Operations & Maintenance Manual

HS-LA FILLER

Machine Serial No. : 2016-094

Project No. : 21R60.BA 0180

Ver. 01

Original instructions

GENERAL INDEX

1 INTRODUCTION

1.1 WARNING

The instructions accompanying the machine should be “original instuctions” or a “translation of the original instructions”. In this case, you should attach a copy of the original instructions to the translation.

These **INSTRUCTIONS FOR USE & MAINTENANCE** are part of the machine and should accompany it throughout its useful life until disposed of **INSTRUCTIONS**.

Before starting ANY operation, consult the relevant Section of these **INSTRUCTIONS**.

Make sure that nobody has access to the machine before getting thoroughly acquainted with these **INSTRUCTIONS**.

The only operations allowed are those described in these **INSTRUCTIONS**. for any operation other than these, contact **Alfa Laval’s Customer Service.**

ATTENTION!

Do not attempt tampering the calibration of any component or part of the plant unless expressly authorized in writing by Alfa Laval.

Any calibration carried out by Alfa Laval at the time of testing has the purpose of ensuring the plants safety and trouble free operation:

Any unauthorized tampering will entail the forfeiture of the guarantee.

Furthermore, the tampering of any safety device may undermine the safe use of the equipment, thereby Alfa Laval shall not be held liable for damages in case of accidents resulting from such unauthorized tampering.

This manual must always be accessible to the operators in charge of the machine/plant and its operation, as well as all persons working near the machine, although autonomously.

Keep these INSTRUCTIONS FOR USE AND MAINTENANCE at operator’s reach and make sure that their place of storage is suitable to protect them from accidental damage.

You should furtherly consider to update it any time you intervene with relevant modifications to the plant and to transmit it to other users or following owners.

PURPOSES OF THE HANDBOOK

The purpose of this manual is to supply:

The operators the most complete manual , instructing them on the functioning of the machine at the best safety conditions.

The maintenance operators a detailed plan on which and how many services you need for reliable operation.

For this purpose we will quote in the chapters which need it, the specific indication of WHO and WITH WHICH QUALIFICATION should operate and intervene in that determined situation.

1.2 CHOICE AND QUALIFICATION OF THE OPERATOR

We classify the personnel assigned to the plant according to the specialization and to the task they should carry out.

The operators are qualified as follows:

1.2.1 GENERIC OPERATOR:

Personnel not specialized ready to rule the plant by acting on the push buttons placed on the control panel, able to succeed in charging or discharging materials used during production cycle and learn about simple functions such as starting or restarting the production after forced pauses.

1.2.2 MECHANICAL MAINTENANCE:

Technician qualified to rule the plant during its standard running, able to succeed in size changing and in operating on the mechanical parts for adjustments, maintenance and repairing. He is not allowed to operate on the electric system with tension connected.

The operator has the skills to operate properly and safely when using forklifts, bridge cranes and other equipment necessary to handle and lift machines with or without packaging.

1.2.3 ELECTRICAL MAINTENANCE:

Technician qualified to operate the plant during its standard running and charged with all the electrical adjustments, maintenance and repairing. They are allow to operate inside the control cabinet and the connector block with tension connected.

1.2.4 ALFA LAVAL TECHNICIAN:

Qualified technician supplied by Alfa Laval for complex services.

1.3 GUARANTEE

If not specified otherwise in the order confirmation, the terms and conditions of guarantee are as follows:

1.3.1 SCOPE OF THE GUARANTEE

Alfa Laval guarantees the good quality and workmanship of its products and shall

- During the specified guarantee period
- Repair or replace free of charge any part whose failure or premature wear and tear are the result of poor quality of materials, defective workmanship or assembling.

The guarantee shall not apply for those parts whose failure or wear and tear are due to

- Separator's negligence in checking the levels of the fluids,cleaning the filters, providing the correct utility lines and feeding;
- Use of inappropriate tools for the ordinary or extraordinary maintenance;
- Failure to perform/incorrect maintenance;
- Alterations or tampering carried out - whether directly or indirectly without the specific authorization by Alfa Laval;
- Failure to comply with the **INSTRUCTIONS FOR USE & MAINTENANCE.**

For this reason, we strongly recommend that the instructions contained in this Manual are understood and followed, as a precondition for the correct and safe use of the plant.

1.3.2 DURATION OF THE GUARANTEE

The guarantee shall last for 12 MONTHS from the date of delivery of the plant.

Such period shall remain unchanged even in the case that replacements or repairs are carried out during the 12-month period.

1.3.3 APPLICATION OF THE GUARANTEE

In order to establish the causes, and agree to the application of the guarantee, the parts for which a guarantee replacement is claimed shall be made available to Alfa Laval.

Any work required for replacement/repair under guarantee shall be executed at Alfa Laval's option, at the manufacturer's premises, at third parties premises or directly on the spot.

For any work carried out locally, the customer shall provide and pay for the necessary utilities, extraordinary equipment, auxiliary personnel and the costs of travel, board and accomodation of Alfa Laval's technicians.

1.3.4 EXCLUSIONS AND LIMITS

The guarantee shall not cover the materials and parts subject to normal wear.

For the components and accessories bought from independent Vendors, the guarantee shall be the one granted to Alfa Laval by such Vendors.

1.3.5 HOW TO RETURN THE DEFECTIVE MATERIAL

Before returning to Alfa Laval any part for which a replacement/ repair under guarantee is claimed, the necessary approval shall be obtained from Alfa Laval's Customer Service.

All parts shall be properly packed to avoid any damage in transit, and accompanied by:

- Reference to the purchase order number;
- Plant serial number;
- Code number of the part;
- Accurate description of the defect and the circumstances which caused it.

All parts approved to be under guarantee are delivered ex works; replaced parts are the property of Alfa Laval and shall be returned ex works.

1.4 TEST AND RESPONSIBILITY

Before shipment all of our machines are accurately tested by qualified personnel through operational tests which simulate the normal working conditions.

Through the operational tests

- Run with cold water
- It is possible to verify the actual performance of the machine against the design data, the calibration of safety, control and check devices, the conditions of any seals, as well as the noise and vibration-free operation of the machine.

However, at the time of start-up, after the machine has been installed in the production line, a final test of the conditions of operation is required.

For the first start-up of the machine, we recommend that an Alfa Laval engineer should be present, in order to check that the wiring has been executed correctly and that the machine has been properly installed, in addition to providing any additional information or instruction to the operators and service personnel with reference to this Manual.

CAUTION:

Should the Customer decide not to ask for the attendance of an Alfa Laval Engineer to the start-up, Alfa Laval shall not be held liable from any claim for damages to person/s or property caused by failure to observe the instructions provided in chapters:

”4 INSTALLATION”

”5.1 Checking Before Starting”

”5.3 Starting Procedure”

1.5 SOFTWARE LICENCE

The company Alfa Laval grants a licence in regards to the specific equipment installed on the electronics dedicated to the specific function, which is non-exclusive and non-transferable.

The license is not transferable to third parties, it is not applicable for purposes other than those designed or for similar equipment and cannot be modified except with written permission from the company Alfa Laval.

The license does not give any right to obtain copies of software on a different support from that of the memories that came originally with the equipment nor may the software be used for development, design and drafting of documents which are registered in the name of Alfa Laval.

The license acquired with the equipment, does not imply any right to updates.

However, if Alfa Laval provides updates, they would fall under this contract.

INTELLECTUAL PROPERTY

All rights are and will remain assigned to Alfa Laval. The purchase of equipment does not include the acquisition of any intellectual property.

1.6 TECHNICAL REFERENCE STANDARDS

The machine complies with the following standards, where applicable:

EEC Directives

DIRECTIVE 2006/42/EC Machinery directive.

DIRECTIVE 2014/35/EU Low voltage.

DIRECTIVE 2014/30/EU Electromagnetic compatibility.

Harmonised Standards

UNI EN ISO 12100:2010 : Safety of machinery - General principles for design - Risk assessment and risk reduction

UNI EN ISO 13857:2008 : Safety of machinery - Safety distances to prevent danger zones being reached by the upper and lower limbs.

UNI EN 349:2008 : Safety of machinery - Minimum gaps to avoid crushing parts of the human body.

UNI EN ISO 13850:2008 : Safety of machinery - Emergency stop devices, functional aspects, principles for design.

UNI EN ISO 13732-1:2010 : Safety of machinery - Temperatures of touchable surfaces. Ergonomics data to establish temperature limit values for hot surfaces.

UNI EN 983:2009 : Safety of machinery - Safety requirements for fluid power systems and their components - Pneumatics.

UNI EN ISO 4414:2012 : Pneumatic fluid power - General rules and safety requirements for systems and their components

IEC EN 60204-1:2006 : Safety of machinery, electrical equipment of machines - Part 1: General rules.

UNI EN ISO 7731:2009 : Ergonomics - Danger signals for public and work areas - Auditory danger signals

UNI EN 981:2009 : Safety of machinery - System of auditory and visual danger and information signals

UNI EN 12464-1:2004 : Light and lighting - Lighting of work places - Part 1: Indoor work places

International Standards

UNI EN ISO 3746:2011 : Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Survey method using an enveloping measurement surface over a reflecting plane

UNI EN ISO 3744:2010 : Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure. Engineering methods for an essentially free field over a reflecting plane

UNI EN ISO 11201:2010: Acoustics - Noise emitted by machinery and equipment - Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections.

ATTENTION:

The system was not designed and built to operate in places with an explosion hazard covered by the ATEX Directive 94/9 EC.

2 GENERAL INFORMATION

ATTENTION!

The information contained in this section is addressed to the following personnel categories:

Generic operator

Mechanical maintenance

Electrical maintenance

ALFA LAVAL technician

2.1 SAFETY

The present instruction manual has been compiled according to the article 1.7.4 of the Directive 2006/42/EC and considering the normal utilisation conditions of the machine to inform, with the other instructions placed on the machine, the unkeepers on the residual risks that the machine itself shows.

2.1.1 WARNINGS

The customer can use the present Instruction Manual to know, to use and to repair the machine object of the same; other utilizations are severely forbidden.

In case of total or partial loss of the present Instruction Manual, you should inform Alfa Laval and ask for supplementary copies. Alfa Laval, reserves the right to send the documents to the customer, at the expenses of the Customer.

Alfa Laval reserves the rights, the actions and initiatives to prevent all prejudices that could arise from a wrong utilisation of the present Instruction Manual.

In the present Utilisation Manual the customer understands the following definitions of the Directive **2006/42/EC**.

- **“Dangerous area”** any area inside or near the machine where the presence of an exposed person is a danger for the safety and for the health of the above mentioned person.
- **“Exposed person”** any person wholly or partially in a dangerous area;
- **“Operator”** the person or the persons charged to install, to operate to adjust, to maintain, to clean, to repair or move the machine;
- **“PPE”** the Personal Protective Equipment any equipment destined to be worn or kept by the worker against one or more risks that threaten his safety or his health during work, and also any complement or accessory destined to this purpose.

Before starting to operate the equipment the operator should perfectly know the function, the position of the whole controls of the machine and of the technical functional characters of the same.

If the machine is not used in the conditions quoted in the present instruction manual, the manufacturer declines any responsibility to people or things that could occur.

The manufacturer declines any responsibility for the damages caused to people or things caused by the omitted observance of the recommendations quoted after. We remind you that the respect of the safety rules allows the operator to work productively and safely, without danger to cause damages to himself or to others.

ATTENTION:

For the correct use of this machine and to safeguard the safety of the assigned personnel, follow scrupulously the following general and specific rules.

2.1.2 PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment (PPE) in compliance with local legislation where the machine is installed.

All equipment designed to be worn and held by the worker, to protect him against one or several risks which may endanger health or safety at work, as well as any addition or accessory designed for this purpose.

PPE must be used when the risks can not be eliminated or reduced sufficiently by prevention, work organisation and collective protective equipment.

PPE cannot be an alternative to technically feasible prevention systems, but only supplementary to residual or occasional risks, such as, for example, special maintenance.

The personal protective equipment with which the operators in charge of using the machine must be equipped, must comply with the legislation in force and in relation to the action they need to perform, whether for maintenance or for normal use, as follows:

In order to comply with the law, PPE must meet the following general requirements:

1. possession of CE marking and all the required certification;

2. presence of clear operating instructions, in English or in any case in a language understandable to the worker;

3. adequacy of PPE to prevent the risk (essentially avoiding the situation where the PPE creates a greater risk than that to be avoided);

4. adequacy of PPE to the ergonomic and health requirements of the worker.

2.1.2.1 CLOTHING

	The clothing with which the operators must be equipped must be made of resistant material; it must also let the operator move easily according to the movements that the operator has to perform.

2.1.2.2 FOOTWEAR

	Shoes must feature an anatomic anti-stress insole for the comfort of the foot and the upper part must be impenetrable to contact with the product to be used. They must fully cover the ankle and ensure perfect breath ability of the foot.

2.1.2.3 GLOVES

	They must be suitable for the operator's hands and must be of sufficient length to cover the elasticized garment on the operator's wrist. They must ensure a secure and quick grip as well as ensuring high resistance to the product to be handled. They must also ensure protection and comfort against high and low temperatures and good moisture absorption.

2.1.2.4 MASKS

	They must be of a suitable size for the face of the operator who will wear them. They must feature a large filtration area to ensure a minimal breathing impact and a wide visual field to ensure a good view of the environment and the machine; they must also feature a speech diaphragm to ensure good communication. The sealing system must be adjustable and the sealing edge must be a "double lip" type to ensure a certain degree of impenetrability of the product.

2.1.2.5 HARD HATS

	They must feature excellent resistance both to impact and to contact with the product itself. The edge must be adjustable. The hard hat must be equipped with a front sweatband and chin strap for proper fastening. The material must withstand both high and low temperatures. It must be very comfortable in order for the operator to perform his task.

2.1.2.6 BREATHING MASKS

	They must be wear following the producer instructions and must guarantee a suitable and perfect fitting for the operator's face. They must also feature a speech diaphragm to ensure good communication The oxygen concentration of the ambient atmosphere must be at least 19.5 % Volume; they do not protect against asphyxiants. Choose the proper mask/filter in according to the hazard substances handled, in compliance with EN 149/2001 and EN 143/2000 If the respirator is marked as reusable, change the filter following the supplier instructions. If the respirator is marked as not reusable, use it only once. They may not be employed if the concentration, type and properties of contaminants in the ambient atmosphere are unknown or at dangerous levels. They should be disposed if damaged, if the set safe wear time is exceeded, if gas/vapour is detected inside the respirator by taste or smell, if the breathing resistance becomes high due to clogging.

2.1.3 THE OPERATOR SHOULD

- Use with care and in a correct manor the safety devices, the individual and collective protection means predisposed and supplied by the employer, according to the instructions of the present manual.

- **Follow in very careful way** the disposals and the instructions given by the manufacturer, by the employer, by the managers and everyone is assigned to the individual and collective protection.

- **Signal immediately to the employer**, to the managers and to the personnel assigned to safety the breaking of the above mentioned safety devices and protection means, and also the other eventual danger conditions you know, intervening directly and in time, in case of emergency in the scope of his duties and possibilities, to eliminate or to reduce the causes that produced the danger or eventual other lacks.

2.1.4 THE OPERATOR SHOULD NEVER

- Replace or modify, without preventive authorisation, the safety, measurement and signalling devices, and the individual and collective protection instruments.

- **To carry out on Your initiative** operations or actions which are not within their competence that would compromise his or other people’s health and safety.

- Stand outside the operator area while the machine/plant is operating (see working areas layout)

- Access the maintenance or dangerous area before pipes, heat exchangers and the whole plant in general have cooled. If immediate intervention inside the maintenance or dangerous area is required, always use the special PPE's (gloves)

2.1.5 THE OPERATOR SHOULD ALWAYS

- Keep in an easily and quickly accessible place the present instruction manual.
- **Keep in order the work place.** A behaviour not in conformity with this logics involves a danger.
- **Dress in a suitable way.** The operator clothes should be the most suitable as possible, that is to say not too large and without flying about parts. The sleeves should have the elastic. You should not take externally the work dresses girdles, braces, rings and chains. Use the IPD foreseen in the present manual. Long hair should be suitably contained. The operator should be equipped by protective gloves in order to prevent burnings.
- **Let the repairs of the plant be carried out by specialized personnel**. This plant and its equipment are realized according to the in force anti-accidents rules. Repairs should be carried out by qualified personnel and by the utilisation of original spare parts, or there could be damages for the user.
- **Avoid unstable positions.** Assure constantly you are in a sure position with regards to the plant and on a right stability.
- **Switch off the general switch.** Any ordinary programmed and extraordinary maintenance intervention, should be carried out with the plant stopped and isolated from the electrical voltage. Before going on with the above mentioned maintenance disable, from the control panel, the feeding general switch and assure by using a lock that any other person could not re-enable the plant during the maintenance.
- **Before any shift beginning.** assure of the functioning of the devices and safety means. Check the right functioning of all the safety devices present on the plant.
- **Avoid a wrong utilisation of the feeding cable.** Use only cables whose section is suitable for the installed power be used in the manual to put in evidence particularly important indications.
- Wait for pipes, heat exchangers and the whole plant in general to cool before accessing the maintenance or dangerous area Always use the special PPE's (gloves)

2.1.6 DANGEROUS AREAS – WORKING AREAS

The operator should act in these work areas (see the following drawing):

- Operator areas (inside the green area):
  - in front of the machine electrical panel during production;
  - in the back of the machine electrical panel for starting and stopping the work cycle (power on - power off);
  - in front of the filling head, outside the guards during production.
  - on the back of the infeed roller conveyor to load the empty bags.
- Maintenance/Adjustment area (inside the yellow area):
  - steam adjustment;
  - pneumatic panel adjustment;
  - the filling heads area (behind the guards).
- Dangerous area (inside the red area)
  - the filling heads area (behind the guards).
  - the steam group (behind the guards).

FOUND DANGERS:

When the machine is working, it is' strictly forbidden to enter the dangerous area (red color). Keep the distance of at least 1 m

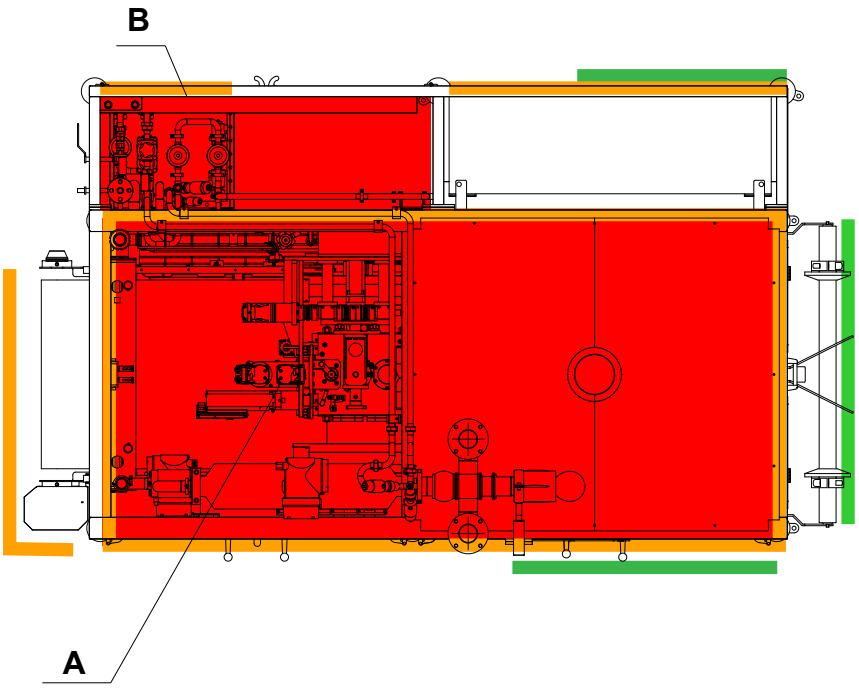
Dangerous area

Operator area

Maintenance/Adjustment area

A Bags dragging and filling area

B Steam group



2.1.7 SAFETY SYMBOLS

Many of the quoted warnings can be summed up in the following illustrated signs. These symbols can be used in the manual to put in evidence particularly important indications.

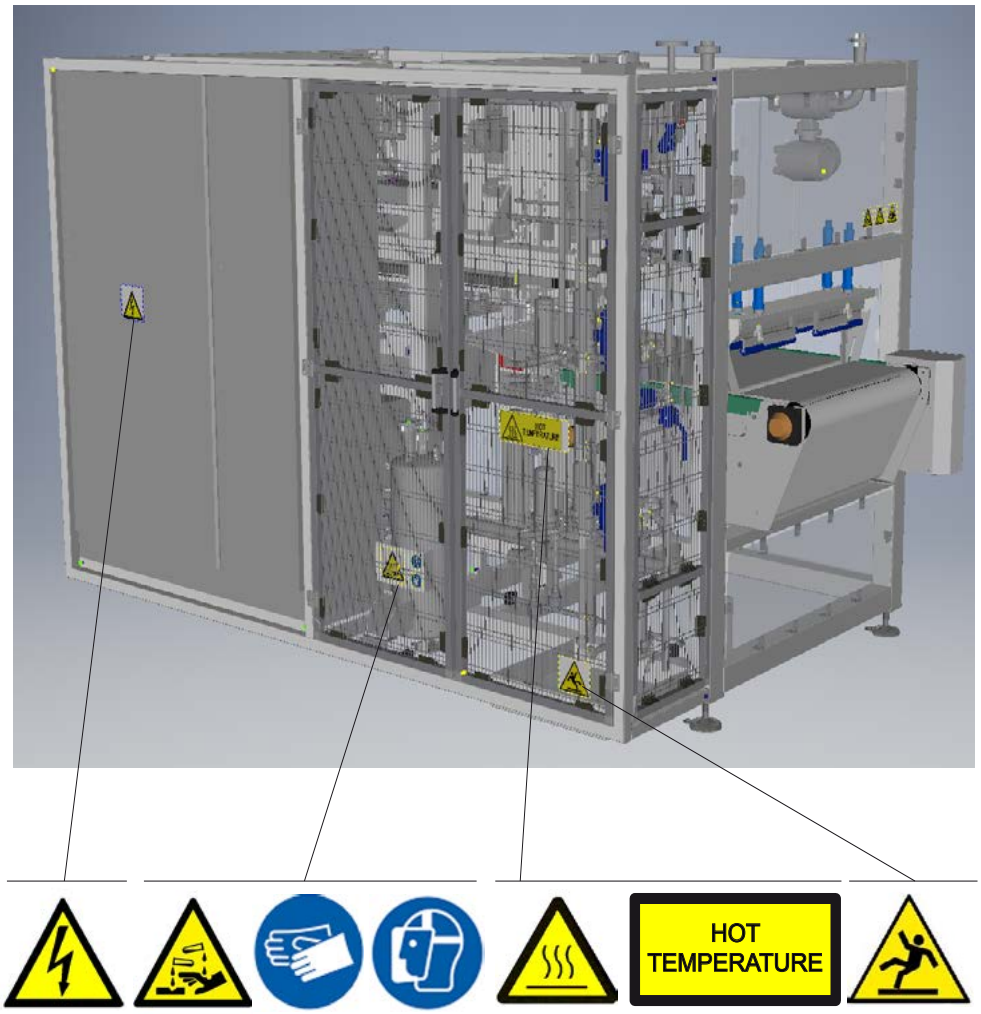
	**ATTENTION:** CAREFULLY READ NOTE BESIDE. THIS SYMBOL INDICATES IMPORTANT WARNING MESSAGE WHICH ARE FUNDAMENTAL FOR THE OPERATOR AND MACHINE SAFETY.

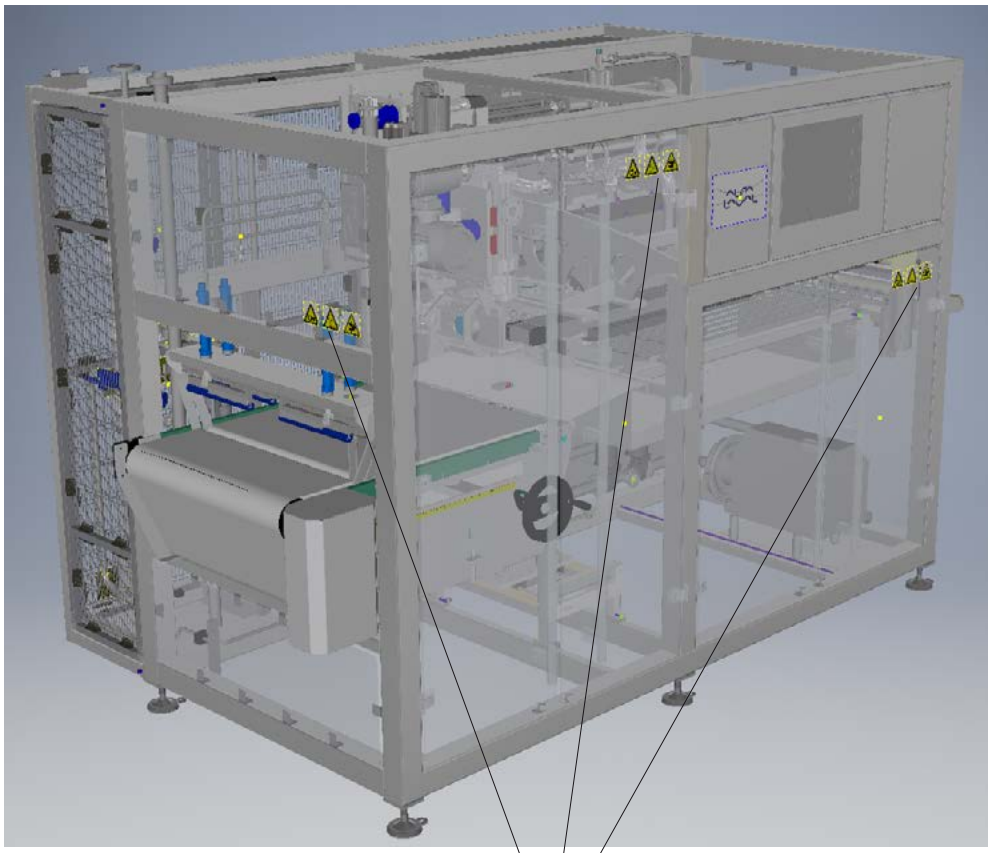
	**IT IS OBLIGATORY TO USE TO WEAR WORK CLOTHES.**
	**IT IS OBLIGATORY TO USE PROTECTIVE FOOTWEAR.**
	**IT IS OBLIGATORY TO USE PROTECTIVE GLOVES.**
	**IT IS OBLIGATORY TO USE PROTECTIVE HELMET.**
	**IT IS OBLIGATORY TO USE PROTECTIVE VISOR.**
	**IT IS OBLIGATORY TO USE PROTECTIVE GLASSES**
	**IT IS OBLIGATORY TO USE HEARING PROTECTION MUFFS**
	**IT IS OBLIGATORY TO USE RESPIRATORY PROTECTION**

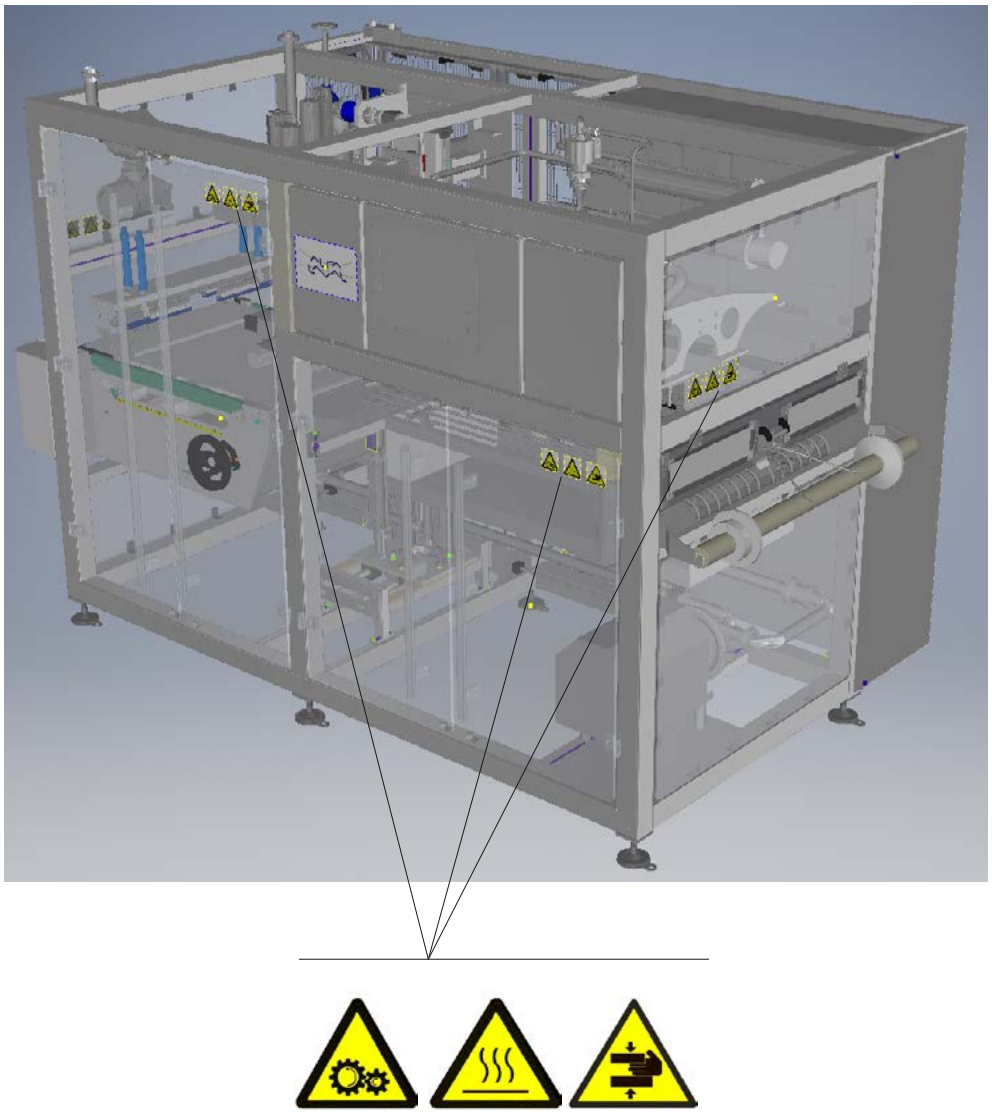
	**ATTENTION GENERAL DANGER**
	**DANGER TO LIMBS (CATCHING, CUTTING, TRAPPING, CRUSHING).**
	**DANGER CORROSIVE MATERIAL**
	**ATTENTION NOT TO GO UP ON THE ROLLER.**
	**IT IS FORBIDDEN TO REPAIR MOVING PARTS**
	**RISK OF HIGH VOLTAGE**
	**RISK OF SURFACES WITH HIGH TEMPERATURES**
	**RISK OF SLIPPING**
	**RISK OF FALLING**
	**RISK OF TRIPPING**

	**USE BY UNAUTHORISED PERSONNEL IS FORBIDDEN**
	**IT IS FORBIDDEN TO REMOVE SAFETY GUARDS AND SAFETY DEVICES**
	**IT IS FORBIDDEN TO REPAIR AND/OR LUBRICATE MOVING PARTS**
	**IT IS FORBIDDEN TO STAND UNDER THE FORKS**
	**IT IS FORBIDDEN TO STAND ON THE FORKS**
	**ACCESS IS FORBIDDEN BY UNAUTHORISED PERSONNEL**
	**IT IS FORBIDDEN TO USE WATER TO PUT OUT FIRES ON THE ELECTRIC BOARD**

2.1.8 SAFETY SYMBOLS POSITION







2.1.8.1 MAIN SWITCH

The machine is equipped with a main switch which interrupts the general supply.

The handle of the main switch of the machine is located on the electric panel, at the front, and can be locked with a padlock in the open switch position (see map of the general switch and emergency button).

The main switch must be disengaged in the event of:

1. electrical hazard;
2. electrical work on the machine or on the electric panel;
3. mechanical work on the machine.

The main switch must be locked with a padlock in the open position in the event of:

1. maintenance work;
2. work on the machine in positions not directly visible from the electric panel.

To lock the main switch:

1. Pull out the lockable opening by levering the side of the switch.
2. Insert the lock and close it.

2.1.8.2 EMERGENCY BUTTONS

The machine is fitted with mushroom emergency buttons, red with a yellow background, which immediately stop the machine controlling all the other operations. (see map of the general switch and emergency button).

These safety devices must be used:

In the event of an imminent danger or mechanical accident;

These buttons must be pressed and held in the event of:

Maintenance work

Operations that require access and presence of the operator within the danger zone.

	**ATTENTION!**: In order to restart the machine after an emergency stop, it is crucial to release the emergency button and then press the "CONTROL POWER RESET" button.

2.1.8.3 WARNING LAMP (IF FORESEEN)

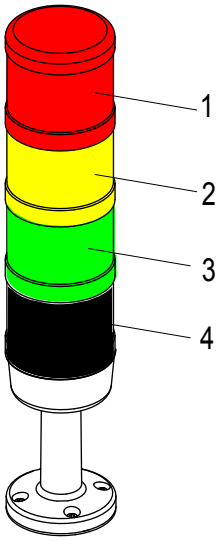
A warning lamp is a column of warning lights:

1. A red light indicates an abnormal or impending critical condition. This is a condition that stops the WORKING step and calling for action by the operator.

2. A yellow light indicates an alarm occour. This is a condition calling for action by the operator but the machine is still in WORKING step.

3. A green light indicates that the machine is in WORKING step. This situation requires no action.

4. Acoustic signal



2.1.8.4 SAFETY DEVICES POSITION

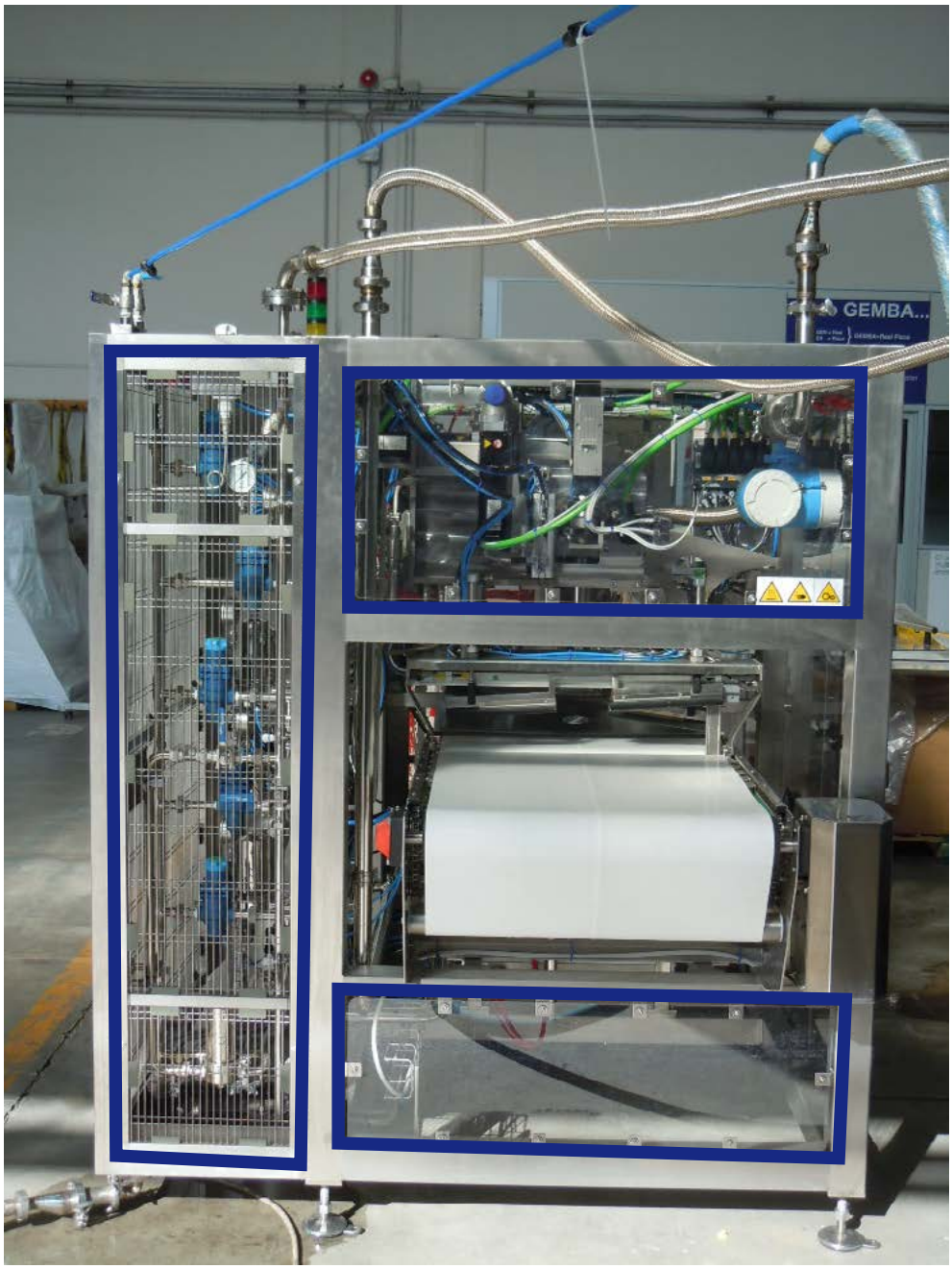
A	Main switch
B	Emergency button
C	Warning Lamp

2.1.8.5 FIXED GUARDS (IF APPLICABLE)

The machine is fitted with guards, sized and positioned in compliance with the design UNI EN ISO 13857:2008 : Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs. (see map of the fixed guards par. 2.1.6).

	***IT IS FORBIDDEN TO REMOVE SAFETY GUARDS AND SAFETY DEVICES***

Stainless steel guard around the main command panel.



PVC guard in the upper outfeed bags area.

PVC guard in the lower outfeed bags area.

Stainless steel grid in side of the steam group, near the outfeed bags area.

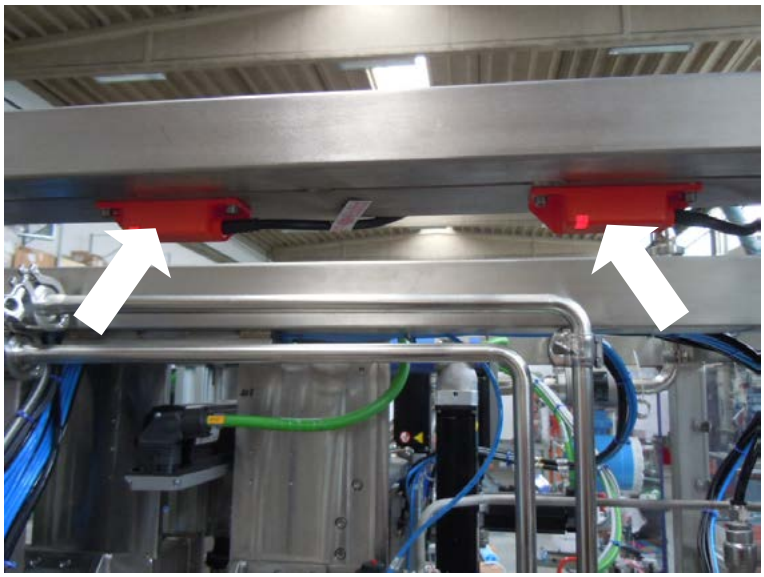
PVC guard in the upper part of the infeed bags area

PVC guard in the lower part of the infeed bags area

Stainless steel cover for the outfeed conveyor.

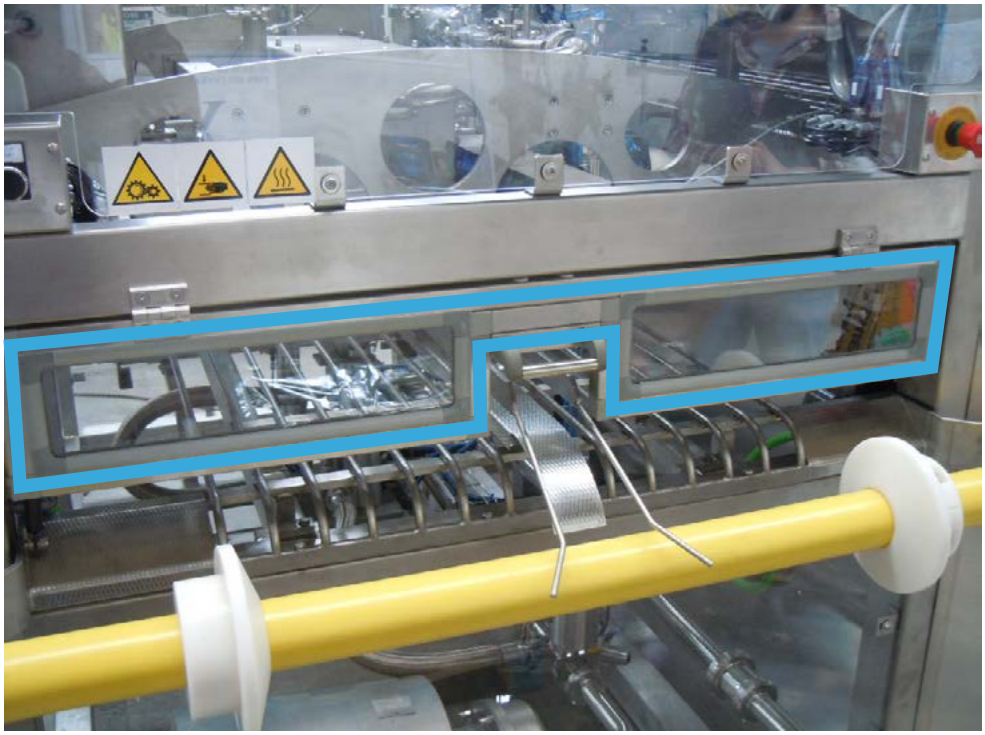
2.1.8.6 MOBILE GUARDS (IF APPLICABLE)

The mobile guards are equipped with safety micro switches that intervene every time the guard is opened, activating an emergency stop.



Do not disable the function of the safety micro switches with electrical or mechanical alterations.

	Never use the machine without the guards active



PVC guards in the infeed bags area

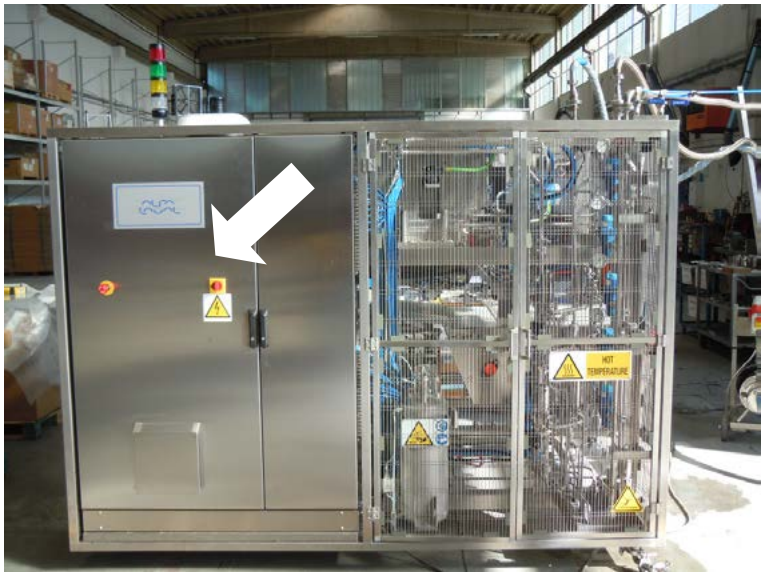
PVC guards in front of the operator area and the filling head area.

Stainless steel grid guards near the electric and pneumatic cabinets

2.1.9 RESIDUAL RISKS DANGER SOURCE AREA

2.1.9.1 ELECTRIC PANEL

	**FOUND DANGERS:** Direct contact with elements under voltage and electrocution when you open the panel.



2.1.9.2 WHOLE MACHINE

FOUND DANGERS:

Loss of stability, fall of the machine during the transport and lifting phases, (for more details on risks and safety measures concerning these operations see paragraph 2.3.5).

2.1.9.3 FLOORING

FOUND DANGERS:

Slipping on the floor around the system which could be wet.

2.1.9.4 CONDENSATION DISCHARGE PIPING

FOUND DANGERS:

Burnings and scalds and other injuries caused by possible contact of people with high temperatures surfaces or liquids during the normal use, maintenance or cleaning operations.
Slipping on the floor around the condensate discharge.

2.1.9.5 DISINFECTANT TANK

FOUND DANGERS:

Burnings, scalds, corrosion and other injuries caused by possible contact of people and things with corrosive substances during the loading, unloading, adjusting, maintenance or cleaning operations. **Always use the suitable PPE.**

2.1.9.6 OUTFEED BAGS AREA

FOUND DANGERS:

Crushing, pinching, rubbing, abrasion caused by bags outfeed, moving transmission organs and pneumatic cylinders during the normal functioning, maintenance and cleaning operation.

Operators should NOT stay in this area. The filled bags are picked up by an additional conveyor (in charge of the customer).

2.1.10 IDENTIFICATION OF THE MACHINE

The machine is identified by the name plate located on the Machine which includes, besides, the manufacturer's make:

Model and type

Serial number.

Internal production order

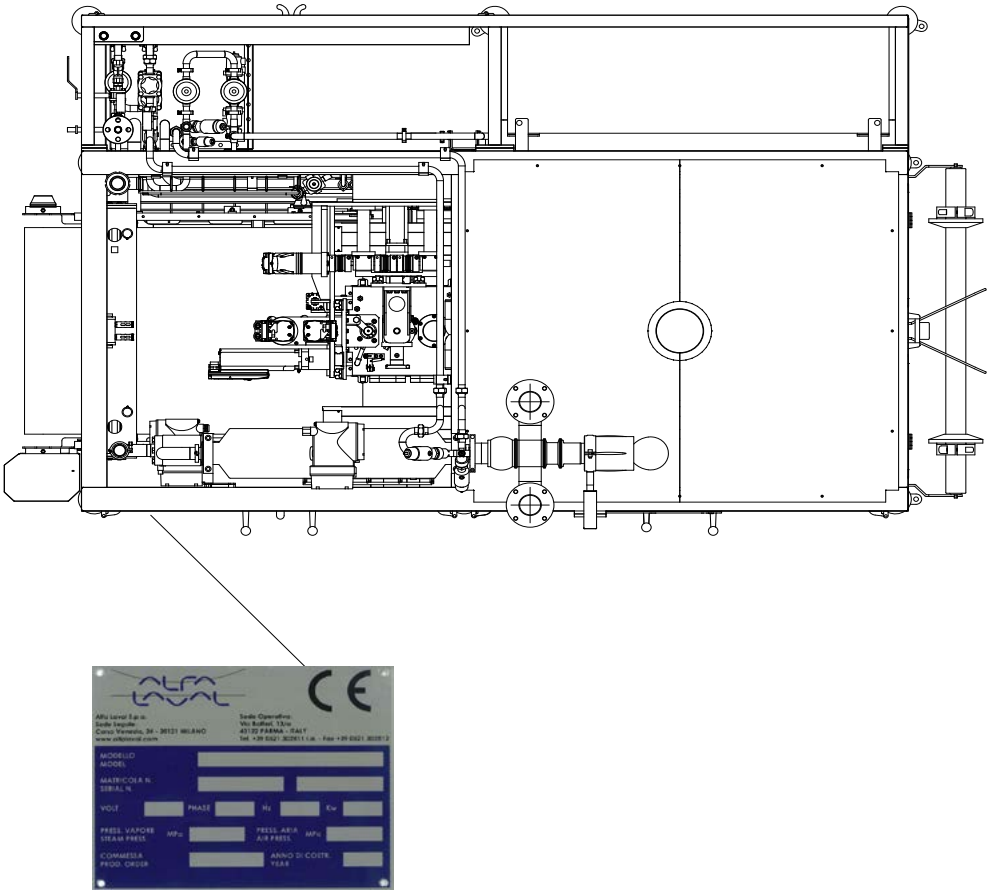
Year of construction

The serial number should always be quoted in any correspondence addressed to **Alfa Laval's Customer Service.**

Marks

The machine has been designed and built in accordance with the EEC standards on the safety of equipment (DIRECTIVE 2006/42/EC).

Alfa Laval guarantees that this machine complies with the above mentioned standard by marking the machine with "CE" as shown in the figure here below.



2.2 RECEPTION AND CONTROL OF THE MACHINE

2.2.1 TRANSPORT

Unless specified otherwise in the Order Confirmation, once the plant has left the Manufacturer's premises, any damage shall be under the responsibility of the carrier - whether an independent one or a Customer's employee.

Therefore, when receiving the plant, the following should be checked:

Contents of the packing against the Packing List;

Integrity of the packing, so that any evident damage can be immediately reported to the carrier;

Any damage suffered by the plant as a result of inaccurate transport by the carrier.

PACKING LIST	SUPPLIER:	CUSTOMER: Alfa Laval SpA via Giuseppe Botteri 13/A 43122 Parma Italy Tel. +39 0521 302811 Fax. +39 0521 302812
COMMESSA		

Article No.	Item Description	Quantity	Etichetta Collo	Colli	Gross weight kg.	Net weight kg.	Dimensions (cm)			Comments

Etichetta Collo	Numero o nome con il quale è identificato il collo, scatola o altro contenitore
Colli	Numero dei colli uguali presenti (attenzione: solo se con stesse dimensioni, pesi e contenuto) Se ci sono più componenti contenuti nella stessa scatola/cassa/pallet indico 1 raggruppando tutte le righe dei suoi articoli
Quantity	Quantità del codice
Article No.	Se disponibile e conosciuto, altrimenti è sufficiente una descrizione chiara del componente

In order to minimize the amount of inconvenience for the Customer, Alfa Laval's Customer Service is always ready to assist with clarifications, evaluation of any damages, and any other action required to restore the good conditions and safety of the plant.

CAUTION:

Should the plant be damaged on receipt you must:

- Take photographs of the damaged parts
- Send the photographs to Alfa Laval with a brief description within 10 days from receipt of the plant, by registered post.

2.2.2 ADOPTION OF PROTECTION DEVICES

	The operators assigned to the charge, the moving and the discharge of the Machine must wear shoes, gloves, working clothes and protective helmet against objects fall.
	
	
	

2.2.3 PACKING OF THE MACHINE

The machine sent to the Customer usually wrapped in plastic film for additional protection and packed in one or more sized wooden crates.

Special equipment can be fixed over linear or shaped wooden support.

CAUTION:

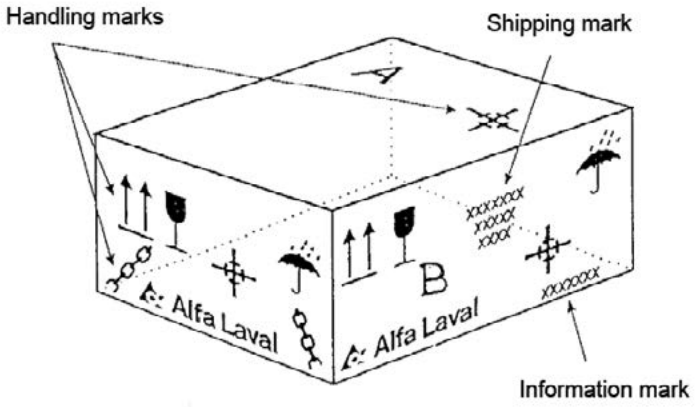
Before lifting and handling the packagings, check their weight on the packing list.

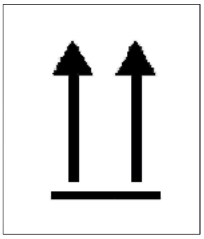
To lift and handle packagings, only use equipment having adequate capacity and payload.

Check the weight of packagings on the packing list.

Care is to be taken while unpacking the unit. Inspect all components for their completeness and condition. Ensure that all packing materials have been removed from the wooden box before starting the installation.

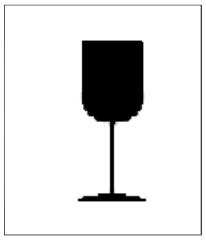
On the crates can be found different symbols and/or stickers:



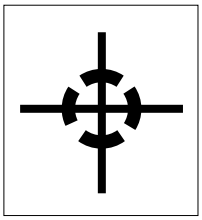
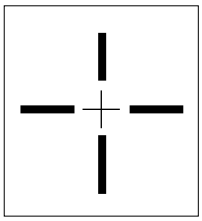


This way up

Keep dry



Fragile/handle with care


or


Centre of gravity

Sling here

A, B

Open this side first

2.2.4 HANDLING AND LIFTING OF THE PACKING

CAUTION:

The operations described in this paragraph must be carried out by personnel having the skills to operate properly and safely when using forklifts, bridge cranes and other equipment necessary to handle and lift machines with or without packaging.

CAUTION:

Operators must read and understand the “Installation Instructions”, “Commissioning Instructions”, “System Operating Instructions”, and the Operating Instructions of the respective equipment before carrying out any installation work on the system!

It is the responsibility of the customer or by the customer appointed responsible for the erection, to ensure that any person involved with the erection of this equipment follows all safety and installation instructions, and local legislation.

Read all instructions carefully and insist accordingly to those working with you and for you to follow the safety instructions.

Operation by unauthorized personnel may endanger personnel and property.

Failure to follow the instructions may cause severe personal injury or damage to the equipment beyond repair.

In addition to the installation instructions of the main equipment and components of the scope of supply, the following general installation instructions apply.

Do not start the system until the complete installation of components is done.

ATTENTION!

Appropriate marks are provided on the crate at the points of running the forks for lifting. Capacity of the means in the lifting conditions.

ATTENTION!

To lift and handle packagings, only use equipment having adequate capacity and payload.See the paragraph Dimensions and Weights 3.1.3 and the Packing List in paragraph Transport 2.3.1.

CAUTION:

In order to ensure a balanced handling of the plant and avoid damage to the plant itself or hazardous situations for the personnel, all movements should be carried out VERY SLOWLY by authorized operators, particularly if it has no package.

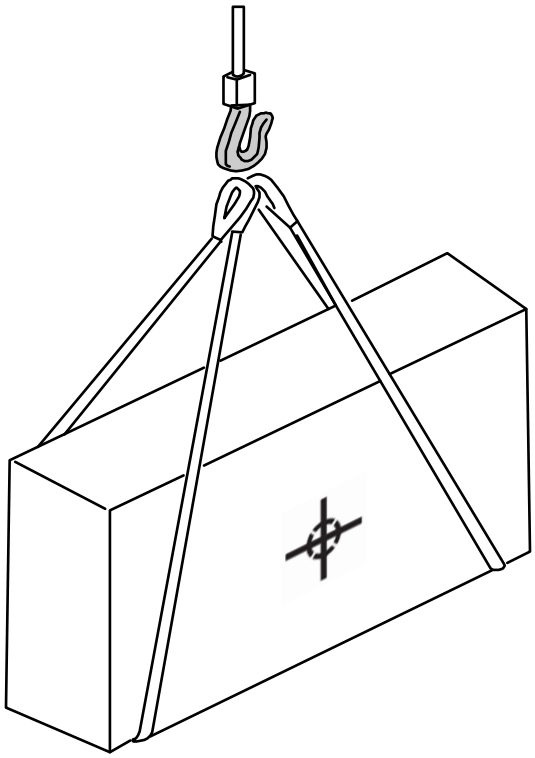
ATTENTION!

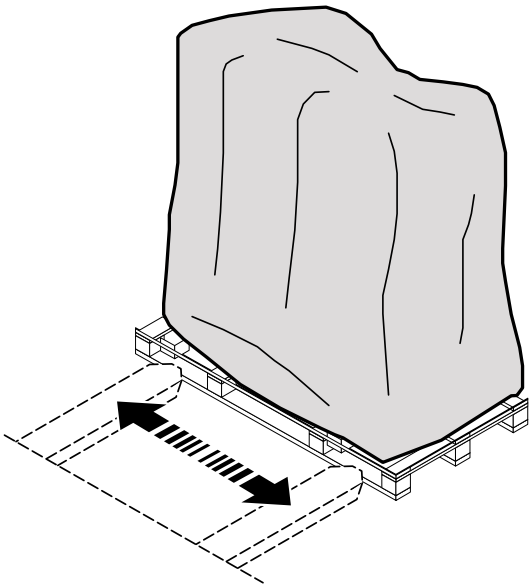
Before starting to handle the plant, make sure that the route to be followed and the intended place of installation are clear of any obstacle.

ATTENTION!

Raise the plant after verifying the correct positioning of the forks with small lifting movements.

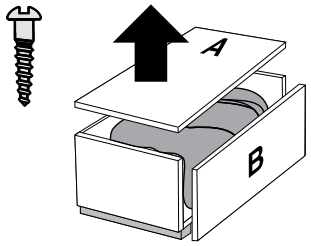
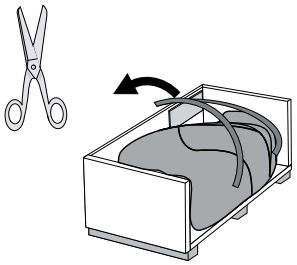
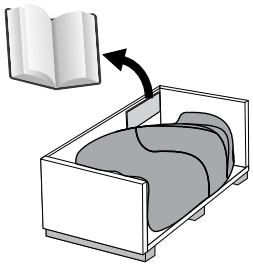
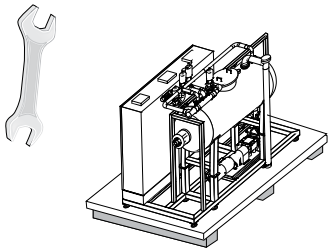
The machine handling must be performed using a forklift (in particular cases using a crane), both while unloading the machine from means of transport and while positioning it on the ground. The gripping points are generally identified at the bottom structure. Place the forks at the bottom and centrally, unless otherwise indicated, resting the machine or the group on the forks and making sure it is steady. If special compartments are provided for the forks to be inserted, use them to avoid overturning.



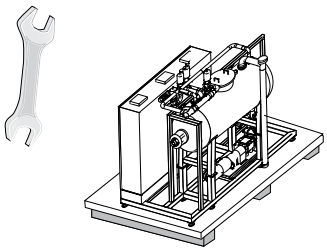


2.2.5 UNPACKING AND INITIAL INSPECTION

Below instructions to be followed for unpacking the Alfa Laval machine stored in a crate:

1		Unbolt the wooden box: Remove the upper layer (A) Then move the part (B) of the wooden box.
2		Cut open the metallic straps Cut open the plastic foil.
3		Remove other sides of the wooden box.
4		Unbolt the unit from the wooden box

Below instructions to be followed for unpacking the Alfa Laval machine stored in a wooden platform:

1		Cut open the metallic straps Cut open the plastic foil. Unbolt the unit from the wooden box

2.2.6 PACKAGING DISPOSAL

NOTE:

Dispose of packaging material separating the different components (e.g. plastic from wood, polystyrene from plastic, etc) according to the regulations in force in the country of installation.

2.3 STOCKING / STORAGE

2.3.1 STORAGE BEFORE INSTALLATION

During the time preceding installation, the plant and its apparatus should be conveniently stored in closed, clean premises to avoid deterioration and preserve its efficiency.

System should preferably be placed directly on foundations and not stored temporarily at the site. If stored temporarily at the site the area shall be suitable to carry the system and they shall rest on wooden pallets/bases. Ensure that there are no nails or other carbon steel in the wood.

If no storage place can be provided other than outdoor, the necessary measures should be taken in order to prevent contact with dust, humidity, rain, such as a waterproof cover.

Special attention should be given to electric control boards and electronic equipment, which are easily affected by humidity and low temperature.

If separate from the plant, they should be stored indoor and provided with special humidity absorbers.

CAUTION:

Storage temperature should not be less than -15°C and more than +55°C; humidity should be less than 95%, with no condensate. Vibrations should be avoided as much as possible.

ATTENTION!

In case the plant is not operating for a long period of time, please open all drainage valves and fittings, to empty the plant as much as possible. Those operations are necessary also in case there is a risk that the temperature decrease below 0°C to avoid breaks due to ice expansion inside the pipes.

2.4 DEMOLITION AND DISPOSAL

2.4.1 INTRODUCTION

The system must be demolished and disposed of in compliance with the regulations in force, first of all by emptying any lubricating fluids and cleaning the various elements and subsequently separating the pieces that make up the machine. After having dismantled the machine, the various materials must be separated in compliance with the regulations in force in the Country in which the machine is being disposed of. The machine does not contain dangerous components or substances that require special removal procedures.

ATTENTION!

When handling waste, use the appropriate Personal Protective Equipment.

The operators assigned to the charge, the demolition and the disposal of the Machine must wear shoes, gloves, working clothes and protective helmet against objects fall.

2.4.2 PROCEDURE

First of all you must:

- Disconnect the electrical power supply
- Disconnect the pneumatic power supply
- Disconnect the steam, water and product power supply
- Disconnect the electrical parts
- Disconnect the mechanical parts, performing the instructions in chapter 4 Installation in reverse order

2.4.3 DEMOLITION MATERIALS

It is non-hazardous special waste that can be recovered, in compliance with local legislation where the machine is installed. With regard to demolition, bear in mind that the materials, which the machine is made of, are dangerous.

The machine is manufactured with the following materials, in various quantities:

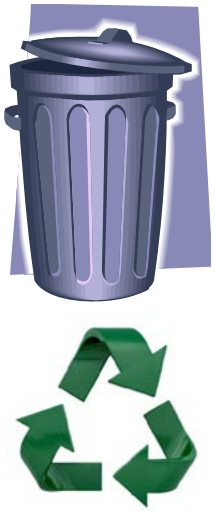
- Stainless steel;

The following are also present in very limited amounts:

- Aluminium;
- Copper;
- Bronze;
- Ceramic;
- PTFE;
- Nitrile;
- Viton;
- PVC.

ATTENTION!

During the disposal process comply with the standards in force in the country. Collect polluting materials such as oils and solvents only using metal STRUCTURES. Consumables: With regard to disposing of consumables, follow these rules: Gear oil: Used oil, oil residues and oil-soaked items should be disposed of through collection points, and not disposed of into the drains of urban areas.



ATTENTION!

Waste from the demolition of the machine must be disposed of in an environmentally friendly manner that does not pollute the soil, air or water. In any case the local legislation in force must be observed. Please note that waste means any substance or object which the holder discards or intends to or is required to discard (Italian Legislative Decree 152/2006). Waste from the demolition of the machine can be classified as special waste.

ATTENTION!

All these materials must be disposed of in compliance with regulations currently in force in the country at the time of disposal.

2.4.4 INSTRUCTIONS FOR SUITABLE TREATMENT OF WASTE

Proper management of special waste requires:

Storage in suitable places, preventing the mixture of hazardous and non-hazardous waste.

Make sure that waste is transported and disposed of/recovered by authorised carriers and waste collection centres.

Waste can only be transported to the authorised collection centres by those registered with the National Register of Environmental Managers.

2.4.5 INSTRUCTIONS FOR SUITABLE TREATMENT OF WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

DIRECTIVE 2002/96/EC Waste Electrical and Electronic Equipment Directive (WEEE Directive) and in compliace with local legislation where the machine is installed".

- prevent the production of WEEE;
- promote the reuse, recycling and other forms of recovery of WEEE, in order to reduce the quantity to be disposed of;
- improve, in environmental terms, the intervention of those involved in the life cycle of the equipment (manufacturers, distributors, consumers and operators directly involved in the treatment of WEEE);
- reduce the use of hazardous substances in electrical and electronic equipment.

The decree imposes the limitation and elimination of certain substances in contained in WEEE: it prohibits the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers. The machine was designed and made in compliance with this directive.

THIS PAGE IS INTENTIONALLY LEFT BLANK

3 TECHNICAL DATA

ATTENTION!

The information contained in this section is addressed to the following personnel categories:

Mechanical maintenance

Electrical maintenance

ALFA LAVAL technician

3.1 MAIN DESCRIPTION

The Alfa Laval Astepo HS-LA aseptic filler is the latest update to complete our unique range of bag-in-box fillers. Designed to meet market demand for faster and better performing machines, the filler relies on a new concept of motion.

Thanks to the implementation of brushless electric servo motor technology, it is possible to control and adjust all the movements inside and outside the aseptic area with an extremely high degree of accuracy.

The HS-LA is suitable for handling high (pH <4.5) and low (pH >4.5) acid products such as:

- Fruit juices, concentrates and beverages
- Dairy products, such as UHT milk, flavoured milk, soft ice mix and cheese sauce
- Sauces and condiments
- Syrups and post mix.

The bags are delivered pre-irradiated with gamma rays. Caps are of the flat rigid type, with high or low fitments, or other dispensing caps from major suppliers.

The HS-LA filler can be supplied as a stand-alone module, or integrated into an Alfa Laval food processing line, for example, a sterilizer and cartoning system.

Key features

- Compact design (limited footprint)
- Short filling cycles due to control by servo motors
- Faster and with less manual intervention (bag/fitment tooling change-over)
- Easy volume size change-over
- Sterile air group integrated in the machine skid
- Possibility to work with any commercial 1” spout type
- Continuous filling process

- Fully automatic, reliable operation
- Traceability
- Autodiagnostics
- CIP cleanable
- Food contact part in stainless steel AISI 316L
- Non-food contact part in stainless steel AISI 304
- Compliant with US FDA regulations
- Filling valve has EHDGE certification.
- Alfa Laval anti-dripping system

Sanitization

Before production starts, all food contact surfaces are automatically sanitized and sterilized. This procedure is fully automatic, consisting of a cleaning in place phase (CIP), followed by an in-line sterilization phase (SIP) both featuring cyclic action of valves in contact with the product, the circulation valves and jets of steam. During CIP and SIP, if any alarm is set off the time counter is automatically set to zero and does not restart until the condition that triggered the alarm has been reset.

Non-food contact surfaces such as the filling head and the tunnel will also be completely sterilized, using steam and vaporized hydrogen peroxide.

Moving

The operator only has to introduce the first bag, then the bag feeder will automatically feed the bags into the sterilization tunnel and the filling head. After this step the cap is re-inserted in the bag spout and an automatic cutter will separate the filled bag from the web. A motorized roller conveyor will move the bags out of the machine.

Filling

In the sterilization tunnel the caps are sterilized with a dosed and monitored jet of vaporized hydrogen peroxide. The spouts are then introduced inside the aseptic head where a positive sterile air flow is used to keep out any airborne contaminant. The temperature and the positive pressure inside the chamber are constantly monitored (critical factor).

The implementation of brushless electric servo motor technology also gives the capability to control and adjust the movements, speed and acceleration of the aseptic valve; this ensures highly accurate filling.

Cap removal is done by using pincers, and an air seal system closes the spout to prevent any contaminating agent from entering the bag.

Controls

The control cabinet is complete with a PLC to manage and check all the working phases and process condition.

Standard equipment

Standard equipment for the HS-LA filling system includes:

- Stainless steel supporting frame.
- ABF/a - Automatic bag feeder, completely integrated in the filling head, for the handling of web type bags.
- Sterilizing tunnel, made of stainless steel AISI 304 for the sterilization of caps/spouts.
- No. 1 filling head, controlled by servo motors made in stainless steel, comprises one aseptic chamber and one filling valve with cold aseptic bellow.
- Volumetric flow meter. Precision of batch refers to pasty homogenous products in 10 lt. bags: ±0.5%.
- Motorized conveyor made of stainless steel for the expulsion of filled bags and to drive the cartoning operation.
- CIP and sterilization loop, to be connected to the existing product piping.
- steam treatment and distribution group complete with gauges, pressure reduction and valves.
- Electric heat exchanger and micro sterile filters for air treatment.
- The filler is managed by a PLC interfaced with a SCADA PC, Touch Screen type.

Optional equipment

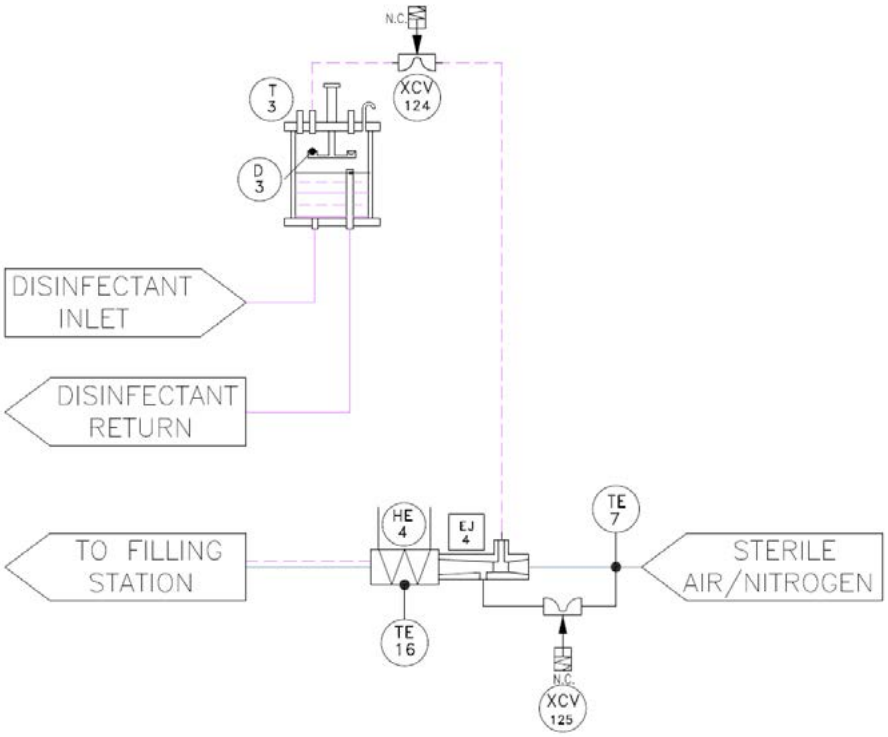
- SteriTank; pressurized, hygienic tanks to prevent, for example, foaming and to achieve better accuracy.
- Mass flow meter for higher accuracy.
- Selected bag-in-box decapping tools for dispenser caps.
- Water/air flow for filled bag-in-box polishing, drying.
- Ink jet printer for filled bags traceability.
- Tailormade solutions to ensure that the bags fit smoothly into the cartons.
- Two or more machines can be aligned to provide large capacities, with synchronized filling processes and cartoning devices.

Integration with carton box system

The HS-LA filler can also be linked up to an automatic Combibox cartoning line (featuring carton sealing with hot- melt glue or adhesive strip) built and configured by Alfa Laval Astepo in accordance with specific customer requirements.

A combined bag-in-box filling and cartoning process line offers the advantages of limited footprint and minimum size change-over time compared to traditional lines.

The filling head disinfectant injection system

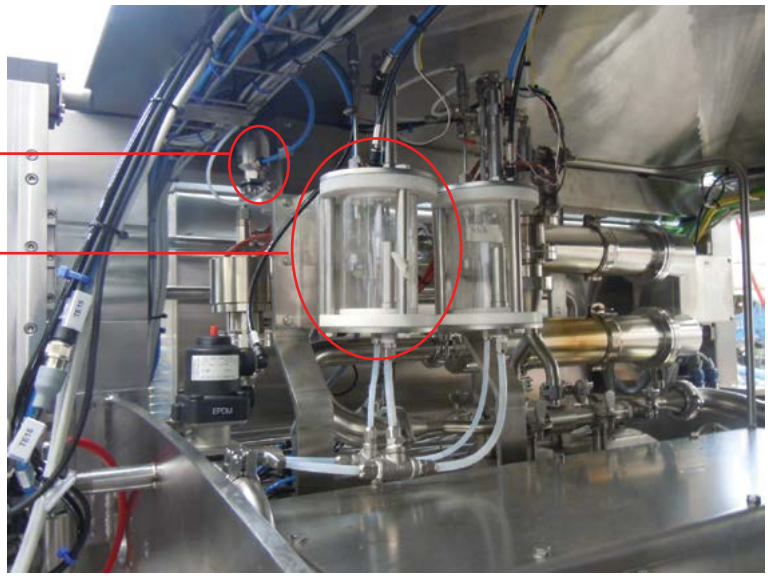


The filling head disinfectant injection system [optional] has the purpose to inject a calibrated dose of vaporized hydrogen peroxide into the sterile air/nitrogen that flows into the filling station during PRODUCTION phase. Disinfectant is injected at every filling cycle and starts when the filling valve AX106 is in the lower position, inserted into the spout, to minimize the potential entrance of residual peroxide into the bag.

The system is composed of:

- HE4 electric heater
- EJ4 ejector
- TE16 temperature probe of the heater
- XCV125 bypass valve
- XCV124 peroxide valve
- T3 dispensing tank

- D3 calibrated disinfectant cup
- In SIP cycle the XCV125 bypass valve opens to grant the correct flow of steam to the filling station.



3.1.1 INTENDED USE AND REASONABLY FORESEEABLE USE

HS-LA 1H/1” filler is an extremely versatile and robust filling system designed for filling of a wide range of food and beverage products into appropriate containers under aseptic conditions. HS-LA 1H/1” filler units are widely used within the food and beverage industries.

Products:

- Fruit juices, concentrates and beverages
- Dairy as UHT milk, flavored milk, soft icemix and cheese sauce.
- Sauces & condiments
- Syrups & post mix

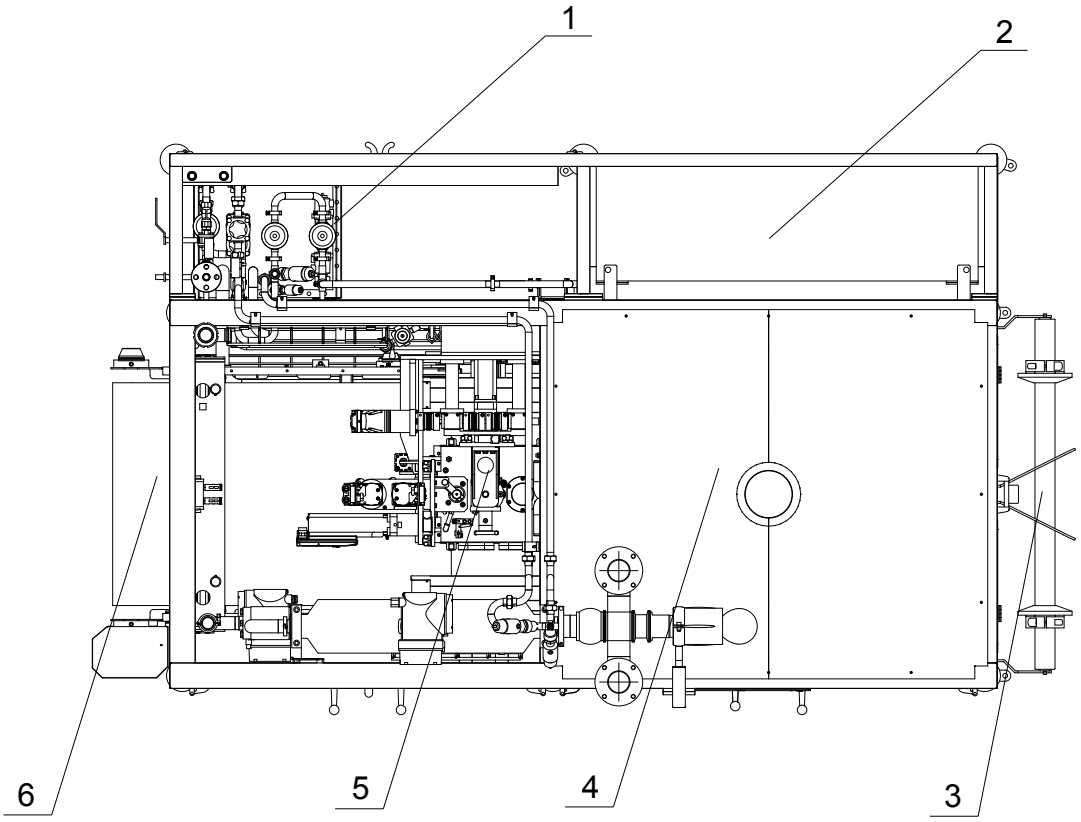
CAUTION:

Any other use is considered misuse. In order to verify the possibility of use other than that specified, the client must contact the manufacturer.

