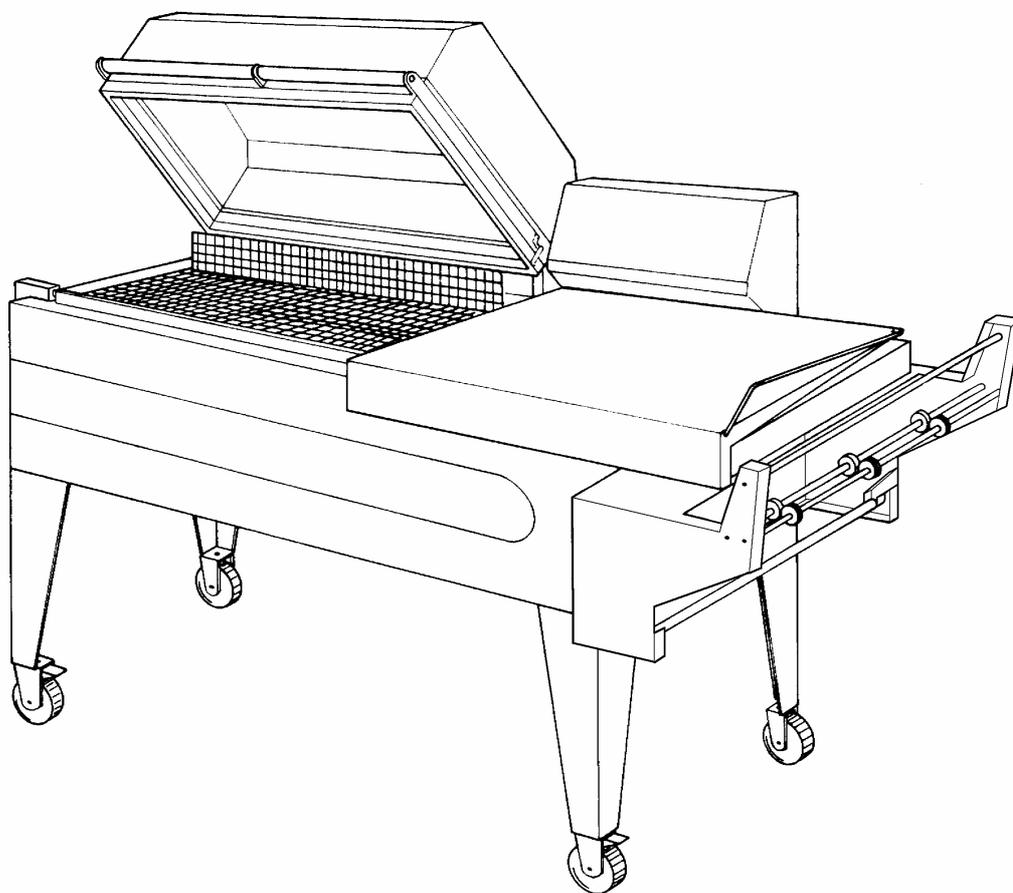




# ***FM77 Digit***

*Instruction manual*



*Before using the machine please carefully read the instructions*



DOC. N. FM111004  
REV. 01  
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# УПАКОВОЧНОЕ ОБОРУДОВАНИЕ



ПРОИЗВОДСТВО И ПОСТАВКА  
СЕРВИСНЫЙ РЕМОНТ  
ЗАПАСНЫЕ ЧАСТИ  
РАСХОДНЫЕ МАТЕРИАЛЫ

Диагностика, ремонт, сервисное обслуживание.

Запасные части и расходный материал: резина, тефлоновая лента, термонож (лезвие), гель для смазки.

Плѐнка термоусадочная полиолефиновая.

Система «Trade-In» – замена Вашего оборудования на новое и более производительное.



*На фото: запайщик Magnetic FL900 + туннель Magnetic T100*

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## 1.1. Preface

This manual has been drawn up in compliance with the UNI 10893 standard dated July 2000. It is meant for all users in order to enable them to use the machine correctly. Keep it in a place which can be easily accessed in the proximity of the machine and which is known to all users. This manual is an integral part of the machine for safety reasons. We wish to specify the symbols in use here below in order to improve their understanding.



### **ATTENTION:**

**Accident prevention rules for the operator. This warning indicates the presence of dangers which can injure the person operating on the machine.**



### **WARNING:**

**It indicates the possibility of damaging the machine and/or its components.**

## 1.2. Performances of packaging machine

You have bought a machine with outstanding features and performance and we thank you very much for your confidence in choosing it. The MINIPACK System is unique in its kind and has achieved worldwide success with more than 60000 units operating in the field of packaging and wrapping. It is handy, low-priced and protected by patents at home and abroad. The technological concept underlining its design, as well as the components and materials used in the manufacturing and testing process are the best assurance of proper operation and long-lasting liability.

Thanks to its particular operating circuit, it can be used both as a sealing and shrinking machine or as a plain sealing machine (sealing only). In this case it is possible to pack the object in a soft bag without shrinkwrapping. The film used in centerfolded execution can be micropunched or not when running through the micropunches of machine itself. The machine can carry out up to 300 packages/hour.

## 1.3. Machine identification

In every communication with the Manufacturer, always mention the model and the serial number specified on the plate on the rear part of the machine.

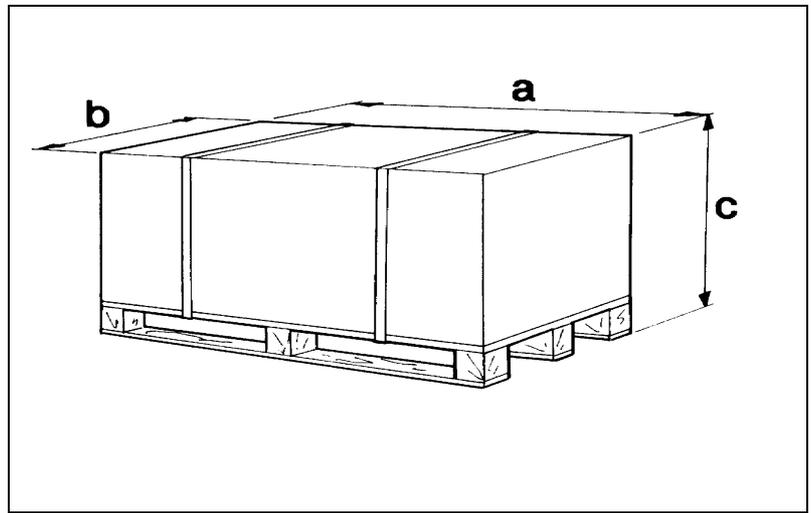
		MINIPACK <sup>®</sup> - TORRE S.p.A. 24044 DALMINE (BG) - ITALY	
V	Hz	W	A
		MOD	
		ANNO	
		MATR.	

## 1.4. Weight and dimensions of packed machine

a = 1970 mm

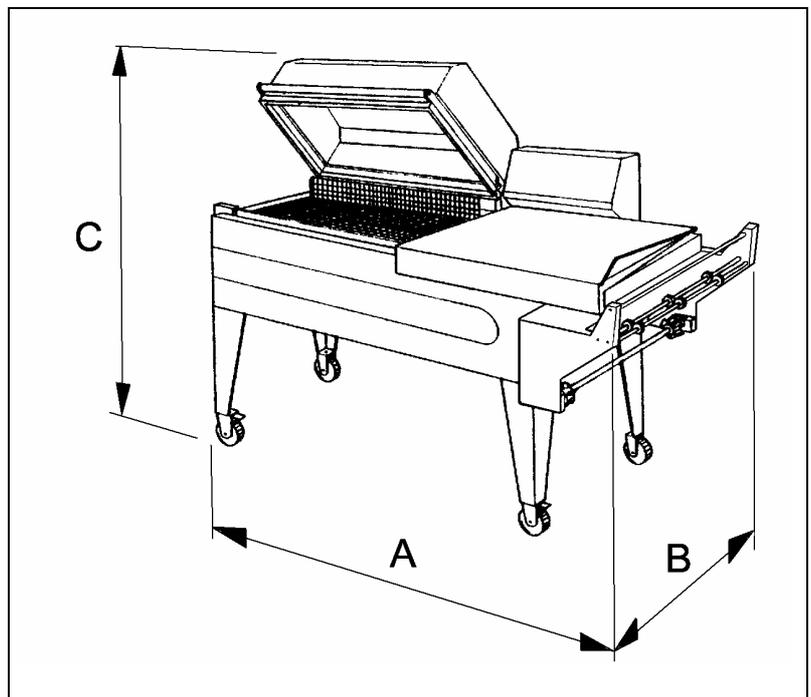
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$b = 1040 \text{ mm}$   
 $c = 910 \text{ mm}$   
Weight = 237 Kg



