SEALING LINE

Automatic tray sealer TS-550

TECHNICAL MANUAL OF INSTALLATION, USE AND MAINTENANCE

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All the regulations, transformations, maintenance, etc., mentioned in this manual must be carried out by qualified personnel for this type of machine.

All the machines manufactured by TALLERES RAMON S.L. conform to the standards EN292-1, EN292-2, EN60204-1 and EN 60335-1 and council directives 93/68 89/392.

Safety rules

- ✓ Read, understand, and follow all instructions in the user manual and on the machine before starting the machine. Keep this manual in a safe place for future reference and for ordering spare parts.
- ✓ Empower operate the machine only for people who have knowledge of this manual. Make sure you know how to stop the machine quickly.
- ✓ Do not put your hands near moving parts.
- ✓ Remove any obstacles that would prevent proper operation of the machine.
- ✓ Make sure to turn off the machine when you finish your work. Never leave a running machine unattended.
- ✓ Always unplug and wait for the machine to cool down before performing any maintenance.
- ✓ Never wear clothing or jewelry to lose that can be caught on moving parts.
- ✓ Please wear safety shoes to avoid any risk due to falling objects from the machine or risks during transport of the machine.
- ✓ Never tilt the machine at an angle of over 30 degrees, to avoid falling and hurting people.
- ✓ Die sets should be changed when they are cold or athermic gloves should be used
- ✓ Always use personal protective equipment (PPE) appropriate to the job being performed.

CONTENT

1. Introduction

The tray sealer machineTS-550 allows the vacuum and hermetic sealing of trays with plastic film, using a die set with the shapes and dimensions of the trays. These moulds can be interchangeable, equipped with profile cut or cut from the back side.

For this, the machine has a vacuum pump, resistances that provide the necessary temperature for the sealing of the plastic, and a gas injection system, which by means of an electrovalve allows the introduction of the gas before sealing.

By means of its control panel with 99 memories, you will manage all the adjustments for the perfect preservation and packaging of your products.

2. Technical specifications

		TS-550
Dimensions		880 x 500 x 1490 mm
Maximum Packaging dimensions		900 x 550 x 1550 mm
Weight		120 kg
Motor		0.75 Kw
Sealing resistance		1500 W
Pump	Standard	25 m3/h
	Optional	40 m3/h

3. Warnings

Never pack products that could damage the machine.
Never pack products that could be damaged by the vacuum.

The security or legal liability will be void if damage from repairs and / or modifications not performed by qualified staff that is approved by the manufacturer of the machine or one of its authorized distributors occur. In case of malfunction, contact the supplier

Always clean the machine with products without solvents, as they may damage it.

If performing maintenance must not have ever running on the machine.

ALWAYS REMOVE THE PLUG FROM POWER WALL.

It is not allowed to pressure cleaning machine, as this could cause considerable damage to electronic components of the machine.

Do not place the machine near a heat source or devices that release steam.

Allow the moulds to cool before removing them for exchange.

Never allow liquids to enter the suction port of the pump. This will cause irreversible damage to the pump.

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4. Precautions

4.1. Machine´s assignment

In case of transfer of the machine it is necessary to inform TALLERES RAMON, S.L. the address of the new owner to facilitate sending any manual modifications to him.

4.2. General safety standards

Always follow the safety rules contained in this manual.
The manufacturer declines related responsibilities of a misuse of the machine.
The supply voltage must match the voltage at which the machine is plugged.

Take care not to reverse the phases when connecting.
The electrical supply installation must be carried out in accordance with current standards (IEC Directive 64-8/1-7 (1992)).
Periodically check that the connection cable is in perfect condition (IEC Directive 64-8/1-7 (1992)).Do not allow persons not involved in the work to be carried out on the machine to approach it. The use, maintenance and repair of the machine must be carried out by trained and qualified maintenance personnel who are familiar with this manual.

ATTENTION!
When the machine is not in use should be protected from caused involuntarily possible tampering. Sign out the cable from the mains supply

SAFETY RULES FOR OPERATION
Before starting work, check the safety devices for any visible defects.

