Gualapack

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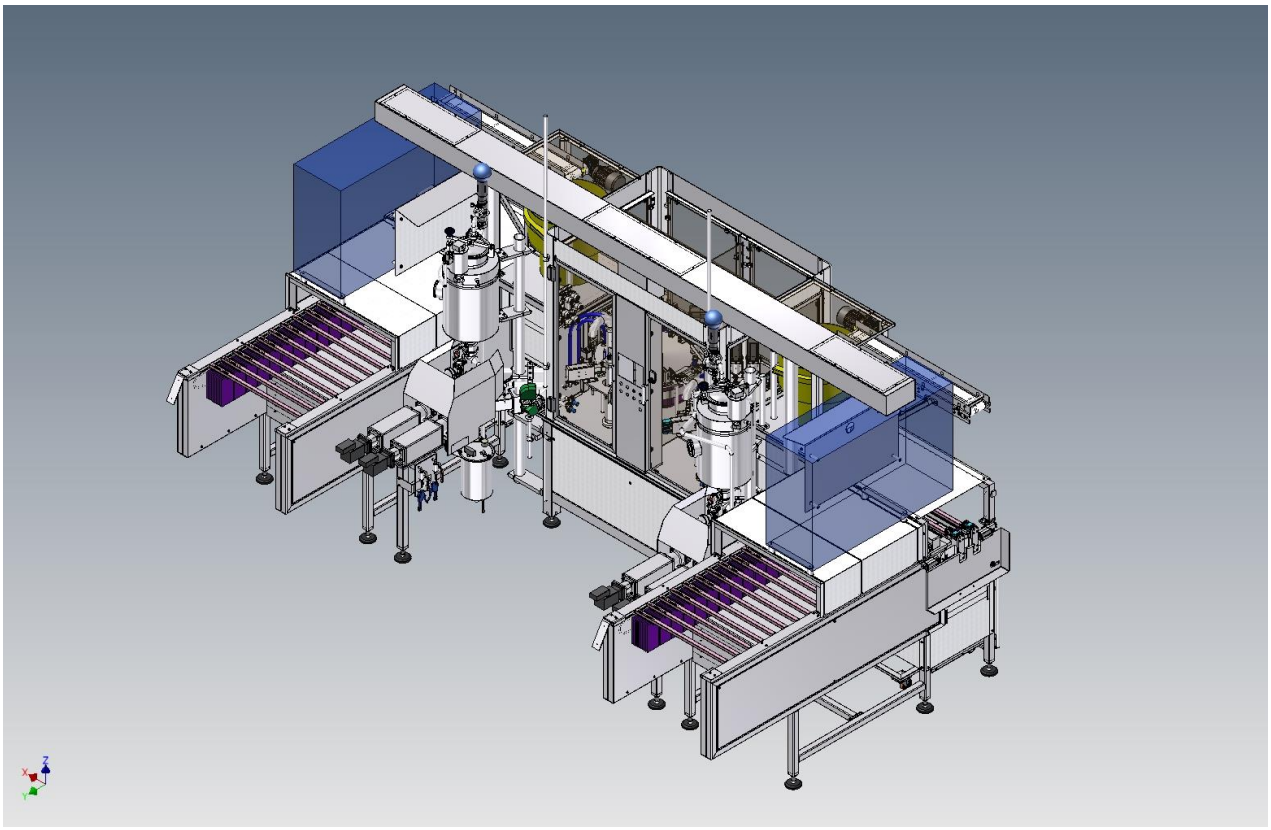
USER MANUAL



Filling Machine
CHP-4H

Year 2020 **Serial number: 20191**

Customer : Unilever USA

☒ **Original Notice**
☐ **Translation of original instructions**

CE

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1.1 INTRODUCTION

The present manual provides useful information regarding correct use of the filling machine CHP-4H.

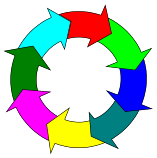
We suggest that the user observes these regulations in order to obtain best performance from the machine.

The machine has been provided with all the safety items necessary to avoid damage to all its parts, even in the case of misuse.

In case repair is necessary the user may refer to Gualapack for advice or request a technician to perform a visit.

To highlight some precaution or attention to be taken, the following simbols are used in the present manual

ATTENTION : Safety rules for the operator



Warning : Possibility to make damage to the machine and to the components of the machine

Precaution : More information on the actual operation

Useful information for the operator

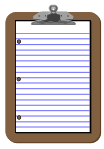
FCMO **Food Contact Materials and Objects (FCMO)**

THE MANUAL AND THE DOCUMENTATION OF THE MACHINE MUST BE KEEP AVAILABLE TO OPERATING AND TECHNICAL PERSONAL.

1.2 GUARANTEE

Gualapack guarantees that this machine is free of manufacturing defects and that its accessories are ready for use.

Gualapack's limited guarantee covers repair and replacement parts, depending on the contract stipulated by the company and the client; and will repair the product or any of its components according to the terms which have been established by the Gualapack Company, excluding all commercial electrical and mechanical components that are covered by the warranty of the producer, provided that all **GENERAL SUPPLY CONDITIONS** with regard to the guarantee have been respected. The product or any part of it can be returned, only if authorised by the Gualapack Company.

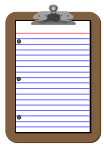


The guarantee is cancelled, if this product or any part of it has not been installed correctly, and if its maintenance has not been carried out as prescribed by the Gualapack Company, or if this product is subject to misuse or has been made to operate differently from that described in this user's manual.

1.3 AT CUSTOMER CHARGE

With the proper exception during the contract sign, at customer charge are :

- Arrangement of the machine in his plant
- Suitable lifting device
- Electrical power supply, with the GROUND wire, according to the specification and tolerance reported in the present manual.
- Water / steam network
- Air network
- Tools
- Lubricant for alimentar industry



Gualapack will be not responsable for a bad functioning of the filling machine due to supply forniture not according to the machine specification.

1.4 TECHNICAL SERVICE

The request for technical service can be send directly to Gualapack company, or to the local representative office.
The contacts are reported on the first page of this manual.

1.5 ACCESSORIES AND OPTIONS

The high speed filling machine CHP-4H is provided with all the necessary equipment which guarantees correct and complete operation.

Gualapack , with the intention of fulfilling the client needs, will analyse the possible supply of special accessories and options, depending on the user's specific requirements.

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2.1 MACHINE GENERAL DESCRIPTION

The CHP-4H filling machine is a machine designed for packing liquid or paste food products into various size of flexible packaging as per Gualapack standard.

2.2 PRINCIPLES OF OPERATION

In the standard version the filling machine can execute the following functions:

- Automatic loading of bags into the rotary table
- Print on the bag of the filling/expiring date, or other information according to the customer requirement (printers at customer charge)
- Fill the bag according to the following cycle

    1) Empty the air from the bag (with a vacuum pump)
    2) Fill the product according to the bag capacity
    3) Fill the bag with air or gas (nitrogen)

- Closure of pouches with the cap
- Unloading the bag on exit conveyor.

The speed of the filling machine changes according to the Cheer Pack size and the kind of product. The max speed is 170 pcs/min for cheer pack 100 ml filled with water.
All FCMO (food contact material and object) components of filling machine are made in according to requirement of FCMO in food industries.

2.3 TECHNICAL INFORMATION

The most important technical information is reported in the following table. More information will be report in the next chapter.

Electrical supply		380 V - Three Phase/60 Hz + ground conductors.
Pneumatic supply		Compressed air from 6 to 10 bar.
Compressed air consumption		200 Nl/min. Max consumption during the cleaning cycle
Fill capacity		According to the size of the pouches (max cheerpack 500 ml, doypack 200 ml)
Product supply pressure		1÷3 bar
Product temperature during filling		-10°/94°C
Filling regulation		Via touchscreen.
Filling tolerance	Standard version	+/- 2 gr or ±1% of the volume contained in the bag (which one is greater).
Overall dimensions		Width 4,7 mt. Length 3 mt. Height 2,6 mt.
Weight		3000 Kg. complete with accessories.
Bag loading		By means automatic charger, with a self government of 10 minutes (900 bags 8.6 mm. Straw).
Cap supply		For standard cap or other types.
Output of bags		By means of a conveyor.
Package dimensions (empty pouch)		Maximum Front Width 100 mm Maximum Height 180 mm (exclusive of spout)
Packaging capacity		70÷500 cc
Max speed		160 pkgs./min (cheer packs 100 ml water filled).
Product feed	Standard version	By means reservoir with automatic control level and automatic dosing pump.
Product pressure control in the pipes		Provided with pressure sensor
Cycle and function Controls		By means of a PLC system, optical sensors and proximity switches.
Error diagnostics		By means of the use of a diagnostics unit equipped with a touch/screen display.

2.3.1 MAIN GROUP OF THE FILLING MACHINE

The filling machine is composed of the main following groups:

1. **Bed or frame**
2. **Motor and motion groups**
3. **Pouches loading system**
4. **Rotary table**
5. **Gas group**
6. **Filling units group**
7. **Cap suppliers group**
8. **Tightening units group**
9. **Cap check group**
10. **Bag output conveyor chain**

2.4 DESCRIPTION OF THE VARIOUS GROUPS

2.4.1 BED OR FRAME

The strong basement is made in stainless steel with a thick top plate of painted carbon steel completely covered by stainless steel plates on the parts exposed to the water. Using a TIG continuous process, and guarantee high resistance to mechanical stress does all welding of the tube joints.

The machine bed provided with support legs, which can be varied in the vertical direction (height) to adjust the level of the machine. The motor group and the pneumatic panel are partial mounted internally and externally. The empty bag supply system and the conveyor belt used for output of the full bags are also assembled to this frame.

The machine is complete with lateral panels, in order to avoid infiltration of liquid inside the motor area, during normal work cycles and during the cleaning operation. ???

2.4.2 PACK SUPPLY SYSTEM

The pack supply system has the purpose to feed with packs the machine rotary tables.
Its main components are:

- Pack feeder with parallel rails
- Pick and Place of pack rail
- Metallic guides et pneumatic cylinder

The pack feeder has a capacity of 17 rails, these rails are placed in parallel and they are transported toward the picking area by the movement of the two side chains. A photocell stops the movement when the rail is at the correct picking position.

The rotary table has to receive two pack at the same time and therefore there are two couples of metallic guides. This means that two pouch rail are used at the same time

The Pick and Place of rail has three positions

- Picking
- Emptying position 1
- Emptying position 2

For each Emptying position there are two pneumatic cylinders that push the pack towards the table.
The one called Charger pushes the pack when they are on the plastic rail, the one called Feeder pushes the packs when they are on the metallic guides.
Both cylinders push the packs only when the rotary table is not moving (stop position), once the packs are loaded on the table they stop to push.

Some proximity switched take care of the movement of these cylinders because they have to exchange job with the condition that the machine has always supplied packs.

The replacement of the empty pack rail with a rail with packs on the Emptying Position 2 has the priority, in fact when a rail is present in Emptying Position 1 it is not possible to go at position 2. Therefore the logic of the movement will be:

- Every time that a new rail is requested at the Emptying Position 2 we will

give it immediately if the passage by Emptying Position 1 is free
- A new rail on Emptying Position 1 will be place only when there is enough available space for packs on the metallic guides. In this way the new rail will be quickly emptied and this will rend free the passage towards Emptying Position 2.
- All empty rails will fall in a carton box.

2.4.3 MOTOR AND MOTION GROUPS

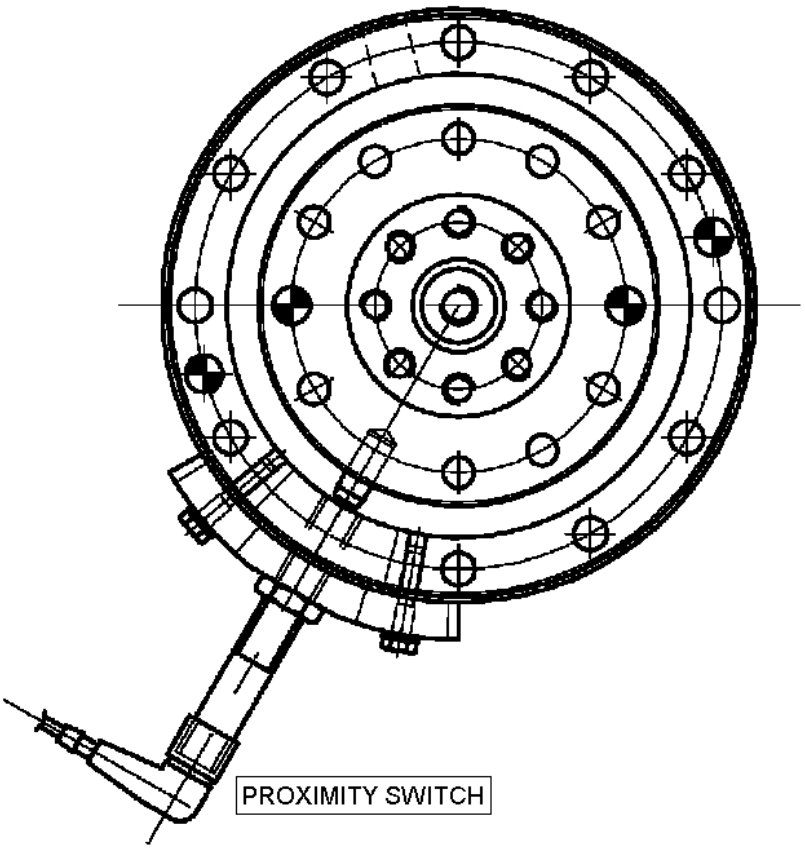
The filling cycle developed, with precise synchronisation between rotation, vertical movement and the intermittent motion by:

- **Main motor**
- **Screw driver motor**
- **Output conveyor belt**
- **Bags supplier and rails transport**

2.4.3.1 MOTION TRANSMISSION

Main Motor.

The main motor is an SBC Brushless SMB82 4500 rpm and 3 Nm.
It drives the cam indexing box and therefore the rotating table.
The angular rotation of the motor has a position feedback performed by the electronic driver.
The motor is connected to a SUMITOMO gearbox reducer with a reduction index of 119.
Each table step means the movement of 2 table slots.
On the SUMITOMO is installed a proximity switch, that works as the zero mechanical point. Its function is define the zero origin of the movement for the brushless motor. This zero position is set at the moment of the transition of the proximity switch from OFF to ON.



At every step of the table of the rotating table the machine performs all the functions: filling, capping, cap check, bag output. During the rotation phase there is the picking of the caps.
The speed and the acceleration of the table movement can be set by the operator via the touch screen to accomplish all the best performances.

Screw driver Motor.

Figure 2

The tightening device is an electronic screwdriver. It activated by the PLC output at the end of the table rotation. A brush-less motor driven by an electronic driver makes it.
Its duty is to tight the caps on the pouches' straws.
The torque of the motor is set via the touch screen
The correct tightening of the caps will be according to the setting of the screwdriver torque.

Bag supplier and rail transport.

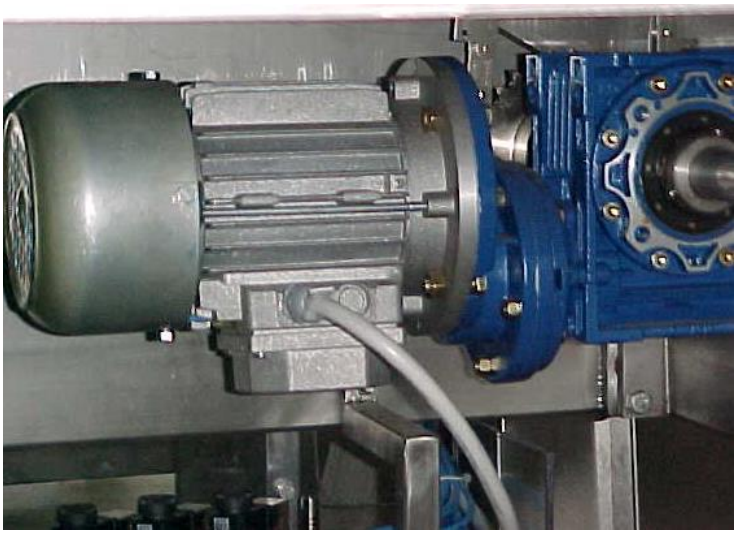
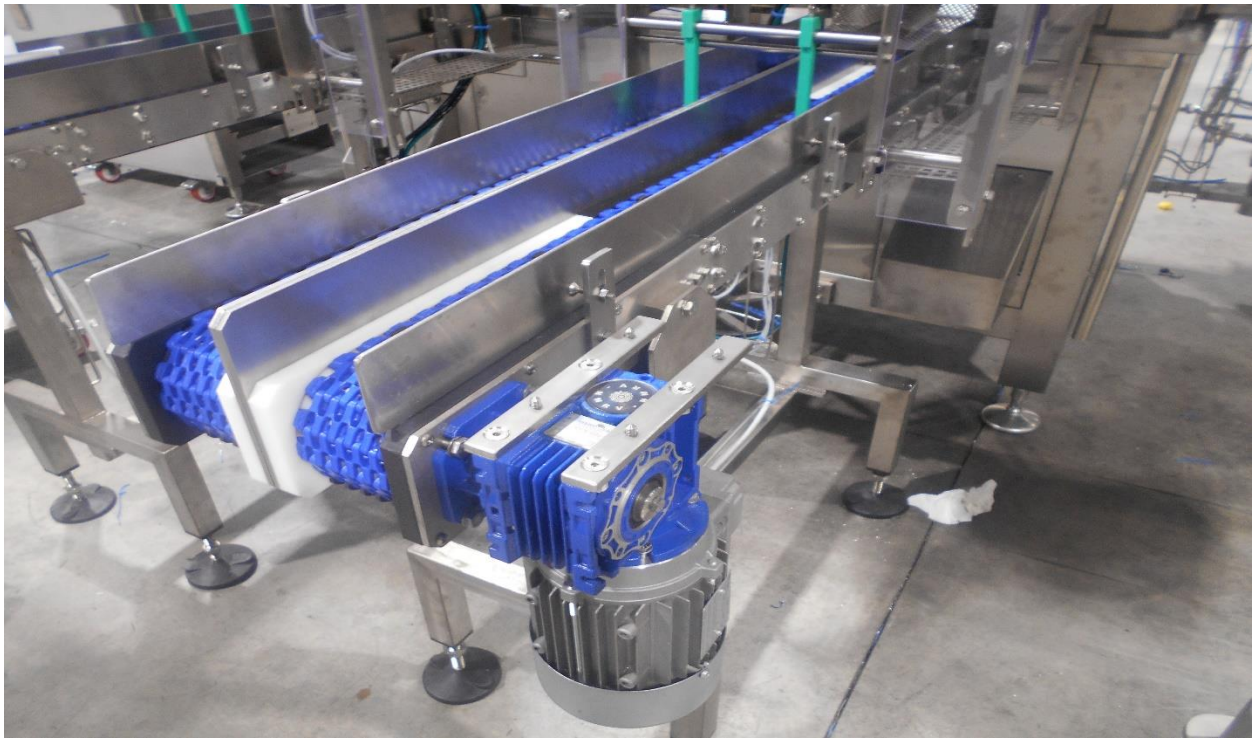


Figure 3

The motor drive is an asynchronous motor with a power of 0,12 kW with a gearbox reducer with ratio 80.
In the loading section the operator load the rail pouches on charger chain and the rail moved forward until the photocell sensor under the pick and place unit is completely covered.
With the rail in this position, the pick and place unit pick the rail and move it one step forward, at this position the rail has been blocked by the two opposite block and the charging cylinder can push pouches toward the rotary table.



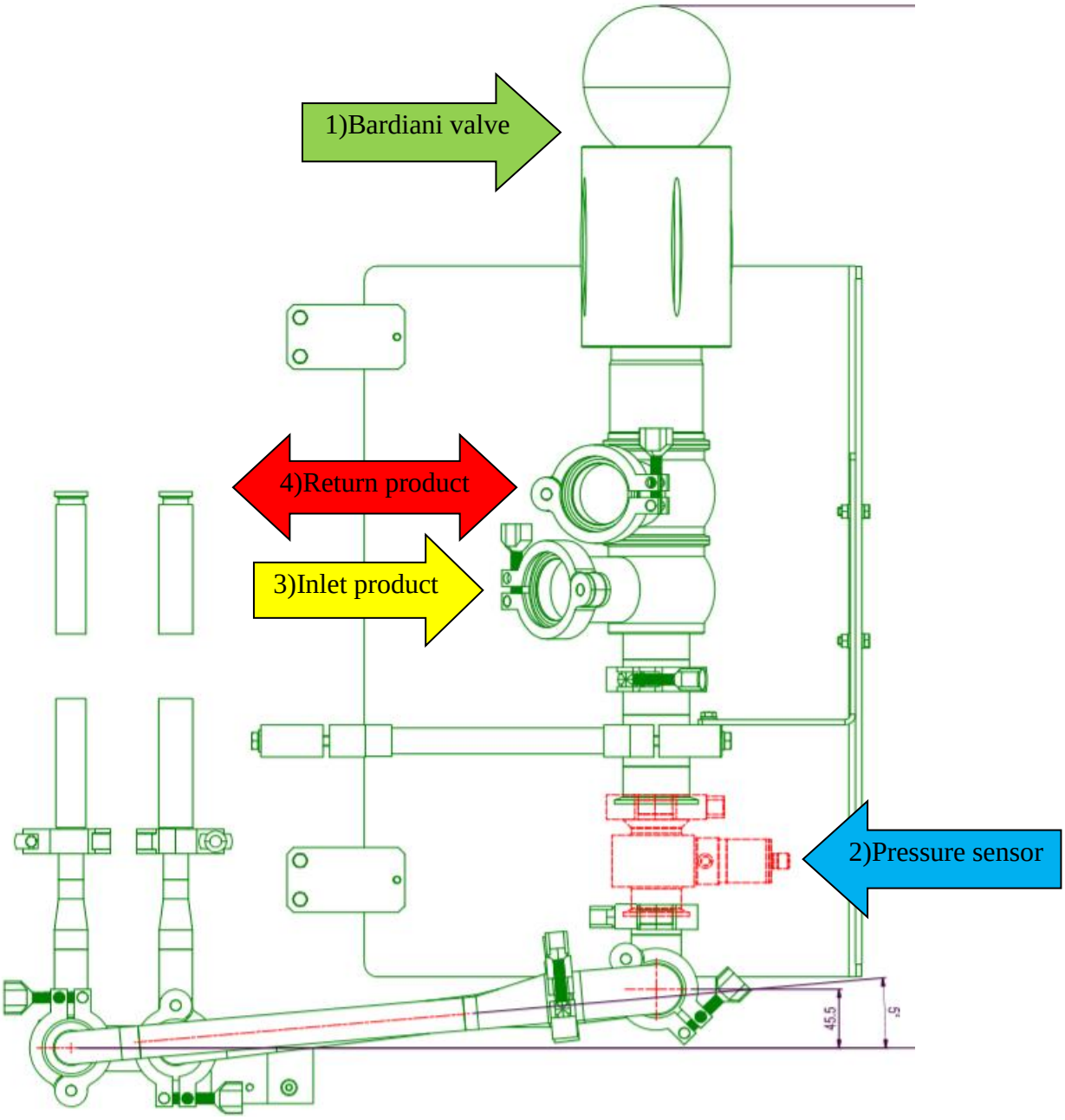
2.4.4 FILLING GROUP

The filling groups is divided in:

Bardiani valve 3 way
Filling valve

2.4.4.1 BARDIANI VALVE

The Bardiani valve 3 way has the function of opening and closing the circuit in the production phase, purging phase and washing phase.
In case of too high pressure the valve closes.
The pressure parameters can be set on display (cap 6.2.1 pag 18), and it's controlled by sensor mounted between the Bardiani valve and the filling valve.

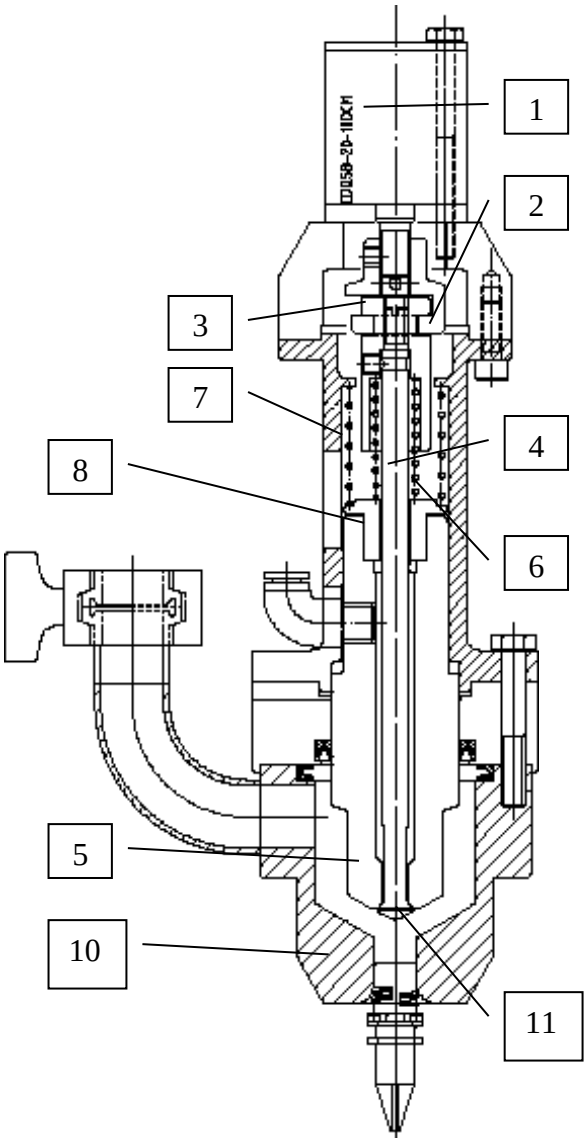


1) **Bardiani valve**
2) **Pressure sensor**
3) **Inlet product**
4) **Return product**

2.4.4.2 FILLING VALVE

The filling valve provides 3 operations:

Suction of the air present inside the pouch before the filling;(optional)
Filling of the product;
Blowing of nitrogen/sterile air inside the pouch, after the filling.

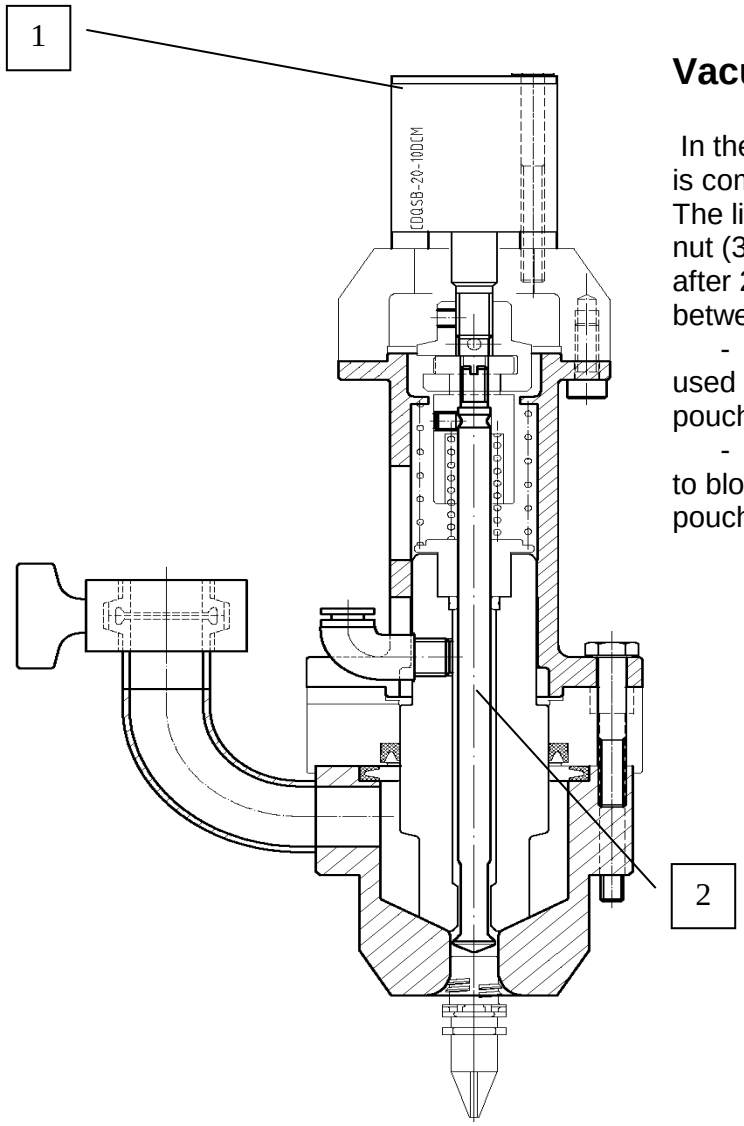


The filling valve is composed by a pneumatic cylinder (20 mm Ø, 10 mm length).
This cylinder is joined to a fork (2), and it controls the opening and closing mechanisms of the filling system.
The main component of this valve is the gas spool (4), which is assembled to a “bell” (3) and inserted into the fork (2).
The gas spool is driven, in the higher end, by a stainless bushing (8) while, in the lower end, by the liquid spool (5).
The sealing between the liquid spool (5) and the ring nut is ensured by the sum of the forces of the 2 springs (6) and (7).

Working description :

Filling phase:

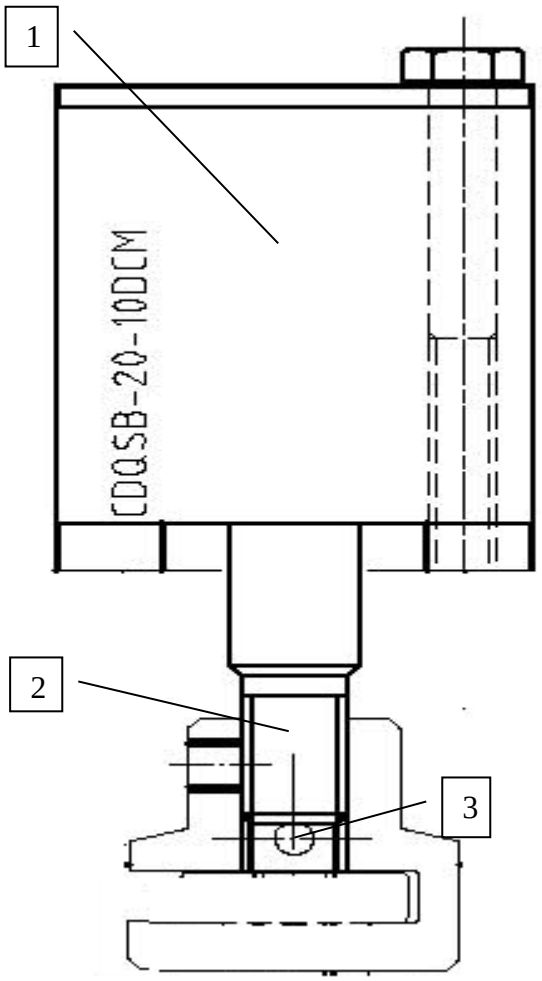
During the filling phase, the pneumatic cylinder (1) is completely retracted.
While the gas spool (4) is moving to the higher position, the bulge (11) gets in contact with the lower part of the liquid spool (5): in such a way, the gas spool bring the liquid spool up.
Then, the product duct is opened, thus letting the product flow.



Vacuum/Blow phase:

In these phases, the pneumatic cylinder (1) is completely extended:
The liquid spool gets in contact with the ring nut (3), while the gas spool (2) ends his run after 2,9mm, thus opening the air duct between the Burkert valves and the pouch:

- before the filling, this duct will be used to create the vacuum inside the pouch;
- after the filling, this duct will be used to blow a certain quantity of nitrogen in the pouch.



Assembly of the pneumatic cylinder to the fork :

- The spool's thread (2) of the cylinder (1) has to be covered of medium strength thread-locker, making the assembly stronger.
- Put the cylindrical pin in his designed place (3);
- take the spool of the pneumatic cylinder and screw it until it gets in touch with the cylindrical pin.

N.B. the cylindrical spine gives the right distance in order to open the gas spool during the vacuum/blow phase.

2.4.4.3 BLOW GROUP

Each of the 4 systems (one for each filling valve) consists of two valves connected to each other. These supply the filling valve to fulfil the conditions:

1) blow gas into the bag.

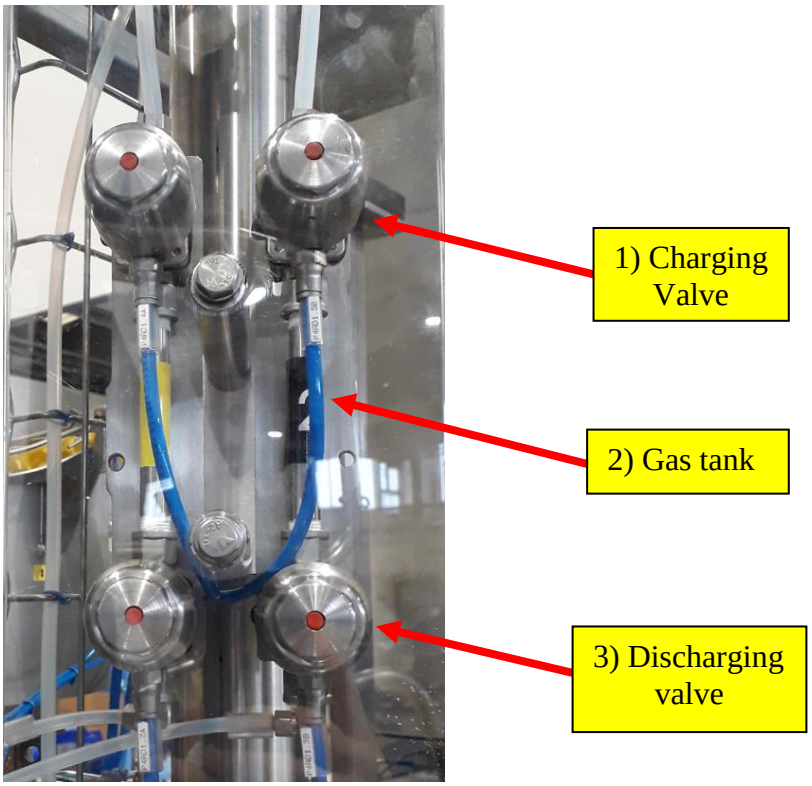


Fig. 10

1 Charging valve.
2 Gas tank.
3 Discharging valve.

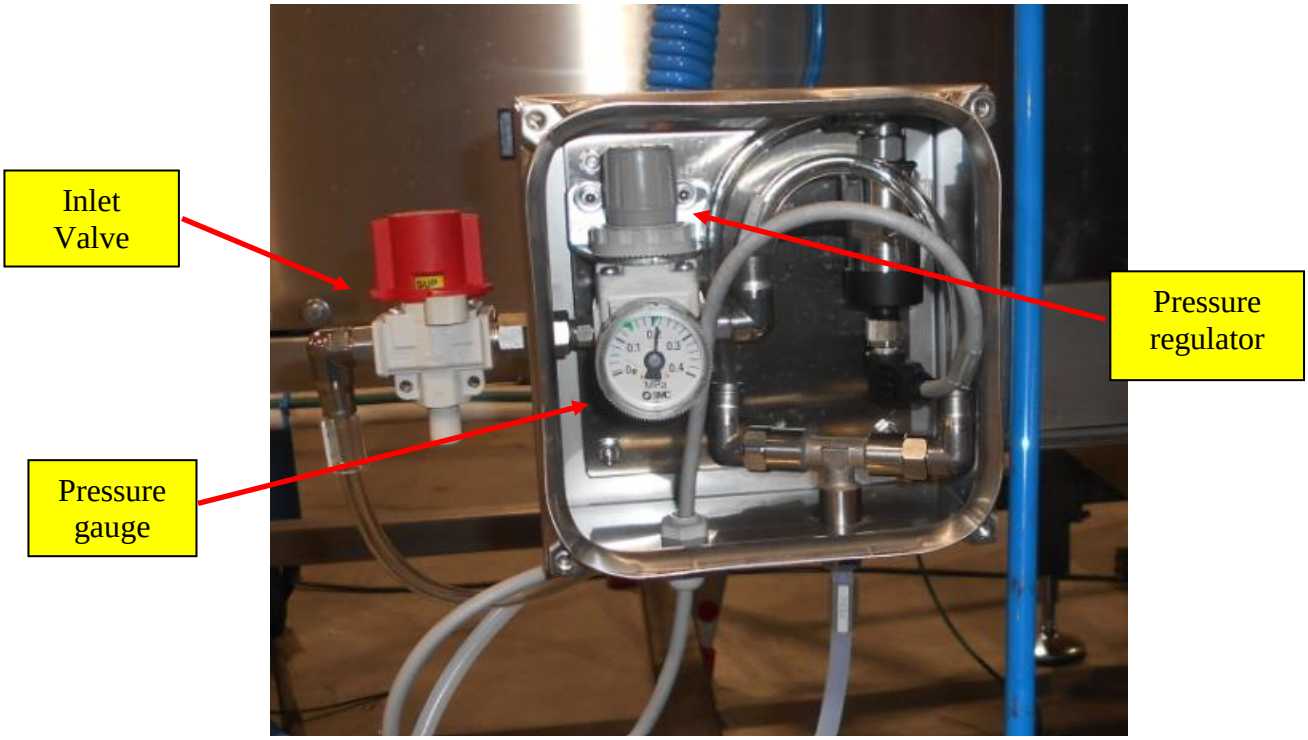
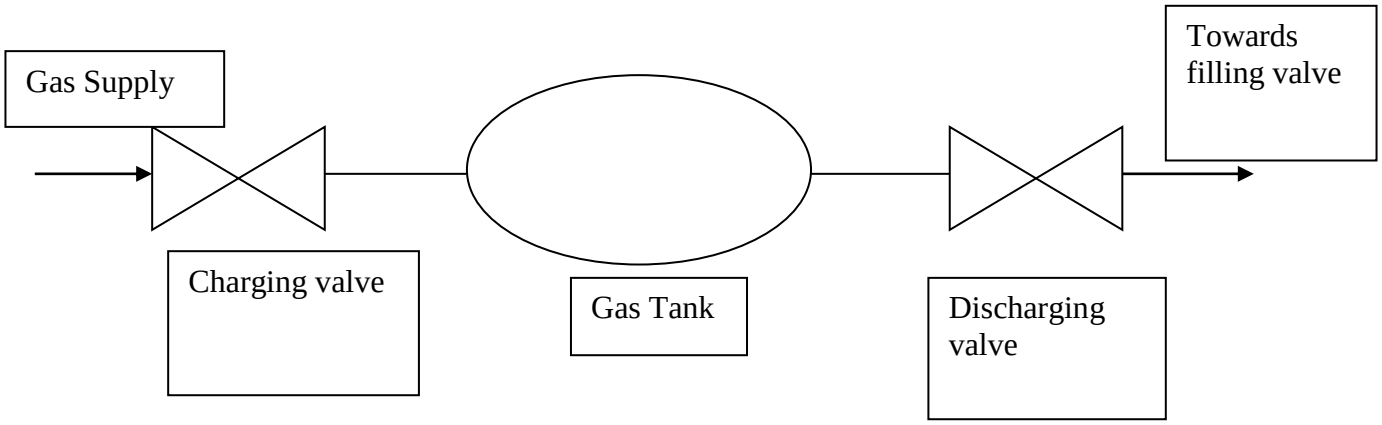


Fig. 11

2) Nitrogen Blow

BLOW GROUP After the bag has been filled, the nozzle and the upper internal part of the straw may be cleaned with a blow of air or gas.
In the food processing field, it is recommended to use nitrogen gas, instead of air, because air may cause the product vitamins to oxidise.
This system is composed of two electro valves, a reservoir which contains gas and a nozzle which injects the gas in the filling valve.

When the filling phase has terminated, the gas refilling valve is closed for a few seconds and the gas blow valve is open: the air/gas is discharged into the bag by means of the valve nozzle, cleaning the internal part of the straw and lowering the liquid level inside the bag to be lowered.
This operation prevents any possible loss of liquid from the bag, during the movement between the filling station and the first welding station.
The valves being used work very well when oil and grease free substances are used, for example very hot water and alkaline lies for cleaning and bleaching. They may be used in a temperature range from -10C to 90C.



CAUTION

THE GAS/AIR BLOW PRESSURE MAY BE ADJUSTED FROM 0.05 MPA TO 0.2 MPA (0.5 TO 2 BAR) AS A FUNCTION OF THE WORKING TEMPERATURE OF THE PRODUCT BEING USED.

THE MAIN CHARACTERISTICS TO KEEP UNDER CONTROL IS THE SWELLING OF THE BAG WHILE GAS IS BLOWN INTO IT.

THE BAG MUST NOT SWELL AT A LEVEL SHOWING AN EXCESSIVE INTERNAL PRESSURE. ONLY VERY SLIGHT SWELLING OF THE BAG IS ALLOWED.

WE RECOMMEND TO REGULATE THE SHOT BY BEGINNING AT A VERY LOW PRESSURE (ABOUT 0 BAR) AND RAISING THE PRESSURE SLOWLY UNTIL THE FOLLOWING CONDITIONS ARE MET:

A) THE HEAD IS FREE OF SPEELS.

B) THE UPPER INTERNAL PART OF THE STRAW IS CLEAN (see chapter 6).

A TOO HIGH GAS PRESSURE CAN GIVE SOME DAMAGES TO THE PACK (EXPLOSION, HOLES, ...) THEREFORE IT IS REALLY MANDATORY THAT AT THE INITIAL PRODUCTION PHASE THE CONDITION OF PACKS ARE WELL CHECKED IN ORDER TO AVOID ANY WEAKNESS ON PACK ITSELF.

2.4.5 CAP SUPPLY GROUP

The cap supply group is composed of three components:

1) Cap supply hopper
2) Cap supply channel (twist)
3) Tear-off head

The purpose of the group is to put on the straw the cap after the filling operation.

FIG. 12

2.4.5.1 CAP SUPPLY HOPPER

Provides caps to machine with the open part directed downward. Two parts form it:

Vibrating unit, the coil of which generates vibration, which is transmitted to the hopper. Hopper contains the caps to be supplied.

The operation principle is as follow: the vibration, which is transmitted to hopper, is transmitted to the caps, causing them to move towards the tear-off head channel. Only the caps, which have the open end upwards, are allowed to enter the tear-off head. The caps, which have its open end downward, fall back into the hopper. Power to the cap supply system, can be turned on and off from the control panel by placing the selection switch on position 1.If the switch remains in position 0 the machine does not work.

The vibrator can be regulated from the control box located within the electrical cabinet

2.4.5.2 CAP SUPPLY CHANNEL

The cap supply channel is a guide for the cap toward the tear-off head. It is strongly connected with the vibrator hopper, to have an easy descending of the cap. At the beginning of the channel there is an optical fibre to avoid the lack of caps.