3.1.2 MAIN COMPONENTS

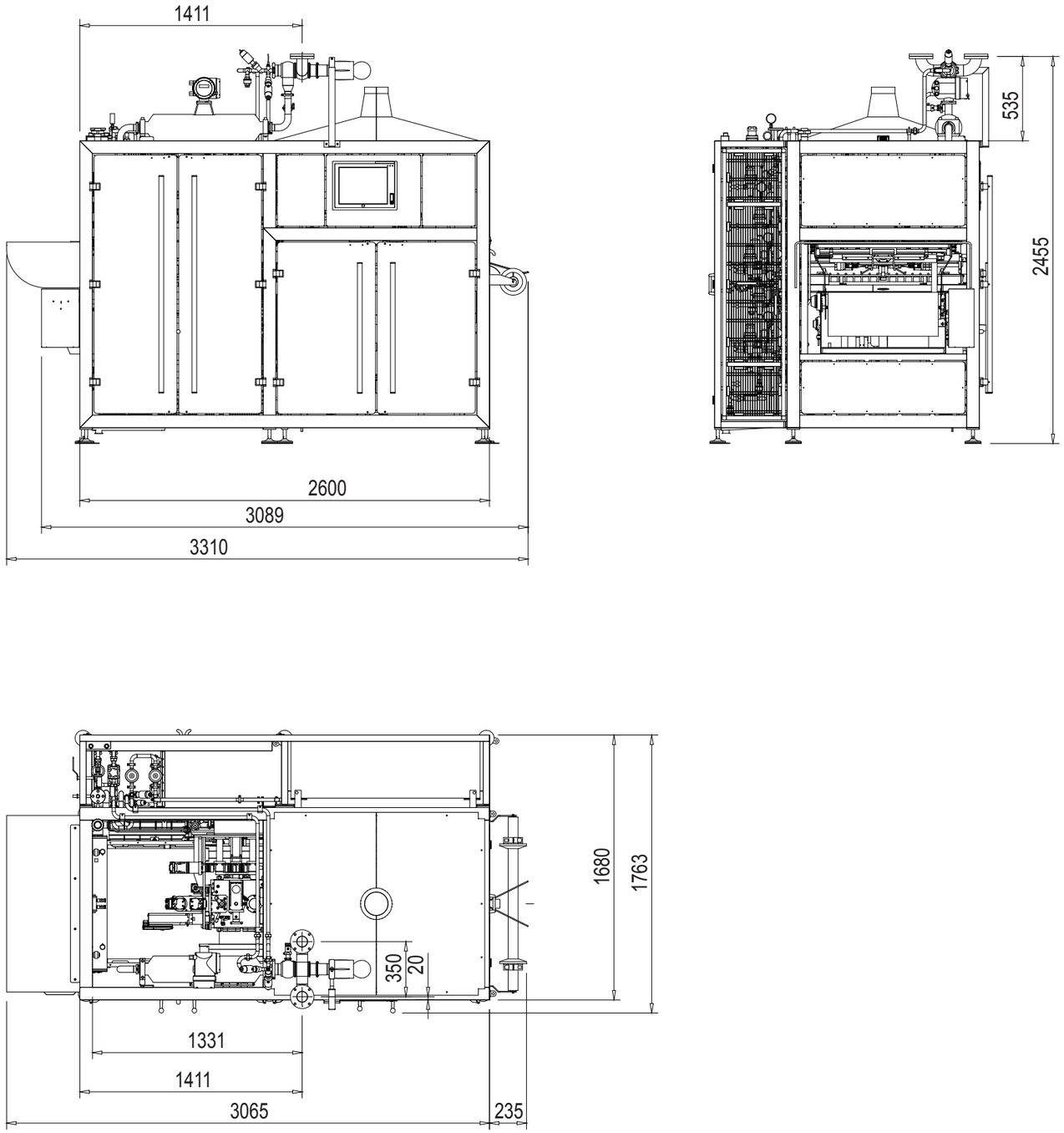
The ASEPTIC FILLER HS-LA consists of 6 main components:

1. Steam group
2. Electric board
3. Bags strip inlet
4. Sterilization tunnel
5. Filling head
6. Filled bags outlet



THIS PAGE IS INTENTIONALLY LEFT BLANK

3.1.3 OVERALL DIMENSIONS AND WEIGHTS



Layout 01.00.1908-00

THIS PAGE IS INTENTIONALLY LEFT BLANK

3.1.4 WEIGHT AND DIMENSION

Weight and dimension	
Weight	1800 kg
Dimension (L x W x H)	3350X1800X2500

3.1.5 PRESSION AND CONSUMPTION

Electrical Power	
Feeding voltage	480 V 60 Hz
Installed power	16 Kw
Compressed air	
Pressure	8 Bar
Consumption	30 Nmc/h
Steam	
Pressure	6 Bar
Consumption only sterilization	30 Kg/h
Consumption during cleaning cycle (CIP)	10 Kg/h
Consumption during filling operations	10 Kg/h
CIP Solution	
Caustic soda:	
Percentage	2-4%
Temperature	80°C
Max. time washing	50 min
Disinfectant concentration	
Hydrogen peroxide (optional)	35%
Oxonia (dilued with demineralizad water) (optional)	0,7%÷3%

3.1.6 FEATURES OF THE CIRCUITS AT MACHINE BOARD

Electric panel	
Auxiliary voltage	24 V DC
Protection degree	IP 65
BRUIT	
The machine has been planned and built in such a way to reduce at the source its noise.	
Leq(A)	< 80 db A 1m

3.1.7 PRODUCTION TYPE

Entering Product Character	
Max pressure	2-3 Bar
Max product temperature	80°C
Instantaneous product capacity	500÷15000 l/h
Container characters	
Bags	3-20 l
Caps	Flat cap
Spout	All
Diameter	1”

ATTENTION!

The quality and performance of the machine are directly proportioned to the quality of the bags used.

Using high-quality bags makes it more difficult for them to break up while being filled.

3.1.8 VIBRATIONS

In conditions that comply with the directions for proper use, given in this manual, the vibrations are not such to give rise to dangerous situations.

3.1.9 WATER STANDARD

The water used in production must meet all the standards and local regulations required for potable water. In general, the water for the plant must meet the following specifications:

Appearance	Clear
Taste	No unpleasant taste
Smell	None
Colour	None
Turbidity	None
Total dissolved solids	< 500 mg/dm^3
Iron	< 0.2 mg/dm^3
Manganese	< 0.1 mg/dm^3
Chloride	< 150 mg/dm^3
Sulphate	< 150 mg/dm^3
Total alkalinity (CaCO3)	50 mg/dm^3
Nitrates	<10 mg/dm^3
Nitrites	Tracce
Lead	< 0.1 mg/dm^3
Silicon	< 0.2 mg/dm^3
Fluorine	<1.5 mg/dm^3
Organic material	None
	pH: 3 – 6

4 INSTALLATION

ATTENTION!

The information contained in this section is addressed to the following personnel categories:

Mechanical maintenance

Electrical maintenance

ALFA LAVAL technician

4.1 INTRODUCTION

CAUTION:

These instructions shall be made available to the personnel involved in the handling and installation of the machine.

4.2 ENVIRONMENTAL CONDITIONS OF USE

The environment in which the system operates must feature the following characteristics:

Temperature: 5°C ÷ +50°C

Humidity: 10% ÷ 85% (at 30°C)

The machine must be protected from rain and weathering.

We recommend installing the machine in a room equipped with underground exhaust/draining systems.

Environmental conditions other than those specified may cause serious damage to the machine and especially to the electrical and electronic equipment.

Putting the machine in places that do not meet the conditions required, voids the warranty.

ATTENTION!

Nitrogen (if present) is an odourless gas that, when inhaled in large quantities, can lead to anoxia, even total, without any warning, until sudden loss of consciousness and death within a short time. Make sure the area is well ventilated and there is no nitrogen leakage.

4.3 USE OF PERSONAL PROTECTIVE EQUIPMENT

The operators assigned to the charge, the moving and the discharge of the Machine must wear shoes, gloves, working clothes and protective helmet against objects fall.

4.4 POSITIONING THE MACHINE PARTS - SEE LAYOUT CHAPTER 8

CAUTION:

For the installation and the assembly of elements/parts that the personnel cannot reach from the ground, use ladders/cranes in compliance with local laws of the country where the machine is installed.

CAUTION:

The operator has the skills to operate properly and safely when using forklifts, bridge cranes and other equipment necessary to handle and lift machines with or without packaging.

CAUTION:

Operators must read and understand the “Installation Instructions”, “Commissioning Instructions”, “System Operating Instructions”, and the Operating Instructions of the respective equipment before carrying out any installation work on the system!

It is the responsibility of the customer or by the customer appointed responsible for the erection, to ensure that any person involved with the erection of this equipment follows all safety and installation instructions, and local legislation.

Read all instructions carefully and insist accordingly to those working with you and for you to follow the safety instructions.

Operation by unauthorized personnel may endanger personnel and property.

Failure to follow the instructions may cause severe personal injury or damage to the equipment beyond repair.

In addition to the installation instructions of the main equipment and components of the scope of supply, the following general installation instructions apply.

Do not start the system until the complete installation of components is done.

ATTENTION!

To lift and handle the machines, only use equipment having adequate capacity and payload.

See the paragraph ”3.1.4 Weight and dimension” and “2.2.3 Packing of the Machine”.

CAUTION:

In order to ensure a balanced handling of the machine and avoid damage to the plant itself or hazardous situations for the personnel, all movements should be carried out VERY SLOWLY by authorized operators, particularly if it has no package.

CAUTION:

Before starting to handle the machine, make sure that the route to be followed and the intended place of installation are clear of any obstacle.

ATTENTION!

Raise the machine after verifying the correct positioning of the forks with small lifting movements.

The correct positioning of the machine within the production line is a pre-condition for ideal performance and easy access for ordinary maintenance.

For this reason, according to the plant dimensions, allow enough space around the plant for the service personnel to carry out the necessary maintenance.

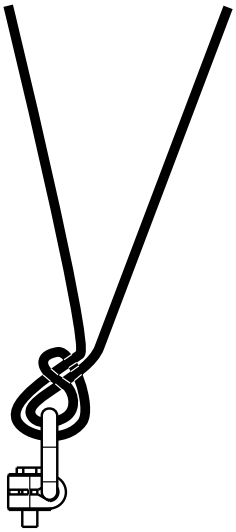
Besides, make sure the plant is not placed near sources of heat which may undermine the necessary cooling, or near obstacles which may obstruct a free air flow.

CAUTION:

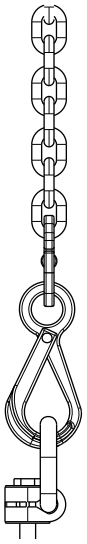
The floor on which the plant stands must have a bearing capacity of at least 150% of the plant's weight.

CAUTION:

When available use the eyebolts installed to lift the machine/equipment.



Tie bends



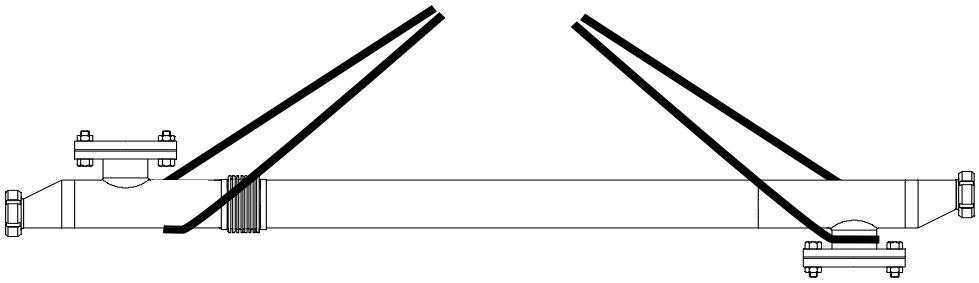
Chain with locked hook

CAUTION:

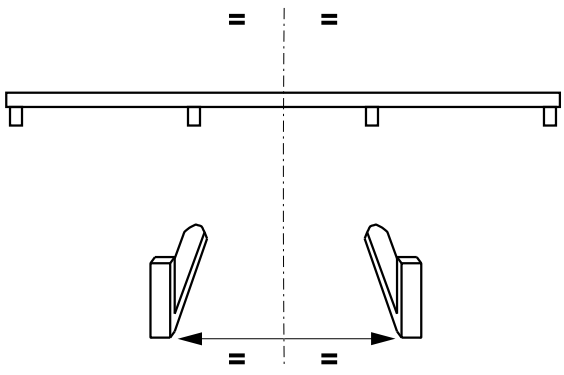
Verify the weight capacity of the bends before starting any lifting operations. Use only bends suitable for the weights equipment to move.

Sling heavy weight elements to in order to ensure a balanced handling and lifting.

Pay attention that both bends load the same weight and tension.



Sling with bends



Balanced lifting with forks

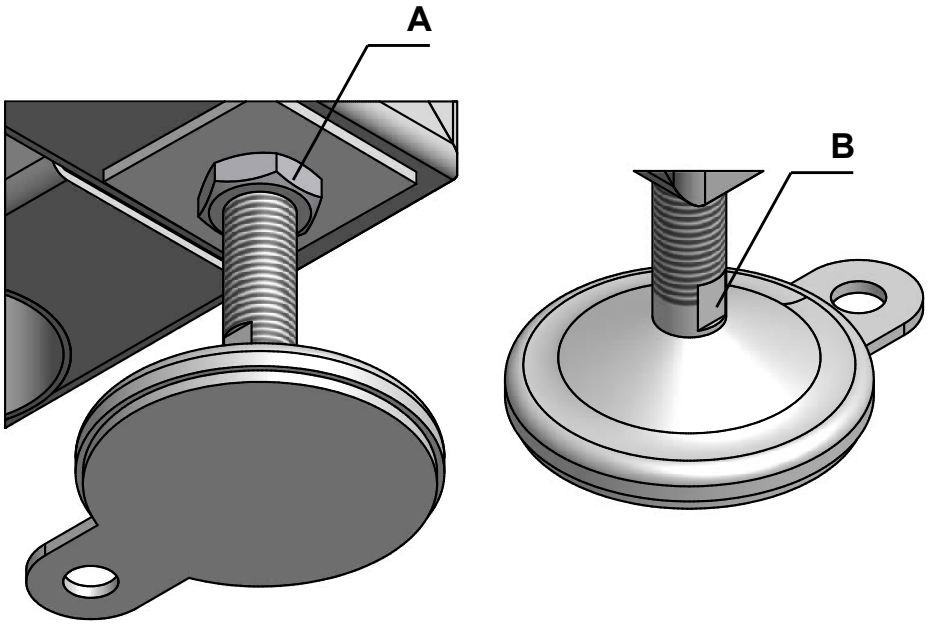
4.5 MACHINE LEVELLING

To ensure a smooth, vibration less operation, the machine should be properly leveled.

To this effect, the machine is supplied with adjustable legs, in some cases, with fixed legs wich don't require to be adjusted.

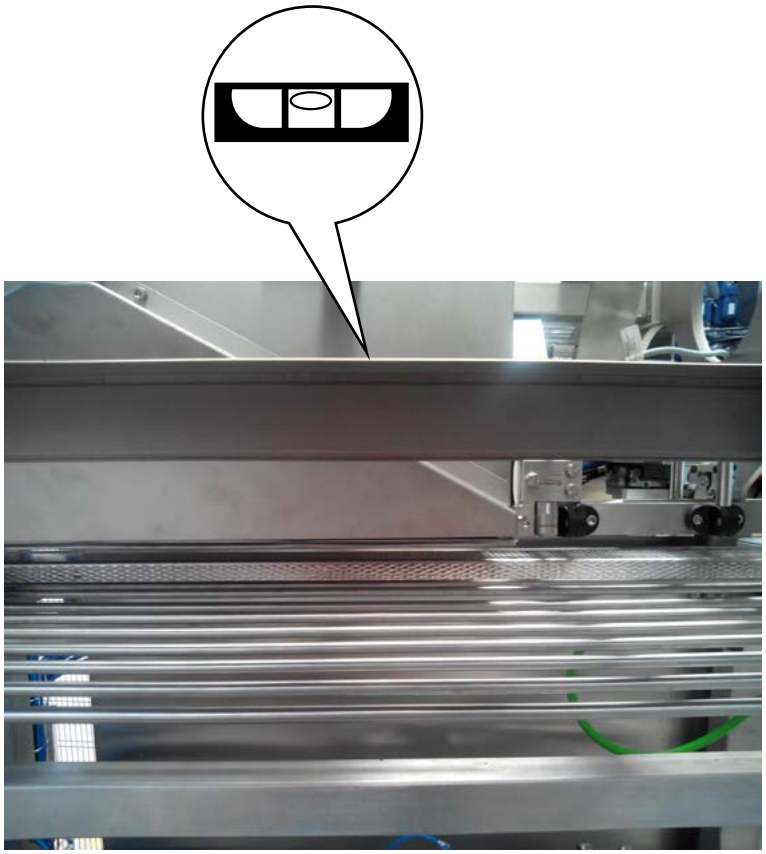
	**CAUTION:** Poor levelling of the support frame may prevent the system from working properly.

	**CAUTION:** Do not start the system if it is not completely level. It is forbidden to put the system on sloping surfaces.

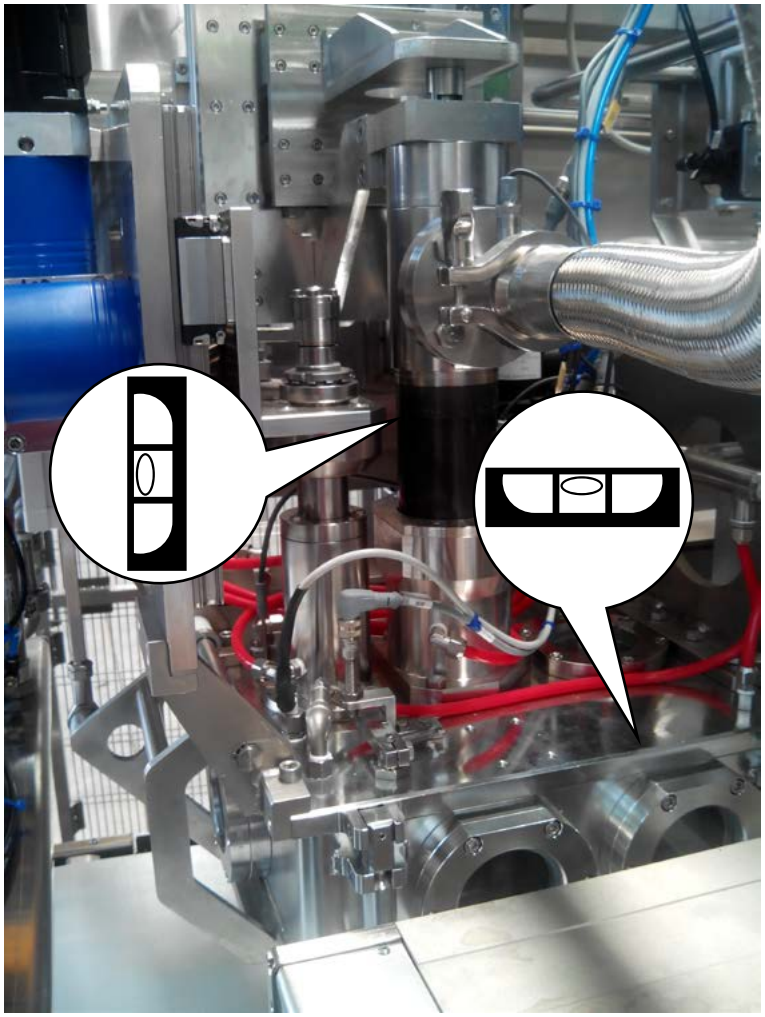


1. Loosen the locking nut A then adjust the high of the foot by turning the stem B.
2. After having correctly levelled all the feet, tighten the locking nut A.
3. Fixed to the floor with bolts.

4.5.1 LEVELLING CHECK POINTS



Dragging bags rails (Horizontal)

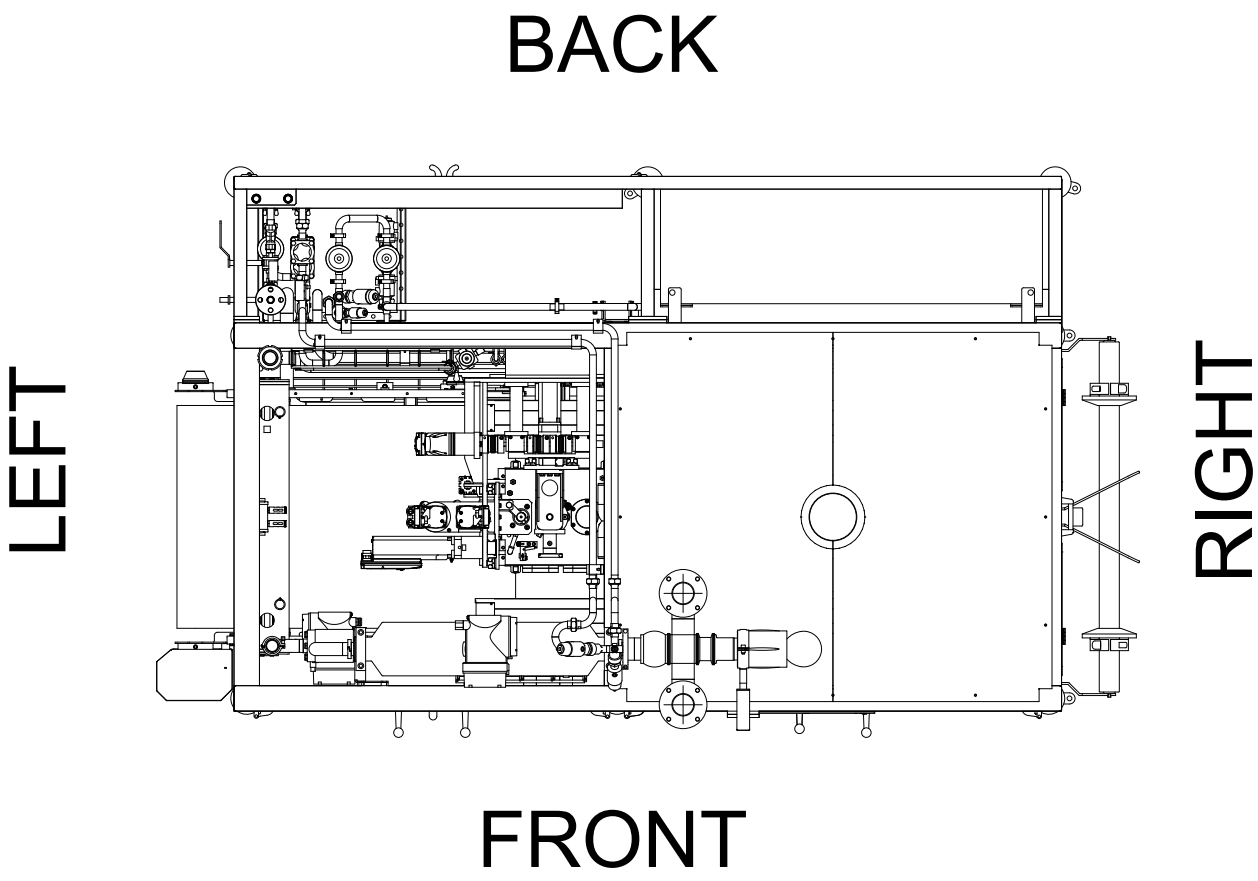


Filling Head (Vertical)

4.6 MACHINE ASSEMBLING

The following paragraph describes the assembly and installation procedures.

To orientate the reader see the following drawing:



	**CAUTION:** • Every pipes connections must be assembled with the proper gaskets. • Screws, bolts, screw studs, nuts must be assembled with the proper washers. • For the lifting and moving equipment instructions see the previous paragraphs. • Connect the pneumatic valves joint with the air pipes.

4.6.1 LIGHT TOWER INSTALLATION

The machine may reach the customer with the luminous tower A disassembled, for transportation reasons. Restore the light tower A on the electrical panel B as shown in the top picture.

4.7 CONNECTIONS

4.7.1 CONNECTION TO UTILITIES AND PRODUCTION LINE

Normally, the machine is connected to the production line via a DIN/CLAMP ring nut or flange of variable size depending on the machine's capacity or particular requirements by the Customer.

CAUTION:

As far as the disposal of waste utilities fluids, refer to the specific regulations in force locally.

4.7.2 ELECTRIC CONNECTIONS

The power line to the control board should be of appropriate type according to the length, type of laying, ambient temperature, nature of the load, and always in accordance with the provisions of the local regulations on this matter.

If no specific agreements have been made in writing with Alfa Laval, the user shall be responsible for establishing the features of the power line and earthing conductor up to the terminal board of the machine, as well as selecting appropriate protection devices against short-circuits and contact voltage.

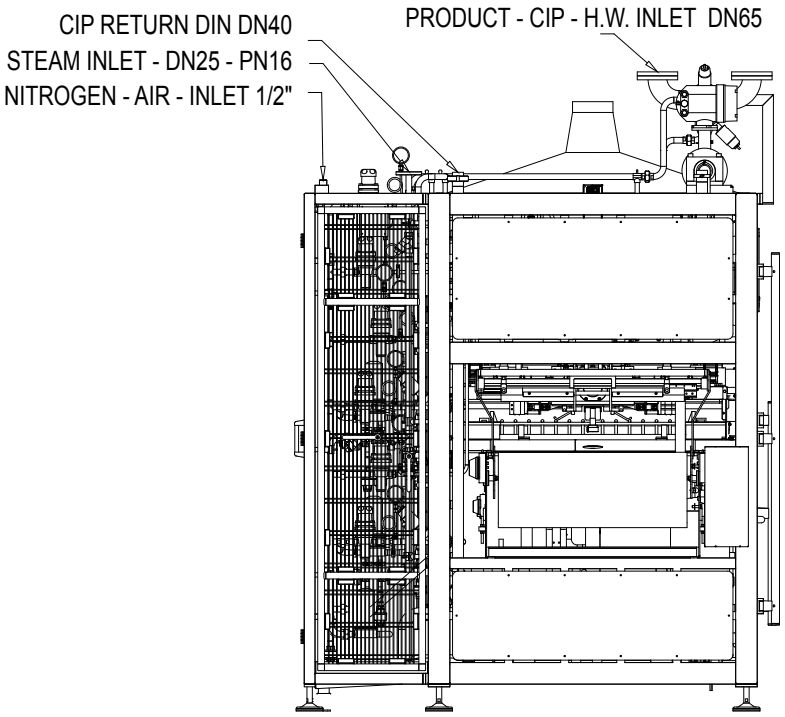
As far as the power details of the machine and wiring diagrams, reference should be made to the electric specifications and electric diagrams .

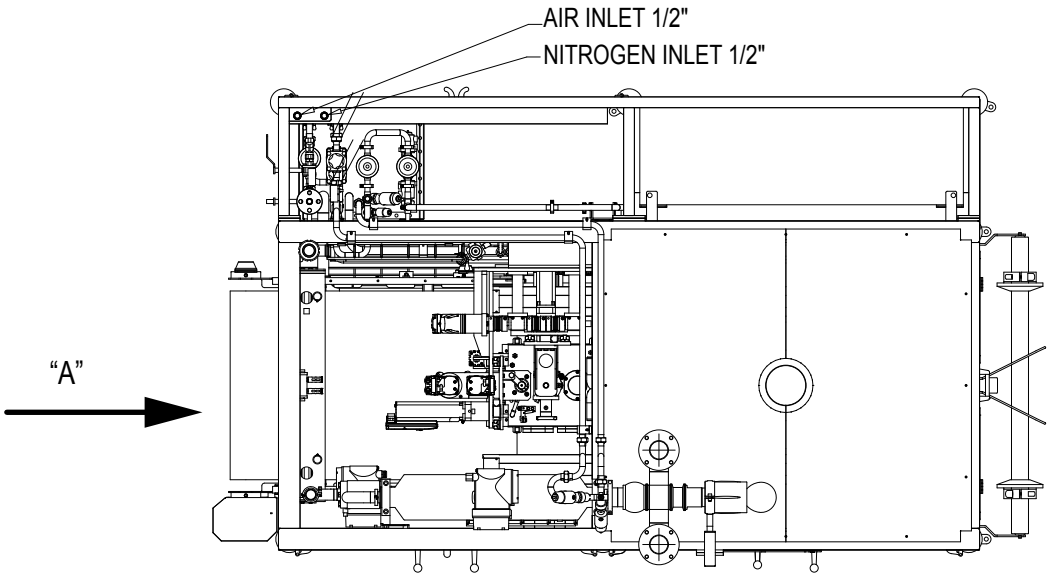
CAUTION:

The indications given concerning the wiring refer to standard laying and environmental conditions; values shown are purely indicative, therefore they should ALWAYS be cross-checked by the user depending on the actual operating conditions.

ATTENTION!

The electrical system of the premises where the machine is to be installed must be equipped with protection against the effects of lightning or must at least be "self-protected".





Detail of flow connection

4.8 ROTATION OF ELECTRIC MOTORS

At the time of wiring, make sure that all motors rotate in the correct direction:

CAUTION:

To check the direction of rotation, the motors should be operated ONLY by impulses.

When performing these operations, follow strictly the safety rules and stay away from any moving part inside the machine.

In case of wrong direction of rotation, reverse any two phases of the input cord.

CAUTION:

Before starting the motors ensure that ONLY installation personnel is present in the vicinity, and that NOBODY is in contact with the machine.

THIS PAGE IS INTENTIONALLY LEFT BLANK

5 INSTRUCTIONS FOR THE OPERATOR

	**ATTENTION!** The information contained in this section is addressed to the following personnel categories: Generic operator Mechanical maintenance

  	The operators assigned to the normal work cycle of the machine must wear shoes, gloves and working clothes.

5.1 CHECKING BEFORE STARTING

CAUTION:

Any operation involving the removal of the machine panelling should be performed with the MACHINE STOPPED AND ISOLATED from the power line by putting the lock on the main switch so that nobody can accidentally give power to the machine.

Do not remove the safety guards and safety devices.

Failure to observe the last recommendation here above may - in case of machine starting - result in a severe risk of injury for anyone standing near moving parts or high temperature elements.

Before starting up the plant, make sure that:

Check the direction of rotation of any motors as described at paragraph ”4.8 Rotation Of Electric Motors”

All manually-operated valves of utilities (steam, water, compressed air) are closed.

Make sure that all utility connections are correctly performed and comply with the attached flow diagram. Connections must be well tight.

Make sure that all electric connections are correct and in compliance with the attached wiring diagram of the control board.

Make sure that the mains voltage in all phases is the same indicated on the plate placed side panel and that grounding complies with the local regulations.

CAUTION:

Before powering on the control board, make sure that steam, water and air on-off valves are closed.

To power on the control board, set the main switch to “1”.

The auxiliary devices are enabled (control voltage 24 V AC) by setting the key switch to “1”

Open the ball valves on the compressed air circuit feeding the control board, and set pressure to 6 bar by means of the pressure reducer located on the control board.

Manually acting, let the centrifugal pumps turn for a short period of time, to make sure that the direction of rotation of the motors corresponds to the one indicated on the ma- chine casing.

CAUTION:

Never operate the pumps for a long period without liquid inside. Assure there is the cooling water for the mechanical seals when required.

Check that the pipes upstream and downstream the plant are clean and free from scaling or welding residues which may damage the machine seriously.

CAUTION:

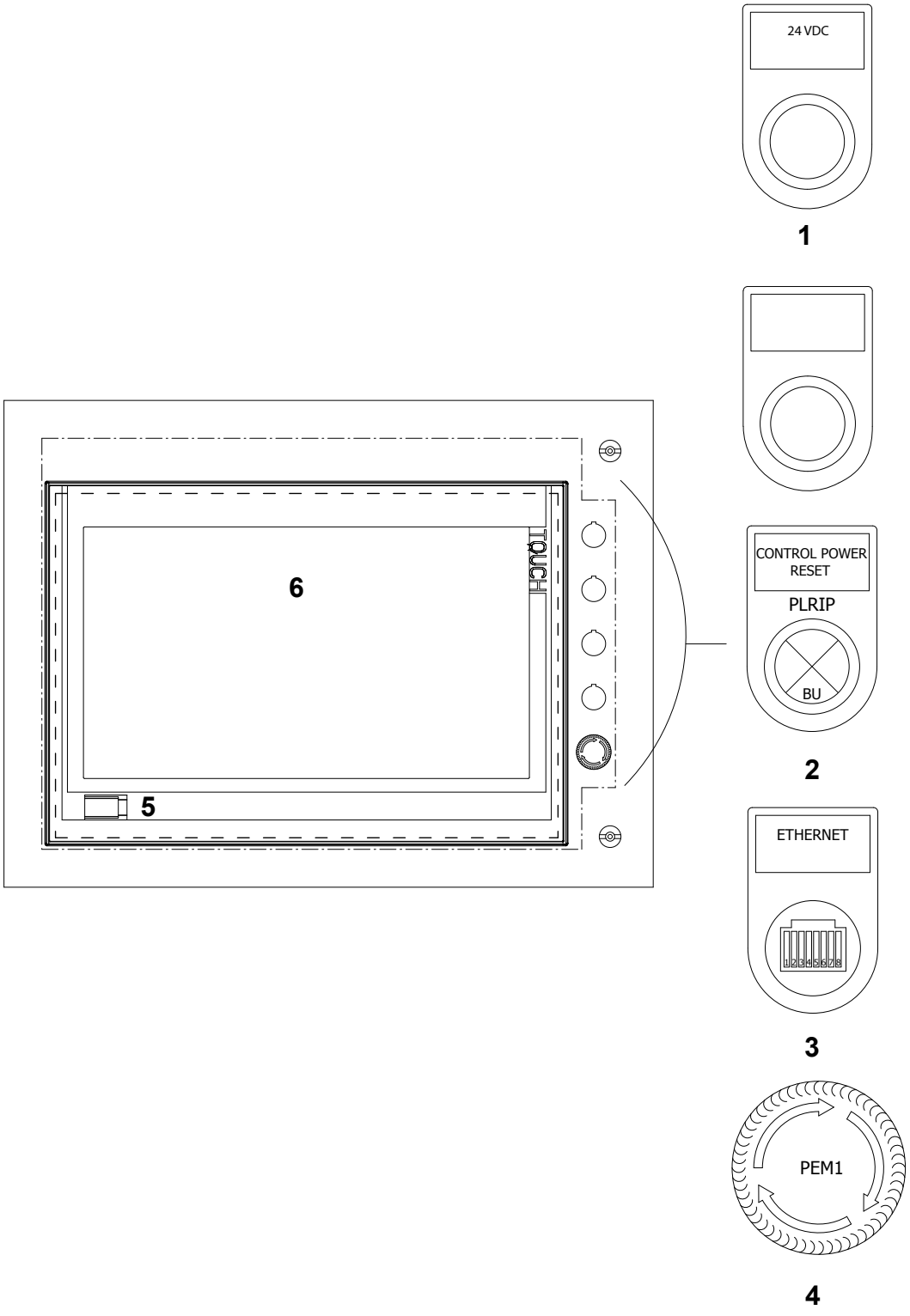
Make sure that there is nothing inside the product pipeline.

Check periodically that the flanges and connections are correctly tightened.

Make sure that seals - if previously removed for storage reasons or machine standstill longer than three months - have been reassembled correctly.

5.2 PUSH BUTTON BOARD DESCRIPTION

Following the description of the command buttons of the machine:



ITEM	NAME	DESCRIPTION
1	24VDC	24 V direct current light
2	CONTROL POWER RE-SET	This button recovers the emergency relay
4	ETHERNET	Ethernet connection (only for technical personnel)
3	EMERGENCY STOP	Emergency stop button (see paragraph “2.1.8.2 Emergency buttons”
5	USB	USB connection (only for technical personnel)
6	TOUCHSCREEN PANEL	Touch screen panel for the control of the machine (see paragraph “5.4 operator panel use - HOME -”)

ITEM	NAME	DESCRIPTION
7	SPOUT CLAMP	This button closes the spout clamp for first bag loading.

5.3 STARTING PROCEDURE

5.3.1 OPERATOR'S POSITION

To ensure a safe use of the machine during start-up and adjustment operations, we recommend that the operator should stand as indicated in the paragraph"8.1 Layout 01.00.1908-00"

5.3.2 START-UP

To carry out initial start-up, proceed as follows:

If steam is required, open the manual steam check valve after draining out any condensation (using the drain valve).

Open the manual compressed air check valve.

If water is required, open all the manual water check valves.

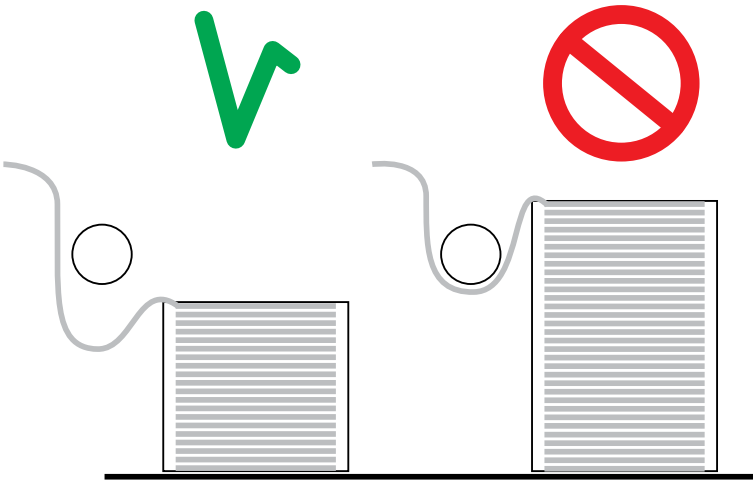
Turn on the electrical panel at the master switch.

Open the alarms page on the HMI interface. Identify the alarms and then press the alarm reset button.

Check that the alarms page have been.

Refer to the chapter on Operations.

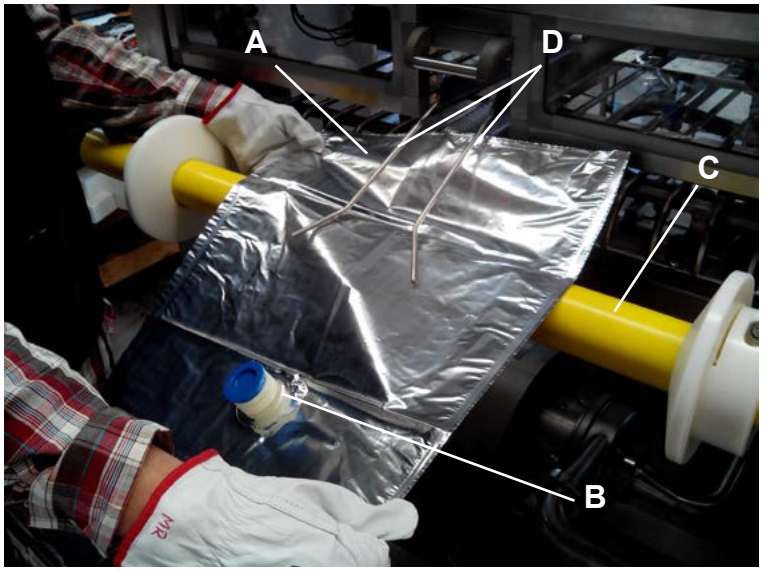
5.3.3 MANUAL BAGS STRIP LOADING



1. Place the bags strip box in the back side of the machine. NOTE: The height of the box does NOT have to be higher than the infeed rollers of the machine, in order to allow a suitable dragging of the bags strip.

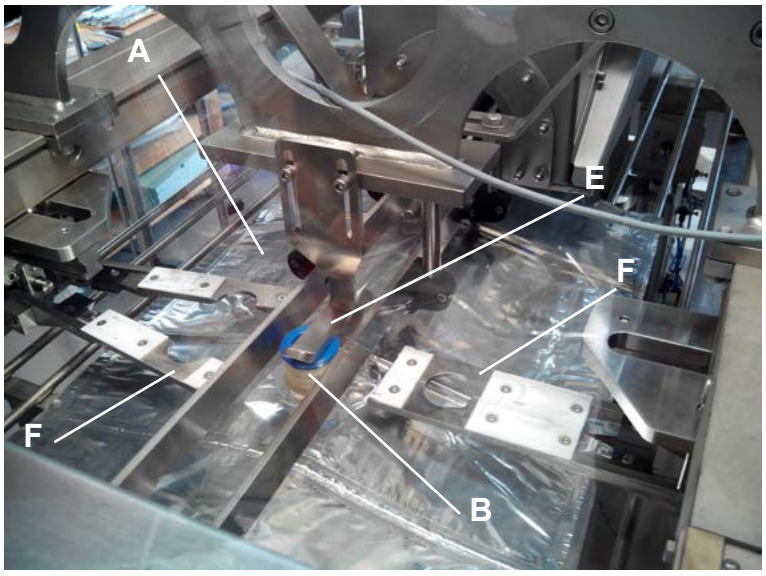
CAUTION:

Any operation involving the removal of the machine paneling should be performed with the MACHINE STOPPED AND ISOLATED from the power line by putting the lock on the main switch so that nobody can accidentally power to the machine on.

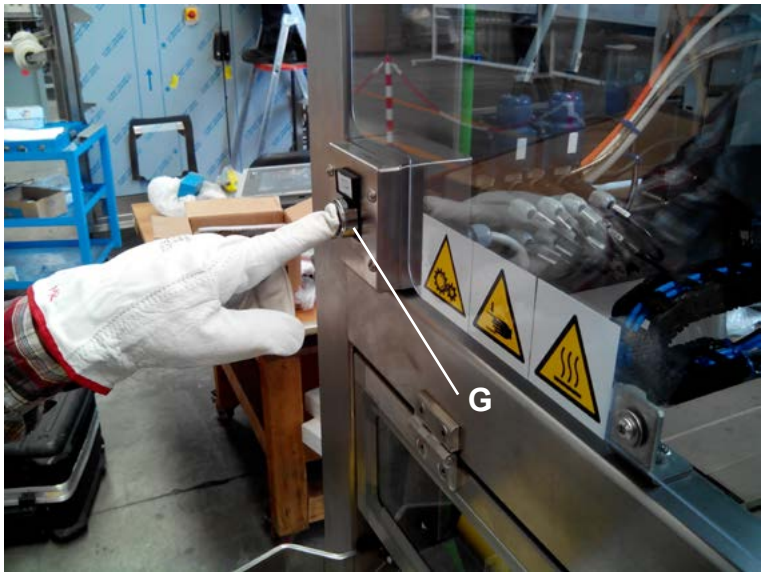


2. Stretch the first bag A of the strip, then lie the first bag A over the infeed rollers C, in order to insert the bag A trailing (first the bottom of the bag A and last the spout B). NOTE: THE BAG HAS TO BE FITTED WITH THE SPOUT B IN FRONT OF THE OPERATOR, IN ORDER TO PASS THROUGH THE SPOUT GUIDES D AS THE LAST PART OF THE BAG A

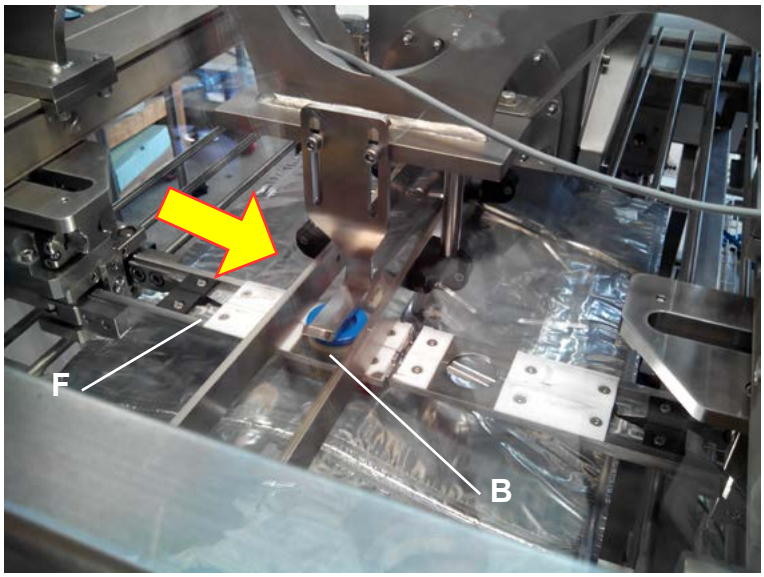
3. Pull the bag A inside the machine, fitting the spout B to pass through the spot guides D.



4. Drag the first bag A until the spout B is placed under the stopper E, between the two spout clamps F, as shown in picture.

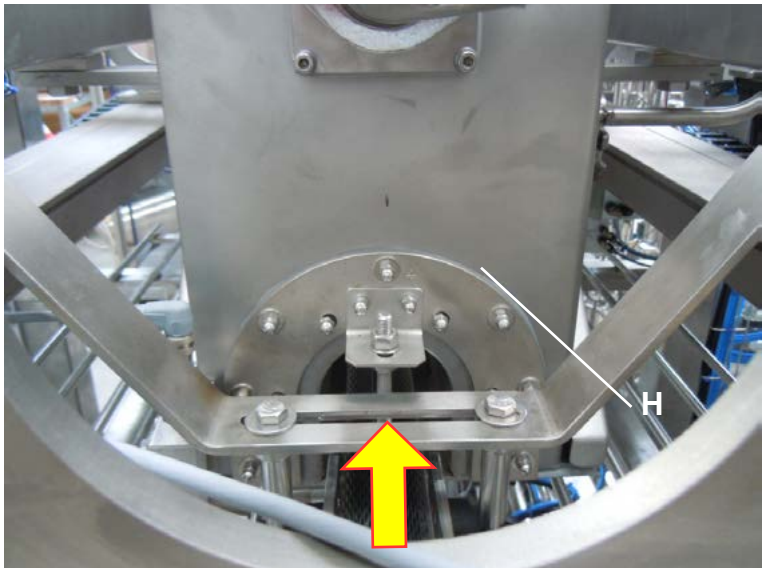


5. Press the button G in order to close the spout clamp.



6. The left spout clamp F moves forward and catches the spout B.

7. Press “CONFIRM” on the main command touch panel. The first bag is dragged ahead, and the left spout clamp catches the spout of the second bag.



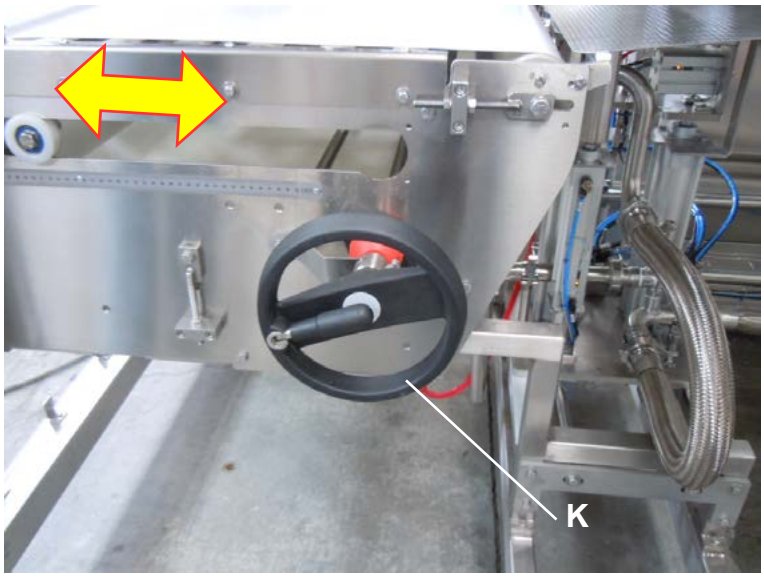
8. The first bag is dragged under the sterilizing tunnel H.

9. The bag strip is dragged to the filling head.

	ATTENTION!: **NOTE:** ONCE THE FIRST BAG IS FED TO THE FILLLING HEAD, MAKE SURE THAT THE BAG IS NOT RUFFLED. OTHERWISE OPEN THE INTERLOCKED DOORS AND STRETCH THE BAG IN ORDER TO HAVE A FLAT SURFACE OF THE BAGS STRIP AS SHOWN IN THE PICTURE. REMEMBER TO CLOSE THE INTERLOCKED DOORS AND TO RESET THE ALARMS IN ORDER TO RESTART THE OPERATION.

ATTENTION!

NOTE: THE VERTICAL CYLINDER, PLACED UNDER THE CONVEYOR, WILL LIFT UP AT THE BEGINNING AND AT THE END OF THE FILLING PHASE. AS SHOWN IN THE PICTURE.



10. Adjust the position of the cutting unit by using the handwheel K, in accordance with the dimension of the first filled bag and the score line between the first and the second filled bag.

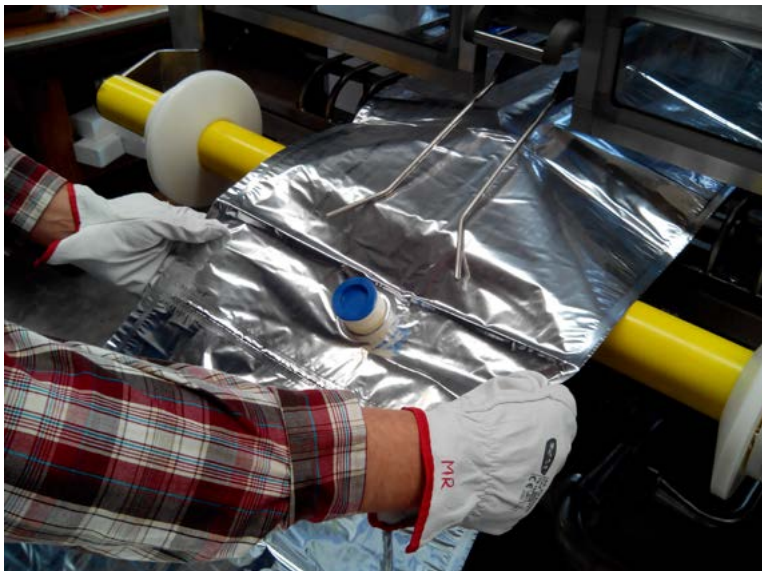
5.3.4 MANUAL BAGS STRIP UNLOADING

CAUTION:

Any operation involving the removal of the machine paneling should be performed with the MACHINE STOPPED AND ISOLATED from the power line by putting the lock on the main switch so that nobody can accidentally power the machine on.

1. Start the BAG DISCHARGE sequence on the main command touch panel. The filler proceeds to release the loaded bags.

2. Once that the bag is released, pull out the bag strip from the bag loading area.



3. Press CONFIRM on the HMI.

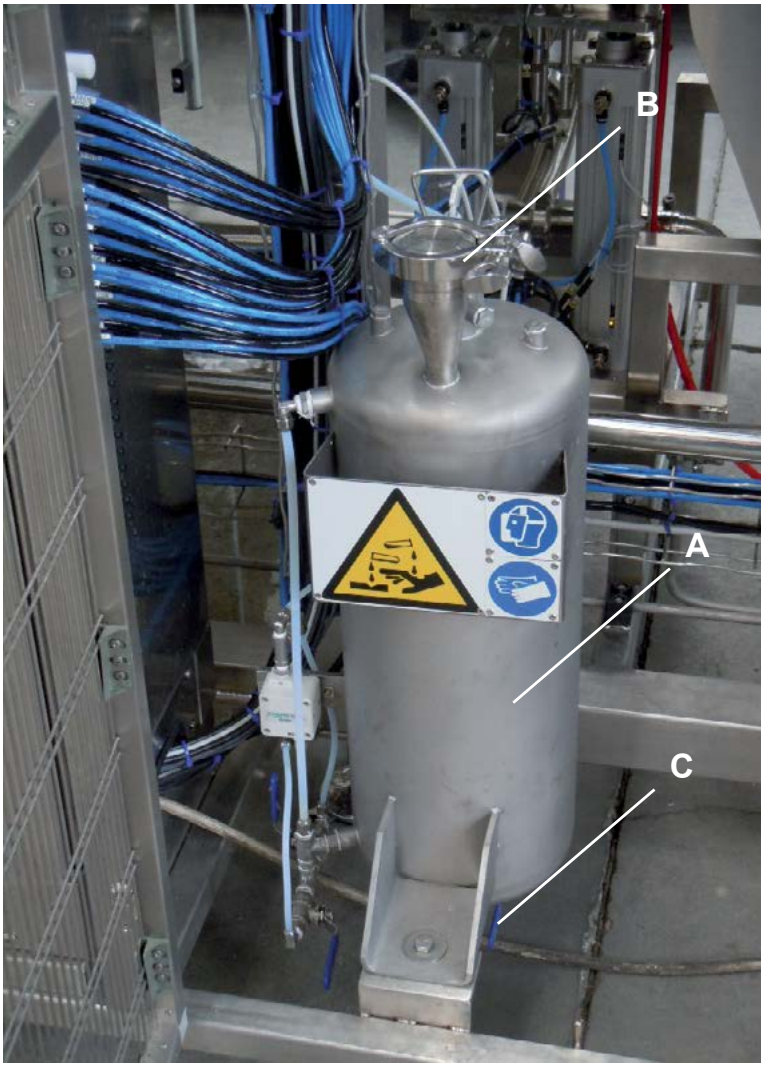
5.3.5 LOADING AND UNLOADING DISINFECTANT

CAUTION:

Any operation involving the disinfectant and chemicals in general, should be performed with extremely care.

Operators MUST wear the suitable PPE: gloves and protective visors.

Risk of burnings, scalds, corrosion and other injuries caused by possible contact of people and things with corrosive substances.



To load disinfectant in the tank A:

1. Open the door of the machine. The doors are interlocked, so the machine will stop.
2. Open the clamp cap B (diameter 1 1/2”).
3. Fill the tank A with disinfectant. The tank capacity is 20 Lt. Take care to NOT fill the tank A up to the maximum capacity.
4. If necessary, use the manual drain valve C to remove the exceed disinfectant in the tank A.

To empty the tank A:

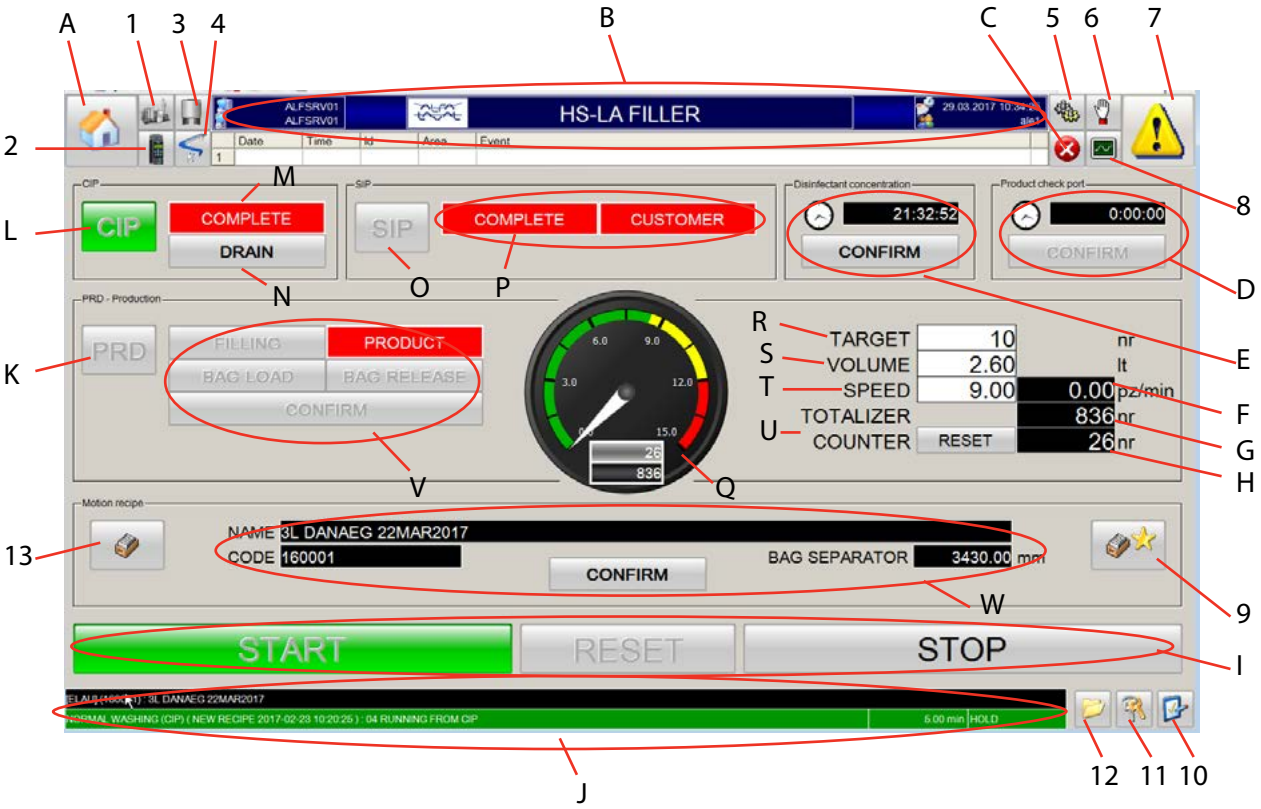
1. Open the door of the machine. The doors are interlocked, so the machine will stop.
2. Use the manual drain valve C to drain out all the disinfectant from the tank A.

5.4 OPERATOR PANEL USE - HOME -

ATTENTION!

Graphics may differ from the represented ones without notice according to the software installed on the equipment.

Icons, symbols and arrangement may be lightly different, but the function and meaning of the objects is not changing among different software installations.



A. HOME. This button loads the home page from every other page.

B. MAIN INFORMATIONS MENU. This Menu displays main informations like DATE/TIME, NAME OF THE MACHINE, WORK GROUP

C. SINGLE ALARM ACKNOWLEDGE. This button clears the alarms one by one. Each single alarm is displayed in the event row on the left of the button.

D. PRODUCT CHECK PORT. Every four hours of filling, the machine stops to allow the operator to check for leaks on the filling valve. Press CONFIRM to restart the counter.

E. DISINFECTANT CONCENTRATION To grant that the disinfectant concentration is compliant with the specifications,the machine stops every 24 hours. If the tank is refilled or the timer expires, the operator has to check the concentration and confirm at his own responsibility.

F. ACTUAL SPEED. Displays the actual speed, which can differ from the nominal one because of the filling time.

G. TOTALIZER. Shows the total number of bags filled. It can not be reset.

H. PARTIAL COUNTER. Shows an incremental counter and can be reset.

I. START/STOP/RESET. From these buttons the operator can start and stop the active selected cycles. The reset button aborts the active cycle and let the operator restart it from the beginning.

J. CYCLE STATUS REAL TIME INFORMATIONS. The running steps are displayed as they are executed, with reference to the loaded motion and phase recipes.

K. PRODUCTION PHASE SELECT. Selects the production phase and turns green.

L. CIP PHASE SELECT. Selects the cip phase and turns green.

M. CIP STATUS. The box lights on when cip is completed.

N. CIP DRAIN REQUEST. When the drain is selected it turns green. All the running cip steps are skipped and the final drain one is started.

O. SIP PHASE SELECT. Selects the sip phase and turns green.

P. SIP STATUS. The complete box lights on when sip is completed. The customer box lights on as long as upstream equipment is sterile (input digital signal).

Q. SPEEDOMETER. It displays at glance the real time filling speed, the total bag counter and partial bag counter.

R. TARGET. Sets the number of bags to be filled before the machine stops automatically.

S. VOLUME. Sets the filling volume.

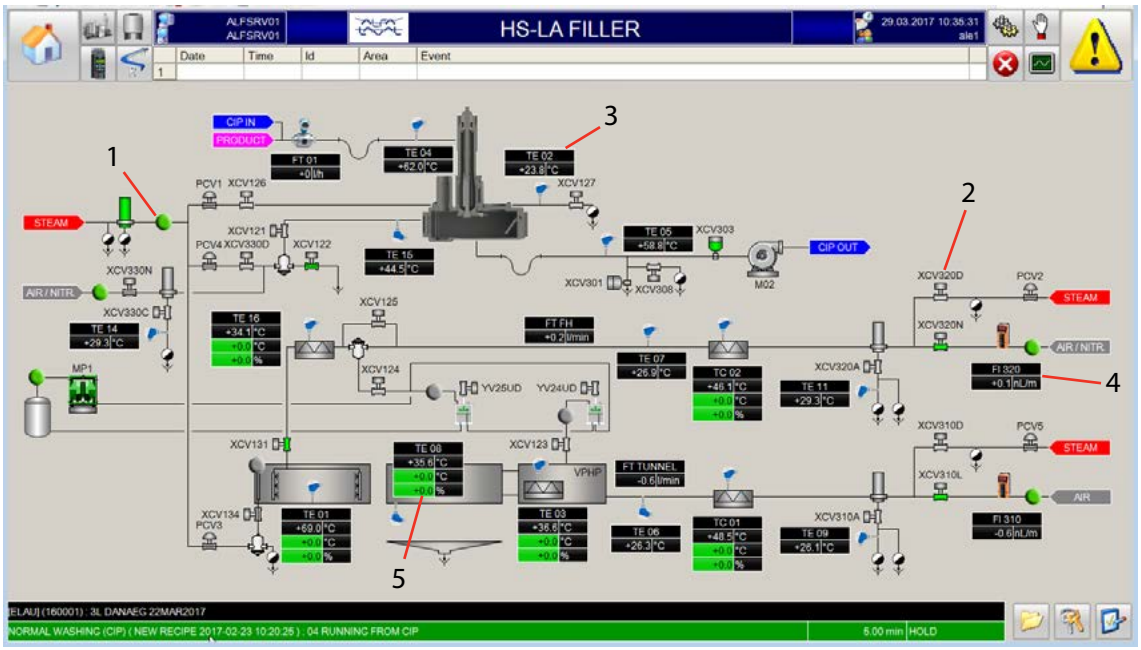
T. NOMINAL SPEED. Sets the nominal speed of the motion system.

U. PARTIAL COUNTER RESET. Reset the partial counter. The reset must be performed when the machine is stopped.

V. PRODUCTION SUB PHASE MENU. Sub phase selected turns green. The product box lights on when the product is available (input digital signal).

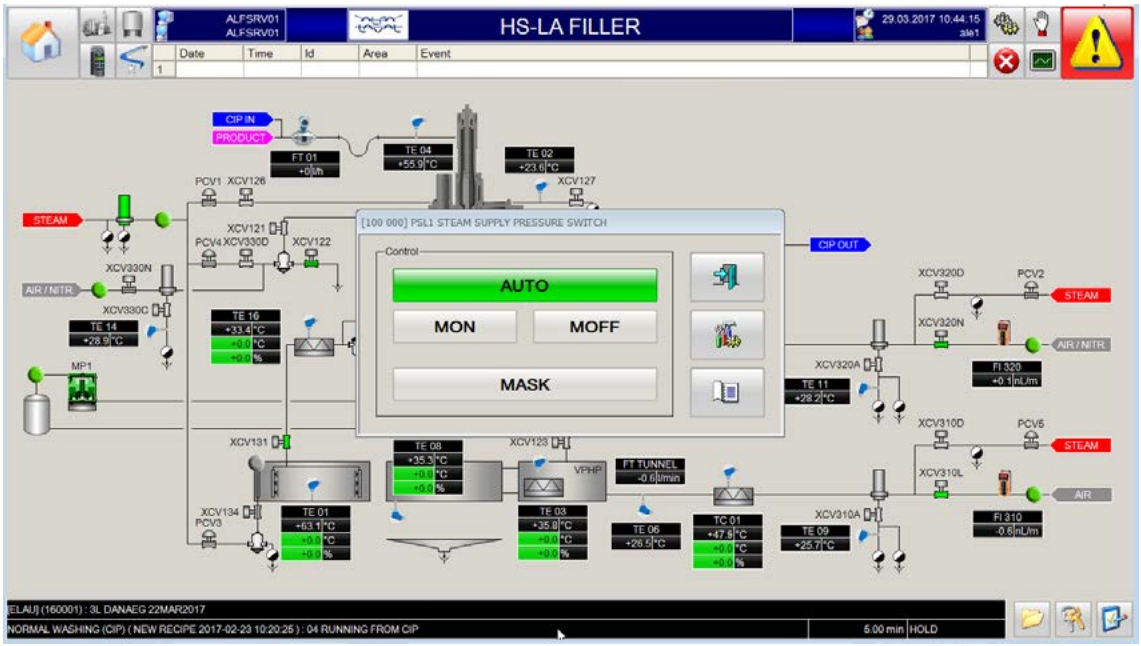
W. MOTION RECIPE AND TOOLING INFORMATIONS. The working recipe is displayed, along with tooling code and bag separator setting. If a recipe which requires different tooling/mechanical setting is loaded, the operator has to confirm that they have been set before starting the filling sequence.

5.4.1 PROCESS LAY OUT



This page represents the synoptic lay out of the machine and displays the status of each device and instrument. Clicking on each device (motor or valve) or each instrument (temperature, pressure, flow, level) opens the related control module page.

5.4.1.1 DIGITAL CONTROL



Clicking on digital device it is possible to see the Digital Control faceplate.

For each component, it's possible:

1. To see the status:

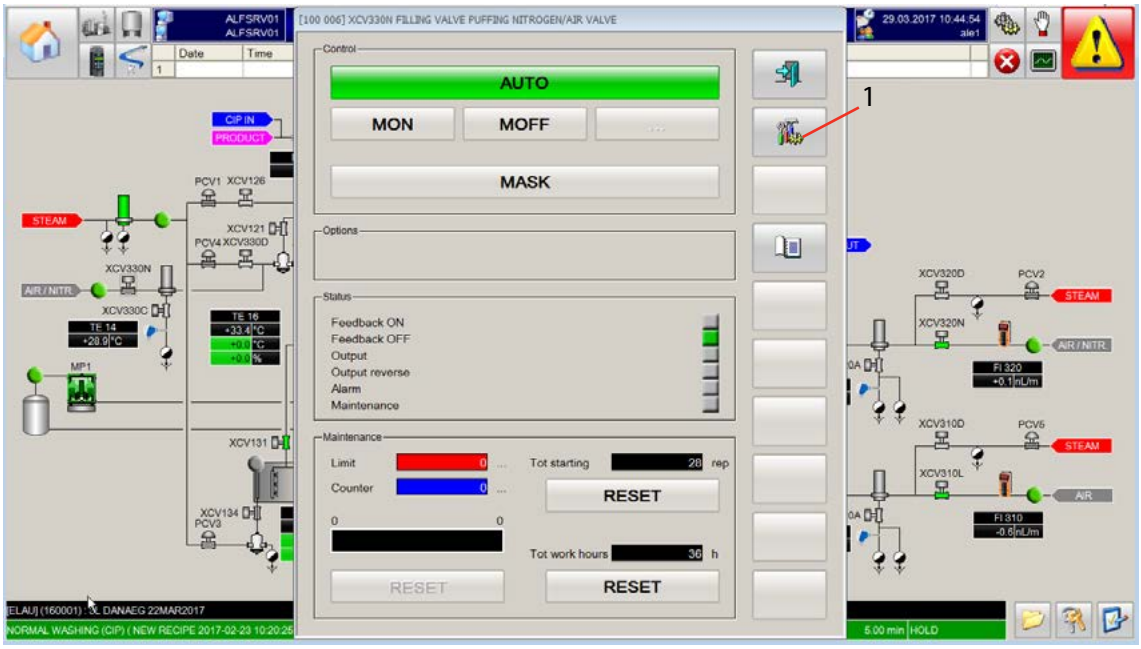
   - The information for the selected utility is displayed: Input logic status indicates the physical status of the utility: Software status indicates the utility status filtered with the set times in the control system.

2. To force in Manual mode the single device:

   - The MON command starts the utility in manual mode.
   - The MOFF command disables the utility in manual mode (the utility will no longer be started).
   - The MASK command disables warnings and alarms related to the selected utility.

3. Configure the device on the apposite page accessible through the button. 

5.4.1.2 PNEUMATIC ACTUATOR SETUP



Clicking on each valve is possible to see the Device Control faceplate.

For each valve, it's possible:

1. To see the status:

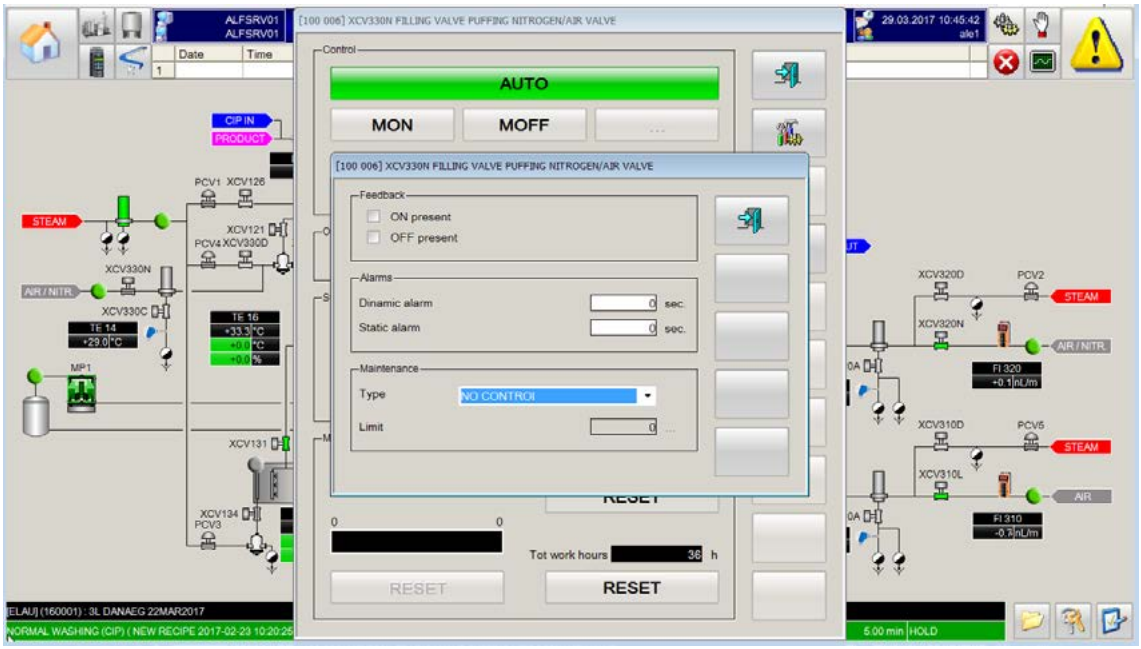
   - The information for the selected utility is displayed: Feedback ON means the utility is controlled; Feedback OFF means the utility is in the rest position: Out means the utility is controlled; Alarm means that there is a specific alarm for the selected utility.

2. To force in Manual mode the single valve:

   - The MON command starts the utility in manual mode.
   - The MOFF command disables the utility in manual mode (the utility will no longer be started).
   - The MASK command disables warnings and alarms related to the selected utility.

3. Configure the device on the apposite page accessible through the button. 

5.4.1.2.1 PNEUMATIC ACTUATOR ADVANCED SETUP



Clicking on each valve is possible to see the Device Setup faceplate.

For each valve, it's possible:

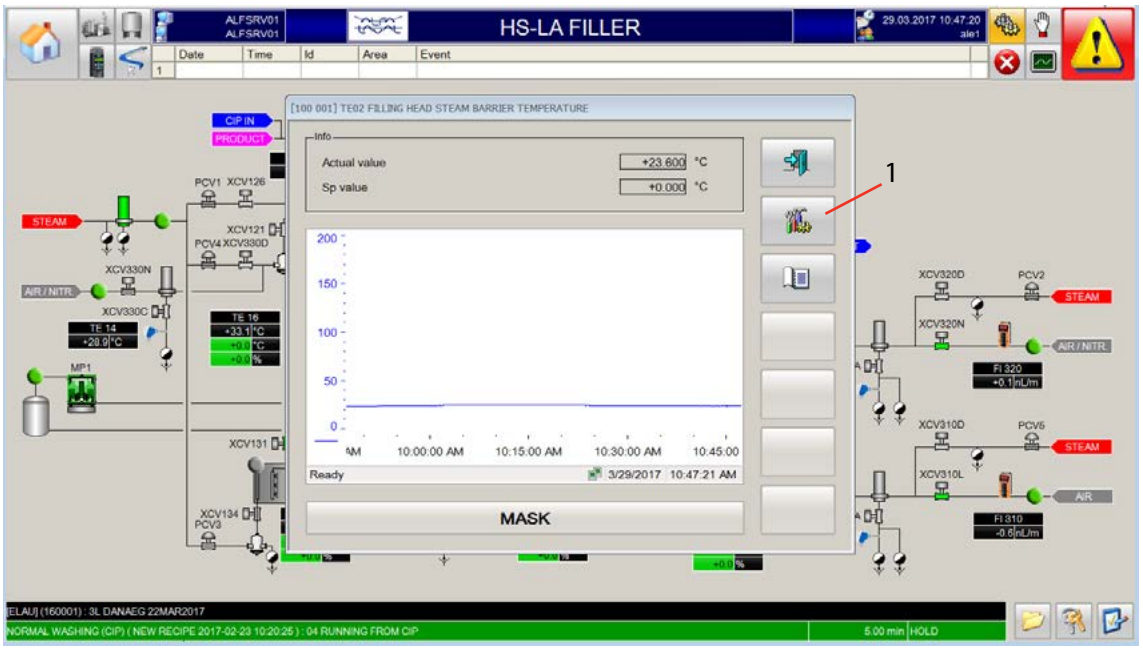
1. To set the device:

   - **Feedback ON Present**: selects if positive feedback is present for the selected utility.
   - **Feedback OFF Present**: selects if rest position feedback is present for the selected utility.
   - **Dynamic time**: sets the time the utility is allowed to move into position before signalling an alarm.
   - **Static time**: sets the alarm time due to lack of feedback
   - **Delay open**: sets the time the utility is allowed to reach the open position.
   - **Delay Close**: sets the time the utility is allowed to reach the closed position

2. To see the maintenance for the device:

   - **Total number of starts**: indicates the total number of startups for the selected utility,
   - **Total hours of operation**: indicates the total number of operating hours for the selected utility

5.4.1.3 PROBE SETUP TEMPERATURE



Clicking on each instrument it is possible to see the Analogic Control faceplate for the Analog Inputs..

For each instrument, it's possible:

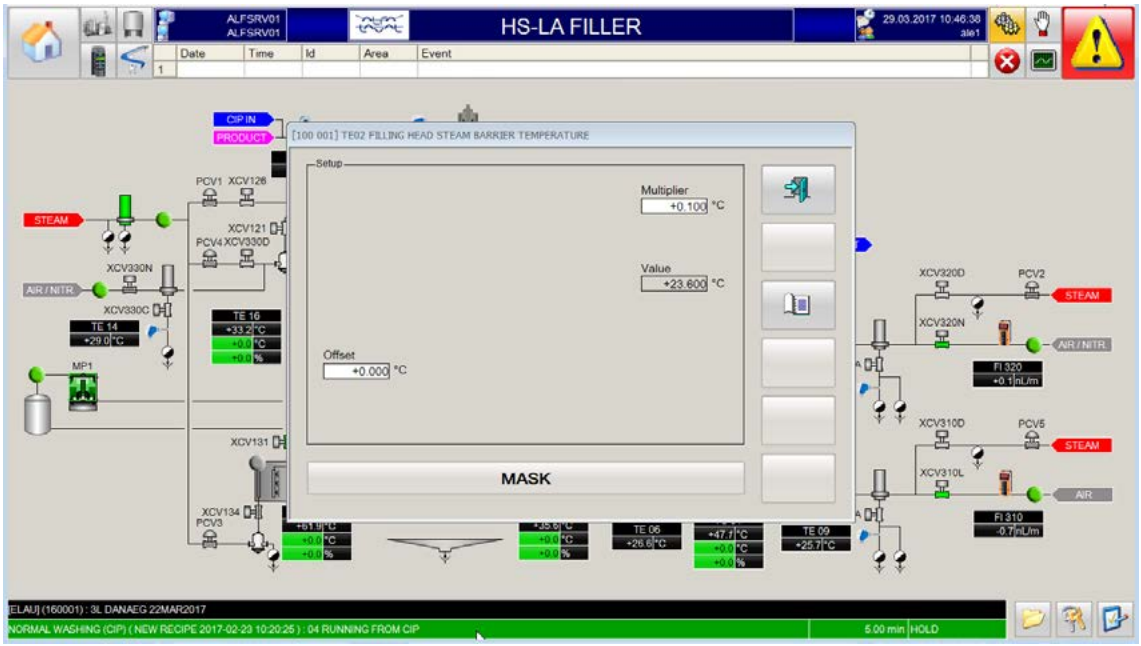
1.To see:

- **Actual value**: is the current read value for the selected utility scaled based on the settings performed in the dedicated page.
- **Expected Setpoint**: is the active set point value for the selected utility.