MAKE SURE THAT:

** There are no persons not involved in the work near the machine.

** There are no objects on or around the machine which could cause damage.

** Once the machine has been started, it must not emit any unusual noise. If this is the case, stop the machine immediately and find out the possible cause. If this is not found, contact technical support.

4.3. Before start-up

- ✓ Under no circumstances operate or adjust the start-up and control elements, etc. without authorisation and/or knowledge of their operation.
- ✓ Before starting work, the operator must check for any visible defects in the machine's control and safety devices.
- ✓ Do not allow persons not involved in the work to approach the machine.
- ✓ In case of a problem that could affect the safe operation of the machine, the machine must be switched off.

If, for installation, maintenance and/or repair purposes, it is unavoidable to dismantle any part of the safety devices, this may only be carried out by authorised persons, who must do so without causing any damage to persons or to the machine.

Before starting the machine, make sure that the direction of rotation of the pump is correct (reverse rotation will result in its destruction).

If it is not, switch off the main power switch, dismantle the socket and reverse the two-phase cables.

As far as your electrical power supply installation is concerned, it must belong to one of the "standardised **in, it or tt** systems, with the corresponding "associated active protections" and, in any case, with the corresponding "earthing system" (EC directive 89/391).

The construction and maintenance of the entire installation must comply with the technical instructions of the IEC 64-8 (1992) standard.

Finally, we remind you that you must inform the local authorities of your "earthing system" (with the associated active protections) so that they can carry out the "initial inspection" required by law and, subsequently, the periodic inspections required.

Both the electrical and gas installations must be carried out by authorised installers.

4.4. Cutting risk

The TS-550 tray sealer has hidden blades for cutting the film and especially the moulds with perimeter cut. If the moulds are changed, take this precaution into account and use gloves for this use.

4.5. Noise level

The sound level is less than 82 dB (A) under proper working conditions.

4.6. Hot surfaces

If the machine has interchangeable inner moulds. These must be allowed to cool before being removed for exchange

5. Warranty

The warranty of the machine is valid for a period of one year, counting from the day of delivery of the machine.

5.1. Restricciones

This warranty does not apply to:

a) Repairs or spare parts reparations that are not necessarily due to a defect in material and/or workmanship from the manufacturer and are caused by:
   1.- Repairing a damage following an accident.
   2.- Defects caused by improper handling and/or carelessness.
   3.- Repairs carried out by third party, other than an official representative and damage caused by repairs by the owner and include parts assembled from the time of these repairs.

b) The warranty does not cover the gaskets, pistons and other parts subject to normal wear and tear.

c) The electronic components of the machines do not fall under warranty.

d) The manufacturer is not responsible for modifications outside the origin of the machine the ones that are set out in this document.

e) The manufacturer is not responsible for failures caused by misuse of the device.

f) The manufacturer is not responsible for the operation and quality of the machine if it implies the default in the present INSTRUCTIONS.

Restrictions of liability and remedies: The manufacturer and distributor are not liable for consequences and damages caused directly or indirectly by a defect.

6. Responsabilities

a) Any liability which is not established by law will be rejected.

b) The liability of the manufacturer and / or supplier does not in any case exceed the total value of the machine.

c) With the exception of the general legal rules of public order, the liability to pay damages of any kind is not assumed (including business losses, real or personal property or injury to persons, whether related to the counterparty or third parties).

d) The manufacturer and / or supplier shall not be liable for damages arising from use of the product that not be appropriate for the purpose for which it was purchased.

e) We will reject any claim for loss of profits from the development of the machine.

7. Installation

On receiving the machine, carefully unpack it and check with the shipping label that it is the required equipment; once it has been discovered, consult the instruction booklet and take the following precautions:

1. The personnel in charge of the installation must be qualified in the installation of machinery.
2. Check that the power supply current corresponds to that required by the machine.
3. Check that all the elements that make up the machine are perfectly positioned and that they have not been misaligned during transport.

Sufficient space should be left around the machine for good ventilation. The lateral space must be at least 5 centimetres.

