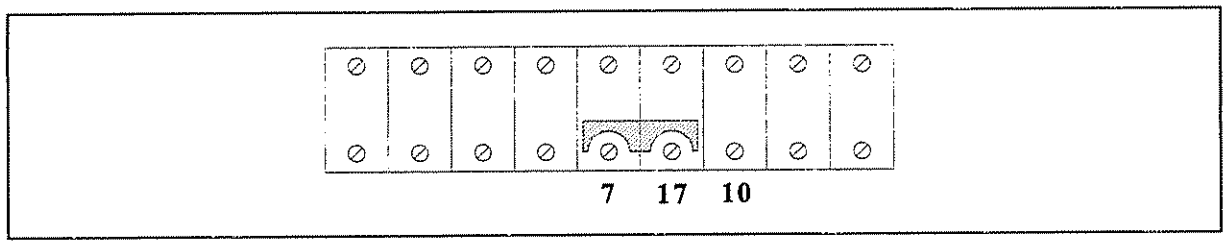
3.2 MACHINE SUPPLY

The machine has a 4 x 2,5 + T, hose for 220 and 380 V.
The total absorbed power is 3 Kw.

For the different supply tensions (three-phase, 200 or 380 V), the connection to the terminals must be made as follows:

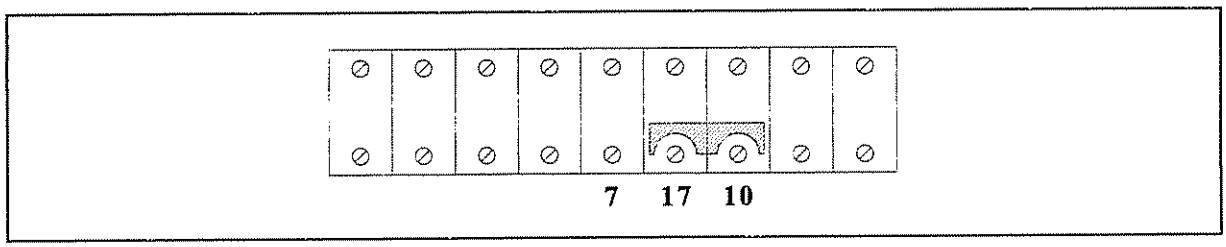
- 220 V.

Terminal connection: Connect terminal nb 7 to nb. 17.



- 380 V.

Terminal connection: Connect terminal nb. 10 to nb. 17.



NOTE: No change has to be made in the main engine.
THE NECESSARY CHANGES MUST BE MADE BY TECHNICAL SERVICE PERSONNEL.

3.3 CONTROL PANEL SUPPLY

Verify that the tension indicator (2) shines after you operate the main switch (1).

3.4 SPINNING SENSE OF THE MAIN ENGINE

In order to determine the correct spinning sense of the main engine you must follow the steps:

1º- Verify that the security guard (22) is closed.
All the guards and doors in the machine must be closed

2º- Disconnect the emergency STOP (9).

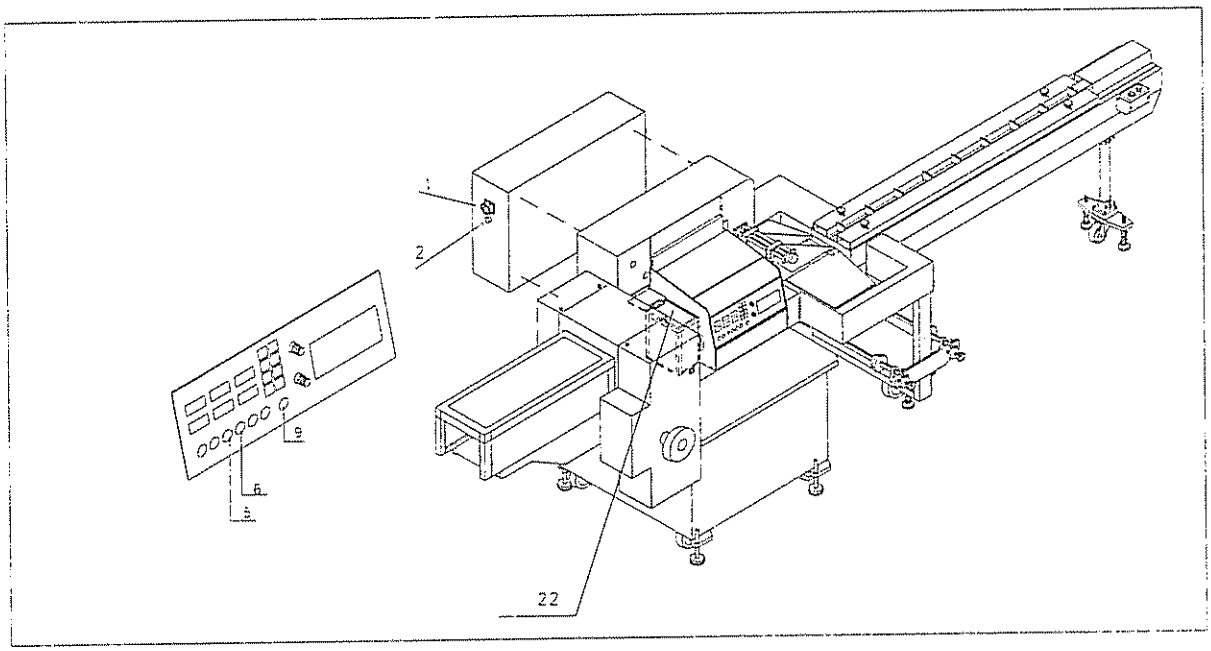
3º- Operate the main switch (1).

4º- Select the intermittent mode with the BUTTON or Selector (5).

5º- Operate the START push button (6).

6º- Verify that the conveyor or supply chart shovel and longitudinal welding head conveyor move towards the mould input and the cross cutting head, respectively.

7º- In they are not moving in the correct sense, disconnect the machine through the main switch (1) and change two phases in the tension connection of the machine.
(See Section 3.2.)

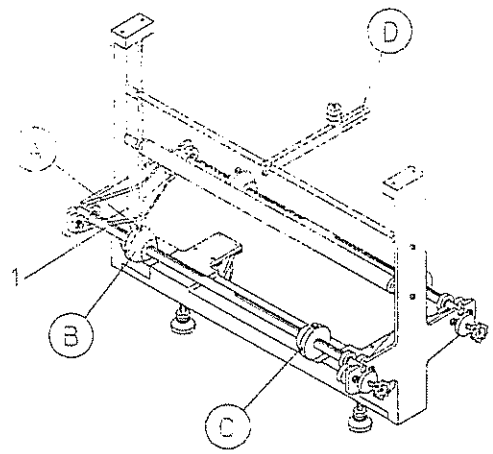


4. OPERATION OF THE MACHINE

4.1 FILM COIL INSERTION

The machine has two axes to support the coils so that it allows to work with films that have different widths and so to cover a wide range of products to wrap.

To place the coil, please follow this process:



1º- Remove the coil support axe (1) and place it on a manipulation table.

2º- Loosen the screw (A), until the cone is free from its support axe.

3º- Remove the cone (B) by moving the former coil pipe.

4º- Place in the new coil, taking into account its winding sense. (If the width of the voil has been modified, the cone C will have to be moved to the necessary height.

5º- Insert the cone (B) until it fits in the coil pipe. Tighten the crew to fix the position.

