H-180

INSTRUCTIONS MANUAL

MESPACK

PACKAGING MACHINES

C/ Mar Adriatico 18, Poligono Industrial La Torre del Rector

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General Index

Model

Horizontal form fill and sealing pouches machine:

Machine model	H-180 FE
Serial number	182.037
Delivery date	FEBRUARY 2010
Customer	PROFIL (POLAND)

IMPORTANT:
We kindly ask our clients to mention the serial number of this machine, in case technical assistance, or spare parts are needed. This serial number corresponds with the number as marked on the licence plate of the machine, situated in the left lateral of the machine. This will ease the proces of servicing and the supply of spare-parts.

EC declaration of conformity

We :

MESPACK

C/ Mar Adriatico 18, Polígono industrial La Torre del Rector

08130 Santa Perpetua

Barcelona (Spain)

Machine model: H-180 FE

Serial number: 182.037

Hereby declare:

That the delivered machine has been constructed according to the following European standards:

* Machine standard 2006/142 (after 98/37/CEE).
* Low tension standard 93/68/CEE.
* Electro-magnetic compatibility standard 2004/108 (after 89/336/CEE).
* Standard related to all materials that are in direct contact with the product to be dosed 89/109/CEE.
* Standard UNE-EN 12100-1 for machine security, basic terms and principals for it's design.
* Standard UNE-EN 12100-2 for machine security, technical guidelines and specifications.
* Standard UNE-EN 60204-1 for electrical equipment of industrial machinery.
* Standard UNE-EN 418 for machine security, emergency stop systems, functions and guidelines for installation.
* Standard UNE-EN 294 for machine security, security distances to avoid the danger for persons getting hurt while machine is in motion.

Santa Perpetua, 2010

Signed:

MESPACK, S.L.

Presentation

Dear client:

We thank you very much for your trust in Mespack and for acquiring this H-180 machine. Your faith in Mespack comes together with an advanced technology and a long experience which you can appreciate in the quality and design of the machine.

In this instructions and spare-parts manual, we try to detail as simple as possible how to install and run the machine as well as how to maintain the machine and how to change over a format. We also include a list with drawings of almost all parts of the machine to make it much easier to order any spare-part in case of need.

These instructions are in general for the personnel responsible for the machine and we recommend to read this manual carefully.

We would also like to mention that it is not possible to prepare an instructions manual that addapts and “solves” all inconvenients that may occur with the machine. Anyhow, it is most important to observe any problem that may occur with it’s necessary dedication, calmth and patience.

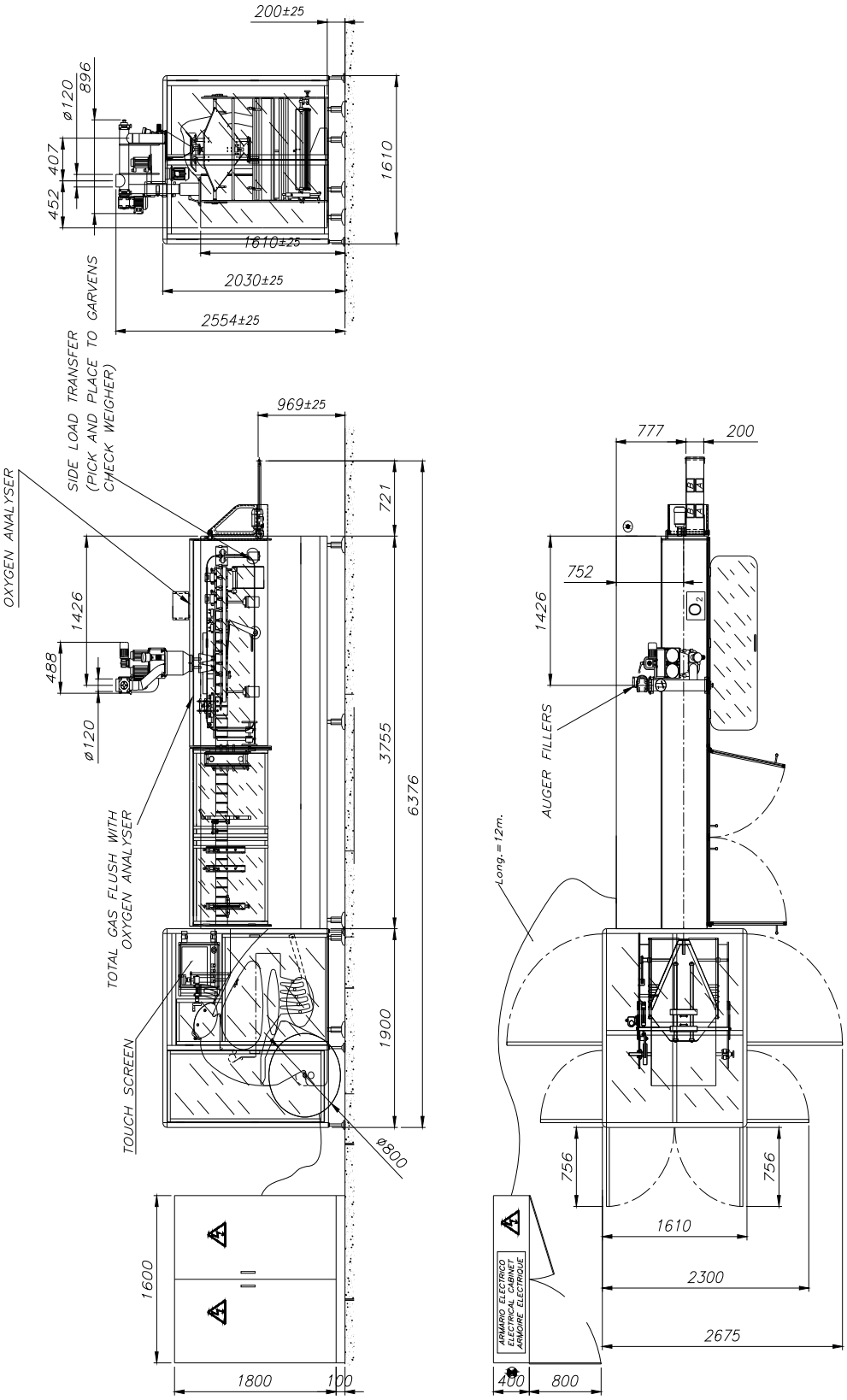
A good functioning of our machine depends in principal on the correct opperating and maintenance of the machine by the personnel in charge.

General characteristics

Horizontal form fill and sealing pouches machine serie H-180:

The H-180 is a new generation horizontal form fill and sealing pouches machine. This machine is of a very advanced technology and a very precise mechanical design, with a very high efficiency and output level.
This, in combination with it's low maintainance needs, it's easy opperation, it's exterior design free of sharp edges, make of this machine the ideal machine for the food industry.
The H-180 is a mono-volume machine. This means that the machine is made from one single frame that can be configured according to the needs of the client.
All mechanisms of the H-180 machine have been designed as a module, allowing with this to configure the machine even at the client's factory, switching from the most basic to the most equipped machine.
This gives us an idea of the great versatility and polivalence given to the machine and it's possibilities to be adjusted to the latest market demands.
All it's mechanics have been designed totally according to a new and different concept, uniting in this new generation machines all experience obtained with our clients.
Because of the exigence and needs of our clients, we developped a new generation of machines, which general characteristics are listed on the following pages.
The client should read the manual having in mind the machine he obtained. With this manual we distinguish the different models of the H-180 series, to make the information more accessible in case spare-parts are being needed.

Machine for standard pouches (EXAMPLE):



MODEL	H-180-S
MINIMUM DIMENSION	70 x 100
MAXIMUM DIMENSION	190 x 300
MAXIMUM VOLUME	1000 C.C.
PRODUCTION SPEED	80 POUCHES / MINUTE
DOSING STATIONS	3
REEL DIAMETER	600
REEL CORE DIAMETER	70/150
MACHINE DIMENSIONS	5200 x 1400 x 2060
ELECTRIC CONSUME	18 KW
PNEUMATIC CONSUME	150 L / MINUTE
WEIGHT	3000
SOUND LEVEL	INF. 70 Db
COLOUR	RAL 9007
SECURITY	CE STANDARD

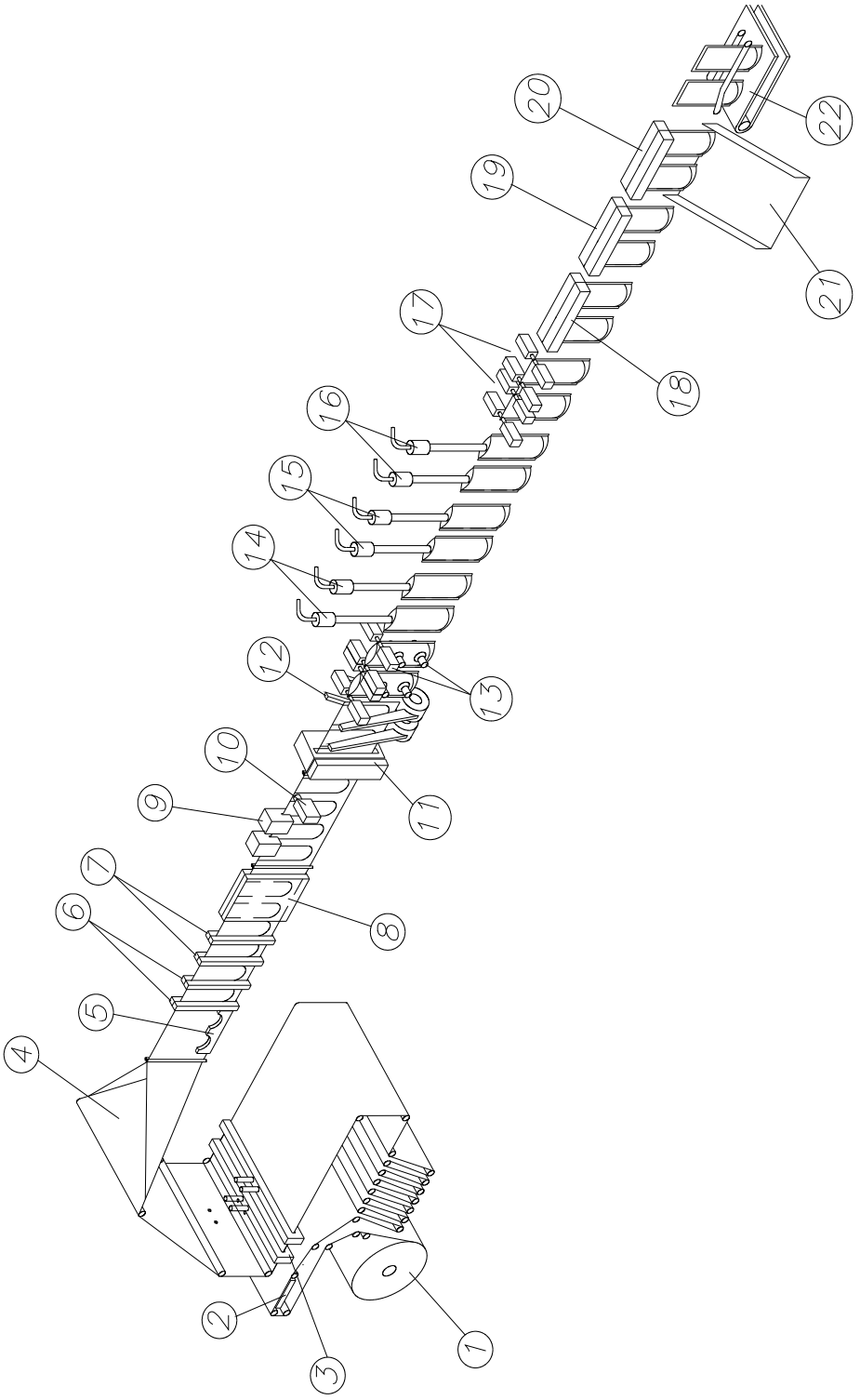
MODEL	H-180-D
MIN. DIMENSION SIMPLEX	50 x 50
MAX. DIMENSION SIMPLEX	90 x 300
MIN. DIMENSION DUPLEX	60 x 60
MAX. DIMENSION DUPLEX	105 x 300
MAX. VOLUME SIMPLEX	1800 C.C.
MAX. VOLUME DUPLEX	500 C.C.
PROD. SPEED SIMPLEX	80 POUCHES / MIN.
PROD. SPEED DUPLEX	160 POUCHES / MIN.
DOSING STATIONS	3
REEL DIAMETER	600
REEL CORE DIAMETER	70/150
MACHINE DIMENSIONS	5200 x 1400 x 2060
ELECTRIC CONSUME	18 KW
PNEUMATIC CONSUME	150 L / MINUTO
WEIGHT	3100
SOUND LEVEL	INF. 70 Db
COLOUR	RAL 9007
SECURITY	CE STANDARD

Machine for Doypack pouches (182.037):

MODEL	H-180-FE
MINIMUM DIMENSION	70 x 100 x 40
MAXIMUM DIMENSION	190 x 300 x 120
MAXIMUM VOLUME	1500 C.C.
PRODUCTION SPEED	60 POUCHES / MINUTE
DOSING STATIONS	3
REEL DIAMETER	600
REEL CORE DIAMETER	70/150
MACHINE DIMENSIONS	5200 x 1400 x 2060
ELECTRIC CONSUME	18 KW
PNEUMATIC CONSUME	* L / MINUTE
WEIGHT	3300Kg
SOUND LEVEL	INF. 70 Db
COLOUR	RAL 9007
SECURITY	CE STANDARD

* It depends on installed components.

Distribution of groups H-180-D y H-180-FE:



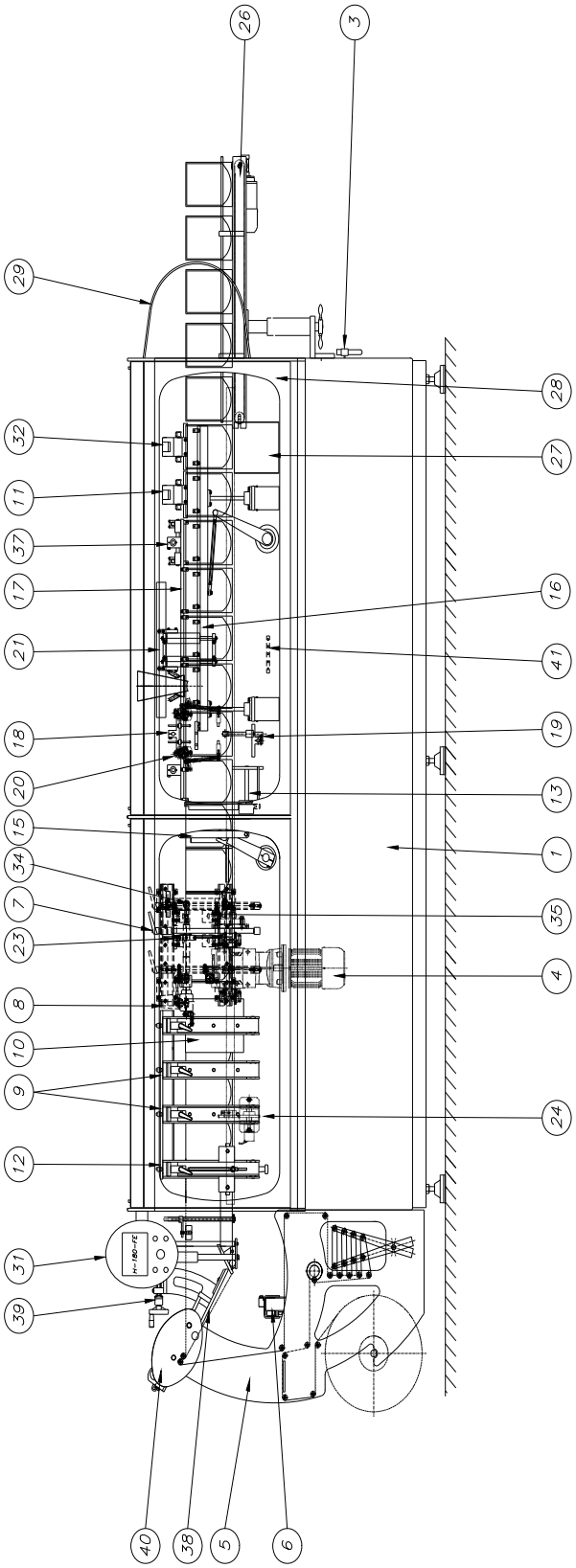
1. Unwinder
2. Reel splicing table
3. Film perforator
4. Forming triangle (for stand-up pouch)
5. Buttom sealer
6. Firts vertical sealer
7. second vertical sealer
8. Cooling station
9. Tear notch
10. Photocell
11. Film transport
12. Scissors
13. Pouch opening
14. Firtst dosing station
15. Second dosing station
16. Third dosing station
17. Pouch closing
18. Top sealer
19. First cooling
20. Second cooling station / declining
21. Declining ramp
22. Exit conveyor beld

In case the machine will work in "**SIMPLEX**", or, in other words, the machine produces only one pouch per cycle, the distribution of the groups as listed before will be the same, but the drawing will change in case the groups will be double. For example the scissors, the dosing nozzles, the clips for pouch closing, the first and the second station of the vertical sealers, the tear notch… All these groups are composed by two units, like this creating the possibility to produce 2 pouches per one cycle (DUPLEX).
More ahead, we will explain the necessary regulations to change over a format of each group, to be able to use and run the machine without any problems. However, before we will pass through the technical characteristics of the machines and the pouches that can be made by each machine.