2. To silent the warnings and alarms regarding the device push the "MASK" button.

3. Configure the instrument on the apposite page accessible through the button. 

5.4.1.3.1 TEMPERATURE PROBE CALIBRATION

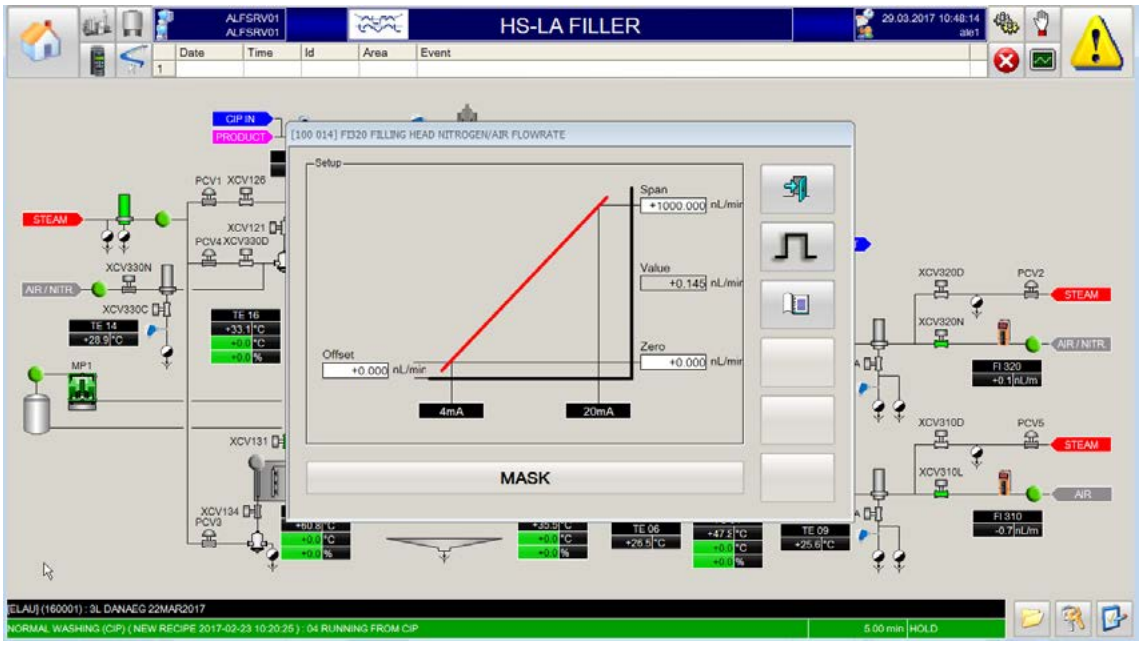


Clicking on each instrument field it is possible to see the Analogic Setup faceplate for the Analog Inputs.

For each instrument, it's possible:

1. To see:
   - Current value: is the current value for the selected utility scaled based on the settings performed in the dedicated page.
2. To set:
   - **Offset**: sets the offset value between the real zero value for the instrument and the one displayed.
   - **Multiplier**: sets the ratio between the rough value read by the PLC and the processed one.
3. To silent the warnings and alarms regarding the device push the "MASK" button.

5.4.1.4 ANALOG DEVICE CALIBRATION



Clicking on each instrument field it is possible to see the Analogic Setup faceplate for the Analog Inputs.

For each instrument, it's possible:

1. To see:

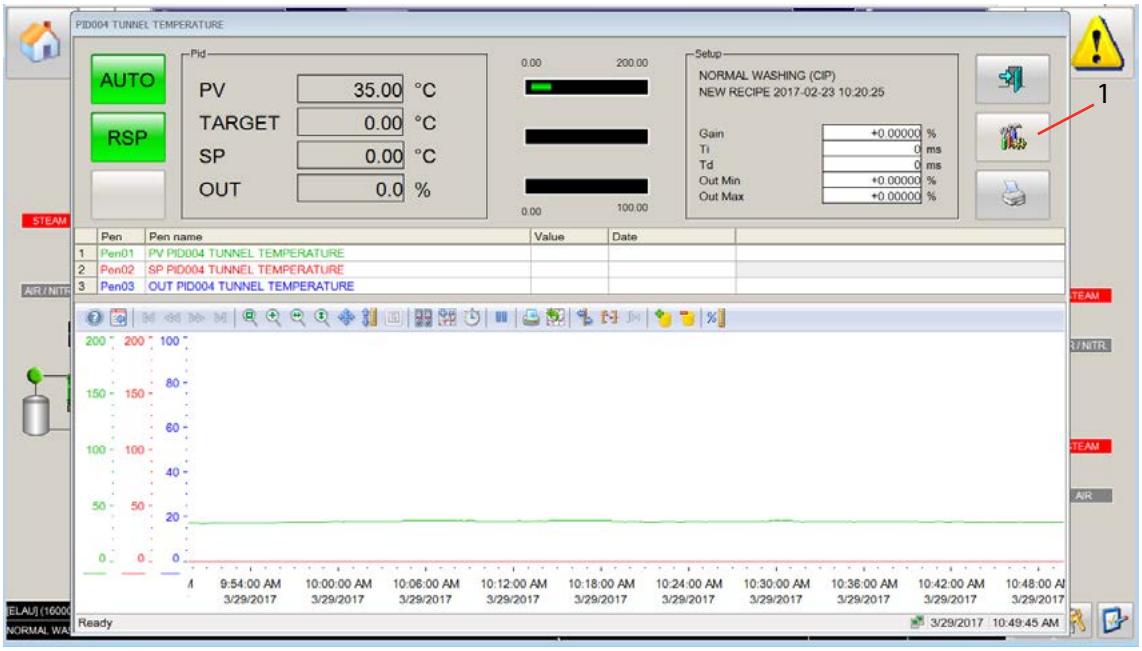
   - Current value: is the current read value for the selected utility scaled based on the settings performed in the dedicated page.

2. To set:

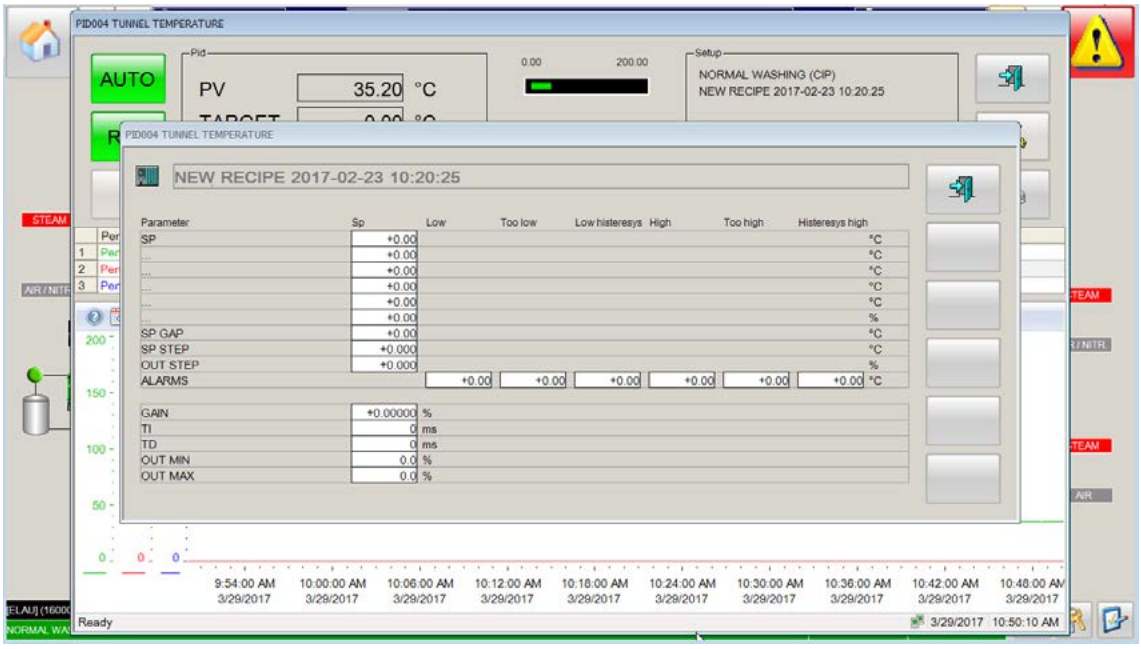
   - **Span**: sets the maximum reading value for the instrument.
   - **Zero**: sets the zero value for the instrument.
   - **Offset**: sets the offset value between the real zero value for the instrument and the one displayed.

3. To silent the warnings and alarms regarding the device push "MASK" button.

5.4.1.5 PID CONTROLLER SETUP



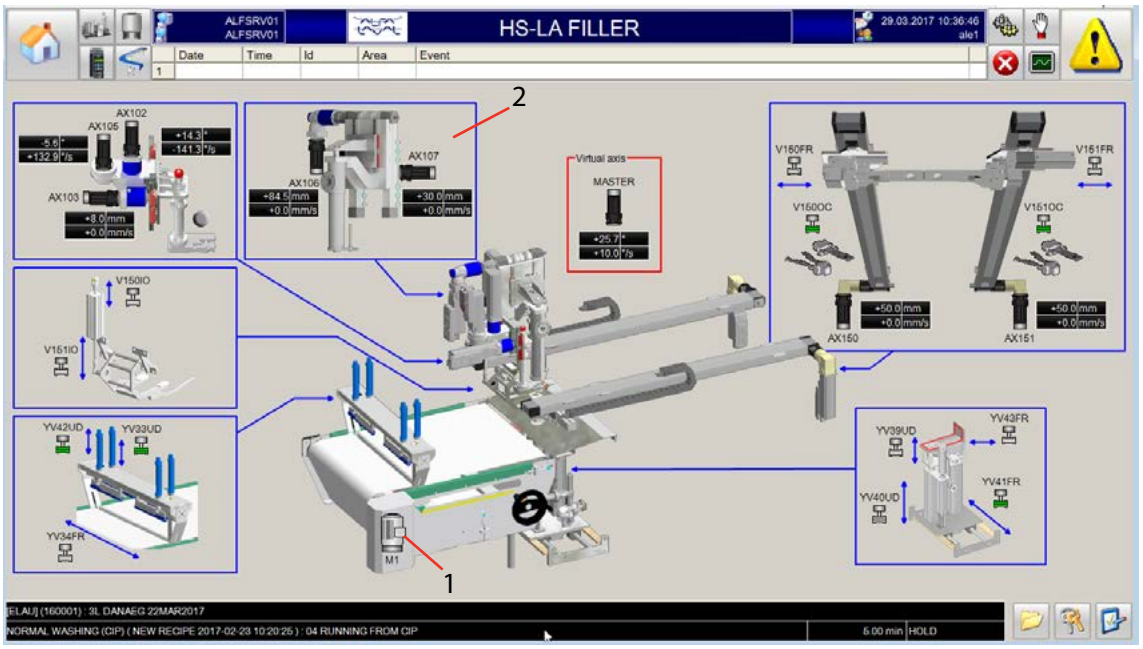
5.4.1.5.1 PID CONTROLLER ADVANCED SETUP



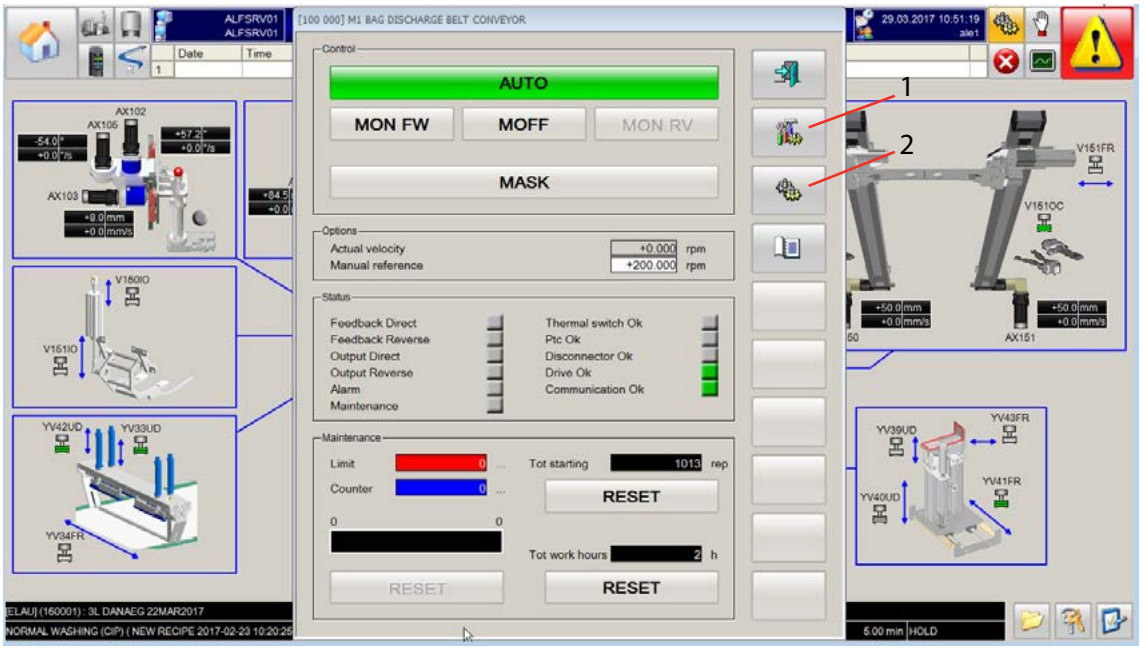
In this page it's possible to see/configure the PID parameters.

Each parameter is set during the commissioning of the plant. It's strongly recommended that just a Service Engineer change these parameters.

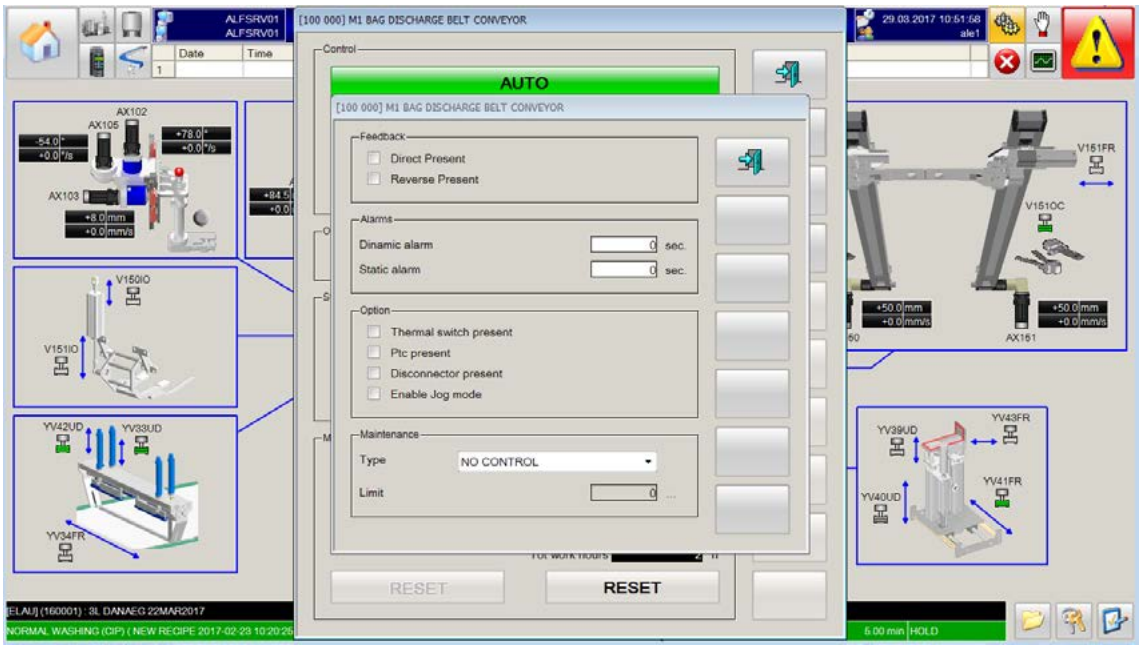
5.4.2 MOTION LAY OUT



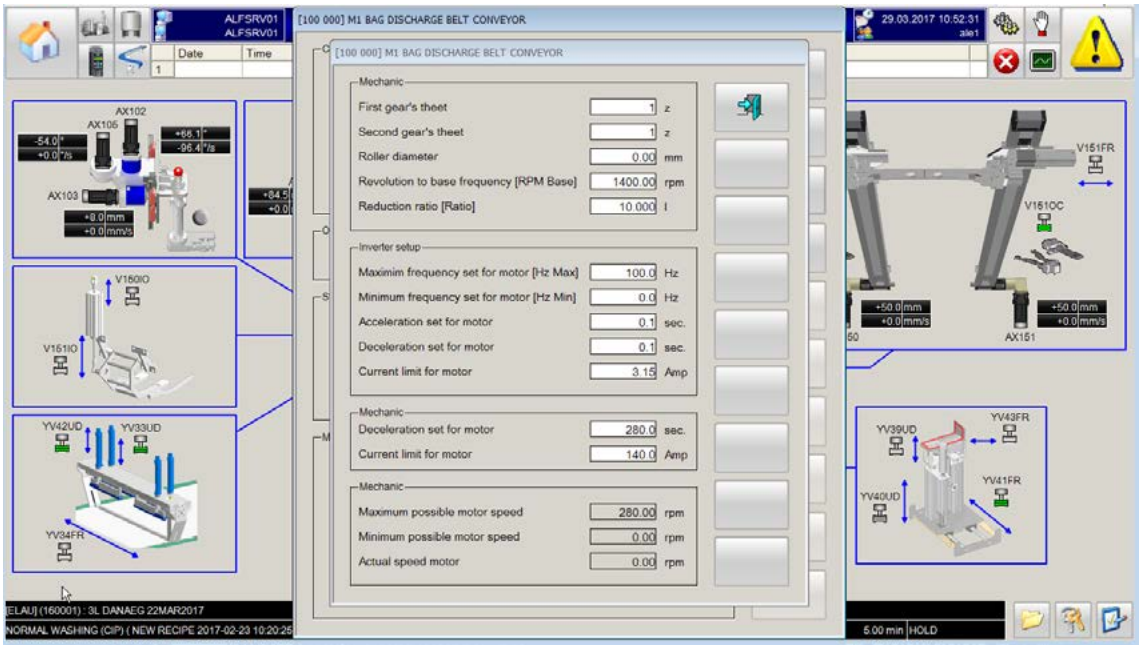
5.4.2.1 DRIVE CONTROL - MOTOR



5.4.2.1.1 MOTOR SETUP



5.4.2.1.2 MOTOR ADVANCED SETUP



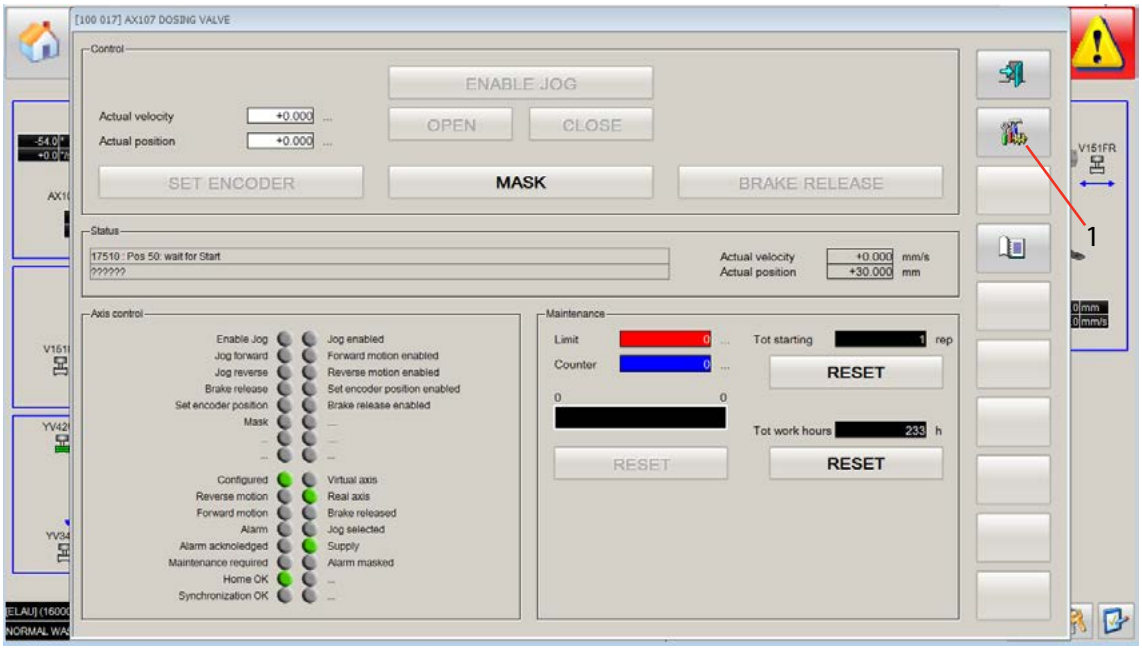
Clicking on each motor is possible to see the Drive Control faceplate for Motors.

For each motor, it's possible:

1. To see the status:

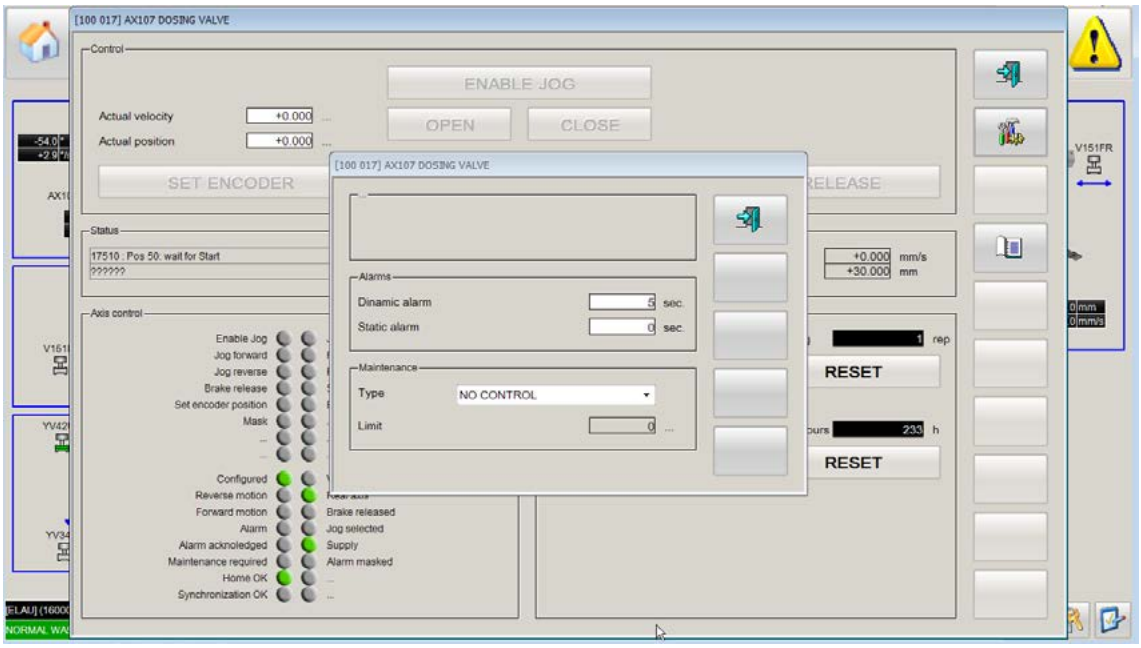
   - The information for the selected utility is displayed: Feedback Direct indicates that the utility is controlled forward; Feedback Reverse indicates that the utility is controlled in reverse; Out Direct indicates that the utility is controlled in a positive direction; Out Reverse indicates that the utility is controlled in the negative direction (optional); In Alarm means that there is a specific alarm for the selected utility; Drive OK means that the drive is ready (optional); Communication OK indicates that the drive is communicating with the control system (optional).
   - **Actual speed**: Displays the actual speed of the selected utility.
   - **Actual Current**: Displays the actual current consumption of the selected utility.

5.4.2.2 BRUSHLESS MOTOR SETUP



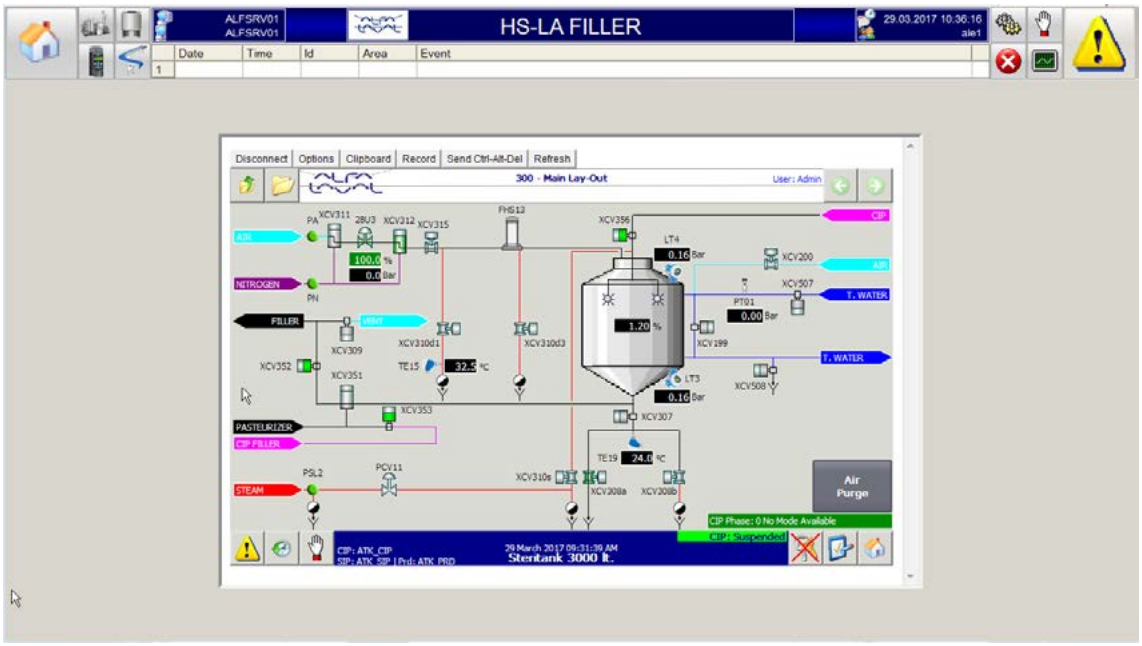
The brushless motor setup page displays the same informations of the standard motors but adds features about the encoder data , logic status, jog commands, brake management.

5.4.2.2.1 BRUSHLESS MOTOR ADVANCED SETTINGS



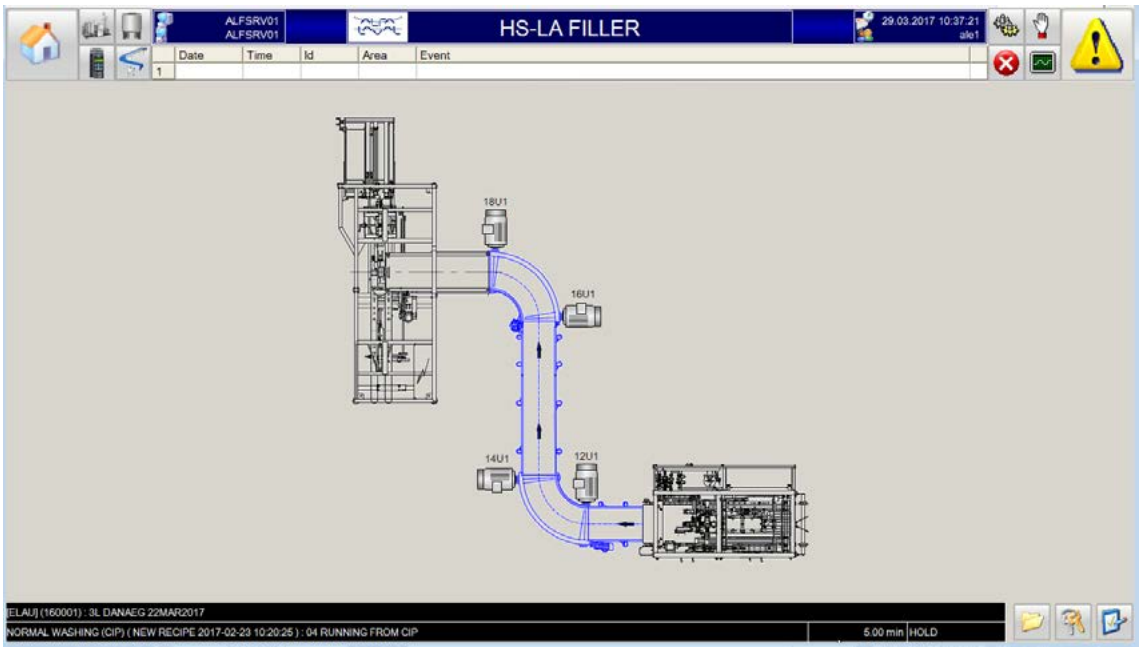
The advanced settings include the alarms and maintenance features as the standard motors.

5.4.3 ASEPTIC TANK HMI REMOTE CONTROL



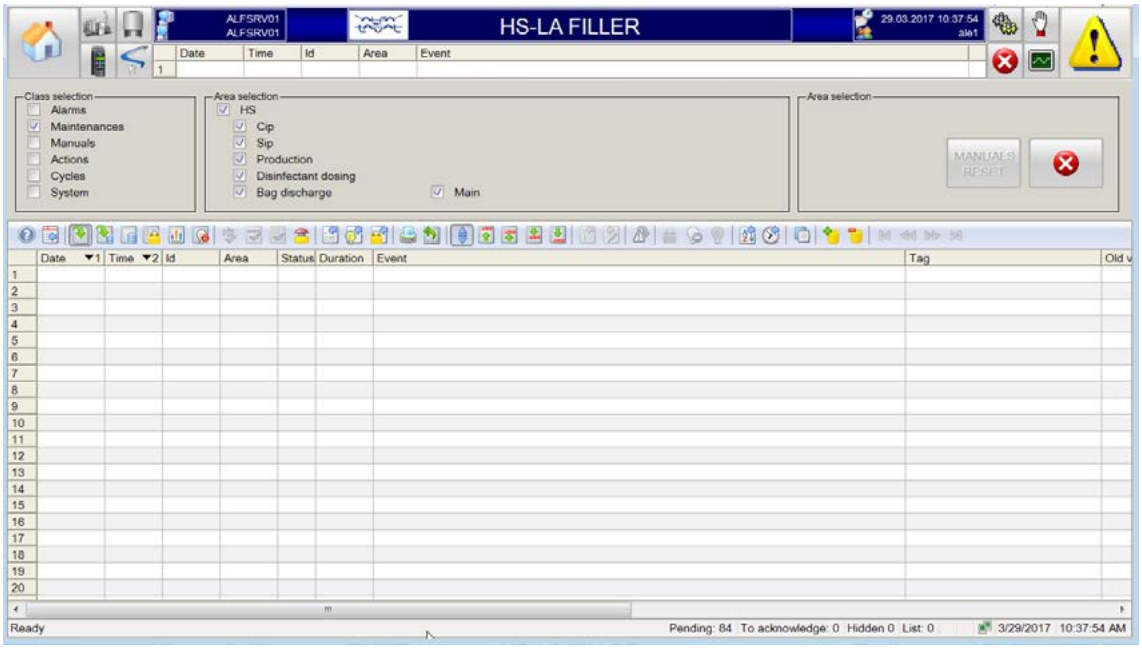
If the machine is fitted with a stand alone aseptic tank, its HMI can be displayed and controlled from remote.

5.4.4 CONVEYOR BELTS LAY OUT



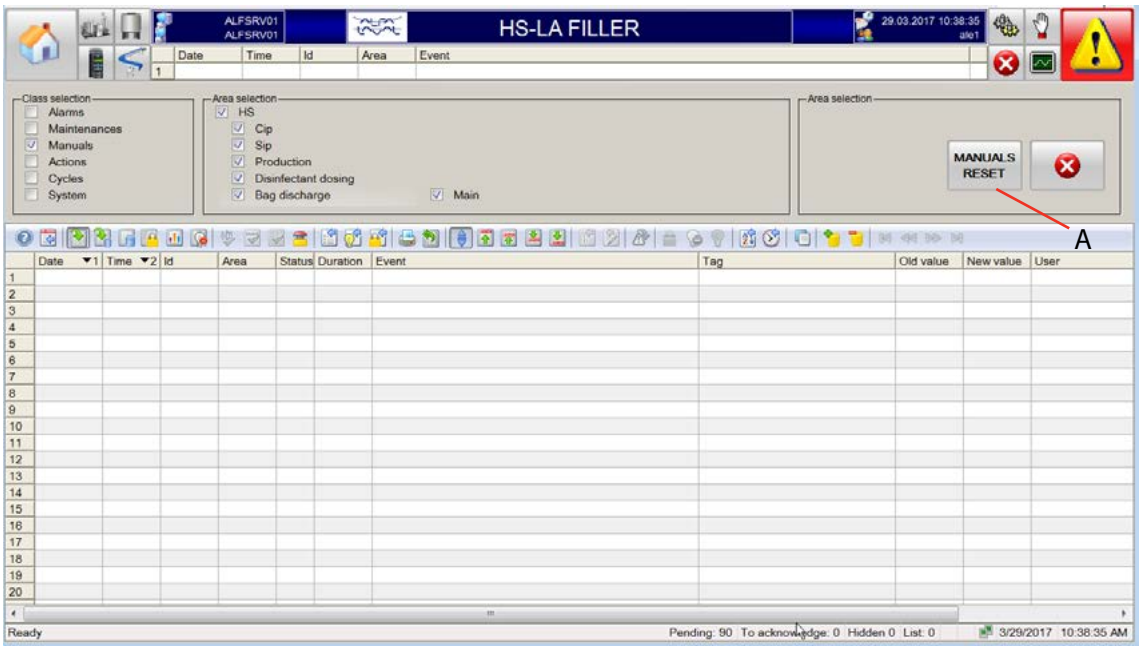
If conveying system is present, this page allows to control and setup the single motors and photocells of the system

5.4.5 ACTIVE MAINTENANCE WARNINGS



When a device needs maintenance, it will appear in the list. Maintenance alerts are not alarms, but warnings, so they are not going to stop the filler.

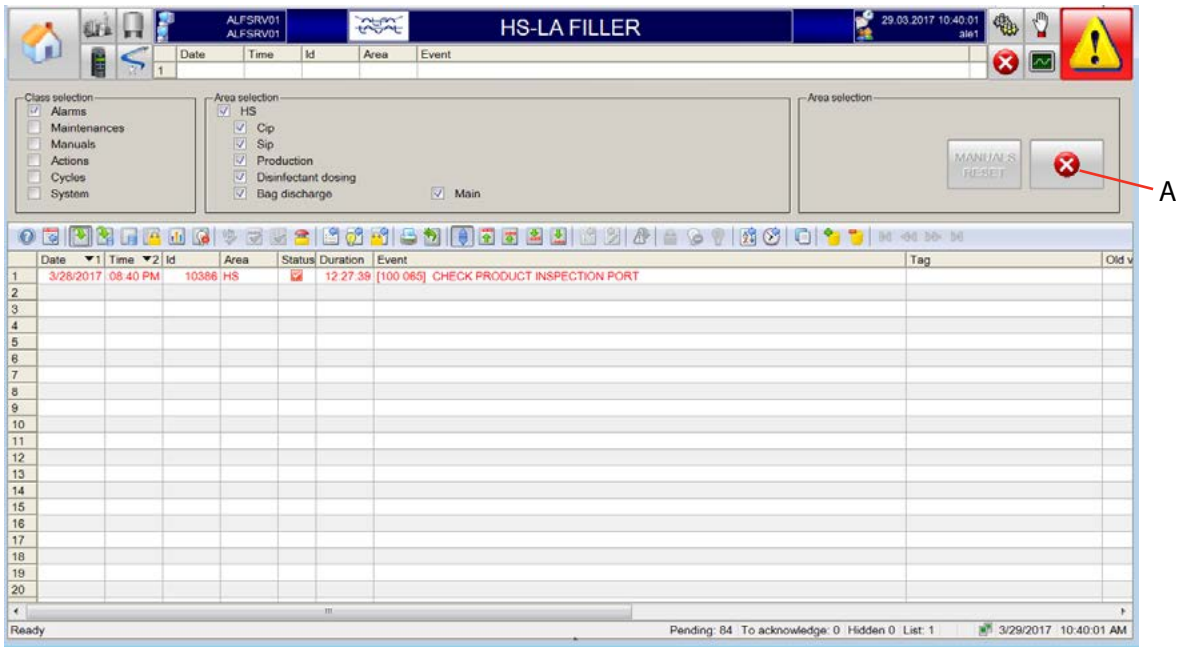
5.4.6 ACTIVE MANUAL COMMANDS



All the devices and settings which are not in automatic mode are shown on this screen.

A. Resets all devices from manual to automatic mode.

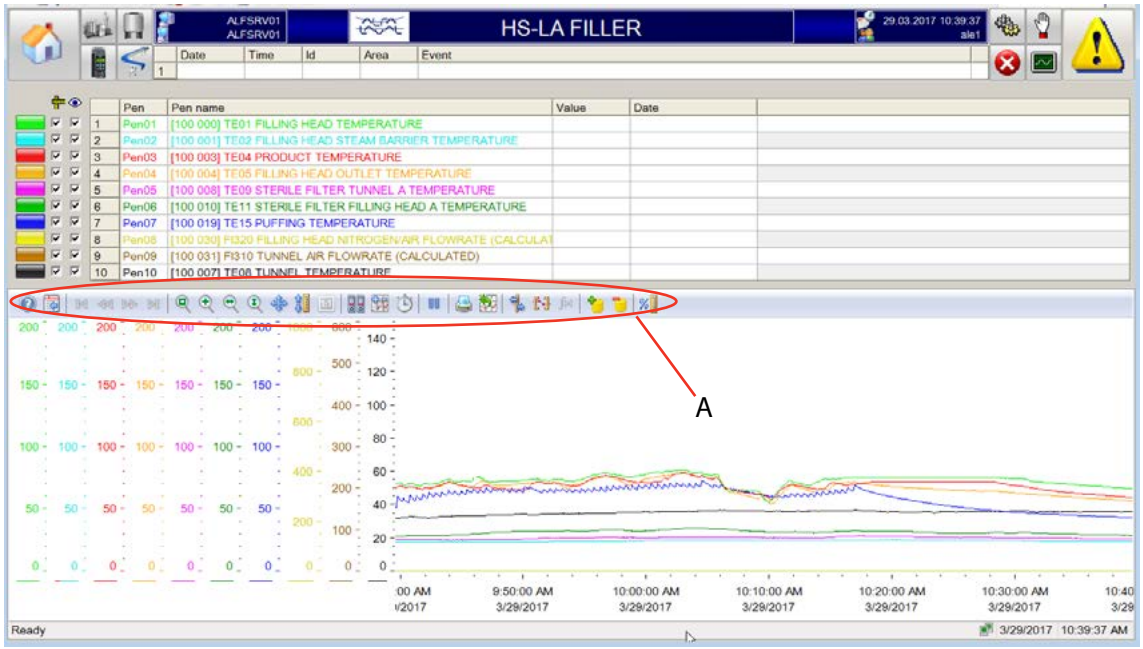
5.4.7 ACTIVE ALARM



All the active alarms are shown

A. Clear alarms

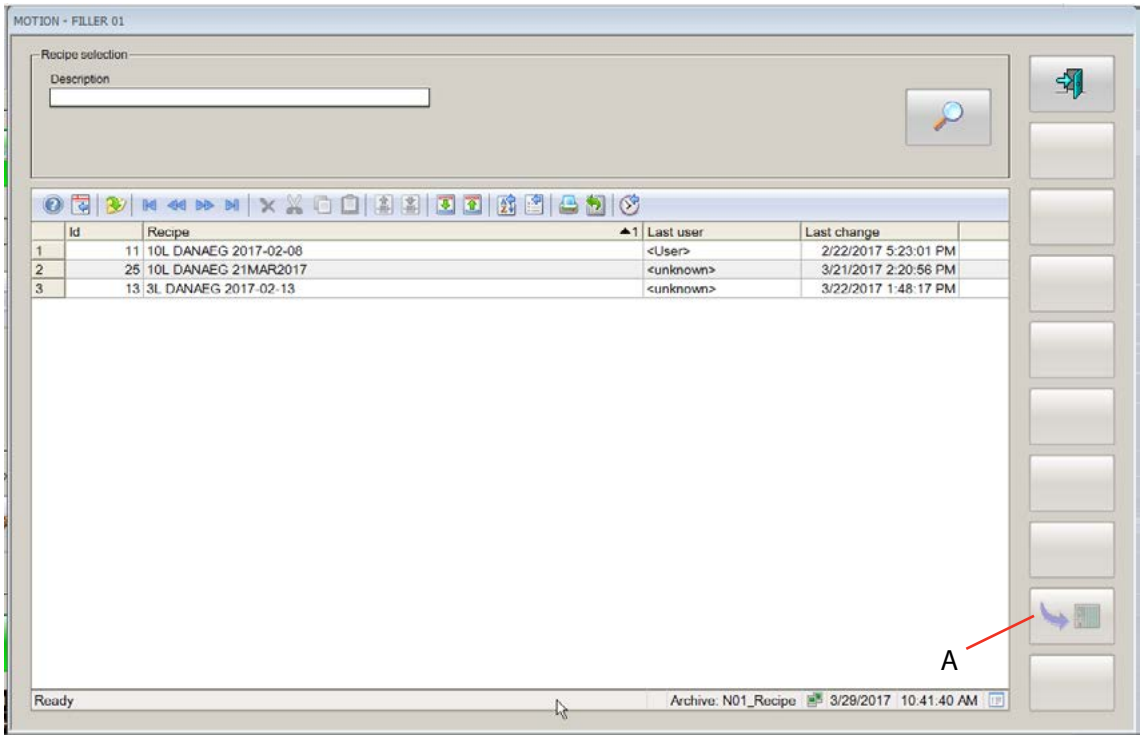
5.4.8 DATA RECORDER



All critical factors are tracked, displayed and recorded. From the option sub-menu it's possible to fit the view and export the data. Pens can be hidden by clicking on the color button for easier visualization. The data will be recorded anyway if the pen is disabled.

A. Options sub menu.

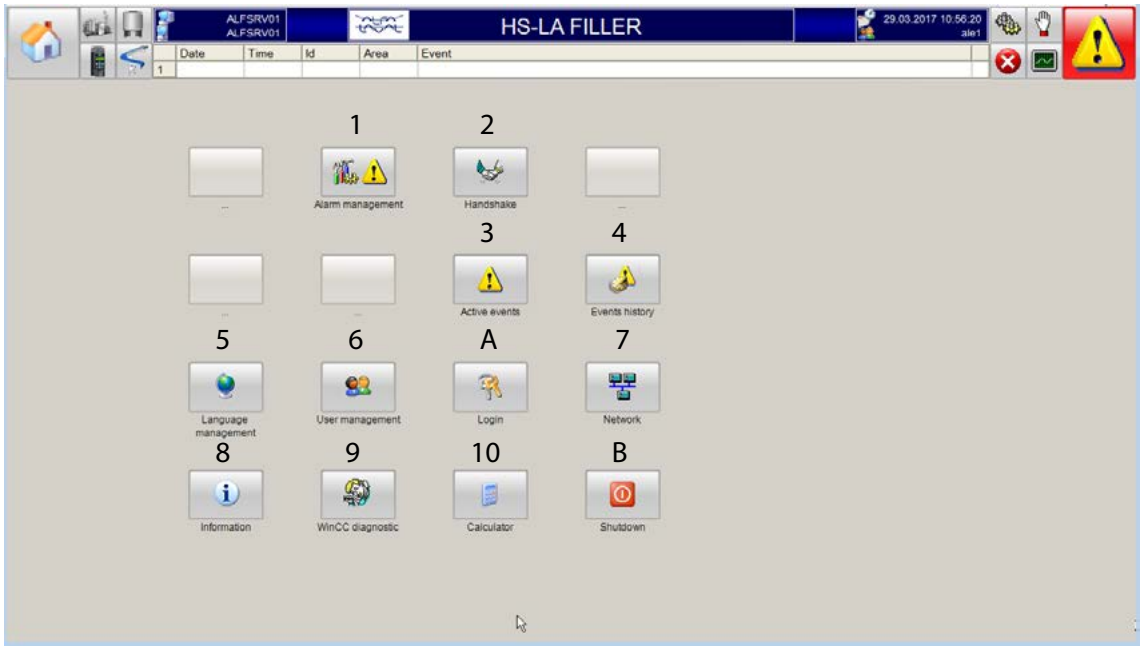
5.4.9 MOTION RECIPES DATABASE



From this database it is possible to choose a motion recipe among the ones tagged as favorites and download it to the PLC.

A. Download to PLC

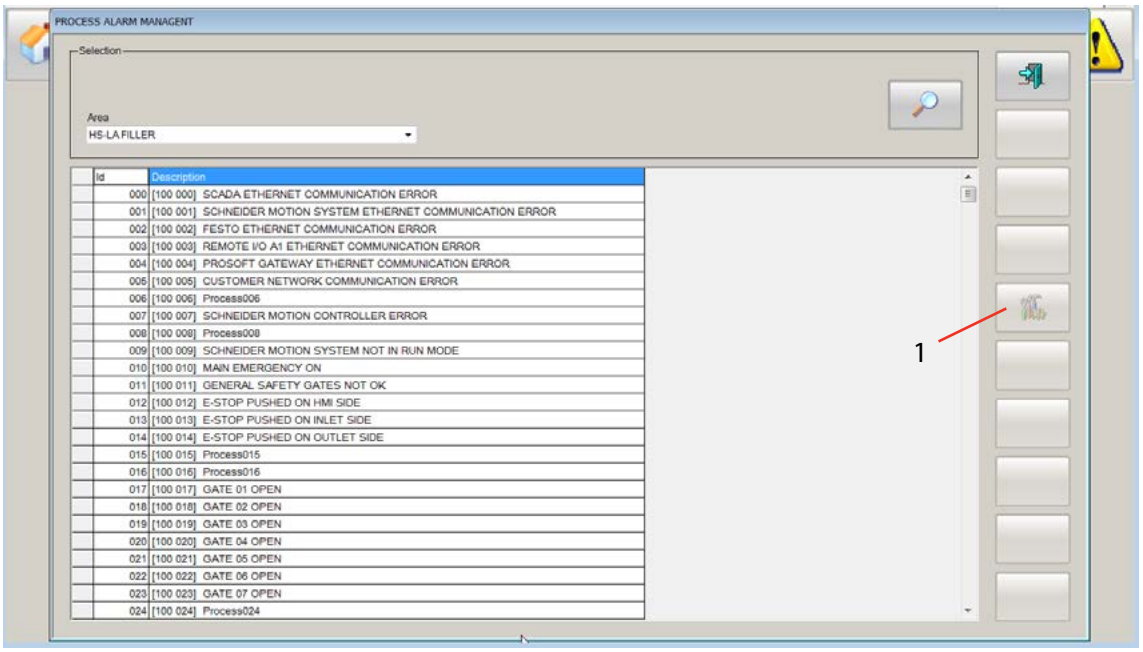
5.4.10 CONTROL PANEL



A. LOGIN. Opens the same login menu as the one accessible from the home page.

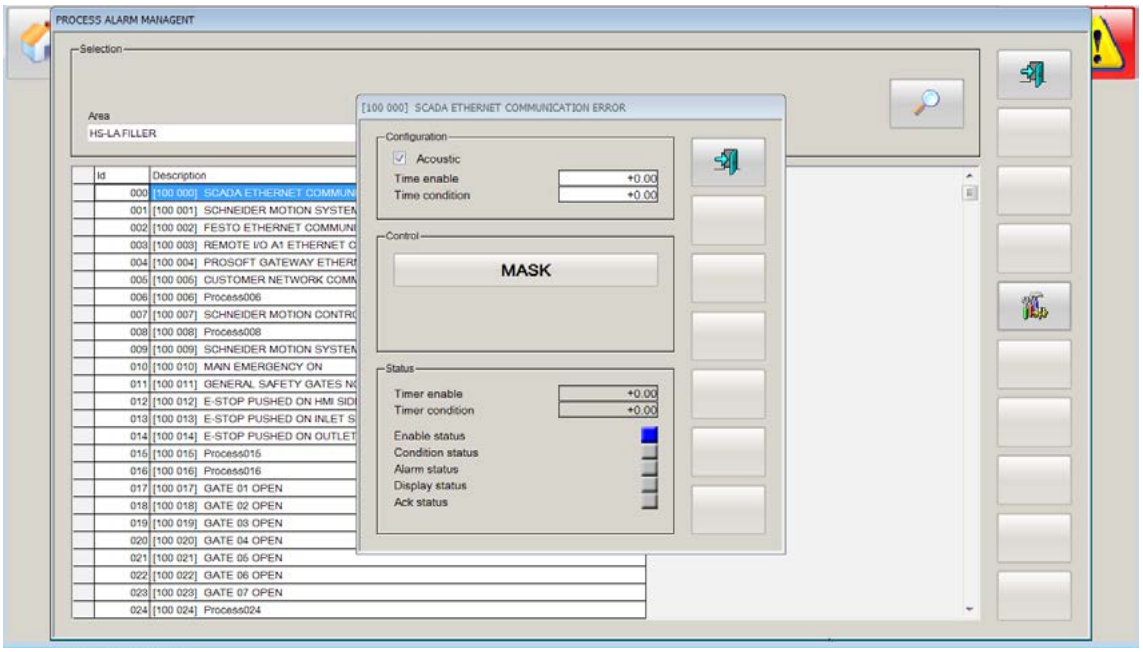
B. SHUTDOWN. Shuts down the scada supervision.

5.4.10.1 ALARM MANAGEMENT



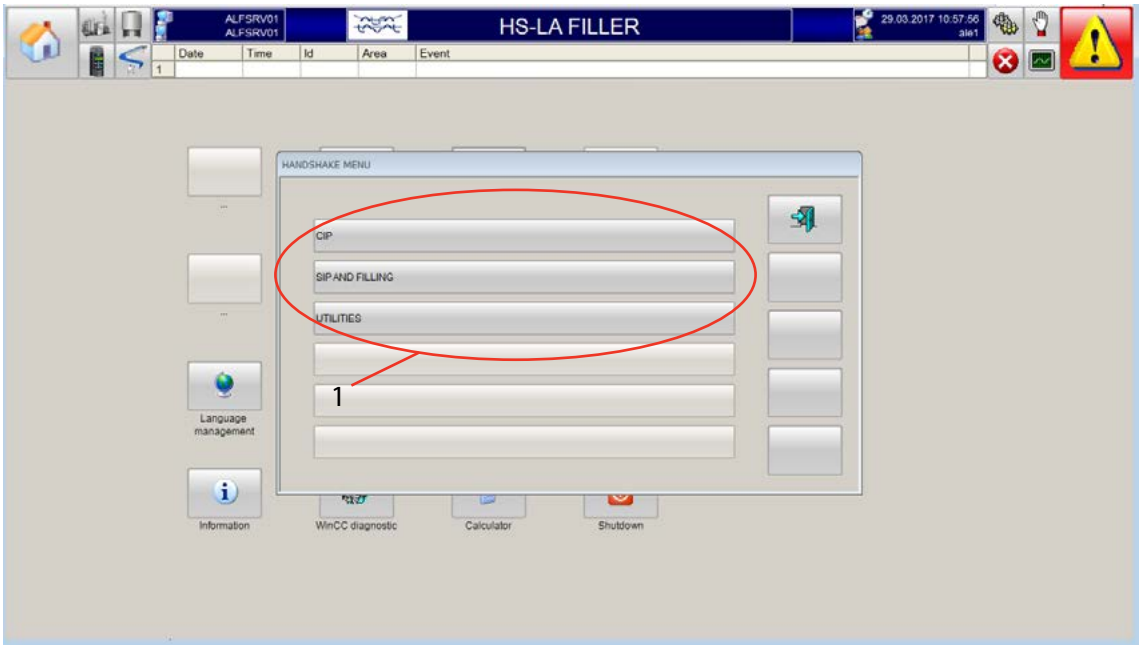
All alarms are listed, spare ones included. In case of multiple machines managed by the filler PLC, the user can select the area and scroll the alarms of that area only.

5.4.10.1.1 ALARM EDIT



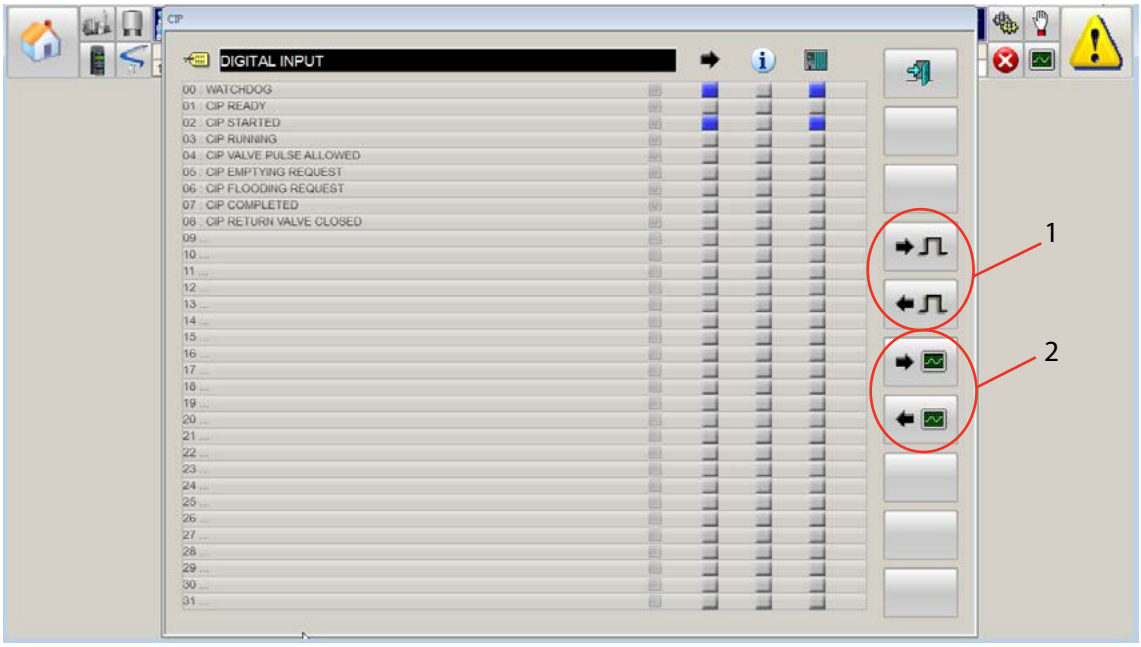
The alarm edit menu allows the user to set the parameters of each alarm and see the status informations.

5.4.10.2 HANDSHAKE



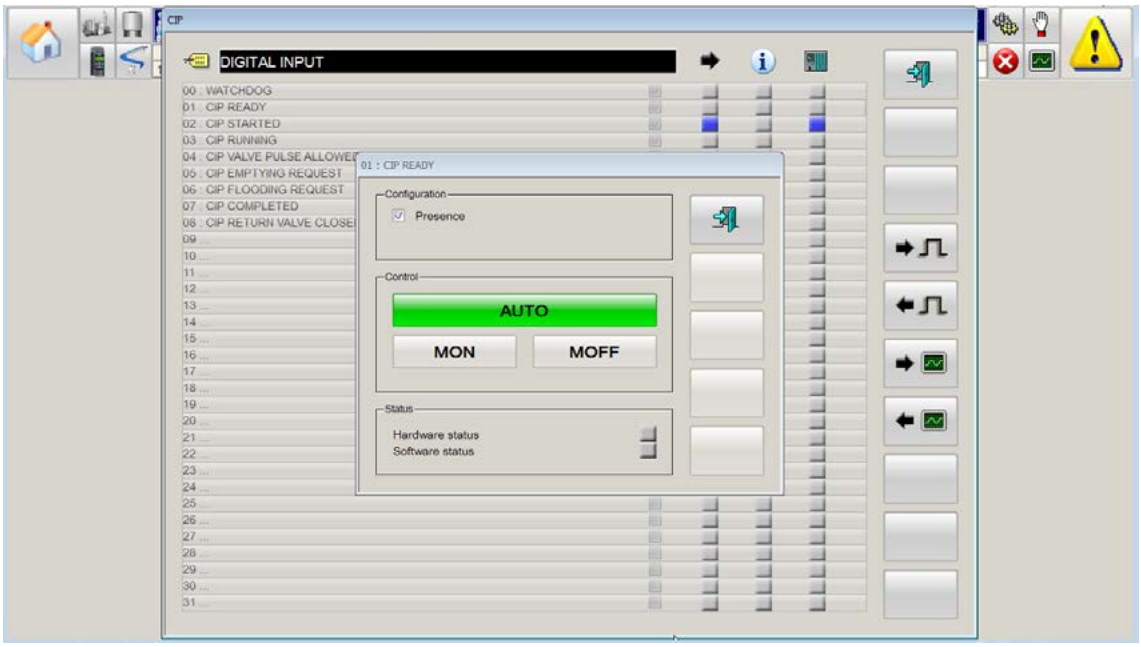
From this menu it is possible to manage the exchange signals to and from the filler.

5.4.10.2.1 SIGNAL EXCHANGE



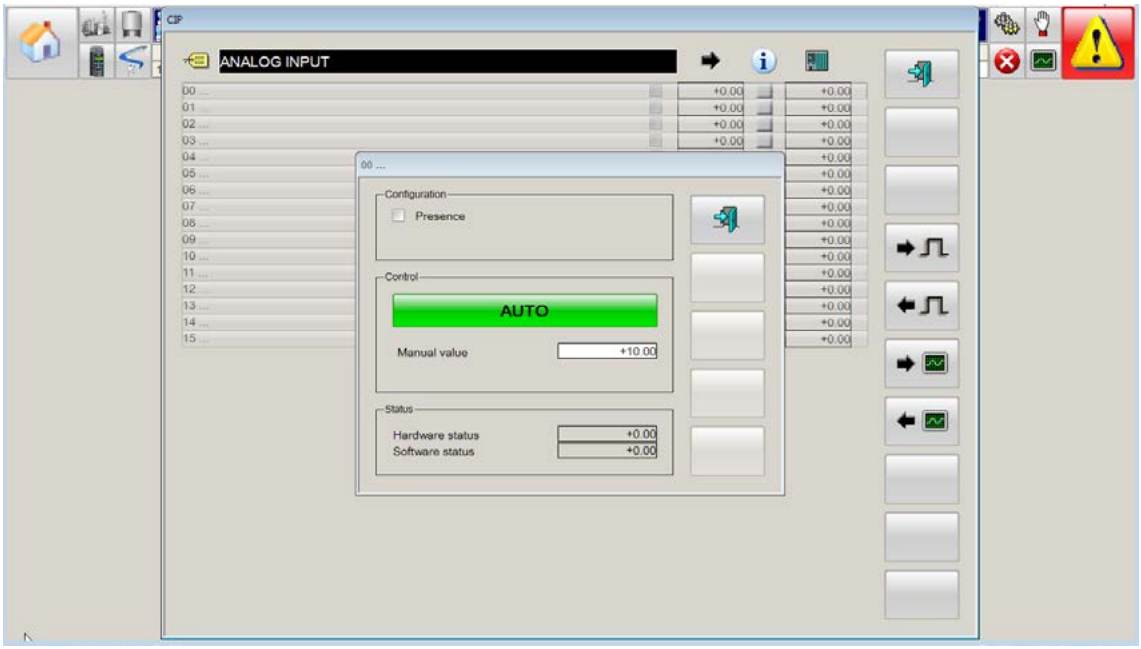
For each group there are four arrays of signals. Digital INPUT/OUTPUT, analog INPUT/OUTPUT.

5.4.10.2.1.1 DIGITAL INPUT/OUTPUT SIGNAL SETUP



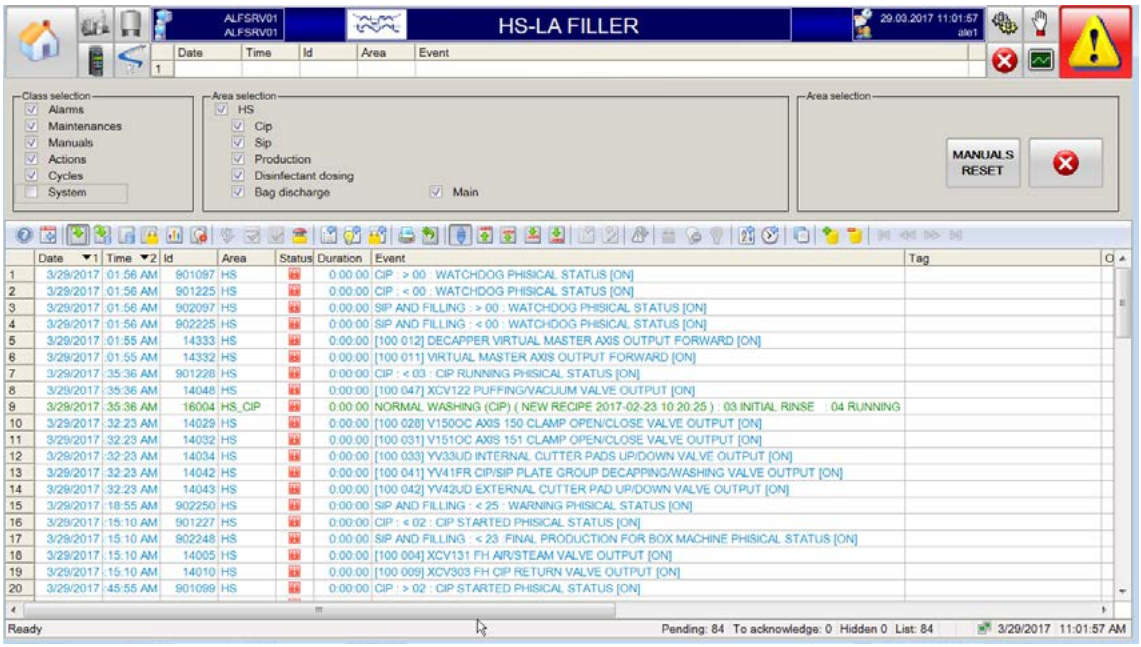
By clicking on each signal, a setup menu is displayed.

5.4.10.2.1.2 ANALOG INPUT/OUTPUT SIGNAL SETUP



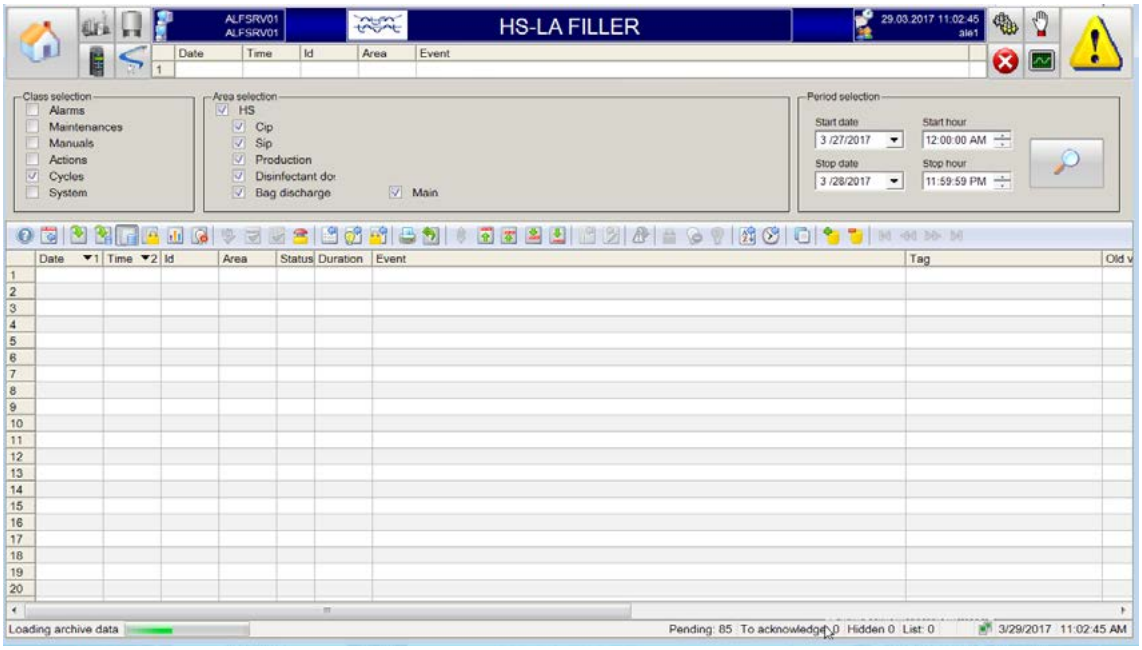
By clicking on each signal, a setup menu is displayed.

5.4.10.3 ACTIVE EVENTS



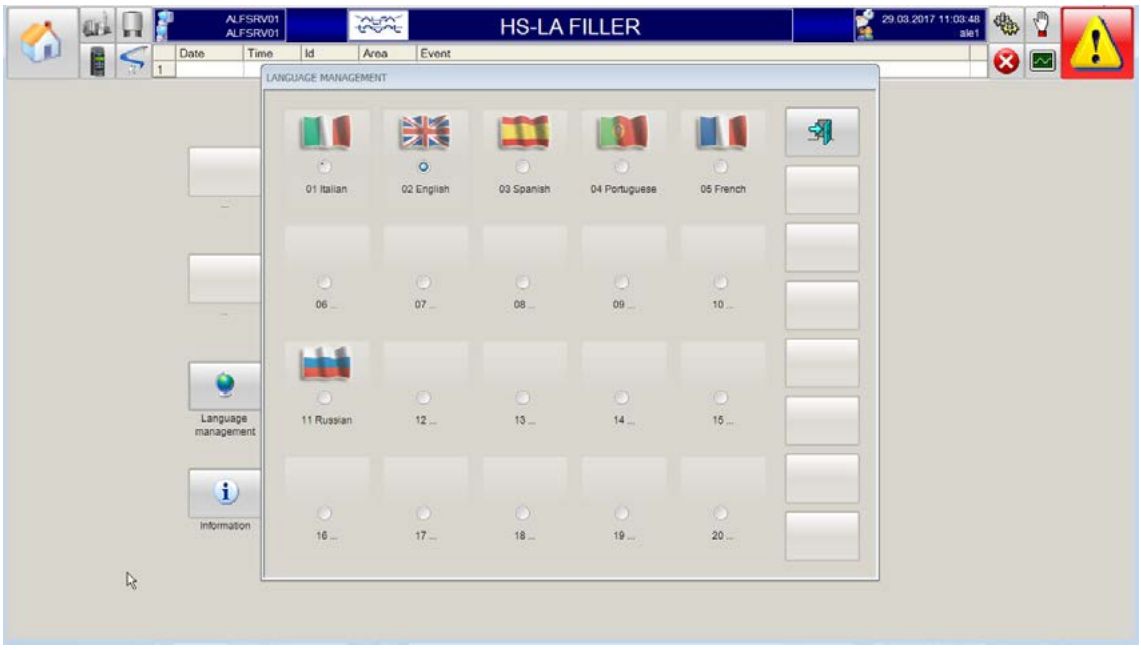
All active events are displayed. It is possible to select class and area for ease of consultation.

5.4.10.4 EVENTS HISTORY



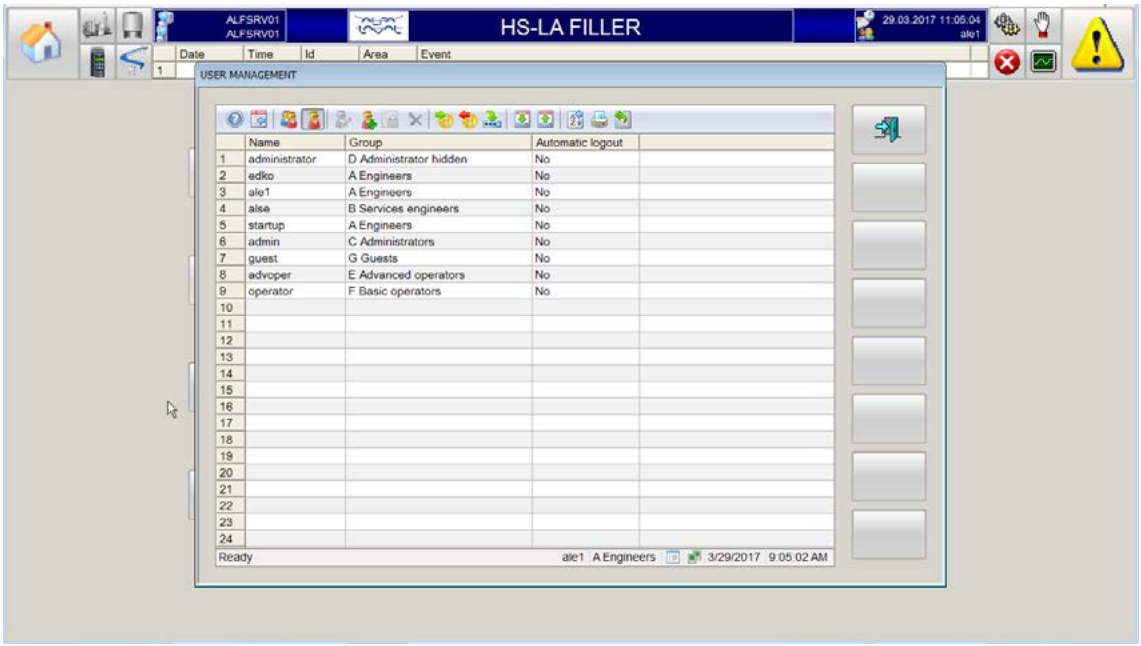
From this menu it is possible to choose a time period and sort which type of event to be listed. Standard data logging keeps data for 180 days.

5.4.10.5 LANGUAGE MANAGEMENT



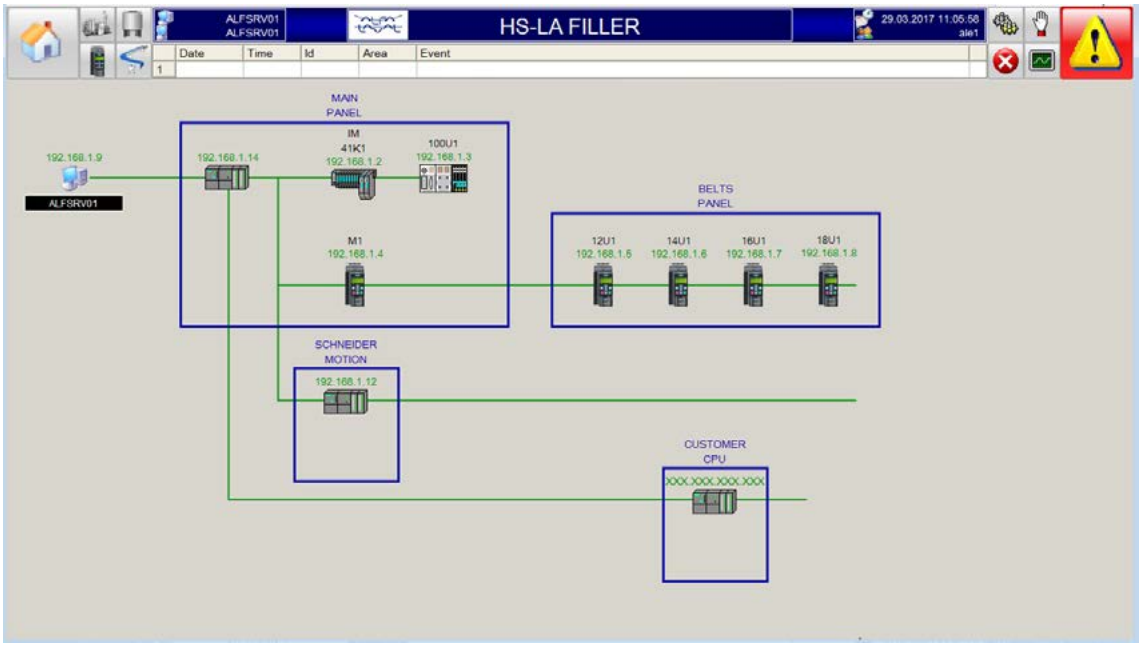
Available languages can be choose from this menu.

5.4.10.6 USER MANAGEMENT



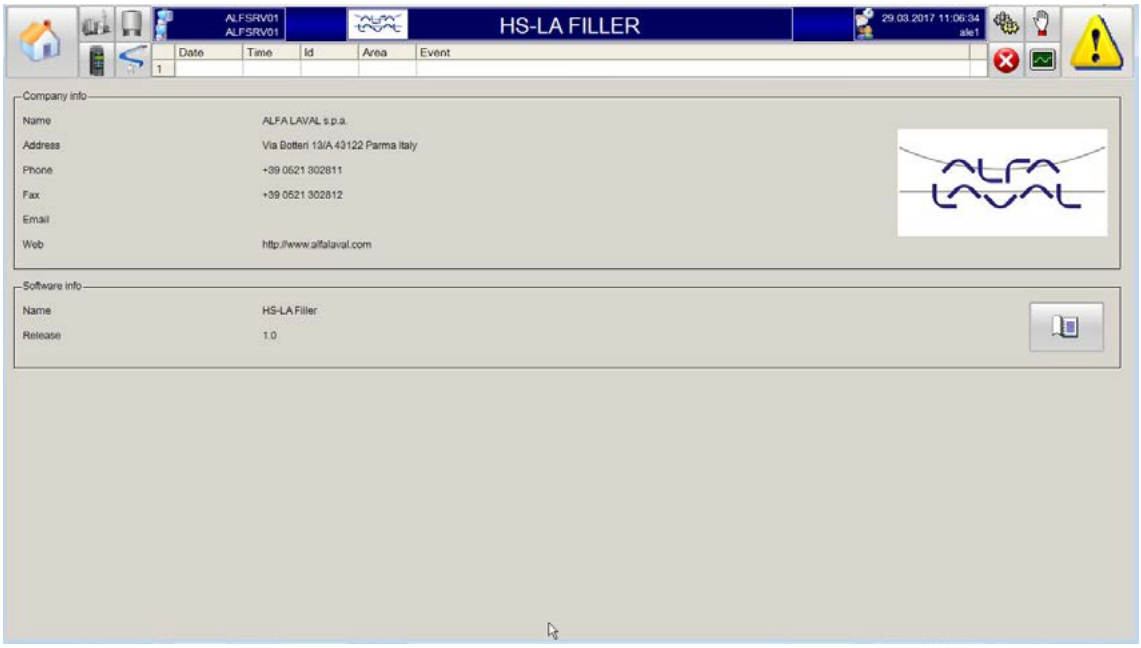
Existing users are shown, only “A” group users have the rights to make modifications to the other users.

