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## 1. GENERAL INFORMATION

### 1.1. PURPOSE OF THE MANUAL

- The manual is an integral part of the machine and is aimed at providing the operator with the “Instructions for use” in order to prevent and minimise the risks that arise from human-machine interaction.  
**The information has been written by the Manufacturer in Italian (the original language) in full compliance with the professional writing principles and the regulations in force.**  
**The communication principles were chosen according to the target readers in order to ease the reading and understanding of the information.**  
**The information may be translated into other languages to satisfy the legal and/or market requirements.**  
**The manuals must be translated directly from the original instructions, without modifications.**  
**Each translation (including that provided by the purchasing agent or by the company that introduces the machine into the country in question) must specify the message “Translation of the original instructions”.**
- Refer to the table of contents in order to easily identify the subjects of interest.
- Some information may not correspond completely to the actual configuration of the machine delivered.
- Any additional information does not affect the readability of the text and the safety level.
- The Manufacturer reserves the right to modify the contents of the manual without prior notice provided that the safety level is not altered.
- Every notification by the recipients can be an important contribution to the improvement of after-sales services that the manufacturer intends to offer to its customers.
- The symbols described below are used to highlight important information or specifications.



#### **Danger - warning**

The symbol indicates critically dangerous situations that if neglected can result in serious personal safety and health hazards.



#### **Caution - warning**

The symbol indicates that suitable actions must be taken in order to avoid personal safety and health hazards and economic damages.



#### **Important**

The symbol indicates particularly important technical and operating information that should not be neglected.

## 1.2. MANUFACTURER AND MACHINE IDENTIFICATION

The illustrated identification plate is applied directly to the machine. It contains references and indispensable operating safety indications.

- 1) Machine model.
- 2) Machine serial number.
- 3) Year of manufacture.
- 4) Power supply voltage.
- 5) Power supply frequency.
- 6) Power supply phases.
- 7) Absorbed electric current.
- 8) Installed power.
- 9) Air consumption.
- 10) Air supply max. pressure.
- 11) Machine weight.
- 12) Manufacturer's identification.
- 13) Name.

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ROBOPAC

**ROBOPAC S.p.a**  
**Via Fabrizio da Montebello, 81**  
**47892 Repubblica di San Marino**  
**Phone (+378) 0549 910511**  
**Fax (+378) 0549 908549**

CE

DENOMINAZIONE DENOMINATION	13	
MODELLO MODEL	1	
MATRICOLA SERIAL NUMBER	2	
DATA DATE OF MAN.	3	
ALIMENTAZIONE SUPPLY VOL.	4	V
FREQUENZA FREQUENCY	5	Hz
N.FASI PHASE	6	
ASSORBIMENTO ABSORPTION	7	A
POTENZA TOT. TOTAL POWER	8	kw
CONSUMO ARIA AIR CONSUMPTION	9	Nl/min
PRESSIONE MAX MAX. PRESSURE	10	bar
PESO WEIGHT	11	kg

### 1.3. TERMS AND DEFINITIONS

Some recurring terms found within the manual are described in order to complete their meaning.



**Maintenance:**

The set of operations required to maintain the machine efficient and in good working order. Normally some operations are scheduled by the manufacturer, who defines the necessary skills and methods of intervention.

Some unscheduled operations must be performed after consulting the manufacturer.



**Operator:**

A person chosen and authorised among those who have the requirements, skills and information necessary for installation, use and ordinary maintenance of the machine.



**Maintenance technician:**

Technician chosen and authorised among those who have the requirements to perform routine and extraordinary maintenance on the machine. Therefore, the technician must have accurate information and competences with particular skills in the field of intervention.



**Format changeover:**

Set of operations to carry out on the machine before starting to work with characteristics other than the previous ones.



**Training:**

Training process aimed at transferring to the new operator the knowledge, skills and behaviours required to operate the machine autonomously, properly and safely.



**Installer:**

Technician chosen and authorised by the manufacturer or by its representative, among those with the requirements to install and test the machine or the relevant system.



**Assistant:**

Employee assigned to assist the production processes of the machine or system in question.



**Production manager:**

Qualified technician, with experience and competence in the field of machinery for the reference sector. Depending on the production requirements, the production manager can operate the machine directly, or

select the operator to be assigned to the task.

### 1.3.1. PICTOGRAMS INDICATING DANGER

The following table summarises the safety-related pictograms which indicate **DANGER**.



**ATTENTION - GENERIC DANGER**

This draws the attention of the personnel concerned to the risk of physical injuries caused by the operation described if it is not carried out in compliance with safety regulations.



**ATTENTION - DANGER DUE TO CONTACT WITH LIVE PARTS**

This indicates to the personnel concerned that the described operation poses, if not carried out in compliance with safety regulations, a risk of electric shock.



**ATTENTION - DANGER DUE TO FLAMMABLE MATERIAL**



**ATTENTION - DANGER DUE TO MOVING PARTS**



**ATTENTION- DANGER DUE TO HIGH TEMPERATURES**



**ATTENTION - DANGER DUE TO SUSPENDED LOADS**



**ATTENTION - DANGER DUE TO CONTACT WITH OVERHEAD OBSTACLES**



**ATTENTION - TRIPPING OR FALLING DANGER**



**ATTENTION - TANGLING DANGER**

It signals to the concerned personnel that the device bearing this pictogram features parts where there is the risk getting tangled when accessed.



**ATTENTION - HAND CRUSHING DANGER**



**ATTENTION - SHEARING DANGER**



**ATTENTION - CUTTING DANGER**

It signals to the concerned personnel that the device on which the pictogram is located has sharp parts that may injure their hands.



**ATTENTION - DANGER DUE TO CARRIAGE MOVEMENT**



**ATTENTION - EXPLOSION DANGER**

### 1.3.2. PICTOGRAMS INDICATING PROHIBITION

The following table summarises the safety-related pictograms indicating **PROHIBITION**.



#### GENERIC PROHIBITION



#### NO SMOKING

Smoking is not allowed in the area where this sign is located.



#### NO NAKED FLAMES

This symbol prohibits the use of naked flames near the machine or parts of it to prevent a fire hazard.



#### NO PEDESTRIANS

Pedestrians are not allowed to pass through the area where this signal is located.



#### DO NOT EXTINGUISH WITH WATER

Any fire that may occur near the machine or parts of it must NOT be extinguished with jets of water.



#### DO NOT INSERT YOUR HANDS



#### DO NOT PUSH



#### DO NOT SEAT DOWN



#### DO NOT CLIMB ONTO THE SURFACE



#### DO NOT REMOVE THE OPERATOR GUARDS

### 1.3.3. PICTOGRAMS INDICATING OBLIGATION

The following table summarises the safety-related pictograms indicating **OBLIGATION**.



#### **GENERIC OBLIGATION**

The presence of the symbol next to the description indicates the obligation to carry out the operation/manoeuvre as described and in compliance with current safety regulations, in order to avoid risks and/or injuries.



#### **OBLIGATION TO REFER TO THE OPERATOR'S MANUAL**

Obligation, before carrying out any operation on the machine, to read the Instruction Manual supplied with the machine.



#### **OBLIGATION TO USE LUBRICANTS RECOMMENDED BY IMA**

Obligation, before changing the oil or the lubricants, to read the Instruction Manual supplied with the machine.



#### **OBLIGATION TO WEAR PROTECTIVE GLOVES**

The presence of the symbol next to the description requires the use of protective gloves by the operator, since the risk of injury is implicit.



#### **OBLIGATION TO WEAR PROTECTIVE GOGGLES**

The presence of the symbol next to the description requires the use of safety goggles by the operator, since the risk of injury is implicit.



#### **OBLIGATION TO WEAR A PROTECTIVE HELMET**

The presence of the symbol next to the description requires the use of a protective helmet by the operator since the risk of injury is implicit.



#### **OBLIGATION TO WEAR A PROTECTIVE MASK**

The presence of the symbol next to the description requires the use of a respiratory protective mask by the operator, since the risk of injury is implicit.



#### **OBLIGATION TO WEAR SAFETY SHOES**

The presence of the symbol next to the description requires the use of protective shoes by the operator, since the risk of injury is implicit.



#### **OBLIGATION TO WEAR PROTECTIVE CLOTHING**

The presence of the symbol next to the description requires the use of a protective overall by the operator, since the risk of injury is implicit.



#### **OBLIGATION TO WEAR EARMUFFS FOR PROTECTION AGAINST NOISE**

The presence of the symbol next to the description requires the use of earmuffs by the operator as the risk of injury is implicit.

#### 1.4. HOW TO REQUEST ASSISTANCE

**Robopac** distribution network is at your disposal for any problem regarding technical assistance, spare parts and any new requirement you might need for your business.

For every technical service request regarding the machine, please indicate the data found on the identification plate, the approximate hours of use and the type of fault detected.

Please refer to one of the authorised service centres or directly to the address indicated for any need.

ROBOPAC S.p.A  
VIA FABRIZIO DA MONTEBELLO, 81  
47892 GUALDICCIOLO REPUBLIC OF S. MARINO (RSM)  
Tel. 0549 (international ++378) 910511  
Fax 0549/908549 - 905946  
<http://www.aetnagroup.com>

#### 1.5. ATTACHED DOCUMENTATION

The machine is provided with the documentation listed below, unless otherwise agreed.

- EC DECLARATION OF CONFORMITY.
- Warranty conditions.
- Pneumatic diagram.
- Wiring diagram and list of components.
- Manuals of installed commercial devices (if necessary for machine use).
- Unpacking and installation instructions.
- Quick guide for quick start.
- USB pendrive containing the information listed below.
  - Use and maintenance manual translated into various languages.
  - Spare parts catalogue.
  - Machine programming software.
  - Wiring Diagrams.

#### 1.6. HOW TO READ THE INSTRUCTIONS FOR USE

The manual is divided into chapters, each of which describes a specific category of information.



**Important**

**Every operator who interacts with the machine, in addition to reading all the documentation, must read and learn the information that falls within his/her operational competence.**

Refer to the abbreviation that precedes the title of the chapters in the index, to search for topics to consult.

These instructions are the result of an automatic system that assembles text and illustrations, so it is possible that when changing pages, there might be interruptions in the flow of text and tables.



**Important**

**Keep this manual for the entire duration of the machine useful life in a well known and easy to access place, available for reference any time the need should arise.**

## 2. SAFETY INFORMATION

### 2.1. GENERAL SAFETY WARNINGS



**Caution - warning**

Carefully read the “Instructions for use” specified in the manual and those applied directly to the machine.

It is important to dedicate a little time to read the “Instructions for use” in order to minimise the risks and avoid unpleasant accidents.

Before performing any operation, the operator must make sure that he/she has understood the “instructions for use”.



**Danger - warning**

Pay attention to the safety warnings, do not misuse the machine and assess the possible residual risks.

Caution is essential.

Safety is also in the hands of those who interface with the machine throughout its life span.



**Important**

Sometimes, accidents can be caused by a “careless” use of the machine by the operator.

Usually it is too late to remember what should have been done when the accident has already happened.



**Caution - warning**

Preserve the readability of the information signs and observe the indications given.

The information signs may have different shapes and colours, indicating hazards, obligations, prohibitions and indications.

Tampering with the safety devices and the removal of the same may create risks (even severe) for the operators.

The personnel authorised to carry out any operation with the machine must have acknowledged experiences in the specific field.



**Important**

The manufacturer is not responsible for any damage to the packaged product occurred during wrapping, stabilisation and following operations.



**Important**

Non-compliance with the instructions given may cause risks to the safety and health of people, as well as economic damages.

## 2.2. SAFETY WARNINGS FOR HANDLING AND INSTALLATION



### Danger - warning

The personnel authorised to handle the machine (load and unload) must possess the necessary technical and professional knowledge and skills.

Handle (load and unload) the machine according to the instructions affixed directly to the machine, to the package and in the user manual.

During handling use one or more assistants, if required. This may pose unexpected risks.

In order to minimise the risks related to assistants' involvement, you must inform them in advance on the type of work to be carried out and the behaviour to adopt.

Handling must be carried out with the aid of specific means (crane, forklift truck etc.) by qualified personnel capable of observing the safety requirements.

When using the lifting means, insert and/or fasten the devices (hooks, forks etc.) only into the points provided on the package and/or on the machine.

Transport the machine with suitable means of adequate capacity.

The minimum and maximum temperature (during transport and/or storage) must fall within the range allowed in order to prevent damaging the electrical components.

Install the machine only in spaces with no explosion and/or fire risks.

Avoid spaces exposed to atmospheric and corrosive agents.