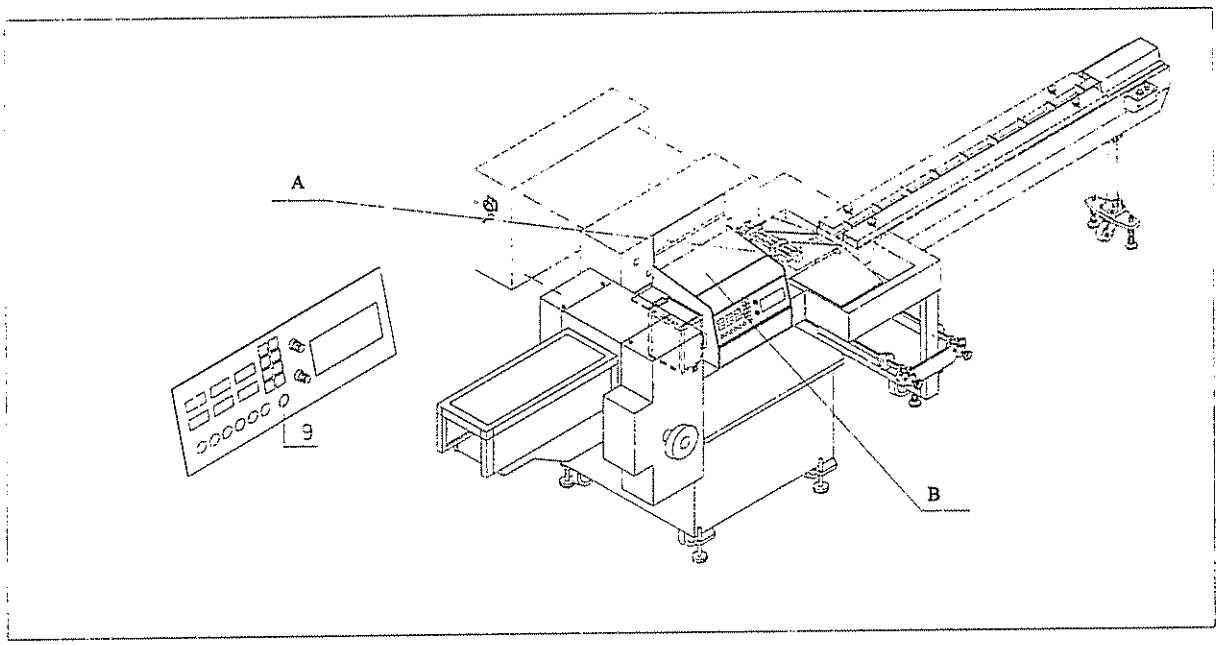
6º- Raise the brake (D) and place the coil support axe with the new coil in its support.

4.2 INSERTION OF FILM IN THE MOULD

In order to insert the film in the mould, please follow this process:

1º: Verify that the film is correctly placed in the coil support.

2º: Wind the film slightly and introduce it through the winding rolls until the mould.



3º: Open the roll couple (A) throuth the pneumatic control (9), introduce the film and close it back again.

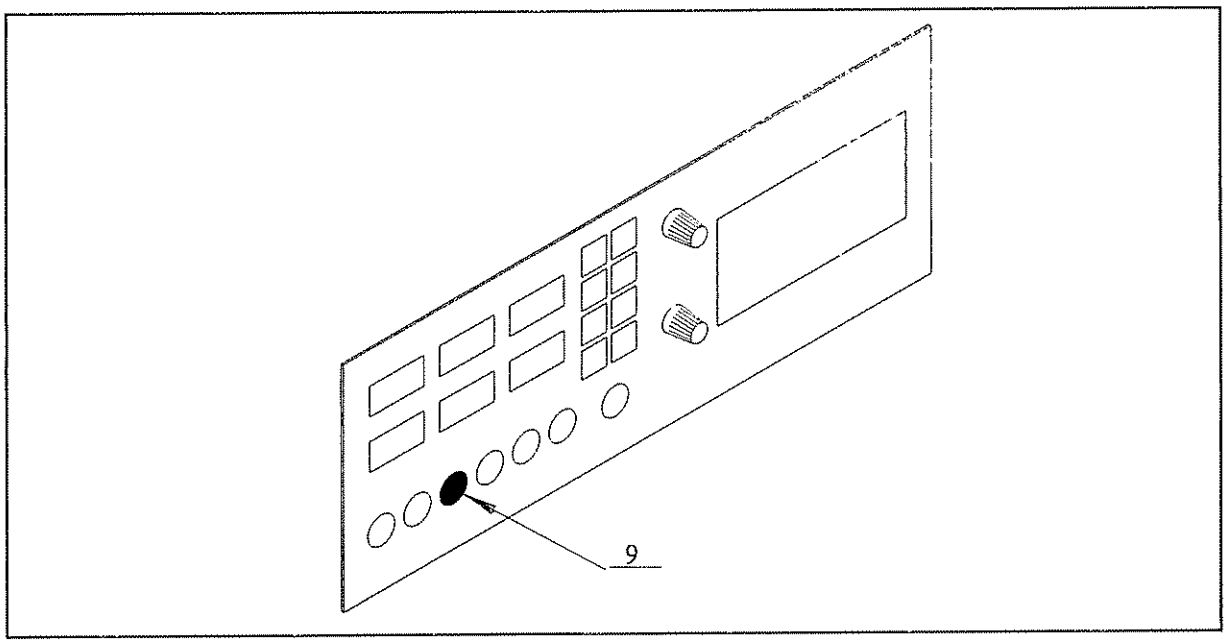
4º: The intermediate welding rolls (B) will close automatically when the machine begins to work.

4.3 FUCTIONS OF THE CONTROLS

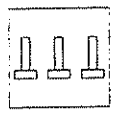
4.3.1 MANUAL / AUTOMATIC CONTROL (5)

If you turn the control to its  , the machine works in a continual mode when the START button is pushed (provided there is a product on the supply conveyor).

If you turn the control to its step-by-step position  , the machine works in an intermittent mode (it only works while the START button is pressed). This position is used for beginning of new cycle or coil changes.



4.3.2 LONGITUDINAL WELDING TEMPERATURE CONTROL AND REGULATOR

If you operate this control  the longitudinal welding resistors heat the welding rolls. Some time will pass before the welding rolls reach the regulator temperature.

- <u>Temperature regulator</u>

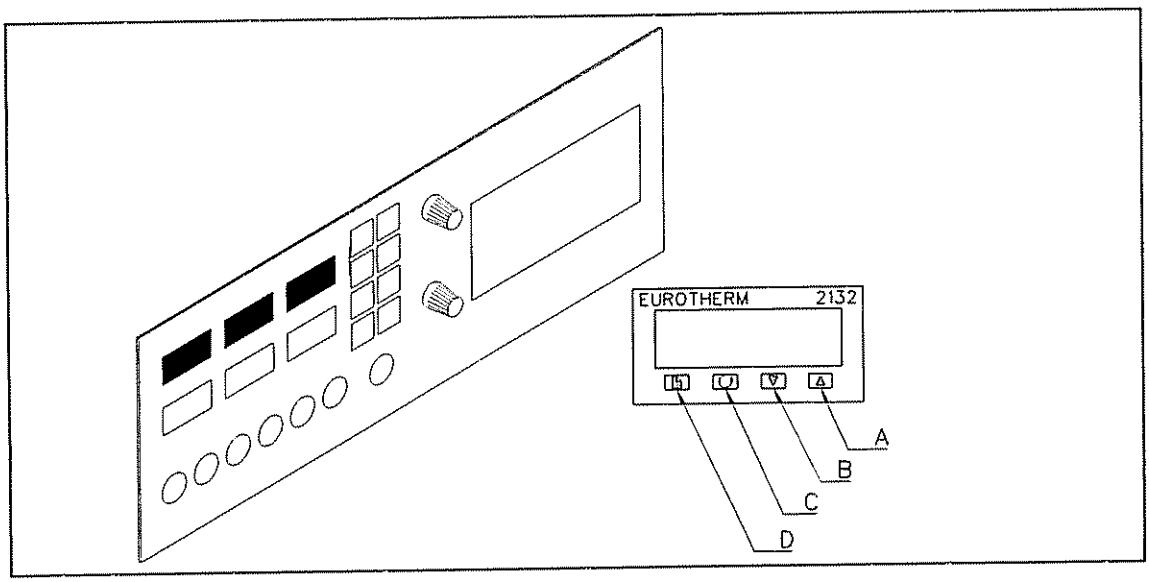
It keeps the programmed temperature in the welding rolls necessary to make the sealing.

The selection of temperature must be varied depending on type of film used and machine speed.

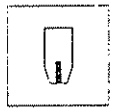
Operation:

To select a certain temperature, press once the A or B keys and then press again and keep pressed so that the regulator changes the value (upwards or downwards).
The selected value will be stored in the memory and the regulator will show the real temperature value (once the value of the real temperature is stable, it will equal the selected value) If you only wish to see the selected temperature, press once the A or B keys.

IMPORTANT: You must never press C or D keys.



4.3.3 CROSS WELDING TEMPERATURE CONTROL AND REGULATOR

If you operate this control  The cross welding resistor in the upper clamp

And if you operate this  control, the cross welding resistor in the lower clamp will heat the clamps. Some time will pass until the clamps reach the regulator temperature.

NOTE: The temperature regulation in the lower clamp is OPTIONAL.