5.4.10.7 NETWORK



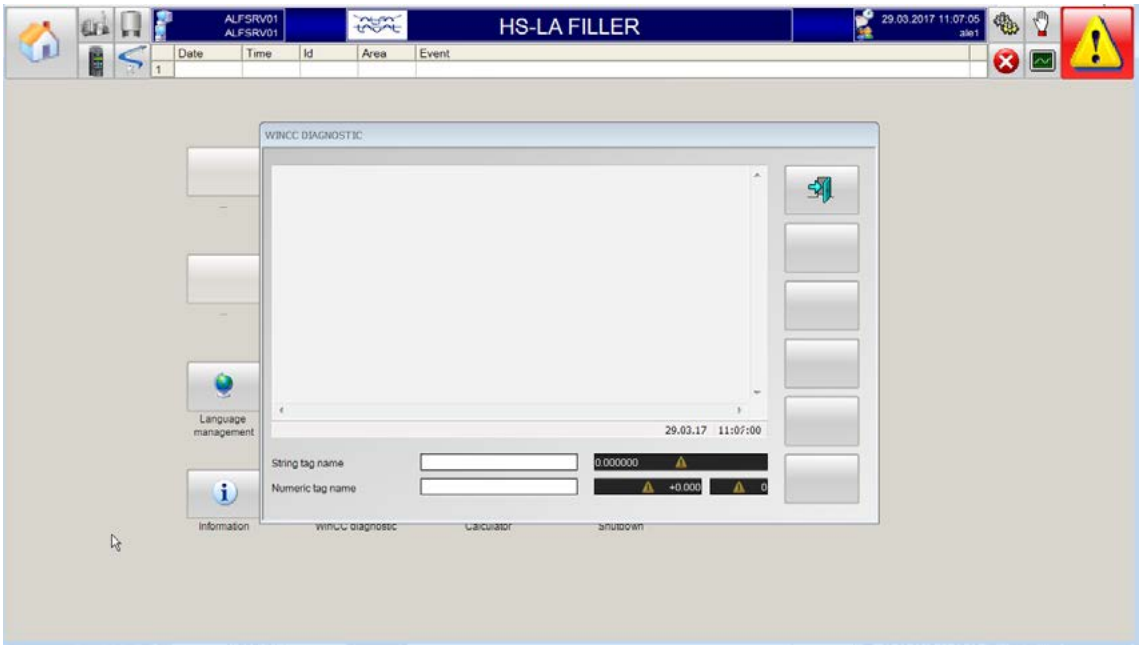
Informations about network topology and IP addresses are shown.

5.4.10.8 INFORMATION



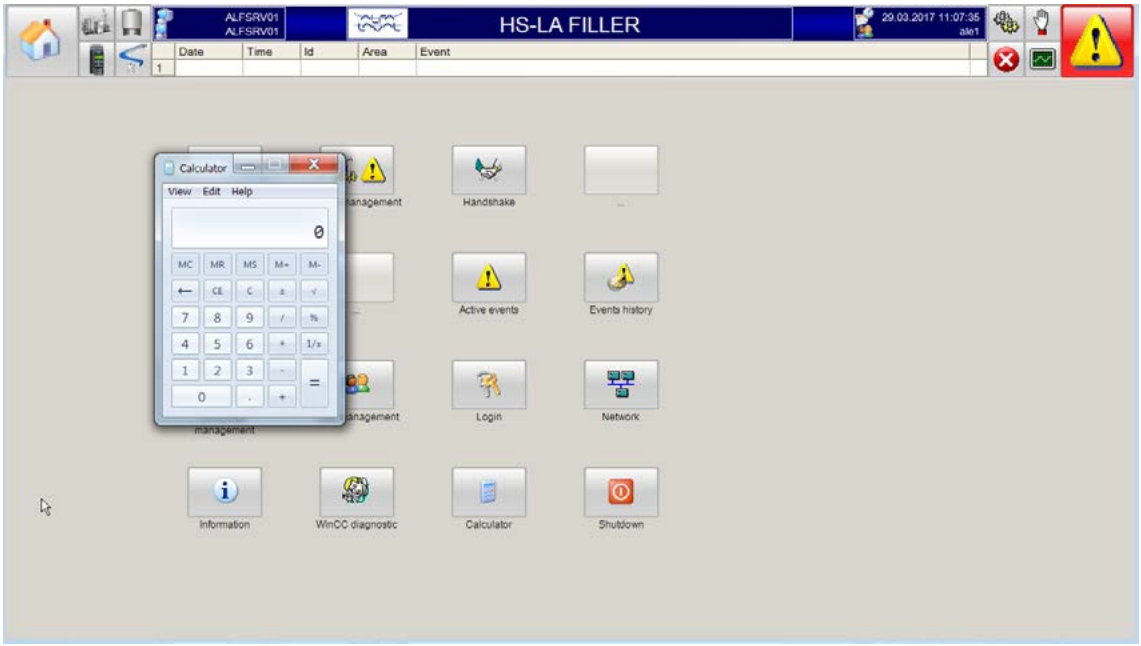
General informations about Alfa Laval's facility where the machine has been built.

5.4.10.9 WINCC DIAGNOSTIC



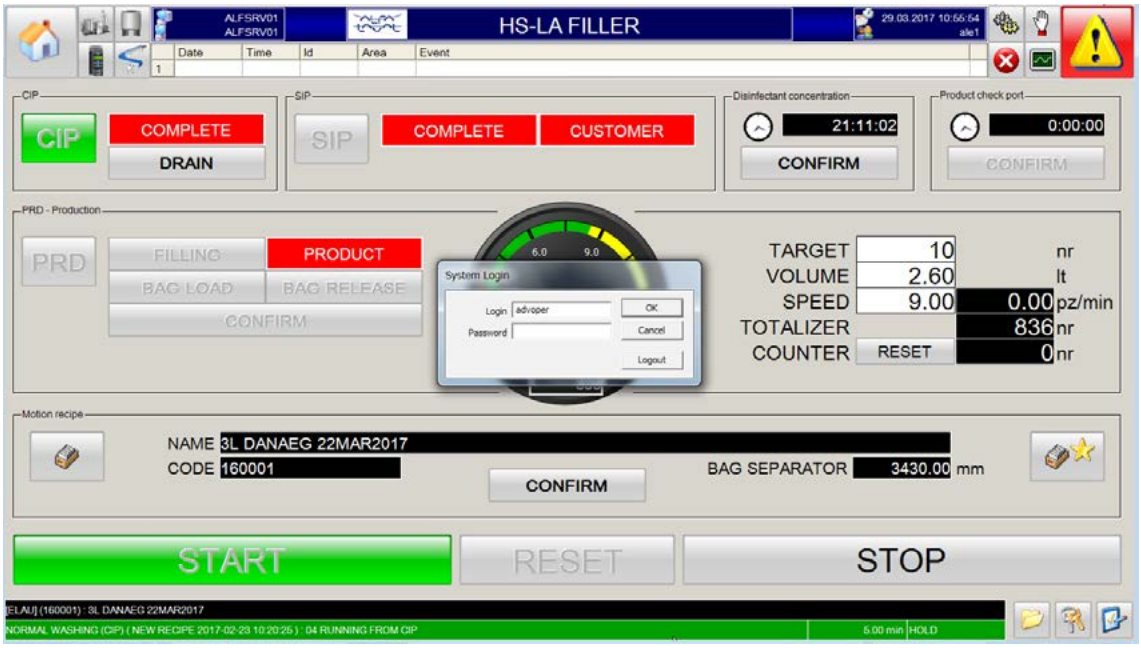
Diagnostic tool for troubleshooting WINCC software issues

5.4.10.10 CALCULATOR



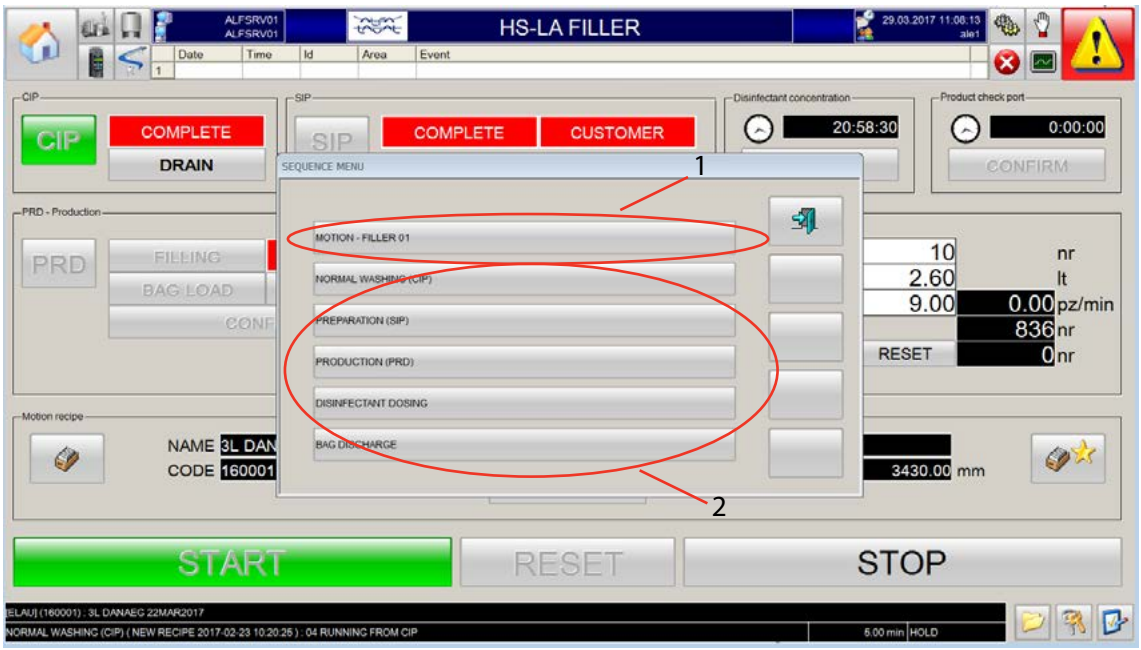
Opens the calculator tool.

5.4.11 USER LOGIN



From this screen it is possible to login with different users. Each user has a specific array of access rights.

5.4.12 RECIPE MENU



From this page it's possible to access to the recipes of each phase of the machine.

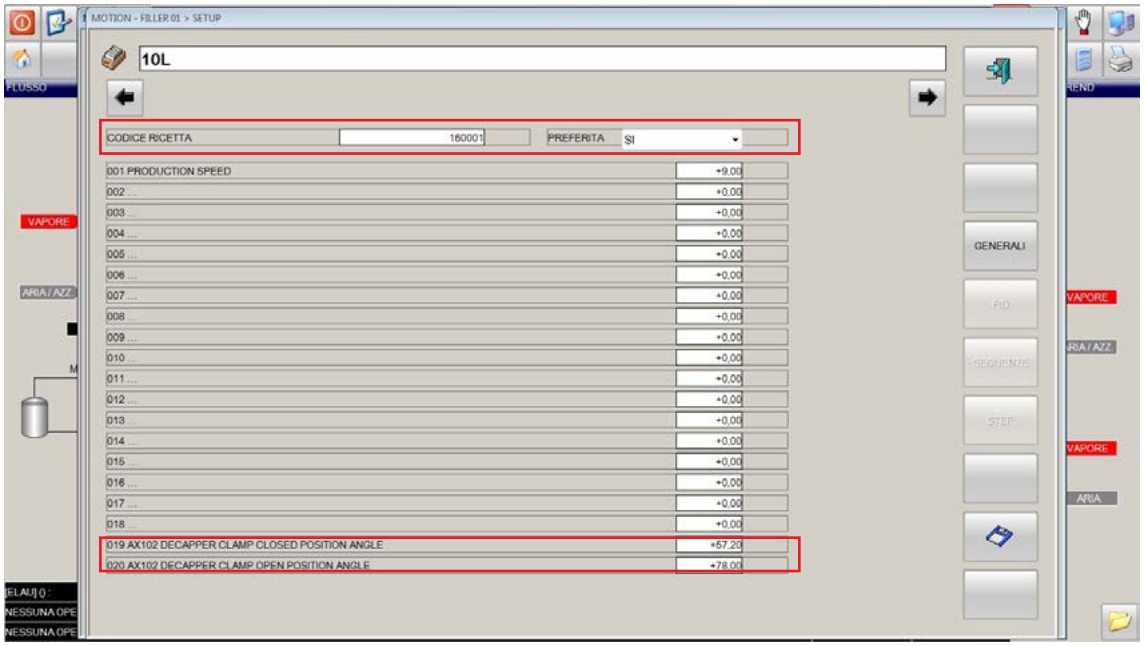
5.4.12.1 MOTION FILLER

From the motion recipe menu it is possible to set all the motion parameters of the filler.

Each recipe stored in the database has its dedicated set of parameters which are recalled when it is loaded to the PLC.

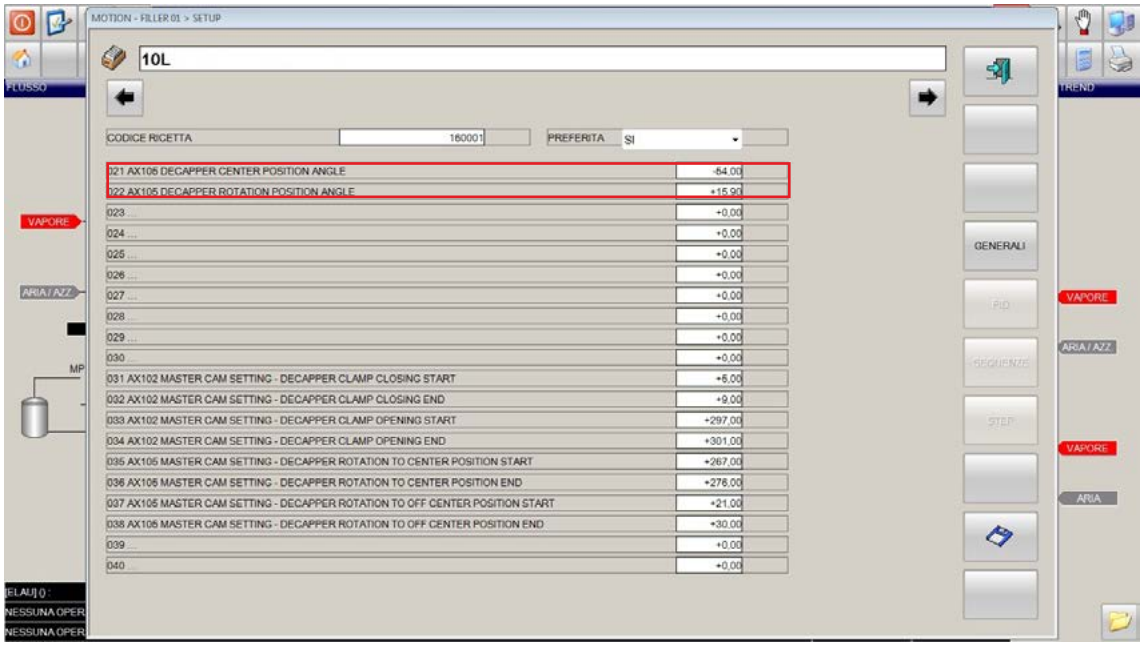
Most of the parameters are reserved and only Alfa Laval staff is allowed to modify them.

Depending on the user logged in, the parameters useful for the tuning and adjustment of the machine are the ones highlighted in the red boxes.

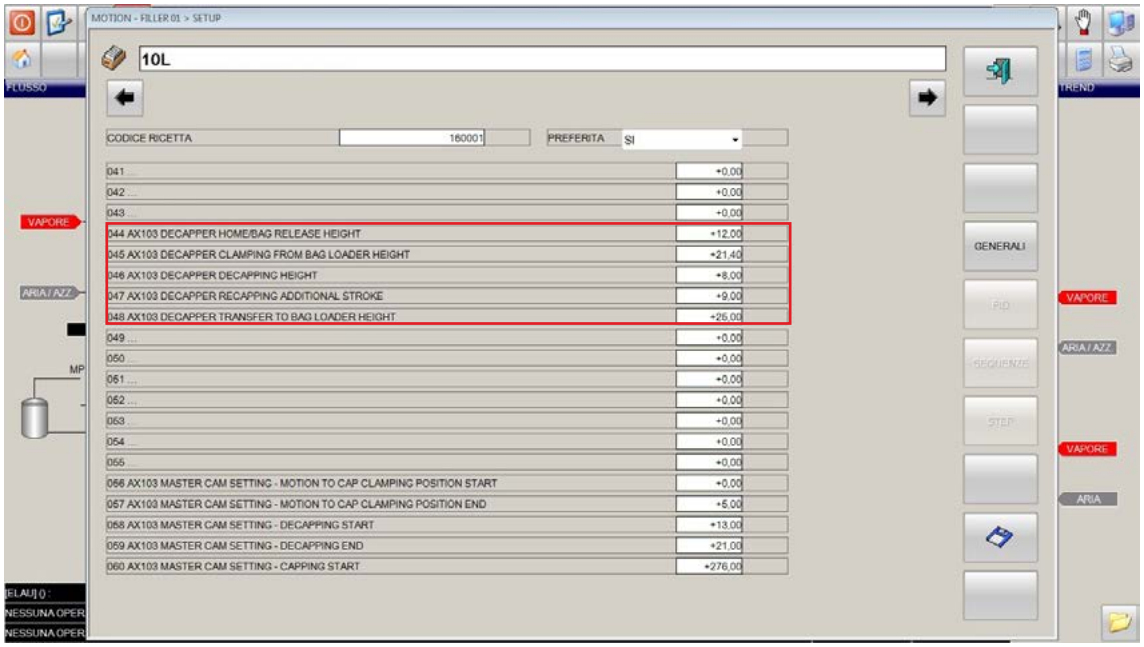


PRODUCTION SPEED parameter is the default speed set when the recipe is loaded and it can be changed in real time during production from the home page

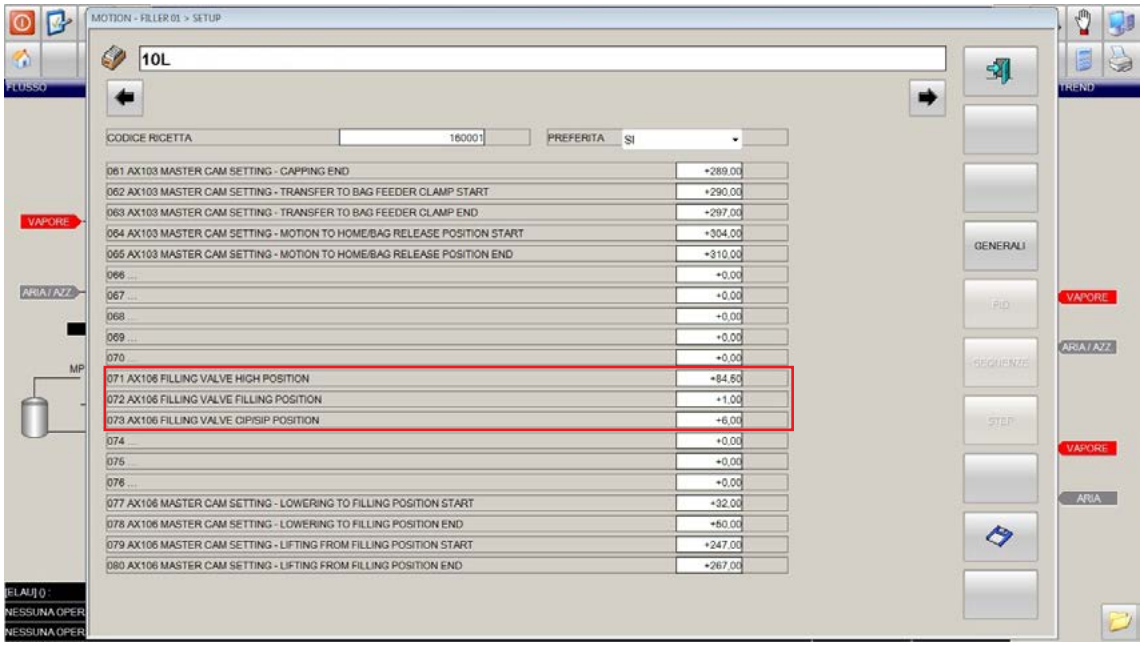
AX102 DECAPPER CLAMP parameters set the open and close position of the decapper clamp



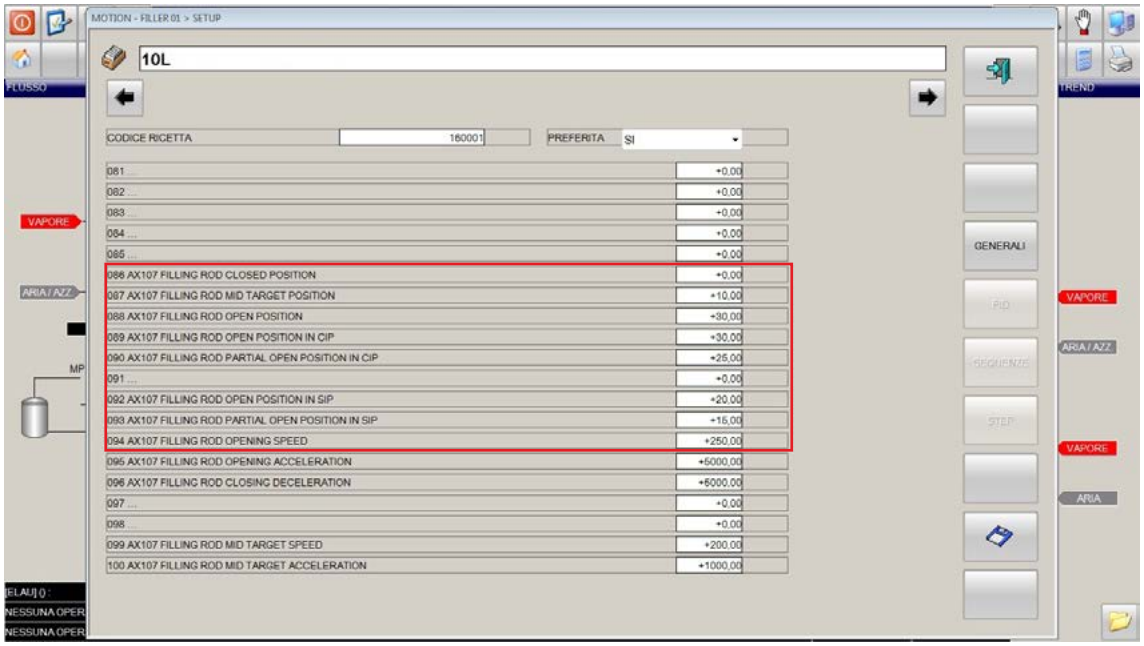
AX105 DECAPPER ANGLE parameters set the center (decapping and recapping) and off-center (filling) positions of the decapper



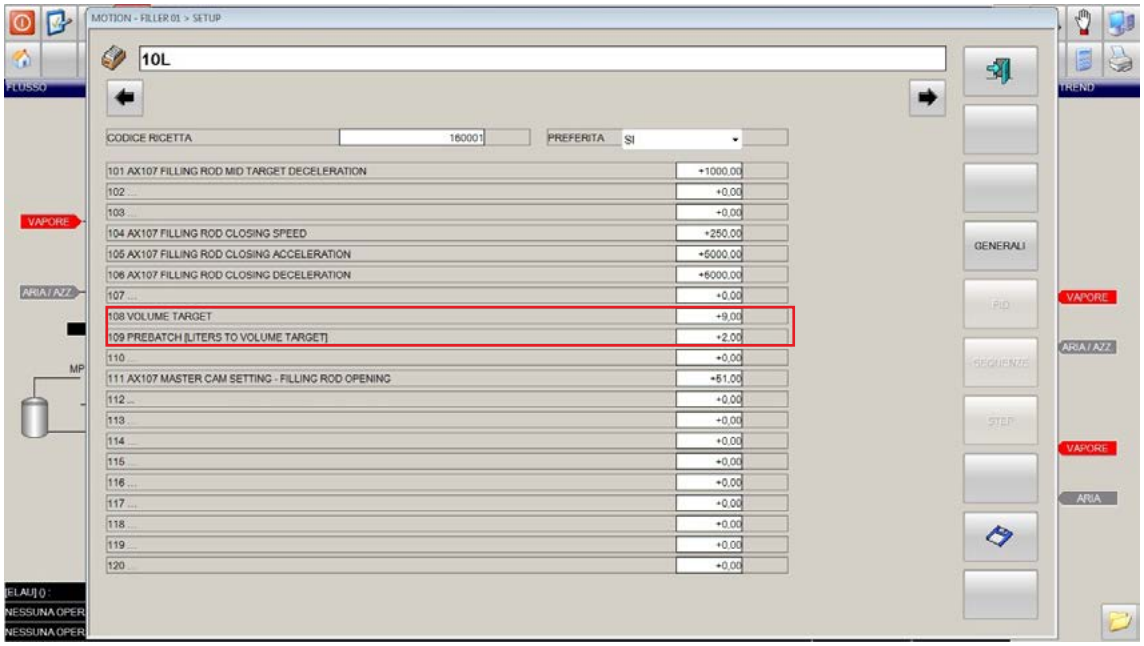
AX103 DECAPPER HEIGHT parameters set the height of the decapper for each handling step



AX106 FILLING VALVE parameters set the height of the filling valve in PRD/CIP/SIP phases

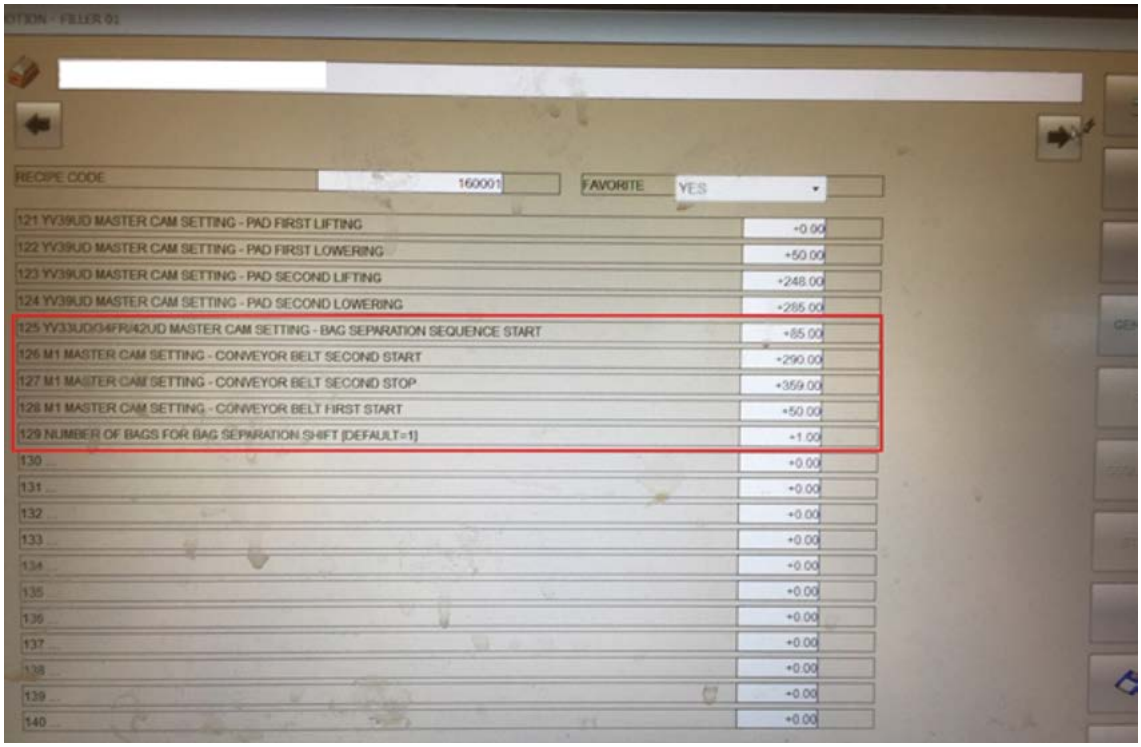


AX107 FILLING ROD parameters set the open position of the filling rod in PRD/CIP/SIP phases



VOLUME TARGET parameter is the default volume set when the recipe is loaded and it can be changed in real time during production from the home page

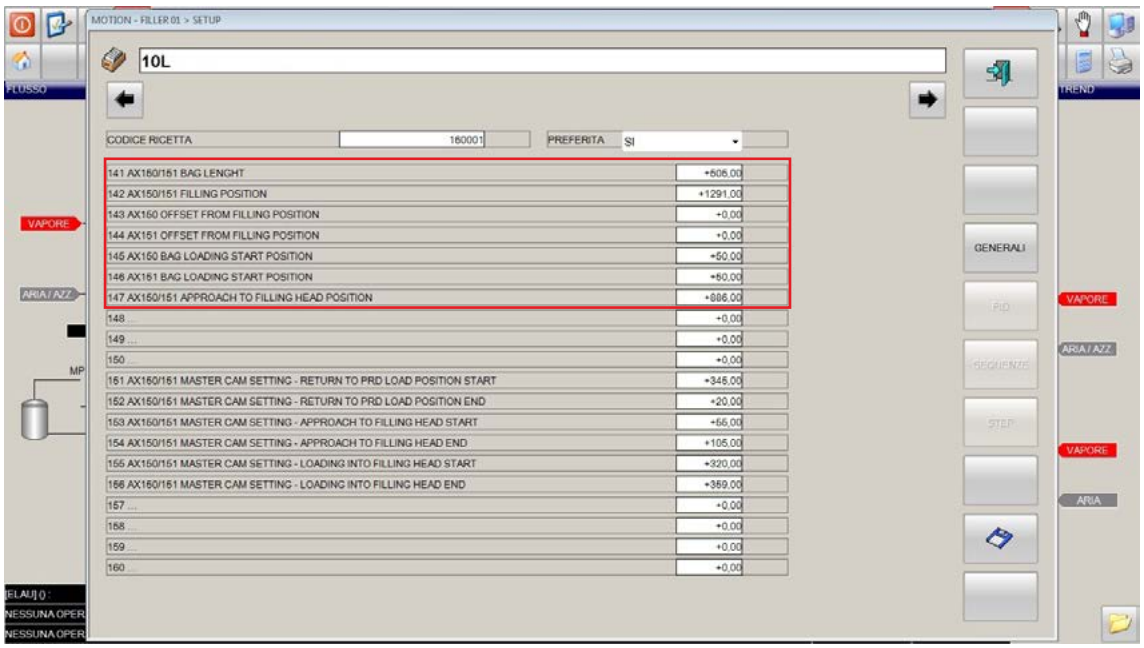
PREBATCH [LITERS TO VOLUME TARGET] parameter sets the number of liters to volume target for the filling rod to move to partial opening to improve the accuracy of the dosing. For example if volume target is 10l and prebatch is 2l, the filling rod is going to the partial opening position when the filled volume reaches 8l and closes when the 10l target is achieved



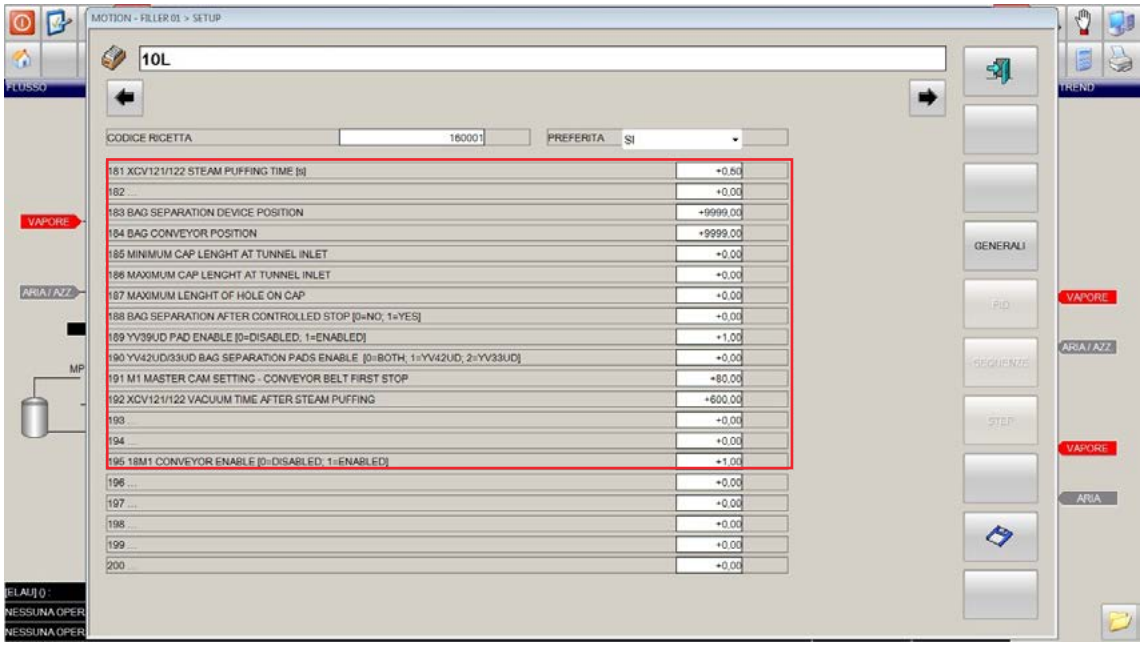
YV33UD/34FR/42UD BAG SEPARATION SEQUENCE parameter sets the cam angle where the bag separation sequence starts

M1 CONVEYOR BELT parameters set the start/stop cam angles where the conveyor is running

NUMBER OF BAGS FOR BAG SEPARATION SHIFT parameter (default is 1) can be changed when filling small/short bags if the bag separation device can not cut the first bag filled. This parameter is for bag count purpose only and is not affecting the functionality of the filler



AX150/151 BAG FEEDER parameters set the position of the bag feeder clamps during handling operations according to the size of the bag. The offset parameters can be used for fine tuning of the clamps and affect the filling position only



XCV121/122 STEAM PUFFING TIME parameter sets the time [s] of steam puffing after filling to clean the nozzle from drops. If puffing is not required, the parameter can be set to 0

BAG SEPARATION DEVICE POSITION/BAG CONVEYOR POSITION parameters set the value displayed on the home page for the manual setting of the bag separation device. Note that the value is displayed only and is not affecting the functionality of the filler

CAP LENGTH parameters set the fitment dimensions for automated visual inspection system at tunnel inlet [optional]

BAG SEPARATION AFTER CONTROLLED STOP parameter sets if the last bag filled has to be cut before the filler stops [1] or if it will be cut after the restart [0]

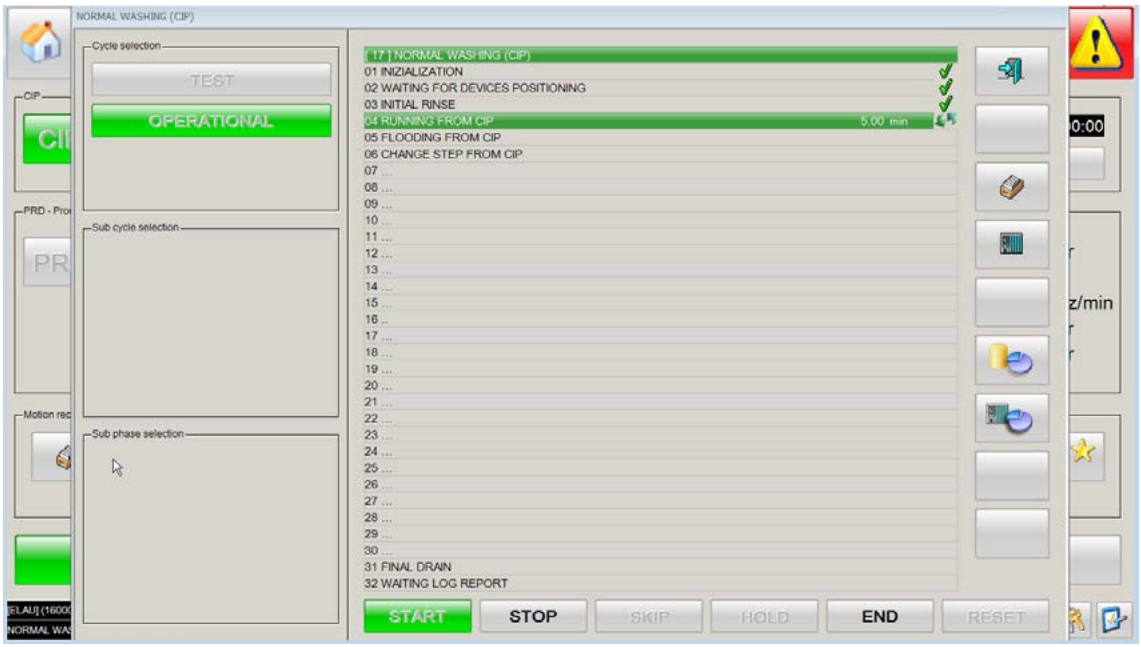
YV39UD PAD ENABLE parameter excludes the YV39 plunger if set to 0

YV42UD/33UD BAG SEPARATION PADS ENABLE parameter sets the active pads of the bag separation device

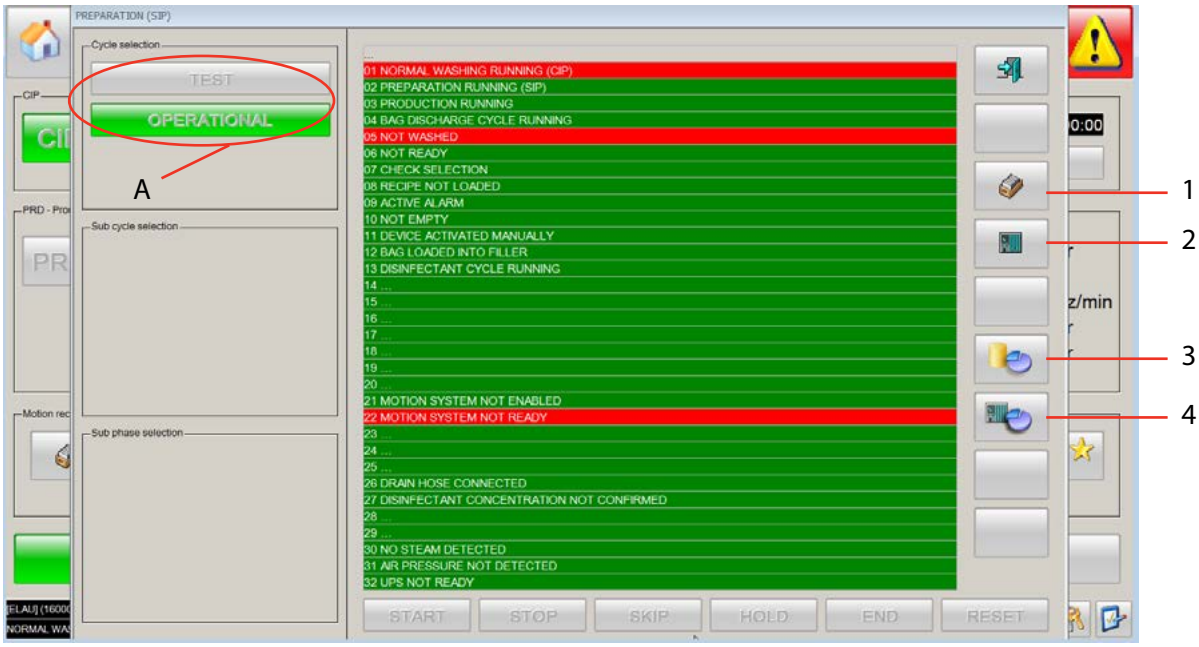
XCV121/122 VACUUM AFTER STEAM PUFFING TIME parameter sets the duration of the vacuum after steam puffing on the filling nozzle to hold eventual residual drops and prevent them to fall on the decapper

18M1 CONVEYOR ENABLE parameter sets the presence of the optional outlet conveyor

5.4.12.2 SEQUENCES



If the selected sequence is running, this page shows the active steps and the completed ones.



A. The selector between “Test and operational” modes is reserved to Alfa Laval Engineers for the status of the machine.

If the selected sequence is not running. This page shows the related interlocks.

These turn green if the condition is met or red if it is not.

Every individual bar contains the description of the interlock.

Start: Allows the cycle to start

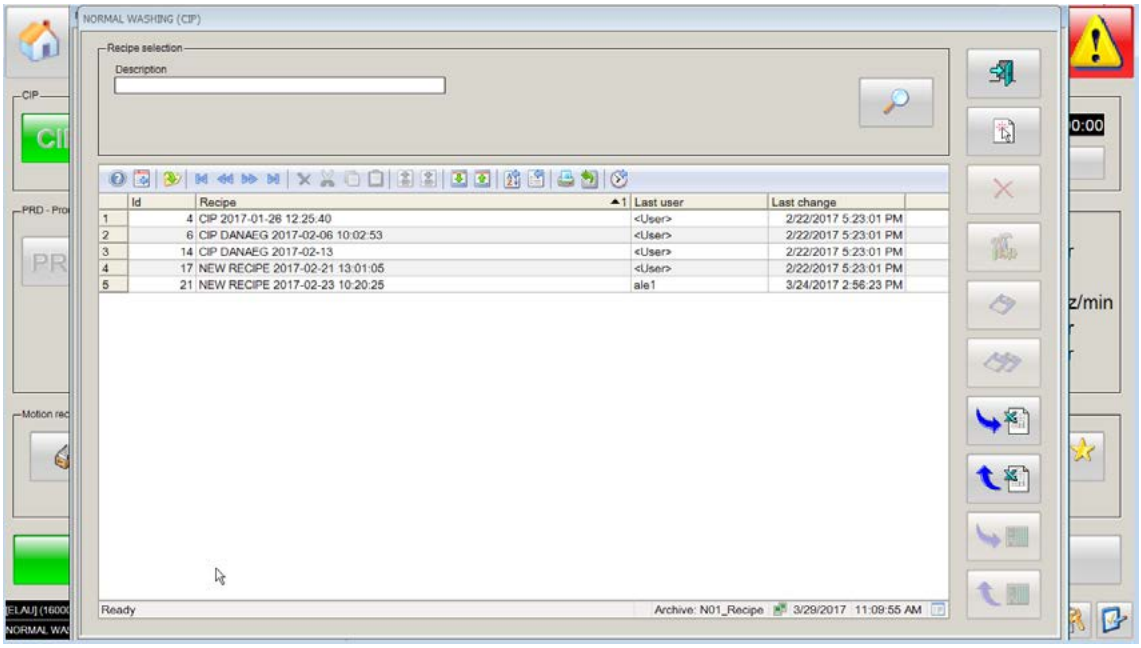
Stop: Stops the active cycle

Reset: Resets the active cycle.

Skip: If enabled by the software and pressed, it allows to skip to the next step, leaving the skipped one incomplete.

Hold: If enabled by the software and pressed, it allows to freeze the current step and, therefore, the sequences do not go forward.

5.4.12.2.1 RECIPE DATABASE



In this page it's possible to manage the recipes of the selected sequence.

 Use this button to start creating a new recipe.

 Use this button to save the data that was changed.

 Use this button to save the data that was changed to a new recipe.

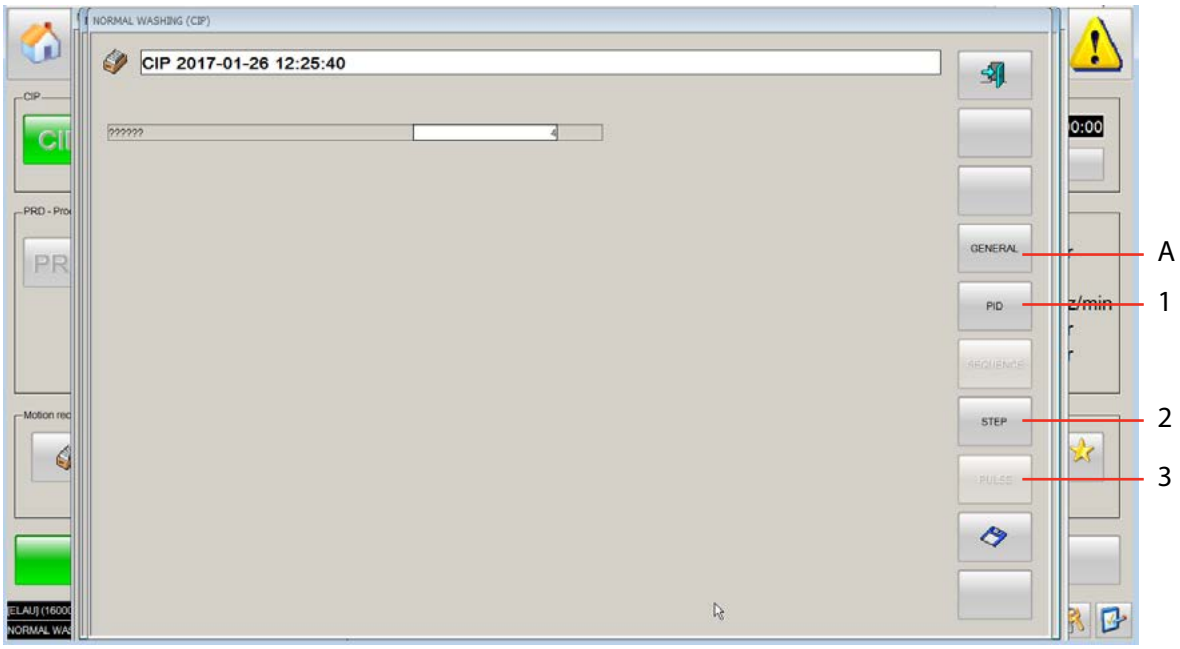
 Use this button to delete the recipe selected. The system asks for confirmation.

 Use this button to send the selected recipe to the PLC.

 Use this button to load the dataset from the PLC and save it in the recipe archive.

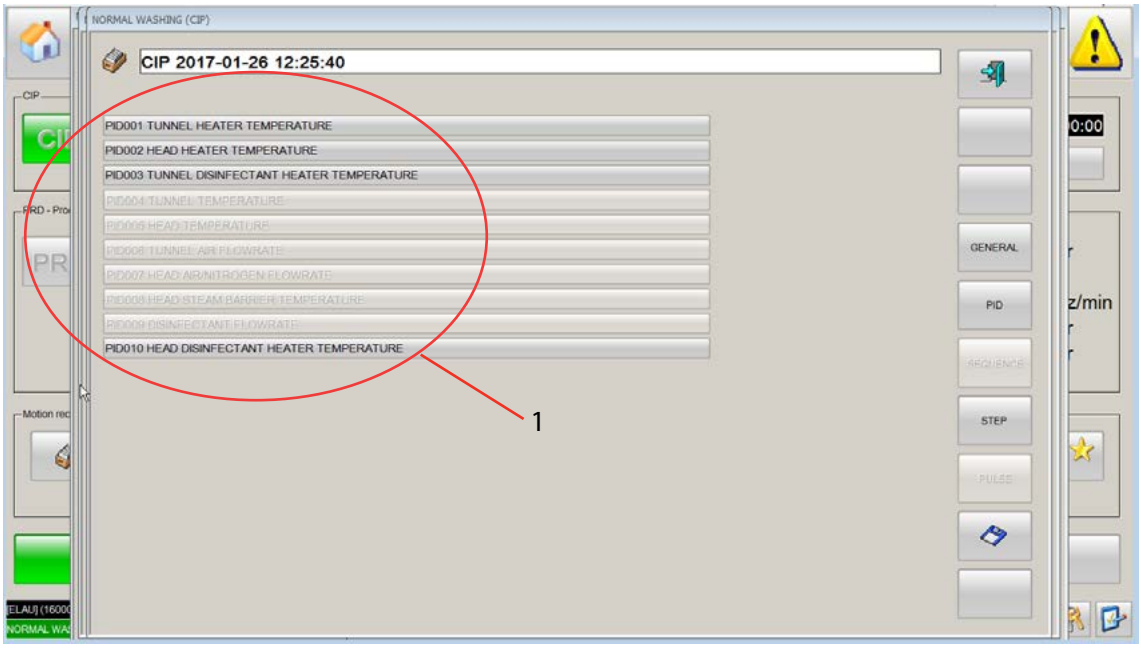
 Use this button to access the online recipe editing pages for the recipe.

5.4.12.2.2 RECIPE SETUP

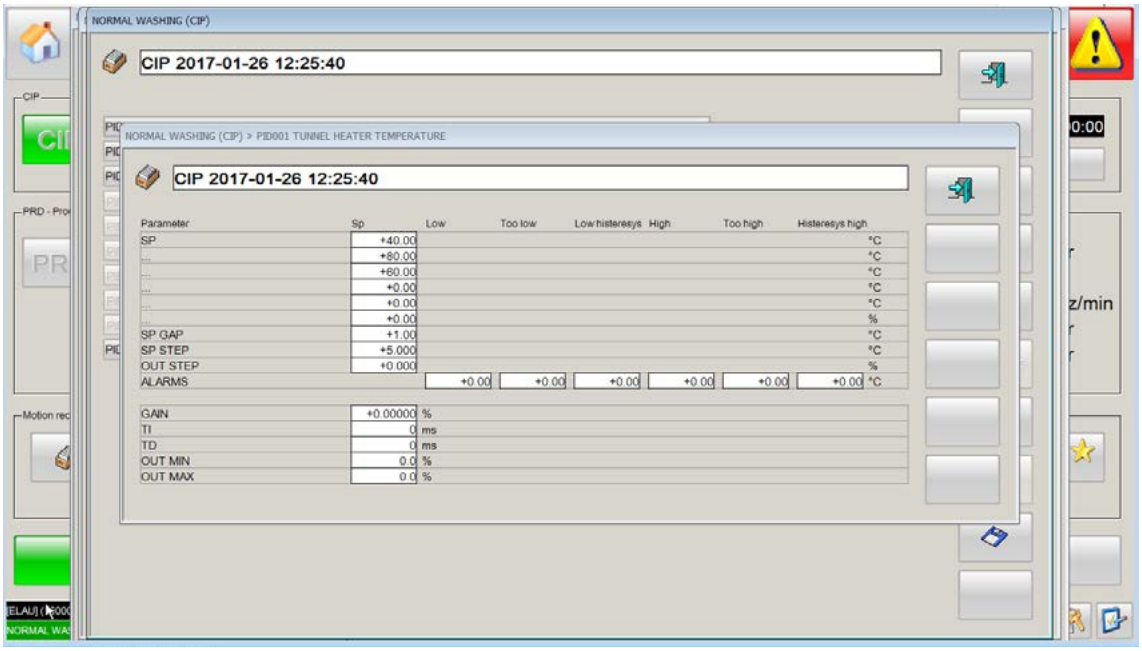


The “A” button opens this actual recipe setup page.

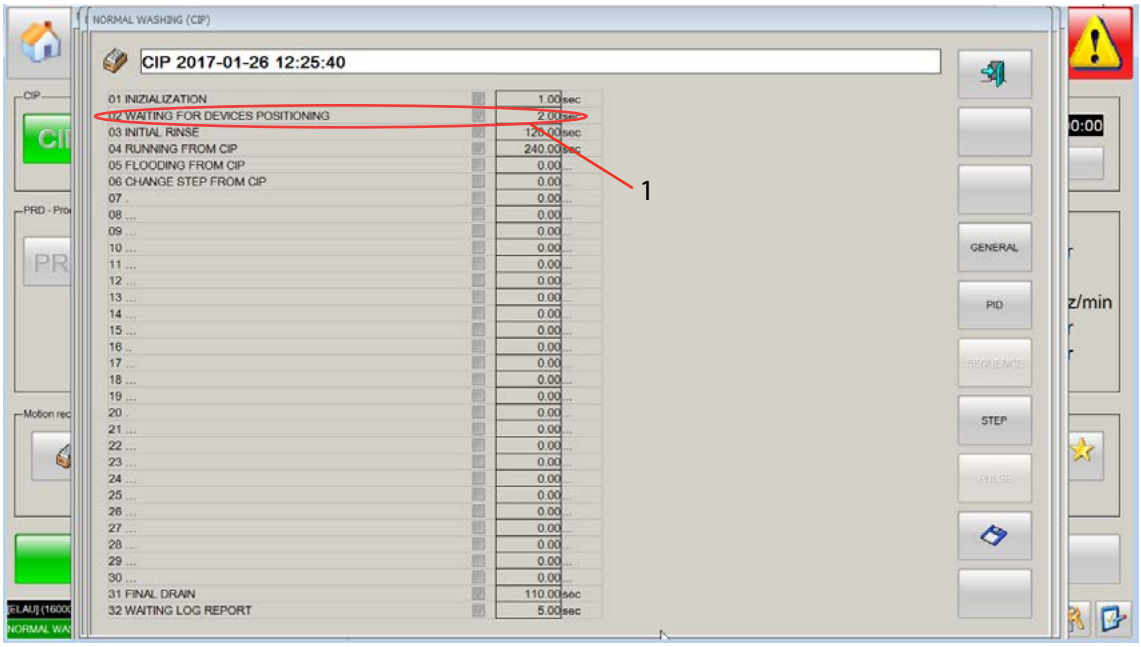
5.4.12.2.2.1 RECIPE PDI SETUP MENU



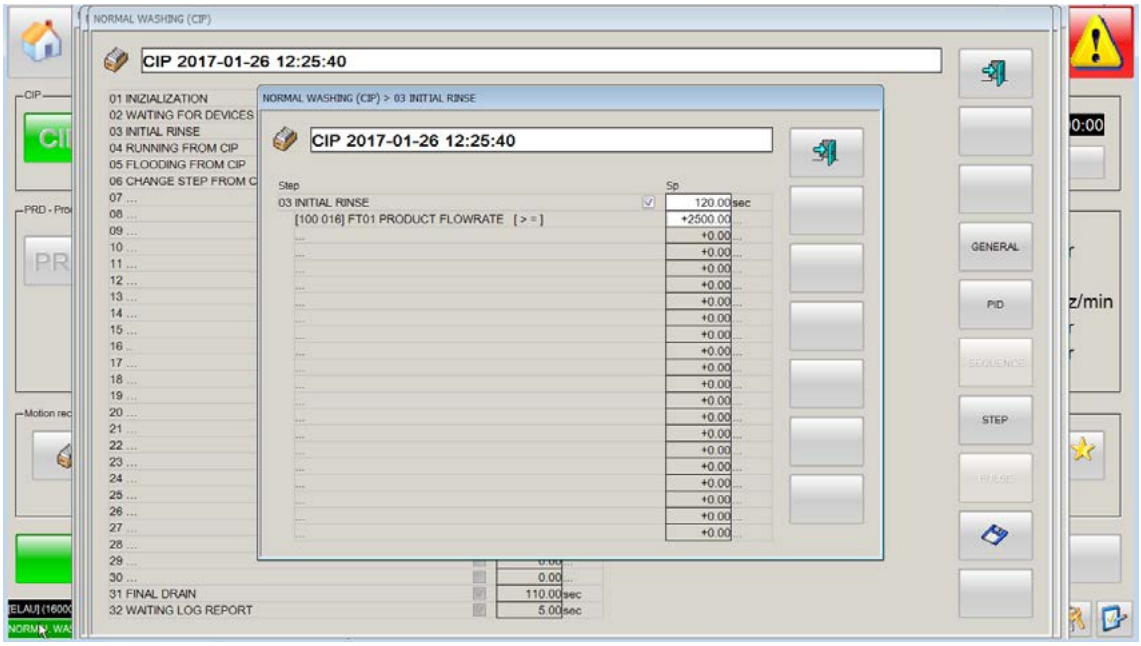
5.4.12.2.2.1.1 SINGLE PID SETUP



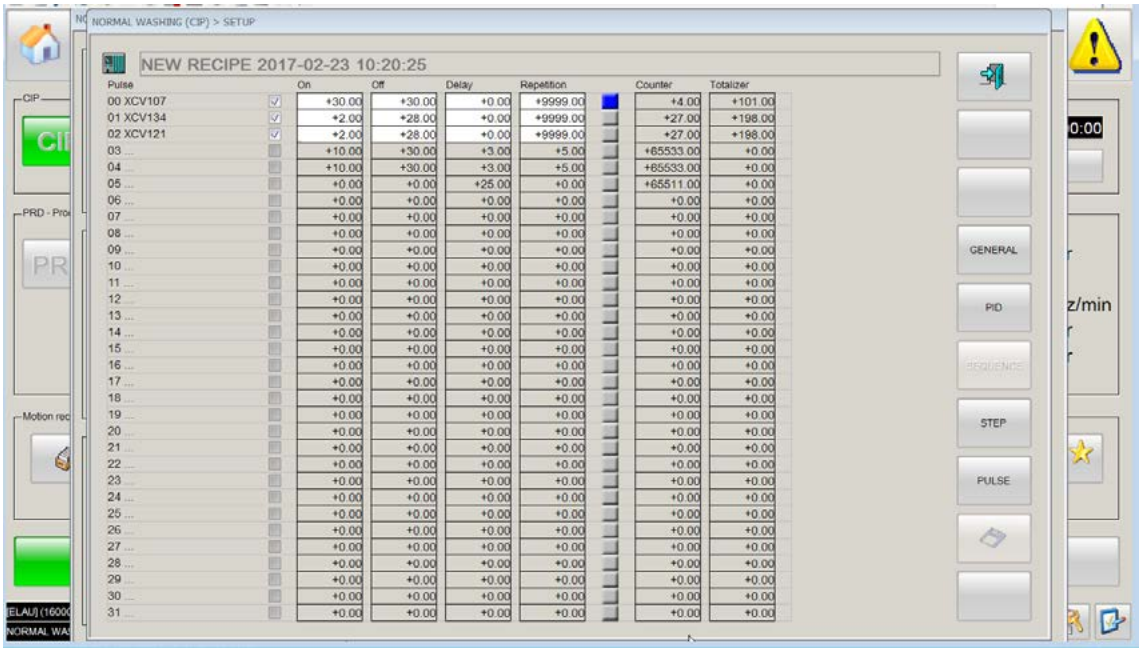
5.4.12.2.2.2 RECIPE STEP MENU



5.4.12.2.2.2.1 SINGLE STEP SETUP



5.4.12.2.2.3 PULSE CONFIGURATION



Here you can configure the software-enabled valves that you wish to flip.

The parameters are as follows:

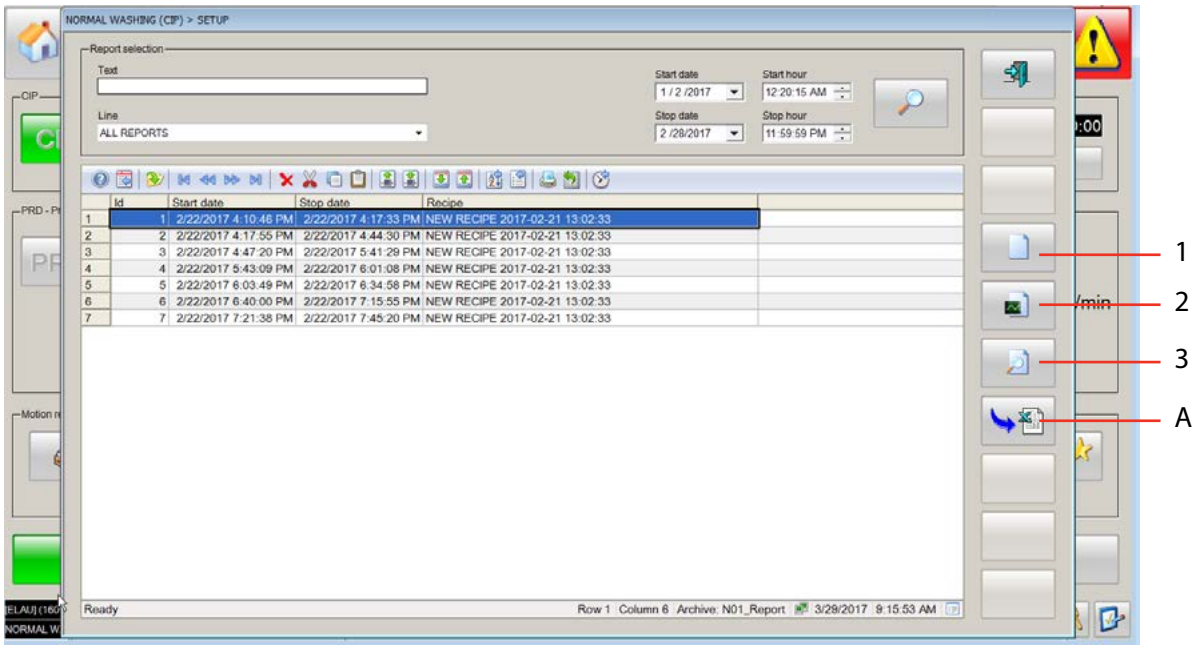
On: sets the time the valve remains controlled.

Off: sets the time the valve remains uncontrolled.

Delay: sets the delay time in which the valve begins to flip.

Repetition: sets the number of repetitions the valve carries out.

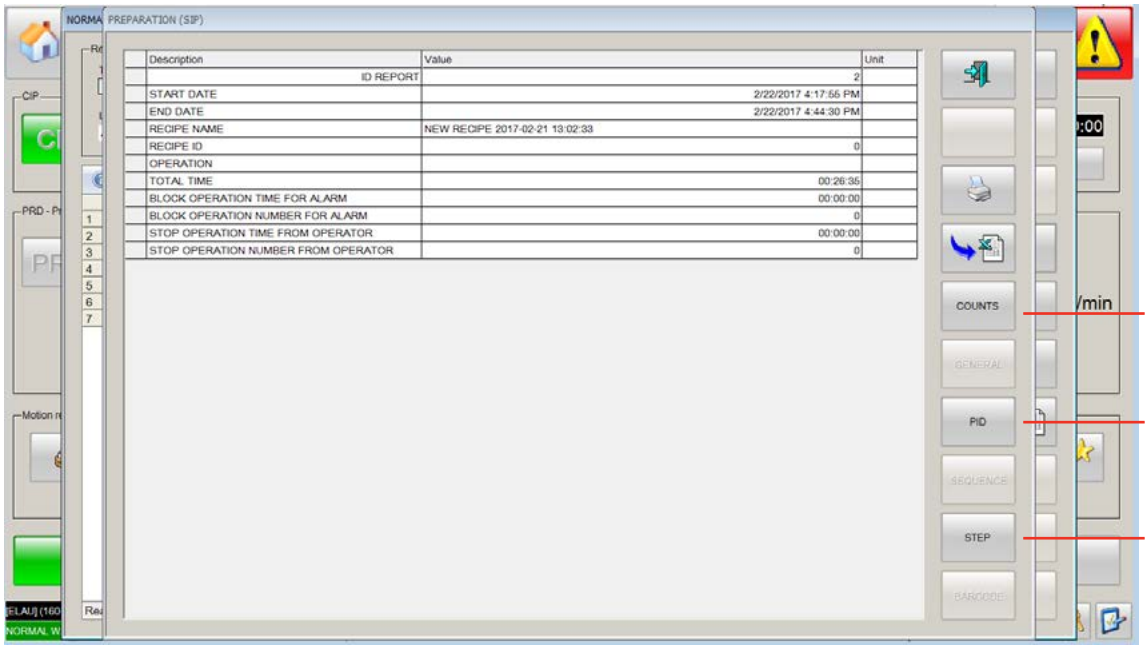
5.4.12.2.3 SEQUENCER REPORT DATABASE



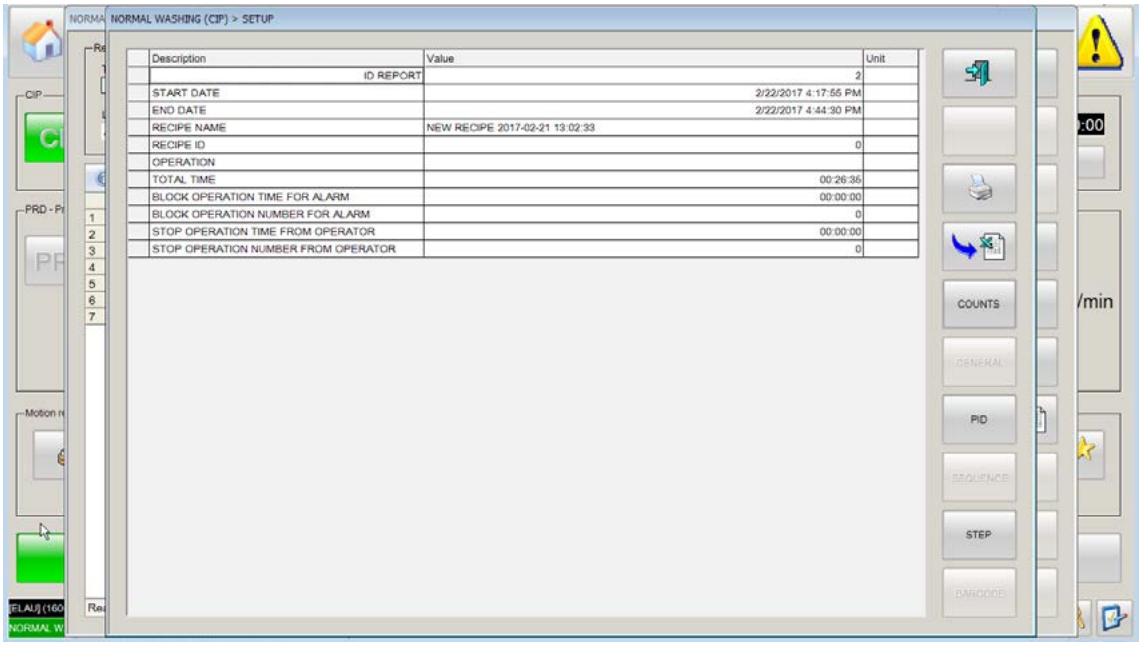
This database contains all the saved reports. Filters can be applied like date/time or sequence.

A. It is possible to export the data in Microsoft Excel.csv file.

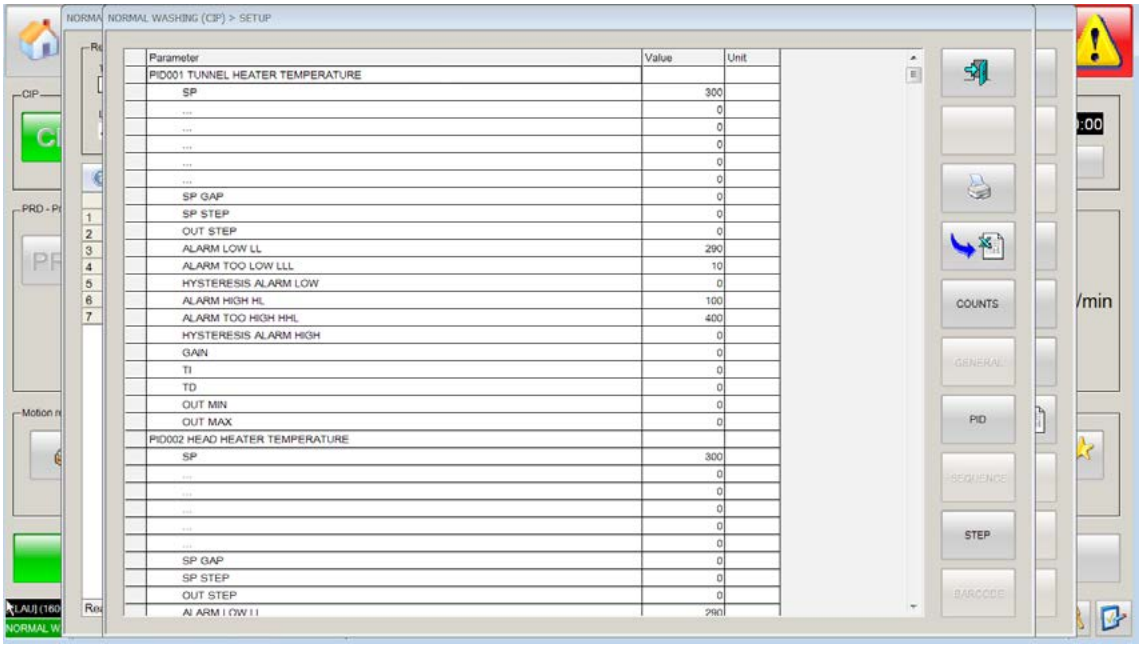
5.4.12.2.3.1 SEQUENCER REPORT



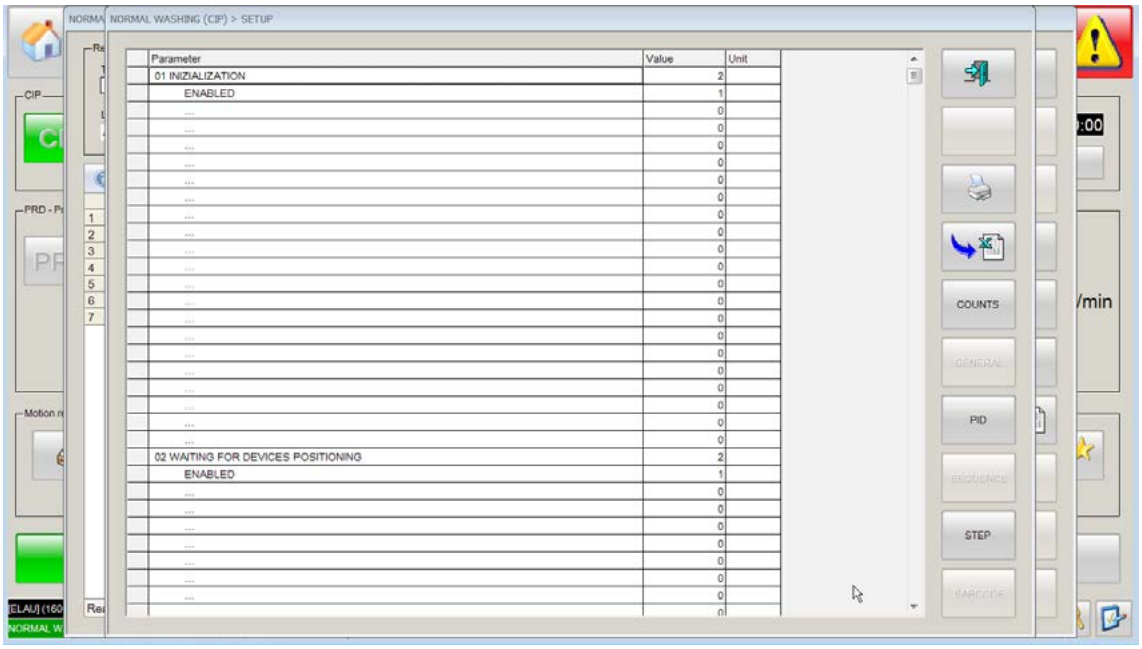
5.4.12.2.3.1.1 SINGLE REPORT DATA - COUNTS



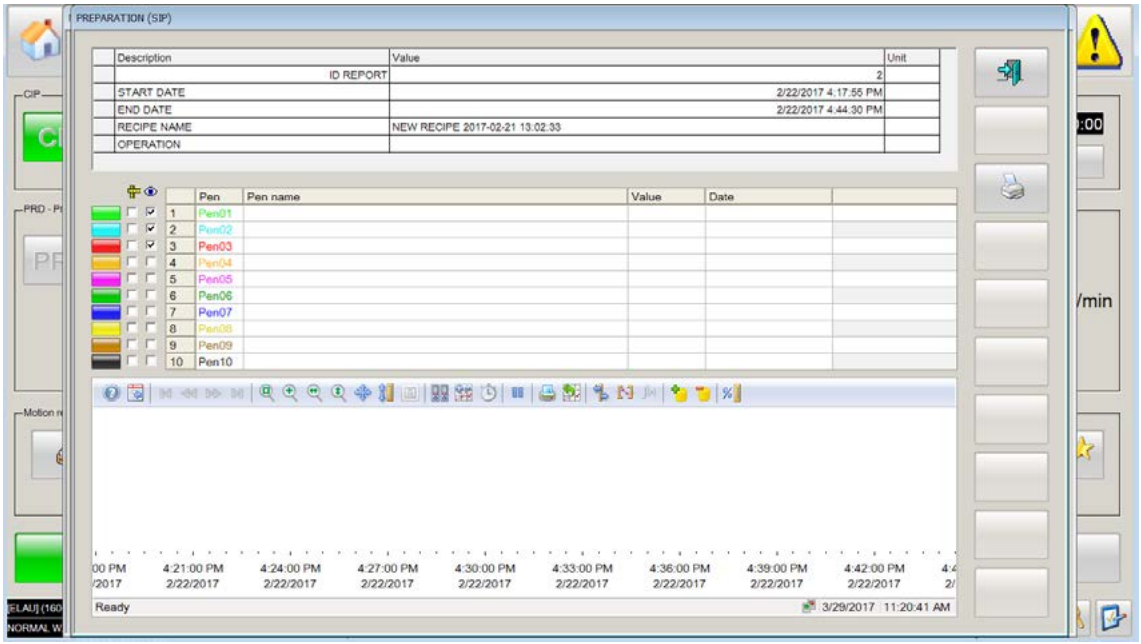
5.4.12.2.3.1.2 SINGLE REPORT DATA - PID



5.4.12.2.3.1.3 SINGLE REPORT DATA - STEP

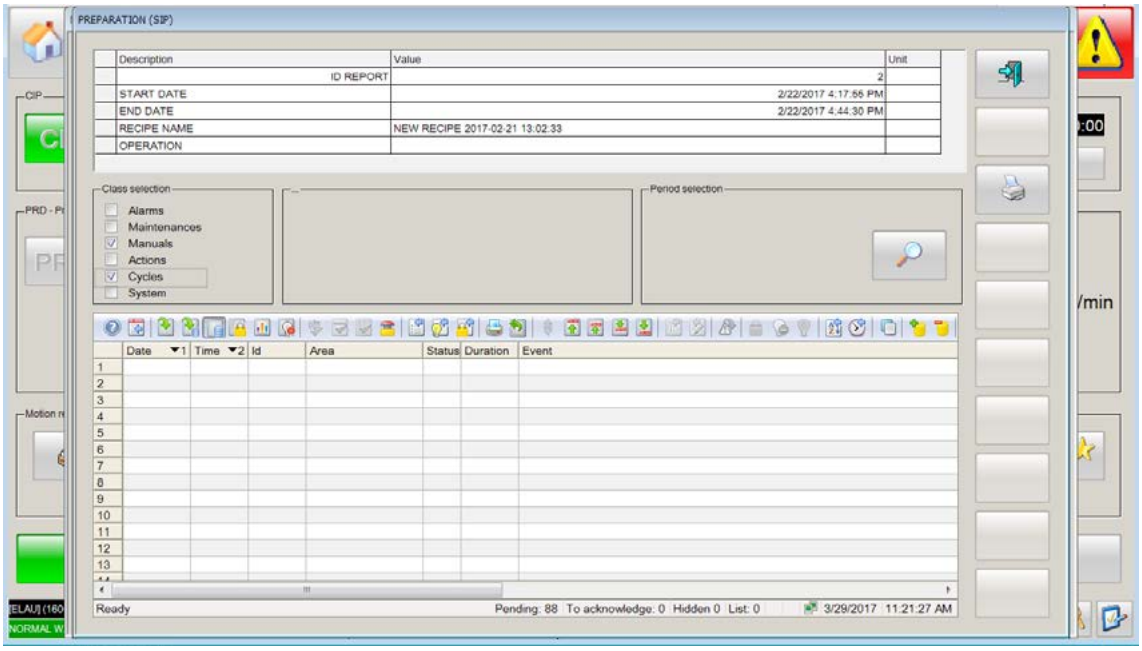


5.4.12.2.3.2 SEQUENCER SINGLE REPORT - TREND

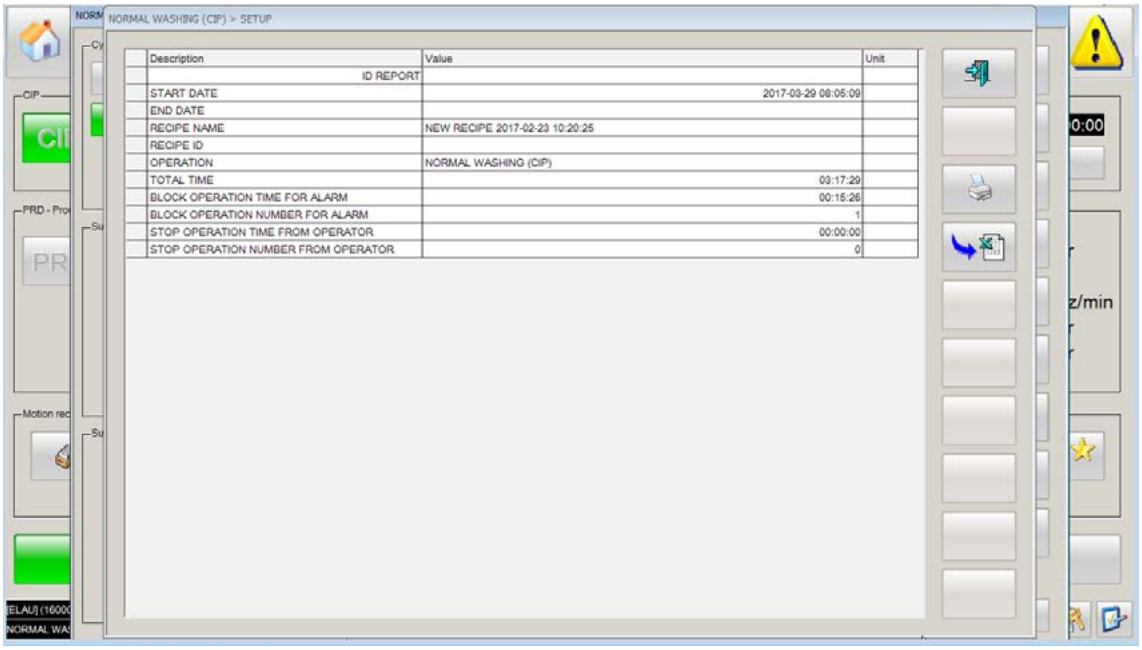


From this menu it’s possible to analyze the recorded data related to the selected trend.