RELATION OF GROUPS:

Machine H-180-FE

POSITION	DESCRIPTION
1	FRAME
2	ELECTRICAL CABINET
3	MAINTENANCE UNIT
4	MOTIVITY GROUP
5	INDEPENDENT UNWINDER
6	REEL PERFORATOR DOYPACK
7	FILM GUIDES
8	AUTOMATIC SEALING JAW CORRECTION
9	VERTICAL SEALING JAW
10	PLENCHING JAW
11	TOP SEALING JAW
12	BOTTOM SEALING JAW
13	SCISSORS
14	INDIVIDUAL POUCH CUTTER
15	FILM TRANSPORT
16	MOBILE CARRIER
17	FIXED CARRIER
18	VACUUM CUPS
19	BOTTOM VACUUM CUPS
20	POUCH OPENING CLIPS
21	DOSING SYSTEM
22	DUST EXHAUST
23	PHOTOCELL
24	ENCODER
25	EXIT RAMP
26	DOYPACK CONVEYOR BELT
27	POUCH DECLINING RAMP
28	PROTECTIONS
29	PROTECTIONS DOYPACK CONVEYOR
30	PROTECTIONS TRANSFER
31	TOUCH SCREEN
32	TOP COOLER
33	HOT INK CODER
34	EMBOSS CODER
35	TEAR NOTCH
36	TRANSFER
37	STATIC STRETCHING
38	FORMING TRIANGLE
39	FORMING TRIANGLE FOR BOTTOM
40	REEL EDGE ALLIGNER
41	CENTRAL LUBRICATION SYSTEM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Pouch characteristics

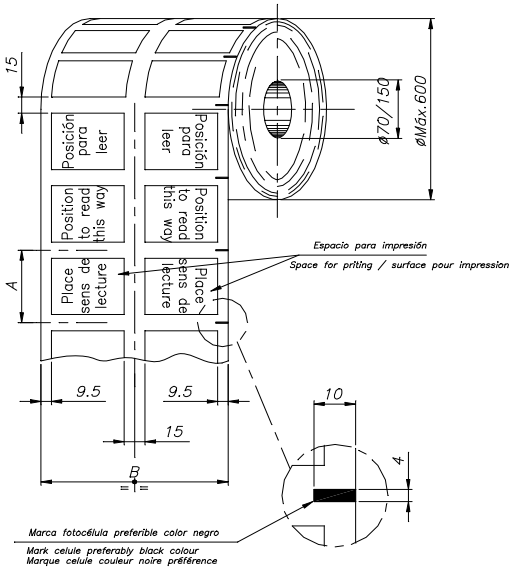
Our machines are capable of producing 4 types of pouches, the production of those depends on the needs of the client. All types of pouches can be produced in simplex or in duplex (two pouches per cycle). To work in duplex, the machine should be equipped with the necessary groups to work in duplex. The pouches have a maximum format. The maximum format in height is the same for simplex as well as for duplex, the maximum width for the duplex pouches is the half of the simplex pouch.

REEL LAYOUT DRAWING FOR FLAT POUCHES:

The reel layout drawing indicates the necessary characteristics for the reel that should be used by the client, with the maximum dimensions and it's possible combinations.

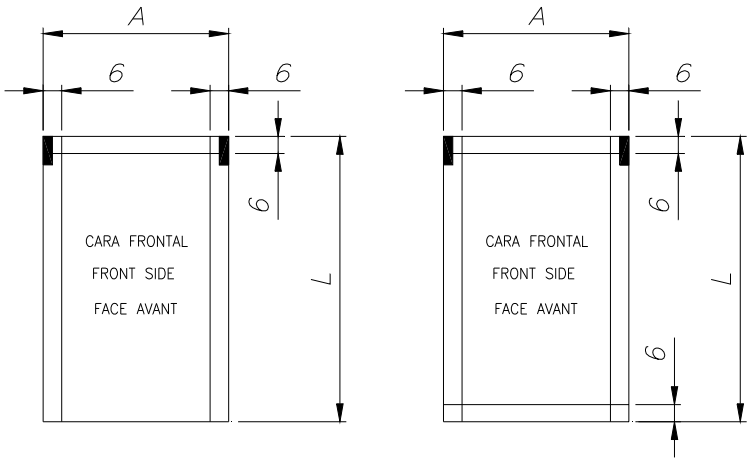
FLAT POUCHES:

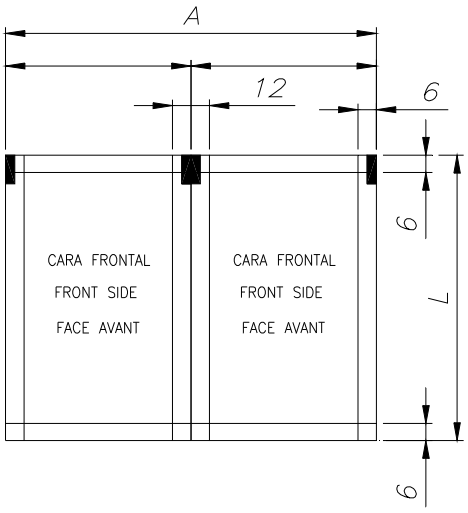
The flat pouches can be produced either with three or with four side sealing. In case to have four sealings, the fourth sealing will be the bottom sealing, losing like this volumein the pouch, but on the other hand, gaining rigidness.



DOYPACK POUCHES:

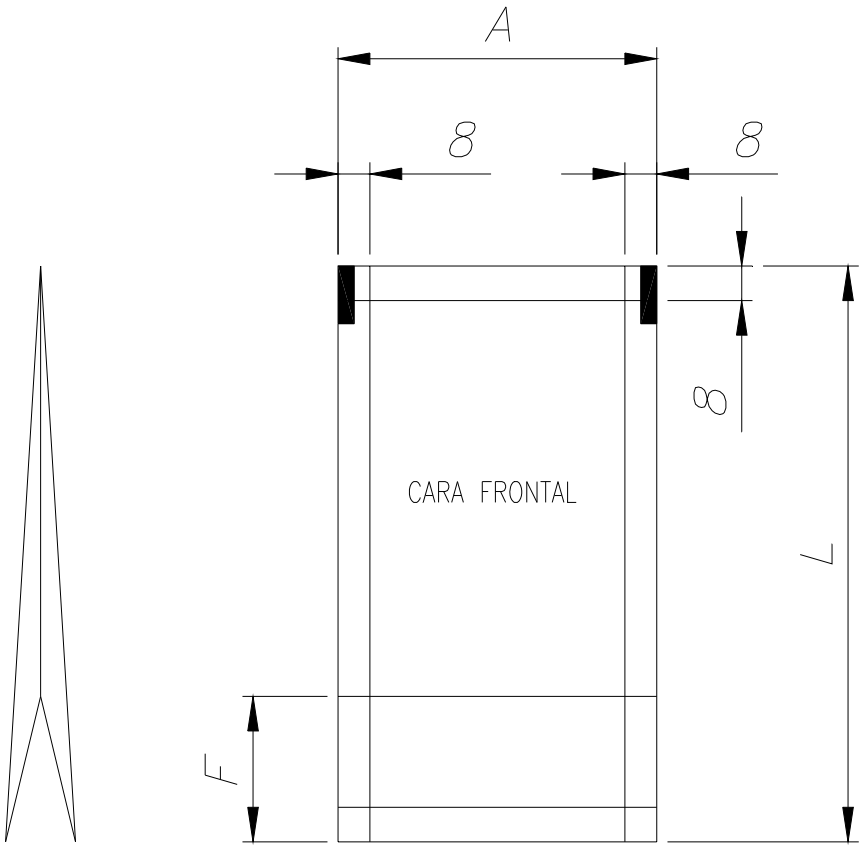
With this type of pouches it is necessary to have a fourth, or bottom sealer with a special shape. The sealer should have the adequate dimensions according to the dimensions of the pouch that should correspond with the volume to be dosed inside the pouch. To achieve the folding we use the forming triangle, which is situated on the reel unwinding device which will be commented later. Applicating this type of pouch in the reel sketch on one of the previous pages, the vaue of "**B**" will be the same as two times "**L**" plus two times "**F**".





GUSSET POUCH:

This type of pouch is very similar to the doypack (stand-up) pouch, but in reality this pouch is a lot less stable as the doypack pouch. This shape is simply given to the pouch to obtain more dosing volume inside a pouch of the same dimension. To make this pouch, it is not necessary to use perforators, nor special shaped bottomsealers, a simple bending in the central part of the film is enough to realice this pouch design.

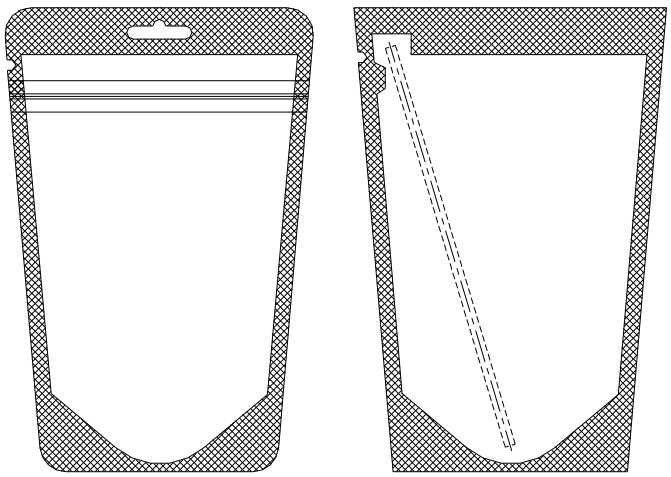


APPLICABLE MODULES:

Mespack new generation machinery can be equipped with the following applications:

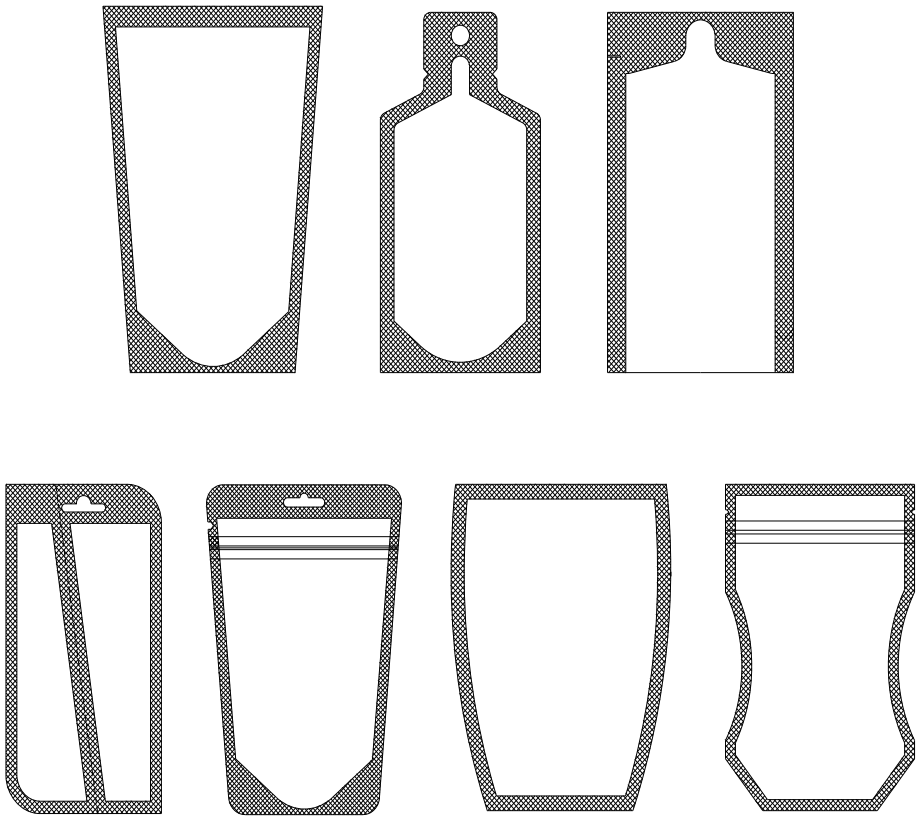
-ZIPPER APPLICATOR

-STRAW APPLICATOR



POUCH SHAPES:

On the new range of MESPACK machines the following pouch shapes can be manufactured.



Materials and finishing

We believe that it's worthwhile to dedicate a chapter to the materials used for the construction of this new generation machinery and their treatments (finishing).
Because these machines have been designed generally for the packaging of liquids, we took very special care about using non-corrosive materials and treatments.
We are aware that these machines will be installed in places with high humidity grades and that there will be frequent cleaning of the dosing group, either to change the product, or for cleaning.
That is why the machine is devided in three working sectors, or areas, which form part of the unwinding, forming, confection, filling and closing of the pouch.
All groups that compose the zones of unwinding / forming and confection of the pouch have been submitted to the following manufacturing proces:

1.- **MECHANIZING**
2.- **BLASTING TO ELIMINATE PORES**
3.- **POLISHING**
4.- **DESCALING**
5.- **COATING OF 20 MICRONS NICKEL PLATING**

To describe the whole proces, may be somewhat complicated, but very effective when treating to avoid corrosion. The corrosion tests made with saline fog easily passes the 300 hours, which is equal to 10 years exposure to sea ambient.
The dosing area / closing area of the pouch starts where the pouches are being opened until the exit of the pouch, where the pouch is totally finished – formed filled and sealed - and placed on the conveyor belt.
All mechanical parts that compose this area are manufactured in stainless material (AISI-304 for steel and A.A. 5083 para el aluminio); this to preserve the integrity of the products to be packed and to support the decay provoced by aggresive cleaning products.

The frame and the laterals of the reel unwinding system are painted, but following a very concrete proces:

1.- **SAND BLASTING.**
2.- **2 LAYERS OF EPOXY COATING.**
3.- **1 LAYER OF HARD COATING (MARINE) OF 2 COMPONENTS: RESIN AND HARDENER.**
4.- **1 LAYER OF POLYURETHANE PAINT, COLOR INOX, SPECIALLY MADE FOR MESPACK, WITH A MIX OF INOX POWDER (EXTREMELY RESISTANT TO CORROSION).**
5.- **OVEN DRYING.**

Besides the frontal part and the top part of the frame are protected by a stainless steel plate (AISI 304).
It is worth mentioning that all electronic parts used in the H-180,are situated in a separate electrical cabinet, isolated from all vibrations, temparature variations and humidity that can be originated by the machine, completing with the standard IP-54.

Dangers

For security reasons, Mespack has followed all possible norms and standards, as proposed by the EU, to be able to guarantee the security of the personnel dedicated to the operation and maintainance of the machine. These norms and standards are listed in the declaration of CE conformity, to be found in the "Introduction" part of this manual.

MECHANICAL DANGERS: Our machines basically function mechanically, with continuous oscillating movements of the major part of the groups, in charge of folding, confectionning, filling, transporting and cutting the pouch. There exists the danger of cutting, getting stuck and even impacts caused by moving groups.

ELECTRICAL DANGERS: Our machines are equipped with an electrical cabinet, where the generators and distributors of the electricity for the machine are located. It is important to keep unexperienced personnel from managing these systems. It may also happen that parts of the machine have been accidentally charged due to short circuits or electrical overload.

THERMAL DANGERS: One of the bases of our machinery is the use of high temparatures (for sealing). These temparatures may reach up to 180 degrees Celcius. Before realizing any operation in the sealing zone, it is absolutely necessary to check the temperature.

Preventive measures

The machines are equipped with the necessary and sufficient security systems to avoid any contact of the personnel with any of the dangers commented on the page before.

PROTECTIONS OPEN DETECTORS:

Mespack machines are equipped with 2 types of protections. The fixed ones and the mobile ones (doors). The mobile ones are equipped with a locking system. In case one of the mobile protections (doors), as for example the left door, the right door, or the conveyor belt door is being opened (unlocked), the machine will stop automatically. This system pretends to secure the physical integrity of the personel in charge with the operating of the machine. Once the doors are closed perfectly, the machine will not start automatically, it will be necessary to start the machine fromk the touch-screen.

ATENTION : IT IS STRICTLTY PROHIBITED TO DEACTIVATE THE MOBILE PROTECTIONS EQUIPPED WITH A LOCKING SYSTEM.

The rear doors of the machine, that allow access to the inner part of the machine, where the cam shaft and the machines main motor is located, are equipped with fixed (metalic) protections.
These maintain in their position by means of fixing elements that avoid them from being removed or opened without the use of a tool. It is not possible that they remain closed, without their fixing elements.

ATENTION: IT IS STRICTLY PROHIBITED TO WORK WITH THE REAR PROTECTIONS OF THE MACHINE OPENED.

MAINTENANCES:

While realizing maintenance and reparation of the machine, the electrical feeding of the machine should be disconnected by switching the main power switch, that can be found on the control panel inside the electrical cabinet. The air pressure valve, situated in the feeding unit in the right lateral of the machine should be closed, passing from “open” to “exh”.

EMERGENCY STOPS:

The emergency stop is permanently in operation. The goal of the emergency stop system is to stop the machine immediately for whatever type of inconvenience or problem that may appear while using the machine. It is necessary to avoid dangerous situations and unnecessary risks.
The signal of the emergency stop has priority over all other signals.
The machine is equipped with 2 emergency stop buttons, to be recognized easily by it’s red color and because of the fact that they are bigger than the usual buttons. This, to make it easy and fast to react in case of an emergency. One is situated on the control board, next to the touch-screen and the other in the contrary part of the machine where the secondary buttons are located. Like this we avoid to loose time, when realizing a displacement from one side of the machine to the other in case of an emergency.

Once the emergency stop button has been pushed, the machine will stop and the button will be sunk. To return to connect the machine the button should be turned clockwise, so the machine will be activated. To return to start the machine, we will have to push the “RESET” button (orange color) and afterwards the “START” button (green color).