- <u>Temperature regulator</u>

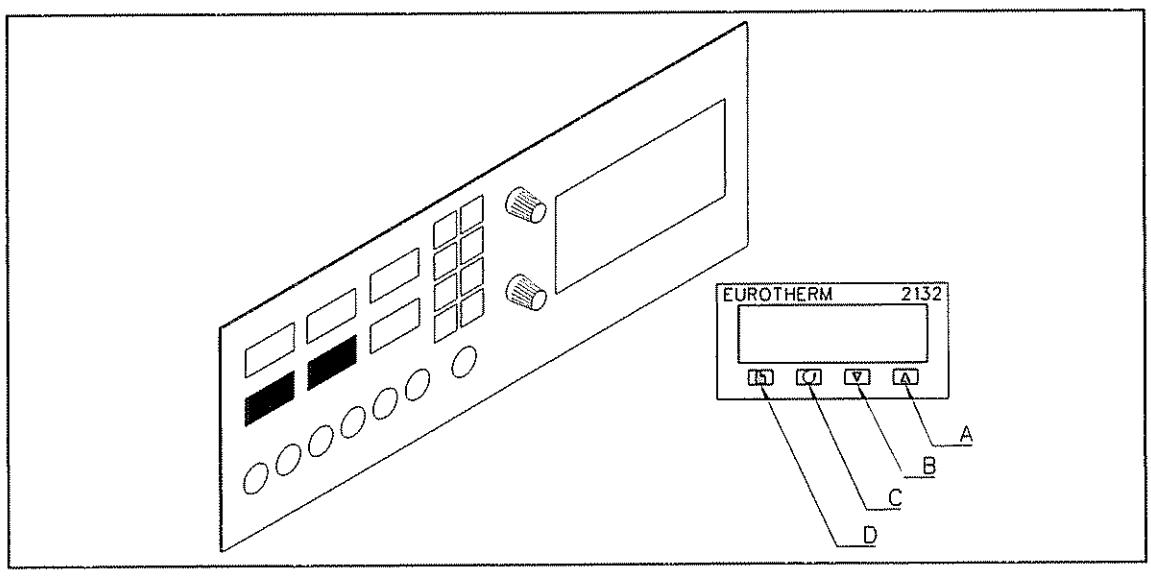
It keeps the programmed cross welding clamp temperature necessary to make the sealing.

The selection of temperature must be varied depending on type of film used and machine speed.

Operation:

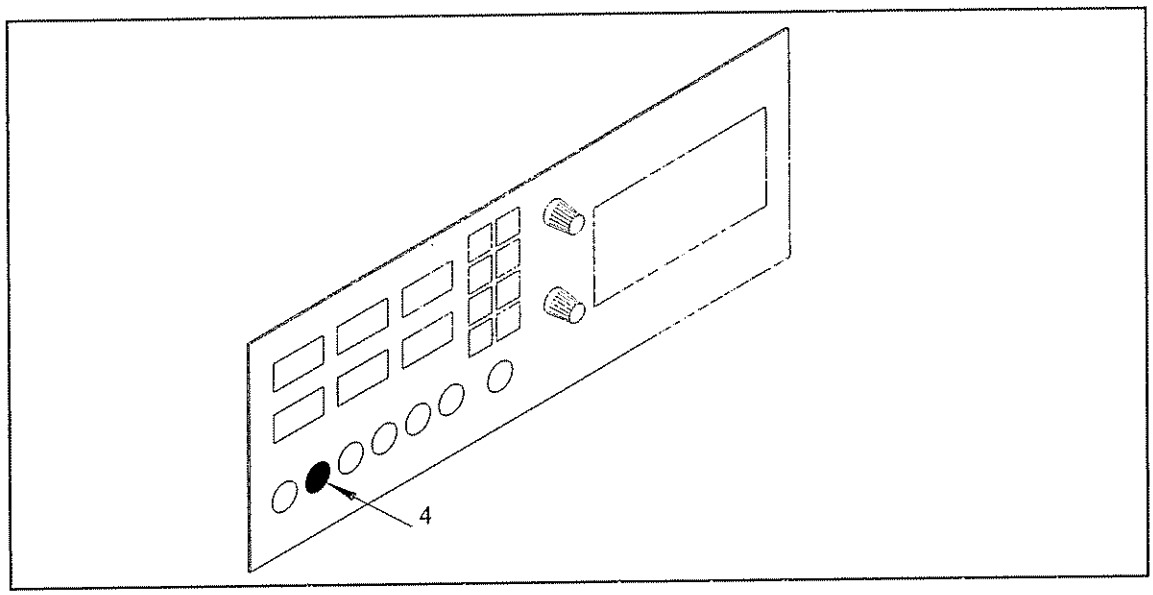
To select a certain temperature, press once the A or B keys and then press again and keep pressed so that the regulator changes the value (upwards or downwards).
The selected value will be stored in the memory and the regulator will show the real temperature calue (once the value of the real temperature is stable, it will equal the selected value). If you only wish to see the selected temperature, press once the A or B keys.

IMPORTANT: You must never press C or D keys.



4.3.4 FIRST CUTTING CONTROL.

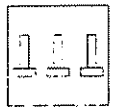
In order to cut and close the bag when you start a new wrapping cycle, you have a control to activate the clamps to make the sealing and cutting (4). In some of the models, this first cutting control is **OPTIONAL.**

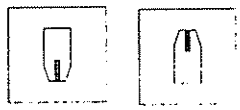


5. PRODUCTION

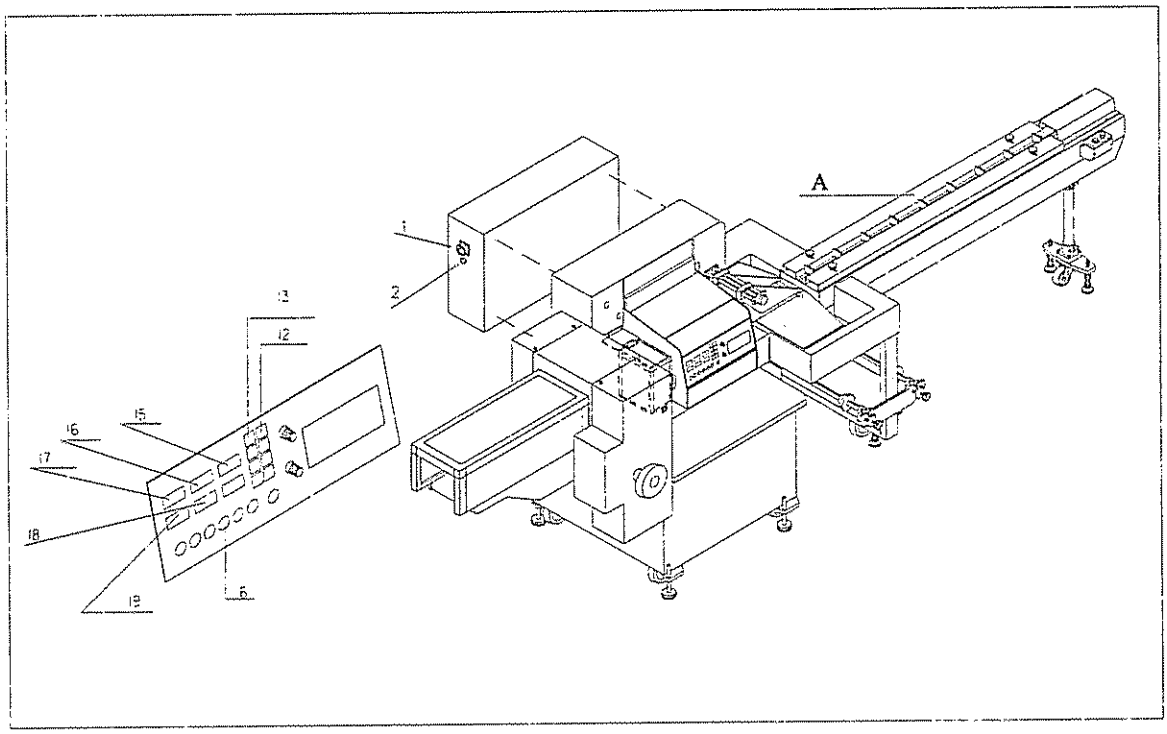
To put the machine in operation mode, you must follow these steps:

- Operate the main switch (1).
- Operate the regulation controls for the longitudinal welding (12) and cross welding (13) temperature egulation. The lower clamp regulation control is optional.





- Place the film according to the description in section 4.2.
- Wait some time until the temperature regulators (15), (16) (17), (18) and (19) reach the selected value.
  NOTE: Some of these regulators can be OPTIONAL depending on the machine model.
- Place the product in the supply chart. The chart can have shovels or a conveyor (A).
- Activate the START pusher button (6).