Assess, prior to installation, if it is necessary to implement a "safety plan" in order to protect the safety of the personnel involved.

Provide proper safety conditions when operating in high areas that are dangerous or hard to access.

Install the machine according to the minimum perimeter spaces indicated by the Manufacturer and the surrounding working activities.

Prepare a machine installation project if the machine is to interact (directly or indirectly) with another machine or with a production line.

The project must take into account all operating conditions, in order to comply with all laws in force on matter of safety in the workplace.

Check that the installation space is properly ventilated in order to avoid unhealthy air concentration for the operators.

Implement the most suitable solutions to minimise noise emission levels and acoustic pollution.

Carry out the electrical connections in accordance with the best practice and in full compliance with the instructions provided by the Manufacturer and the specific regulations in force.



### Important

**The machine is designed to be connected to a TN-S system and the impedance value of the PE circuit must be below 400 mΩ.**

**The electrical connections must be carried out exclusively by operators with acquired and acknowledged skills in the field of intervention.**

The installer must test the machine and check, through a general test, that the machine can be commissioned without any risk for the operator.

Dispose of all the packaging components in compliance with the standards in force in the Country of installation.

**Non-compliance with the instructions given may cause risks to the safety and health of people, as well as economic damages.**

## 2.3. SAFETY WARNINGS FOR USE AND OPERATION



### Danger - warning

The operator must be trained and possess the adequate skills required to carry out the specific tasks and must be fit to use the machine safely.

When using the machine for the first time, the operator must read the manual and identify the control functions and simulate some operations, especially machine start and stop.

The machine has been designed and manufactured to meet all the operating conditions indicated by the Manufacturer.



### Caution - warning

Use the machine only with the original safety devices installed by the Manufacturer.  
Do not tamper with, disable, remove or bypass the safety devices installed on the machine.



### Danger - warning

Do not modify the constructive and functional characteristics of the machine in any way.

Do not use the machine with the safety devices not properly installed and efficient.

Always wear the Personal Protective Equipment indicated in the "Instructions for use", **in particular safety shoes**, and that provided for by the laws in force on matter of safety in the workplace.

Always keep the perimeter areas in suitable conditions and free from obstacles in order to minimise the risks for the operator, especially near the control station.

The machine must be used **by one operator only**, that must be appointed and authorised by the employer.

The involvement of one or more assistants when performing some operations or maintenance (ordinary) interventions may pose unpredictable risks.

In order to minimise the risks related to assistants' involvement, you must inform them in advance on the type of work to be carried out and the behaviour to adopt.

Make sure that no unauthorised persons are within the machine operating area during its production activity and during maintenance.

It is forbidden to climb onto the rotary table with forklift trucks. In addition to being dangerous, it can also damage the machine.



### Important

**Non-compliance with the instructions given may cause risks to the safety and health of people, as well as economic damages.**

## 2.4. SAFETY WARNINGS RELATED TO MISUSE

### 2.4.1. REASONABLY FORESEEABLE MISUSE

- The reasonably foreseeable misuse is: “the use of the machine in a way other than that indicated in the manual, that may stem from the easily predictable human behaviour”.  
**The machine must be used only for wrapping and stabilising products with regular shape or with a shape that ensures a stable wrapping.**  
**Packages containing liquids or insubstantial materials must have characteristics suitable to the product and be perfectly closed and sealed to prevent the contents from flowing out.**  
 Do not palletize or wrap products housed in irregularly shaped packages (boxes, liquid containers, etc.) or packages that do not guarantee their stability.
- The machine should only be used for the uses intended by the Manufacturer.
- Do not allow the machine to be used by operators that are not properly trained, informed and authorised.
- Packages containing liquid or insubstantial products must ensure that they do not leak out.
- Do not wrap bulk products of irregular shape and improperly collected to avoid an unsuitable palletization.
- Do not use the machine to wrap and stabilise living beings (animals and persons).
- Do not use the machine with wrapping material other than that provided by the Manufacturer.
- Do not use the machine as a lifting device or as a work surface (e.g. workbench).
- Do not stretch or pre-stretch the film excessively and do not wrap the product with too many wrappings in order to prevent damaging the packages and the products contained in them.
- Do not use or let the machine be used for purposes or in ways other than those intended by the Manufacturer.
- Do not use or let the machine be used with defective, deactivated and/or incorrectly installed safety devices.
- Do not continue to use the machine if malfunctions have been detected.
- Stop the machine immediately and restart it only after the normal conditions of use have been restored.
- Never carry out an intervention with the machine in operation, but only after stopping it properly, under safety conditions.
- Never use the machine without wearing the Personal Protective Equipment indicated by the Manufacturer and provided for by the laws in force on workplaces.
- Never use the machine if the scheduled maintenance interventions have not been carried out.
- Do not clean or wash the machine with aggressive products to avoid damaging the components.
- Do not replace the components with non-original spare parts or part with different design and construction features.
- Do not leave the machine unattended at the end of the production activity without shutting it down first in safety conditions.

### 2.4.2. EMPLOYER OBLIGATIONS

- The operator must be trained to acquire the required skills in the field of packaging machines or equivalent. Upon completing the training, ensure that the operator has understood the entire content of the operating manual, in particular the safety information.
- The operator must have the required skills and must be fit for the activities to be carried out in safety conditions.
- The employer must inform the operator on the reasonably foreseeable misuses and on the persistent residual risks.
- The operator must be capable of reading and understanding the user manual and must easily identify the safety signs.
- Allow the machine to be used only by operators that are properly trained, informed and authorised.



#### **Important**

**The employer must document the training carried out for the operators.**

## 2.5. SAFETY WARNINGS ON RESIDUAL RISKS



### Danger - warning

During design and manufacturing, the Manufacturer has paid particular attention to the residual risks that may affect the safety and health of the operators.

The residual risks are: "all the risks that persists although all safety solutions have been applied and integrated during machine design".

The list specifies the residual risks specific for this type of machine.



### Risk of slipping:

Do not climb on machine parts during its operation.



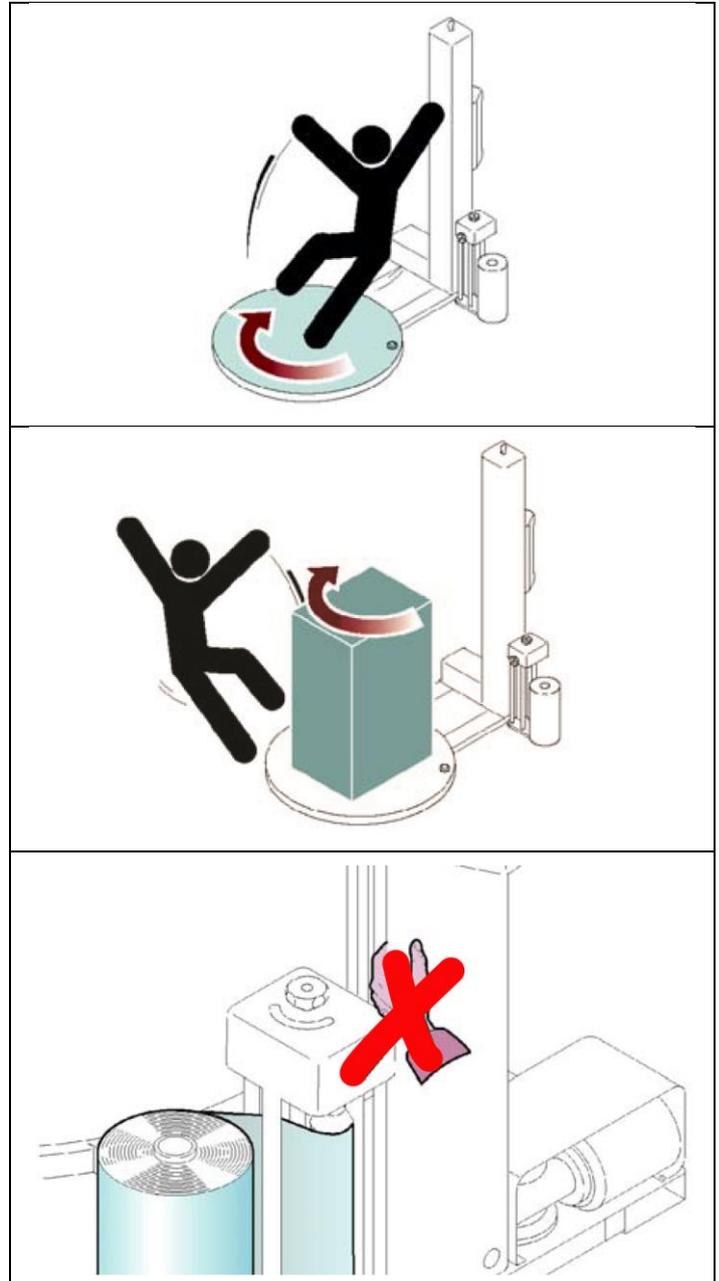
### Risk of impact:

Do not approach machine parts during its operation.



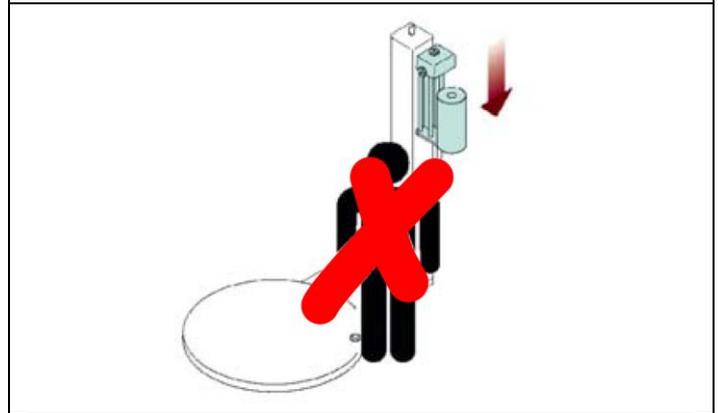
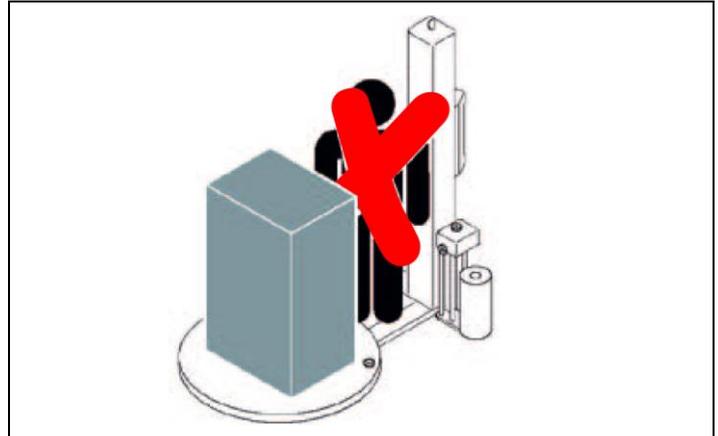
### Risk of shearing upper limbs:

Do not insert your hands inside moving parts.





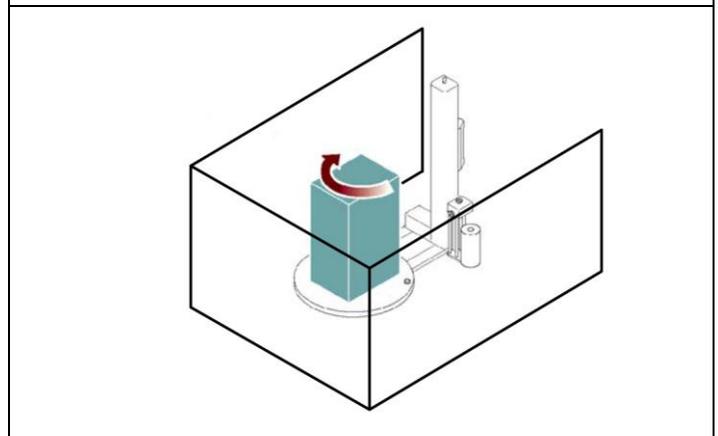
**Risk of body crushing:**  
Do not stand in the machine operating area.



**Risk of impact and slipping:**  
Do not approach or climb on machine parts (e.g.: rotary table) with the lifting device during machine operation.



**Risk of falling or ejected objects:**  
Do not use the machine at a speed which is not suitable for the type of product to be wrapped.



If the packages to be wrapped contain unstable and dangerous elements, it is necessary to implement appropriate safety measures (e.g.: perimeter protections) to avoid risks of injuries to persons.