PERSONNEL SECURITY:

The machine should be exclusively operated by authorized and trained personnel only. Having in mind always the following indications:

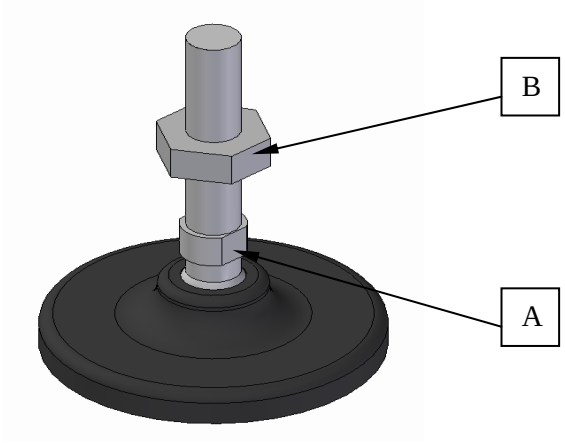
When realizing whatever operation with the machine, processing, maintenance, repairs, cleaning etc. the instructions for disconnection of the machine should be followed as specified before.
The operator will stop to work with the machine to guarantee the security of the machine.
The maximum responsible should take care that only authorized personel manages the machine.
The operator should report immediately any alteration observed in the machine according to operating security.
The machine should be used exclusively in correct state and not when the machine is damaged for whatever reason.
The buyer of the machine should emit the necessary instructions and realice the corresponding controls, to be able to guarantee the cleanness and the visibility in and around the working space of the machine.

NOT COMPLETING THE NORMS AS SPECIFIED IN THE PART “SECURITY SYSTEMS” CAUSES DANGER FOR THE PHYSICAL INTEGRITY OF THE PERSONEL.

Installation

POSITIONING OF THE MACHINE:

We advice to install the machine on a stable underground, solid and as plain as possible. The total weight of the machine is approximately 3300 Kg. which is being supported by 10 feet. The first step to take is to level the machine by regulating the adjustable feet of the machine. The leveling should be controlled by a water level.
Once the machine is in correct horizontal position, we control if the bases work correctly. We recommend to work with a dynamometric key which allows a precise adjustment.

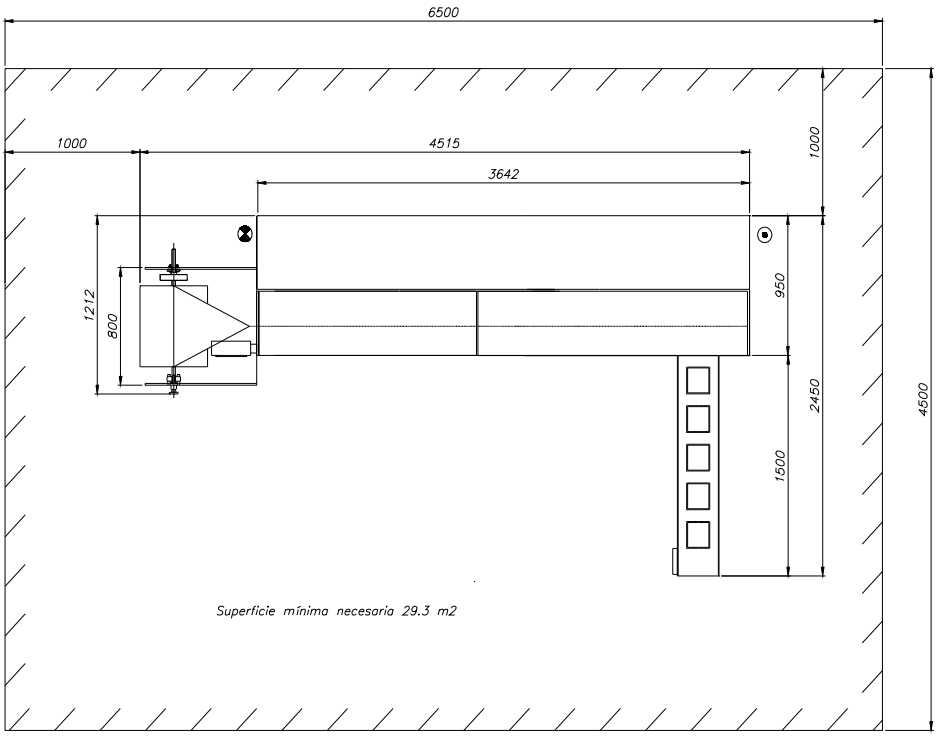


To regulate the bases (feet), sublect base A and turn the back nut (clockwise if you want to lower the machine and against the clock in case you want to raise the machine).
These bases are made out of intensified polyamide. Version anti-vibration.

DIMENSIONS:

The overall dimensions of the machine depend on the type of dosing system added to the machine, whether there is a zipper applicator, straw insertion system, spout cap insertion system etc. added to the machine. It also depends on the conveyor belt that comes connected to the machine and if the machine forms part of a line of machinery.
The positioning should be realised leaving between 1 and 1,5 metres of free space around the machine.

MINIMUM NECESSARY FLOOR SPACE:



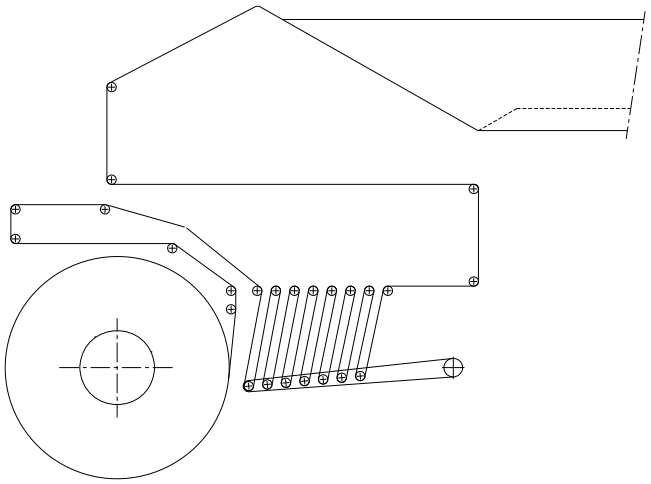
STAR-UP:

For the installation of the machine, in first place, the main power switch - situated on the electrical cabinet - should be activated. After doing this a message “without power” will appear on the touch-screen. To give power to the machine, please pulse “reset”.

Basing us on the fact that the machine usually leaves Mespack, prepared and adjusted to satisfy the conditions for the production of the pouch as demanded by the client, you should proceed as follows:

First we should fix the reel of heatsealable material on the expandible shaft

Afterwards we should pass the heatsealable material (film) through the rollers according to the sketch below, which is also situated on the reel unwinding system.



The run of the film is not always the same and may vary depending on the type of pouch the machine should produce.

Tearing the film softly we pass it through all groups of the machine until we arrive at the last scissors.

With the jog control we start the machine, trying to make some empty pouches and controlling the displacement of the photo-mark on the film in respect to the cut of the scissors.

To realice the correction on the position of the pouch, we should first stop the machine and position the film in the correst position manually. This position should be between an interval that afterwards allows us an automatic correction.

Once we have checked the correct functioning, we activate the machine by means of the "START" button.

CONNECTIONS:

The machine will be prepared according to the Voltage indicated by the client in the order. To electrically connect the machine, we should distinguish the following 5 cables:

TENSION: -BLACK.....L1
-BROWN.....L2
-GRAY.....L3

GROUND: -YELLOW AND GREEN .....PE

NEUTRAL: -BLUE.....N

The motors of the basic machine do not need the control of the turning direction while installing the machine, because of the electric control systems. What we do recommend is to observe this function on all other motors that do not form part of the basic machine, for example: Auger fillers, feeding systems, conveyor belts etc. When you notice that in case you switch on the machine these options turn in the other direction, 2 phases of the machine should be inverted.

The pneumatic installation of the machine is limited to the connection of a hose for the feeding of the compressed air (maximum 12 bars = 170 psi), controlling by means of the manometer that the presion that enters the machine is correct for the good functioning of the machine and that it does not pass the pressure of 6 bars (86 psi).

In case there are more than one maintenance unit, the hose should be connected to each single one of them.

WE RECOMMEND THAT ALL THESE OPPERATIONS WILL BE EFFECTUATED BY SPECIALIZED PERSONNEL OR BY OUR AFTER SALES SERVICE.

Format changeover

CONSIDERATIONS:

Before we start to explain group by goup, how to realice a format changeover, it is absolutely necessary to take the following aspects in consideration, while realizing this changeover. If not, it may result almost impossible to realice a format changeover wit h guarantees.

The machine has been prepared for the realizing of regulations and installations by specialized personnel only.

All parts of the machine can be regulated and include rulers to determine the dimension. These rulers indicate at any time, the dimension we are realicing. In case of a change, we only check that all the rulers correspond with the same number.

The reference point to start a format change-over for the width of the pouch is the pouch opening group.

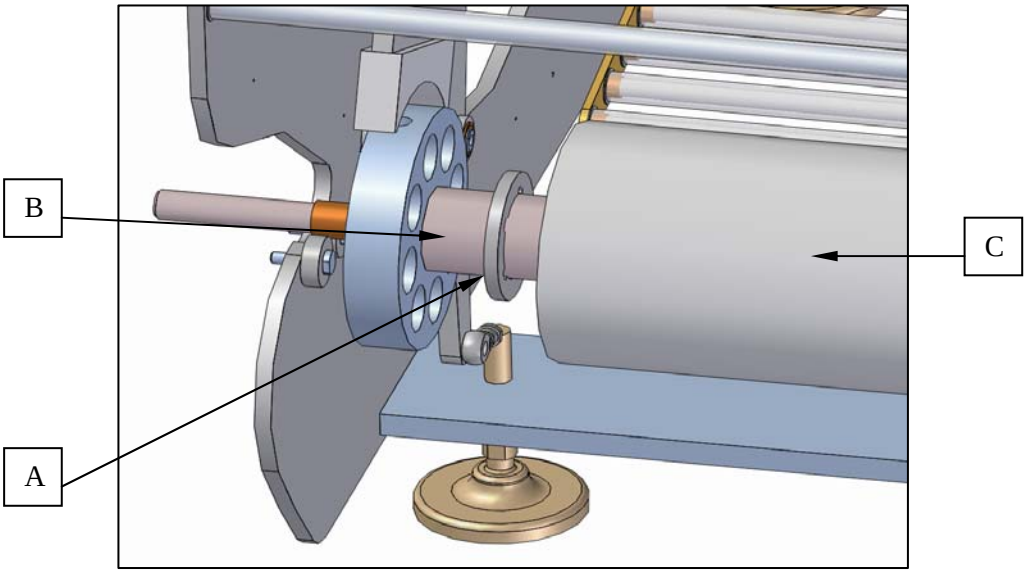
To regulate the hight of the pouch we will have to change the reel of heatsealable material. This, in correspondence with the width of the reel. The superior part of the film, through the groups on the machine, mark the superior part of the pouch, which is fixed and does not vary while processing. We mention that the format will only vary in hight and the regulation will be realized starting from the top of the pouch until the bottom of the pouch.

To realice a format changeover, it is not only recommendable to follow all considerations and descriptions of the adjustable groups, as detailed group by group on the following pages; it is also necessary to modify the changes realiced for the changeover for the format until achieving the wished final product. It is necessary to
have one thing in mind: A good and fast installation corresponds with the experience and practice of the operators.

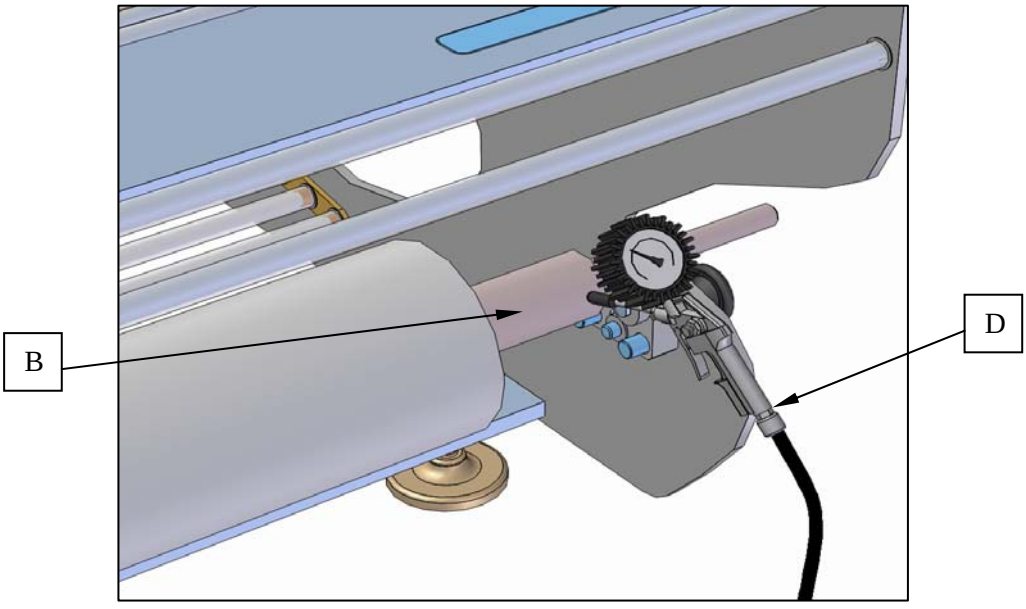
REEL UNWINDER:

The change of a format will only affect the reel unwinder, when the format requires a different hight of the pouch. This means that the width of the reel will change. The reel unwinder has the capacity to support and contain a reel of ∅600mm. maximum and a maximum width of 720mm. having in mind that the maximum hight of the pouch is 300 mm.

Drawing nr. 1



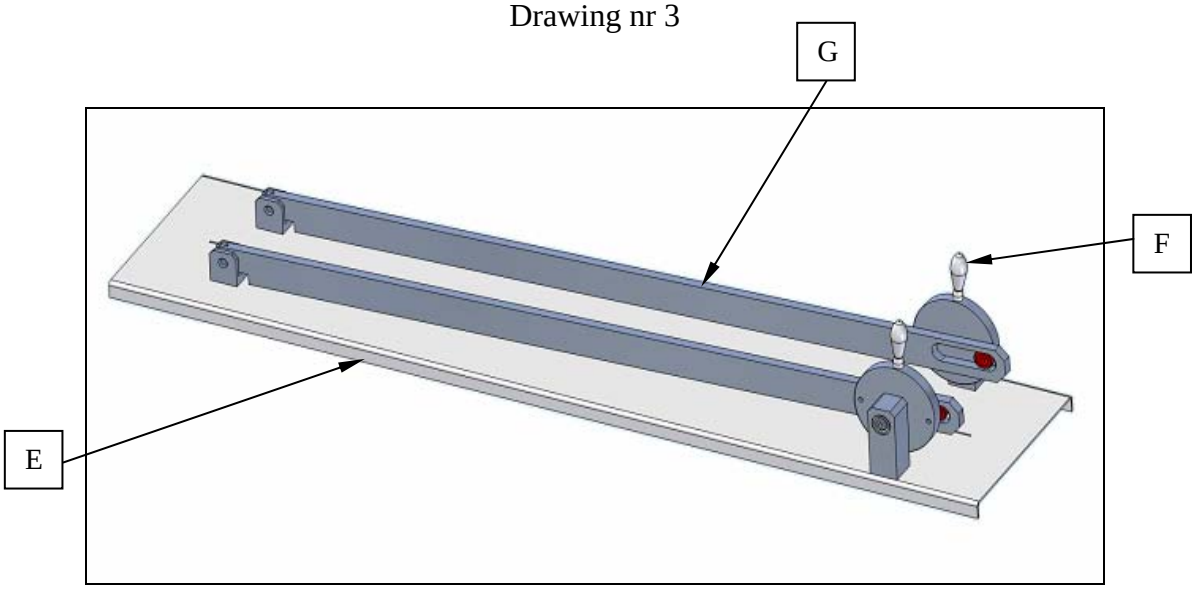
Drawing nr. 2



The reelunwinding group is equipped with a reel holding shaft "**B**", with pneumatic activation. When introducing compressed air with the pneumatic pistol "**D**", the rubber membranes of the shaft will expand putting pressure on the reel core "**C**". It is also necessary to modify the snug "**A**" for the reel width, to have - in case we change a reel – the adequate position to fit the reel in case of using the same dimensions.
To be able to remove the reel, it is enough to press the valve on the pneumatic shaft, like that letting all air escape from the shaft. Afterwards we lift the shaft by it's extremes and we support the reel on the floor, taking another reel.

The unwinder also includes a reel splicing table "drawing 3", to make it easier to change a reel. This table allows you to connect the new reel with the used reel. This considerably reduces the time needed to change a reel and makes the work for the operator much more comfortable, since it will not be necessary to pass the film through the machine.

Drawing nr 3



The assemble unit is provided with a table "**E**" on which we can fix the film ends by means of turning handle "**F**", with the ruler "**G**" to make the union between the two films reels more easy. Until the film union section leaves the front of the machine we should not start the dosing unit.