2.4.5.3 TEAR-OFF HEAD

Prepare and maintains the cap in correct position. When the straw passes under the head, the straw enters the cap and is extracted from the mobile tweezers (2), which hold it. The blade (3) holds the cap on the straw in order to prevent it from being lost prior the pre-tightening task. Blade pressure may be regulated by the screw (4).
A photocell (5) check the presence of the cap on the head, and in case of missing cap the machine is stopped, or cannot be started.

2.4.6 PRE-TIGHTENING

At the end of the chutes there is a photocell sensor that informs when the chute is empty or caps are present inside.
The cap pre-tightening device is located immediately after the tear-off head. During table motion translation, immediately after the cap is placed on the straw, the cap slides against the notched vulcanised rubber pad. The spring pushes the rubber pad against the cap which applies pressure against the cap.
The pressure between the cap and the rubber pad is regulated by screw and determines the pre-tightening torque.
In order to avoid that the cap exits with the end open upward, a steel blade remains on top for the entire operation. At this point the cap has reached the desired torque value and is ready to be tightened

FIG.13

2.4.7 TIGHTENING

The cap tightening system has 2 Brushless motor with a rated torque of 1,4 Nm and 3000 rpm. Its function is to tighten the caps at the right torque, the adjustment is possible for the operator via touch screen.

When the table stops and the screwdriver column is down the cap tightening system starts to rotate clockwise.

The torque adjustment can be done at any moment.
When the right torque is reached the electronic driver gives a signal to the PLC, in case of no signal to the PLC the pack will be rejected.

FIG. 14

2.4.8 CAP TIGHTENING CHECK

The cap tightening check device has to verify the right position of the cap after the final tightening, performed in the previous station.

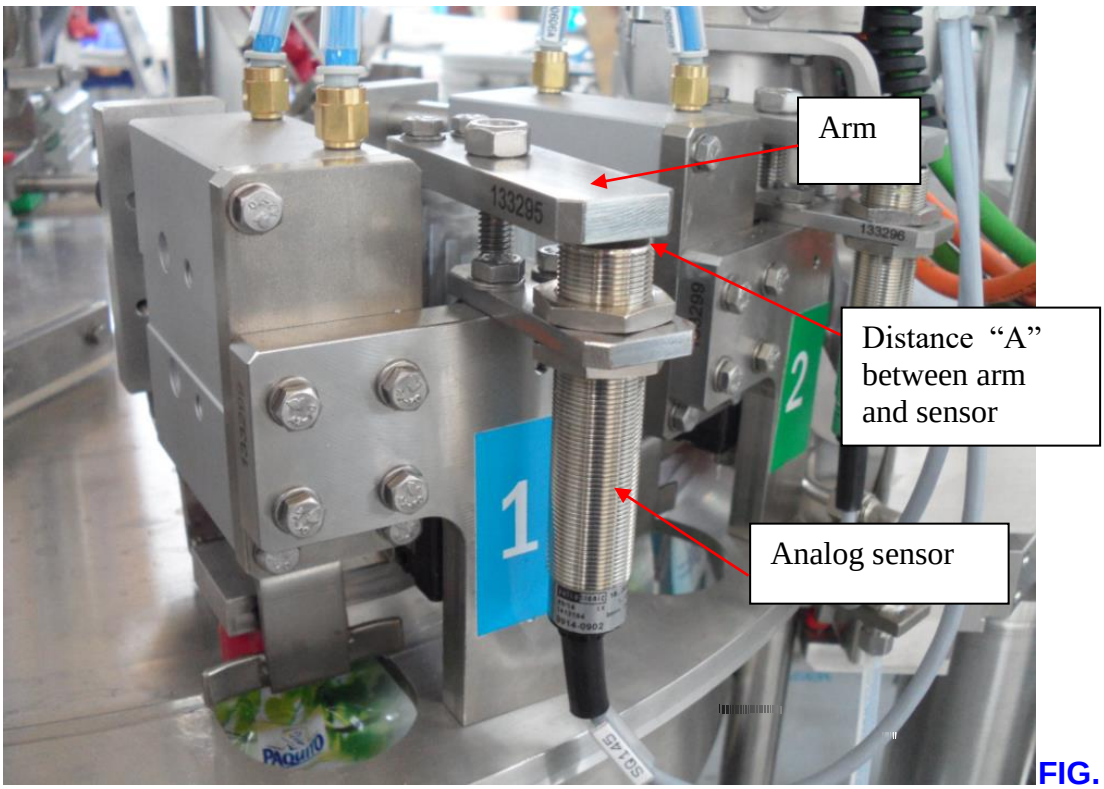


FIG. 15

It is based on a check of distance A. The device is comprised of a lever arm system, placed on the fulcrum point of its structure. On one end of the lever arm system a weight is welded the lower part of which is shaped to allow the approaching cap to be positioned or allow it to slide. The opposite end of the lever activates the analogue proximity, that can be return a voltage value according to the distance from the proximity and the lever arm end.
This proximity is calibrated to the correct tightening position, depending on the type of cap being used. For details on the calibration procedure see chapter 5, and see also chapter 6 about the cap position control.
When an under tightened cap is detected, the distance A becomes greater than the standard value, the machine is stopped and the unscrewed indication appear on the control panel.
When an over tightened cap is detected or a straw without cap is detected, the distance A is less than the standard value. In this case the over screwed or cap loss indication appear on the control panel.
The stop screw has been provided to avoid the contact of the lever arm with the proximity switch.

2.4.9 OUTPUT POUCH CONVEYOR BELT

The pack output is normally a conveyor chute that may change in case of special layout requirements.

2.4.9.1 REJECTED POUCH

In case of defective pouches (filling or capping phase) the pack has to be rejected. When the defective pouch is on the discharge position, that usually remove the pack from the rotary table, the pneumatic pusher is not activated and so the pack remain on the table. At the next step of the table this pack is rejected from the table and falls in a gravity chute.

2.4.10 ELECTRICAL PANELS

For easy explanation, the electrical system will be divided in different group as below:

- Electrical box
- Main control board
- Secondary control board

CAUTION

Because all movements of the filling machine are controlled by means of electric and electronic device, it is suitable to check the machine periodically, and only with qualified technician.

A copy of the electrical drawing is enclosed to the present manual.

The primary control board is placed on left side of the electrical cabinet, and includes all the function selector and push button, to control the filling machine.

✓ **Start cycle**
This pushbutton starts the cycle of the machine, during the machine operation the green light is ON.

✓ **Stop Cycle**
This pushbutton stops the operation of the machine at the end of the cycle, thus the filler can restart without problems when needed.

✓ **Bypass temperature control**
This selector with key has to be always in OFF during normal production, in this case the product temperature is compared with the set point and in case of temperature lower than the set point the filler goes in alarm condition and stops.
The position ON has to be used only in special cases like test of the machine during maintenance as in this position no control is active on the product temperature.

✓ **Alarm Reset**
In case of an alarm this pushbutton light with red blinking, at the same time an alarm message appears on the machine display.
The Alarm reset pushbutton has to be pressed only when the alarm condition has been removed.

✓ **Left Jog**
This pushbutton commands one step to the left rotary table. This operation is not possible with the machine operating in automatic cycle.

✓ **Right Jog**
- ✓ This pushbutton commands one step to the right rotary table. This operation is not possible with the machine operating in automatic cycle.

✓ **Cleaning**
As soon as this selector in on position 1 the filling unit goes up at one position where it is possible to place under them the cleaning kit, at the same time the dosing pumps move to the maximum possible volume.
The cleaning cycle starts when the Start pushbutton is pressed.

✓ **Emergency reset**
This pushbutton resets the emergency stop of the machine.
This operation is not possible with open doors or Emergency pushbutton pressed, in this case the pushbutton red light is blinking. When all doors and Emergency pushbuttons are in good position the red light is stable and then it is possible to reset the Emergency.

✓ **Emergency stop**
When this pushbutton is activated the machine stops immediately in emergency conditions.

2.5 RULES – CERTIFICATION – LIMIT FOR USE.

The filling machine is been designed and built taking care the security requirements according to the standard 89/392/CEE and following update.
Below all used rules are reported.

ATTENTION

READ CHAPTER 3, TO HAVE DETAILED INFORMATION ABOUT THE SECURITY USE OF THE FILLING MACHINE.

2.5.1 TECHNICAL STANDARD USED.

The technical standard used to design the filling machine is as follow:

EN 292-1	Security of machine. Basic concept, general principle for designing
EN 292-2	Security of machine. Basic concept, general principle for designing
EN 294	Security of machine. Distance of security to prevent dangerous zone that can be reach by upper part of human body
EN 349	Security of machine. Minimum distance to prevent injury to human body
EN 418	Security of machine. Emergency stop system, principal for functional designing.
prEN 811	Security of machine. Distance of security to prevent dangerous zone that can be reach by lower part of human body
PrEN 894-1	Security of machine. Principle to design control and signal device. First part: Man – machine interface
PrEN 894-2	Security of machine. Principle to design control and signal device. Second part Signalling device
PrEN 894-3	Security of machine. Principle to design control and signal device. Third part: Command device
PrEn 953	Security of machine. General information to design and to build safety guard.
PrEn 954	Security of machine. Element for system of command related to the security – First part: Principle to design.
PrEn 1050	Security of machine. Valuation of risk
PrEn 50099-1	Security of machine. Visual, acoustic and tact signal
En 60-204	Electric equipment for machine

2.5.2 FILLING MACHINE CERTIFICATION.

Enclosed with the filling machine a Conformity declaration is supply, according to the standard 89/392/CEE.
The **CE** stencils on the machine highlight this complying.
All supplier declarations are enclosed with the present manual.

2.5.3 FOOD CONTACT MATERIALS AND OBJECT

FCMO

All FCMO components are classified and identified comply whit the relevant directives and regulations.
In particular they comply whit the following **U.E.** Regulations.
Reg. 1935/04/CE and any specific provisions for individual materials.
Reg. 2023/06/CE
USA Regulations.
FDA Cpt 21 CRF – 1 April 2017 - Part 170 - 199
Indirect food additives=Materials and Objects in contact whit food.
FDA Cpt 21 CRF – 1 April 2017
PART 110 - Current Good Manufacturing Practice in Manufacturing, Packing, or Holding Human Food - Subpart C--Equipment
Sec. 110.40 Equipment and utensils da (a) a (g)

2.5.4 ENVIRONMENT CONDITION FOR USE.

The filling machine must be installed in an environment equipped with the necessary security device according to the law.
The operating temperature must be between 0° and 35° C.

2.5.5 LIGHTING.

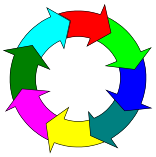
At customer charge the responsibility to provide a good lighting of the room where to filling machine is placed, according to local laws and the ECC standard. When necessary, during the maintenance is convenient to use a portable lamp, to guarantee to operate in security.

ATTENTION

In case of supplementary device installed over the machine (i.e. laminar flux ceiling) check the light level to be in the correct range.

2.5.6 VIBRATION.

The vibration produced by the machine is not dangerous for the operator health.



WARNING

An excessive vibration can be due only by a mechanical defect on the filling machine that must be immediately reported to the maintenance operator, to guarantee the safety of the machine.

2.5.7 NOISE.

The noise level is less than **85dB**, according to the ECC standard.

2.5.8 SCRAP AND ENVIRONMENT CONTAMINATION.

The products allowed to be filled with the machine are the following

- Isotonic products
- Fruits juice
- The
- Ice cream
- Honey
- Jam
- Tooth paste
- Sauce
- Yogurt

The customer must evaluate the grade of contamination of the filled products and must provide the correct solutions, to avoid health problem of the operator.

2.5.9 DISMANTLING OF THE MACHINE.

The possible dismantling of the filling machine must be entrusted to qualified personal with suitable tools.
This to comply with the laws of components disposal.

PRECAUTION

Before to start the dismantling of the filling machine, create space enough around it to allow, in safety, all movements of the operators.

Below a list of fundamental steps of filling machine dismantling

- Disconnect all machine supplies
- Empties the tank and all circuits
- Dismount the parts of filling machine and dived it according to the material types.

ATTENTION

Some components must be handled with suitable lifting devices.

INDEX

3.1 GENERAL INFORMATION– USE – WORKING AREAS.

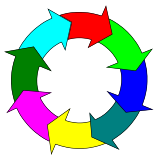
3.1.1 GENERAL INFORMATION.

The customer must provide to train the operators on the accident risk, on the security devices and on the general rules about the accident prevention, according to the ECC standard and according to the local laws.

The operator must know the location and the function of the command and each characteristic of the filling machine. Moreover, the present manual must be read before to operate on the machine.

The maintenance intervention must be done by qualified personnel, with the machine placed in a correct state.

To tamper or to change without authorization one or more components of the machine, to install devices that can modify the use of the machine (see chapter 3.1.2), and to use different spare parts, can cause risk of accident on the machine.



WARNING

The clothing of the operators (production or maintenance), must be according to the ECC standard 89/656/CEE and 89/868/CEE and to the local laws.

For any intervention in high temperature areas, like the product tank, is necessary to use protective gloves.

ATTENTION

To eliminate risk of dragging, or other, it is better not wear bracelets, watches, rings or neck's chain.

3.1.2 EXPECTED USE NOT EXPECTED USE, INCORRECT USE.

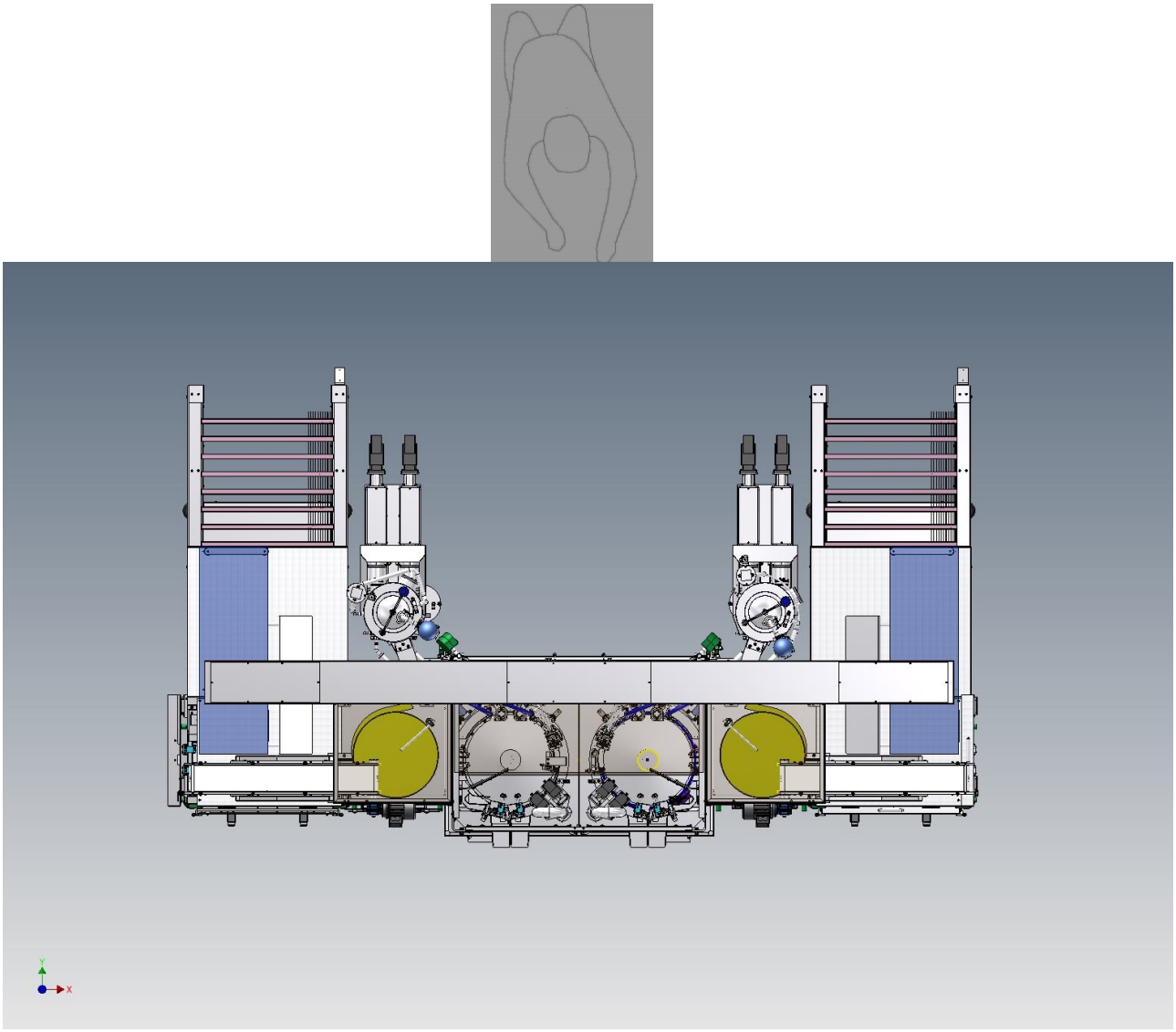
The filling machine CHP-4H is designed to fill food and no-food products, as in the following table

Isotonic products
Fruit juices
The
Ice cream
Honey
Jam
Tooth paste, soap
Sauce
Temperature Min-10°C Max 94°C
Holding time max 30 minute

Any other product not listed above, is a not expected use of the filling machine, so Gualapack refuse any responsibility on the possible damage on the machine. Possible use of other products must be object of authorization of Gualapack.

3.1.3 WORKING AREA, COMMAND AREA AND SECURITY AREA.

During the normal work in automatic cycle, the operator must be present at least in one of the areas signed in the following picture. He will check the main control board and the filling area, the pouch's loaders, and the output conveyor area.



3.2 RISK, PROTECTIONS, WARNINGS.

3.2.1 GENERAL SAFETY.

According to the **ECC MACHINE DIRECTIVE,** the following words are defined:

- **DANGEROUS AREA**: an area inside or near the machine where the presence of the exposed person can be a risk for the security of the person itself
- **EXPOSED PERSON**: any person partially or completely located in a dangerous area.
- **OPERATOR**: charged person to install, to run, to tune, to execute the normal maintenance, and to clean the machine.

During the designing phase, any dangerous areas have been evaluated, and the suitable actions have been taken to avoid risk to the operator, and to avoid damages to the machine.
To guarantee the health and the security of the exposed person, on the machine the following security devices are installed:

- Security limit switch on each door or mobile guard
- Fixed guards screwed with socket head screw
- Electronic devices to detect working faults, like compressed air, over temperature, end of working product, and any faults on electric device (motor, etc).

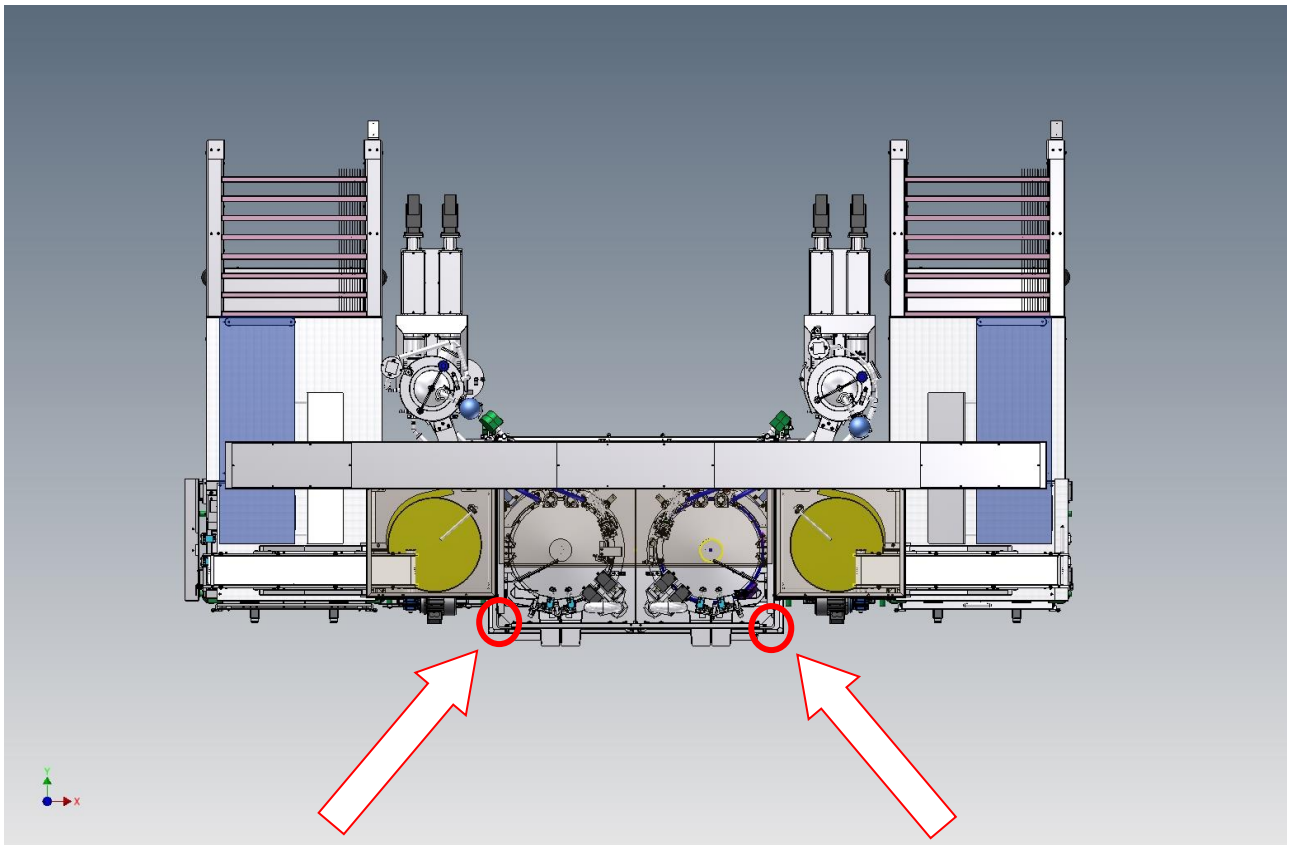
ATTENTION

Periodically check the functioning of any security device. (see Chapter 7).

3.2.2 RISK IN THE WORKING ENVIRONMENT.

The environment where the filling machine is placed, must observe the machine characteristic, reported in the chapter 2.3 and to be taken in consideration the information reported in the chapter 4.2.

Due to machine operation, floor near filler could be wet.
Filler has two draining points, as shown in following picture:



It's customer responsibility to collect water falling from these draining points or provide a safe floor to guarantee a safe environment for operators, according to local legislation.

3.2.3 RISK ON THE MACHINE.

After to be taken in consideration all possible risk of the filling machine, any solutions have been adopted to eliminate and to reduce the danger to the exposed person.
But on the machine equipped with these safety devices, the following risk are still pending.

3.2.3.1 POUCH LOADER

- Squashing risk in the loading area
  While the operator is loading the plastic rail with the pouches, is possible to squash the fingers into the rail support.

3.2.3.2 ROTATING TABLES

- Squashing and dragging risk if the machine is working with the safety device tampered.

ATTENTION

DO NOT TAMPER THE SAFETY DEVICE AND THE PROTECTION GUARDS.

- Scorching risk in the filling group
  By operating over the filling group (tank, pumping unit, filling valve) scorching can be possible when the machine operates with product at high temperature (80-90 °C).

ATTENTION

Wear protective gloves while operating over the above group.

3.2.4 RISKS.

List of risk in the filling machine

MACHINE BED GROUP: no risk

POUCH LOADER GROUP

A) Squashing
- Due to the movement of the two pushers of the pouches

B) Danger due to problem or malfunction of the control system
- Not controlled start of the loader

PRINTING ROTATING TABLE

A) Squashing and dragging
- Due to the movement of the rotating table

B) Danger due to problem or malfunction of the control system
- Not controlled start of the rotating table

POUCHES TRANSPORT CHAIN

A) Squashing and dragging
- Due to the movement of the chain and its mechanical part

FILLING GROUP

A) Scorching risk
- Due to the high temperature of the cleaning product in the filling circuit

B) Squashing and dragging
- Due to the movement of the filling valve

CAPPING GROUP

A) Squashing and dragging
- Due to the movement of the screwdriver groups

OUTPUT CONVEYOR

A) Squashing and dragging
- Due to the movement of the belt conveyor

B) Scorching risk
- Due to the high temperature of the product filled in the pouches.

ATTENTION

TAKE CARE TO AVOID MOVING THE MACHINE WITH PERSON INSIDE.

3.3 ACCIDENT PROTECTION.

The machine is equipped with doors/guards at avoid to the operator to reach dangerous components. (see chapter 3.2.3).
There are two types of protection:

- Fixed protection: installed only in the areas to exclusive access for maintenance. They are fixed with system where a special tool is required to remove them. (Example: socket head screw).
- Mobile protection: for the machine areas to be access frequently, and fixed with easy removable device (doors), but controlled with special electric device, that switch the machine in a security condition while engaged.

ATTENTION

IT IS FORBIDDEN TO TAMPER THE SECURITY PROTECTION OF THE FILLING MACHINE, OR THE WARNING TAGS. GUALAPACK SPA IS NOT RESPONSIBLE OF THE SECURITY OF THE MACHINE IN CASE OF NOT COMPLIANCE THE PROHIBITION.

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4.1 PACKING, HANDLING, SENDING, TRANSPORT.

The person used for the handling operation of the filling machine, must be trained for that activity (lift driver, crane operator, etc), to prevent any accident risk and wrong operation that can damage the filling machine, during to movement.
It is important to plan also the help of one person to indicate, at the lift driver or at the crane operator, the single movement when the visibility is not enough to ensure an operation in safety.

GUALAPACK REFUSES ANY RESPONSIBILITY ON CASUALTIES OR DAMAGE DUE TO WRONG HANDLING OF THE LOADS, EXECUTED BY NOT CHARGED PERSON OR WITH WRONG DEVICES.

According to the final destination the filling machine can be sent:

- Fixed on a wooden pallet by lorry
- In a wooden box clamped on the lorry
- In a wooden box with special protection for shipping by sea
- In a container with internal clamp

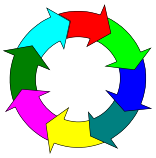
In all the conditions the machine can be prepared to shipment disconnecting the cheer-pack feeders, removing both the product reservoirs, disconnecting the main electrical cabinet and the output conveyors. All these disconnected machine parts and any contingent accessory will be sent whit the same kind of packaging used for the machine.

Transport on pallet

The machine is not protected against incidental impact, with the exception of spare parts.

Transport in boxes

Carrying the boxes, be careful at theirs barycentre and lift them just at the minimum necessary level.



WARNING

Each box must be open, by removing the top cover first, and then the lateral walls.
The box containing only not mounted components, must be open by removing the top cover only.

When the assembling of the machine begins, open the box only in the indicated sequence.

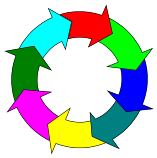
Transport in container

The filling machine is loaded and fixed into the container according to the specific requirement. The information to move in safety the single parts will be placed on each component of the machine.

CAUTION

The customer must check always the condition of the machine when it arrives in his factory, whatever the transport used.

Take into consideration the dimensions and the weight of the filling machine when lift it (see chapter 2.3).
In case of contact between the sling rope and the machine body, insert a protection element.
The capacity load of the lifting device, must be adequate to the weight of the component to be lifted, plus the safety limit.



WARNING

NEVER USE A LIFTING DEVICE NOT ADEQUATE TO THE SECURITY RULES.

One of the best way to handle the machine is using 2 fork lifts (60 ton each) to have a good balance of the weight.

To dispose the packing, the customer must take into consideration the laws of his country.

GUALAPACK SPA REFUSE ANY RESPONSIBILITY ON CASUALTIES OR DAMAGE DUE TO WRONG HANDLING OF THE LOADS.

Handling.

Before to move any box, pallet or part of the machine, take preventative measures against tilting risk!

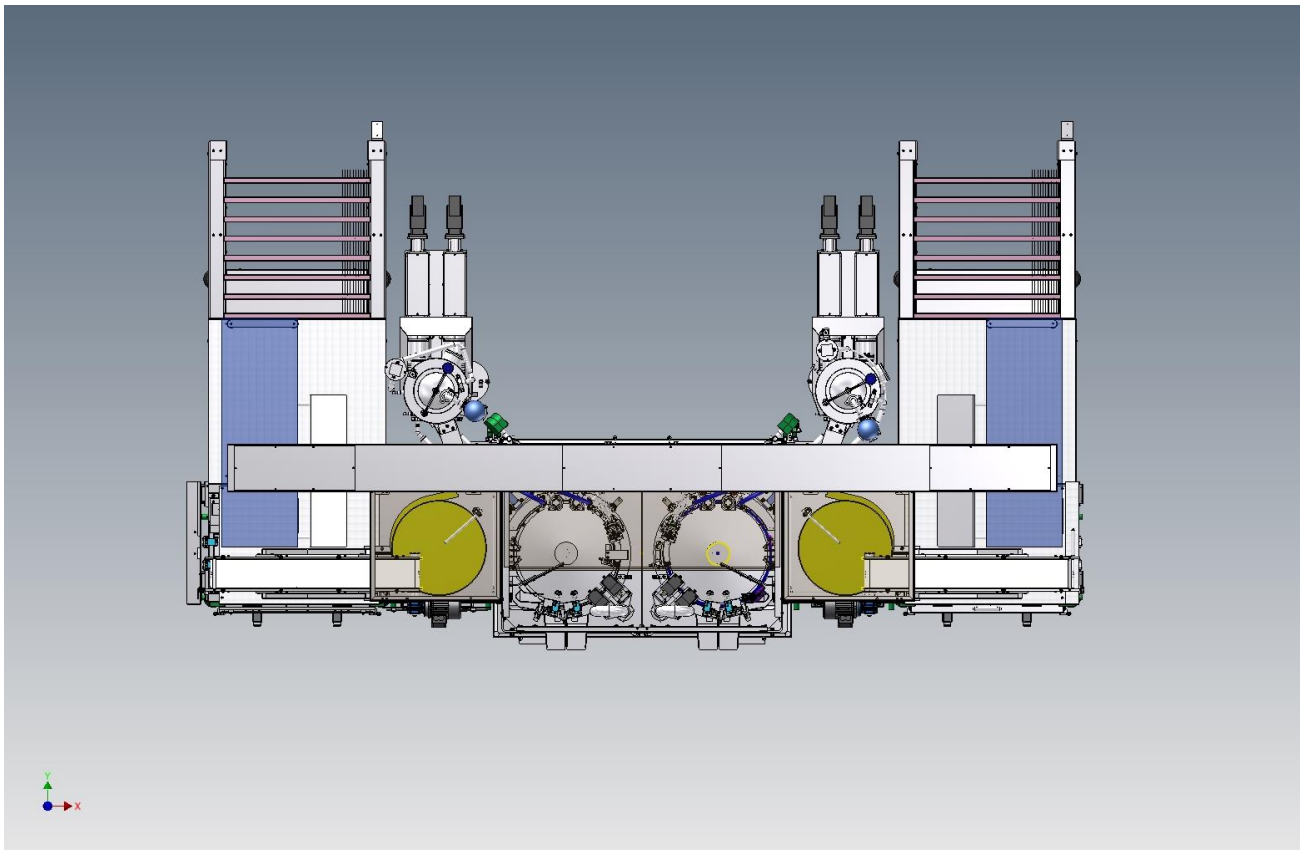
Handle the parcels in the original packaging until reached the destination place.

The handling of the machine must be done only by means two adequate forklifts acting on the properly anti-tilting device under the stainless-steel frame.
Never lift or move the machine acting on the upper frame.

4.2 CHOICE OF THE PLACE AND VERIFICATION OF THE INSTALLATION REQUIREMENT.

The customer must arrange a room with enough free space around the filling machine (at least 1 meter for each side) paying also attention to the passage for the rough materials.

The room must be equipped with all supplies needed by the machine (air, power supply, water, etc. see chapter 4.5) for a right functioning.
The space around filler must be 2 meters for every side.



4.3 PREPARING FOR THE INSTALLATION AND GROUNDWORK.

The ground floor installation area must be capable to support the weight specification, reported in chapter 2.2.
Moreover must be smooth and capable to support the unit load on the bearing of the machine.
The ground floor slope must be between 5 and 10 mm/mt.

4.4 ASSEMBLING.

The assembling operation must be done by GUALAPACK technicians or other engineer well erudite on accident prevention measures and with explicit authorization of GUALAPACK Spa.

GUALAPACK REFUSES ANY RESPONSIBILITY ON CASUALTIES OR DAMAGE DUE TO WRONG HANDLING AND ASSEMBLING EXECUTED BY PERSON WITHOUT EXPLICIT AUTHORIZATION OR WITH WRONG DEVICES.

4.5 CONNECTION TO THE SUPPLIES.

4.5.1 CONNECTION TO ELECTRIC SUPPLY.

The connection to the electric power supply, must be done according to the security rules in use in the country of the customer. The maximum power needed by the machine is 6.5 Kw.

ATTENTION

At customer charge the installation of a differential switch before the main switch of the filling machine.

The section of the cables to be used to connect the filling machine must be calculated taking into account the max power and the distance from the power source.

Cable
Phase R – S – T
Neutral
Ground

The cable is to be connected to the main electrical cabinet on the left upper part of the electrical cabinet located on the left side of the machine as shown drawing 115350 here attached.

4.5.2 CONNECTION TO AIR NETWORK.

The customer must connect the air supply pipe in according to the consumption and needed pressure (see chapter 2.3)
The diameter of the pipe must be at least 1 ½ " gas.
The connection point (shown in the following picture) is located inside the basement the, as shown drawing here attached.

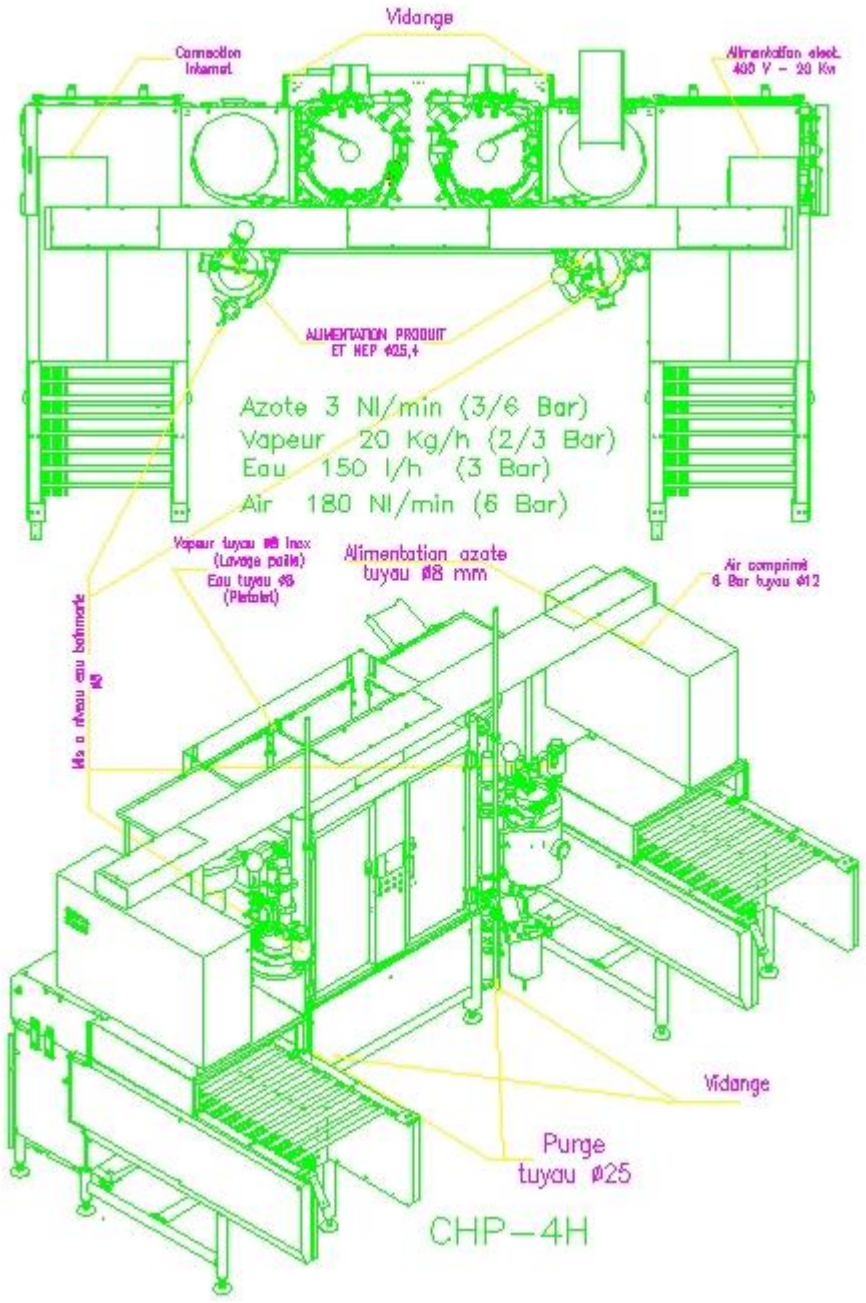


Fig. 18

CAUTION

4.5.3 CONNECTION TO THE WATER NETWORK.

One option is the straw cleaning/cooling water.
The connection point (shown in the following picture) is located behind the filling station close to the left cheer-pack feeder, as shown drawing here attached.
Moreover, we suggest to install at least one water point provided by an apposite cleaning nozzle that could reach any part of the machine.

CAUTION

On the water pipes, the customer must install a gate valve, near the filling machine, with the purpose to connect and disconnect the water easily.

4.5.4 CONNECTION TO STEAM.

One option is the straw cleaning by means steam.
The steam connection pipe must be isolated to avoid any scorching risk.

4.5.5 CONNECTION TO NITROGEN.

The machine fills the packs with product and in top of it a certain amount of nitrogen gas is placed, so it is necessary also the Nitrogen connection at a pressure of 6 bar, the connection is located above the pneumatic panel.

4.6 CONTROLS TO BE DONE BEFORE THE FIRST STARTUP

Before to start for the first time the filling machine check:

- Presence of foreign component into the machine, the can be cause of damage to the machine, during the working cycle. In case, remove it.
- All the moving part must be altogether clear in the own moving areas

To avoid damages it is better to run the first cycle manually via the handwheel.

4.6.1 LUBRICATION BEFORE THE FIRST START UP.

The machine has been lubricated before the delivery, however we suggest to check every sliding part that must be very clean and well lubricated to avoid any possibly jamming.
The customer shall maintain the lubrication of the machine according to the indication present in the maintenance table.

INDEX

5.1 PREPARING, CONTROL AND TEST BEFORE TO START.

ATTENTION

These operations must be done by GUALAPACK technicians or other engineer well erudite on accident prevention measures and with explicit authorization of GUALAPACK Spa.

GUALAPACK REFUSES ANY RESPONSIBILITY ON CASUALTIES OR DAMAGE DUE TO WRONG OPERATION EXECUTED BY PERSON WITHOUT EXPLICIT AUTHORIZATION OR WITH WRONG DEVICES.

Before to start with the setup operation of the filling machine, is necessary to perform a list of control, to avoid risk or problem during this phase.

- Check the alignment of each group
- Verify that all supplies, are been properly connected
- All the moving part must be altogether clear in the own moving areas

ATTENTION

Make a walk around of the machine, and check that no foreign parts are present into or near the machine (pipes, cables), and that these parts can not dangerous for the operator.

5.1.1 MAIN MOTOR GROUP.

Check the rotating direction of the motors as indicated below

1) Switch on the machine by rotating the main switch to ON
2) Reset the emergency fault
3) Push the start on the bags feeder and check the direction of movement of the plastic rail transport chain (toward the machine is the good direction)
4) In case of wrong movement direction exchange two wires in the main switch of the machine

ATTENTION

For an easy operation, swap the wires before the main switch.
Switch off the electricity in the cable before to swap the wires.

5.1.2 BAGS LOADER.

Check the alignment of the bags loader in respect to the pouches dispatcher guide, then between those guides and the right cart of the dispatcher (with cylinder completely extended) and in the end between the right and the left carts of the dispatcher (with both cylinder completely extended)
Verify also the correct alignment between each cart ant its inserting guide (toward the rotary table) with both cylinders in backmost position.

5.1.3 CENTRING OF FILLING VALVES.

The filling valves are practically held in position by the dimensions of the mechanical parts. The only two necessary adjustments are the vertical and the horizontal position with respect to the straw position.
When the locking clamp will be loose, the filling valve support can be rotate around his axis in order to find the proper position on to the straw.

Figure 12

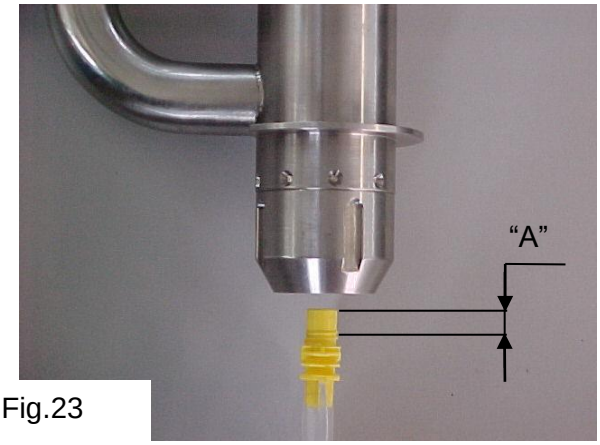


Fig.23

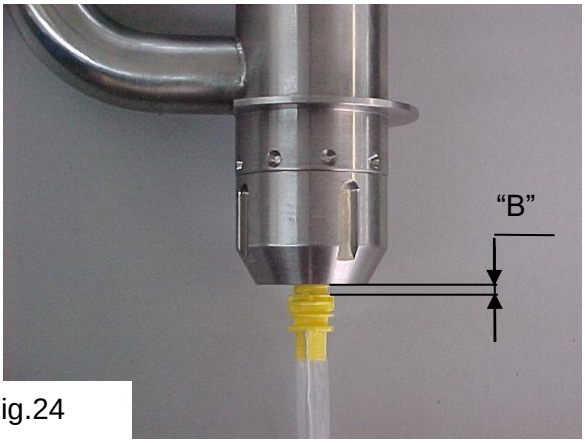


Fig.24

The dimension named “A” (straw insertion area) must be 10 millimetres and “B” (when filling unit is in lowest position) 3 millimetres.
This adjusting must be done acting on the lifting cylinder of the filling unit.

For the vertical position regulation, the regulated point is onto the cylinder rod, as shown on figure below.
It as to be regulated in order to obtain the quote B indicates in figure above. And B must be around 3 mm.