## 2.6. SAFETY WARNINGS FOR ADJUSTMENTS AND MAINTENANCE

- Keep the machine in maximum efficiency conditions and perform all the scheduled maintenance operations provided for by the Manufacturer.  
Proper maintenance will provide the best performance, a longer life span and constant compliance with safety requirements.
- Enable all machine safety devices before performing any maintenance and adjustment operations.
- Demarcate the surrounding areas and put in place adequate safety measures, as provided for by the standards on workplace safety, in order to prevent and minimise the risks.
- Maintenance interventions in areas that are not easily accessible or dangerous must be carried out after having ensured the necessary conditions are met.
- The personnel authorised to carry out the ordinary maintenance (adjustments, replacements etc.) must possess the necessary technical and professional knowledge and skills.
- Do not carry out interventions other than those indicated in the user manual without the express authorisation of the Manufacturer.
- Do not use products that contain corrosive and flammable substances or that are harmful to people's health.
- Wear Personal Protective Equipment as required by labour laws and as indicated in the "Instructions for Use" and/or on the machine.
- The use of similar but non-original spare parts may result in improper repairs, altered performance and economic damage.
- Use lubricants (oils or grease) recommended by the Manufacturer or with similar chemical-physical features.
- Do not dispose of polluting liquids, worn parts and maintenance waste into the environment.
- Select the components according to the chemical and physical features of the material and dispose of them separately in accordance with the applicable laws.
- All the extraordinary maintenance interventions shall be carried out only by authorised personnel with experience and expertise in the field of intervention.



### Important

**Non-compliance with the instructions given may cause risks to the safety and health of people, as well as economic damages.**

## 2.7. SAFETY WARNING FOR THE ELECTRICAL EQUIPMENT

The electrical equipment has been designed and manufactured in accordance with the relevant standards.

These standards consider operating conditions based on the surrounding environment.

The list contains the conditions necessary for the correct operation of the electrical equipment.

- Ambient temperature must be within **5°C** and **40°C**.
- The relative humidity should be between **50%** (measured at **40°C**) and **90%** (measured at **20°C**).
- The installation environment must be immune to and must not be a source of electromagnetic interference or radiation (x-rays, lasers, etc.).
- The environment must not have areas with concentrations of gas and dust that are potentially explosive and/or with a fire risk.
- The products and materials used during production and maintenance must not contain contaminants or corrosive agents (acids, chemicals, salts, etc.) and must not be able to penetrate and/or come into contact with electrical components.
- During transport and storage, the ambient temperature must be between **-25°C** and **55°C**.
- The electrical equipment may still be exposed to a temperature of up to **70°C** provided that the exposure time does not exceed **24** hours.
- The electrical equipment operates correctly up to **1000 m** above sea level.



### Important

**If it is not possible to comply with one or more of the conditions listed, which are essential for the correct operation of the electrical equipment, it is necessary to agree at the contractual stage which additional solutions to adopt in order to create the most suitable conditions (e.g. specific electrical components, air conditioning equipment, etc.).**

## 2.8. INFORMATION AND SAFETY SIGNS

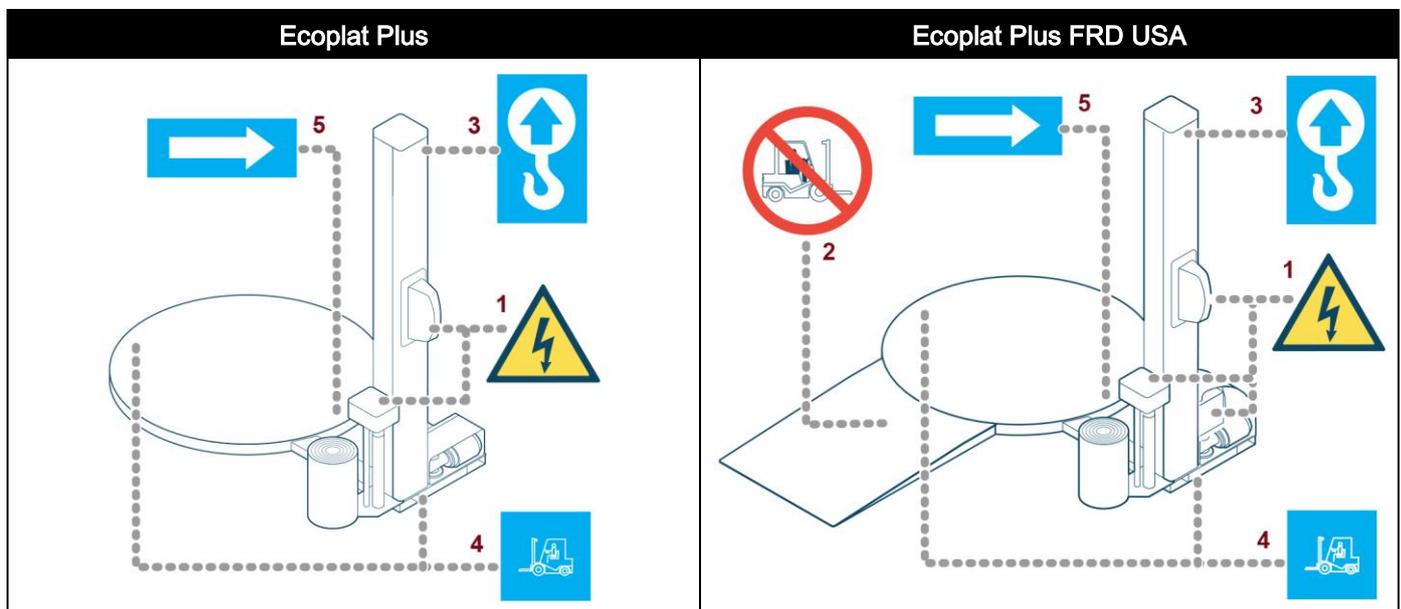
The figure indicates the position of the safety and information signs affixed to the machine. For each sign the relative description is specified.

1. **Electrical hazard sign**  
Do not access the area to avoid risks of electric shock or electrocution.
2. **Prohibition sign**  
Do not climb on the ramp with the forklift truck.
3. **Information sign**  
It indicates the lifting points with hook device.
4. **Information sign**  
It indicates the lifting points with fork device.
5. **Information sign**  
It indicates the rotary table rotation direction.



### Important

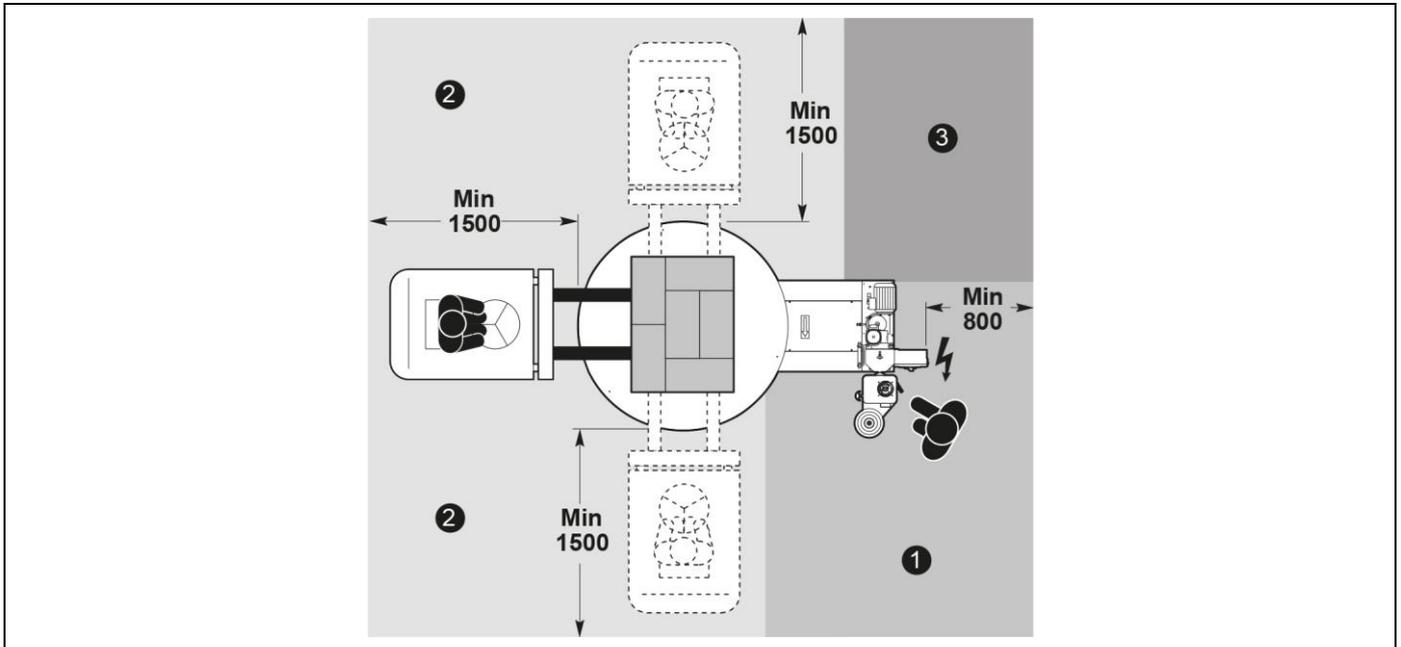
Make sure that the nameplates are clearly legible.  
If not, replace and reposition them at the original position.



## 2.9. PERIMETER AREAS

The illustration shows the perimeter working areas of the machine.

1. Operator standing area.
2. Pallet loading/unloading area.
3. Perimeter area.



### 3. TECHNICAL INFORMATION

#### 3.1. MACHINE GENERAL DESCRIPTION

- The machine is a semi-automatic machine for palletised load wrapping and stabilising with stretch film.
- The machine must be used only for wrapping and stabilising products contained in packages (in boxes, liquid containers, etc.) with regular shape or with a shape that ensures a stable palletisation.
- Packages containing liquids or insubstantial materials must have characteristics suitable to the product and be perfectly closed and sealed to prevent the contents from flowing out.
- The machine consists of a rotary table, which makes the pallet turn, and a spool carriage which unwinds and stretches the film.
- The machine is equipped with a series of safety devices designed to avoid any injuries to the operator or other persons using the machine. It comes in different models to satisfy different market needs.
- Stretch film spools commonly available on the market are used for load wrapping.
- This machine is normally installed in workshops or industrial environments protected from the atmospheric agents.



**Danger - warning**

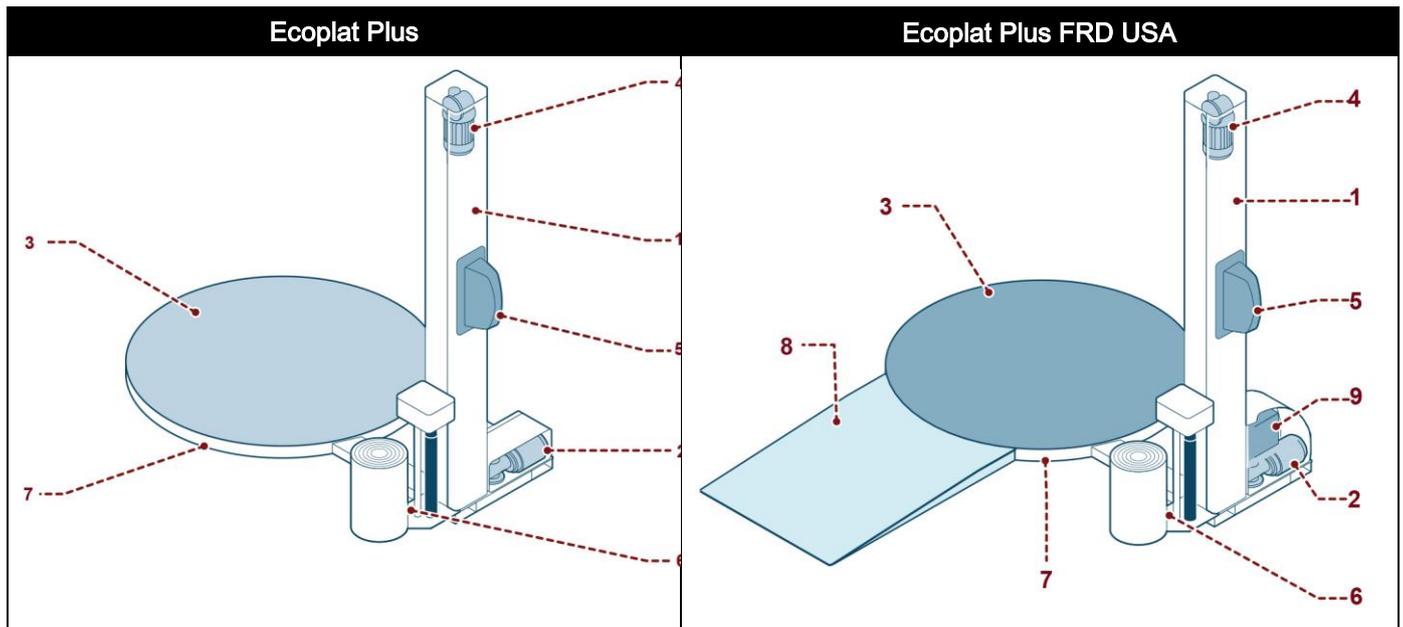
**Using this machine in explosive environments or when exposed to atmospheric agents is strictly forbidden.**

- The pallet loading and unloading are performed by the user, who can also insert and cut the film.
- Only one operator is required for its use.

