

EU SEGURTASUN GAILUAK
ES SEGURIDADES
EN SAFETY DEVICES
DE SICHERUNGEN
IT SICUREZZE
FR SÉCURITÉS
NL BEVEILIGINGEN
PT SEGURANÇAS
PL BEZPIECZEŃSTWO
RO SISITEMUL DE SIGURANȚĂ
RU БЕЗОПАСНОСТЬ

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EU ERABILERA ARGIBIDEAK
ES INSTRUCCIONES DE USO
EN INSTRUCTIONS FOR USE
DE BEDIENUNGSANWEISUNGEN
IT ISTRUZIONI PER L'USO
FR INSTRUCTIONS D'UTILISATION
NL GEBRUIKSAANWIJZING
PT INSTRUÇÕES DE USO
PL INSTRUKCJA OBSŁUGI
RO INSTRUCȚIUNI DE UTILIZARE
RU ИНСТРУКЦИЯ ПО ПРИМЕНЕНИЮ

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EU BOTOIAK, PANTAILAK ETA ALARMAK
ES BOTONERA, PANTALLAS Y ALARMAS
EN BUTTON PANEL, SCREENS AND ALARMS
DE KNOPFSCHALTТАFEL, EINSTELLUNGEN – STÖRUNGSMELDUNGEN
IT PULSANTIERA, SCHERMATE E ALLARMI
FR PUPITRE DE COMMANDES - ÉCRAN – ALARMES
NL DRUKKNOPPENKAST, BEELDSCHERMEN EN ALARMEN
PT PAINEL DE BOTÕES, TELAS E ALARMES
PL USTAWIENIA - ALARMY I WIADOMOŚCI NA EKRANIE
RO ARIA BUTOANELOR, ECRANE ȘI ALARME
RU КНОПОЧНЫЙ ПУЛЬТ, ЭКРАНЫ И ТРЕВОГИ

-3-

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1 INTRODUCTION

This section in the Manual was included for the user to become familiarized with the safety measures to follow when using the machine.

2 GENERAL SAFETY PRECAUTIONS

Do not handle, install, adjust or start-up this machine without first reading the content of this manual.

Although the machine includes the systems that are needed to ensure the safety of the user, special care should be taken in handling, setting and maintenance operations.

When unpacking the machine, carefully inspect for any damages that may have occurred during transportation. If any problems are found please notify the transportation company so that your agent may make a proper evaluation.

Maintenance and servicing should only be done by qualified and properly trained personnel.

This machine is designed to package the product indicated in the sales contract that was signed by the client. Should any other type of product need to be packaged, please check with ULMA.

ULMA is not responsible for any alterations or adaptations made on the machine by personnel other than ULMA, unless previously authorized in writing.

The use of spare parts and consumable items that are not manufactured by ULMA may have a negative effect on the functioning of our equipment, and may be a cause for cancelling the guarantee.

THE SAFETY OF THE PERSONNEL INVOLVED IN HANDLING INDUSTRIAL EQUIPMENT IS ONLY POSSIBLE WITH A PROPERLY DESIGNED SAFETY PROGRAM, WHICH SHOULD BE STRICTLY FOLLOWED BY THE USERS OF THE EQUIPMENT.



3 PERSONNEL SAFETY

Machine operating and maintenance personnel must be aware that safety procedures are included as a part of their work. Accident prevention must be one of the main objectives in their work.

Know and respect the machine. Read and follow safety procedures and make sure that everyone working with the machine understand and use these procedures.

Do not use neckties, handkerchiefs, loose dresses, necklaces, loose fitting clothing, etc. near a moving machine. Protect long hair with a cap or hair net.

Use the Personal Protective Equipment required for the work to be performed and keep this equipment in good condition.

NOT FOLLOWING THE INSTRUCTIONS IN THIS SECTION MAY RESULT IN PERSONAL INJURY AND/OR DAMAGE TO THE MACHINE.



4 WORK AREA SAFETY

Always keep work area clean. Work areas with material such as oil, waste or water on the floor, may cause personnel to fall and may result in serious injury.

Ensure that your work area is free of dangerous obstructions or dangerous protruding parts on the machine.

Report any unsafe working conditions to your manager or supervisor.

The machine must be left at least 500 mm from the wall. This minimum distance will avoid possible crushing.

All handling and maintenance operations on the machine must be made with the MACHINE STOP.

NOT FULFILLING THE ABOVE MAY RESULT IN SERIOUS PERSONAL INJURY.



5 LOADING AND UNLOADING SAFETY

If there is any doubt or uncertainty regarding procedures related to elevation and transportation, please contact the appropriate manager or supervisor.

Before lifting or transporting anything, check the weight and dimensions by reading labels, transportation information, and any written manuals or transportation details.

Motorized devices or other mechanical devices must be used to lift and transport heavy or large objects. For that purpose, personnel must be trained and authorized to handle and transport loads.

Never place an overhead load on your body or move the load over the body of someone else.

Before lifting an object make sure that there is a safe place from which to lift.

Always check slings, chains, hoists and other lifting devices before use.

Never exceed nominal safety loads of cranes, hoists, slings, eyebolts and other lifting equipment.

For more information on loading, unloading and transporting the machine or any of its parts, read the instructions included in this manual (section on unpacking, transportation and handling).

NOT FOLLOWING THE ABOVE INSTRUCTIONS MAY RESULT IN SERIOUS DAMAGES, INCLUDING DEATH DUE TO CRUSHING TO THE PERSON HANDLING THE MACHINE..



6 SAFETY DURING SERVICING

Assign the work to qualified personnel.

Study and understand all safety instructions before servicing.

The doors of the main electrical cabinet must be closed before and after connecting to electricity.

Guards, protections, barriers, covers and other devices must be connected or in position before operating the machine.

Once the machine is installed, check that the engines are running the proper direction (indicated with an arrow over the ventilator grid).

Check that operating devices (micros) are operating correctly.

7 OPERATING SAFETY

Do not try to start or use the machine until all safety terms, installation instructions and maintenance procedures, have been understood.

Maintain the machine in proper operating condition.

Keep all safety systems activated permanently.

The operator must never insert his/her hands, rags, tools, etc. inside the machine while it is running.

Do not place tools, parts or other objects on or inside the machine.

Do not use mobile telephones near the industrial computer or inside the electricity cupboard.

NOT FOLLOWING THE ABOVE INSTRUCTIONS MAY RESULT IN SERIOUS INJURY TO PERSONS HANDLING THE MACHINE.



8 MAINTENANCE SAFETY

Adjustments, repairs and lubrication must only be made by qualified maintenance personnel, by following this manual's instructions and ensuring lock-out and tag-out.

Always disconnect the electrical supply, before doing any cleaning or maintenance.

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

REPAIR AND MAINTENANCE OPERATIONS MUST BE PERFORMED WHILE THE MACHINE IS STOPPED, ONCE ALL EXTERNAL POWER SOURCES ARE DISCONNECTED AND AFTER DISCHARGING THE RESIDUAL ENERGY FROM ACTUATORS.



9 LOCK-OUT AND TAG-OUT PROCEDURE

Purpose

This procedure establishes the minimum requirements for the lock-out and tag-out of power supply devices. It will be used to make sure that the machine or equipment is disconnected from any power source that is potentially dangerous and that it is locked and tagged before any personnel carries out any type of maintenance work or repair.

Responsibility:

Personnel responsible for work to be performed in dangerous areas must be instructed as to the meaning of safety through the lock-out/tag-out procedure.

Preparation for Lock-out/Tag-out

All affected operators must be notified that the lock-out/tag-out procedure will be performed.

Lock-out/Tag-out Sequence

Identify all devices and power sources that must be disconnected (switches, valves and others).

- Electrical Cabinet. Cut the power using the input disconnecting switch and remove the fuses (this blocks the air and water system).
- Air. Empty the cooling system (only if needed).
- Water (only with cooling system). Interruption of water intake if needed.

Add sign on machine prohibiting reconnection.

After ensuring that no one is exposed and to check that the power sources disconnection was made correctly, press the activation buttons that control the operation of the isolated section to make sure that the disconnection was efficient.

REPLACE ACTIVATION BUTTONS TO THE OFF POSITION AFTER THIS CHECK.



After performing the above operations, the machine will be in lock-out/tag-out and the work may be performed without risk of an unexpected start-up.

If the process involves more than one person

In the steps shown in the above sections, if there is more than one person involved, each person involved will lock-out and tag-out the power-cutting devices.

No one may remove it, except the person adding the lock-out and tag-out. The equipment will not be connected while there is a lock-out and/or tag-out.

Return the machine to its normal operating condition

Reconnection may be made after performing the repair, maintenance, connection or other operations and once the equipment is prepared for use.

Inspect the work area and rest of the machine affected by the lock-out/tag-out, to ensure that no one is exposed.

Remove additional protections, if any.

Remove all tag-outs and other lock-outs.

Reconnect all switches that were disconnected.

The machine is now in service again for normal production.

10 WEEKLY CHECKS

Main switch operation.

Operation of emergency stop.

Correct operation of all safety guard micros.

Guards prevent access to dangerous points on the machine.

The guards are perfectly secured to ensure that there is no danger whatsoever for the user.

The doors on the electrical cabinet and junction boxes are closed properly.

11 AERIAL NOISE EMITTED

The equivalent continuous A-weighted sound pressure level experienced by this machine is 74 dB (A).

12 SAFETY WITH VACUUM PUMPS

This section shall only apply to machines that include vacuum pumps.







IMPORTANT WARNING




IN STANDARD VERSIONS, THIS EQUIPMENT IS NOT PREPARED TO BE OPERATED WITH A MIXTURE OF GASES THAT CONTAIN OXYGEN OVER 21% IN ITS COMPOSITION.



If a gas is to be injected in the package that contains oxygen exceeding the indicated proportion (21%), the vacuum pump must be adapted so that it may work under these conditions. There is a risk of ignition, with the possibility of explosion, due to the reaction between the oils in the pump and the gas enriched with oxygen

If you wish to work under these conditions, please contact ULMA

13 PICTOGRAM SIGNAL

DESCRIPTION	PICTOGRAM
<p>EU Temperatura handiko eremua ES Zona a temperatura elevada EN Higher temperature area DE Hochtemperaturbereich IT Zona a temperatura elevata FR Température élevée dans cette zone NL Zone met hoge temperatuur PT Zona com temperatura elevada PL Strefa wysokiej temperatury RO Zonă cu temperatură ridicată RU Зона с высокой температурой</p>	
<p>EU Elektrizitate arriskua ES Peligro eléctrico EN Electricity danger DE Vorsicht! Elektrizität! IT Rischio elettrico FR Risque d'électrocution NL Elektrisch gevaar PT Perigo elétrico PL Zagrożenie elektryczne RO Pericol electric RU Опасность поражения электрическим током</p>	
<p>EU Arriskua ES Peligro EN Danger DE Gefahr IT Pericolo FR Danger NL Gevaar PT Perigo PL Uwaga RO Pericol RU Опасность</p>	
<p>EU Arrapatzeko arriskua ES Peligro de atrapamiento EN Danger of being trapped DE Klemmgefahr IT Rischio di schiacciamento FR Risque d'écrasement NL Gevaar op verstrikking PT Perigo de prisão de partes PL Niebezpieczeństwo wciągnięcia RO Pericol de strivire RU Опасность захвата</p>	

DESCRIPTION	PICTOGRAM
<p>EU Arrapatzeko arriskua ES Peligro de atrapamiento EN Danger of being trapped DE Klemmgefahr IT Rischio di schiacciamento FR Risque d'écrasement NL Gevaar op verstricking PT Perigo de prisão de partes PL Niebezpieczeństwo wciągnięcia RO Pericol de strivire RU Опасность захвата</p>	
<p>EU Makina martxan egonik konponketaren debekua ES Prohibición de reparación en funcionamiento EN Repair forbidden when functioning DE Reparatur bei laufender Maschine verboten IT Divieto di riparare mentre è in funzione FR Interdiction de réparer la machine en fonctionnement NL Verboden te machine te repareren terwijl die aan het werken is PT Proibição de reparação em funcionamento PL Zakaz naprawiania maszyny w czasie pracy RO Interzisă repararea în timpul funcționării RU Запрещается производить ремонт во время работы машины</p>	
<p>EU Baimen gabeko langileria debekatuta dauka makina konpontzea ES Prohibido reparar la máquina a personal no autorizado EN Unauthorized personnel are forbidden to repair the machine DE Reparatur durch unbefugte Personen verboten IT È vietato riparare la macchina al personale non autorizzato FR Interdiction à toute personne non autorisée de réparer la machine NL Verboden de machine te laten repareren door onbevoegd personeel PT Proibida a reparação da máquina por pessoal não autorizado PL Zakaz naprawiania maszyny przez niewykwalifikowany personel RO Interzisă repararea de către personal neautorizat RU Запрещается производить ремонт неразрешенному персоналу</p>	

DESCRIPTION	PICTOGRAM
<p>EU Makina martxan egonik koipeztatzearen debekua ES Prohibido engrasar la máquina en funcionamiento EN Forbidden to lubricate the machine when functioning DE Schmierung bei laufender Maschine verboten IT È vietato lubrificare la macchina quando è in funzione FR Interdiction de graisser la machine en fonctionnement NL Verboden de machine te smeren terwijl die aan het werken is PT Proibido lubrificar com a máquina em funcionamento PL Zakaz smarowania maszyny w czasie pracy RO Interzisă ungerea mașinii în timpul funcționării RU Запрещается смазывать машину во время ее работы</p>	
<p>EU Makinan manipulazio puntuak ES Puntos de manipulación de máquina EN Machine handling points DE Bedienpunkte der maschine IT Punti di manovra della macchina FR Points de manipulation de la machine NL Manipuleerpunten op de machine PT Pontos de manipulação da máquina PL Punkty czynności przy maszynie RO Puncte de manipulare a mașinii RU Места захвата машины</p>	

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1 MACHINE WORKING DESCRIPTION

1.1 INTRODUCTION – WORKING DESCRIPTION

Thermoforming machines are included within the group formed by wrapping machines.

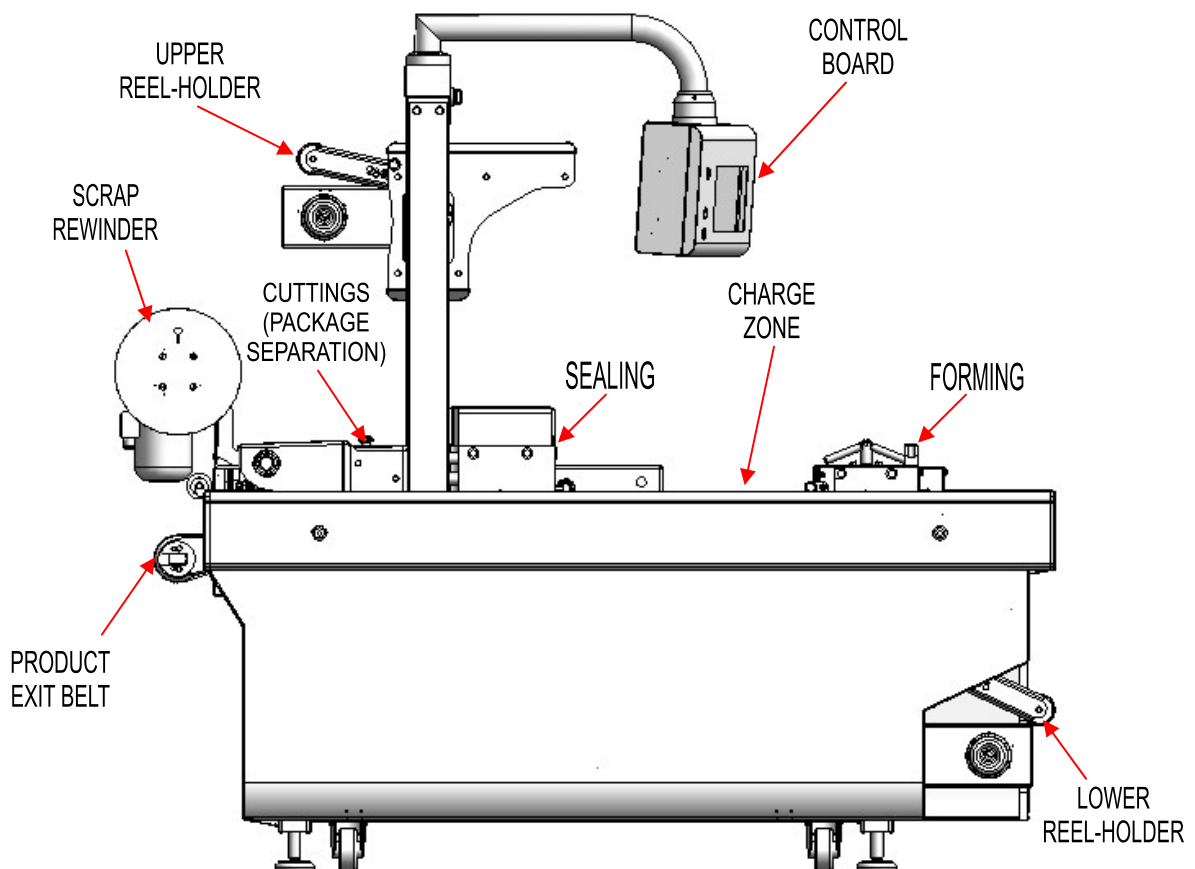
This machine uses two film coils. The interior coil is made of plastic material (usually a complex one, that is to say, formed by more than one component) that, by means of different systems, when it meets the thermoforming mould adapts itself to the shape of a fitting so creating a cavity.

Once the film cooled, it reaches the loading area, where the product to be packed is introduced in the abovementioned cavities by means of adequate devices that adapt themselves to the machine.

Then, the upper film is placed on the cavities and both enter a camera or welding mould where the sealing of both plastic materials takes place. Previously, and if the product so requires and the moulds are prepared to do so, we can create an atmosphere modification into the package.

Finally, at the cutting unit, packs are divided by unit or by group and so they come out of the machine ready to be presented to consumers.

1.2 MACHINE WORKING DESCRIPTION



1.3 THERMOFORMING MOULD

Thermoforming is one of the oldest methods of plastic material processing. The film, which is placed over the thermoforming mould held by grips, must be:

1. Preheated.
2. Moulded.
3. Cooled.

The previously heated material is softened and then pushed against a mould surface, so adapting itself to the shape of the surface (this process is called forming or moulding). When the hot film touches the cooled fitting, the film cools and its new shape is stable. The thickness of the mould surface will always be below the starting thickness of the film.

1.4 SEALING MOULD

Once the thermoforming finished and after having put the product to wrap in the cavity, the product will enter the heat-sealing unit together with the upper film, where both materials will be joined together.

The heat- sealing unit varies depending on the processes that will take place inside it:

The simplest case is a welding mould where both materials are welded.

- 2) Then you can have a welding mould designed to make a previous vacuum.
- 3) Finally, you may want the sealing mould to inject gas into the wrapping. In this case, a previous vacuum will be made.

1.5 DIVISION PER TRAY UNIT

So far, we have trays with a product inside and closed by means of an upper film. These trays reach the cutting area, where the units will be divided.

Depending on the shape and material of the tray, we can use one system or another, depending on whether we have used a flexible or stiff film.

DIFFERENT TYPES OF CUTTING DEPENDING ON PACKING MATERIAL

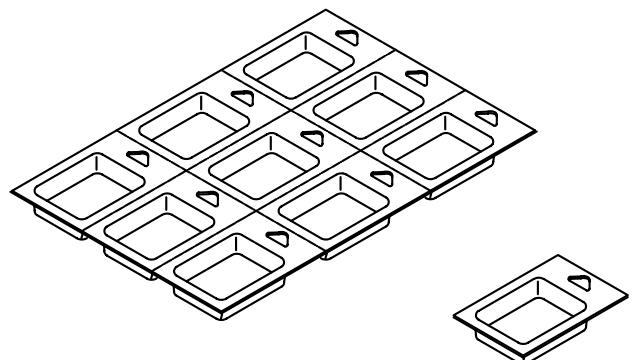
FLEXIBLE FILM (MATERIALS)

-CROSS-CUTTING

Guillotine cutting.