### 1.5. Machine weight and dimensions

$a = 1875 \text{ mm}$   
 $b = 950 \text{ mm}$   
 $c = 1410 \text{ mm}$   
Weight = 185 Kg



## Chapter 2. Machine installation

### 2.1. Transport and positioning



***It is recommended to handle with great care during transport and positioning!***



***Use protection gloves while handling the machine.***

*Cut the strap with scissors (make sure you protect your eyes by wearing glasses) and withdraw the cardboard.*

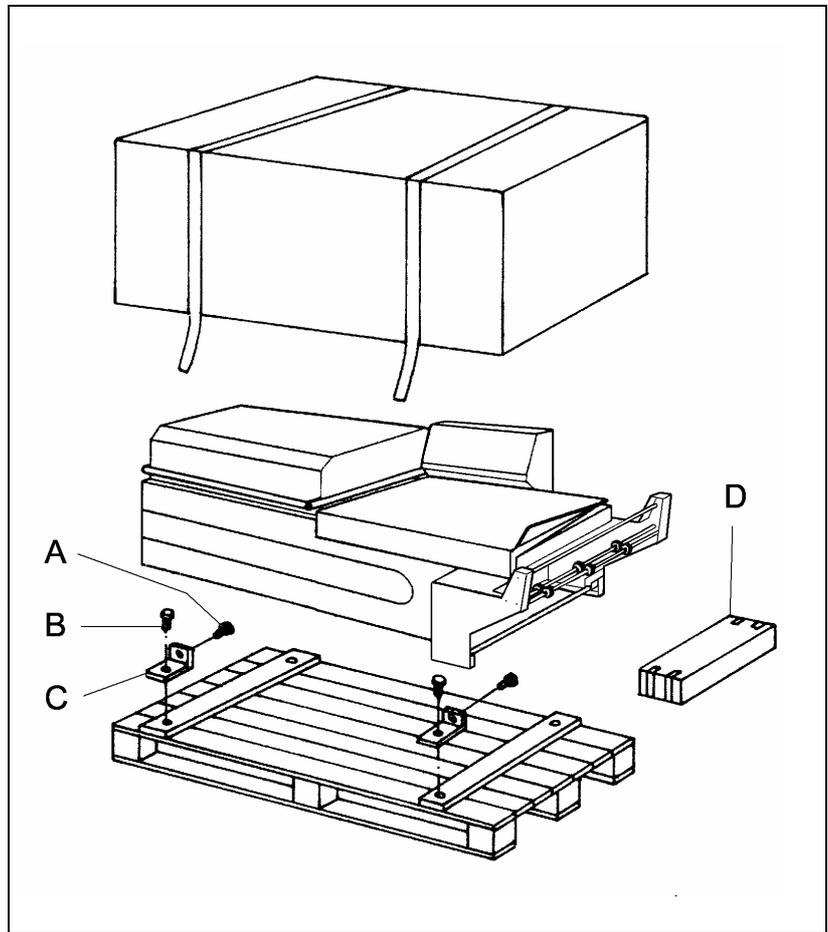
*Remove the box (D) containing the supports.  
Unscrew the 4 locking screws (B) of the plates (C).*

*Lift the machine up using a fork lift.*

*Unscrew the 4 screws (A) fixing the plates (C) on the machine.*

*Assemble the 4 supports by using the supplied screws.*

***Cut the strap to release the upper hood.***



## **2.2. Environmental conditions**

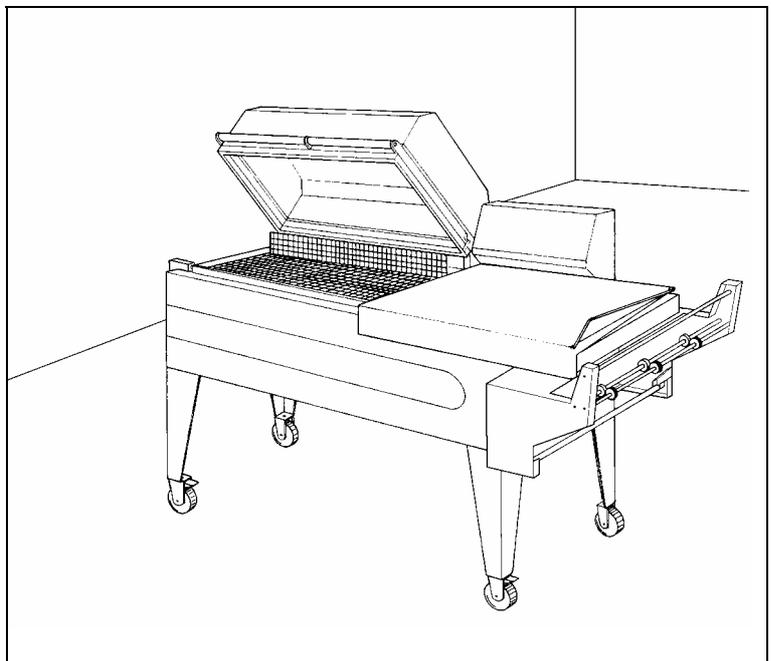
*Place the machine in a suitable environment free from humidity, gases, explosives, combustible materials.*

*Leave a minimal space of 200mm around the machine so that not to obstruct airoutlets.*

*Once the correct height is obtained, block the machine by means of the wheel brakes.*

*Working environmental conditions:*

- Temperature from + 5°C to + 40°C*
- Relative humidity from 30% to 90%, without condensation*



*The lighting of the operation room shall comply with the laws in force in the country where the machine is installed. However, it shall be uniform and provide for good visibility in order to safeguard the operator's safety and health.*

**Machine safety factor = IP20**

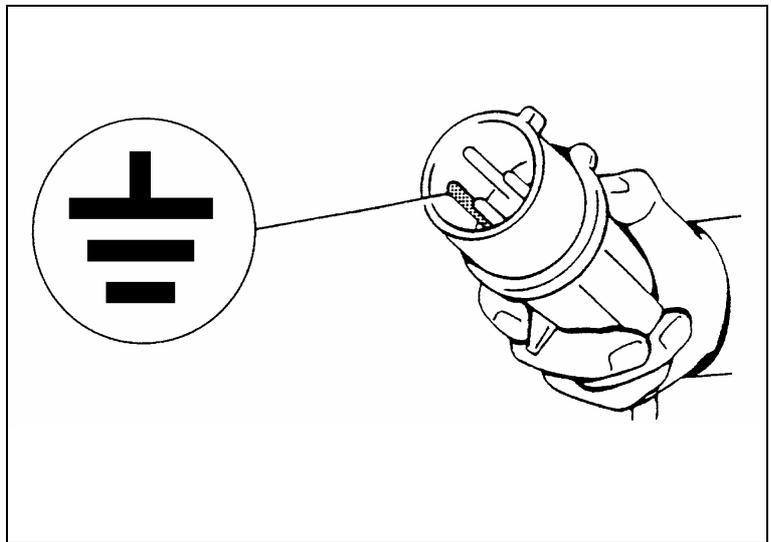
**The aerial noise made by the machine is lower than 70 dB**

## **2.3. Electrical connections**

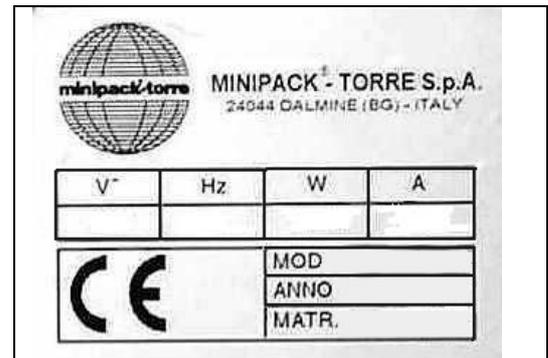


*If the machine is not equipped with the power supply plug, use a plug that is suitable for the voltage and amperage values described by the rating plate and that can comply with the rules in force in the installation country.*