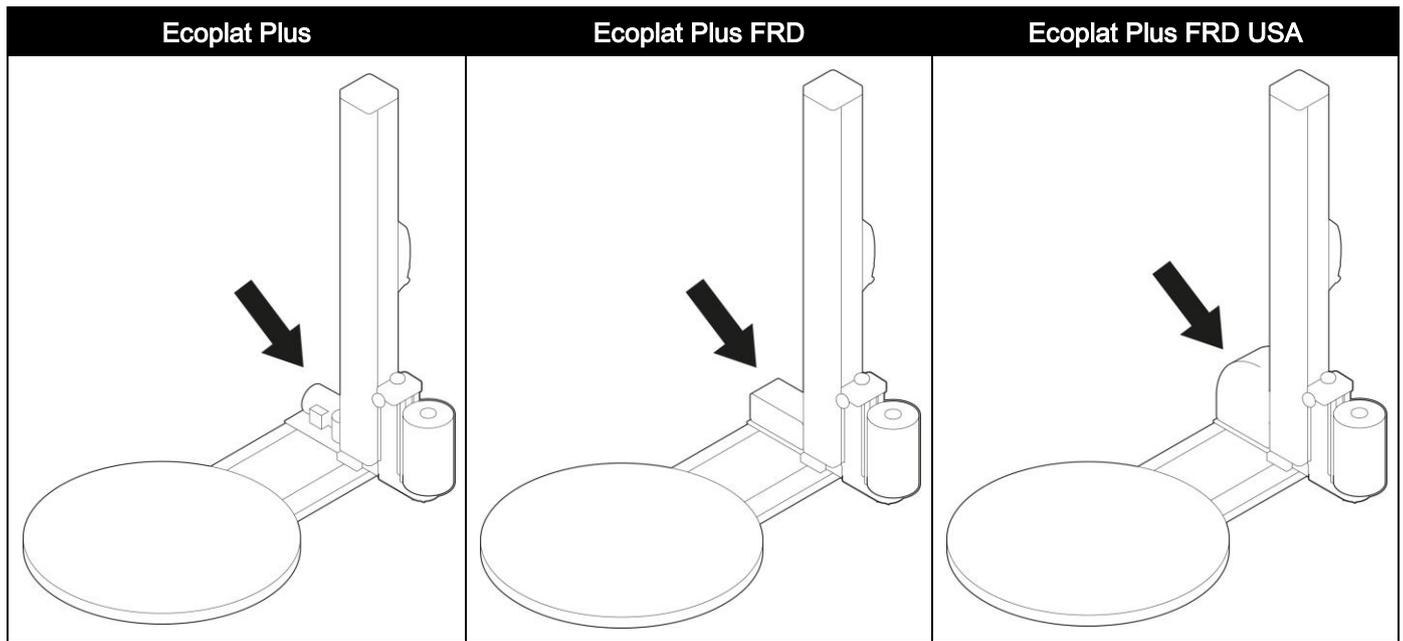
The illustration shows, for information purposes only, the machine models, and the legend lists the parts.

**Legend:**

1. Slide shaft
2. Table motor
3. Rotary table
4. Carriage motor
5. Control panel
6. Film carriage
7. Base
8. Loading/unloading ramp
9. Autotransformer



### 3.1.1. MACHINE MODELS DESCRIPTION



Type of machine	General features
Ecoplat Plus Ecoplat Plus FRD Ecoplat Plus FRD USA	Ecoplat Plus with film carriage type "FRD" or "FRD" for net.

Table: Film carriage features

Film carriage type	General features
FRD	Film carriage type "FRD" and "FRD" for net" with roller with clutch, mechanical brake, and manual film stretching adjustment.

### 3.2. DESCRIPTION OF THE OPERATION CYCLE

#### Phase 1

The operator loads the pallet on the rotary table and fastens the film in the relevant locking disc (if any), or to the pallet corner.



#### Caution - warning

Risk of crushing upper limbs.  
Do not insert the film in the gripper by hand.

#### Phase 2

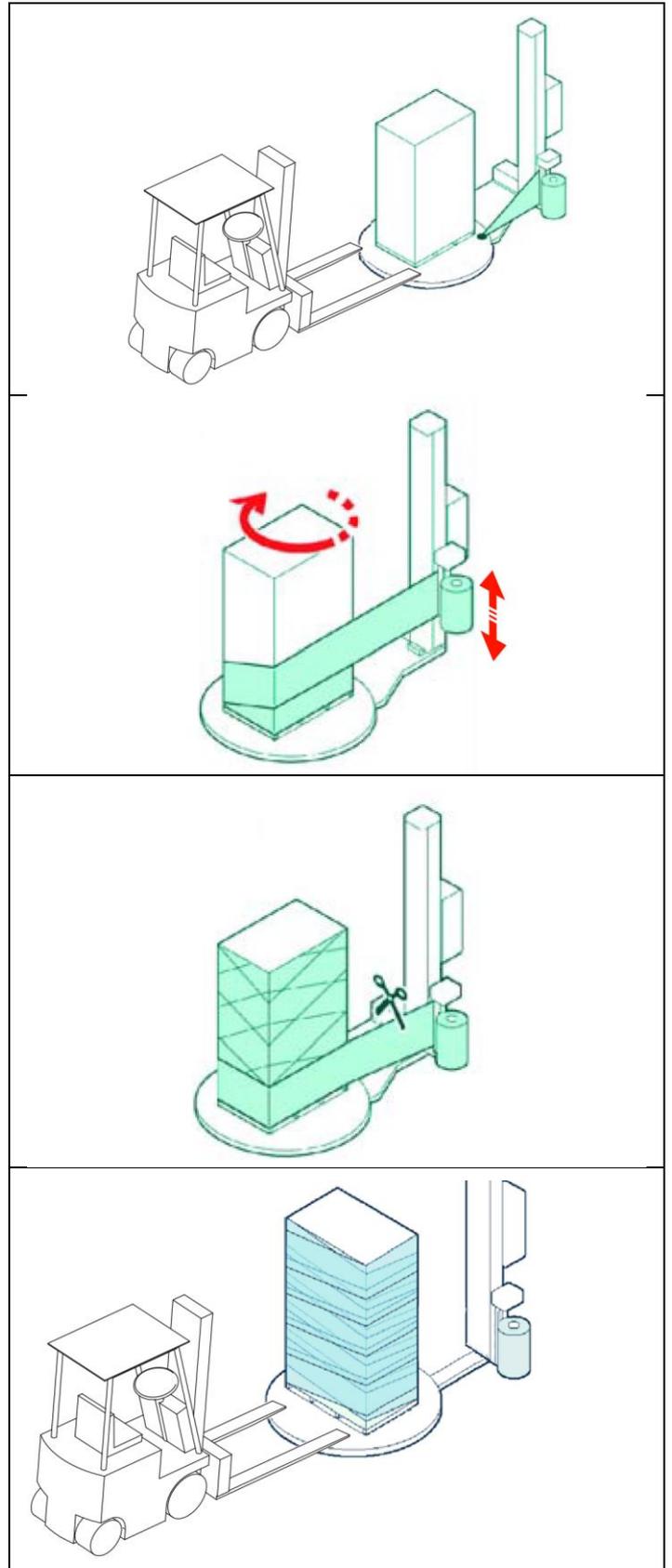
Once the cycle has started, the rotary table starts to turn, while the film carriage unwinds the film for the entire height, according to pre-set parameters.

#### Phase 3

Once the wrapping phase has ended, the machine stops for manual film cutting.

#### Phase 4

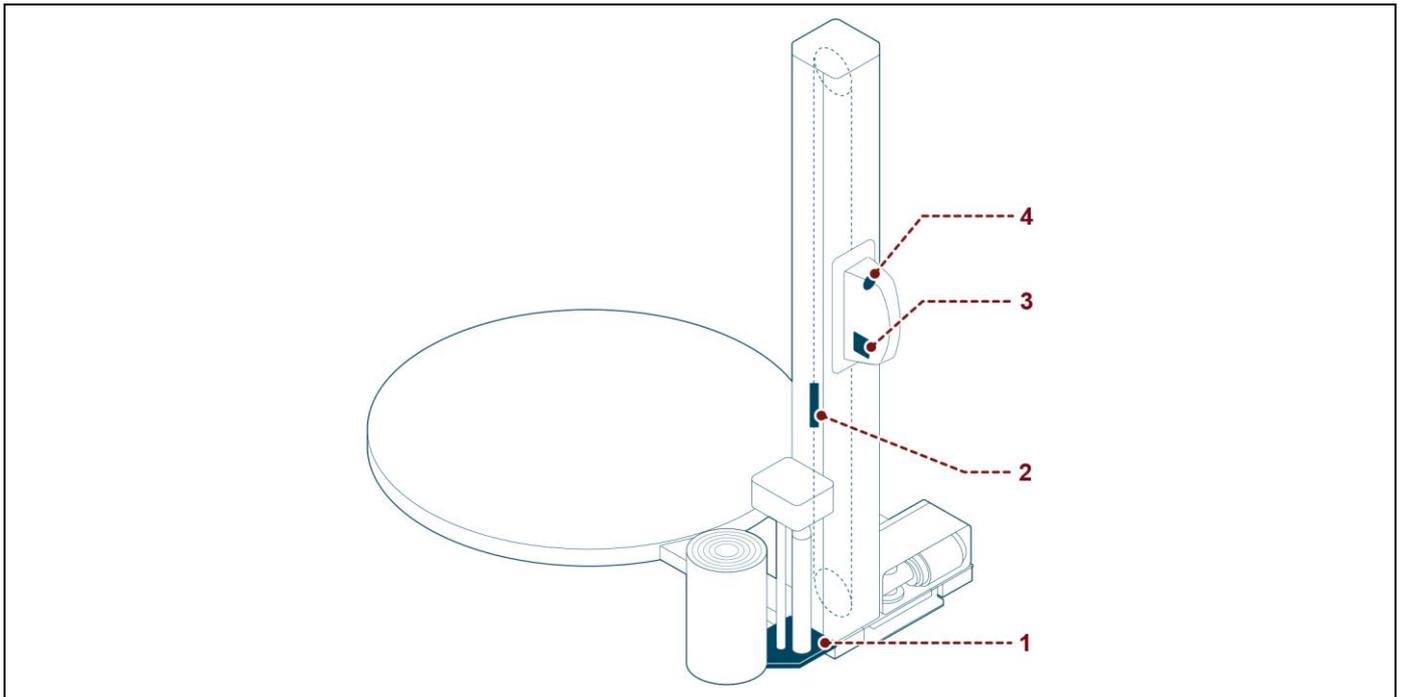
The operator unloads the pallet.  
The cycle is complete and the machine is ready to start a new cycle.



### 3.3. SAFETY DEVICE DESCRIPTION

The figure shows the position of the devices on the machine.

1. **Film carriage base microswitch:**  
it stops the downstroke if there are obstacles under the carriage.
2. **Film carriage mechanical locking device:**  
it immediately stops the fall of the film carriage in case of accidental breakage of the lifting chain.
3. **Main switch:**  
it enables and disables the power supply. It can be locked to prevent unauthorised persons from enabling it during machine adjustment and maintenance phases.
4. **Acoustic signal:** it signals the wrapping cycle start.



