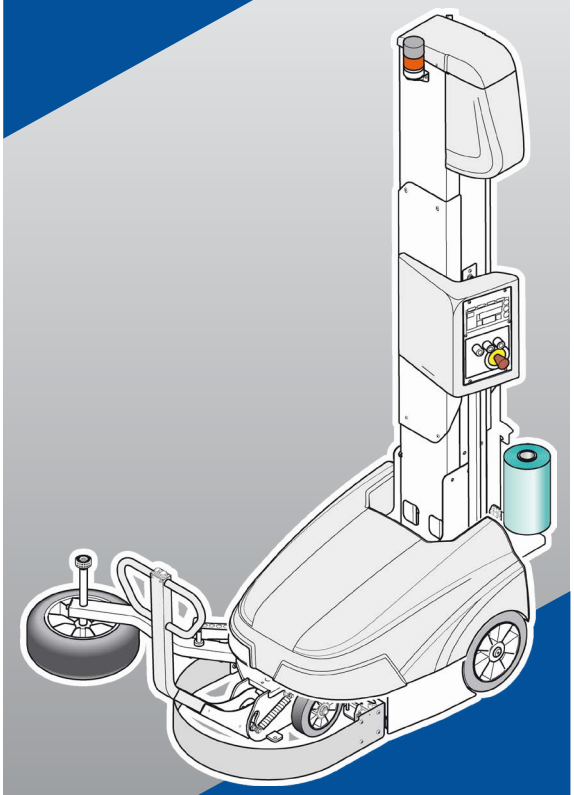
SIAT

M. J. MAILLIS GROUP

# Semiautomatic Pallet Wrapping ROBOT



# BeeWrap

## Operation and maintenance manual

Translation of the "ORIGINAL INSTRUCTIONS"

https://goo.gl/CjKgzr

Code **SBC0029874**

English language

ed. 03-2016 - rev. 0

# Warranty Conditions

Within the restrictions expressed below, the supplier commits to repairing any possible manufacturing defects that arise during the twelve (12) months of the warranty valid from first operation of the machine, and however no more than thirteen (13) months from the delivery date.

The warranty does not cover:
- transport damage;
- damage due to incorrect installation;
- improper use of the machine or negligence;
- tampering or repairs carried out by unauthorised staff;
- poor maintenance;
- parts subject to normal wear (such as belts, rolls in rubber, gaskets, brushes, etc.) as well as electrical parts.

To benefit from the warranty, the client must immediately notify the supplier of any defects found, stating the serial number of the machine. The client must send the supplier the faulty part for repair or replacement. The supplier must carry out the repairs within a reasonable period of time. With these repairs or replacements, the supplier fully complies with his warranty obligations.
If the repairs or replacements must take place where the machine is installed, the costs of labour, travel and accommodation for the technicians or assembly staff will be fully paid by the client.
For materials not built by the supplier, such as electrical equipment and motors, the client avails of the same warranty received from the suppliers of these materials.
The supplier cannot guarantee compliance of the machinery with legislation in force in the non-E.U. countries where they are installed and in particular the legislation relating to accident prevention and pollution. Adaptation of the machines to the aforementioned standards is the responsibility of the client who takes full responsibility, releasing the supplier from any liability towards third parties due to non-compliance with these standards.

# Summary

## Safety information



## Technical Specifications



## Use and functioning



## Maintenance

## Reel holding carriages

## Purpose of the manual

- The purpose of the manual is to inform and train operators so that they can interact with the machine in SAFE CONDITIONS.
- Its aim is also to prevent risks, to reduce the social costs resulting from accidents and damage to the health of people, pets, property and to the environment.
- **In some cases, accidents may be due to the Operator using the machine carelessly.**
- **Caution is always necessary. Safety is also the responsibility of all the persons interacting with the machine throughout its operating life.**
- **Remember that it is too late to think about safety issues when the accident has already occurred.**
- **Reading the Operating Instructions is fundamental in order to minimize the risks and avoid accidents.**
- The content of this manual was originally edited by the Manufacturer in the mother tongue (ITALIAN), in compliance with the professional writing standards and the regulations in force.
- Any translation of the manuals shall be carried out directly and without alterations from the texts of the ORIGINAL INSTRUCTIONS.
- This applies also to the translations carried out by the agent or by the person who is in charge of delivering the equipment in the specific linguistic area.
- The Manufacturer reserves the right to make any changes to the content of the manuals without prior notice, provided that such changes do not alter the safety level.
- All information supplied by the recipients represents an important contribution to the improvement of the after-sales service that the manufacturer will offer to his/her customers.
- All supplied information is organised into an index and a table of contents, so as to easily track specific topics of interest.
- **The SAFETY WARNINGS and the INSTALLATION MANUAL are supplied as hard-copy publications.**
- **The USE AND MAINTENANCE MANUAL, operation diagrams and all other post-sale documents can be downloaded from the INTERNET.**
- Keep the manual and the attached documents in a place known and easily traceable, so that you may refer to them whenever necessary.

## Glossary of the terms

**The glossary includes some terms used when processing information, with their definition, in order to facilitate understanding.**

- **Training:** A process aiming at transferring the knowledge, skills and behaviours required to work in an autonomous, correct and hazard-free manner.
- **Assistant:** person chosen, trained and coordinated in an appropriate manner to minimize the risks in carrying out their tasks.
- **Emergency stop:** voluntary activation of the special control that stops the dangerous elements of the work unit in the case of imminent risk.
- **Stop in alarm conditions:** this state causes the components to stop and is activated when the control system detects a problem in the machine operation.
- **General shut down:** In addition to the normal stop this state also causes the interruption of all the power sources (electrical, pneumatic, etc.).
- **Operating Stop:** state that does not cut off power supply to the actuators, but ensures control system monitoring in safe conditions.
- **Size change:** a set of interventions to be carried out before beginning to work with specifications different with respect to the ones previously in use.
- **Test-run:** a series of operations required to ensure compliance to the design specifications, and to commission the machine under safety conditions.
- **Installer:** a technician chosen and authorized by the manufacturer or his authorized representative, among those who fulfil the requirements for installation and testing of the machine or plant in question.
- **Maintenance Operator:** a technician chosen and authorized, among those who fulfil the requirements, to carry out routine and extraordinary maintenance operations on the machine. Therefore, the maintenance operator shall possess precise knowledge and skills, with particular skills in the relevant field.
- **Routine Maintenance:** all the operations necessary to maintain the functionality and efficiency of the machine. Normally, these operations are scheduled by the manufacturer, who defines the necessary skills and methods of action.
- **Operator:** a person chosen and authorized, among those who fulfil the requirements, having the knowledge and skills necessary to operate the machine and carry out routine maintenance interventions.
- **Person in charge of the installation:** a technical expert who must carry out the installation in compliance with the laws applicable to the workplace and, at the end, assess its compliance.
- **Residual risks:** all the risks remain even if all the safety solutions have been adopted and integrated when the machine has been designed.
- **Expert Technician:** A person authorised by the Manufacturer and/or his representative to carry out services that require specific technical skills and abilities.
- **Forwarder and Handler:** Authorized persons with recognized expertise in the use of means of transport and lifting devices, in safety conditions.
- **Improper use:** reasonably foreseeable use different from what is specified in the use manual, that may be caused by human behaviour.

## Attached documentation

**The SAFETY WARNINGS and the INSTALLATION MANUAL are supplied as hard-copy publications.**

- The USE AND MAINTENANCE MANUAL, operation diagrams and all other post-sale documents can be downloaded from the INTERNET.
- The list shows the documentation supplied with the machine.
- CE Declaration of conformity
- Operation and maintenance manual
- Installation manual
- Wiring diagrams
- Pneumatic system diagrams
- Specific Manuals for installed components or sub-assemblies available commercially

## General safety warnings

- The machine has been designed and built with all the precautionary measures aimed at minimising the possible risks over its expected life cycle.
- Tampering with and bypassing the safety devices may lead to severe risks for the Operators.
- Before interacting with the machine, and in particular, before its first use, read the SAFETY WARNINGS contained in the manual.
- Spend some of your time reading this information to avoid any risk for people's health and safety as well as economic damage.
- Respect the SAFETY WARNINGS. Avoid any IMPROPER USE of the machine and assess the RESIDUAL RISKS.
- When operating the machine, DO NOT wear clothes and/or accessories that could become caught in the moving or protruding parts.
- Before machine use and/or maintenance, read the information contained in the reference documents and accurately implement the described procedures.
- Carry out the interventions ONLY according to the modes recommended by the Manufacturer in the "Instructions for use".
- The personnel in charge of carrying out interventions on the machine must have suitable and proven experience in this specific field.
- Please keep safety signs and information legible and follow the instructions.
- The information signals may be of different shapes and colours, to indicate dangers, obligations, prohibitions and indications.
- Signals which are no longer legible must be replaced and repositioned in the same place of origin.
- **The non-compliance with the information provided herein may lead to risks for the safety and health of the persons involved and may also lead to economic damages.**

## Safety Warnings for Handling and Installation

- The manufacturer has attached special attention to the packaging of the machine, to minimise the risks associated with the shipping, handling and transport phases.
- The personnel authorised to handle the machine (loading and unloading) must have acknowledged technical skills and professional ability.
- Before handling, please read the instructions, in particular those on safety, contained in the installation manual, on the packages and/or on the removed parts.
- In order to make transport easier, the equipment can be shipped with a few disassembled and properly protected and packaged components.
- Loading and transport must be carried out with equipment of adequate capacity by anchoring it to specific points indicated on the packages.
- DO NOT attempt to by-pass the instructions concerning the lifting requirements and special points provided for lifting and handling each item and/or disassembled part.
- Slowly lift the pack to the minimum necessary height and move it very carefully in order to avoid dangerous vibrations.
- The packs being shipped must be properly fastened to the means of transport in order to ensure safe conditions during transfer and the integrity of their contents.
- Certain steps might request one or more operators, who must be previously trained and informed on the tasks they will have to perform.
- Download packages in the immediate vicinity of the machine setting, which must be sheltered from bad weather.
- Do not stack the packs onto each other in order to avoid any damage and to avoid the risk of sudden and dangerous movements.
- In case of prolonged storage, regularly check that the component stocking conditions do not change.
- The installation area is to be prepared so as to be able to carry out the operations as specified in the manuals and in conditions of safety.
- Ensure that the installation environment is protected against atmospheric agents, free of corrosive substances and free of any risk of explosion and/or fire.
- Make sure that the installation area has a suitable ventilation to avoid the concentration of unhealthy air for the Operators.
- Signal and delimit the installation area in a proper way in order to prevent non authorised personnel from accessing the installation area.
- The connections to the power sources (electric, pneumatic, etc.) must be performed correctly, as shown in the diagrams and in compliance with the regulatory and legal requirements in force.
- ONLY qualified and experienced personnel are allowed to carry out the electrical connections.
- After completing the connections, perform a general check to ensure that all the interventions have been carried out properly and that the requirements have been met.
- The installation manager, before commissioning, must check that all the safety devices are properly installed and functioning.
- At the end of operations check that there are no other tools or other material near the moving parts or in dangerous areas.
- Dispose of all packing in accordance with the laws in force in the country of installation.

– **The non-compliance with the information provided herein may lead to risks for the safety and health of the persons involved and may also lead to economic damages.**

## Safety Warnings for Operation and Use

– The machine must be used by one single operator ONLY, who must be trained and capable of performing the work and be in suitable conditions.
– Certain steps might request one or more operators, who must be previously trained and informed on the tasks they will have to perform.
– Consult the user manual, in particular during the first use, and make sure that you fully understand its content.
– Find out the position and function of the controls and simulate some operations (in particular start and stop) in order to acquire familiarity.
– The machine shall be used ONLY for the purposes and complying with the procedures specified by the Manufacturer.
– Make sure that all the safety devices are properly installed and efficient.
– The machine should be used ONLY with the original safety devices installed by the Manufacturer.
– Ensure the area around the machine, especially the control post, is ALWAYS unobstructed and in good condition to minimize the risks for the Operator.
– According to the type of operation to carry out, wear the Personal Protective Equipment listed in the “Instructions for use” and that indicated by the Labour laws.
– **The non-compliance with the information provided herein may lead to risks for the safety and health of the persons involved and may also lead to economic damages.**

### Safety Manager Obligations

– The safety manager must train the operator and help him or her familiarise and interact with the machine in an independent, adequate and risk-free manner.
– The operator must be informed about reasonably predictable INCORRECT USES and about the RESIDUAL RISKS that remain.
– The operator must demonstrate that he has acquired the relevant skills and has understood the “User Instructions” in such a way as to carry out his activities safely.
– The operator must be able to recognise the safety signals and demonstrate that he is in suitable condition to carry out his assigned duties.
– The safety manager must release educational material to trainees and document the delivered training, so as to be able to produce such documentation in case of litigation.

## Safety Warnings on Misuse

**Improper use: reasonably foreseeable use different from what is specified in the use manual, that may be caused by human behaviour.**

- ONLY trained, documented and authorized Operators are allowed to use the machine.
- DO NOT use or allow other persons to use the machine if the safety devices are faulty, disabled and/or incorrectly installed.
- DO NOT use or allow other persons to use the machine for purposes and in ways different from what specified by the Manufacturer.
- DO NOT use the machine in home environments.
- DO NOT wear clothes and/or accessories that could become caught in the moving or protruding parts.
- When operating the machine, ALWAYS wear the Personal Protective Equipment specified by the Manufacturer and by the current regulations on safety at work.
- If troubles arise, do NOT continue to use the machine. Stop it immediately and restart only after restoring the normal operating condition.
- DO NOT use the machine if the scheduled routine maintenance interventions have not been carried out.
- DO NOT tamper with, override, bypass or eliminate the safety devices installed on the machine.
- DO NOT modify the manufacturing and functional characteristics of the machine in any manner whatsoever.
- DO NOT perform any interventions other than those specified in the Operation Manual without the explicit authorization of the Manufacturer.
- DO NOT carry out any intervention when the machine is being operated. Stop the machine and put it in safety condition before carrying out any intervention.
- DO NOT clean or wash the machine using aggressive products that may damage its components.
- DO NOT replace the components with non-genuine spare parts or other components with different design and manufacturing specifications.
- DO NOT dump in the environment any materials, polluting liquids and maintenance waste generated during the operations. Dispose of them according to the regulations in force.
- DO NOT leave the machine unattended during operation and DO NOT leave it at the end of the work without stopping it to safety conditions.
- **The non-compliance with the information provided herein may lead to risks for the safety and health of the persons involved and may also lead to economic damages.**

## Safety Warnings on Residual Risks

**Residual risks: all the risks remain even if all the safety solutions have been adopted and integrated when the machine has been designed.**

- Upon designing and building the machine, the Manufacturer has paid particular attention to the RESIDUAL RISKS that may affect the safety and health of the Operators.
- For specific information about residual risks, please refer to the machine user manual.

## Safety Warnings for Maintenance and Adjustments

- Always keep the machine in optimum operating condition and carry out the routine maintenance according to the intervals and procedures specified by the Manufacturer.
- **A good maintenance will ensure a stable performance over time, longer working life and constant compliance with the safety requirements.**
- The personnel authorized to carry out the ordinary maintenance must have qualified expertise and specific skills in the field of intervention.
- Any work on the electrical system must ONLY be performed by technicians with acknowledged, field-specific skills.
- Mark the intervention area and prevent access to the devices that, if activated, may cause unexpected hazards and jeopardize the safety level.
- According to the type of operation to carry out, wear the Personal Protective Equipment listed in the “Instructions for use” and that indicated by the Labour laws.
- Respect the SAFETY WARNINGS. Avoid any IMPROPER USE of the machine and assess the RESIDUAL RISKS.
- Before carrying out any intervention, activate all the safety measures, and assess any residual energy which may still be present.
- Interventions to not easily accessible or dangerous areas shall be carried out ONLY after arranging the required safety conditions.
- Carry out the interventions ONLY according to the modes recommended by the Manufacturer in the “Instructions for use”.
- All operations must be carried out ONLY with suitable tools which shall be in good condition, in order to avoid damaging any components and parts of the machine.
- Replace the components and/or safety devices ONLY with original spare parts in order not to alter the required safety level.
- Replace the components (with the exception of safety components) with original parts or components having identical design and functional characteristics.
- The use of similar but not genuine spare parts can lead to non-compliant repairs, impaired performance and economic damage.
- Use the lubricants (oils and greases) recommended by the Manufacturer or lubricants of equivalent chemical and physical characteristics.
- At work completion, restore all the security conditions aimed to prevent and minimize the risks during the human-machine interaction.
- At the end of operations check that there are no other tools or other material near the moving parts or in dangerous areas.
- Refer to the Technical Assistance Service of the Manufacturer, in case interventions not described in the “Instructions for use” are needed.
- All EXTRAORDINARY MAINTENANCE interventions shall be performed only by authorized Technicians with proven and gained experience in the field.
- **The non-compliance with the information provided herein may lead to risks for the safety and health of the persons involved and may also lead to economic damages.**

## Safety warnings for the electrical equipment

**The electrical equipment has been built in accordance with the applicable standards and its efficiency is ensured if the listed conditions are met.**

– Ambient temperature and relative humidity between maximum and minimum permitted limits.
– Absence of environmental electromagnetic noise and radiation (X-rays, laser, etc.).
– Absence of environment areas with gas and dust concentration levels potentially explosive and/or at risk of fire.
– Use of products and materials free from contaminants and corrosive agents.
– Products containing chemicals, acids, salts, etc. can come into contact with the electrical components and cause irreversible damage.
– Transport and storage temperatures between minimum and maximum permitted limits.
– Altitude not exceeding the maximum permitted limits.
– Installation at altitudes higher than the permitted values will affect the efficiency of electrical and electronic components.
– Power Cable with section suitable for the current power and intensity values indicated in the data plate.
– Protection class in accordance with data plate indications.
– The power supply line to which the machine must be connected must have identical characteristics to those mentioned in the data plate.

**Important**

**All the listed requirement values are contained in the technical specifications table.**

– **If one or more of the listed requirements cannot be met, alternative solutions should be agreed at the ordering stage.**

## Safety warnings for the environmental impact

**Each organization is responsible for implementing procedures aimed at identifying, evaluating and controlling the environmental impact of its own activities (products, services, etc.).**

– Procedures for identifying significant environmental impact must take account of the factors listed.
  - Emissions in the atmosphere
  - Discharged liquids
  - Waste disposal
  - Soil contamination
  - Use of raw materials and natural resources
  - Local problems related to the environmental impact
– In order to minimize the environmental risks during the man-machine interaction follow the recommended instructions.
  - Dispose of all packing in accordance with the laws in force in the country of installation.
  - Make sure that the installation area has a suitable ventilation to avoid the concentration of unhealthy air for the Operators.
  - Keep noise level to the minimum to reduce noise pollution.
  - Select materials on the basis of their composition and provide for differentiated disposal in accordance with the laws in force.

- Avoid dumping polluting materials and products in the environment (oils, greases, electrical and electronic apparatus etc.).
- All the components of Electrical and Electronic Apparatus contain dangerous substances and are appropriately marked.
- Dispose of Electrical and Electronic Apparatus Waste properly, at authorised collection centres, to avoid harmful and damaging effects.
- Incorrect disposal of dangerous waste is punishable with sanctions regulated by the laws in force on the territory in question.

– **The non-compliance with the information provided herein may lead to risks for the safety and health of the persons involved and may also lead to economic damages.**

## Safety and information symbols

**The figures show safety signs and information and the relevant meaning.**

– For more details on the signs actually used, refer to the section on “Position of the safety signs and information”.

– **Electrical shock or electrocution hazard:** hazard signal that warns the operator from accessing the areas under voltage in order to avoid risks.

– **Risk of tripping:** danger signal indicating that attention should be paid to projections from the structure.

– **Risk of slipping:** danger signal indicating that attention should be paid during transfers on flat surfaces.

– **Risk of crushing body parts:** danger signal warning to stay out of the active machine work range.

– **Risk of crushing upper limbs:** danger signal warning to keep upper limbs out of the active machine work range.

– **Risk of projection of objects:** danger signal indicating the risk of projected material in the event of excessive operation speed or workbench instability.

– **Cutting hazard:** danger sign warning not to come close to the cutting parts with the upper limbs.

– **Risk of entanglement:** danger sign warning not to come close to the moving parts with the upper limbs.

– **Information Signal:** indicates the required direction of rotation for operation.

– **Information Signal:** indicates the lifting points for fork-type devices.

– **Information sign:** it indicates the points where to attach the hooks of the lifting device.

– **Information Signal:** indicates the earthing point.

– **Information warning sign:** read the operation and maintenance manual carefully before performing any operations.