The back of the machine must have a stop to prevent it from moving and sufficient space to prevent the cables and their air and gas ducts from being crushed. Space shall also be provided for changing the moulds (if available).

Minimum safety requirements for the operator and machine must also be included in the installation space.

Whether moving or operating the machine, the balance of the machine must always be checked in advance.

Avoid installing the machine in an environment where dust, corrosive elements, acids, etc. are present.

Avoid installing the machine in an area where there are vibrations.

Avoid installing the machine in direct sunlight or near steam. This may affect its performance.

Do not install the machine in a potentially explosive environment.

7.1. Connections

7.1.1. Electrical connection

Check that the voltage indicated on the label of the machine is the same as the mains voltage.

Always connect the machine correctly to an earthed socket to avoid danger or electric shock (the earth connection is yellow/green).

The power cable must be free to move freely and nothing must be placed on it.

If the power cord is damaged for any reason, it must be replaced immediately.

If there are problems with the machine and maintenance work needs to be carried out, the machine must be disconnected from the power supply before starting work on the machine.

If you do not expect to use the machine for a long period of time, the power should always be disconnected.

7.1.2. Gas connection

Connect the hose from the gas cylinder to the nipple on the back of the machine and secure it with a hose clamp.

The outer diameter of the nipples to connect the gas hose and the pressurised air hose to the machine are (3/8") 9.52 mm.

Under no circumstances use flammable gases or gas mixtures with a high oxygen content (unless the machine is equipped with a special pump designed to work with gas mixtures with a content of more than 21%).

There is a danger of explosion if you use gas mixtures with a high oxygen content

Gas cylinders must always be correctly positioned and secured. If the gas extraction function or the machine is not in use, the gas cylinder valve must always be closed.

The pressure of the gas cylinder pressure reduction valve must never exceed 2 bar. Higher pressure could damage the machine.

Note: Accidents or damage caused by the use of these gases will invalidate any liability on the part of the supplier and/or manufacturer as well as the cancellation of the guarantee.

8. Set up

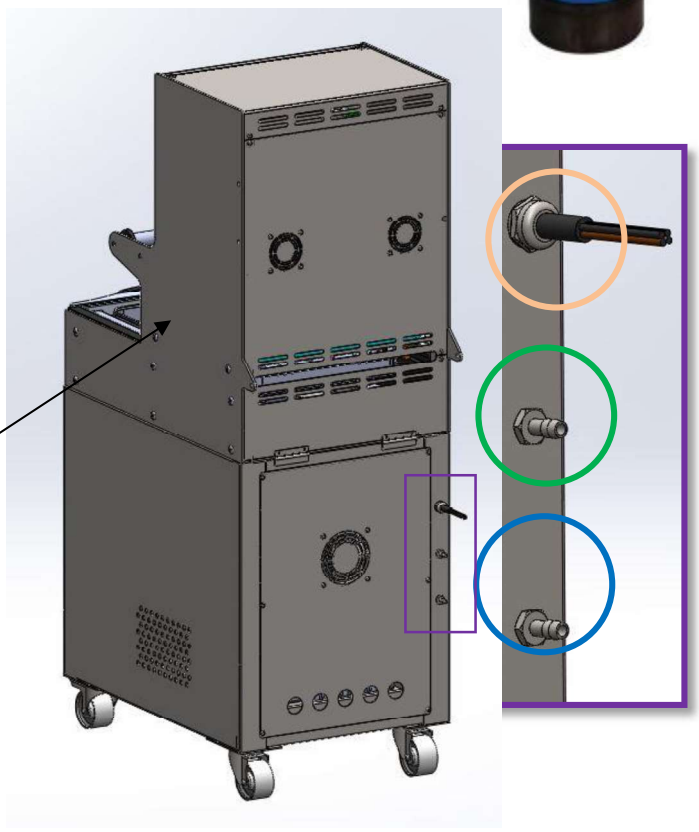
1. Switch on the **power supply.**

2. Switch on the machine from the control panel.

3. Connect the machine to the compressed air supply. This connection is located on the rear of the machine

4. Connect the machine to the **gas supply.**

5. Pull the drawer all the way out until it stops. This operation will initiate the heating of the machine "CAL", and subsequently the pump operation, when the programmed sealing temperature is reached.