5.4.12.2.3.3 SEQUENCER SINGLE REPORT - EVENTS

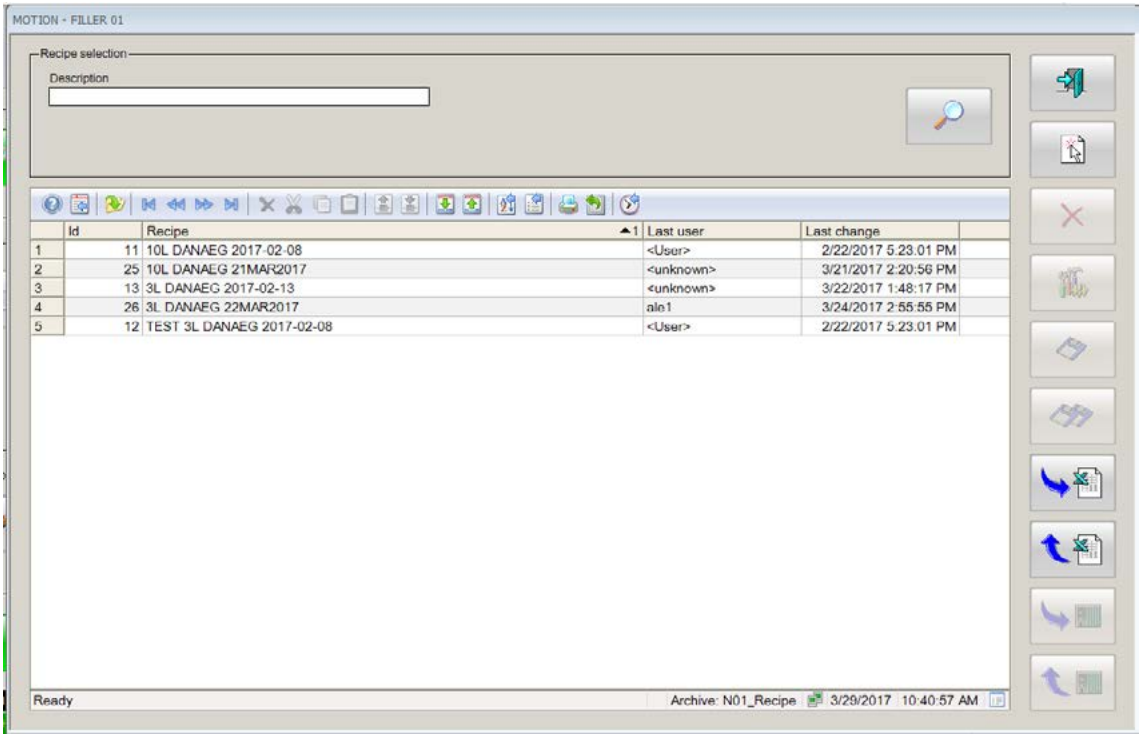


5.4.12.2.4 SEQUENCER ONLINE REPORT



This page displays the current values of the online report related to the selected sequence. It's possible to print and export the chart.

5.4.12.3 MOTION RECIPE DATABASE (ADVANCED)



From the database it is possible to create, save, delete, import/export, download/upload the motion recipes.

5.4.13 USING THE DEVICE SYMBOLS

In the layout page, pressing the symbols access the control and settings pages for the object.

 Pressing the motors accesses the “Motor Status” page described in the apposite section.

 Pressing the valves accesses the “Valve Status” page described in the apposite section.

 Pressing the indications of the analogue utilities accesses the “Analogue Status” page described in the apposite section.

 Pressing the indications for the expected analogue utility values accesses the “Analogue Setup” page described in the apposite section.

 Pressing the indications for the analogue utilities accesses the “Analogue Setup” page described in the apposite section.

 Pressing the pressure level probes accesses the “Analogue Setup” page described in the apposite section.

5.4.14 COLOURS

 The device is characterized by an alarm masked from the operator (white background).

 Maintenance notice (orange background).

 The device that is alarming (flashing red background); the alarm must be reset (steady red background).

 The device is in automatic operation mode and is working (green symbol).

 The device is in automatic operation mode and is stopped (grey symbol).

 The device is in manual operation mode and is working (Yellow Square).

 The device is in manual disabled mode and is stopped (Purple Square).

The colours are for all displayed devices.

 Analogue device alarming or analogue value not valid (flashing).

 Set Point search in progress, the device set point has not been reached (flashing).

5.4.15 DEVICE SYMBOLS

 Maximum level probe: the status of the maximum level probe is displayed in the upper part of the tank; not reached (grey), level detected (blue), reached (red).

Pressing the symbol for the Premix maximum level probe accesses the settings for the probe itself.

 Minimum level probe: the status of the minimum level probe is displayed in the bottom part of the tank; not reached (grey), colour not used (blue), reached (green).

 Motor: the speed is displayed in rpm.

 The current value is displayed (black background) and when it is alarming (red background).

 The set value is displayed on the instrument (green background) and when a value other than the one set is detected (yellow background).

 Temperature probe: the detected temperature is shown.

 The current value is displayed (black background) and when it is alarming due to a value beyond the instrument limits (red background).

 The set value is displayed on the instrument (green background) and when a value other than the one set is detected (yellow background).

Valve: the status is displayed.

Pump: the speed is displayed in rpm.

 Shows that the inspection hatch is open.

5.5 CRITICAL CONTROL POINTS

The CCPs of the filler are summarized in the chart. In PRODUCTION cycle if one of the factors drops below the threshold, sterility is considered lost and the machine allows only a CIP cycle. The sterilizing tunnel is kept under a constant flow of sterile air (about 400l/min); 1ml of vapourised hydrogen peroxide is injected every 4 seconds, the temperature is kept at about 70°C to prevent the condensation of the disinfectant against the walls of the tunnel.

The filling head is kept under a constant flow of sterile nitrogen (about 80l/min).

All reciprocating movements are protected by steam barriers at >101°C.

In SIP cycle if one of the factors drops while the 30 minutes counter is running, the counter resets; if it drops after the counter has finished, there's a sterility loss and the only enabled cycles are SIP restart or CIP start.

CRITICAL CONTROL POINTS		
SIP		
TE01	FILLING HEAD TEMPERATURE	>121°C
TE02	STEAM BARRIER TEMPERATURE	>121°C
TE05	PRODUCT LINE END SIP TEMPERATURE	>121°C
TE06	TEMPERATURE BEFORE VPHP (VAPOUR PHASE HYDROGEN PEROXIDE) GENERATOR	>121°C
TE09	FC310a SIP FILLING HEAD STERILE FILTER SIP TEMPERATURE	>121°C
TE10	FC310b SIP FILLING HEAD STERILE FILTER SIP TEMPERATURE	>121°C
TE11	FC320a TUNNEL STERILE FILTER SIP TEMPERATURE	>121°C
TE12	FC320b TUNNEL STERILE FILTER SIP TEMPERATURE	>121°C
TE15	STEAM PUFFING TEMPERATURE	>121°C
PT04	PRODUCT LINE PRESSURE	>0,1bar
	DISINFECTANT SEQUENCE COMPLETED	
PRODUCTION		
TE02	STEAM BARRIER TEMPERATURE	>101°C
FI320	FILLING HEAD STERILE NITROGEN FLOW	>40l/min
FI310	TUNNEL STERILE AIR FLOW	>250l/min
TE03	VPHP ELECTRIC HEATER TEMPERATURE	>185°C
TE16	XCV401 PRODUCT SUPPLY VALVE STEAM BARRIER	>101°C
PT04	PRODUCT LINE PRESSURE	>0,1bar
	DISINFECTANT SEQUENCE COMPLETED	

5.6 OPERATIVE PHASES DESCRIPTION

5.6.1 PRODUCTION

In production cycle the 310 line - sterile air to the sterilizing tunnel – and the 320 line – air/nitrogen to the filling station are open. All the valves going to steam traps and all the steam valves are closed.

XCV310a,b,c,d are closed

XCV310L is open.

XCV320a,b,c,d are closed

XCV320N, XCV131 are open

Condensate ejection line (XCV134) is open.

During the filling step the valve AX106 goes down into the spout and the AX107 stem opens for dosing. At the end of the dosing the AX107 closes and the steam puffing sequence starts: XCV122 and XCV121 valves flip to flush the nozzle from eventual drops.

All the time that the machine is in sterility conditions, the disinfectant injection into the tunnel cycle is on. The MP1 pump keeps recycling the disinfectant between the T1 tank and the T2 dispensing tank. Every 4s the XCV123 valve opens and disinfectant is sucked from the calibrated cups, it goes through the vapor phase hydrogen peroxide generator and is injected into the sterilizing tunnel.

5.6.2 SIP

During SIP cycle the filling station is sealed by the CIP/SIP plate.

In SIP cycle the 310 line is set to feed steam to the sterilizing tunnel and the 320 line is set to feed steam to the filling station. All the valves going to steam traps and all the steam valves are open.

XCV310a,b,c,d are open

XCV310L is closed

XCV320a,b,c,d are open

XCV320N is closed

XCV131 is open

Condensate ejection line(XCV134) is open.

The valve AX106 goes down into the CIP/SIP plate and the AX107 stem opens. XCV301 and XCV308 are open during preheating to release the condensate, the XCV301 closes and XCV308 stays opens towards the steam trap. XCV303 is closed.

The product line is sterilized by steam coming from the line; the filling station and relative sterile filters is sterilized by steam coming from the 320 line; the tunnel line and relative sterile filters are sterilized by steam coming from the 310 line up to the VPHP generator; the line after the VPHP generator and the tunnel are sterilized by hydrogen peroxide sprayed after tunnel line cooling.

In the cooling step the valves are arranged as in production mode, so all steam lines and steam traps are closed and all the sterile air/nitrogen lines are open to dry the sterile filters and cool the pipes down.

During product line cooling, the positive pressure to keep the sterility must be granted by the up-stream equipment, for example pressurized aseptic tank.

5.6.3 CIP

CIP cycle consists of three main phases: first drain, cleaning, final drain.

In the first drain step, the filling valve AX106 is inserted into the CIP/SIP plate, the AX107 stem is open, XCV301 and XCV308 are closed, XCV303 is open and the CIP return pump P1 is on, so that the product still present in the pipeline can be sent back without flooding the filling station. XCV121, XCV134 and XCV131 are closed.

During cleaning step, the filling valve AX106 lifts and allows chemicals to flood the filling station and clean the inner surfaces. XCV122 and XCV121 flip to clean the steam puffing line. XCV134 flips to clean condensate ejection line. XCV301 flips to clean drain pipe. AX107 stem flips in order to clean the internal bellows. The decapper clamp is rotating alternatively all time long to clean the clamp itself and to spread the flow towards the walls of the filling station, simulating the effect of a spray ball. The return pump P1 is on when the flooding sensor of the filling station is on.

During final drain step, the drain valve XCV301 is open, XCV131 is open and the air/nitrogen line 320 to the filling station is open to help emptying the filling station. Condensate ejection XCV134 valve is open.

5.7 ALARMS

The process alarms are summarized in the following table:

Alarm ID	Description
000	SCADA ERROR ON COMMUNICATION ETHERNET IP
001	ELAU SYSTEM ERROR ON COMMUNICATION ETHERNET IP
002	FESTO SYSTEM ERROR ON COMMUNICATION ETHERNET IP
003	REMOTE I/O A1 ERROR ON COMMUNICATION ETHERNET IP
004	PROSOFT ERROR ON COMMUNICATION EHTERNET IP
005	CUSTOMER NETWORK COMMUNICATION NOT OK
007	CONTROLLORE DI MOTION IN ERRORE
009	ELAU SYSTEM NOT IN RUN MODE
010	MAINS EMERGENCY ON
011	GENERAL SAFETY GATE NOT OK
012	EMERGENCY PUSHBUTTON ON KOMMANDER PRESSED
013	EMERGENCY PUSHBUTTON ON INLET BAGS PRESSED
014	EMERGENCY PUSHBUTTON ON OUTLET BAGS PRESSED
017	GATE 01 OPEN
018	GATE 02 OPEN
019	GATE 03 OPEN
020	GATE 04 OPEN
021	GATE 05 OPEN
022	GATE 06 OPEN
026	UPS ON RUNNING 24VDC POWER SUPPLY LOST
027	UPS BATTERY NOT READY (UNDER 85%)
028	SAFETY GATE EXCLUDED SWITCH ACTIVE
029	AXIS GROUP NOT ENABLED
031	AXIS VIRTUAL MASTER NOT HOME
032	AXIS DECAPPER VIRTUAL MASTER NOT HOME
033	AXIS 102 DECAPPER CLAMP NOT HOME
034	AXIS 103 UP/DOWN DECAPPER NOT HOME
035	AXIS 105 DECAPPER ROTATION NOT HOME
036	AXIS 106 DOSING VALVE GROUP UP/DOWN NOT HOME
037	AXIS 107 DOSING VALVE NOT HOME
038	AXIS 150 PICK&PLACE RIGHT NOT HOME
039	AXIS 151 PICK&PLACE LEFT NOT HOME
042	TIMEOUT CAP DETECTION
043	CAP LOCKED ON HEAD
044	DOSING TIMEOUT
045	TIMEOUT FB YV150 GROUP NOT REVERSE DURING AXIS MOVIMENT
046	TIMEOUT FB YV150 GROUP NOT FORWARD DURING AXIS MOVIMENT
047	TIMEOUT FB YV150 CLAMP NOT CLOSE DURING AXIS MOVIMENT FORWARD
048	TIMEOUT FB YV150 CLAMP NOT CLOSE DURING AXIS MOVIMENT REVERSE

Alarm ID	Description
049	TIMEOUT FB YV150 GROUP NOT HIGH DURING AXIS MOVIMENT FORWARD
050	TIMEOUT FB YV150 GROUP NOT HIGH DURING AXIS MOVIMENT REVERSE
051	TIMEOUT FB YV151 GROUP NOT REVERSE DURING AXIS MOVIMENT
052	TIMEOUT FB YV151 GROUP NOT FORWARD DURING AXIS MOVIMENT
053	TIMEOUT FB YV151 CLAMP NOT CLOSE DURING AXIS MOVIMENT FORWARD
054	TIMEOUT FB YV151 CLAMP NOT CLOSE DURING AXIS MOVIMENT REVERSE
055	TIMEOUT FB YV151 GROUP NOT HIGH DURING AXIS MOVIMENT FORWARD
056	TIMEOUT FB YV151 GROUP NOT HIGH DURING AXIS MOVIMENT REVERSE
057	OUTLET TUNNEL TIMEOUT STERILIZATION CAP
058	INLET TUNNEL CAP DETECTION ERROR
064	CONTROL AND CONFIRM PEROXIDE CONCENTRATION
065	CHECK STATUS OF PRODUCT INSPECTION PORTS
068	PRODUCT FLOWRATE LOW
069	PRODUCT FLOWRATE HIGH
070	PRODUCT TEMPERATURE LOW
071	PRODUCT TEMPERATURE HIGH
072	STERIL FILTER TUNNEL A TEMPERATURE LOW
073	STERIL FILTER TUNNEL A TEMPERATURE HIGH
074	STERIL FILTER TUNNEL B TEMPERATURE LOW
075	STERIL FILTER TUNNEL B TEMPERATURE HIGH
076	STERIL FILTER HEAD A TEMPERATURE LOW
077	STERIL FILTER HEAD A TEMPERATURE HIGH
078	STERIL FILTER HEAD B TEMPERATURE LOW
079	STERIL FILTER HEAD B TEMPERATURE HIGH
080	HEAD OUTLET TEMPERATURE LOW
081	HEAD OUTLET TEMPERATURE HIGH
082	TUNNEL HEATER OUTLET TEMPERATURE LOW
083	TUNNEL HEATER OUTLET TEMPERATURE HIGH
084	HEAD HEATER OUTLET TEMPERATURE LOW
085	HEAD HEATER OUTLET TEMPERATURE HIGH
086	TUNNEL STERIL FILTER OUTLET TEMPERATURE LOW
087	TUNNEL STERIL FILTER OUTLET TEMPERATURE HIGH
088	HEAD STERIL FILTER OUTLET TEMPERATURE LOW
089	HEAD STERIL FILTER OUTLET TEMPERATURE HIGH
100	INLET STEAM PRESSURE LOW
101	INLET NITROGEN PRESSURE LOW
102	DOSING DISINFECTANT TANK EMPTY
103	DISINFECTANT TANK EMPTY
104	HEAD LEVEL LOW
105	TUNNEL HIGH FLOW AIR PRESSURE LOW
106	TUNNEL LOW FLOW AIR PRESSURE LOW
107	AIR SUPPLY PRESSURE LOW

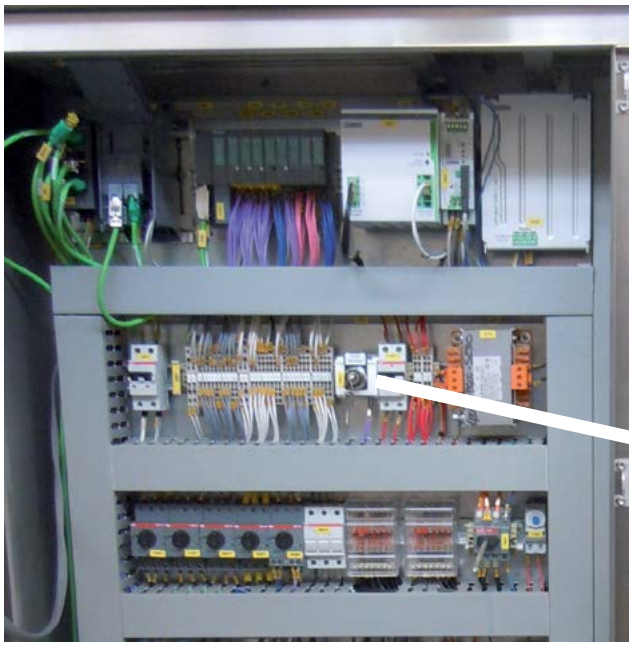
Alarm ID	Description
120	ATTENTION CHANGE TOOLING
121	STERILIZATION TIMER RESET : TE01 UNDER SP
122	STERILIZATION TIMER RESET : TE02 UNDER SP
123	STERILIZATION TIMER RESET : TE05 UNDER SP
124	STERILIZATION TIMER RESET : TE06 UNDER SP
125	STERILIZATION TIMER RESET : TE09 UNDER SP
126	STERILIZATION TIMER RESET : TE10 UNDER SP
127	STERILIZATION TIMER RESET : TE11 UNDER SP
128	STERILIZATION TIMER RESET : TE12 UNDER SP
129	STERILIZATION TIMER RESET : TE07 UNDER SP
130	STERILIZATION TIMER RESET : TE14 UNDER SP
135	STERILIZATION TIMER RESET : CUSTOMER PIPE LINE
136	CUSTOMER PIPELINE STERILIZATION LOST SIGNAL
137	BOXMACHINE NOT READY
138	BOXMACHINE NOT RUNNING
150	TUNNEL HEATER TEMPERATURE LOW
151	TUNNEL HEATER TEMPERATURE TOO LOW
152	TUNNEL HEATER TEMPERATURE HIGH
153	TUNNEL HEATER TEMPERATURE TOO HIGH
154	HEAD HEATER TEMPERATURE LOW
155	HEAD HEATER TEMPERATURE TOO LOW
156	HEAD HEATER TEMPERATURE HIGH
157	HEAD HEATER TEMPERATURE TOO HIGH
158	DISINFECTANT HEATER TEMPERATURE LOW
159	DISINFECTANT HEATER TEMPERATURE TOO LOW
160	DISINFECTANT HEATER TEMPERATURE HIGH
161	DISINFECTANT HEATER TEMPERATURE TOO HIGH
162	TUNNEL TEMPERATURE LOW
163	TUNNEL TEMPERATURE TOO LOW
164	TUNNEL TEMPERATURE HIGH
165	TUNNEL TEMPERATURE TOO HIGH
166	HEAD TEMPERATURE LOW
167	HEAD TEMPERATURE TOO LOW
168	HEAD TEMPERATURE HIGH
169	HEAD TEMPERATURE TOO HIGH
170	AIR FLOWRATE LOW
171	AIR FLOWRATE TOO LOW
172	AIR FLOWRATE HIGH
173	AIR FLOWRATE TOO HIGH
174	NITROGEN FLOWRATE LOW
175	NITROGEN FLOWRATE TOO LOW
176	NITROGEN FLOWRATE HIGH

Alarm ID	Description
177	NITROGEN FLOWRATE TOO HIGH
178	HEAD STEAM BARRIER TEMPERATURE LOW
179	HEAD STEAM BARRIER TEMPERATURE TOO LOW
180	HEAD STEAM BARRIER TEMPERATURE HIGH
181	HEAD STEAM BARRIER TEMPERATURE TOO HIGH
182	PEROXIDE FLOWRATE LOW
183	PEROXIDE FLOWRATE TOO LOW
184	PEROXIDE FLOWRATE HIGH
185	PEROXIDE FLOWRATE TOO HIGH

Additional alarms:

- For every analog probe/ transmitter instrument there are dedicated alarms for broken wire or cable not connected.
- For every motor with frequency converter there are alarms for communication and drive faults.
- For every valve there are alarms related to the feedback status (configurable from the device setup menu).
- For all the devices there is a warning for maintenance status (configurable from the device advanced setup menu).

5.8 GUARDS SAFETY SWITCHES BYPASS



	ATTENTION!: Use the guards safety switches bypass only for the following operations: - mechanical and/or pneumatic adjustment - maintenance - restoration and replacement of mechanical and/pneumatic parts Any other use of the guards safety switches bypass is forbidden.

	ATTENTION!: The activation key of the guards safety switches bypass has to be used and kept exclusively by the machine responsible. It is severely forbidden leave the activation key unattended or fitted in the seat if the guards safety switches bypass is in position 0. The machine responsible has to supervise that all operators are informed about the machine is working in maintenance/adjustment and step-by-step mode (i.e. showing information plaques, defining a maintenance dangerous area with mobile fences, etc.). Only mechanical and electric maintenance operators are authorized for working with guards safety switches bypass in position 1..

On the command panel there is the GUARDS SAFETY SWITCHES BYPASS with activation key. This switch can assume two different position that correspond to different working modes of the machine:

- Position 0: the standard working mode. All the movable guards are activated and isolate the operators from the moving parts and from the filling heads.

Once that the GUARDS SAFETY SWITCHES BYPASS is in position 0, the machine responsible has to remove the activation key from its seat. The green light of the warning light tower is ON.

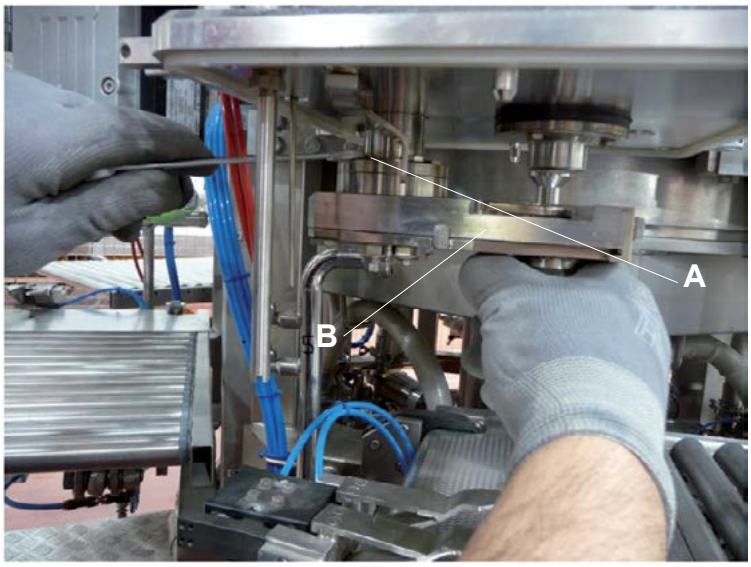
- Position 1: the special maintenance/adjustment mode.

Once that the GUARDS SAFETY SWITCHES BYPASS switch is in position 1, the activation key can NOT be extracted from its seat. The yellow light and the red light of the warning lamp tower are blinking alternatively.

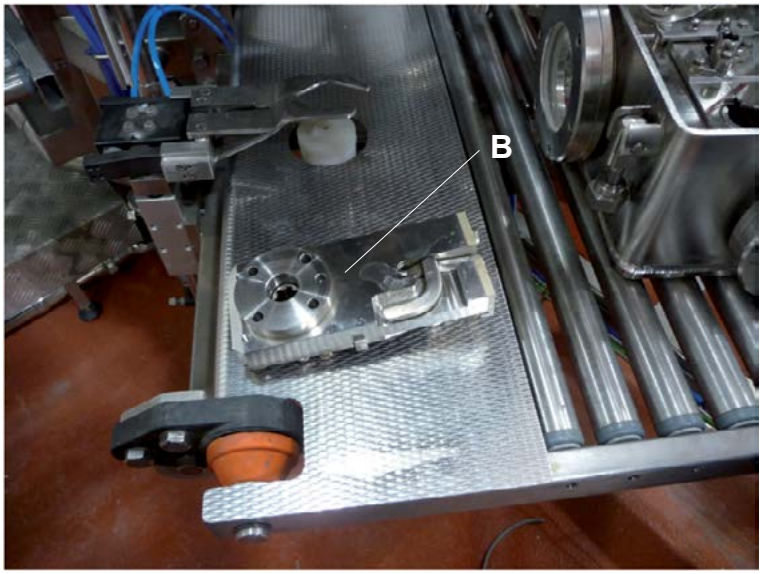
5.9 FORMAT CHANGING

ATTENTION!:

For any operations involving o-ring and gaskets, we remind lubricating these elements with a lubricating grease certified as suitable for use, in the food industry.

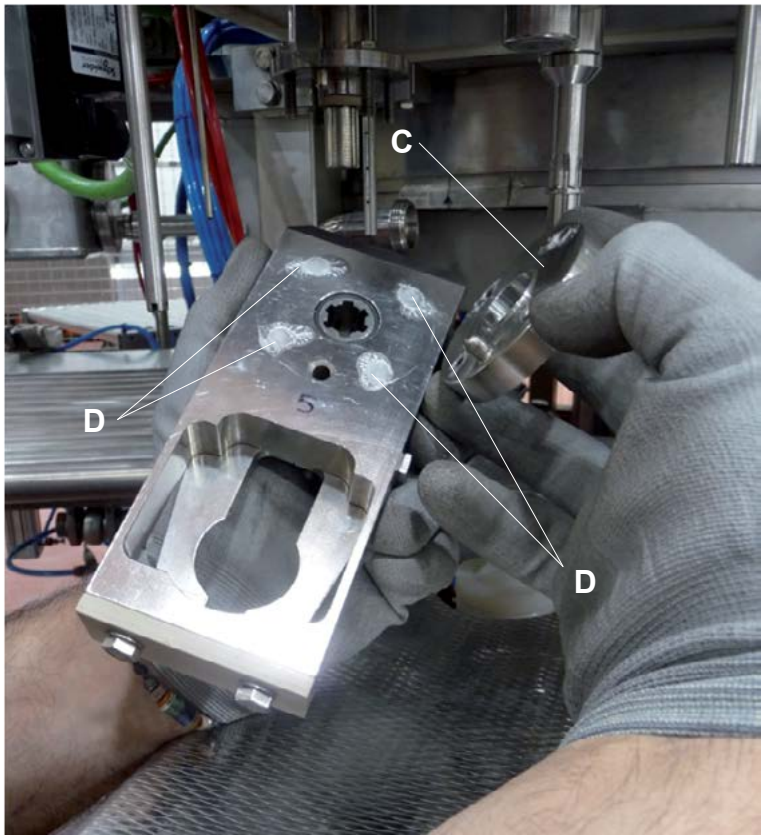


Unscrew the four bolts A which hold the uncapper plate B to the shaft. and extract it.

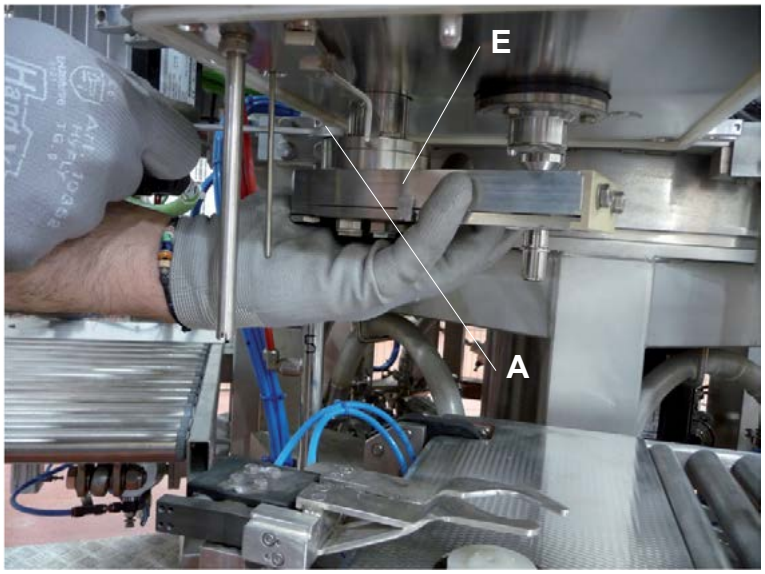


Extract the uncapper plate B.

Remove the spacer C from the old clamping device.



Put some food grade grease in the threads D of the new clamping device and place back the spacer C.



Place the new uncapper E and tighten the four bolts A.

5.10 EMERGENCY STOP

In case of serious danger or failure of the machine, the operation can be immediately halted by pressing the emergency push-buttons.

	**CAUTION:** Adequate free space should be provided in front of the machine under any circumstances in order to allow immediate access to the emergency push-button and any start/stop or setting devices.

	**CAUTION:** Before resuming the machine operation, eliminate the cause which brought to the emergency stop.

	**CAUTION:** By resetting the emergency push-button to its normal status, the machine is not started automatically, but it is enabled to start operating through the normal procedure.

5.11 RESTARTING THE MACHINE AFTER IT HAS STOPPED

To restart the machine after it has stopped, proceed as follows:

Only in the case of an Emergency Stop, reset the red button (turn and lift it).

Only in the case of an Emergency Stop, press the blue CONTROL POWER RESET button.

Open the alarms page on the HMI interface. Identify the alarms and then press the alarm reset button.

Check that the alarms page has been cleared.

On the HMI interface, open the page of the current work phase (before the machine was stopped).

Press the START button on the HMI.

The machine reverts from STOP state to RUNNING state.

5.12 MACHINE STANDSTILL FOR OVER THREE MONTHS

If the machine is expected to remain still for periods longer than three months (for example, when used for seasonal work only), it should be stored in closed premises protected from bad weather, dust and corrosive releases according to the recommendations given previously, including for the electric components.

We recommend strongly that, immediately after the end of production and before the seasonal standstill, a thorough washing of the entire machine and a complete maintenance is performed (see ”6.1 Maintenance”).

THIS PAGE IS INTENTIONALLY LEFT BLANK

6 MAINTENANCE INSTRUCTIONS

ATTENTION!

The information contained in this section is addressed to the following personnel categories:

Mechanical maintenance

Electrical maintenance

ALFA LAVAL technician

6.1 MAINTENANCE

6.1.1 GENERALS

This Section contains the necessary information to maintain your machine in perfect operating conditions.

The steps described are easy to follow and do not require the backup of a qualified technician.

However, Alfa Laval Customer Service will be glad to provide the necessary supplements of information and means to reach the target quickly and effectively.

A careful reading and consulting of the Sections of this Manual are essential to execute a correct maintenance and ensure a good, lasting performance of the machine.

CAUTION:

For the personnel safety, any check and maintenance operation should be carried out with the MACHINE STOPPED and with the isolator switch LOCKED (with the appropriate padlock) in the OPEN POSITION.

For the personnel safety, perform any check and maintenance operation after the closing of utilities manual commands/valves (steam, compressed air, water).

CAUTION:

For the installation and the assembly of elements/parts that the personnel cannot reach from the ground, use ladders/cranes in compliance with local laws of the country where the machine is installed.

CAUTION:

The use, access to internal parts and maintenance of the machine should not be allowed to any personnel not acquainted with the indications of this Manual, which should be made available to as many operators are possible

6.2 ORDINARY MAINTENANCE OPERATIONS

6.2.1 MAINTENANCE OPERATIONS FOR FILLER'S VALVE BODY.

	**ATTENTION!** The valve body has a ceramic coating. The ceramic coating is subject to breaking in the case of crash/shock. It is to be handled with great care. In the case that steam filtering operations are not carried out correctly, the ceramic coating can be scratched or damaged. (See also the documentation enclosed in the manual "9 COMPONENTS AND CERTIFICATES").

	**IMPORTANT!** TAKE NOTE OF THE FOLLOWING INFORMATION IN ORDER CLEAN THE VALVE BODY CORRECTLY

Ceramic is sensitive to chemical corrosion.

A CIP washing cycle of the valve body is therefore recommended following these procedures:

washing cycle with caustic soda:

percentage: 2-4%

temperature: 80°C

washing time: 50 min. maximum

washing cycle with citric acid:

percentage: 0,8-2%

temperature: 55°C

washing time: 30 min. maximum

We recommend to rinse accurately so to remove any trace of detergent.

Do not exceed the indicated washing time.

Use the detergent at the minimum percentage possible.

Avoid sudden temperature changes to the ceramic coated parts.

Other conditions will not be covered by our guarantee and need to be verified by our Technical Department.

6.2.2 RECOMMENDED CLEANING PROCEDURES

Introduction

The exterior surfaces of the HS-LA filler require a dedicated cleaning procedure. In many cases support structures, mechanical features, conveyors, platforms, and other features of the equipment do not have easy access. Those surfaces in the center of the unit will be especially difficult to reach. The construction of the unit suggests cleaning aids such as high pressure wash and other mechanical cleaning application methods should not be used for cleaning exterior surfaces of the equipment due to potential damage to the equipment systems. Also there will be a need for caution of water sensitive equipment systems such as the many servo motors. Many slide points exist which are lightly lubed and cleaning will remove most, if not all, the lubricant in the slides. Practices will need to include lubrication of the slides following cleaning or those doing the cleaning will need to use caution to keep cleaning chemicals away from the lubricated points. The complexity of the materials used in construction and the degree of sensitivity to chemical attack will call for the use of metal and paint safe cleaners. It will be important to ensure that all electric heaters are cool before cleaning. If hot the heat may accelerate corrosion and dry chemicals on the surfaces causing increased difficulty of clean-up.

Cleaning of the exterior of the equipment may be needed under several conditions:

1. At the end of production (generally a daily event)
2. At product change Clean in Place (CIP) cleanings
3. During production, generally as a result of a spill, bag break, or other cause for a need for a “clean-up”
4. Major clean-ups, during system maintenance, plant, or line shut down events

The cleanings performed may have a varying degree of intensity. For example, a bag break with a light soil splash on equipment, may simply call for the impacted surfaces to be rinsed with water, and potentially air dried. Quality control guidelines within the production facility should establish the standards and frequency of cleanings.

Cleaning of the unit will require the internal portions of the equipment to be cleaned using CIP. The CIP cleaning process will clean the inside of pipes, valves and reservoirs as may be plumbed into and in conjunction with the equipment. The equipment is included in the “product circuit”.

CIP cleaning of the internal portions of the equipment to be cleaned may be needed under several conditions:

1. At the end of production (generally a daily event)
2. At product change overs during production
3. If the integrity of the product circuit is compromised generating a need for a clean
4. Major clean-ups, during system maintenance, plant, or line shut down events

We would suggest there would be a physical break between the plant product distribution and the Alfa Laval Filler system. A diverter panel or alternate method should be employed to prevent product being filled on the adjacent line from being pushed past weak or non- functioning valves into the filler. Similar breaks should be employed between production operations and CIP operations.

6.2.2.1 THE PRODUCT CIRCUIT

Recommended cleaning procedure

The cleaning of the product circuit is performed by means of a CIP process divided into the following steps:

- Make necessary CIP connections, lock outs, and product breaks.
- Pre rinse with water.
- Clean with a low foam alkaline detergent or a low foam chlorinated alkaline detergent.
- Intermediate rinse with water.
- Cleaning with a low foam acid detergent.
- Final potable water rinse with water.
- As appropriate or as allowed by local regulations follow the above rinse with a sanitizing or disinfectant rinse.
- Following the sanitizing/disinfectant rinse, depending on local regulations and/or if the food or beverage being processed is taste sensitive, follow the sanitizer/disinfectant rinse with a potable water rinse.
- Depending on local practices perform an air blowout, or plan to dispose of the first beverage/food product through the system, to insure rinse water or sanitizer/disinfectant do not become part of the finished product.

6.2.2.2 THE BAG FEEDER AREA

Recommended cleaning procedure

- Cleaning may be needed under several conditions:
- At the end of production (generally a daily event)
- At food / beverage product change overs
- During production, generally as a result of a spill, bag break, or other cause there may be a need for a quick “clean-up”

Regular clean-up

- The cleaning of the bag feeder is likely performed by manual methods and the process is divided into the following steps:
- Remove any residual bags from the bag feeder and store them in a clean dry area.
- Perform any necessary lock out tag out requirements and protect water sensitive equipment.
- Pre rinse with water.
- Apply a general purpose cleaner or a chlorinated general purpose cleaner to the surfaces to be cleaned, detail as necessary.
- Rinse with fresh water.
- Inspect for performance and re-clean as necessary following the above steps.
- Apply a potable water rinse.

- As required based on the soils encountered, perform an acid cleaning of the exterior surfaces to aid in removal of mineral scales and potential residual protein, rinse with fresh water. Use caution around soft metals, iron and painted surfaces as acids could cause corrosion of non stainless surfaces.

- Rinse the acid cleaning step.

- As appropriate, or as allowed by local regulations, follow the above rinse with a sanitizing or disinfectant rinse.

- Following the sanitizing/disinfectant rinse, depending on local regulations, and/or if the food or beverage being processed is taste sensitive, follow the sanitizer/disinfectant application with a potable water rinse.

- Following the cleaning function, it may be necessary for maintenance to perform any necessary re-lubrication.

Quick clean-up

For quick cleanups during production as a result of a spill or bag break, it may be possible to perform a quick clean-up if the nature of the soil allows and the degree of soiling is not too great. Plant quality control should establish protocols as to when a quick clean-up is acceptable and when a full clean-up is necessary.

- The filler will be stopped and the feed of bags stopped.

- The affected bags will be removed from the feeder

- Unaffected bags should be pulled from the feeder to a point where they will not be impacted by the clean-up.

- As necessary a chemical cleaner should be applied, if a water rinse is not sufficient.

- The bag feeder should be rinsed with fresh water to remove the soils.

- As appropriate, or as allowed by local regulations, follow the above rinse with a sanitizing or disinfectant rinse.

- The bag feeder should be dried. Note if compressed air is used it should be filtered air.

- Reset the bags so that they may be feed by the feeder.

Equipment and tools:

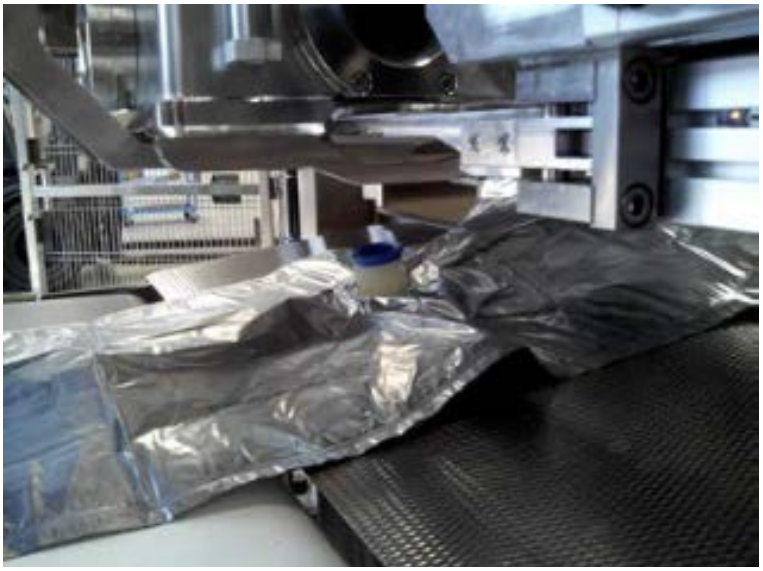
Application of the cleaning solutions may be by bucket and brush, pump up sprayer, or applied with foam applicators, depending on availability within the plant. Detail cleaning requires up close work with small brushes, scrub pads, and similar cleaning tools.

Application of rinse waters should be from in plant water systems using “house” water

pressure and low to moderate volume flows.

For light clean-up needs alcohol wipes could be used for detail applications.

6.2.2.3 THE BAGS EMPTY OR FILLED



Bags should be stored in a clean dry place. Under most conditions there should not be a need for bags to be cleaned. If the integrity of the inside of the bag is sacrificed the bag should be discarded and not used. If the exterior of bags should become soiled dur- ing storage, quality control should make a decision if they should be discarded or if they may be cleaned and saved.

Cleaning of the exterior of the bags may be needed if during production there is a bag break or other spill which may cause soiling of the bag.

If the bag has been filled prior to becoming soiled and prior to being boxed, it may be pos- sible to water rinse the exterior of the bag removing the soil and air dry it, and then return the bag to the line to be boxed. Plant production and quality control should determine if time lost to clean the bag warrants the effort or if quality standards will allow the action.

If the bag is on the bag feeder and moving toward the filler, when due to a bag break, a spill, or for an alternate cause, a bag or bags become soiled the bags may be discarded or cleaned. Plant quality control should establish the protocol to determine which action to follow. If significant bags are involved, and the integrity of the bag has not been violated, they may be cleaned, allowed to air dry, and placed back in service. If the integrity of the bag has been lost they should be discarded.

Recommended cleaning procedure

Chemicals

If lightly soiled, the bags may be rinsed and dried and returned to production, following the standards set by quality control. Alcohol wipes may be used if the soiling is light enough eliminating the need for water and a drying process.

If heavily soiled, the cleaning of the bags is performed by manual methods, and the process is divided into the following steps:

- Pre rinse with water.
- Apply a general purpose cleaner or a chlorinated general purpose cleaner to the surfaces to be cleaned, detail as necessary. Follow quality control directions for water rinse options eliminating the need for a cleaner.
- Rinse with fresh water.
- Inspect for performance and re-clean as necessary following the above steps.
- Apply a potable water rinse with water.
- Depending on plant and local guidelines, it may be necessary to remove the bags from the production area for the cleaning function.
- As appropriate or as allowed by local regulations follow the above rinse with a sanitizing or disinfectant rinse.
- Following the sanitizing/disinfectant rinse, depending on local regulations, follow the sanitizer rinse with a potable water rinse.

6.2.2.4 THE HYDROGEN PEROXIDE SPRAYING NOZZLES AND VENTURI DEVICES

On top of each peroxide heater there is a nozzle that needs to be cleaned if scale is building up.

Recommended cleaning procedure

Note: if having difficulties with peroxide nozzles plugging insure a “spray grade” of per- oxide is used for the application.

For most supplies of peroxide, when cleaning of the nozzles is necessary a soak cleaning in an acidic solution will dissolve most of the soils present.

Consider the following steps:

- Perform any necessary lock out tag out requirements and protect water sensitive equipment.
- Remove the nozzles from the equipment.
- Rinse the nozzles with fresh water.
- Make a solution of acidic cleaner and water in a small plastic bucket or tray.
- Add the nozzles to the solution and allow them to soak.
- Remove the nozzles, rinse with fresh water and detail using a scrub pad as may be necessary. If the nozzle(s) are completely plugged, it may be necessary to push the plug out of the nozzle. Should the acid cleaning not work to expectations, replace the nozzle with a new nozzle and contact your chemical supplier for alternate chemical recommendations to remove the soil.
- If highly soiled it may be necessary to soak the nozzles longer or repeat the process several times.
- Apply a final rinse
- Allow to dry and install the nozzle.

Equipment and tools

Small plastic bucket or tray should be used to soak clean the nozzles. Scrub pads could be used to detail the exterior of the nozzle.

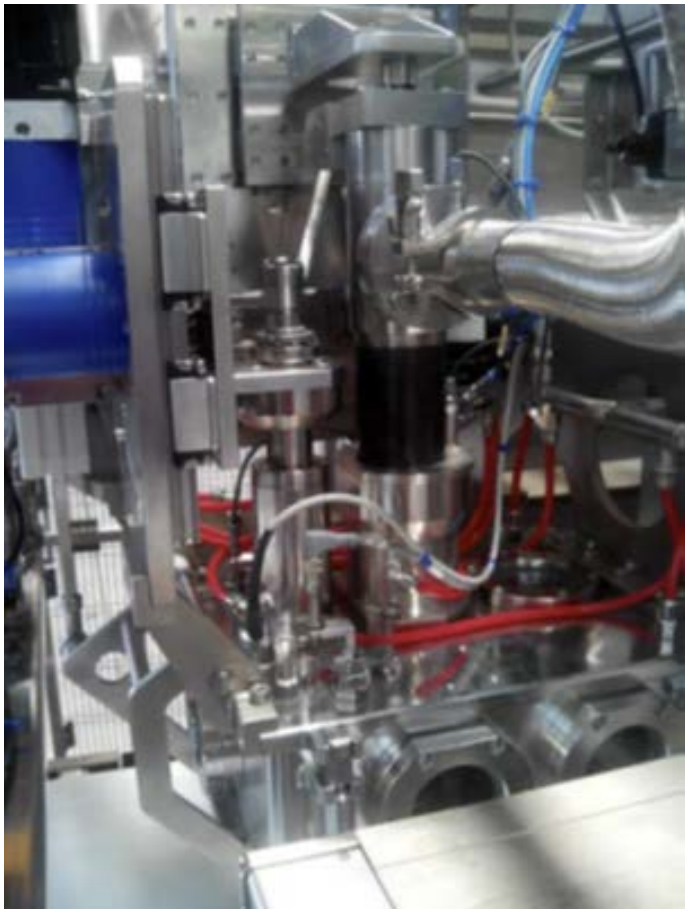
Application of rinse waters should be from in-plant water systems using “house” water pressure and low to moderate volume follows.

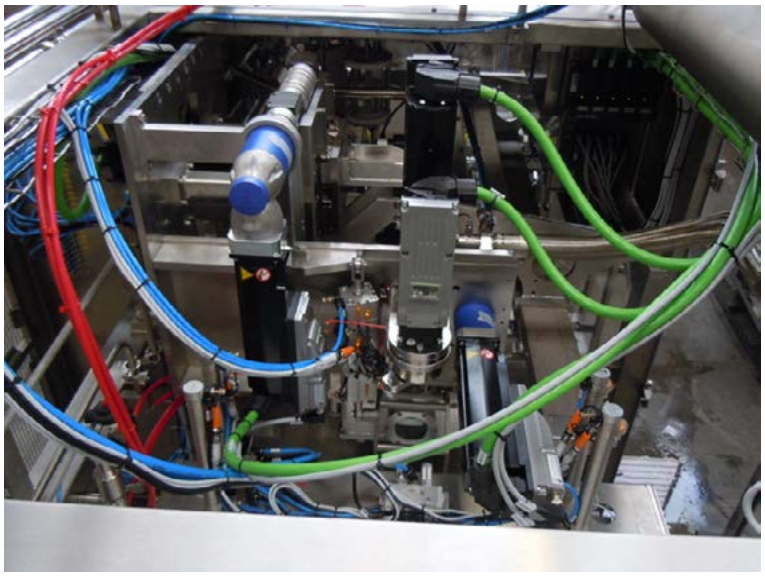
Frequency of cleaning

The nozzles should be inspected on each cleaning cycle and maintenance cycle and if necessary cleaned.

Note: If a “spray grade” of peroxide is used this need should be slight.

6.2.2.5 THE EXTERNAL SIDE OF THE FILLER AND FILLING STATION





Recommended cleaning procedure

The cleaning of the filler and filling stations is likely performed by manual methods and

the process is divided into the following steps:

- Pre rinse with water.
- Perform any necessary lock out tag out requirements and protect water sensitive equipment.
- Ensure the peroxide heaters are cool.
- Using plastic sheeting or other similar materials protect all electronic equipment including servos and wired temperature sensors.
- Pre-clean by physically removing as much soil as possible from the surfaces to be cleaned using wipes, scrub pads, squeegees or similar tools.
- Rinse with fresh water.
- Apply a general purpose cleaner or a chlorinated general purpose cleaner to the surfaces to be cleaned, detail as necessary.
- Rinse with fresh water.
- Inspect for performance and re-clean as necessary following the above steps.
- Apply a potable water rinse.
- As required based on the soils encountered, perform an acid cleaning of the exterior surfaces to aid in removal of mineral scales and potential residual protein, rinse with fresh water. Use caution around soft metals, iron, and painted surfaces as acids could cause corrosion of non stainless surfaces.
- Rinse the acid cleaning step.
- As appropriate or as allowed by local regulations follow the above rinse with a sanitizing or disinfectant rinse.
- Following the sanitizing/disinfectant rinse, depending on local regulations, follow the sanitizer/disinfectant application with a potable water rinse.
- Following the cleaning function, it may be necessary for maintenance to perform any necessary re-lubrication of the equipment.
- For quick clean-up during production as a result of a spill or bag break, it may be possible to perform a quick clean-up if the nature of the soil allows and the degree of soiling is not too great. Plant quality control should establish protocols as to when a quick clean-up is acceptable and when a full clean-up is necessary.

Equipment and tools

Application of the cleaning solutions may be by bucket and brush, pump up sprayer, or applied with foam applicators, depending on availability within the plant. Detail cleaning requires up close work with small brushes, scrub pads, and similar cleaning tools.

Application of rinse waters should be from in-plant water systems using “house” water pressure and low to moderate volume follows.

For light clean-up needs alcohol wipes could be used for detail applications.

Frequency of cleaning

Plant management and quality control should establish a standard as to when cleaning should be performed and the degree of that cleaning. The operators of the equipment should be trained accordingly.

Cleaning may be needed under several conditions:

- At the end of production (generally a daily event)
- At food / beverage product change overs
- During production, generally as a result of a spill, bag break, or other cause there may be a need for a quick “clean-up”

6.2.2.6 THE BAG SEPARATOR SYSTEM

Recommended cleaning procedure

The cleaning of the bag separator system is likely performed by manual methods and the process is divided into the following steps:

- Perform any necessary lock out tag out requirements and protect water sensitive equipment.
- Using plastic sheeting or other similar materials protect all electronic equipment including servos.
- As may be necessary pre-clean by physically removing as much soil as possible from the surfaces to be cleaned using wipes, scrub pads, squeegees or similar tools.
- Rinse with fresh water.

- Apply a general purpose cleaner or a chlorinated general purpose cleaner to the surfaces to be cleaned, detail as necessary.
- Rinse with fresh water.
- Inspect for performance and re-clean as necessary following the above steps.
- Apply a potable water rinse.
- As required based on the soils encountered, perform an acid cleaning of the exterior surfaces to aid in removal of mineral scales and potential residual protein, rinse with fresh water. Use caution around soft metals, iron and painted surfaces as acids could cause corrosion of non stainless surfaces.
- Rinse the acid cleaning step.
- As appropriate, or as allowed by local regulations, follow the above rinse with a sanitizing or disinfectant rinse.
- Following the sanitizing/disinfectant rinse, depending on local regulations, follow the sanitizer/disinfectant application with a potable water rinse.
- Following the cleaning function, it may be necessary for maintenance to lubricate slides and other points, as may be necessary.

For quick clean-up during production as a result of a spill or bag break, it may be possible to perform a quick clean-up, if the nature of the soil allows, and the degree of soiling is not too great. Plant quality control should establish protocols as to when a quick clean-up is acceptable and when a full clean-up is necessary.

Equipment and tools

Application of the cleaning solutions may be by bucket and brush, pump up sprayer, or applied with foam applicators, depending on availability with in the plant. Detail cleaning requires up close work with small brushes, scrub pads, and similar cleaning tools.

Application of rinse waters should be from in plant water systems using “house” water pressure and low to moderate volume follows.

For light clean-up needs alcohol wipes could be used for detail applications.

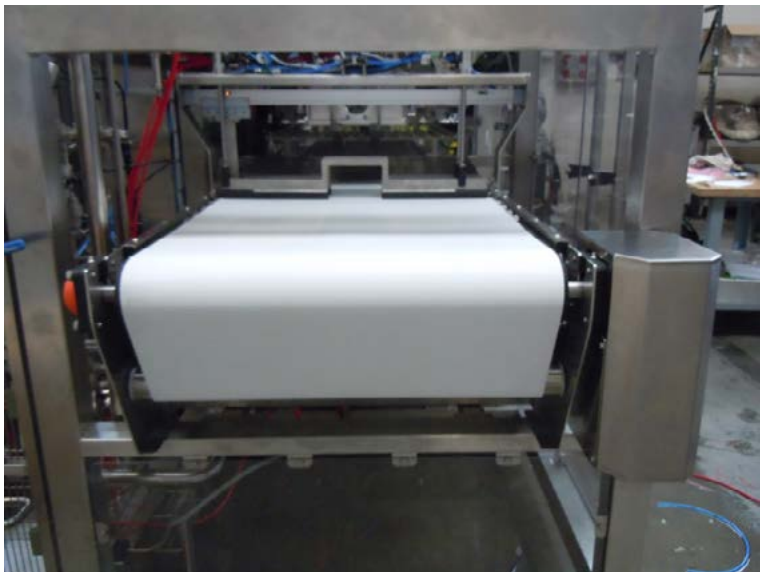
Frequency of cleaning

Plant management and quality control should establish a standard as to when cleaning should be performed and the degree of that cleaning. The operators of the equipment should be trained accordingly.

Cleaning may be needed under several conditions:

- At the end of production (generally a daily event)
- At food / beverage product change overs
- During production, generally as a result of a spill, bag break, or other cause calls for a quick “clean-up”

6.2.2.7 THE EXIT CONVEYOR



Recommended cleaning procedure

The cleaning of the exit conveyor is likely performed by manual methods and the process is divided into the following steps:

- Remove any packaging materials and finished packaged product from the area and protect them from the cleaning process.
- Perform any necessary lock out tag out requirements and protect water sensitive equipment.
- As may be necessary pre-clean by physically removing as much soil as possible from the surfaces to be cleaned using wipes, scrub pads, squeegees or similar tools.
- Rinse with fresh water.
- Apply a general purpose cleaner or a chlorinated general purpose cleaner to the surfaces to be cleaned, detail as necessary.

- Rinse with fresh water.
- Inspect for performance and re-clean as necessary following the above steps.
- Apply a potable water rinse.
- As required based on the soils encountered, perform an acid cleaning of the exterior surfaces to aid in removal of mineral scales and potential residual protein, rinse with fresh water. Use caution around soft metals, iron, and painted surfaces as acids could cause corrosion of non stainless surfaces.
- Rinse the acid cleaning step.
- As appropriate or as allowed by local regulations follow the above rinse with a sanitizing or disinfectant rinse.
- Following the sanitizing/disinfectant rinse, depending on local, follow the sanitizer/ disinfectant application with a potable water rinse.
- Following the cleaning function, it may be necessary for maintenance to lubricate slides and other points, as may be necessary.
- For quick clean-up during production as a result of a spill or bag break, it may be possible to perform a quick clean-up if the nature of the soil allows and the degree of soiling is not too great. Plant quality control should establish protocols as to when a quick clean-up is acceptable and when a full clean-up is necessary.

Equipment and tools

Application of the cleaning solutions may be by bucket and brush, pump up sprayer, or applied with foam applicators, depending on availability with in the plant. Detail cleaning requires up close work with small brushes, scrub pads, and similar cleaning tools.

Application of rinse waters should be from in-plant water systems using “house” water pressure and low to moderate volume follows.

For light clean-up needs alcohol wipes could be used for detail applications.

Frequency of cleaning

Plant management and quality control should establish a standard as to when cleaning should be performed and the degree of that cleaning. The operators of the equipment should be trained accordingly.

Cleaning may be needed under several conditions:

- At the end of production (generally a daily event)
- At food / beverage product change overs
- During production, generally as a result of a spill, bag break, or other cause calls for a quick “clean-up”

6.2.2.8 EXTERIORS OF CIP RETURN TANK, ASEPTIC HOLDING TANK, LINES, VALVES, AND OTHER ASSOCIATED STRUCTURES (IF INSTALLED)

Recommended cleaning procedure

The cleaning of the CIP return tank, aseptic holding tank, lines valves, and other associated structures is likely performed by manual methods and the process is divided into the following steps:

- Perform any necessary lock out tag out requirements and protect water sensitive equipment.
- As may be necessary pre-clean by physically removing as much soil as possible from the surfaces to be cleaned using wipes, scrub pads, squeegees, or similar tools.
- Rinse with fresh water.
- Apply a general purpose cleaner or a chlorinated general purpose cleaner to the surfaces to be cleaned, detail as necessary.
- Rinse with fresh water.
- Inspect for performance and re-clean as necessary following the above steps.
- Apply a potable water rinse.
- As required based on the soils encountered, perform an acid cleaning of the exterior surfaces to aid in removal of mineral scales and potential residual protein, rinse with fresh water. Use caution around soft metals, iron and painted surfaces as acids could cause corrosion of non stainless surfaces.
- Rinse the acid cleaning step.
- As appropriate or as allowed by local regulations follow the above rinse with a sanitizing or disinfectant rinse.
- Following the sanitizing/disinfectant rinse, depending on local regulations, follow the sanitizer/disinfectant application with a potable water rinse.

Equipment and tools

Application of the cleaning solutions may be by bucket and brush, pump up sprayer, or applied with foam applicators, depending on availability with-in the plant. Detail cleaning requires up close work with small brushes, scrub pads, and similar cleaning tools.

Application of rinse waters should be from in plant water systems using “house” water pressure and low to moderate volume follows.

For light clean-up needs alcohol wipes could be used for detail applications.

Frequency of cleaning

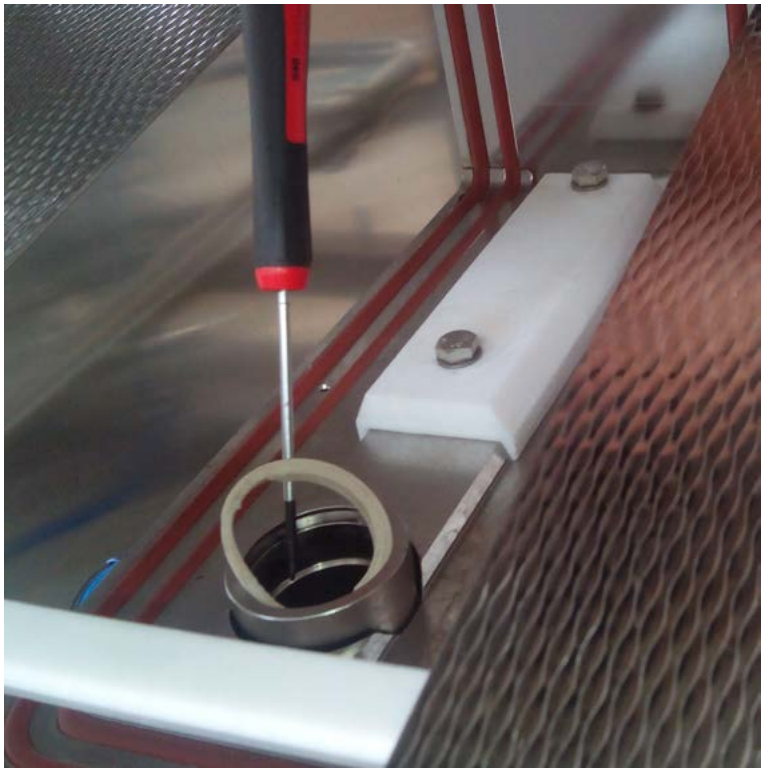
Plant management and quality control should establish a standard as to when cleaning should be performed and the degree of that cleaning. The operators of the equipment should be trained accordingly.

Cleaning may be needed under several conditions:

- At the end of production (generally a daily event)
- At food / beverage product change overs
- During production, generally as a result of a spill, bag break, or other cause calls for a quick “clean-up”

6.2.3 MAINTENANCE OPERATIONS FOR CIP / SIP PLATE GASKET

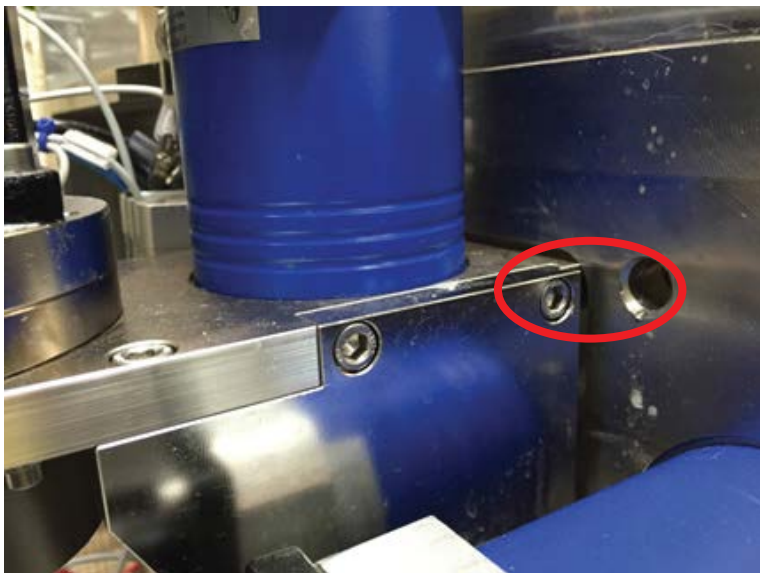
Procedure to replace the CIP / SIP gasket



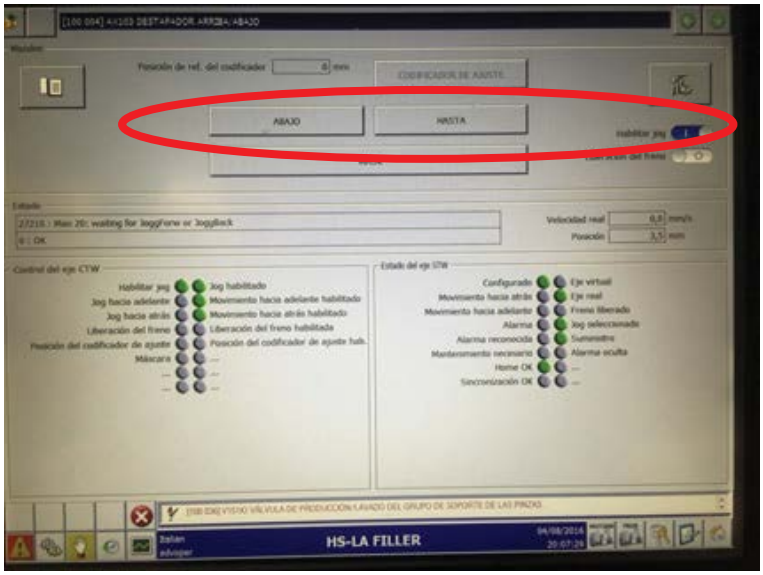
	**ATTENTION!** For this operation use protective gloves Use a thin screwdriver to help the removing of the gasket. Manually insert the gasket in position.

6.2.4 AX103 – DECAPPER CLAMP LIFT

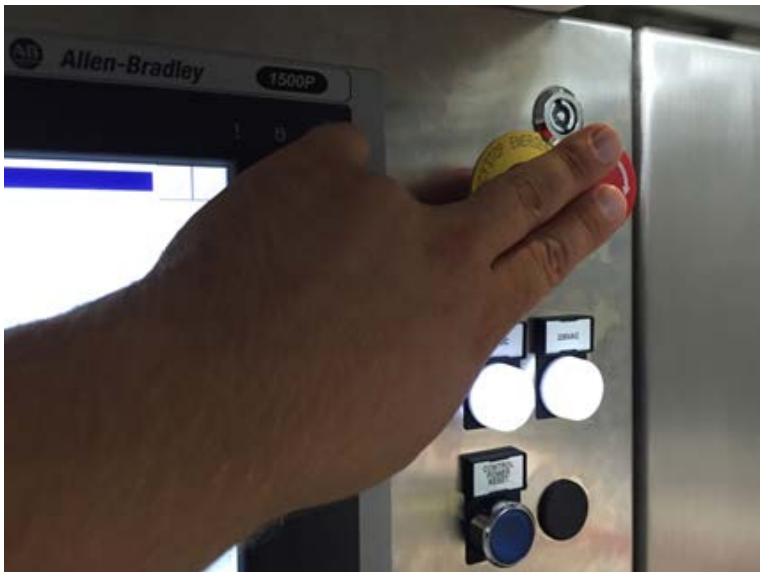
The zero position of the AX103 servo-drive is all way up, when the plates shown in the pictures match.



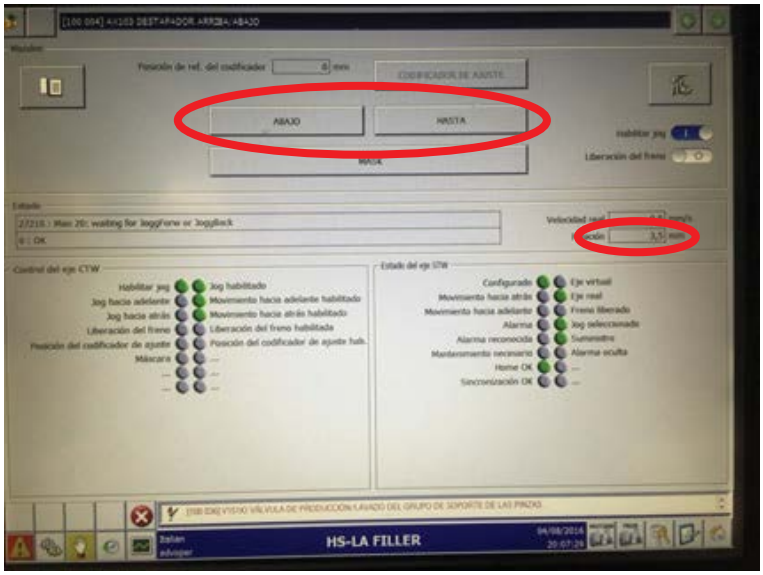
In order to take the axis in the right position, play with the jog function until the plate reaches the correct position.



Once the position is reached, push the e-stop button.

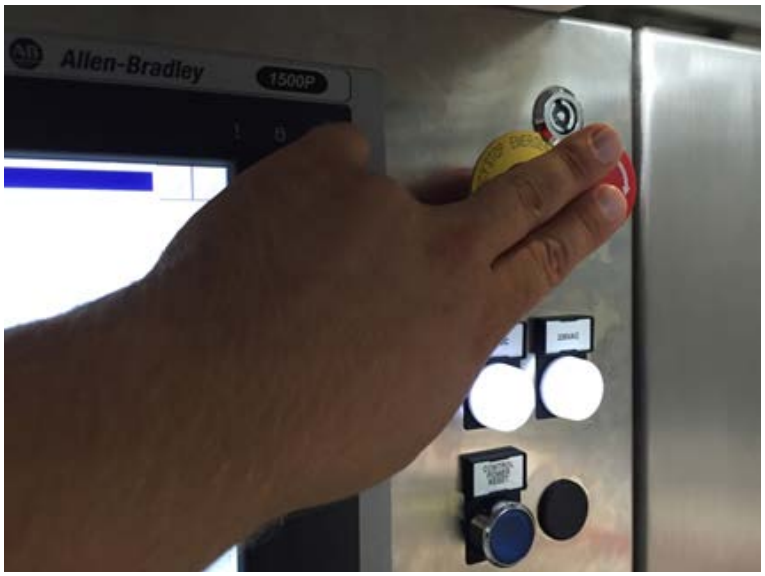


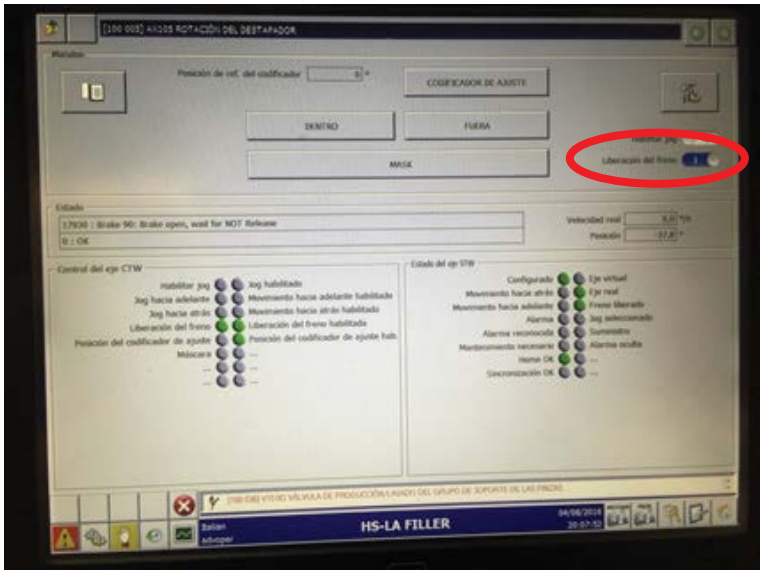
Then push the SET POSITION ENCODER button. If the operation is successful, the POSITION field will show 0. Default value is 0.

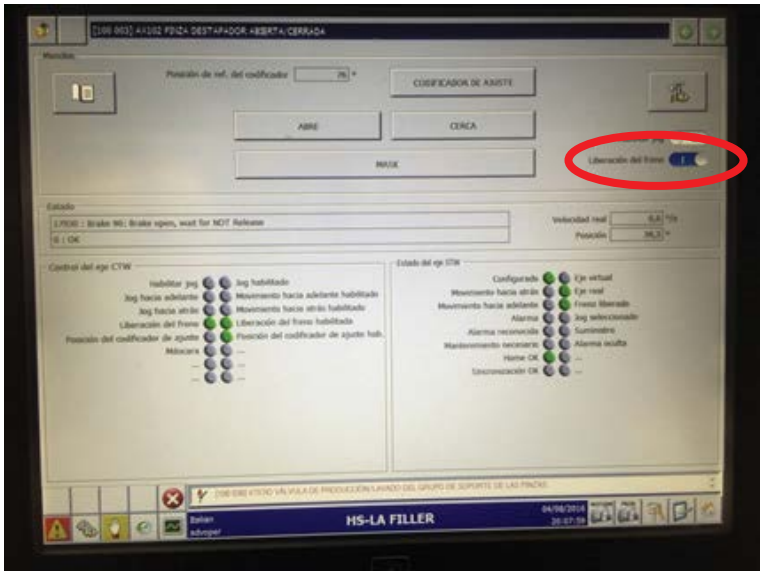


6.2.5 AX102 AND AX105 – DECAPPER CLAMP ROTATION AND CLOUSURE

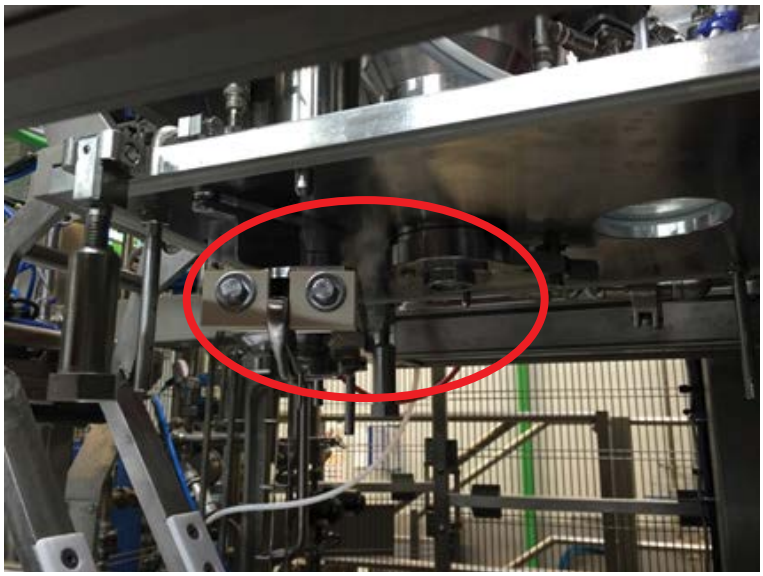
Push the e-stop button, then release the brakes of the AX102 and AX105 servo-motors.



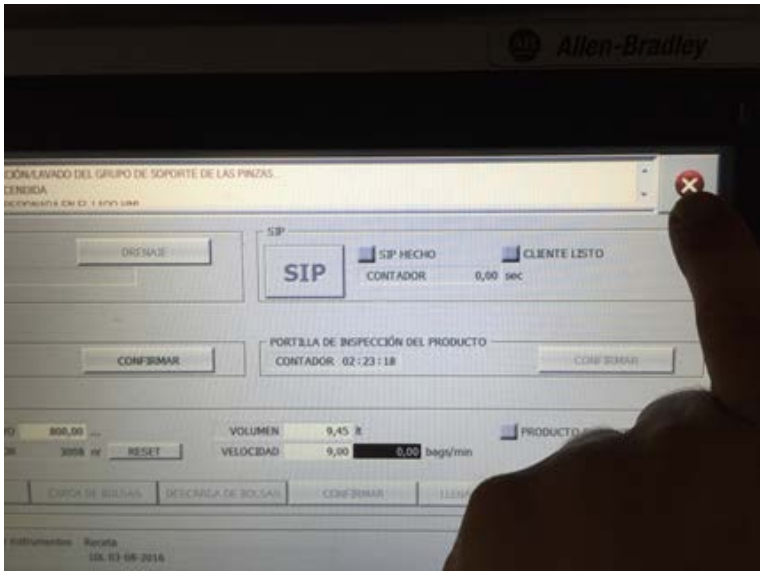

HS-LA FILLER


HS-LA FILLER

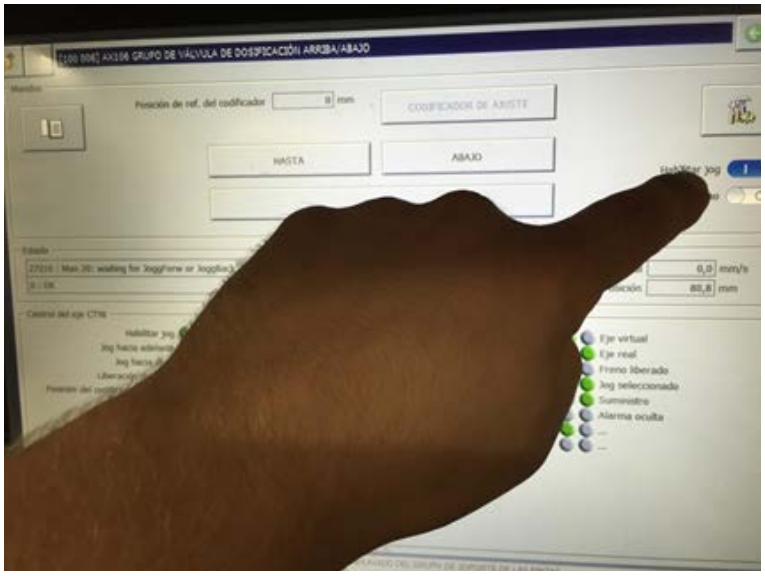
Manually rotate the decapper clamp so that the filling valve has room to go downwards freely. Do not over-rotate the decapper and check the upper lever. There must be room for the valve to move freely with no interference with the levers.