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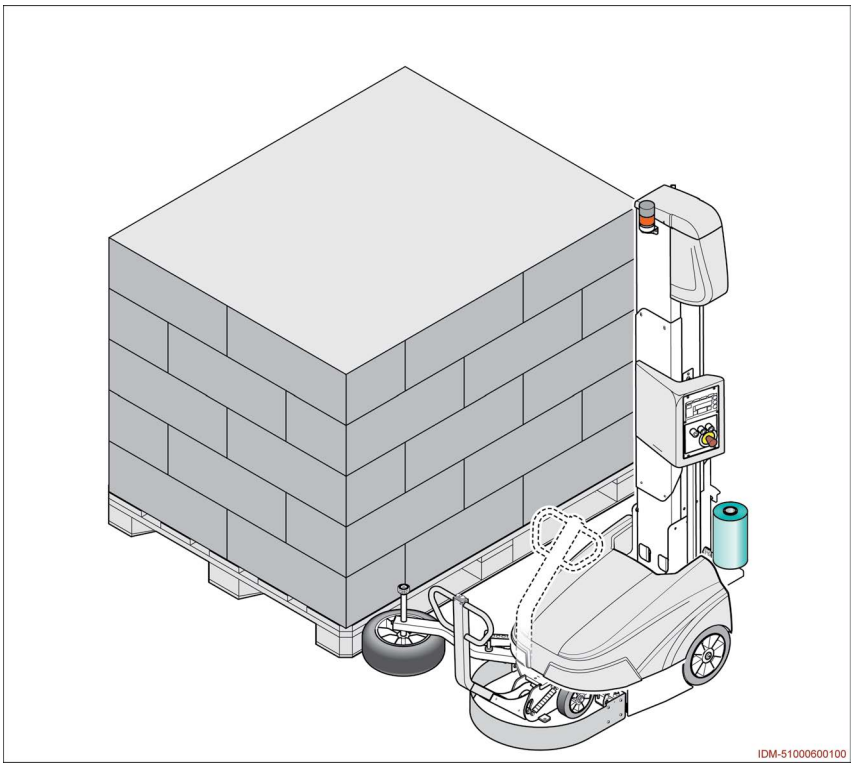
## General description of the machine




- The semiautomatic robot series **Bee-Wrap** is a machine designed and built to stabilise palletised products with stretch film.
- The products to be wrapped must be contained in packages (cases, containers for liquids, etc.) having a regular shape or in any case, such as to allow for stable palletising.
- The containers of liquids or fluids should be hermetically sealed and with suitable characteristics to avoid spilling any content.
- To wrap loads, commercially available reels of stretch film are used.
- The machine has been designed, built and equipped by applying integrated safety principles.
- The machine must be used by one single operator ONLY, who must be trained and capable of performing the work and be in suitable conditions.
- The machine is for professional use only and must be used in industrial-type settings - factories or workshops.
- To allow the machine to move freely, the wrapping area must be compact, flat and not uneven.
- The premises must have no areas with gas and dust concentration levels that are potentially explosive and/or at risk of fire.

**Description of the main components**

**A) Handlebar:** control that drives the machine during the movement.

– The controls installed in the handlebar start the movement.

**B) Feeler wheel:** Its purpose is to follow the perimeter of the pallet during the wrapping cycle.

**C) Batteries:** They provide power supply to the electric motors and the circuit.

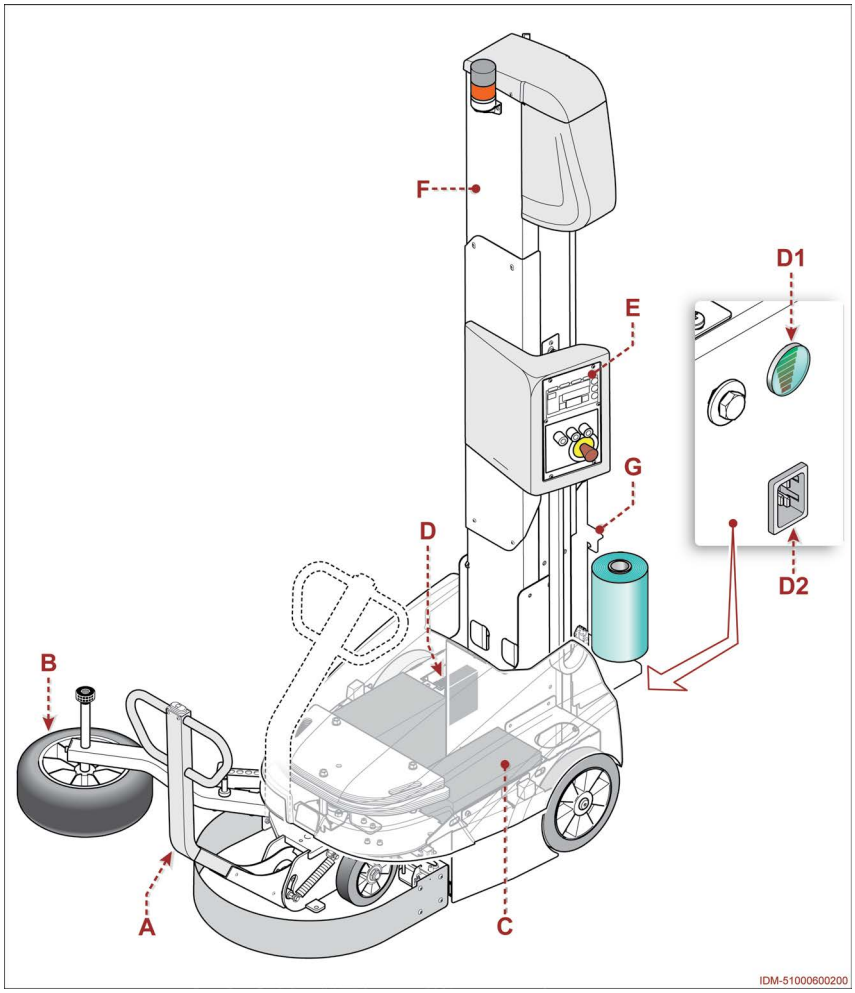
**D) Battery charger:** This electronic device is used to recharge the batteries **C**.

– The indicator **D1** signals the charging conditions.

– The power cable , which is supplied in the standard equipment, must be connected to the socket D2.

**E) Control panel:** it contains the devices to start and control all the operation functions.

**F) Slide column:** for the vertical handling of the reel carriage **G**.




**G) Reel holding carriage**

– According to production requirements, in the ordering phase the machine can be equipped with one of the listed carriages.

– **Reel holding carriage (type M):** specific for single or double wrapping, with manual adjustment of film stretching via the mechanical clutch ring.

– **Reel holding carriage (type FM):** specific for single or double wrapping, with adjustment of film stretching.

– The film stretching value is programmed in the control panel.

– **Reel holding carriage (type LP):** specific for single or double wrapping, with motorised film pre-stretching and electronic adjustment of film stretching.

## Manufacturer and machine identification

**The identification plate (pictured) is affixed directly to the machine.**

– In addition to the references for identification provided by the Manufacturer, they also list all the essential information for a safe operation.

**A)** Manufacturer identification

**B)** Space reserved for CE compliance marking

**C)** Machine model

**D)** Machine type

**E)** Serial number

**F)** Serial number

**G)** Year of fabrication

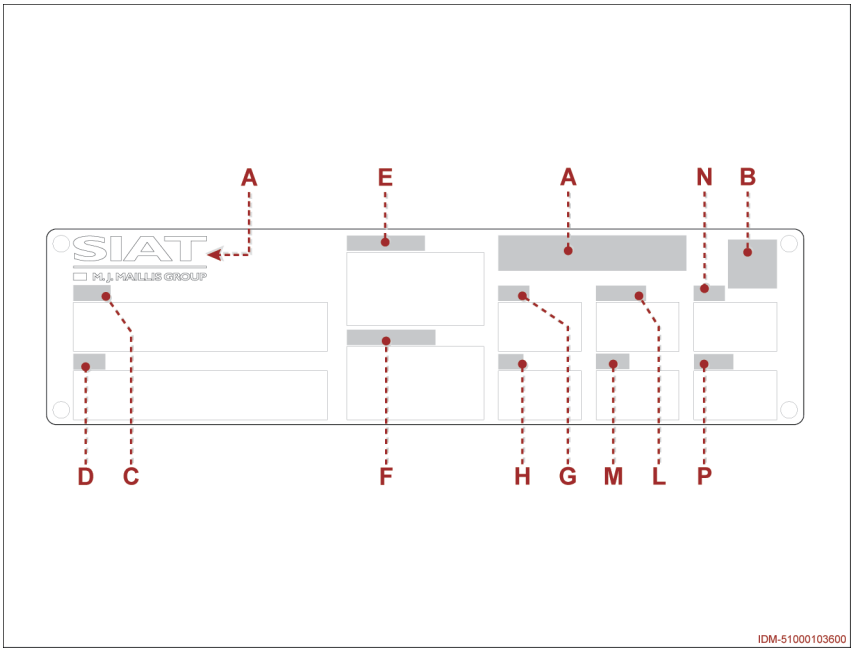
**H)** Power supply voltage

**L)** Electrical power consumption

**M)** Power supply frequency

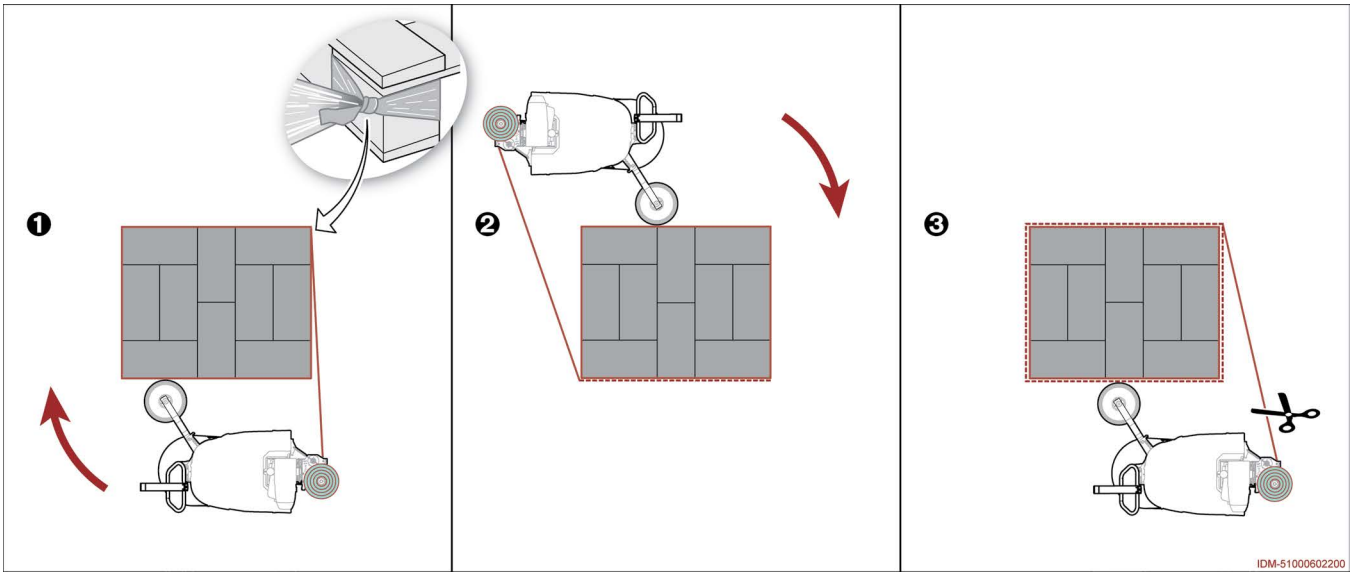
**N)** Absorbed power

**P)** Power supply phases



## Cycle

**The figure shows the operating cycle.**




**Stage ❶**

– Approach the machine to the pallet until touching the feeler.

– Tie the trailing end of the film to the base of the product to be wrapped.

**Stage ❷**

– Start the wrapping cycle according to the programmed parameters.

– The machine moves around the product in clockwise direction and stops at the end of the wrapping operation.

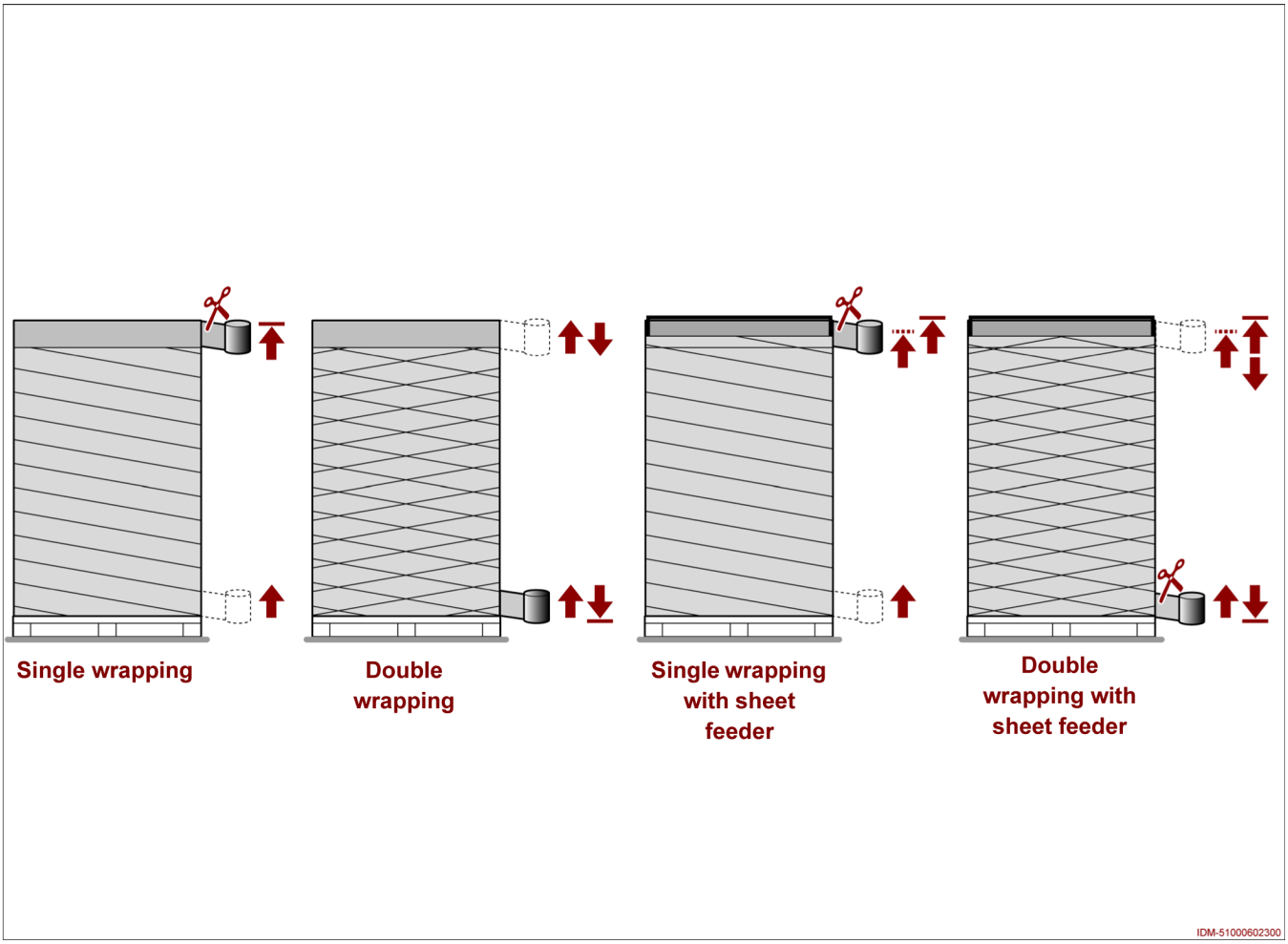
**Stage ❸**

– Manually cut the film and cause it to adhere to the wrapped product.

– The machine is set to start a new wrapping cycle.

## Wrapping types

**The figure shows the wrapping types that can be carried out.**




– **Single wrapping:** It starts at the base of the pallet with a series of stabilizing windings and then stops at the top of the pallet with a closing winding.

– Completely lower the reel holding carriage by means of the control panel to start a new wrapping operation.

**NOTE**

**The operator can decide whether to cut the film when the carriage is in the high position or in the low position.**

– **Double wrapping:** It starts at the base of the pallet with a series of stabilizing windings and then reaches the top of the pallet.

– After performing a reinforcement winding at the top, the wrapping process continues back to the bottom and stops after performing the closing winding.

– **Single wrapping with sheet feeder:** it starts at the base of the pallet (with stabilisation wrappings) and temporarily stops on top.

– After the protection sheet (TOP) has been put in place, the Operator resumes the wrapping cycle.

– At the end of the upper reinforcement, the wrapping will stop.

– Completely lower the reel holding carriage by means of the control panel to start a new wrapping operation.

**NOTE**

**The operator can decide whether to cut the film when the carriage is in the high position or in the low position.**

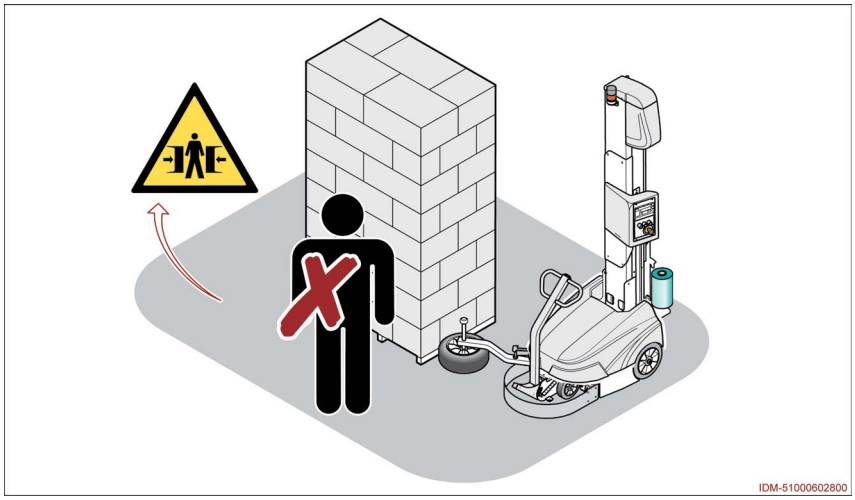
– **Double wrapping with sheet feeder:** It starts at the base of the pallet with a series of stabilizing windings and temporarily stops at the top of the pallet.
– After the protection sheet (TOP) has been put in place, the Operator resumes the wrapping cycle.
– After performing a reinforcement winding at the top, the wrapping process continues back to the bottom and stops after performing the closing winding.

## Residual risks

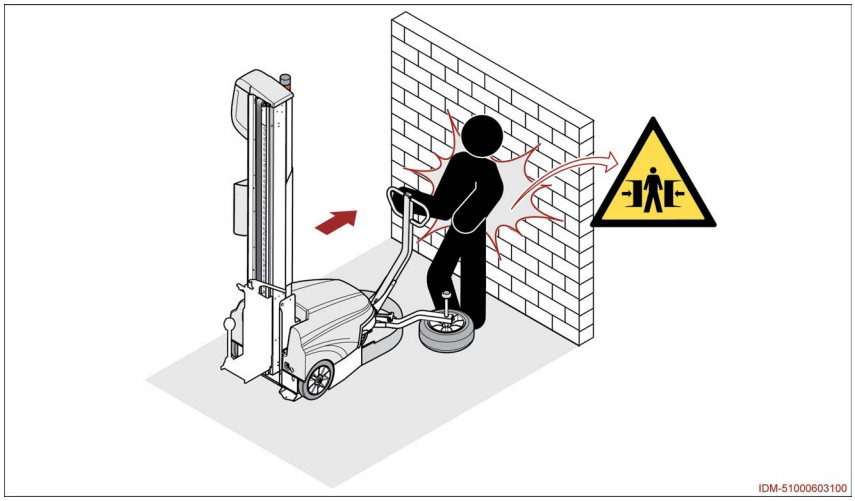
Residual risks are defined as: **"Any risk that remains notwithstanding the safety solutions adopted and integrated during the design phase"**.

– Each residual risk is signalled with a special sign. Some of them are applied close to the areas where the risk is present, others are placed in an easily visible position.
– The list includes the residual risks that may persist on this type of machine.