-LONGITUDINAL CUTTING

Pneumatic edge cutting.



2 MACHINE INSTALLATION

2.1 MACHINE LOCATION

The machine must be located so that all its parts are easily reachable.

It is advised to leave a minimum space at the front and at the back of the machine in order to allow access for maintenance.

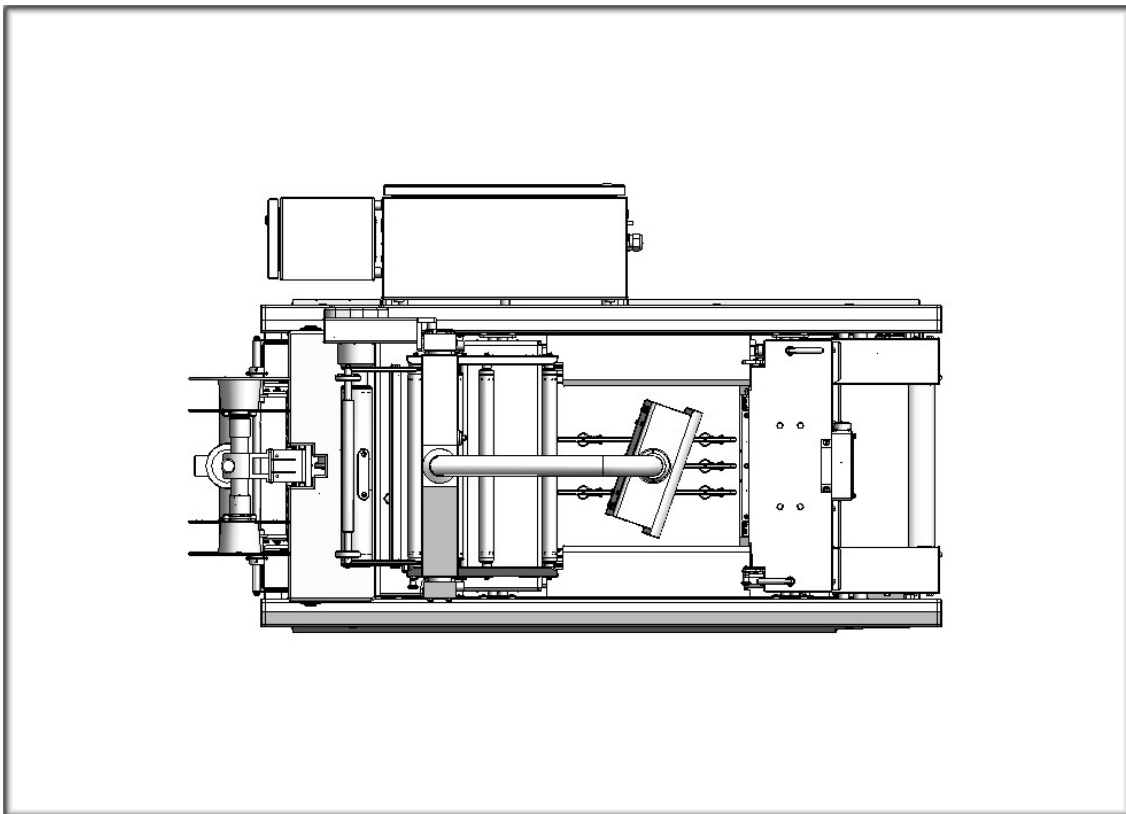
A space will be necessary for the output of products or a possible output conveyor connection.

The loading area of the machine must be free of obstacles in order to ease the feeding of products.

According to the installation diagram, you must foresee the location of the machine and its supplies.

The height can be adjusted thanks to the legs of the machine.

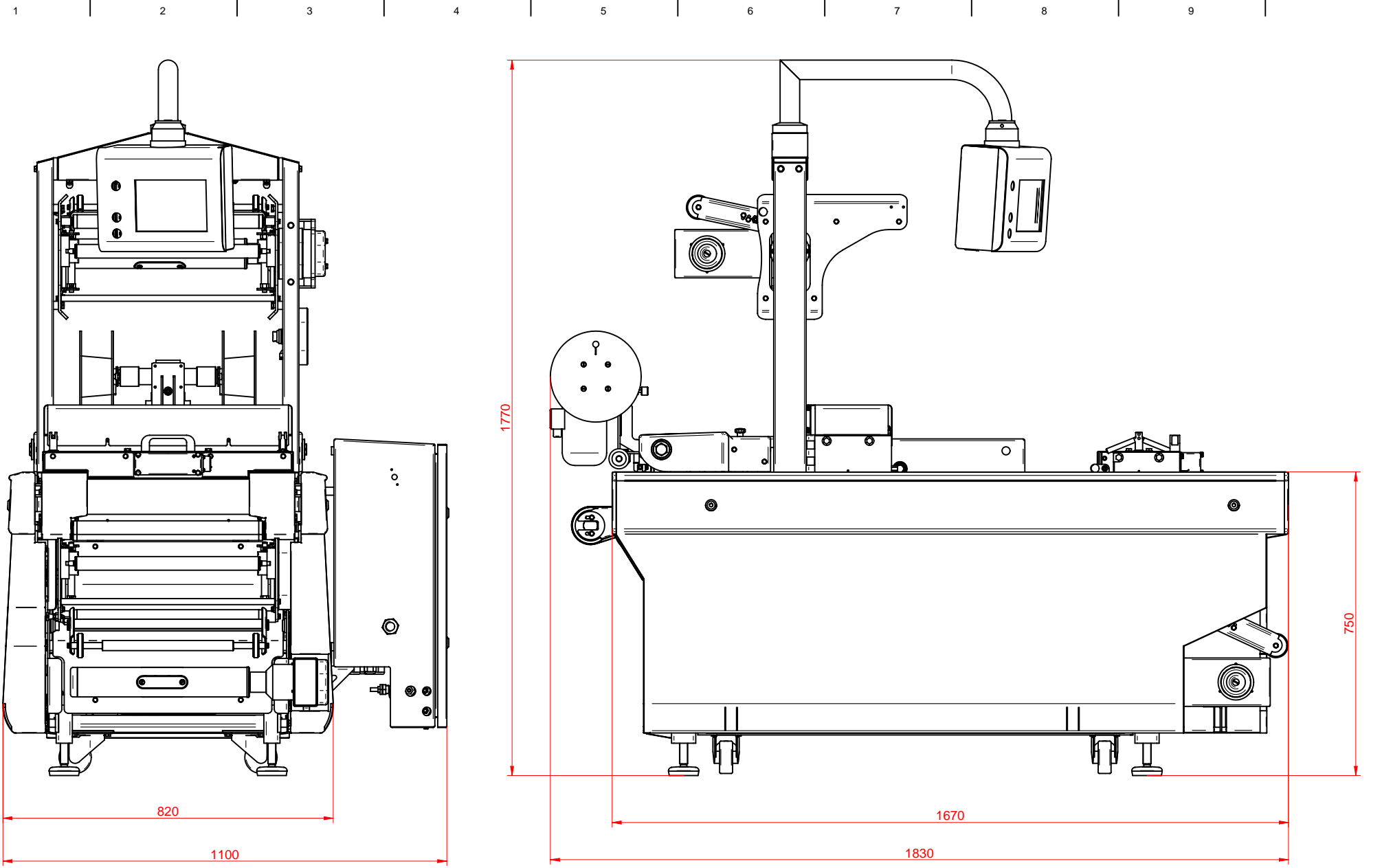
The machine must be horizontal and the access to the pneumatic and electrical cabinets must be free of obstacles.




2.2 MACHINE DIMENSIONS

(Next page)

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V.	Modificacion	Posicion	Realizado	Fecha

Izena - Denominacion MAQUINA TFS-100		380V 50HZ		Data - Fecha 16/06/09	
Eskalari - Material		A.ORTUETA		Oneratzaile - Aprobada A.ORTUETA	
Tratamendua - Tratamiento		Aren Ordezkoa		Ver.	
Zimurtasuna - Rugosidad		Eskala - Escala 1:9.1		Marrakiz z. - Dibujo Numero 8488199	
		Parteko Orokorrak - Tolerantzia Generalak UNE EN 22768-1-m : 1993 UNE EN 22768-2-k : 1993		Ver. 00	

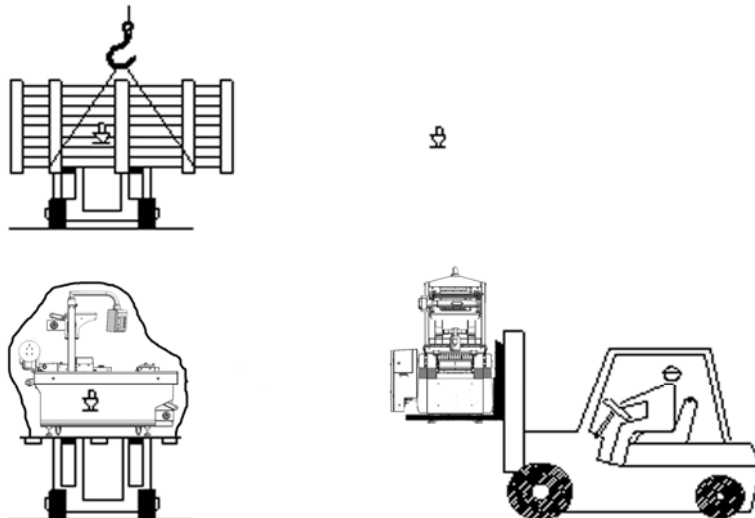
3 VERIFICATIONS BEFORE INSTALLATION

3.1 TRANSPORT INSTRUCTIONS

For the transport and installation of the machine, you must prepare a forklift truck (remember the weight of the machine).

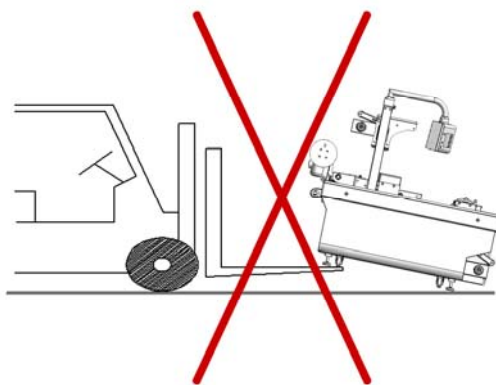
Precautions to be taken:

-Lift the machine by its centre of gravity, which may not be the centre of the machine.



-When you lift the machine with the forklift truck, do so by its front part (opposite to the electrical cabinet). Verify the existence of components sticking out of the lower part of the machine.

-Do never lift the machine by its ends or extensions.



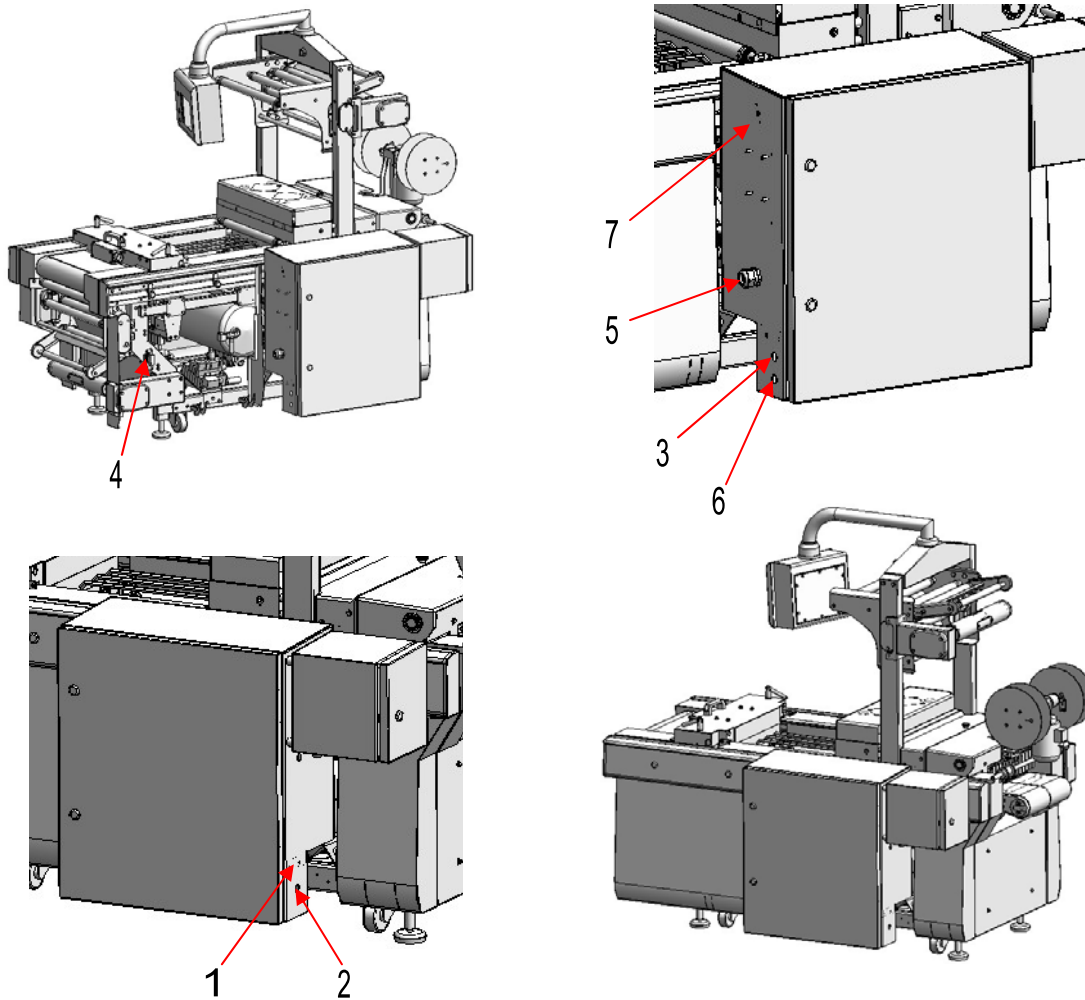
-Always be extremely careful when lifting and transporting the machine.

-Approximate weight of the machine: 400kg.

-If you want to lift the machine with a crane, you must protect the contact areas of the slings with the framework in order to avoid scratches and distortions.

3.2 INSTALLATION SCHEME

Cabinet backside view



NUMBER	DENOMINATION
1	Vacuum pump tray connector
2	Gas inlet (option)
3	Cooling water outlet
4	Water outlet push button
5	Electrical connection
6	Cooling water inlet
7	Main switch

3.3 ELECTRICAL CIRCUIT

Check that the electrical tension corresponds to the characteristics of the machine (see characteristic plate).

Check the existence of NEUTRAL and EARTH in the supply if connected to 400V. If there is a 230V connection, NEUTRAL will not be used.

Highest tolerance in tension variation: 10%.

Check the spinning sense of all the engines included those in vacuum pumps.

3.4 VACUUM CONNECTION

(Only if moulds are prepared to carry out this function).

The connection of the pump to the machine is made by means of strengthen plastic hoses. Long lines as well as bends must be avoided as they reduce the final level of vacuum.

For the products that have high levels of moisture, you must use a non emulsifier oil in the vacuum pump. If you do not use this oil, you will have to include a decanting device previously to the pump in order to eliminate water.

Check the spinning sense of pump motor.

3.5 PNEUMATIC CONNECTION

(Just when there is not air compressor).

The compressed air net must be able to supply the necessary pressure and flow (6 - 7 Kg/cm² and 250 l/min).

Minimum pressure = 6 bar. If this pressure decreased during machine operation, problems would occur.

Set the pressure regulator of the maintenance group. In systems with high water condensation (low room temperature), it would be a good idea to install a decanting device in order to avoid possible breakdowns.

3.5.1 AIR TREATMENT

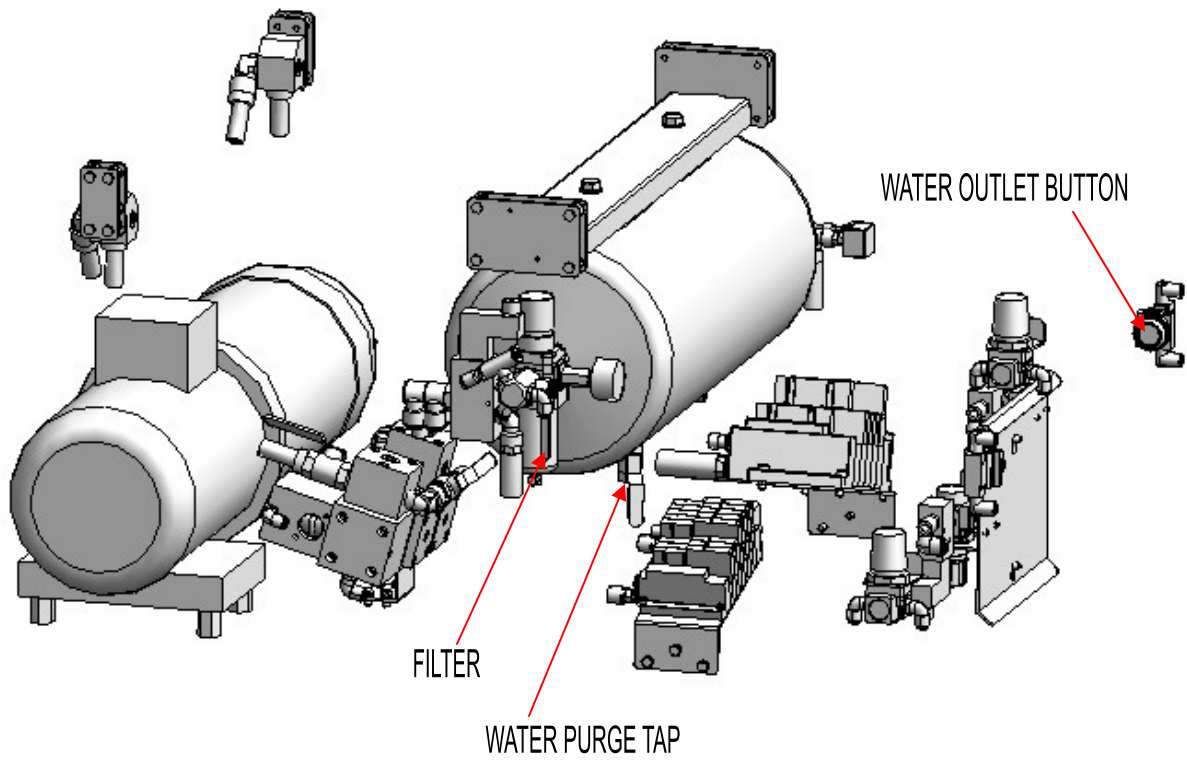
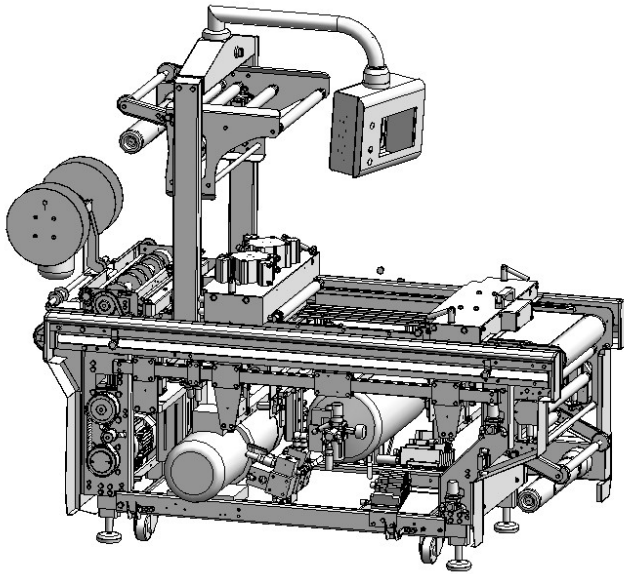
The air used in the machines OPTIMA must be dry and not contain any oil. This is why we recommend to check the compressed air installation (there must be a filter to eliminate moisture and air impurities) before connecting the machine.

The air filter at the inlet of the machine eliminates small impurities and moisture in the air, but the air must be dry and filtered at the outlet of the compressor.

The inlet filter of the machine must be bled every time it is full with water.

When forming is made with air, air moisture can damage the pneumatic circuit and air impurities can make the tray look dirty.