### 3.4. DESCRIPTION OF ELECTRICAL DEVICES

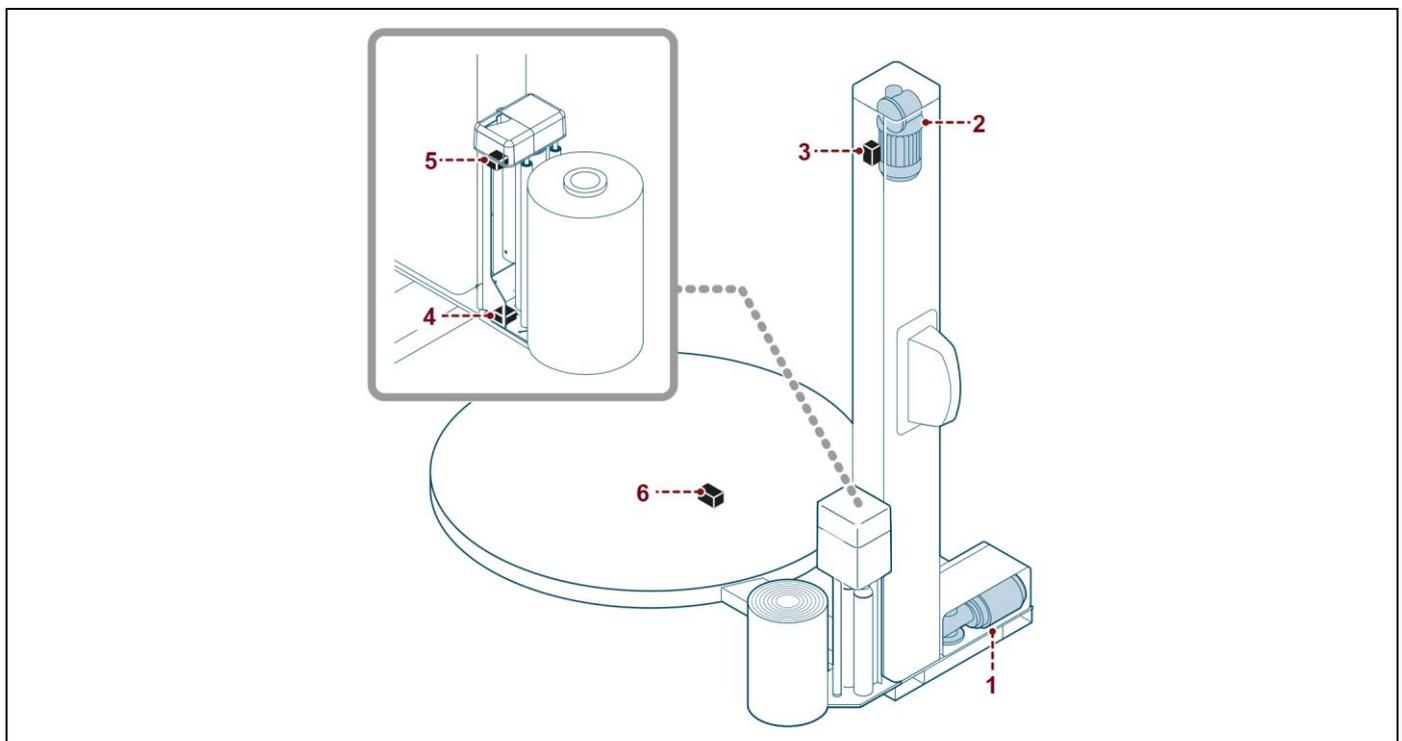
The figure shows the position of the devices on the machine.

1. **Gearmotor:**  
it activates the table rotation.
2. **Gearmotor:**  
it activates the film carriage movement.
3. **Microswitch:**  
it detects the film carriage "upper" limit stop.
4. **Microswitch:**  
it detects the film carriage "lower" limit stop.
5. **Photocell:**  
it detects the height and the presence of the load to be wrapped.
6. **Sensor:**  
it enables the synchronised stop of the rotary table.



**Important**

For further details see the wiring diagram.



### 3.4.1. REMOTE CONTROL SOFTWARE

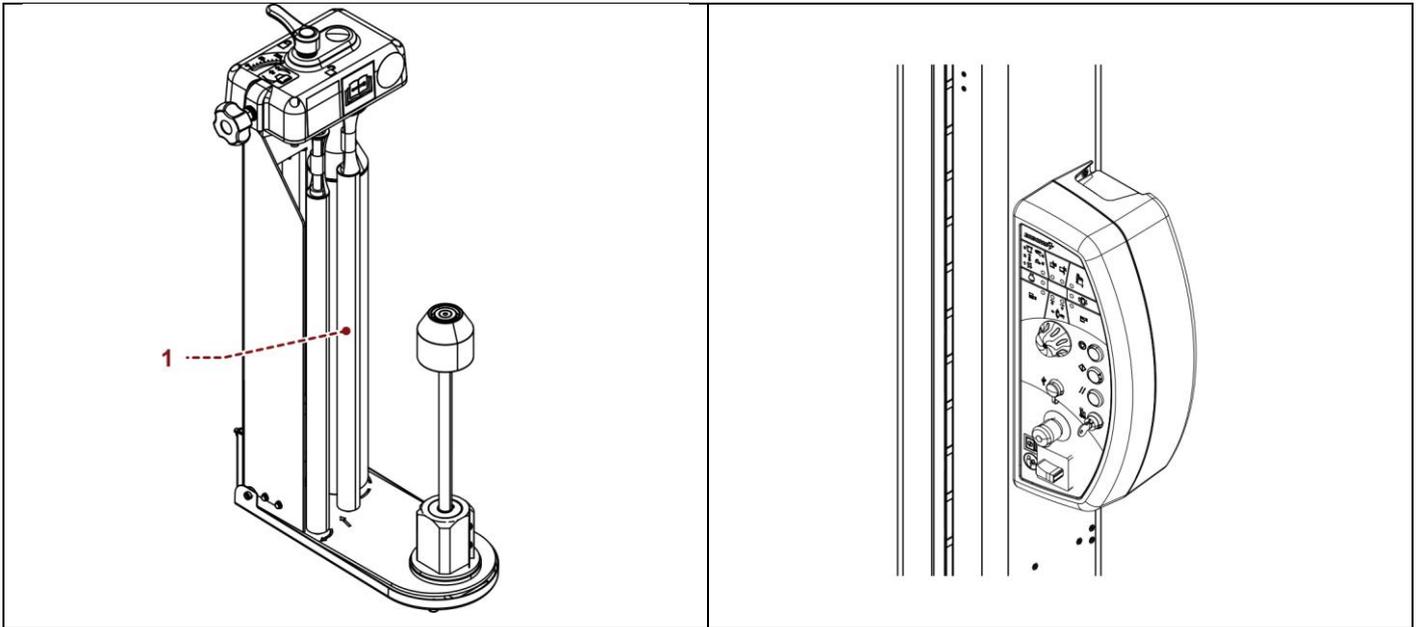
The machine can be equipped with an optional device (available in two versions) for remotely reading certain data regarding its operation (R-Connect).

The version with film consumption measurement uses the roller (1), and a sensor positioned in proximity of the same, to determine the amount of film used during the wrapping cycles.



**Important**

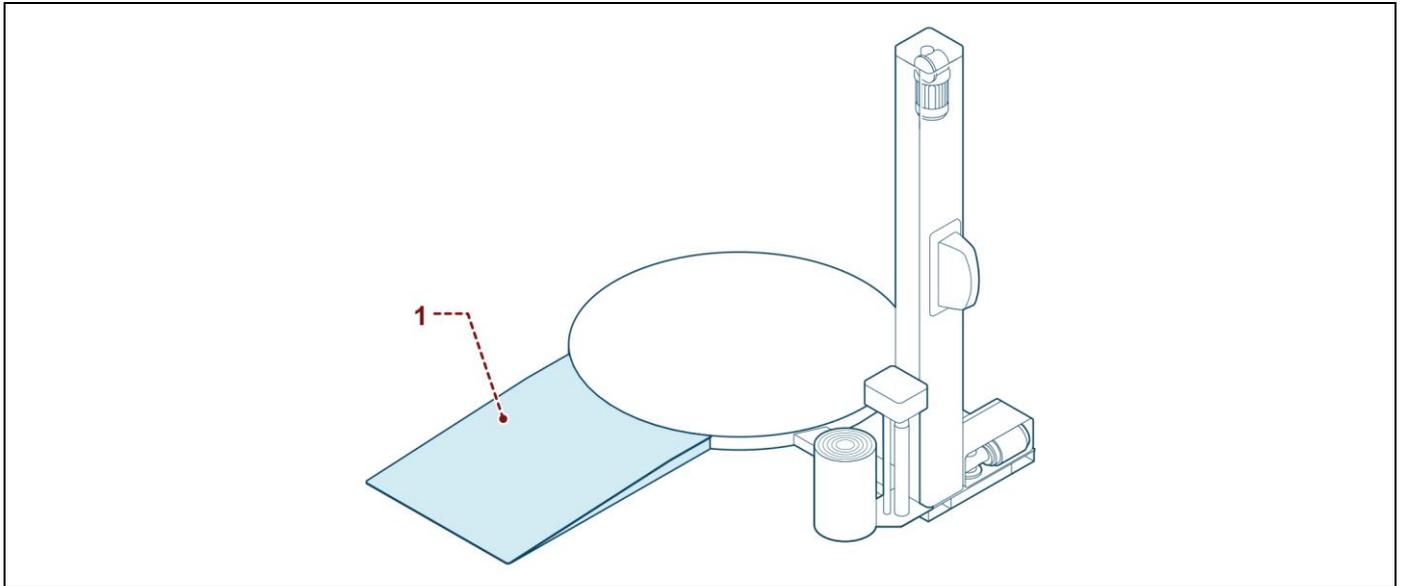
For further details see the wiring diagram.



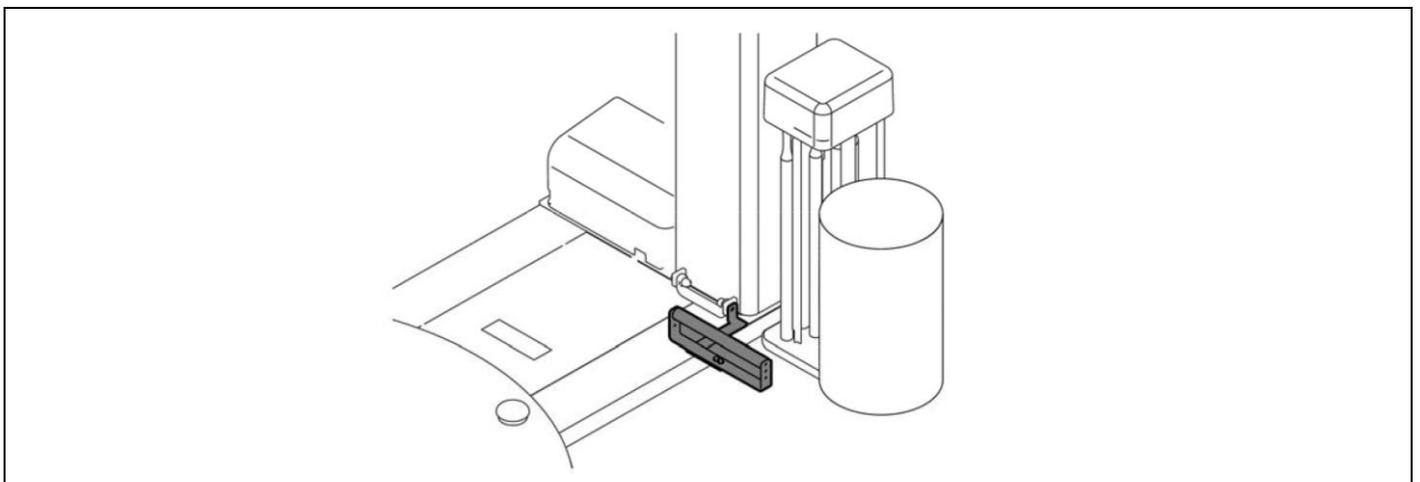
### 3.5. DESCRIPTION OF ACCESSORIES ON REQUEST

To increase the machine performance and versatility, the Manufacturer makes available the following accessories.

1. **Pallet loading/unloading ramp:**  
it facilitates these operations through fork lifting devices (hand pallet trucks).