**GROUNDING OF THE UNIT IS OBLIGATORY!**

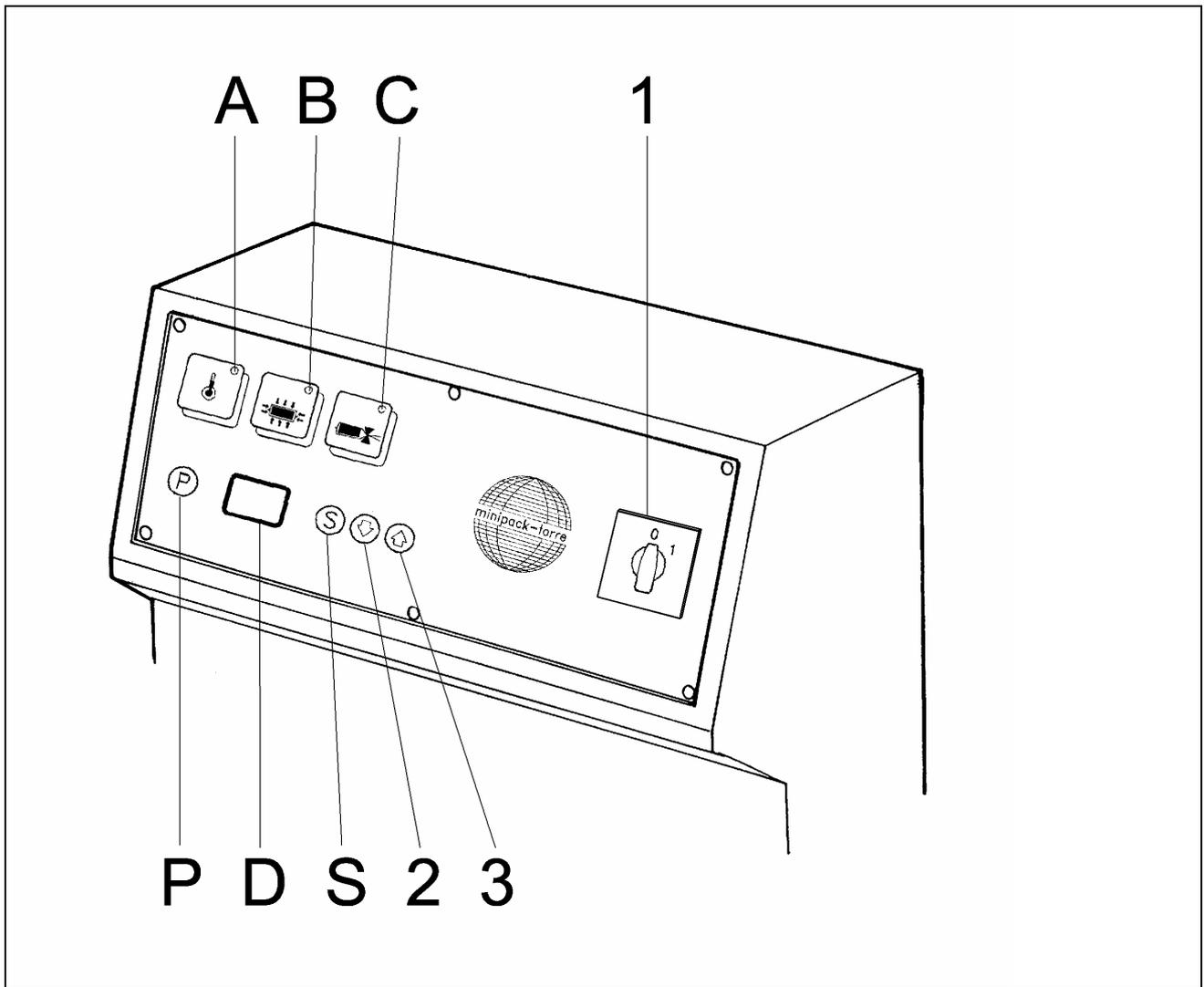


*Before executing electrical connections, make sure the mains voltage matches the one on the plate on machine rear and that the earthing contact complies with the safety rules in force. In case of doubts about the mains voltage, contact the local public supply Company.*



**Chapter 3. Machine adjustment and setting up**

**3.1. Adjustment**



- 1- Main switch
- 2- Adjusting button
- 3- Adjusting button
- A- Temperature warning light
- B- Shrinking warning light
- C- Sealing warning light
- P- Programs selection button
- D- Display
- S- Variables selection switch

## **ELECTRONIC BOARD FEATURES**

*The machine is equipped with 6 selectable programs:*

<b>Program nr.</b>	<b>Program features</b>
<b>P1</b>	Sealing only
<b>P2</b>	Sealing + shrinking
<b>P3</b>	Sealing + delayed shrinking to sealing end
<b>P4 - P5 - P6</b>	Sealing + shrinking

Each program is composed by 4 variables which can be modified (in case it is not possible to set one of them, such a variable will obviously not appear on the display):

<b>Variable</b>	<b>Field</b>	<b>Field features</b>
1. Temperature	00 ÷ 99	corresponds to 220.....420°C (2°C each point)-
2. Sealing	0 ÷ 2.7	(medium value 75)
3. Shrinking	0.0 ÷ 9.9	values expressed in seconds
4. Shrinking delay	0 ÷ 9	values expressed in seconds tenth-seconds values

### **PHASE NR. 1 = SWITCHING THE MACHINE ON**

Turn the main switch (1) into pos. 1. Before using the machine, wait until the adjusting temperature is reached. This is signalled by the extinction of the warning light (A). The display (D) turns on and the number of the currently selected program will appear.

### **PHASE NR. 2 = PROGRAMS**

#### **SELECTION**

Push button (P) to select the number of the program.

### **PHASE NR. 3 = VARIABLES PROGRAMMING**

Through button (S) it is possible to look through the variables of the selected program, while through buttons (2) and (3) the memorized values can be modified. To validate modifications, press button (S) until the number of the program appears on the display.

The fan delay time after sealing can be modified; there is not a LED indicating this variable which is shown with an "r" on the left display, while the right one shows the time which has been set. At the end of all variables to be adjusted, the display will show the code of the program just chosen (for example P1).

N.B.: In case during programming the FC limit switch is being pressed, the unit quits the scheduling, the selected program is executed and the display shows the number of the program.

### **PHASE NR. 4 =**

#### **PERFORMANCE**

Once all adjustments have been made, the machine is ready to start working.

<b>PAUSE TIME</b>	<b>TEMPERATURE (Field)</b>
<b>6"</b>	<b>50</b>
<b>7"</b>	<b>60</b>
<b>8"</b>	<b>70</b>
<b>9"</b>	<b>80</b>
<b>10"</b>	<b>90</b>

In case of "**ANOMALY**" the display will show as follows:

**E 1** Machine has been switched on when the hood was lowered. Lift the hood up.

**E 2** Machine has been switched on when the (S) button was pressed. Release the

button. In case the error signalling still persists, check the correct functioning of the button.

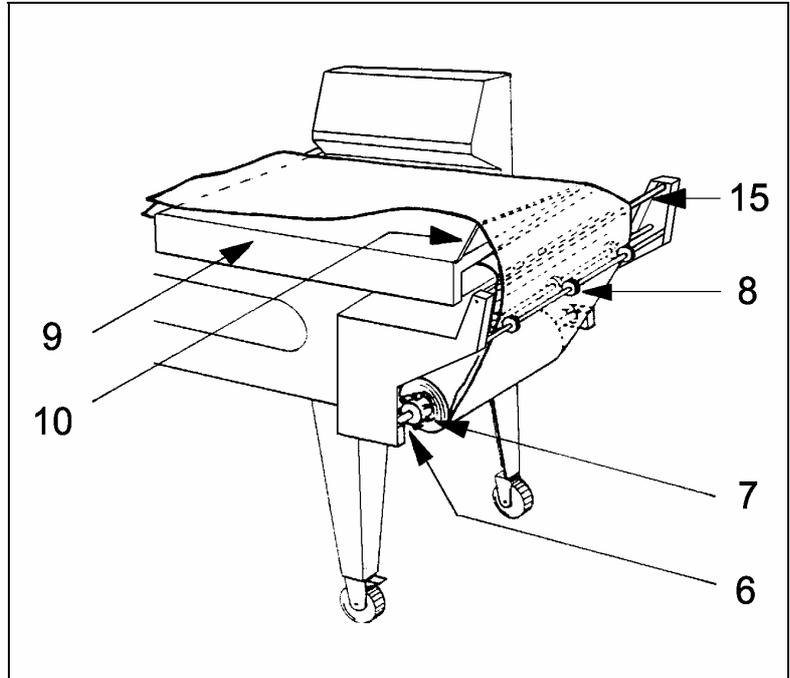
**E 3** Working temperature hasn't been reached in the set time (10 min.). Check the correct positioning of the feeler. Check heater and fuses. Reset through (P) button.

**E 4** Temperature is higher than 420°C or feeler has been interrupted. Switch the machine on to reset.

### 3.2. Film roll insertion

- Insert the roll of film on the roller (6) and block it through the centering cones (7).
- Position the roller on the film roll support.
- Run through the micropunches (8).
- Passage over film transmission roller (15).
- Run the film lower layer under the packaging plate (9).

Run the film upper layer over the packaging plate (9) and separator rod (10).