Purge the condensed water from the air deposit when switching off the machine, or every 8 hours.



3.6 COOLING WATER CONNECTION

Supply and drain connections are made through a transparent blue plastic hose.

Check if the following characteristics are true:

- Highest pressure: 2 Kg./cm²
- Lowest pressure: 1.5 Kg./cm²
- Flow: 40 - 60 L/h. (s. temperatura)

The pressure must be within these limits. A pressure lower than 1 Kg./cm² can cause working problems.

When first using the machine, clean the pipes properly before making water pass through the circuit in order to eliminate remains from the assembly process.

We recommend to install an inlet purifier in order to filter the biggest impurities.

If water is rich in lime, you will have to install a water softener.

If inlet cooling water temperature is over 15^o C, we recommend you to install a water softener.

An alternative to the water softener could be a closed circuit.

3.7 GAS CONNECTION

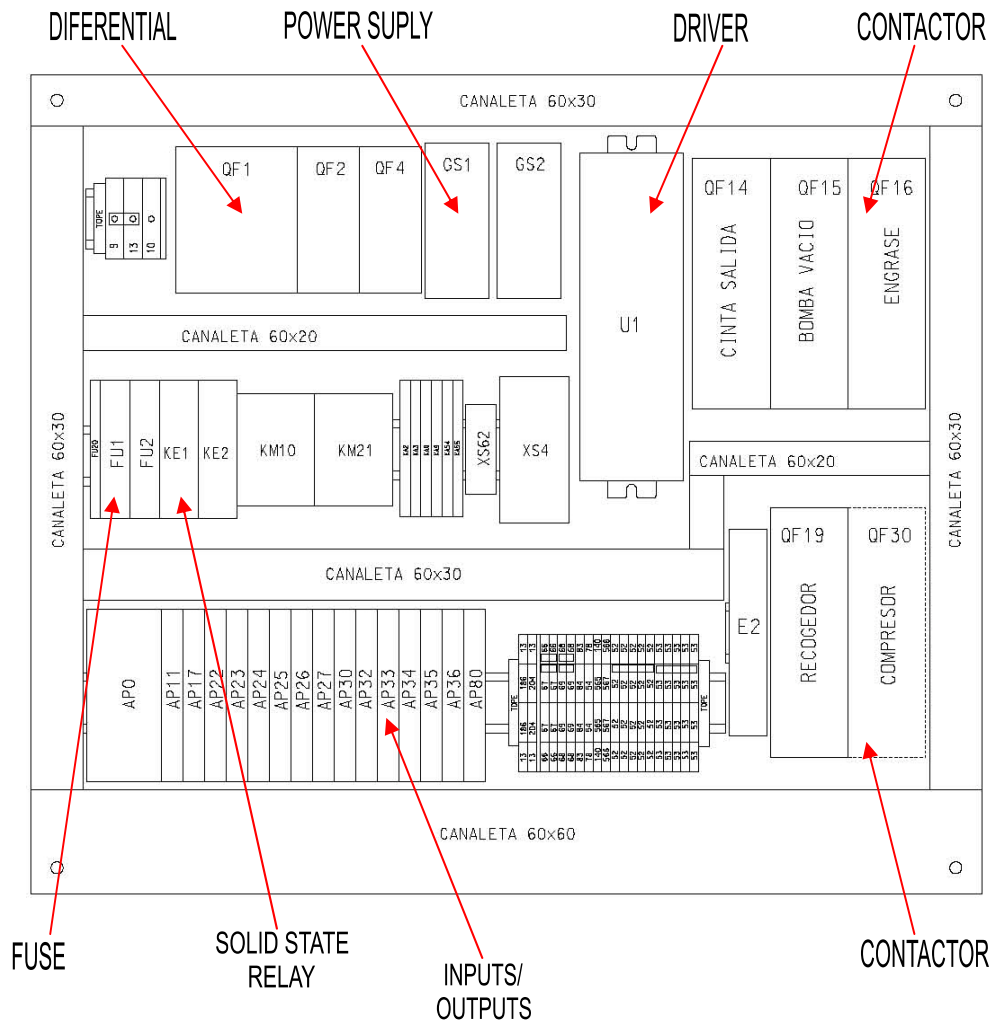
For moulds designed for gas injection only.

The gas or gas mixture is usually supplied in high pressure bottles in which outlet a pressure gauge is placed which regulates the outlet pressure of the gas. The normal working pressure varies depending on gas volume (0.5-2 Kg/cm²).

In the free part of the pressure gauge, a flexible hose is placed (ref. RYLSOL OX 20 Atm. dia. 8x16 mm.) which reaches the gas connection at the machine (see connection diagram).

In case you needed so, the mixture could be made "in situ" with as many bottles as components there are in the mixture. You will find in the market some mixers to do this and even bottles with the mixture already made.

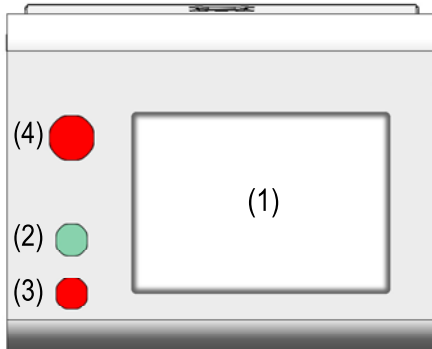
3.8 ELECTRONIC CABINET



4 MACHINE OPERATION

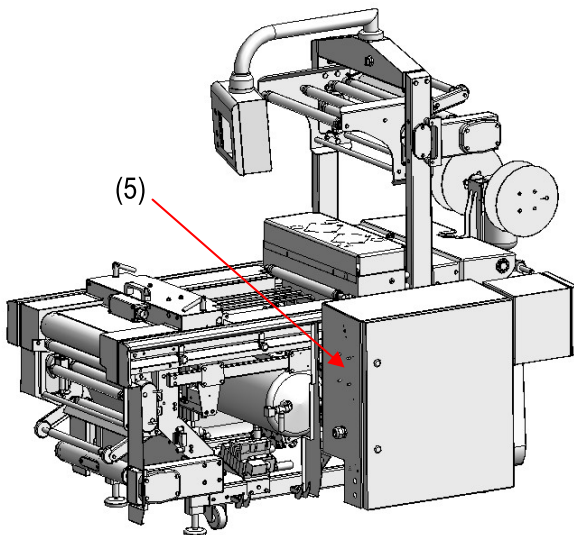
4.1 CONTROLS

NEXT TO THE CONTROL PANEL



- 1 Touch screen. (See touch screen functions)
- 2 Start button.
- 3 Stop button.
- 4 Emergency stop button (STOP).

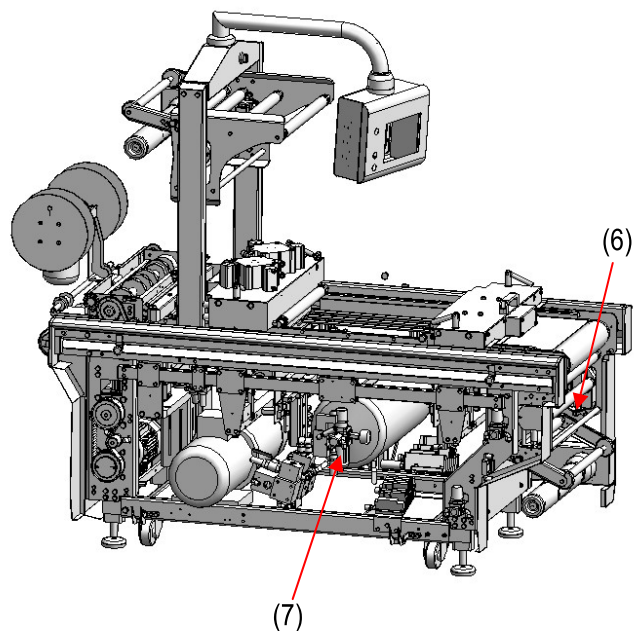
NEXT TO THE CABINET



- 5 Main switch

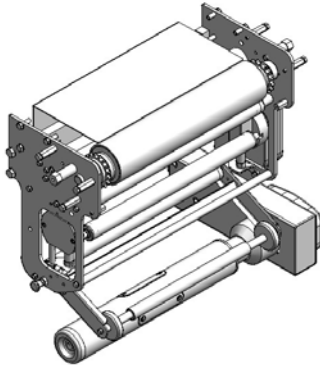
ON THE MACHINE WORK SURFACE

- 6 Cooling water outlet button
- 7 Air inlet regulator and filter



4.2 FILM COIL INSERTION

Once the machine is connected, we must insert the film coils in order to begin to work. The dimensions and characteristics of the coils are specified in the drawing given to the customer.



LOWER FILM COIL INSERTION

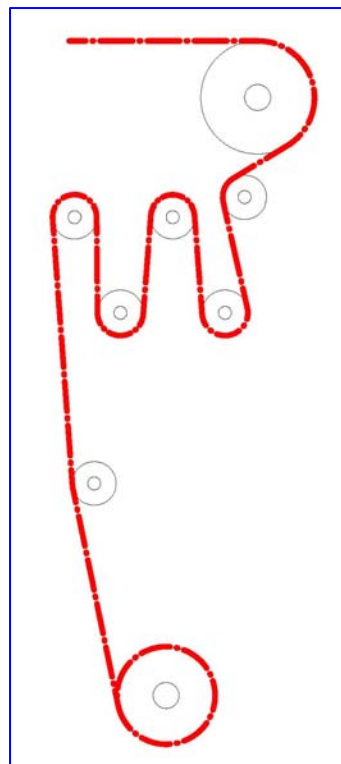
Insert the coil in its mandrel and place the reed on the coil support centred with respect to the setting rings.

Next to the working surface of the machine, there is a diagram indicating the film flow until the input roll. In order to ease the introduction of the film when you install a new coil, there is an advancement button at the input end of the machine, on the coil support.

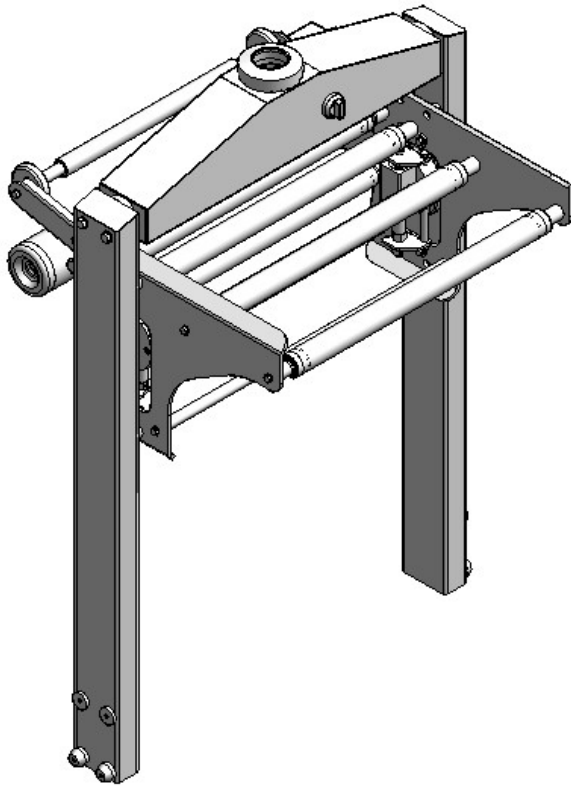
At the film inlet roll, grips are open. Insert the film between them and make it pass through the winders according to the scheme. When you push the advancement button, the grips will hold the film and drag it. Be careful so that the beginning of the film does not encounter any supporting bar.

If the film is complex, only one of the faces will be the welding face. This face must be upwards. All the coils have this face identified.

Lower roll-holder



UPPER FILM COIL INSERTION



Insert the coil in its mandrel, hold the nut and place the reel on the coil support centred with respect to the setting rings.

Place the coil on the upper coil support. The sense of the coil introduction will depend on which is the welding face. This face must be opposite to the lower film (downwards at mould inlet) for both parts to weld together. Make the film pass through the winders according to the scheme.

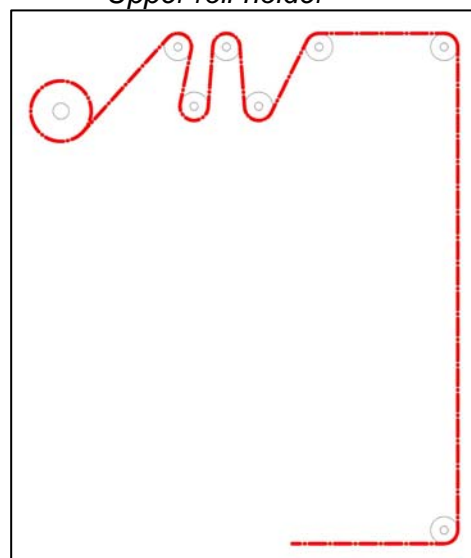
The upper film has no specific dragging system. It is driven by the lower film once they are welded together.

Insert the film until it reaches the welding mould inlet or stick it to the lower film with some sticking tape. During the first cycle, when you press the start button, if the welding temperature is adequate and the sealing time sufficient, both materials

will weld together and the lower film will drive the upper film, except if one of the coils is badly placed. If this was the case, check if the welding faces of both films are opposite each other.

If the upper film is of a printed type, try to insert it so that the printed part is centred with respect to the sealing.

Upper roll-holder



4.3 OPERATION

The control system of TFS offers a range of devices so that handling the functions of its machines turns out to be an easy task for operators. These devices are:

- Touch screen.
- Start button.
- Stop button.
- Emergency stop button (emergency).
- Main switch.

The touch screen is a device that helps the machine operator by indicating him/her, in case there is an interruption, what caused the machine to stop. It also permits handling the working mode of the machine (vacuum connection, gas, cross-cutting, encoder, photocell, change of time, change of temperature...).

There are two cycle buttons located in the control board.

The water outlet button evacuates water from the cooling circuit and is used when changing or loosening moulds.

The main switch is only used to start and stop the machine in normal conditions.

To start the machine, we turn on the main switch. If the coil films are already inserted and the stop is deactivated, we can start working. In order to do so, you must press the start button and some machine devices will start working (air circuit, water and heaters).

When everything is ready (temperatures reached and rolls on standby) you must press the start button again to start the auto working mode. The machine indicated you can start the auto working mode with a blinking light on the right upper corner of the screen. If the light does not blink and you press the start button, you will get a message on the screen indicating the reason why you cannot start the auto working mode.

Together with this manual, you will find enclosed a working instructions sheet where you can find the adequate temperature and position of the elements that form the control panel in order to correctly process the plastic film.

For the machine to stop the cycles, you must press the stop button.

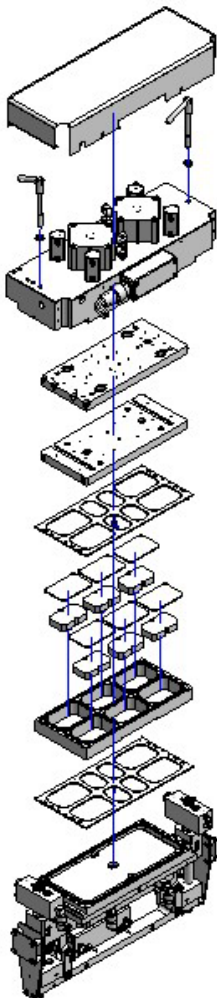
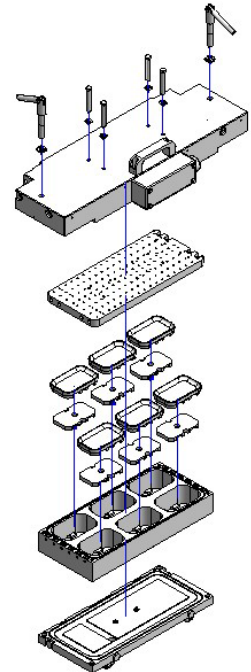
5 FORMAT AND MOULD CHANGE

Whenever the format needs to be changed, the machine must be shut-down.

Follow these steps:

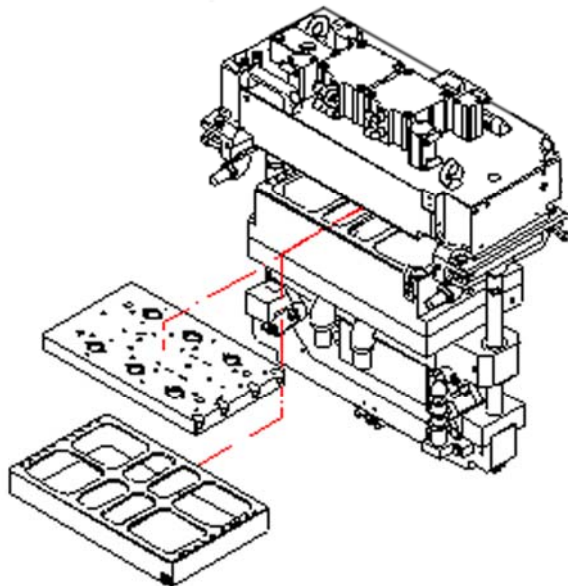
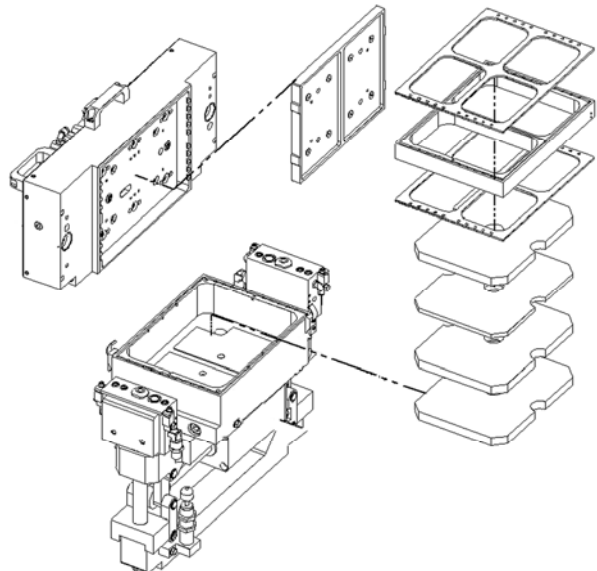
5.1 FORMING MOULD CHANGE

- 1.-Select the program number you wish to use.
- 2.-Purge the water from the cooling system
- 3.-Rotate the top former by loosening the side levers and the connector. Cut the film and the forming drawer will remain visible with its formats.
- 4.-Extract the mould towards the lower reel-holder area by lifting it slightly. Remove it from the machine and place it in its appropriate storage area.
- 5.-Use the new mould (from the same pass (trajectory) and carry out the operation in reverse to point 5.
- 6.-Place the top former in its position once again and tie it using the side levers.



5.2 SEALING MOULD CHANGE

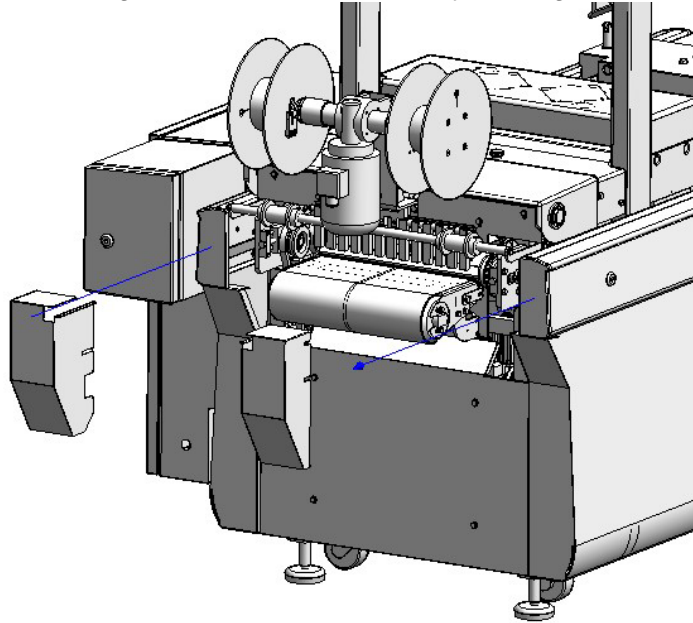
- 1.-Open the cutting safety cover.
- 2.-In case the mould has pneumatic change, activated plate change. That way, we can make the cylinders that tie the sealing plate loosen the plate.
- 3.-Using heat protective gloves hold the sealing plate, that was previously loosened, and move it to the charge zone.
- 4.-Place the hot plate in a safe place (hot plate).
- 5.-Take the new sealing plate and insert it in the former with the grooves facing towards the former until its end hits the end of the mooring cylinders.
- 6.-Return the selector from point 2 to its initial position and the plate will be tied to the hot plate.
- 7.-Cut the film using a cutter and make a space in the steps before and after the sealing module (If the base film is installed).
- 8.-Raise the frame around 15 mm and remove it through the space (of the film) on the left side of the sealing module.
- 9.-Take the new frame and follow the procedure in point 8 in reverse.
- 10.-Place any corresponding blocks and frames.
- 11.-Place safety cover.