Regulated point

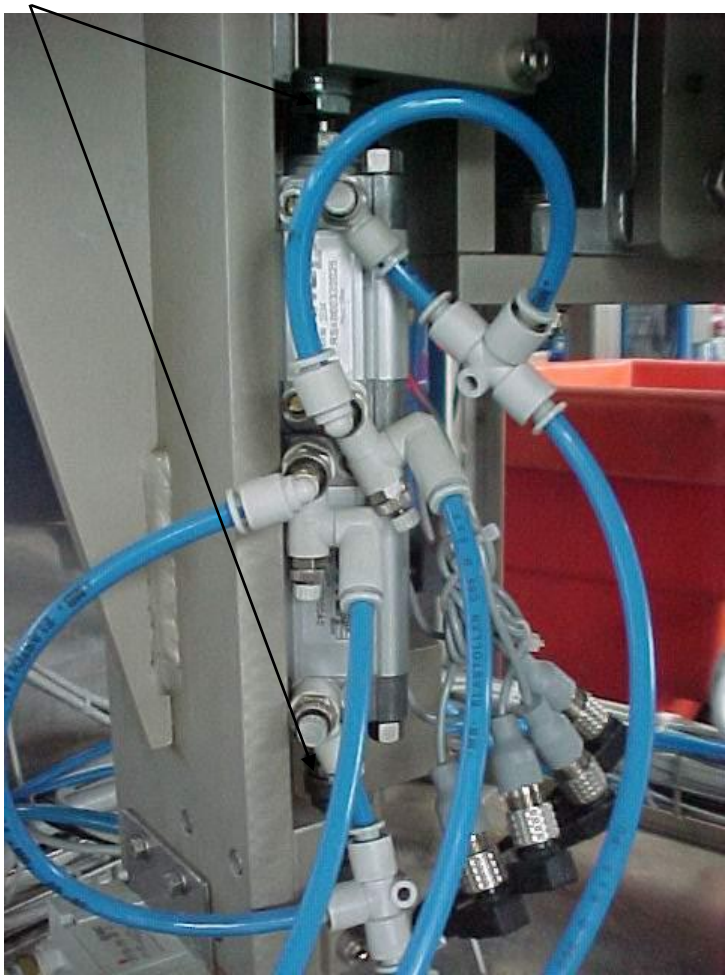


Figure 25

5.1.4 CENTRING OF TEAR-OFF HEAD.

There are two important adjustments on the tear-off head.
As shown in the following picture, the horizontal setting must be made leaving the pouch straw perfectly in the middle of the tear-off head's slot.
The vertical setting have to be made leaving the cap in the lowest possible position, paying attention to avoid the contact between the pouch straw and the external part of the cap or the tamper evident.

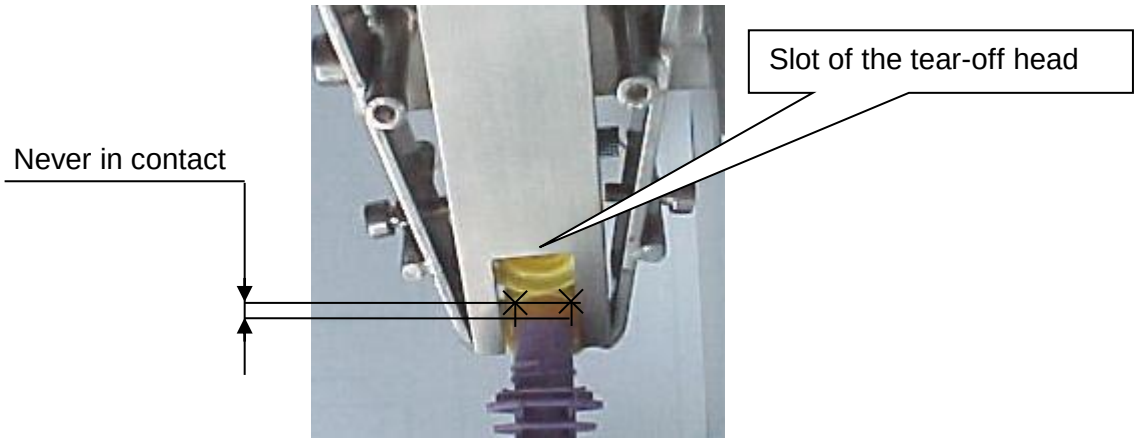


Fig. 27

5.1.5 SCREWERS CENTERING

Each Cap Screwer is practically held in position by means properly slide linear motion. The only two adjustments that are necessary are the vertical and the horizontal position with respect to the straw position.
These two settings are common to the other operating units and are described in following description

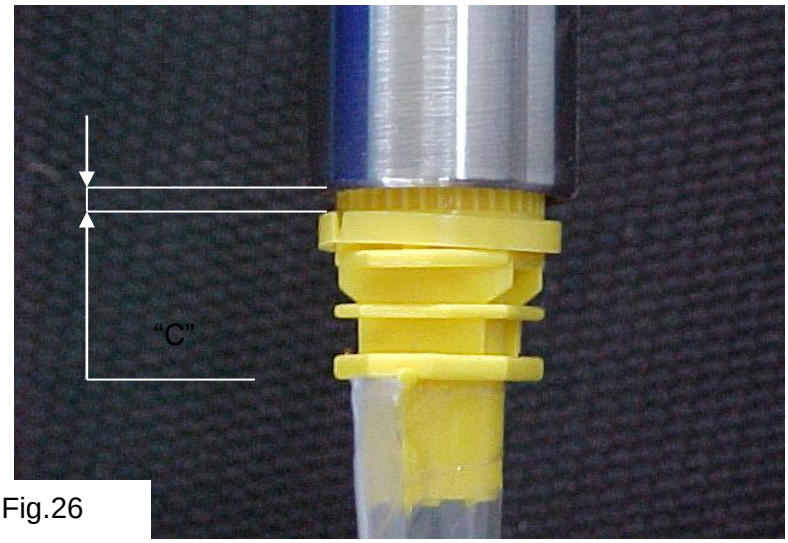


Fig.26

The dimension named "C" (between the screwdriver's end and the tamper evident when capping unit is in lowest position) must be 1-2 millimetres.
This adjusting must be made acting on the lifting cylinder of the capping unit.

5.1.6 ADJUSTMENT OF CAP CHECKING DEVICE.

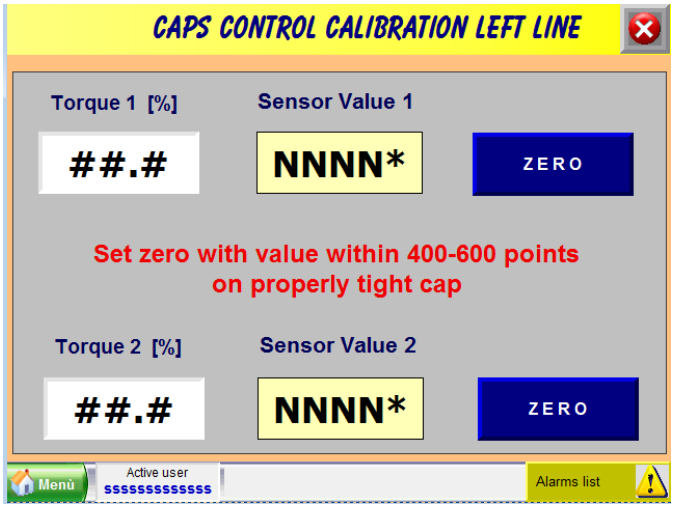
N.B. We suggest to authorize these setting operations only to the engineer properly erudite about any possibly risk following to the malfunctioning of this device.

The malfunctioning of the cap tightening check device, allow to put in production pouches with unscrewed or altogether missing cap and to reject pouches with perfectly tightened caps.

The cap height control is performed on the rotary table, by allowing the bag to pass by, with the cap screwed on the straw, in the space under the lever arm system actuator which will activate the analogical inductive proximity sensor.
The inductive proximity sensor sends a signal which varies from 0 to 10 volt, and which corresponds to a variable actuation distance from 0 to 3 mm.
There are many possibly regulations on the cap checking device; some of them are “extraordinary regulations” necessary just in extraordinary event (for example after analogical sensor replacing) and other are “ordinary regulations”;
We suggest trying to solve the problem starting with the ordinary regulations.

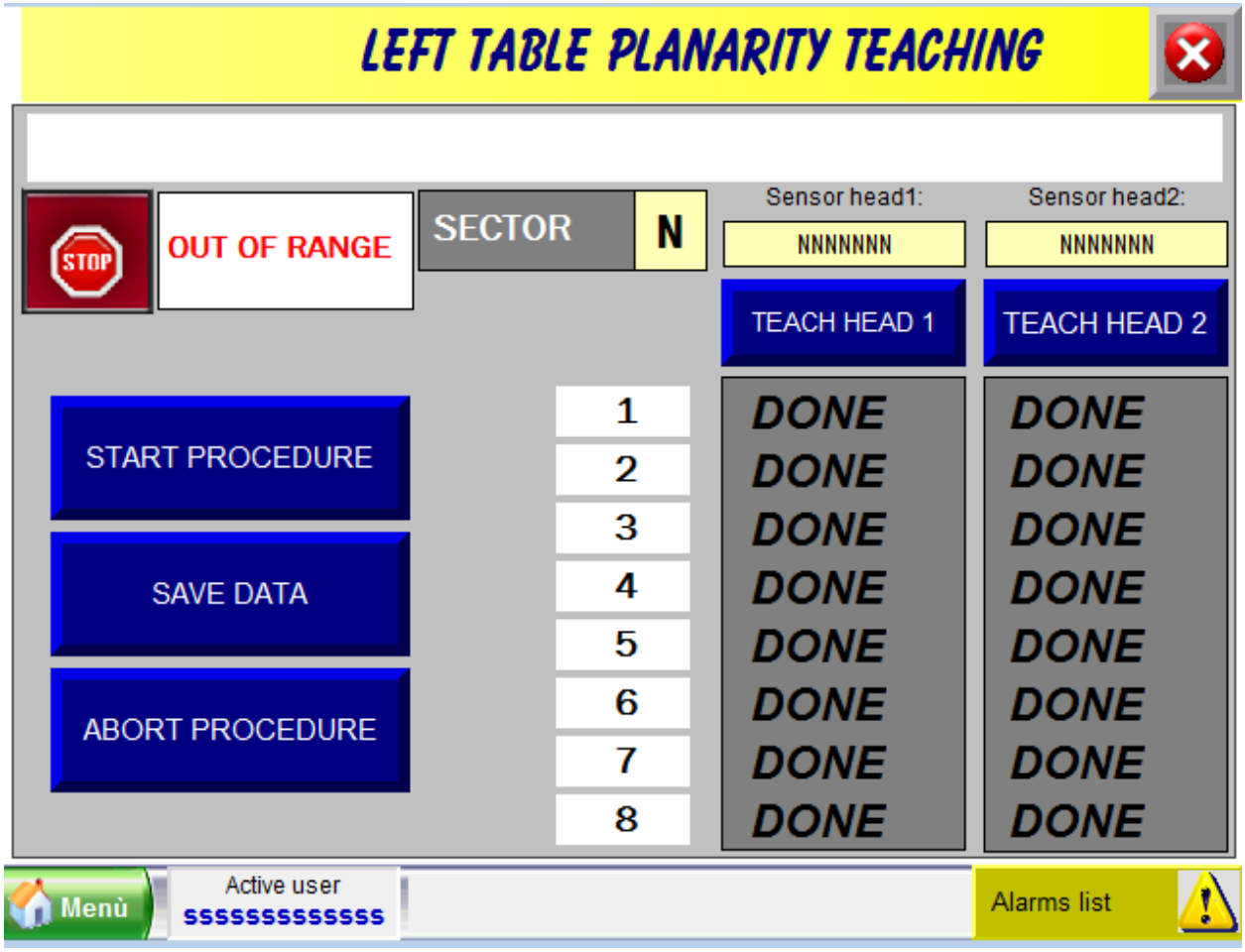
Ordinary adjustments

Please place a pouch with perfectly tightened cap under each sensor of the machine.
At this point if the value read on the display must be between 400 and 600(*) press Zero. Doing this the new reference height has been passed to the PLC. The caps are good if they stay in the window +/- 150.



Page access: **MENU → ONLY TECHNICIANS → Caps Control Calibration**
Access granted to user Maint only.

Extraordinary adjustments



This process make the cap check more precise, because it takes into account the possible variations in height of each slot of the rotating table.
Normally it's done at the first start-up of the machine, in which all the height values are stored in the plc memory.
It may be necessary to repeat the procedure in case the table has been hit, bent, or whenever the cap check is not working properly.

Page access: **MENU → ONLY TECHNICIANS → ROTARY TABLES SETTINGS → TABLE PLANARITY CORRECTION**
Access granted to user Maint only.

1) With the help of the "JOG" button, move the table until you are in the sector n° 1;
2) Press the button **"START PROCEDURE"**;
3) Put the samples under the caps control station:
4) Press **"TEACH HEAD 1"** and **"TEACH HEAD 2"** then remove the samples from the table and restart emergency;
5) Move the table to the following step with "**JOG**" pushbutton;
6) Repeat the steps from point N 3 until all the sectors show "Done"
7) Push on "Save data".

Procedure completed.

5.2 CHECK OF SAFETY DEVICES.

Before starting with the machine in production, it is mandatory to check all safety devices installed on the machine. This procedure must be adopted as a normal maintenance procedure.

5.2.1 EMERGENCY PUSH BUTTON.

With the auxiliary circuit ON, push each emergency push button, and check every time that the auxiliary circuit are switched OFF. Check also that the lamp enclosed in the Emergency Restart push button is flashing. Restore the emergency, by releasing the emergency push button and by pressing the above restart push button.

5.2.2 DOOR SECURITY SWITCHES.

With the auxiliary circuit ON, open the access doors and check every time that the auxiliary circuit are switched OFF. Check also that the lamp enclosed in the Emergency Restart push button is flashing. Restore the emergency and by closing the door and by pressing the above restart push button.

5.2.3 MAGNETOTHERMAL SWITCHES.

Open each thermal protection of the motor, and verify that a fault indication appears on the display. Restore the protection, and reset the fault by pushing the ALARM RESET push button. The Fault must disappear from the display.

5.2.4 PNEUMATIC PRESSURE CHECK.

To check the function of the pressure gauge, proceed as follow:

- With the machine in manual mode, close the main valve on the air network
- With the drain valve, on air filter group, discharge the air, until the pressure is under the value of 4 bar.
- Check that the display is showing the fault
- If the fault does not appear, on the pressure gauge adjust the pressure value, until the fault is now displaying.
- Now open the air valve, and verify to be able to reset the fault.

-

INDEX

6.1 GENERAL INFORMATION

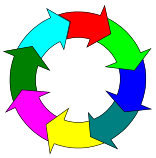
After the first setup, according with the information of the previous chapter, the filling machine is ready to run in automatic cycle.

ATTENTION

The machine must be run by qualified personnel only, which must have read the instruction reported in the present manual, and must have knowledge of the safety devices of the machine.

NOTE

Read very well the chapter 3, concerning the safety devices.



WARNING

In case of serious faults, or in case of not well known faults, stop the machine and wait for the maintenance intervention of qualified technician, or wait the GUALAPACK technical service.

6.2 USE, AREAS, OPERATORS

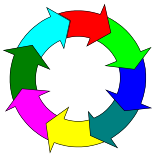
The filling machine CHP-4H is designed to fill food and no-food product as in the following table

- Isotonic products
- Fruit juices
- The
- Ice Cream
- Honey
- Jam
- Tooth paste, soap
- Sauce

Any other product not listed above, is a not expected use of the filling machine, so Gualapack SpA refuses any responsibility on the possible damage on the machine.
Use of different products must be authorized by Gualapack SpA.

The jobs of the operator are:

- ❑ Start of the automatic cycle
- ❑ Load the pouches into the loader
- ❑ Check the filling and welding operation
- ❑ Change of production
- ❑ Cleaning of the machine



WARNING

Any other job, not listed above, must be entrust to the internal maintenance operator.

Typical jobs of the maintenance operator are

- ❑ Periodic maintenance
- ❑ Periodic check of the safety devices
- ❑ Special maintenance

6.2.1 GENERAL INFORMATION

Hereby are reported the required information for a safe operation on the machine.

WARNING

The operator must know very well this manual and all command of the machine, and what to do in case of activation of a safety device.

6.2.2 USE OF THE OPERATOR INTERFACE TERMINAL (LCD DISPLAY)

This machine is provided with a LCD display that shows the machine status.
It is a screen terminal connected to the PLC used to control the machine.

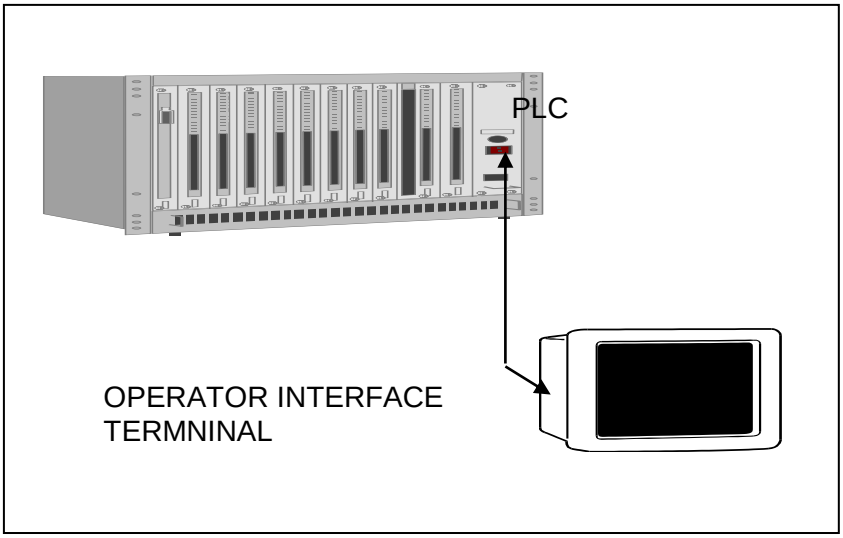
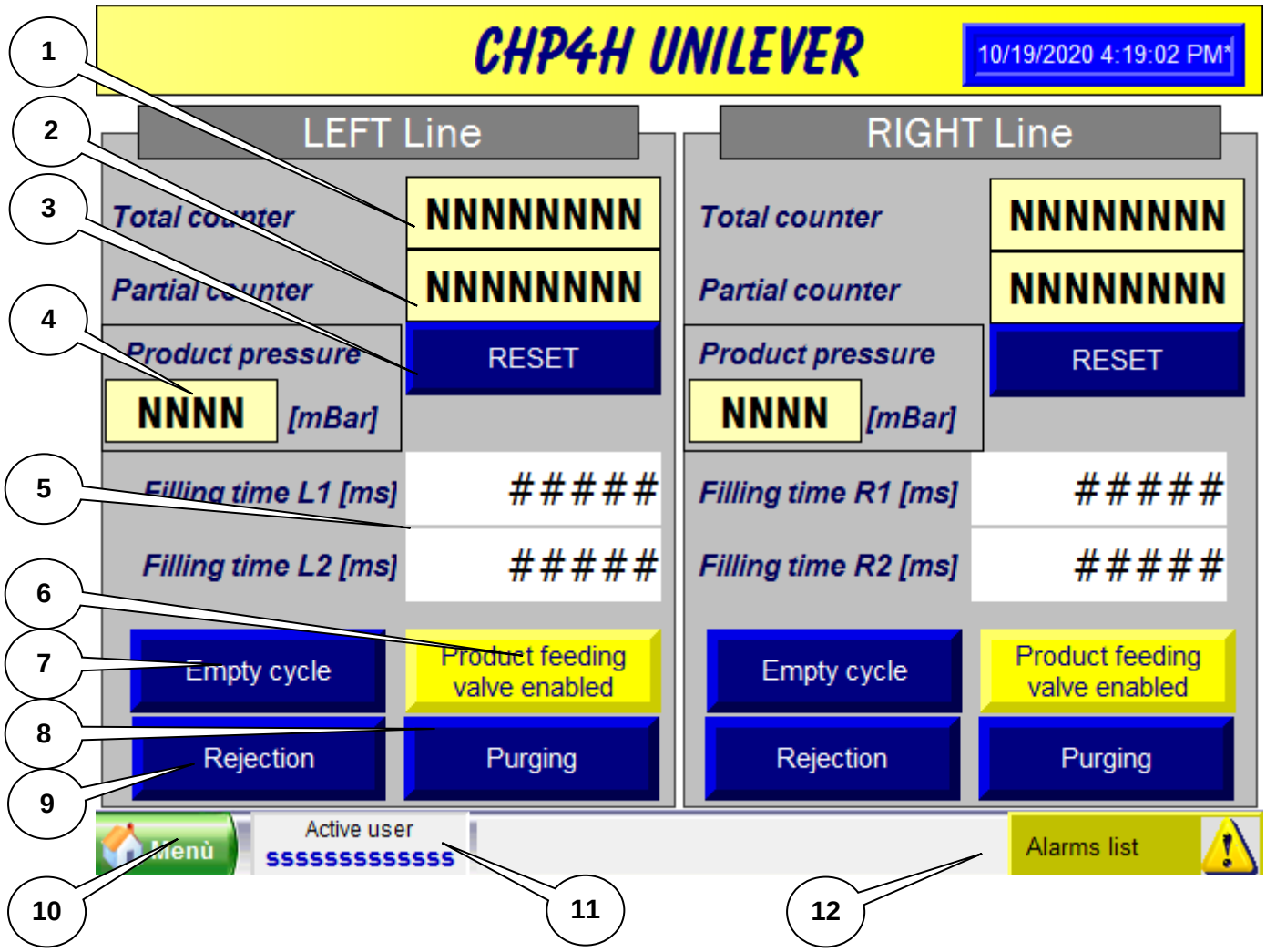


Fig. 6. 5

The terminal is a liquid crystal displays with a touch screen feature, a device that can identify when the operator push on the screen area with a finger. That allows to use this feature like a keyboard. In fact, all function key are implemented by using the touch screen.
By pushing the area over the drawn key, the terminal proceeds as when you push function key over a P.C. keyboard.
In this chapter, you will find all the explanation for the page message but alarm page (for alarm page see chapter “8 FAULT DETECTION”.

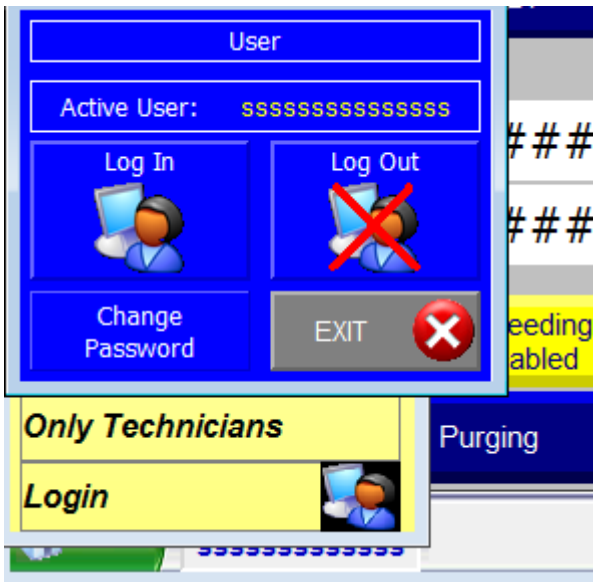
Main Page.



Pos	*Command / Fields Description*	*Granted to user:*
1)	Shows the total counter of the filled pouches per Line.	--
2)	Shows the partial counter of the filled pouches per Line.	--
3)	Resets the partial counter of the filled pouches per Line.	Anyone
4)	Shows the product pressure of the Line.	--
5)	Set the filling time in mSec (opening time of the filling valve)	Anyone
6)	Enable / disable the Product feeding valve. (Disabled=always closed, enabled=operates automatically).	Anyone
7)	Starts the cycle to empty the table, filling the present pouches.	Anyone
8)	Starts the Purging cycle. The purging cycle drains the product from the line. It is useful in the beginning of the production to evacuate the initial product since its quality and temperature is not good and before starting the CIP to evacuate the product residuals from the line.	Anyone
9)	Forces the rejection of the filled pouches regardless their quality.	Anyone

10)	Access to the following pages: - General management - Parameter setting left - Parameter setting right - Recipes - Rejection counters - Empty rails counters - Manual commands - Cleaning cycle - Machine calibration - Alarm history - Only technicians - Login	Anyone
11)	Shows the active user	--
12)	Access to present alarm list.	Anyone

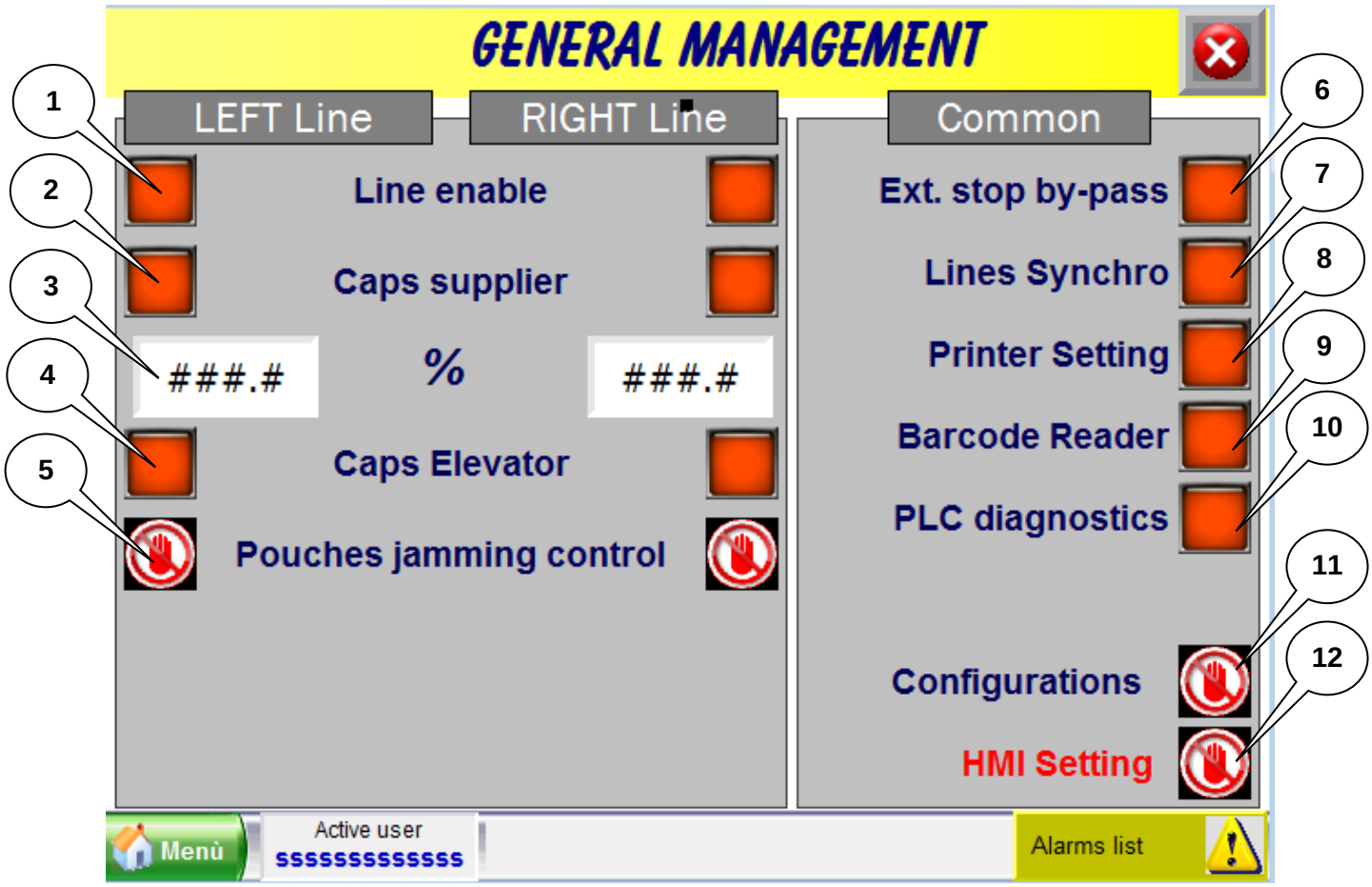
User Login access



Press Menu → Login.

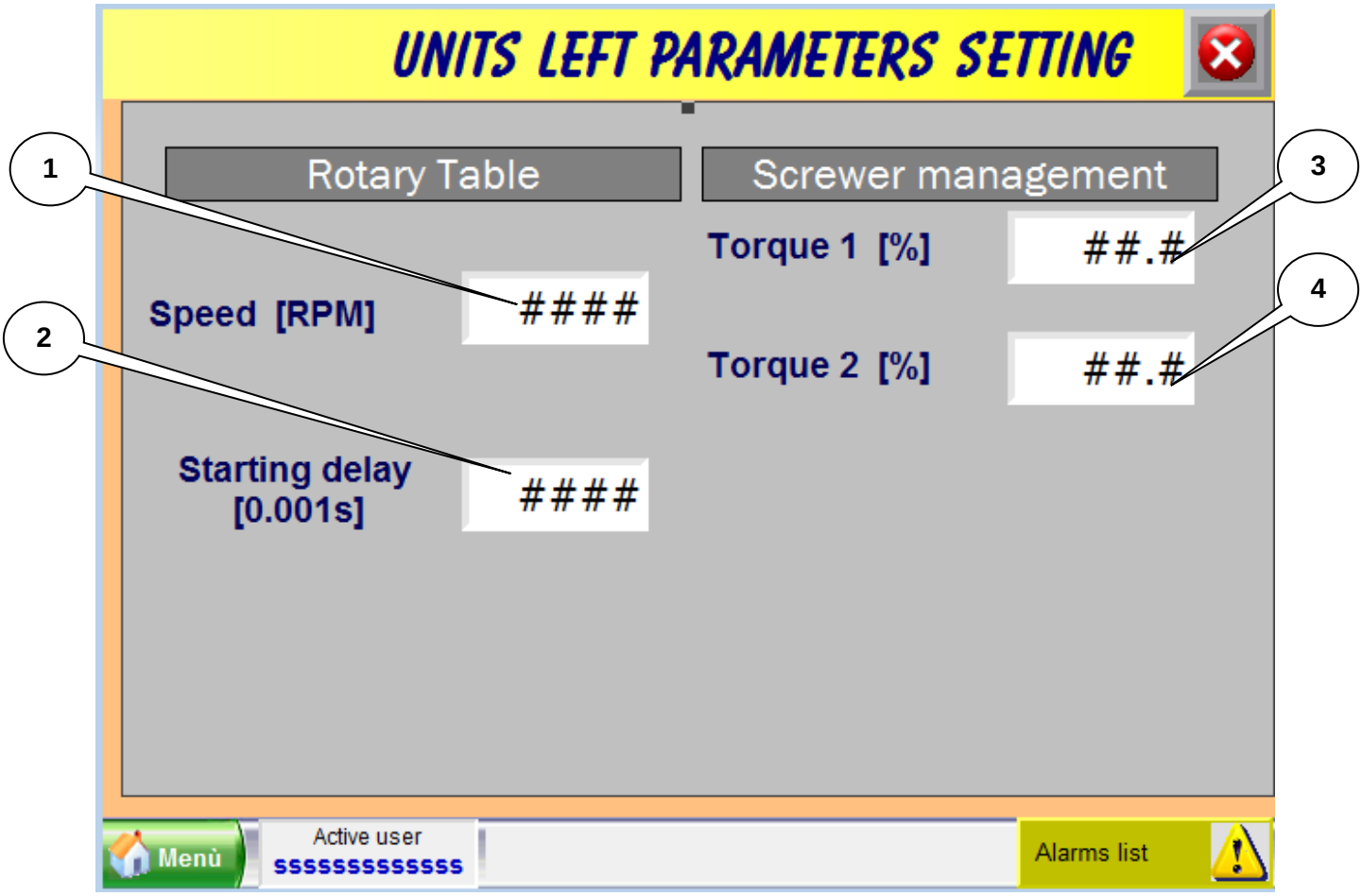
User	**Password**	**Access to:**
Supervisor	****	All production quality parameter setting.
Maint	****	All production quality parameter setting. All technical setting.

Page General Management



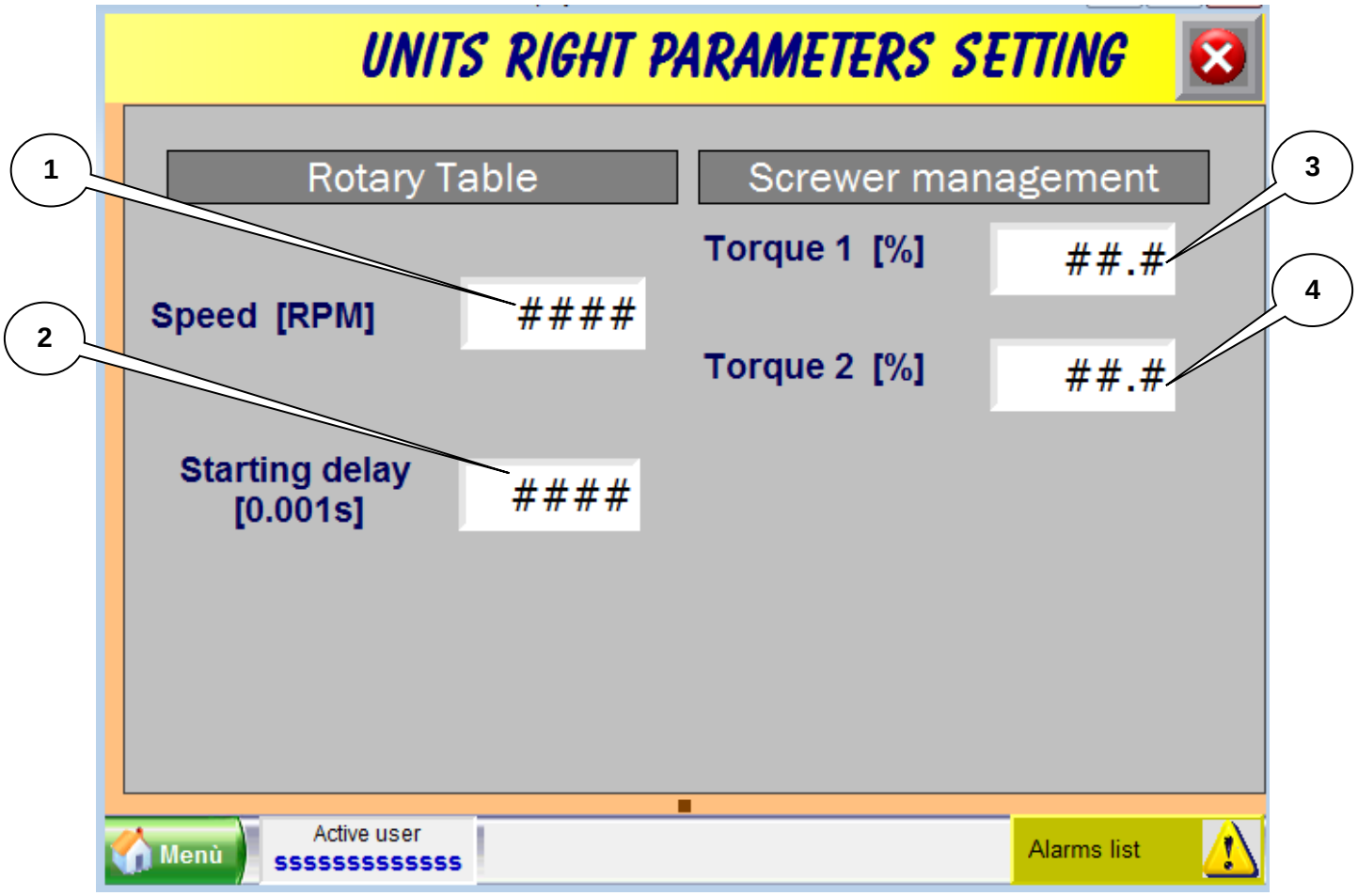
Pos	*Command Description*	*Granted to user:*
1)	Enable / disable left of right side of the filler.	Anyone.
2)	Enable / disable the caps supplier vibration.	Anyone
3)	Set the intensity of the caps supplier vibration.	Supervisor - Maint
4)	Enable / disable the caps elevator.	Anyone
5)	Enable / disable the exit pouches jamming control.	Supervisor - Maint
6)	Enable / disable the bypass of the external production authorization.	Anyone
7)	Enable / disable the synchronization between the two side of the filler.	Anyone
8)	Access to the Printer setting page.	Anyone
9)	Access to the Barcode reader setting page.	Anyone
10)	Access to the PLC diagnostics pages.	Anyone
11)	Access to the filler configuration.	Maint
12)	Access to HMI configuration.	Maint

Page Parameter setting Left.



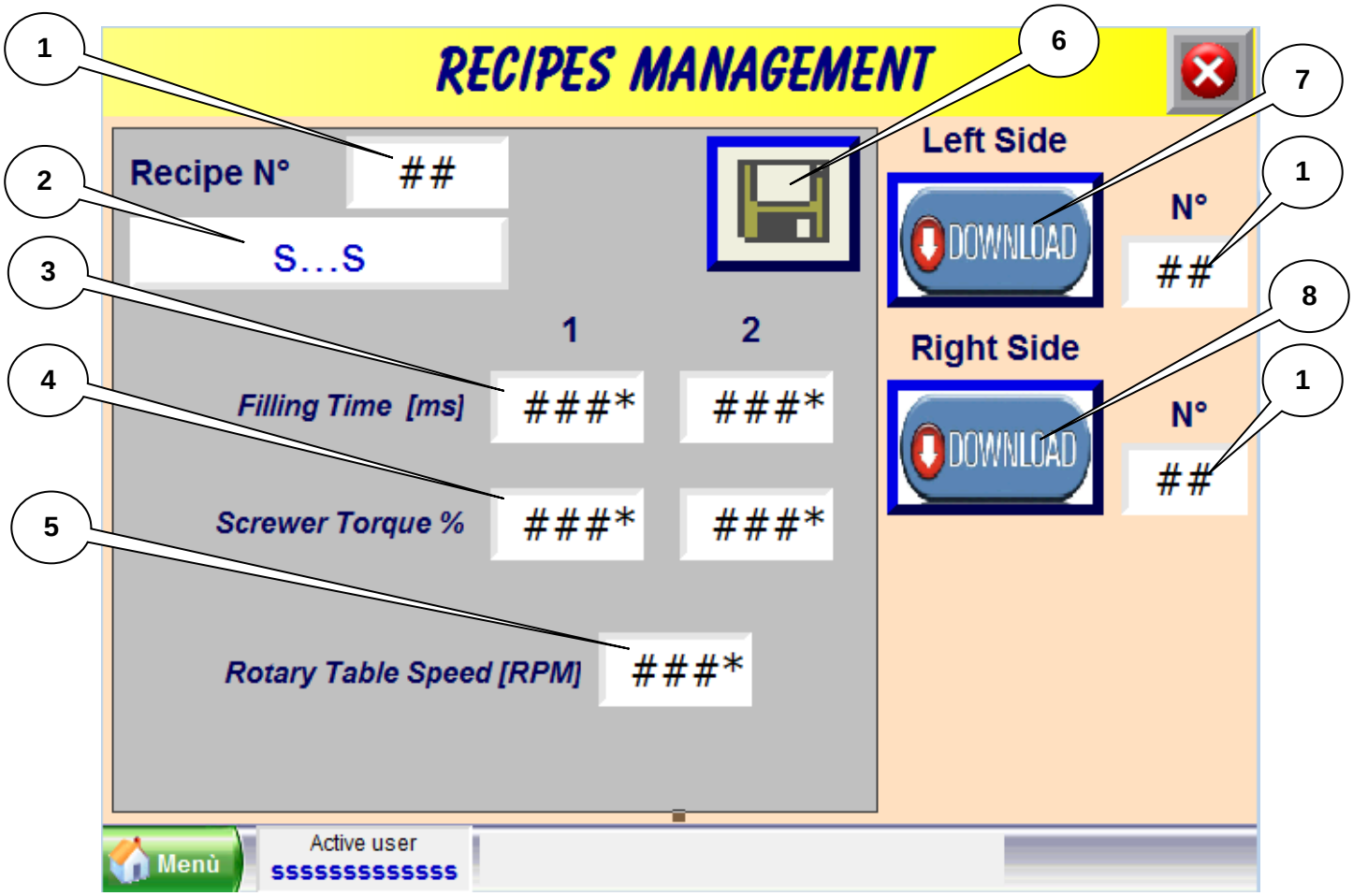
Pos	*Field Description*	*Granted to user:*
1)	Set the rotation table speed (rpm)	Supervisor - Maint
2)	Set the value of the delay of the rotation table start after filling operation are completed (mSec)	Anyone
3)	Set the screwing torque of the screwdriver 1 (% of the nominal motor torque)	Anyone
4)	Set the screwing torque of the screwdriver 1 (% of the nominal motor torque)	Anyone

Page Parameter setting Right.