Tilting plate for mould change

a) Precautions before start-up

Check that the pneumatic pressure is sufficient. The normal pressure is 5 bar.
Open the stopcock, and regulate the gas pressure, without exceeding the pressure indicated above in the "gas" section.
Wear safety boots and other protective clothing and PPE to ensure operator safety.

b) Test cycle sequence

Press the run button No. 11 and set the sealing temperature to 160°C, shortly before the set value is reached the vacuum pump will start.
NOTE: The noise of the pump should be soft, if it is not (low sound with vibrations), it means that the pump is rotating in the opposite direction. Please turn off the machine and switch two phases of the power supply between them.

c) Vacuum, gas and sealing adjustment

Set the vacuum level by pressing button no. 5 and adjusting with buttons no. 2 and 3.
Choose the gas filling option (key nº 7) and adjust it with buttons nº 2 and 3, adjust its percentage.
Set the sealing time by pressing button no. 7 and adjusting with buttons no. 2 and 3, all parameters will be automatically saved in the selected programme number.

Please note that if the difference between gas and vacuum is too big or too small, the package will be deformed.

If everything is OK, use the machine according to the instructions in this manual.

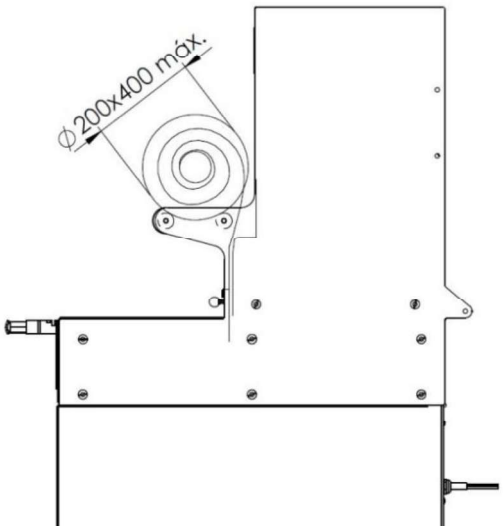
CONSULT THE MANUFACTURER OF FILM AND TRAYS
FOR THE OPTIMUM RECOMMENDED SEALING TEMPERATURE AND TIME.

9. Programming of special additional functions

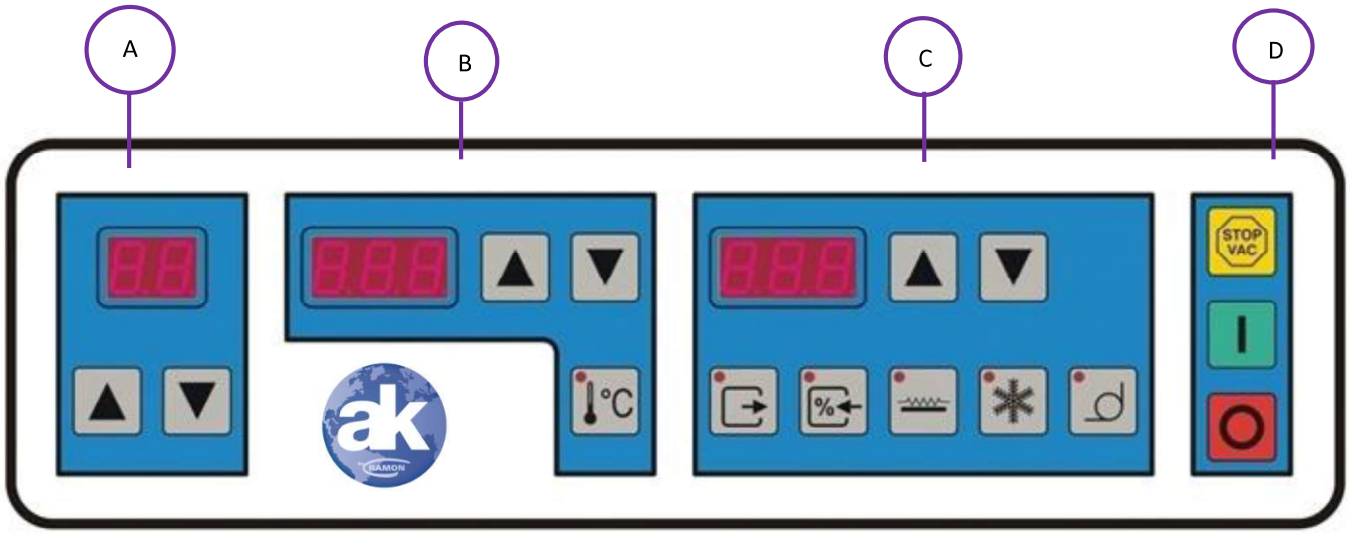
The machine leaves the factory with standard programming. If you wish to reprogram the machine for any reason (temperature ranges, speeds, calibrations, etc.), please contact your supplier or the manufacturer.