**FORMAT CHANGE IN SEALING
MOULD WITH PNEUMATIC CHANGE****FORMAT CHANGE IN SEALING
MOULD WITH MANUAL CHANGE****5.3 FORMAT CHANGE IN THE LONGITUDINAL CUTTING**

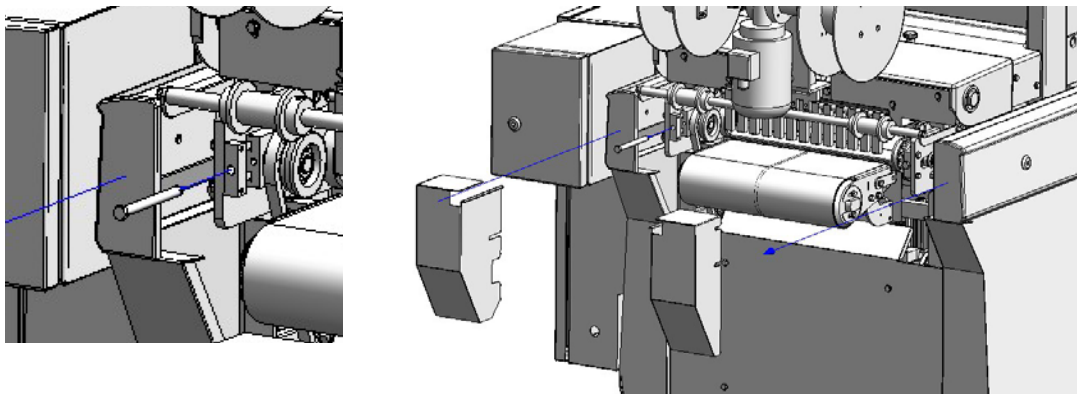
Activate the necessary pneumatic heads for cutting the desired format.

6 CHANGE OF DRAGGING GRIPS

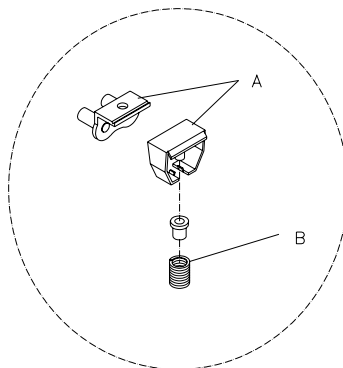
- 1) Remove the closing sheets of the machine by loosening the screws.



- 2) Loosen the chain by means of the tightening screws.



- 3) Substitute defective grips (A) and springs (B).

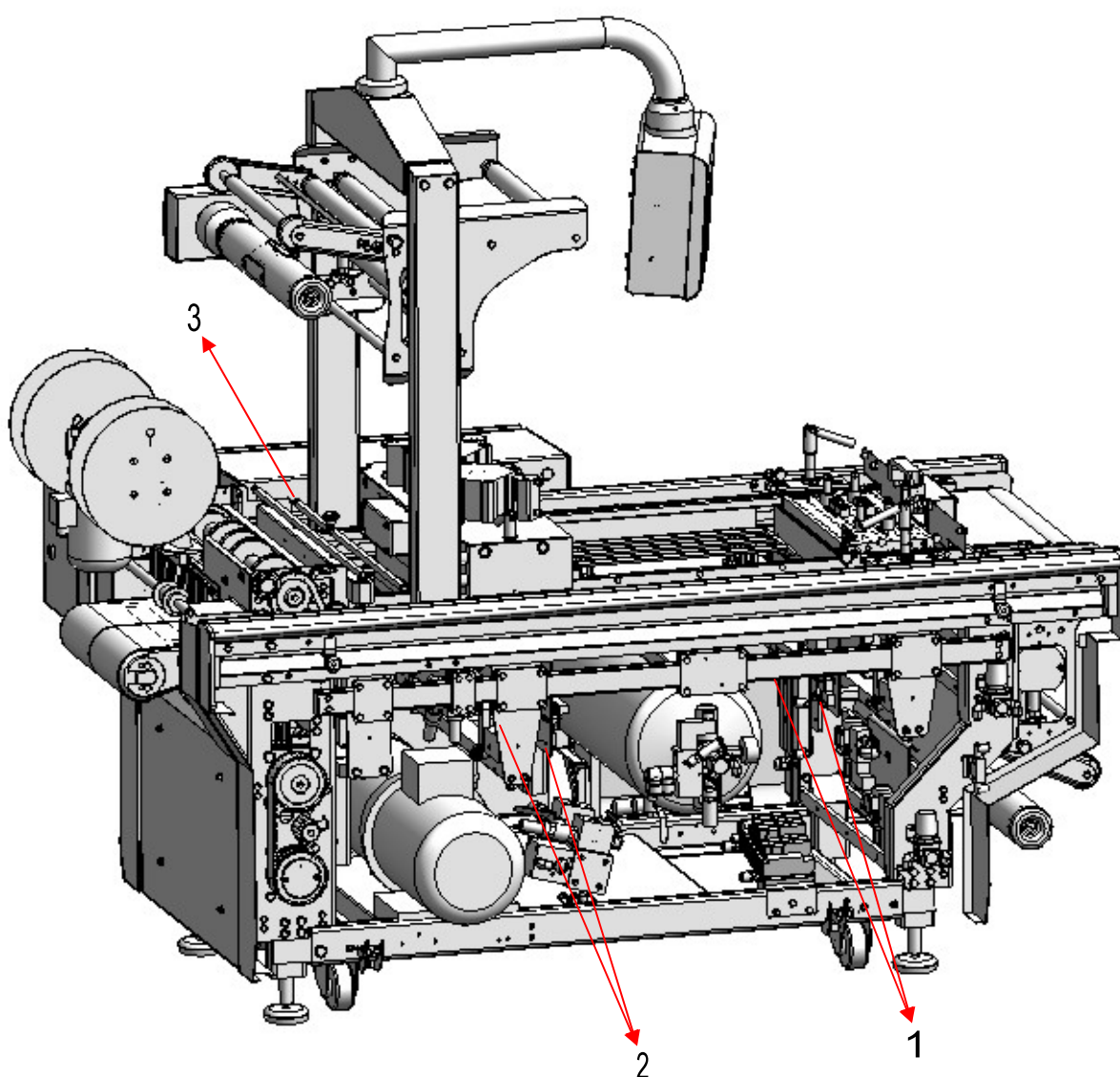


- 4) Tighten conveyor (observe that A grips open).

6.1 DETECTORS. LOCATION OF DETECTORS

- 1) Security micro forming safety barrier.
- 2) Security micro sealing safety barrier.
- 3) Security micro cutting guard.

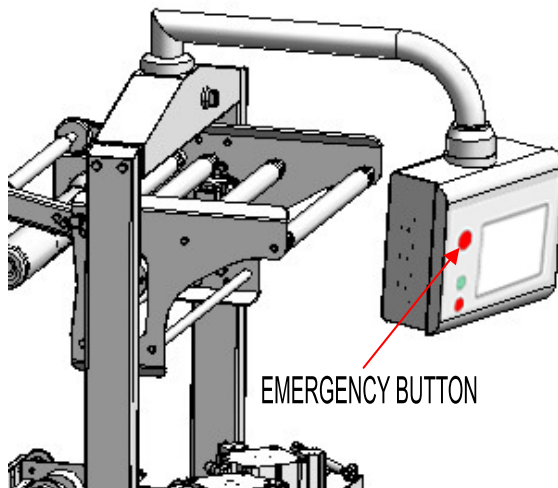
Detectors



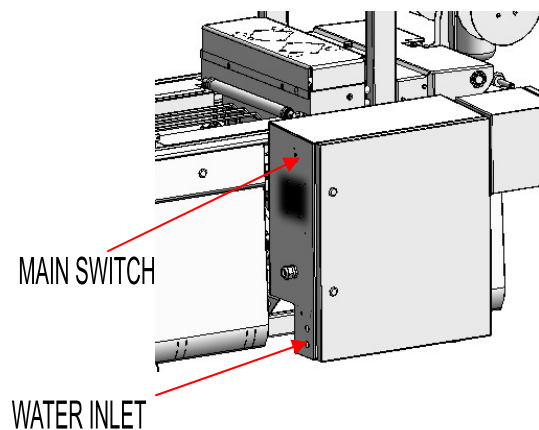
6.2 WARNINGS AND DANGEROUS AREAS FOR THE OPERATOR

In case of emergency, the operator must follow the instructions below:

Press emergency button



Disconnect main switch, close compressed air, gas and water



Ask for help

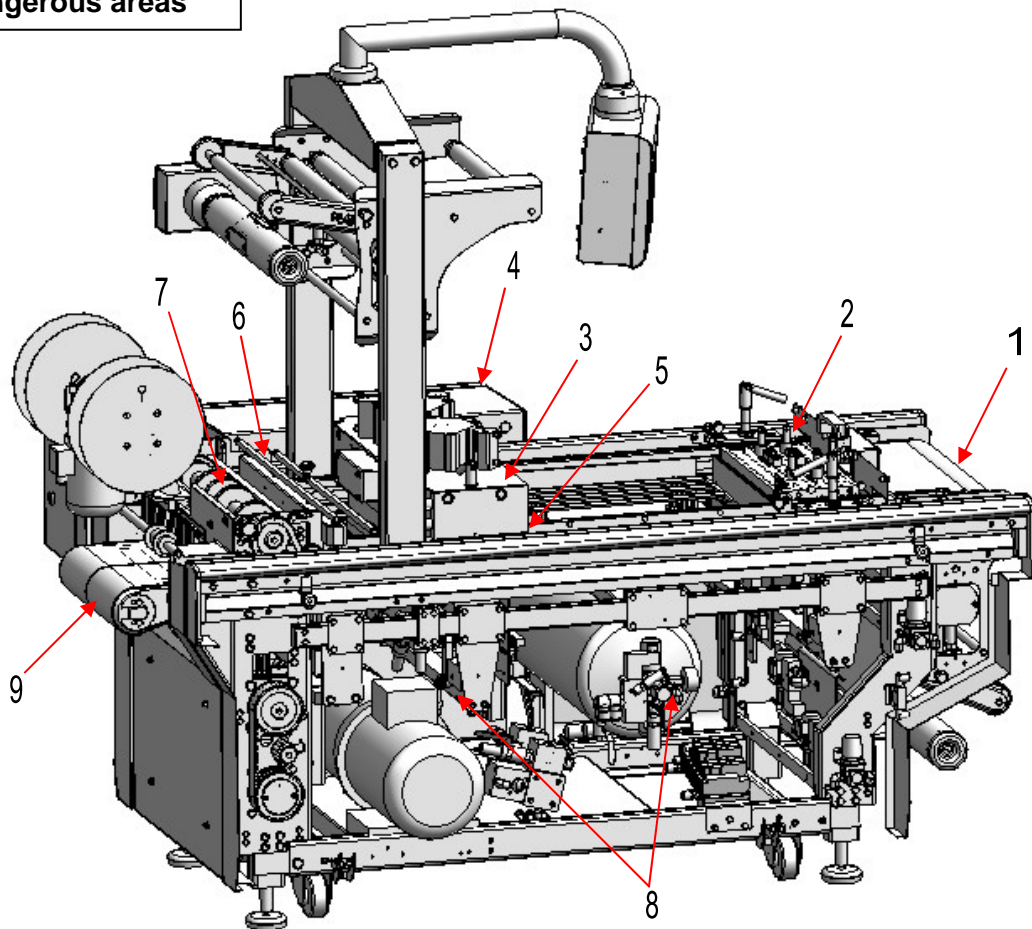
The people working with this type of machines can be badly injured if they do not follow the main rules for these machines.

The inadequate use of these machines can cause important damage in the machine or in the products. This is why it is completely forbidden to modify the machine if you are not qualified to do so.

The dangerous areas for the user are protected by means of a security system. The manipulation of this system can cause problems for the user. If the system had to be dismantled for maintenance or repairing purposes, the machine should be turned off if possible. If this was not possible, the system must be installed immediately after the maintenance or repairing work is finished. There are some dangerous areas which are not protected by any security system. This is the case of the lower film inlet (where clothes can get stuck) and also of all the mechanisms that move upwards and downwards. These mechanisms will not be dangerous if the user works with all the guards correctly placed. All the dangerous areas are marked with a specific danger symbol.

These are the reasons why the user must examine the machine every day. This must be done when starting the machine in search of any damage that can have a negative influence on the security of the user. The worker, even if recently recruited, must be familiarised with the security devices in order to be able to assure a correct operation of the machine.

Dangerous areas



- 1-Lower film inlet
- 2-Forming area
- 3-Sealing area
- 4-Electrical cabinet
- 5-Upper film inlet
- 6-Cross-cutting
- 7-Longitudinal cutting
- 8-Side guards and mechanisms
- 9-Product outlet area
- 10-Optional mechanisms

Before starting to work in any of the abovementioned dangerous areas, the main switch must be reset, i.e., the machine must be disconnected.

ATTENTION

DANGER OF ELECTROCUTION IN THE HEATING RESISTANCES OF THE ELECTRIC CABINET:

The heating resistances that maintain the electric cabinet on a pre-selected temperature (that can be adjusted with a thermostat) are connected directly to the main electrical supply; for this reason, although the machine has been turned off with the main switch, the heaters will continue in operation until cutting the general electrical supply.

7 MAINTENANCE

This chapter will explain the steps to follow to guarantee proper machine performance.

7.1 GENERAL MAINTENANCE AND CLEANING

7.1.1 CLEANING THE MACHINE

For the cleaning processes described below we have worked in collaboration with companies such as Johnson Diversey and Ecolab. Therefore, the cleaning procedures explained below are directly related to each of the cleaning products recommended by each of the two companies for each application.



		DETERGENTS (1)	DISINFECTANT DETERGENTS (2)	STAIN REMOVAL DETERGENTS (3)	DISINFECTANTS (4)
DAIRY PRODUCTS	Johnson Diversey	ARTECLEAN VK40	DIVERFOAM SMS CLHOR VF18	ACIFOAM VF10	SUREDIS VT1
RAW MEAT	Johnson Diversey	DELTAFOAM VF8	DIVERFOAM SMS CLHOR VF18	ACIFOAM VF10	SUREDIS VT1
FISH	Johnson Diversey	ARTECLEAN VK40	DIVERFOAM SMS CLHOR VF18	ACIFOAM VF10	SUREDIS VT1
FRUITS AND VEGETABLES	Johnson Diversey	SAFEFOAM VF9	DIVERFOAM SMS CLHOR VF18	ACIFOAM VF10	SUREDIS VT1
PRE-COOKED	Johnson Diversey	ARTECLEAN VK40	DIVERFOAM SMS CLHOR VF18	ACIFOAM VF10	SUREDIS VT1

There are 3 cleaning methods:

1. FAST cleaning (or INTERMEDIATE)

- a. Initial rinse
- b. Lather with (2) disinfectant detergent
- c. Minimum action time of 10 minutes
- d. Final Rinse

2. LONG cleaning (or FINAL)

- a. Initial rinse
- b. Lather with (1) disinfectant detergent
- c. Intermediate rinse
- d. Lather with (4) disinfectant

- e. Minimum action time of 10 minutes
- f. Final Rinse

3. ACID Cleaning (Stain removal)

- a. Initial rinse
- b. Lather with (1) detergent
- c. Intermediate rinse
- d. Lather with (3) acid detergent
- e. Intermediate rinse
- f. Lather with (4) disinfectant
- g. Minimum action time of 10 minutes
- h. Final Rinse



Product	Stage	Material	Long cleaning	Short cleaning*	Acid cleaning	Manual / neutral cleaning	Alcohol-based disinfectant
FRESH CHEESE	Detergent	Stainless	<i>P3-top ax 19</i>	<i>P3-top ax 66</i>	<i>P3-top ax 52</i>	<i>Adilex 1</i>	
		Aluminium	<i>P3-top ax 17</i>	<i>P3-top ax 686</i>			
	Disinfectant		<i>P3-top ax 99</i>				<i>P3-alcodes or Alcodes MaxiWipes</i>
MEAT	Detergent	Stainless	<i>P3-top ax 19</i>	<i>P3-top ax 66</i>	<i>P3-top ax 52</i>	<i>Adilex 1</i>	
		Aluminium	<i>P3-top ax 17</i>	<i>P3-top ax 686</i>			
	Disinfectant		<i>P3-top ax 99</i>				<i>P3-alcodes or Alcodes MaxiWipes</i>
FISH	Detergent	Stainless	<i>P3-top ax 66</i>	<i>P3-top ax 66</i>	<i>P3-top ax 52</i>	<i>Adilex 1</i>	
		Aluminium	<i>P3-top ax 686</i>	<i>P3-top ax 686</i>			
	Disinfectant		<i>P3-top ax 91</i>				<i>P3-alcodes or Alcodes MaxiWipes</i>
FRUITS AND VEGETABLES	Detergent	Stainless	<i>P3-top ax 19</i>	<i>P3-top ax 66</i>	<i>P3-top ax 52</i>	<i>Adilex 1</i>	
		Pigments*	<i>P3-top ax 66</i>				
		Aluminium	<i>P3-top ax 17</i>	<i>P3-top ax 686</i>			
	Disinfectant		<i>P3-top ax 99</i>				<i>P3-alcodes or Alcodes MaxiWipes</i>
PRECOOKED FOOD	Detergent	Stainless	<i>P3-top ax 19</i>	<i>P3-top ax 66</i>	<i>P3-top ax 52</i>	<i>Adilex 1</i>	
		Aluminium	<i>P3-top ax 17</i>	<i>P3-top ax 686</i>			
	Disinfectant		<i>P3-top ax 99</i>				<i>P3-alcodes or Alcodes MaxiWipes</i>

- Manual / neutral cleaning: for covers or superficial plastics that do not resist alkalis or acids.
- Short cleaning: we recommend a product with a detergent and disinfectant action.
- Alcohol-based disinfectant: First remove the dirt with a moist towel/rag and then apply the product.

PRODUCT DESCRIPTION:

P3-topax 19: Alkaline detergent applied as foam	P3-topax 91: Quaternary ammonium-based disinfectant
P3-topax 17: Alkaline detergent with rust proofing applied as foam.	P3-topax 99: Amine-based disinfectant
P3-topax 66: Alkaline-chlorine detergent-disinfectant applied as foam	ADILEX L: Manually applied neutral detergent
P3-topax 686: Alkaline detergent with active chlorine applied as foam	P3-alcodes: Ready-to-use disinfectant spray.
P3-topax 52: Acid detergent applied as foam	Alcodes Maxiwipes: Alcohol-based disinfectant soaked-towels

7.1.2 GENERAL OBSERVATIONS

To protect the machine consider the following guidelines:

- Do not use detergents that contain chlorine. Use detergents with a ph level of 6 to 9.5.
- Do not use disinfectants that contain chlorine. Use alcohol-based disinfectants.
- Do not use high-pressure or steam cleaning equipment. Use low-pressure foamy detergents and hot water.
- Do not use disinfectant detergents that contain the chemicals listed below on the polycarbonate protection covers:
 - Ammonia.
 - Strong alkali.
 - Substances that are similar to glycol.
 - Chlorine.
- Check the indications on detergents, disinfectants and anti-rusting agents!

VERY IMPORTANT!!!



ULMA is not responsible for any damage to the machines due to the improper choice or use of cleaning products.

7.1.3 CLEANING PROCEDURES

At the commencement of cleaning the machine, for the good of the user, make sure that the main switch is in the "0" position if by chance you have the metallic safety guards turned on, or the safety devices activated as without these, dangerous situations may arise for the operator.