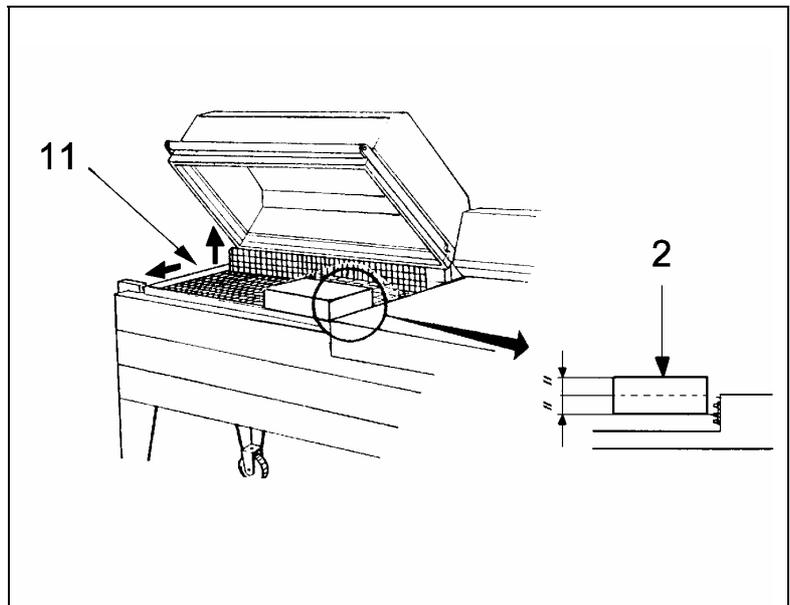


### 3.3. Reticulated plate installation

The reticulated plate (11) can be placed according to the height of the product to pack. To position it follow this procedure:

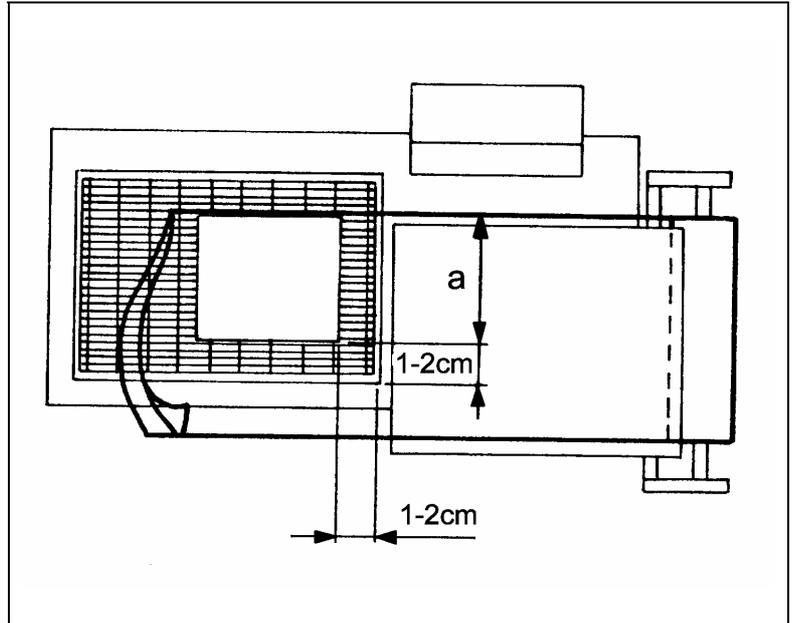
- Pull the reticulated plate in direction of the arrows
- Remove it from the stops
- Position the plate on the stops at the required height

N.B.: For a proper packaging the reticulated plate must be positioned so that film sealing is at the half of the package height.



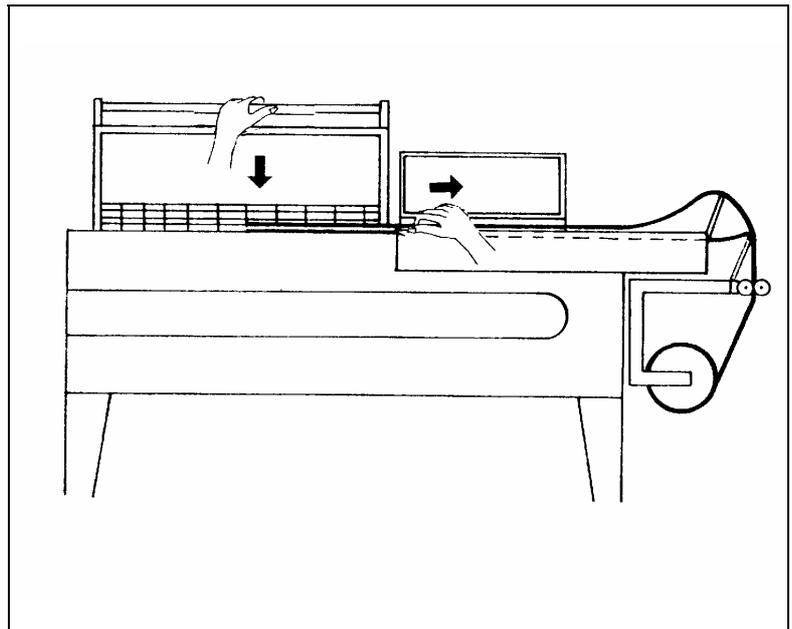
### 3.4. Bobbins support and packaging flat adjustment

The bobbin support and the packaging flat must be adjusted according to the width of the article to be packaged, leaving a space of about 1-2 cm between the article and the welding edge.



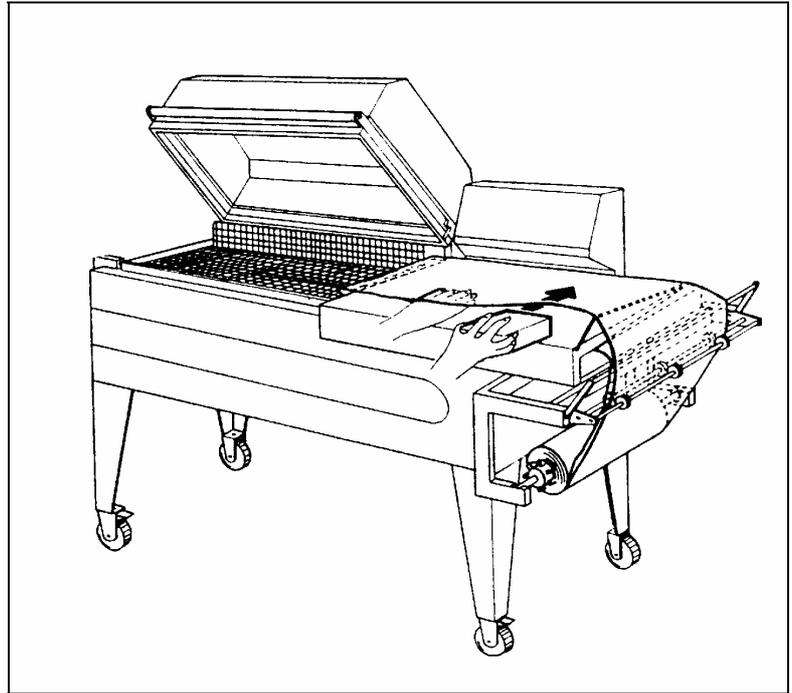
### 3.5. Execution of 1<sup>st</sup> film sealing

Place film as shown in the picture to carry out the first seal. Lower the handle of the cover with your left hand and make a pressure of 10-15 Kg. Machine will automatically operate and the first seal will be carried out on the side of the film. With the right hand detach the film from the sealing blade. Film is now ready to carry out wrapping.



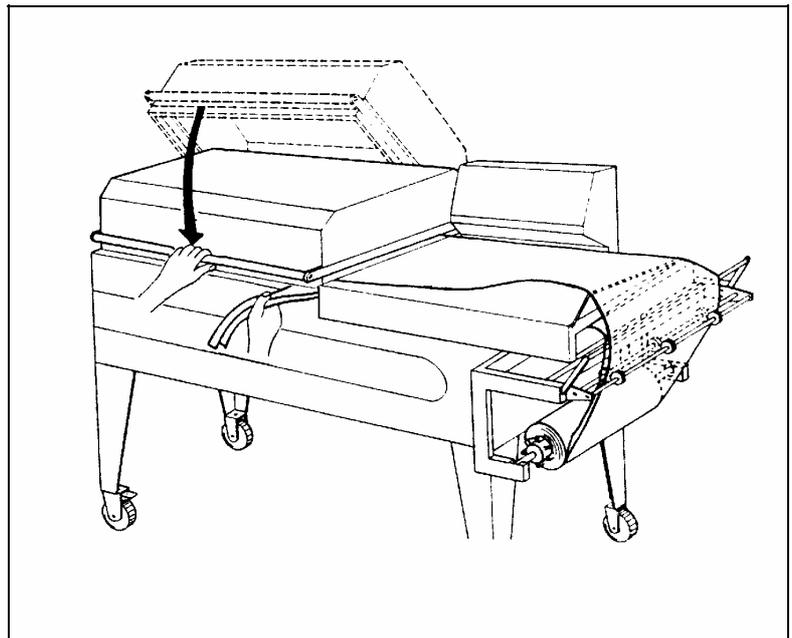
### 3.6. Introducing the object to be wrapped

With the left hand slide on the packaging plate the quantity of film necessary to contain the product to be packed. Introduce the product into the bag using the right hand and make it slide to the left until it is layed on the screen leaving a little space fo about 1-2 cm to allow the passage of air for shrinkwrapping.