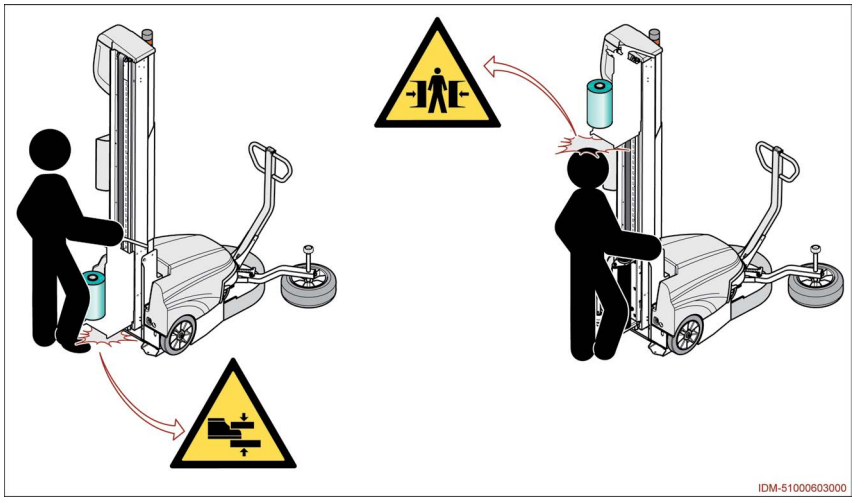
– **Risk of crushing body parts:** do not pass or stay within the range of action during the wrapping operation.



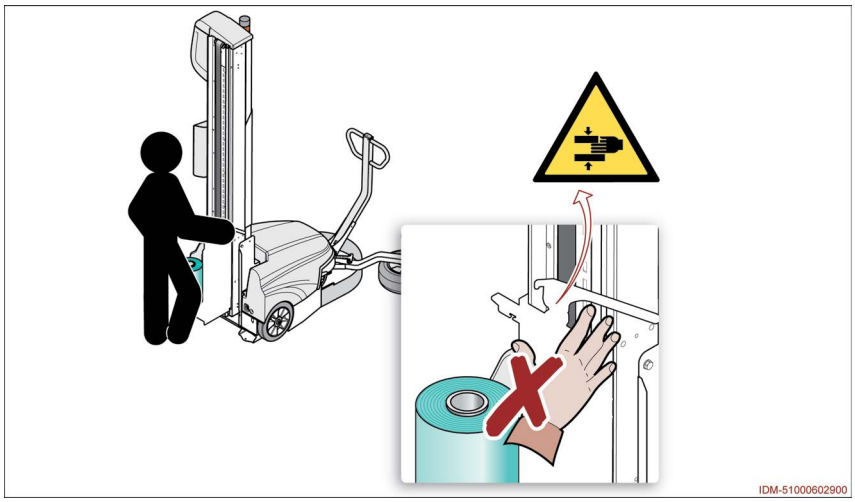

– **Risk of crushing body parts:** pay attention that there are no obstacles during the manual reverse movement.



– **Risk of crushing body parts and lower limbs:** do not stay within the operating area while the reel holding carriage is lowering.




– **Risk of crushing upper limbs:** do not introduce or place upper limbs in/ next to any machine moving parts during operation.
– The risk mainly relates to the area between the sliding column and the reel holding carriage.



## Incorrect uses that are reasonably expected

**Improper use:** reasonably foreseeable use different from what is specified in the use manual, that may be caused by human behaviour.

– ONLY trained, documented and authorized Operators are allowed to use the machine.

– DO NOT use or allow other persons to use the machine for purposes and in ways different from what specified by the Manufacturer.

– DO NOT use the machine in unstable, uneven, sloping and unsuitably protected areas to prevent the risk of capsizing or falling.

– DO NOT use the machine to perform wrapping operations on road, railway or naval transport means.

**NOTE**

**To be used on naval means, carefully assess its stability to be able to operate in safe conditions.**

– DO NOT use the machine in places that are at risk of fire and / or explosion.

– Do not use the machine as a means to transport people or things.

– DO NOT allow people to walk through or stand within the working area of the machine during the wrapping cycle.

– DO NOT carry out any intervention when the machine is being operated. Stop the machine and put it in safety condition before carrying out any intervention.

– DO NOT clean or wash the machine using aggressive products that may damage its components.

– DO NOT leave the machine unattended during operation and DO NOT leave it at the end of the work without stopping it to safety conditions.

## Optional Accessories

**Some accessories designed to improve the performance and versatility of the machine are available from the manufacturer. This list contains a description of the main ones.**

– **Radio control:** optional device that is used as a remote control.

## Description of the safety devices

**The machine is equipped with safety devices that reduce the risks during the man-machine interaction.**

**A) Emergency stop button:** safety control that, in case of an imminent risk, stops all parts whose function might constitute a risk.

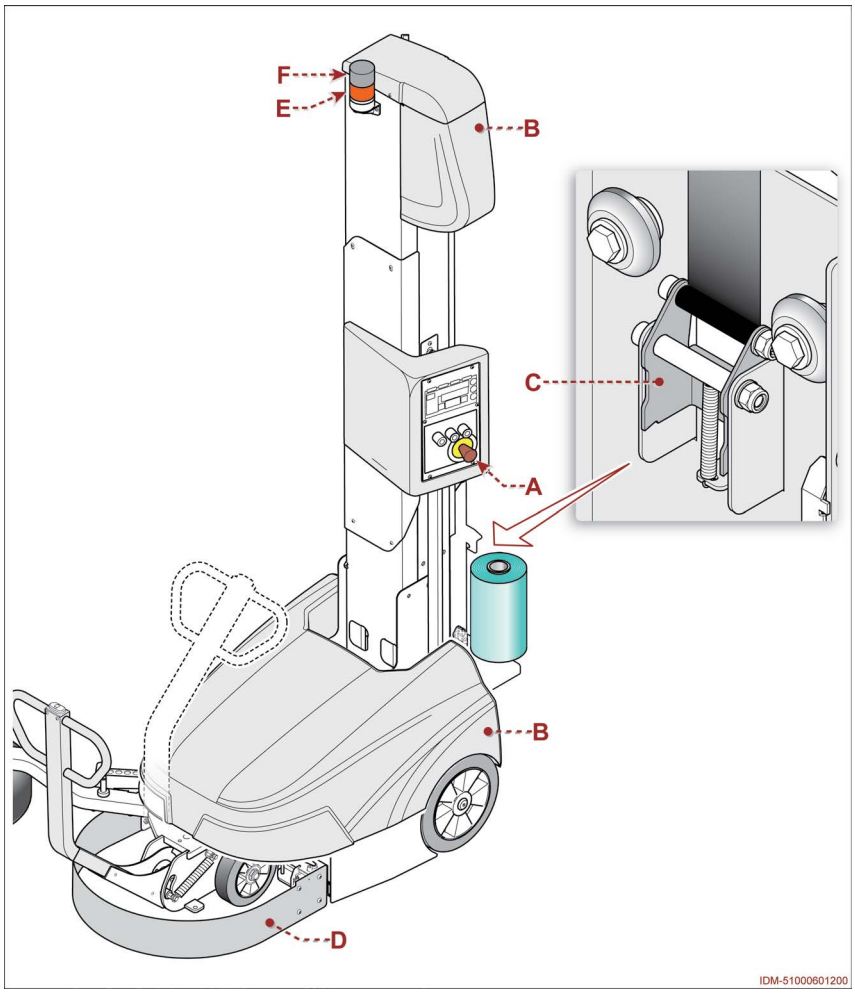
**B) Fixed guards:** safety devices preventing access to parts the operation of which could imply safety risks.

**C) Fall arrest system:** safety device that prevents the risk of a fall of the carriage in the event of lifting strap breaking.

**D) Emergency bumper:** safety device that stops the operation in emergency conditions, in case of collision against an obstacle.

**E) Warning light (yellow light):** safety device that signals the operating conditions of the machine.

**F) Buzzer:** safety device that signals the wrapping operation in “automatic mode.”



## Specifications

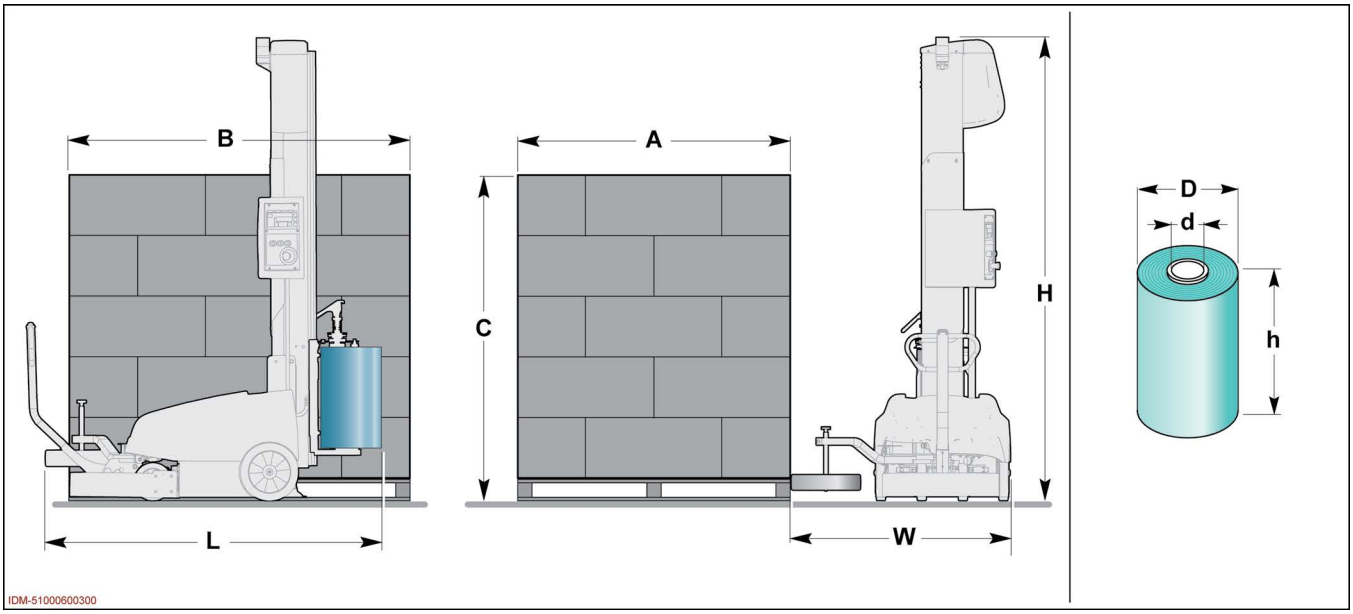



Table: Technical data of the machine

| *Description* | *Unit of measure-ment* | *Value* |
|---|---|---|
| **Electric supply** | | |
| The power supply specifications are those shown in the identification plate applied to the machine. | | |
| **Features of the machine** | | |
| Length, width, height (LxWxH) | mm | 1600 x 1200 x 2400 |
| Weight (with acid-type batteries 90 A) | kg | 330 |
| traverse speed | m/min. | 50 ÷ 80 |
| **Features of accumulator batteries** | | |
| Batteries [1]) | Quantity | 2 |
| - Gel type: electric current intensity | A | 82 |
| - Gel type: electric current intensity | A | 105 |
| - Acid type: electric current intensity | A | 90 |
| Weight of every battery | | |
| - Gel type (82 A) | kg | 27 |
| - Gel type (105 A) | kg | 37 |
| - Acid type (90 A) | kg | 29 |
| **Features of the pallet** | | |
| Length, width, height (AxBxC) | mm | 400x500x600 minimum |
| | mm | 6000x7000x2100 maximum |
| **OPERATING PROPERTIES** | | |
| Maximum level of noise | dBa | 72 |
| **Dimensions of film reel** | | |
| Maximum external diameter **D** | mm | 250 |
| Inside Diameter **d** | mm | 75 |
| Maximum height **h** | mm | 500 |
| Film thickness | µm | 17÷23 |
| Max Weight | kg | 17 |
| **Environmental conditions** | | |
| Maximum operating height (asl) | m | 1000 |
| Relative humidity (detected at a temperature included between 20°C and 40°C) | | 50% |
| Ambient functioning temperature | °C | +5 ÷ 40 |
| Environmental brightness | LUX | 600 |

**[1])** Accumulator batteries are installed as already ready for use (charged).

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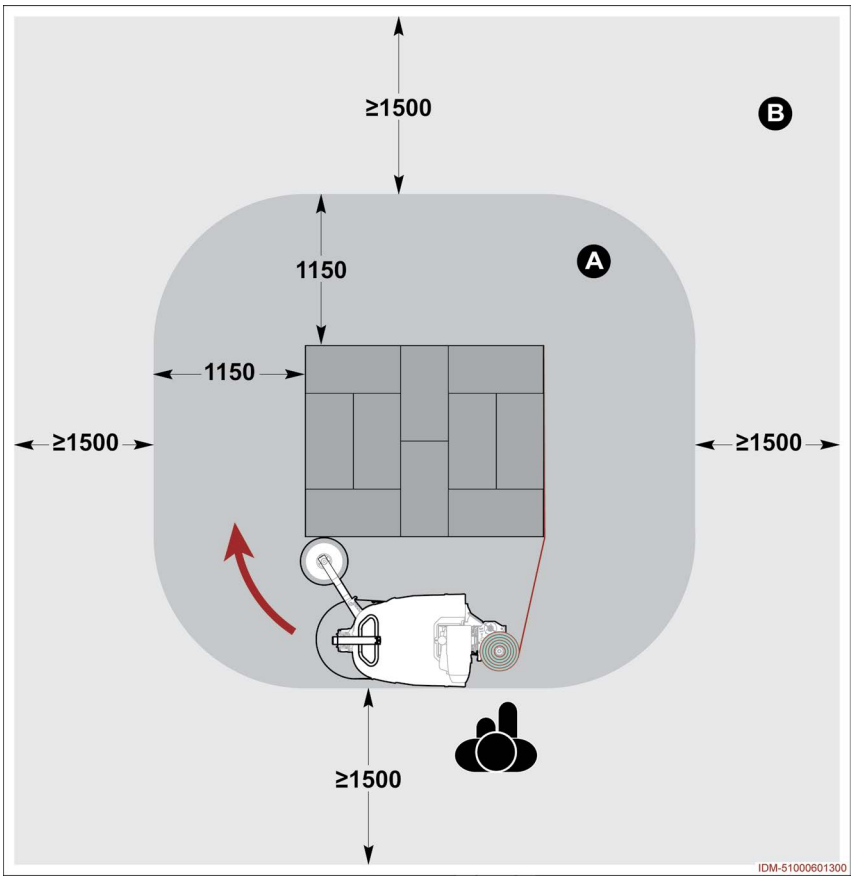
## Description of outer areas

**The figure shows different areas to be considered in the planning of the installation area.**

**A) Machine working area**

**B) Perimeter area**



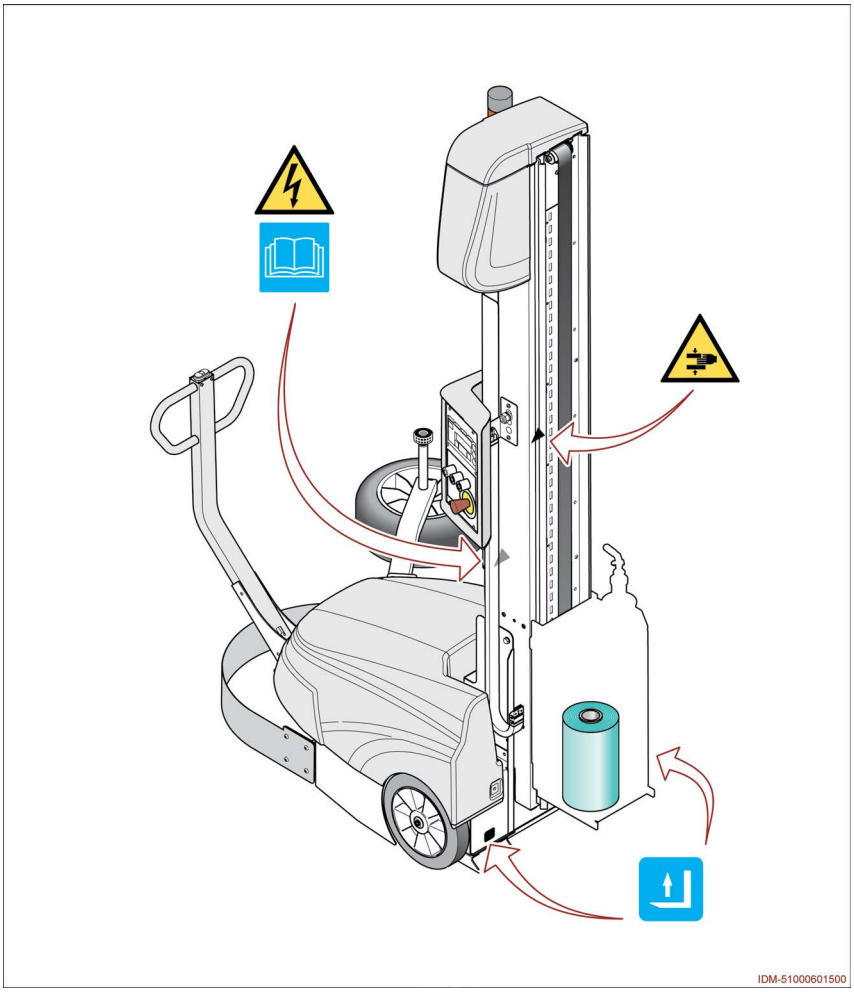
## Position of information and safety plates

**The figure shows the position of the signals applied on the machine.**

– Please keep safety signs and information legible and follow the instructions.

– Signals which are no longer legible must be replaced and repositioned in the same place of origin.

– For more details on the signs used, refer to the section on “Safety signs and information”.



## Recommendations on Operation and Use

– The machine must be used by one single operator ONLY, who must be trained and capable of performing the work and be in suitable conditions.

– Consult the user manual, in particular during the first use, and make sure that you fully understand its content.

– Find out the position and function of the controls and simulate some operations (in particular start and stop) in order to acquire familiarity.

– The machine shall be used ONLY for the purposes and complying with the procedures specified by the Manufacturer.

– Make sure that all the safety devices are properly installed and efficient.

– Before commissioning, check that the roller feeler is next to the upper surface of the pallet (not of the product).

– Ensure the area around the machine, especially the control post, is ALWAYS unobstructed and in good condition to minimize the risks for the Operator.

– Ensure that there is sufficient film supply to the reel to avoid having to stop wrapping because of the film running out.

## Control description

**The illustration shows the main commands and their description and function are listed.**

**A) Emergency stop button:** safety control that, in case of an imminent risk, stops all parts whose function might constitute a risk.

– The control must stay “locked” until all the normal operating conditions have been restored.

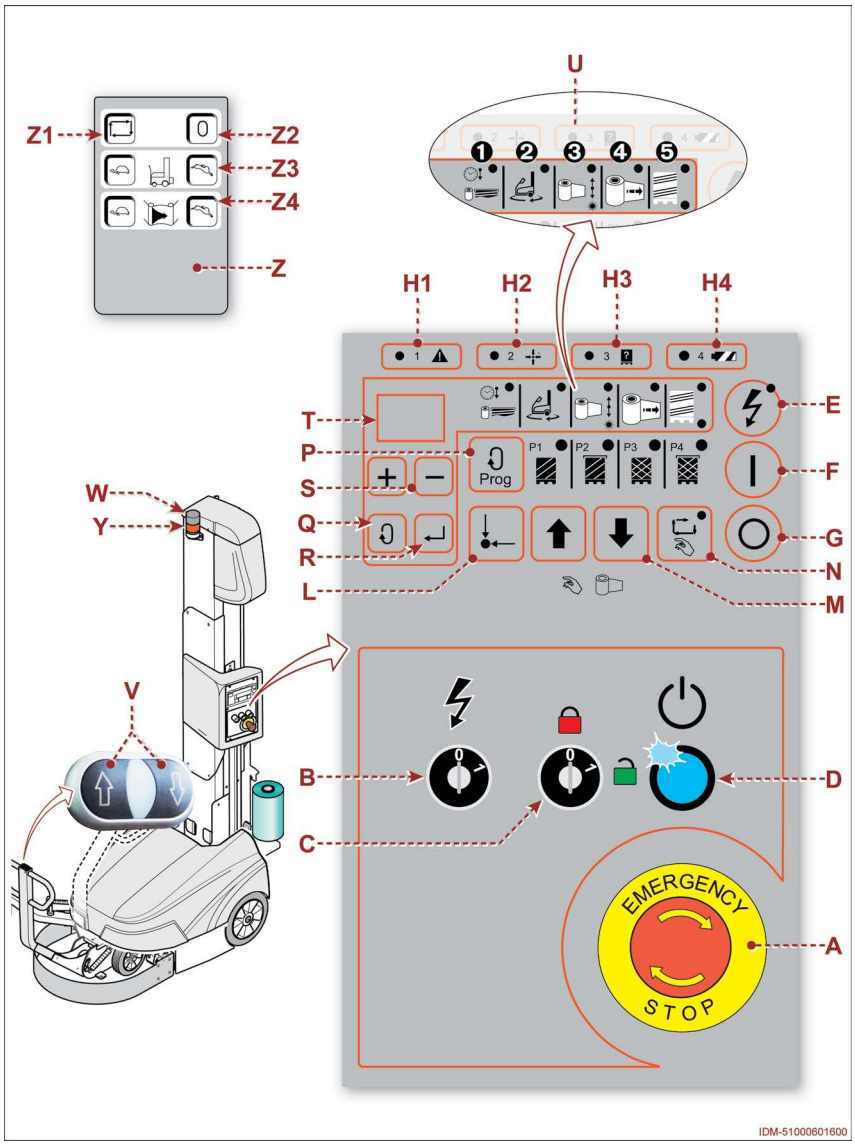
– After having normalised running conditions, unblock the button with a deliberate action to authorise restart.