The user should utilise gloves, safety glasses, etc., when using cleaning substances and be careful with alcohol-based disinfectants as they may cause burning of the skin. The user should also bear in mind the safety instructions and the operating instructions of the above-mentioned products.

As has been stated previously, before commencing to clean the machine, make sure the main switch is in the "0" position. After checking this, you can wash the machine without take off the covers with hot water. Then you must take off the covers and you can remove the biggest part of dirty with air pressure (until 3 or 4 bar) after that you can wash the machine using a wet cloth with mild detergent .Next dry the machine using air jet again.

If you proceed to disinfecting the machine, spray the entire machine with an alcohol-based disinfectant once you have finished cleaning the machine. When sufficient time has passed for the disinfection of the machine, the machine is rinsed using enough hot water.

IMPORTANT NOTE: Bearing in mind that the disinfectants degrease the metal, you should return to cover the film of grease on the metal with an antioxidant product such as white oil to protect against corrosion. Before applying the antioxidant, you should polish any possible corrosion areas.

It is recommended to double check the pipes of the machine periodically, and to proceed cleaning where ever is obstructed.

Suppliers of Detergents

To make any queries regarding the suppliers, we suggest that you contact ULMA Packaging or speak directly to your representative.

7.2 MECHANICAL MAINTENANCE

-DAILY:

- Clean conveyor (open grips and inlet roller)
- Clean transport guides.
- Check air and water pressure. Adjust if necessary.
- Check maintenance unit (filter group).
- Check heating plates. We recommend to eliminate dirt and plastic materials when still hot.
- Check oil level in the pump. First oil change must be done after 100 hours' work (alimentary synthetic oil and SAE 30 viscosity). Oil change not necessary in oxygen pump.
- Deposit purge

-WEEKLY:

- Check fittings and corresponding silicone joints.
- Check duct joints. Check hoses.
- Check knives in cutting devices. Replace them if necessary.
- Check the security circuit. When you eliminate protection devices, machine must stop.
- Check emergency system.
- Bleed water and air filters.

-MONTHLY-QUARTERLY:

- Check conveyor tension. Increase it if necessary.
- Check if fitting lifter cylinders are working properly and lubricate fitting lifter guides.
- Lubricate conveyor belt (use alimentary oil).
- Lubricate cross-cutting columns and film remain cutting guides.
- Compressor maintenance

-HALF-YEARLY – ANNUAL:

- Lubricate mould-holder's ball and socket joints.
- Change defective transport grips
- Visual control of the electrical cabinet
- Change air filters of admission and expulsion (if proceed).
- Change oil filter of vacuum pump (if proceed).

WORKING CONDITIONS IN A CORROSIVE ENVIRONMENT

When working in a corrosive environment (moisture, salt, vinegar, dairy products, etc.), some maintenance and working standards must be observed which depend on the mentioned environmental conditions.

During handling, avoid direct contact with water, salt, vinegar, dairy products, etc. with the machine or film, except with the thermoformed cavity which will contain the product (and will later be sealed).

MAINTENANCE IN A CORROSIVE ENVIRONMENT

- Daily** external general cleaning of the machine with water and soap.
- At the end of each working day**, film-free conveyor belt cleaning with compressed air.
- Weekly** cleaning of the air filter in vacuum pump with compressed air.

-**Weekly** cleaning of the heating and welding plates of the cutting devices. Do not use metallic elements. Open mould and clean impurities or stuck material on the plates.

-**Every six months or before end of season**, external and internal general cleaning and lubrication of the machine. Be very careful with fasteners, cuttings, conveyor belt and guides, vacuum valves, moulds, tefloned plates (teflon them if necessary), vacuum pump (oil and air filters...), etc.

-**Weekly** conveyor lubrication. Before you do so, be sure that the conveyor is clean. Lubricate the chain without film.

-To sweep the environment and low parts of the machine **daily**.

7.3 LUBRICATION

Some machine components need to be lubricated both for optimum operation and to extend their useful life (machine and components).

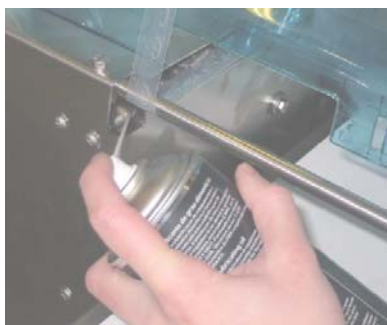
Greasing shall be done manually at the points indicated in section 5.2 (Lubrication Points). Depending on the machine model, it may have the following options:

- Chain cleaning and greasing option
- Centralized greasing + chain cleaning and greasing option.

7.3.1 TABLE OF LUBRICATION EQUIVALENTS MANUAL

LUBRICATION POINT	POINT	FREQUENCY	LUBRICANT	
			CHARACTERISTICS	RECOMMENDED
FILM ADVANCE CHAIN	1	Every 250H.	Oil based on insoluble synthetic hydrocarbon and ester.	FILM ADVANCE CHAIN
LEVER ELEVATION SYSTEM	2	Each bearings change	Long-lasting lubrication (corr. degree = 0)	ARM ELEVATION SYSTEME
CROSS-CUTTING GUIDES	4,5	Every 500H	Alimentary synthetic oil Viscosity: SAE 30	CROSS-CUTTING GUIDES
TRANSMISIÓN SHAFT	7	Every 500H	Alimentary synthetic oil Viscosity: SAE 30	TRANSMISIÓN SHAFT
VACUUM PUMP (EXCEPT OXYGEN)	-	Every 1000 h (1 st change at 100 h)	Alimentary synthetic oil Viscosity: SAE 30	VACUUM PUMP (EXCEPT OXYGEN)
VACUUM PUMP (FOR OXYGEN)	-	No necessary	Stainless oil	VACUUM PUMP (FOR OXYGEN)

SEE THE LUBRICATION POINTS GRAPHIC IN NEXT PAGES.



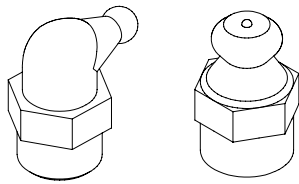
CHAIN (1)



GREASERS (3, 4, 5, 6)

IMPORTANT NOTE:

IF YOUR THERMOFORMER IS EQUIPED WITH A VACUUM PUMP PREPARED TO WORK WITH GAS MIXTURES CONTAINING > 21 % OF O₂ IN CASE AN OIL LEVEL DESCENT TAKES PLACE STOP THE MACHINE AND PUT IN CONTACT IMMEDIATELY WITH THE NEAREST ULMA AGENCY. READ CHAPTER VACUUM PUMP

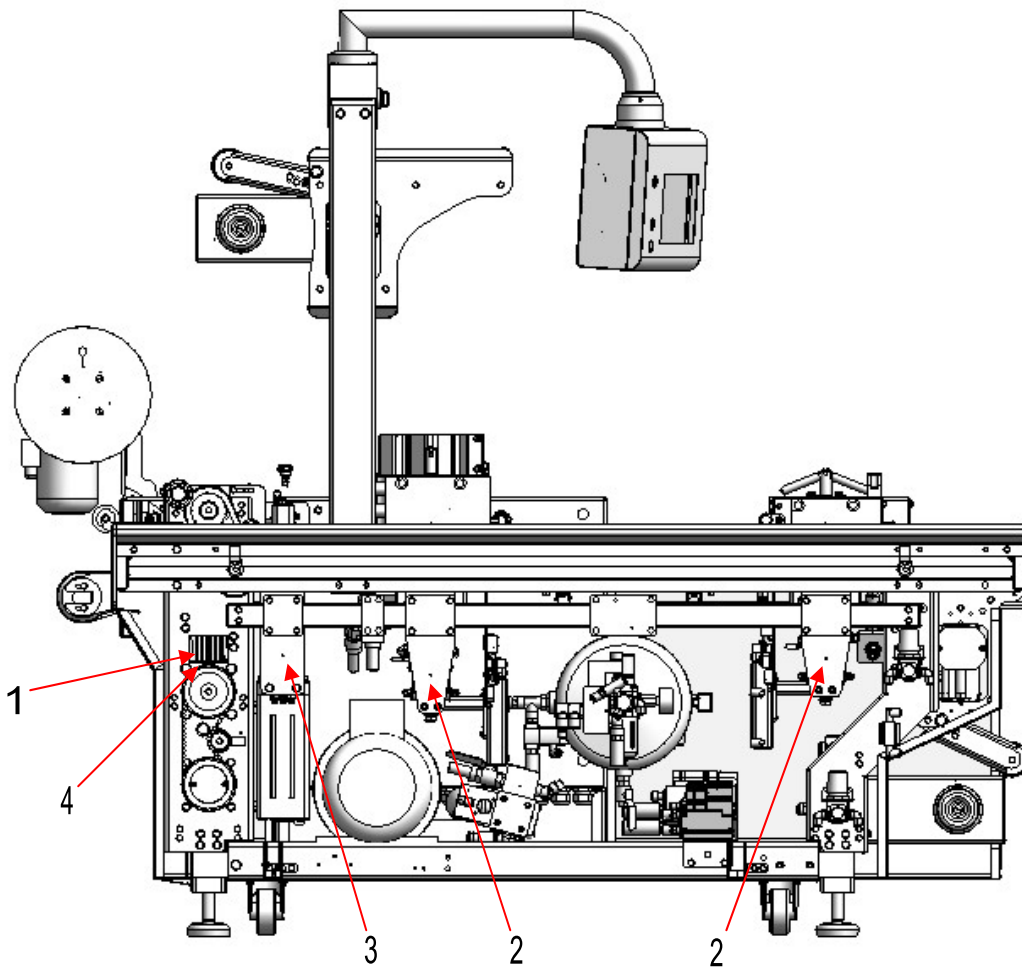


GREASERS



9372726 GREASE CUP

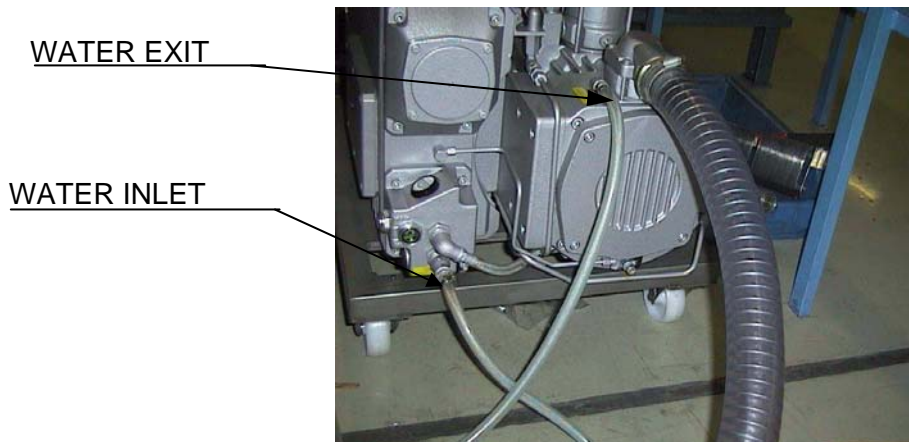
Lubrication points



7.4 VACUUM PUMP

Pump cooling

Busch vacuum pumps do not need water cooling, except the **EVA CB250 80 A** pump. Use the cooling circuit of the machine to cool the pump. All the pumps need to be lubricated with oil.



Anti-emulsion oil cleaning

When working with high moisture products, it is important to get back the pump lubricant for it not to lose its properties. This is why condensed water vapour must be separated from oil inside the crank. An anti-emulsion lubricant will be necessary when working with high moisture products.

In order to keep lubricant in good working condition, we recommend the following (strongly recommended if working with high moisture products):

1-Pump must be started (without making cycles) 30 minutes before packaging is started, so it can reach a temperature of 75°C.

2-Once the production completed, leave the pump still working for 30-40 minutes more in order to separate water and oil.

3-Once the oil has been separated, water must be purged after two hours' stop. We recommend to do this the day after, before starting producing and after making a preheating. The purge can be made by slightly opening the oil emptying plug for water to come out and close it when oil starts coming out.

Cleaning of the oil in the oxygen pump

The following must be done (there are different cases):

1-If oil contains a small quantity of water, you only have to let the pump work for an hour for water to evaporate.

2-If oil contains a big quantity of water, we recommend to take all the oil out of the pump in a transparent container.

We also recommend to take off the filter and clean it from oil in order to obtain as much oil as possible (this oil being very expensive).

Let the oil in the container. The oil in the oxygen pump is heavier than water and so it will go to the bottom of the recipient. Take out the water and put the filter and

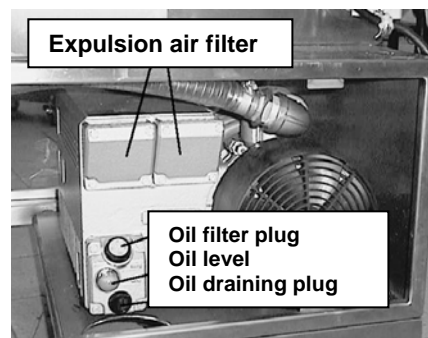
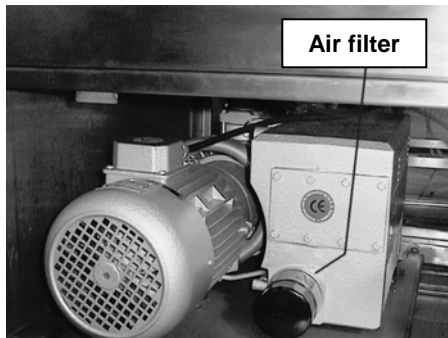
clean oil back into the pump. If you work adequately, you will never have to change the oil in an oxygen pump.

Maintenance of the pump

When carrying out maintenance work and when users could be injured by mobile parts and electrical components, the pump must be totally isolated and disconnected. It is extremely important not to start the unit again during maintenance work. Do not carry out maintenance work in a pump with working temperature, as there is risk of hot parts or lubricant.

Read carefully the set up and maintenance manual of the vacuum pump before handling it.

The oil in the pump must be firstly changed after 100 hour work and then every 500 hour work or every 3 months. The oil filter must be changed at the same time. We recommend to regularly verify the oil level in the pump and to add some oil if necessary. Fill ¾ of the oil deposit, never more.



**** The oil already used must be eliminated according to the existing health, security and environment standards. If you decide to use a new type of oil, you must completely empty the oil separator and cooling unit (if there is one).****

An anti-emulsion oil must be used when working with high-moisture products. This type of oil does not mix with water, but we recommend to take out water in order to work correctly.

On the other hand, it must be said that oxygen pumps need a very expensive special oil which does not need to be changed at all. Water must also be taken out of these pumps, but a different procedure must be followed.

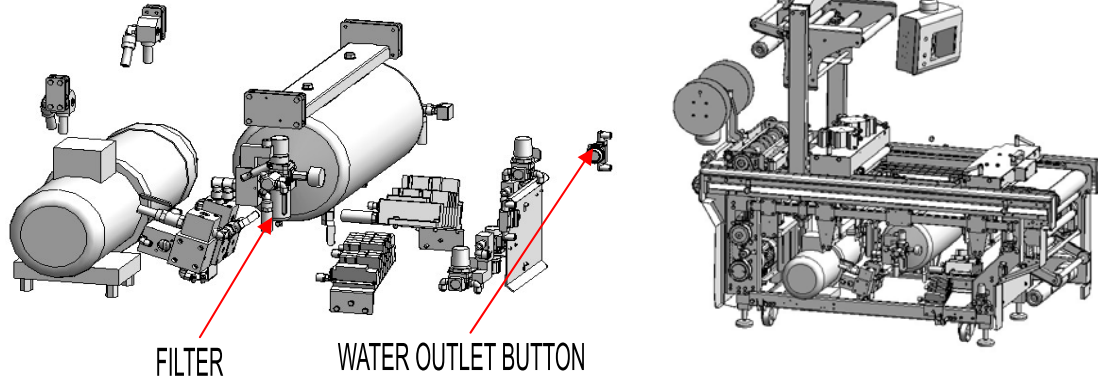
Here is a summary for pump maintenance:

Periodicity	Function	Remarks
Daily	Check oil level	Fill ¾ of the oil deposit, never more
Weekly	Check if the inlet filter is clean	
Every 3 months or 500 hours	Oil and filter change	
Every 9 to 18 months	Replace outlet filter elements	

7.5 FILTROS

The air used in the machines TFS must be oil free. This is why we recommend to check the compressed air installation (there must be a filter to eliminate moisture and air impurities) before connecting the machine.

The air filter at the inlet of the machine eliminates small impurities and moisture in the air, but the air must be dry and filtered at the outlet of the compressor.



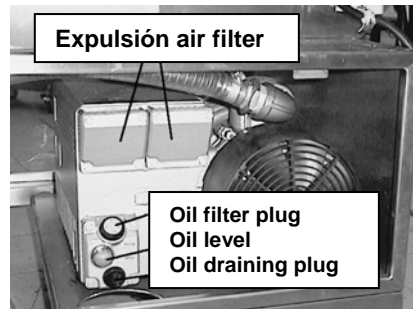
The inlet filter of the machine must be bled every time it is full with water.

When forming is made with air, air moisture can damage the pneumatic circuit and air impurities can make the tray look dirty.

For all these reasons, filter maintenance must be as follows:

I Periodicity	Function	Indication
Every 8 hours	-Check if adjustment is necessary -Check and change filter if necessary	Pressure 6-7kg/cm ² and between 1500-2000 l/min
Every 1000 hours	Change filter	

Vacuum pumps have air and oil filters which will also require maintenance work. Oil filter must be replaced every time the oil is changed and outlet filters every 9 to 18 working months. It will only have to be replaced if blocked with solids or with burnt oil.



The following symptoms will indicate that filters are blocked:

- Oil vapour existence at outlet
- Increase in the electrical consumption of the engine
- Oil leakage though air valves (if there is any)

In some cases, a big blockage in the filter can cause a filtering element to brake.

You can also include a manometer in the pump (optional) which indicates outlet filter load losses and so its level of pollution.

8 PRODUCT LOCATION

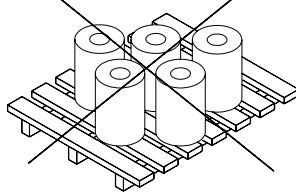
8.1 FILM COIL STORAGE AND TRANSPORT

Coils can lose their properties if incorrectly stored. A correct storage is extremely important as it eases the insertion of the coil in the machine.

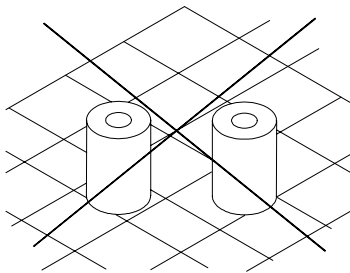
These are examples of correct and incorrect coil storage:

Incorrect

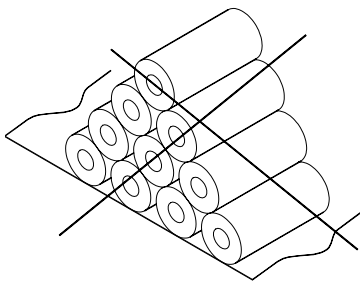
-Storage on badly-levelled surfaces



-Storage on irregular-surface floors



-Longitudinal coil storage

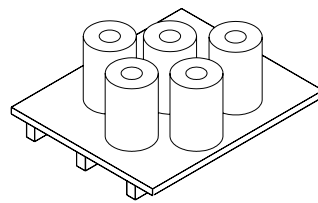


-Direct exposure to the sun

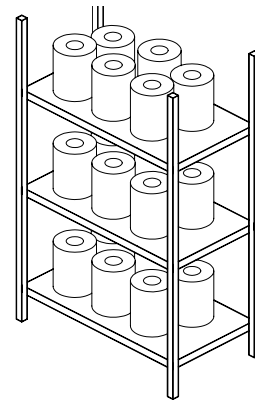


Correct

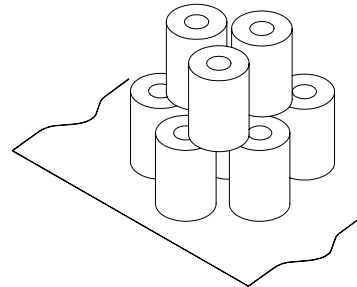
-Storage on well-levelled surfaces



-Storage in shelves



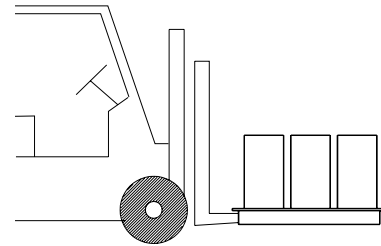
-Always store coils vertically



-Storage in a fresh and dry place



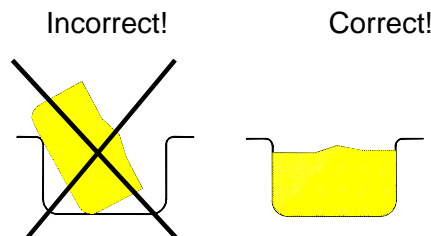
We recommend not to take off the protection sheet during coil transport. We also recommend to use a forklift truck or similar device for coil transport. Be careful that the system you chose does not damage the film.