### 3.7. Making up

By pushing the cover handle with a pressure of 10-15 Kg. the cover rests on the sealing blade; by pinching the film, it is automatically sealed on the open sides (right and front). In case you have selected the function "SEALING +SHRINKWRAPPING" you will see the film shrink onto the product. Slightly decrease the pressure on the cover handle to allow film detach from the sealing area on the inside. With the right hand detach the film from the sealing blade towards the outside.



## Chapter 4. Limits and conditions in the use of machine

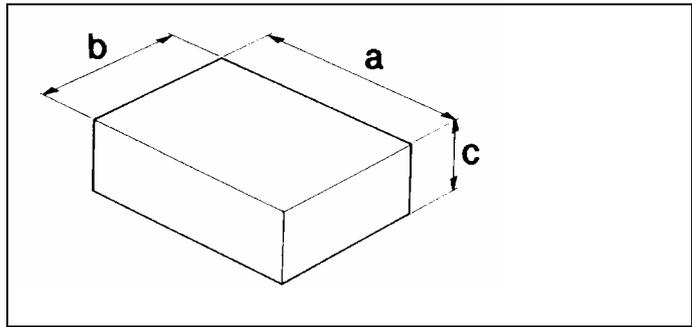
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### 4.1. Max. packing sizes

$a = \text{mm } 800$

$b = \text{mm } 500$

$c = \text{mm } 250$



**N.B.:** max. dimensions shown on above scheme are referring to the max. dimension of the single package.

Refer to chapter 5.2. to get max. dimension of package ( $b \times c$ ); the addition of  $(b + c)$  is equal to film roll width 100 mm.

### 4.2. Items which must not be packed

The below listed products must absolutely not be wrapped to avoid damages to the machine and serious injuries.

Wet and unstable products, liquids of any kind and density in fragile containers, flammable and explosive materials, pressurised gas cylinder of any kind, bulk and volatile powders, bulk materials with grain size smaller than the holes of the reticulated plate, any materials and products not listed but which might harm operator and cause damages to the machine.

The below listed products must absolutely not be wrapped to avoid damages to the machine and serious injuries to the operator in charge:



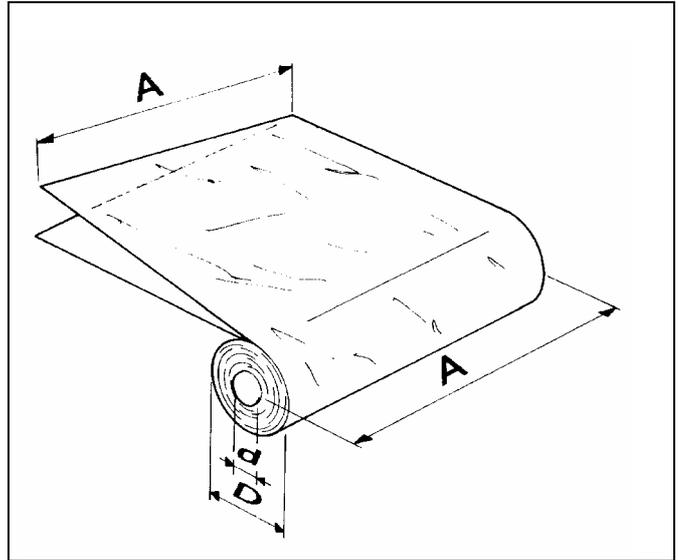
- Wet and unstable products,
- liquids of any kind and density in fragile containers,
- flammable and explosive materials, pressurised gas cylinder of any kind, bulk and volatile powders,
- bulk materials with grain size smaller than the holes of the reticulated plate,
- any materials and products not listed but which might harm operator and cause damages to the machine.

## Chapter 5. Film features

### 5.1. Films to be used

Machine can work with all shrinkwrapping films (technical grade or food grade films) with thickness 15-50 micron manufactured by "MINIPACK-TORRE S.p.A.". The special features of our films (which may be customized with drawings and text) assure their outstanding reliability, with regard both to compliance with laws in force and to an excellent machine performance.

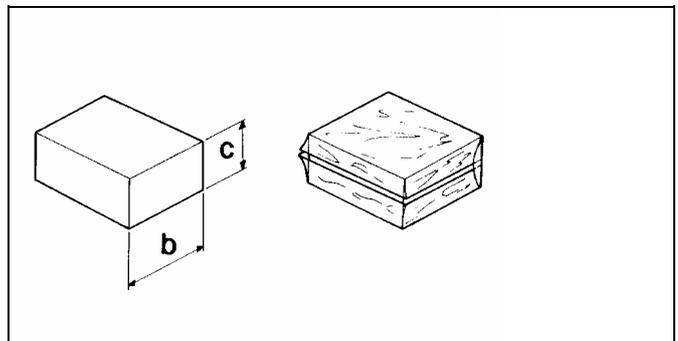
A= mm 800 MAX  
 D= mm 300 MAX  
 d= mm 77



	<p><b>It is recommended to refer to the technical and safety sheets of the films in use and to observe the corresponding instructions!</b></p>
--	--

### 5.2. Band A calculation

Fascia A = b + c + 100mm



## Chapter 6. Safety standards

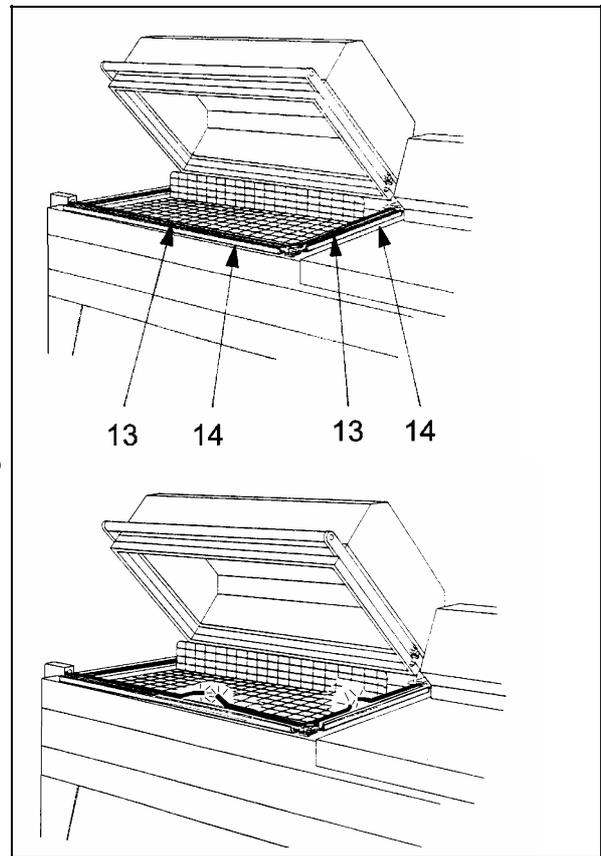
### 6.1. Warnings

		<p><b>During the work phases pay attention to all hot parts of the machine. The temperature they can reach is so high that it can cause burns.</b></p>
		<p><b>It is forbidden to smoke when the machine is working!</b></p>

Do not touch the sealing blade (13) soon after sealing by reaching beyond the safety guard (14).  
 Danger of burns due to residual heat on the sealing blade.