REEL EDGE ALLIGNER:

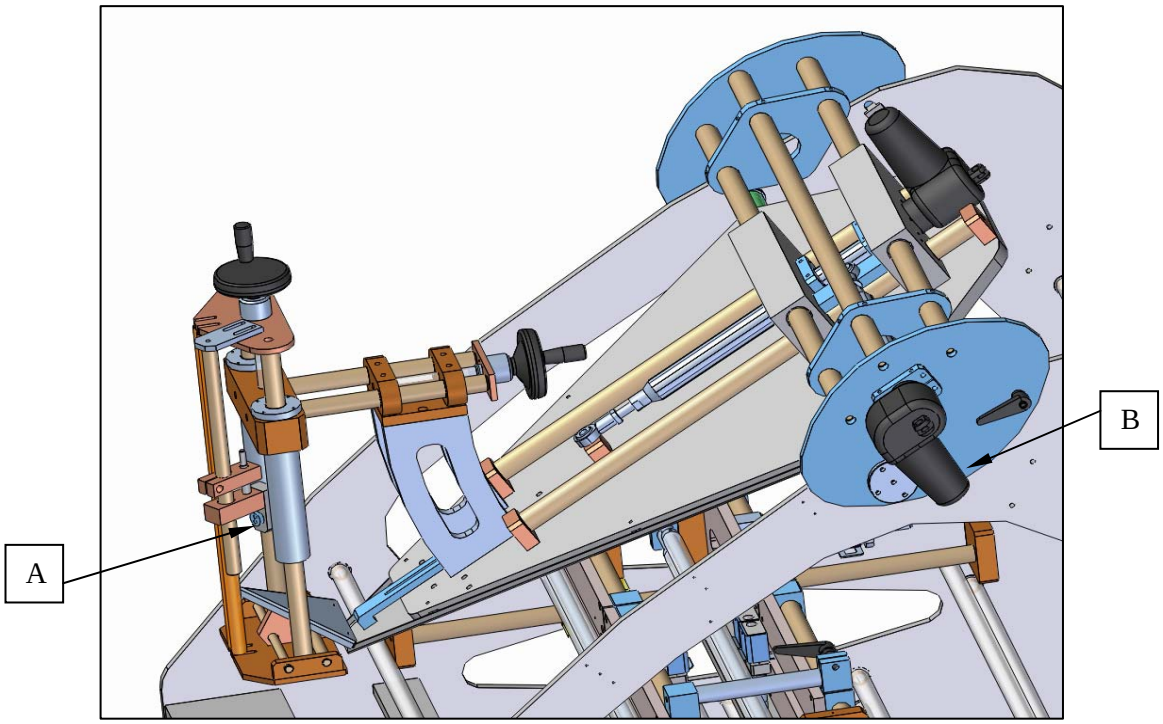
The reel edge alligner has been designed to maintain the film perfectly folded and alligned in it's superior parts. The alligning is very precise and of immediate response. This is being achieved by it's assembling just before the forming triangle.

The reel edge alligner is being controlled by two optical fibres "**A**" that mark the limits through where the film must pass. These optical fibres indicate through the PLC of the machine the actuators to change the coordinates of the alligner.

The reel edge alligner only needs to be regulated in hight or bottom, in other words: when we change the width of the reel.

To regulate the actuators, please consult the touch-screen.

Drawing nr. 4

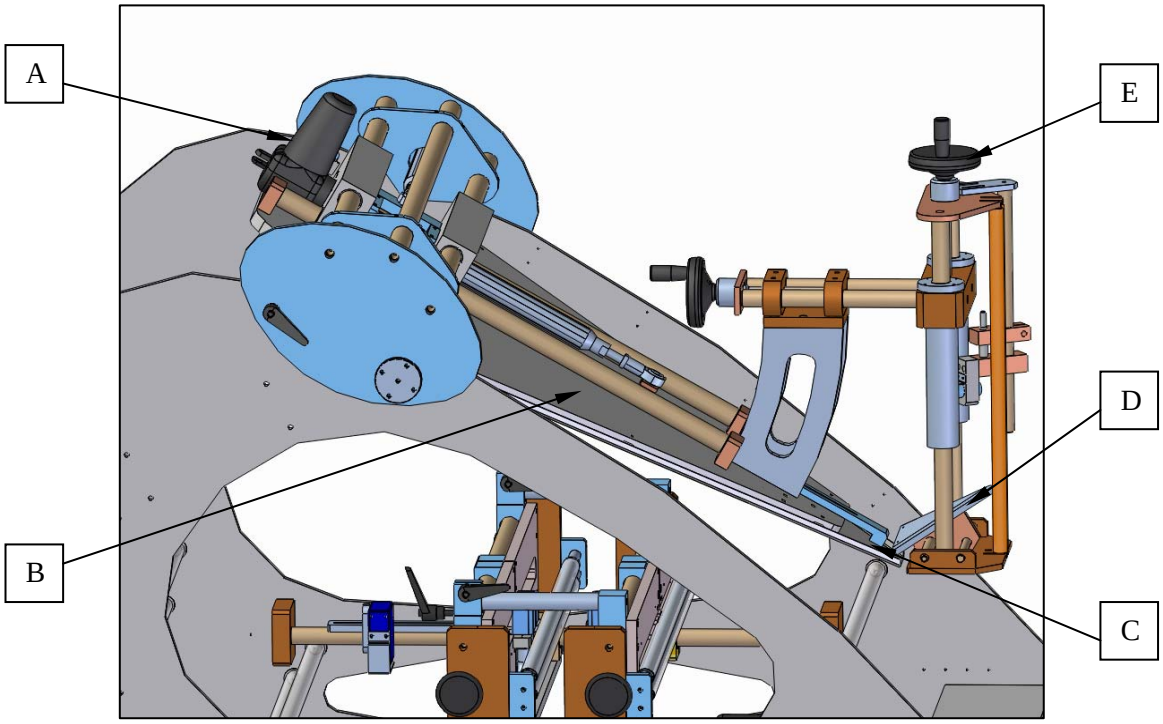


FORMING TRIANGLE:

For the regulation of the forming triangle it is necessary to have two types of regulation in mind: The regulation of the hight and the regulation of the bottom of the stand-up (doypack) pouch.

To be able to realice the change of the hight of the pouch it is necessary to use the touch-screen. Through the touch-screenwe should modify the position of the actuator "**A**", raising or lowering the whole group of the forming triangle "**B**", until we achieve the desired format.

Drawing Nr 5

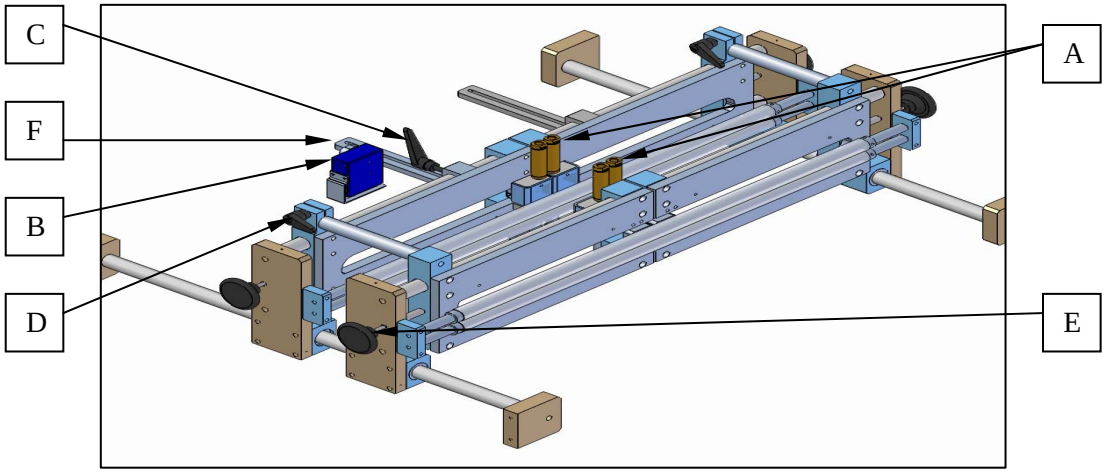


To realice a format changeover for doypack pouches, the first we have to do is to follow the explanation before, to obtain the desired hight of the pouch. Afterwards to realice the change of the bottom of the Doypack pouch, it will be necessary to change the lateral plates "**C**" that correspond with the new format to be realized. After that we should regulate the bottom triangle "**D**" with the wheels "**E**" until placing it in the correct position for the new format.

BOTTOM PERFORATOR:

The bottom perforation group is being used for the creation of the bottom of the doypack pouch. The regulation of the perforator will only be necessary in case we change the hight of the pouch format.

Drawing nº 6



The regulation of the perforators "**A**" only allow to change the bottom of the doypack pouch. It will be necessary to turn the wheel "**E**", of which we have one on each side of the reel unwinder. With these wheels we can increase or decrease the seperation between both perforators. It is important that both perforators have the same distance from the center of the film. The bigger the separation between the perforators, the higher the bottom of the doypack pouch.

When the machine is duplex, we have 2 perforators more to be regulated, added to the left of the standard installed perforators. But besides this, we shoul regulate the change of the dimension in width. With the handle "**D**" we loosen the group added for duplex production and we move it with reference to the shaft "**F**", where the format to be realized is marked.

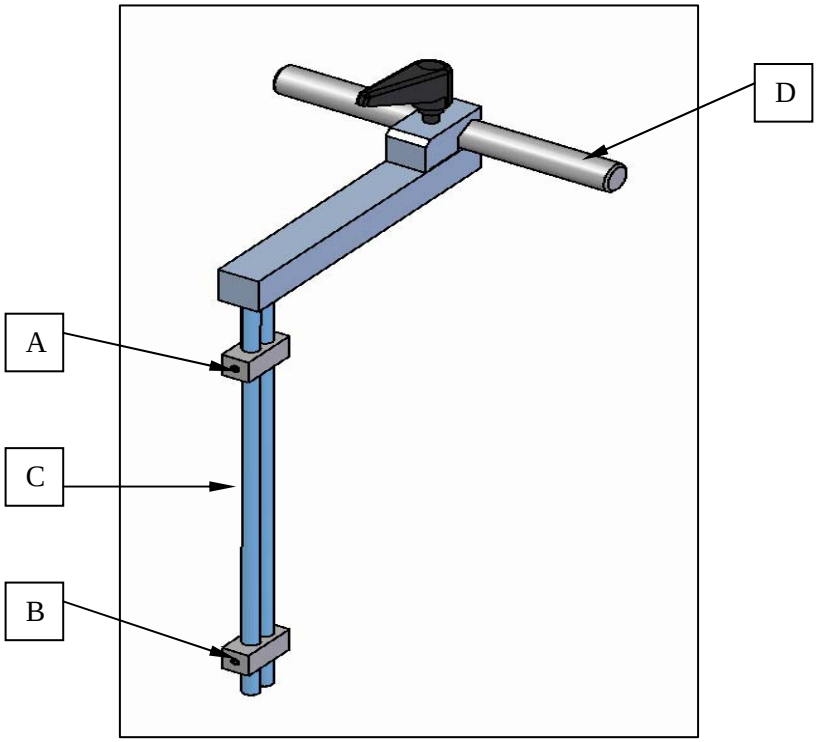
In case the machine is simplex, or duplex, but we have already realized the proces as described before, we should regulate the position of the photocell. In case there is a change of hight , we should position the photocell "**B**" in the adequate position by means of the handle "**C**", to correctly detect the photo-mark on the film.

In case the regulation depends on the width of the pouch, we should move the photo-cell via it's support guide "**F**".

FILM GUIDES:

The distance between the frontal plate an the film should always be 240mm. The superior line of the film should not vary either from it's 160mm in respect with the superior mark of the frontal plate.

Drawing nr 7

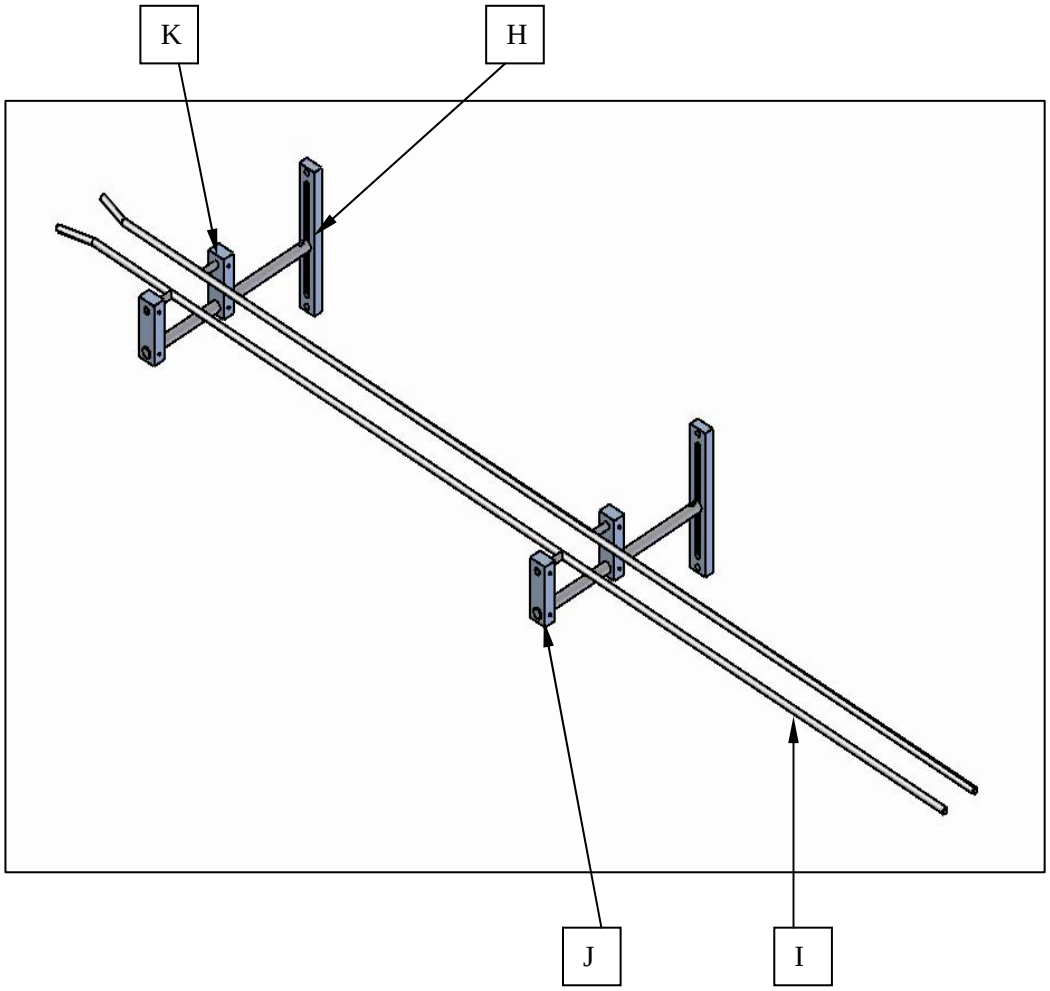


The machine H-180 has four groups of film guides; one to guide the film after the reel unwinder, another before arriving to the photo-cell, another before the film transporting group, and one incorporated in the scissors group.

These groups should only be regulated when the hight of the format changes, this will change the position of snug "**B**" that goes fixed with a screw. Loosening the screw we can manipulate the hight of "**B**" by moving the snug up or down via the guides rod "**C**" until they have been adjusted to the new format. The superior snugs "**A**" can be regulated, but the film will remain always at the same hight. This means that it is not recommendable to change their position. The film guides can be regulated horizontally by means of the guides "**D**".

We also have another group of film guides, situated below the mobile carrier, with two different types of regulation.
The regulation in hight in case there will be a reel change and the regulation of the width for the bottom of the doypack pouch.

Drawing nr 9



To regulate the hight, we should simply loosen the screws "**H**", enabling the possibility to change the hight of the horizontal guides "**I**".
In case of a variation in the width of the pouch, the regulation consists in closing or opening the film guidess "**I**". Therefore you should loosen the screws "**J**", so you will be able to move the rods horizontally through the dies "**K**".

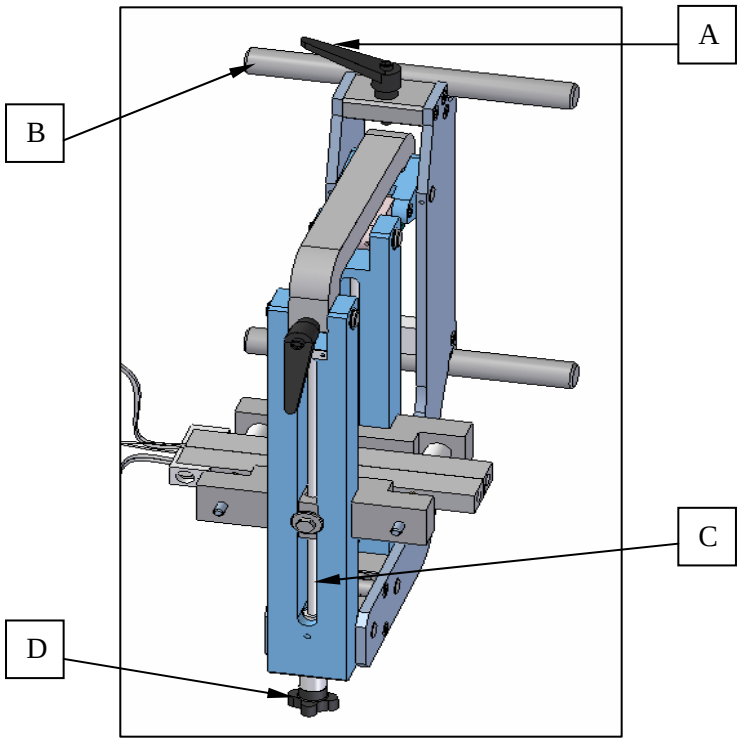
SEALERS:

Our machines are equipped with 3 different types of sealers, distinguished according to their corresponding sealing zones: The bottom sealer (4th sealer), the vertical sealers and the top sealers.

BOTTOM SEALER:

This group always requires regulation when the hight of the pouch is being changed. In case we want to change the width of a doypack pouch, it will be necessary to change the bottom sealer. Therefore we should receive an order of sealers that correspond with the new format to be realized.