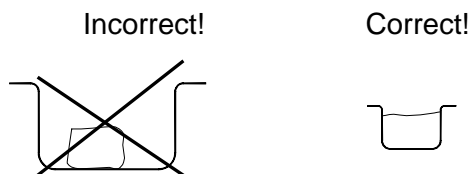
8.2 INSERTION OF PRODUCTS IN TRAYS

After forming the tray, the next step is to insert the product. This can be done automatically or manually and the positioning will be important for a correct sealing to be achieved later.

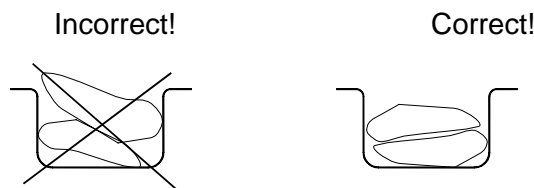
The product must not stick out of the tray, as this could damage the welding fitting and the cutting device.



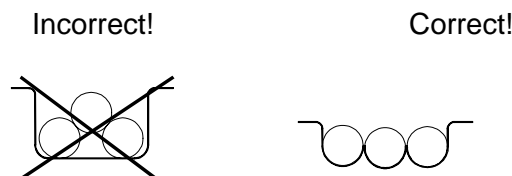
To achieve a correct sealing, tray dimensions must be adapted product dimensions.



Products with edges which could damage the tray must be situated appropriately so that these edges do not damage the tray.



Products with strange shapes must be packed in trays with the same shapes.



Products must be correctly placed in the tray and welding areas must be kept clean in order to achieve a correct welding, otherwise, product conservation could be threatened. This is very important when working with products containing starch or fibre, meat, etc.

EU BOTOIAK, PANTAILAK ETA ALARMAK
ES BOTONERA, PANTALLAS Y ALARMAS
EN BUTTON PANEL, SCREENS AND ALARMS
DE KNOPFSCHALTAFEL, EINSTELLUNGEN – STÖRUNGSMELDUNGEN
IT PULSANTIERA, SCHERMATE E ALLARMI
FR PUPITRE DE COMMANDES - ÉCRAN – ALARMES
NL DRUKKNOPPENKAST, BEELDSCHERMEN EN ALARMEN
PT PAINEL DE BOTÕES, TELAS E ALARMES
PL USTAWIENIA - ALARMY I WIADOMOŚCI NA EKRAKIE
RO ARIA BUTOANELOR, ECRANE ȘI ALARME
RU КНОПОЧНЫЙ ПУЛЬТ, ЭКРАНЫ И ТРЕВОГИ

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1 REGULATIONS.

1.1 TOUCH SCREEN FUNCTIONS

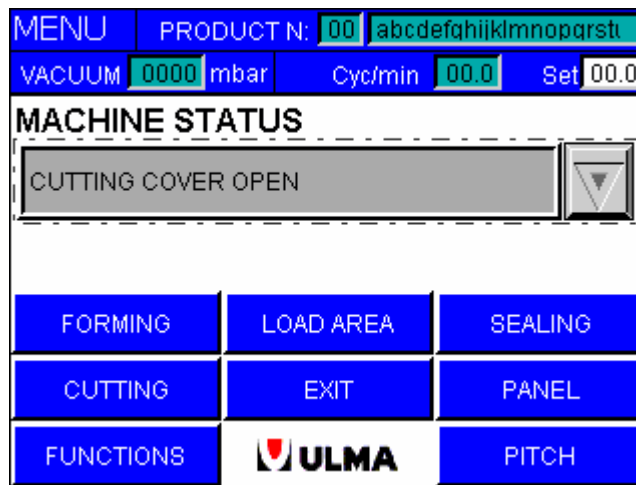
Here you will find the different functions of the touch screen: function modification, time modification, advance modification, display of error messages ...

In order to change any parameter's value, you need to push upon the parameter to be changed, and to activate a specific device or to activate the machine, press the corresponding button. When - displays next to the button, it indicates that the button is active, and when displays it means the button is deactivated. □

If the text is darkened the machine does not offer an option, so it can not be activated, and if the value of a parameter appears with a grey foreground minds that the parameter can't be modified because you don't have the needed level. More details in the chapter "Password".

The screen will only allow us to activate or change parameters if we introduce the password.

1.2 MAIN MENU



Forming. Access to forming zone parameters. In this zone you can change temperature setpoints, times and activations in relation with the forming of the pack.

Load area. Access to load area zone parameters. In this zone is where the product is loaded.

Sealing. Access to sealing zone parameters. In this zone is where the pack is sealed. Therefore you can change sealing temperature setpoint, times and activations depending on the configuration of the machine

Cutting. Access to cutting zone parameters. In this zone you can activate diferents cuts of the machine.

Exit. Access to exit zone parameters.

Pitch. Access to advance counter screen.


Panel. Access to panel zone parameters. In this zone you can change product or language and access output or manual screens.

Functions. Fast access to the most used parameters.

All the screens include the parameter:

Product number. You can store up to 50 products to which different times, activations, etc. are associated.

Also in the upper part of the screen you can view the current product number and name, and the machine's current status. The different machine alarms can

be viewed by pressing  and the different production speeds can also be selected by pressing the "set" parameter. The parameter "Cycles/min" shows the machine's real speed.

In the "Vacuum" parameter is possible to view welding mould pressure in millibars.

From any screen, to return to the main menu press "MENU".

1.3 FORMING

FORMING		PRODUCT N: 00	
	PRESENT	REF.	ALARM
Temperature	000.0 °C	000 °C	000 °C
Heating		0.0 s	
Forming		0.0 s	
Forming ventilation		0.0 s	
<input type="checkbox"/>	FORMING FORM	<input type="checkbox"/>	TEMPERATURE
	MANUAL		ALARM
MENU			

You can use this screen to change the default settings for the temperature and alarms, and display the temperature for the forming area.

Present. Current temperature for the area.

Ref.: Default temperature with a maximum of 200° C.

Alarm. Temperature range at which the temperature error will appear outside of the range. If the current temperature is outside this range the machine will not be able to start unless the temperature error is deactivated. Since the machine is not turned on, the temperature error will not make any sense. The maximum alarm may not exceed 25°C.

Forming. The air time to form the package.

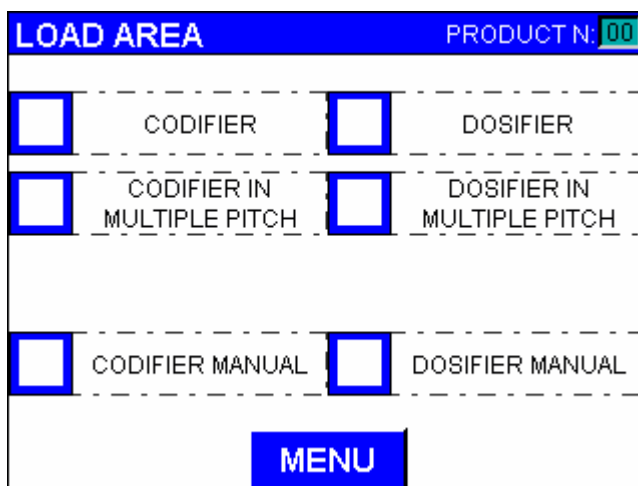
Heating. The time the film is heated, either in the forming station for a flexible film.

Forming ventilation. The time necessary to void the forming air, before opening the mould. If the time is not properly entered, it may produce noises while opening the forming mould.

Forming form manual. The forming tool lifts. If pressed again it lowers. This button only works with a stopped machine.

Temperature Alarm. Temperature margins after which an out-of-range alarm will sound. If the current temperature is outside this range, the machine will not be able to operate unless the temperature errors are not activated. If it is not activated, the machine will not take into consideration the temperature errors.

1.4 LOAD AREA



Depending on the configuration of the machine, some of the following parameters may not be changed or displayed.

Load area zone have these activations:

Codifier. Activation of the codifier (only if machine includes codifier option).

Codifier in multiple pitch. With this button, we activate the codifier in multiple pitch (if the machine has an optional codifier).

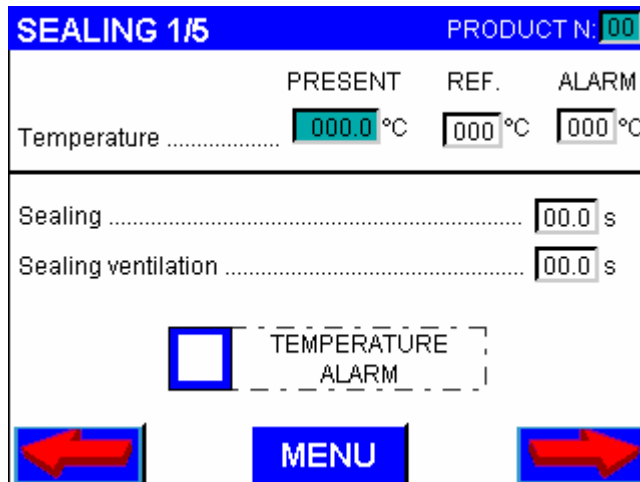
Dosifier. Activation of dosifier (only if machine includes dosifier option).

Dosifier in multiple pitch. With this button, we activate the dosifier in multiple pitch (if the machine has an optional dosifier).

Codifier manual. Manually operate the codifier (only if the machine has a codifier).

Dosifier manual. Manually operate the dosifier (only if the machine has a dosifier).

1.5 SEALING



Depending on the configuration of the machine, some of the following parameters may not be changed or displayed.

The sealing area has the next parameters:

Present: Current temperature for the area.

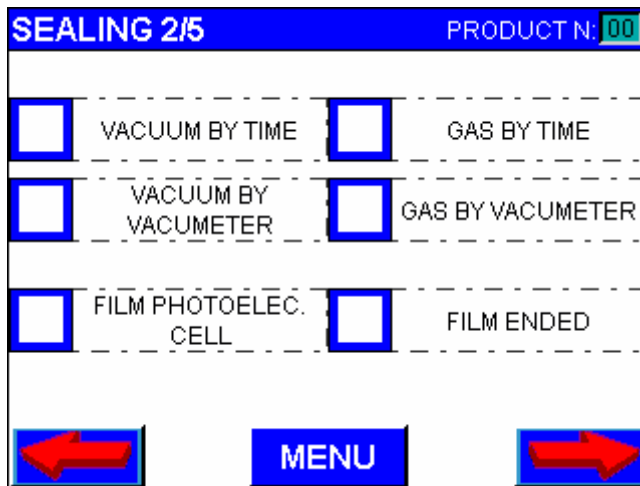
Reference: Default temperature with a maximum of 200⁰ C.

Alarm: Temperature range at which the temperature error will appear outside of the range. If the current temperature is outside this range the machine will not be able to start unless the temperature error is deactivated. Since the machine is not turned on, the temperature error will not make any sense. The maximum alarm may not exceed 25°C.

Sealing: Time of package sealing.

Sealing ventilation: This is the time necessary for air to enter the mould and balance the mould pressure with atmospheric pressure. If this time is not correctly introduced, noises could be heard during forming mould opening.

Temperature Alarm: Temperature margins after which an out-of-range alarm will sound. If the current temperature is outside this range, the machine will not be able to operate unless the temperature errors are not activated. If it is not activated, the machine will not take into consideration the temperature errors. The maximum for alarm should not surpass 25°C.



Vacuum by time: The package is vacuumed for the specified amount of time on the times screen (vacuum time) (only if the machine has the package vacuum option).

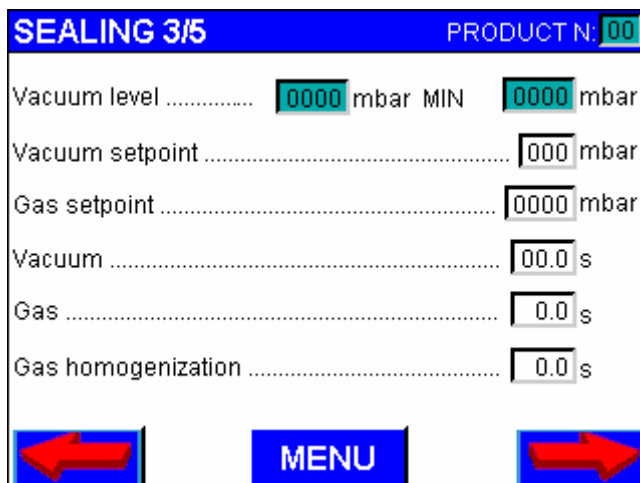
Vacuum by vacuumeter: The package is vacuumed up to the vacuum level entered on the vacuumeter setting. If it does not reach this level upon finishing the machine's cycle, it stops and shows the corresponding error message. (only if the machine has the package vacuum option).

Gas by time: The gas is injected for the specified amount of time on the times screen (gas time) (only if the machine has this gas option).

Gas by vacuumeter. The gas is injected up to the level entered on the vacuumeter setting. If it does not reach the gas level upon finishing the machine's cycle, it stops and shows the corresponding error message. (only if the machine has the gas option).

Film photoelec. cell. Activate the cover film centring (only for machines that work with printed film).

Film ended: Detects when the upper film is finished. If this option is activated, the machine will stop when the film is finished. (only if the machine has this option).



Vacuum level (mbar). This parameter read-only, showing the level of current vacuum within the drawer, in millibars, with a memory of the minimum vacuum value the package has reached in the previous cycle (only if the machine has the vacuum option).

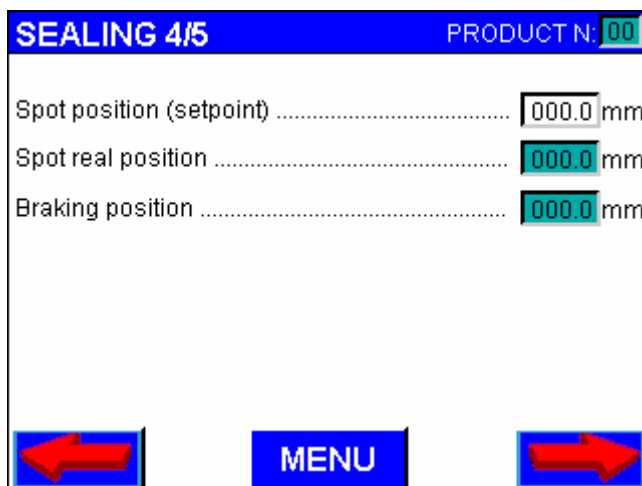
Vacuum setpoint (mbar): Vacuum settings to be injected in millibars if the machine has the vacuum by vacuum activated (only if the machine has the vacuum option.)

Gas setpoint (mbar): Gas settings to be injected in millibars if the machine has the vacuum by gas activated (only if the machine has the vacuum option).

Vacuum: Time to do vacuum in the package if the machine is working in “vacuum by time” mode. Or the extra time to do vacuum if the machine is with “Vacuum vacuumeter” and “Vacuum by time” both activated (only if the machine has the vacuum option).

Gas: Time to inject gas in the package (only if the machine has the gas option).

Gas homogenization: Waiting period after the gas injection and before sealing (only if the machine has the gas option).

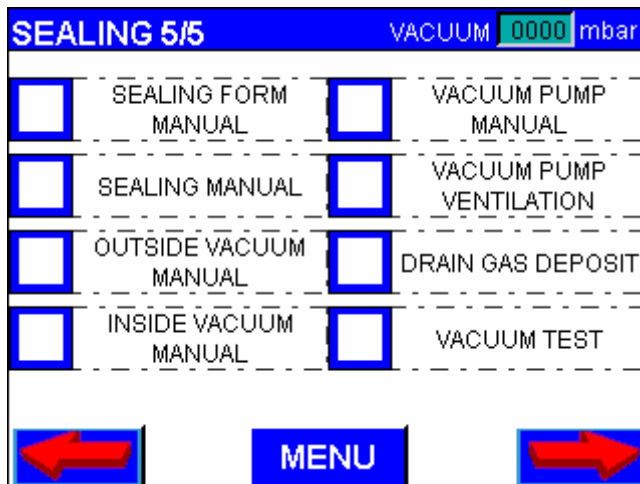


In case of working with printed film, this 3 parameters exist:

Spot position (setpoint): Is the only programmable parameter: the distance from the spot to the photoelectric cell where the spot should be.

Spot real position: Is the distance from the spot to the photoelectric cell which the spot is detected.

Braking position: Is the distance from the spot to the photoelectric cell where the brake is activated.



Sealing form manual: The sealing mould lifts. If pressed again it lowers.

Vacuum pump manual: Activates the vacuum pump. Pressing it again it stops the pump (only if the machine has the vacuum optional).

Sealing manual: If pressed with the tools manually closed, it seals. Once finished the tools lower.

Vacuum pump ventilation: Activates the vacuum electrovalve on the tank to flush the vacuum air pump filter. This button must be pressed when the machine is waiting on automatic cycles (only when the machine has the package vacuum option).

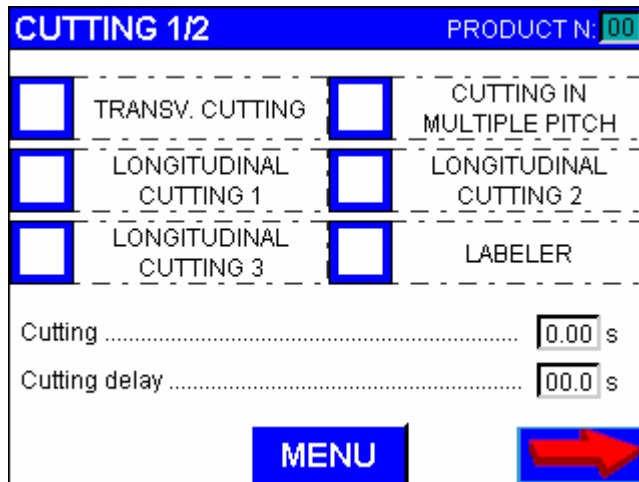
Inside vacuum manual: Activates the inside vacuum. Pressing it again stops it (only if the machine has the vacuum optional).

Drain gas deposit: Manually operate the gas electrovalve. If pressed the gas electrovalve is opened.

Outside vacuum manual: Activates the outside vacuum. Pressing it again stops it (only if the machine has the vacuum optional).

Vacuum test. Operates in manual vacuum mode to check possible leaks. Pressing it once raises the tools and begins the vacuum. Pressing it again starts the pumps and maintains the compartment closed. Pressing it again releases the mould and lowers the tools (only if the machine has the package vacuum option).

1.6 CUTTING



Depending on the configuration of the machine, some of the following parameters may not be changed or displayed.

Transversal cutting: Transversal cutting activation.

Transversal cutting in multiple pitch: Activates transversal cutting with multiple advance.

Longitudinal cutting 1: First longitudinal cutting activation.