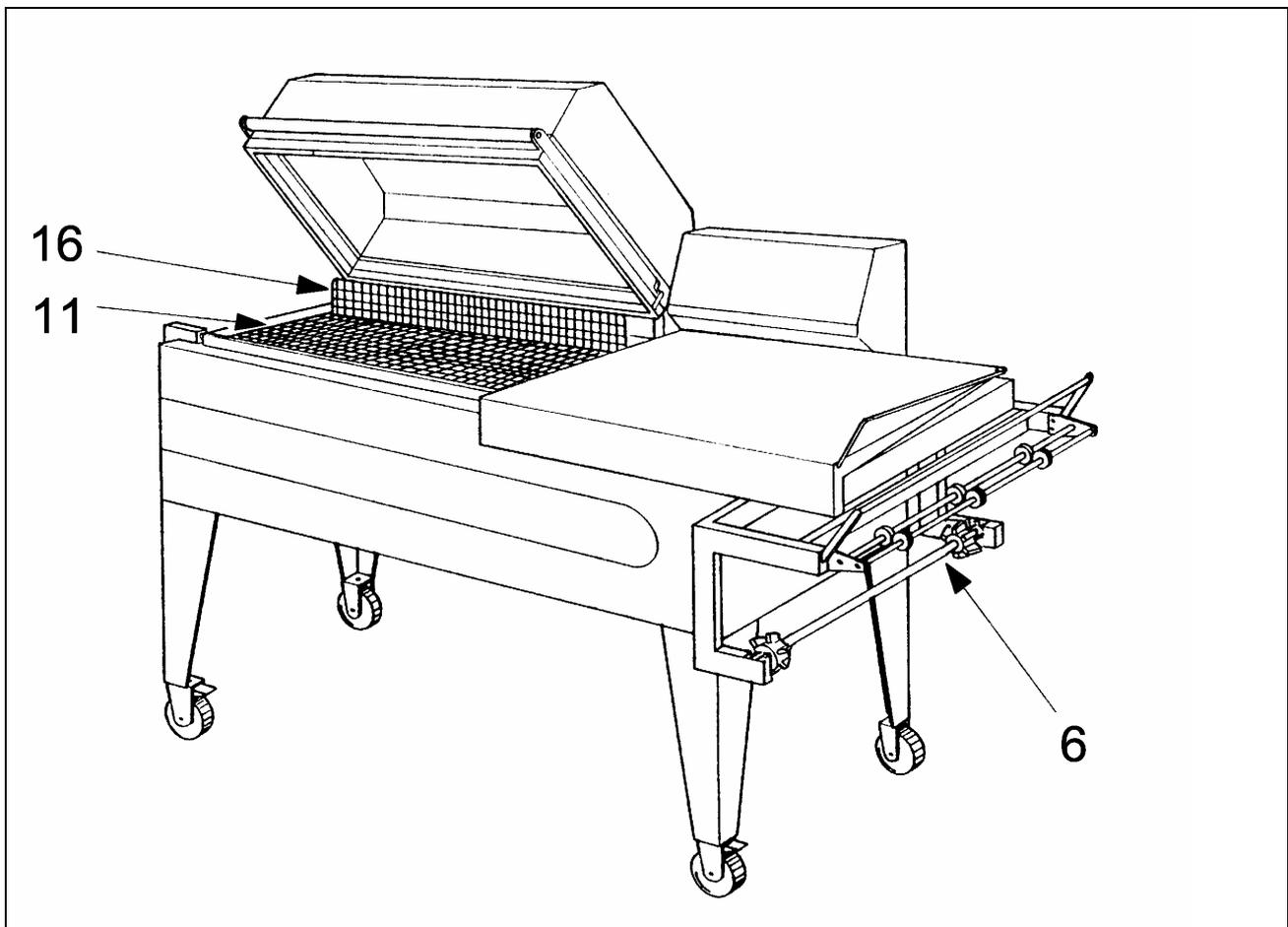
*Do not touch the sealing blade (13) soon after sealing by reaching beyond the safety guard (14).  
Danger of burns due to residual heat on the sealing blade.*

*Do not keep on sealing in case the sealing blade (13) breaks.  
Replace it at once.*

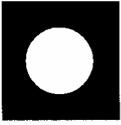


## **Chapter 6. Safety standards**

### **6.1. Warnings**



- Do not touch the chamber closing flap (16) during warm-up function. Danger of burns.
- Do not touch the fan while moving or using the machine without the reticulated plate (11).
- Make sure that the roll of film is properly lodged (6).



Every time you turn the machine off, it is recommended to leave the upper hood open (as shown in the drawing).

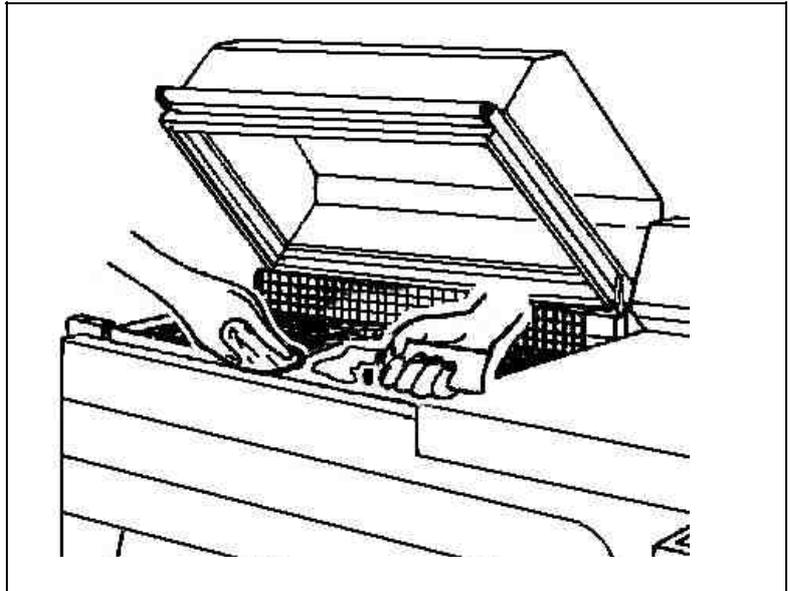
## Chapter 7. Ordinary maintenance

### 7.1. Precautions for ordinary maintenance interventions

	<p><b>ORDINARY MAINTENANCE, MUST BE EXECUTED BY QUALIFIED STAFF APPROPRIATELY TRAINED.</b>  <i>Before proceeding to maintenance, switch the machine off and disconnect it by operating on the master switch and wait for the machine to cool down!</i></p>	
		<p><i>It is recommended to use protection gloves during maintenance operations!</i></p>

### 7.2. Sealing blade cleaning

Using a dry cloth, wipe off the residues clinging to the sealing blade: do this at once after sealing since they are easier to remove when still warm.  
 Periodically lubricate the sealing blade with the grease supplied with the machine.

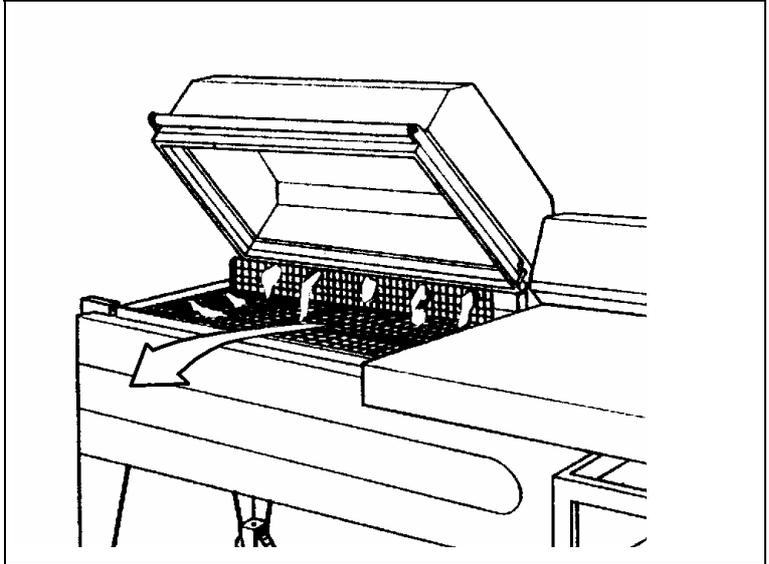


### 7.3. Plastic film and other scrap removal

Wait for the machine to cool down completely before removing any scraps stuck to the hot parts of the machine

(e.g. , on the flaps of the heat chamber). If the lower cover requires cleaning (where the fan is installed), remove the reticulated plate and take out any pieces that may have fallen inside.

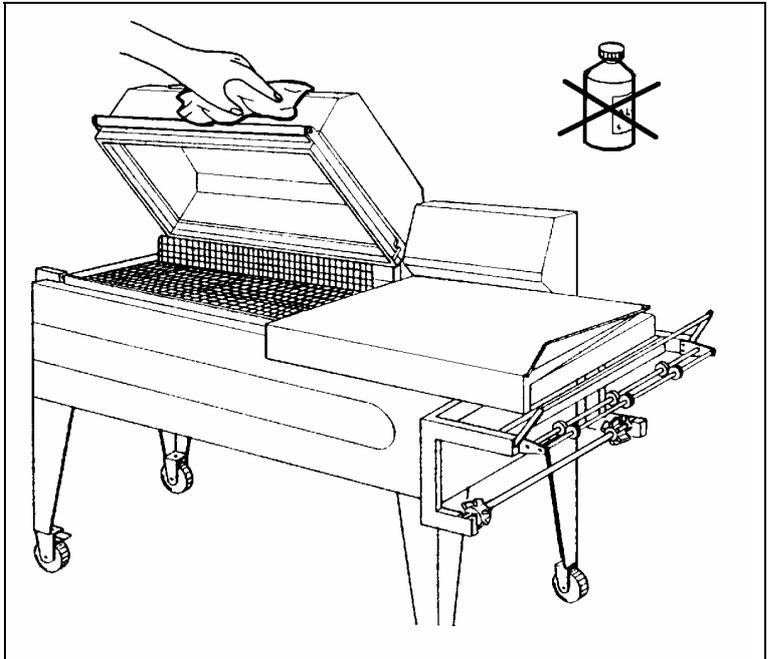
For a more careful cleaning of the lower bell we recommend to use a vacuum cleaner.