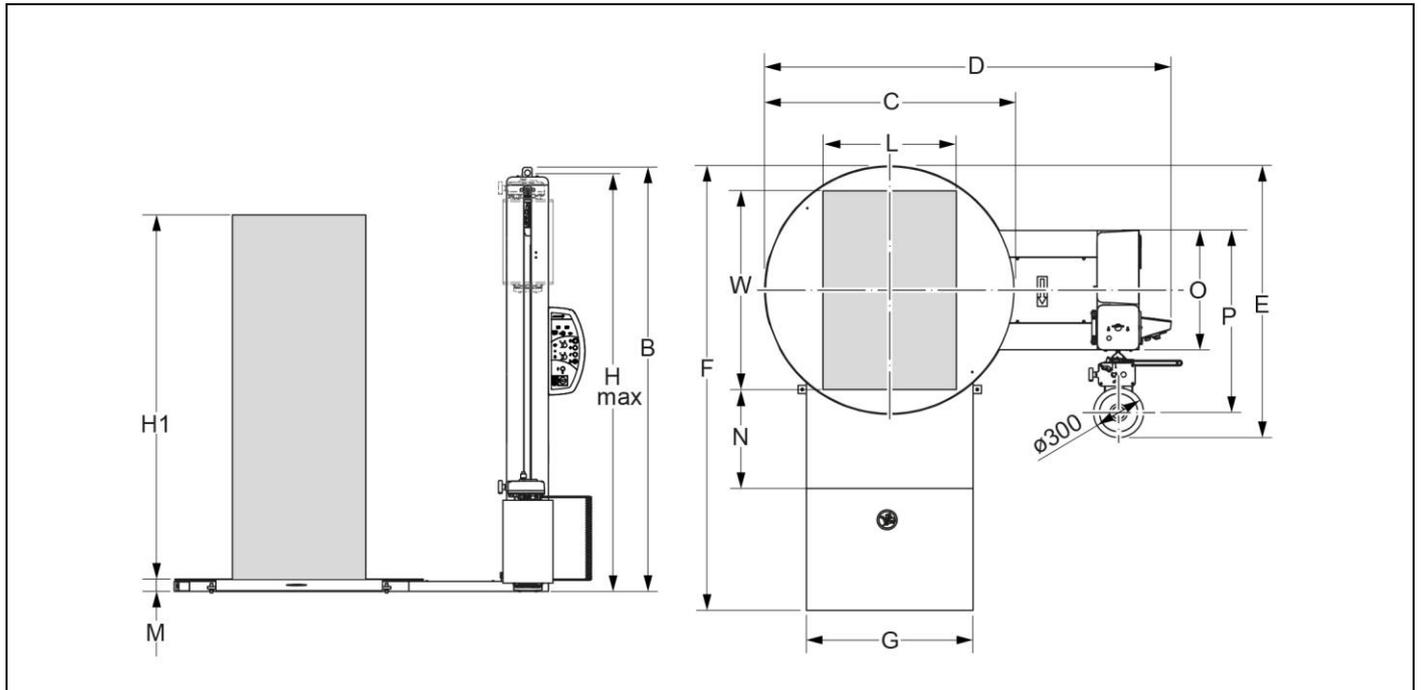


2. **Underground installation template:**  
profiled structure for base underground installation.
3. **Film reinforcement tool:**  
it is used to create a film reinforcement on the base of the product or on the pallet.



### 3.6. TECHNICAL SPECIFICATIONS

The illustration and the table include the machine dimensional specifications and technical data.



#### 3.6.1. MACHINE DIMENSIONS

Description	Unit of measurement	Machine model				
		Ecoplat Plus Base		Ecoplat Plus FRD		Ecoplat Plus FRD USA
		Std.	Opt.	Std.	Opt.	Opt.
Shaft height	mm	2200	2400	2200	2400	-
A	mm	-	-	-	-	-
Max H (carriage)	mm	2490	2690	2490	2690	-
B	mm	2560	2760	2560	2760	3160
H1	mm	2200	2400	2200	2400	2800
M	mm	73.5	77.5	73.5	77.5	77.5

Overall load dimensions	mm	Ø 1500	Ø 1650	Ø 1500	Ø 1650	-
C	mm	1500	1650	1500	1650	1650
D	mm	2490	2720	2490	2720	2720
E	mm	1640	1715	1640	1715	1715
F (std)	mm	-	-	2690	2910	2910
F (XL)	mm	-	-	3845	3645	-
F (XXL)	Mm	-	-	4775	4860	-
G	mm	-	-	1000	1000	1000
N	mm	-	-	1500	1600	-
L	mm	800	1000	800	1000	1000
W	mm	1200	1200	1200	1200	1200
O	mm	720	720	720	720	720
P	mm	1100	1100	1100	1100	1565
Weight	kg	1200	2000	2000	2000	2000

### 3.6.2. MACHINE TECHNICAL FEATURES

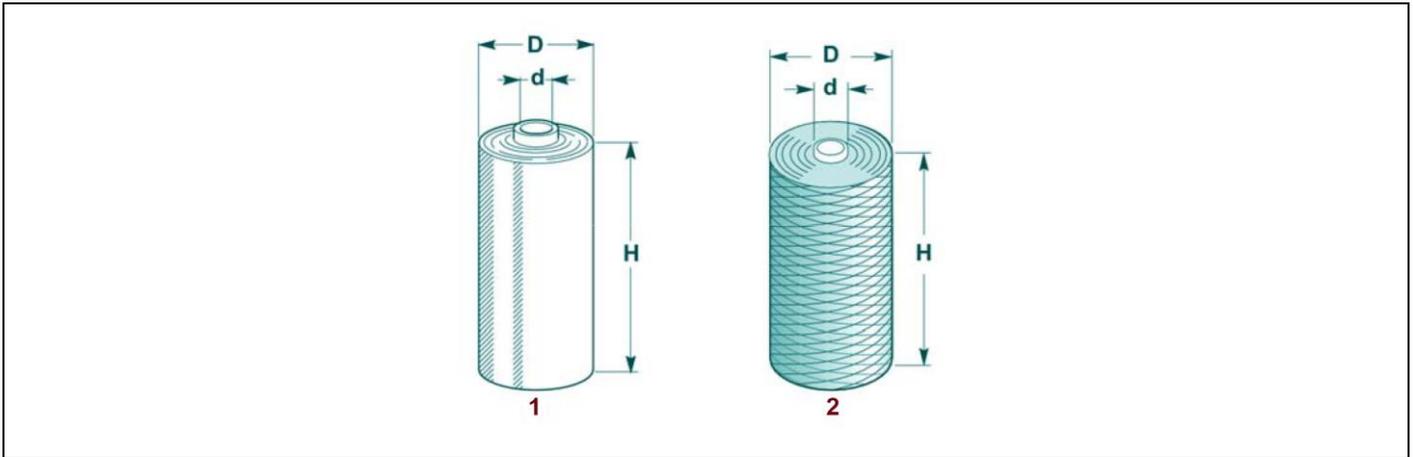
Description	Unit of measurement	Machine model		
		Ecoplat Plus	Ecoplat Plus FRD Ecoplat Plus FRD (per rete)	Ecoplat Plus FRD USA
Supply voltage	V	220-240 1Ph	220-240 1Ph	110 – 130 1Ph
		220-240 3h	220-240 3h	
		380-415	380-415	
Electrical current frequency	Hz	50/60	50/60	50/60
Installed power	kW	See “table 3.5: Installed power”		
Table rotation speed	rpm	4 ÷ 10	4 ÷ 10	4 ÷ 10
Carriage upstroke / downstroke speed	m/min.	1.4 - 4	1.4 - 4	1.4 – 4
Maximum capacity (standard rotary table)	kg	1200	2000	2000
	mm	ØC = 1500	ØC = 1500	ØC = 1650
Maximum capacity (optional rotary table)	kg	2000	-	-
	mm	ØC = 1500	-	-
	kg	2000	2000	-
	mm	ØC = 1650	ØC = 1650	-
Overall weight	kg	285 ÷ 400	315 ÷ 400	410
Ambient operating temperature	°C	0 ÷ 40	0 ÷ 40	0 ÷ 40

### 3.6.3. INSTALLED POWER

Ecoplat Plus Base			
ØC (mm)	Load capacity (kg)	Film carriage type	Power absorbed by the machine (kW)
1500	1200	FRD	1.1
	1200	FRD (per rete)	1.1
	2000	FRD	1.1
	2000	FRD (per rete)	1.1
1650	2000	FRD	1.5
	2000	FRD (per rete)	1.5

Ecoplat Plus FRD			
ØC (mm)	Load capacity (kg)	Film carriage type	Power absorbed by the machine (kW)
1500	2000	FRD	1.1
	2000	FRD (per rete)	1.1
1650	2000	FRD	1.5
	2000	FRD (per rete)	1.5

### 3.6.4. SPOOL FEATURES



Description	Unit of measurement	Value
<b>Film reel dimensions (1)</b>		
Maximum outer diameter (D)	mm	300
Reel height (H)	mm	500
Film thickness	µm	17÷35
Internal diameter (d)	mm	76
Max. weight	kg	20
<b>Mesh reel dimensions (2)</b>		
Maximum outer diameter (D)	mm	300
Reel height (H)	mm	500
Internal diameter (d)	mm	76
Max. weight	kg	20

### 3.7. NOISE LEVEL

The values relating to airborne noise have been detected in compliance with standards:

- ISO 4871
- ISO 11201

Description	A-weighted emission sound pressure measured level at the operator's position (LpA)
Operation in working conditions.	69.3 dB (A)



**Caution - warning**

Prolonged exposure above **80 dB (A)** can be harmful.



The use of appropriate protection systems is recommended ( earmuffs, ear plugs, etc.).

### 3.8. INSTALLATION ENVIRONMENT CHARACTERISTICS

The place where the machine is to be installed must be carefully selected taking into account the environment conditions in order to have correct and risk-free operating conditions.

Therefore we suggest to take into account the following prerequisites:

- An appropriate ambient temperature (see "Technical data").
- A perimeter area that must be left around the immediate working area, also for safety reasons (see "Perimeter areas").
- A flat surface, steady and without vibrations with adequate load bearing capacity, considering also the weight of palletised loads.
- The area must feature suitable sockets for compressed air and power distribution.



**Danger - warning**

Using this machine in explosive environments or when exposed to atmospheric agents is strictly forbidden.

## **4. INFORMATION ON HANDLING AND INSTALLATION**

### **4.1. RECOMMENDATIONS FOR HANDLING AND LOADING**

- Before performing any operation, the authorised operator must make sure to have understood the "Instructions for use".
- Carefully read the "Instructions for use" specified in the manual and those applied directly to the machine and/or the package.
- Provide suitable safety conditions in compliance with the regulations on workplace safety to prevent and minimise the risks.
- Pay attention to the safety warnings, do not misuse the machine and assess the possible residual risks.

## 4.2. PACKING AND UNPACKING

The packing is realised, keeping the overall dimensions limited, also in consideration of the transport chosen. To facilitate transport, shipping can be performed with some components disassembled and appropriately protected and packaged.

Some parts, especially electrical equipment, are protected with anti-moisture nylon covers.

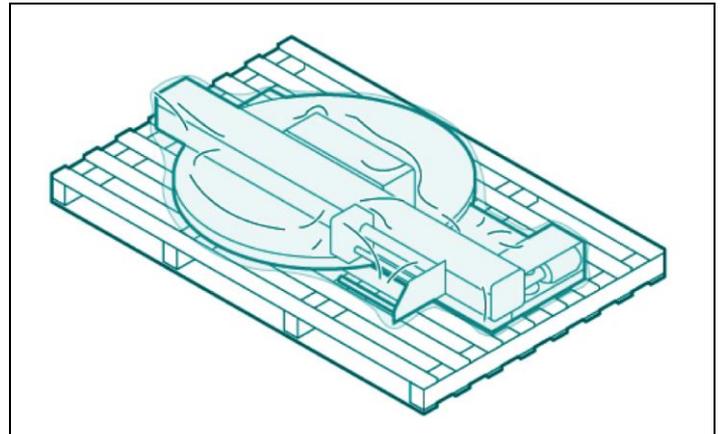
The packages bear all necessary information for loading and unloading.

When unpacking, check the integrity and exact quantity of the components.

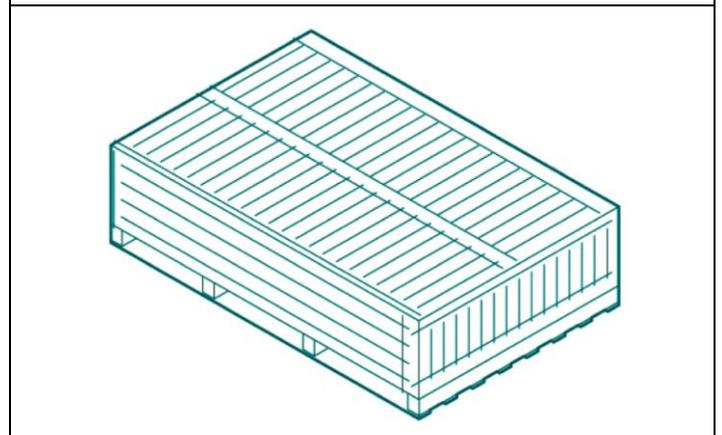
Packaging material should be appropriately disposed of according to the laws in force.

The illustrations show the common types of packaging used.