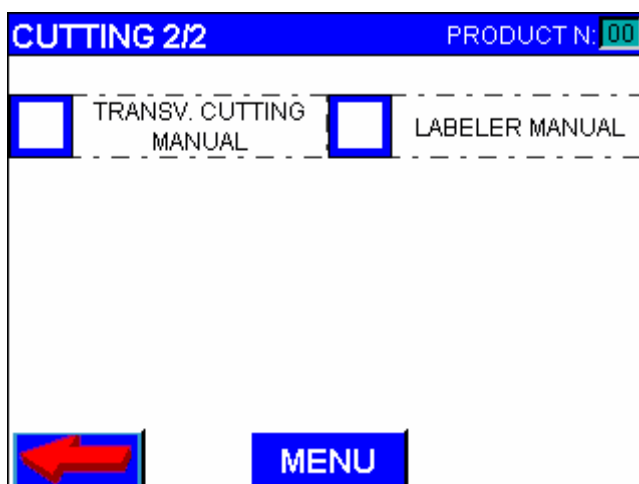
Longitudinal cutting 2: Second longitudinal cutting activation.

Longitudinal cutting 3: Third longitudinal cutting activation.

Cutting: Time of package cross cutting.

Cutting delay: Delay time from the end of the advance until cutting is made.

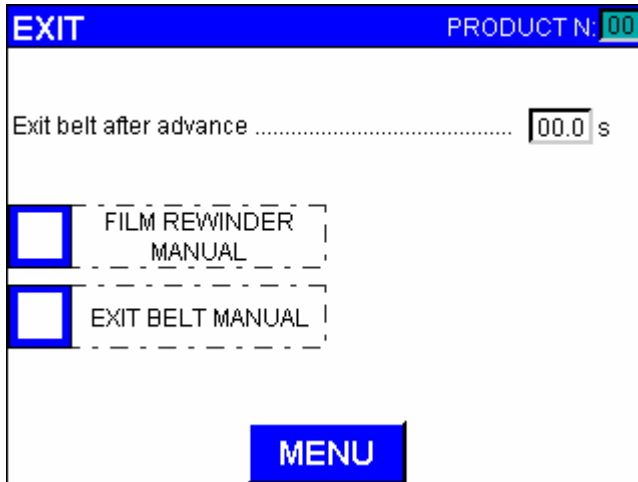
Labeler: Labeler activation (only if the machine has the labeler option).



Transversal cutting manual. Activates the transversal cutting manually.

Labeller manual. Activates the labeller manually (only if it has labeller option).

1.7 EXIT



Depending on the configuration of the machine, some of the following parameters may not be changed or displayed.

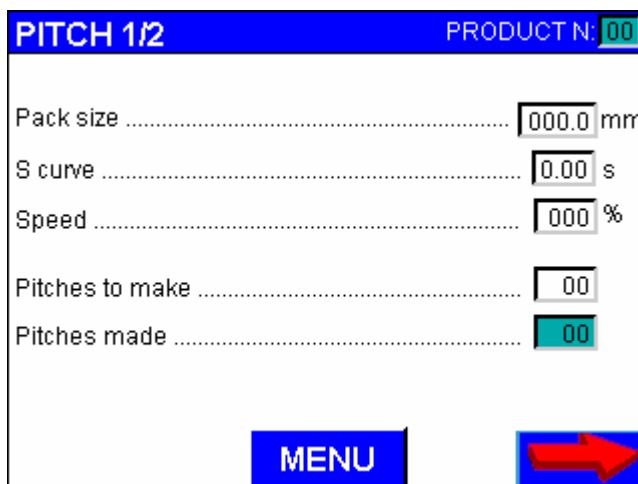
Exit zone have these activations:

Exit belt after advance: Time to continue running the exit belt after the film advance ended.

Film rewinder manual: Activates the film rewinder manually.

Exit belt manual. Activates the exit belt manually.

1.8 PITCH



Depending on the machine configuration, some of the following parameters may not appear.

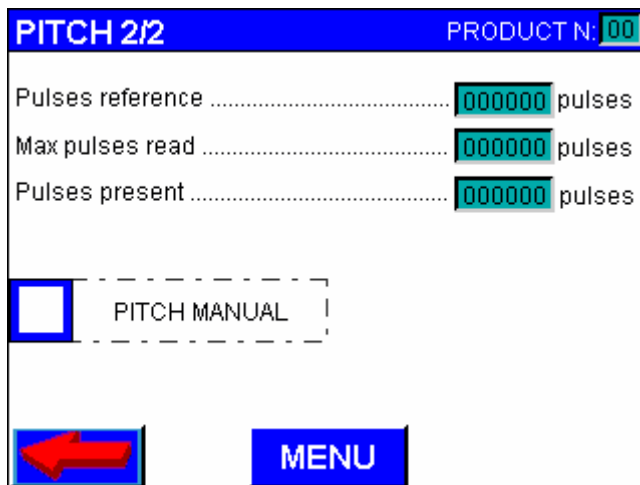
Pack size. Advance to be made in millimetres.

S curve. Time constant parameter sent to the inverter. The higher value It is the softer the advance speed will change. (Big values necessary when packaging liquid containing products)

Speed. Speed of the advance in per cent.

Pitches to make. Number of advances to make, which allows making intermediate cuttings before formers go up.

Pitches made. Displays number of advances (from the advances introduced in the previous parameters) already completed.



The machine is equipped with an encoder, which gives a certain number of pulses in advance

Pulses reference. Film advance reference position in pulses.

Max pulses read. The maximum value of pulses obtained in a film advance.

Pulses present. Actual pulses while the film is advancing.

Pitch manual. One advance is made manually.

1.9 FUNCTIONS

FUNCTIONS		PRODUCT N: 00
<input type="checkbox"/>	FILM PHOTOELEC. CELL	<input type="checkbox"/>
<input type="checkbox"/>	DOSIFIER	<input type="checkbox"/>
<input type="checkbox"/>	PITCH MANUAL	<input type="checkbox"/>
<input type="checkbox"/>	MANUAL CYCLE	
MENU		

Film photoelec. cell. Activate the cover film centring (only for machines that work with printed film).

Codifier. Activation of the codifier (only if machine includes codifier option).

Dosifier. Activation of the dosifier (only if machine includes dosifier option).



Labeler. Activation of the labeler (only if machine includes labeler option).

Pitch manual. One advance is made manually.

Sealing plate change. Activation of the sealing plate electrovalve to be possible change it.

Manual cycle. It makes a complete cycle, advance the film, go up the forms and end all the cycle.

1.10 PANEL

PANEL 1/3		PRODUCT N: 00
CHANGE TO PRODUCT	MECHANICAL SETTINGS	MAINTENANCE
USER LEVELS	LANGUAGE	MONITORING
MANUAL		
	MENU	

Panel zone have these functions:

Change to product. This button allows changing the product of the machine.

Mechanical settings. This button allows to mechanical settings screen.

Maintenance. This button allows to maintenance screen.

User levels. This button allows obtain more or less level of password. Also it's possible to lose your password level.

Language. This button allow to change the language of the machine.

Monitoring. Here appear the most significant times in the production cycle

Manual. This button allows to activate manually cuts, moulds, etc.

1.10.1 CHANGE TO PRODUCT



In these screen the user can change the product number. Also the user can edit a name to a product number. If the user change any parameters and change the product without pushing the switch **SAVE CHANGES**, these changes will be lost.

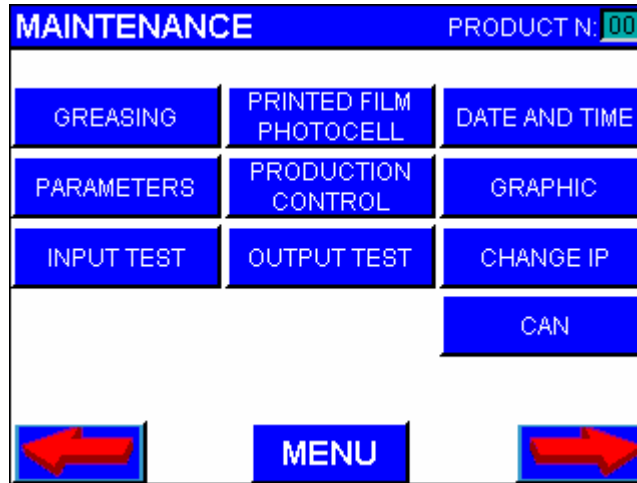
With the "copy" key allows to the copy screen, where you can select the destination product number.

If any parameter is changed a "changes not stored" notice is displayed, and if we want choose another product previously these changes must be recorded by pressing the "Save" button.

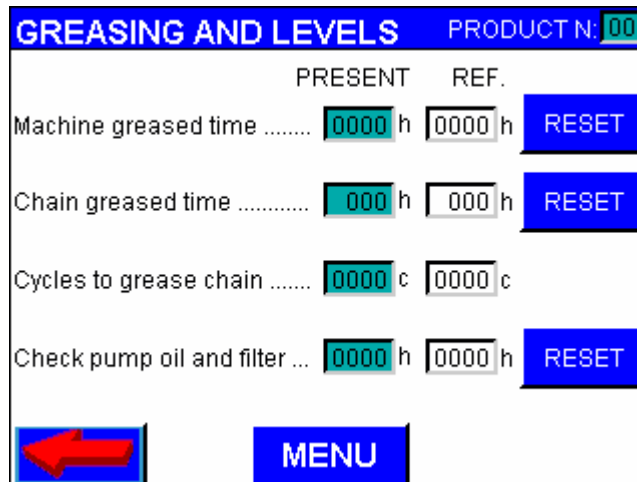
1.10.2 MECHANICAL SETTINGS

This screen is empty. (Reserved to put the position of the elements in the frame).

1.10.3 MAINTENANCE



1.10.4 GREASING



Machine greased time. If the machine has centralised greasing, alter these hours pass the machine will carry out a greasing cycle.

If the machine has no centralised greasing, the program will then tell us that we have to grease the machine. We can use the reset button to reset the current value of the timer, after manual greasing. If we don't want to see the machine greasing notification we can put the timer at 0.

Chain greased time. If the machine has chain greasing, alter this time passes the machine will execute both chain greasing cycles as indicated in the chain greasing cycles parameter.

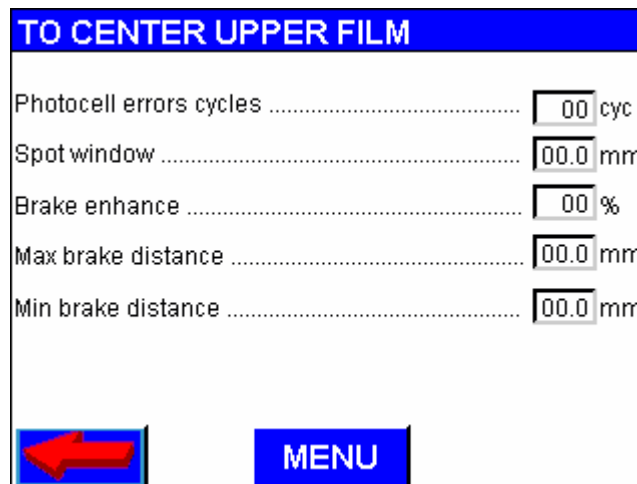
If the machine has not chain greasing, the program will then notify us that we have to grease the machine. Using the reset button we can reset the current value of

the timer, alter manual greasing. If we don't want to see the notification to grease the machine we can set the timer value at 0.

Cycles to grease chain. This is the number of chain greases made if the machine has automatic chain greasing.

Check pump oil and filter. The set point value is used to choose the time we want the machine to notify the advance time. We can use the present value to display the time that has passed since the last reset

1.10.5 PRINTED FILM PHOTOCCELL



The next parameters only will be configured if the machine has upper film centering system.

Photocell errors cycles. It is the number of cycles that the spot isn't detected inside the established limits, to stop the machine with an error. This applies both, to count the upper and lower photocell.

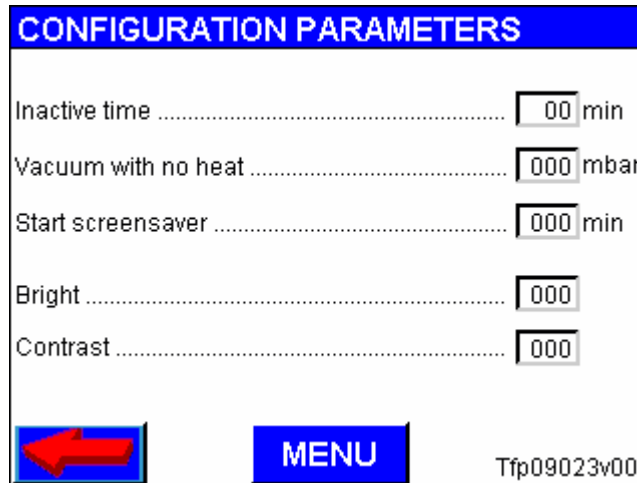
Spot window. This parameter is that we use to generate the window to read spot. It is the distance before and after the value of spot setpoint position, in which we will look the spot, to calculate the position of braking. To take the error the spot must be outside that window.

Brake enhance. With this parameter controls the magnitude of the braking. You can center the film making several soft stops, stretching little by little, or rather, make a hard braking and centering the film in very few cycles. The default is 35%.

Min brake distance. It is the minimum distance from braking that is done to the machine, although the picture does not go backward and we need to brake. This parameter is often used to always have a minimum stretch of film, especially in cases where the product out of the pack. The default is 0mm.

Max brake distance. This is the limit we use braking. We believe that a greater braking it might cause a rupture of film or problems centring due to excessive stretching. That is, if the result of the mathematical operation that we carried out in section 7, gives us a value exceeding the maximum braking distance, we value the latter case. The default is 35 mm.

1.10.6 PARAMETERS



On this page we have the following parameters:

Inactive time. If the the screen isn't touched at here scheduled time the program change to the level of user. If we don't want change to a default user level set at value 0.

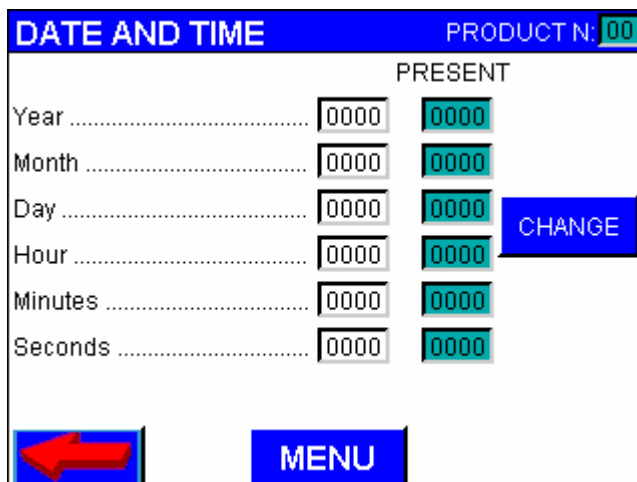
Vacuum with no heat. It is the vacuum level at which cut orders to heat the sealing mould, if the optional is activated.

Start screensaver. After the scheduled time, without touching the screen, start screensaver mode and appears Ulma logo moving across the screen.

Bright. With this parameter can change the screen brightness by introducing a value of 0 to 100. 0 brightness minimum and 100 maximum brightness.

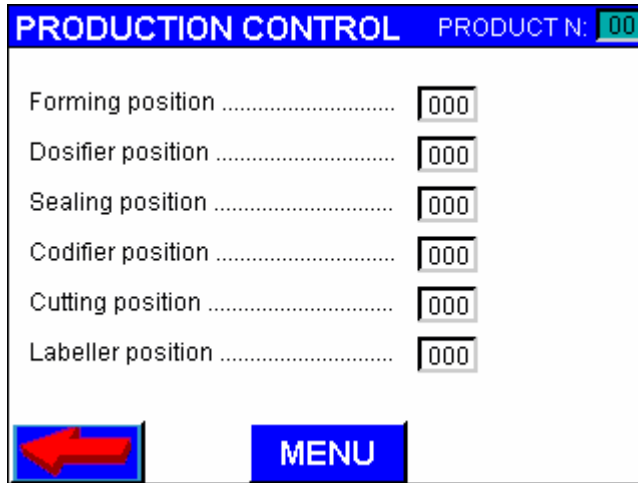
Contrast. With this parameter can change the screen contrast by introducing a value of 0 to 100. 0 contrast minimum and 100 maximum contrast.

1.10.7 DATE AND TIME



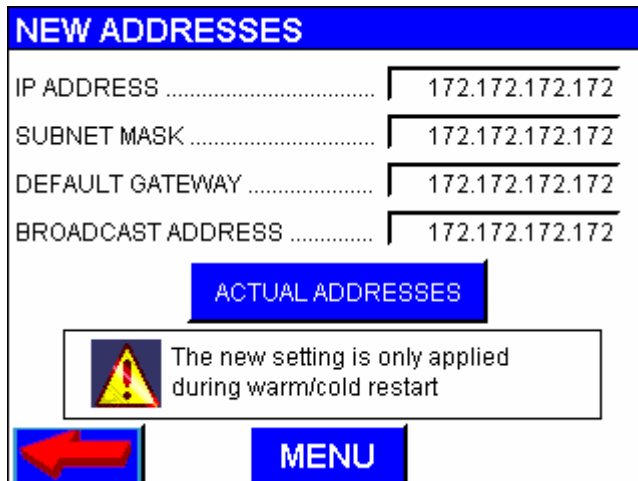
In this page can change the date and time of the internal clock of the PC.

1.10.8 PRODUCTION CONTROL



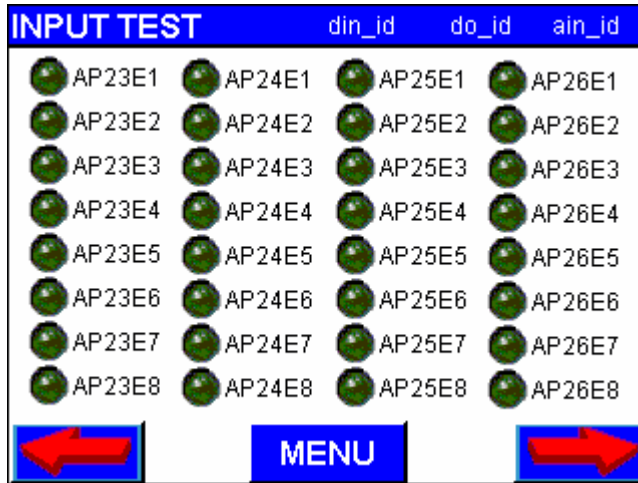
These are the positions of the different areas of the machine, to control the production. For example if there is any problem in the forming area and the film isn't formed, in the next areas this step isn't worked.

1.10.9 CHANGE IP



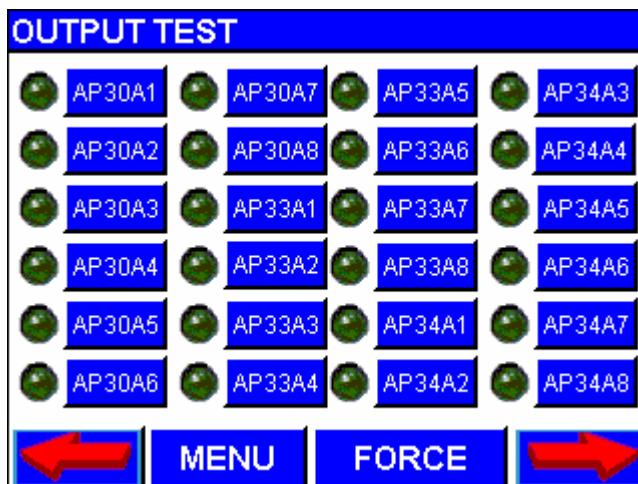
From this screen you can see and change the IP address of the PC.

1.10.10 INPUT TEST



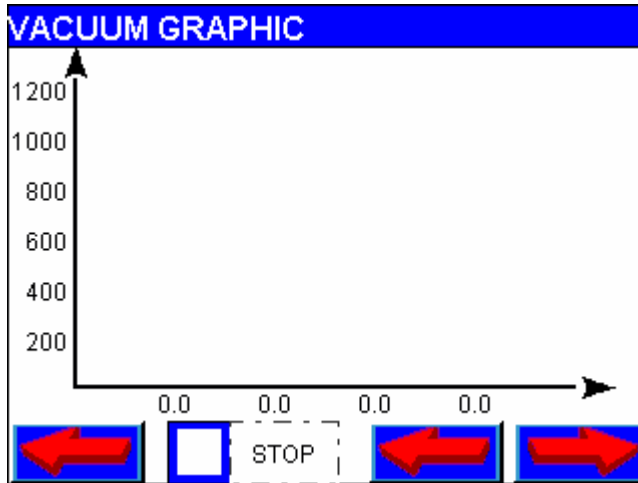
This screen allows the viewing of the status of inputs.