**B) Key selector switch:** control designed to connect and disconnect the electric power supply to the control panel.
- Position **“0”**: function deactivated.
- Position **“1”**: function activated.

– The warning light **E** will switch ON when the machine is in operating conditions.

**C) Key selector switch:** control that enables and disables wrapping parameter programming.
- Position **“0”**: function deactivated.
- Position **“1”**: function activated.

**D) Illuminated button (blue light):** control that is used to enable control functions.




**E) Green colour LED:** when it is ON, it means that the electric power supply to the control panel was activated.

**F) Key:** control that starts the wrapping operation.

**G) Key:** control that interrupts the wrapping operation in a point other than the programmed point.

**H1) Red colour LED:** when it is ON, it signals that the emergency stop was activated by means the button **A** or by the bumper following the collision against an obstacle.

**H2) Red colour LED:** when it is ON, it signals that the reel holding carriage is not correctly timed.

**H3) Red colour LED:** when it is ON, it signals that the pallet is not detected by the photocell.

**H4) Red colour LED:** when it is ON, it signals that the battery charge level lowered under the minimum threshold.

**L) Key:** control that is used to reset the position of reel holding carriage.

**M) Keys:** non-release controls that are used for the vertical movement of the reel holding carriage.

– The controls are enabled only in case of operation in “manual mode” and selector **C** in position **“1”**.

**N) Key:** control to select the operation mode.
- LED ON: operation in automatic mode.
- LED OFF: operation in manual mode.

**P) Key:** control that selects the wrapping type.

– The LED will switch ON according to the relevant wrapping type.

**P1)** Single wrapping

**P2)** Single wrapping with sheet feeder

**P3)** Double wrapping

**P4)** Double wrapping with sheet feeder

**Q) Key:** control that shows the programmed wrapping values in the display **T**.

– Press the control repeatedly until you display the desired value.

**R) Key:** control that enables the modification of the value shown in the display **T**.

**S) Keys:** controls that increase or reduce the value shown in the display **T**.

– Press the key **R** to confirm the entered value.

**T) Display:** it shows the parameter that was selected with the key **Q** or the abbreviation of the alarm in progress.

**U) Wrapping parameters**

– The LED will switch ON to signal the corresponding parameter shown in the display **T**.
- ❶ **- Carriage partial lowering time:** programming of the reel holding carriage lowering time.

– The lowering time corresponds to the height that is necessary to introduce the upper protection sheet.

– When the reel holding carriage is at the programmed height, the machine will stop to allow the manual introduction of the protection sheet.
- ❷ **- Machine speed:** programming of the maximum speed.
- ❸ **- Carriage speed:** programming of the maximum speed for the vertical movement of the reel holding carriage.
- ❹ **- Tension of the film:** programming of film stretching.
- ❺ **- Lower and upper wrapping:** programming of wrapping revolutions to create the reinforcing band.

**V) Buttons:** non-release controls that manually move the machine.

**W) Warning light (yellow light):** safety device that signals the operating conditions of the machine.

**Y) Buzzer:** safety device that signals the wrapping operation in “automatic mode.”

**Z) Radio control:** optional device that is used as a remote control.

**Z1) Key:** control that starts the wrapping operation.

**Z2) Key:** control that interrupts the wrapping operation in a point other than the programmed point.

**Z3) Keys:** controls that modify the travelling speed of the machine.

**Z4) Keys:** controls that modify the programmed film stretching.
- “Turtle” icon: it reduces the value.
- “Rabbit” icon: it increases the value.

## Programming of the wrapping operation

**The intervention aims at programming the parameters according to the wrapping type (single, single with sheet feeder, double, double with sheet feeder).**

– The figure shows the points of intervention and the description shows the procedures to be adopted.

**1.** Turn the selector **B** on position **“1”**.

– The light of the button **D** remains steadily on.

– LEDs **E-H1** start to flash.

**2.** Press the push-button **D**.

– The push-button lamp shuts off.

– The LED **E** keeps ON with fixed light, while the LED **H1** switches OFF.

**3.** Turn the selector **C** on position **“1”**.

**4.** Select the wrapping type by using the key **P**.

– The LED will switch ON according to the relevant wrapping type.

**5.** Select the wrapping parameter by using the key **Q**.

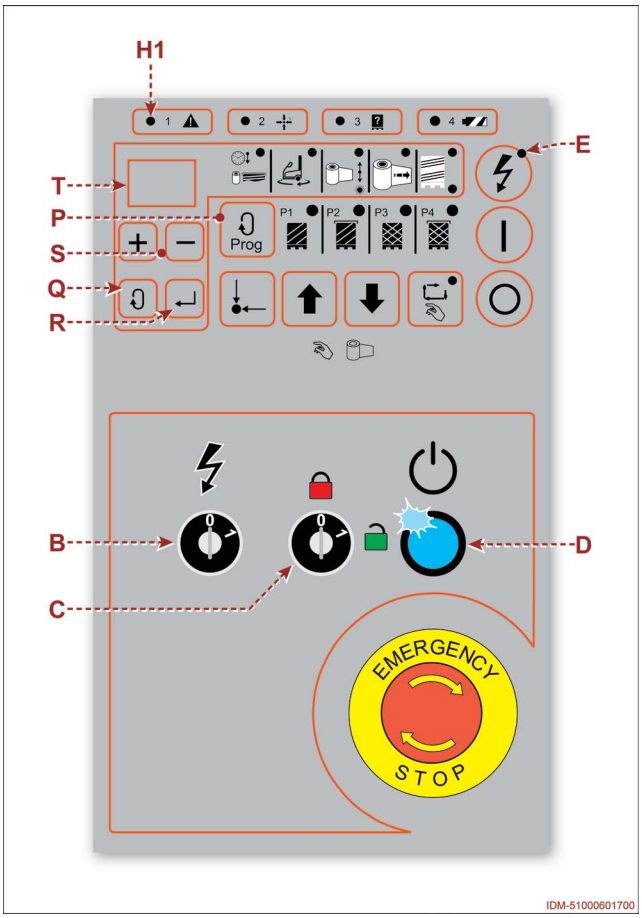
– The LED will switch ON to signal the corresponding parameter shown in the display **T**.

**6.** Press key **R**.

– The parameter shown in the display **T** starts to flash.

**7.** Press one of buttons **S** in order to increase or decrease the value until the desired value is obtained.

**8.** Press the key **R** to confirm.




**NOTE**

**The described procedure can be used to programme all wrapping parameters.**

**9.** When you finish programming the desired parameters, turn the selector **C** to position **“0”**.

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## Emergency stop and new start-up

### Stop with activation of the emergency button

1. In the presence of an imminent risk press the emergency stop button **A**.

– All moving devices immediately stop.

2. Identify the causes that have caused the stop.
3. Restore normal running conditions

**Important**

**The recovery operations that are not within the operator's field of competence shall be carried out by authorised personnel and with recognised skills.**

4. Manually cut the film and cause it to adhere to the wrapped product.

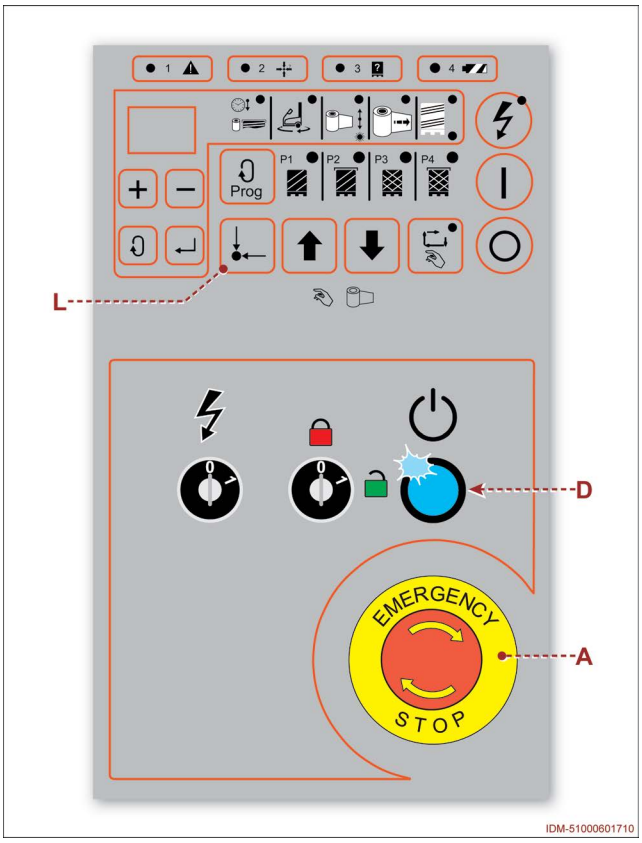
**NOTE**

**Decide whether you want to remove or leave the already performed wrapping.**

5. Unlock the emergency stop button with a voluntary action.
6. Press the push-button **D**.

– The button pilot light goes on.

7. Press key **L**.
8. Wait for the units to synch and become automatically timed.
9. Tie the trailing end of the film to the base of the product to be wrapped.
10. Start the wrapping phase.




### Stop with activation of the emergency bumper

– The operation will automatically stop because the bumper collided against an obstacle.

1. Remove the obstacle.
2. Manually cut the film and cause it to adhere to the wrapped product.

**NOTE**

**Decide whether you want to remove or leave the already performed wrapping.**

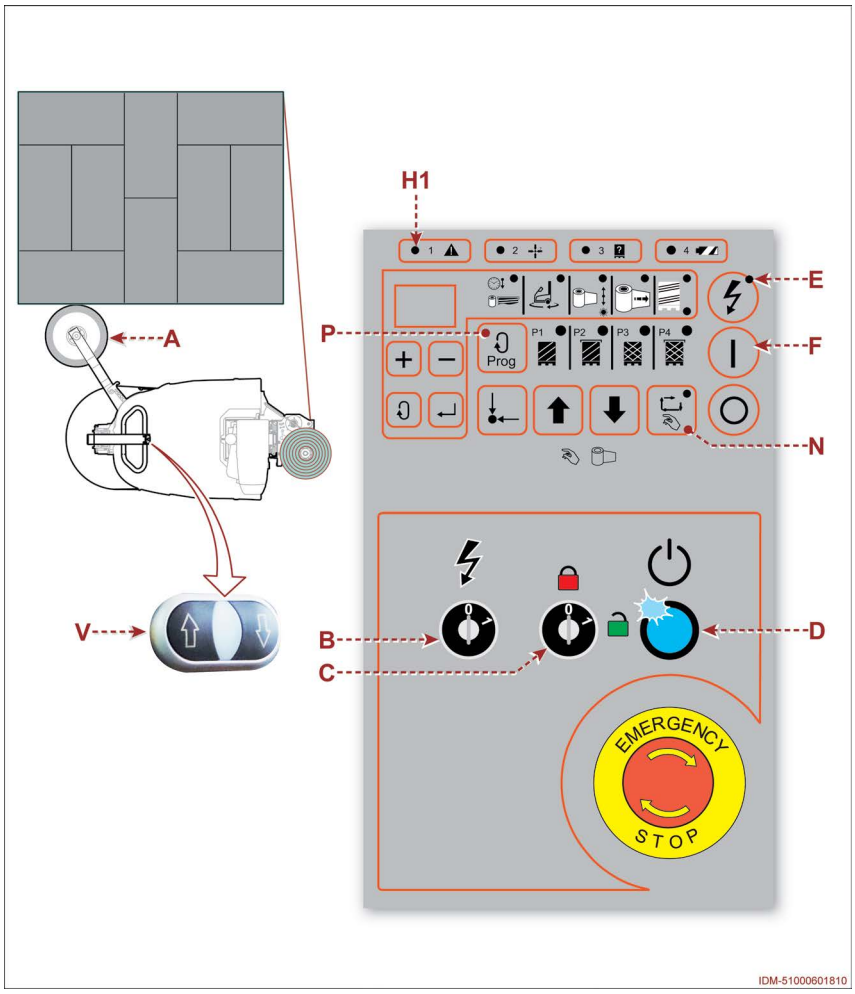
3. Press the push-button **D**.

– The button pilot light goes on.

4. Press key **L**.
5. Wait for the units to synch and become automatically timed.
6. Tie the trailing end of the film to the base of the product to be wrapped.
7. Start the wrapping phase.

## How to start the wrapping cycle

**The figure shows the points of intervention and the description shows the procedures to be adopted.**




**1.** Turn the selector **B** on position **“1”**.

– The light of the button **D** remains steadily on.

– LEDs **E-H1** start to flash.

**2.** Press the push-button **D**.

– The push-button lamp shuts off.

– The LED **E** keeps ON with fixed light, while the LED **H1** switches OFF.

**3.** Use the buttons **V** to approach the machine to the pallet, until the feeler wheel **A** is in contact with the pallet.

**4.** Tie the trailing end of the film to the base of the product to be wrapped.

**5.** Start the operation in AUTOMATIC mode by using the control **N**.

– The LED of the pressed key turns on.

**6.** Turn the selector **C** on position **“1”**.

**7.** Select the desired wrapping by using the key **P**.

– Automatic wrapping (single or double)

– Automatic wrapping with sheet feeder (single or double)

**8.** Turn the selector **C** on position **“0”**.

**9.** Press and keep the key **F** pressed (about 3 seconds) to start the operation in “automatic mode.”

– The buzzer will activate to warn the personnel that the wrapping operation is in progress in “automatic mode.”

– The machine stops with the modes that were established according to the selected wrapping type.

– **DO NOT control a machine stop if the wrapping cycle has not been completed.**

**NOTE**

**For further details see paragraph.**

**10.** At the end of the working activity, adjust the buttons **V** to park the machine within the battery charging area.

**11.** Carry out battery recharge (See “How to recharge the battery”).

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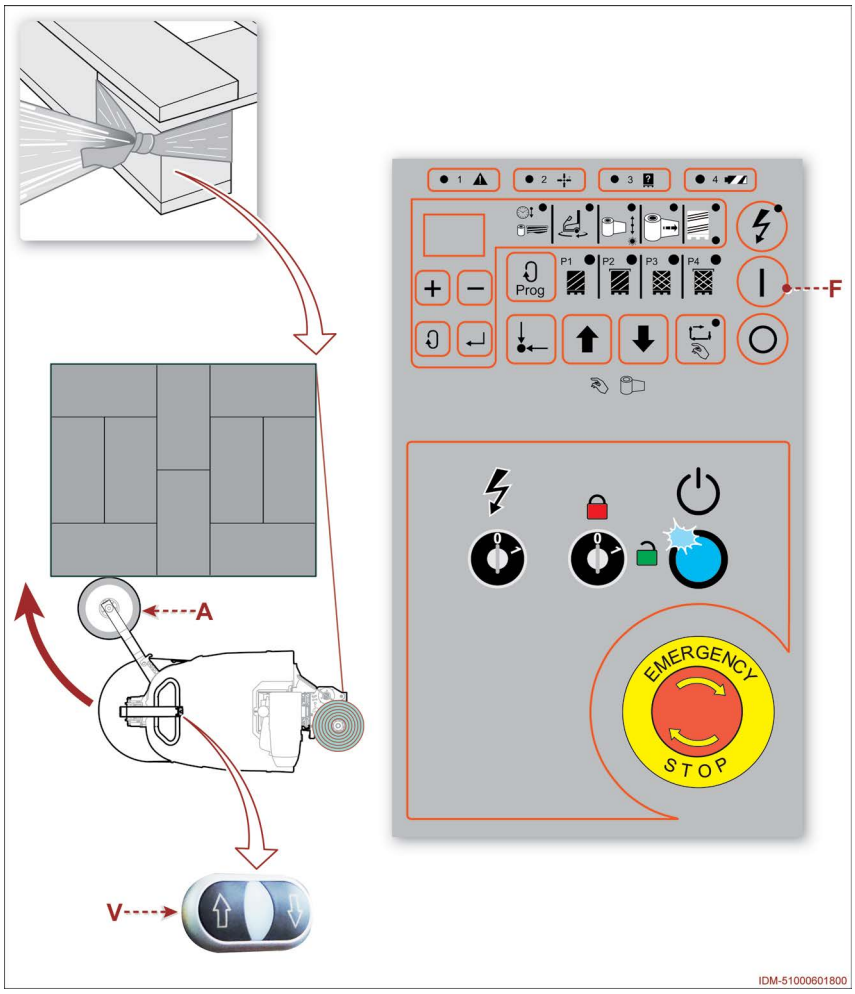
## Automatic wrapping (single or double)

**The figure shows the points of intervention and the description shows the procedures to be adopted.**




1. Carry out cycle start operations (See “How to start the wrapping cycle”).

– **Single mode:** the wrapping will automatically stop with the reel holding carriage at the top of the pallet.
To bring the reel holding carriage back to its cycle start position, press the button **F**.

– **Double mode:** the wrapping will automatically stop with the reel holding carriage at the starting point (lower part of the pallet).

2. Manually cut the film and cause it to adhere to the wrapped product.
3. Adjust the buttons **V** to approach the machine to the new pallet, until the roller feeler **A** touches the pallet.
4. Press and keep the key **F** pressed (about 3 seconds) to start the operation in “automatic mode.”

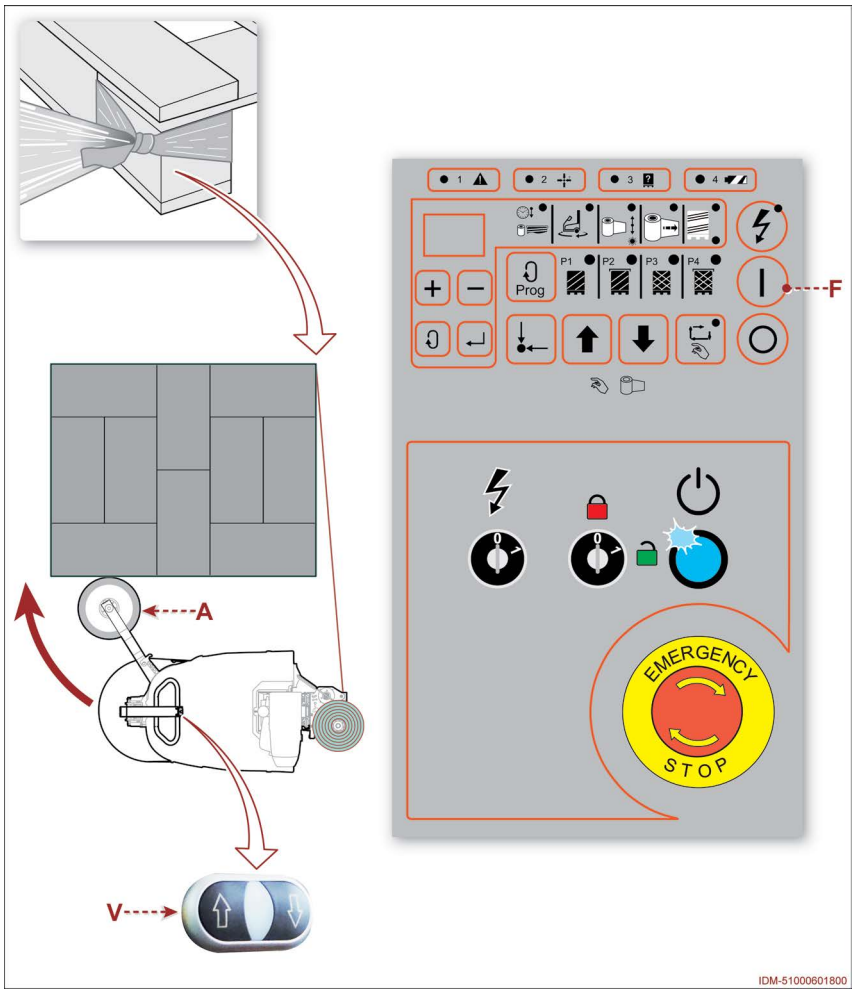
– The buzzer will activate to warn the personnel that the wrapping operation is in progress in “automatic mode.”