6. ADJUSTMENTS

6.1 SUPPLY CHART ADJUSTMENT

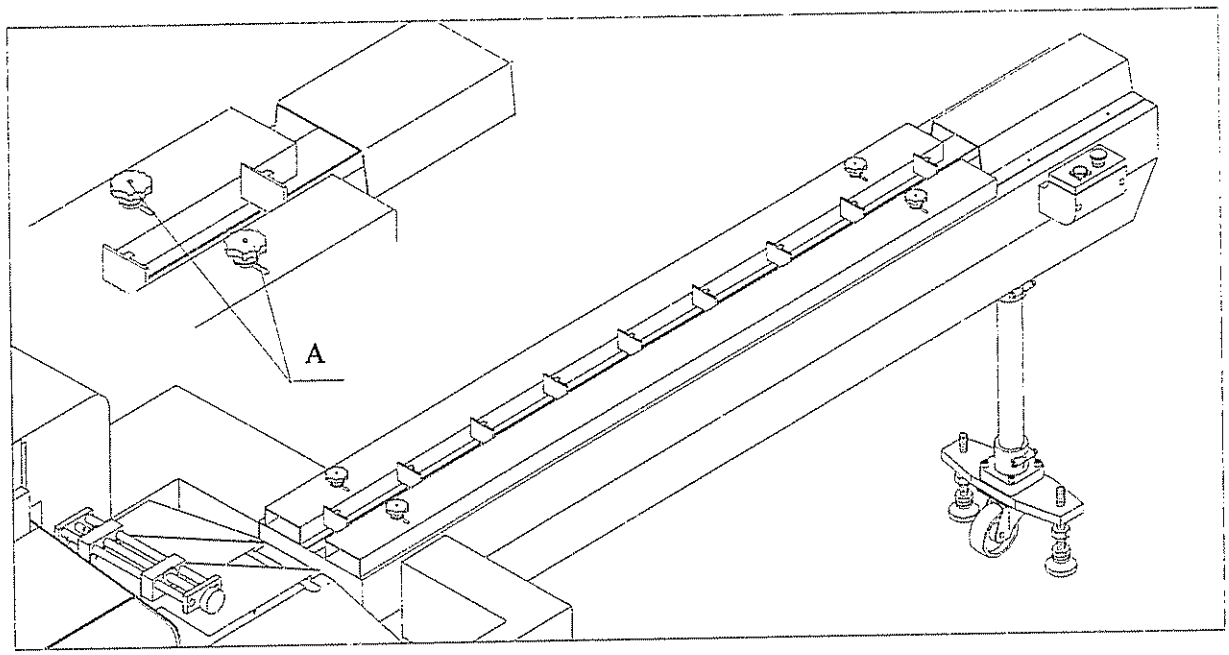
A) Side guide adjustment

When the width of the product to be wrapped varies, you need to adjust the distance between the side guides of the product in the supply chart.

- After having placed some products in the chart, loosen the wheels (A) and adjust the side guides to the dimensions of the product so that the product can be guided and freely transported to the mould.

- Verify that the guides are aligned with respect to the product input sides of the mould and then tighten the wheels (A).

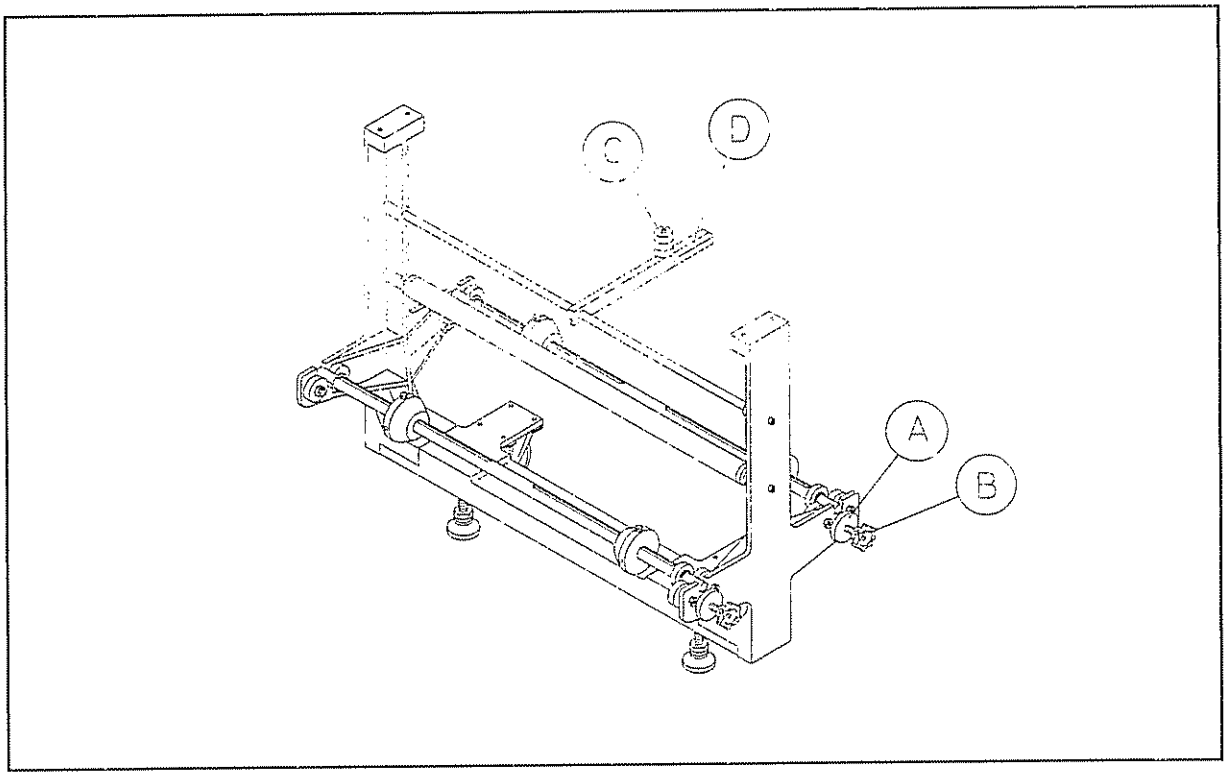
NOTE: You must adjust the mould because of the product width variation (see section 6.3).



6.2 COIL SUPPORT ADJUSTMENT

A) Film centring

It is important to centre the coil in order to prevent it from coming off the mould when the machine is in production.



This regulation is made in the coil support, located under the supply chart, by turning the wheel (B) and the nut (A) to the right or to the left depending on the sense of the movement required.

B) Coil support axe brake

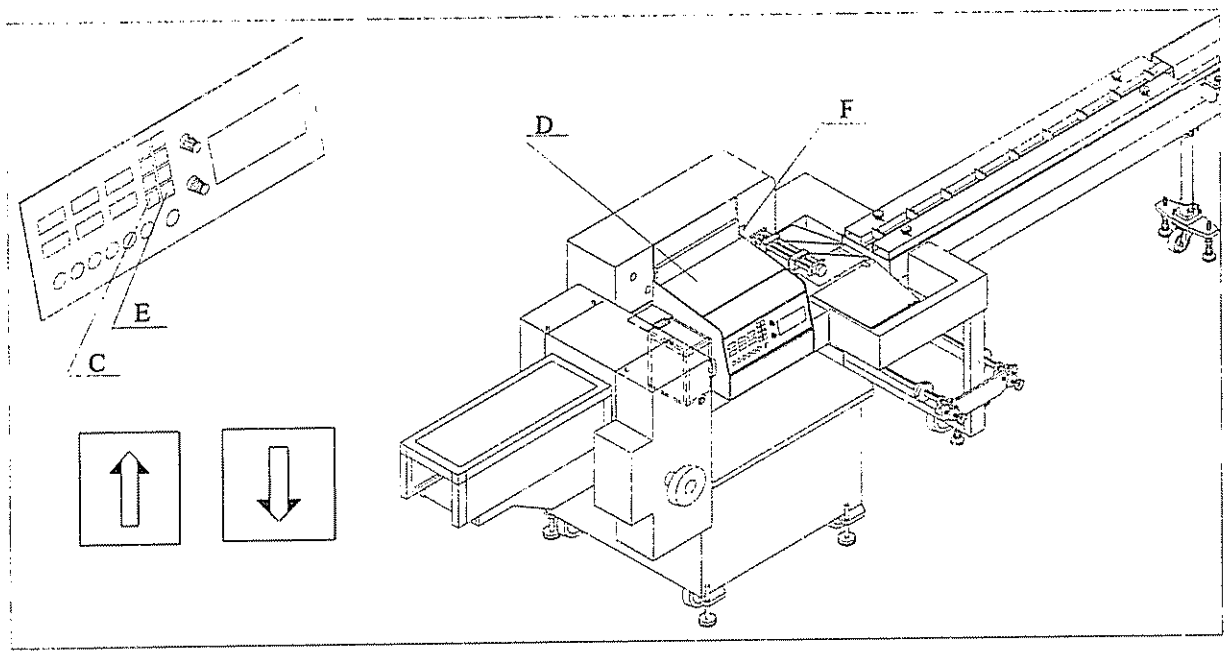
It is necessary for the correct winding of the film. Lever D brakes the coil depending on its diameter. The bigger the diameter, the stronger the braking force.