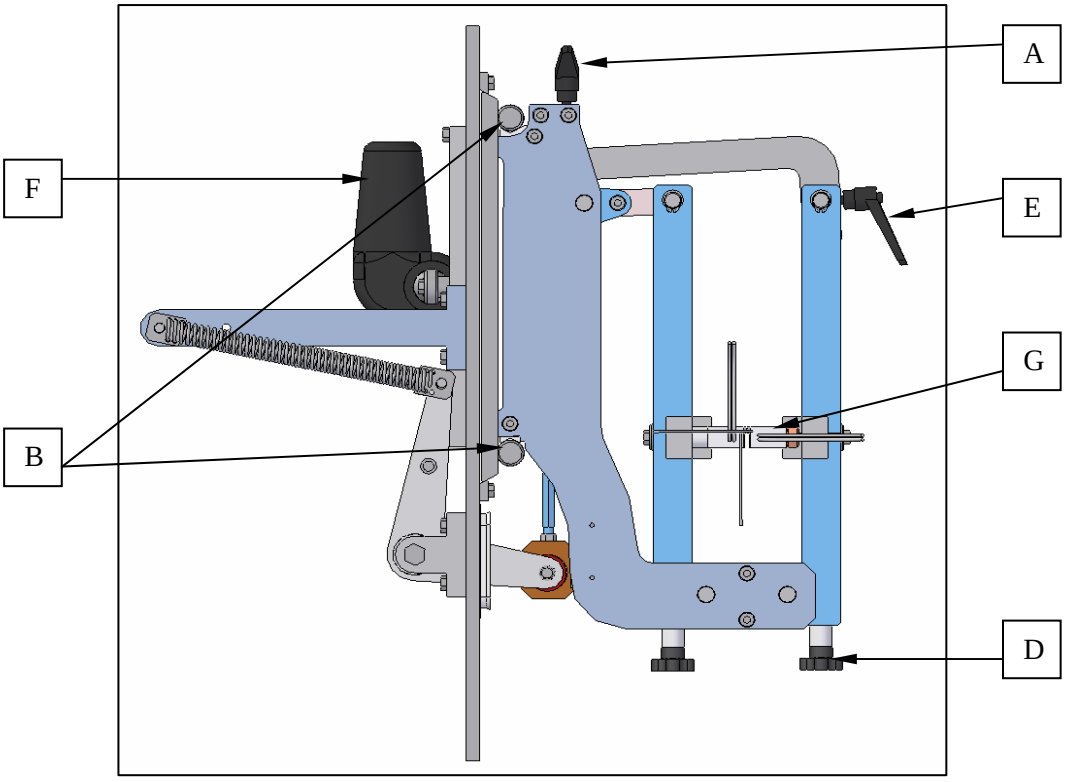
Drawing nr 10



To situate the bottom sealer in it's correct position, we have to loosen the handle "**A**" moving the sealing jaws through the guide "**B**".
However, first we will have to close the jaws, without having any film between them, to assure that they close perfectly.

For the regulation of the hight of the bottom sealer, it will only be necessary to turn the pome "**D**" that moves a screw cutted guide "**C**" that holds the bottom sealer. We should turn the pome until the sealers are at the hight that corresponds with the bottom of the new pouch format. Once the format changeover has been realized it is necessary to pass the film through the sealers, to control if the pressure of the sealers is correct and the sealing is stable and equal throughout all it's length.

Drawing nr 11



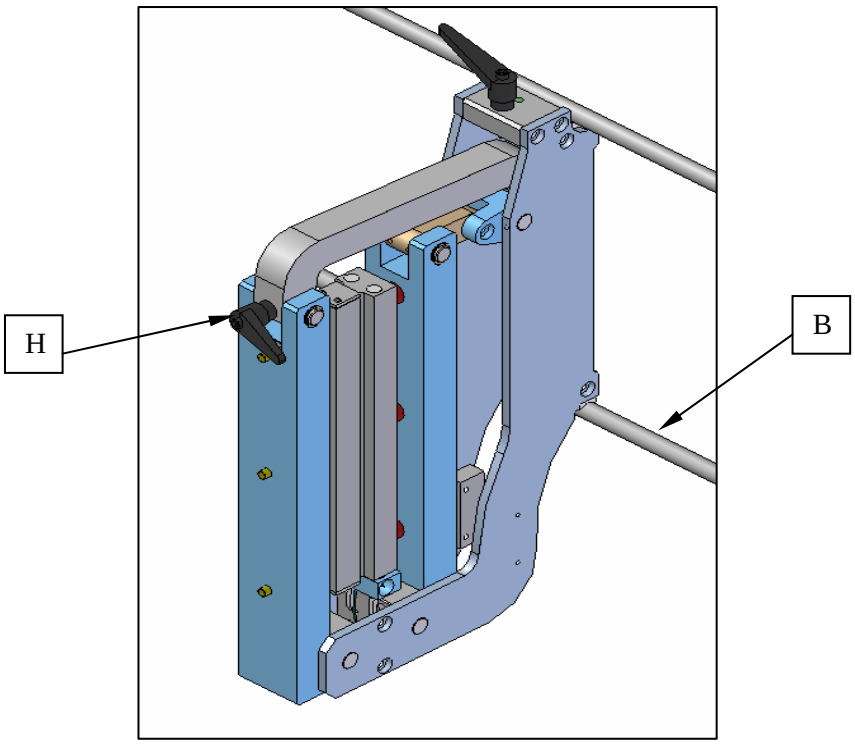
In drawing nr 11 we can observe the perfile of the bottom sealing group. We have the handle "**A**" that allows us to regulate the sealing jaws horizontally through their guides "**B**". The handle "**A**" gives us the possibility to open the jaw of the exterior bottom sealer, allowing like that to clean the sealing bars "**G**" in case of need.In drawing 1 we can also observe the two pomes "**D**" for the regulation of the hight of the sealers. This group will only be necessary in case a pouch format with 4 sealings is being realized; either doypack pouches or 4 side sealed flat pouches.

In case it will be necessary to manipulate the sealers it is absolutely necessary to check that the sealers have cooled down. Ignoring this may cause serious injuries.

VERTICAL SEALERS:

This group requires regulation in case the width of the pouch format is being changed.
The machine machine is equipped with a completely mechanical and very accurate sealing jaws, with independent activation from jaw to jaw (one single sealer per jaw).
The alligning and the contact of the sealers is adjusted only one time, so it will not be necessary to adjust these aspects, not even when a format is being changed.
The vertical sealing jaw is being repeated two times in case the machine is equipped for doypack pouches (steel / sillicone, sillicone / steel). There is another reason why these jaws have been designed: The problem of the displacement of the photo-mark above 1mm., because of printing failures on the reel. This problem has been resolved by installing an automatic correcting system to the vertical sealers by means of motorized nuts (drawing nr. 11 "**F**"), that are being instructed by the photocell which automatically corrects the working position of the jaws without the need to stop the machine.

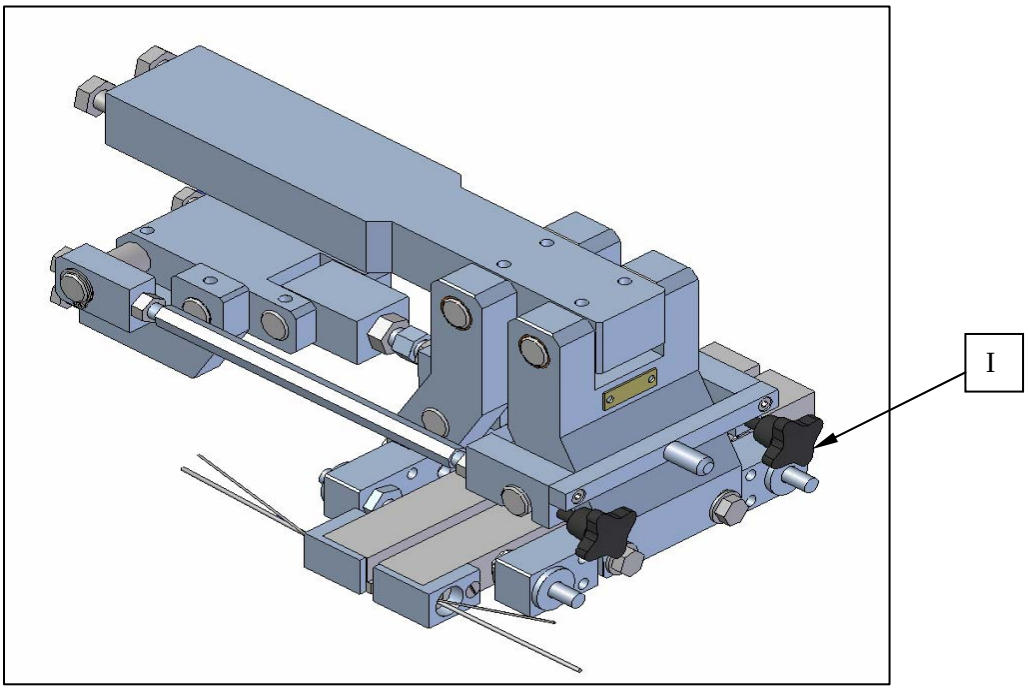
Drawing nr 12



TOP SEALERS:

In this station, the horizontal sealer realices the sealing of the top of the pouch, finishing like this the proces of confrctioning the pouch. The top sealers do not need any regulation at all in case a pouch format is being changed, because the top part of the film will never change it's position. When there is a change in the width of the pouch format, the top sealers will also remain in their position, since the top sealers have the sufficient length to cover the maximum pouch width to be realized on the machine.

Drawing nr 13

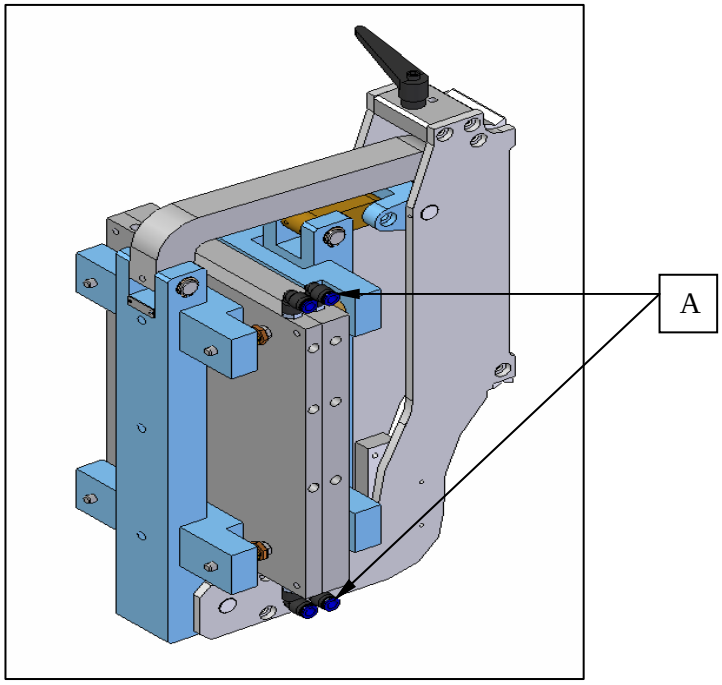


The system allows an easy opening through the pomes "**I**" to be able to clean the top sealers in case of need.

COOLING SYSTEM:

Our machines are basically equipped with cooling systems for the sealers.
The vertical cooling system is for the cooling of the bottom and vertical sealing of the pouch (drawing nr 14) and there is another cooling system for the top sealing of the pouch.
The vertical cooling device requires regulation only to place the jaw in it's adequate position, displacing the device through it's guides "**B**" (drawing nr 12). This group does not need any regulation according to the pouch format, because the width and the hight of the cooling system is valid for most of the pouch formats.

Drawing nr 14

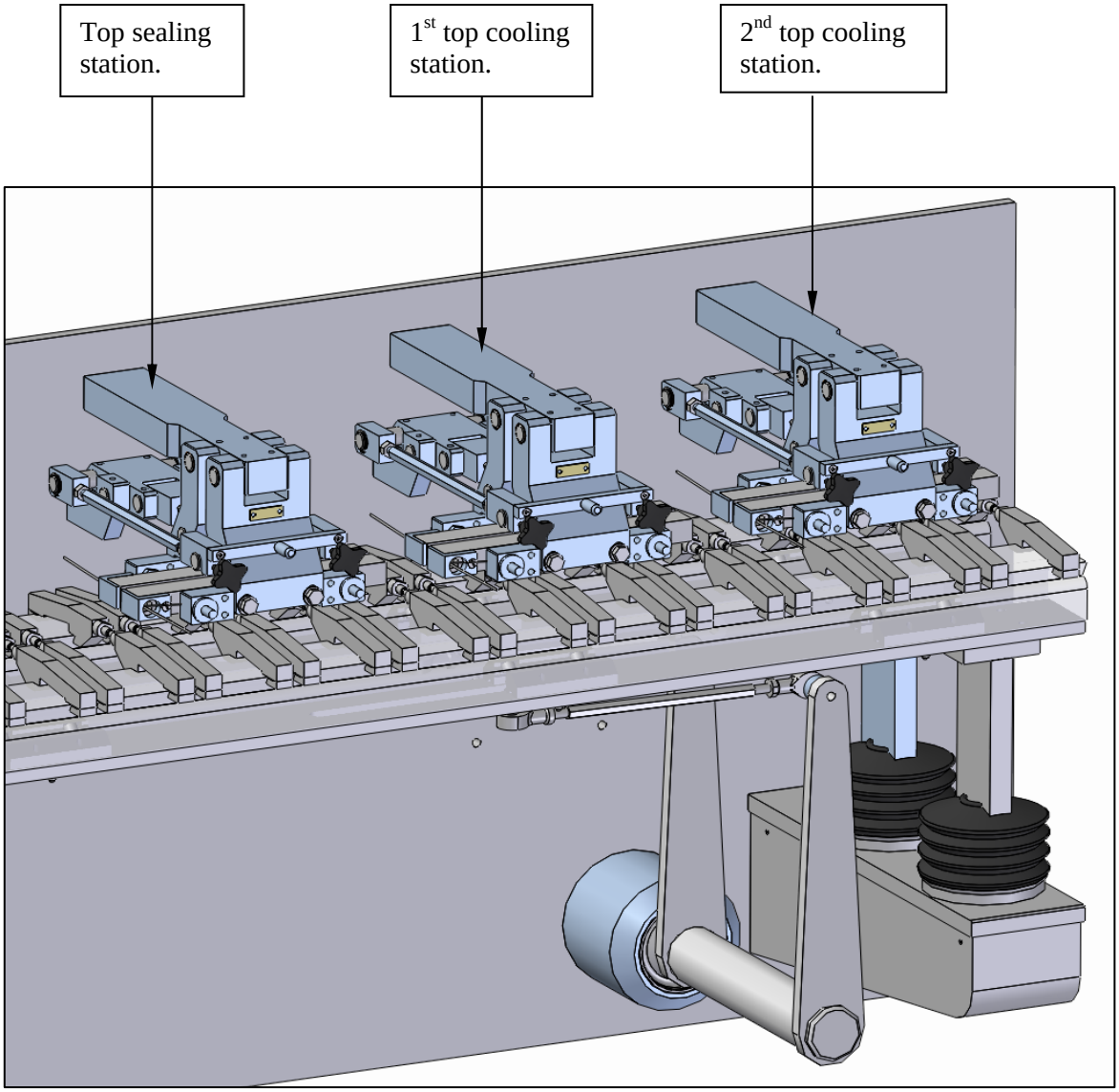


"**A**" (Drawing nr 14) are plugs for the connection of air or water.

HORIZONTAL COOLING:

The horizontal cooling device (top cooling) does not require any regulation for format changeovers (same as with the top sealers). The cooling device has the sufficient length to cover the width of any pouch format to be realiced on the machine.

Drawing nr. 15



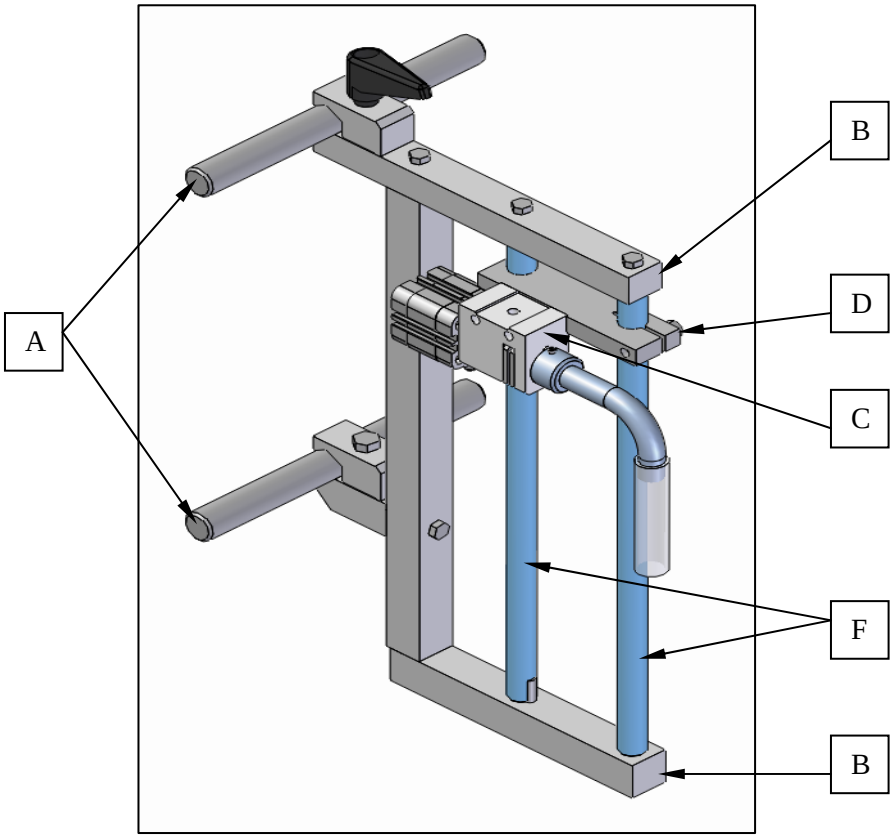
TEAR NOTCH:

The H-180 machine can be equipped with two different types of tear notches. Both of them work in the same way. The difference between both is that one of them is like a linear cut of 5 mm. and the other is of a triangle or "**V**" shape (4mm).