10. Placement of the film

The maximum size of the film roll shall not exceed Ø200x400 mm wide and shall be fully compatible with the trays to be sealed.
must be completely compatible with the trays to be sealed.
Place the roll of film on the 2 rollers located under the panel (usually the side that welds with the trays is usually the inside of the roll), centre it by means of the 2 rings located on one of the rollers and fix them by means of the built-in fasteners.
Pass the film through the rear part (between the roller and the machine) and by slightly lifting the pressure plate, pass the film between the plate and the machine (this plate has a tab along its entire length to pull it). The pressure of this plate can be adjusted by pressing the "ball" knobs that press on springs for this purpose.
Leave the film in such a way that it completely overlaps the magnet-holding bar, and it should be between this bar and the drawer.



11. Description of areas and functions



The control panel of the machine is divided into four parts framed as follow

A **Program area.** It allows to store 100 parameter settings, which will be; the temperature and all other parameters set in the operation area. Their values are automatically saved.

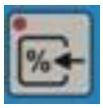
B **Temperature area.** Establishes and informs of the current and programmed temperature, press the thermometer and use the up/down arrows to change its value.

C **Operation area.** It informs and modifies the operations described in each pushbutton, in its display we will normally have the vacuum value and temporarily the value of the preselection that we select. To its right we have the arrows to raise/lower the value.

We also have in this area five keys with a light indicator and a symbol inside that allow us to select the value we want to see and/or modify. These keys are, from left to right: the "VACUUM" to be carried out, the "GAS" supply, the "WELDING" time of the tray and film, the "COOLING" stage and the "ROLLING" of the excess film, which is only available on automatic machines.

When you press one of these keys, its indicator light will come on and its value will appear on the display and can be modified. And pressing its key or waiting a few seconds without pressing any key will exit the selection and the measured gap will be displayed again. All the values of the preselection's are in seconds except for vacuum and gas. Vacuum is in % and gas are the value by which the % vacuum should decrease.

D **Service area.** Switch the machine on and off, stop the vacuum function, and continue operations.

Symbol	Nº	Name	Description
	1	Display	There are 3, one to show the programme number we are working on, one to show the sealing temperature, and the last one to show the other values.
	2	Push button +	It is used to increase the value shown on the display. Each display is accompanied by one of these
	3	Push button -	It is used to decrease the value shown on the display. Each display is accompanied by one of these
	4	Programmed temperatue	When pressed, it allows setting the sealing temperature. If not pressed, it displays the current temperature
	5	Vacuum percentage	When pressed, it shows the current empty percentage on the third display and allows you to change it.
	6	Gas percentage	When pressed, shows the current gas percentage in the third display, and allows you to change it.
	7	Sealing time	When pressed, the current sealing time is shown on the third display and can be changed.
	8	Cooling time (automatic only)	When pressed, the current cooling time is shown on the third display and can be changed.
	9	Film pick-up time (automatic only)	Pressing it shows the film pick-up time on the third display, and allows you to change it.
	10	STOP VAC	Stop the vacuum process and continues with the heat-sealing cycle.
	11	Start button	Switch on the machine
	12	Stop button	Switch off the machine

12. Use of the machine

When the machine is started, the following sequence will be displayed:

1. For a short period of time (1-2s) the programme display will show the value "P", which will quickly change to the value "0", the temperature display will show the software version, "115", and the vacuum display will show the version, "-00", with all LEDs lit and the buzzer sounding.