The braking force can be regulated by means of counterweights (C) in the brake lever (D).

6.3 LONGITUDINAL WELDING AND DRAGGING ROLL PRESSURE ADJUSTMENT.

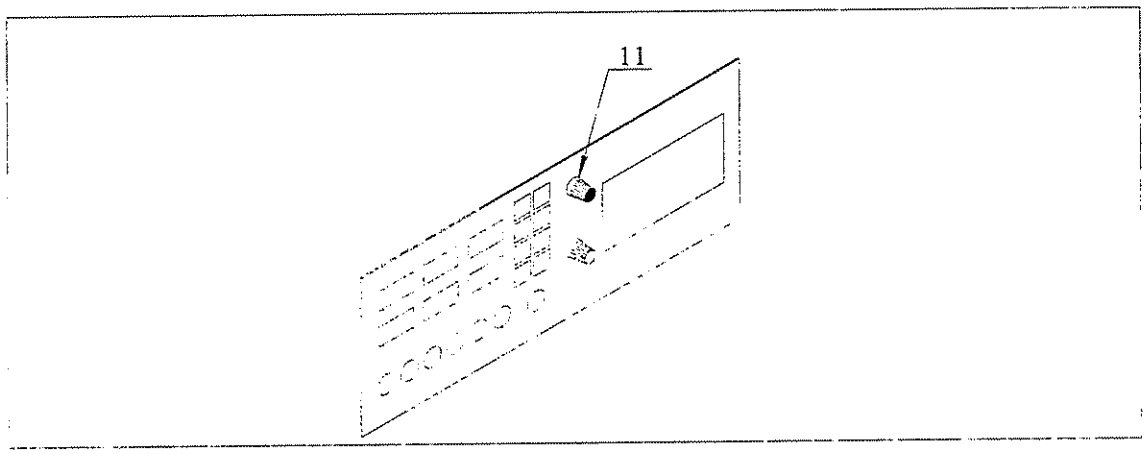
It is necessary when the height of the product to be wrapped varies. You must vary the height of the welding and dragging rolls (D), (longitudinal welding).

This operation will be made trough the (C) and (E) controls panel. The displacement is measured by means of a graduated ruler located on one side of the head (F). The displacement values for each product are specified in the technical sheet of the machine.



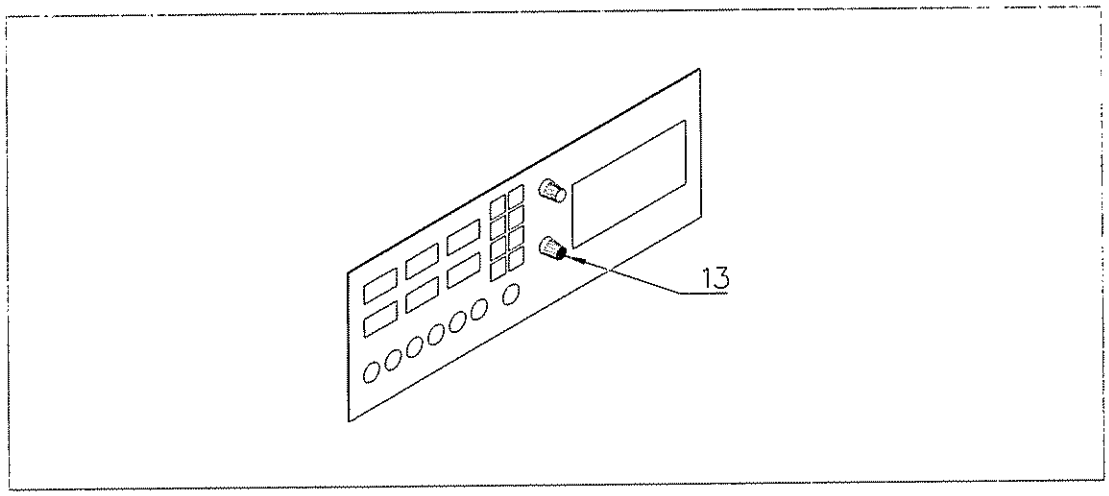
6.4 PRODUCTION SPEED ADJUSTMENT

It is possible to vary the production speed of the machine by turning the potentiometer located in the control panel (11).



6.5 CHART SPEED ADJUSTMENT (OPTIONAL)

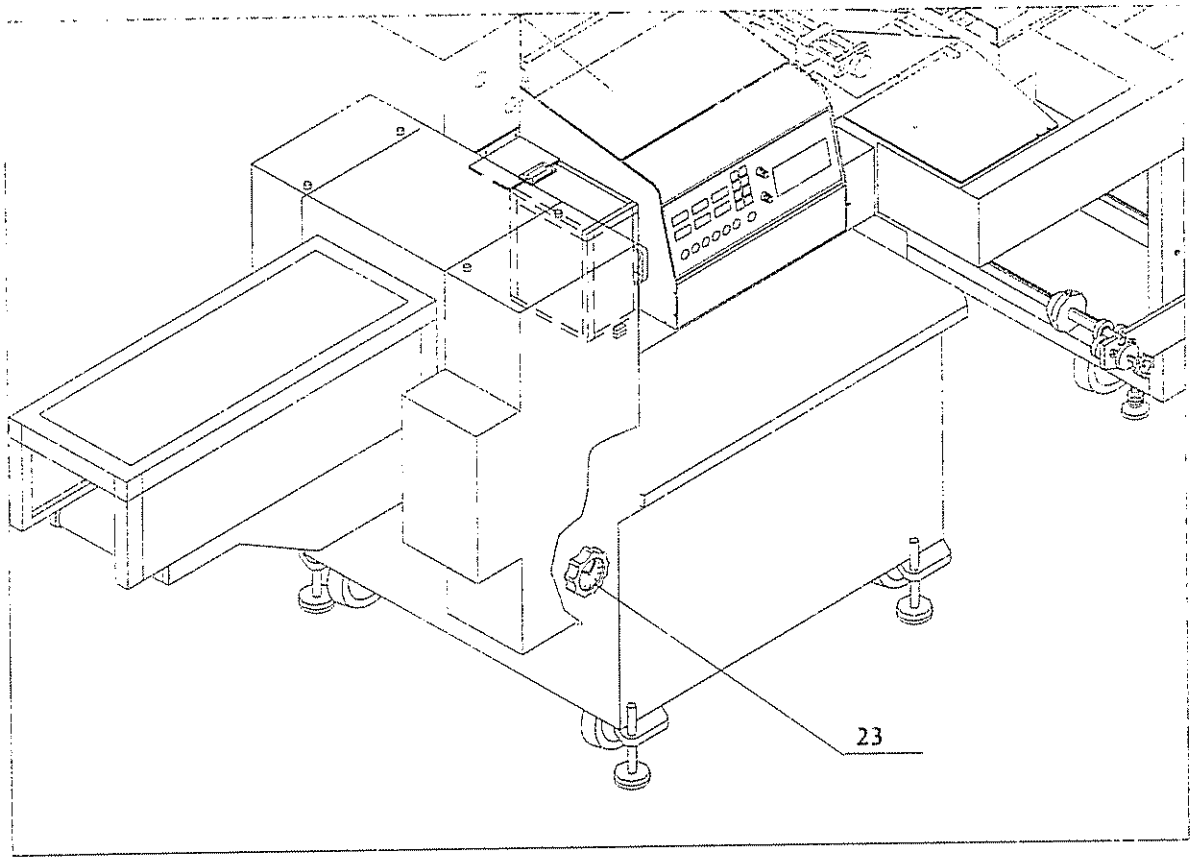
In some applications, like freezing, the supply chart does not need to be starting and stopping depending on the distance between products. In these cases, a potentiometer (13) is added to adjust the supply chart speed so that this is working continuously.



6.6 CROSS CUTTING AND WELDING CLAMP SPEED ADJUSTMENT

By means of this adjustment, you can modify the spinning speed of the clamps in the cutting and welding point in order to avoid them to brake ot pull the film when sealing (welding) or cutting.

By turning the wheel (23) clockwise (verify that this reduces the head speed), you can reduce the clamp speed and so the film is slowed down. If you turn the wheel counterclockwise, you will increase the clamp speed (verify that this increases the head speed).