Usually this group only needs regulation when the pouch format is being changed in width. The group consists of some supports "**B**", that go fixed on the top and bottom guides "**A**". These guides give us the possibility to horizontally regulate the notch and place it exactly in the position where it should perforate the vertical sealing.

The hight of this device can be changed by means of the guides "**F**" that unite a top and bottom support. By loosening the screws "**D**" we can move the tear notch device up and down the guides. In principal the hight of this device should not vary, because the top part of the film will always be in the same position. In other words: it only dependes on the position where the client desires the tear notch to be.

Drawing nr. 16



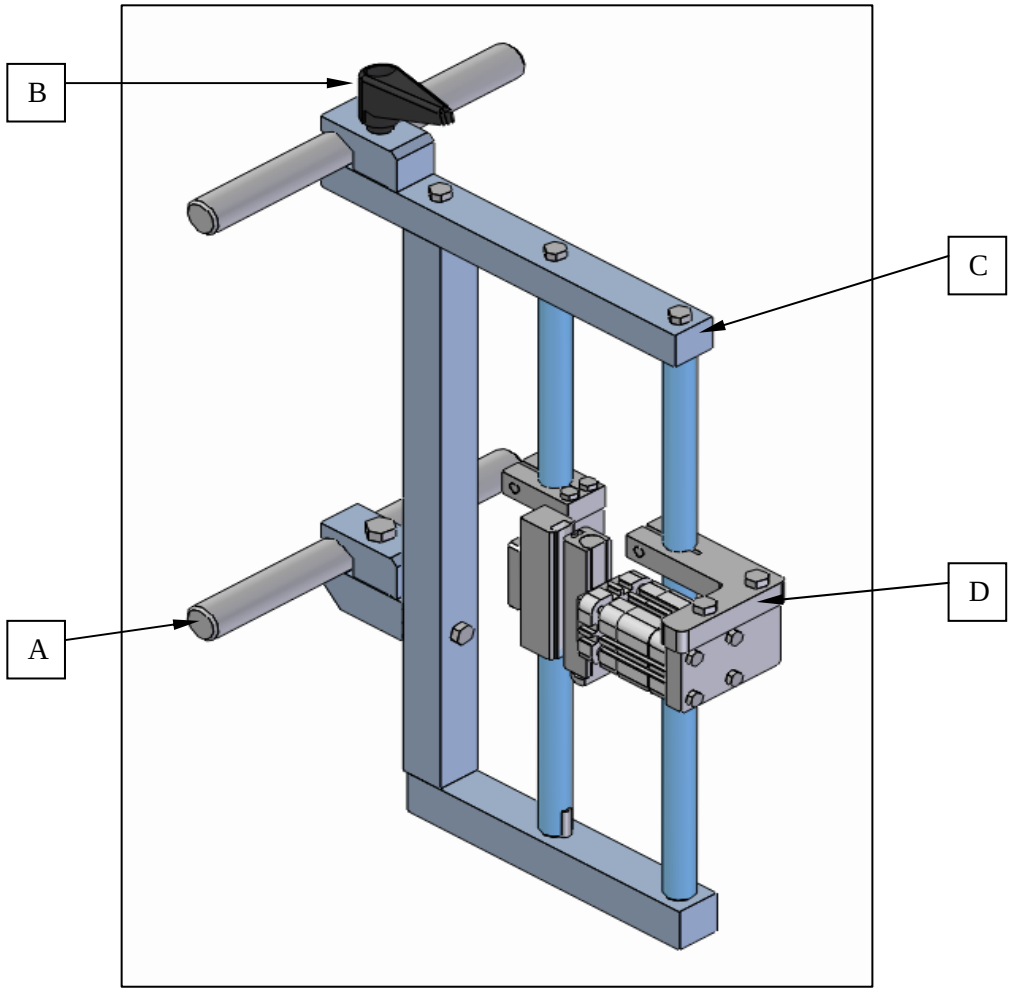
EMBOSS CODER:

This group requires regulation always when a pouch format is being changed in width or in hight and wherever the client wants to print.

To change the group in correspondence with the width of the pouch it is necessary to move the whole group to the left or to the right through the guides "**A**", loosening the screw "**B**" that subjects support "**C**".

For the regulation of the hight we should loosen the screws of support "**D**" that subjects the printer, raising it or lowering it through the guides that unite the two supports "**C**". It is necessary to have in mind that the underground should be equally regulated with the printer.

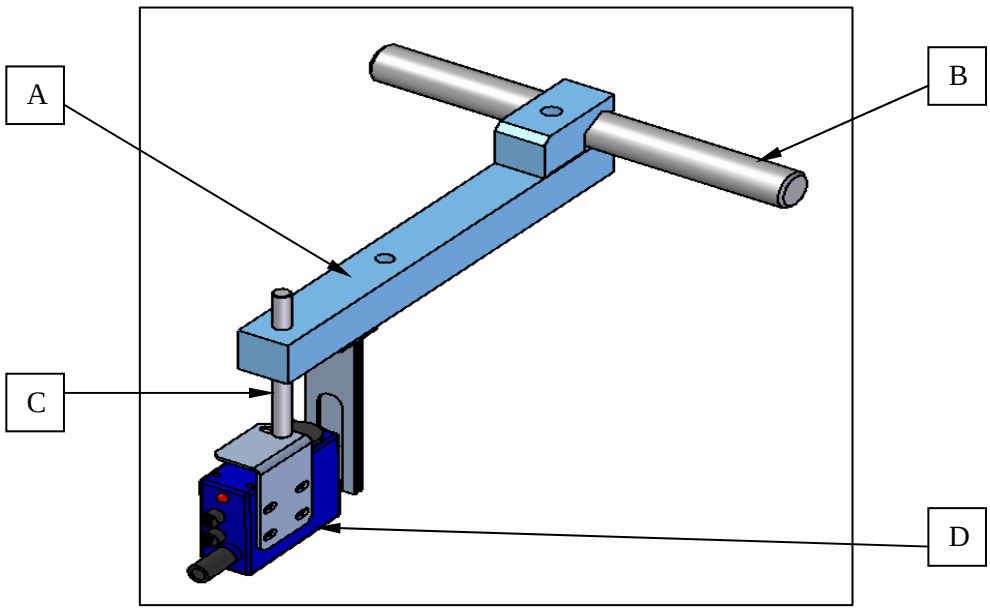
Drawing nr 17



PHOTOCELL:

The photocell needs regulation when the pouch format is being changed in width. This change makes us vary the separation between the photo-marks on the film.
For the regulation we proceed to loosen the screw that subjects the support "**A**" on guide "**B**", until the red light on the photocell corresponds with the photo-mark on the film.
Once the photocell is in position we tighten the screws.
We can also change the hight of the photocell through guide "**C**" subjected to support "**A**" by means of a screw. When we loosen this screw, the photocell will move because of it's own weight, so it will be necessarry to subject the photocell and to control that the photocell is being positioned according to the photo-mark on the film.
We can also vary the distance from the photocell to the film. This regulation can be realized by loosening the screws on the supports of the photocell and move the photocell through the track on the support. We recommend the distance between the photo-cell and the film to be between 3 and 5 mm., depending on the quality of the photo-mark and the film.
If in case of maintianance or cleaning the machine, it is desired to cancel the photocell, the photo-cell may be disconnected through the touch-screen of the machine.

Drawing nr 18



FILM TRANSPORT:

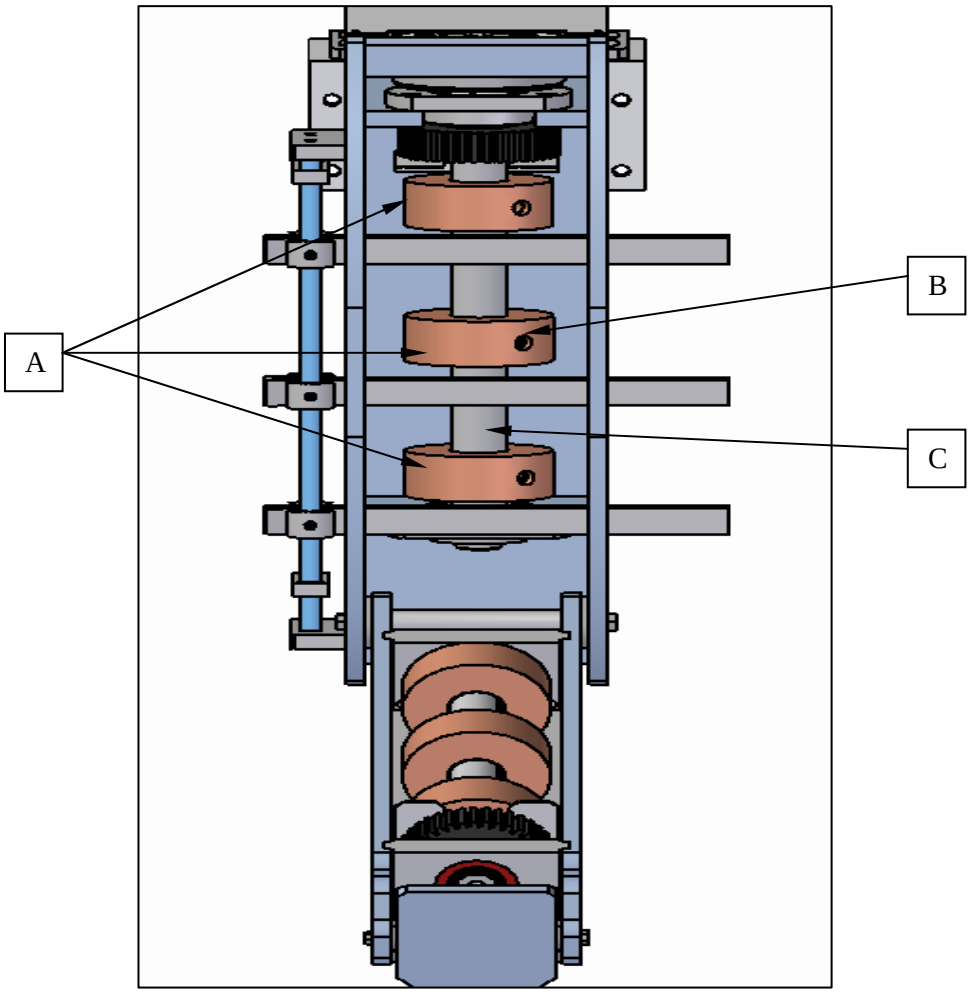
This group needs to be adjusted when there is a considerable change in the height of a pouch dimension and the rollers "**A**" do not touch the film in the correct position for a precise film transmport.

The first thing that has to be adjusted are the rollers that transport the film. For this the next steps should be followed: The screws "**B**" should be loosened, to be able to displace the rollers "**A**" up or down the shaft "**C**" until the correct fposition has been achieved after this, the screws should be tightened again.

The width of each formal should not be changed manually but electronically following the procedures mentioned in the part "TOUCH SCREEN" in this manual.

To correct the "spot" printing errors it is necessary to pull the film between 1-2mm more than the pouch width, like this the position of the pouch is corrected.

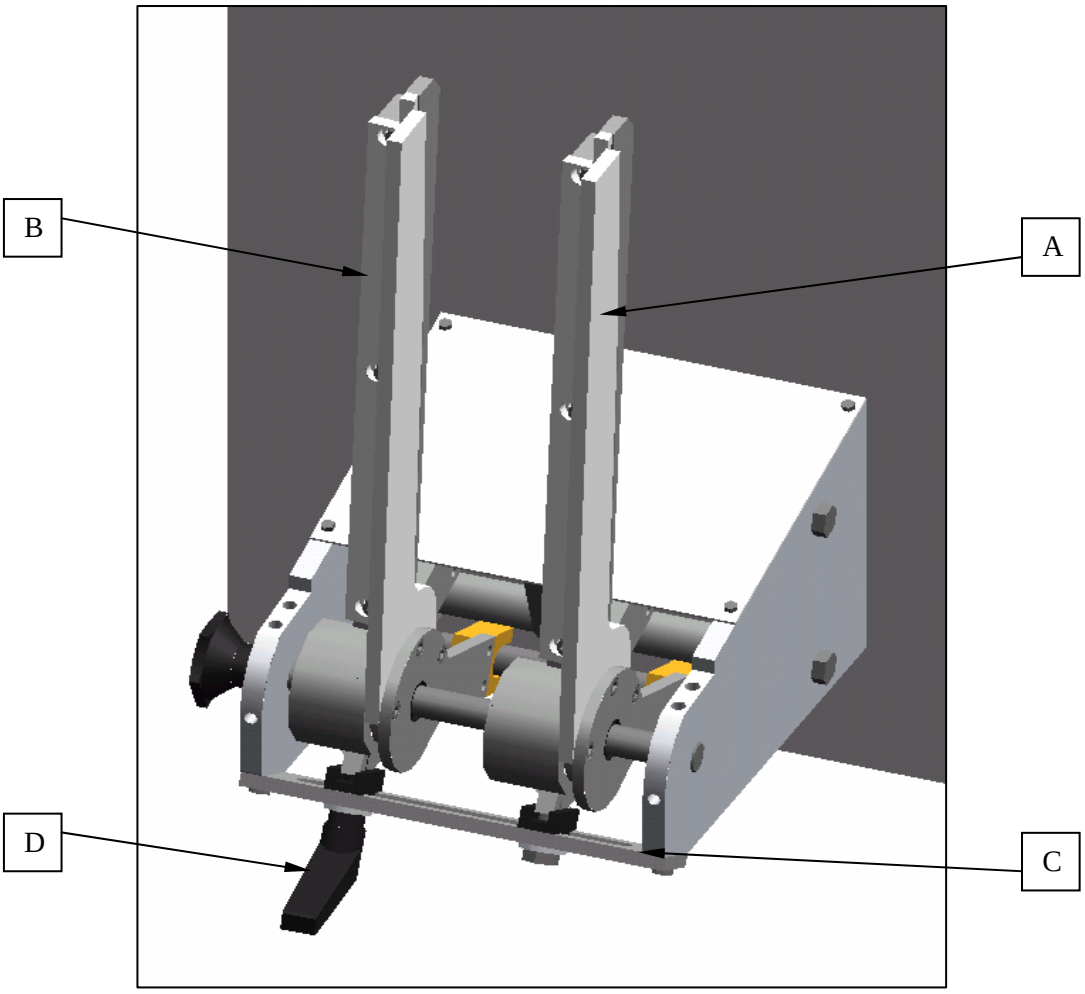
Drawing nr 19



SCISSORS:

The scissors should only be regulated when the width of a pouch format needs to be changed. We observe the following photo's and their instructions:

Drawing nr 20

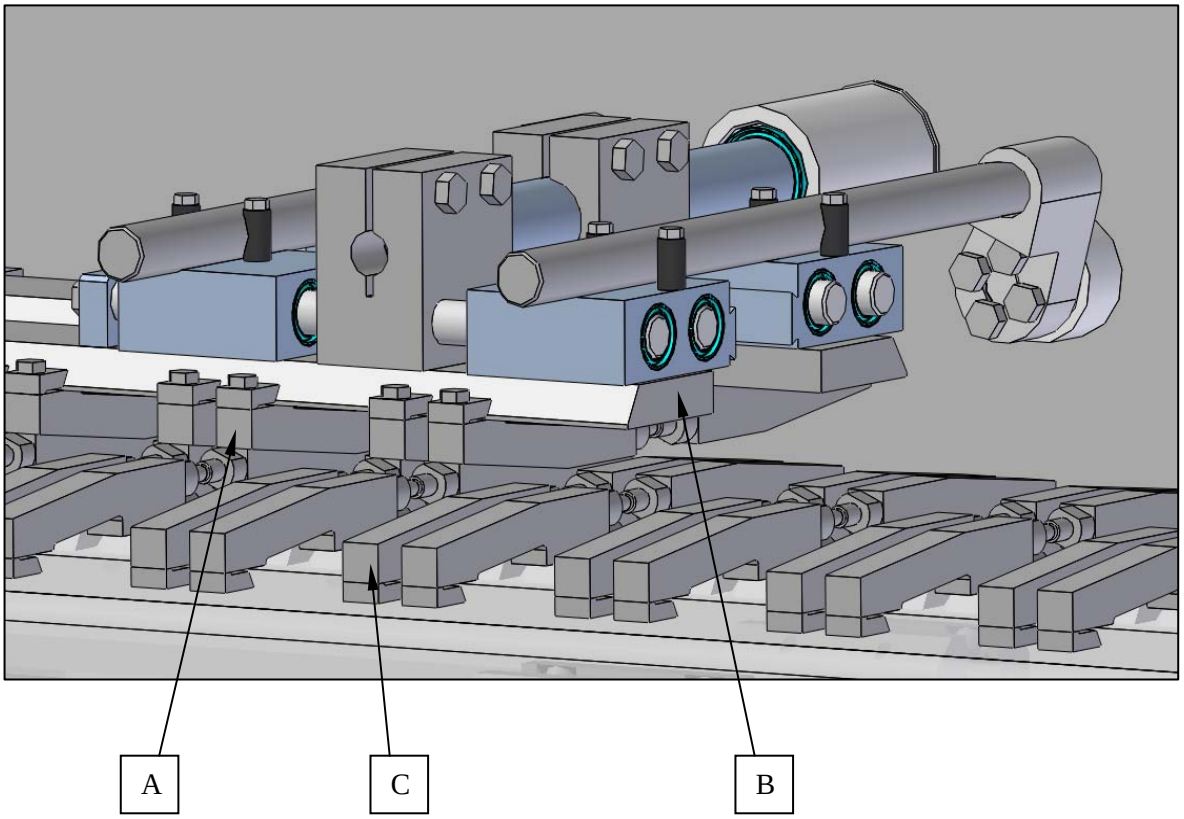


In the case of above shown photo, the regulation simply consists of loosening the handle "**D**" and displace the scissors "**B**" until positioning it adequately for the desired format as indicated by the marked reglet on te support "**C**". The right scissors mark "point zero" when we work in simplex as well as when we work in duplex. This point is unvariable and should always be at 205mm from the center of the pouch opening group.