– The machine carries out the new wrapping and, at the end of the set cycle, it will automatically stop.

5. Repeat the same operations to wrap the other pallets.

## Automatic wrapping with sheet feeder (single or double)

**The figure shows the points of intervention and the description shows the procedures to be adopted.**




**1.** Carry out cycle start operations (See “How to start the wrapping cycle”).

– The machine carries out the wrapping cycle and stops next to the upper part of the product to be wrapped.

– **Single mode:** the wrapping will automatically stop with the reel holding carriage at the top of the pallet.

**2.** Insert the covering sheet.

**3.** Press the key **F** to complete the wrapping of the covering sheet.

**4.** At the end, press the key **F** to take the reel holding carriage back to the starting point (lower part of the pallet).

– **Double mode:** the wrapping will automatically stop with the reel holding carriage at the top of the pallet.

**5.** Insert the covering sheet.

**6.** Press key **F**.

– The machine finishes the wrapping and automatically stops with the reel holding carriage at the starting point (lower part of the pallet).

**7.** Manually cut the film and cause it to adhere to the wrapped product.

**8.** Adjust the buttons **V** to approach the machine to the new pallet, until the roller feeler **A** touches the pallet.

**9.** Press and keep the key **F** pressed (about 3 seconds) to start the operation in “automatic mode.”

– The buzzer will activate to warn the personnel that the wrapping operation is in progress in “automatic mode.”

**10.** Repeat the same operations to wrap the other pallets.

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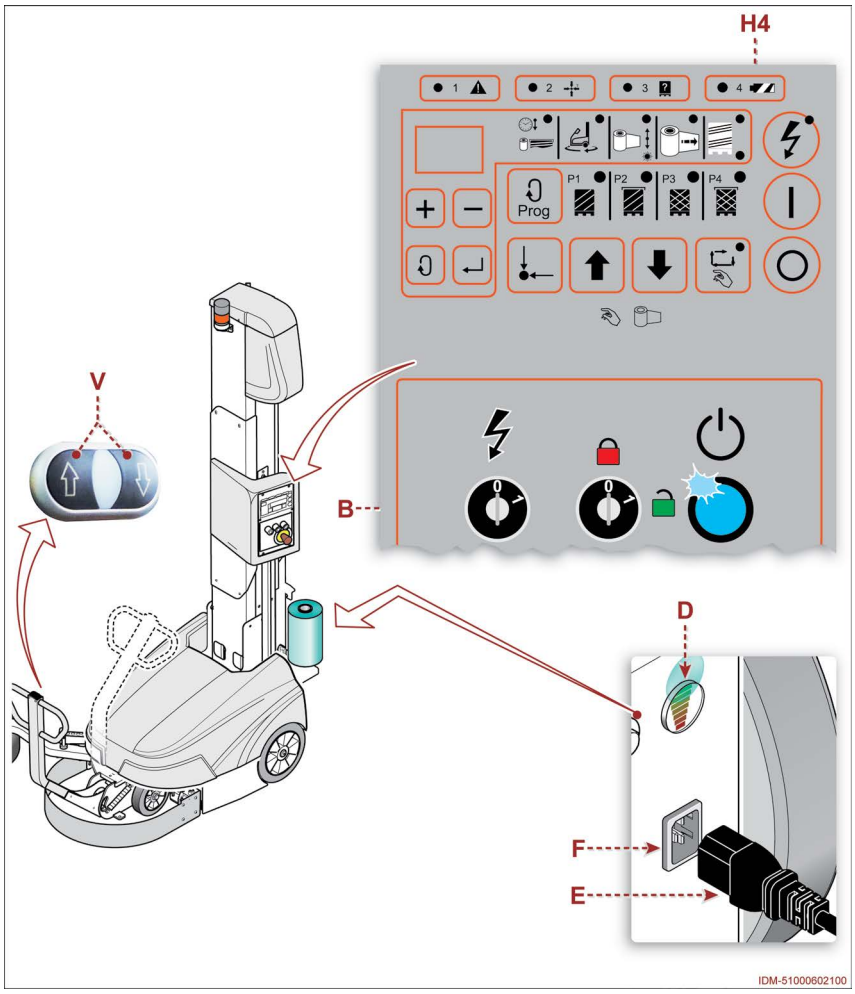
## How to recharge the battery

**The accumulator battery must be charged any time the status bar D is close to the minimum threshold.**

– The operation will automatically stop when the minimum charging threshold is reached (LED **H4** ON).




**Important**

**To prevent a sudden stop, recharge as soon as possible.**

– The automatic stop occurs without finishing the wrapping in progress and leaves a sufficient charge for the movement to the charging area.

– The residual charge that remains in the battery is important to safeguard its lifespan.

– Follow the procedure below.

1. Manually cut the film and cause it to adhere to the wrapped product.
2. Adjust the buttons **V** to park the machine within the battery charging area.
3. Turn the selector **B** on position **"0"**.
4. Remove the key from selector **B** and keep it in a restricted place.

**Important**

**DO NOT carry out the recharge with the control B switched ON to prevent the electric components from being damaged by overcurrents.**

5. Connect the power cable **E** to the socket **F**.

**NOTE**

**Check that the power supply line has the same specifications as those stated in the identification plate.**

– The status bar **D** signals when the recharging operation has finished.

6. Disconnect cable **E** from electric socket **F**.

■ **REMARKS**

– In case the battery is completely exhausted and not sufficient to reach the recharging area, adjust the specific selector to disengage the motor brake.
The mode allows the manual movement to reach the recharging area.

– The recharging area must be arranged in ventilated premises, sheltered from weathering agents and out of the operating areas.

– In case of prolonged inactivity, periodically perform a full recharge of the battery.
  - **Lithium battery:** recharge every 2 months
  - **Acid battery:** recharge every 2 - 3 weeks
– For further details see the specific manual.

## Recommendations for maintenance interventions

– The personnel authorized to carry out the ordinary maintenance must have qualified expertise and specific skills in the field of intervention.
– Any work on the electrical system must ONLY be performed by technicians with acknowledged, field-specific skills.
– Mark the intervention area and prevent access to the devices that, if activated, may cause unexpected hazards and jeopardize the safety level.
– According to the type of operation to carry out, wear the Personal Protective Equipment listed in the “Instructions for use” and that indicated by the Labour laws.
– Before carrying out any intervention, activate all the safety measures, and assess any residual energy which may still be present.
– Interventions to not easily accessible or dangerous areas shall be carried out ONLY after arranging the required safety conditions.
– Carry out the interventions ONLY according to the modes recommended by the Manufacturer in the “Instructions for use”.
– Carry out all interventions ONLY with suitable tools in good state to avoid damaging work unit components and parts.
– At work completion, restore all the security conditions aimed to prevent and minimize the risks during the human-machine interaction.
– At the end of operations check that there are no other tools or other material near the moving parts or in dangerous areas.
– Refer to the Technical Assistance Service of the Manufacturer, in case interventions not described in the “Instructions for use” are needed.
– All EXTRAORDINARY MAINTENANCE interventions shall be performed only by authorized Technicians with proven and gained experience in the field.
– **The non-compliance with the information provided herein may lead to risks for the safety and health of the persons involved and may also lead to economic damages.**

## Scheduled maintenance intervals

**Always keep the machine in optimum operating condition and carry out the routine maintenance according to the intervals and procedures specified by the Manufacturer.**

– A good maintenance will ensure a stable performance over time, longer working life and constant compliance with the safety requirements.

### Maintenance schedule

**Every working day**

| *Component* | *Operation required* | *Procedures to implement* |
|---|---|---|
| Safety bumper | Functional check | - Check the correct operation (See “Daily check of the safety bumper”). |
| Emergency stop button. | Functional check | - Check the correct operation. |

**Every 40 work hours (max 1 week)**

| *Component* | *Operation required* | *Procedures to implement* |
|---|---|---|
| Reel holding carriage sliding guides | Cleaning | - Remove any impurities with a plastic scraper.<br>- Clean with a soft cloth soaked in a non-flammable and non-corrosive detergent.<br>- Properly dry the surfaces. |
| Pallet detection photocell | Cleaning | - Clean the detection area of the photocell.<br>- Use a clean, dry (not abrasive) cloth. |
| Lifting belt for the reel holding carriage | Wear and tear control | - Check this component for wear.<br>- Replace the component, if it is worn out (See “Replacing the lifting belt of the carriage”). |

**Every 200 work hours (max 1 month)**

| *Component* | *Operation required* | *Procedures to implement* |
|---|---|---|
| Safety bumper | Functional check | - Check the correct operation (See “Monthly check of the safety bumper”). |

**Every 5000 work hours (max 12 months)**

| *Component* | *Operation required* | *Procedures to implement* |
|---|---|---|
| Vertical movement wheels of the reel holding carriage | Wear and tear control | - Check this component for wear.<br>- Replace the component, if it is worn out |
| Safety bumper | Functional check | - Check the correct operation (See “Yearly check of the safety bumper”). |

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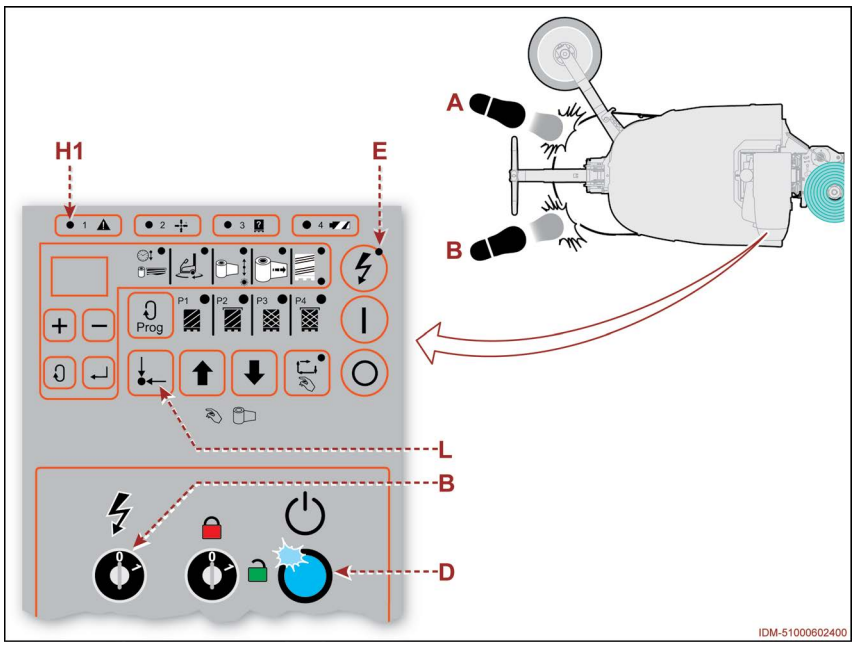
## Daily check of the safety bumper

**The check is necessary to verify the efficiency of the safety system and to maintain a suitable efficacy level to prevent unexpected risks.**

- **The operation must be carried out by the maintenance technician or by personnel with suitable competences, skills and knowledge.**
- **Make sure to fulfil the required requirements in order to work under safe conditions.**

– The figure shows the points of intervention and the description shows the procedures to be adopted.




**NOTE**

**The check must be carried out with the machine connected to the power supply, but NOT MOVING.**

1. Turn the selector **B** on position **"1"**.

– The light of the button **D** remains steadily on.

– LEDs **E-H1** start to flash.

2. Press the push-button **D**.

– The push-button lamp shuts off.

– The LED **E** keeps ON with fixed light, while the LED **H1** switches OFF.

3. Exercise a strong pressure onto the emergency bumper in point **A** and check that the LED **H1** switches ON.
4. Press the Reset key **L**.
5. Exercise a strong pressure onto the emergency bumper in point **B** and check that the LED **H1** switches ON.
6. Press the Reset key **L**.

**NOTE**

**The safety system will be faulty if the collision does not make the LED H1 switch ON.**
**If the problem persists, please contact the Manufacturer's Technical Service.**

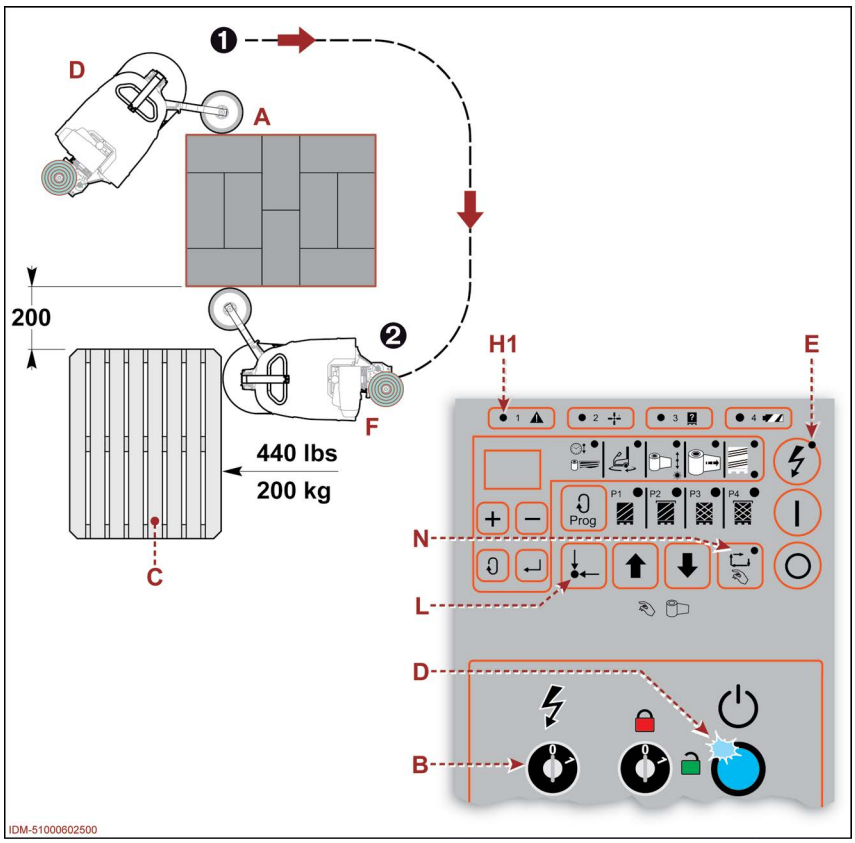
**Attention Warning**

**DO NOT keep using the machine if you have not solved the detected defects and avoid the risk of faults or unpredictable incidents.**

## Monthly check of the safety bumper

**The check is necessary to verify the efficiency of the safety system and to maintain a suitable efficacy level to prevent unexpected risks.**

- **The operation must be carried out by the maintenance technician or by personnel with suitable competences, skills and knowledge.**
- **Make sure to fulfil the required requirements in order to work under safe conditions.**
- **The figure shows the points of intervention and the description shows the procedures to be adopted.**




**NOTE**

**The check must be carried out with the machine connected to the power supply, but NOT MOVING.**

1. **Turn the selector B** on position **"1"**.

– The light of the button **D** remains steadily on.

– LEDs **E-H1** start to flash.

2. Press the push-button **D**.

– The push-button lamp shuts off.

– The LED **E** keeps ON with fixed light, while the LED **H1** switches OFF.

**Important**

**Make sure that there are no people or obstacles within the range of action of the area where the check is carried out.**

3. Position the machine in the area **A**, next to the load to be wrapped.
4. Position a test load or pallet **C** in position , at the distance and having the weight that are specified in the image.
5. Adjust the control panel to set the minimum travelling speed of the machine.
6. Start the operation in AUTOMATIC mode by using the control **N**.

– The machine starts until the emergency bumper hits the load **C**.

– The machine must stop in emergency conditions with the LED **H1** being ON.

7. Check that the driving wheel is not under tension.

**NOTE**

**The safety system will be faulty if the collision does not make the LED H1 switch ON.**
**The fault can be detected also in case the driving wheel continues rotating.**
**If the problem persists, please contact the Manufacturer's Technical Service.**

**Attention Warning**

**DO NOT keep using the machine if you have not solved the detected defects and avoid the risk of faults or unpredictable incidents.**

8. Press the Reset key **L**.
9. Adjust the control panel to re-set the travelling speed of the machine.

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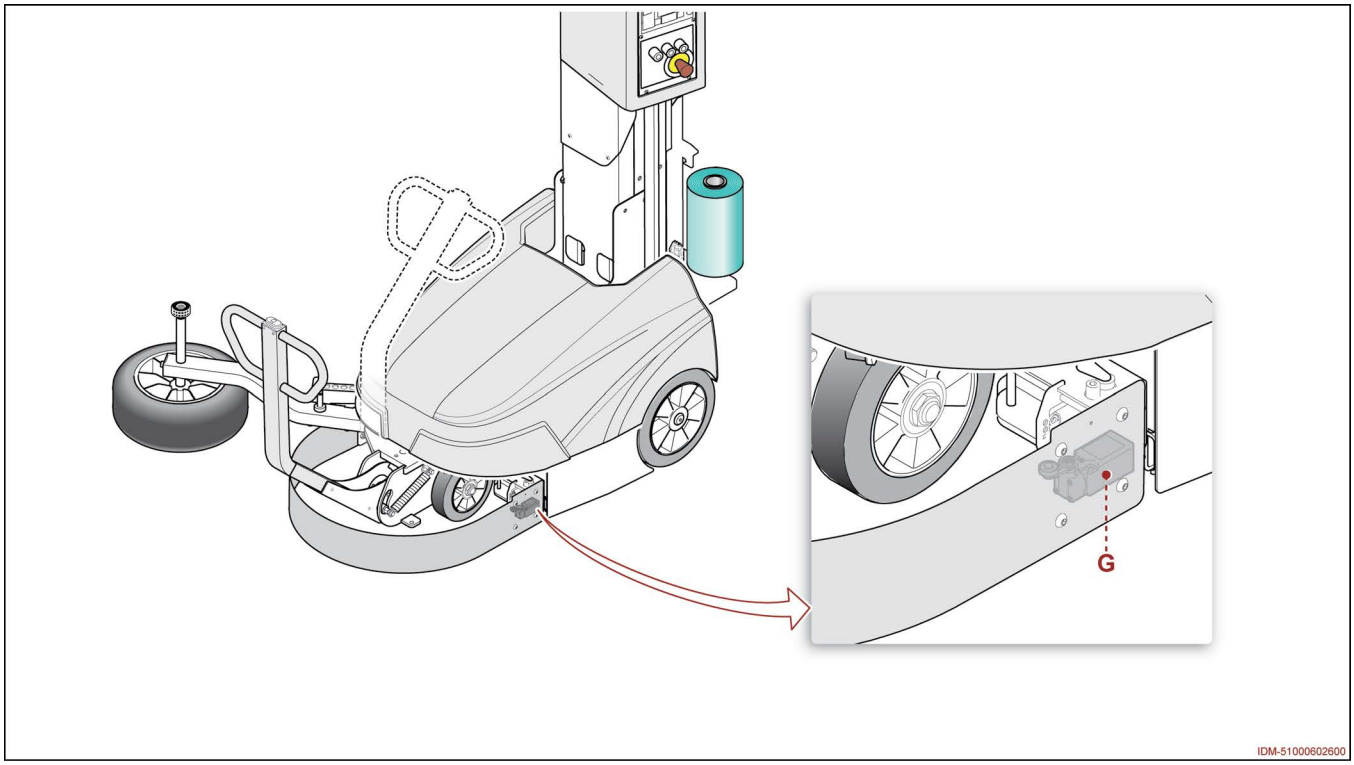
## Yearly check of the safety bumper

**The check is necessary to verify the efficiency of the safety system and to maintain a suitable efficacy level to prevent unexpected risks.**

- **The operation must be carried out by the maintenance technician or by personnel with suitable competences, skills and knowledge.**
- **Make sure to fulfil the required requirements in order to work under safe conditions.**
- The figure shows the points of intervention and the description shows the procedures to be adopted.




**NOTE**

**The check must be carried out with the machine NOT connected to the power supply. DO NOT lift the machine from the ground to perform the checks.**

- Use compressed air to remove all residues from bumper installation and handlebar leverage areas.
- In area **A**, check that the levers that activate the micro-switches move freely and that they have no excessive clearance.
- Check the efficiency of the springs **B**.
- Check that all components of the safety system are undamaged and correctly tightened.
- Screw all fasteners that are not correctly tightened.
- Check the efficiency of the micro-switches **C**.
- Check the sensitivity level of the safety bumper and that there are no deformations, cuts or abrasions.
- Check that the handlebar moves in a correct way.
- Check the efficiency of the springs **D**.
- If you detect considerable irregularities, call the Technical Customer Service of the manufacturer.
- Start the operation ONLY after restoring the normal working conditions of the safety system.