6.7 CROSS CUTTING AND WELDING CLAMP HEIGHT ADJUSTMENT

The blades on the cross cutting clamps are there to divide the products by unit.

When the cutting is not correct, and after verification that the regulator temperature is correct, you must do the following:

Increase the pressure on the springs by turning of a whole turn the nuts (A),always keeping the working temperature. If after this operation the cutting is still not happening, the cutting blade must be adjusted:

1.- Put the nuts back to their former position (A).

2.- Put the clamps in their cutting position through the intermittent control on the control panel.

3.- Loosen the screws (B).

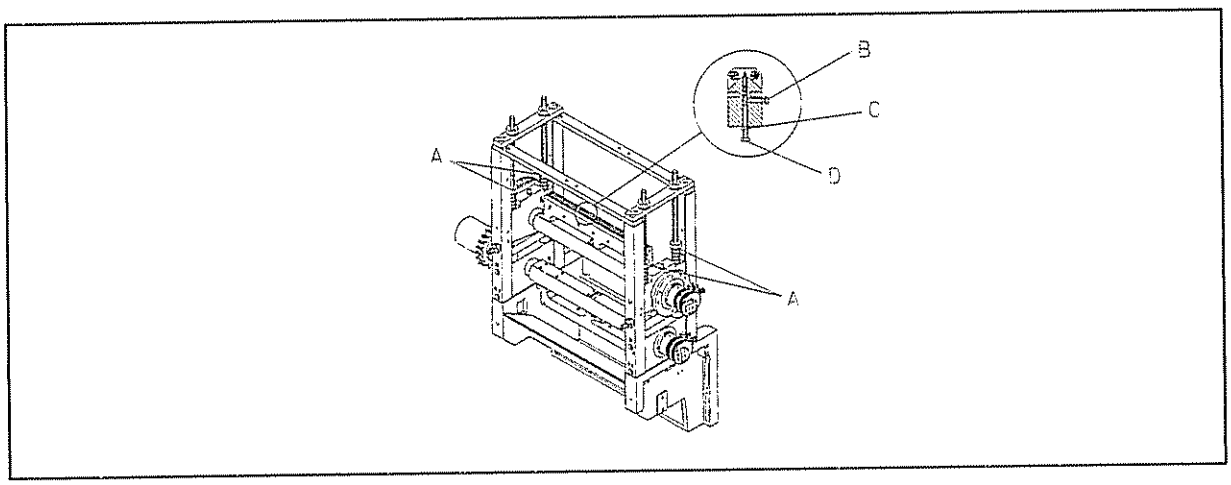
4.- Loosen the counternuts (C) tun the screws (D) 1/4 of a turn clockwise and tighten the counternuts (C); then tighten the screws (B).

5.- Verify that the cutting is uniform after this operation.

6.- If you cannot get a proper cutting, start the process again from point 2.

NOTE: - THESE OPERATIONS MUST BE MADE BY SPECIALIZED PERSONNEL

- ANY EXCESS IN THE ADJUSTMENT CAN DAMAGE THE ELLIPTICAL SYSTEM OF THE MACHINE.



6.8 WRAPPING MATERIAL LENGTH ADJUSTMENT

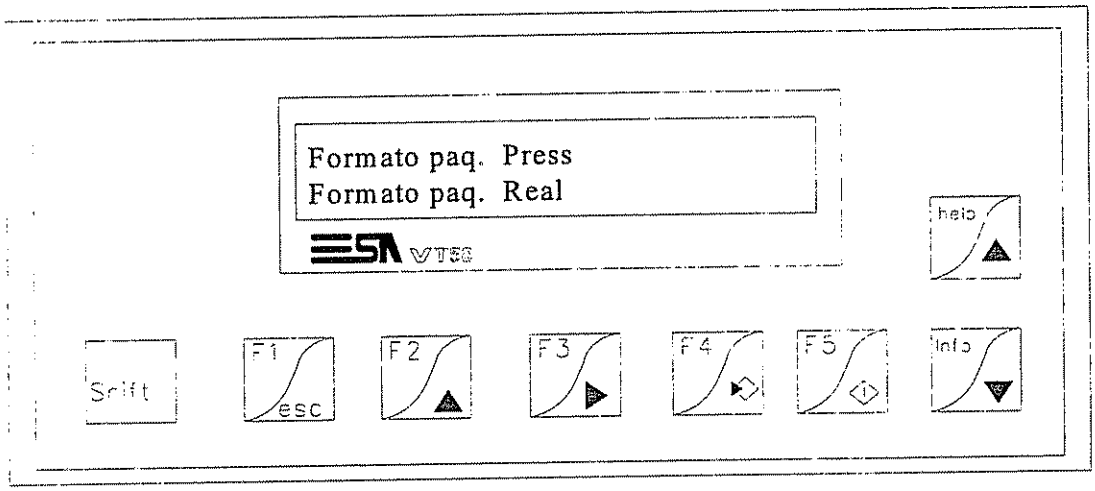
The format length will be varied through the display parameter:

FORMAT OF THE PARCEL.

It is used to adjust the bag size in which the product will be wrapped. It adjusts the connection between the chart engine and the main engine (that pulls the paper).

A 1000 connection represents a ratio of 1:1

In order to change the data for each type of product to be wrapped, you must follow the steps indicated in the DISPLAY OPERATING ESA Vt. 50. You must go to the MENU MODE and then follow the steps in that section relating to the " *Modification of a parameter value* ".

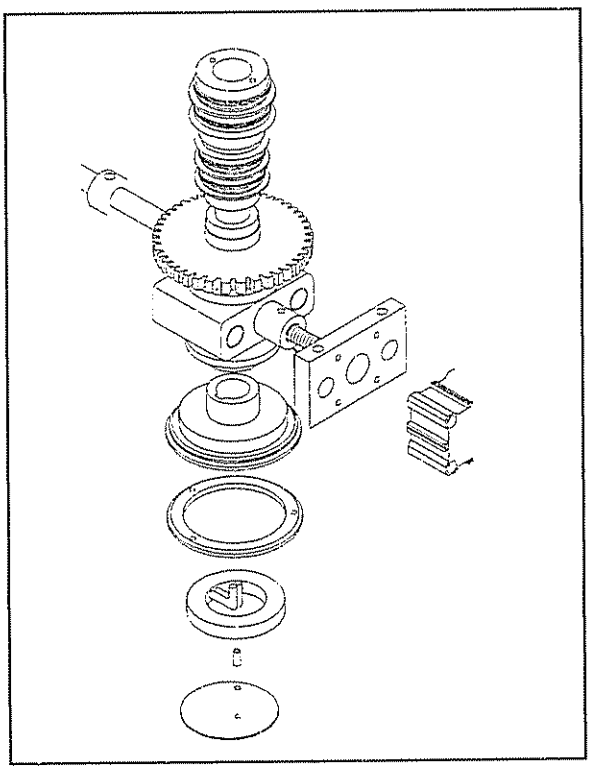


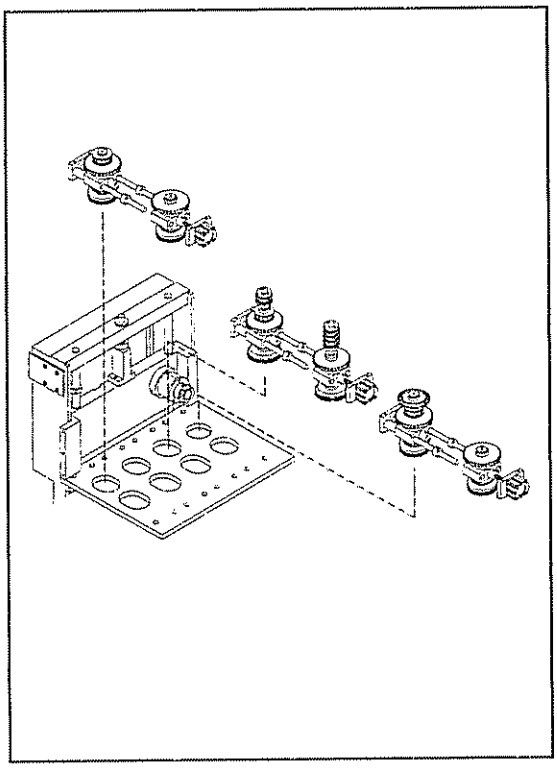
7. REPLACEMENTS

7.1 LONGITUDINAL WELDING RESISTOR REPLACEMENT

In order to replace the longitudinal welding resistor you must do the following:

- Disconnect the machine through the main switch.
- Raise the head to the maximum through the panel control button (section 6.3.).
- Loosen the protection plate clamping screws and remove the plate.
- Loosen the resistor terminals located in the connection strip.
- Loosen the resistor protection clamping screws and remove the top.
- Substitute the resistor and follow the abovementioned process inversely.