#### **7.4. Machine cleaning**

Use a cloth moistened with water for the cleaning of the machine.

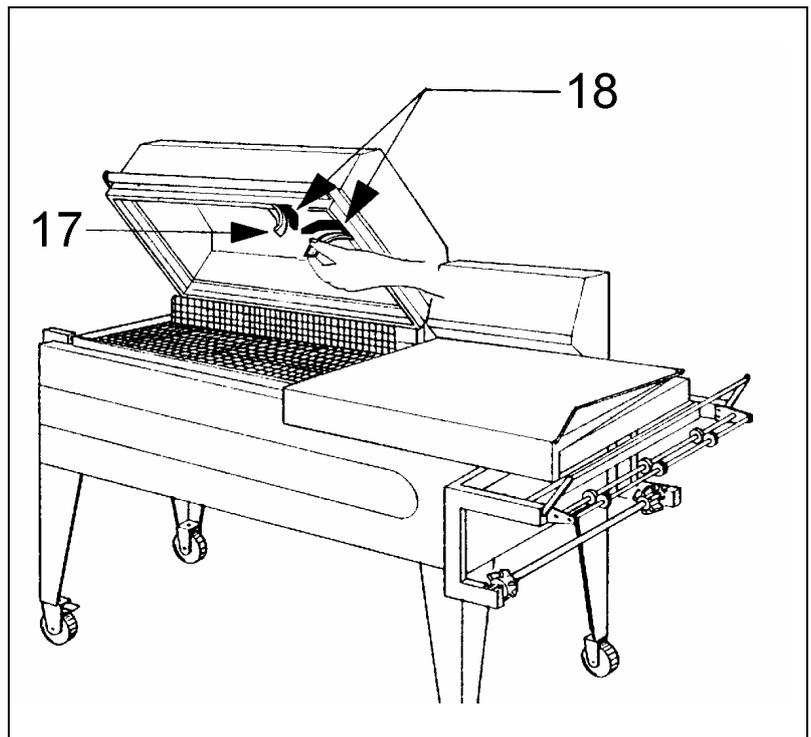
For cleaning the bell inside and outside we recommend to use a normal detergent for glass cleaning. Do not use any detergents with solvents which could damage the bell and reduce the transparency.



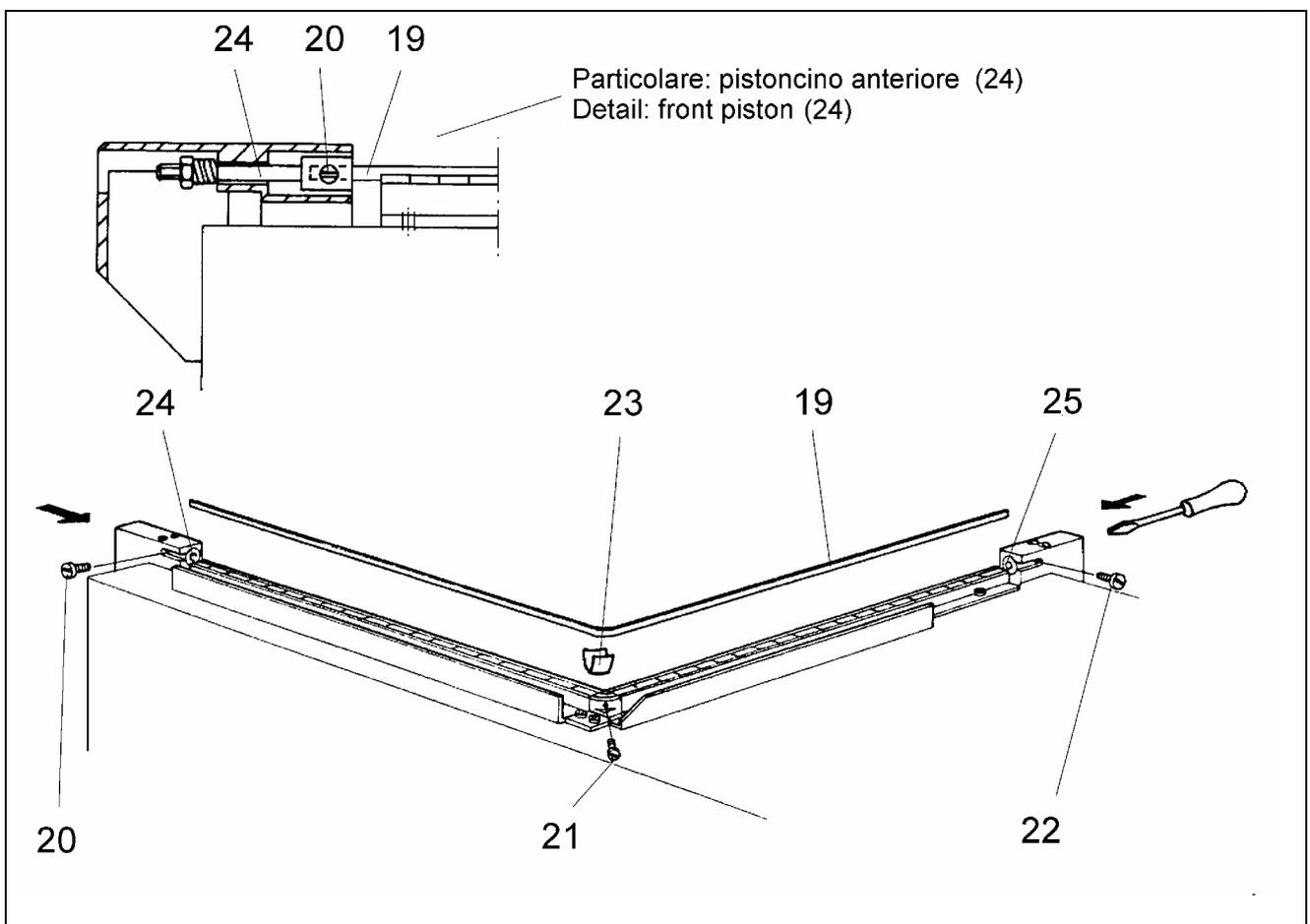
## 7.5. Rubber and teflon replacement

When the Teflon-strikers (17) are worn out, replace them with spare parts, paying attention that the application is linear and even.

Before applying the Teflon self-adhesive strip clean the rubber part (18) with a detergent. If also the rubber (18) is damaged, replace it as follows: Remove the old rubber, clean its housing, apply some drops of glue in the housing, insert the new rubber in a linear way, clean the rubber with a detergent, apply the self-adhesive Teflon-strip.