## Problems, causes, remedies

**The table shows the list of faults that can occur during the standard operation and it highlights possible remedies.**

**Table:** Operation failures

| *Problem* | *Cause* | *Remedy* |
|---|---|---|
| LED **H1** ON | Emergency stop button pressed | - See "Stop with activation of the emergency button" |
| | The bumper hit an obstacle within the working area | - See "Stop with activation of the emergency bumper" |
| LED **H2** ON | Reel holding carriage not timed. | - Press the Reset control to restore the operation (See "Control description"). |
| LED **H3** ON | Pallet not detected by the photoelectric cell | - Check the functionality of the component.<br>- The component must be adjusted (See "Pallet detecting photocell sensitivity adjustment"). |
| | The height of the pallet to be wrapped is shorter than the minimum allowed size | - See "Specifications" |
| LED **H4** ON and battery charge status LED ON (red) | Flat battery | - Carry out battery recharge (See "How to recharge the battery"). |
| The display shows the message **"F1"**. | Corner not detected by the sensor within the programmed time | - Check the efficiency of the sensor that is installed in the feeler.In case of a circular-shaped pallet , deselect the "corner count" function. |
| The display shows the message **"F6"**. | The fall arrest system activated due to a loose lifting belt. | - Check the functionality of the component.<br>- Press the Reset control to restore the operation (See "Control description"). |
| The display shows the message **"F9"**. | Activation of the lower safety limit-stop of the reel holding carriage | - Press the Reset control to restore the operation (See "Control description"). |
| The machine does not start | Emergency stop button pressed | - See "Stop with activation of the emergency button" |
| | The bumper hit an obstacle within the working area | - See "Stop with activation of the emergency bumper" |
| | Flat battery | - Carry out battery recharge (See "How to recharge the battery"). |
| The reel holding carriage will go up but won't stop at the top of the pallet. | Pallet not detected by the photoelectric cell | - Check the functionality of the component.<br>- The component must be adjusted (See "Pallet detecting photocell sensitivity adjustment"). |
| The ends of the pallet are wrapped with an excessive quantity of reinforcing bands. | Top reinforcing band quantity not correctly set | - Modify the programming (See "Programming of the wrapping operation"). |
| | Bottom reinforcing band quantity not correctly set | - Modify the programming (See "Programming of the wrapping operation"). |
| The film is too tightly stretched or too loose. | Stretching or pre-stretching factor of the film not set correctly | - Modify the programming (See "Programming of the wrapping operation"). |
| The machine stops with the reel holding carriage not correctly positioned. | Failure of lifting belt of the reel holding carriage | - Replace the component (See "Replacing the lifting belt of the carriage"). |
| The noise level is too high. | The gearmotor that moves the reel holding carriage is faulty | - Check the functionality of the component. |
| | The gearmotor that starts the wheels is faulty | - Check the functionality of the component. |

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| *Problem* | *Cause* | *Remedy* |
|---|---|---|
| Reel holding carriage jogging motion. | Presence of residues or dust on the reel holding carriage sliding guides | - Remove any residues. |
| The operating functions cannot be started by using the radio control | Faulty radio control | - Check the functionality of the component. |
| The batteries do not recharge completely. | Faulty batteries | - Replace the component. |
| | Faulty battery charger | - Replace the component. |

## How to adjust the feeler

**The operation must be carried out by the maintenance technician or by personnel with suitable competences, skills and knowledge.**
**Make sure to fulfil the required requirements in order to work under safe conditions.**

– Before commissioning, check that the roller feeler is next to the upper surface of the pallet (not of the product).

– The figure shows the points of intervention and the description shows the procedures to be adopted.

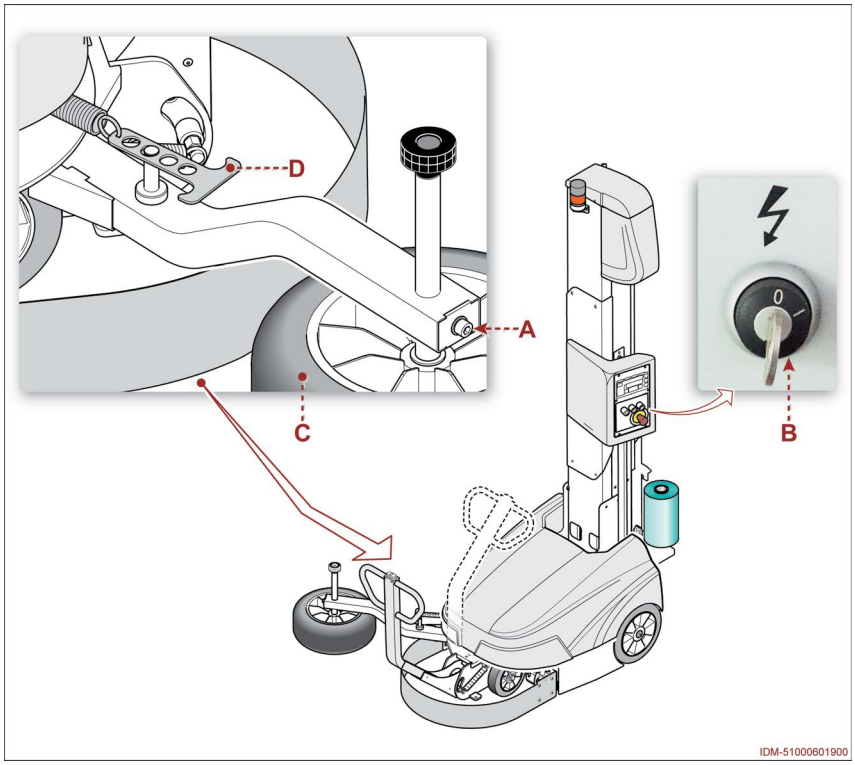
**1.** Move the machine next to the pallet.

**2.** Turn the selector **B** on position **“0”**.

**3.** Remove the key from selector **B** and keep it in a restricted place.

**4.** Loosen the screw **A**, take the wheel **C** to the desired height, and then tighten the screw.

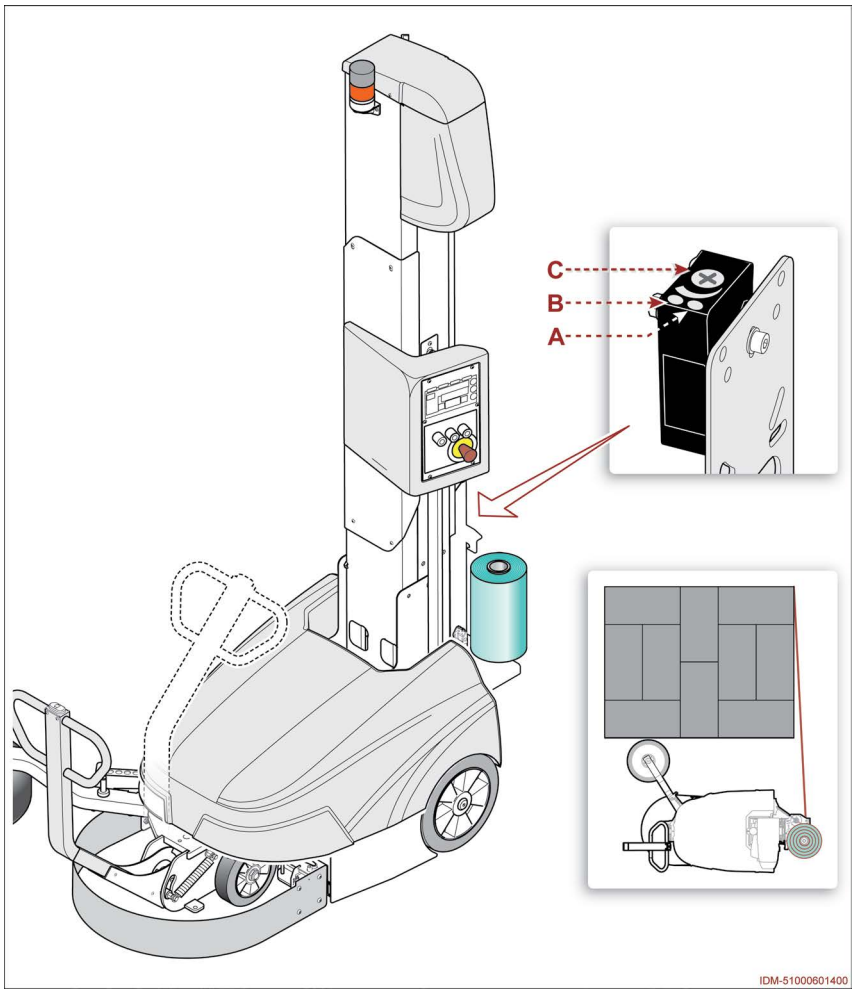
**5.** Adjust the push of the wheel **C** onto the pallet by using the tie rod **D**.



## Pallet detecting photocell sensitivity adjustment

**The operation must be carried out by the maintenance technician or by personnel with suitable competences, skills and knowledge.**
**Make sure to fulfil the required requirements in order to work under safe conditions.**

- This action is necessary to adjust the sensitivity of the photocell when it fails to detect the presence of a pallet.
- Lean the roller feeler against the pallet containing the product (see figure).
- Check if the photocell detects the pallet.
- The active state is signalled by a warning light **B** (yellow light) coming on.
- When the light **B** is off, slowly rotate the control **C** until the indicator light illuminates.
- The light **A** lighting up (green light) indicates that the photocell is powered.



## Replacing the lifting belt of the carriage

**The operation must be carried out by the maintenance technician or by personnel with suitable competences, skills and knowledge.**
**Make sure to fulfil the required requirements in order to work under safe conditions.**

– The figure shows the points of intervention and the description shows the procedures to be adopted.

**1.** Turn the selector **A** on position **"0"**.

**2.** Remove the key from selector **A** and keep it in a restricted place.

**3.** Remove reel.

**4.** Loosen the screws **B**.

**5.** Loosen the screws **C** on both sides.

**6.** Install the support **D**.

**7.** Attach the column **E** to a lifting device.

**8.** Bring the column to a horizontal position.

**9.** Tighten the screws **C** on both sides.

**10.** Remove the lifting device.

**11.** Remove the fastening elements and remove the component **F**.

**12.** Remove the fastening elements **G** and remove the component **H**.

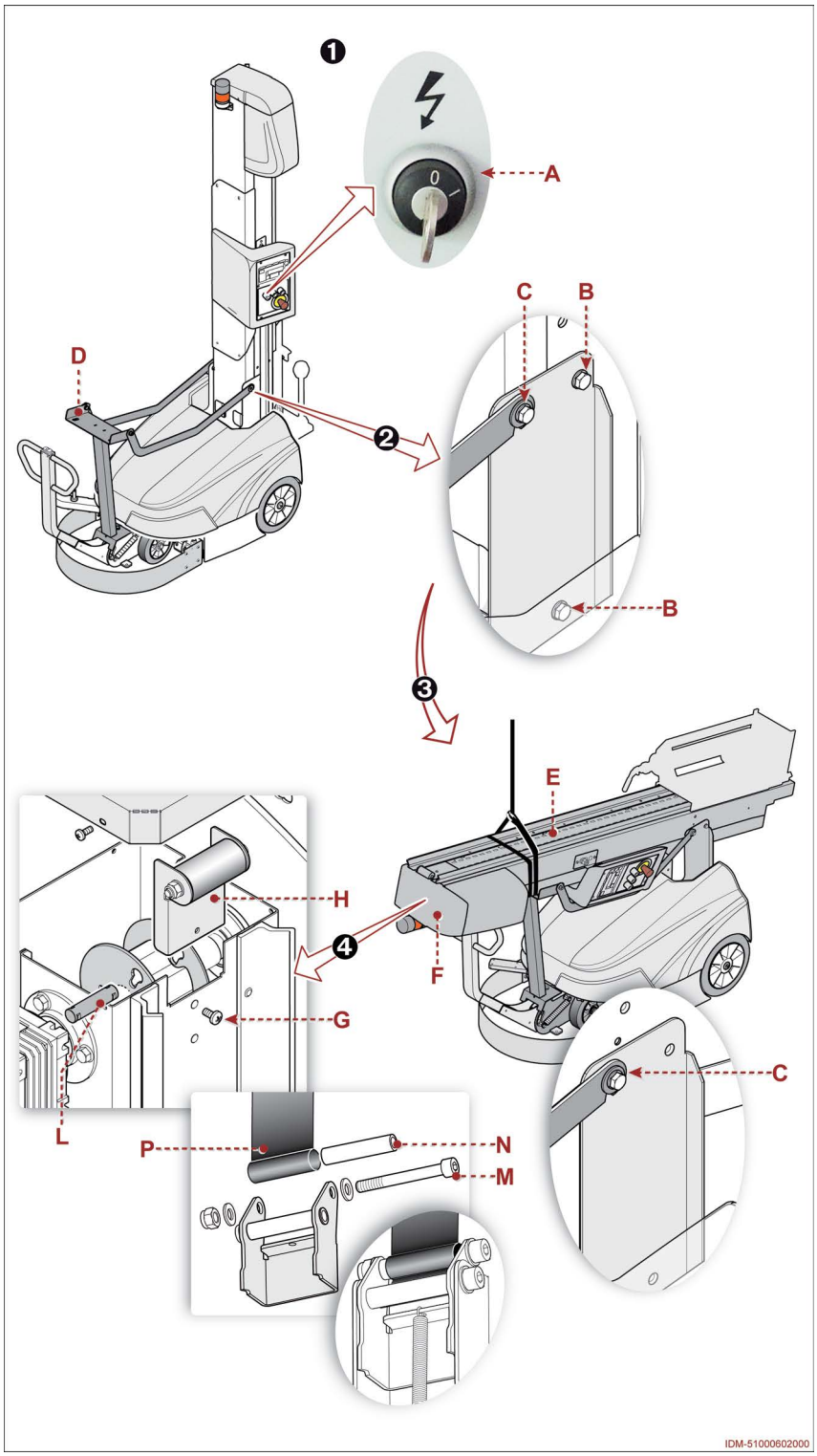
**13.** Slip out pin **L**.

**14.** Remove the fasteners **M**.

**15.** Remove the bushing **N** and remove the damaged belt **P**.

**16.** Insert the bushing **N** in the new belt.

**17.** Secure the end of the belt (with bushing) by means of the fastening elements **M**.

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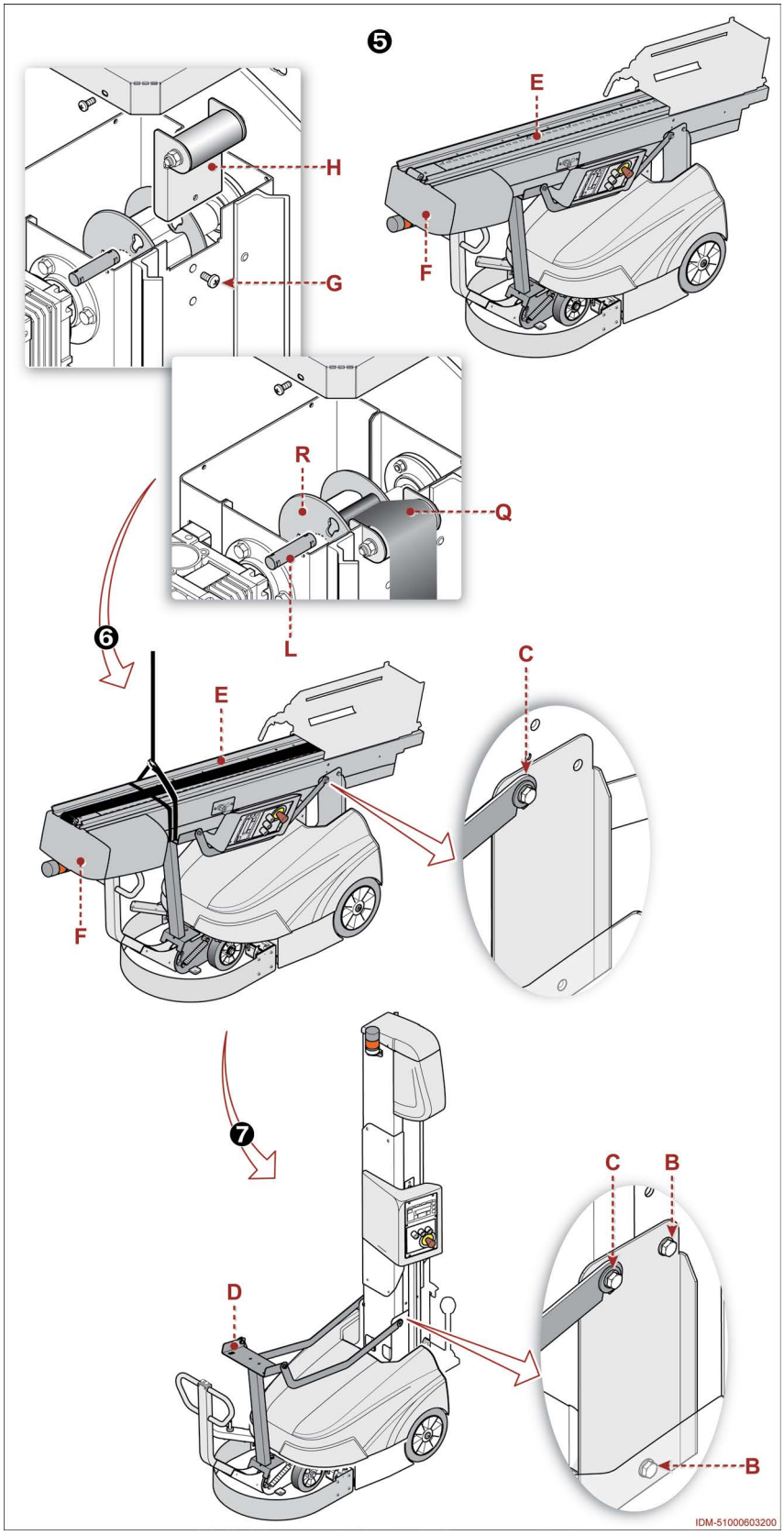
18. Install the component **H** and lock it in place with the fastening elements **G**.
19. Lead the belt over the roller **Q**.
20. Insert the pin **L** to connect the end of the belt to the pulley **R**.
21. Install the component **F** and lock it in place with the fastening elements.
22. Loosen the screws **C** on both sides.
23. Attach the column **E** to a lifting device.
24. Lift the column **E** to its vertical position.
25. Tighten screws **B**.
26. Remove support **D**.
27. Tighten the screws **C** on both sides.
28. Remove the lifting device.

– **At the end of operations, check that there are no tools or other material near the moving parts or in dangerous areas.**



## Machine Disposal and Scrapping

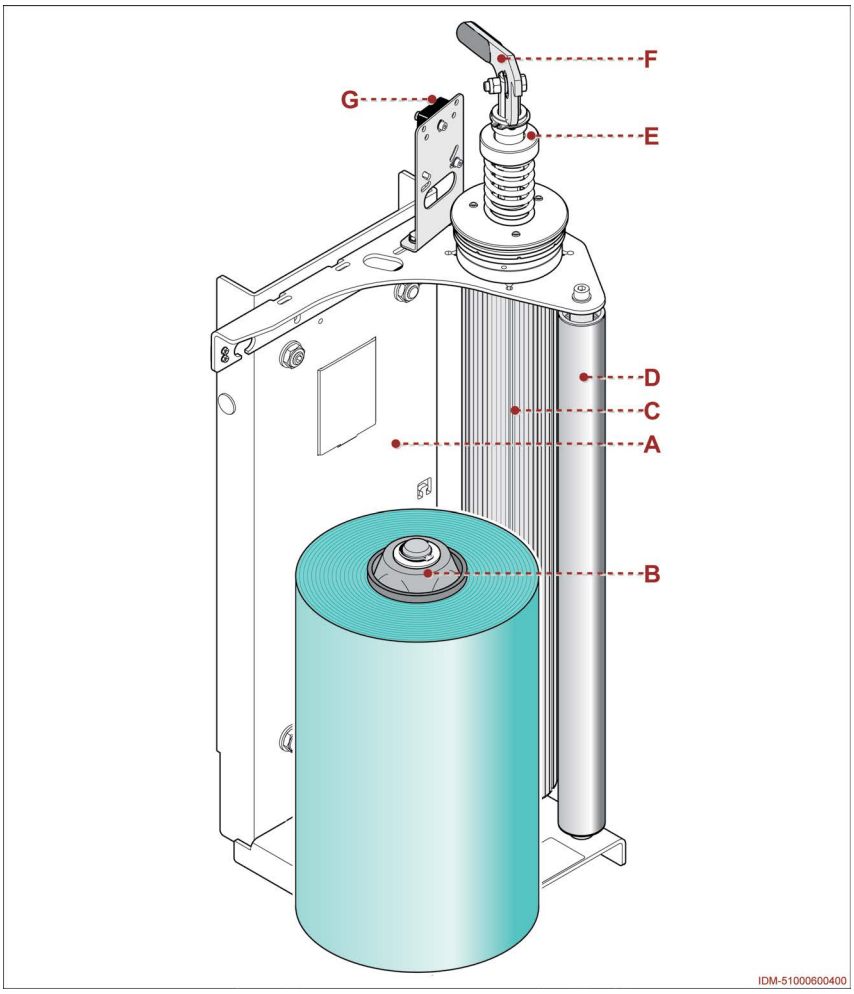
### MACHINE DISMANTLING

– Disconnect the supplies form the energy sources (electrical, pneumatic, etc.) in order to prevent any restart.
– Carefully drain the systems containing hazardous substances, according to the applicable regulations on safety at work and environmental protection.
– Position the machine in a place that is not easily accessible by non authorised people.