1.10.11 OUTPUTS TEST



This screen allows the viewing of the status of outputs. And if you press the button "Force" can be turned on and off the exits by pressing the button corresponding output.

1.10.12 GRAPHIC



This screen allows the viewing of vacuumeter or vacuumeters of the machine, to see the behaviour of vacuum within the sealing mould.

Each machine cycle is displayed a cycle of vacuum. With the Stop button, we can stop momentary the actual graphic until they turn off the Stop button.

With the arrows on the right we will vary the scale of the graph.

1.10.13 CAN



The figure shows a screen titled "CAN". It contains three input fields: "CAN INIT", "CAN_RUN (1)", and "CAN_RUN (2)". At the bottom left, there is a red left-pointing arrow button. At the bottom center, there is a blue button labeled "MENU".

In this screen you can see the CAN open communication status.

1.10.14 USER LEVELS

The program has two password levels for the customer. A users password for activations and time changes and a maintenance password. When we use the maintenance password, the system allows us to change the same parameters we can change with the user password, plus the maintenance screen parameters.

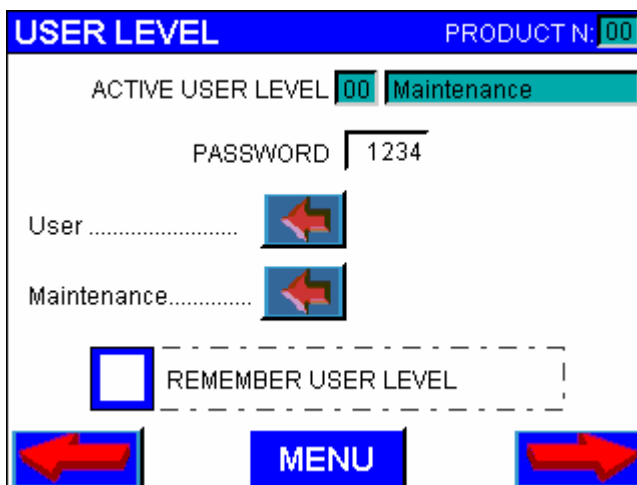
When we introduce the password and this password matches with other level passwords (user's passwords or maintenance passwords), the screen displays the correct password and a list of lower level passwords. In this moment the password is active and we can change times and activations. If we want acces to a lower level we can touch in an arrow of a lower level.

The machinery includes the following standard passwords.

User Password 555
Maintenance Password..... 112

These is a way to remember password. If this option is enabled, when the machine is switched on the user will have the same password level which had before switching off the machine. When this option is disabled the machine starts up with the lower password level.

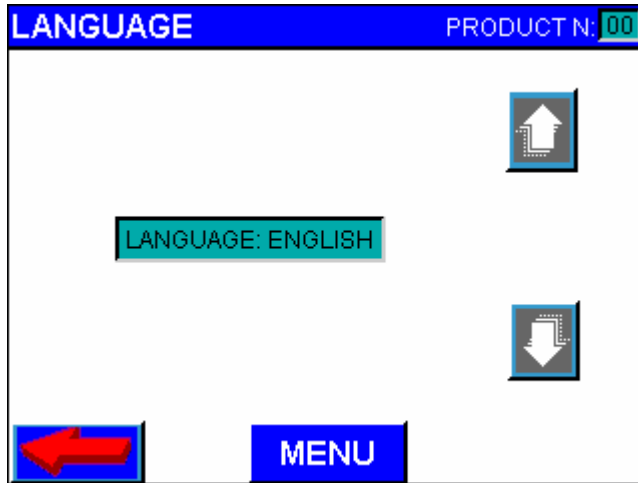
At the top of the screen shows the active level. If we get to a lower level, simply press the arrow on the corresponding level. If on the contrary, we want access to a higher level, we must press on the digit "password" at the top of the screen, and enter the password to the level that we want access.



If we want that the machine remember the active level every time when turn on the machine, press the button at the bottom of the screen.

If you want to change the password level or less active in the next screen just click on the password you want to change.

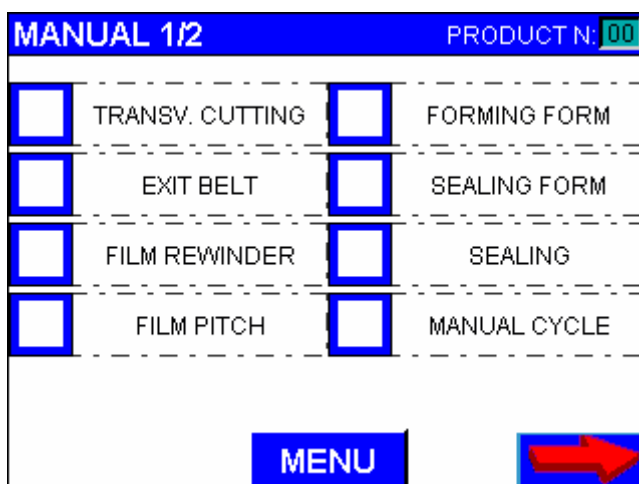
1.10.15 LANGUAGE



On this screen the user can choose any of the different languages for display on screen by pressing the buttons. We need the “maintenance” password to make a change of language.

1.10.16 MANUAL

Depending on the configuration of the machine, some of the following parameters may not be changed or displayed. The user must have maintenance password to access to this screen.



Transversal cutting. Transversal cutting activation manually.

Forming form manual. Forming form goes up. If pressed again, form goes down.

Exit belt. Activates the exit belt manually.

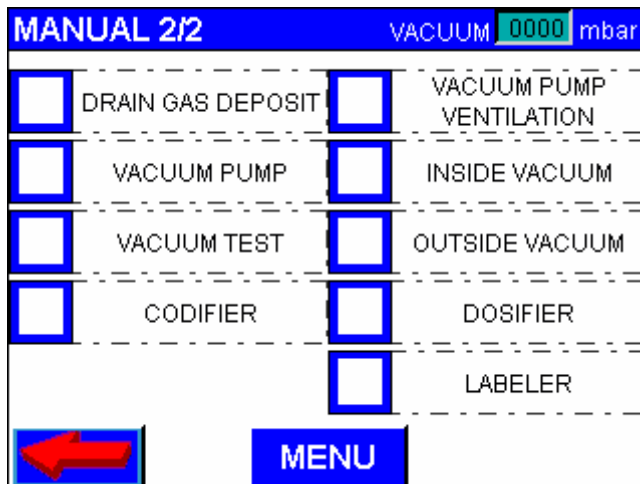
Sealing form manual. Sealing form goes up. If pressed again, form goes down.

Film rewinder. Activates the film rewinder manually.

Sealing. If pressed when formers closed manually, a sealing is made. Once the sealing is finished, formers go down.

Film pitch. One advance is made manually.

Manual cycle. It makes a complete cycle, advance the film, go up the forms and end all the cycle.



Drain gas deposit. This is the manual mode of the gas electrovalve. If we push this button we open the gas electrovalve.

Vacuum pump ventilation. It activates the package vacuum electrovalve to air the air filter of the vacuum pump and be able to extract it. This key must be pressed when the machine is waiting for the automatic cycles (only if machine includes vacuum option).

Vacuum pump. Activates the vacuum pump (only if the machine has the vacuum option).

Inside vacuum. Activates the inside vacuum valve (only if the machine has the vacuum option).

Vacuum test. Operation in manual mode to verify possible escapes. Pressing it once the forms go up and begins the vacuum execution. Pressing it once more the die remains closed. Pressing it again the mould is ventilated and the forms descend. (only if the machine has the optional Package vacuum).

Outside vacuum. Activates the inside vacuum valve (only if the machine has the vacuum option).

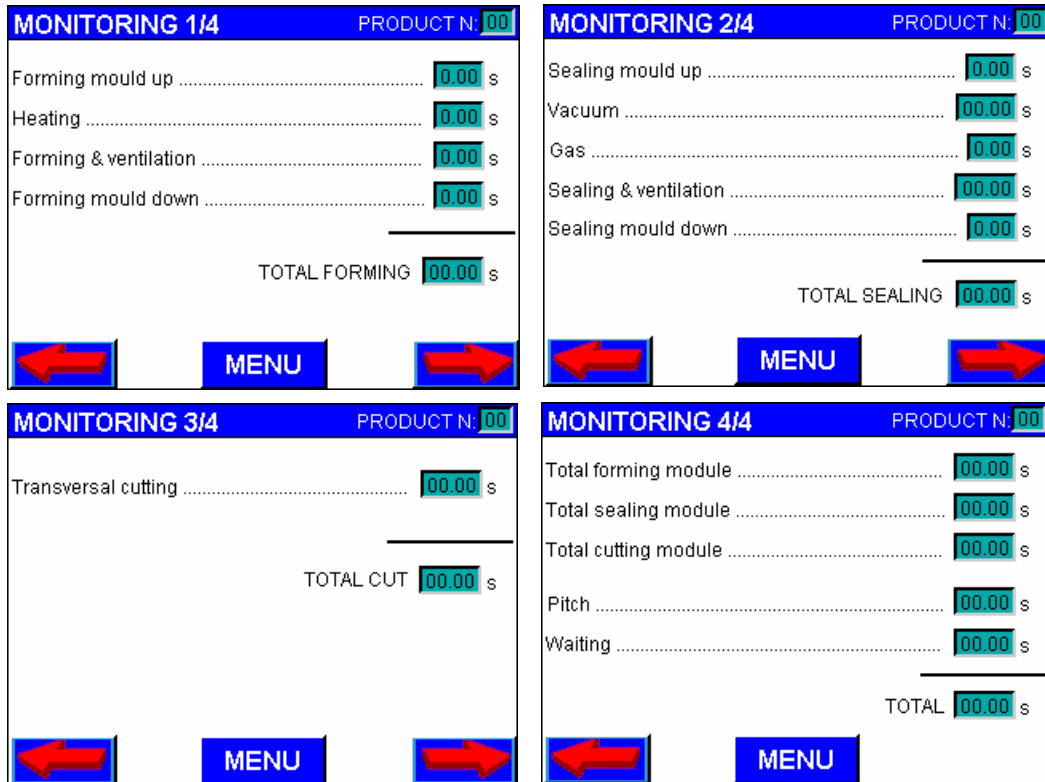
Codifier manual. Activates the codifier (only if the machine has this option).

Dosifier manual. Activates the dosifier (only if the machine has this option).

Labeller manual. Activates the labeller (only if the machine has this option).

1.10.17 MONITORING

From these screens you can monitor the time it takes the machine to make all movements to facilitate optimizing the cycle time.



The monitoring screens are arranged in a 2x2 grid. Each screen has a blue header with the screen name and 'PRODUCT N: 00'. The data is displayed in green boxes with 's' for seconds.

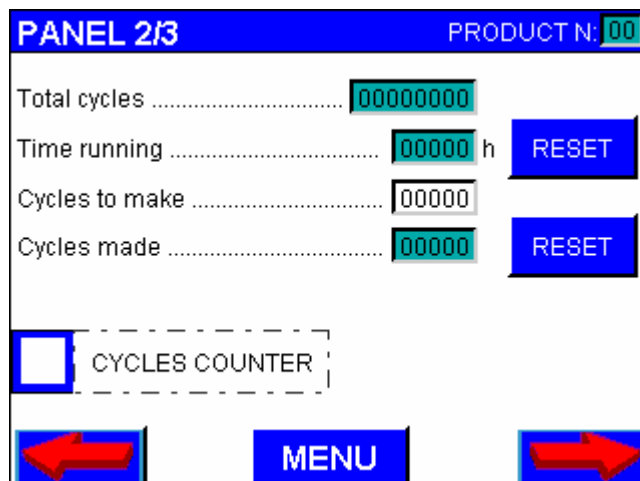
- MONITORING 1/4:** Shows forming module times: Forming mould up (0.00 s), Heating (0.00 s), Forming & ventilation (0.00 s), Forming mould down (0.00 s), and TOTAL FORMING (00.00 s).
- MONITORING 2/4:** Shows sealing module times: Sealing mould up (0.00 s), Vacuum (00.00 s), Gas (0.00 s), Sealing & ventilation (00.00 s), Sealing mould down (0.00 s), and TOTAL SEALING (00.00 s).
- MONITORING 3/4:** Shows cutting module times: Transversal cutting (00.00 s) and TOTAL CUT (00.00 s).
- MONITORING 4/4:** Shows overall machine time: Total forming module (00.00 s), Total sealing module (00.00 s), Total cutting module (00.00 s), Pitch (00.00 s), Waiting (00.00 s), and TOTAL (00.00 s).

Each screen includes a 'MENU' button and navigation arrows (left and right).

In the first screen we have times of the forming module, then sealing, cuttings and the last the overall machine time.

1.10.18 PRODUCTION

From the screen control panel and clicking the right arrow we have the parameters of cycle counters.



The production control panel has a blue header with 'PANEL 2/3' and 'PRODUCT N: 00'. It displays four cycle counter parameters in green boxes:

- Total cycles: 00000000
- Time running: 00000 h
- Cycles to make: 00000
- Cycles made: 00000

There are two 'RESET' buttons, one next to 'Time running' and one next to 'Cycles made'. A dashed box labeled 'CYCLES COUNTER' is located below the parameters. The screen includes a 'MENU' button and navigation arrows (left and right).

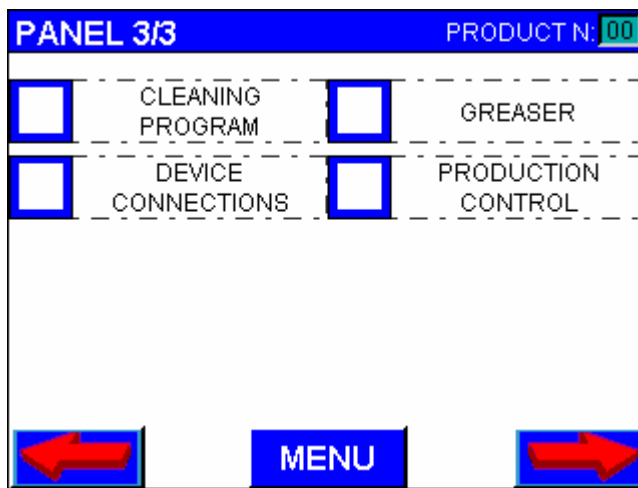
Total cycles. Number of cycles already completed. This value cannot be reset.

Time running. Number of hours the machine is running since the last time that was reseted.

Cycles to make. Partial cycle counter. Once this counting finished, machine will stop and display a message on the screen. Using the lower keys you can activate or reset this counter.

Cycles made. Number of cycles already finished with respect to the number displayed in the partial counter.

From this screen and pressing the right arrow we have the following parameters.



Cleaning program. Activation of cleaning program.

Greaser. Activation of centralized greasing (only if machine includes greaser option).

Device connections. If this option is active, the different motors will keep connected when machine is waiting for automatic cycles (vacuum pump, etc.).

Production control. Activation of the control production, to avoid empty cycles.

2 SECURITY AND PROTECTION

2.1 SAFETY

In order to start working, TFS first checks the following:

- Emergency stop disengaged.
- Cutting cover in correct position.
- Circuit breakers.
- Advance motor variator alarm.

If any of these is not in a correct position, machine will not start working and an error message will be displayed.

If the checking is correct, you will be able to start the machine by pressing the start pushbutton. This connects the water circuit, heaters, pumps, output belt, etc.

Before starting working in automatic mode, it is recommended to wait until heater temperature reaches the defined level and becomes constant.

By pressing again on the start pushbutton, machine will start working normally in cycles. Each cycle will take into account the functions selected in the touch screen. If you press on the start pushbutton and machine does not start working, the reason for this will be displayed in the screen.

If machine operation is interrupted, the reason for this will be displayed. The operator will follow the instructions given in the screen in order to restart the cycle. The error message will not disappear until you press on start or stop pushbutton.

If an emergency stop has occurred (STOP activated, covers open), the cycle will be immediately interrupted. Heaters will only be disconnected when you press on emergency stop. If a cover is open, machine will maintain heater temperature.

Depending on the cause that activated a safety device, we can make two different groups:

- Complete stop safety.
- Ordinary stop safety.

2.2 TOTAL STOP SAFETY

The machine will stop immediately after one of the following errors occur:

Emergency stop. Any of the emergency push button is pressed.

Security error. One of the contacts of the security micros is open (emergency button or guard micro).

Cutting cover open. The cutting cover is not detected in its position.

Inverter error. The inverter has an error. If you have the frontal panel (programming panel), look for the error in the inverter's manual.

Error in the motors. Protection of any of the motors has been activated. Check that all circuit breakers (QM) in the electrical cabinet are in STOP position. Push ON button once the corresponding circuit breaker is in the original position, if it has a serial connection with the protections of all the other motors.

Temperature excess. The temperature of one of the heating plates is too high. Check which one is the overheated one, looking the temperature of each one.

Water pressure error: This error appears when switching on the machine there is no water entering or enough water pressure.

Vacuum pump starter error. This error will show up, when there is a fault in the vacuum pump starter (only if the start up of the vacuum is made by a starter).

Film advance error. You will get this message if after some time the film advancement has not been completed. If the film does not go forward, this may mean that the film is blocked. If advancement is too long, reset the counter with the "RESET" key in the latter, if the machine has pulses counter reset option.

Anticipated sealing mould rise alarm. Sealing die is detected in the upper position before the film finishes the advance. Anticipated advance parameters need to be changed.

Anticipated forming mould rise alarm. Forming dies is detected in the upper position before the film finishes the advance. Anticipated advance parameters need to be changed.

Sealing die not up. The sealing die is not detected in the upper position.

Sealing die not down. The sealing die is not detected in the bottom position.

Forming die not up. The forming die is not detected in the upper position.

Forming die not down. The forming die is not detected in the bottom position.

Lower cut 1, don't lift up. Transversal cutting 1 not detected in the upper position.

Lower cutting 1, not down. Transversal cutting 1 not detected in the bottom position.

Error sealing plate down. The sealing plate is not correctly placed, so it is not in the upper position.

2.3 ORDINARY STOP SAFETY

After one of the following errors occur the machine will stop once the current cycle is completed. Depending on the reason why the machine has stopped, you might not be able to start it again.

Driver communication error. Communication error between PC and any driver.

Resistance breakage: look consumption. Some of the heating resistors has been damaged. If there is more than one area with damaged resistors detection, check which of the areas is consuming less than usual. For doing this, go to the consumption menu and check which of the areas is consuming less than the setpoint. The machine will not stop after making the cycle.

Thermocouple error. The thermocouple of one of the areas is damaged. Each area has its own thermocouple error. For example, if “sealing thermocouple error” is shown, the thermocouple of the sealing heating area is damaged.

Thermocouple inverted. The thermocouple of any zone is inverted or wrong connected. Each zone has its own error. For example, if appears the alarm “sealing thermocouple inverted” it means that the termocople of the sealing zone is inverted.

Temperature is not increasing. The temperature of any zone is not increasing. Each zone has its own error. For example, if appears the alarm “sealing temperature is not increasing” it means that the sealing zone temperature is not increasing. Revise the relay and the fuse.

Relay alarm. The relay of any zone is not working properly. Each zone has its own error. For example, if appears the alarm “sealing relay alarm” it means that the sealing zone relay is not working properly. Possibly the relay is in short-circuit because the temperature increase with the relay disconnected.

No activations in multiple pitch. The machine is working in multiple pitch mode, but all the activations in this mode are deactivated.

Vacuum set point not reached. Pressure value set in the vacuum set point has not been reached.

Gas set point not reached. Pressure value set in the gas set point has not been reached.

Temperature error. The temperature of one of the heaters is out of range.

Lower film end. The end of the bottom roller is being deteced.

Upper film end. The end of the upper roller is being detected.

End of cycles to be made. The set cycles amount have already been done.

Double check pump's oil and filters. The machine shows a warning to check the vacuum pumps (filtres, oil exchange...). After checking the vacuum pumps, reset the counter of double check pump's oil and filter, in the maintenance menu screen. The machine will not stop after the cycle is made.

Stop pressed. Stop button is pressed.