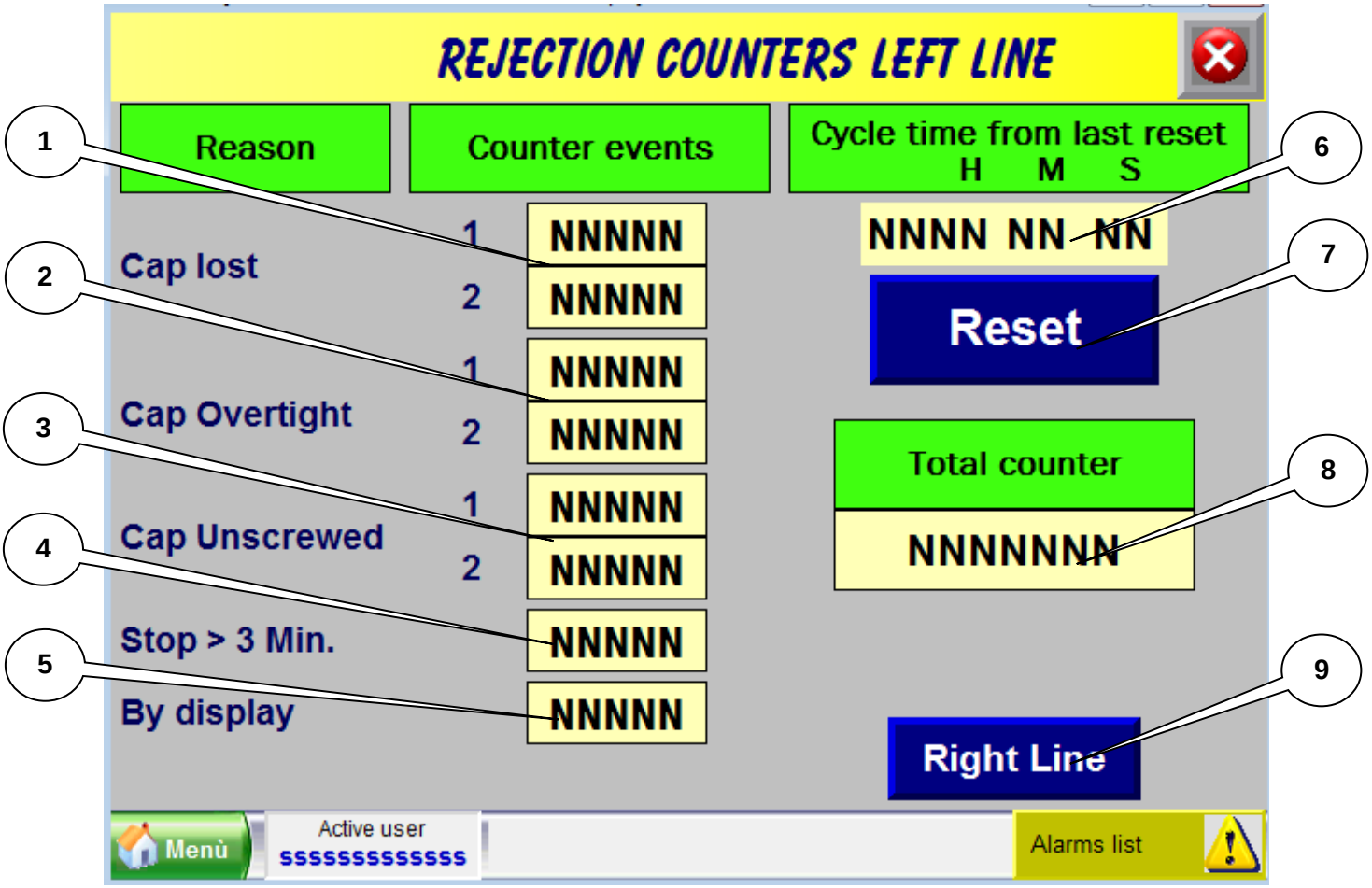
Pos	*Field Description*	*Granted to user:*
1)	Set the rotation table speed (rpm)	Supervisor - Maint
2)	Set the value of the delay of the rotation table start after filling operation are completed (mSec)	Anyone
3)	Set the screwing torque of the screwdriver 1 (% of the nominal motor torque)	Anyone
4)	Set the screwing torque of the screwdriver 1 (% of the nominal motor torque)	Anyone

Page Recipes.



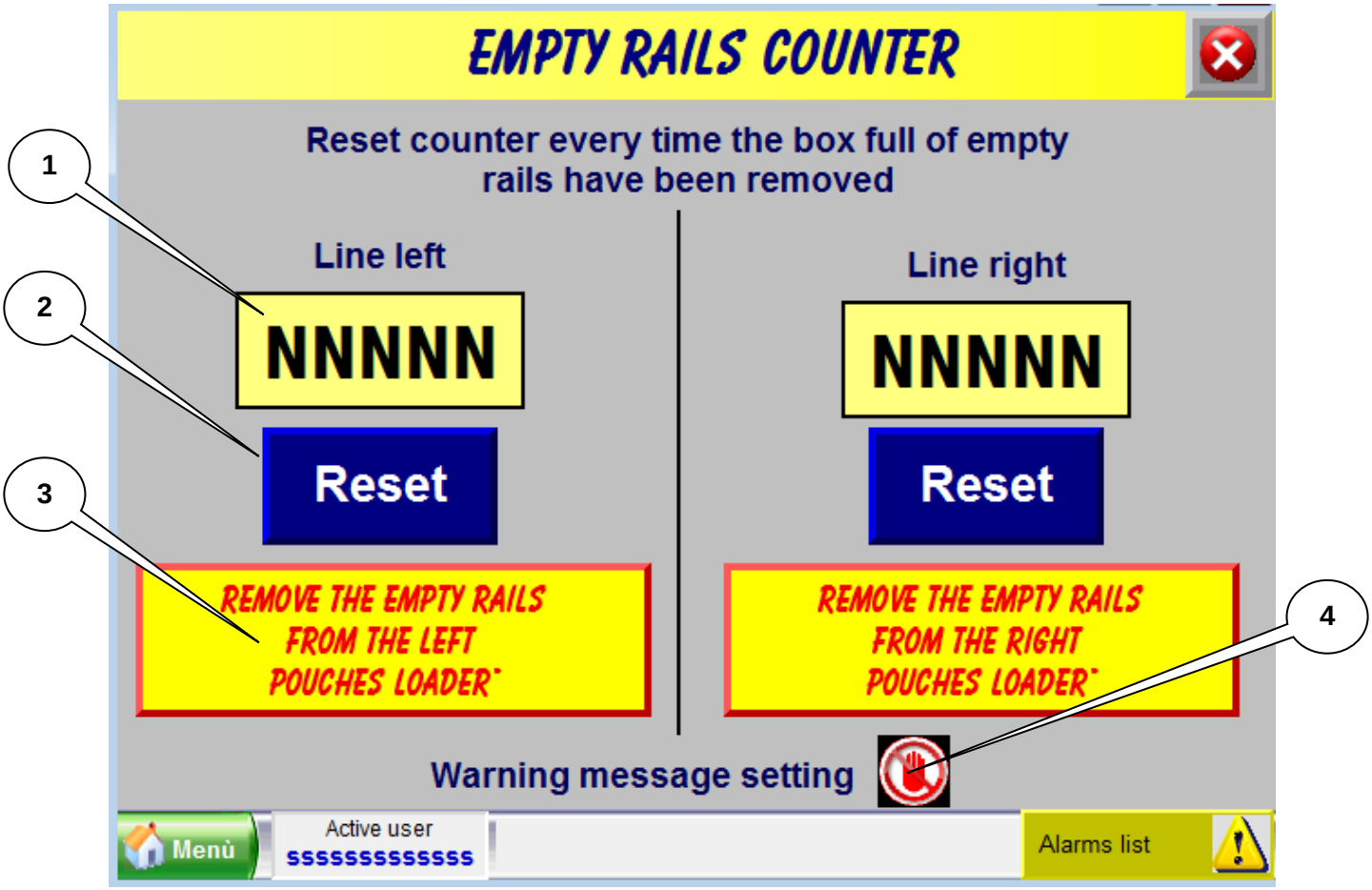
Pos	*Field Description*	*Granted to user:*
1)	Select the recipe number	Anyone
2)	Set / shows the recipe's name	Anyone
3)	Set / shows the recipe's Filling time	Anyone
4)	Set / shows the recipe's Screwing torque	Anyone
5)	Set / shows the recipe's Rotary table speed	Anyone
6)	Save the recipe's value and name	Supervisor - Maint
7)	Download the present Recipe in the Left side of the filler	Anyone
8)	Download the present Recipe in the Right side of the filler	Anyone

Page Rejection counters.



Pos	*Field Description*	*Granted to user:*
1)	Shows the number of pouches rejected for missing cap.	Anyone
2)	Shows the number of pouches rejected for overtightened cap.	Anyone
3)	Shows the number of pouches rejected for unscrewed cap.	Anyone
4)	Shows the number of pouches rejected for a production stop longer than 3 minutes.	Anyone
5)	Shows the number of pouches rejected for HMI selection	Anyone
6)	Shows the production cycle time elapsed from the last counters reset.	Anyone
7)	Resets all rejection pouches counters and time.	Anyone
8)	Shows the sum of the rejected pouches.	Anyone
9)	Access to the same counter of the right side	Anyone

Page Empty rails counters.
The system is equipped with a counter of the plastic rails used to load the empty pouches.

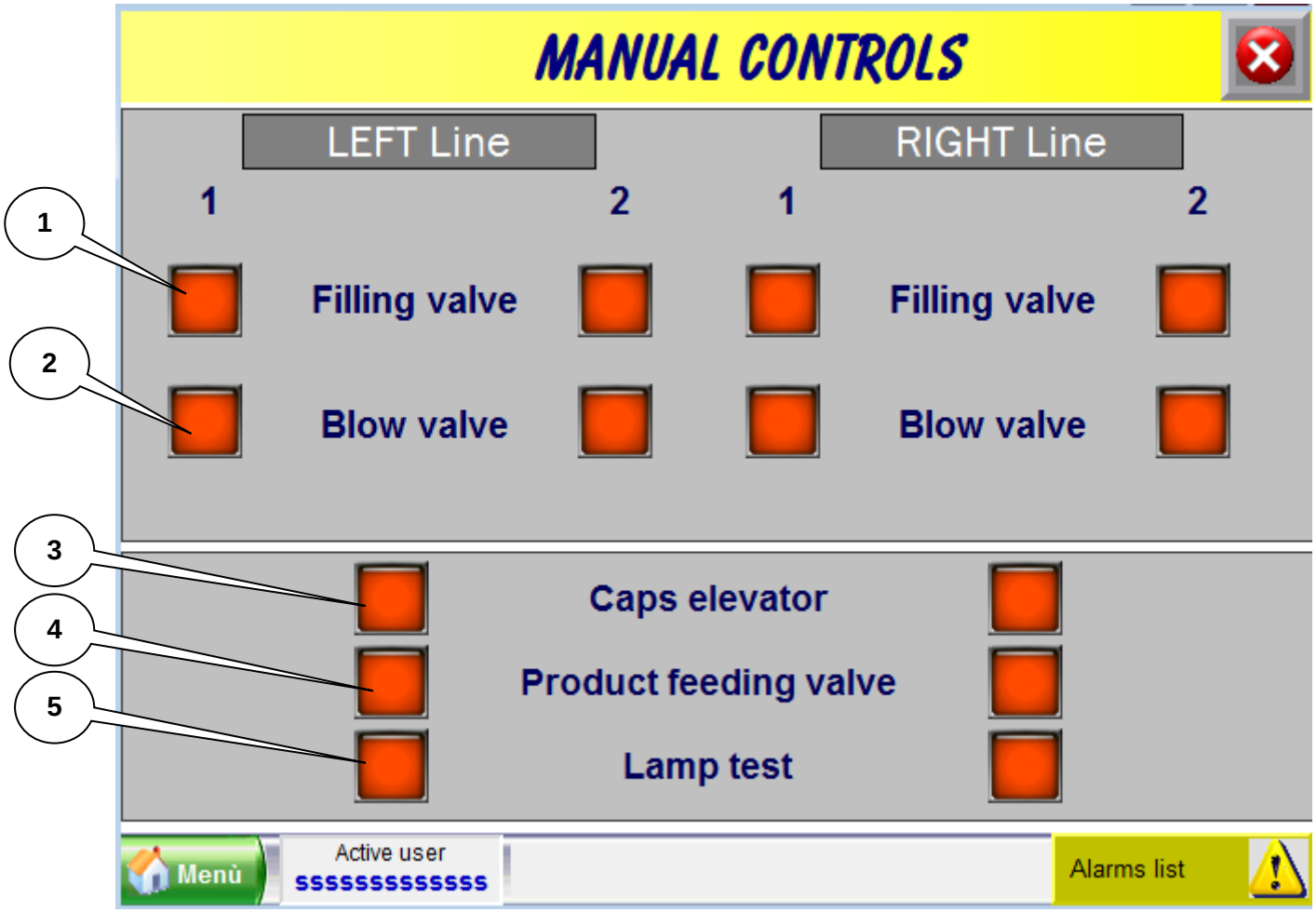


Pos	*Field Description*	*Granted to user:*
1)	Shows the number of plastic rails	--
2)	Resets the counter of plastic rails used	Anyone
3)	Warns the operator that the plastic rails have to be removed. It is shown when: a) the PV of the empty rails counter exceed the SP of the warning message. It is still possible to navigate in the panel by clicking on the up-right cross button. b) the PV of the empty rails counter exceed the SP of the warning bell. It is no more possible to navigate in the panel. Remove the rails anc reset the counter.	--
4)	Access to the setting of the warnings for the empty rails to be removed.	Supervisor - Maint

Page Warning message setting

Pos	*Field Description*	*Granted to user:*
1)	Sets the SP to trigger the message: *Remove the empty rails from the left pouches loader.*	Supervisor – Maint (access page)
2)	Sets the SP to trigger the warning bell.	

Page Manual commands.



The manual command are available when all automatic cycles are OFF only.

Pos	***Command / Fields Description***	***Granted to user:***
1)	Opens the filling valve.	Anyone
2)	Opens the blowing valves Gemu.	Anyone
3)	Starts the caps elevator.	Anyone
4)	Opens the product feeding valve Bardiani.	Anyone
5)	Turns ON all the filler lamps and the acoustic bell.	Anyone

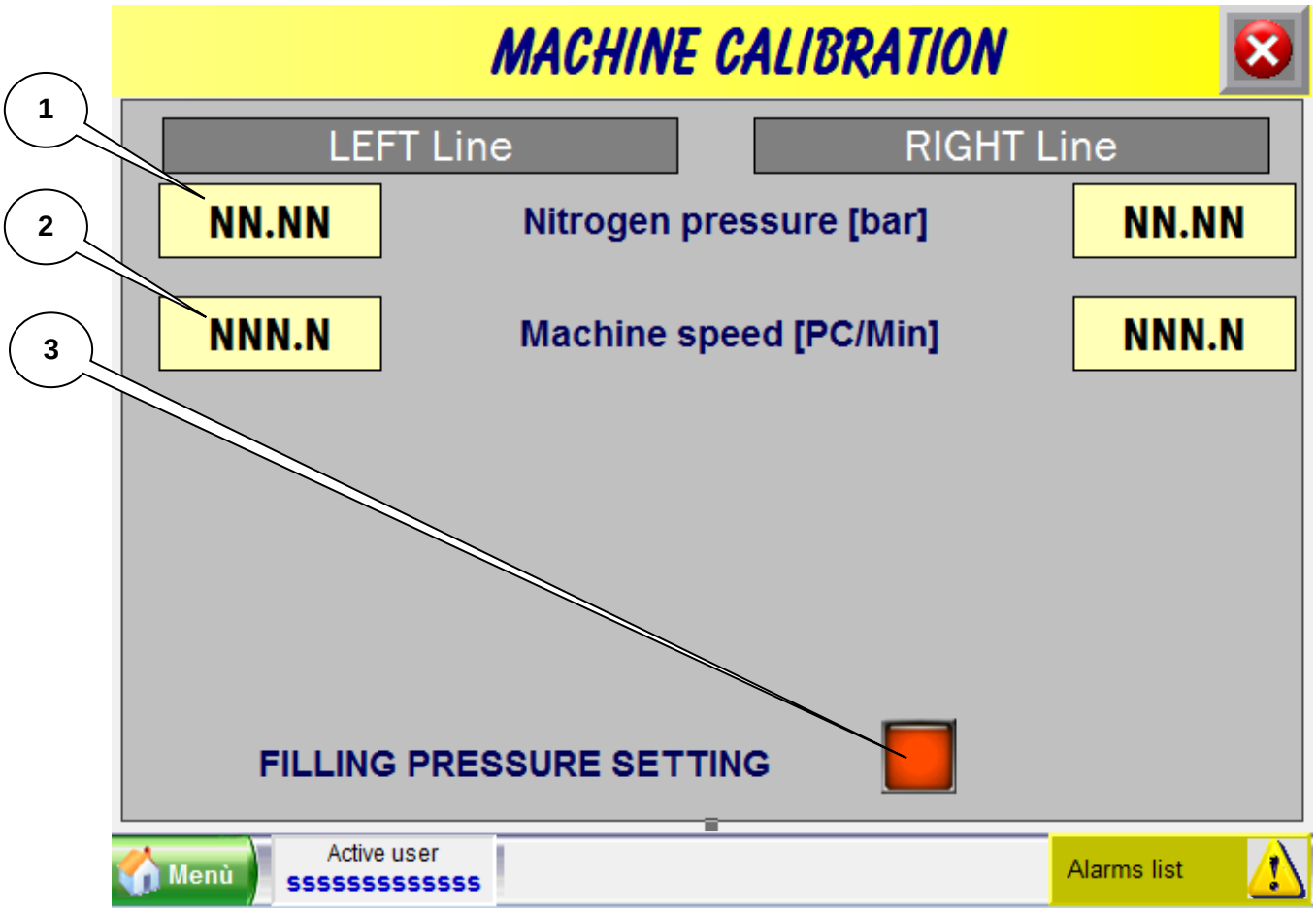
Page Alarm List.

This page shows the currently active alarms and automatically closes when there are no active alarms.
For the whole alarm list and for the troubleshooting see chapter “8- FAULT DETECTION”.

Page alarm history

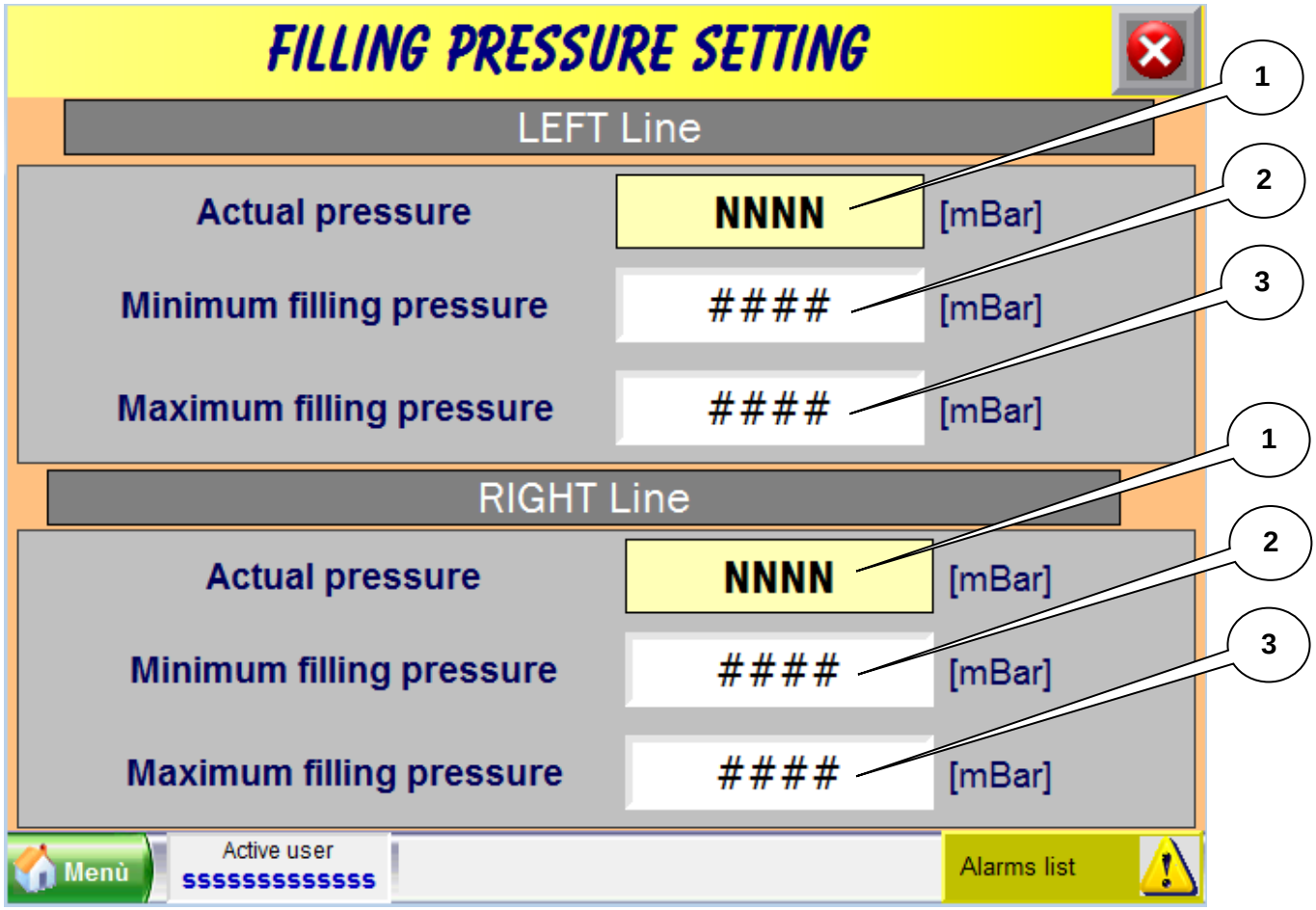
On this page is possible to scroll all the alarms that stopped the machine.

Page Machine calibration.



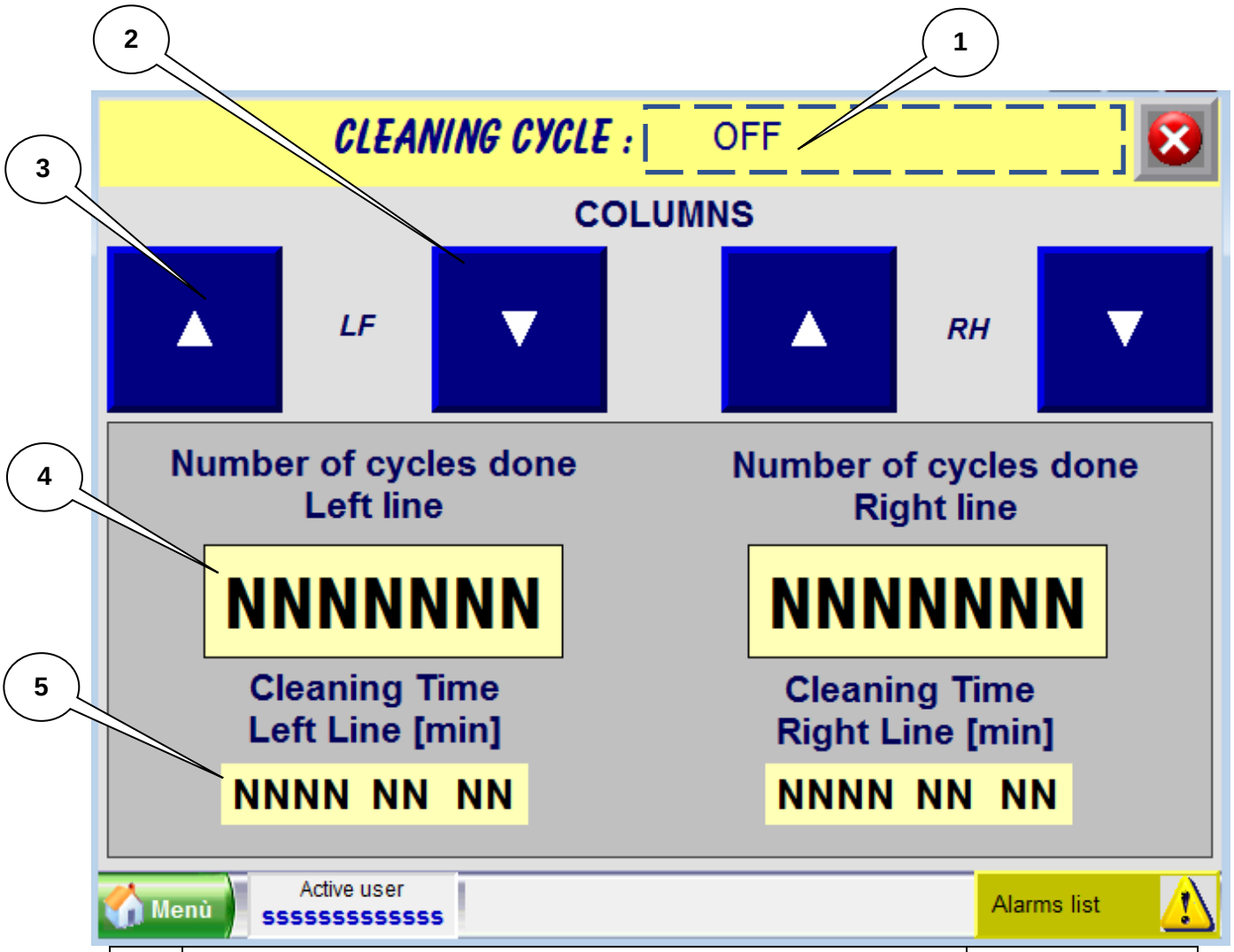
Pos	*Command / Fields Description*	*Granted to user:*
1)	Shows the pressure of the Nitrogen.	--
2)	Shows the production cadence in filled pouches /minute.	--
3)	Access to the filling-setting-pressure page	Supervisor - Maint

Page Filling pressure setting.



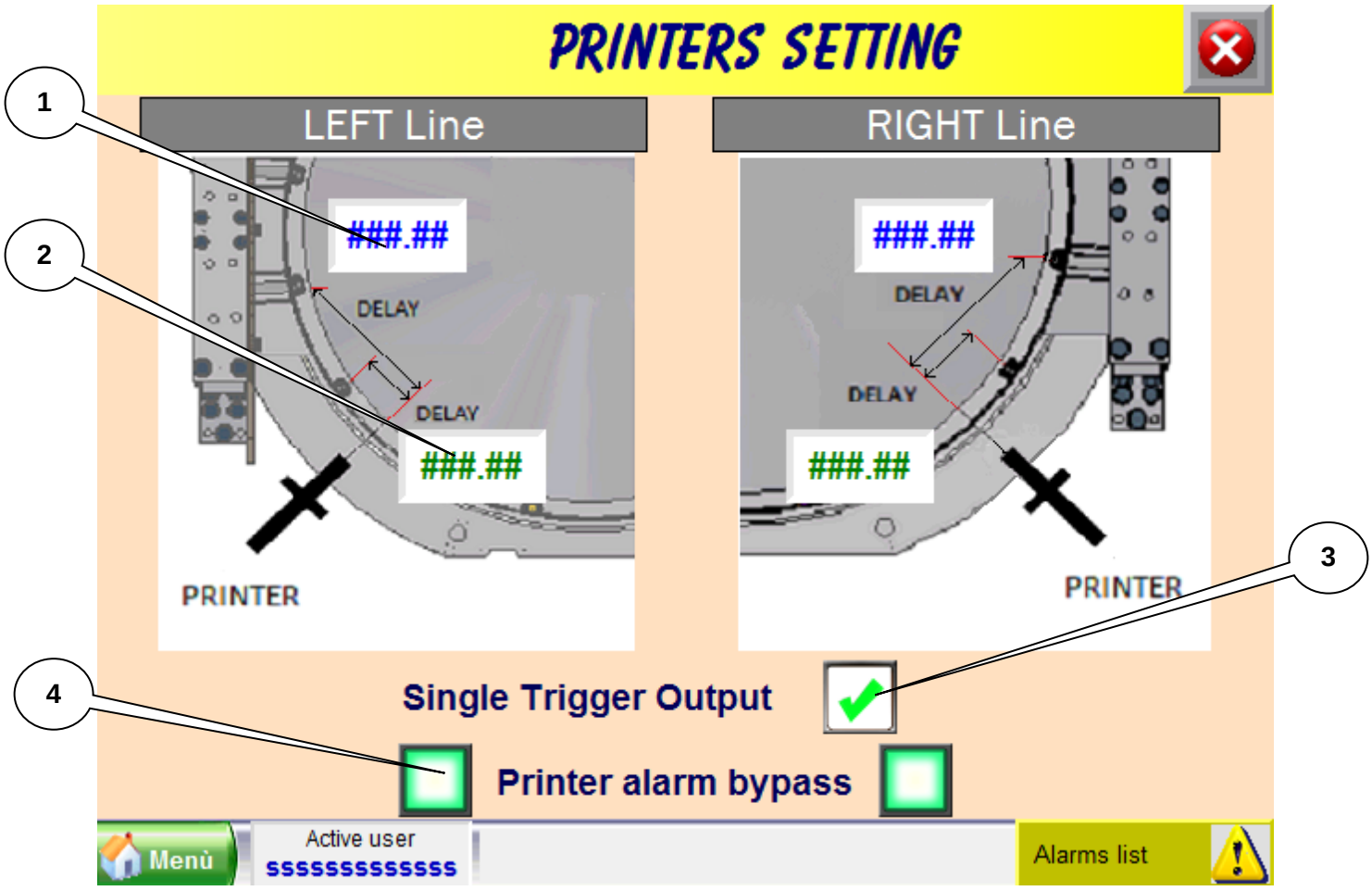
Pos	*Command / Fields Description*	*Granted to user:*
1)	Shows the PV (process value) of the product.	Supervisor – Maint (page access)
2)	Sets the SPmin, minimum pressure of the product to allow the filling phase. When the PV is lower than the SPmin, the production cycle stays in standby waiting for the pressure to grow-up over the SPmin.	
3)	Sets the SPmax, maximum pressure of the product to allow the filling phase. When the PV is higher than the SPmax, the production cycle drops-off showing the proper alarm.	

Page Cleaning.



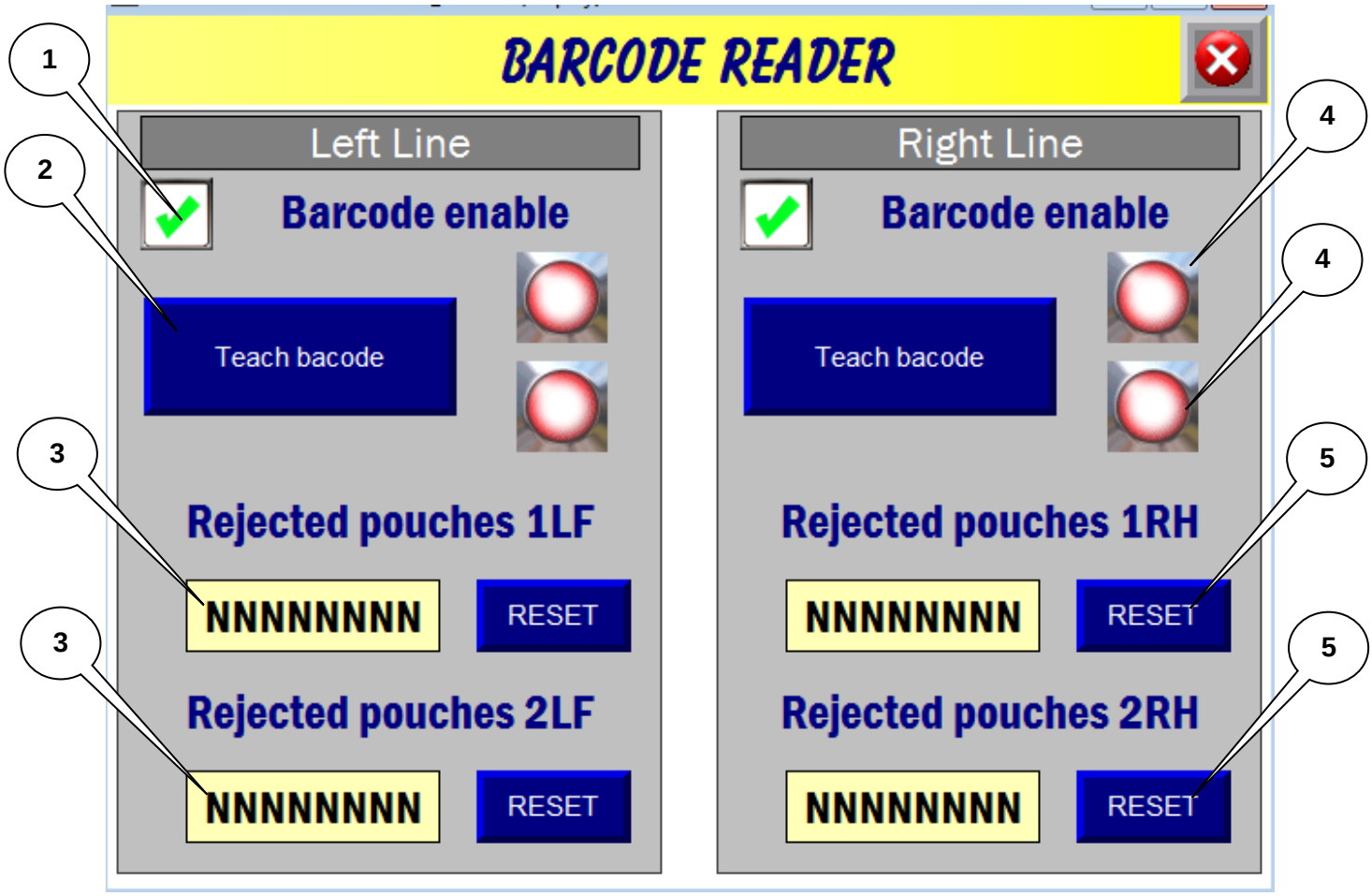
Pos	*Command / Fields Description*	*Granted to user:*
1)	Shows the status of the cleaning cycle: - OFF = The filler is not ready to automatically start the cleaning cycle. - READY = The filler is ready to start automatically the cycle whenever the CIP preparation will send the command. - ACTIVE = THE cip CYCLE IS ACTIVE. - COMPLETED = The filler received the signal CIP completed from the CIP preparation.	--
2)	Lowers the filling unit column. (to be performed after CIP manifold installation).	Anyone
3)	Raises the filling unit column. (to be performed for CIP manifold installation).	Anyone
4)	Shows the number of cycles performed from the filler during the CIP.	--
5)	Shows the elapsed time in CIP cycle.	--

Page Printer setting.



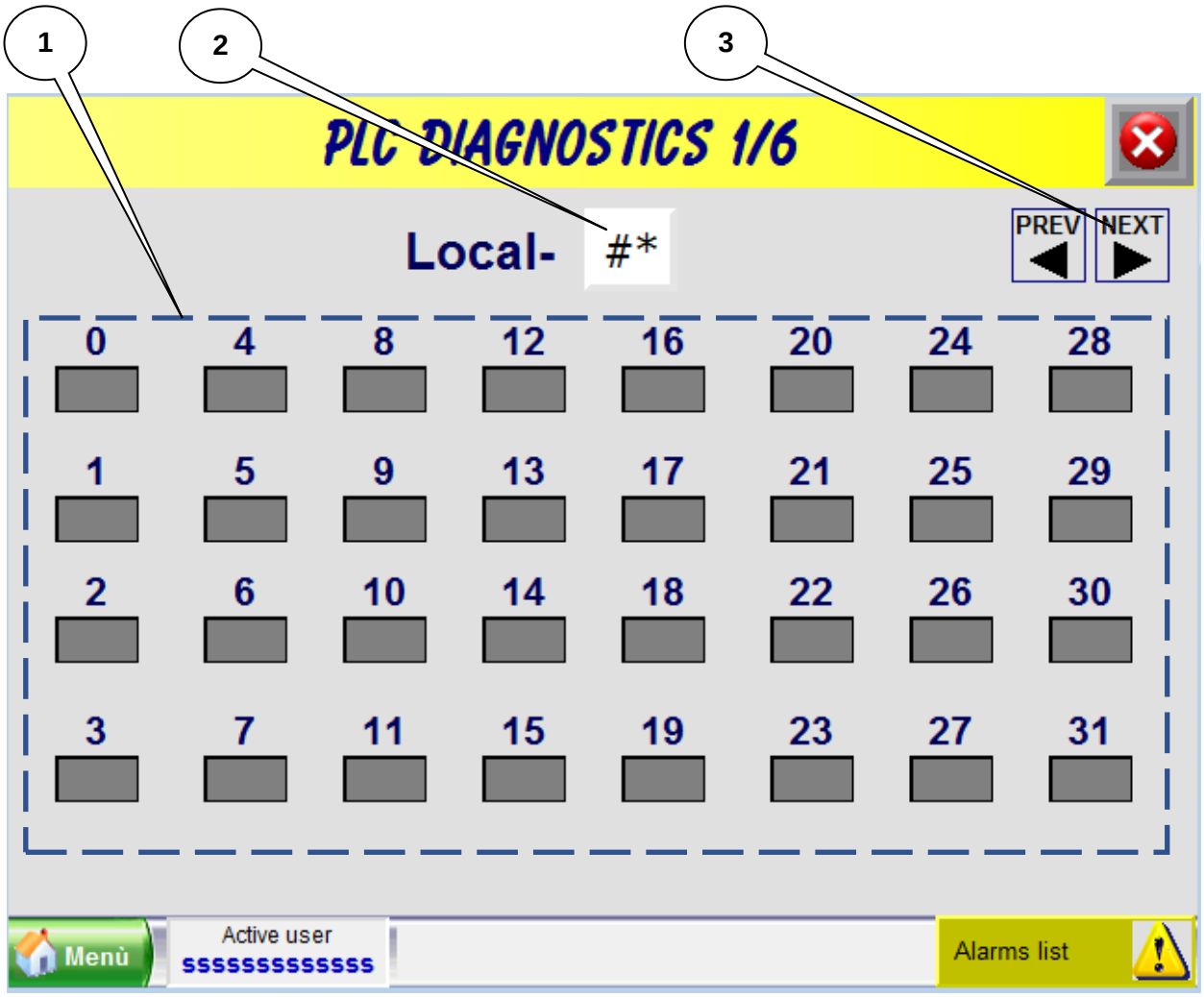
Pos	*Command / Fields Description*	*Granted to user:*
1)	Sets the delay value of the second trigger (pouch that will be filled by the head N 1)	Anyone
2)	Sets the delay value of the first trigger (pouch that will be filled by the head N 2)	Anyone
3)	Selects the triggers on one output signal only. If the option is enabled, both triggers will be produced by one single output: KAL3OD.26 left side, and KAL3OD.28 right side. If the option is disabled, the triggers will be produced as follow: - KAL3OD.26 Pouch 1 left - KAL3OD.27 Pouch 2 left - KAL3OD.28 Pouch 1 right - KAL3OD.29 Pouch 2 right	Anyone
4)	Disables the alarm “Printer fault”. In this way the production can run even without the Printer signal “Ready”. It is recommended to use this option for test only and not for production intended for the market because of the risk to produce pouches without labelling.	Supervisor - Maint

Page Barcode reader setting.



Pos	*Command / Fields Description*	*Granted to user:*
1)	Enable / disable the Barcode recognition. When enabled, all barcode's pouches that have not been recognized, will be rejected; after 2 consecutive rejection, the production will stop showing the proper alarm.	Anyone
2)	Teaches the Barcode reader on the barcode present in front of the camera.	Anyone
3)	Shows the quantity of pouches rejected because of the mismatching barcode.	Anyone
4)	Disables the alarm "Printer fault". In this way the production can run even without the Printer signal "Ready". It is recommended to use this option for test only and not for production intended for the market because of the risk to produce pouches without labelling.	Supervisor - Maint

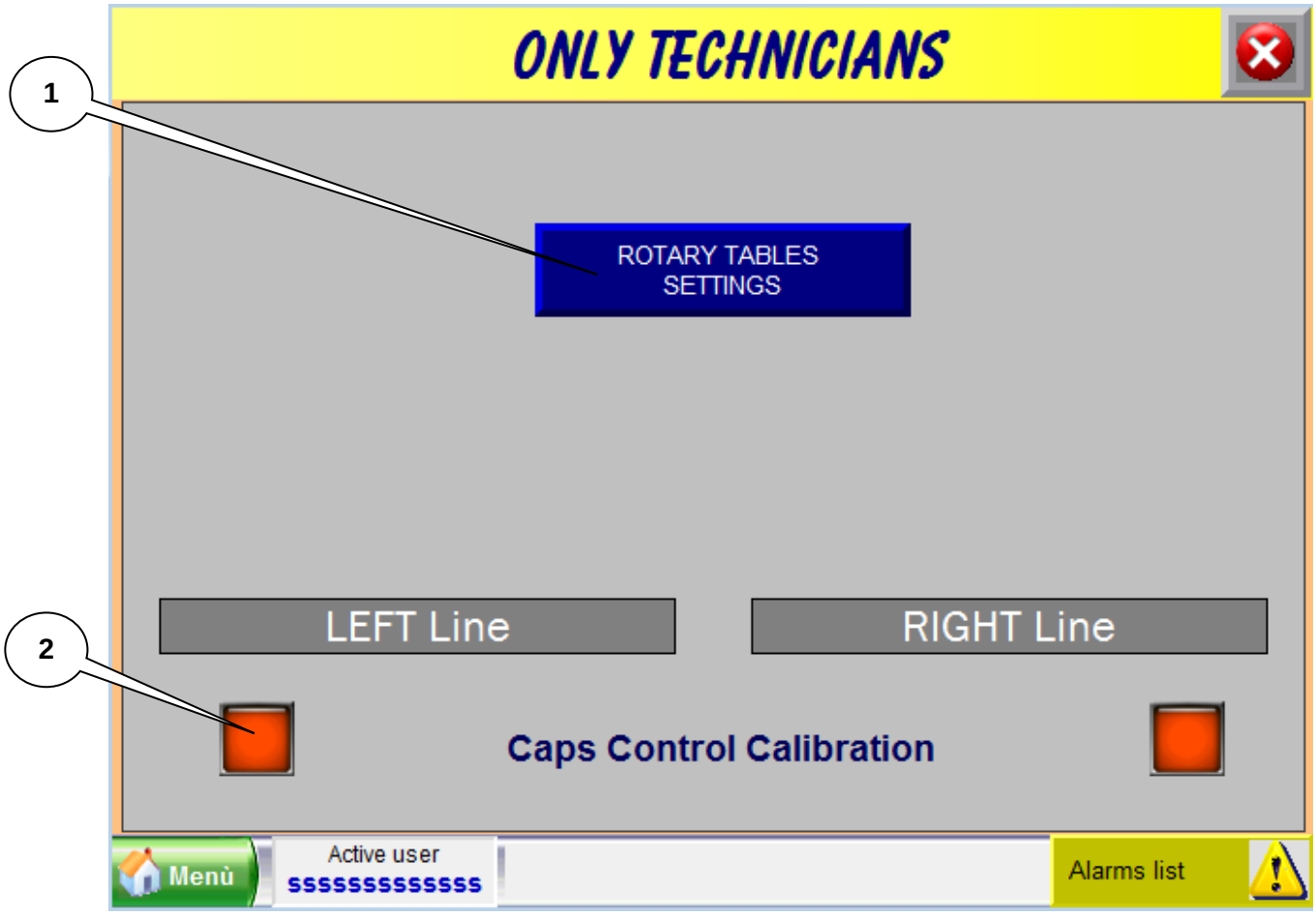
Pages PLC diagnostics.