### MACHINE SCRAPPING

– Carefully drain the systems containing hazardous substances, according to the applicable regulations on safety at work and environmental protection.
– The machine is to be scrapped at the authorized centres by skilled personnel equipped with all the necessary means to operate in safety conditions.
– The personnel carrying out the scrapping of the machine must identify any residual energy and implement a “safety plan” to avoid any unexpected hazard.
– The components must be selected based on the chemical and physical characteristics of their materials and disposed of separately according to the regulations in force.

## Reel holding carriage (M)




**Main components**

**A) Structure:** it is equipped with rollers for the vertical travelling of the carriage on the column.

– In the structure a fall arrest system is installed, which stops the carriage in case of lifting belt failure.

**B) Reel support shaft:** it is equipped with a friction device to stop the reel from unravelling.

**C) Roller:** designed to tension the film.

– On the outer surface of the roller are inserts designed to ensure film pulling during wrapping.

**D) Roller (idle)**

**E) Ring:** device used to adjust the tension of the film.

**F) Lever:** device used to disengage the roller **C**.

**G) Photocell:** it detects the presence of the pallet and the reel holding carriage in high position.

– Detecting the pallet is necessary to enable wrapping start, while detecting the reel holding carriage is required to show that wrapping has reached the upper part.

– On request, a “black” version of the photocell can be supplied, specifically designed to detect wrapped items or products with a prevalence of dark surfaces.

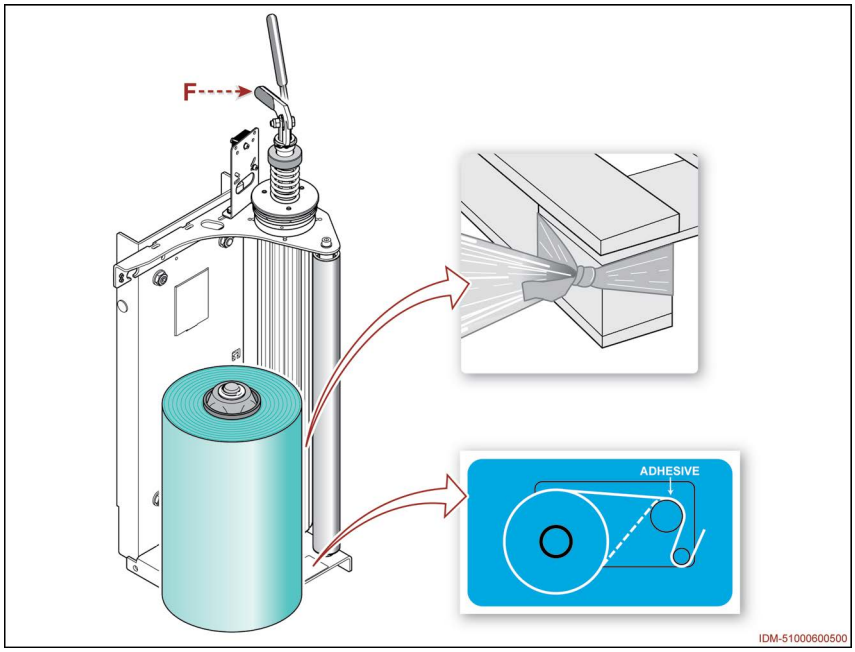
### Film Coil Feeding

1. Lower the reel holding carriage until its endstroke.
2. Lift the lever **F** to its vertical position.
3. Remove the cardboard core of the reel.
4. Insert the new reel.

**NOTE**

**Check whether the wrapping film has the same chemical-physical characteristics as the film in the reel holding carriage.**
**If film characteristics appear to be different, consider whether you should adjust the film tension.**

5. Lead in the film after checking which side is the adhesive side.




**Important**

**In order to avoid transferring impurities to the surfaces of the guiding rollers, discard the outer wrapping film layer on the reel.**

6. Tie the trailing end of the film to the base of the product to be wrapped.
7. Start wrapping.
8. Lower the lever **F** to its horizontal position after the completion of at least one wrapping turn.

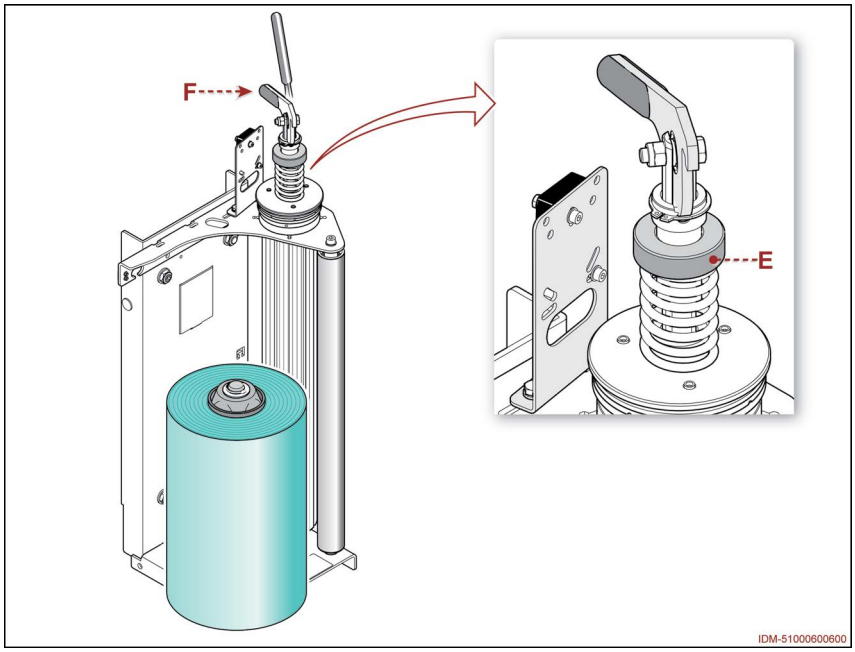
### Tension adjustment of film

– **This action is necessary to stop the film breaking during wrapping.**

1. Lower the reel holding carriage until its endstroke.
2. Lift the lever **F** to its vertical position.
3. Adjust the film tension via the ring **E**.

– **Clockwise:** the value increases.
– **Anti-clockwise:** the value decreases.

4. Lower the lever **F** to its horizontal position.
5. Start wrapping.

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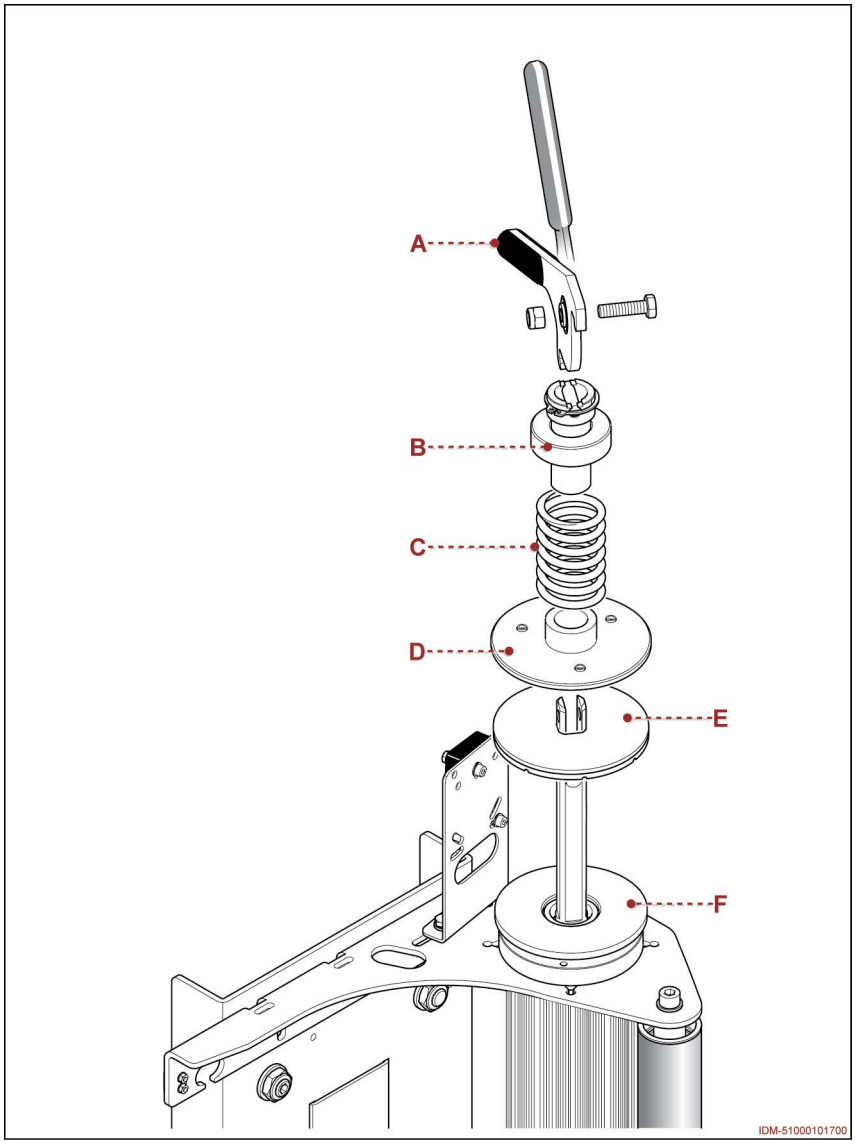
**Cleaning and replacing the friction disc**

– **The operation must be carried out by the maintenance technician or by personnel with suitable competences, skills and knowledge.**

– **Make sure to fulfil the required requirements in order to work under safe conditions.**

– **This service should be carried out with the reel holding carriage lowered and the machine safely at a stop.**




1. Lift the lever **A** to its vertical position.
2. Remove the fastening elements and remove the lever.
3. Remove in a sequence the components **B-C-D-E**.
4. Clean the matching surfaces of the friction discs **E-F**.
5. Check the wear level of the friction material of the disc **E**.

– In the case of excessive wear, replace the component.

6. Install the disc **E** with the friction material facing downwards.
7. Install in a sequence the components **D-C-B**.
8. Engage the lever **A** in a vertical position and insert the fastening elements.
9. Lower the lever to its horizontal position.

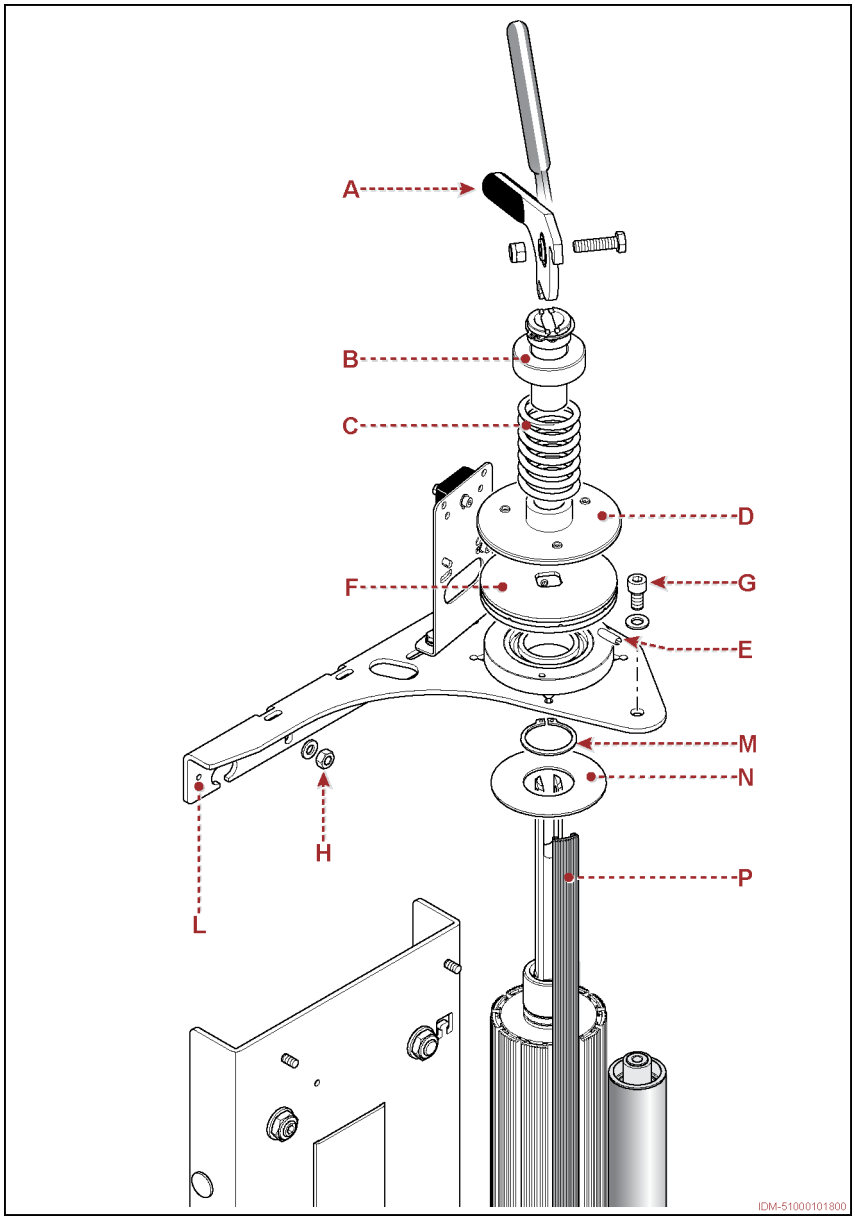
– **At the end of operations, check that there are no tools or other material near the moving parts or in dangerous areas.**

**Replacing the outer surface of roller**

– **The operation must be carried out by the maintenance technician or by personnel with suitable competences, skills and knowledge.**

– **Make sure to fulfil the required requirements in order to work under safe conditions.**

– **This service should be carried out with the reel holding carriage lowered and the machine safely at a stop.**




1. Lift the lever **A** to its vertical position.
2. Remove the fastening elements and remove the lever.
3. Remove in a sequence the components **B-C-D**.
4. Unscrew screw **E**.
5. Remove the component **F**.
6. Unscrew screw **G**.
7. Unscrew the nuts **H**.
8. Remove the plate **L**.
9. Remove stop ring **M**.
10. Remove the component **N**.
11. Remove all the external cylinder surface inserts **P**, one at a time.
12. Thoroughly clean the grooves of the roller.
13. Insert in a sequence, one at a time, all the new external cylinder surface inserts.
14. Install component **N**.
15. Reinstall the retainer ring **M**.
16. Fit back the plate **L** and fix it with the nuts **H** without tightening.
17. Insert screw **G** and tighten it.
18. Adjust the position of the plate **L** and tighten the nuts **H**.
19. Install the component **F** all the way in and fix it with the screw **E**.
20. Install in a sequence the components **D-C-B**.
21. Engage the lever **A** in a vertical position and insert the fastening elements.
22. Lower the lever to its horizontal position.

– **At the end of operations, check that there are no tools or other material near the moving parts or in dangerous areas.**

## Reel holding carriage (FM)

### Main components

**A) Structure:** it is equipped with rollers for the vertical travelling of the carriage on the column.

– In the structure a fall arrest system is installed, which stops the carriage in case of lifting belt failure.

**B) Reel support shaft:** it is equipped with a friction device to stop the reel from unravelling.

**C) Roller:** designed to tension the film.

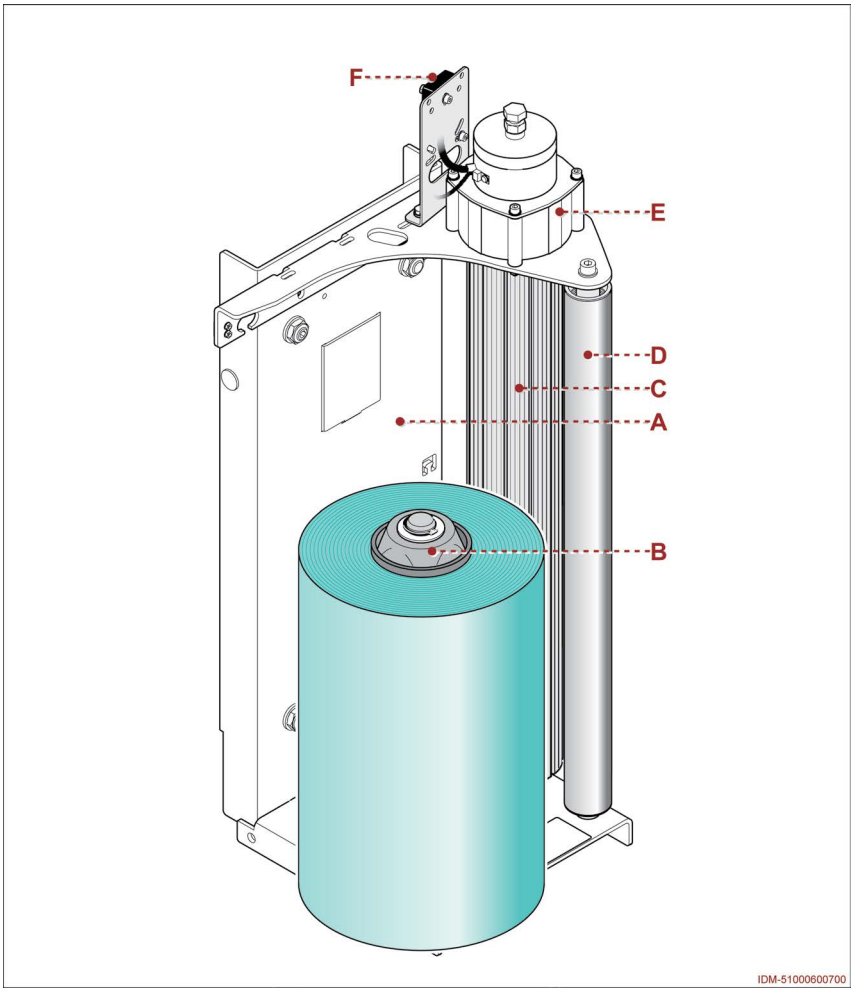
– On the outer surface of the roller are inserts designed to ensure film pulling during wrapping.

**D) Roller (idle)**

**E) Electromechanical brake:** device that adjusts the tension of the film.

**F) Photocell:** it detects the presence of the pallet and the reel holding carriage in high position.

– Detecting the pallet is necessary to enable wrapping start, while detecting the reel holding carriage is required to show that wrapping has reached the upper part.




– On request, a “black” version of the photocell can be supplied, specifically designed to detect wrapped items or products with a prevalence of dark surfaces.

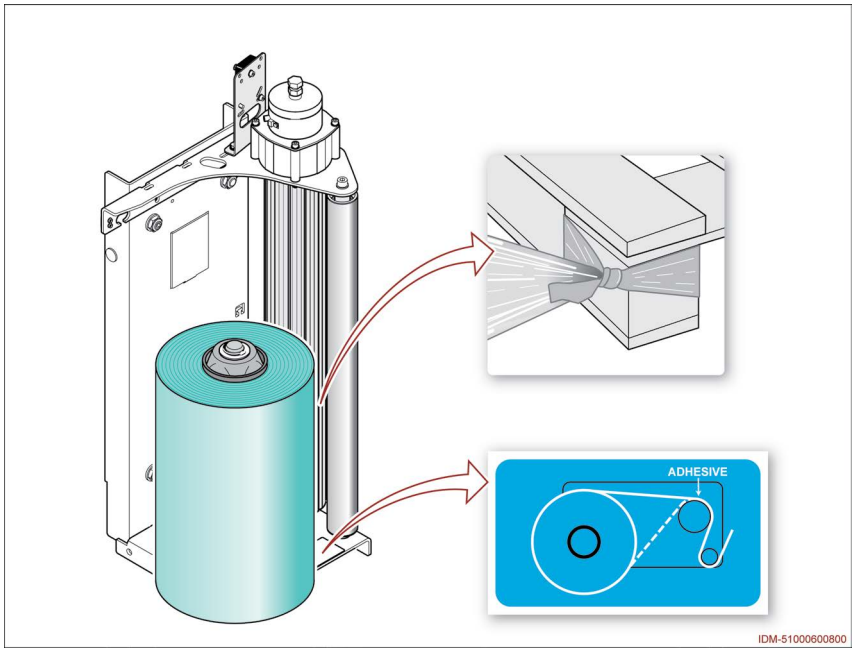
### Film Coil Feeding

1. Lower the reel holding carriage until its endstroke.
2. Remove the cardboard core of the reel.
3. Insert the new reel.