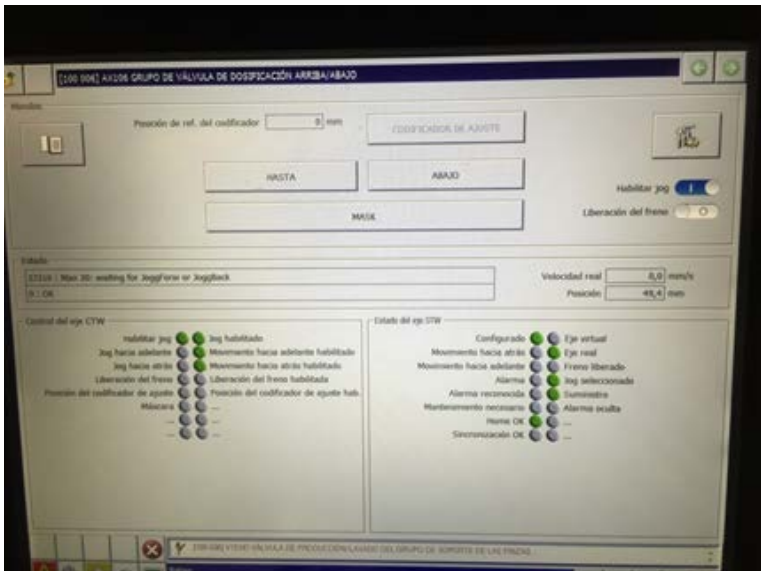


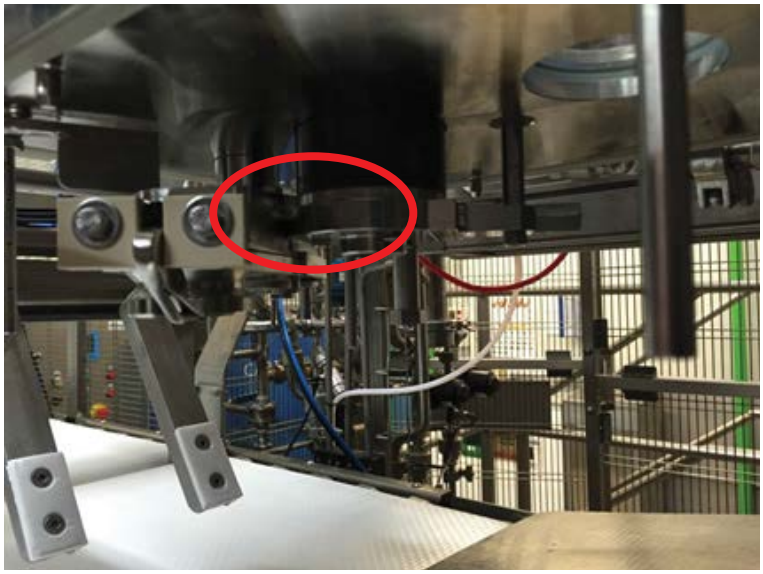
Reset the motion system by pushing the blue button and clearing the alarms.



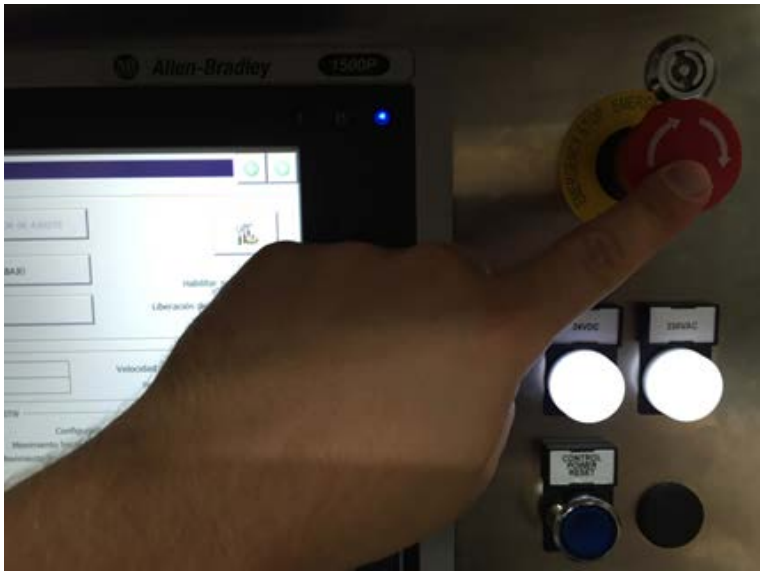
Operating with the JOG function of the AX103 and AX106 servodrives, take the AX103 axis to a position between 3 and 6. Then lower the AX106 axis to a position as shown in the picture, where the outer side of the valve is about at the middle of the decapper clamp plate height.

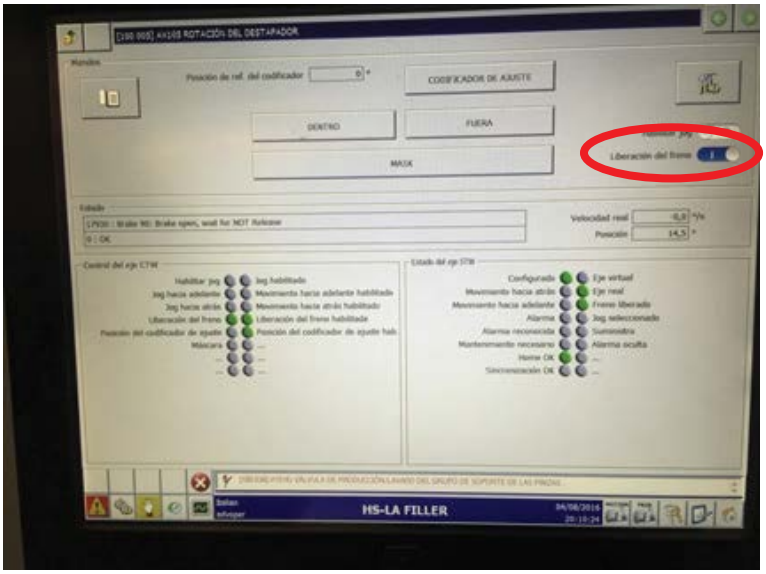


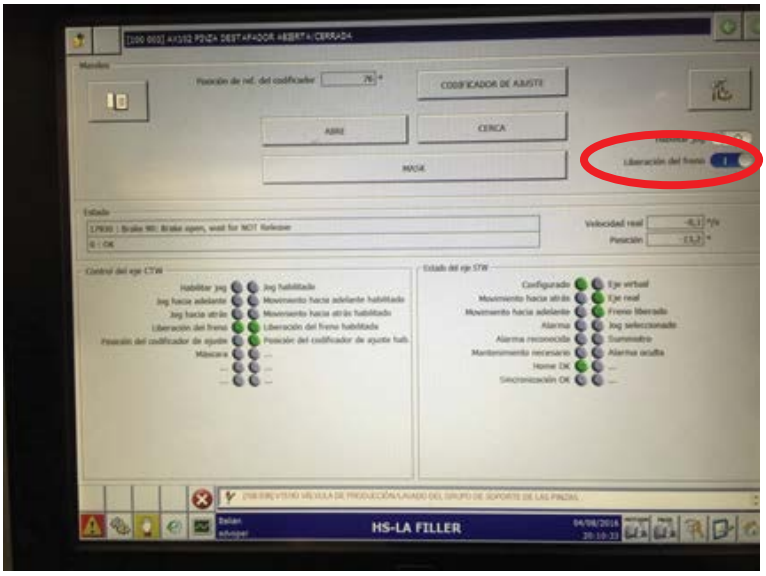




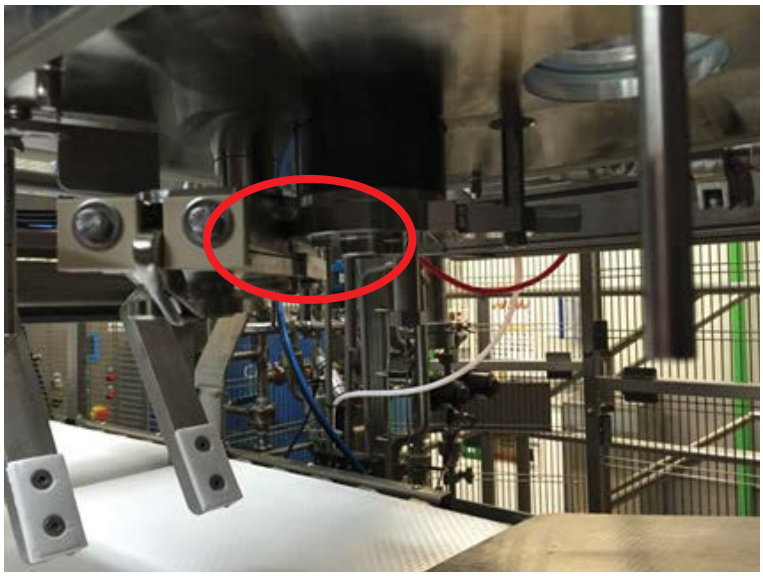
Push the e-stop and release the AX102 and AX105 brakes.

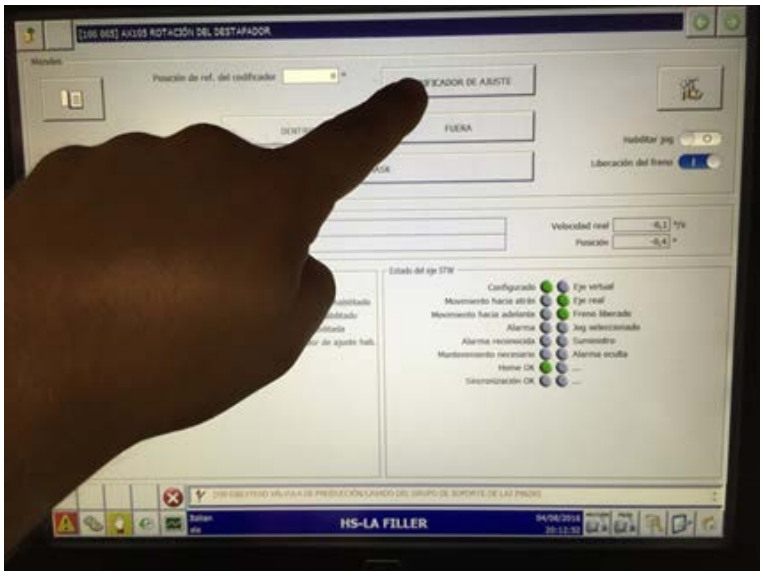



[100 005] AX105 ROTACIÓN DEL DESTAPADOR
CODIFICADOR DE AJUSTE
DENTRO
FUERA
MAX
Liberación del freno
HS-LA FILLER

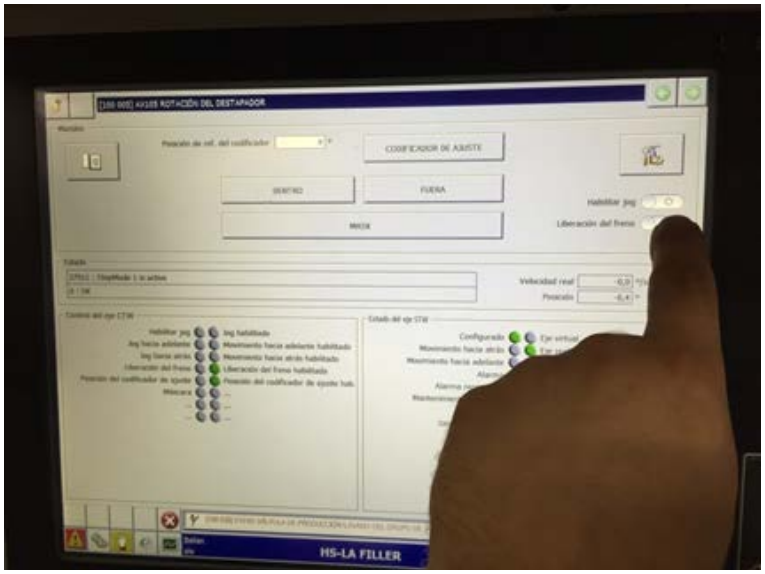

CODIFICADOR DE AJUSTE
CERCA
MAX
Liberación del freno
HS-LA FILLER

Rotate the AX105 axis until the decapper plate hits the filling valve. While still holding this position, push the SET POSITION ENCODER button of the AX105 axis. If the operation is successful, the POSITION field will show 0. Default value is 0.

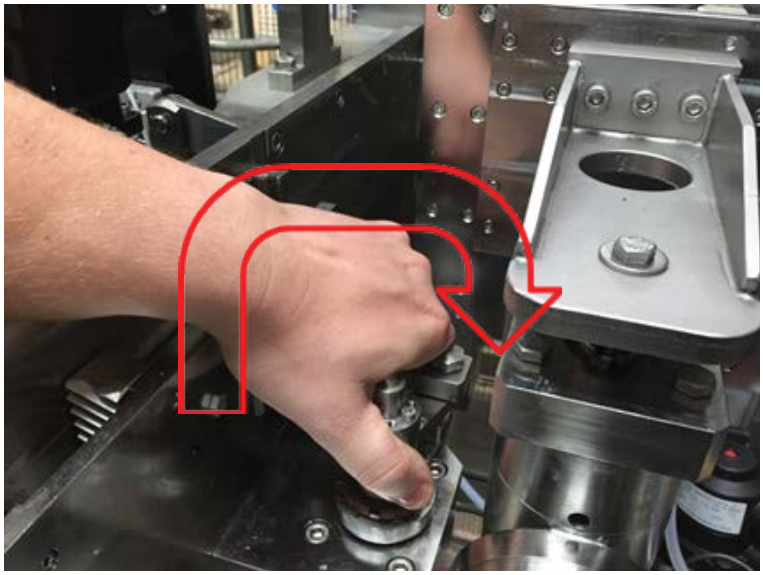


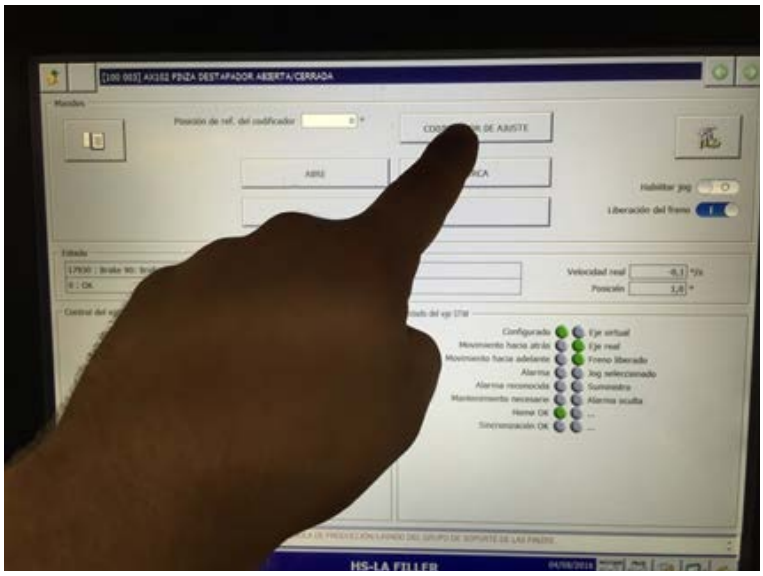


Once the zero position is set, keep holding the clamp in place and lock the brake of the AX105 axis.



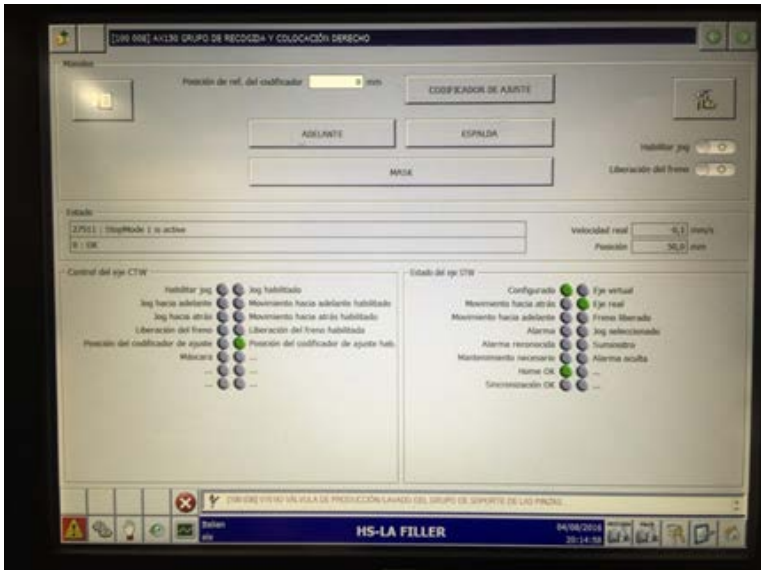
Close the clamps by turning the upper lever clockwise. While applying a light force to keep the clamp closed, push the SET ENCODER POSITION button. Default value is 0.

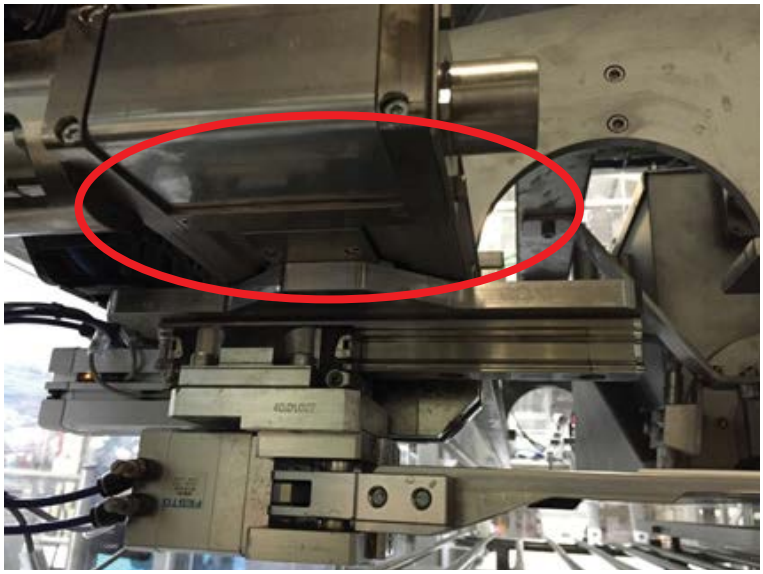


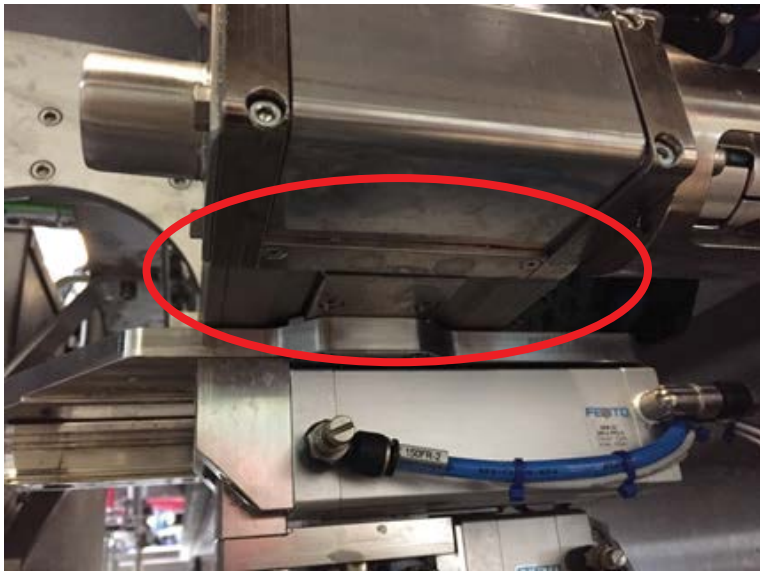

[100 003] AX102 PINZA DESTAPADOR ABIERTA/CERRADA
Posición de ref. del codificador
ABRE
Habilitar jog
Liberación del freno
Velocidad real
Posición
Configurado
Eje virtual
Movimiento hacia atrás
Eje real
Movimiento hacia adelante
Freno liberado
Alarma
Jog seleccionado
Alarma reconocida
Suministro
Mantenimiento necesario
Alarma oculta
Home OK
Sincronización OK
HS-LA FILLER

6.2.6 AX150 AND AX151 – BAG LOADER CLAMPS

Push the e-stop and manually take both clamps all way backwards until they reach the mechanical stop. Then set the position with the SET POSITION ENCODER button. Default value is 0 for both servo-drives.

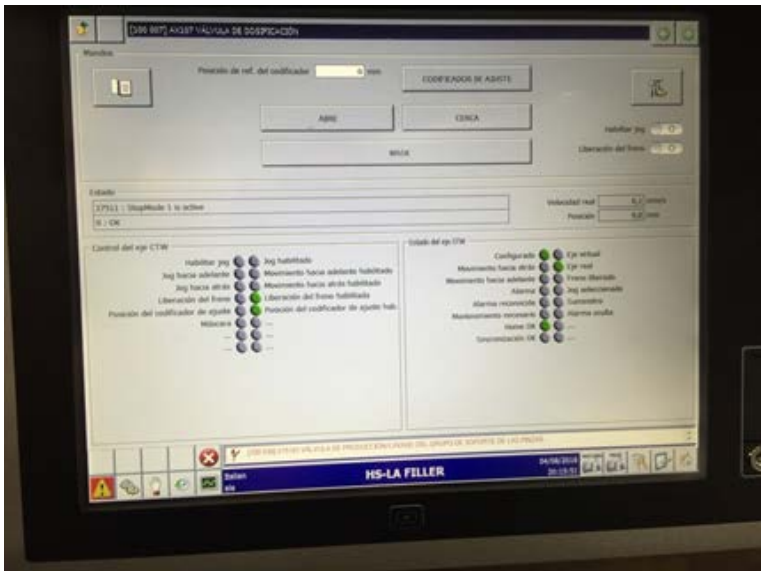




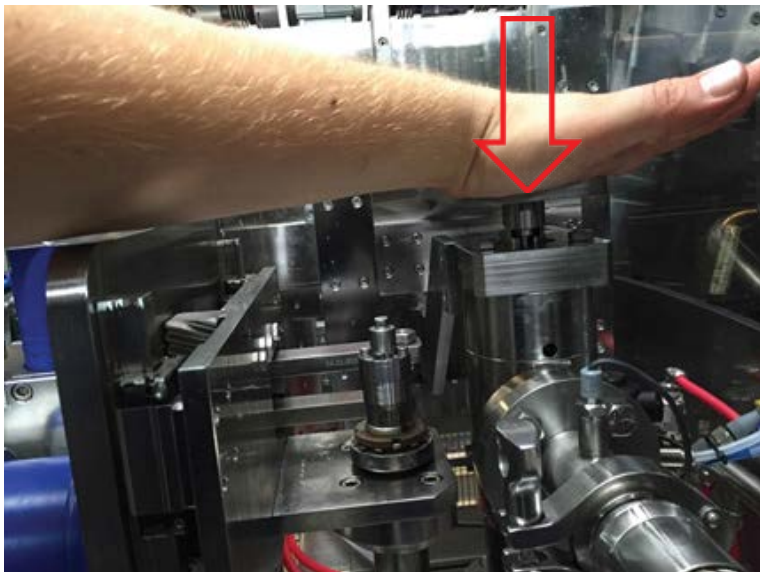

FESTO

6.2.7 AX107 – FILLING VALVE STEM

Push the e-stop button and release the brake.



Push downwards the stem by applying force on top of the actuator and push the SET ENCODER POSITION button, then lock the brake.



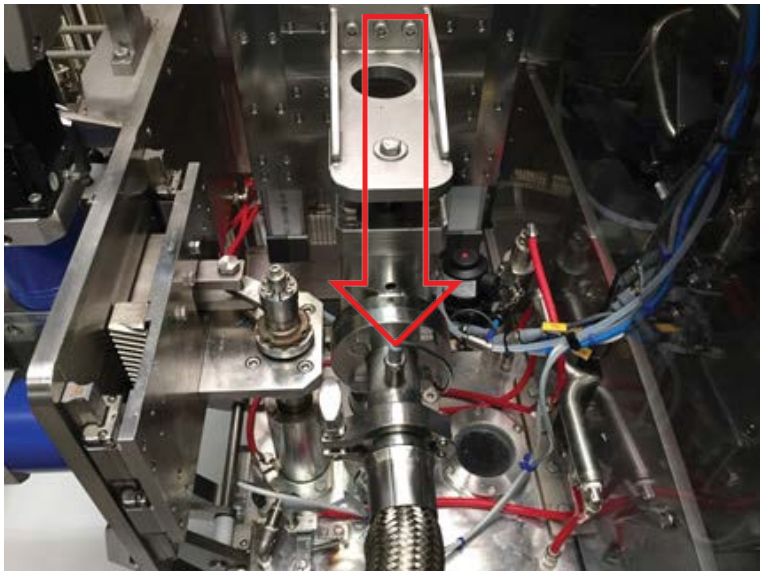
6.2.8 AX106 – FILLING VALVE LIFT

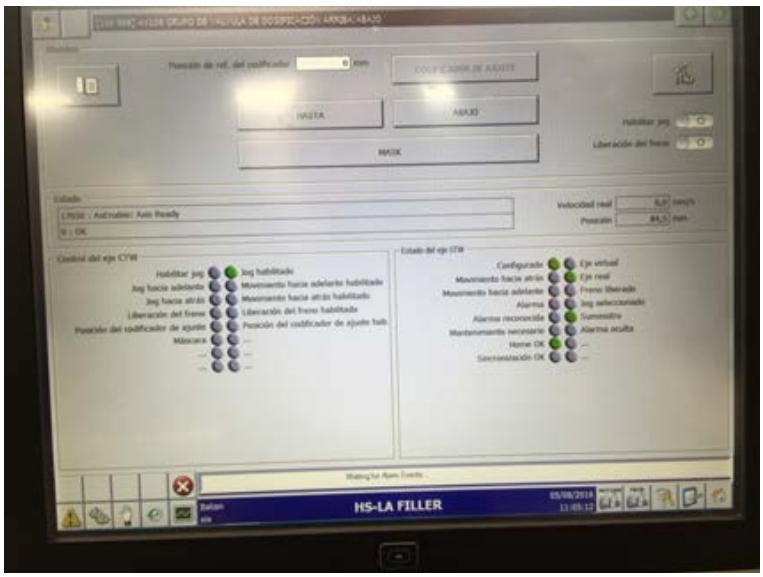
Take the AX102 and AX105 servo-drives off center in order to let the valve move freely up and down, as described in the AX102/AX105 zero position set section.

Playing with the jog function take the AX106 axis to a low position so that it is close to the bottom of the filling head.

Push the e-stop and release the brake.

Push downwards the filling valve by applying force on top of the actuator and push the SET ENCODER POSITION button, then lock the brake.





6.2.9 ORDINARY MAINTENANCE TABLE

CAUTION:

Strictly follow the instructions and frequency checks on the components described below in order to maintain the efficiency of the machine.

Components by third parts suppliers	Frequency
HANDBOOK FOR CONVEYOR BELT Le=700 W=1080 TFP modello MNA000166	**For the maintenance operations frequency, see the attached manual of the specific equipment**
HANDBOOK FOR BALL VALVE SPIRAX-SARCO model M10S	
HANDBOOK FOR BUTTERFLY VALVE ALFA LAVAL model LKB-2	
HANDBOOK FOR PNEUMATIC MEMBRANE VALVE GEMU model 605	
HANDBOOK FOR PNEUMATIC MEMBRANE VALVE GEMU model 650	
HANDBOOK FOR PNEUMATIC VALVE GEMU model 550	
HANDBOOK FOR DIAPHRAGM VALVE GEMU model 625	
HANDBOOK FOR SAFETY VALVE NUOVA GENERAL INSTRUMENTS model G14	
HANDBOOK FOR PRESSURE REDUCING VALVE SPIRAX SARCO model SRV2	
HANDBOOK FOR STRAINER SPIRAX SARCO model Fig 1..16L	
HANDBOOK FOR STERILE FILTER DONALDSON model SRFN5/15-05	
HANDBOOK FOR STEAM TRAPS TLV model LV21	
HANDBOOK FOR MASSIC FLOW METER E+H model PROMAS83	
HANDBOOK FOR SIGNAL CONDITIONING INSTRUMENT VEGA model VEGATOR 132	
HANDBOOK FOR PRESSURE SWITCHES DANFOSS model ISG231-031	
HANDBOOK FOR CENTRIFUGAL PUMP ALFA LAVAL model SOLID C-01	
HANDBOOK FOR ELECTRIC MOTORS WEG	
HANDBOOK FOR MEMBRANE PNEUMATIC PUMP SMC model PB1013	
HABDBOOK FOR GEARHEAD WITTENSTEIN model LK	
HANDBOOK FOR GENERATION WITTENSTEIN model LP	
HANDBOOK FOR BALL RAIL SYSTEMS REXROT	
HANDBOOK FOR BOURDON TUBE PRESSURE GAUGE model MGS18	

Nr. Bags Filled Or Time Passed	Type Of Intervention	Component
EVERY HOUR	Correct checking cap closure	
EVERY DAY	Check for steam loss.	Gaskets.
	Check that there are no cuts or abrasions.	Flexible pipelines.
	Temperature control >0<200 °C.	
EVERY 1.000 BAGS	Check alignments of filling head movements. Adjustment if necessary.	
	Check tension and regulation.	Conveyor chains.
EVERY 5.000 BAGS	Check alignments of automatic feeder movements. Adjustment if necessary.	
EVERY 10.000 BAGS	Check for steam loss.	Product valves Alfa Laval.
	Check membrane.	Valves.
	Check for steam loss.	Product valves.
	Check.	Compressed air filter.
	Control and cleaning when the lower pressure of the filtering element is lower than the inlet pressure.	Steam filter.
	Check for loss of air.	Pneumatic actuator fittings.
	Check efficiency of cylinder and pneumatic valves.	Pneumatic actuators.
	Check.	See the spare part tables for the specific components
EVERY 20.000 BAGS	Check.	See the spare part tables for the specific components
EVERY 50.000 BAGS OR YEARLY	Replace (or each time are dismounted).	Uncapper gaskets.
	Replace (or each time are dismounted).	Filling valve gaskets.
	Replace gaskets and bearings (or before if necessary).	Articulated joints.
	Replace gasket (or before if necessary).	Product valves Alfa Laval.
	Replace membrane (or before if necessary).	Valves.
	Replace gasket (or before if necessary).	Product valves.
	Replace gaskets filtering element and filter container .	Steam filter.
EVERY 50.000 BAGS	Replace (or before if necessary).	See the spare part tables for the specific components

EVERY 100.000 BAGS	Replace (or before if necessary).	Conveyor chains
	Replace (or before if necessary).	See the spare part tables for the specific components
EVERY 200.000 BAGS	Replace (or before if necessary).	Pneumatic cylinder gaskets.
EVERY 100 STERILIZATIONS OR ONE YEAR	Replace.	Sterile air/nitrogen filters.
EVERY 12 MONTHS	Verify the measurements of temperature and pressure (where present) with the help of a certified instrument.	Temperature probe PT100. Pressure gauge.
EVERY 24 MONTHS	Replace	Flexible product pipe any model (if present)
	Replace	See the spare part tables for the specific components

For the ordinary maintenance of the components see legend of the colors:

CHECK EVERY 10.000 BAGS

CHECK EVERY 20.000 BAGS

REPLACE EVERY 50.000 (OR BEFORE IF NECESSARY)

REPLACE EVERY 100.000 (OR BEFORE IF NECESSARY)

REPLACE EVERY 24 MONTHS

CHECK EVERY 10.000 BAGS and REPLACE EVERY 50.000 (OR BEFORE IF NECESSARY)

CHECK EVERY 20.000 BAGS and REPLACE EVERY 50.000 (OR BEFORE IF NECESSARY)

CHECK EVERY 20.000 BAGS and REPLACE EVERY 100.000 (OR BEFORE IF NECESSARY)

THIRD PARTY (see the correspondent manuals)

See paragraph “7.2 Spare Parts Table”

6.3 NOT-ORDINARY MAINTENANCE

6.3.1 MOBILE HEAD MOTORS REPLACEMENT

The mobile head motors of the filling unit are:

E. Rotation uncapper motor

F. Lifting uncapper motor.

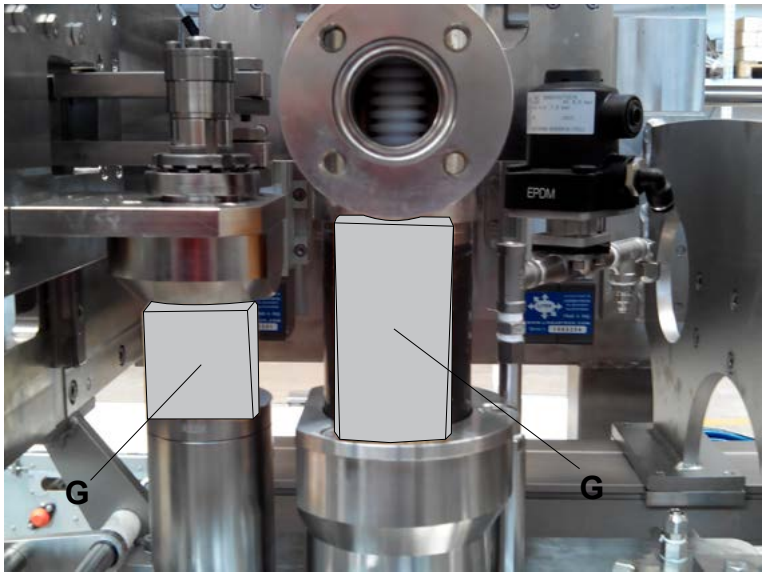
G. Opening/Closing uncapper clamp motor.

H. Opening/Closing shutter motor.

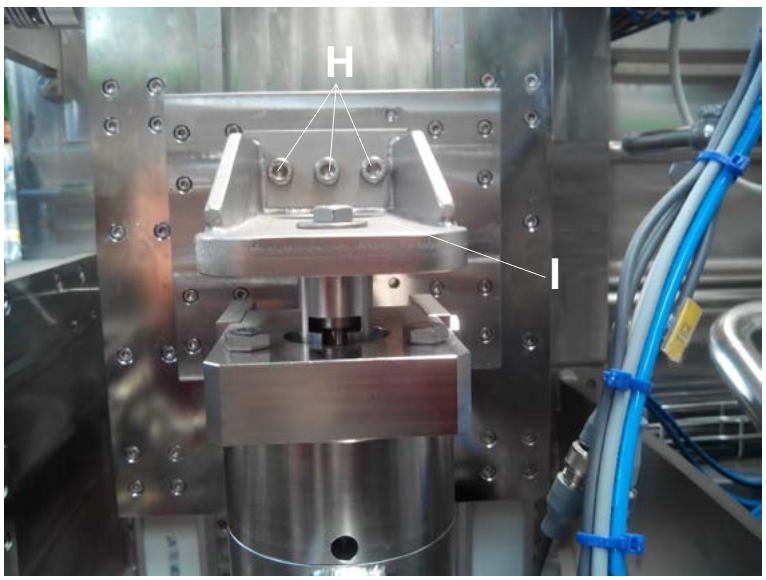
I. Lifting valve motor.

CAUTION:

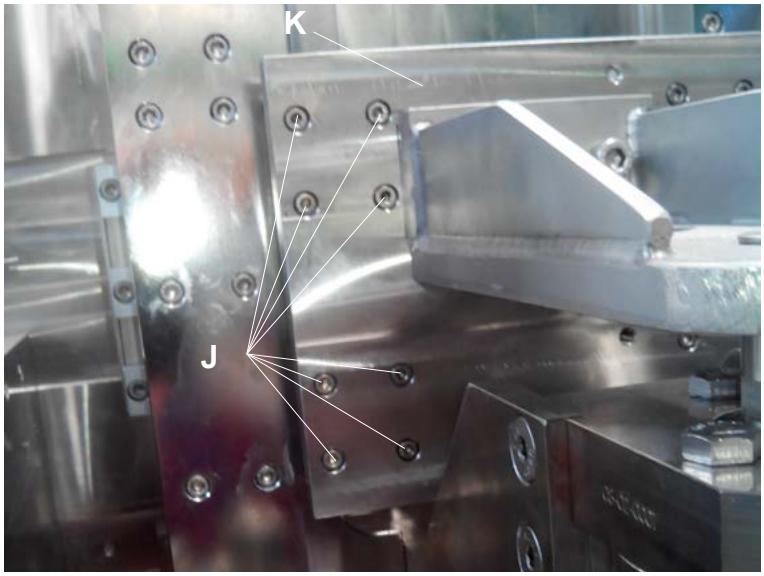
All motors have integrated brakes. Press one of the emergency buttons in order to run the emergency mode and unlock the brakes of the motors.



1. During the maintenance operation, always use supports G (suitable for aseptic environment) for the filling head, in order to avoid damages for the machine and the operators, due to the accidental fall of the filling head.



2. Remove the fixing screws H in order to free the filling head holder I.

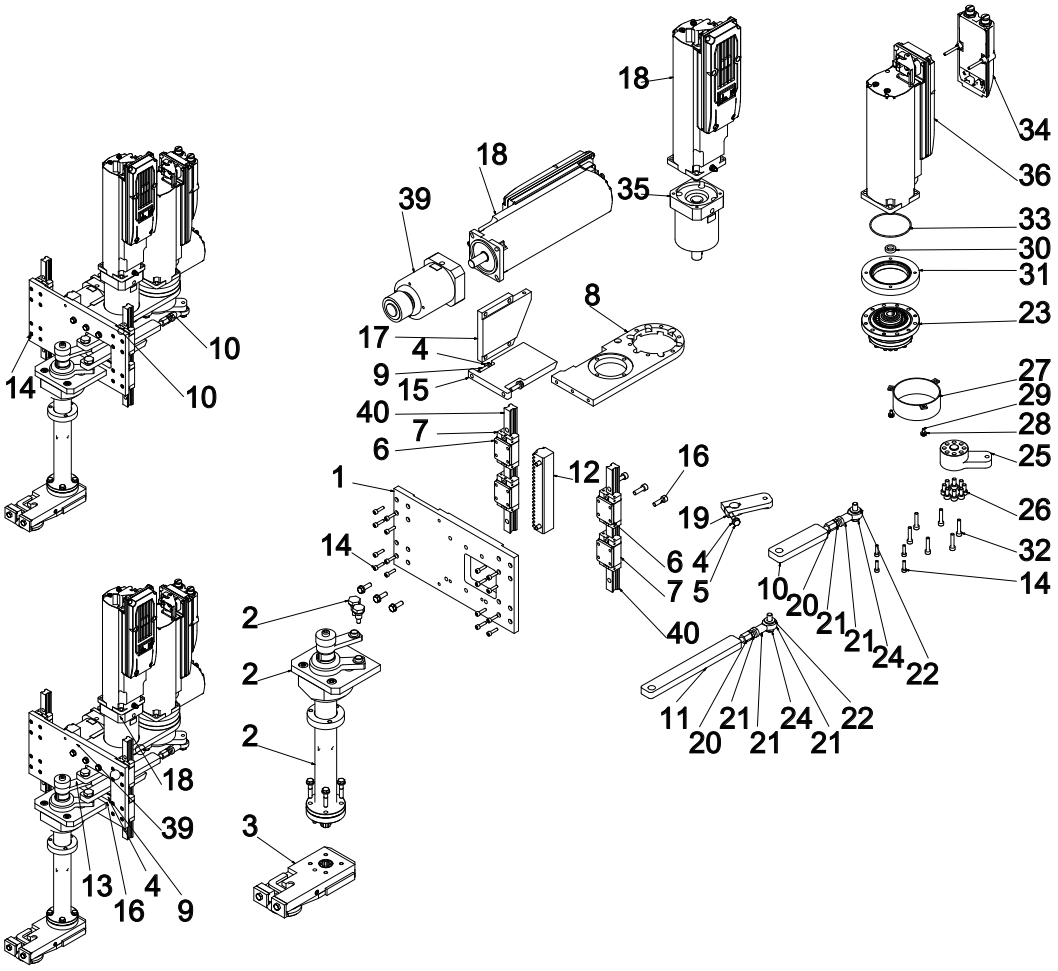


3. Remove the fixing screws J on both sides in order to free the main plate holder K.

CAUTION:

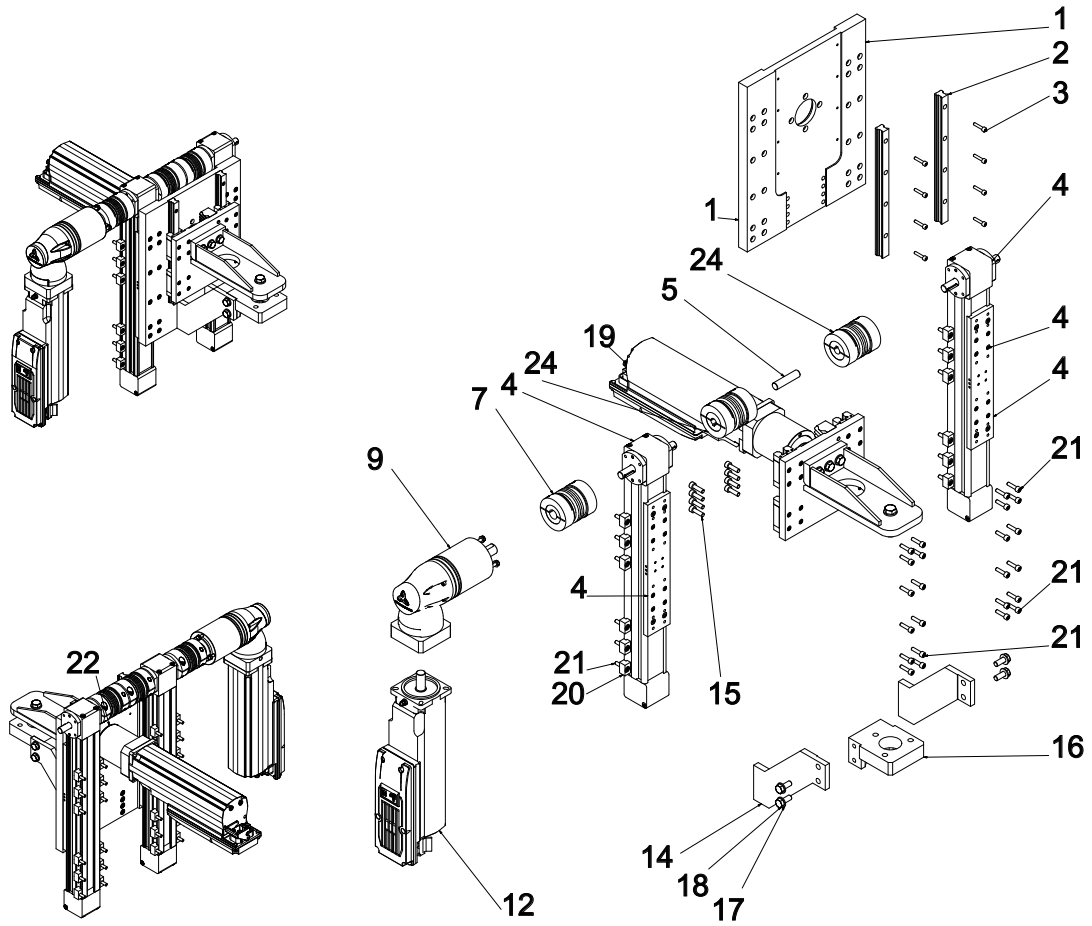
If the maintenance requires the filling head removal from the guides L, the use of guide extensions M is strongly suggested in order to avoid damages for the machine and the operators, due to the accidental fall of the filling head.

6.3.1.1 UNCAPPER



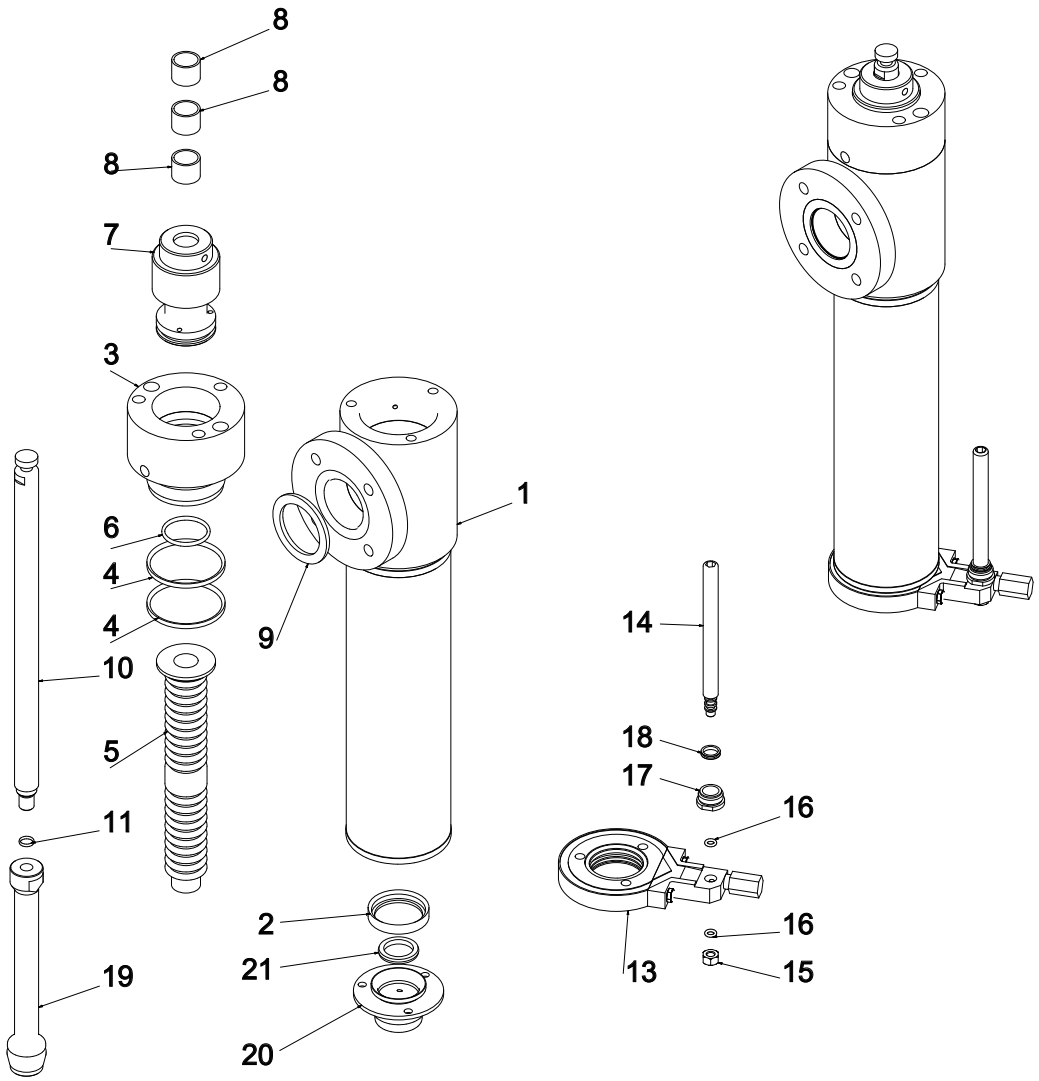
1	Slider Plate	20	Tie Rod
2	Uncapper Movement	21	Swivel Head M8x1,25
3	Uncapper-Reinforced Clamps Group	22	Washer UNI 6592 Ø8
4	Washer UNI 6592 Ø6	23	Motor Gear
5	Screw ISO 4014 - M6 x 30	24	Screw UNI 5739 M08x025
6	Uncapper Slider Spacer	25	Mounting Pivot
7	Steel Slider TG.15 NRII	26	Screw ISO 4762 - M6 x 12
8	Motor Gear Support	27	Uncapper Gearbox Carter
9	Screw UNI 5739 M06x020	28	Washer UNI 6592 Ø4
10	Short Uncapper Tie Rod	29	Screw ISO 4017 - M4 x 8
11	Long Uncapper Tie-Beam	30	Motor-Shaft Spacer
12	Toothed Rack	31	Stainless Steel Flange
13	Screw UNI 5931 M06x025	32	Screw UNI 5931 - M5x25
14	Screw UNI 5931 M04x016	33	O-Ring 2250
15	Uncapper Motor Support	34	I/O Board
16	Screw UNI 5931 M06x020	35	Motor Gear
17	Uncapper Support Bracket	36	Motor
18	Motor	39	Motor Gear 1 with Pinion RMT
19	Motor Lever	40	Steel Guide TG.15 NRII

6.3.1.2 VALVE HANDLING



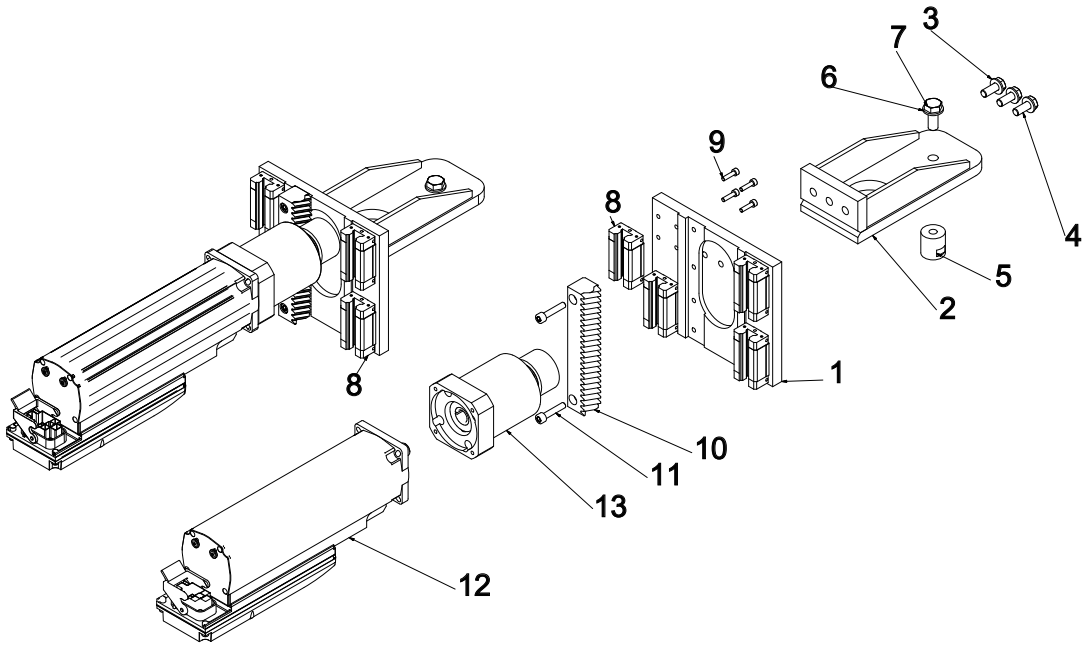
1	Cross Support	13	Side Support (RIGHT)
2	Steel Guide TG.15 NRII	14	Side Support (LEFT)
3	Screw UNI 5931 M4x20	15	Washer UNI 5931 M06x020
4	Linear Module Stroke 120	16	Basement plate
5	Joint Shaft	17	Washer UNI 6592 Ø8
7	Joint D1=16 D2=12	18	Screw UNI 5739 M08x020
8	Gear Motor Support	19	Stem Lifting
9	Gear Motor	20	Bracket
10	Washer UNI 6592 Ø5	21	Screw UNI 5931 M05x020
11	Screw UNI 5739 M05x025	22	Motor Spacer Flange
12	Motor	24	Joint D1=16 D2=12

6.3.1.3 FILLING VALVE



1	Interchangeable Entrance Valve Body Assembly	12	O-Ring 3137
2	Doser Lower Seal	13	Valve Stream Jet Diffuser With Retention
3	Support Seal Valve Bellows	14	Spray Nozzle
4	O-Ring 3181	15	Nut UNI 5587 M6
5	Stem Bellows Ø16	16	O-Ring 2018
6	O-Ring 3106	17	Cap for Infeed Manifold Steam Diffuser
7	Guide Stem	18	Seal
8	Guide Rib	19	Stem
9	O-Ring 6150	20	Nozzle
10	Doser Stem	21	Bearing 27x19,7x3,6
11	O-Ring 2031		

6.3.1.4 STEM LIFTING



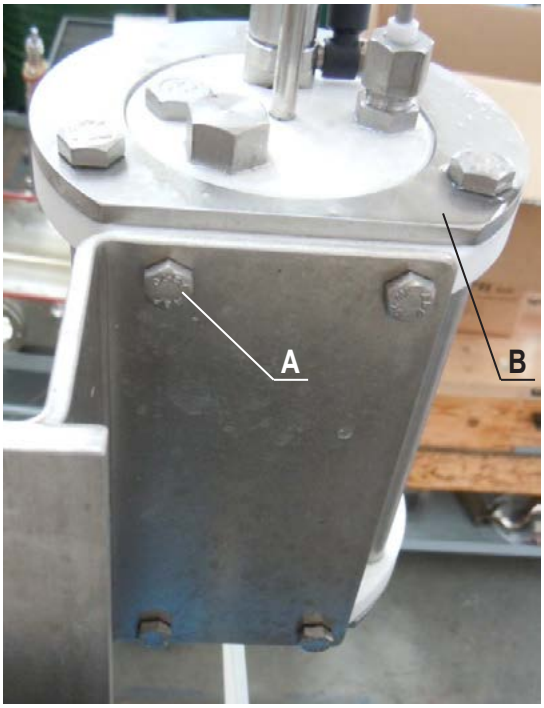
1	Slider Plate
2	Support
3	Washer UNI 6592 Ø8
4	Screw UNI 5739 M08x020
5	Cylindrical Junction
6	Washer UNI 6592 Ø10
7	Scrw UNI 5739 M10x025
8	Steel Slider TG.15 NRII
9	Screw UNI 5931 M04x016
10	Toothed Rack
11	Screw UNI 5931 M06x030
12	Motor
13	Gear Motor with Pinion RMT

6.3.2 STERILE FILTER MAINTENANCE

Sterile filters of different model and sizes can be installed on the machine depending on their function. The maintenance procedure is the same for all types of sterile filters. Always refer to the attached sterile filter manuals.

1. Open clamp A acting on screw B and remove it.
2. Slide off filter C cover, thus unscrew and remove sterile filter element D.
3. In case of leakage replace gasket E and F.
4. Install new sterile filter element D and reassemble in reverse order.

6.3.3 DISINFECTANT TANK MAINTENANCE



Unscrew the 4 screws A and remove dosing container B.

Unscrew the 3 screws C located below dosing container B and remove glass D.

Replace the two gaskets E, placed above and below glass D.

Reassemble in reverse order.

6.3.4 BATTERIES

-CPU Electronic card.

replace every 2 years.

-Video terminal.

Replace every 2 years.

Note:

If the working atmosphere of the machine is not optimum (condensating humidity, dust etc..) then a preventive maintenance is recommended by halving the indicated values.

If the compressed air fed to the machine has a lot of condensation, check at each production the efficiency of the reduction system's automatic draining

For machines which work only seasonally (eg. tomato season), then a preventive maintenance is recommended before the beginning of each season.

For machines which do not reach the data indicated during a period of 12 months then a preventive maintenance is recommended at least once a year.

During maintenance operations check that ceramic parts (filling valve's rod and body, product valve rod etc.) are in perfect condition. Eventually replace damaged parts or have them coated with ceramic.

Every 10.000 cycles and a complete CIP cycle, check the cleaness of the inside of the filling valve.

ATTENTION!

So as to avoid damage to machine parts:

Never use the machine without the auxiliary circuit filters.

Use suitable and undamaged equipment for the dismounting and reassembling of the parts.

Do not use detergents, solutions, or additives containing chloride.

6.4 CLEANING

At the end of the production cycle you must carry out the washing of the whole machine with water or with neutral detergent, do not use any solvent, such as alcohol, gasoline, etc.

CAUTION:

Cleaning must be carried out with the disconnected machine from energy sources (electrical supplies)

The workers assigned to the maintenance and cleaning must wear work clothes, shoes anti-slip sole, gloves, goggles/protective visor.

CAUTION:

During the washing operation, protecting the area around the machine, so as to prevent access to unauthorised persons.

CAUTION:

Clean the whole machine with water or neutral detergent. Do not use any solvent such as alcohol, gasoline, etc.

Do NOT use a pressure washer to clean the machine.

Do NOT use high pressure water directly on the control, transmission and electrical equipment.

6.5 LIST OF MAINTENANCE CARRIED OUT

HOURS WORKED OR BAGS FILLED	TYPE OF INTERVENTION	SIGNATURE OF MAINTENANCE ENGINEER	DATE

7 SUGGESTED SPARE PARTS

Introduction

In order to limit the number of shutdowns in production, servicing, and resetting the operations in the machine, it is advisable to keep a series of suggested spare parts available for elements that are subject to greater stress and therefore to greater wear.

7.1 SPARE PART LIST

Pos.	Description	Code	Qty. Installed	Qty. Suggested
Filling valve assembly 70-57-003-02				
1	Lower seal	01-10-1062	1	1
2	Gasket OR-3181	OR-3181	2	2
3	Folding for stem Ø16	0315-103882	1	1
4	Gasket OR-3106	OR-3106	1	1
5	Guide strip	01-13-397	3	3
6	Gasket OR-6150	OR-6150	1	1
7	Gasket OR-3137	OR-3137	1	1
8	Seal	0306-103389	1	1
9	Gasket-2068-17X1.78	OR-2068	1	2
Valve steam diffuser assembly 70-57-005-01				
10	Gasket OR-2018	OR-2018	2	1
11	Gasket OR-108	OR-108	1	1
12	Gasket OR-3143	OR-3143	2	2
13	Gasket OR-2062	OR-2062	1	1
14	Gasket RC 2037	0305-100048	1	1
Uncapper movement assembly - 04-02-0022-01				
15	Seal ring	0304-100060	2	2
16	Bearing D.=30	0301-100035	1	1
17	Bushing	0315-101704	2	2
18	Rolling seal	0303-103024	2	2
19	Upper bushing	04-02-0090	1	1
20	OR-2068-17X1.78	OR-2068	1	1
21	Spindle lower washer	04-02-0081	1	1
22	Uncapper clamp opening spindle	04-02-0114	1	1
23	Bushing	0315-101706	4	4
24	Uncapper screw	04-02-0031-01	2	2

Pos.	Description	Code	Qty. Installed	Qty. Suggested
Uncapper assembly - reinforced clamps 04-02-101-00				
25	Bushing	0315-103599	1	1
26	Clamp bushing	04-02-0062	4	4
27	Bushing	0315-101702	1	1
28	Clamp plain washer	04-02-0067	4	4
29	Clamp support	04-02-0095	2	2
30	Bushing	0315-101748	2	2
Aseptic filling head assembly - 70-51-001-01				
31	Sight glass gasket DN65	0306-103116	8	4
32	Sight glass DN65	0315-103527	4	2
33	Closing gasket 6x8 L=1000	0300-103004	1	1
34	Gasket RC-6275	0305-100053	2	2
35	Gasket OR-6275	OR-6275	2	2
36	Gasket OR-4312	OR-4312	1	1
37	Filling head guide strip	01-10-152	2	2
38	Gasket RC-4137	0305-100050	2	2
39	Gasket OR-4137	OR-4137	2	2
40	Gasket OR-3187	OR-3187	1	1
41	Guide strip	01-10-345	2	2
42	Gasket OR-2062	OR-2062	1	1
43	Washing plate invitation	40-01-051	1	1
44	Closing knob	01-10-038	2	1
45	Long clamping knob	40-04-005	2	1
46	Hinge	01-10-037	2	1
47	Long pivot	40-04-004	2	1
Cap presence - 70-51-002-00				
48	Gasket OR-2062	OR-2062	1	1
49	Gasket OR-2025	OR-2025	1	1
50	Bushing	0315-101702	2	2
51	External seeger Ø6	0302-100000	1	1
52	Proximity switch	0310-103417	1	1
53	Spring	01-10-107	1	1

Pos.	Description	Code	Qty. Installed	Qty. Suggested
Uncapper assembly - 70-56-001-01				
54	Swivel head M8x1,25	0311-100985	2	1
55	Gasket OR-2250 63,22x1,78	OR-2250	1	1
56	Plate	0301-103036	4	1
Valve handling - 70-57-002-02				
57	Joint	04-01-0055	1	1
58	Joint	40-08-040	2	1
59	Linear module	0316-103612	2	1
Steam lifting - 70-57-001-01				
60	Plate	0301-103036	1	1
Loader group - 70-55-001-01				
61	Chain	0315-103916	2	1
62	Linear module	0316-104103	1	1
Bag feeder clamp assembly - 70-61-001-02				
63	Compact cylinder	0306-103688	1	1
64	Bearing	0301-103035	8	8
65	Bushing	0315-103879	8	8
66	External seeger Ø6	0302-100000	8	8
67	Compact cylinder	0306-103689	1	1
68	Plate	40-01-127	1	1
69	Clamp Finger	40-01-016-01	2	1
70	HS clamp short skater	08-07-0060	2	2
71	HS clamp long skater	08-07-0061	2	2
72	Bushing	0315-103880	1	1
Bag feeder clamp 150 assembly - 70-61-002-01				
73	Bearing	0301-103035	8	4
74	Bushing	0315-103879	8	8
75	External seeger Ø6	0302-100000	8	4
76	Kit for Compact cylinder	0306-103689	1	1
77	HS clamp short skater	08-07-0060	2	2
78	HS clamp long skater	08-07-0061	2	2
79	Bushing	0315-103880	1	1
80	Kit for Compact cylinder	0306-103689	1	1
81	Plate	40-01-127	1	1
82	Clamp Finger	40-01-016-01	2	1

Pos.	Description	Code	Qty. Installed	Qty. Suggested
Washing plate group assembly - 70-58-001-02				
83	Kit for Cylinder	0306-103687	2	1
84	Kit for Cylinder	0306-103686	1	1
85	Compact cylinder	0306-103684	1	1
86	Gasket OR-147	OR-147	1	1
87	Gasket OR 274x6	0350-103876	1	1
88	Gasket OR 250x6	0350-103875	1	1
89	Kit for Cylinder	0306-103685	1	1
Clamp support assembly - 70-68-001-01				
90	Pad	40-01-060	2	2
91	Spacer	40-08-012	2	2
92	Bushing	0315-103908	2	2
93	External seeger Ø14	0302-100005	2	2
94	Tie rod M10x1,25	0311-103672	1	1
95	Tie rod M10x1,25	0311-103669	1	1
96	Bushing	0315-103907	2	2
97	Kit for Cylinder	0306-103690	1	1
98	Kit for Cylinder	0306-103691	1	1
Cutter assembly - 70-60-001-02				
99	Cylinder	0311-103686	4	1
100	Fork M10x1,25	0311-103006	4	2
101	Rubber pad	40-11-008	4	2
102	Cylinder D.25	0311-103676	1	1
Tank assembly - 21-06-335-01				
103	Membrane pneumatic pump	0314-103021	1	1
104	Level switch	0310-101823	1	1
Venturi group assembly - 70-66-010-01				
105	Insulator	70-66-009-01	1	1
106	Gasket OR-2050	OR-2050	2	2
107	Cartridge Heater	0316-103945	3	3
108	Seal	40-11-009	1	1
109	Temperature brobe	0310-103702	1	1

Pos.	Description	Code	Qty. Installed	Qty. Suggested
Sterilized air heater assembly - 70-66-022-01				
110	Cartridge Heater	0316-103944	6	3
Suction ejector assembly - 21-01-090-00				
111	Gasket OR-2062	OR-2062	3	3
Dispenser tank - 21-06-338				
112	Levels insulating	21-00-026-1	02	02
113	OR 2021 Viton gasket	OR-2021	02	02
114	OR 3075 Viton gasket	OR-3075	01	01
115	OR 6275-S Viton gasket	OR-6275-S	02	02
116	Cylinder SMC – C85N16-35-B-DKI10921	0311-103369	01	01
Belt conveyor - 70-62-001-01				
117	Belt conveyor 700 x 2885 mm white	70-62-003		1
118	Bearing 6202-2RS	70-62-002		4
119	Wheel P54000986	70-62-004		2
120	Inner support P12006395	70-62-005		4
121	Support ucf 206	70-62-006		4
122	Chain ½ “	70-62-007		1
123	Support ucfl 204	70-62-008		2
124	Bearing 6000-2RS	70-62-009		2
Discharge plate assembly - 70-58-003-00				
125	PTFE slider	40-04-010	4	2
Filler				
126	Steam cartridge filter MCS4463PHH13	0313-100561	1	1
127	Filter element	0313-103787	3	1
128	Gasket kit for PROMAG 53H flowmeter DN40	0306-103355	1	1
129	Flexible pipe	21-00-285	3	1
130	Membrane DN4/8	0306-100712	7	2
131	Membrane DN15/25	0306-100713	7	2
132	Kit for centrifugal pump	9611922454	1	1
133	Pressure reducer 0,14÷1,7	0313-103191	2	1
134	Pressure reducer 0,14÷1,7	0313-103190	3	1

Pos.	Description	Code	Qty. Installed	Qty. Suggested
135	Safety valve	0309-103439	1	1
136	Steam trap	0313-103577	11	1
137	Kit for butterfly valve DN40	9611923077	2	1
Electro-pneumatics				
138	Monostable solenoid valve	0311-103432	-	1
139	Bistable solenoid valve	0311-103434	-	1
140	Multiples electrical outlet	0317-103105	2	1
141	Cable PLC-DB4	0317-103139	1	1
142	Cables DB4-DB4/motor 3m	0317-103113	1	1
143	Triple stage motor without brake	0317-103138	2	1
144	Double stage motor without brake	0317-103106	1	1
145	Triple stage motor with brake	0317-103140	4	1
146	Digital module 8 I/Oi	0317-103022	5	1
147	Multiple electrical outlet 4 I/O to be mounted on board machine	0317-103130	8	1
148	Connector 4 I/O	0317-103129	8	1
149	Cable 4 I/O - 8 I/O	0317-103131	8	1
150	Temperature probe PT 100 L=24 with cable	0310-103428	9	1
151	Temperature probe PT 100 L=100 with cable	0310-103427	2	1
Belt conveyor system (s.n. 2016-106)				
152	Belt conveyor 600 X 2440 mm white	0390-102106		1
153	Belt conveyor 600 X 6035 mm white	0390-102107		1
154	Support Ucf 206	0390-102108		2
155	Bearing 6304-2RS	0390-102109		4
156	Bearing 61902-2RS	0390-102110		4
157	Angular belt L=600 mm	0390-102111		1
158	9/5000 Rubber band"	0390-102112		60
159	Chain for angular belt with side support	0390-102113		1

Pos.	Description	Code	Qty. Installed	Qty. Suggested
Combibox				
160	Gray rectangular belt with rubber inserts	0390-100048		4,2
161	Chain guide for carton transport combi 15	0390-100055		4
162	Chain joint 10B-1 5/8" INOX	0390-100056		12
163	Roller chain 10B-1 5/8" INOX	0390-100057		11
164	Toothed belt 25 AT10	0390-100004		4

7.2 SPARE PARTS TABLE

7.2.1 INTRODUCTION

Spare parts tables have a double purpose, i.e. to order the single items, and to ease service personnel's task when tracing the item inside the plant.

7.2.2 DESCRIPTION OF CONTENTS OF SPARE PART TABLES

Each group is divided into two tables: the drawn table, showing the spare parts and the relevant position by means of numerical references; the descriptive table, indicating the details needed to identify and order the single item.

For the ordinary maintenance of the components see legend of the colors:

CHECK EVERY 10.000 BAGS

CHECK EVERY 20.000 BAGS

REPLACE EVERY 50.000 (OR BEFORE IF NECESSARY)

REPLACE EVERY 100.000 (OR BEFORE IF NECESSARY)

REPLACE EVERY 24 MONTHS

CHECK EVERY 10.000 BAGS and REPLACE EVERY 50.000 (OR BEFORE IF NECESSARY)

CHECK EVERY 20.000 BAGS and REPLACE EVERY 50.000 (OR BEFORE IF NECESSARY)

CHECK EVERY 20.000 BAGS and REPLACE EVERY 100.000 (OR BEFORE IF NECESSARY)

THIRD PARTY (see the correspondent manuals)

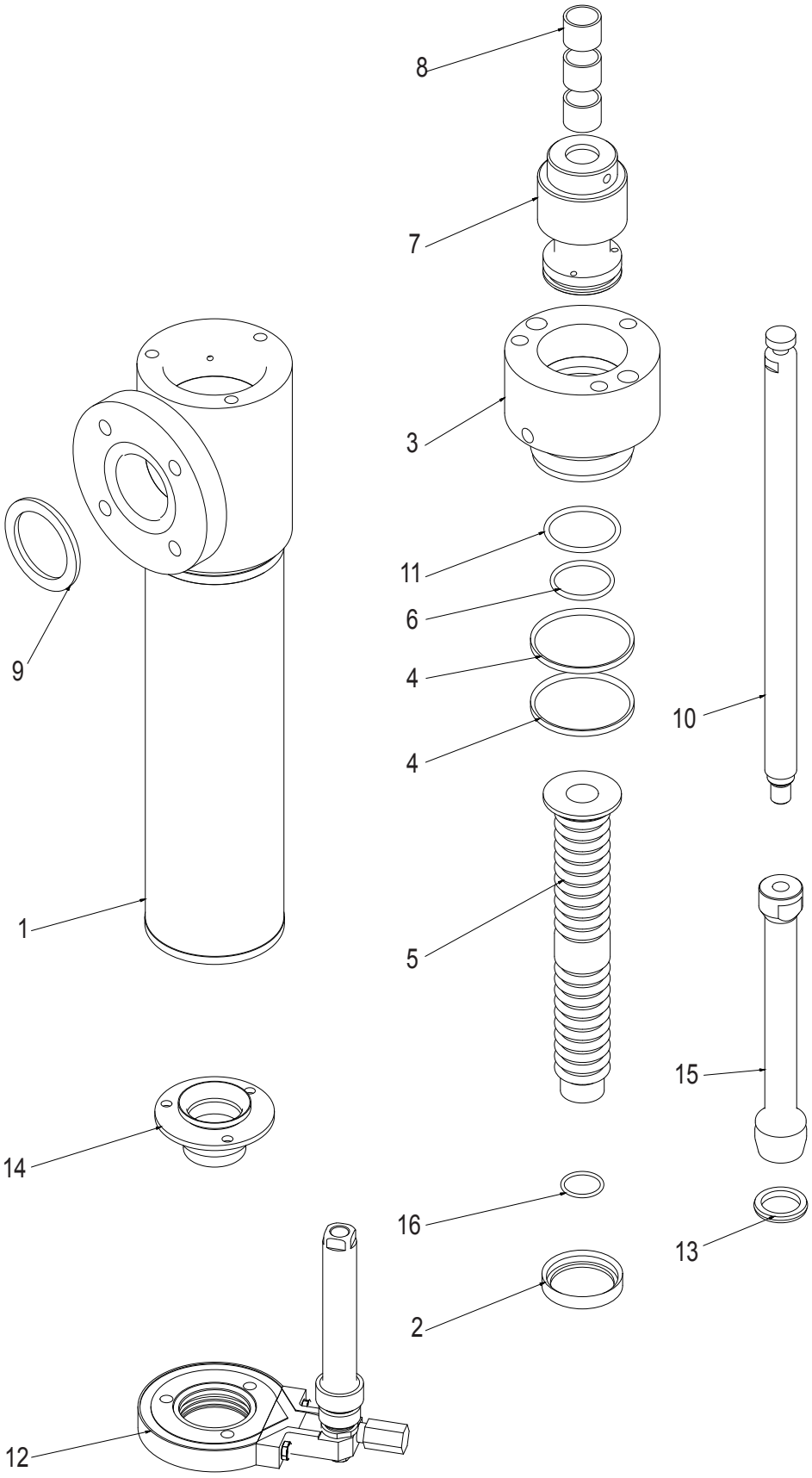
See cap. 6 - MAINTENACE -

7.2.3 HOW TO INTERPRET THE SPARE PART TABLES

Methodology

If you want to know the full details of a single item, in order to fill in the enquiry form included in subject **"7.3 HOW TO ORDER SPARE PARTS ", PARAGRAPH "FROM TO ORDER SPARE PARTS"**, you must identify the drawing in which the requested component is indicated and take note of the necessary details from the drawing list for the compilation of the request.