Pos	*Command / Fields Description*	*Granted to user:*
1)	Shows the 32 LEDs status of the area specified in field 2.	Anyone
2)	Sets / shows the area of the Local channels: - 1 = 32 bits Inputs - 2 = 32 bits Inputs - 3 = 32 bits Outputs	Anyone
3)	Navigates in the PLC diagnostics pages..	Anyone

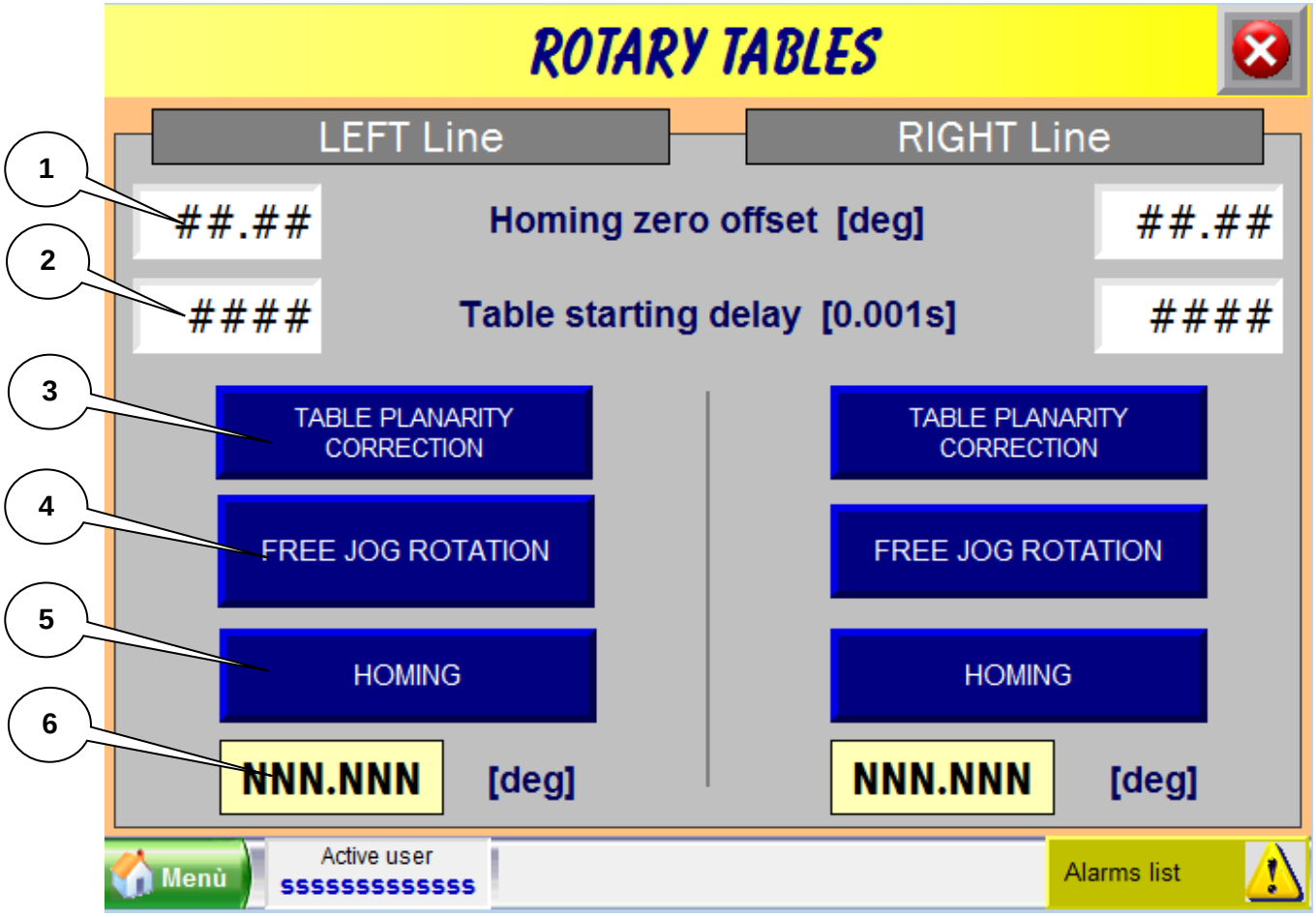
Any page shows the LEDs status of the specified area.

Page Only for technicians.



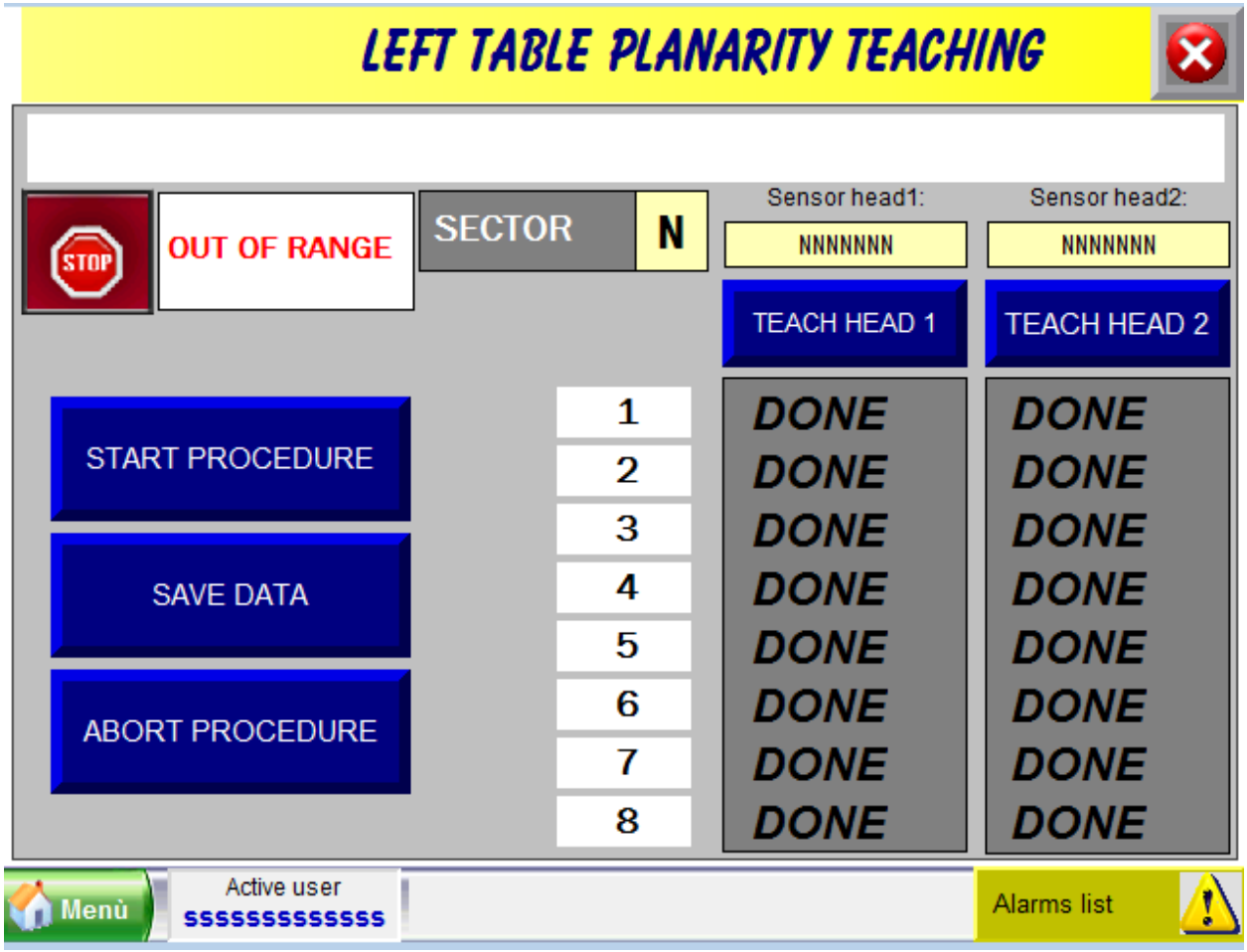
Pos	*Command / Fields Description*	*Granted to user:*
1)	Access to the Rotary tables setting.	Supervisor - Maint
2)	Access to the Caps control calibration.	Supervisor - Maint

Page Rotary tables setting.



Pos	*Command Description*	*Granted to user:*
1)	Sets the offset value of the table Homing. For details see Chapter 5.	Supervisor – Maint (page access)
2)	Set the value of the delay of the rotation table start after filling operation are completed (mSec)	
3)	Access to the procedure of “TABLE PLANARITY COR-RECTION”. For details see Chapter 5.	
4)	Starts the free rotation of the table. To exit from that function, use the command HOMING or press the JOG blue push-button.	
5)	Starts the HOMING function looking for the table origin.	
6)	Shows the actual value of the angle-table-position.	

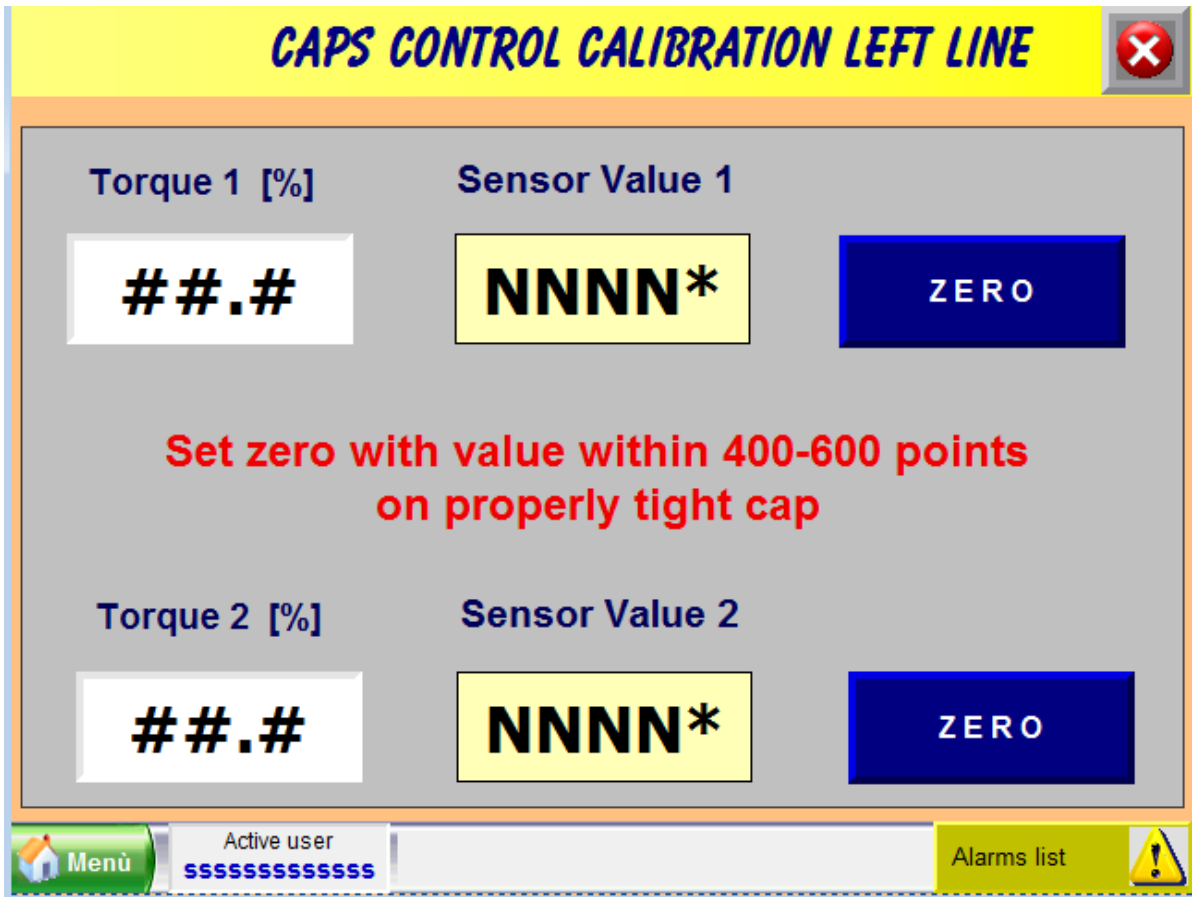
Page Planarity Teaching.



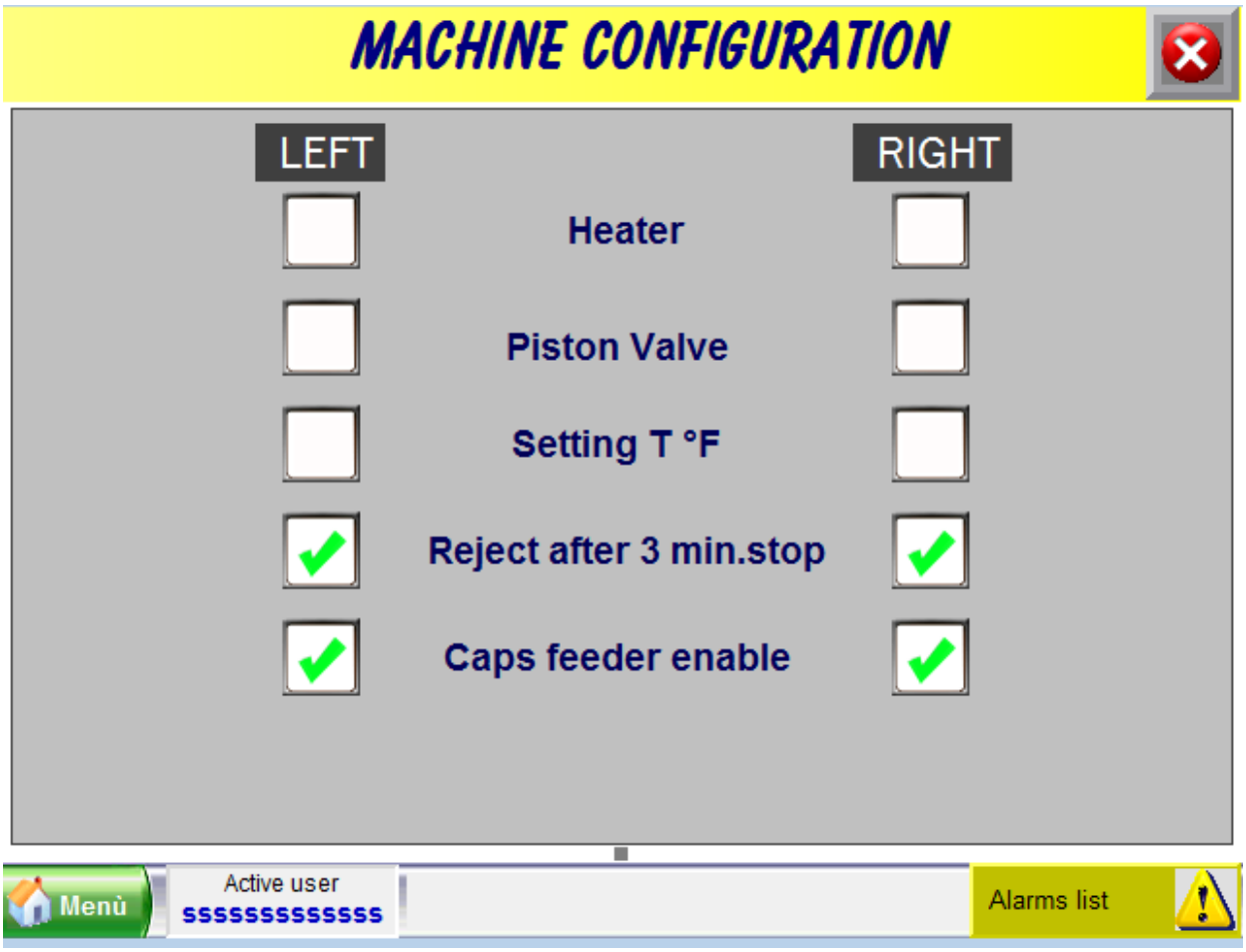
For details of the table-planarity-correction procedure see Chapter 5.

Page Cap control calibration.

For details of the Caps-control-calibration procedure see Chapter 5.



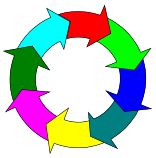
Page Machine configuration



In this screen it is possible to see the options that are installed on the machine and eventually modify them respecting to the real hardware configuration.

6.2.3 FAULT INDICATORS

On the main electric box a fault indicator is located to advise the operator (with a red light and an acoustic alarm) when the machine stop for a problem.
To understand the right reason of the fault, look the fault indication of the LCD display, located on the door of the electric box.
See also chapter “8- FAULT DETECTION”



WARNING

Every fault causes the stop of the automatic cycle of the machine.

6.2.4 START OF THE MACHINE
6.2.5 PRESTART CHECK LIST

Before to proceed to start the automatic cycle, check the following point:

- Air at the right pressure
- Electrical power supply at the right voltage
- Right connection of the nitrogen and vacuum pipes
- Right connection of the product pipes
- All the moving part must be altogether clear in the own moving areas
- All the mechanical device (linear motion guide, sliding part, etc.) must be very clean to avoid any possibly jamming
- Correct position and right locking of the filling valves

6.2.6 SETUP OPERATION

The present chapter explains the operation to set the machine according to the requirement of the product.

- Load the plastic rails with the desired pouches into the loader (pay attention to the side of the pouches), and then push the CHARGING BAGS push button, located near the loading area. Wait for a complete operation.
- Repeat the previous point until the loader is completely full of pouches.
- Put some caps into the two caps hopper

Attention! Handle with care the caps to avoid any damage on the tamper evident

- Check the position of the CLEANING CYCLE selector, must be OFF
- Check the PRODUCT FEEDING VALVE is activated.
- Check the right torque of the screwdrivers
- Adjust the right filling time and product pressure according to the pouches size and product kind.

For the cleaning cycle

- Perform the cleaning according to chapter. 6.7.2
- Remove the cleaning kit
- Turn OFF the cleaning selector.

Now the filler is ready to start in production.

The following schedule reassumes the operation must be done at each production start-up.

STARTUP CHECK LIST

Date:	Product:	Lot n°:	Operator:	Schedule n°:

OPERATION	**FOUND**
Air supply at right pressure	
Electrical power supply at the right voltage	
Vacuum and nitrogen pipes connected	
Vacuum value and gas pressure (must be according to the size of the pouches being filled)	
Product pipes connected	
Mechanical moving part clear in the own moving areas	
Mechanical device (linear motion guide, sliding part, etc.) clean to avoid any possibly jamming	
Correct position and right locking of the filling valves	
Dosing pump stroke (must be according to the size of the pouches being filled)	
Ink jet printer ready and set with the right parameter	
Ink jet printer in the right position according with the pouch size	
Presence and correct reference of pouches in the charger (pay attention to the side of the pouches)	
Presence and correct reference of caps in the caps hoppers	
Right torque of the screwdrivers	
SEE ALSO THE PRODUCTION PARAMETERS CHECK LIST	

6.2.7 ADJUSTING OF THE WEIGHT POUCHES

The following instruction are to guide the operator to set the right weight into the pouch, and then to set to pumping unit to fill to right quantity of product.

a) Start the automatic cycle, and wait for the first pouch exiting from the unloading station.

b) Check the weight of the pouch. If is not in the tolerance, proceed as follow.

Adjust the volume on the touchscreen as described in para. 6.2.2, after any adjustment please check the weight of pouches.
This adjustment can be done even the machine is in production.

6.2.8 ADJUSTING OF THE CAPS TIGHTENING TORQUE

Adjust the torque of the cap screwer on the touchscreen, as described in para. 6.2.2, in order to obtain the right positioning of the cap.
Pay attention to the setting of cap control that must give values between 400 and 600 with caps well tightened. Otherwise it is necessary to adjust the cap control.

6.2.9 CAP CHECK

The observance of the *right tightening caps range* (see drawing below) guarantees the microbiological seal standard.

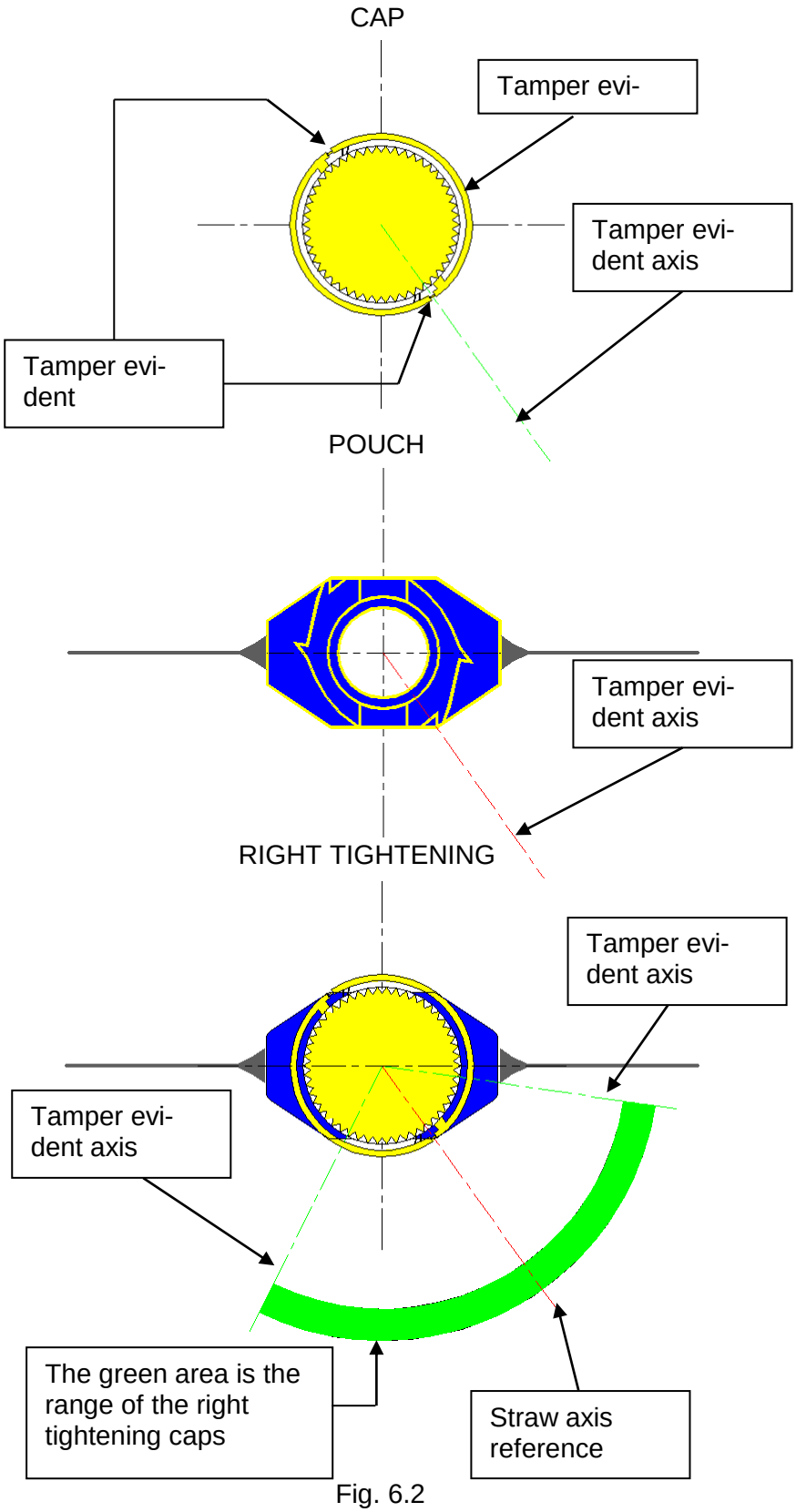


Fig. 6.2

This very important checking, allow the operator to understand if the cap tightening check device it is working right or not. The condition of the tightened caps has to be in the *right range* if not must be rejected.
Within this range the operator, acting on the special potentiometers, the have to adjust the torque to maintain the good position **(see fig. 6.3).**

During production must be taken at least 5 pouches every 30 minute max

To understand if the caps are in this *right range* is needed to check the tamper evident position (it must be within the green area shown in the drawing) and its height **(see fig. 6.4).**

Fig. 6.2

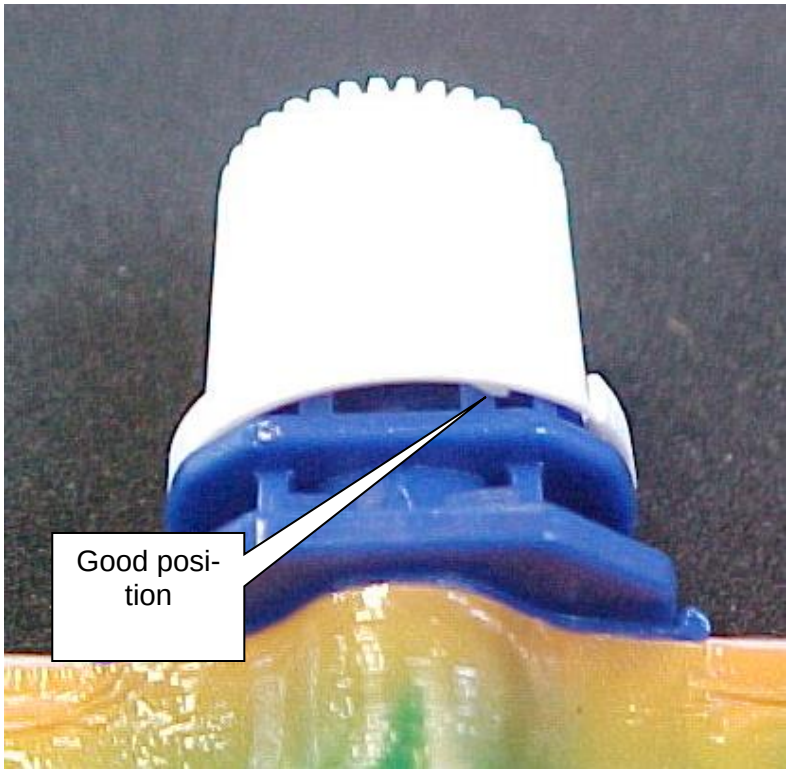


Fig. 6.3

In this picture, it is shown the good position of the well-tightened cap

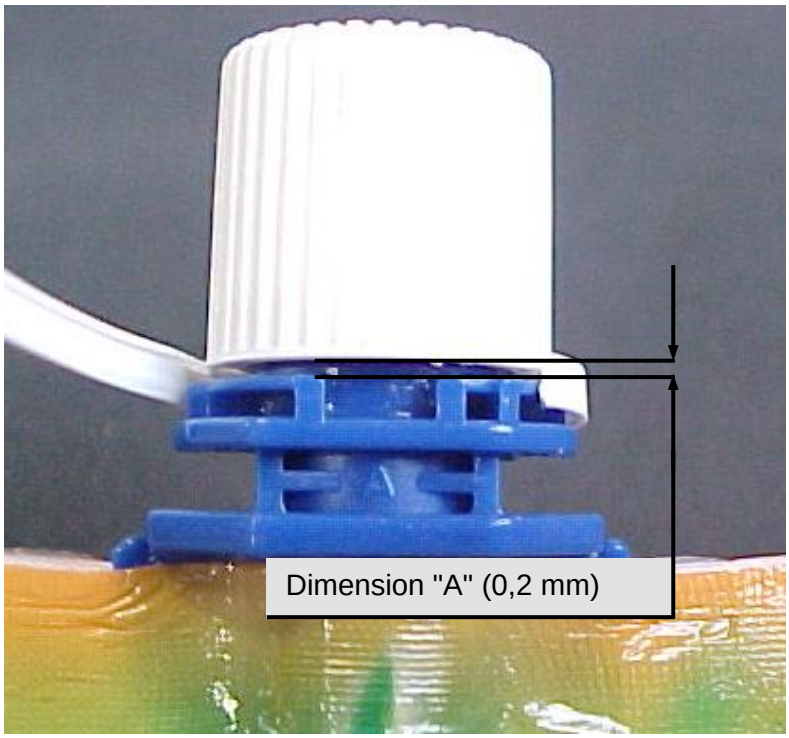


Fig. 6.4

It is mandatory check also the height of the cap.
To do that, without rotating the cap, break the tamper evident and as shown in fig. 6.4, check the dimension “A”.
The dimension “A” between the wing surface of the straw and the lower surface of the cap must be 0,2 mm.

6.3 AUTOMATIC CYCLE

During the automatic cycle are at the operator charge to perform some operations to guarantee the continuous work of the machine and the good quality of the production. The frequency of the checking operations has to be at least every 30 min.
The following list reports those operations:

- Load the plastic rails with the desired pouches into the loader (pay attention to the side of the pouches to guarantee the position of the printing area)
- Repeat the previous point until the loader is completely full of pouches.
- Put some caps into the two caps hopper

Attention! Handle with care the caps to avoid any damage on the tamper evident

- Check the good printing quality that has to be well readable on every pouch and with correct information about the production.
- Check the right weight of the pouch in according to the tolerance value. To perform this operation sees the chapter 6.5.2.1. In case of undesired fluctuation of the weight, it is better to stop the machine to understand the cause of the problem (see chapter 8.0 FAULT DETECTION and 7.0 MAINTENANCE)
- Check the vacuum value that must be 40%
- Check the nitrogen pressure that must be between 1 and 2 bar according to the size of the pouches)
- Check the product temperature before the filling tank
- Check the product temperature in the filling tank
- Check the product temperature in pouch after filling
- Check if there are leakages from the straws of the pouches after filling
- Check the right tightening of the caps **(see chapter 6.4.3)**
- Verification of the output conveyor, to avoid that some pouches stay stopped on the conveyors
- Verification of the rejected bag chute, must be clear

PRODUCTION PARAMETERS CHECK LIST

Date:	Product:	Lot n°:	Operator:	Schedule n°:

		0,0 h	0,5 h	1 h	1,5 h	2 h	2,5 h	3 h	3,5 h	4 h
Weight of the pouches	Grams									
Right tightening of the cap	Ok +/-									
Leakage from the filling valves after filling	Yes / No									
Leakage from the straw after filling	Yes / No									
Good printing quality	Yes / No									
Product temperature before the filler	°C									
Product temperature in the filling tank	°C									
Product temperature in the pouch after the filler	°C									
Product leakage from the pipes joints	Yes / No									
Vacuum value	%									
Nitrogen pressure	Bar									
Rejected bag chute clear	Yes / No									
Bag output conveyor belt clear	Yes / No									

6.3.1 MACHINE STOP
6.3.2 VOLUNTARY STOP

The voluntary stop of the automatic cycle of the machine occur by pushing the STOP CYCLE pushbutton on one of the control board. The machine complete the current cycle by waiting the end of work of each group, then stops the cycle.

It is also available another way to stop the production by means pushing the “EMPTY MACHINE” pushbutton, and the difference between this push button and the above, is that before to stop automatic cycle the machine wait to fill the pouches present from the loading station until the exit station. After the operator push this button no other pouches are loaded in the printing rotating table.

After a voluntary stop, to start again the machine, simply push the START push button.

6.3.3 EMERGENCY STOP

The emergency stop must be used only when the safety of the machine and of the operator can be put in danger, and is necessary to stop immediately the machine.
On the machine, three emergency push buttons are available to this purpose.

6.3.4 RESTORE AFTER AN EMERGENCY STOP

Pull up the emergency push button, and then push EMERGENCY RESTART push button, to restore the emergency. Repeat again the start up sequence to start again the machine.

ATTENTION

When the operator restores the emergency, the machine doesn’t start again in automatic mode, until the START CYCLE push button is not pressed.

6.3.5 CIL. CLEANING, INSPECTIONS
6.3.6 CLEANING OF THE FILLING MACHINE

All information reported here are just a reference. The customer has the responsibility to check the cleanness of the filler after the cleaning cycle and eventually adapt the type of cleaning solutions, the cleaning solution concentration and the cleaning times to reach a good cleaning of the machine.

6.3.7 EXTERNAL CLEANING BY PRESSURE SPRAY METHOD

The machine may be cleaned by the use of hot water spray to a maximum temperature of 50°C or 60°C, and to which has been added a special cleaning agent used for cleaning food processing machines.

A final rinse is necessary, using only hot water, in order to eliminate all residual detergent.

Before starting pressure cleaning it is mandatory that the main power supply to the machine is disconnected and all printing equipment are removed from the machine.

By opening the plastic security doors access may be easily gained the work zone with the spray nozzle and the consequent removal of all traces of spills from the machine.

It is advisable to continue spraying, particularly over the moving parts of the machine, to ensure the removal of any deeply seated stubborn residue which has accumulated in hard to reach areas.

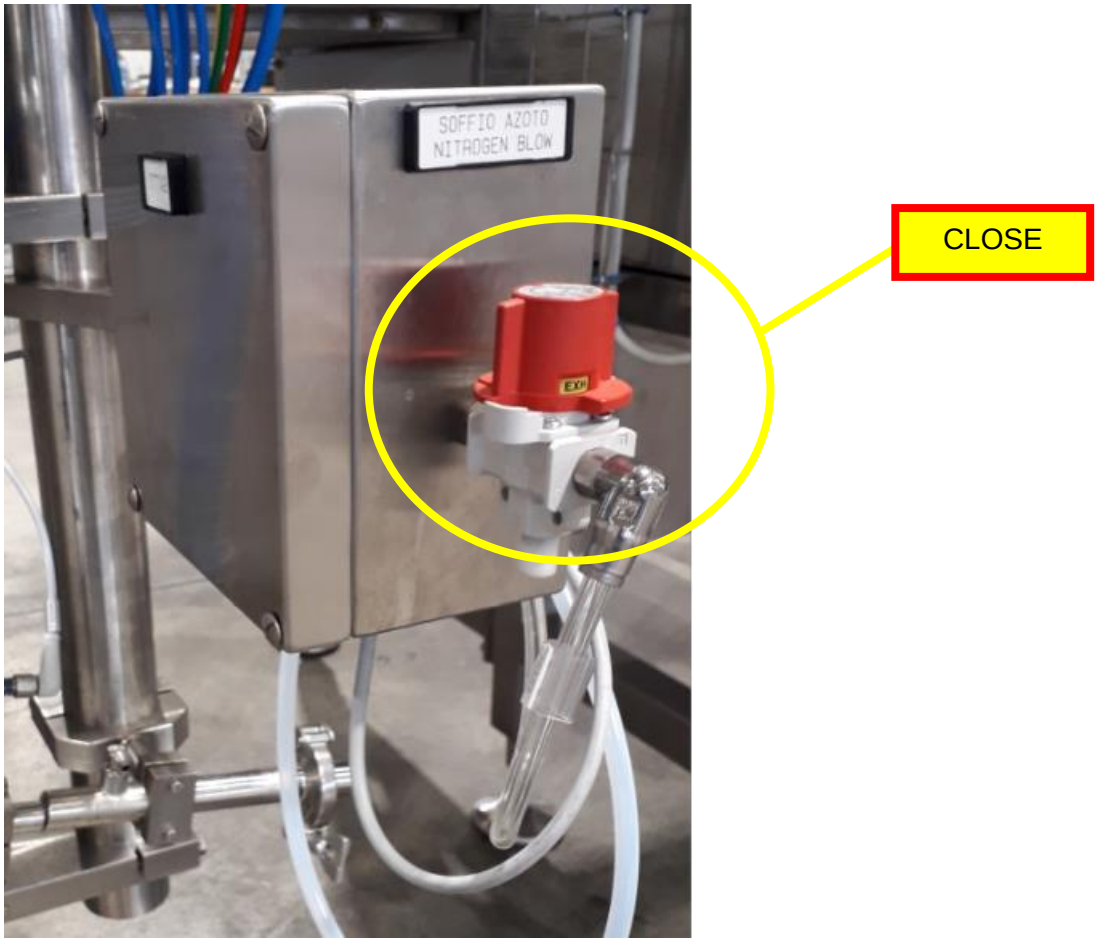
6.3.8 AUTOMATIC INTERNAL CLEANING CYCLE

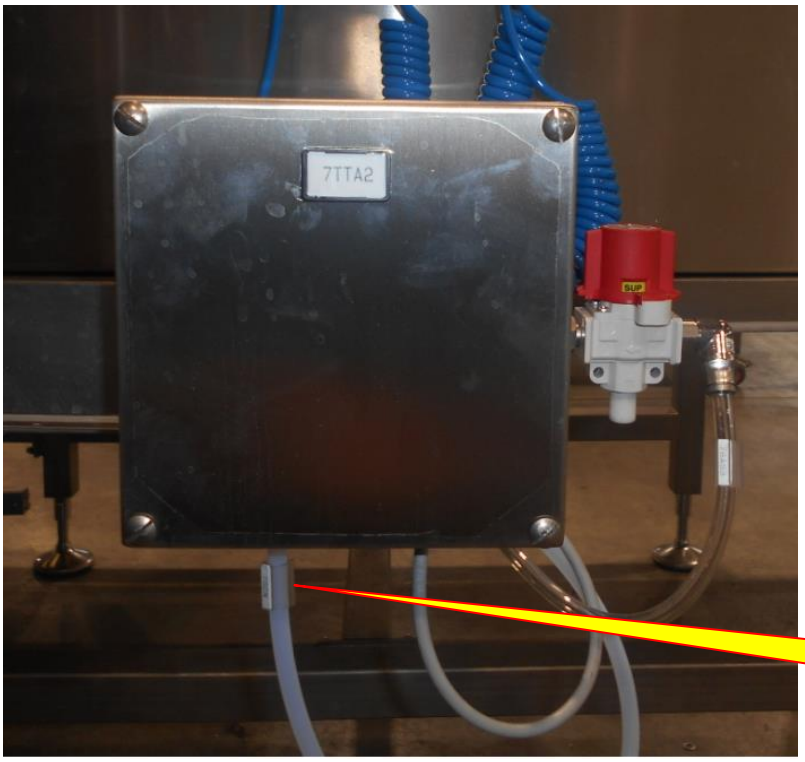
The machine is equipped with an automatic internal cleaning cycle, useful to clean the filling circuit like filling valve, the blow circuit and the product supply pipes. The following step will describe the procedure to activate this cycle.

6.3.9 MACHINE PREPARATION FOR CLEANING

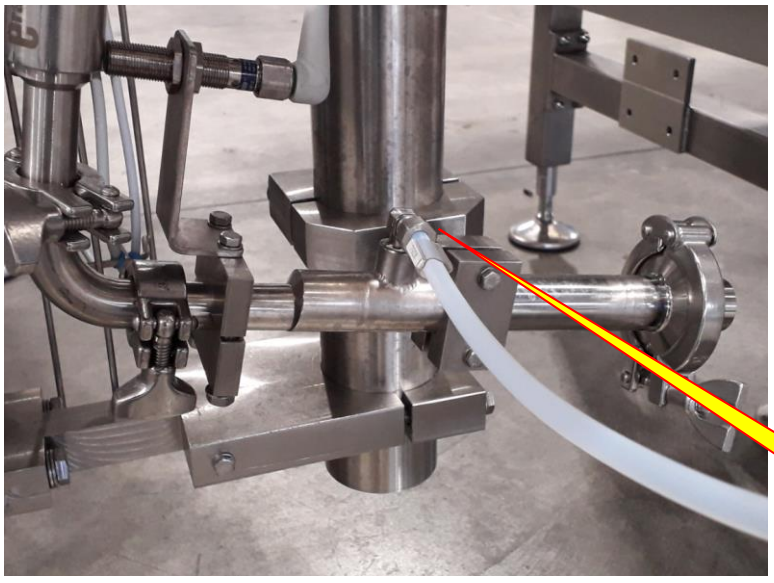
When we are ready, we can prepare the machine for cleaning in this way see next figures:

- Close the nitrogen and supplies (see picture below)



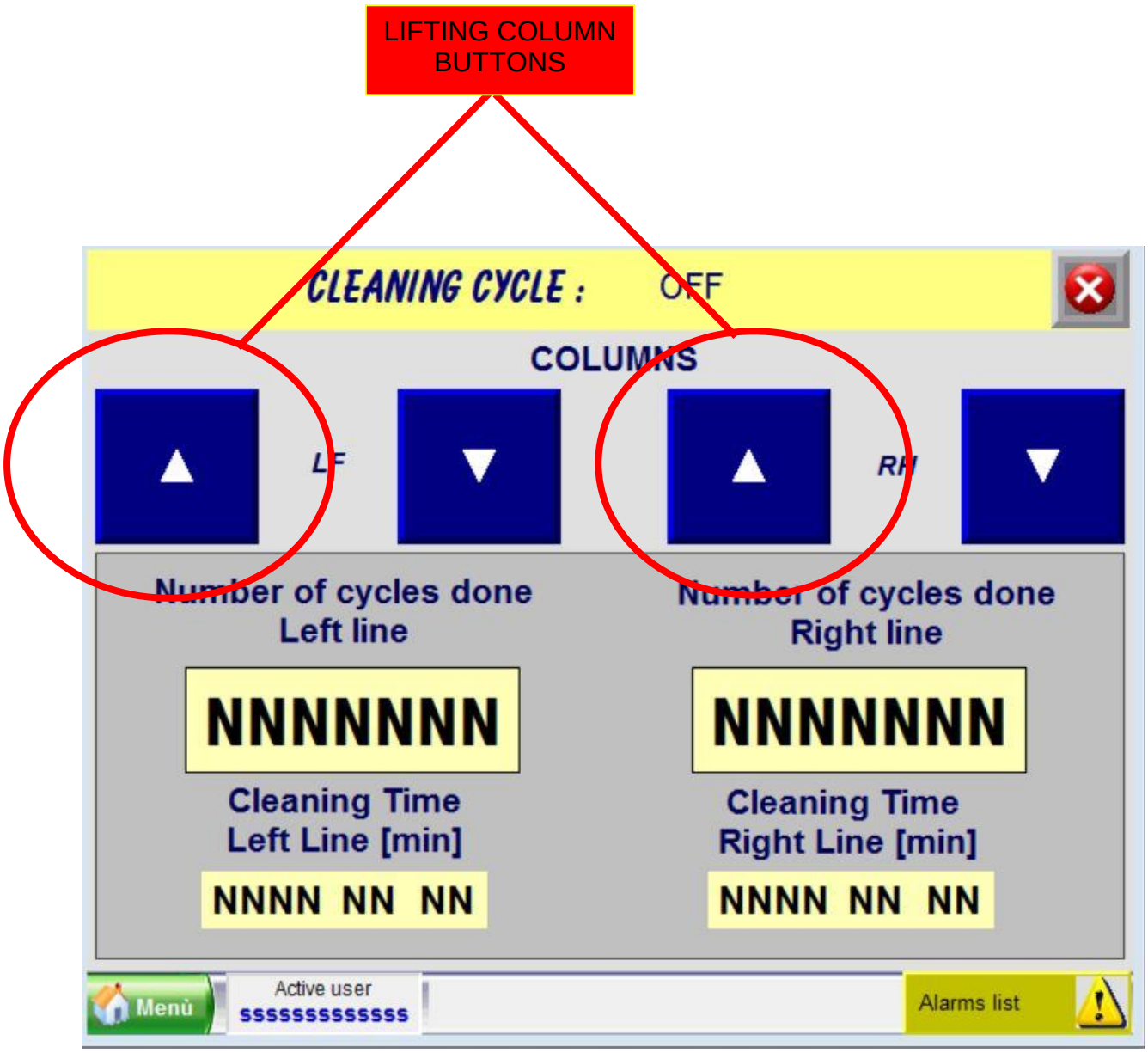


-Disconnect pipe of nitrogen

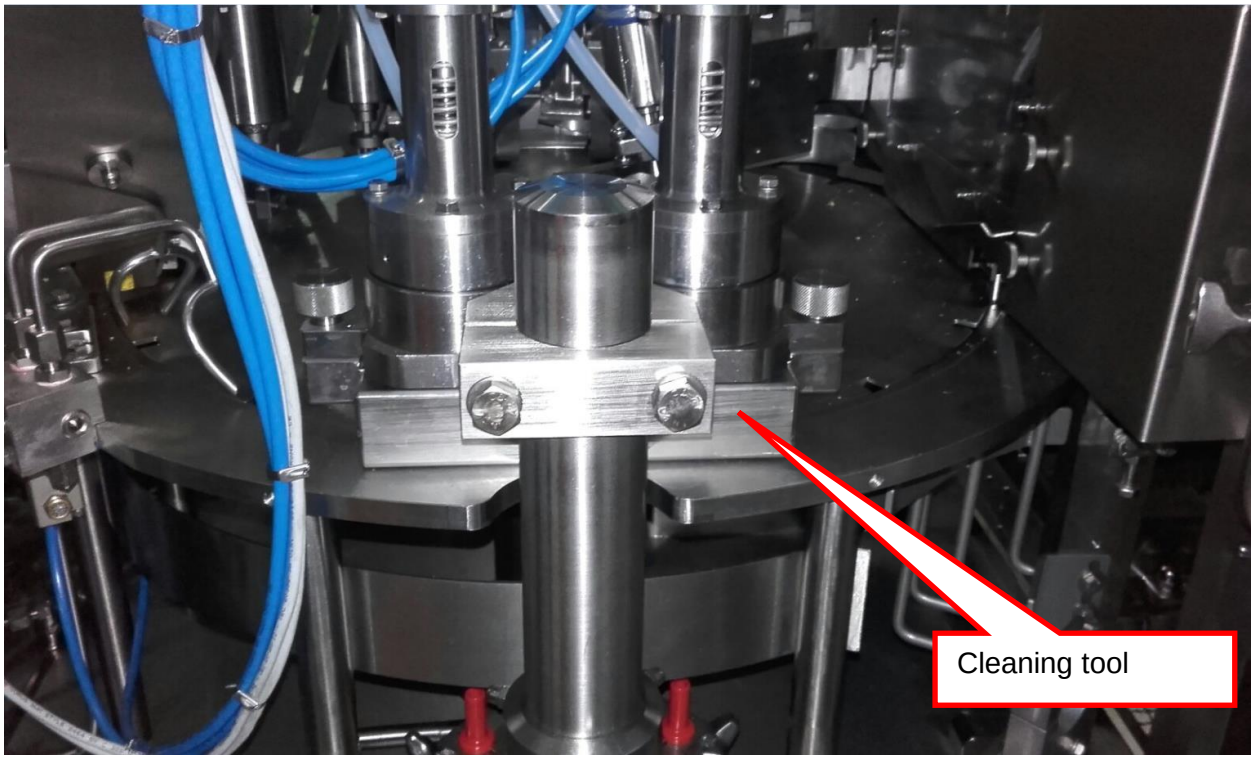


-Then connect them to the CIP draining pipe.