2. Check that the machine is in the correct position, with the tray out. If this is not the case, the tray shall be pulled out completely.

3. The temperature control will be activated and the vacuum display will show "CAL". From this moment and when the sealing temperature is reached, the programme number and the preselections can be modified.

4. When the temperature starts to be close to the selected temperature, the vacuum pump will start.

5. From this moment the machine is ready for use.

   For the traysealer, the heatsealing operation shall start when the tray is manually inserted, at which point the 'Heatseal Start' shall start and the following sequence shall be followed:

6. The operator shall insert the tray until it stops at the end of the tray stroke.

7. Lower the upper drawer.

8. The vacuum will be activated and will not stop until the preset vacuum is achieved or until the "STOP VAC" key is pressed.

9. Gas will be drawn in until the set gas-vacuum difference is achieved.

10. The weld is activated for the programmed time.

11. The cooling option is activated for the pre-selected time.

12. The buzzer will sound and the drawer can be pulled out until the stop is reached.

13. Remove the tray, the machine is ready for another operation.

13. Maintenance

If you wish a long service life of the machine it is essential to carry out a good, regular and complete maintenance, in this way you will avoid breakdowns and the quality of the thermosealing will always be optimal.

If the machine is used normally, a complete overhaul every year is sufficient, but if it is used more intensively, a complete overhaul every 6 months is necessary.

If there are any doubts about the maintenance instructions below or if the machines do not work properly, please contact the supplier or manufacturer.

Repairs or maintenance work must only be carried out by qualified personnel, and with the express consent of the manufacturer.

Repair or maintenance work must only be carried out by qualified personnel, and with the express consent of the manufacturer.

13.1. Maintenance plan

Element		Activity	Period						
			Break	Diary	Weekly	6 month	12 month	2 years	4 years
1	Pump	Visual inspection		■					
		Check oil level			■				
		Noise check		■					
		Oil change					■		
2	Die set box	Cleaning		■					
3	Die set	Replacement of the silicone gasket	■						

13.2. Pump

13.2.1. Visual inspection

Check that there are no leaks, paying special attention to elements such as hoses, couplings and rubber seals. If any leakage is found, the pump must be repaired by contacting the manufacturer.

13.2.2. Check oil level

Before and after using the machine, it is necessary to check that the oil level in the pump is correct, otherwise the pump could be seriously damaged.
The oil level must always be between the marks indicated on the sight glass on the pump.
Use the holes on the underside of the chassis to view the sight glass.
If the oil level is insufficient, add oil immediately.
If, when checking the level, the colour has changed to a whitish colour, it is necessary to change the oil level completely.

13.2.3. Noise check

With the pump running, check that there are no unusual noises, otherwise the pump may be damaged. If noise is detected, carry out a general overhaul of the assembly.

13.2.4. Oil change

Once the oil has reached the end of its life, it will be necessary to replace it with new oil of the same characteristics. To do this, the oil reservoir must be completely emptied before adding new oil.

CHANGE THE OIL IN THE VACUUM PUMP EVERY 300 WORKING HOURS.

If the packaged product contains liquid, it is necessary to check the oil more often, and change it before time if it is found to be deteriorated.

Also check the oil level through the sight glass. If the oil is dirty, it should be changed immediately.Atención. La eliminación del aceite usado debe hacerse según las normativas locales. Puede provocar daños al medio ambiente.

Recommended oil: *BP Energol RC 100, Esso Nuto H100, Mobil Rarus 427*

13.3. Die set box

13.3.1. Cleaning

If the vacuum process is finished, use a clean, damp cloth to clean the mould drawer.

ALWAYS UNPLUG THE POWER PLUG FROM THE WALL SOCKET.