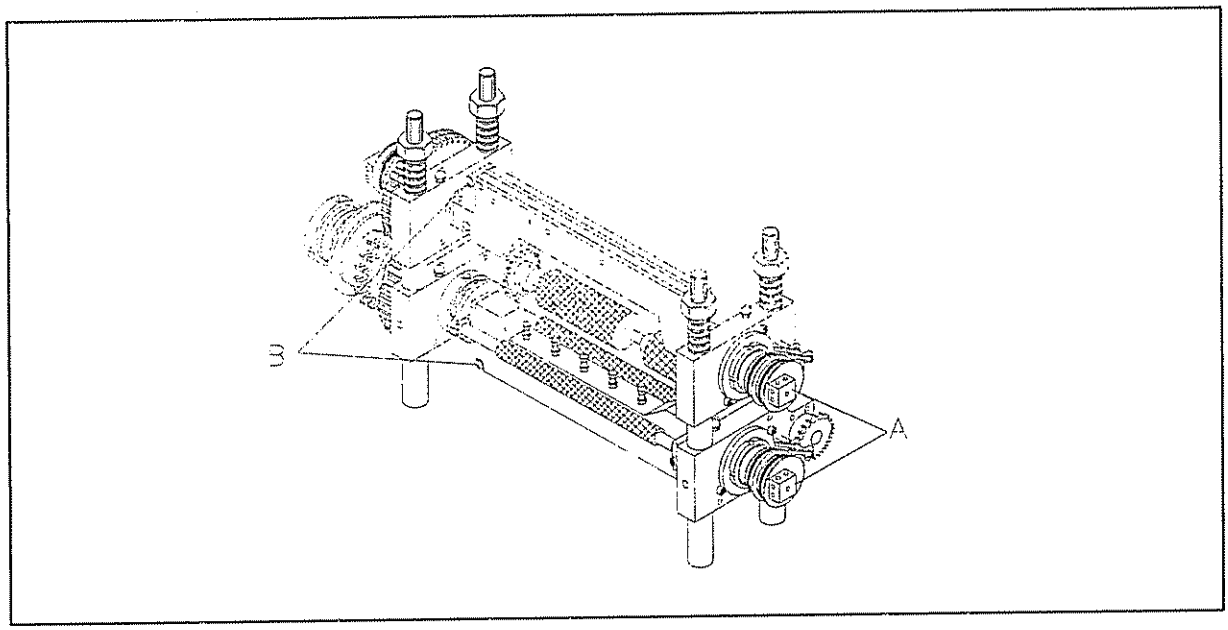




7.2 CROSS WELDING RESISTOR REPLACEMENT

Disconnect the machine and loosen the clamping strip A terminals. Loosen the isolator B and push the resistors with a rod to remove them.

Follow the inverse process to insert the new resistor.



8. MACHINE PROTECION AND SECURITY

8.1 DIFFERENTIAL

It is a protection against possible earth derivations of the machine.

8.2 THERMICAL PROTECTION (OF THE FREQUENCE VARIATOR)

It is used to protect the main engine and the chart against overintensities.

8.3 PROTECTIONS.

20 A QF-3 magnetothermic:	Protects the main engine supply.
8 A QF-4 magnetothermic:	Protects the chart engine supply.
10 A FU-2 fuse:	Protects the cross welding and cutting clamp resistor circuit.
4 A FU-3 fuse:	Protects the longitudinal welding resistor circuit.

8.4 EMERGENCY STOP

This pusher stops the machine in the position it had when it was pushed.

It disconnects tension of longitudinal and cross welding temperature regulators.

8.5 PROTECTION GUARDS

These protections activate some micro switches when the guards are lifted and so deactivate the machine cycle.

9. ANOMALIES, CAUSES AND SOLUTIONS

ANOMALY	POSSIBLE CAUSE	SOLUTIONS
Current supply signal lamp off	- The machine is not connected	Verify that the machine is correctly connected. Verify the circuit. Put the main switch in its ON position.
	- Differential off	Turn differential ON.
	- Bulb fused	Replace bulb.
Current supply signal lamp on and engine not working you press START	- Emergeny stop active	Disconnect emergency STOP.
	- Security guards open	Close guards.
	- QF-3 magnetothermic disconnected.	Connect magnetothermic.
Temperature control signal lamps off	- Switches disconnected	Operate switches.
Welding resistors not heating	- FU-2 Fuse (cross) FU-3 Fuse (longitudinal) Broken (fused)	Replace fuse. Replace fuse
	- Dirty brush contacts	Clean brushes.
	- Emergency stop active	Disconnect emergency STOP.
	- Damaged resistors	Replace thermocouple.
Temperature control indicators display FFF	- Thermocouple broken	Replace thermocouple.
When you supply a product and operate the start pusher the machine **does not work in automatic mode**	- The Automatic manual switch (control) is manual position.	Turn switch to Automatic position.

ANOMALIES, CAUSES AND SOLUTIONS

ANOMALIAS	POSIBLES CAUSAS	SOLUCIONES
The film is not properly cut	- Remains of product or film in blade	Clean blade.
	- Inadequate temperature	Adjust temperature.
	- Blade not adjusted	Adjust blade.
	- Damaged blade	Replace blade.
Bad quality in cross welding	- Remains of product in clamp	Clean clamp.
	- Inadequate temperature	Adjust temperature.
	- Welding clamp pressure inadequate	Adjust pressure.
Cross welding not made	- Regulator not connected	Connect regulator.
	- Regulators with F.F.F.signal	Verify and clean brush collectors if necessary.
	- Thermocouple broken	Replace thermocouple.
	- FU-2/FU-3 fuses fused	Replace fuse.
	- Resistor broken	Replace resistor.
Bad quality in longitudinal welding	- Remains of product or film in rolls	Clean brushes.
	- Inadequate welding temperature	Modify temperature.
	- Inadequate pressure in welding rolls	Regulate pressure.
Longitudinal welding not made	- Temperature regulator disconnected	Connect regulator.
	- Welding rolls open	Operate lever.
	- Regulators with F.F.F signal.	Verify and clean brush collectors if necessary.
	- Thermocouple broken	Replace thermocouple.
	- FU-3 fuse fused	Replace fuse.
	- Resistor broken	Replace resistor.

ANOMALIES, CAUSES AND SOLUTIONS

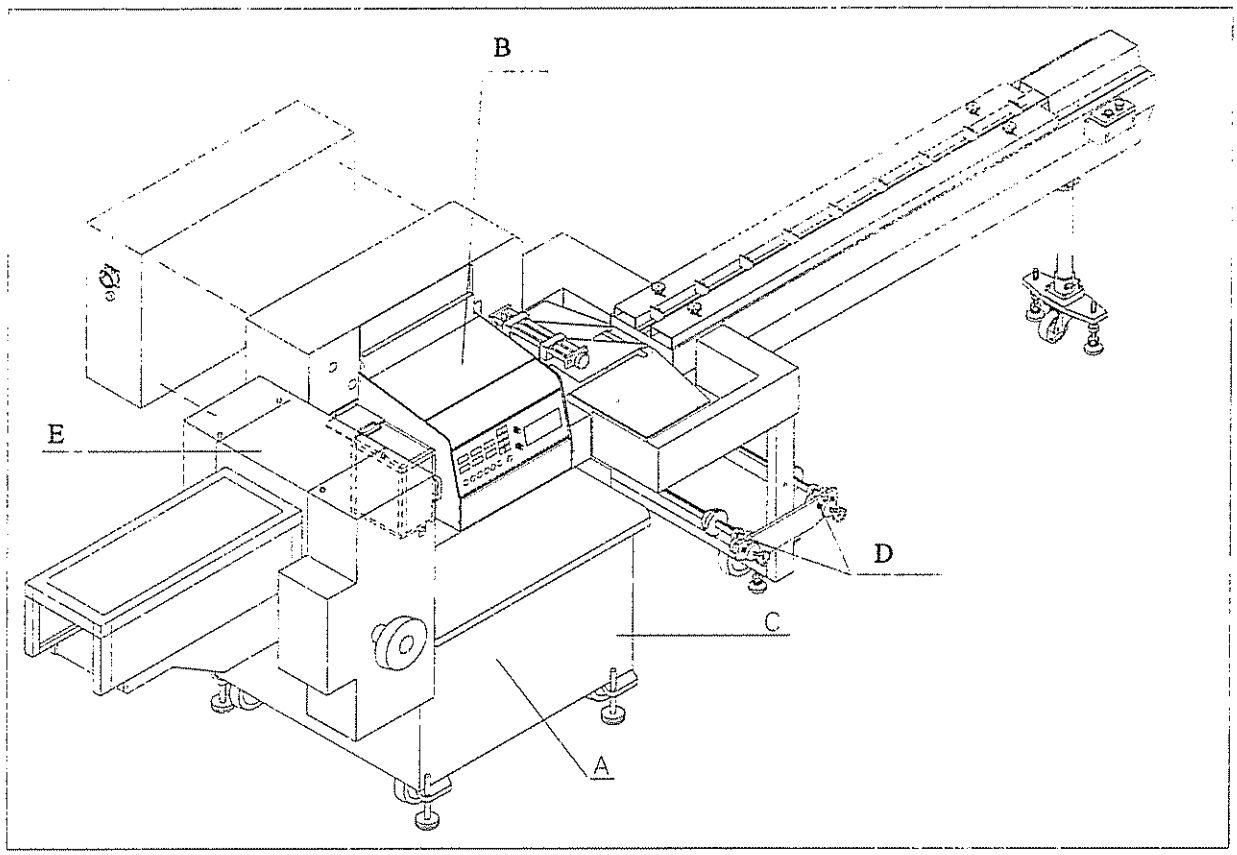
ANOMALY	POSSIBLE CAUSE	SOLUTIONS
Burnt welding	- Too high welding temperature	Decrease selected welding temperature.
The film comes out of the mould	- Coil not centred	Centre coil.
	- Film input roll in wrong position	Verify roll position (See technical sheet).
	- Inadequate coil support brake tension	Adjust tension.
The film brakes	- Inadequate coil support brake tension	Adjust tension.
	- Too high welding roll temperature	Correct temperature.
Parcel too long	- Wrong bag length.	Verify data.
		Take new references, if necessary