CLIPS FIXED CARRIER:

This group requires regulation when the pouch format changes in width. The only regulation that should be effectuated is to change the position of the clips "**A**" These clips should be displaced one by one through the marked dimensions on the beam "**B**", until a position of 3mm. from both exterior parts of the pouch.
The fixed clips should correspond with the clips on the mobile carrier "**C**" in it's horizontal position.

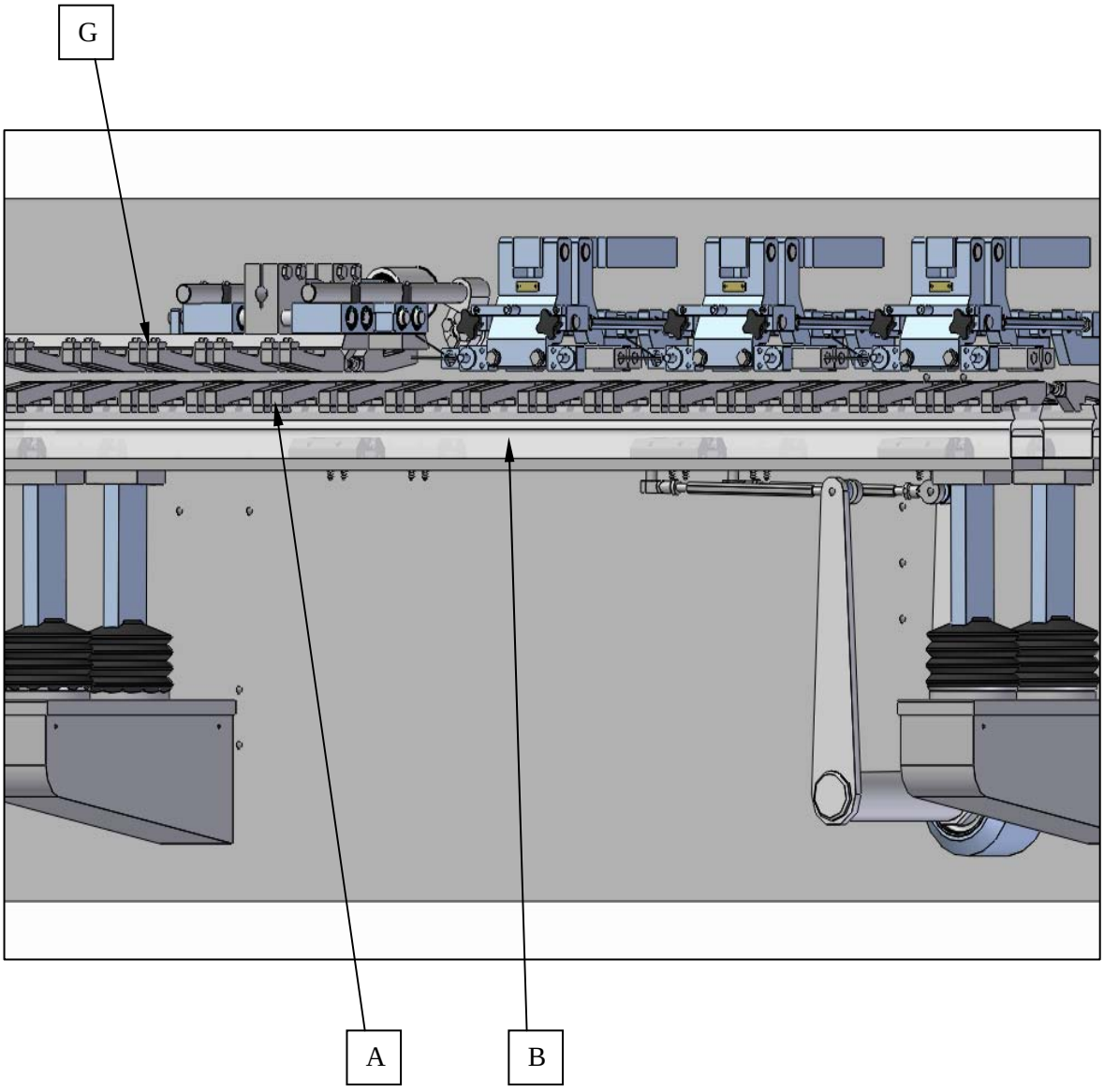
Drawing nr 21



CLIPS MOBILE CARRIER:

This groups requires regulation in case the width of the pouch format to be realized changes. The only regulation to be effectuated is the change of the position of the clips "**A**" in drawing nr 22. These clips should be displaced one by one through the marked dimensions on the beam of the carrier "**B**".
The clips of the mobile carrier should correspond with the clips on the fixed carrier "**G**" in it's horizontal position.

Drawing nr 22



POUCH OPENING GROUP:

The pouch opening group is a group that functions as a reference point for the regulation of a pouch format for all other groups on the machine. This reference point is the center between the vacuum cups; this point is unvariable.

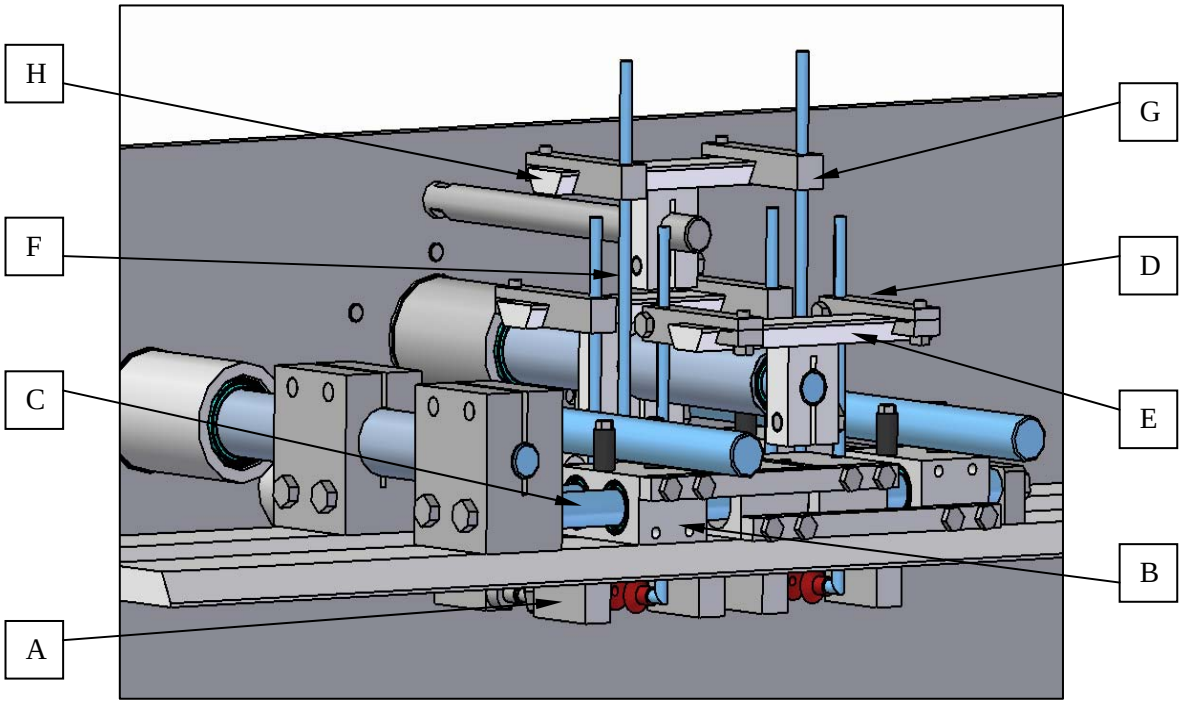
The pouch opening groups is formed by three different and important parts.

The pouch opening clips, which should be regulated according to the width of the pouch we are making. The clips "**A**" are equal to the clips on the carrier and the should be regulated in the same way, by means of the dies on the guide "**B**" that, in this occasion is situated above the shafts "**C**".

The superior vacuum cups, can be regulated in hight by loosening the screws on the dies "**D**", which allows us to place them in the most adequate position. Usually the standard hight as fitted on the machine works correctly for each pouch format. In case we want to change the width of the format of the pouch, we need to regulate the position of the vacuum cups through the guides "**E**" simply by loosening the screws that fix the dies to the guide.

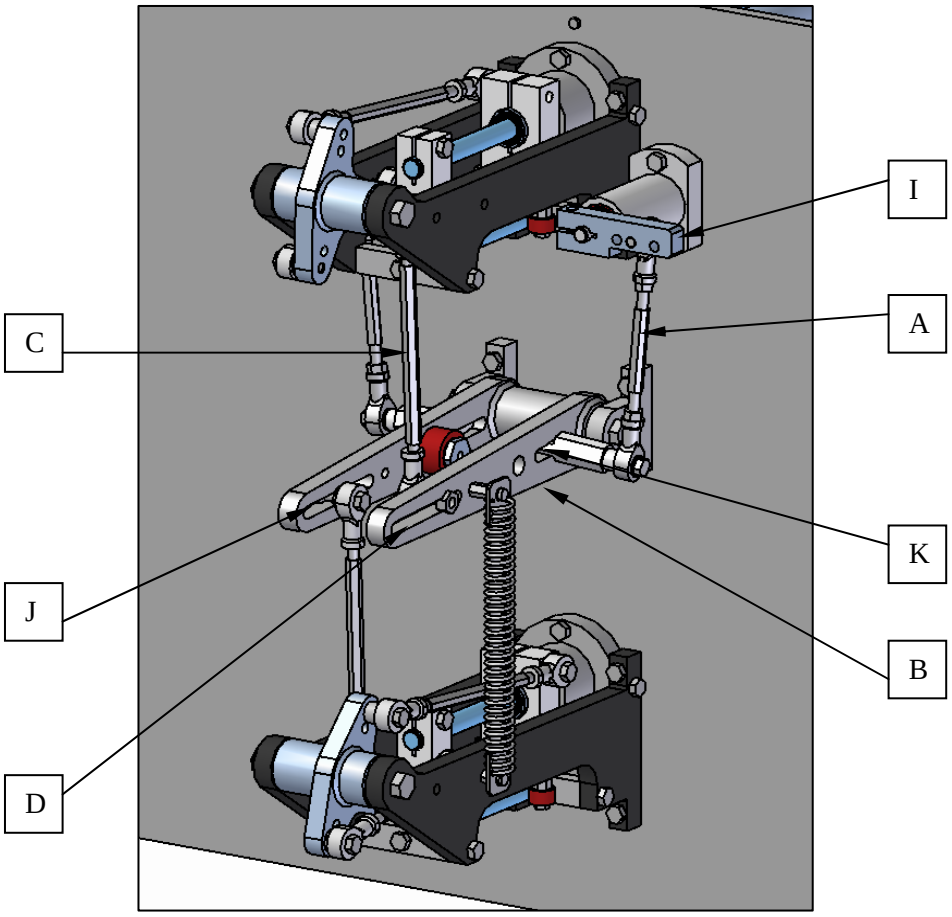
The pouch blowing group helps to open the pouch by means of blowing air inside the pouch. The nozzles of this system "**F**" can also be regulated through the dies "**G**" on guide "**H**".

Drawing nr 24



The pouch opening group needs to be regulated in it's activation.
The clips can be regulated for the quantity the pouch needs to be opened by means of the rods "**A**". These are fixed with the lever "**B**" which includes a track "**K**" that allows us to move the rod and to position it in the most adequate position to obtain the necessary opening according to the width of the pouch.. The rod is also connected with the soperior lever "**I**" and can be fixed in different bore holes. If we pass from the interior bore hole to the exterior, we also obtain a major pouch opening.
The grade of opening of the suction cups can also be regulated, depending on the width of the pouch.. The rod "**C**" can ve regulated through the track "**D**" loosening the nut that fixes it and displacing it to the extreme part of the lever. This way we achieve amajor pouch opening. For the regulation of the rod we should adjust with the screw cut of the abutments, to be able to reach the extreme part of the lever.

Drawing nr 25



INFERIOR SUCTION CUPS:

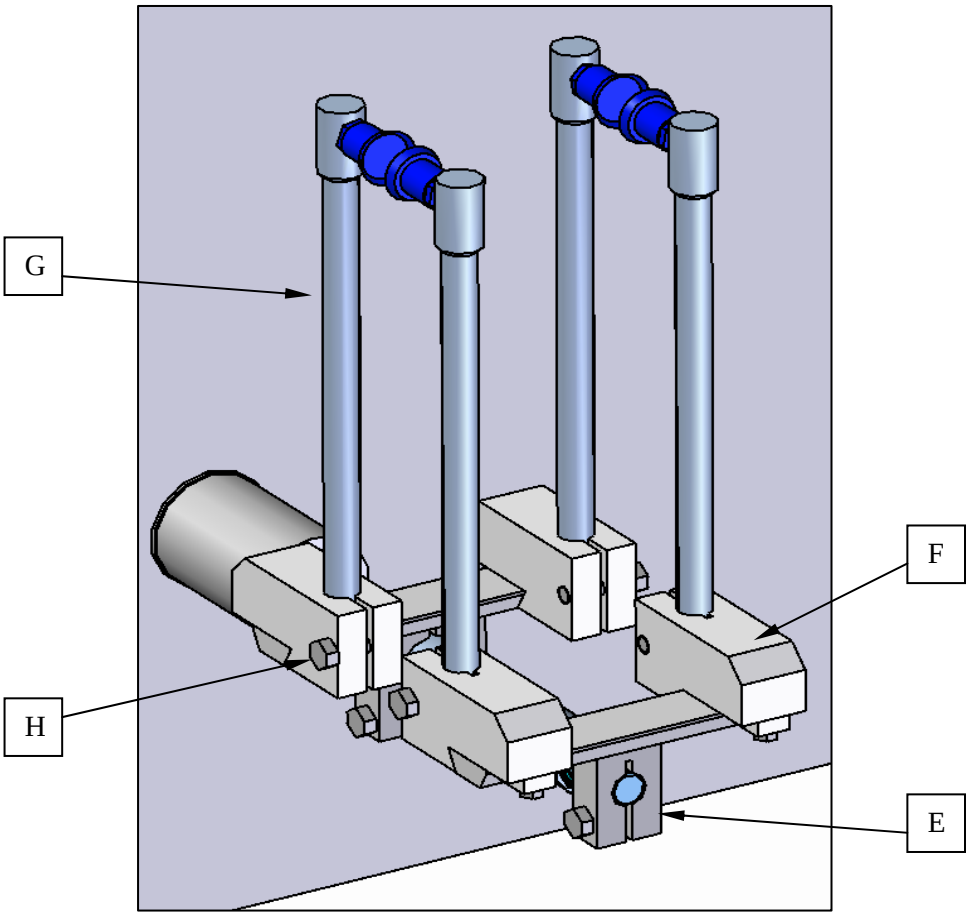
The group of the inferior suction cups should be regulated always when there is a change in hight or in width of the pouch.

For the change of width of the format, the group comes equipped with guides "**E**" (For duplex formats), where the suction cups support "**F**" can be adjusted, to find the central part of the pouch.

When the hight of the pouch is going to be changed, the die "**F**" allows us to regulate the tubes "**G**", loosening the screw "**H**" that holds it in the regulation die.

It is also necessary, in accordance with the bottom of the pouch, to regulate the opening of the pouch, from the activation we can see in drawing nr. 25. The rod "**I**" can be regulated through the track "**J**" of the principal lever of the pouch opening group.

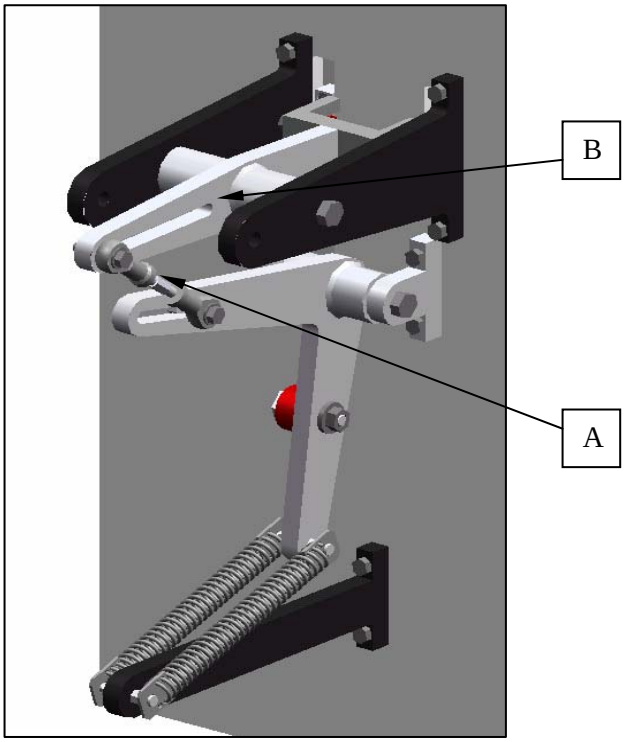
Drawing nr 26



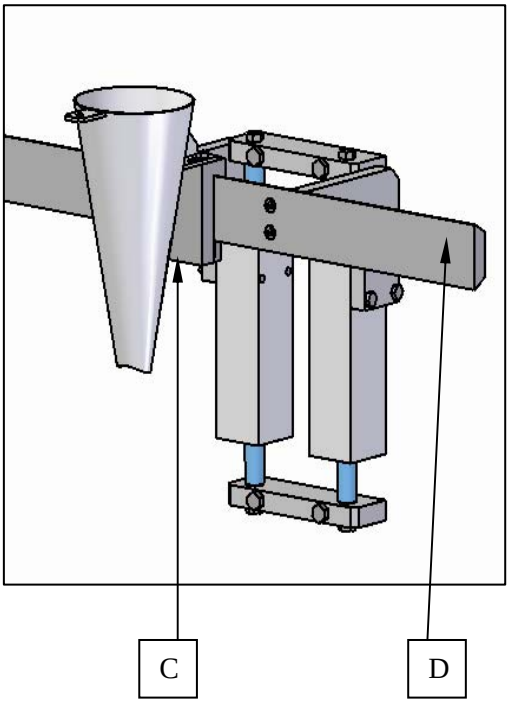
DOSING:

The regulation for the dosing group we find in two parts of the machine. One in the activation (drive) of the machine (drawing nr. 27) and another for the regulation and positioning of the nozzles or funnels (drawing nr. 28).