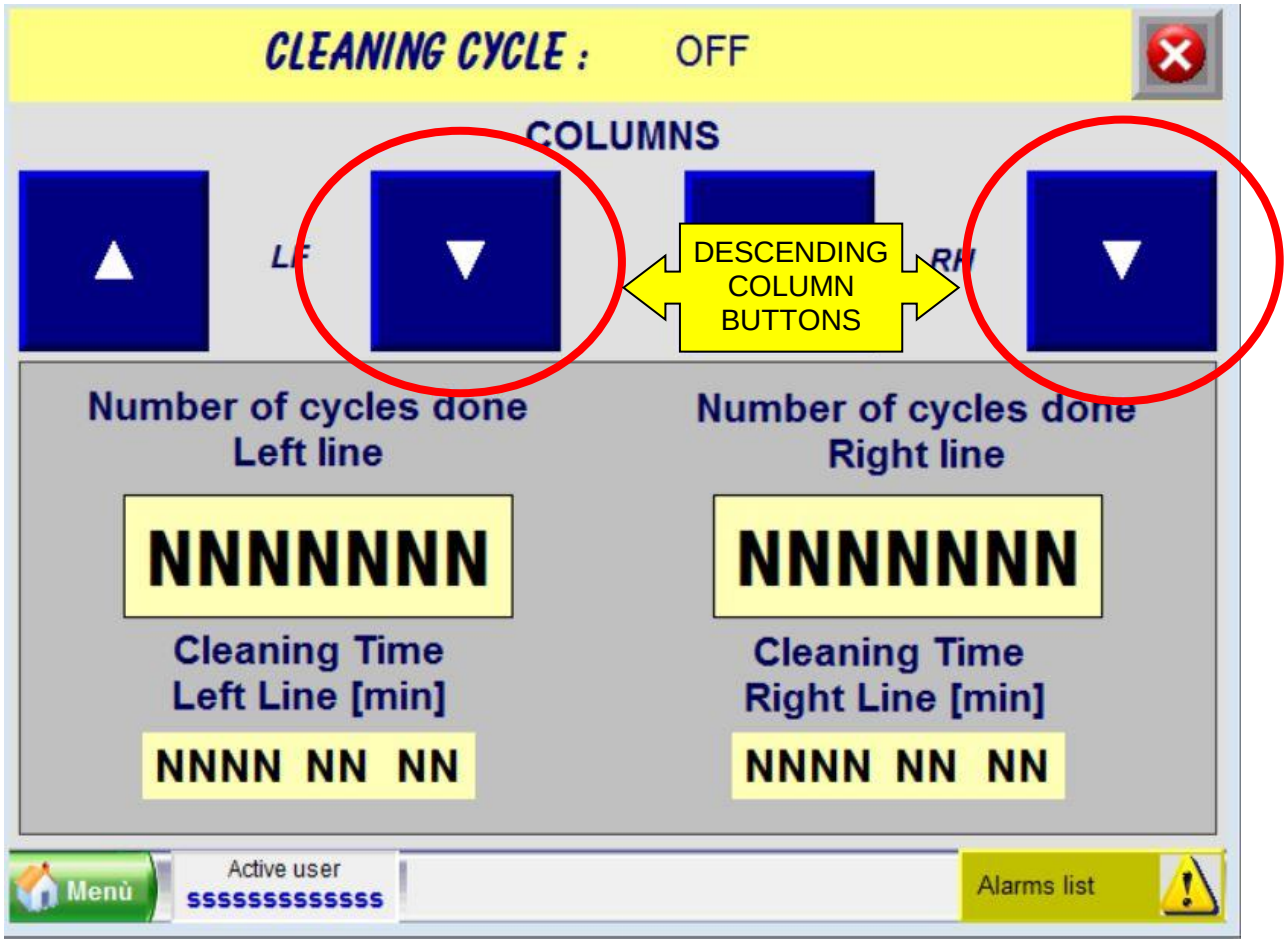
Rotate the CIP selector on the main control panel of the filler and will appear the cleaning page.
Using the pushbuttons on the upper side of the page, lift the columns.



Once the columns are in highest position, install the cleaning tools under the filling valves



Once installed the cleaning tools, set down the columns with the proper buttons.



6.4 CLEANING CYCLE

It is now possible to start the CIP cycle using the main pushbutton “START CYCLE”.
It is possible to stop the cleaning cycle (this will have some effect on the whole system) using the main pushbutton “STOP CYCLE”. In case the cycle cannot be restarted use the button “C.I.P. Abortion”.

All times and phases must be managed by the CIP unit of the customer. The cleaning logic of the machine is quite simple (see diagram) and is carried out at a pressure of 7 Bar.

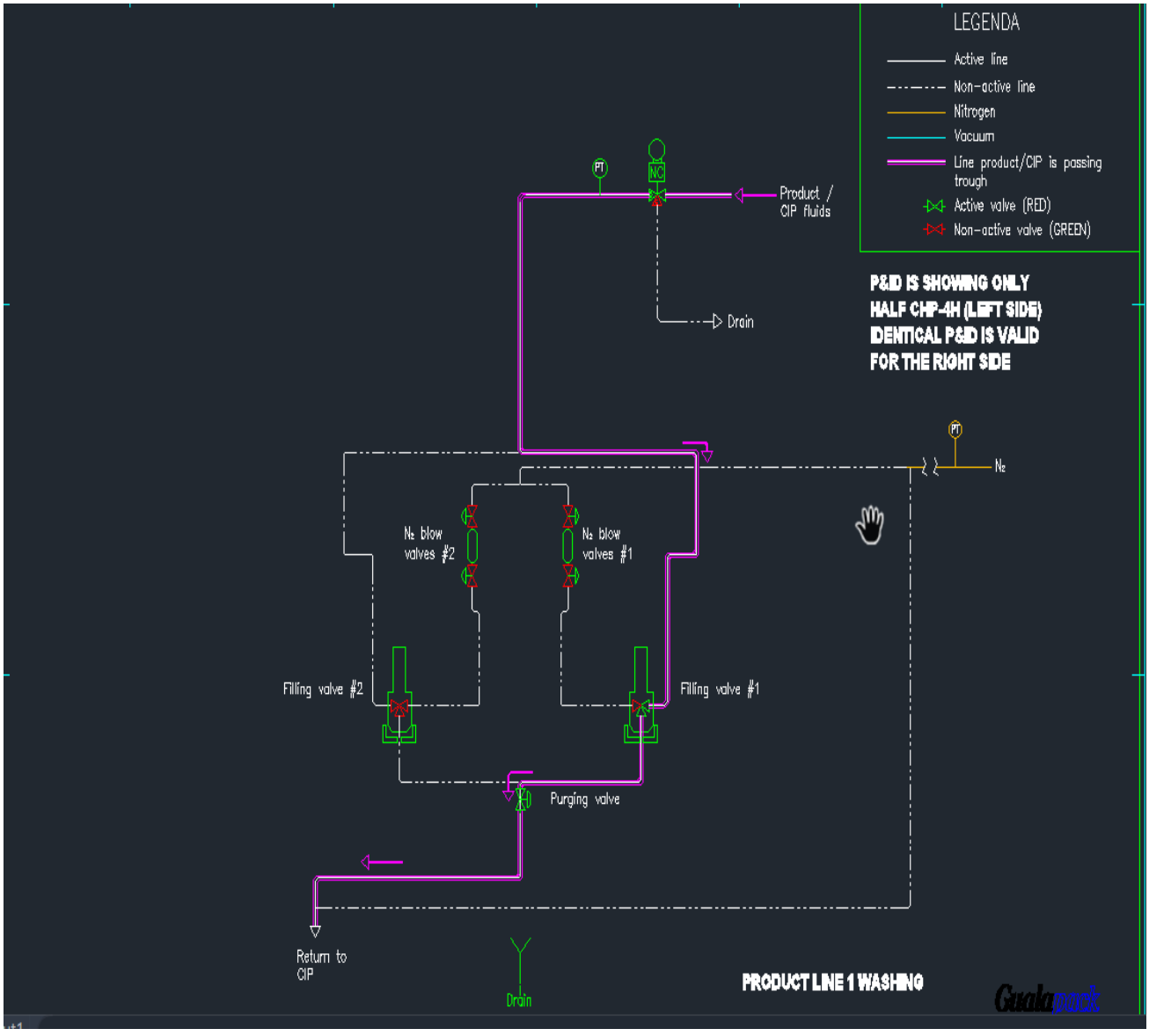


FIG.1

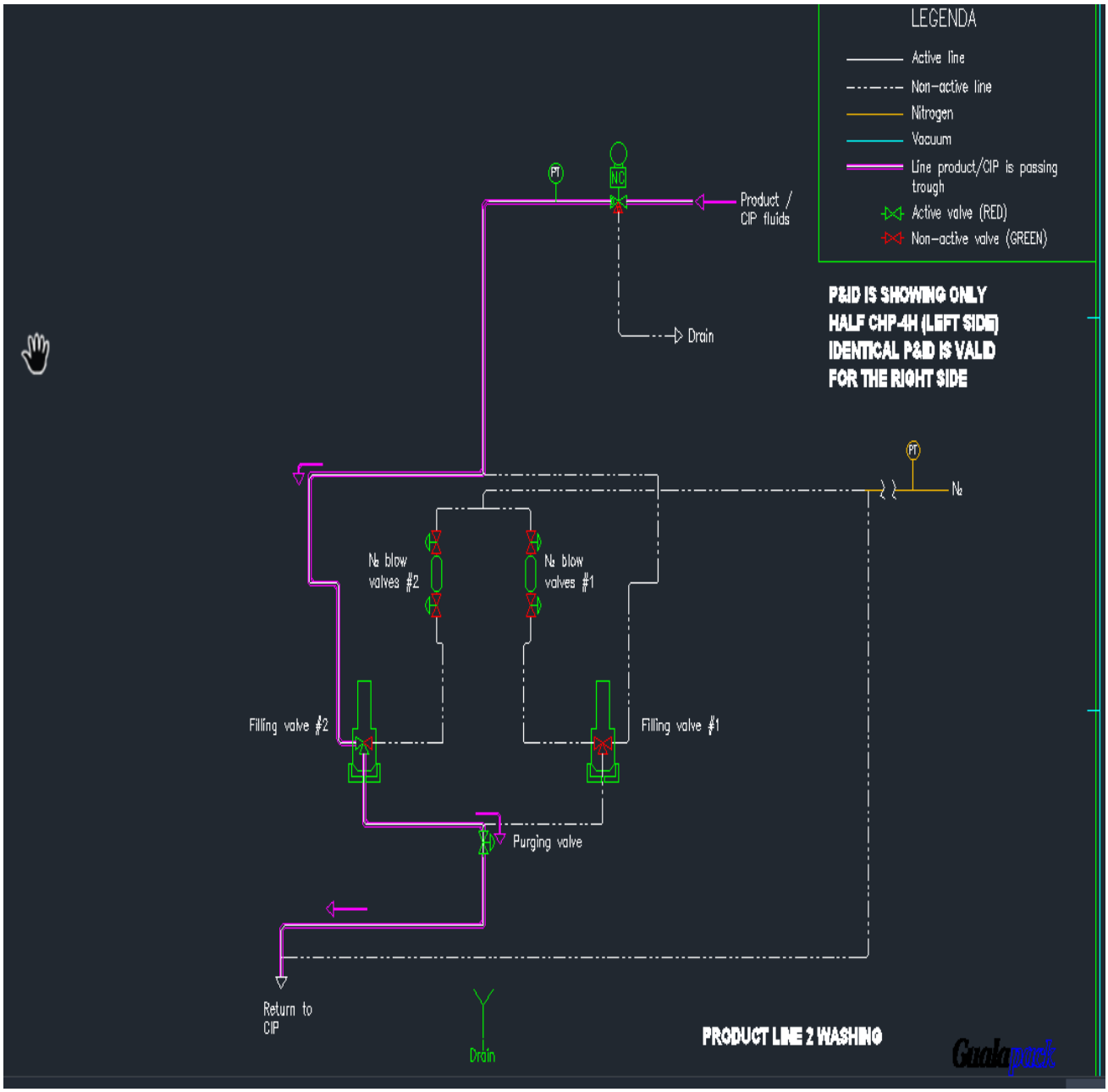


FIG.2

At first the machine alternates the cycle represented in the figure 1-2 for a time of 20 second for a total of 5 times

Then the machine starts a series of cycle divided into (fig. 3-4) for 20 seconds, figure (5-6) for 10 seconds and figure number 7 for 5 seconds, all repeated for the number of time that the customer will decided based on washing criteria that will deem appropriate.

FIG. 3

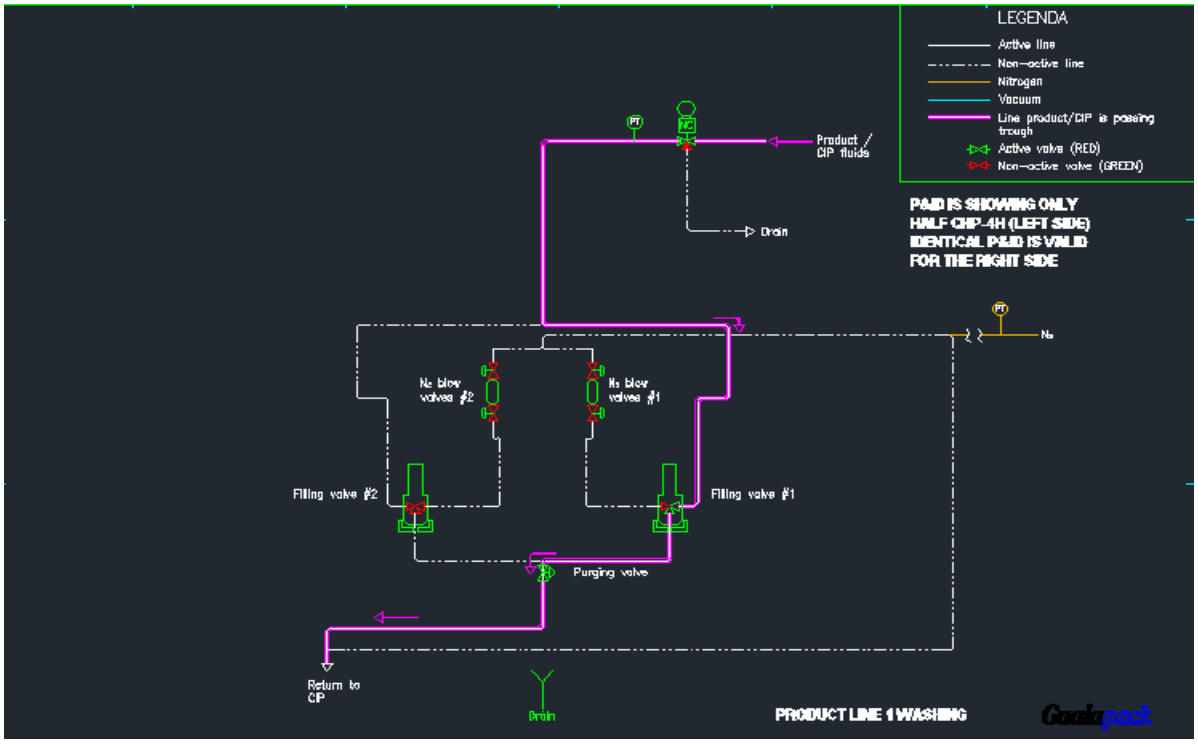

LEGENDA
Active line
Non-active line
Nitrogen
Vacuum
Line product/CIP is passing trough
Active valve (RED)
Non-active valve (GREEN)
P&ID IS SHOWING ONLY HALF CHP-4H (LEFT SIDE) IDENTICAL P&ID IS VALID FOR THE RIGHT SIDE
Product / CIP fluids
Drain
N2 blow valves #2
N2 blow valves #1
Filling valve #2
Filling valve #1
Purging valve
Return to CIP
Drain
PRODUCT LINE 1 WASHING

FIG. 4

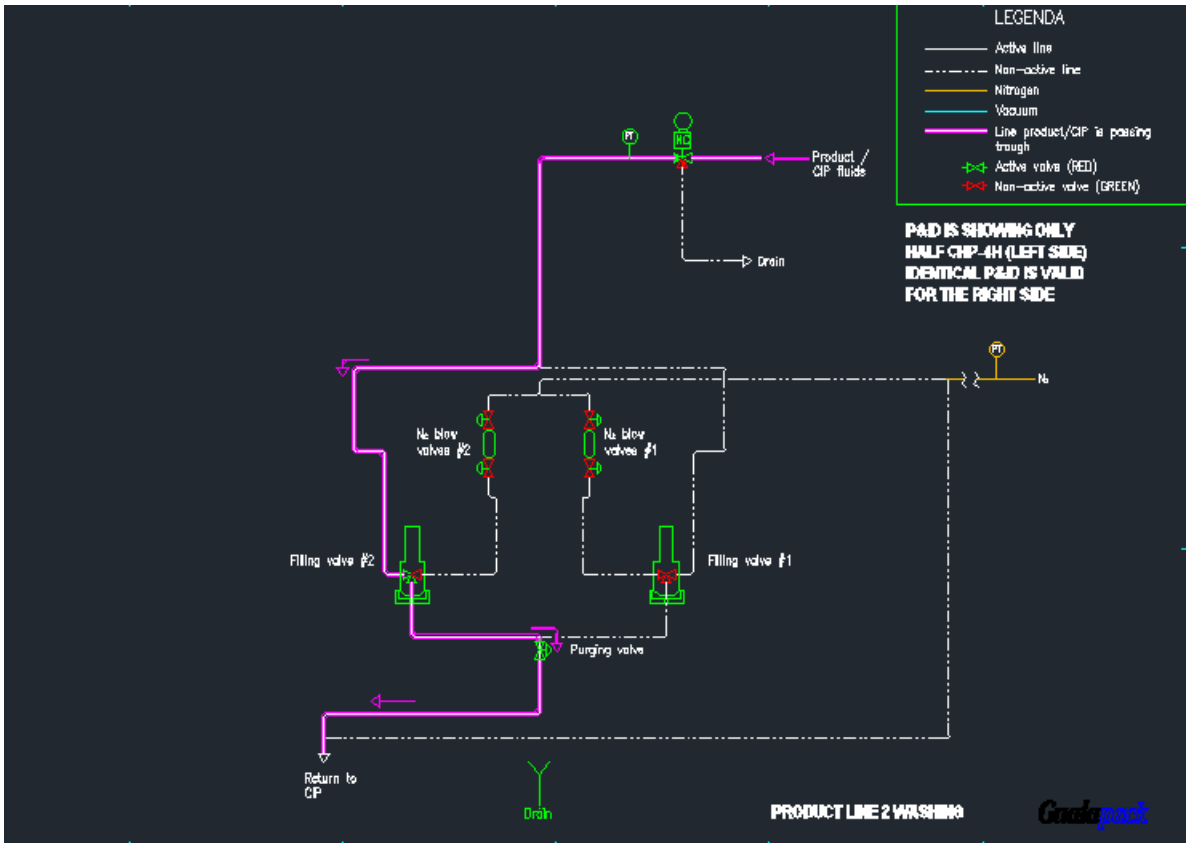

LEGENDA
Active line
Non-active line
Nitrogen
Vacuum
Line product/CIP is passing trough
Active valve (RED)
Non-active valve (GREEN)
P&ID IS SHOWING ONLY HALF CHP-4H (LEFT SIDE) IDENTICAL P&ID IS VALID FOR THE RIGHT SIDE
Product / CIP fluids
Drain
N2 blow valves #2
N2 blow valves #1
Filling valve #2
Filling valve #1
Purging valve
Return to CIP
Drain
PRODUCT LINE 2 WASHING

FIG. 5

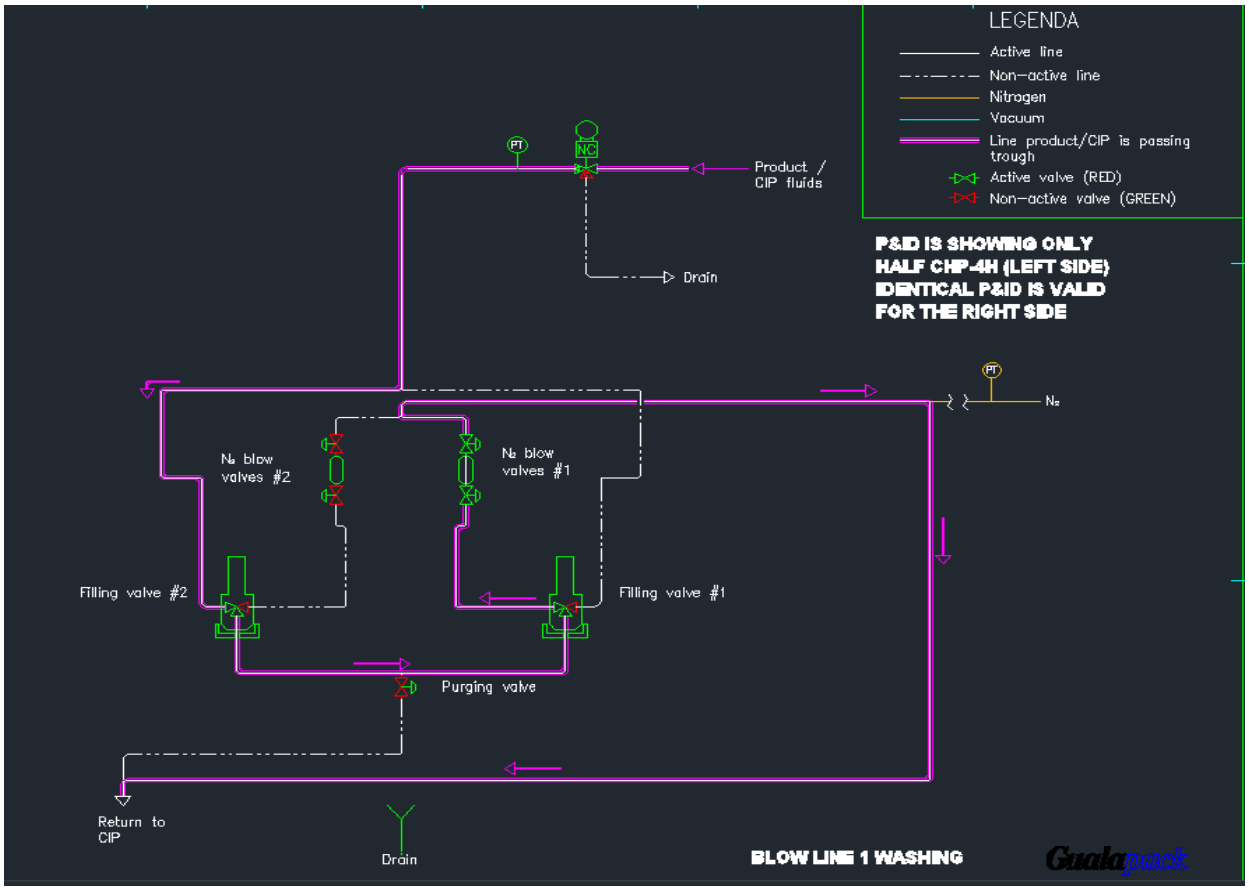

LEGENDA
Active line
Non-active line
Nitrogen
Vacuum
Line product/CIP is passing trough
Active valve (RED)
Non-active valve (GREEN)
P&ID IS SHOWING ONLY HALF CHP-4H (LEFT SIDE) IDENTICAL P&ID IS VALID FOR THE RIGHT SIDE
Product / CIP fluids
Drain
N₂ blow valves #2
N₂ blow valves #1
Filling valve #2
Filling valve #1
Purging valve
Return to CIP
Drain
BLOW LINE 1 WASHING
Gualapack

FIG. 6

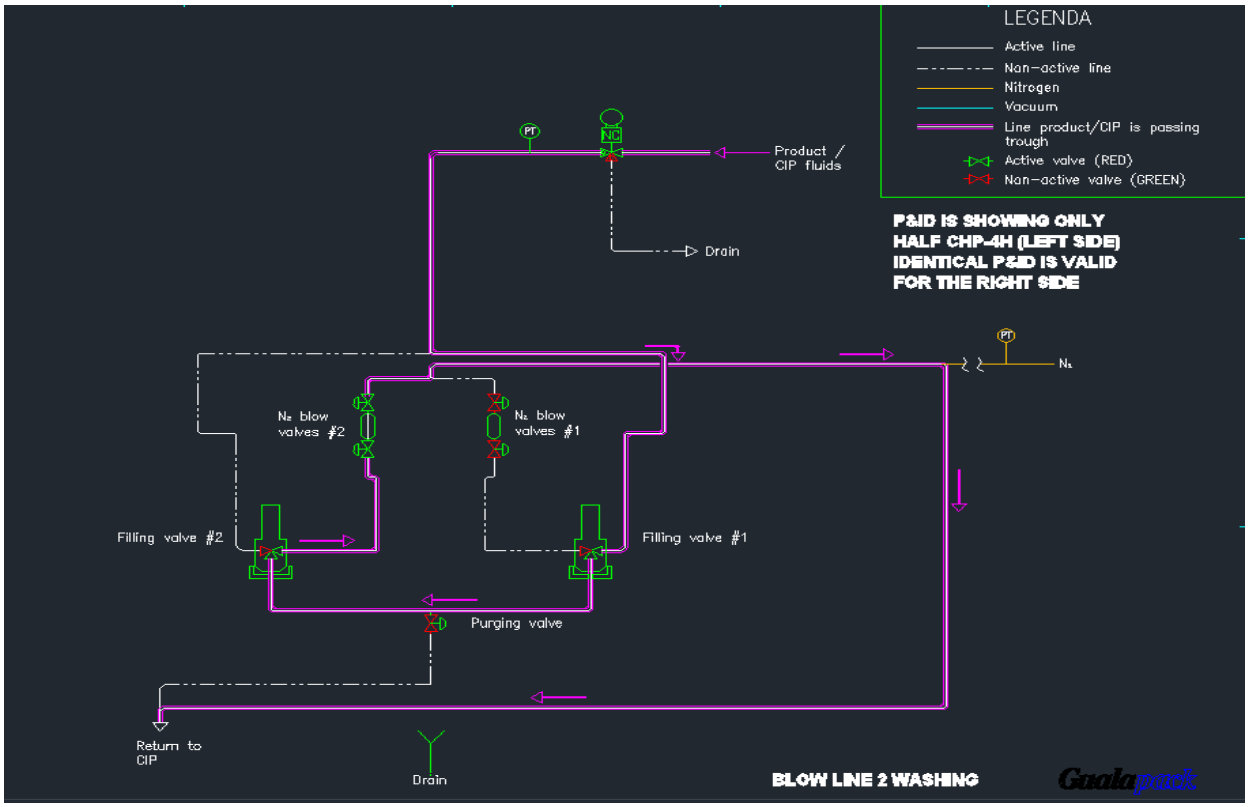
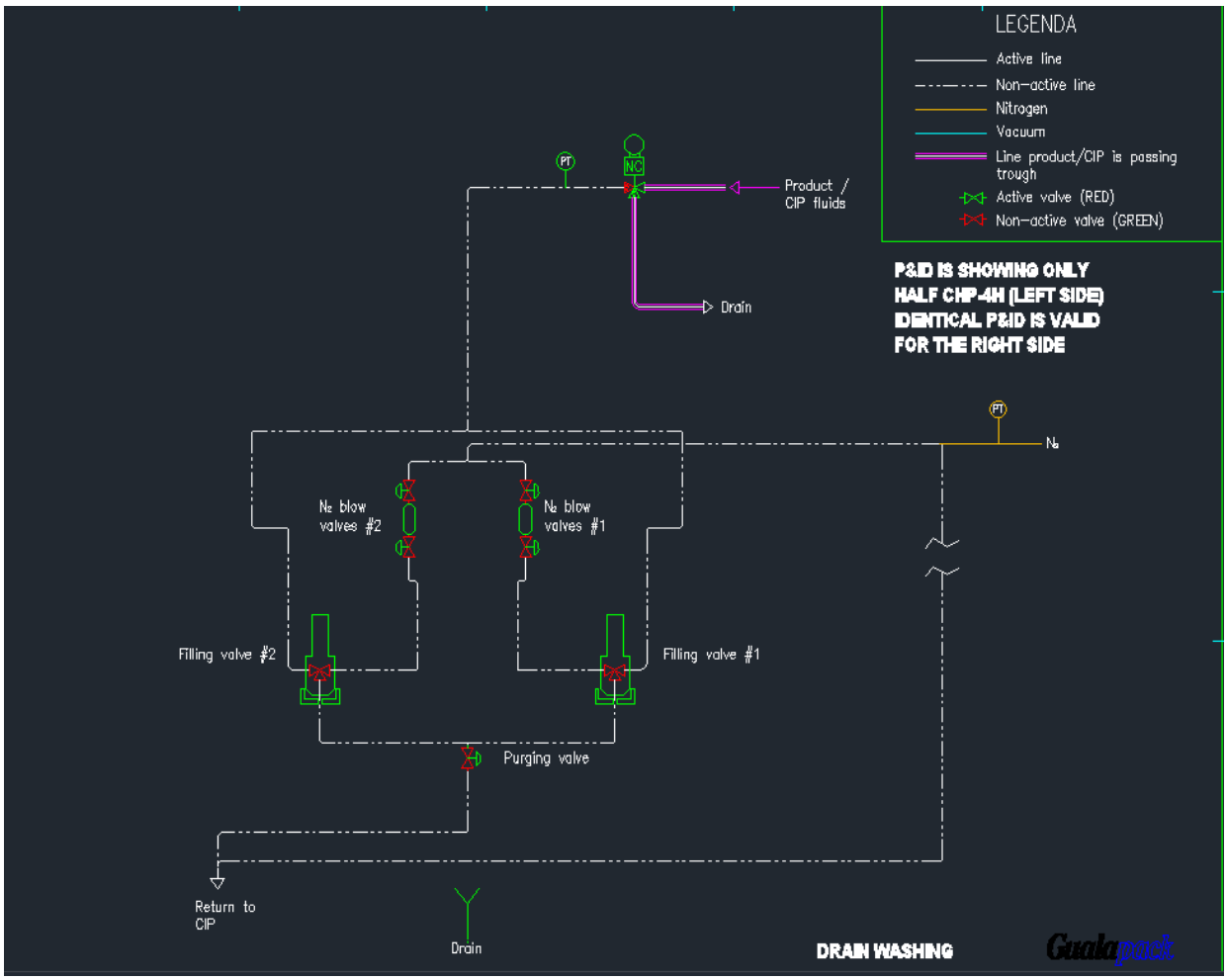

LEGENDA
Active line
Non-active line
Nitrogen
Vacuum
Line product/CIP is passing trough
Active valve (RED)
Non-active valve (GREEN)
P&ID IS SHOWING ONLY HALF CHP-4H (LEFT SIDE) IDENTICAL P&ID IS VALID FOR THE RIGHT SIDE
Product / CIP fluids
Drain
N₂ blow valves #2
N₂ blow valves #1
Filling valve #2
Filling valve #1
Purging valve
Return to CIP
Drain
BLOW LINE 2 WASHING
Gualapack

FIG. 7


LEGENDA
Active line
Non-active line
Nitrogen
Vacuum
Line product/CIP is passing trough
Active valve (RED)
Non-active valve (GREEN)
P&ID IS SHOWING ONLY HALF CHP-4H (LEFT SIDE) IDENTICAL P&ID IS VALID FOR THE RIGHT SIDE
PT
NC
Product / CIP fluids
Drain
N₂
N₂ blow valves #2
N₂ blow valves #1
Filling valve #2
Filling valve #1
Purging valve
Return to CIP
Drain
DRAIN WASHING
Gualapack

6.4.1 DEFINITION OF THE RIGHT AUTOMATIC CLEANING

The right cleaning cycle has to be defined in the first period of use of the machine and it is mandatory to revise it at any change in product type.
For the definition of the cycle it is necessary to strip the product circuit and check at regular intervals the cleanness of the internal surfaces. With these inspections it is possible to modify step by step the parameters of the cleaning cycle (cleaning product, concentrations, times, ..) until a good compromise between cleaning and cleaning time is reached.

The definition of the cleaning cycle is under the responsibility of the customer (who use the machine)

In most cases a bad cleaning is due to :

- Insufficient flow rate (mainly if the dirt is in the product tank)
- Low temperature of the cleaning solution
- Cleaning time too short
- Cleaning solution concentration too low
- Frequency of cleaning cycles too rare (too long period of production)

6.4.2 INSPECTIONS

Visual verification of the vacuum and blowing phases efficiency.
The value of the nitrogen pressure (fig1) are controlled by pressure-transducer and so if those values are out of range the filling cycle stops and the related alarm is shown on the panel. Nonetheless is mandatory to verify the real effect of those phases on the filled pouch.

Check of the blowing phase:

Frequency	30 min production
When	During filling cycle
Who	Filler operator

At the end of the filling product, it starts the blowing phase. This phase has the duty to dry-out the nozzles of the filling valves and to push down the product into the pouches.
This phase blows the head-space of the pouches with Nitrogen and its efficiency can be verified in two ways:

1) The typical moving of the pouches bloated must be well visible.
2) There should be no product coming out from the straws after filling.

In case the blowing phase is not well visible or there is product coming out from the straws, stop the filling cycle and perform the following check:

1) Verify the proper connection of the blowing pipes to the filling valves
2) Verify the presence of any leaking of the blowing pipes and fittings
3) Verify any possible obstruction of the blowing pipes and fittings
4) Verify that the filled volume do not exceed the pouches capacity
    a. Once the pouch is filled, there must be an head space of about 10 ÷ 15% left in the pouch.
5) Verify the proper working of the blowing Gemu valves([2])

Fig1

Fig2

Visual verification of the filling area cleanness.

Frequency	30 min production
When	During filling cycle
Who	Filler operator

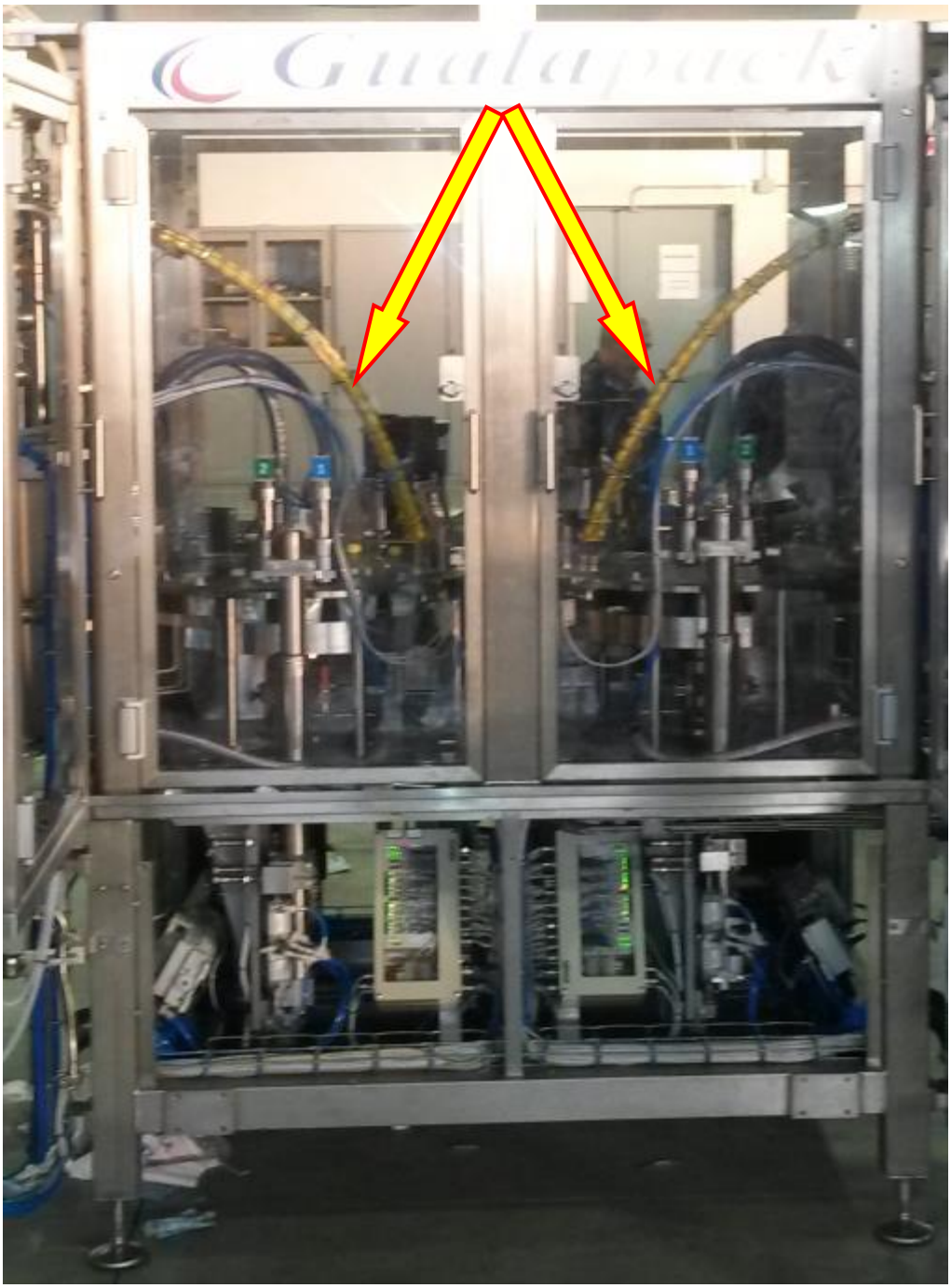
The filling area and the rotary table must be always clean.
There should be no product coming out from the pouches or from the filling valves.
Possible causes:

1) The filled volume exceeds the pouches capacity
2) The efficiency of the vacuum phase is not correct
3) The efficiency of the blowing phase is not correct
4) The product makes foam
    a. Reduce the filling speed
5) Speed of the rotary table is too high

Visual verification of the caps feeder chute

Frequency	30 min production
When	During filling cycle
Who	Filler operator

Verify the regular sliding of the caps in its chute.
It must be smooth.
On contrary, stop the filling cycle and verify the cleanness of the chutes.