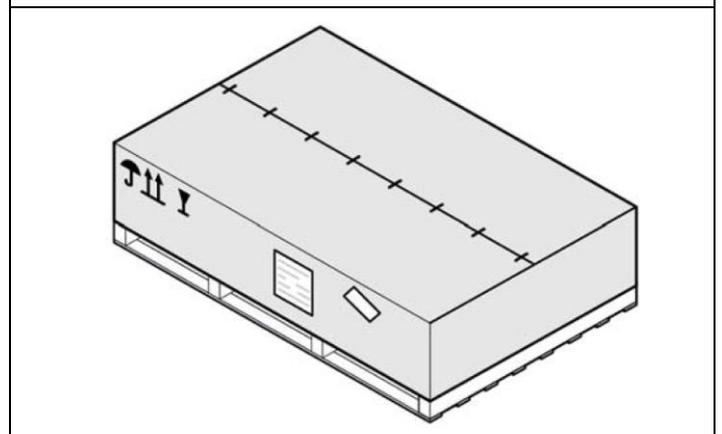
**Package on pallet with nylon protection**



**Package in crate**



**Package with cardboard box**



### 4.3. TRANSPORT AND HANDLING

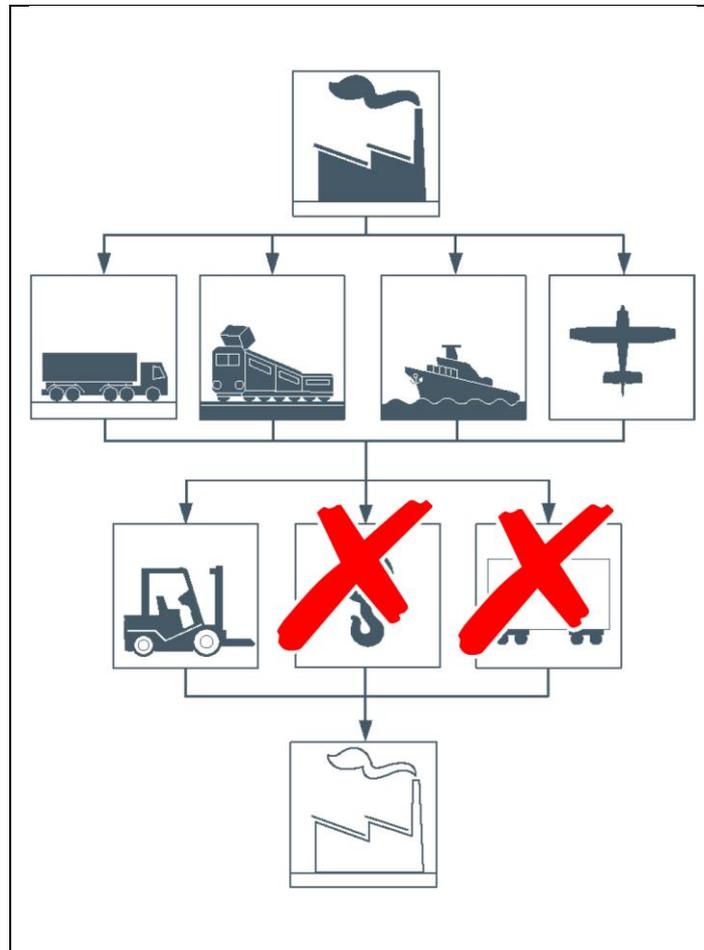
Transport, also according to the destination, can be performed with different vehicles.  
The diagram represents the most used solutions.

During transport, in order to avoid sudden movements, adequately anchor the machine to the vehicle.



**Important**

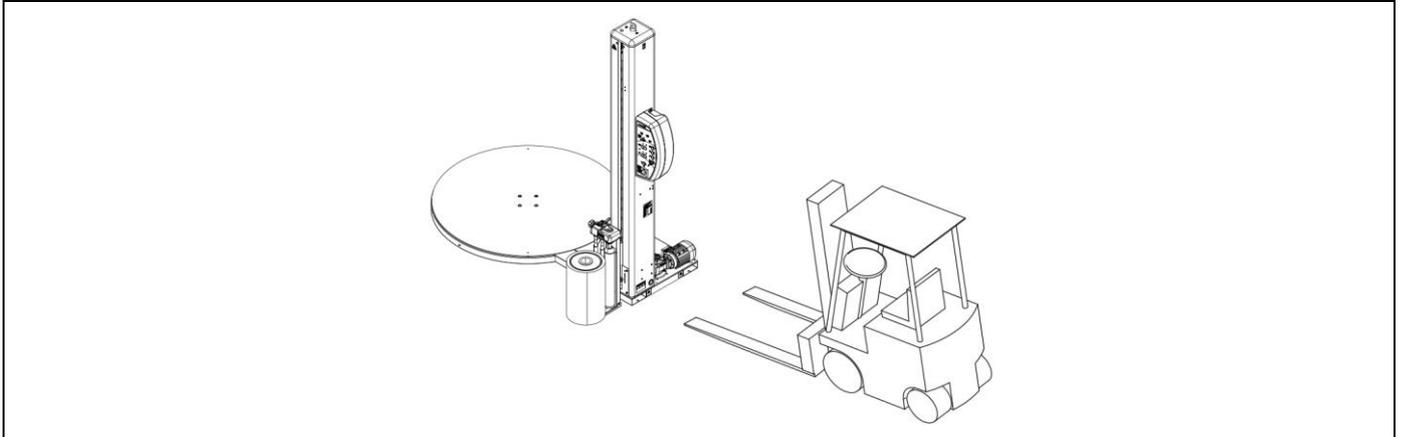
For further transportations, recreate the initial packaging conditions for transport and handling.



#### 4.4. HANDLING AND LIFTING

The machine can be moved with a forklift truck with suitable load capacity by inserting the forks in the points indicated directly on the machine.

Transport and lifting means must be operated by personnel authorised and qualified for the use of such means.



#### 4.5. INSTALLATION OF THE MACHINE

The machine must be installed in an area which fulfils the requirements indicated in paragraph "Installation environment characteristics".

If necessary, identify the exact position by plotting the coordinates for correct positioning.



**Danger - warning**

Authorised technical service personnel must perform installation and assembly operations.

Proceed as follows:

1. Insert the forklift truck forks in the specially designed spaces provided in the base.
2. Lift the machine from the pallet (if any).



**Danger - warning**

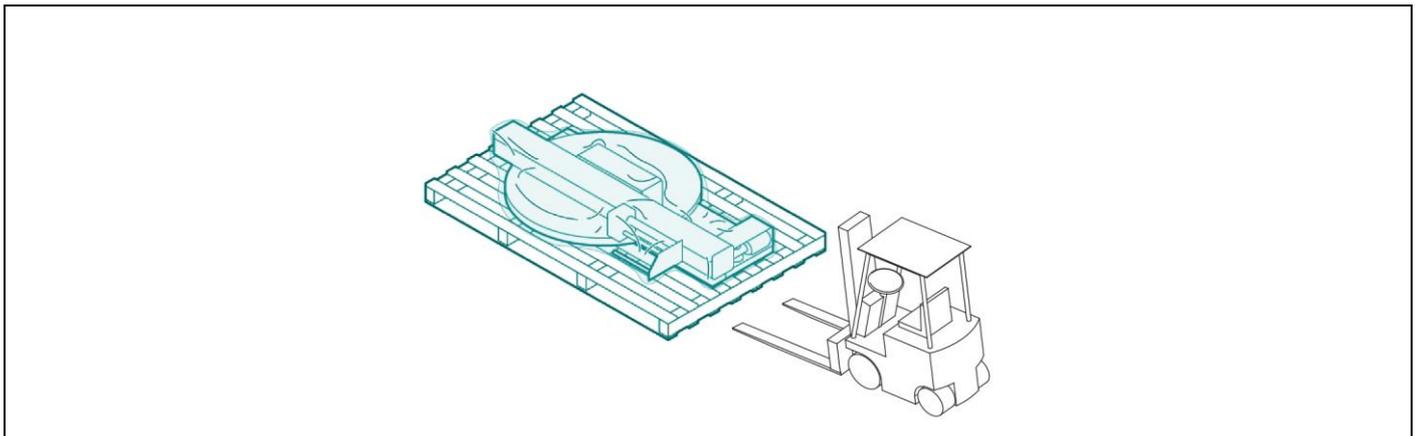
To perform the operation in safety conditions, insert some wooden blocks under the forks of the forklift truck and place everything on the floor.

3. Place the machine in the area assigned for assembly.



**Important**

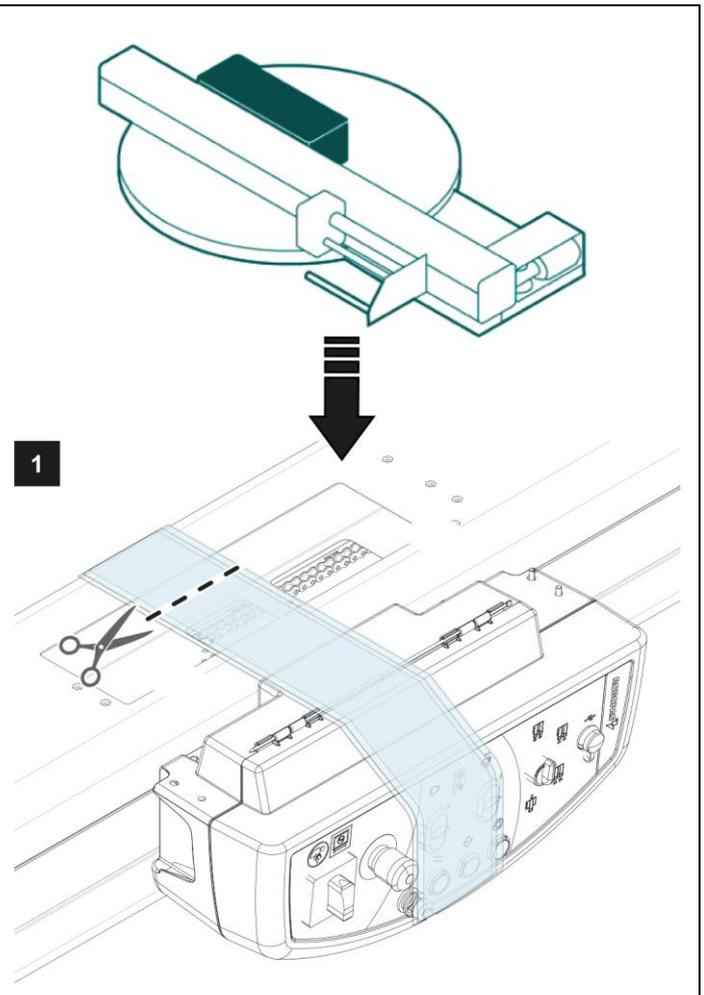
The resting surface must be smooth and well levelled.



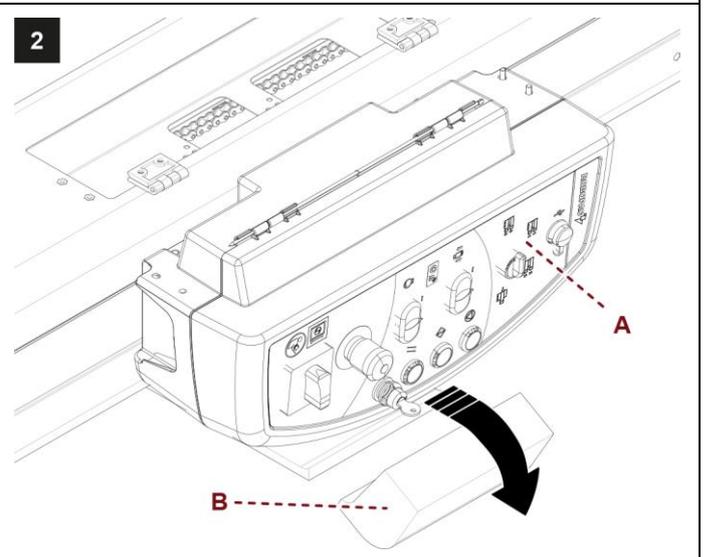
#### 4.5.1. ELECTRIC BOX ASSEMBLY

In order to assemble the electric box, proceed as indicated.