13.4. Die set

13.4.1. Replacement of the silicone gasket

Over time, it is likely that the silicone gasket on the moulds in a perimeter groove will eventually crack or break completely. In this case it will be necessary to replace it with a new one. To do this, simply remove the old gasket (you can use pliers if necessary), clean and degrease the groove, and insert the new gasket. Make sure that the gasket is the correct size, with no gaps or gaps in the new gasket.

14. Incident diagnosis

Problem	Reason	Solution
The machine does not turn on	Power failure	Check the inlet and outlet
Machine does not heat up	Mould drawer not completely pulled out	Pull the mould box
Machine temperature is excessively high and/or fluctuating	Failure of the temperature sensor, relays or electronics	Stop the machine and call the service department.
Pump does not start	The set temperature has not been reached	Wait until the temperature is reached, call for service
Drawer cannot be inserted or removed	Lack of air pressure in the machine	Check the air line, call for service
Vacuum does not occur, is low or is not reached	Drawer incorrectly positioned, drawer gaskets in bad condition, leakage in the ducts	Check and if it persists, call for service
The gas flushing process is not completed	Check gas stopcock, low pressure or no gas.	Check and if it persists, call for service.
The machine does not cut the film	Cutting seals in bad condition, or not properly positioned, drawer not properly positioned, damage to blades	Check that all seals are in place and clean, blades in bad condition, call for service.
The film has not adhered to the tray or is loose	Film roll placed upside down, not compatible or missing temperature.	Check all these conditions
The tray is deformed "concave". 	Not enough gas	Reduce vacuum settings or increase gas supply.
The tray is deformed "convex" 	Too much gas	Reduce gas supply or increase vacuum values.
The sealing of the trays is weak	Lack of temperature or sealing time, non-compatible plastics, lack of pressure in the pneumatic connection	Check all values and components
The sealing of the trays is irregular	Incorrectly positioned or damaged tray support seals, tray rim with product residues	Check components and their condition
The sealing of the trays is deformed and wrinkled.	Excessive temperature or sealing time, non-compatible plastics	Check all values and components

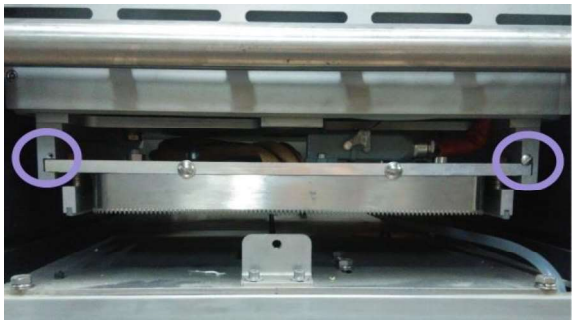
If, after applying the solution to your problem, the problem persists, contact your supplier or manufacturer.

15. Die set change

1. Disconnect the machine from the power supply.

2. Loosen and remove the 2 lateral screws of the rear plate which is hinged by means of a hinge, for this only a flat screwdriver is needed. Once removed, the plate will tilt at the bottom, leaving access to the inside of the machine.

3. Next, remove the 2 screws at the ends to free the mould. To do this, use the flat screwdriver used previously.



4. Once the mould is free, it is slightly extracted, until the electrical connector mounted on the upper part of the mould can be disassembled.

5. Unplug the electrical connector.

6. At this point, the die set assembly can be removed completely.

7. Place the new mould in the position of the old one and reassemble everything disassembled in the previous steps.

16. Characteristics and other information

16.1. General characteristics

External air compressor

Sound level

- ✓ 80.4 dB (A)

Storage conditions

- ✓ Temperature: 0-45 ºC
- ✓ Humidity: 20-95 % RH

Operating range

- ✓ Temperature: 0-45 ºC
- ✓ Humidity: 20-95 % RH
- ✓ Altitude: 0-1000m (from sea level)

16.2. Space requirements

- ✓ Sufficient space must be provided for heat emission, operation and maintenance of the machine.
- ✓ The machine must be installed away from other machines.

16.3. Plates with features

On the right side of the machine base and in the lower right corner, the plate is placed according to the pattern shown below.

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