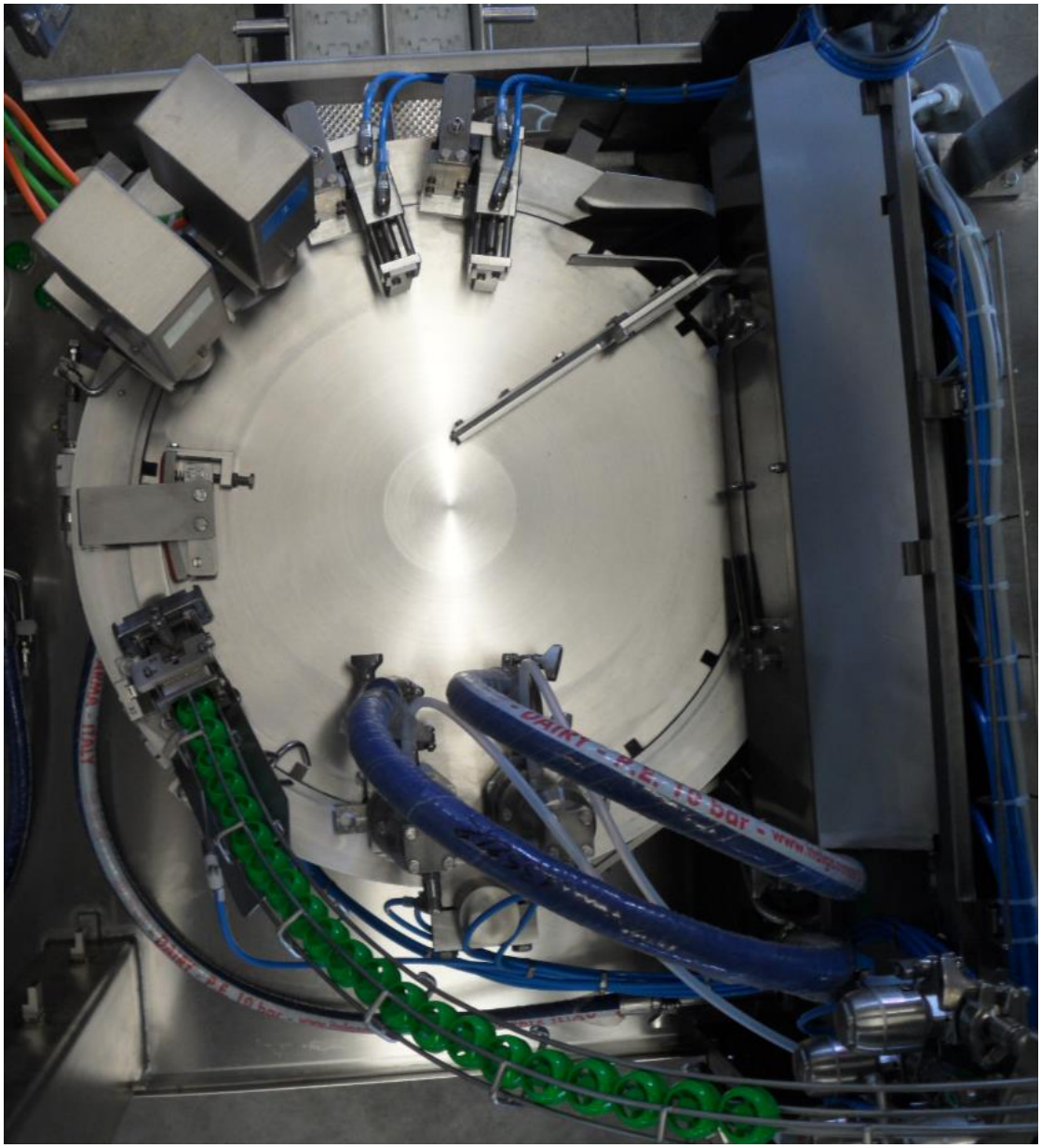


Visual the presence of caps free on the table (lost from the straws)

Frequency	30 min production
When	During filling cycle
Who	Filler operator

There must be no presence of free caps lost on the rotary table.
On contrary verify the provenance of those caps.
Frequent cause:

1) Insufficient caps feeding
    a. Verify the proper adjusting of the caps bowl vibration power
        i. If needed re-adjust the vibration power
    b. Verify the proper sliding od the caps in the chutes
        i. If needed stop the cycle and clean the chutes
2) Improper adjusting of the tear-off-head.
    a. Call the maintenance department. Stop the cycle and have the proper adjusting checked.
3) Improper adjusting of the caps pre-screwing device.
    a. Call the maintenance department. Stop the cycle and have the proper adjusting checked.



Verification of the printing label of the pouches

Frequency	30 min production
When	During filling cycle
Who	Filler operator

Verify on the filled pouches the quality and the correctness of the printing label. All data (Lot no, production date, expiration date, ecc) must be fully readable.
Frequent cause of trouble:

1) Improper printing head orientation
2) Improper printer speed (must be according to the rotary table speed)
3) Printing head cleanness
4) Improper Printing guide orientation
5) Bad shaped pouches
    a. before loading the pouches rails, verify the pouches status. If they are crumpled and creased straighten them.

Verification of the caps tightening

Frequency	30 min production
When	During filling cycle
Who	Filler operator

Verify the tightening of the caps following the instruction given on chapter 6.4.3.

Verification of the rejected pouches quality.

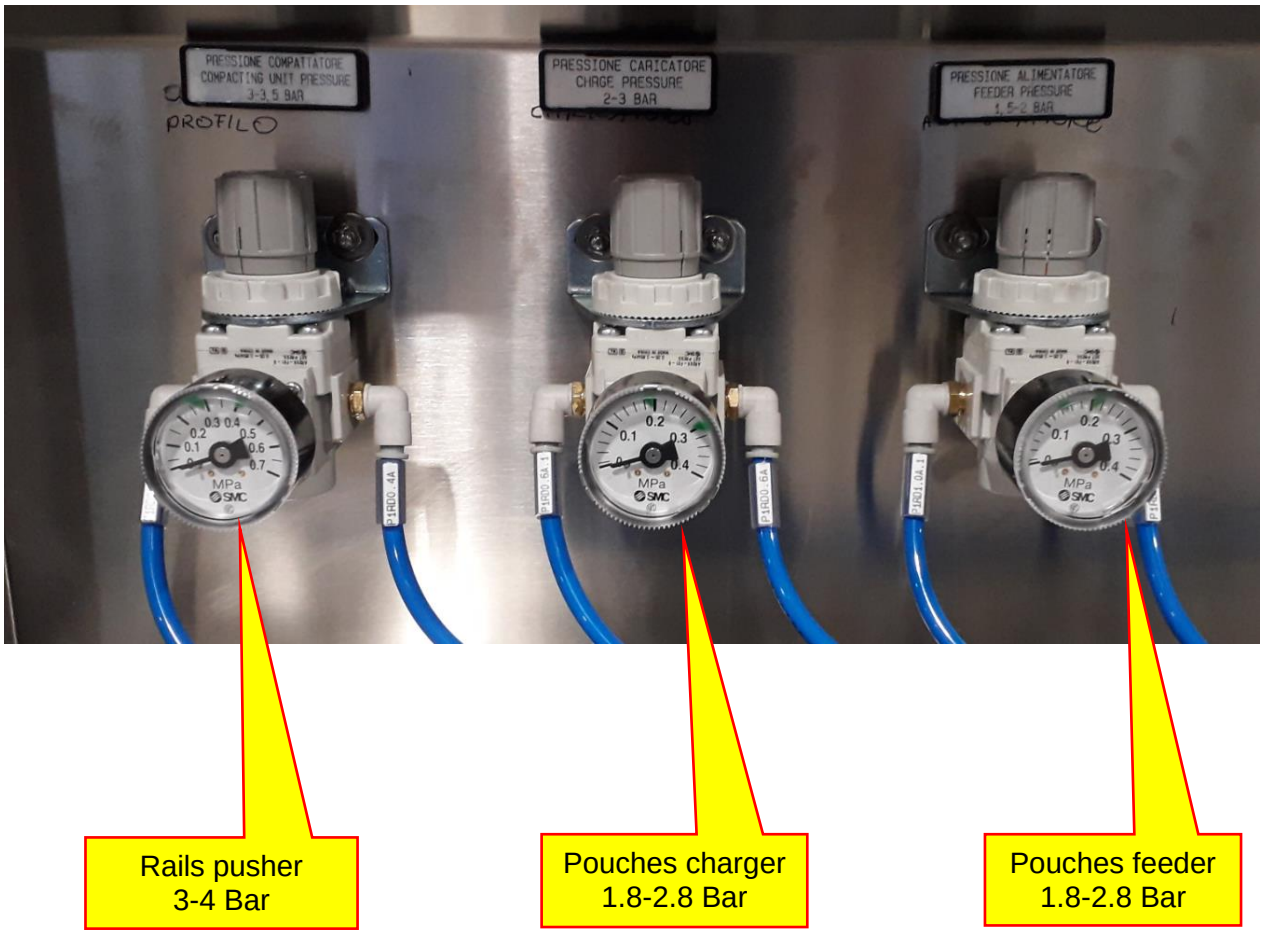
Frequency	30 min production
When	During filling cycle
Who	Filler operator

Using the rejected pouches counter separated by reason, identify the pouches rejected for un-screwed cap, missing cap and overtightened cap; verify the correctness of the rejection.
In case of incorrect rejection call the maintenance department and ask for a calibration of the "Caps Tightening Control Device".

Verification of the pouches loaders air pressure.

Frequency	Daily
When	During filling cycle
Who	Filler operator

Verify that the air pressure of the pouches loader is within the proper range. The air pressure value of the pouches charger and feeder have to be frequently adjusted. For this adjusting try to keep the value close to the lower range (1,8÷2 bar); then if the pouches loading is not fast enough increase the value slowly and cautiously. Do not exceed the maximum value (2,8bar).



6.5 Traffic lamp

The machine is equipped with a standard 3-lights traffic lamp, placed right over the left electrical cabinet.
The lamps turn on and off depending on the machine status, as explained below:

	FIXED	BLINKING (1s)
RED	Test button	Any alarm of the machine
		Emergency not restored
ORANGE	Test button	Temperature control disabled
		Pouch chargers empty (left/right or both)
		External stop
GREEN	Test button	Automatic cycle on 1 side only (left or right)
	Automatic cycle on	External stop
	Purging cycle on	Empty cycle
	Cleaning cycle on duty	Cleaning cycle in standby
		Leaving from purging cycle

INDEX

7.1 SAFETY: PRECAUTION AND MAINTENANCE STATE.

The people assigned to perform the maintenance on the filling machine, to operate in maximum safety condition, must have read and understand any information in the present manual at the chapter **3 – SAFETY AND ACCIDENT PREVENTION**.

ATTENTION

The maintenance or repairing intervention must be performed by qualified and authorized personnel only.
Every intervention must be performed in safety condition and with the machine stopped.

ENERGY SOURCE.

ATTENTION

For all maintenance intervention, the energy sources must be closed:

7.1.1.1 ELECTRICAL POWER.

Verify the main power supply breaker to be in OFF position.
Apply a warning tag on the breaker to advise other people on the state of the machine.
It is possible to lock the breaker with a padlock.

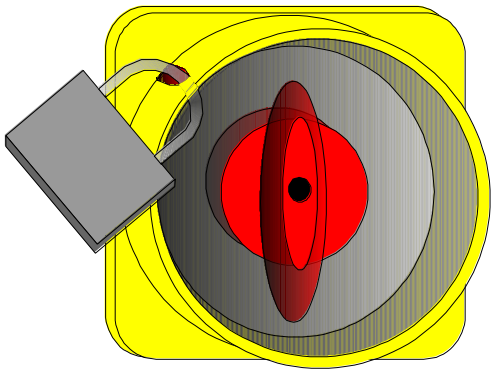
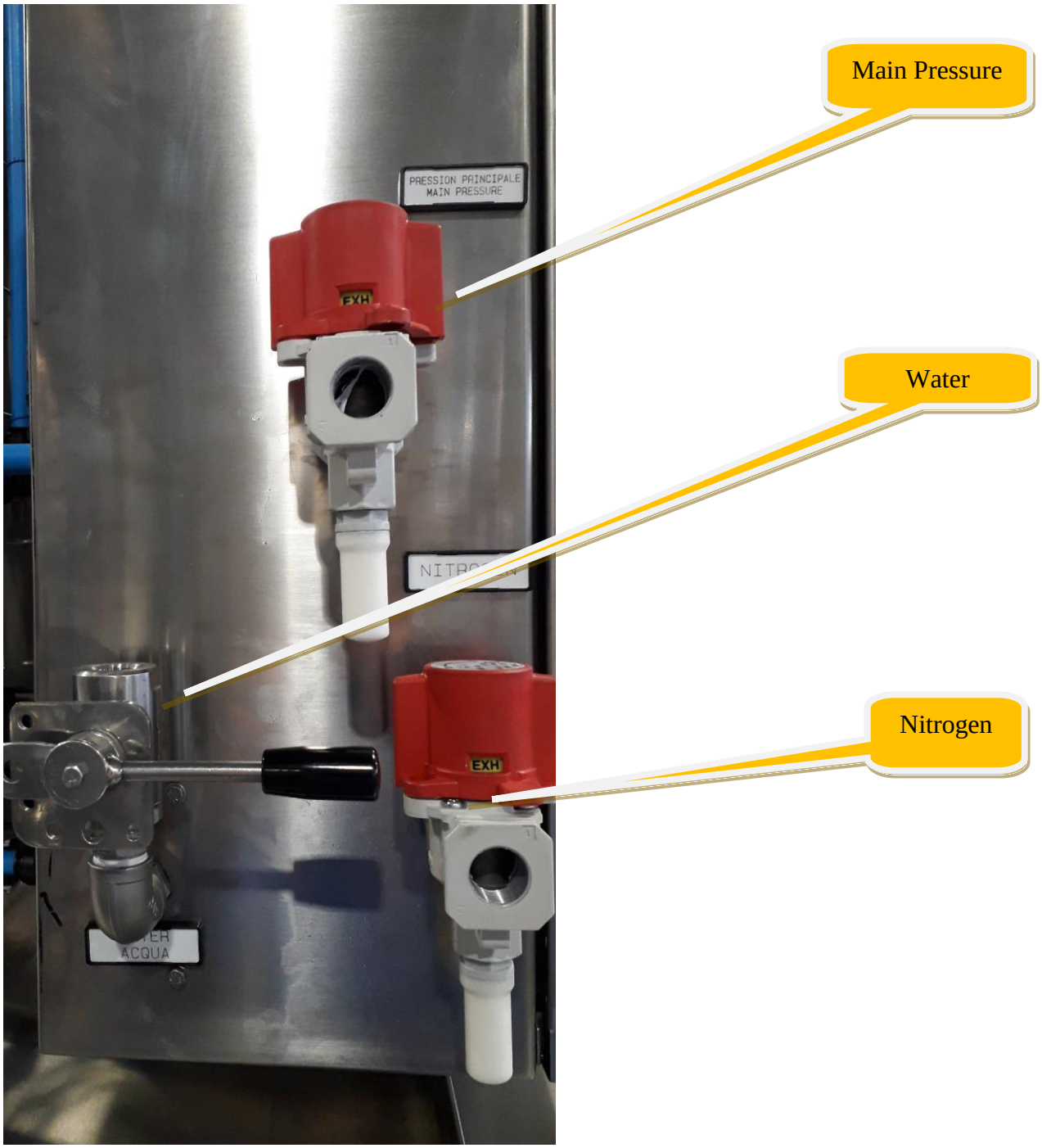


Fig. 7.1

7.1.1.2 WATER, NITROGEN, COMPRESSED AIR.

Close all energy source:
In the picture below, you can find the position of all valves.



TEST OVER SAFETY DEVICE.

The people assigned to the maintenance of the machine is obliged to verify the function of the safety device.
Periodically is necessary to test the safety device of the machine, and this procedure must be executed as a normal maintenance.

Emergency push button

- With the machine ready to run , push each emergency push button, and verify that the machine is set in emergency state (Emergency lamp ON). Verify also the fault indication on the LCD display.
- Every time restore the emergency.

Door safety switch

- Open each door, and verify that the machine is set in emergency state (Emergency lamp ON). Verify also the fault indication on the LCD display.
- Restore the emergency and try with the other doors.

Loader door safety switch

- With the bags pusher of the loader in the forward position, try to open the door on the bags loading area. Must be not possible to open the door.
- With the bags pusher in the backward position (rest position), try to open the door. Must be possible to open the door.
- With the door open is not possible to push the bags into the loader.

Thermal protection for the motors

- Switch off each thermal protection breaker, and verify the fault indication on the LCD display.
- Restore the breaker and reset the fault before to test another breaker.

Pressure switch on pneumatic circuit

- With the machine in ready to run state, close the air main valve on the supply pipe of the machine
- Decrease the pressure on the FRL group to zero
- The fault indication must appear around 3-4 Bar

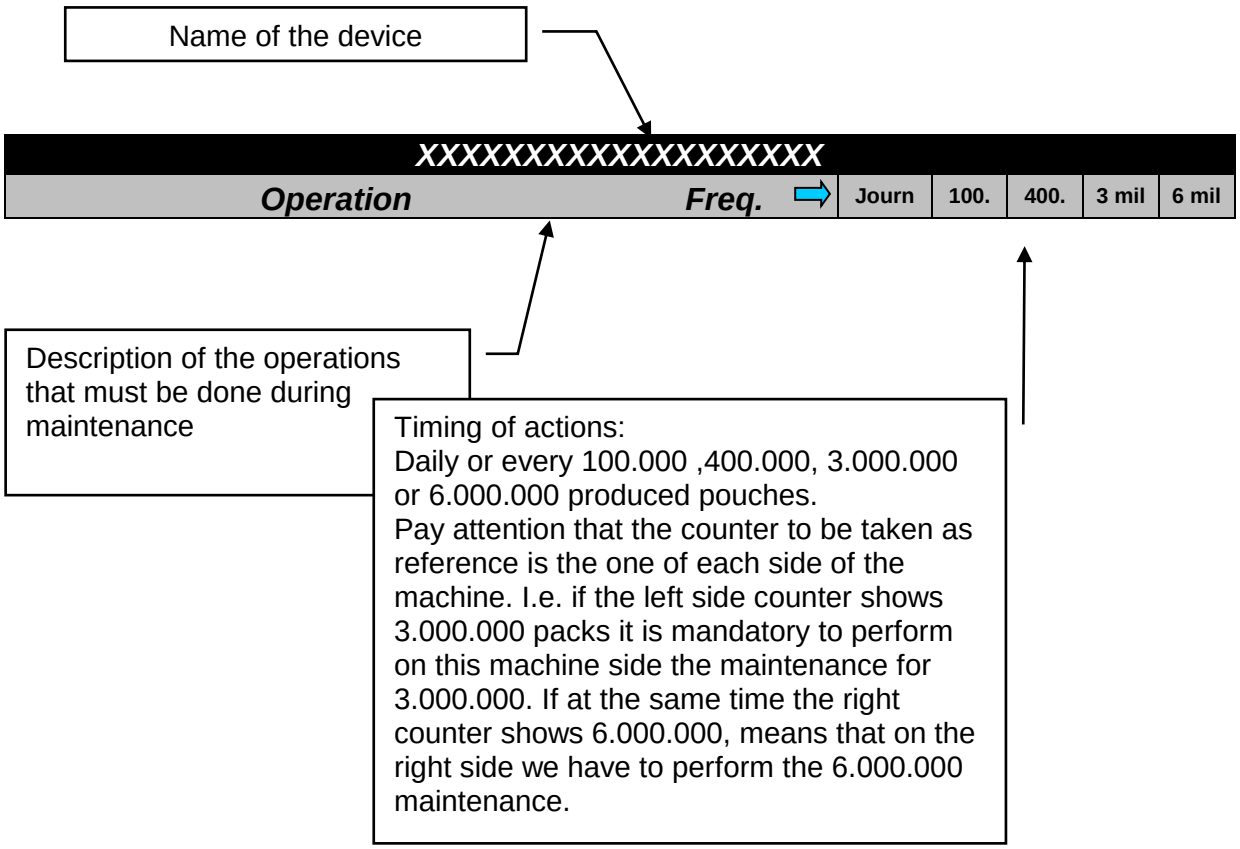
7.2 PREVENTIVE MAINTENANCE.

Hereby the table for the preventive maintenance to carry out on the machine, with the pourpose to maintain it efficient, so to guarantee a safety running.

WARNING

The people assigned to the preventive maintenance, must be qualified person, trained by Gualapack.

Each table is organized as below :



The intervention interval are general and they are average values, therefore these intervals can change a lot on the basis of product, cleaning solutions, cleaning cycle.
The adapted table must be defined in the first period of production and verified at any product or cycle change.
For this definition will be necessary to check frequently the machine parts, very important and the wearing parts in the product circuit. With the results of these inspection it will be possible to determine the life of the wearing and mechanical parts.

POUCH CHARGER					
Operation ***Freq.*** ⇨	**Daily**	**100.**	**400.**	**3 mil**	**6 mil**
Stainless steel blades					
❑ Cleaning – lubricate with silicon oil					
Rod-less cylinder Charger					
❑ With the machine in emergency stop, test the free movement of the carriage					
❑ Check the operation of the limit switches.					
Air pressure					
❑ Check the value of the air pressure for the rod-less cylinders: must be 1,8 – 2,5 bar for the charger cylinder and 1,8 – 3,0 bar for the feeder cylinder					
Grippers					
❑ Check the movements of gripper					
Pick and Place					
❑ Check the movements of the pick and Place					
Motorization.					
❑ Check the chain movement					
❑ Lubricate the bearing with grease					

ROTATING TABLE						
Operation	Freq. ⇨	Daily	100.	1 mil.	3 mil	6 mil
Table phase						
❑ Make this checking in the pouch enter position. Check the good stop position. Centre of the table slot must be always aligned in according to the center of the pouch feeding rails.						

PRODUCT TANK						
Operation	Freq. ⇨	daily	100.	1 mil	3 mil	6 mil
❑ Check the right level device working..						
❑ Open the tank cover and clean the internal surfaces using hot water and a brush - Clean also the internal surface of the cover - Check that all internal parts are well fixed.						

PISTON VALVES						
Operation *Freq.* ⇨	Daily	100.	1 mil	3 mil	6 mil
Gaskets						
Open the valve and replace all gaskets				■	
Open the valve and check the condition of the liquid spool, if shows wearing replace it				■	
Spring						
Open the valve and check the spring, if necessary replace it.				■	

VACUUM AND NITROGEN SYSTEM					
Operation *Freq.* ⇨	Daily	100.	1mil	3mil	6mil
1) Vacuum level					
❑ Adjust the vacuum level at -35 - -45 kPa	■				
2) Nitrogen pressure level					
❑ Adjust the nitrogen pressure at 1,2 – 2,5 bar according to the pouch size and the head space of the pouch	■				
3) Vacuum tank					
❑ Open the vacuum tank and clean it carefully by hot water, dry it and check that the gasket is good.	■				
❑ Replace the gasket of the cover					■
4) Venturi pump					
❑ Clean				■	
5) Pipes and fittings					
❑ Check for leakages	■				
6) GEMU Valves					
❑ Check the membranes status ❑ Replace the membrane if broken				■	

DOSING PUMP					
Operation Freq. ⇨	Daily	100.	1mil	3 mil	6 mil
Lubrication					
Dismount the cover and lubricate with grease the greasing point				■	
Piston gasket					
❑ Open the dosing pump and replace the gasket				■	
Static gasket					
❑ Open the dosing pump and replace the tri clamp gasket					■
Piston Sliding bush					
❑ Open the pump and replace the piston sliding bush				■	

FILLING VALVE 125839					
Operation Freq. ⇨	Daily	100.	1mil	3mil	6mil
1) Cleaning (To carry out at the end of each production cycle).					
❑ Open the lower clamp – Remove the cylinder supporting body - Extract the valve core - Wash it with hot water and wipe it – Lubricate with food grease the sliding parts – Reassemble the valve	■				
2) Gasket					
❑ Replace the gaskets item 240 fig. 7.13 and item 220 fig. 7.12 and 7.13				■	
❑ Replace the gaskets item 230 fig. 7.13					■
3) Liquid spool and gas spool.					
❑ Check the status and the sealing function of the liquid spool and gas spool			■		
❑ Replace the liquid spool if necessary				■	
❑ Replace the gas spool					■
4) Valve spring					
❑ Check the status of the spring			■		
❑ Replace the spring				■	
5) Pipes and fittings					
❑ Check for leakages	■				
❑ Replace all fittings				■	

FILLING VALVE 126598					
Operation ***Freq.*** ⇨	**Daily**	**100.**	**1mil**	**3mil**	**6mil**
6) Cleaning (To carry out at the end of each production cycle).					
❑ Open the lower clamp – Remove the cylinder supporting body - Extract the valve core - Wash it with hot water and wipe it – Lubricate with food grease the sliding parts – Reassemble the valve	■				
7) Gasket					
❑ Replace the gaskets item 240 fig. 7.13 and item 220 fig. 7.12 and 7.13				■	
❑ Replace the gaskets item 230 fig. 7.13 ❑ Replace the gasket item 140 fig. 7.15					■
8) Liquid spool and gas spool.					
❑ Check the status and the sealing function of the liquid spool and gas spool			■		
❑ Replace the liquid spool if necessary				■	
❑ Replace the gas spool					■
9) Valve spring					
❑ Check the status of the spring			■		
❑ Replace the spring				■	
10) Pipes and fittings					
❑ Check for leakages	■				
❑ Replace all fittings				■	

CAP FEEDER						
Operation Freq. ⇨	Daily	100.	400.	3 mil	6 mil
Cap hopper.						
❑ Emptying the hopper from caps. Clean all internal parts using a towel wetted with hot water . Rinse.			■		
Cap channel / Tear-off head.						
❑ Emptying parts from caps. Washing the internal side of the head using hot water and a brush. Rinse with air. Lubricate using antishuffing solution			■		
❑ Replacement of the pliers spring.				■	
❑ Replacement of the pressure spring.				■	

CAPS TIGHT DEVICE CONTROL						
Operation Freq. ⇨	Daily	100.	400.	3 mil	6 mil
Device control.						
❑ With cap loose pouch, verify that pouch must be rejected	■				

7.3 MEMBRANE REPLACEMENT FOR GEMU VALVES (VACUUM NITROGEN GROUP)

For replacing the valve membrane follows the following instructions

1) Dismount the valve body

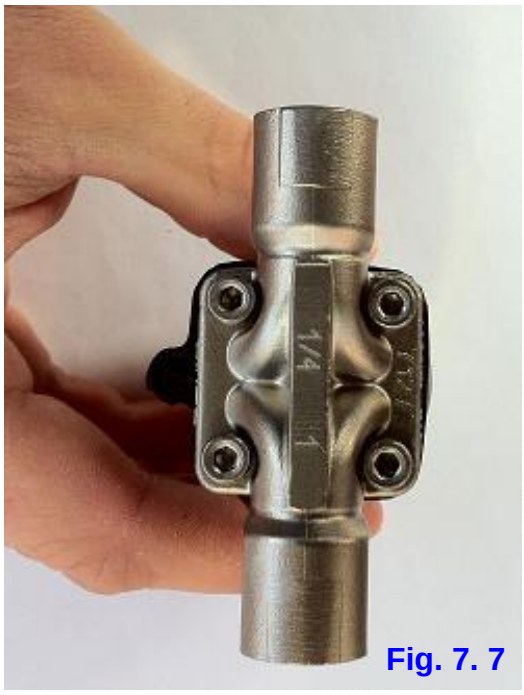


Fig. 7. 7

Fig. 7. 8

2) Dismount the membrane from its seat

Fig. 7. 9

3) Place the new membrane in its seat

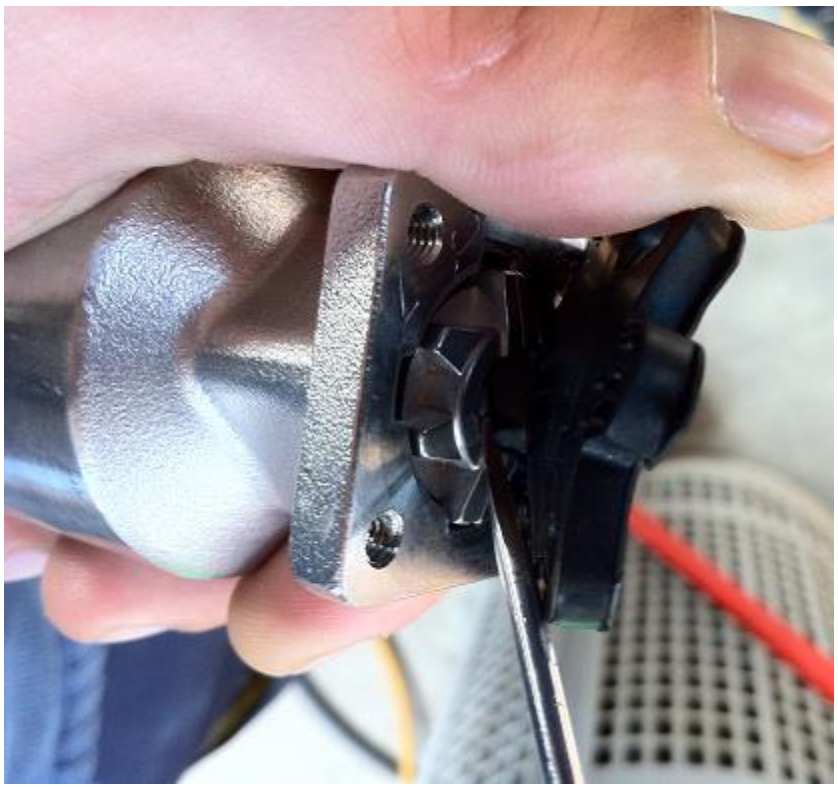


Fig. 7. 10

4) Re assemble the valve

7.4 FILLING VALVE 125839.

For replacing the filling valve seals follows the following instructions

1) Disconnect the pneumatic pipes
2) Dismount screws (300) and disconnect the upper part (50) from the rest of the valve

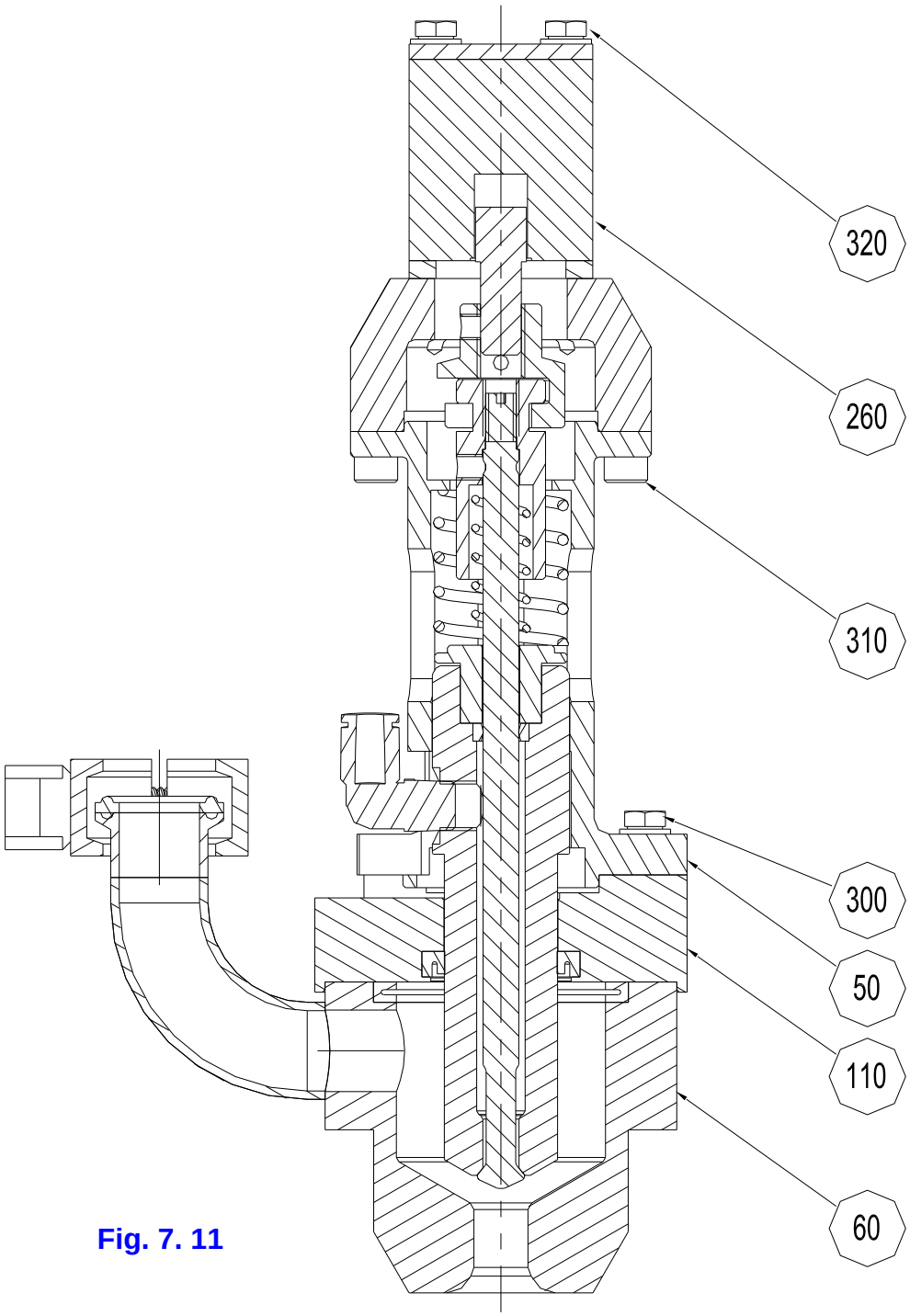
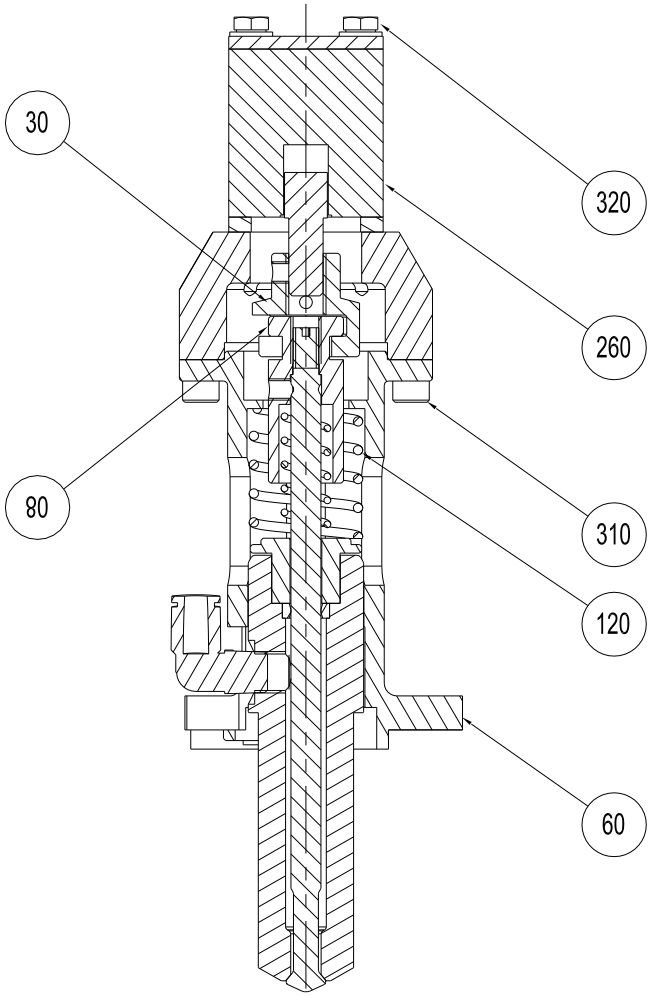


Fig. 7. 11

3) Dismount screws (310)
4) Disconnect the gas rod from the pneumatic cylinder. The pneumatic cylinder has to be fully extended and the movement has to be radial form parts (80) and (30)
5) Now is possible to replace the spring (120)



6) Dismount screws (330) for replacing seals (220) and (230)

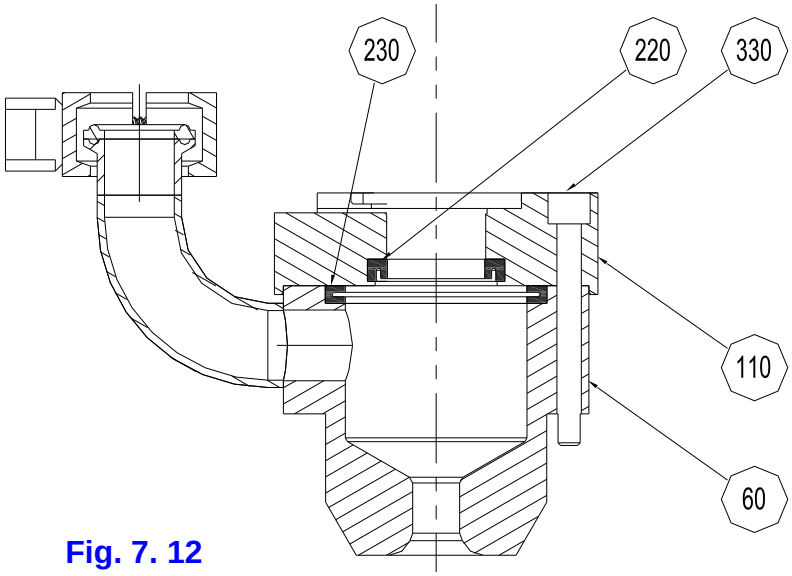


Fig. 7. 12

7) Dismount screw (350) et dismount the part (80) from the gas spool (70). Therefore
   a. dismount the gas spool (70) from the liquid spool (100)
   b. Replace spring (250)
   c. Clean the gas passage
8) Replace regularly the pneumatic connection (360) to guarantee the necessary sealing of the circuit

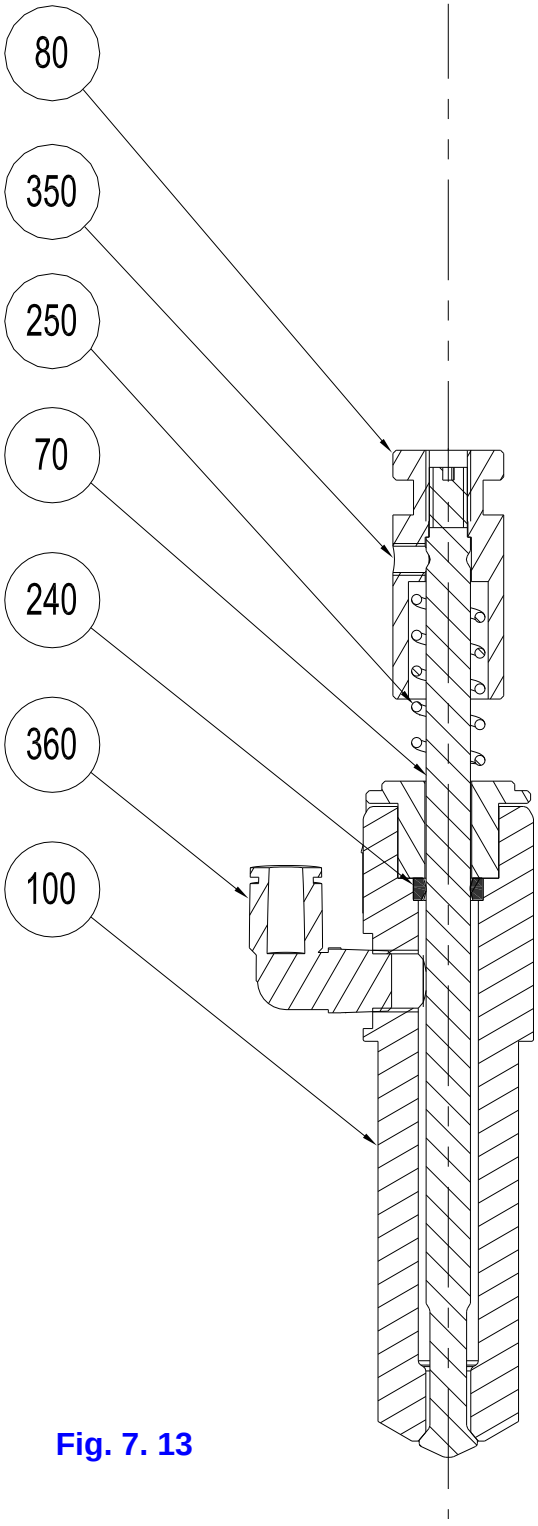


Fig. 7. 13

7.5 FILLING VALVE 126598.

For replacing the filling valve seals follows the following instructions

1) Disconnect the pneumatic pipes
2) Dismount screws (300) and disconnect the upper part (50) from the rest of the valve

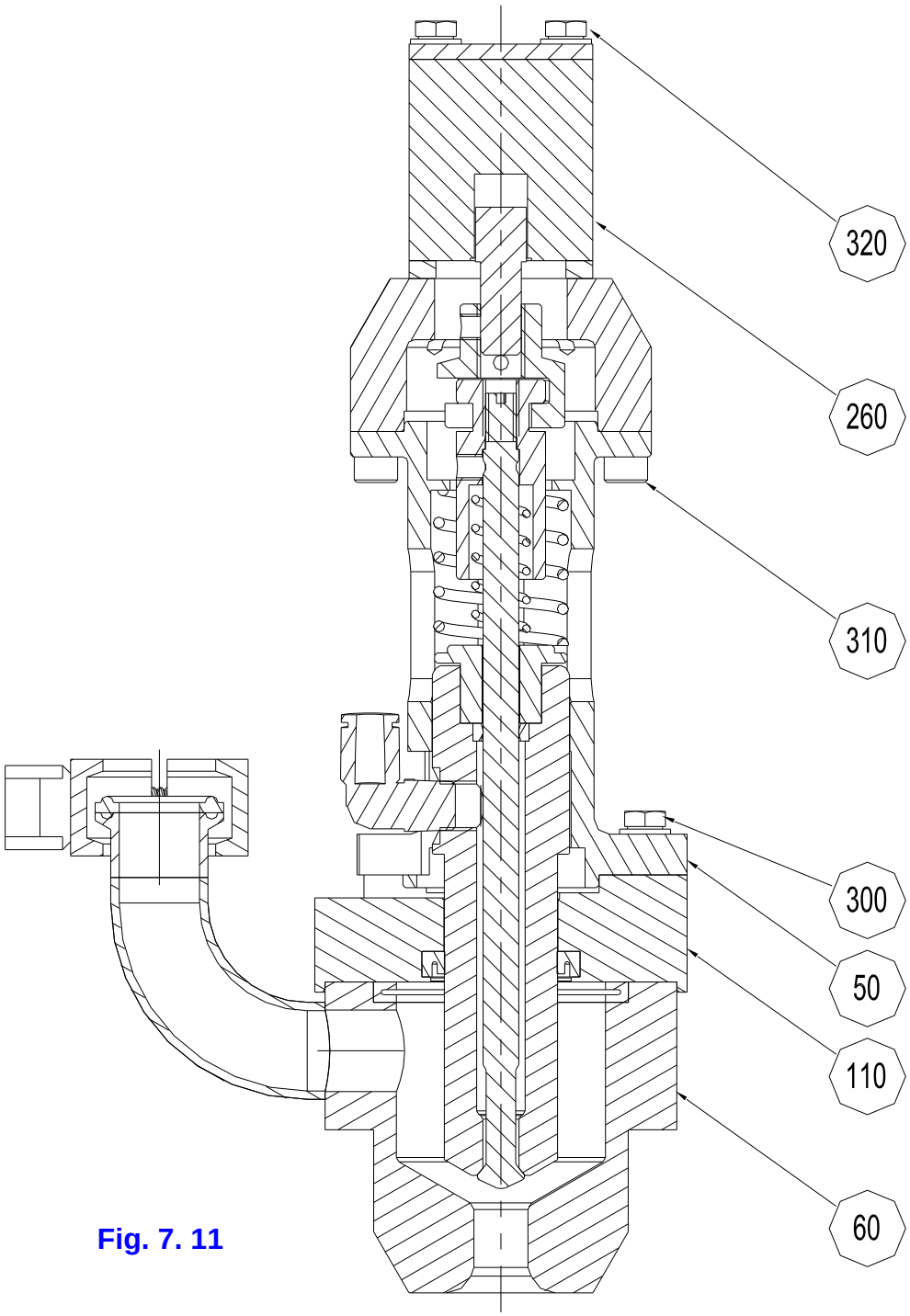


Fig. 7. 11

3) Dismount screws (310)
4) Disconnect the gas rod from the pneumatic cylinder. The pneumatic cylinder has to be fully extended and the movement has to be radial form parts (80) and (30)
5) Now is possible to replace the spring (120)