Drawing nr 27



Drawing nr 28



To start, we must move rod "**A**" through the track "**B**" of the activating levers. With this regulation we achieve a major run in the movement of the nozzles or the funnels. In case the rods will be regulated, it is necessary to modify the position of the abutments until the rod achieves the adequate length to reach the wished point.

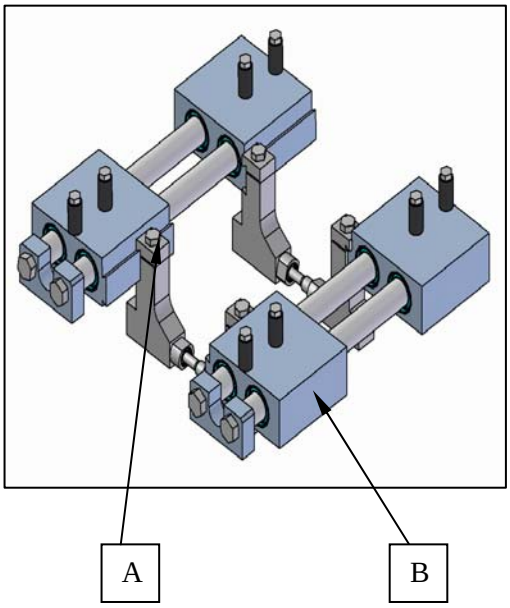
In the second case the regulation depends on the change of the width of a pouch format or if the machine is simplex or duplex. In such a case the nozzle or funnel will be fixed to the support "**C**" which goes fixed to the regulation guide "**D**". Loosening the supports "**C**" we can position the nozzles in the middle part of the pouch.

STATIC STRETCHING:

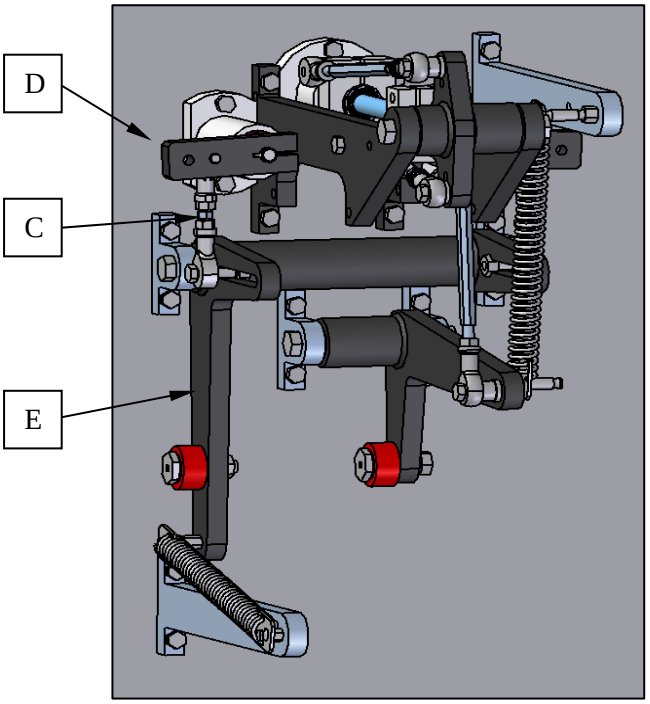
The level of pouch stretching can be regulated, leaving the top part of the pouch perfectly stretched without any wrinkles.

The way to change a format in width is the following:

Drawing nr 29



Drawing nr 30



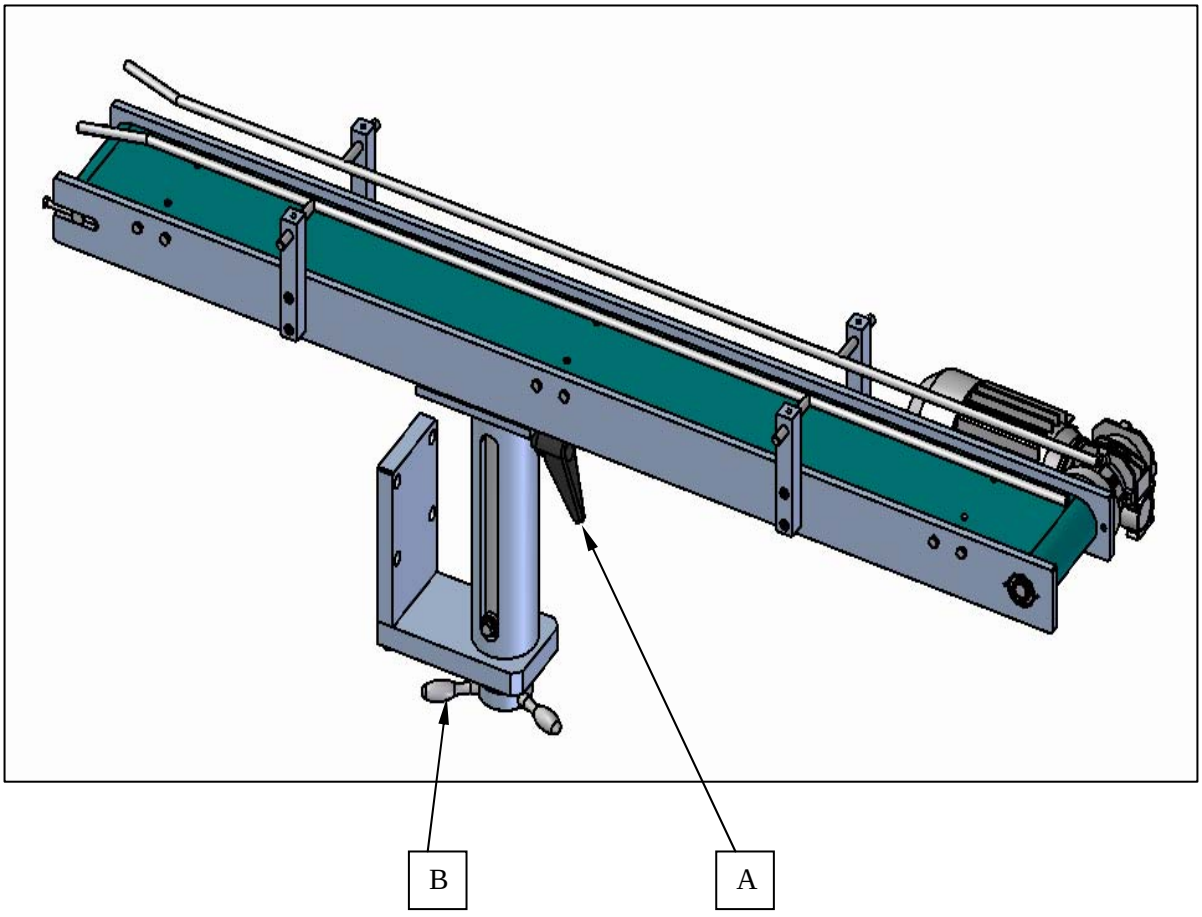
When we need to regulate the clips, we simply need to loosen the screw "**A**", that unites the two parts of the clip and subjects them in die "**B**". Once we have the front and rear clips at 3mm from the extreme part of the pouch, we should fix the screws once again.

The following opperation necessary for a correct stretching in case we change a format in width can be seen from drawing nr 30 which includes the activation of the static stretcher. In this case it will be necessary to regulate the quantity of stretching necessary, depending on the pouch format. We will start to regulate the rods "**C**" through the track of the activating lever "**D**". The more we fix the rod to the extreme part of the lever, the more strectching we obtain. To achieve the desired position of the rod it will be necessary to regulate the abutments that connect the rod with the levers. We could also change the fixing point of the rod in lever "**E**".

EXIT CONVEYOR BELT:

The exit conveyor belt allows us a regulation according to the hight of the pouch.
We have got the handle "**A**" that – in case we loosen it a quarter turn – allows us, by means of wheel "**B**" to raise or to lower the conveyor belt until achieving the hight approximately one centimeter below the bottom of the pouch.

Drawing nr 31



MAINTENANCE

This chapter includes the preventive maintenance plan for Mespack packaging machines, that should be used according to the program and applicated to obtain and maintain a correct functioning of the equipment.

This preventive maintenance plan is devided in mechanical maintenance and electrical maintenance periods of 1 day, 1 week, 1 month, 3 months, 6 months and one year.

MAINTENANCE PROGRAM

MECHANICAL MAINTENANCE

Daily maintenance:

Control the machine structure on the inside as well as on the outside. Check if there is any oxidation, bossing or brake in the structure. If this is the case, immediately advice the maintenance crew.
Revise the correct functioning of the machine (general control). In case any anormality is detected, immediately advice the supervisor responsible for the equipment.
Verify each certain number of pouches or hours of production the correct sealing of the pouches. In case any anormality is being detected, verify where the problem is located and immediately correct this, advicing the authorized personnel.
Realice the cleaning of the machine and the working area of the machine at the end of each working shift. Use compressed air.
Check if the reel has a uniform displacement of the film, if this is not the case, this should be corrected immediately.
In case the machine is equipped with a central lubrication system, the level of the lubricating deposit should be checked. In case product is missing, please refill the deposit between the minimum and maximum limit indicated on the deposit.

Clean each 8 or 16 hours the sealing bars with a metalic brush, to take of the accumuleted polyethylene. Revise continuously during each working shift if cleaning is necessary. The cleaning should be realized when the seling bars are cold.
Verify if the working pressure of the machine is 6 Bars or 86 PSI. If this is not the case, the manometer in the left lateral of the machine must be regulated.

Weekly maintenance:

Verify the state of lubrication of the cams. In case of need, lubricate the parts with lubricants as recommended by Mespack.
Verify if the dosing system does not have any escape. In case an escape is detected, immediately advice the maintenance crew.
Greasen the guides of the mobile carrier.
Greasen the guides of the film transporter.

Maintenance each 3 months:

Verify if the film passes through the correct channels and not outside of them. Modify in case of need.
Check the state of the detents of the principal reductor. In case of any loss, repair the detent.

Maintenance each half year:

Verify the clips on the different carriers. (detents, springs, rubbers and connectors).
Greasen all lubricators of the bearings and others.
Verify if the taps or seals of the electical motors are closed and that there are no screws missing. If this is the case, please replace the seal or tap, or fit / replace the screws.

Yearly maintenance:

Verify the adjustment of all screws of the machine. If any of them presents any looseness, change the rolling bolts. Use the necessary tools to tighten the screws.
Correct the blade of the scissors in case any wearing is shown in the zone where the pouches are being cut. These knifes can be sharpenned fixing them on a magnetic plate use a tangent for the cutting side of the knifes and lower with care 0.05mm until a maximum of 0.20mm.
Verify the state of all mechnic components of the machine, springs, tensors, cams, levers etc. In case of finding some of them in bad state, immediately advice for it's repair.

ELECTRICAL MAINTENANCE

Monthly maintenance:

Control if all electrical contacts are clean and free of corrosion. If this is not the case, proceed to clean them with special a cleaning product for contacts.
Control whether exists humidity in the electrical system. If this is the case, proceed to clean the contacts.
Control the space where the machine is situated: in case of finding escapes of water in the ceiling proceed to eliminate this problem immediately, since the machine might get wet and the electrical system may get dammaged.

Maintenance each 6 months:

Check the state of the cables of the electrical system and it's contactors. In case of finding some of them burned or wasted, please advice immediately the maintenance crew to repair them.
Advice the maintenance crew to check the state of the PLC.

PNEUMATIC MAINTENANCE:

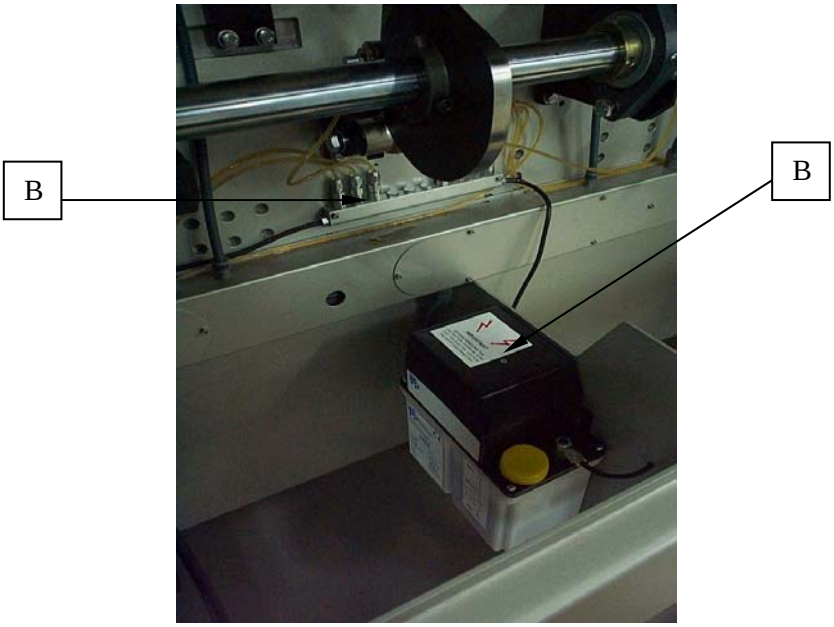
Check all pneumatic connections or hoses. In case of finding any escapes of air, proceed to repair immediately.

Verify that the working pressures is 86 psi or 6 bars. If this is not the case, proceed to regulate this.

GREASING:

For the lubrication of this new generation machine H-180 we have based ourselves in equipping the machine with an automatic lubrication system for the busjings and the bearings of the different groups. For the lubrication of the parts that can be in direct contact with the film or with the dosing group, above the film, a non toxic lubricant should be used. And for the lubrication of the activators (drivers) we advice to use a lubricant spray.
The central lubrication system is equipped with various distributors "**A**" that obtain the lubricant of the automatic deposit "**B**". This system is controlled through the PLC and it is possible to regulate this through the touch screen. The system actuates lubricating all distributors each determined time (determined through touch-screen).
This can be modified, however we recommend to activate at least once per day. It is necessary to check whether there is lubricant insde the deposit or not.
The manual – non toxic- lubrication should be applicated in all moveable zones, always in case it is in front of the machine and above the film line.

Photo nr 34



RECOMMENDED LUBRICANTS:

Characteristics of the soecification CENTRALIZED LUBRICATION

	EP – 00	EP - 000
Basic lubricant	Mineral	Mineral
To increase viscosity	Lithium soap	Lithium soap
Penetration at 25 degrees celcius	400 – 430	445 – 475
Equipment 4 balls (IP-239) Load of the sealers	250 Kgs min.	250 Kgs min.
Consistency NGLI (DIN 51818)	Grade 00	Grade 000

Lubrication for the food sector “Klüber lubrication Nontrop PLB EL”
Has a lubrication period of 200 hours.
Other brands: Shell RETINEK 00, 000

CLEANING:

The cleaning of the machine should be done daily. Especially all exterior mobile parts and principally the ones that are in contact with the product to be dosed.
We also recommend to clean weekly the whole machine (general cleaning), especially the mobile parts and the parts that are in contact with the product to be dosed. The cleaning should be done with brushes, aspirators, towelets etc. Avoid the airblowing and also the cleaning with agressive products as they may dammage important parts of the machine.

TROUBLE SHOTTING FOLLOW UP

Below we describe the most common problems that may occur with the machine and it's possible causes and how to avoid them or solve them.

Machine stop:

Problem will be indicated on the touch-screen.

Scissors do not cut:

The blades of the scissors are worn and should be substituted by new ones.

Pouches fall during transportation through the machine:

The clips are not correctly positioned and should be regulated.

The vacuum cups do not work correctly:

In case the cups are worn it will be necessary to change them.

The ventury or air sucker fails. We will have to check the filter and the functioning of the ventury.

The electro-valve fails. Check if the electro-valve is in good state.

The pouch does not open sufficiently and the funnel or the nozzle wrinkle the pouch while penetrating the pouch:

Can be a problem of the air-pressure of the pouch blower. (Increase pressure).

The track for pouch opening is insufficient. The track should be increased as indicated in the pouch format changeover part of this manual.

The vacuum cups do not open sufficiently the pouch. We should increase this.

The top sealing is wrinkled:

The pouch stretching is insufficient and the track of the static stretcher should be increased.

The pouch opens easily in the part where they are sealed:

It is possible that the sealers are dirty, so we will have to clean the sealers with the special metalic brush.

It is possible that the temparature is not correct. Increase or decrease the temparature.

The product sticks to the extreme parts of the top sealing of the pouch. Increase or decrease the aspiration pressure.