**NOTE**

**Check whether the wrapping film has the same chemical-physical characteristics as the film in the reel holding carriage.**
**If film characteristics appear to be different, consider whether you should adjust the film tension.**

4. Lead in the film after checking which side is the adhesive side.




**Important**

**In order to avoid transferring impurities to the surfaces of the guiding rollers, discard the outer wrapping film layer on the reel.**

5. Tie the trailing end of the film to the base of the product to be wrapped.

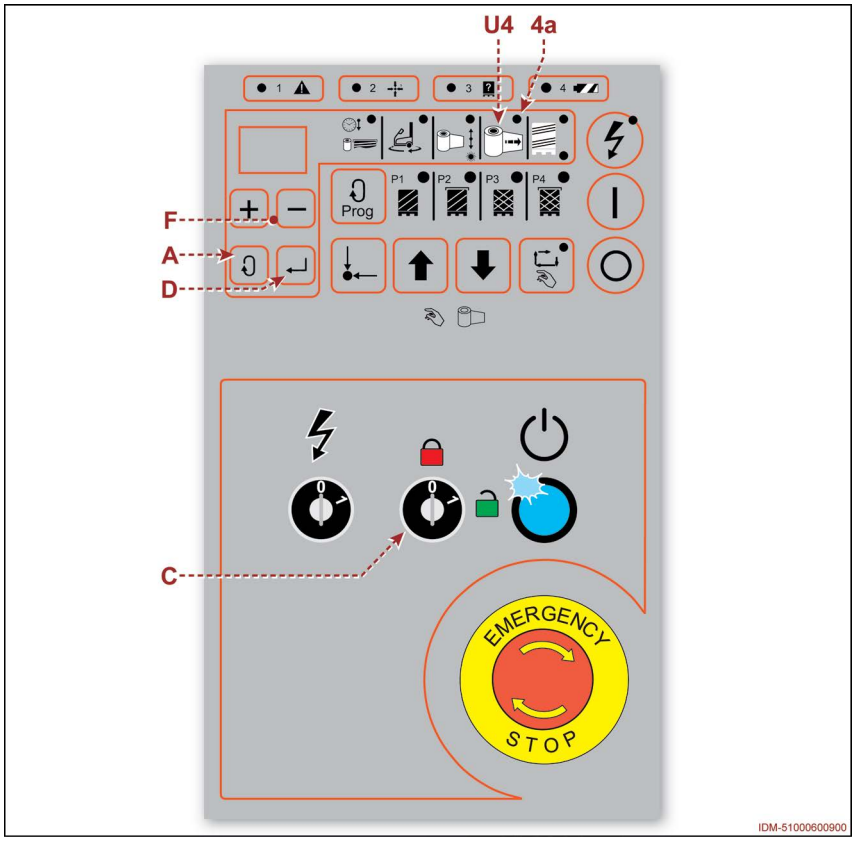
### Tension adjustment of film

– **This action is necessary to stop the film breaking during wrapping.**

1. Turn the selector **C** on position **“1”**.
2. Repeatedly press the button **A** until selecting the parameter **U4**.

– LED **4a** turns on.

3. Adjust the film tension via the controls **F**.
4. Press key **D** to confirm.
5. Turn the selector **C** on position **“0”**.

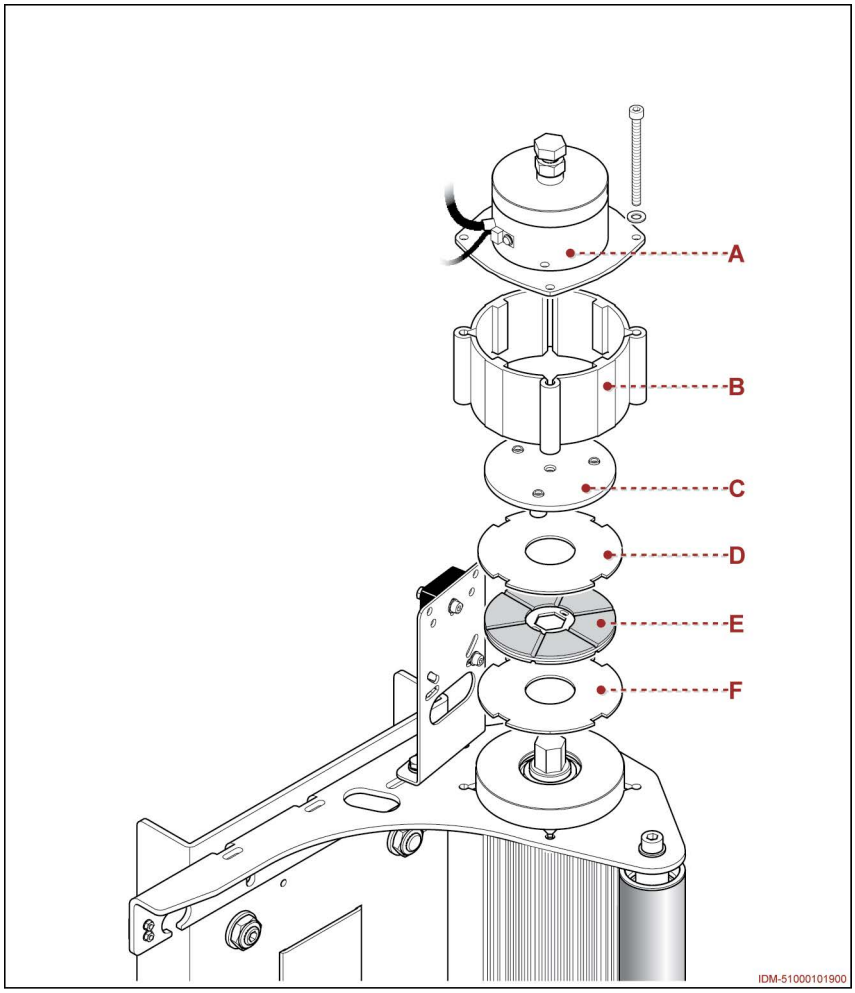


**Cleaning and replacing the friction disc**

– **The operation must be carried out by the maintenance technician or by personnel with suitable competences, skills and knowledge.**

– **Make sure to fulfil the required requirements in order to work under safe conditions.**

– **This service should be carried out with the reel holding carriage lowered and the machine safely at a stop.**




1. Remove the fastening elements and remove the actuator **A**.
2. Remove in a sequence the components **B-C-D-E-F**.
3. Clean the matching surfaces of the friction discs **D-F**.
4. Check the wear level of the friction material of the disc **E**.

– In the case of excessive wear, replace the component.

5. Install in a sequence the components **F-E-D-C-B**.
6. Install the component **A** and lock it in place with the fastening elements.

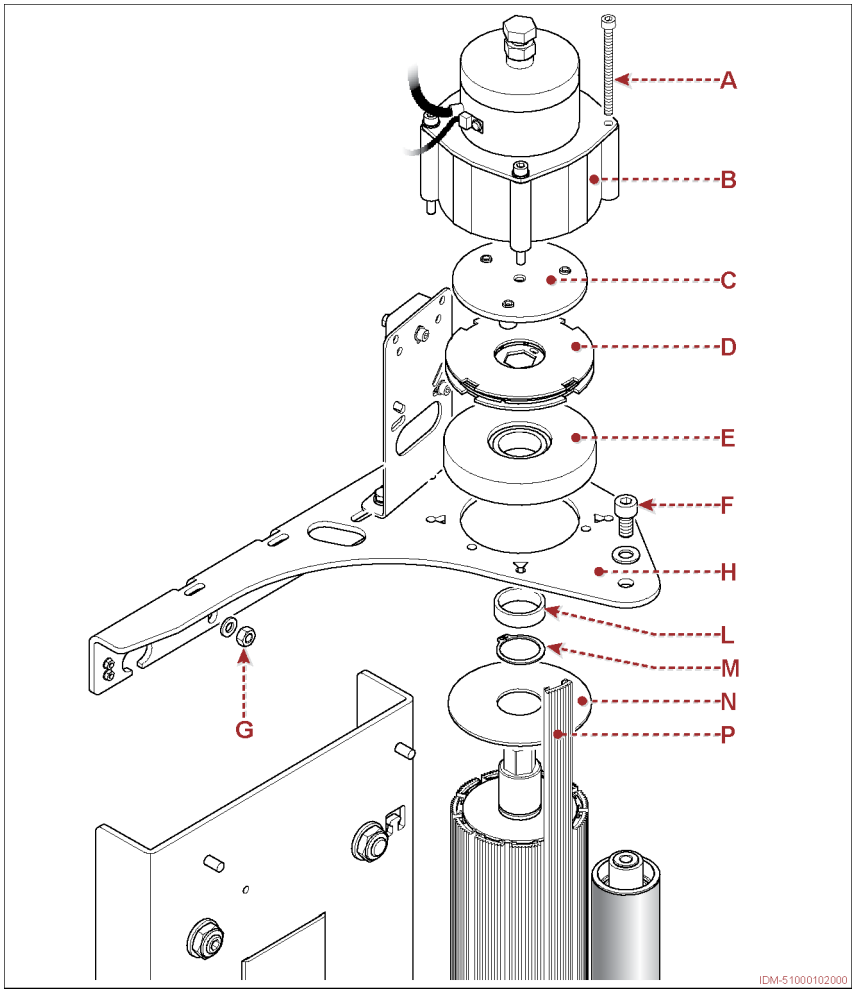
– **At the end of operations, check that there are no tools or other material near the moving parts or in dangerous areas.**

**Replacing the outer surface of roller**

– **The operation must be carried out by the maintenance technician or by personnel with suitable competences, skills and knowledge.**

– **Make sure to fulfil the required requirements in order to work under safe conditions.**

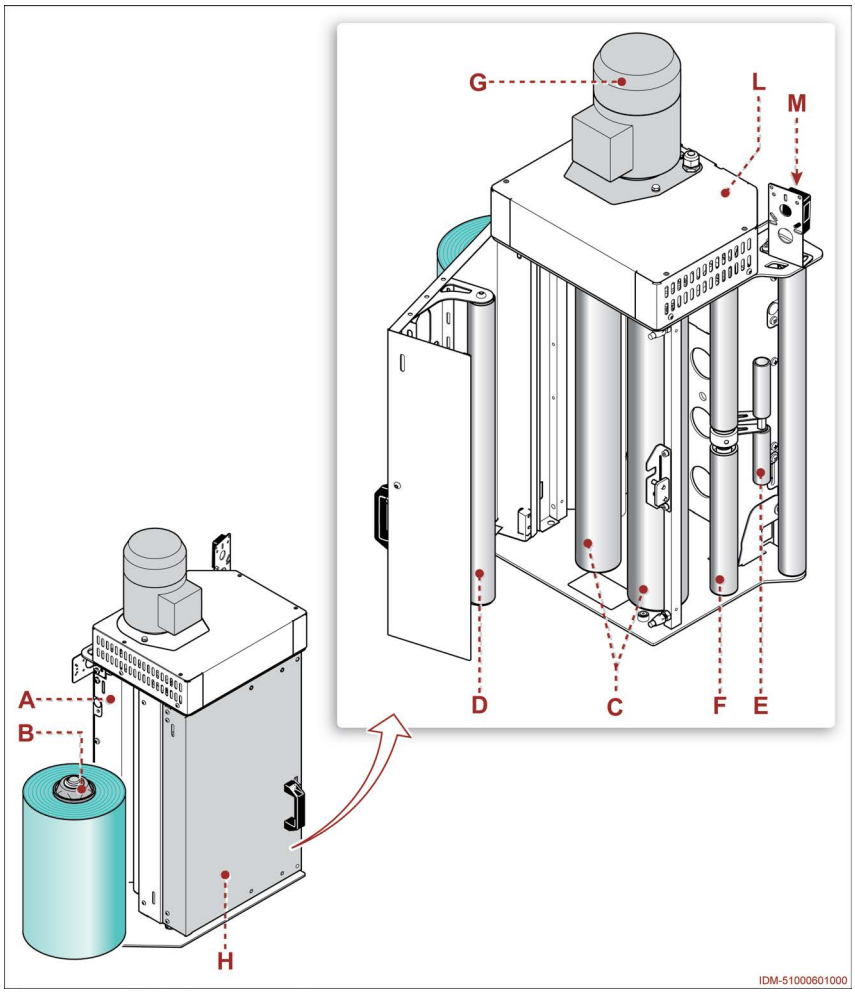
– **This service should be carried out with the reel holding carriage lowered and the machine safely at a stop.**




1. Loosen the screws **A**.
2. Remove the clutch body **B**.
3. Remove in a sequence the components **C-D-E**.
4. Unscrew screw **F**.
5. Unscrew the nuts **G**.
6. Remove the plate **H**.
7. Extract spacer **L**.
8. Remove stop ring **M**.
9. Remove the component **N**.
10. Remove all the external cylinder surface inserts **P**, one at a time.
11. Thoroughly clean the grooves of the roller.
12. Insert in a sequence, one at a time, all the new external cylinder surface inserts.
13. Install component **N**.
14. Reinstall the retainer ring **M**.
15. Install the spacer **L**.
16. Fit back the plate **H** and fix it with the nuts **G** without tightening.
17. Insert screw **F** and tighten it.
18. Adjust the position of the plate **H** and tighten the nuts **G**.
19. Install in a sequence the components **E-D-C**.
20. Install the clutch body **B** and fix it with the screws **A**.

– **At the end of operations, check that there are no tools or other material near the moving parts or in dangerous areas.**

## Reel holding carriage (LP)




**Main components**

**A) Structure:** it is equipped with rollers for the vertical travelling of the carriage on the column.

– In the structure a fall arrest system is installed, which stops the carriage in case of lifting belt failure.

**B) Reel support shaft:** it is equipped with a friction device to stop the reel from unravelling.

**C) Rollers:** they are used to pre-stretch the film.

– The rollers are coupled with gears.

**D) Roller (idle)**

– On closing the guard , the roller **D** is positioned centrally with respect to the rollers **C**.

**E) Idle roller:** used to keep the film evenly stretched.

– The roller is equipped with a sensor that interfaces with the electric motor **G** to adjust the speed of the rollers **C**.

**F) Roller (idle)**

**G) Electric motor:** it drives the pre-stretch rollers.

**H) Interlocked mobile guard:** safety device to prevent access to the components whose operation may represent a risk.

– When opening the guard, the machine stops in safe conditions. The machine restarts only once the guard has been closed and operation has been restored.

**L) Protective guard for the drive system of rollers**

**M) Photocell:** it detects the presence of the pallet and the reel holding carriage in high position.

– Detecting the pallet is necessary to enable wrapping start, while detecting the reel holding carriage is required to show that wrapping has reached the upper part.

– On request, a “black” version of the photocell can be supplied, specifically designed to detect wrapped items or products with a prevalence of dark surfaces.

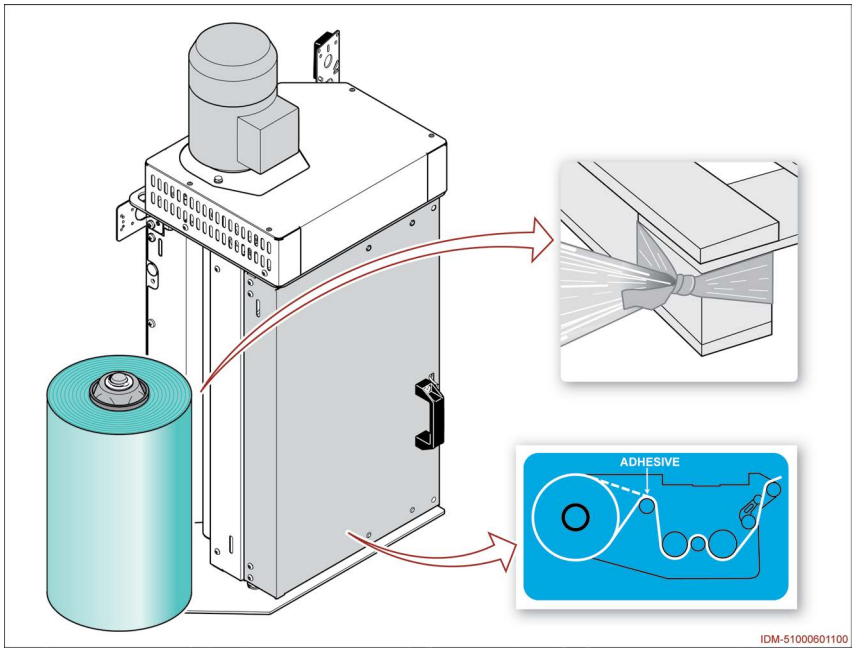
### Film Coil Feeding

1. Lower the reel holding carriage until its endstroke.
2. Open the cover **G**.
3. Remove the cardboard core of the reel.
4. Insert the new reel.

**NOTE**

**Check whether the wrapping film has the same chemical-physical characteristics as the film in the reel holding carriage.**
**If film characteristics appear to be different, consider whether you should adjust the film tension.**

5. Lead in the film after checking which side is the adhesive side.




**Important**

**In order to avoid transferring impurities to the surfaces of the guiding rollers, discard the outer wrapping film layer on the reel.**

6. Tie the trailing end of the film to the base of the product to be wrapped.
7. Close the cover **G**.

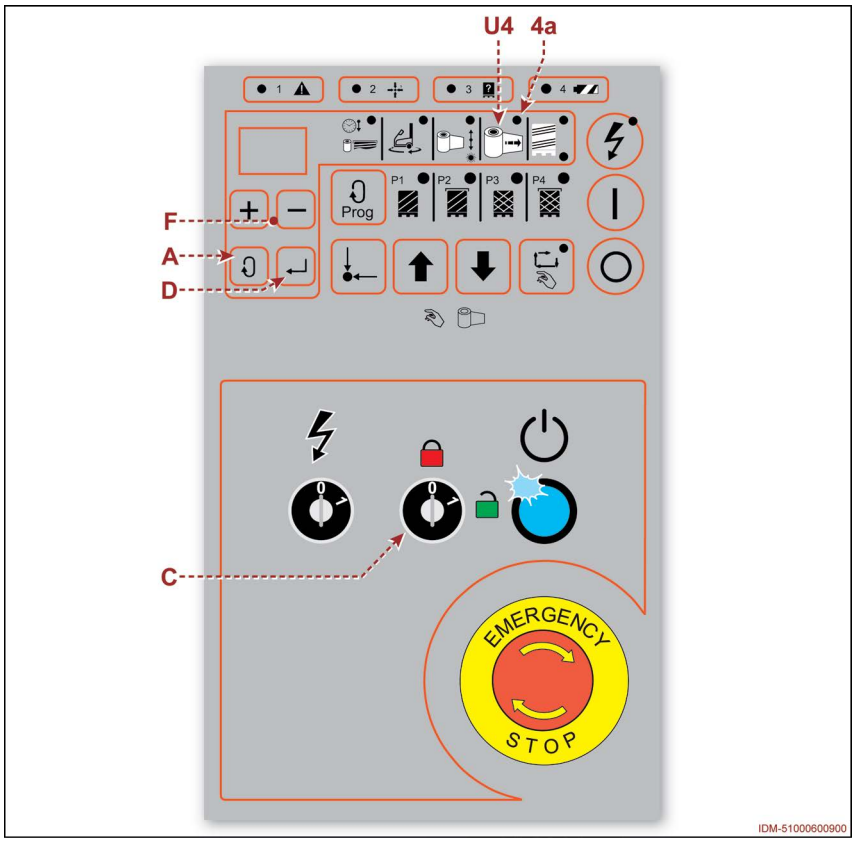
### Tension adjustment of film

– **This action is necessary to stop the film breaking during wrapping.**

1. Turn the selector **C** on position **"1"**.
2. Repeatedly press the button **A** until selecting the parameter **U4**.

– LED **4a** turns on.

3. Adjust the film tension via the controls **F**.
4. Press key **D** to confirm.
5. Turn the selector **C** on position **"0"**.



## Analytical index