10. LUBRICATION AND MAINTENANCE

10.1 LUBRICATION

LUBRICATION POINT		FRECUENCY	LUBRICANT	
			Characteristics	RECOMMENDED
A	DRIVE CHAINS	Every 250 h.: Lubrication with OIL	OIL	KLUBER STRUCTOUIS BHD
B	MOUVEMENT GEARS	Every 250 h: GREASE	OIL	KLUBER STRUCTOUIS BHD
C	SPEED REDUCERS AND SPEED VARIATOR	Every 1 000 h.: CHANGE OIL First change: 50 h.	ISO 460 Viscosity OIL	NUTO H - 68 ESSO
D	COIL SUPPORT SPINDLES	Every 500 h.: GREASE	INORGANIC GREASE	COMPLEX 200 KRAFFT
E	CUTTING CLAMP HEAD SUPPORT	Every 250 h : GREASE	Lithium based grease. Penetration rate NLGI 3 Boiling point > 190°	COMPEX 2000 KRAFFT

10.1.1 LUBRICATION POINTS



10.2 MECHANICAL MAINTENANCE

ADJUSTMENT POINT	FREQUENCY
Supply conveyor tension	Every 300 h.
Supply chain tension	Every 300 h.
Drive chains	Every 300 h.
Replacement of cutting blades	Every 1 000 h.
Security micros	Every 1.500 h.

10.3 ELECTRICAL MAINTENANCE

COMPONENT	LOCATION	OPERATION
COLLECTORS	Dragging rolls Cross cutting clamps	Polish periodically and clean with alcohol the part that is in contact with the charcoal
RESISTORS	Welding clamps Welding roll	Verify the erminals and tighten the screws in the connection strips
TEMPERATURE REGULATORS	Control panel	Verify the correct operating
PHOTO-CELLS	Mould	Clean the lens periodically for the correct reading of the spots

10.4 CLEANING OF THE MACHINE

For the machine to work correctly, you will need to clean it regularly, specially the supply chart and the cross and longitudinal welding units.

It is advisable to clean the supply **on a daily basis**:

- Clean the supply conveyor with alcohol or water and soap.
- Clean the drive chain in order to remove the remains of products that can be left in this area.

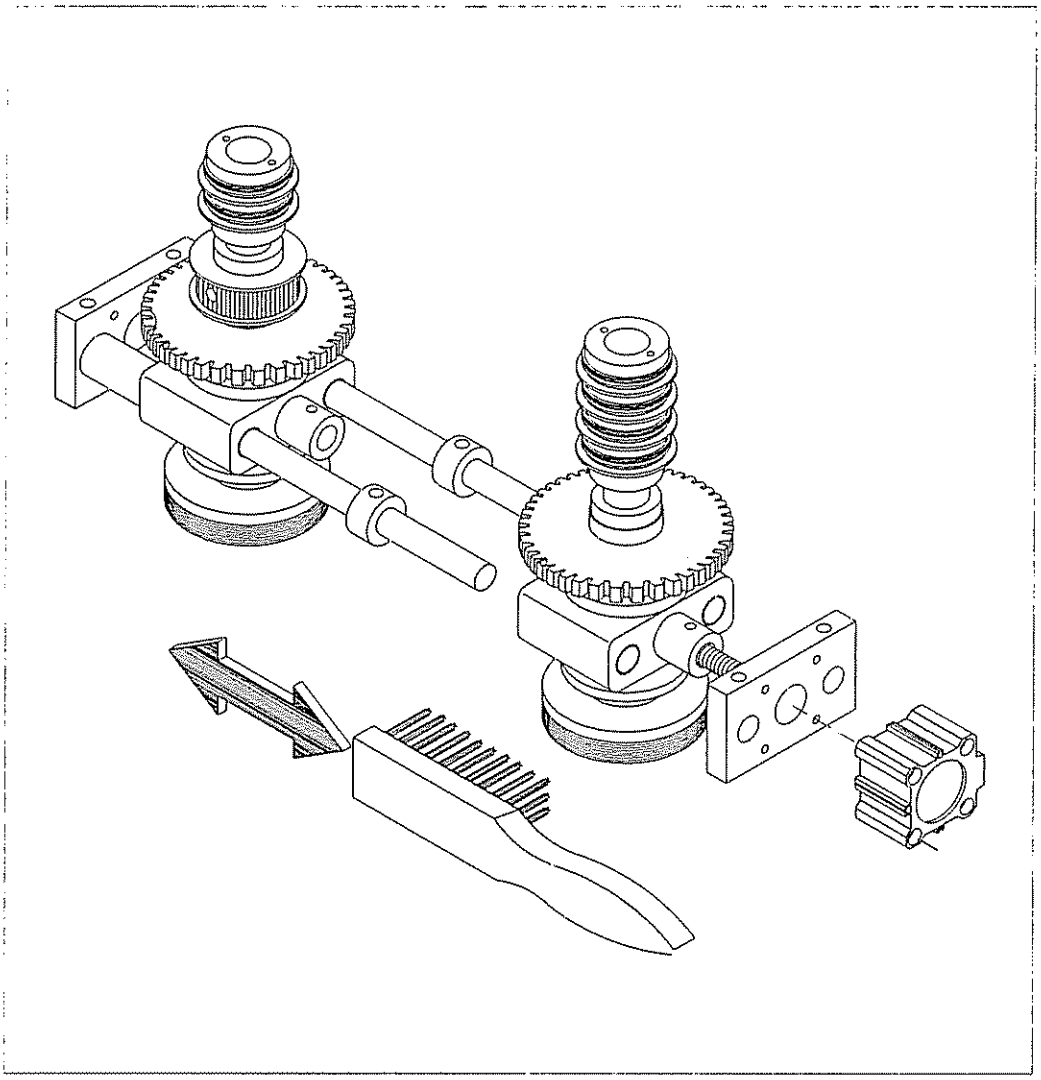
It is advisable to do the following **on a weekly basis:**

- Remove film remains left in cutting blades.
- Make a general cleaning of the machine, removing the remains of product left in the clamp area.

10.5 CLEANING OF THE LONGITUDINAL WELDING ROLLS

It is necessary when there are film or product remains in the rolls. To clean them, you need to dismantle the guards that cover them, place the brush supplied together with the machine next to the rolls as indicated in the figure and rub the folls with the brush.

NOTE: WHEN CLEANING, YOU MUST BE VERY CAREFUL NOT TO DAMAGE THE TOOTHED PART OF THE ROLL.



10.6 CLEANING OF THE CROSS WELDING CLAMPS

As the welding roll, the clamps can also cumulate film or product remains.

In order to clean the clamps, you must disconnect the machine after having placed the clamps in the position indicated in the figure. Then rub the clamps with the brush in the sense of the welding grooves, making a slight pressure on them.

NOTE: WHEN CLEANING, YOU MUST BE VERY CAREFUL NOT TO DAMAGE THE CABLES.