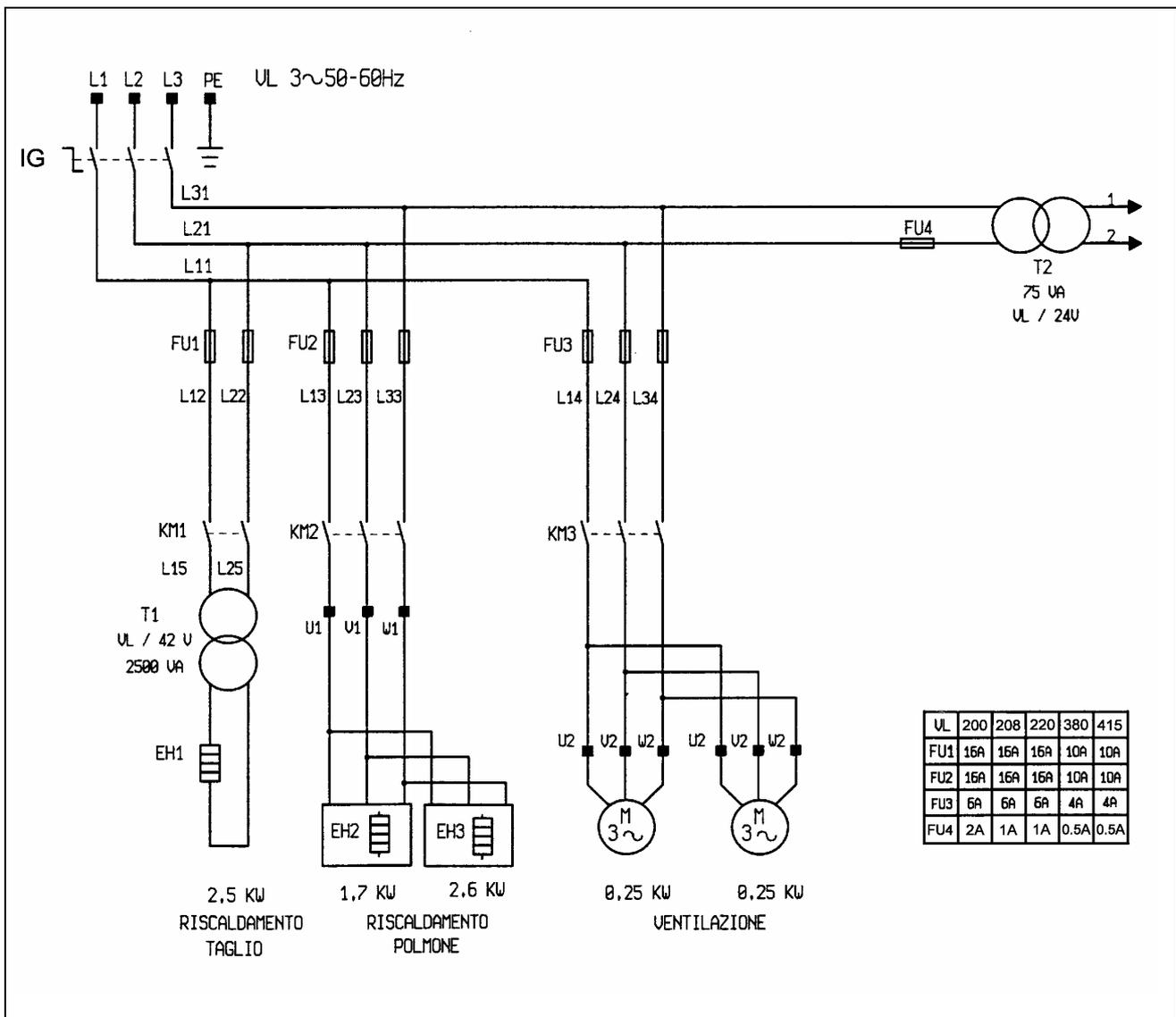
## 7.6. Changing the sealing blade

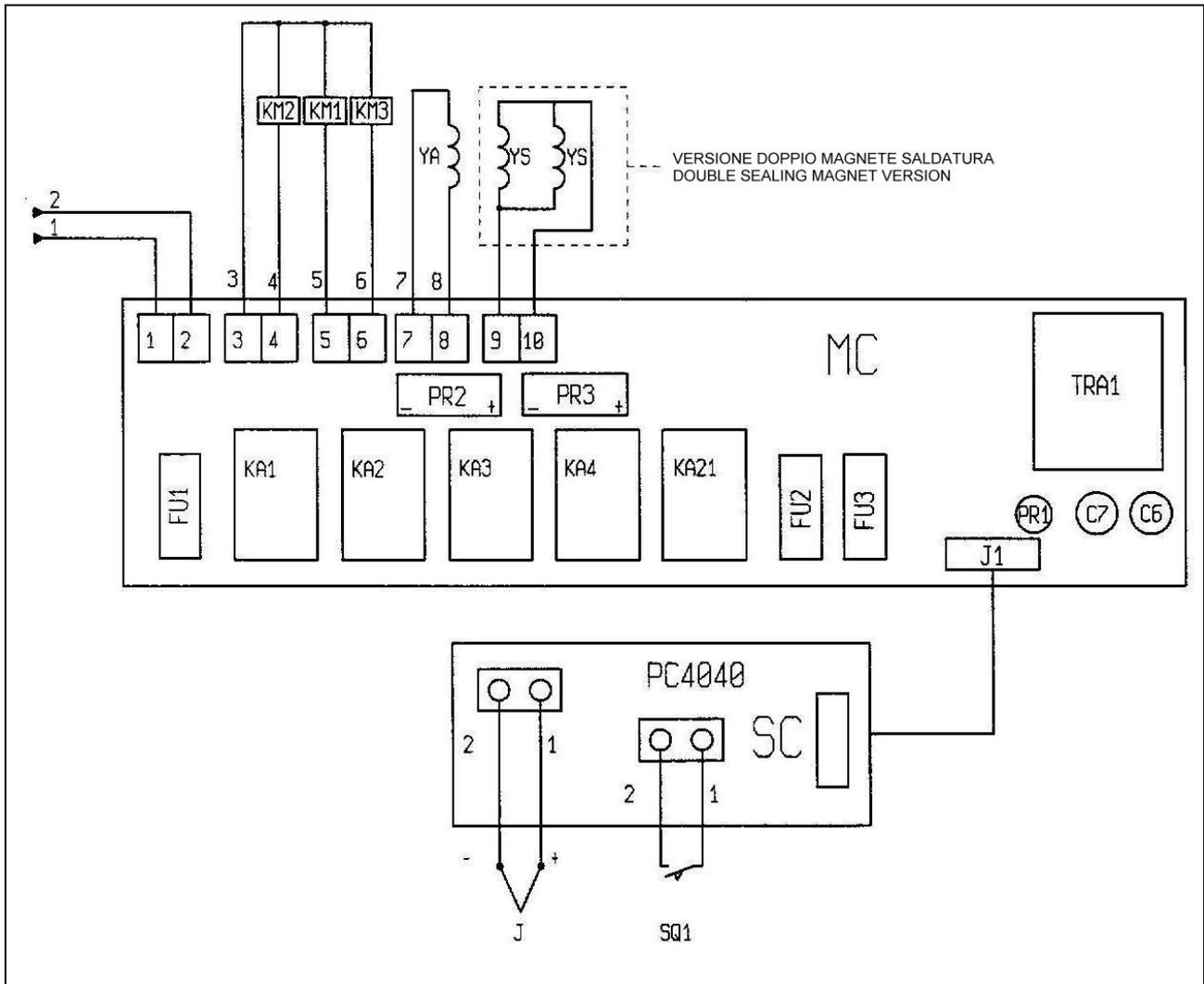


To replace the sealing blade (19) follow this procedure:

- Disconnect power to the machine
- Unscrew the three screws (20), (21), (22)
- Remove the old sealing blade
- Clean the housing and if necessary replace the insulating teflon (23) of the central clamp
- Insert the new sealing blade starting from the central clamp and tighten the screw (21)
- Trim the new sealing blade according to the holes of the pistons (24) and (25)
- Complete the insertion of the sealing blade in the whole housing
- Push the rear piston completely onwards (25) towards the sealing blade to make it enter the hole of the piston itself and then tighten screw (22)
- Push the front piston (24) completely onwards towards the sealing blade to make it enter the hole of the piston itself and then tighten screw (20)
- Trim the teflon projecting from the central clamp
- Make sure that the sealing blade (19) is well positioned and in tension

## 7.7. Wiring diagram





### 7.8. Key wiring diagram

IG Main switch

FU1 Fuse

FU2 Fuse

FU3 Fuse

FU4 Fuse

EH1 Cutting heater

EH2/ Heater

3

T1 Cutting transformer

T2 Auxiliary transformer

KM1 Cutting contactor

KM2 Heaters contactor

KM3 Fan contactor

M Fan motor

YA Shrinking magnet

YS Sealing magnet

J Thermocouple

SQ1 Machine cycle limit switch

### 7.9. Disassembling, demolition and elimination of residuals

**ATTENTION!**

*All operations about disassembling and demolition must be done by qualified personnel with mechanical and electrical expertise required to work in security conditions.*

*Proceed as follows:*

- 1. disconnect machine from power mains*
- 2. disassemble components*

***All wastes must be treated, eliminated or recycled according to their classification and to the procedures in force established by the laws in force in the country the equipment has been installed.***

## **Chapter 8. Guarantee**

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### **Model and Serial Number:**

Equipment manufactured by minipack-torre *is* warranted to be free of defects in parts and craftsmanship for a period of one (1) year from the date of installation, or 15 months from the invoice, whichever occurs first, minipack-america's exclusive obligation under this warranty is limited to repairing or, at its option, replacing any minipack-torre part that is determined by minipack-america to be defective. The warranty is for the original purchaser of new equipment.

Component subsystems manufactured by minipack-torre carry the warranty as stated herein. The warranty does not apply to subsystem component parts which are not manufactured by minipack-torre. Subsystem component parts not manufactured by minipack-torre shall be subject to any warranty of its manufacturer.

This warranty shall not apply to damage resulting from installation, modification, or repair by anyone other than a minipack-america authorized distributor/dealer. Nor shall it apply to any equipment which has been subject to accident, alterations, neglect, misuse or improper maintenance.

In the event of highly corrosive or high moisture applications, special protective coatings or stainless steel construction might be needed.

minipack-torre and minipack-america shall not be liable if minipack-torre equipment or components are used with accessory equipment not manufactured by minipack-torre.

Representations and/or warranties, by whomever made (even if made by minipack-america authorized distributors/dealers), which are inconsistent with the terms herein shall not constitute a term of the minipack-torre or minipack-america express warranty and shall not be binding on minipack-torre or minipack-america.

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