6) Dismount screws (330) for replacing seals (220) , (230) and (140)

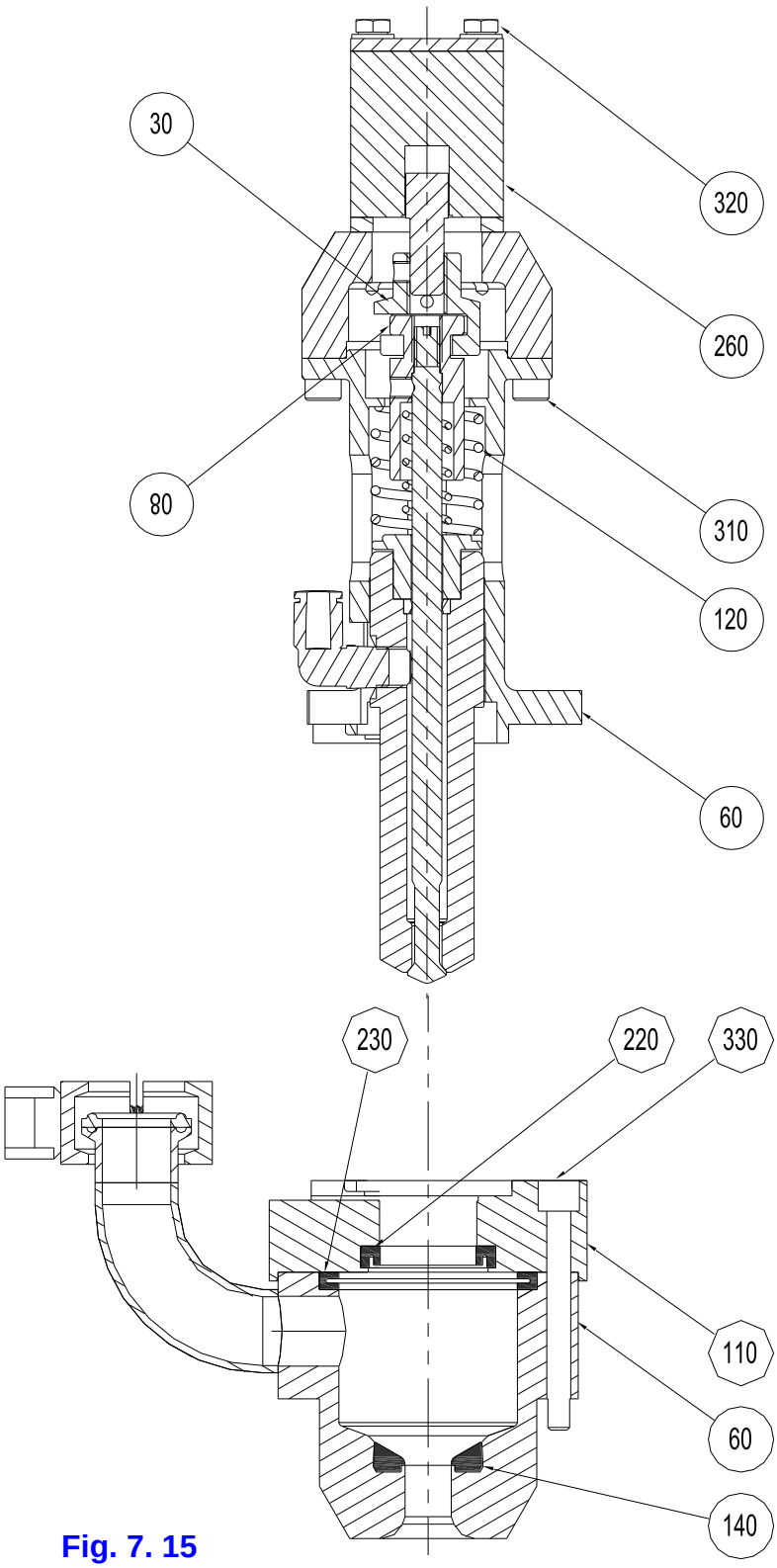


Fig. 7. 15

7) Dismount screw (350) et dismount the part (80) from the gas spool (70). Therefore
    a. Dismount the gas spool (70) from the liquid spool (100)
    b. Replace spring (250)
    c. Clean the gas passage
8) Replace regularly the pneumatic connection (360) to guarantee the necessary sealing of the circuit

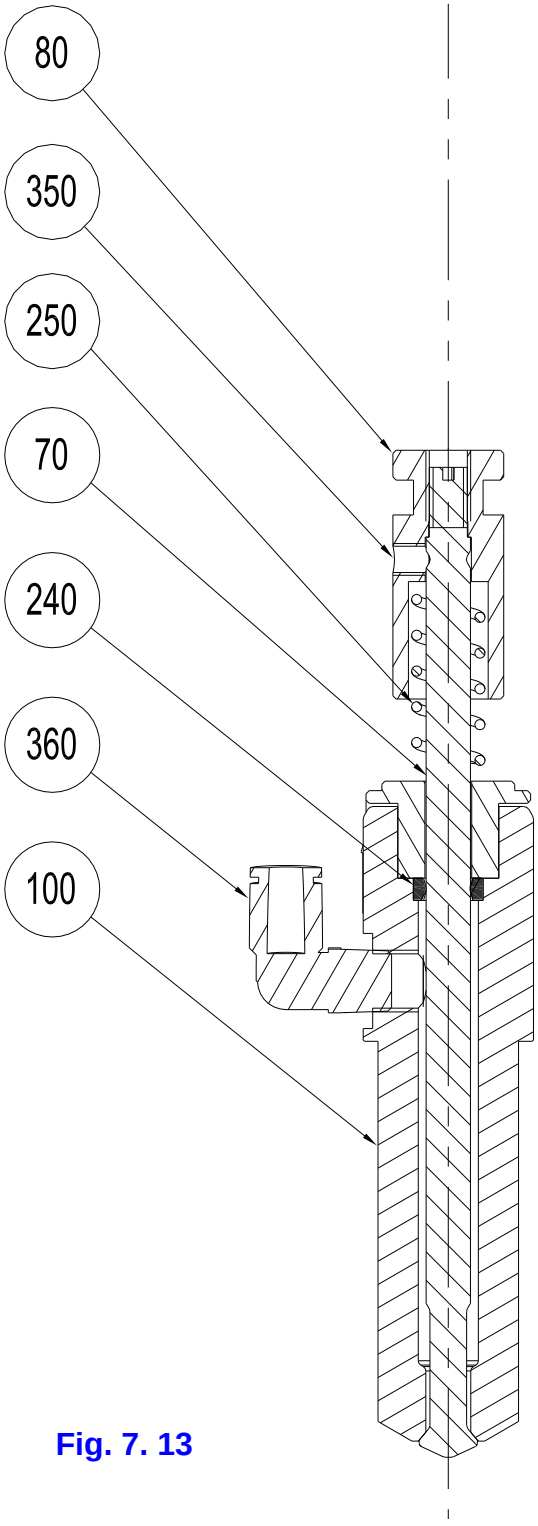


Fig. 7. 13

7.6 LUBRICATION

The lubrication frequency suggested is related to the normal use of the filler in common environments.
In case of some particular stress due to special environments and particular aggressive and corrosive actions (heavy steam, external disinfection foam use etc.) the frequency can be increased.

7.6.1.POUCHES LOADERS LUBRICATION

7.6.1.1 RAILS TRANSPORT CHAIN MOTORIZATION

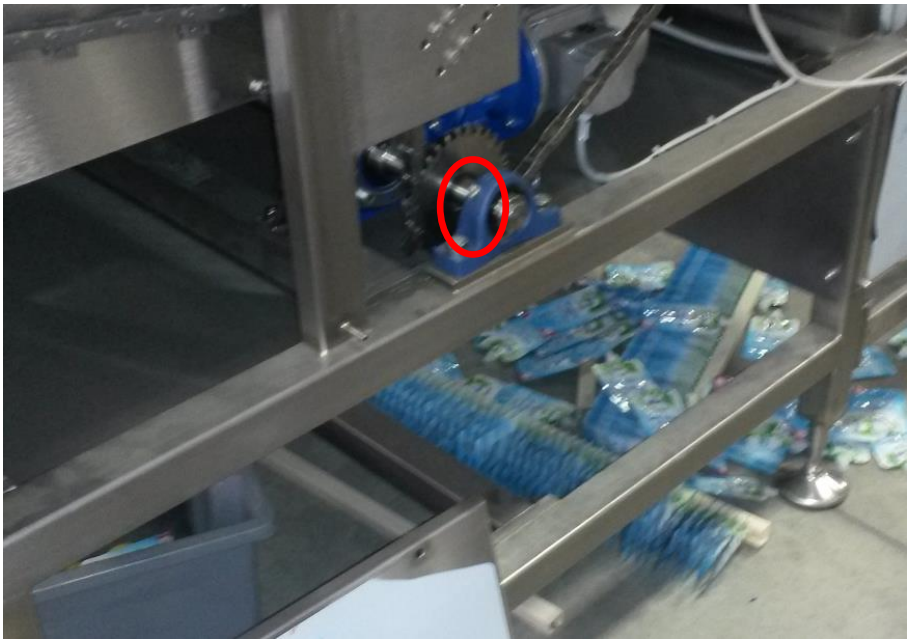
Lubricate rails transport chain motorization any 2 years.

Open the side protection of the main chain motorization.

Lubricate the bearing support.
Any motorization shaft has two bearing support; so open also the other side protection of the same loader and lubricate the point.

Repeat the action on the opposite loader.

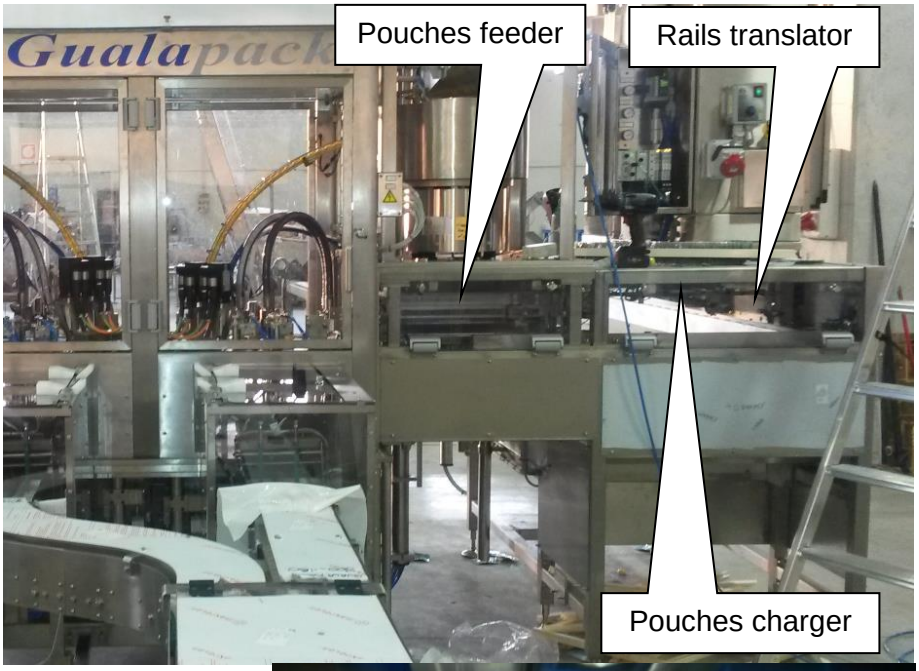
Four points on the filler.



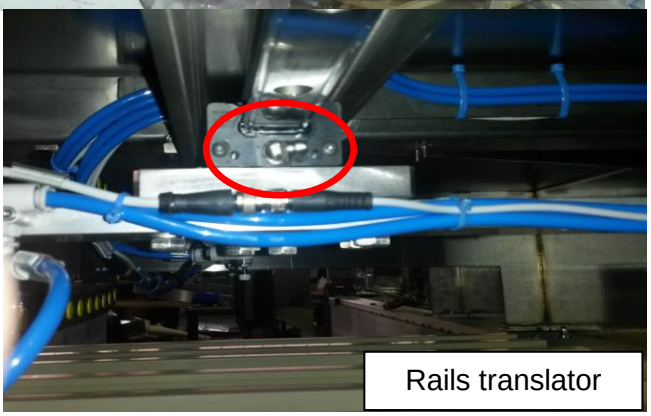
7.6.1.2 BEARING BALL CARTS

Lubricate the bearing ball cart once a month in the following points.

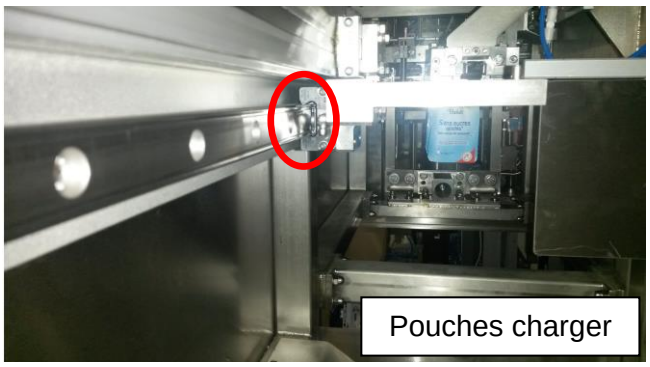
Open the front protection and lubricate the rails translator, the pouches charger and the pouches feeder.



Lubricate the bearing-ball-cart of the rails translator.



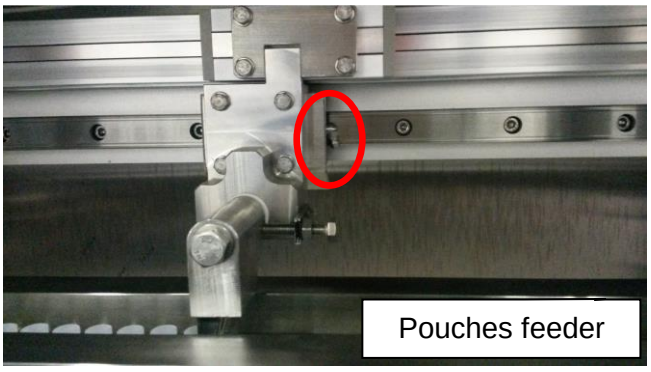
Lubricate the bearing-ball-cart of the pouches charger.



Lubricate the bearing-ball-cart of the pouches feeder.

Repeat the action on the opposite loader.

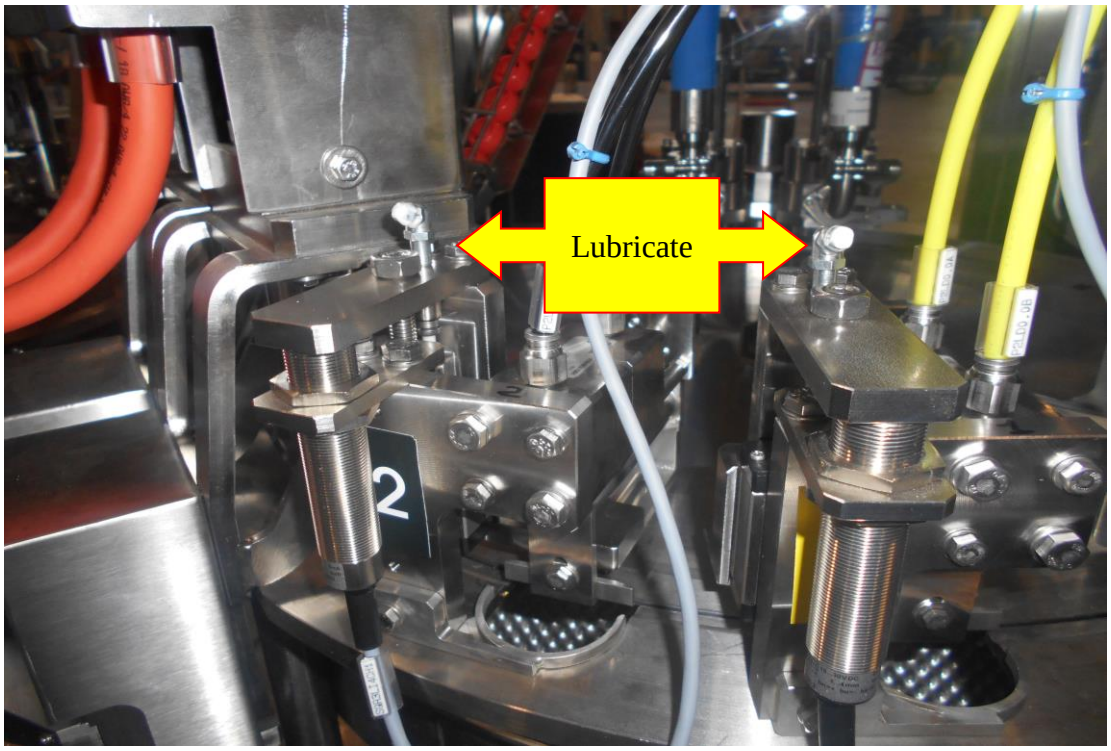
Six points on the filler



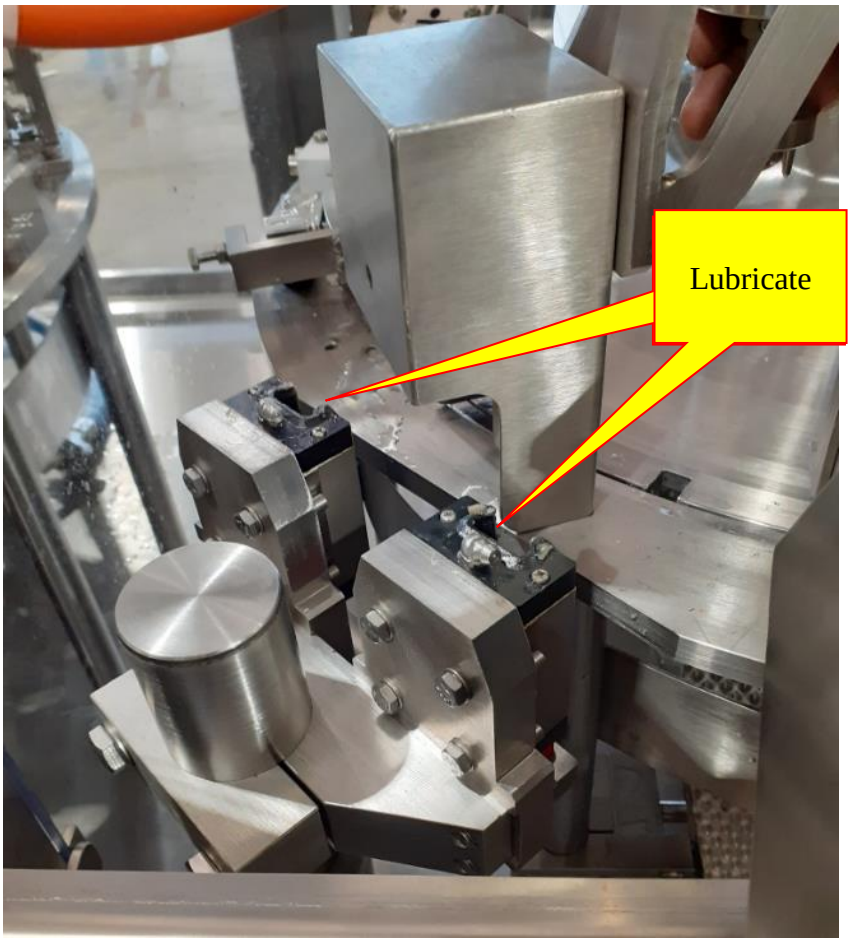
7.6.2 FILLING AREA LUBRICATION.

Lubricate the filling area once a month in the Caps tightening control feeler-pins and caps screwing:

Any caps tightening control feeler-pin has a lubricating point (Lubricate once a month)

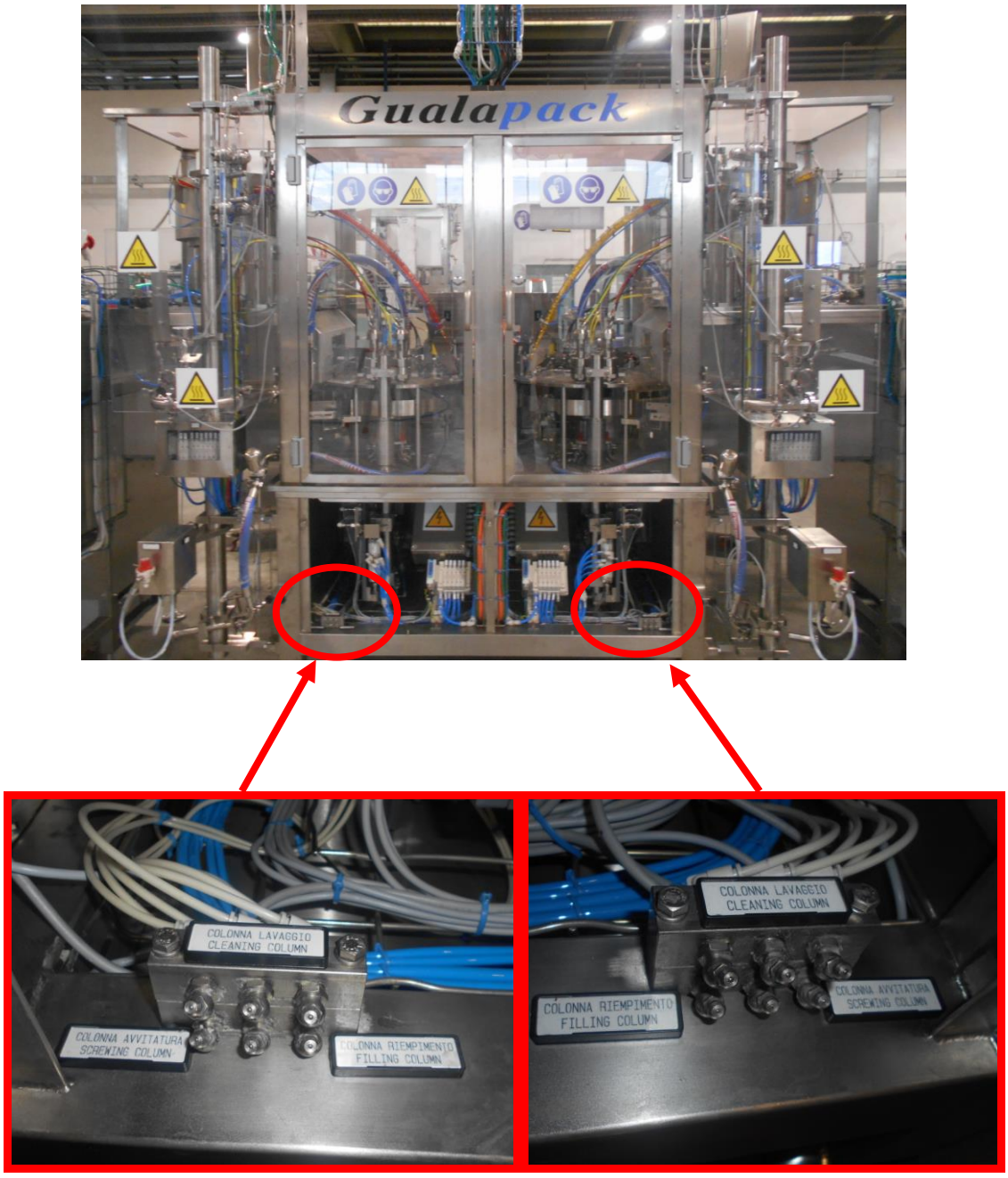


Cap tightening slides.(Lubricate once a month)



7.6.3 CENTRALIZED LUBRICATION

Instead of singularly lubricate all the points, the machine offers only one lubrication point, from which it's possible to arrive to all greasing points of the machine. Open the protections of the main motorization (filling side).
Lubricate these points once a month:



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8.1 FAULTS DETECTION

The filling machine is built with a self-diagnostic procedure, capable to identify any fault during the working cycle.

To report that fault, an LCD display is installed on the machine, so the operator ca see the cause of the stop of the machine.

To reset the fault, the operator can use a push button on the main control board.

In the next section, where the meaning of each fault is explained, will be indicate the right procedure to reset the fault.

8.2 LIST OF ALARMS

Every Alarm string has a numeric identification and a description of the fault.

Moreover, a list of action to be taken to solve the problem is shown.

The operator can follow these indications to identify the component cause of the problem.

This is the HMI screen shown in case of active alarms:

In the following table there is an explanation and some suggestion for each alarm conditions.

Numeric identification of the alarm	Description shown	Action
1	Emergency push-button pressed PB1	The emergency pushbutton on the main control panel is pressed. If it is possible, release the pushbutton to restart the machine.
2	Emergency push-button pressed Charger Left	The emergency pushbutton on the left charger is pressed. If it is possible release the pushbutton to restart the machine.
3	Emergency push-button pressed Charger Right	The emergency pushbutton on the right charger is pressed. If it is possible release the pushbutton to restart the machine
4	Emergency pressed right cabinet	The emergency pushbutton on the left electrical cabinet is pressed. If it is possible release the pushbutton to restart the machine.
5	Emergency pressed left cabinet	The emergency pushbutton on the left electrical cabinet is pressed. If it is possible release the pushbutton to restart the machine.
7	Reset emergency stop	The emergency stop is not restarted. If it is possible restart the machine by pressing “Emergency Restart” pushbutton.
8	Circuit breaker 24V I/O 5QF2 5QF3 5QF4 tripped	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.
9	Circuit breaker 24V servodriver 6QF1 6QF2 tripped	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.
10	Circuit breaker 24V servodriver 6QF3 6QF4 6QF5 tripped	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.
13	Circuit breaker 24V Analog 5QF2 5QF3 5QF4 tripped	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.
14	Circuit breaker 48QF1 fan cooler tripped	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.

17	External stop active	The authorisation from the Endline (or any other component in the filler's downstream connected to the filler) is not giving the production authorization.
33	Ethernet communication Fault Remote I/O R5 (Cabinet)	The Ethernet communication with the indicated node is faulted.
65	Reset emergency (Left side is down)	The emergency stop is not restarted on left side of the filler. If it is possible restart the machine by pressing "Emergency Restart" pushbutton.
66	Air pressure low left line	The air pressure at supply point is too low, please check the air supply and the pressure switch.
67	Door L1 opened (filling area left)	A door of the machine is open. If it is possible close the door to restart the machine.
68	Door L2 opened (filling area left)	A door of the machine is open. If it is possible close the door to restart the machine
69	Door L3 opened (pouches charger area left)	A door of the machine is open. If it is possible close the door to restart the machine
70	Door L4 opened (pouches charger area left)	A door of the machine is open. If it is possible close the door to restart the machine
71	Door L5 opened (pouches charger area left)	A door of the machine is open. If it is possible close the door to restart the machine
72	Door L6 opened (barcode area left)	A door of the machine is open. If it is possible close the door to restart the machine
73	Check circuit safety doors left	A door of the machine is not well closed (or the safety switch broken). If it is possible close the door to restart the machine.
77	Circuit breaker left line caps supplier 46QF1 tripped	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.
78	Missing caps in the tear-off-head Line Left	It is possible that caps are missing in the tear-off head
79	Rotary table left line - Position fault	The rotary table is out of the correct position. Perform a HOMING and if the problem is still present check the mechanical and electrical parts.
83	Circuit breaker tripped 20QF1 Servodriver Feeder Left	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.

87	Too screwed caps or left screwer drive unit 1 fault	The cap sensor has detected a cap too tightened. Check that the cap is really too tightened and if so, reduce the screwing torque, if not, perform the procedure of **Caps Control Calibration** and check it again.
88	Too screwed caps or left screwer drive unit 2 fault	The cap sensor has detected a cap too tightened. Check that the cap is really too tightened and if so, reduce the screwing torque, if not, perform the procedure of **Caps Control Calibration** and check it again.
89	Machine left stop for too many pouches rejected	The filler has rejected more than 3 pouches. Check the caps presence in the whole caps feeding line and proper adjusting of the caps Tear-Off-Head.
90	Pouches charger left empty	Pouch charger empty. Add pouches' rails.
91	Product pressure sensor left burnout	The signal of the product pressure sensor of the left side is not correct. Check the pressure sensor and its cable.
93	Product feeding valve left side fault	The Bardiani 3-way valve feeding product on the left side is faulted. Check the proper working of the valve and of its
94	Filling unit cylinder left fault	The filling column is not reaching its up or down limit switch. Check for mechanical jamming, pneumatic defect, limit-switch unproperly adjusted or not working.
95	Left screwing unit cylinder fault	The screwing column is not reaching its up or down limit switch. Check for mechanical jamming, pneumatic defect, limit-switch unproperly adjusted or not working.
97	Left pouches charger cylinder fault	The pouches pushed by the pouches-charger (first cylinder, the longer one) do not slide into the pouches dispatcher or the pneumatic cylinder is in fault. Check the proper sliding of the pouches through the plastic rails, the filler guide to the dispatcher. Check the cylinder, the valve and the mechanical parts.
98	Left pouches dispatcher cylinders fault	The dispatcher cylinders are not reaching theirs limit switches. Check the cylinders, the electrovalve, the mechanical parts and the limit switches.

99	Left pouches feeder cylinder fault	The pouches pushed by the pouches-feeder (second cylinder, the shorter one) do not slide into the pouches dispatcher or the pneumatic cylinder is in fault. Check the proper sliding of the pouches through the filler guide to the dispatcher. Check the cylinder, the valve and the mechanical parts.
100	Left Insertion Cylinder 1 fault	The Pouches-Insertion-cylinder (the cylinder that introduce the pouches into the rotary table's slot) is not reaching its limit switches. Check the cylinder, the electrovalve, the mechanical parts and the limit switches.
101	Left rails locking cylinder fault	The cylinder that lock the plastic rails is in fault. Check the cylinder, the electrovalve, the mechanical parts and the limit switches.
102	Left Insertion Cylinder 2 fault	The Pouches-Insertion-cylinder (the cylinder that introduce the pouches into the rotary table's slot) is not reaching its limit switches. Check the cylinder, the electrovalve, the mechanical parts and the limit switches.
103	Left rails pliers cylinders fault	The pliers-cylinders that bring the plastic rails are in fault. Check the pliers, the electrovalve, the mechanical parts and the limit switches.
105	Left rails traslator cylinder fault	The cylinder that moves the plastic rails is in fault. Check the cylinder, the electrovalve, the mechanical parts and the limit switches.
106	Left caps elevator empty	The caps elevator is empty. Feed it with caps.
107	Nitrogen pressure left sensor burnout	The signal of the Nitrogen pressure switch of the left side is not correct. Check the pressure switch and its cable.
108	Left value nitrogen pressure out of range	The nitrogen pressure is out of range. Adjust it
109	Product pressure too high on the filling valves left side.	The pressure in the filling circuit is too high: a) In production cycle PV higher than the SP set by the HMI. b) In CIP cleaning cycle PV higher than 7 Bar.
111	Left rotary table command fault. Press emergency and restart.	An internal command error occurred. Press emergency and restart.

112	Left line printer fault	The signal “Printer ready” is not reaching the filler. Check for the printer status and its connection to the filler.
113	Circuit breaker tripped 35QF1. (Left line charger motor)	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.
114	Left line caps elevator motor fault	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.
115	Wrong connection to CIP-return on Left Side	The draining pipe of the filler is not connected to the CIP-solution-return-line.
116	Jamming pouch outfeed head 1 left	Pouches jamming detected on the exit line 1 left.
117	Jamming pouch outfeed head 2 left	Pouches jamming detected on the exit line 2 left.
118	Circuit breaker left line35QF3 tripped	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.
121	Left Table Motor Drive fault	The drive of the rotary table is faulted. Check it.
122	Right Pump 1 Motor Drive fault	The drive of the dosing pump is faulted. Check it.
123	Right Pump 2 Motor Drive fault	The drive of the dosing pump is faulted. Check it.
124	Left Screwer 1 Motor Drive fault	The drive of the screwer drive is faulted. Check it.
125	Left Screwer 2 Motor Drive fault	The drive of the screwer drive is faulted. Check it.
129	Ethernet communication Fault remote I/O R1 (JB1 Left)	The Ethernet communication with the indicated node is faulted.
130	Ethernet communication Fault remote I/O R2 (JB2 Left)	The Ethernet communication with the indicated node is faulted.
131	Ethernet communication Fault Pneumatic Valves P1 (Left)	The Ethernet communication with the indicated node is faulted.
132	Ethernet communication Fault Pneumatic Valves P2 (Left)	The Ethernet communication with the indicated node is faulted.
133	Ethernet communication Fault Pneumatic Valves P5 (Left)	The Ethernet communication with the indicated node is faulted.

135	Ethernet communication Fault Drive Left Table	The Ethernet communication with the indicated node is faulted.
136	Ethernet communication Fault Drive Left Pump 1	The Ethernet communication with the indicated node is faulted.
137	Ethernet communication Fault Drive Left Pump 2	The Ethernet communication with the indicated node is faulted.
138	Ethernet communication Fault Drive Left Screwer 1	The Ethernet communication with the indicated node is faulted.
139	Ethernet communication Fault Drive Left Screwer 2	The Ethernet communication with the indicated node is faulted.
140	Ethernet communication Fault Drive Output Conveyor LF	The Ethernet communication with the indicated node is faulted.
143	Barcode mismatch head 1 Left fault	2 consecutive barcodes were not recognised.
144	Barcode mismatch head 2 Left fault	2 consecutive barcodes were not recognised
161	Reset emergency (Right side is down)	The emergency stop is not restarted on right side of the filler. If it is possible restart the machine by pressing “Emergency Restart” pushbutton.
162	Air pressure low right line	The air pressure at supply point is too low, please check the air supply and the pressure switch.
163	Door R1 opened (filling area left)	A door of the machine is open. If it is possible close the door to restart the machine.
164	Door R2 opened (filling area left)	A door of the machine is open. If it is possible close the door to restart the machine
165	Door R3 opened (pouches charger area left)	A door of the machine is open. If it is possible close the door to restart the machine
166	Door R4 opened (pouches charger area left)	A door of the machine is open. If it is possible close the door to restart the machine
167	Door R5 opened (pouches charger area left)	A door of the machine is open. If it is possible close the door to restart the machine
168	Door R6 opened (barcode area left)	A door of the machine is open. If it is possible close the door to restart the machine
169	Check circuit safety doors RIGHT	A door of the machine is not well closed (or the safety switch broken). If it is possible, close the door to restart the machine.

173	Circuit breaker left line caps supplier 46QF2 tripped	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.
174	Missing caps in the tear-off-head Line Right	It is possible that caps are missing in the tear-off head
175	Rotary table left line - Position fault	The rotary table is out of the correct position. Perform a HOMING and if the problem is still present check the mechanical and electrical parts.
179	Circuit breaker tripped 25QF1 Servodriver Feeder Right	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.
183	Too screwed caps or right screwer drive unit 1 fault	The cap sensor has detected a cap too tightened. Check that the cap is really too tightened and if so, reduce the screwing torque, if not, perform the procedure of **Caps Control Calibration** and check it again.
184	Too screwed caps or right screwer drive unit 2 fault	The cap sensor has detected a cap too tightened. Check that the cap is really too tightened and if so, reduce the screwing torque, if not, perform the procedure of **Caps Control Calibration** and check it again.
185	Machine right stop for too many pouches rejected	The filler has rejected more than 3 pouches. Check the caps presence in the whole caps feeding line and proper adjusting of the caps Tear-Off-Head.
186	Pouches charger right empty	Pouch charger empty. Add pouches' rails.
187	Product pressure sensor right burnout	The signal of the product pressure sensor of the right side is not correct. Check the pressure sensor and its cable.
189	Product feeding valve right side fault	The Bardiani 3-way valve feeding product to the right side is faulted. Check the proper working of the valve and of its
190	Filling unit cylinder right fault	The filling column is not reaching its up or down limit switch. Check for mechanical jamming, pneumatic defect, limit-switch unproperly adjusted or not working.
191	Right screwing unit cylinder fault	The screwing column is not reaching its up or down limit switch. Check for mechanical jamming, pneumatic defect, limit-switch unproperly adjusted or not working.

193	Right pouches charger cylinder fault	The pouches pushed by the pouches-charger (first cylinder, the longer one) do not slide into the pouches dispatcher or the pneumatic cylinder is in fault. Check the proper sliding of the pouches through the plastic rails, the filler guide to the dispatcher. Check the cylinder, the valve and the mechanical parts.
194	Right pouches dispatcher cylinders fault	The dispatcher cylinders are not reaching theirs limit switches. Check the cylinders, the electrovalve, the mechanical parts and the limit switches.
195	Right pouches feeder cylinder fault	The pouches pushed by the pouches-feeder (second cylinder, the shorter one) do not slide into the pouches dispatcher or the pneumatic cylinder is in fault. Check the proper sliding of the pouches through the filler guide to the dispatcher. Check the cylinder, the valve and the mechanical parts.
196	Right Insertion Cylinder 1 fault	The Pouches-Insertion-cylinder (the cylinder that introduce the pouches into the rotary table's slot) is not reaching its limit switches. Check the cylinder, the electrovalve, the mechanical parts and the limit switches.
197	Right rails locking cylinder fault	The cylinder that lock the plastic rails is in fault. Check the cylinder, the electrovalve, the mechanical parts and the limit switches.
198	Right Insertion Cylinder 2 fault	The Pouches-Insertion-cylinder (the cylinder that introduce the pouches into the rotary table's slot) is not reaching its limit switches. Check the cylinder, the electrovalve, the mechanical parts and the limit switches.
199	Right rails pliers cylinders fault	The pliers-cylinders that bring the plastic rails are in fault. Check the pliers, the electrovalve, the mechanical parts and the limit switches.
201	Right rails traslator cylinder fault	The cylinder that moves the plastic rails is in fault. Check the cylinder, the electrovalve, the mechanical parts and the limit switches.
202	Right caps elevator empty	The caps elevator is empty. Feed it with caps.

203	Nitrogen pressure right sensor burnout	The signal of the Nitrogen pressure switch of the left side is not correct. Check the pressure switch and its cable.
204	Right value nitrogen pressure out of range	The nitrogen pressure is out of range. Adjust it
205	Product pressure too high on the filling valves right side.	The pressure in the filling circuit is too high: c) In production cycle PV higher than the SP set by the HMI. d) In CIP cleaning cycle PV higher than 7 Bar.
207	Right rotary table command fault. Press emergency and restart.	An internal command error occurred. Press emergency and restart.
208	Right line printer fault	The signal “Printer ready” is not reaching the filler. Check for the printer status and its connection to the filler.
209	Circuit breaker tripped 40QF2. (Right line charger motor)	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.
210	Right line caps elevator motor fault	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.
211	Wrong connection to CIP-return on Right Side	The draining pipe of the filler is not connected to the CIP-solution-return-line.
212	Jamming pouch outfeed head 1 right	Pouches jamming detected on the exit line 1 right.
213	Jamming pouch outfeed head 2 right	Pouches jamming detected on the exit line 2 right.
214	Circuit breaker left line40QF3 tripped	A circuit breaker is tripped in the electrical cabinet. Check mechanical and electrical parts related to it before to try to restart it.
217	Left Table Motor Drive fault	The drive of the rotary table is faulted. Check it.
218	Right Pump 1 Motor Drive fault	The drive of the dosing pump is faulted. Check it.
219	Right Pump 2 Motor Drive fault	The drive of the dosing pump is faulted. Check it.
220	Left Screwer 1 Motor Drive fault	The drive of the screwer drive is faulted. Check it.
221	Left Screwer 2 Motor Drive fault	The drive of the screwer drive is faulted. Check it.

225	Ethernet communication Fault remote I/O R3 (JB1 Right)	The Ethernet communication with the indicated node is faulted.
226	Ethernet communication Fault remote I/O R4 (JB2 Right)	The Ethernet communication with the indicated node is faulted.
227	Ethernet communication Fault Pneumatic Valves P1 (Right)	The Ethernet communication with the indicated node is faulted.
228	Ethernet communication Fault Pneumatic Valves P2 (Right)	The Ethernet communication with the indicated node is faulted.
229	Ethernet communication Fault Pneumatic Valves P5 (Right)	The Ethernet communication with the indicated node is faulted.
231	Ethernet communication Fault Drive Right Table	The Ethernet communication with the indicated node is faulted.
232	Ethernet communication Fault Drive Right Pump 1	The Ethernet communication with the indicated node is faulted.
233	Ethernet communication Fault Drive Right Pump 2	The Ethernet communication with the indicated node is faulted.
234	Ethernet communication Fault Drive Right Screwer 1	The Ethernet communication with the indicated node is faulted.
235	Ethernet communication Fault Drive Right Screwer 2	The Ethernet communication with the indicated node is faulted.
236	Ethernet communication Fault Drive Output Conveyor LF	The Ethernet communication with the indicated node is faulted.
239	Barcode mismatch head 1 Left fault	2 consecutive barcodes were not recognised.
240	Barcode mismatch head 2 Left fault	2 consecutive barcodes were not recognised

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The customer is responsible to procede to dispose any waste produced by the machine, according the local low of his country.

9.1 WASTE DEFINITION.

For waste is intended any substance or object to derive from human activities or natural cycle, leave or to be leaved.

9.1.1 SPECIAL WASTE.

The following are to be intended as special waste :

- Any remainder derived from industrial activities that , for it quality or quantity , cannot be consider as urban waste.
- Any machine / equipment damaged or not good for use
- The engine vehicle and any its damged parts.

9.1.2 TOXIC AND HARMFUL WASTE.

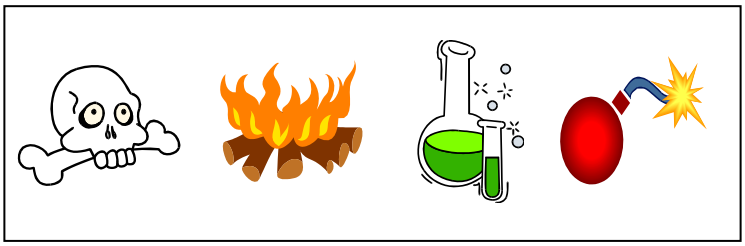
Toxix and harmful wast are to be intended all the waste containing or contaminated by the sostance included in the ECC directive 75/442/CEE, 76/403/CEE and 768/319/CEE.

9.1.3 TEMPORARY STORAGE.

The temporary storage of toxic and harmful waste is allow only if a disposal or final storage is foresee. In any case all local law must be observe to guarantee the environment.

9.2 TYPE OF CONTAINER.

The fixed or moveble tank, assign to contain the toxic or harmful waste, must be suitable to the chemical characteristic of the waste.
Any container filled with the toxic or harmful waste must be tagged with the necessary information about.



9.3 DISPOSAL.

The disposal of special and toxic waste must be perfomed only by specialize company, with the suitable authorization from the local goverment.

The customer is responsible to procede to dispose any waste produced by the machine, according the local low of his country.