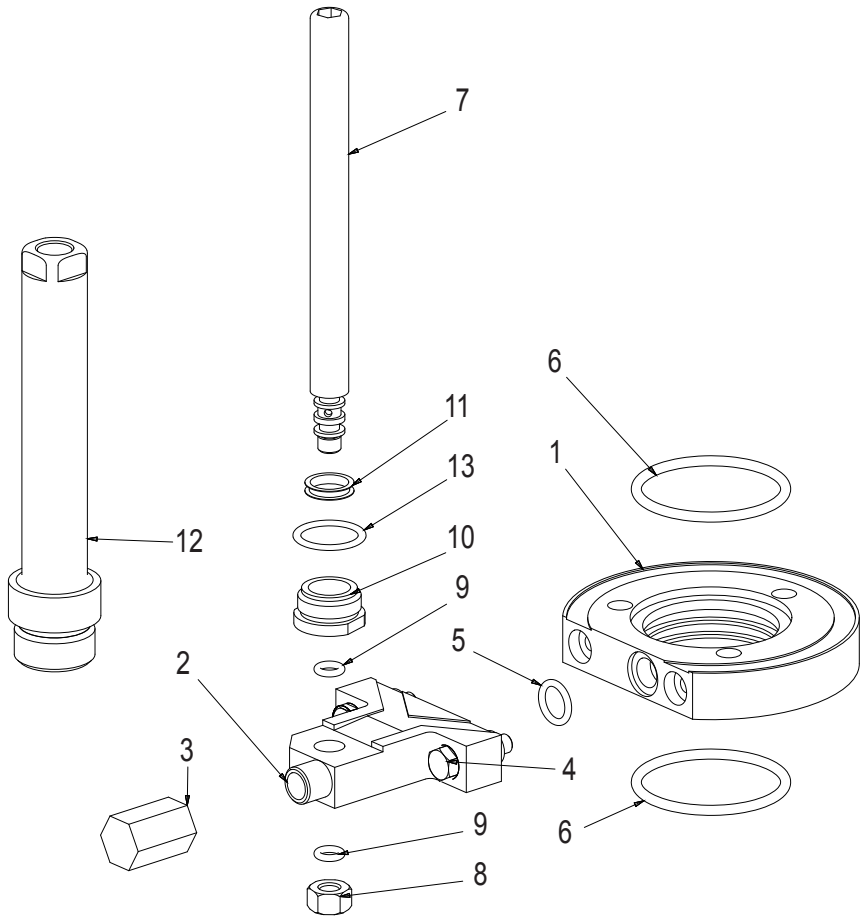
7.2.4 FILLING VALVE ASSEMBLY - 70-57-003-02



7.2.4 FILLING VALVE ASSEMBLY - 70-57-003-02

Ref.	Our Code	Description	U.M.	Qty
1	01-10-0266-02	Exchangeable entrance valve body assembly	No.	1
2	01-10-1062	Lower seal	No.	1
3	01-10-1120-01	Folding seal valve support	No.	1
4	OR-3181	Gasket OR-3181	No.	2
5	0315-103882	Folding for stem ø16	No.	1
6	OR-3106	Gasket OR-3106	No.	1
7	01-10-1135-01	Stem guide pin	No.	1
8	01-13-397	Guide strip	No.	3
9	OR-6150	Gasket OR-6150	No.	1
10	01-10-1134	Doser stem	No.	1
11	OR-3137	Gasket OR-3137	No.	1
12	70-57-005	Valve steam jet diffuser with retention	No.	1
13	0306-103389	Seal	No.	1
14	CM15-077-27	Single stem gasket nozzle	No.	1
15	CM15-077-26	Single stem gasket	No.	1
16	OR-2068-17x1.78	Gasket OR-2068	No.	1

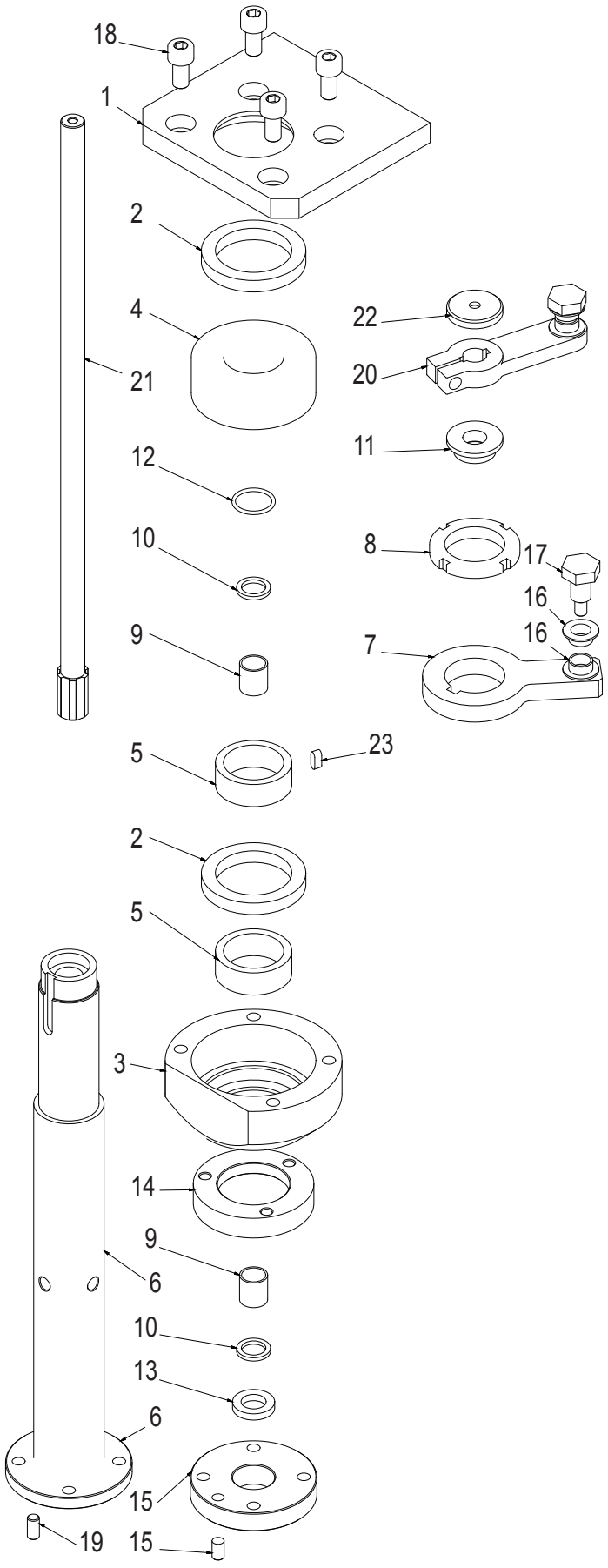
7.2.5 VALVE STEAM DIFFUSER ASSEMBLY - 70-57-005-01



7.2.5 VALVE STEAM DIFFUSER ASSEMBLY - 70-57-005-01

Ref.	Our Code	Description	U.M.	Qty
1	40-03-017	Filling valve steam jet diffuser HS 2015	No.	1
2	01-10-313-01	Filling valve steam jet diffuser attack	No.	1
3	01-10-1175	HS steam jet body plug	No.	1
4	0325-102506	Screw TE M5 x 20	No.	2
5	OR-108	Gasket OR-108	No.	1
6	OR-3143	Gasket OR-3143	No.	2
7	01-10-125	Spray nozzle	No.	1
8	0325-101584	Nut M6	No.	1
9	OR-2018	Gasket OR-2018	No.	2
10	01-10-164	Cap	No.	1
11	0305-100048	Gasket RC 2037	No.	1
12	40-08-014	Diffuser feeding manifold	No.	1
13	OR-2062	Gasket OR-2062	No.	1

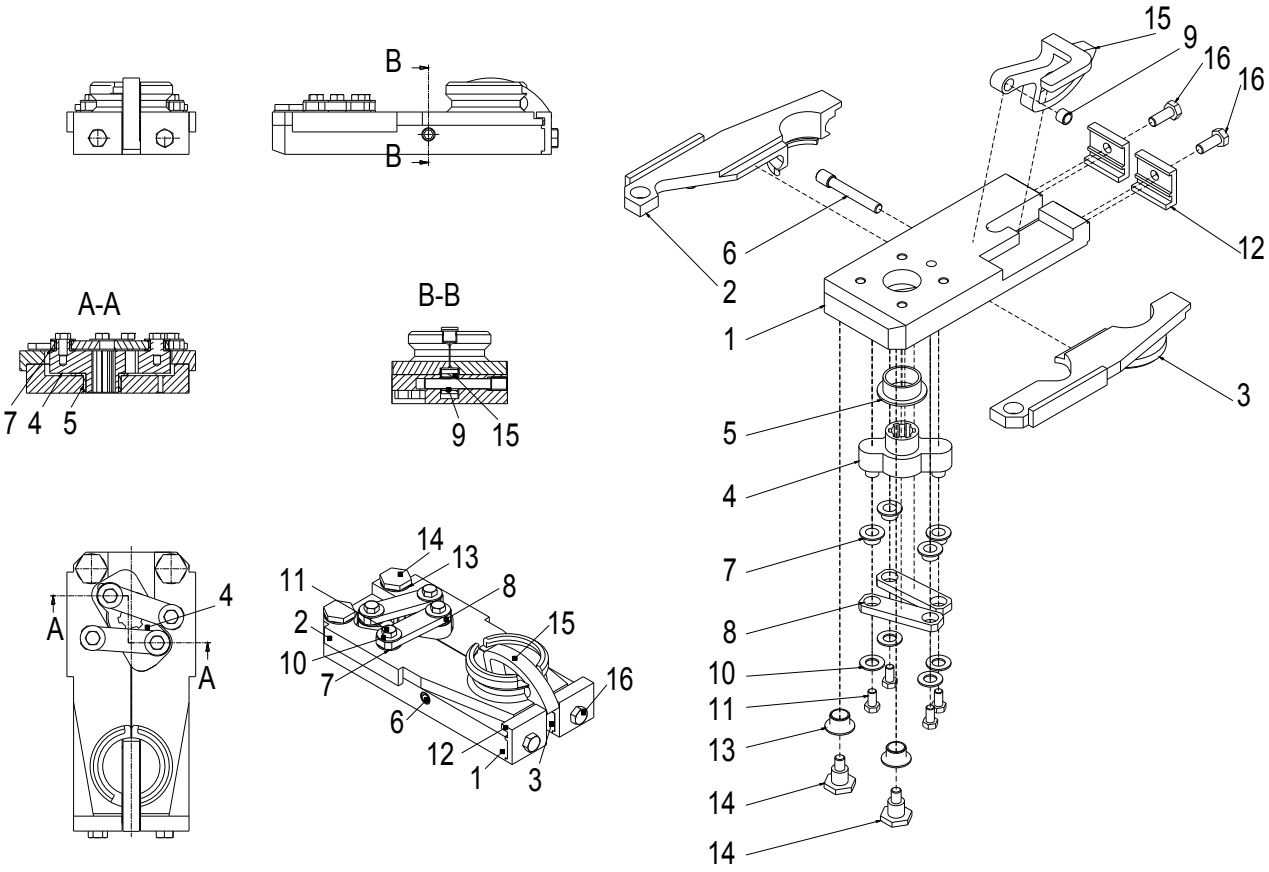
7.2.6 UNCAPPER MOVEMENT ASSEMBLY - 04-02-0022-01



7.2.6 UNCAPPER MOVEMENT ASSEMBLY - 04-02-0022-01

Ref.	Our Code	Description	U.M.	Qty
1	04-02-0023	Uncapper support	No.	1
2	0304-100060	Seal ring	No.	2
3	04-02-0029	Uncapper hub	No.	1
4	0301-100035	Bearing D.=30	No.	1
5	04-02-0030	Uncapper spacer	No.	2
6	04-02-0039	Uncapper spindle	No.	1
7	04-02-0027	Lower lever	No.	1
8	0301-103031	Locking collar M30x1,5	No.	1
9	0315-101704	Bushing	No.	2
10	0303-103024	Rolling seal	No.	2
11	04-02-0090	Upper bushing	No.	1
12	OR-2068	Gasket OR-2068-17X1.78	No.	1
13	04-02-0081	Spindle lower washer	No.	1
14	04-02-0080	Uncapper hub cap	No.	1
15	04-02-0091	Lower spout clamp spacer	No.	1
16	0315-101706	Bushing	No.	4
17	04-02-0031-01	Uncapper screw	No.	2
18	0325-101442	Screw T.C.E.I. M08x016	No.	4
19	40-04-003	Uncapper centering shaft	No.	1
20	04-02-0113	Motor lever	No.	1
21	04-02-0114	Uncapper clamp opening spindle	No.	1
22	04-02-0116	Upper lever cover	No.	1
23	04-02-0115	Square key	No.	1

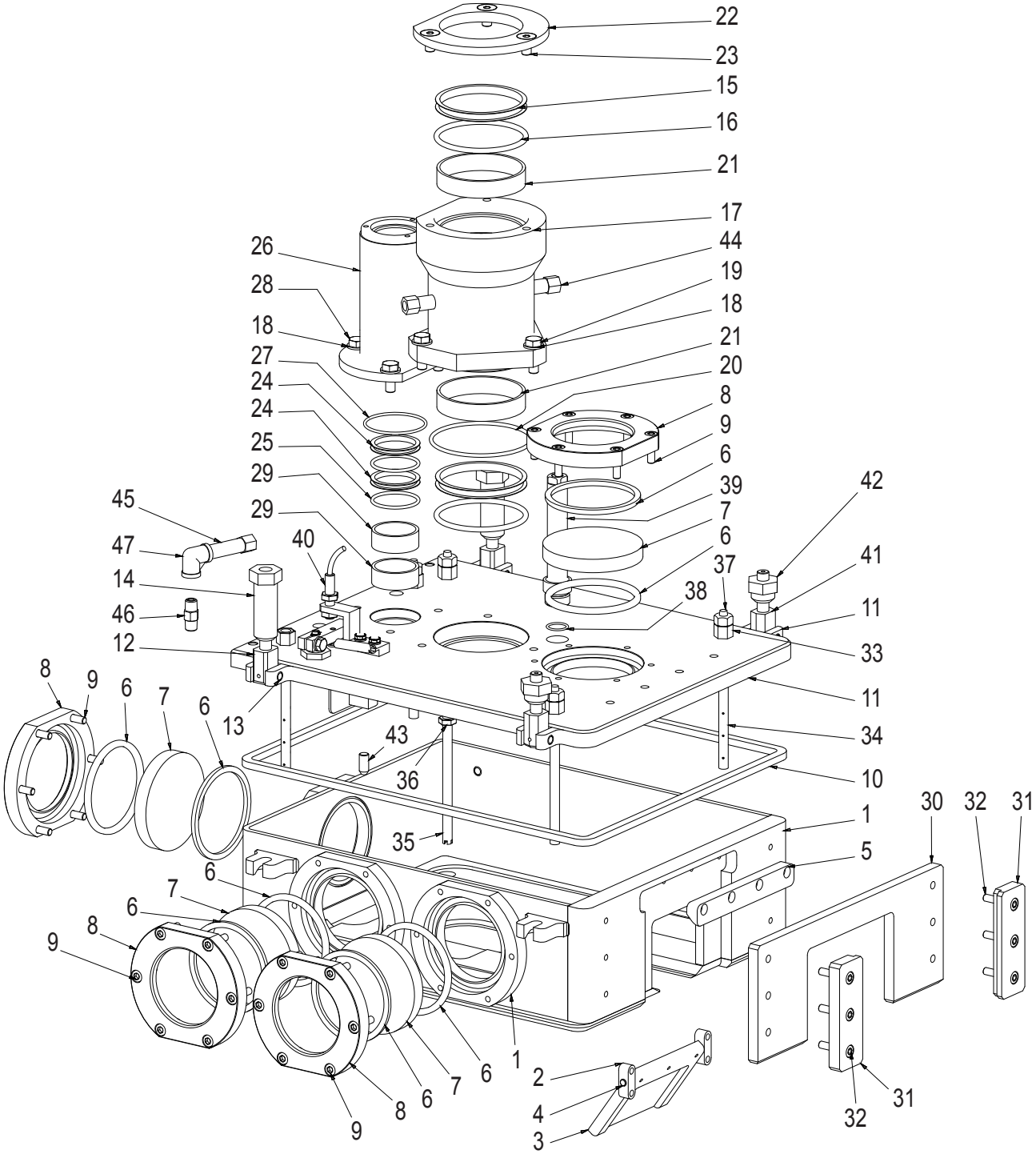
7.2.7 UNCAPPER ASSEMBLY - SMURFIT SCREWCAP - 04-02-101-00



7.2.7 UNCAPPER ASSEMBLY - FLAT CAP - 04-02-101-00

Ref.	Our Code	Description	U.M.	Qty
1	04-02-098	Clamp body	No.	1
2	04-02-0099	Left clamp	No.	1
	04-02-0112-01	Left clamp (Smurfit)	No.	1
3	04-02-0100	Right clamp	No.	1
	04-02-0111-01	Right clamp (Smurfit)	No.	1
4	04-02-0073	Uncapper clamp lower lever	No.	1
5	0315-103599	Bushing	No.	1
6	04-02-097	Grub screw M8x50	No.	1
7	04-02-0062	Clamp bushing	No.	4
8	04-02-0072	Clamp activating lever	No.	2
9	0315-101702	Bushing	No.	1
10	04-02-0067	Clamp plain washer	No.	4
11	0325-101579	Screw T.E. M05x010	No.	4
12	04-02-0095	Clamp support	No.	2
13	0315-101748	Bushing	No.	2
14	04-02-0096	Uncapper clamp pin	No.	2
15	40-13-017	Uncapper tap presence lever	No.	1
16	0325-101514	Screw T.E. M06x016	No.	2

7.2.8 ASEPTIC FILLING HEAD ASSEMBLY - 70-51-001-01



7.2.8 ASEPTIC FILLING HEAD ASSEMBLY - 70-51-001-01

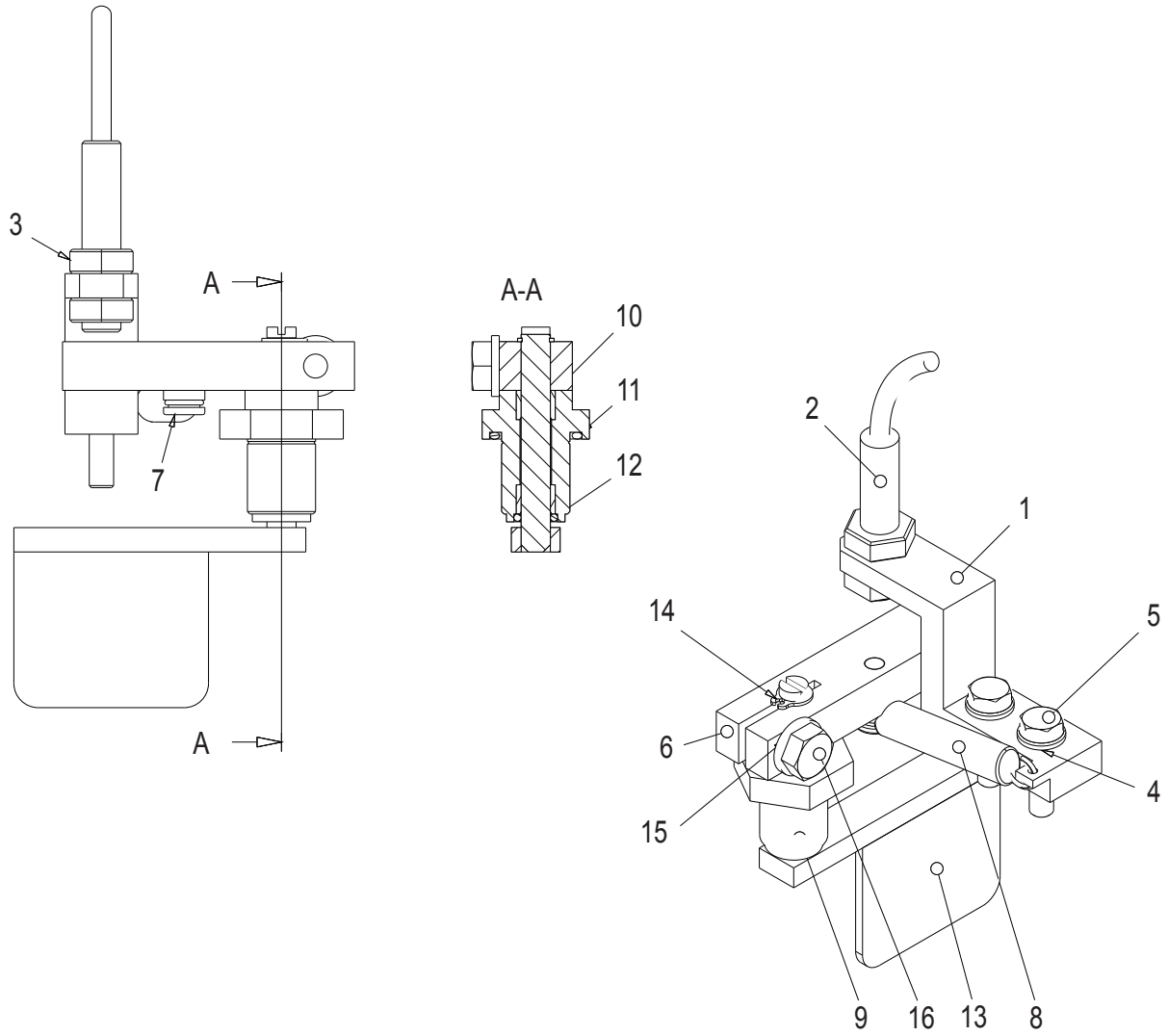
Ref.	Our Code	Description	U.M.	Qty
1	40-13-015-01	Finished filling chamber base assembly	No.	1
2	40-01-050	Bulkhead pivot support new	No.	2
3	40-01-049	Bulkhead	No.	1
4	40-04-006	Bulkhead	No.	1
5	40-01-051	Washing plate invitation	No.	1
6	0306-103116	Sight glass gasket DN65	No.	8
7	0315-103527	Sight glass DN65	No.	4
8	40-03-015	Viewport outer flange	No.	4
9	0325-101669	Screw T.C.E.I. M06x020	No.	24
10	0300-103004	Closing gasket 6x8 L=1000	No.	1
11	40-01-052-01	Filling head top plate	No.	1
12	40-04-004	Long pivot	No.	2
13	01-10-036	Hinge pin	No.	4
14	40-04-005	Long clamping knob	No.	2
15	0305-100053	Gasket RC6275	No.	2
16	OR-6275	Gasket OR-6275	No.	2
17	04-02-0052	Filling valve hub	No.	1
18	0325-101437	Plan washer ø8	No.	6
19	0325-101430	Screw T.E. M08x025	No.	3
20	OR-4312	Gasket OR-4312	No.	1
21	01-10-152	Filling head guide strip	No.	2
22	04-02-0053	Hub plate	No.	1
23	0325-103020	Screw T.S.P.E.I. M08x016	No.	3
24	0305-100050	Gasket RC4137	No.	2
25	OR-4137	Gasket OR-4137	No.	2
26	04-02-0088-01	Uncapper spindle movement hub	No.	1
27	OR-3187	Gasket OR-3187	No.	1
28	0325-101444	Screw T.E. M08x020	No.	3
29	01-10-345	Guide strip	No.	2
30	40-01-053	Sterilization tunnel spacer plate	No.	1
31	40-01-054	Drilled spacer plate	No.	2
32	0325-101670	Screw T.C.E.I. M06x025	No.	6
33	21-00-121	Reducing joint	No.	5
34	01-10-353-1	Steam washing diffuser pipe D.8	No.	4

7.2.8 ASEPTIC FILLING HEAD ASSEMBLY - 70-51-001-01

Ref.	Our Code	Description	U.M.	Qty
35	08-02-0031	Condensed suction pipe D.8	No.	1
36	21-00-120	Hexagonal nut M8x1	No.	5
37	0307-103075	Junction with sleeve ø1-8	No.	5
38	OR-2062	Gasket OR-2062	No.	1
39	40-08-014	Diffuser feeding manifold	No.	1
40	70-51-002-00	Tap presence	No.	1
41	01-10-037	Male hinge	No.	2
42	01-10-038	Tightening knob	No.	2
43	01-10-031	Centering pin	No.	2
44	21-00-042	Extension	No.	3
45	21-00-175	Extension	No.	1
46	0307-100098	Nipple 1/8"	No.	1
47	0307-100127	Elbow 90°	No.	1

THIS PAGE IS INTENTIONALLY LEFT BLANK

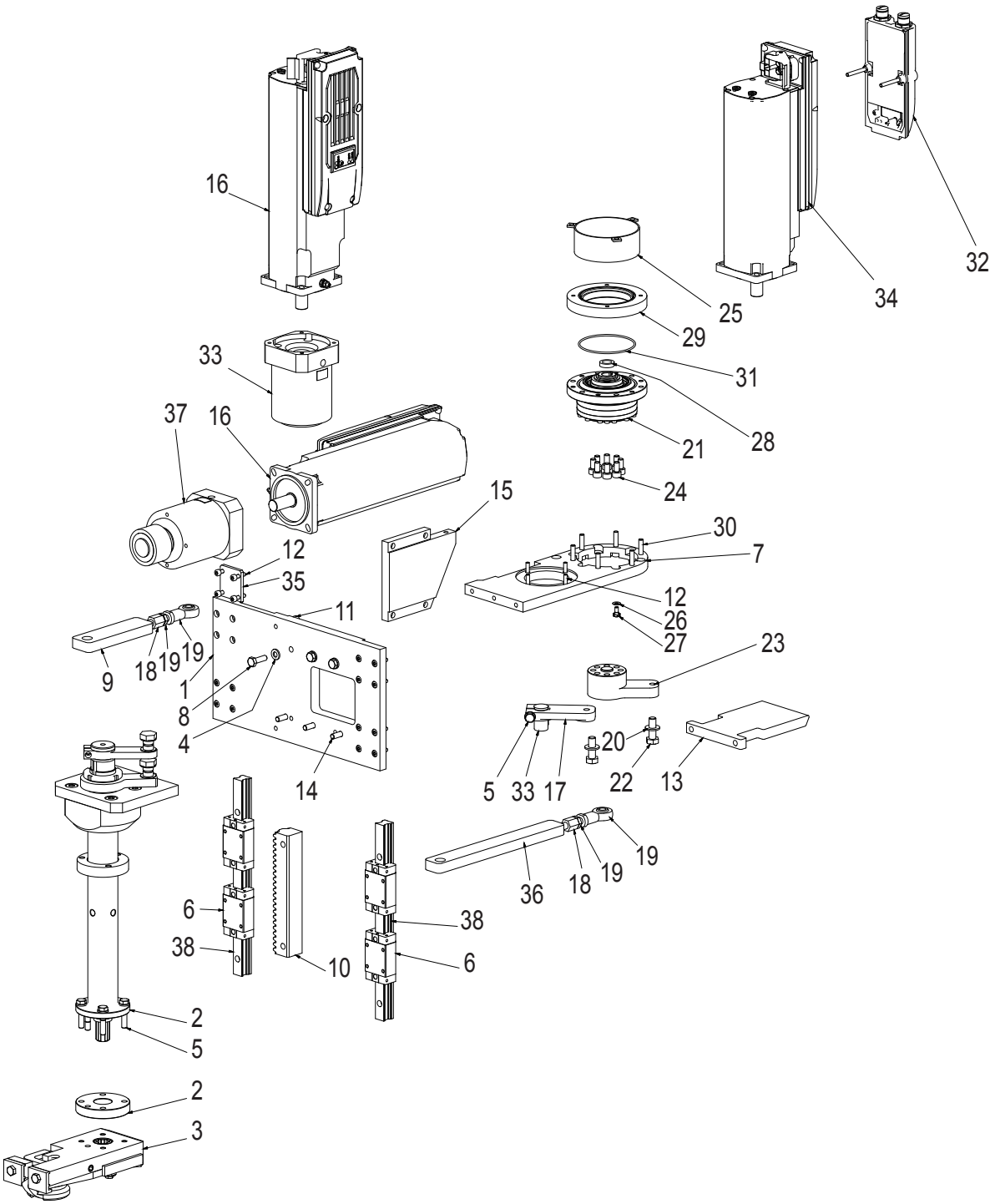
7.2.9 PRESENCE CAP - 70-51-002-00



7.2.9 PRESENCE CAP - 70-51-002-00

Ref.	Our Code	Description	U.M.	Qty
01	04-02-0085	Sensor support	No.	1
02	0310-103417	Proximity switch	No.	1
03	21-00-120	Nut	No.	2
04	0325-101756	Washer	No.	2
05	0325-102506	Screw	No.	2
06	01-10-227	Sensor lever	No.	1
07	01-10-088	Spring connection for sensor lever	No.	1
08	01-10-107	Spring	No.	1
09	01-10-086-1	Lever hub	No.	1
10	0315-101702	Bushing	No.	2
11	OR-2062	Gasket OR-2062	No.	1
12	OR-2525	Gsket OR-2025	No.	1
13	40-13-016	Cap presence lever	No.	1
14	0302-100000	Seeger	No.	1
15	0325-101810	Washer	No.	1
16	0325-101514	Screw	No.	1

7.2.10 UNCAPPER ASSEMBLY - 70-56-001-01



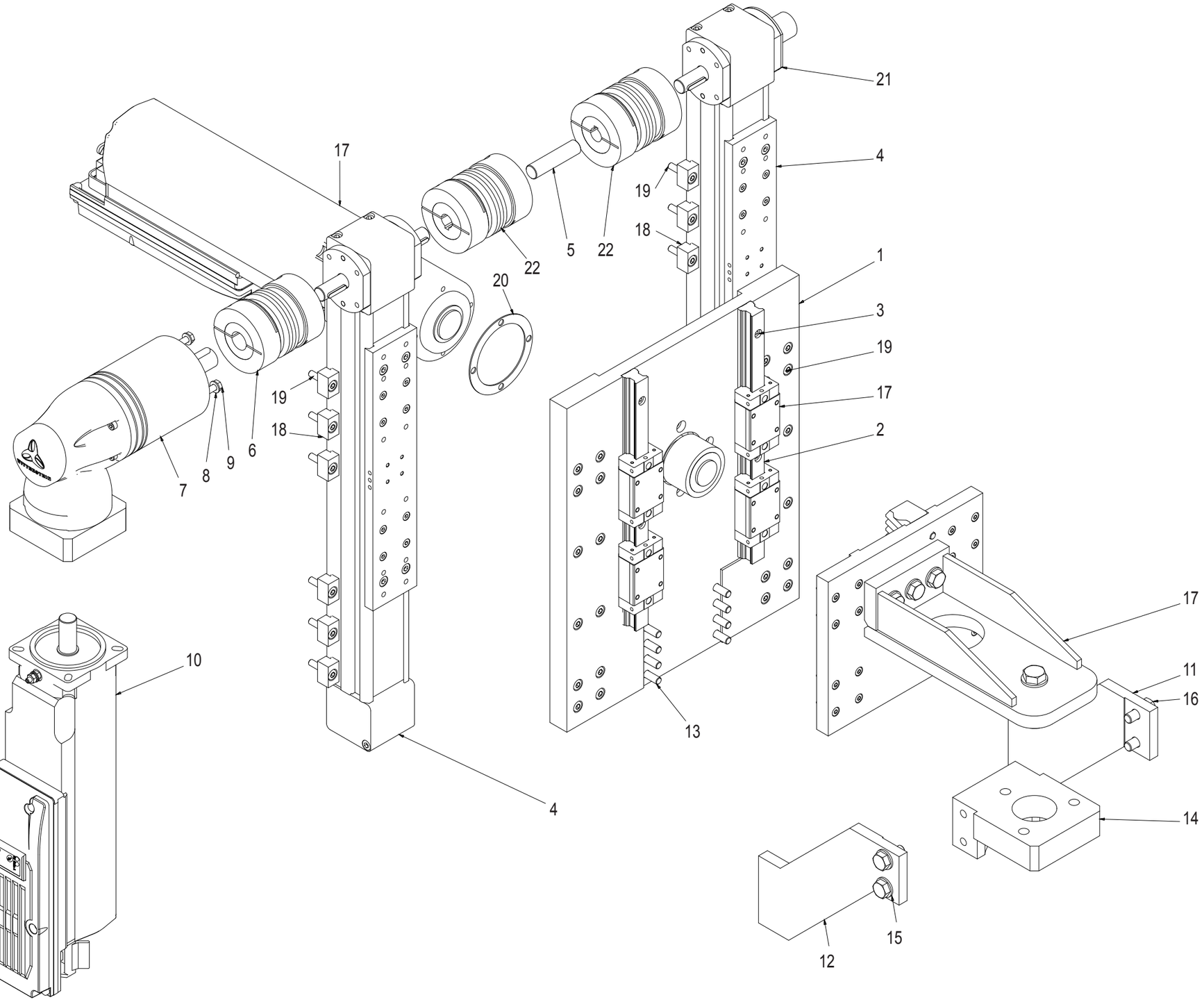
7.2.10 UNCAPPER ASSEMBLY - 70-56-001-01

Ref.	Our Code	Description	U.M.	Qty
1	04-02-0026-00	Sliding pieces plate	No.	1
2	04-02-0022-01	Uncapper movement	No.	1
3	04-02-0117	Uncapper assembly - Reinforced clamp	No.	1
4	0325-101810	Plain washer Ø6	No.	10
5	0325-103065	Washer T.E. M6 x 30	No.	5
6	0301-103036	Sliding piece	No.	4
7	08-02-0024-02	New gear motor support	No.	1
8	0325-101428	Screw T.E. M06x020	No.	5
9	04-02-0033-00	Short uncapper tie rod	No.	1
10	04-02-0042-02	Rack	No.	1
11	0325-101670	Screw T.C.E.I. M06x025	No.	2
12	0325-103042	Screw T.C.E.I. M04x016	No.	20
13	40-01-0035	Uncapper engine's support	No.	1
14	0325-101669	Screw T.C.E.I. M06x020	No.	3
15	08-02-0004-00	Uncapper support middle bracket	No.	1
16	0317-103140	Motor	No.	2
17	04-02-0024-01	Motor lever	No.	1
18	04-02-0032-00	Spindle tie rod	No.	2
19	0311-100985	Swivel head M8x1,25	No.	2
20	0325-101437	Plain washer Ø8	No.	2
21	0318-103204	Gear motor	No.	1
22	0325-101430	Screw T.E. M08x025	No.	2
23	08-02-0002-01	Motor lever pin	No.	1
24	0325-101454	Screw T.C.E. M6 x 12	No.	8
25	40-10-008-00	Uncapper gearbox carter	No.	1
26	0325-103028	Plain washer Ø4	No.	3
27	0325-103022	Screw T.E. M4 x 8	No.	3
28	08-02-0003-00	Motor shaft spacer	No.	1
29	08-02-0001-00	Motor - Motor gear flange	No.	1
30	0325-101668	Screw M5x25	No.	6
31	OR-2250	Gasket OR-2250 63,22x1,78	No.	1
32	0317-103022	Digital board motor IN-OUT	No.	1
33	0318-103210	Motor gear	No.	1
34	0317-103106	Motor	No.	1

7.2.10 UNCAPPER ASSEMBLY - 70-56-001-01

Ref.	Our Code	Description	U.M.	Qty
35	40-02-020-00	Uncapper slider spacer	No.	4
36	40-01-041-00	Long uncapper tie-beam	No.	1
37	0318-103211	Motor gear with pinion	No.	1
38	0301-103037	Guide	No.	2

7.2.11 VALVE HANDLING ASSEMBLY - 70-57-002-02

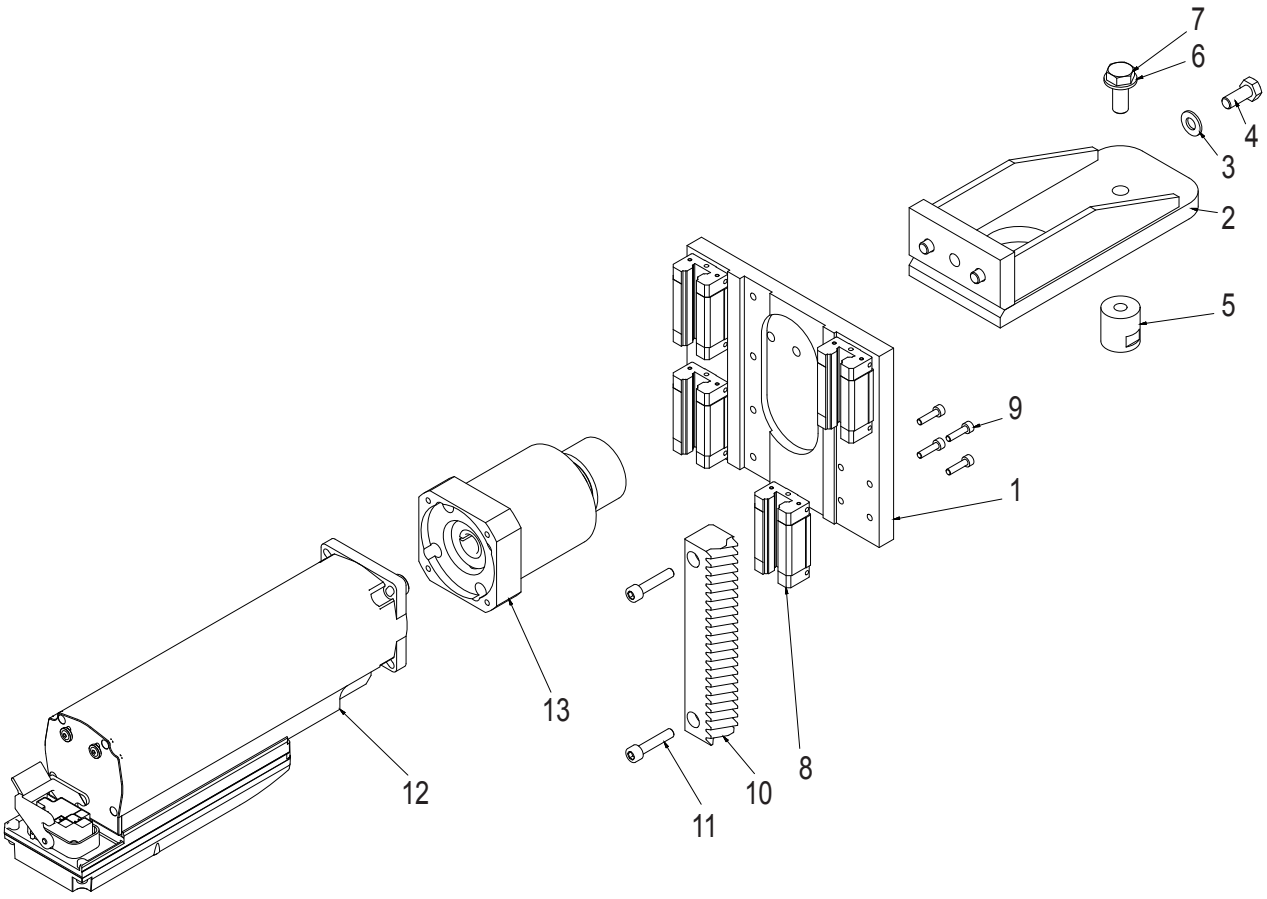


THIS PAGE IS INTENTIONALLY LEFT BLANK

7.2.11 VALVE HANDLING ASSEMBLY - 70-57-002-02

Ref.	Our Code	Description	U.M.	Qty
1	04-02-0015-01	Cross support	No.	1
2	0301-103037	Guide	No.	2
3	0325-103043	Screw M4x20	No.	8
4	0316-103612	Linear module strike=120	No.	2
5	04-02-0043-01	Junction shaft	No.	1
6	04-01-055	Joint	No.	1
7	0318-101181	Motor gear	No.	1
8	0325-101756	Plain washer Ø5	No.	4
9	0325-103074	Screw T.E. M05x025	No.	4
10	0317-103140	Motor	No.	1
11	04-02-0048-00	Right side support	No.	1
12	04-02-0049-01	Left side support	No.	1
13	0325-101669	Screw T.C.E.I. M06x020	No.	8
14	08-02-0007-00	Fixed block	No.	1
15	0325-101437	Plain washer Ø8	No.	2
16	0325-101444	Screw T.E. M08x020	No.	2
17	70-57-001-01	STEM LIFTING	No.	1
18	0316-103950	Fixing bracket	No.	24
19	0325-101668	Screw T.C.E.I. M05x020	No.	48
20	04-02-0014-00	Motor spacer flange	No.	1
21	40-02-045	Motor shaft protection	No.	1
22	40-08-040	Joint D1=12 D2=12	No.	2
23	0325-103020	Screw	No.	2

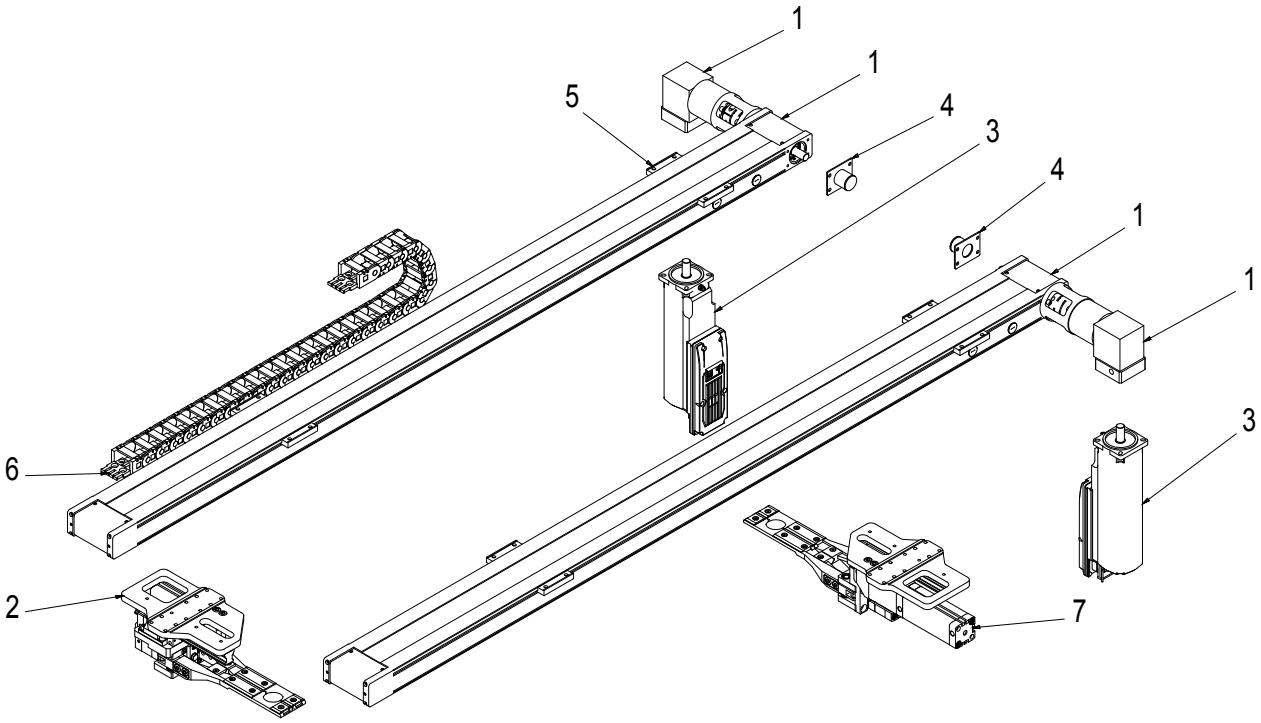
7.2.12 STEM LIFTING ASSEMBLY - 70-57-001-01



7.2.12 STEM LIFTING ASSEMBLY - 70-57-001-01

Ref.	Our Code	Description	U.M.	Qty
1	04-02-0013-00	Plate for sliding pieces	No.	1
2	04-02-0016-00	Spindle support	No.	1
3	0325-101437	Plain washer Ø8	No.	3
4	0325-101444	Screw T.E. M08x020	No.	3
5	04-02-0057-00	Cylinder connection	No.	1
6	0325-101518	Plain washer Ø10	No.	1
7	0325-101624	Screw T.E. M10x025	No.	1
8	0301-103036	Sliding piece	No.	4
9	0325-103042	Screw T.C.E.I. M04x016	No.	16
10	04-02-0042-02	Rack	No.	1
11	0325-101580	Screw T.C.E.I. M06x030	No.	2
12	0317-103140	Motor	No.	1
13	0318-103211	Gear motor	No.	1

7.2.13 LOADER GROUP ASSEMBLY - 70-55-001-01

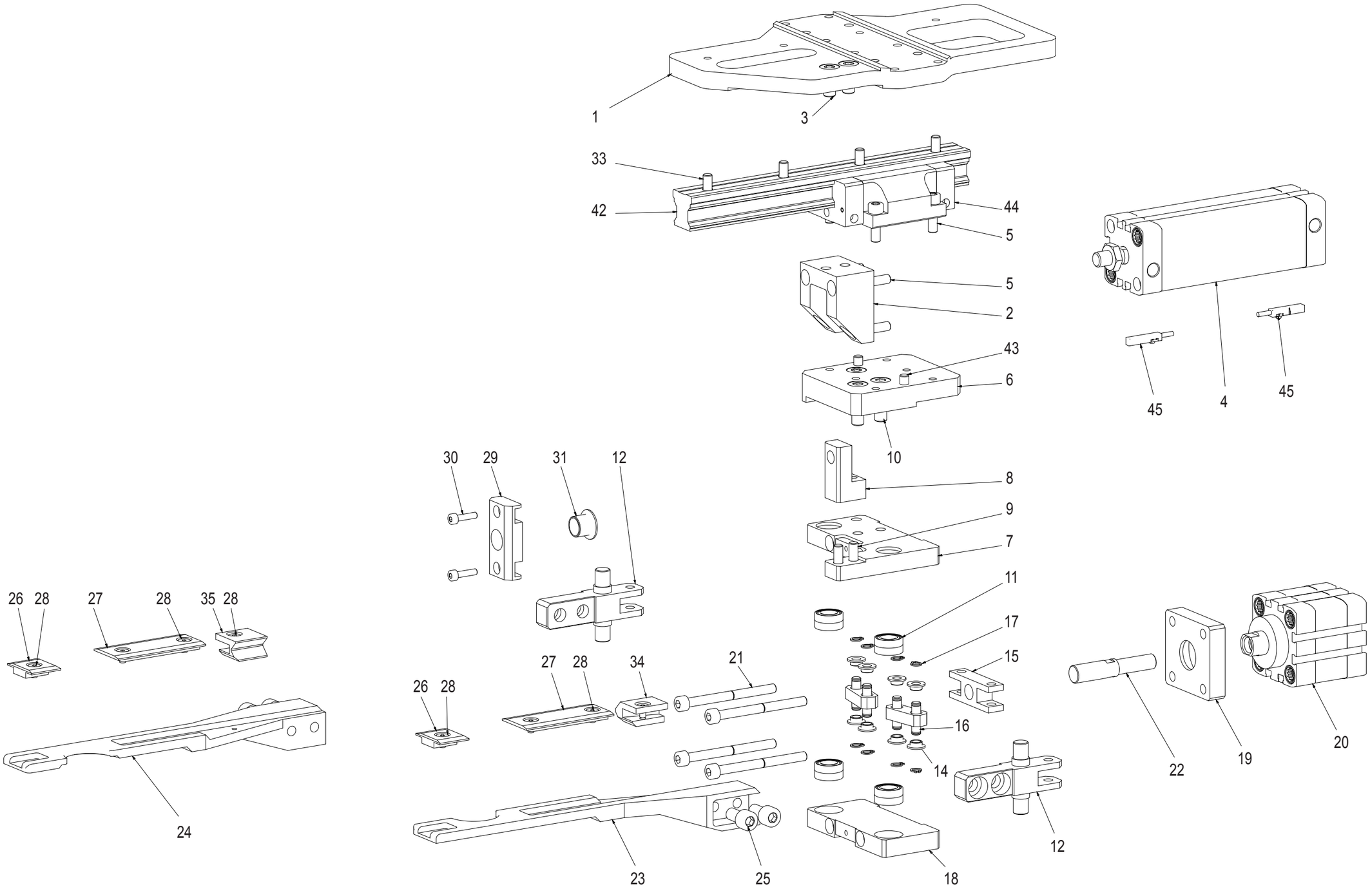


7.2.13 LOADER GROUP ASSEMBLY - 70-55-001-01

Ref.	Our Code	Description	U.M.	Qty
1	0316-103959	Linear module strike=1360	No.	2
2	70-61-001-02	Bag feeder clamp	No.	2
3	0317-103138	Motor	No.	2
4	40-13-036	Shaft cover	No.	2
5	04-02-0108	Bag feeder support	No.	8
6	0315-103916	Cables holder chain	No.	2
7	70-61-002-01	Bag feeder clamp 150	No.	1

THIS PAGE IS INTENTIONALLY LEFT BLANK

7.2.14 BAG FEEDER CLAMP ASSEMBLY - 70-61-001-02



THIS PAGE IS INTENTIONALLY LEFT BLANK

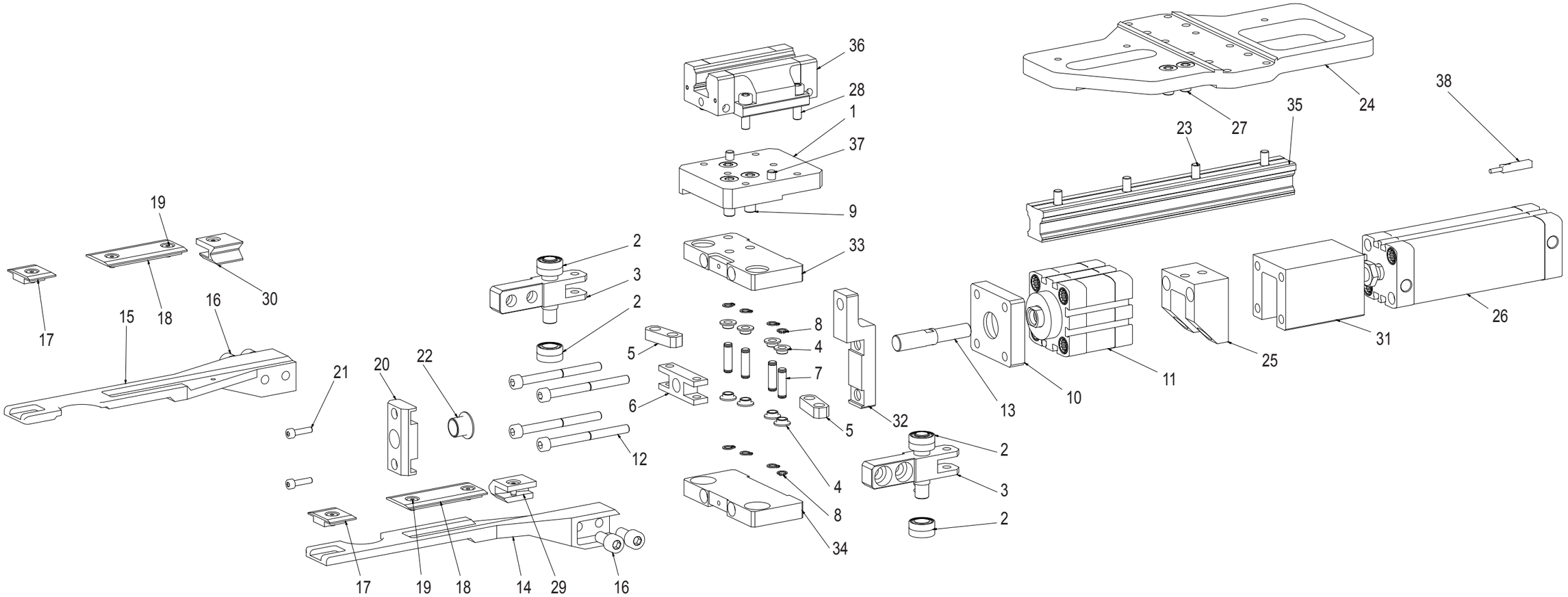
7.2.14 BAG FEEDER CLAMP ASSEMBLY - 70-61-001-02

Ref.	Our Code	Description	U.M.	Qty
1	40-01-038	Clamp supporting plate	No.	1
2	40-01-025	Cylinder fixing support	No.	1
3	0325-103217	Screw T.C.E.I. M08x012	No.	2
4	0311-103638	Compact cylinder	No.	1
5	0325-101669	Screw T.C.E.I. M06x020	No.	8
6	40-01-027-01	Sliding block support	No.	1
7	40-01-014-01	Top plate hs clamp	No.	1
8	40-01-026	Cylinder support	No.	1
9	0325-101441	Screw T.C.E.I. M06x016	No.	2
10	0325-102302	Screw T.C.E.I. M08x020	No.	3
11	0301-103035	Bearing	No.	8
12	40-01-016-01	Clamp finger	No.	2
13	40-01-017	HS clamp connecting rod	No.	2
14	0315-103879	Bushing	No.	8
15	40-01-018	Clamp joint	No.	1
16	40-08-003	Centering pin	No.	4
17	0302-100000	External seeger Ø6	No.	8
18	40-01-015	Bottom plate HS clamp	No.	1
19	40-01-023	Spacer plate of cylinder clamp opening	No.	1
20	0311-103637	Compact cylinder	No.	1
21	0325-103049	Screw T.C.E. M6 x 60	No.	4
22	40-08-002	Sliding round of opening clamp	No.	1
23	08-07-0058-01	Left BF clamp	No.	1
24	08-07-0059-01	Right BF clamp	No.	1
25	0325-101442	Screw T.C.E.I. M08x016	No.	4
26	08-07-0060	HS clamp short skater	No.	2
27	08-07-0061	HS clamp long skater	No.	2
28	0325-103216	Screw T.S.E. M4 x 8	No.	8
29	40-01-019	Central HS support	No.	1
30	0325-103042	Screw T.C.E.I. M04x016	No.	2
31	0315-103880	Bushing	No.	1
33	0325-101670	Screw T.C.E.I. M06x025	No.	4
34	08-07-0062-00	Left BF clamp pointer	No.	1
35	08-07-0063-00	Right BF clamp pointer	No.	1
42	0301-103034	Guide with slinding piece	No.	1
43	40-08-037	Reference pin	No.	2

7.2.14 BAG FEEDER CLAMP ASSEMBLY - 70-61-001-02

Ref.	Our Code	Description	U.M.	Qty
44	40-01-127	Plate	No.	1
45	0310-103746	Magnetic sensor	No.	4

7.2.15 BAG FEEDER CLAMP 150 ASSEMBLY - 70-61-002-00



THIS PAGE IS INTENTIONALLY LEFT BLANK

7.2.15 BAG FEEDER CLAMP 150 ASSEMBLY - 70-61-002-00

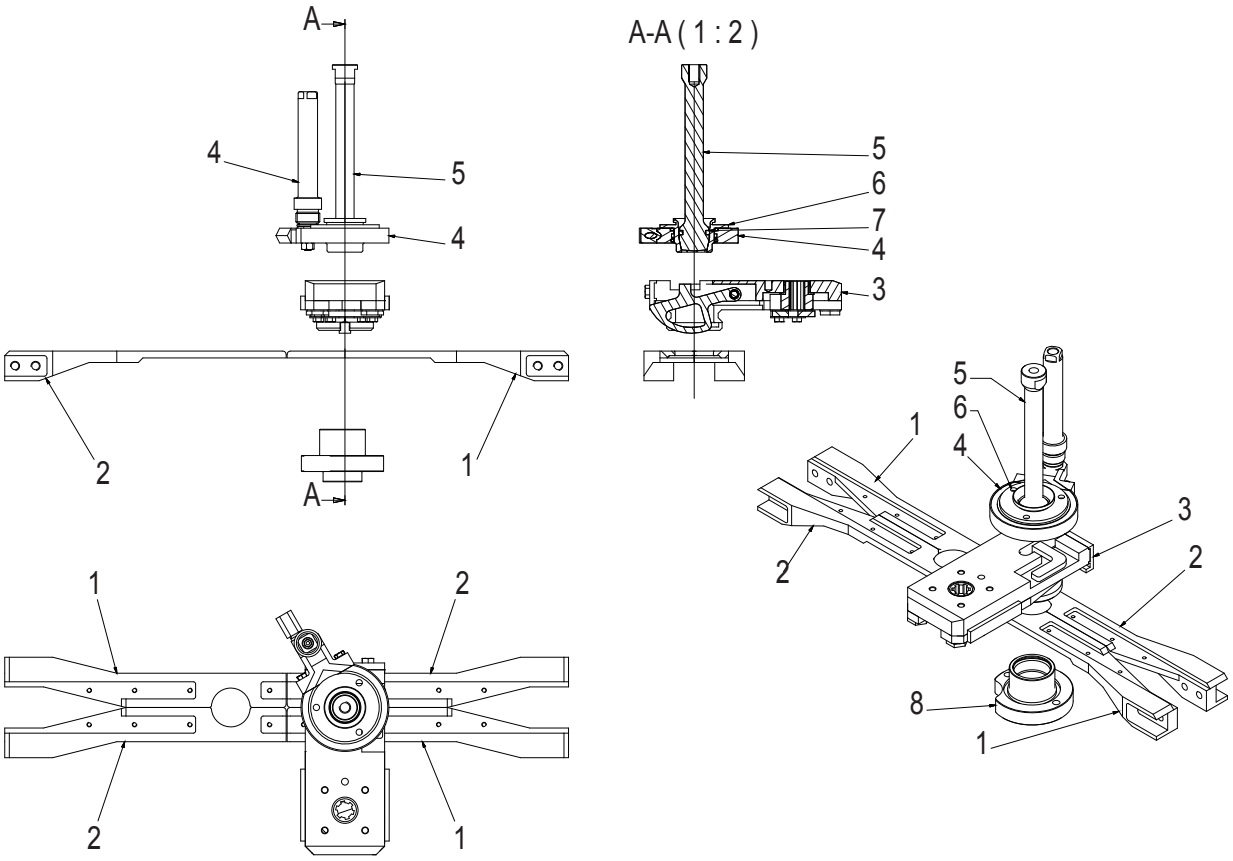
Ref.	Our Code	Description	U.M.	Qty
1	40-01-027-01	Sliding block support	No.	1
2	0301-103035	Bearing	No.	8
3	40-01-016-01	Clamp finger	No.	2
4	0315-103879	Bushing	No.	8
5	40-01-017	HS clamp connecting rod	No.	2
6	40-01-018	Clamp joint	No.	1
7	40-08-003	Centering pin	No.	4
8	0302-100000	External seeger Ø6	No.	8
9	0325-102302	Screw T.C.E.I. M08x020	No.	3
10	40-01-023	Spacer plate of cylinder clamp opening	No.	1
11	0311-103637	Compact cylinder	No.	1
12	0325-103049	Screw T.C.E. M6 x 60	No.	4
13	40-08-002	Sliding round of opening clamp	No.	1
14	08-07-0058-01	Left BF clamp	No.	1
15	08-07-0059-01	Right BF clamp	No.	1
16	0325-101442	Screw T.C.E.I. M08x016	No.	4
17	08-07-0060	HS clamp short skater	No.	2
18	08-07-0061	HS clamp long skater	No.	2
19	0325-103216	Screw T.S.E. M4 x 8	No.	8
20	40-01-019	Central HS support	No.	1
21	0325-103042	Screw T.C.E.I. M04x016	No.	2
22	0315-103880	Bushing	No.	1
23	0325-101670	Screw T.C.E.I. M06x025	No.	4
24	40-01-038	Clamp supporting plate	No.	1
25	40-01-025	Cylinder fixing support	No.	1
26	0311-103638	Compact cylinder	No.	1
27	0325-103217	Screw T.C.E.I. M08x012	No.	2
28	0325-101669	Screw T.C.E.I. M06x020	No.	4
29	08-07-0062-00	Left BF clamp pointer	No.	1
30	08-07-0063-00	Right BF clamp pointer	No.	1
31	40-01-072	Cylinder spacer	No.	1
32	40-01-073	Cylinder support	No.	1
33	40-01-128	Top plate HS clamp	No.	1
34	40-01-075	Bottom plate HS clamp 150	No.	1
35	0301-103034	Guide with slinding piece	No.	1
44	40-01-127	Plate	No.	1

7.2.15 BAG FEEDER CLAMP 150 ASSEMBLY - 70-61-002-00

Ref.	Our Code	Description	U.M.	Qty
43	40-08-037	Reference pin	No.	2
45	0310-103746	Magnetic sensor	No.	4

THIS PAGE IS INTENTIONALLY LEFT BLANK

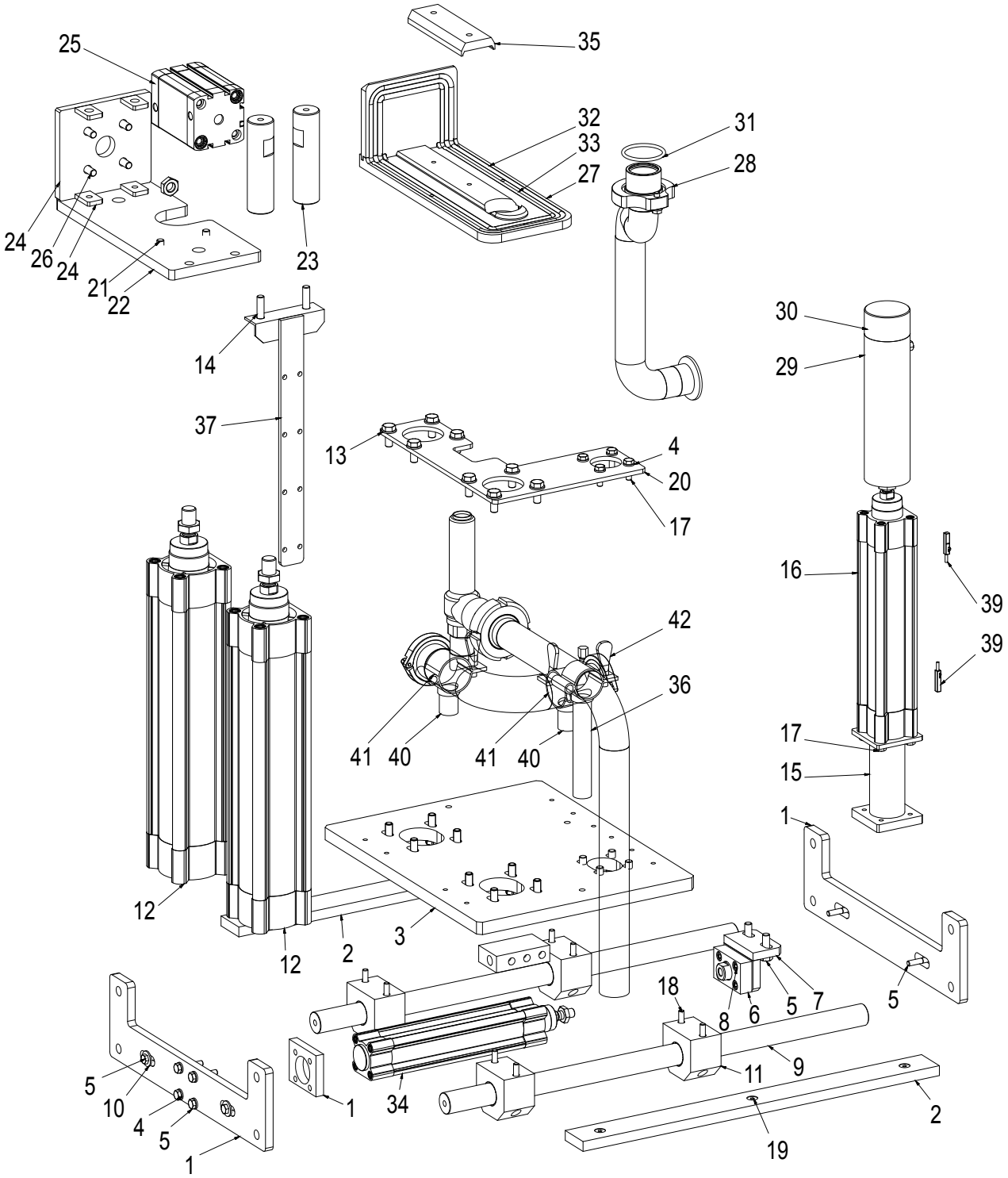
7.2.16 FLAT UNCAPPER KIT - 70-61-004



7.2.16 FLAT UNCAPPER KIT - 70-61-004

Ref.	Our Code	Description	U.M.	Qty
01	08-07-0058-01	Left BF Clamp	No.	02
02	08-07-0059-01	Right BF Clamp	No.	02
03	04-02-101-00	Uncapper groum Smurfit	No.	01
04	70-57-005-01	Valve steam jet diffuser with without retention	No.	01
05	CM15-077-26	Single steam gasket	No.	01
06	CM15-077-27	Single steam gasket nozzle	No	01
07	0306-103389	Seal ATP akSP 27X19,7X3,6	No.	01
08	40-08-007	Low neck washing tube mouth	No.	01

7.2.17 WASHING PLATE GROUP ASSEMBLY - 70-58-001-02



7.2.17 WASHING PLATE GROUP ASSEMBLY - 70-58-001-02

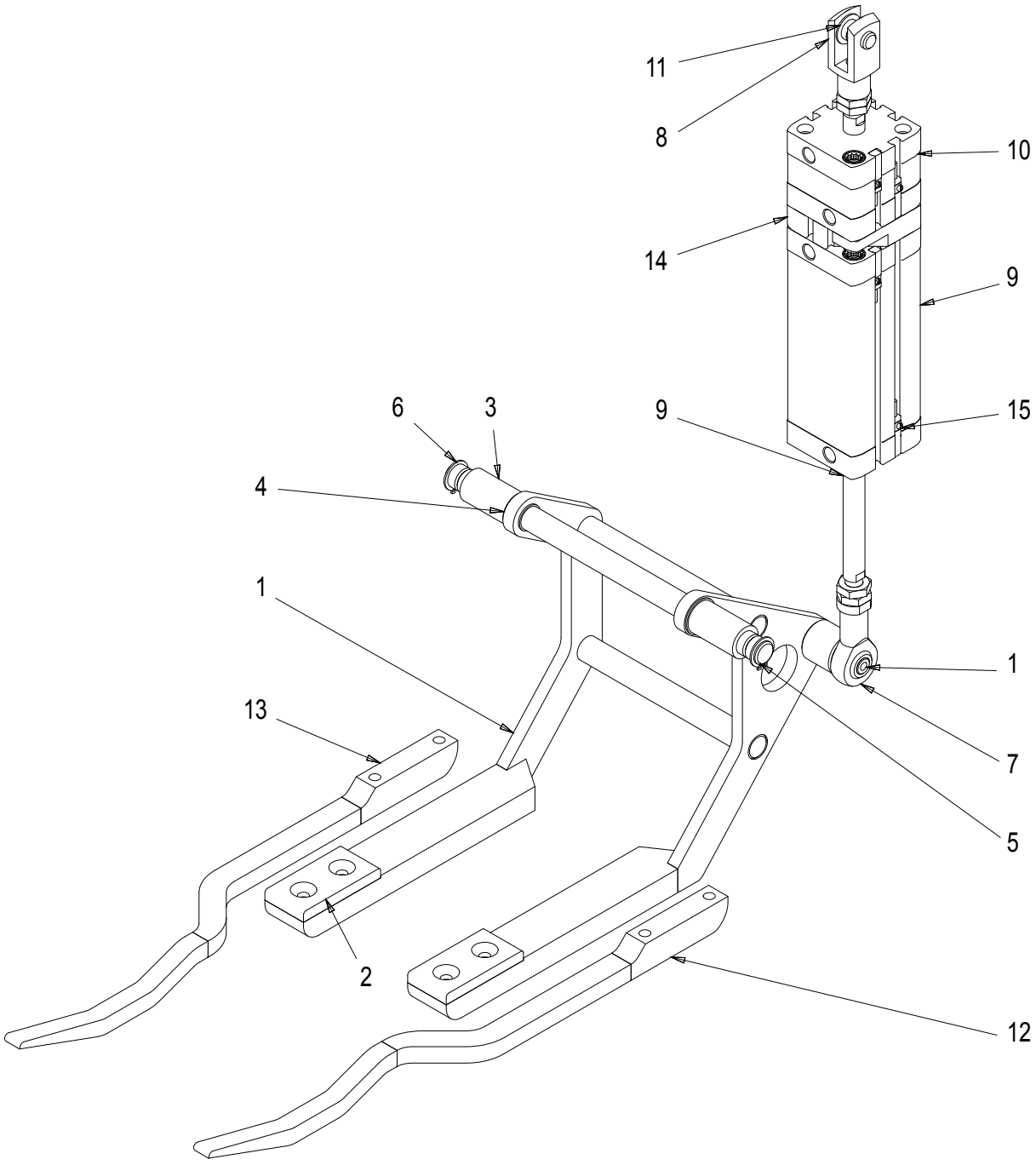
Ref.	Our Code	Description	U.M.	Qty
1	40-13-001-01	Washing plate frame	No.	1
2	40-01-036-00	Polyethylene plate	No.	2
3	40-01-037-00	Washing group support plate	No.	1
4	0325-101810	Plain washer Ø6	No.	20
5	0325-103065	Screw T.E. M06x030	No.	14
6	0311-103643	Flanged junction	No.	1
7	40-13-002-00	Welded plates	No.	1
8	0325-101441	Screw T.C.E.I. M06x016	No.	4
9	40-04-002-01	Sliding bush's round	No.	2
10	0325-103218	Plain washer	No.	4
11	0315-103881	Support	No.	4
12	0311-103639	Cylinder	No.	2
13	0325-101437	Plain washer Ø8	No.	32
14	0325-101624	Screw T.E. M8 x 30	No.	18
15	40-13-003-00	Welded cylinder support	No.	1
16	0311-103640	Cylinder	No.	1
17	0325-101428	Screw T.E. M06x020	No.	10
18	0325-102719	Screw T.C.E.I. M06x040	No.	8
19	0325-103051	Screw T.S.P.E.I. M06x016	No.	6
20	40-02-018	Cylinders fastening sheet metaL	No.	1
21	0325-101444	Screw T.E. M08x020	No.	10
22	40-01-040-00	Lifting washing plate bracket	No.	1
23	40-08-005-00	Washing plate spacer	No.	2
24	40-13-009-00	Washing plate cylinder bracket	No.	1
25	0311-103657	Compact cylinder	No.	1
26	0325-101430	Screw T.E. M08x025	No.	4
27	70-58-002-02	Cip and sip plate	No.	1
28	40-13-010-00	Cip and sip drain pipes	No.	1
29	40-13-011-01	Pad support	No.	1
30	40-08-008-00	Pad	No.	1
31	OR-147	Gasket OR-147	No.	1
32	0350-103876	Gasket OR 274x6	No.	1
33	0350-103875	Gasket OR 250x6	No.	1
34	0311-103673	Cylinder	No.	1

7.2.17 WASHING PLATE GROUP ASSEMBLY - 70-58-001-02

Ref.	Our Code	Description	U.M.	Qty
35	70-58-004-01	Washing plate pointer	No.	1
36	21-00-218	Pipe holder support L=120	No.	1
37	40-13-043	Drain plate	No.	1
38	40-01-090	Drain plate	No.	1
39	0310-103746	Magnetic sensor	No.	8
40	21-00-305	Pipe holder support Ø12 L=30	No.	2
41	0307-100189	Pipe holder DN32	No.	2
42	0307-100190	Pipe holder DN40	No.	1

THIS PAGE IS INTENTIONALLY LEFT BLANK

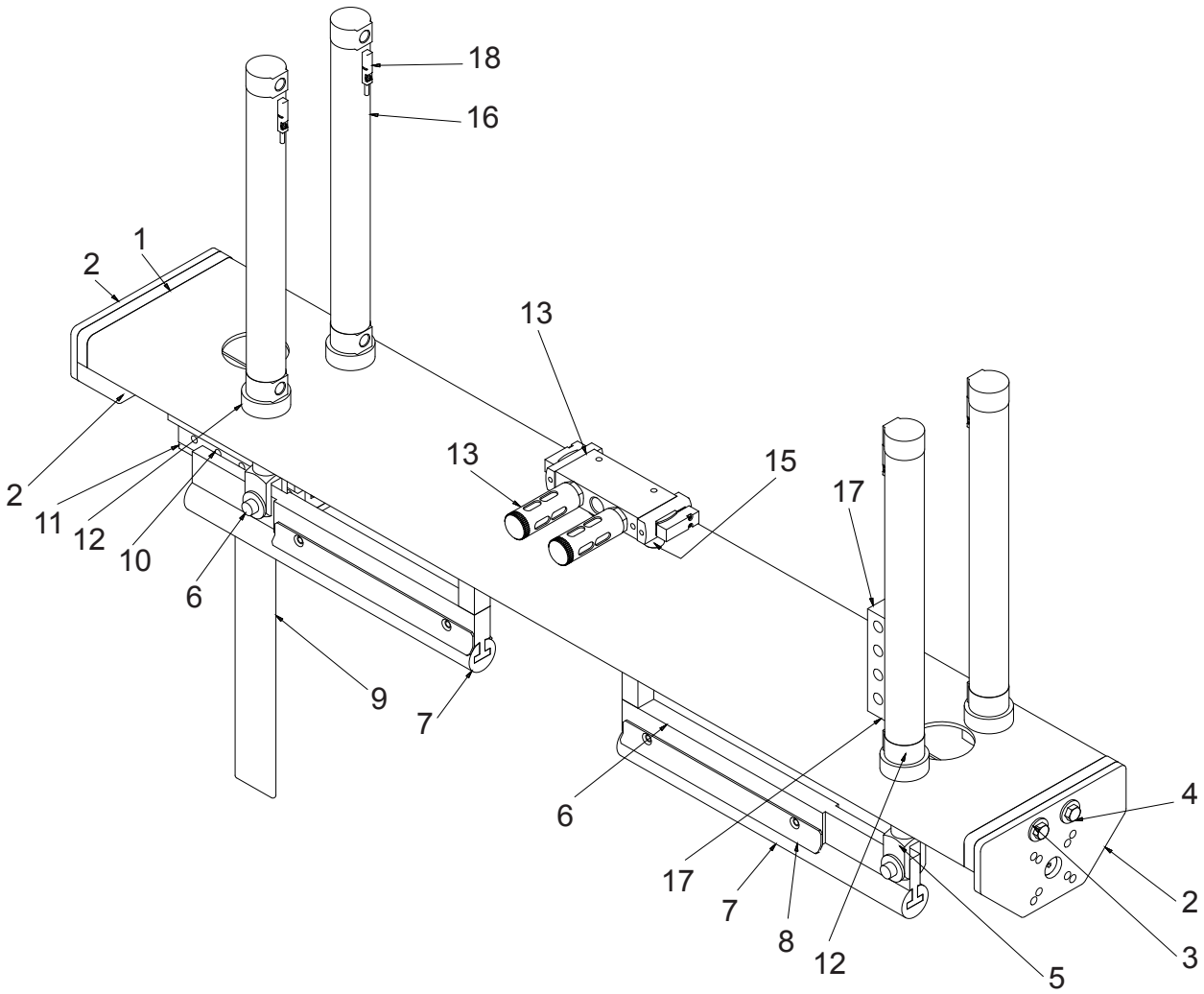
7.2.18 CLAMP SUPPORT ASSEMBLY - 70-68-001-01



7.2.18 CLAMP SUPPORT ASSEMBLY - 70-68-001-01

Ref.	Our Code	Description	U.M.	Qty
1	40-13-040-01	Rotating assembly	No.	1
2	40-01-060	Pad	No.	2
3	40-08-012	Spacer	No.	2
4	0315-103908	Bushing	No.	2
5	40-05-001	Shaft	No.	1
6	0302-100005	External seeger Ø14	No.	2
7	0311-103672	Tie rod M10x1,25	No.	1
8	0311-103669	Tie rod M10x1,25	No.	1
9	0311-103671	Compact cylinder	No.	1
10	0311-103670	Compact cylinder	No.	1
11	0315-103907	Bushing	No.	2
12	40-02-055	Bag runner SX	No.	1
13	40-02-056	Bag runner DX	No.	1
14	0311-103678	Flange	No.	1
15	0310-103746	Magnetic sensor	No.	4

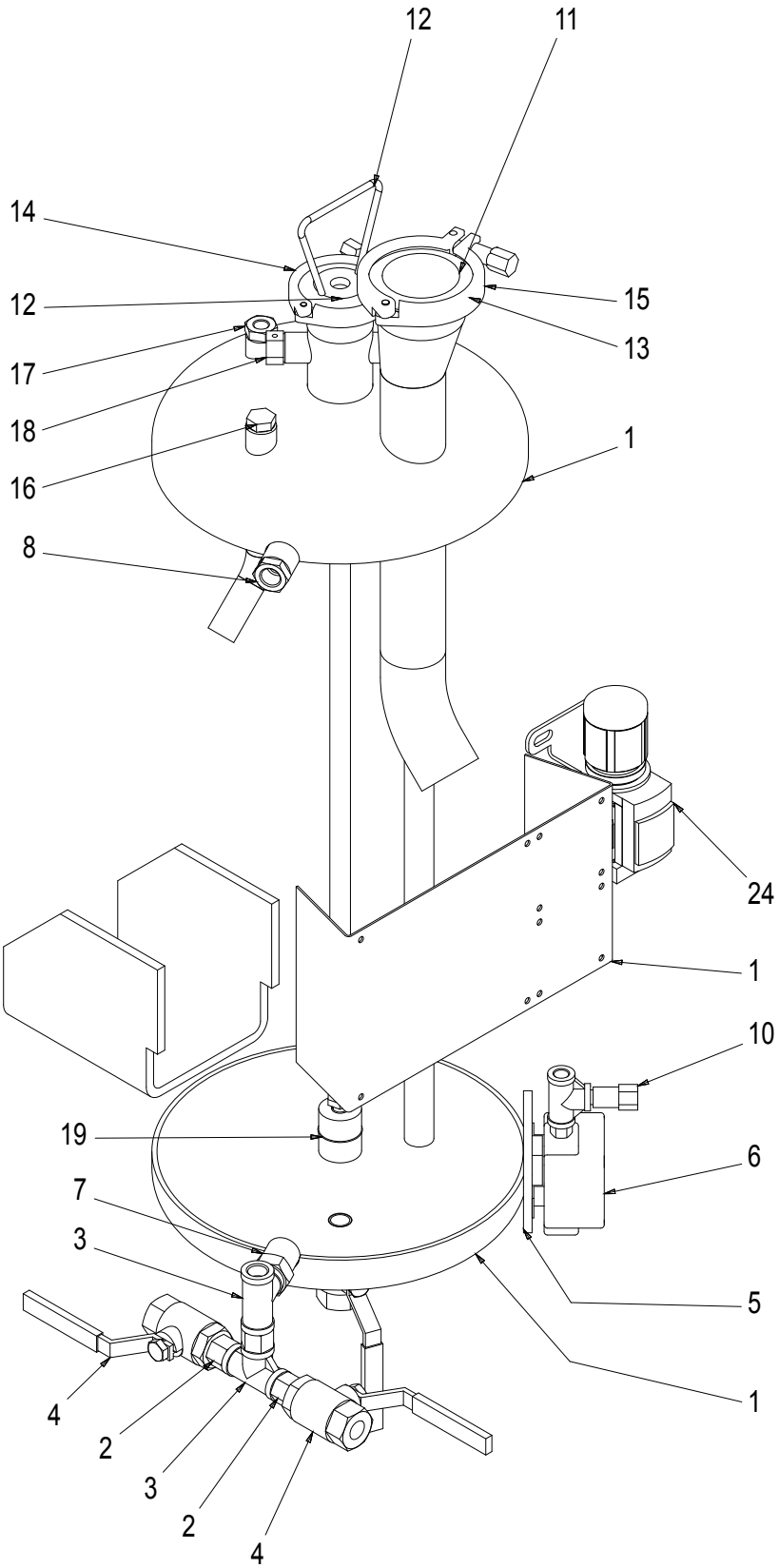
7.2.19 CUTTER ASSEMBLY - 70-60-001-02



7.2.19 CUTTER ASSEMBLY - 70-60-001-02

Ref.	Our Code	Description	U.M.	Qty
1	40-13-037	Crossbar	No.	1
2	40-02-033	Side plate	No.	2
3	0325-101437	Plain washer Ø8	No.	4
4	0325-101514	Screw T.E. M06x016	No.	4
5	0311-103006	Fork M10x1,25	No.	4
6	40-13-038	Pad support	No.	2
7	40-11-008	Rubber pad	No.	4
8	40-02-034	Pad support sheet metal	No.	8
9	40-13-049	Cutter blade	No.	1
10	0311-103676	Cylinder D.25	No.	1
11	40-02-036	Cutter blade adjustable flange	No.	1
12	21-00-308	Cutter cylinder spacer	No.	4
13	0310-103722	Flow regulator	No.	1
14	0311-103682	Silenced flow regulator	No.	2
15	40-08-018	Pneumatic valve support	No.	2
16	0311-103686	Cylinder	No.	4
17	02-13-083	Air distributor	No.	1
18	0310-103746	Magnetic sensor	No.	4

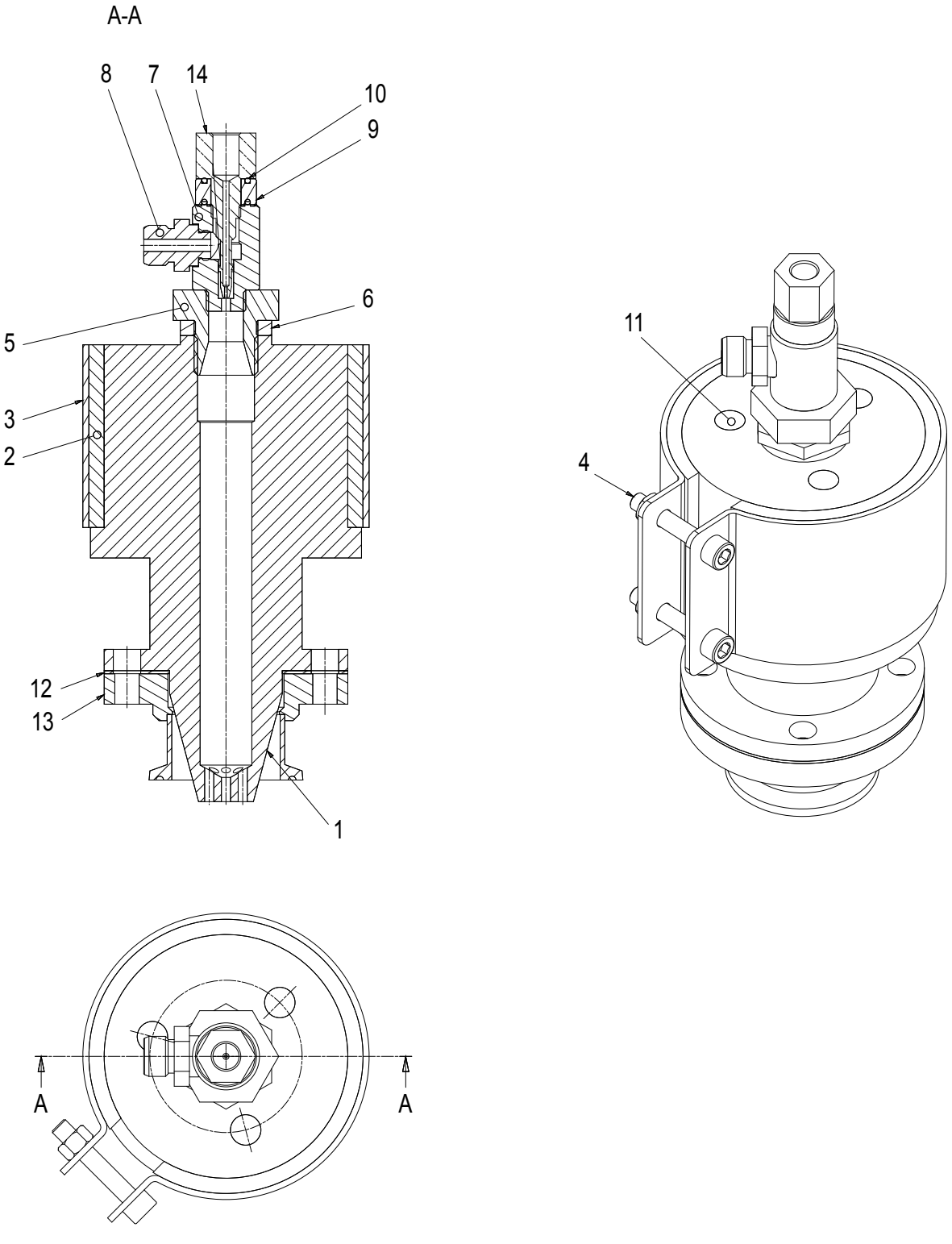
7.2.20 TANK ASSEMBLY - 21-06-335-01



7.2.20 TANK ASSEMBLY - 21-06-335-01

Ref.	Our Code	Description	U.M.	Qty
1	04-08-0001-01	Tank group	No.	1
2	0307-100097	Nipple	No.	3
3	0307-100129	Junction	No.	3
4	0309-100447	Manual ball valve	No.	3
5	40-01-094	Process pump bracket support	No.	1
6	0314-103021	Membrane pneumatic pump	No.	1
7	0307-101663	Nipple	No.	1
8	0307-100106	Junction	No.	1
9	0307-100098	Nipple	No.	1
10	21-00-042	Juntion	No.	1
11	0307-103301	Clamp cap	No.	1
12	04-08-0002	Float holding shaft	No.	1
13	0306-103346	Gasket clamp	No.	1
14	0307-101235	Clamp	No.	1
15	0307-100732	Clamp	No.	1
16	0307-100134	Cap	No.	3
17	0307-100105	Junction	No.	1
18	21-06-017	Airway cap	No.	1
19	0310-101823	Level switch	No.	1
20	0311-103540	Pressure reducer	No.	1

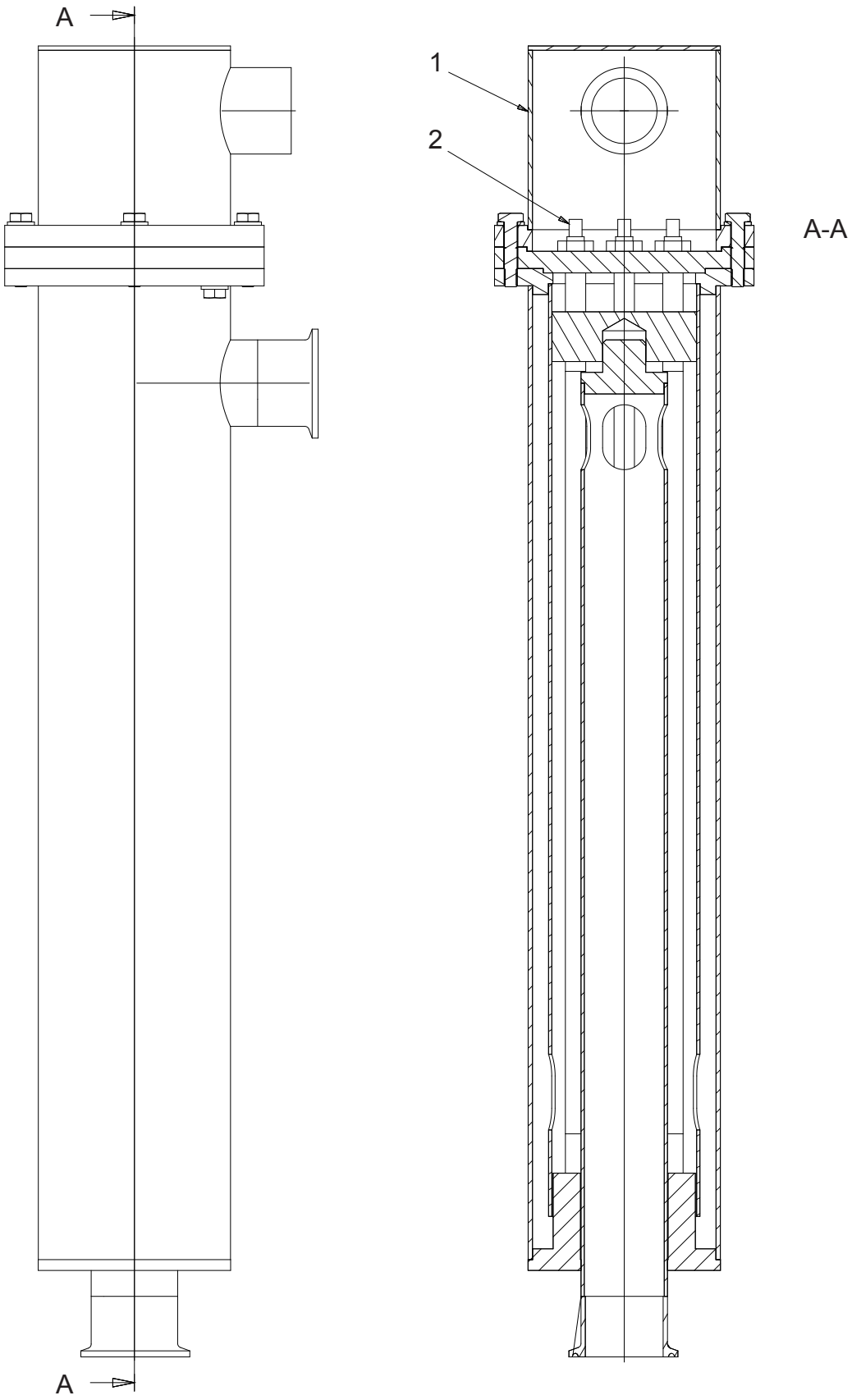
7.2.21 VENTURI GROUP ASSEMBLY - 70-66-010-01



7.2.21 VENTURI GROUP ASSEMBLY - 70-66-010-01

Ref.	Our Code	Description	U.M.	Qty
1	70-66-008-00	Injector body	No.	1
2	70-66-009-01	Insulator	No.	1
3	70-66-007-00	External strip	No.	1
4	0325-101670	Screw T.C.E.I. M06x035	No.	2
5	70-66-006-00	Junction	No.	1
6	70-66-005-00	Sleeve for adjustement	No.	1
7	70-66-002-00	Venturi meter body	No.	1
8	70-66-004-00	Venturi meter body connection	No.	1
9	70-66-001-00	Venturi group spacer	No.	1
10	OR-2050	Gasket OR-2050	No.	2
11	0316-103945	Cartridge Heater	No.	3
12	40-11-009	Seal	No.	1
13	40-13-042	Heater adapter	No.	1
14	70-66-003-00	Nozzle	No.	1

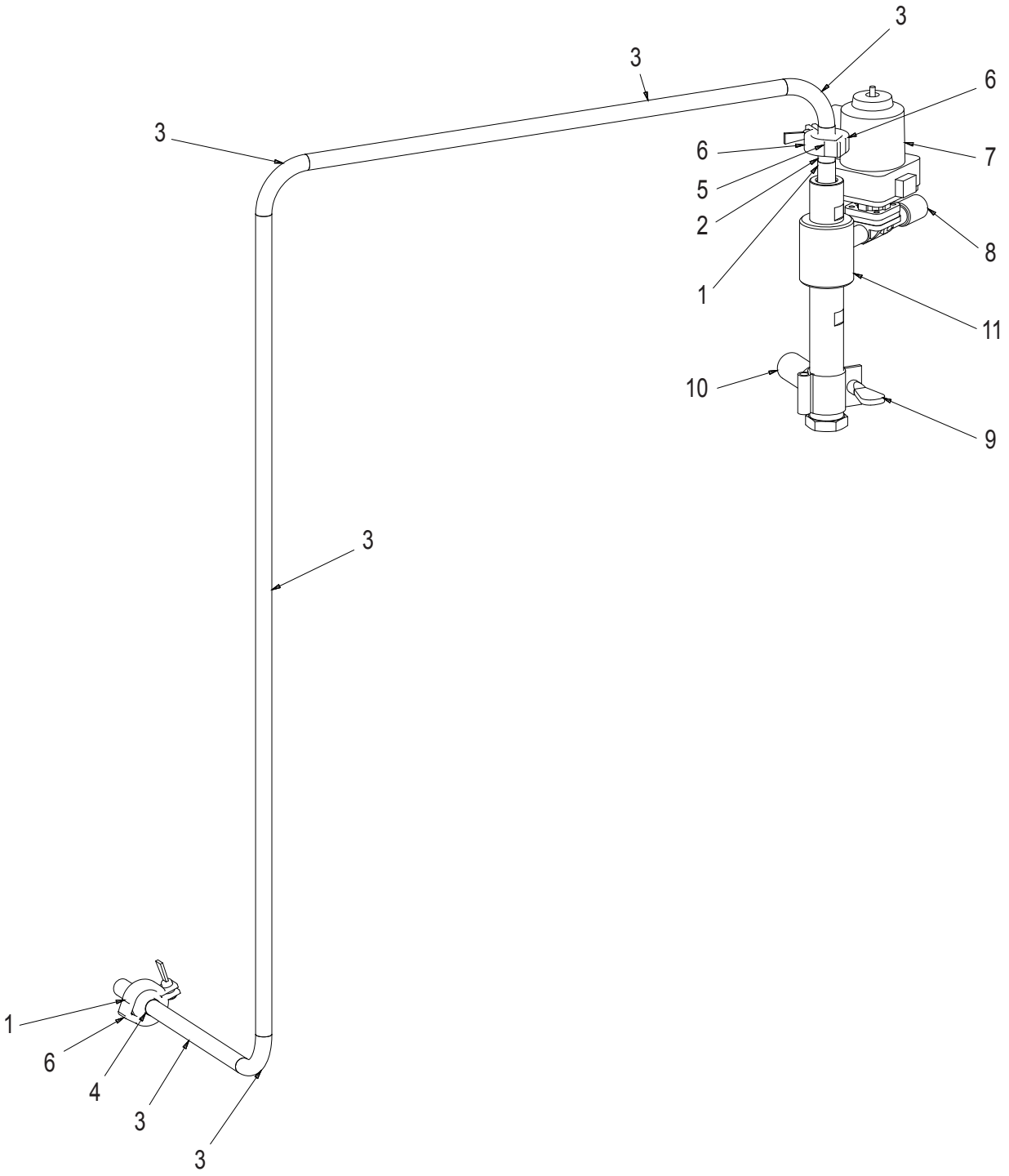
7.2.22 STERILIZED AIR HEATER ASSEMBLY - 70-66-022-01



7.2.22 STERILIZED AIR HEATER ASSEMBLY - 70-66-022-01

Ref.	Our Code	Description	U.M.	Qty
1	70-66-027	Sterilized air heater group	No.	1
2	0316-103944	Cartridge Heater	No.	6

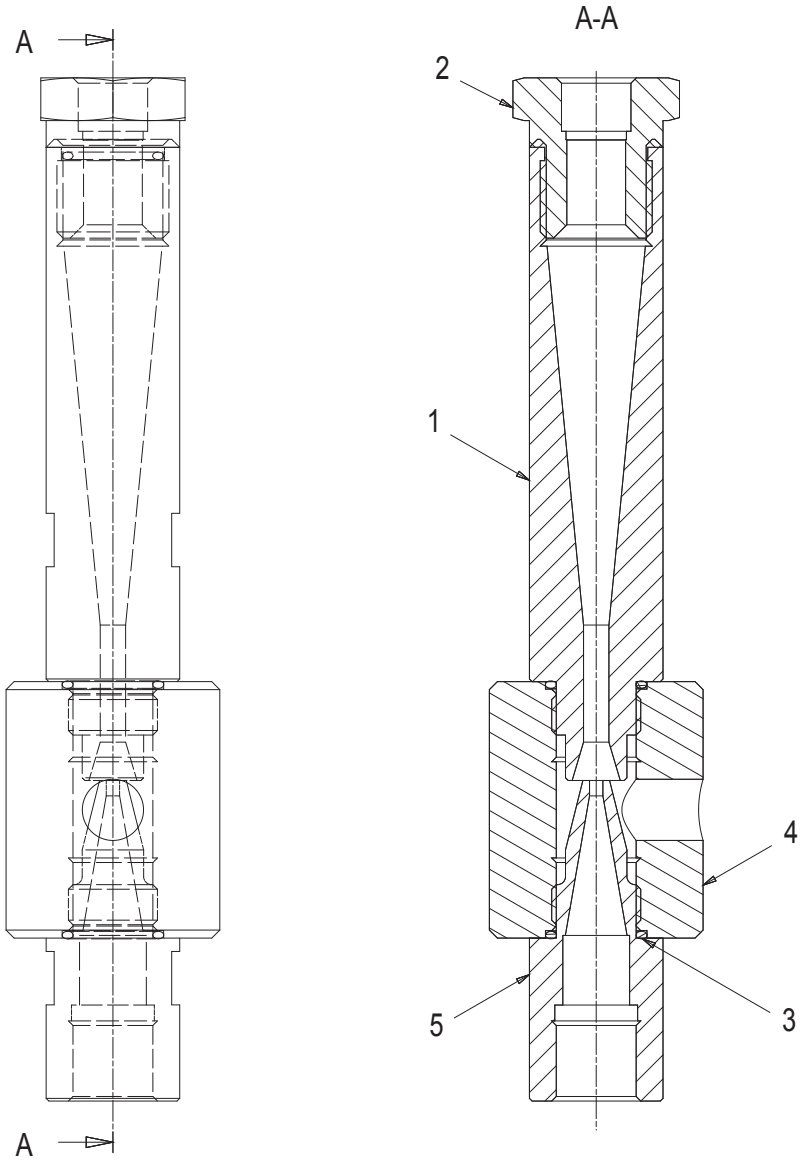
7.2.23 EJECTION STEAM BARRIER PIPING ASSEMBLY - 70-69-026-01



7.2.23 EJECTION STEAM BARRIER PIPING ASSEMBLY - 70-69-026-01

Ref.	Our Code	Description	U.M.	Qty
1	0307-100114	Welding male part	No.	3
2	0307-103180	Clamp	No.	2
3	0319-100756	Pipe Ø12	No.	6
4	0307-103180	Clamp ferrule BS 4825 Inch 1-2	No.	2
5	0307-102199	Clamp gasket	No.	2
6	0307-102198	Clamp claw	No.	2
7	0309-101039	Pneumatic membrane valve	No.	1
8	0307-100122	Socket	No.	1
9	0307-100222	Pipe holder	No.	1
10	21-00-124	Piper holder support	No.	1
11	21-01-090	Ejector assembly	No.	1

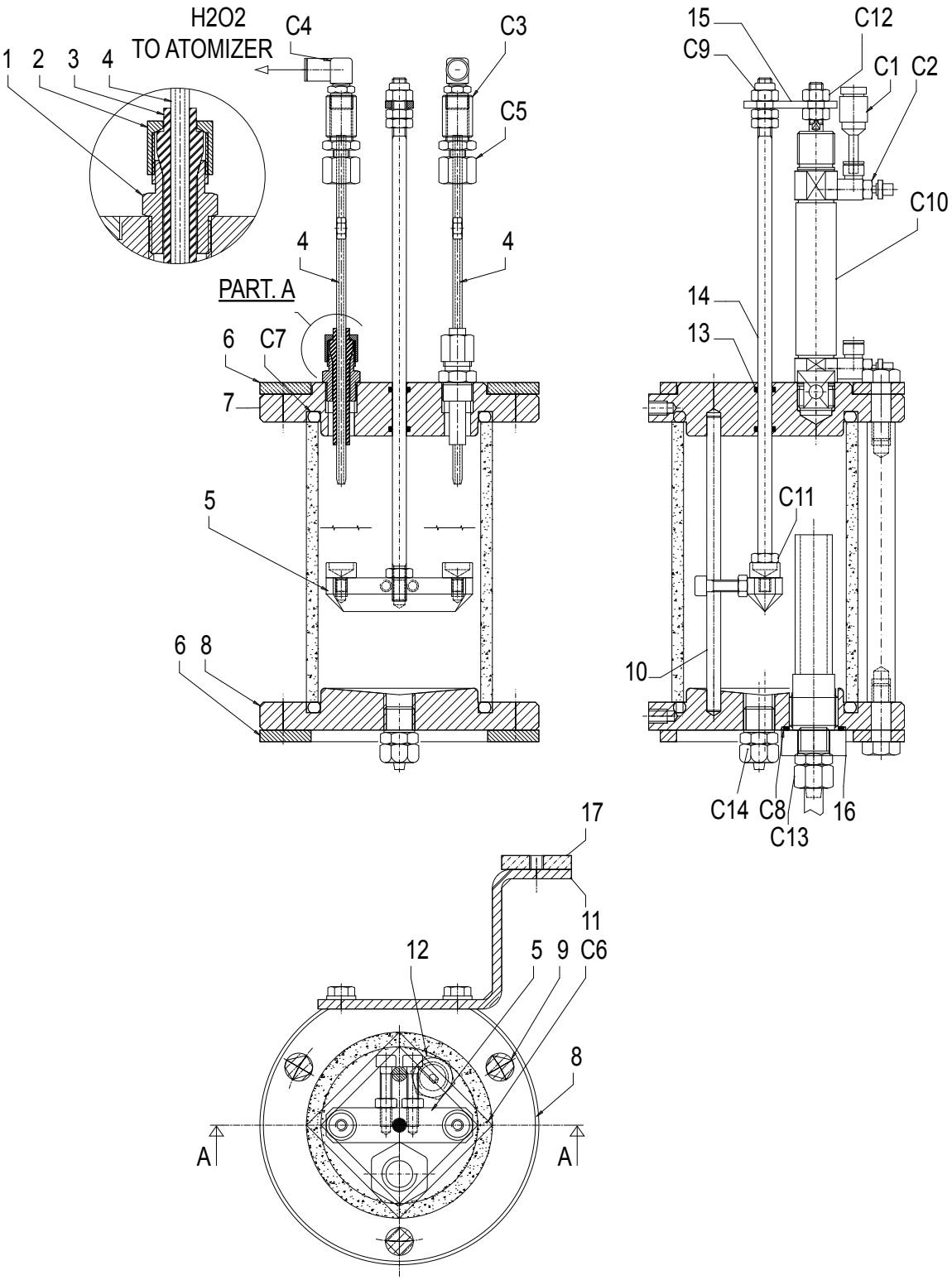
7.2.24 SUCTION EJECTOR ASSEMBLY - 21-01-090-00



7.2.24 SUCTION EJECTOR ASSEMBLY - 21-01-090-00

Ref.	Our Code	Description	U.M.	Qty
1	21-01-083-00	Ejector body	No.	1
2	21-01-089-00	Ejector juntion	No.	1
3	OR-2062	Gasket OR-2062	No.	3
4	21-01-018-00	Ejector hub	No.	1
5	21-01-084-00	Ejector nozzle	No.	1

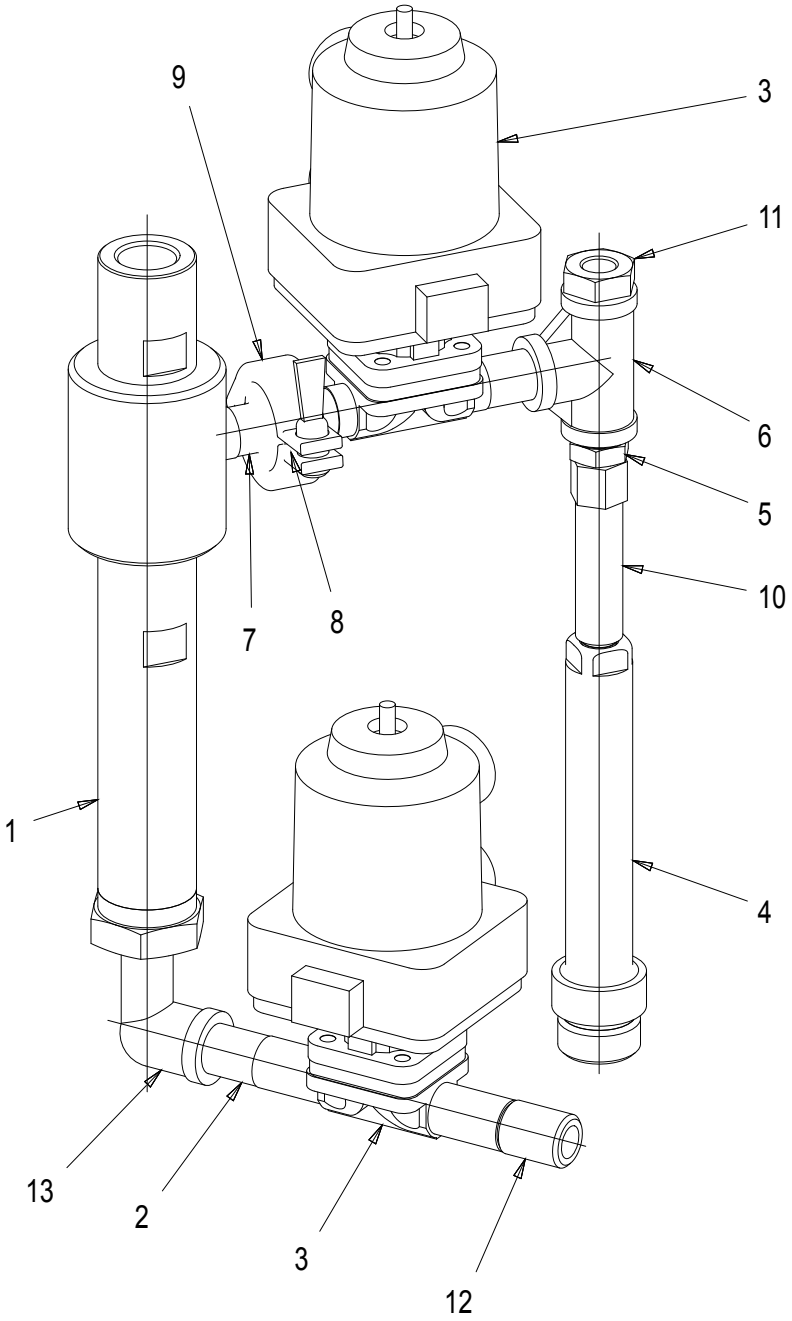
7.2.25 DISPENSER TANK - 21-06-338



7.2.25 DISPENSER TANK - 21-06-338

Ref.	Our Code	Description	U.M.	Qty
1	21-00-001	Union ø1/4"	No	02
2	21-00-003	Nut ø1/8" and ø1/4"	No	02
3	21-00-026-1	Levels insulating	No	02
4	21-06-027	Disinfectant suction pipe	No	02
5	21-06-004	Support for dosing	No	01
6	21-06-026	Reinforcement ring	No	02
7	21-06-014-02	Upper flange	No	01
8	21-06-015-01	Lower flange	No	01
9	21-06-003	Tie rod	No	03
10	21-06-023	Round	No	01
11	21-06-007	Stirrup	No	01
12	21-06-017	Plug	No	01
13	OR-2021	Gasket OR-2021	No	02
14	21-06-331	Rod	No	01
15	21-06-332	Cylinder connection plate	No	01
16	21-06-334	Overflow pipe	No	01
17	21-06-059	Fixing plate	No	01
C1	0311-101526	Union ø6/4	No	02
C2	0311-102122	Flow regulator	No	02
C3	0307-100123	Coupling DN1/8"	No	02
C4	0307-103017	Union 90° ø4x1/8"	No	02
C5	0307-102181	Union 1/8" x ø4	No	02
C6	0315-101256	Sight glass DN65	No	01
C7	OR-6275-S	Gasket OR - OR 6275 - 69.22	No	02
C8	OR-3075	Gasket OR 3075	No	01
C9	0325-103033	Nut M6 UNI 7473	No	01
C10	0311-103369	Cylinder	No	01
C11	0325-102725	Nut M6 UNI 5589	No	03
C12	0325-101584	Nut M6 UNI 5588	No	02
C13	0307-103076	Union Ø8x1/4"	No.	01
C14	0307-103074	Union Ø6x1/4"	No.	01
*	21-06-013-1	Dosing disinfectant 0,5 cc	No.	1

7.2.26 VENTURI GROUP ASSEMBLY - 70-66-010-01



7.2.26 VENTURI GROUP ASSEMBLY - 70-66-010-01

Ref.	Our Code	Description	U.M.	Qty
1	21-01-090	Ejector assembly	No.	1
2	0307-100114	Welding male	No.	3
3	0309-101039	Membrane valve	No.	2
4	40-08-14	Diffuser feeding manifold	No.	1
5	0307-100096	Nipple	No.	1
6	0307-100129	Union	No.	1
7	0307-103180	Clamp	No.	2
8	0307-102199	Clamp gasket	No.	1
9	0307-102198	Clamp	No.	1
10	21-00-175	Extension	No.	1
11	0307-100105	Reduction	No.	1
12	0307-100123	Socket 1/8"	No.	1
13	0307-100124	Elbow	No.	1

7.3 HOW TO ORDER SPARE PARTS

7.3.1 USE OF THE CATALOGUE

In order to keep the quality and operation characteristics of Alfa Laval machines intact, only original spare parts must be used.

The use of spare parts that are not original means **the immediate withdrawal of the warranty.**

This catalogue gives information on how to order spare parts by choosing them on the enclosed tables and referring to the relative codes.

7.3.2 TO ORDER SPARE PARTS

Alfa Laval service assistance can manage itself directly with the order, or the Alfa Laval agent can immediately provide in sending the request.

To order spare parts we ask kindly to the Customer to use, sending it by fax or e-mail, the attached module (to use the schedule for more than one order we recommend you to copy the original page).

The fulfilling of this schedule will facilitate the duties of the assistance department, reducing considerably the delivery times and will avoid possible errors.

To order electrical spare parts, fill the description and the component code, these data can be taken from the list of the electric diagram.

Moreover, it is extremely important ALWAYS to specify the type of machine and serial number: this allows the code numbers to be checked in order to avoid any errors or difficulties.

Telephone Contact

ALFA LAVAL Spare Parts Office tel. +30 0521 302850 fax 0521 302842

E-mail sandra.maraffi@alfalaval.com

7.3.3 CARD FOR SPARE PARTS ORDERING

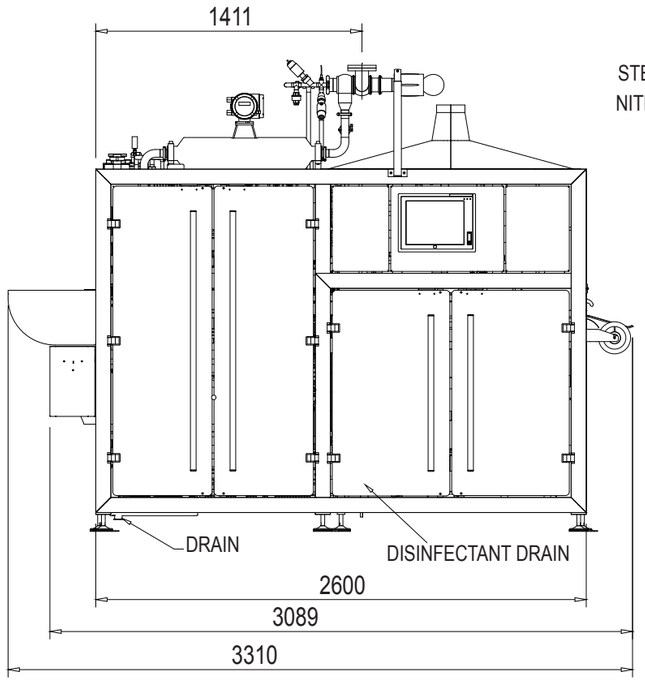
SPARE PARTS ORDERING CARD	
Client	
Machine model	
Serial Number	
Order date	

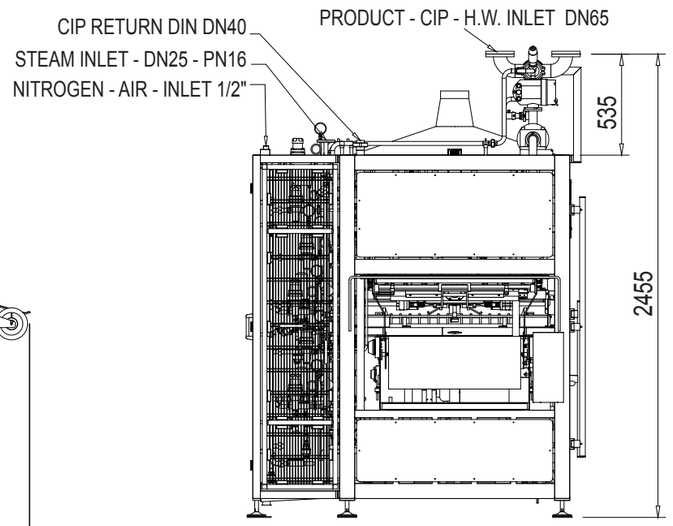
Table No.	Pos. No.	Code	Qty	Description

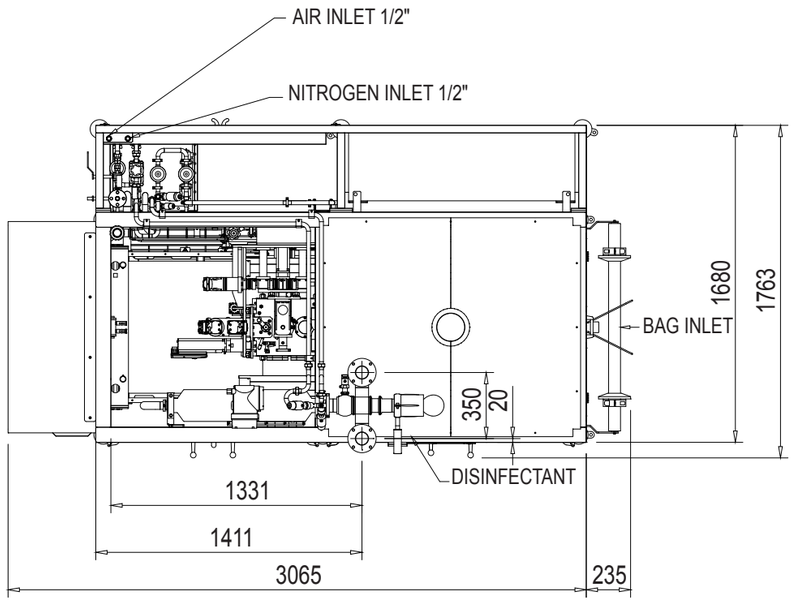
THIS PAGE IS INTENTIONALLY LEFT BLANK

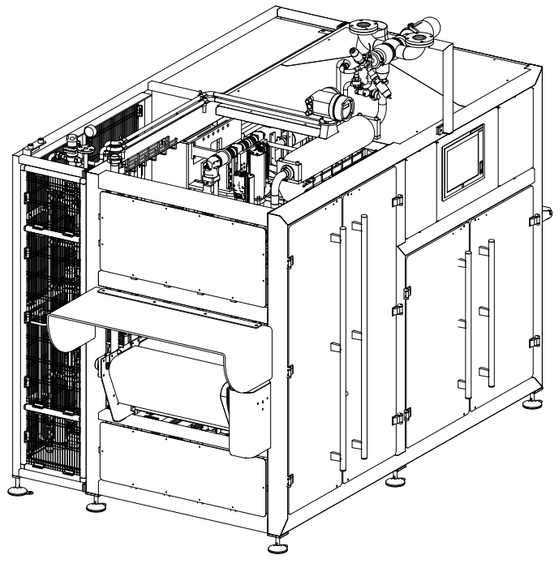
8 LAYOUT - FLOW SHEET - ELECTRIC AND PNEUMATIC DIAGRAM

8.1 LAYOUT 01.00.1908-00



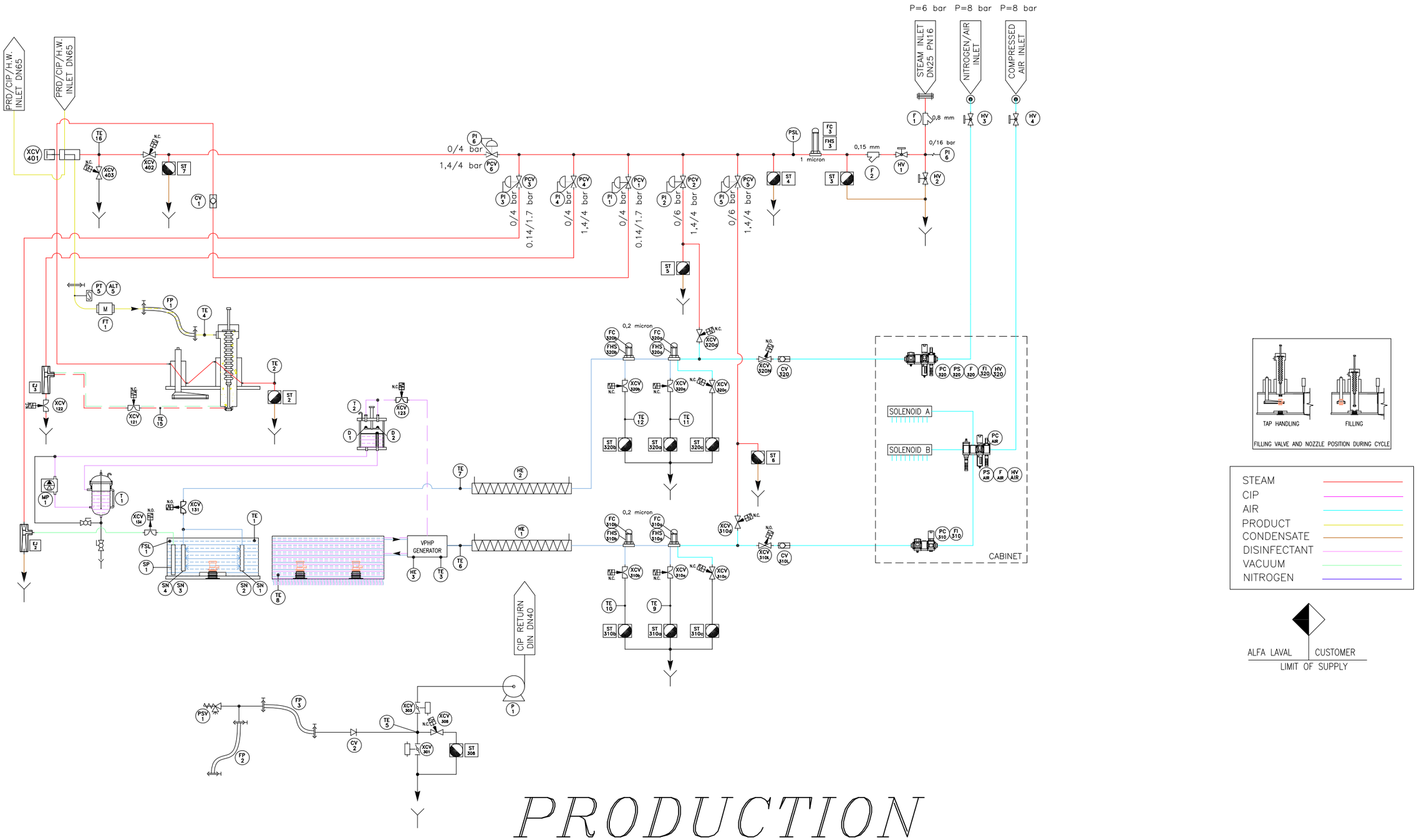






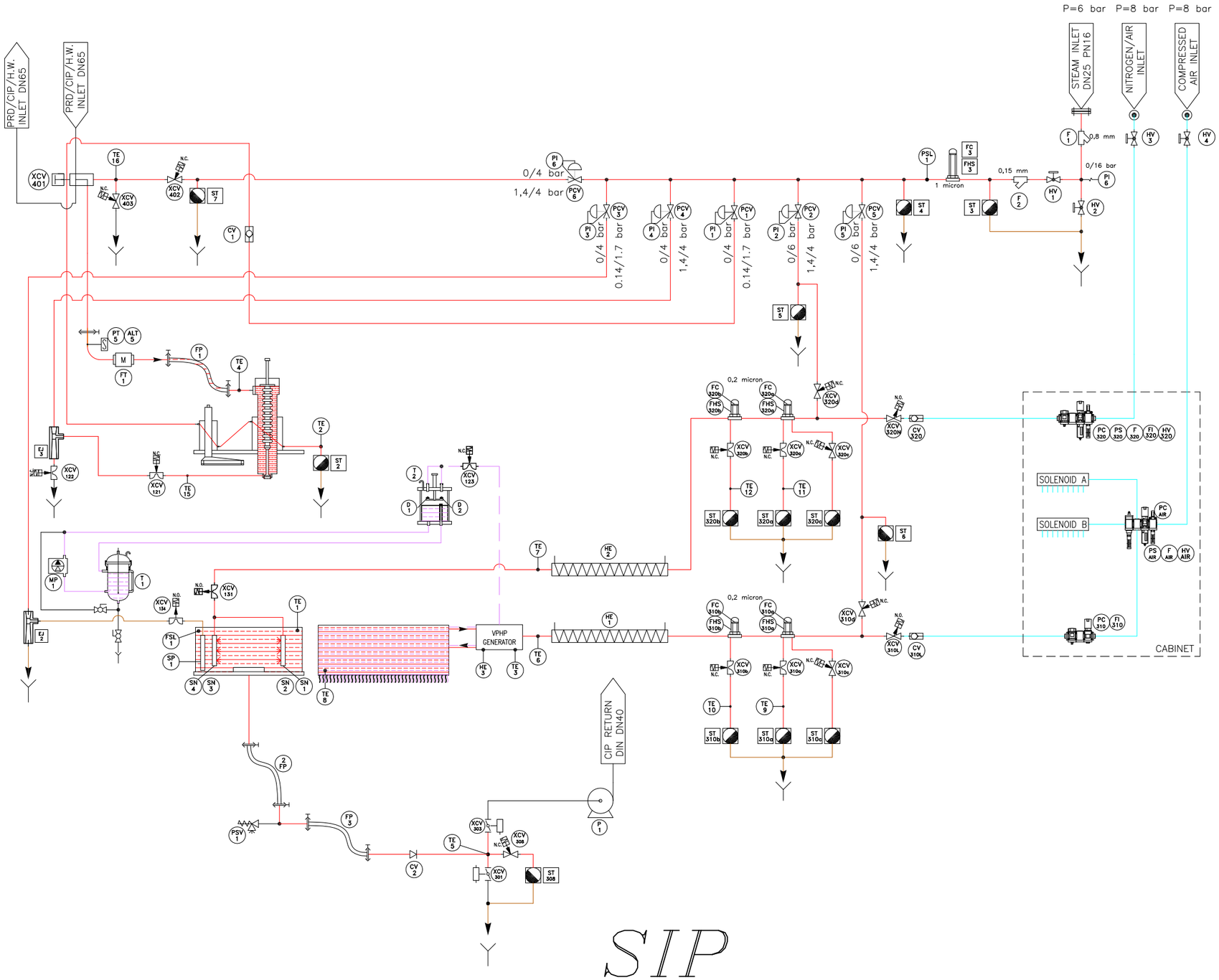
THIS PAGE IS INTENTIONALLY LEFT BLANK

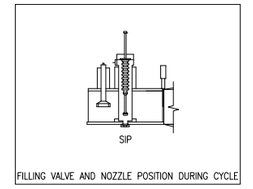
8.2 P&ID 05.04.1330-02



PRODUCTION

THIS PAGE IS INTENTIONALLY LEFT BLANK



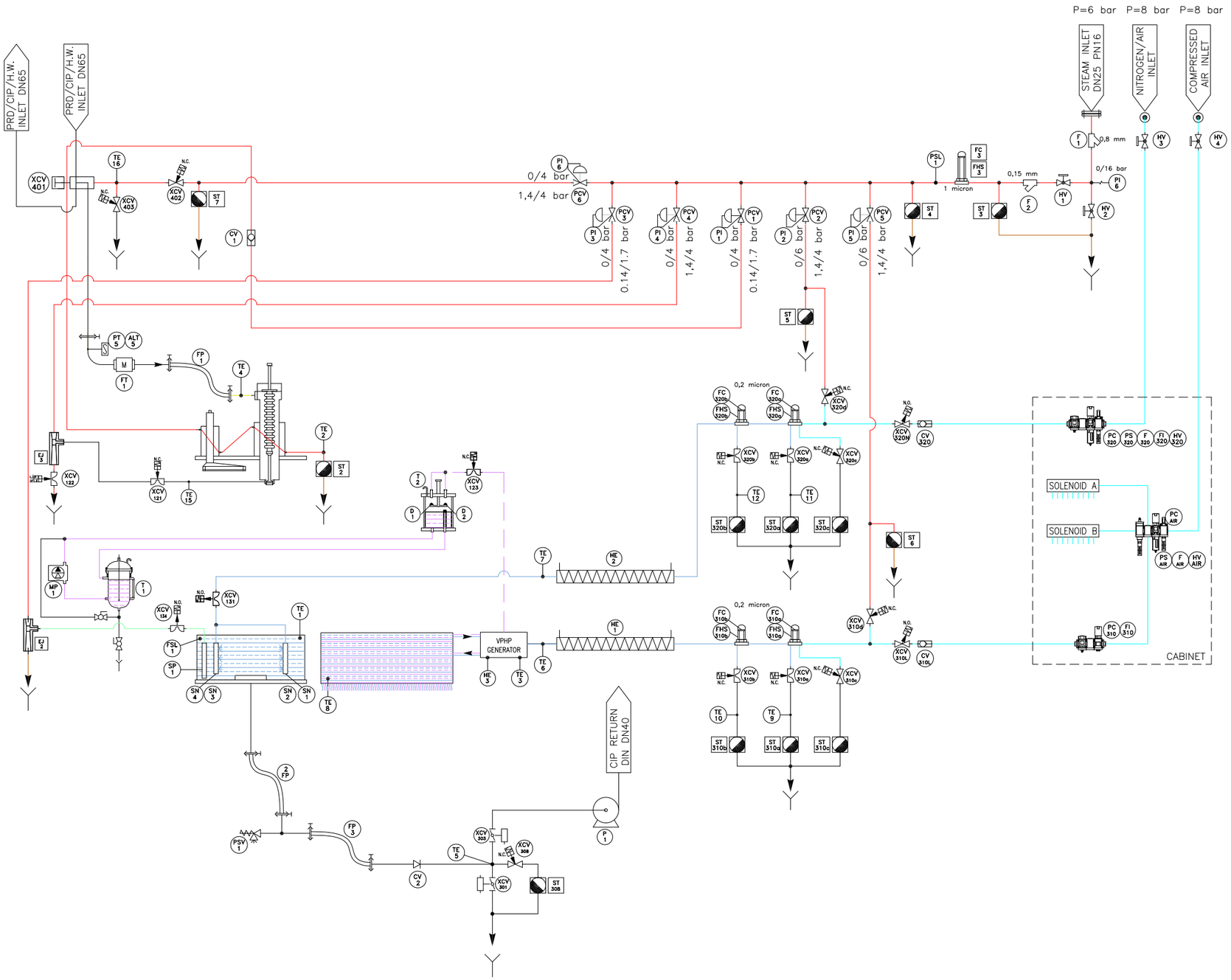


FILLING VALVE AND NOZZLE POSITION DURING CYCLE

STEAM
CIP
AIR
PRODUCT
CONDENSATE
DISINFECTANT
VACUUM
NITROGEN

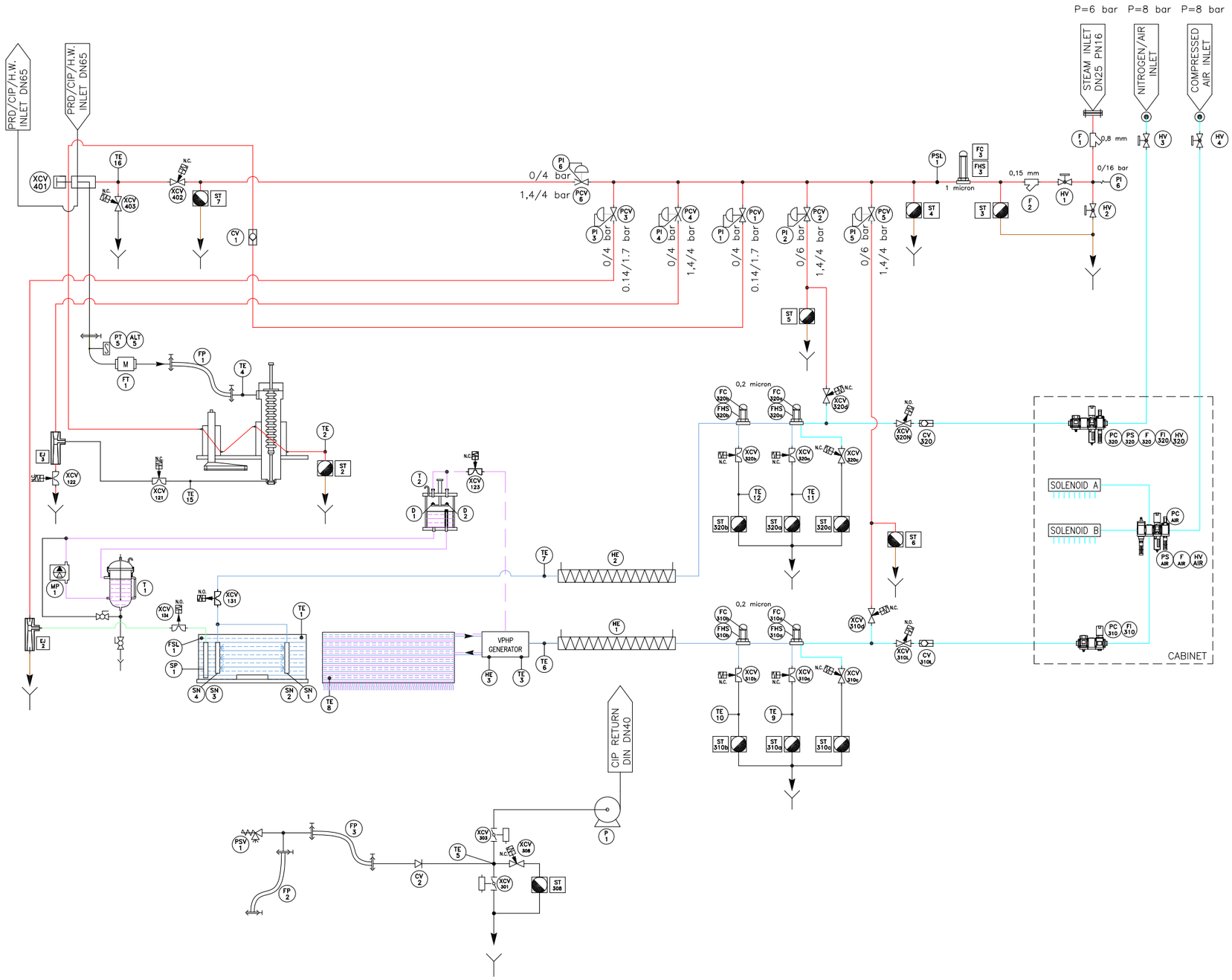
ALFA LAVAL | CUSTOMER
LIMIT OF SUPPLY

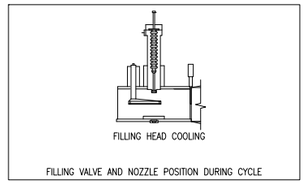
THIS PAGE IS INTENTIONALLY LEFT BLANK



PRD LINE COOLING

THIS PAGE IS INTENTIONALLY LEFT BLANK



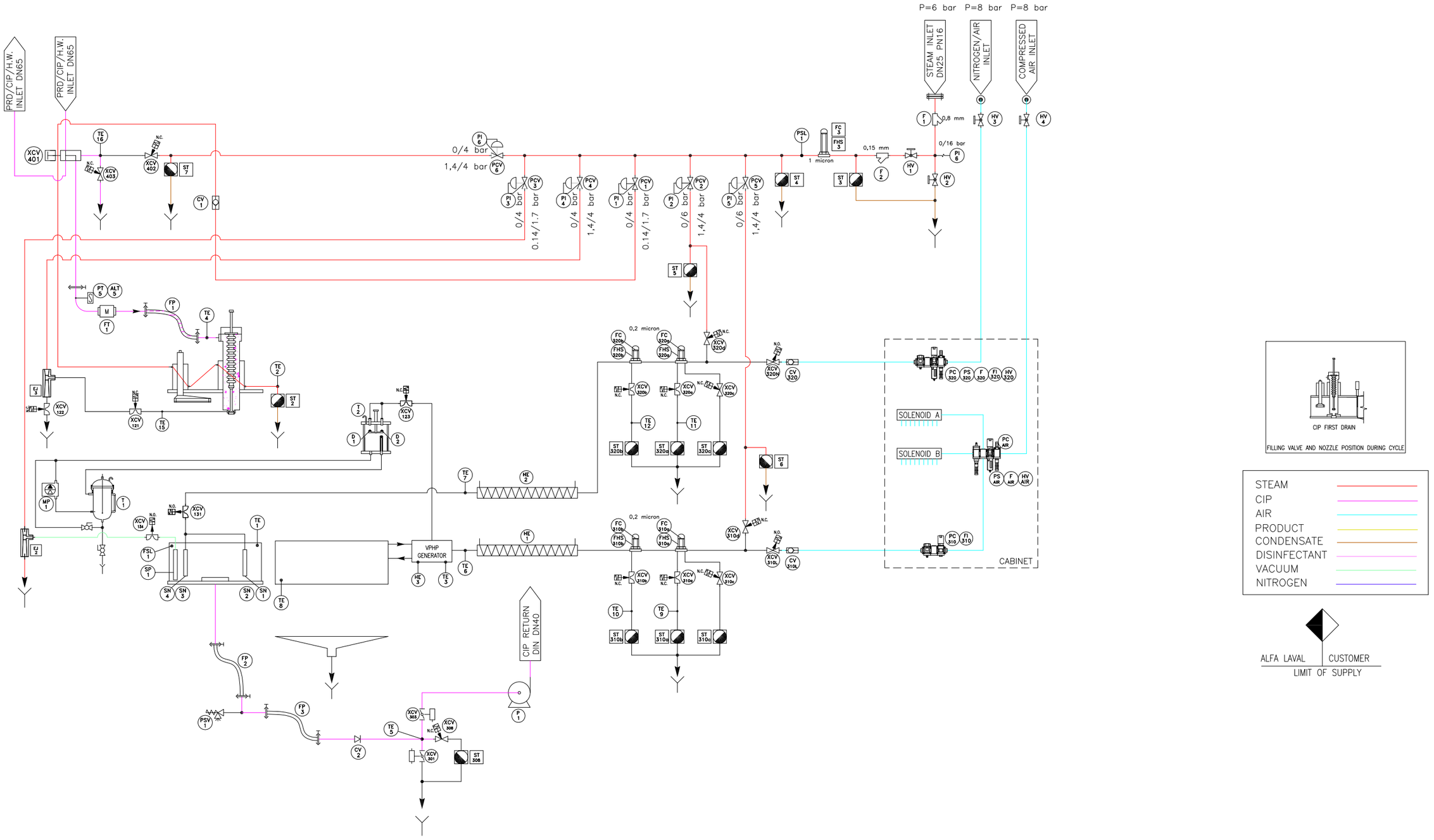


STEAM
CIP
AIR
PRODUCT
CONDENSATE
DISINFECTANT
VACUUM
NITROGEN

ALFA LAVAL | CUSTOMER
LIMIT OF SUPPLY

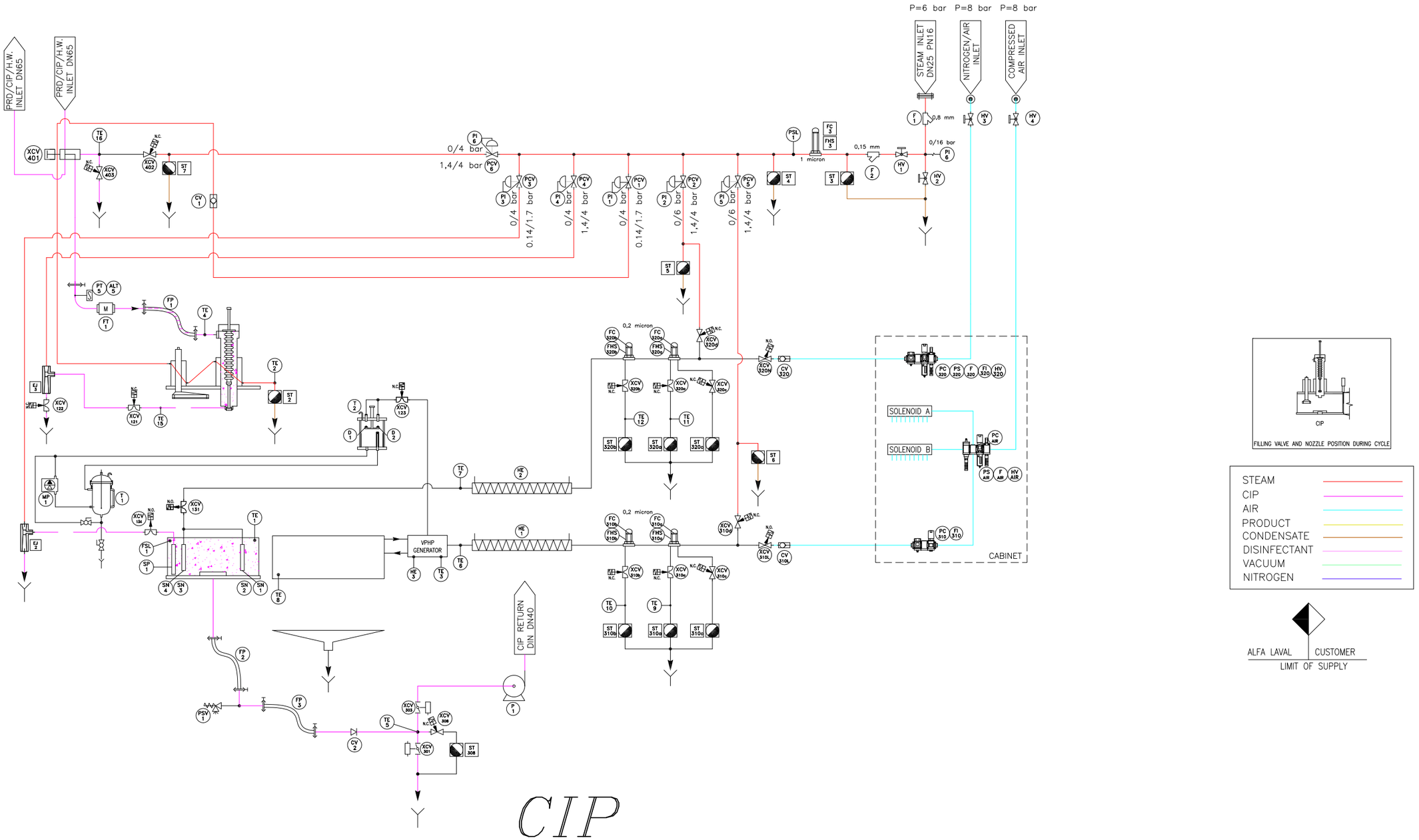
FILLING HEAD COOLING

THIS PAGE IS INTENTIONALLY LEFT BLANK

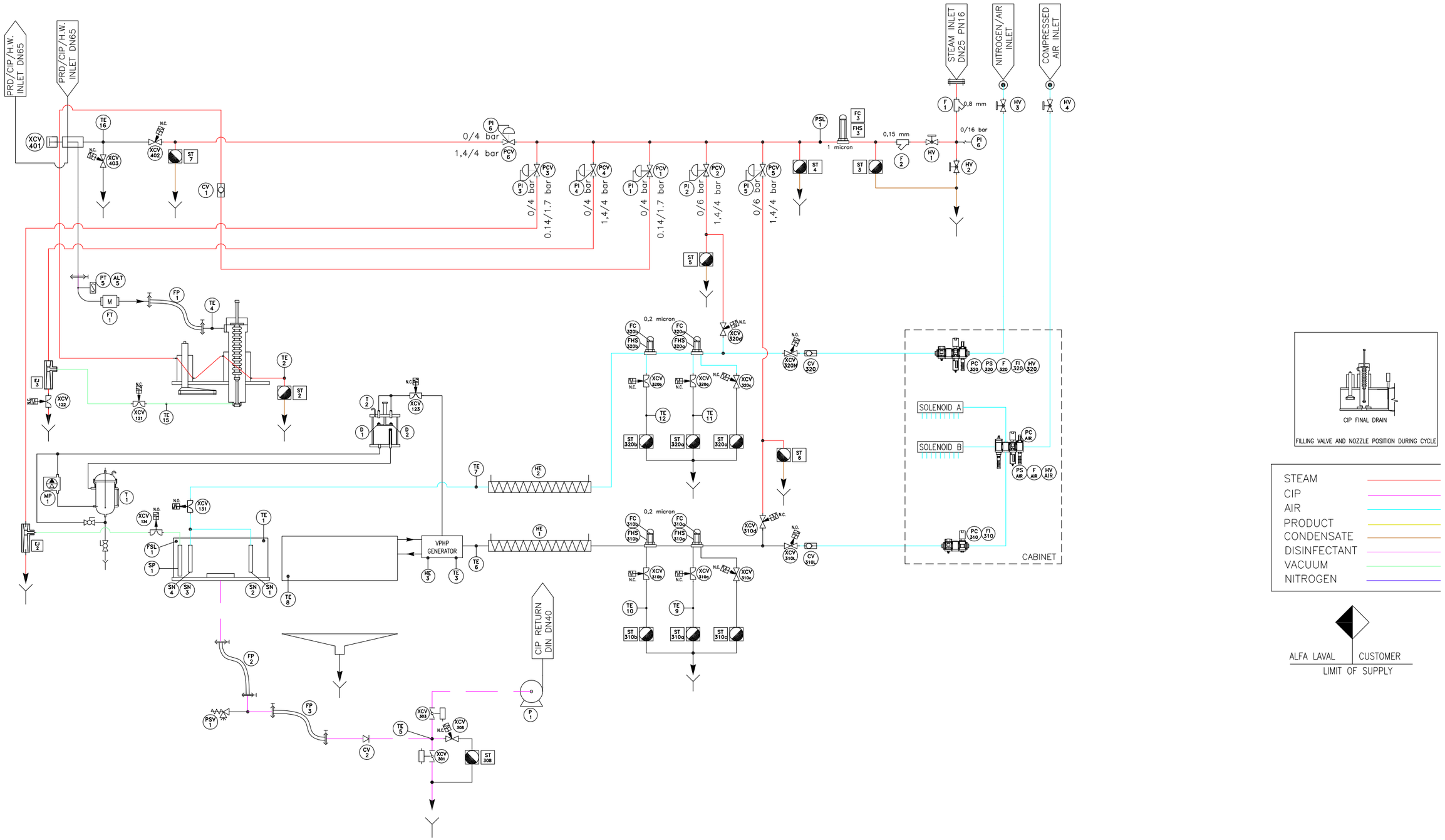


CIP FIRST DRAIN

THIS PAGE IS INTENTIONALLY LEFT BLANK


P=6 bar
P=8 bar
P=8 bar
STEAM INLET DN25 PN16
NITROGEN/AIR INLET
COMPRESSED AIR INLET
PRD/CIP/H.W. INLET DN65
PRD/CIP/H.W. INLET DN65
0,8 mm
0/16 bar
0,15 mm
1 micron
0/4 bar
1,4/4 bar
0/4 bar
0.14/1.7 bar
0/4 bar
1,4/4 bar
0/4 bar
0.14/1.7 bar
0/6 bar
1,4/4 bar
0/6 bar
1,4/4 bar
0,2 micron
0,2 micron
SOLENOID A
SOLENOID B
CABINET
VPHP GENERATOR
CIP RETURN DIN DN40
CIP
FILLING VALVE AND NOZZLE POSITION DURING CYCLE
STEAM
CIP
AIR
PRODUCT
CONDENSATE
DISINFECTANT
VACUUM
NITROGEN
ALFA LAVAL
CUSTOMER
LIMIT OF SUPPLY

THIS PAGE IS INTENTIONALLY LEFT BLANK


PRD/CIP/H.W. INLET DN65
PRD/CIP/H.W. INLET DN65
STEAM INLET DN25 PN16
NITROGEN/AIR INLET
COMPRESSED AIR INLET
0,8 mm
0,15 mm
0/16 bar
1 micron
0/4 bar
1,4/4 bar
0/4 bar
0.14/1.7 bar
0/4 bar
1,4/4 bar
0/4 bar
0.14/1.7 bar
0/6 bar
1,4/4 bar
0/6 bar
1,4/4 bar
0,2 micron
0,2 micron
SOLENOID A
SOLENOID B
CABINET
VPHP GENERATOR
CIP RETURN DIN DN40
CIP FINAL DRAIN
FILLING VALVE AND NOZZLE POSITION DURING CYCLE
STEAM
CIP
AIR
PRODUCT
CONDENSATE
DISINFECTANT
VACUUM
NITROGEN
ALFA LAVAL
CUSTOMER
LIMIT OF SUPPLY

THIS PAGE IS INTENTIONALLY LEFT BLANK

8.2.1 LIST OF COMPONENTS

For a better comprehension of the machine, we list below the numerical references, the description and the make of each component installed on the machine. Each reference (first column of the list) corresponds to a symbol in **P&ID No. 05.04.1330-02**

Reference		Ref Code	Part Description
ALT	5	0307-103102	Adapter 1"1/2
CV	1	0309-101723	Check valve DN1/4”
CV	2	9612220042	Check valve LKC2 DN40
CV	310L	0309-101960	Check valve DN1/2”
CV	320	0309-101960	Check valve DN1/2”
D	2	21-06-013-1	Doser cap. 0.5CC
D	1	21-06-013-1	Doser cap. 0.5CC
EJ	3	21-01-090-00	Ejector
EJ	2	21-01-090-00	Ejector
F	1	0313-100600	“Y” filter 1/2”G PN16
F	2	0313-101932	“Y” filter DN1/2”
FC	320b	0313-103787	Sterile filter for flow tunnel
FC	320a	0313-103787	Sterile filter for flow tunnel
FC	310b	0313-103787	Sterile filter for flow tunnel
FC	310a	0313-103787	Sterile filter for flow tunnel
FC	3	0313-103982	Filter cartridge
FHS	310a	0313-103796	Container for filter
FHS	310b	0313-103796	Container for filter
FHS	320a	0313-103796	Container for filter
FHS	3	0313-103796	Container for filter
FHS	320b	0313-103796	Container for filter
FP	3	21-00-285	Flexible pipe DN40 L=900mm
FP	2	21-00-285	Flexible pipe DN40 L=900mm
FP	1	21-00-285	Flexible pipe DN40 L=900mm
FSL	1	21-06-337	Level probe
FT	1	0316-103458	Massic flow meter DN40
HE	3	70.69.002-01	Heater
HE	2	70-66-022-02	Heater
HE	1	70-66-022-02	Heater
HV	4	0309-103942	Ball valve DN1/2”
HV	3	0309-103942	Ball valve DN1/2”

HV	1	0313-103001	Valve DN1/2”
HV	2	0313-103001	Valve DN1/2”
MP	1	0314-103021	Membrane pump
P	1	9613394931	Centrifugal pump
PC	310	0311-103653	Service unit flow tunnel
PC	AIR	0311-103652	Service unit air
PC	320	0311-103651	Service unit nitrogen
PCV	6	0313-103190	Pressure regulator DN 1/2” 1,4 - 4 bar
PCV	5	0313-103190	Pressure regulator DN 1/2” 1,4 - 4 bar
PCV	4	0313-103191	Pressure regulator DN 1/2” 0.14-1.7 bar
PCV	2	0313-103190	Pressure regulator DN 1/2” 1,4 - 4 bar
PCV	1	0313-103190	Pressure regulator DN 1/2” 1,4 - 4 bar
PCV	3	0313-103191	Pressure regulator DN 1/2” 0.14-1.7 bar
PI	6	0312-100993	Pressure gauge DN1/4” 0-4 bar
PI	5	0312-100993	Pressure gauge DN1/4” 0-4 bar
PI	4	0312-100993	Pressure gauge DN1/4” 0-4 bar
PI	2	0312-100357	Pressure gauge DN1/4” 0-6 bar
PI	1	0312-100357	Pressure gauge DN1/4” 0-6 bar
PI	3	0312-100993	Pressure gauge DN1/4” 0-4 bar
PI	6	0312-100358	Pressure gauge DN1/4” 0-16 bar
PSL	1	0310-100397	Pressure switch
PSV	1	0309-103439	Safety valve 3/4”-1”G - 2 bar
PT	5	0316-103347	Pressure transmitter
SN	2	01-10-353-1	Steam pipe Ø8
SN	3	01-10-353-1	Steam pipe Ø8
SN	4	01-10-353-1	Steam pipe Ø8
SN	1	01-10-353-1	Steam pipe Ø8
SP	1	08.02.0031	Ejector pipe Ø8
ST	7	0313-103577	Steam trap Ø1/2”
ST	2	0313-103577	Steam trap Ø1/2”
ST	320c	0313-103577	Steam trap Ø1/2”
ST	310c	0313-103577	Steam trap Ø1/2”
ST	308	0313-103577	Steam trap Ø1/2”
ST	5	0313-103577	Steam trap Ø1/2”
ST	6	0313-103577	Steam trap Ø1/2”
ST	4	0313-103577	Steam trap Ø1/2”

ST	3	0313-103577	Steam trap Ø1/2”
ST	310b	0313-103577	Steam trap Ø1/2”
ST	310a	0313-103577	Steam trap Ø1/2”
ST	320b	0313-103577	Steam trap Ø1/2”
ST	320a	0313-103577	Steam trap Ø1/2”
T	1		Disinfectant tank 20L
T	2	21-06-338	Tank dispenser
TE	16	0310-103428	Temperature probe PT100 Ø3x24mm - 1/8”
TE	15	0310-103428	Temperature probe PT100 Ø3x24mm - 1/8”
TE	2	0310-103428	Temperature probe PT100 Ø3x24mm - 1/8”
TE	3	0310-103702	PT100 CL.B D3 L150 MgO M12
TE	5	0310-103428	Temperature probe PT100 Ø3x24mm - 1/8”
TE	9	0310-103428	Temperature probe PT100 Ø3x24mm - 1/8”
TE	10	0310-103428	Temperature probe PT100 Ø3x24mm - 1/8”
TE	11	0310-103428	Temperature probe PT100 Ø3x24mm - 1/8”
TE	12	0310-103428	Temperature probe PT100 Ø3x24mm - 1/8”
TE	7	0310-103428	Temperature probe PT100 Ø3x24mm - 1/8”
TE	1	0310-103427	Temperature probe PT100 Ø3x100mm - 1/4”
TE	6	0310-103428	Temperature probe PT100 Ø3x24mm - 1/8”
TE	8	0310-103427	Temperature probe PT100 Ø3x100mm - 1/4”
TE	4	0310-103428	Temperature probe PT100 Ø3x24mm - 1/8”
XCV	403	0309-103450	Pneumatic valve DN15
XCV	402	0309-103450	Pneumatic valve DN15
XCV	122	0309-101039	Membrane pneumatic valve DN8
XCV	121	0309-101039	Membrane pneumatic valve DN8
XCV	320c	0309-103409	Pneumatic valve Ø13.5x1.5
XCV	301	9612628503	Butterfly valve DN40
XCV	310c	0309-103409	Pneumatic valve Ø13.5x1.5
XCV	308	0309-103409	Pneumatic valve Ø13.5x1.5
XCV	303	9612628503	Butterfly valve DN40
XCV	310L	0309-103959	Pneumatic valve DN10
XCV	310d	0309-103450	Membrane pneumatic valve DN15
XCV	320d	0309-103450	Membrane pneumatic valve DN15
XCV	320N	0309-103959	Pneumatic valve DN10
XCV	134	0309-101040	Membrane pneumatic valve DN8
XCV	310a	0309-101039	Membrane pneumatic valve DN8

XCV	310b	0309-101039	Membrane pneumatic valve DN8
XCV	320a	0309-101039	Membrane pneumatic valve DN8
XCV	320b	0309-101039	Membrane pneumatic valve DN8
XCV	131	0309-103958	Membrane pneumatic valve DN15
XCV	123	0309-103227	Membrane pneumatic valve DN15

8.3 ELECTRIC AND PNEUMATIC DIAGRAM

8.3.1 INTRODUCTION

The rated values for voltage and frequency in the electric input system should be those indicated in the contract and appearing on the machine equipment.

If not otherwise indicated in the contract between the Customer and Alfa Laval, the electric system shall be prepared in accordance with International Regulations IEC 204.

Laying and electric connections shall be executed professionally, in accordance with safety regulations and with directive 2006/95/EC (Low Voltage Directive) and Directive 2004/108/EC (ElectroMagnetic Compatibility directive).

8.3.2 HOW TO INTERPRET THE WIRING DIAGRAM

Generally, it may be necessary to refer to the wiring diagram both for the identification of spare part trade name and for maintenance operations.

Each diagram is divided into two typologies of pages: the drawn pages, showing the spare parts and their physical position by means of numerical references and symbols; the index where all details needed for spotting and ordering the spare parts are indicated.

8.3.3 ELECTRICAL AND PNEUMATIC

See the file 2016-094 in the attachments folder.

THIS PAGE IS INTENTIONALLY LEFT BLANK

9 COMPONENTS AND CERTIFICATES

9.1 LIST OF ATTACHMENTS

- DECLARATION OF CONFORMITY
- ELECTRIC AND PNEUMATIC DIAGRAM

1. HANDBOOK FOR CONVEYOR BELT Le=700 W=1080 TFP modello MNA000166
2. HANDBOOK FOR BALL VALVE SPIRAX-SARCO model M10S
3. HANDBOOK FOR BUTTERFLY VALVE ALFA LAVAL model LKB-2
4. HANDBOOK FOR PNEUMATIC MEMBRANE VALVE GEMU model 605
5. HANDBOOK FOR PNEUMATIC MEMBRANE VALVE GEMU model 650
6. HANDBOOK FOR PNEUMATIC VALVE GEMU model 550
7. HANDBOOK FOR DIAPHRAGM VALVE GEMU model 625
8. HANDBOOK FOR SAFETY VALVE NUOVA GENERAL INSTRUMENTS model G14
9. HANDBOOK FOR PRESSURE REDUCING VALVE SPIRAX SARCO model SRV2
10. HANDBOOK FOR STRAINER SPIRAX SARCO model Fig 1..16L
11. HANDBOOK FOR STERILE FILTER DONALDSON model SRFN5/15-05
12. HANDBOOK FOR STEAM TRAPS TLV model LV21
13. HANDBOOK FOR MASSIC FLOW METER E+H model PROMAS83
14. HANDBOOK FOR SIGNAL CONDITIONING INSTRUMENT VEGA model VEGATOR 132
15. HANDBOOK FOR PRESSURE SWITCHES DANFOSS model ISG231-031
16. HANDBOOK FOR CENTRIFUGAL PUMP ALFA LAVAL model SOLID C-01
17. HANDBOOK FOR ELECTRIC MOTORS WEG
18. HANDBOOK FOR MEMBRANE PNEUMATIC PUMP SMC model PB1013
19. HABDBOOK FOR GEARHEAD WITTENSTEIN model LK

20. HANDBOOK FOR GENERATION WITTENSTEIN model LP

21. HANDBOOK FOR BALL RAIL SYSTEMS REXROT

22. HANDBOOK FOR BOURDON TUBE PRESSURE GAUGE model MGS18

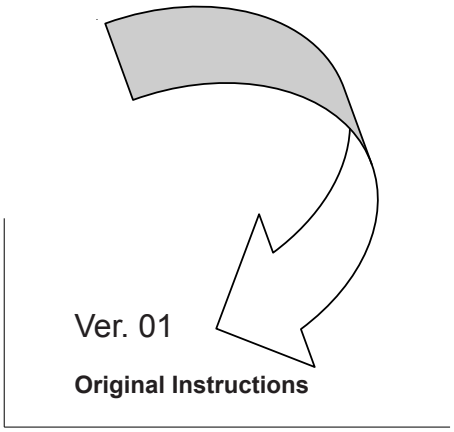
10 UPDATINGS

10.1 MANUAL UPDATINGS

Introduction:

If after the reception of this publication, the machine will be submitted to changes, we will send you an updated copy of the CD.

	**NOTE!** We will change the VERSION number placed at the bottom of first page of the publication.



THIS PAGE IS INTENTIONALLY LEFT BLANK