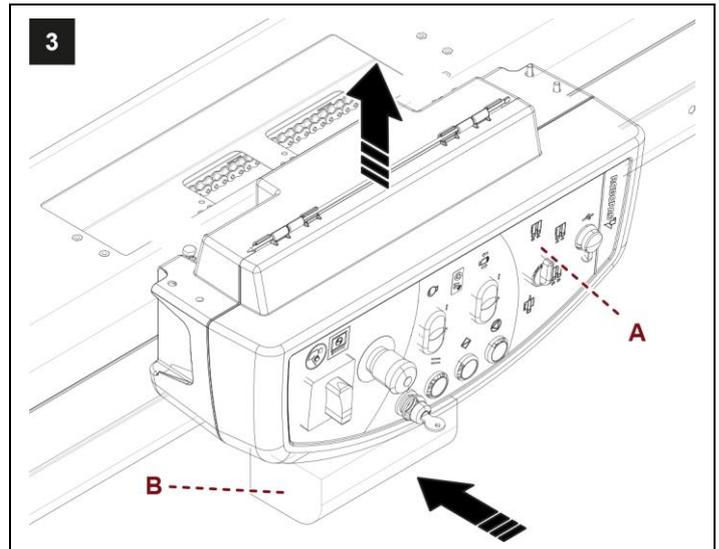
1. Cut the tape securing the electric box to the machine.



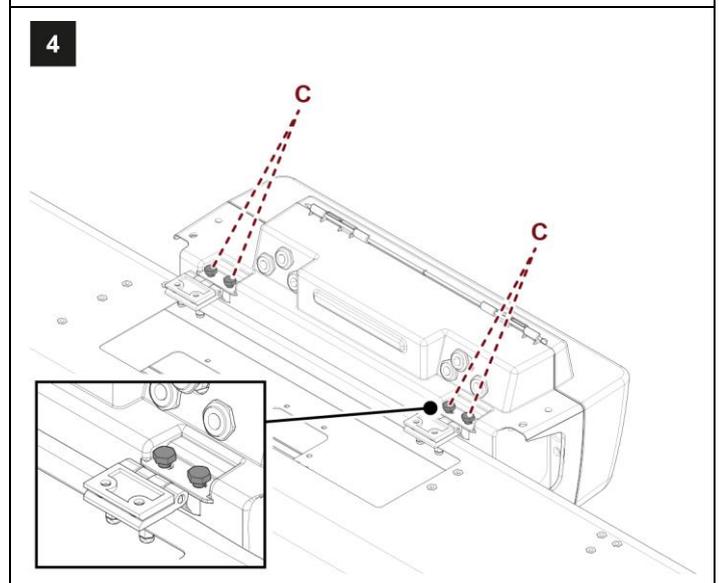
2. Break the polystyrene protection (B) around the electric box itself (A).



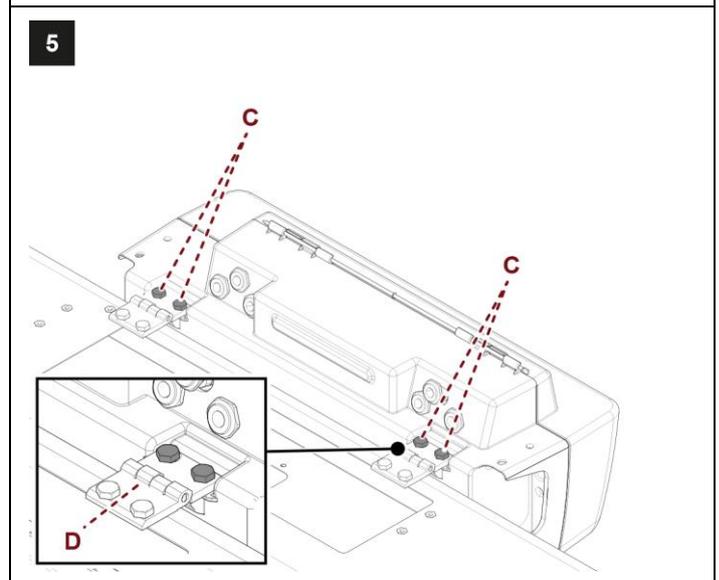
- Lift the electric box (A) so that it remains in line with the fasteners positioned below the polystyrene (B).



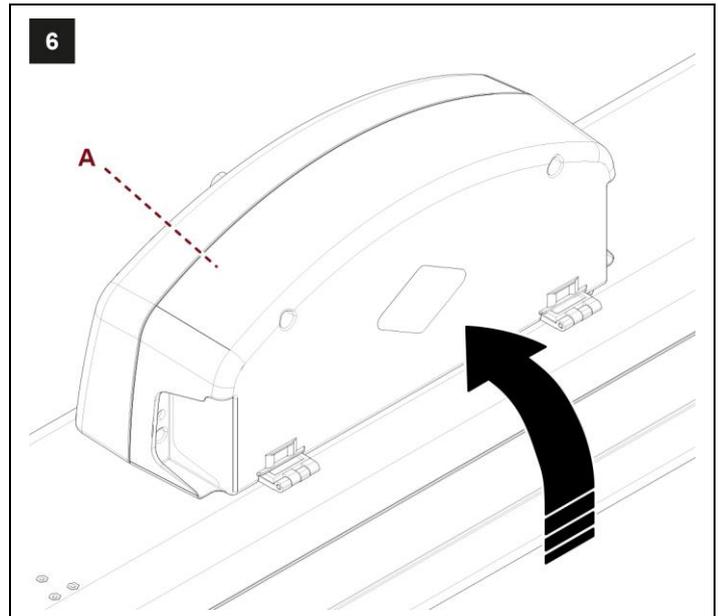
- Unscrew the screws (C).



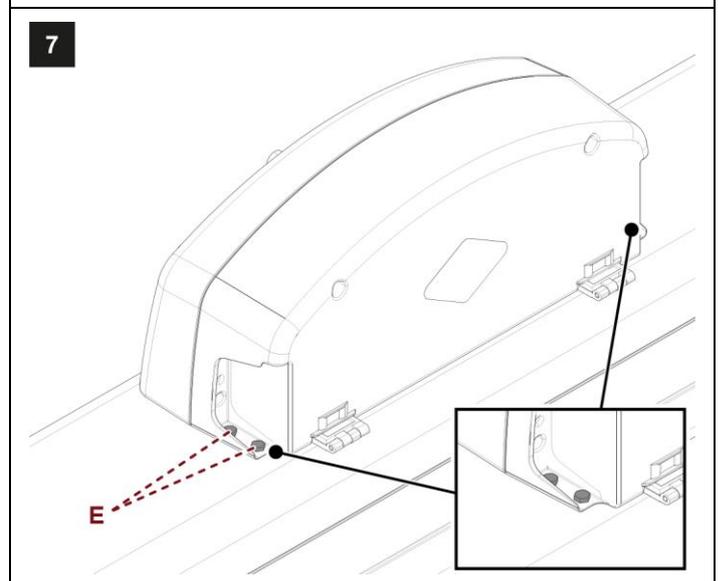
- Open the fasteners (D) and screw in the screws (C).



6. Turn the electric box (A).

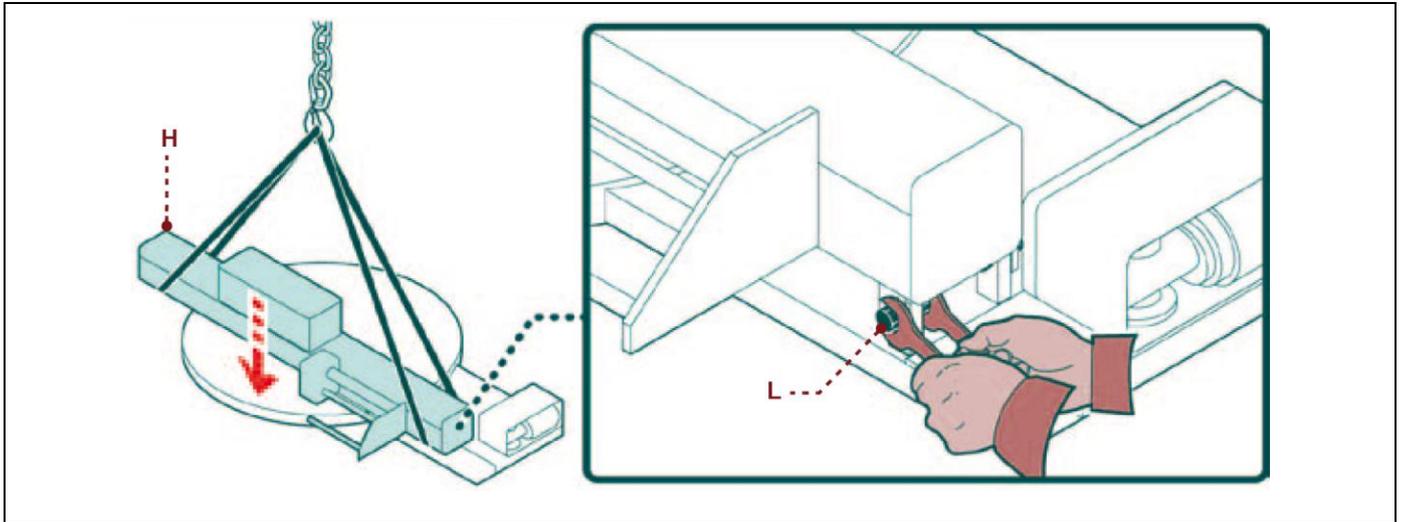


7. Fasten the electric box to the slide shaft using the screws (E).

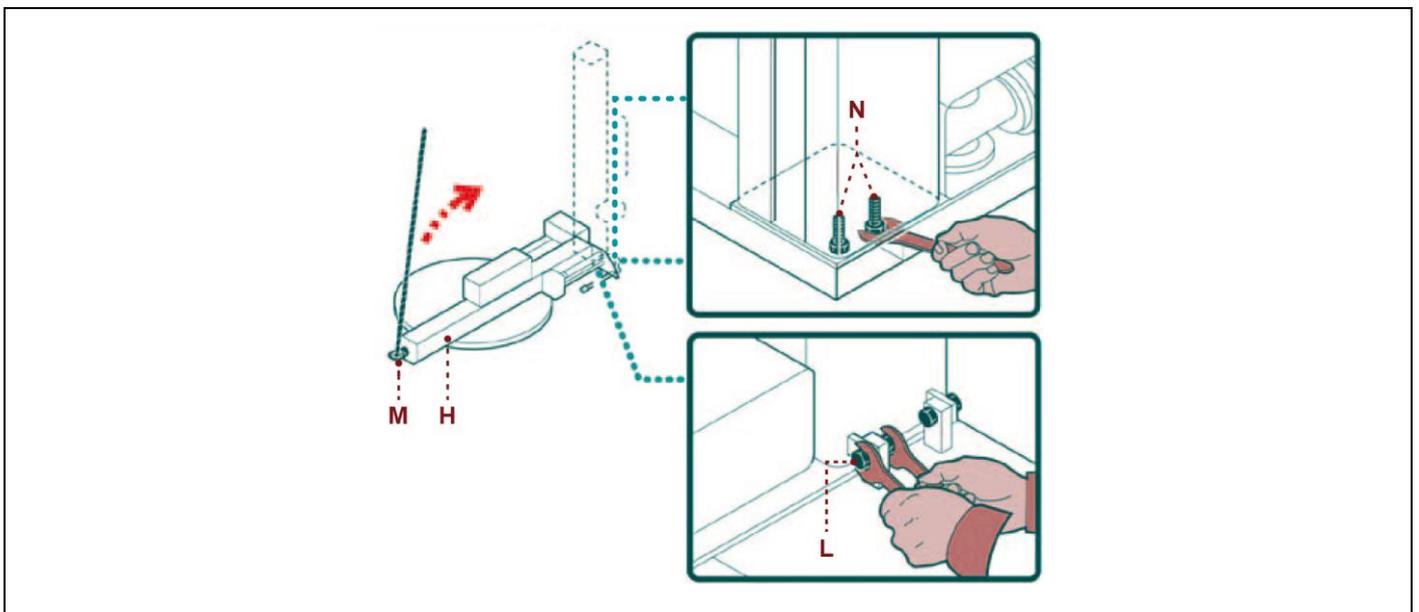


#### 4.5.2. SLIDE SHAFT ASSEMBLY

1. In certain configurations it is necessary to lift and position the slide shaft (H) above the rotary table, in correspondence with the hinge.
2. Insert the screws (L) into the hinge without tightening them.



3. Connect the lifting device hook in the bracket (M) of the slide shaft and tension.
4. Lift the slide shaft (H).
5. Fasten the slide shaft to the machine body with the screws (N).
6. Tighten the screws of the hinge (L).



#### 4.6. MACHINE FIXING

Once the units have been assembled and levels, squaring, parallelism and orthogonality have been checked, it is necessary to fix the machine body to the floor.

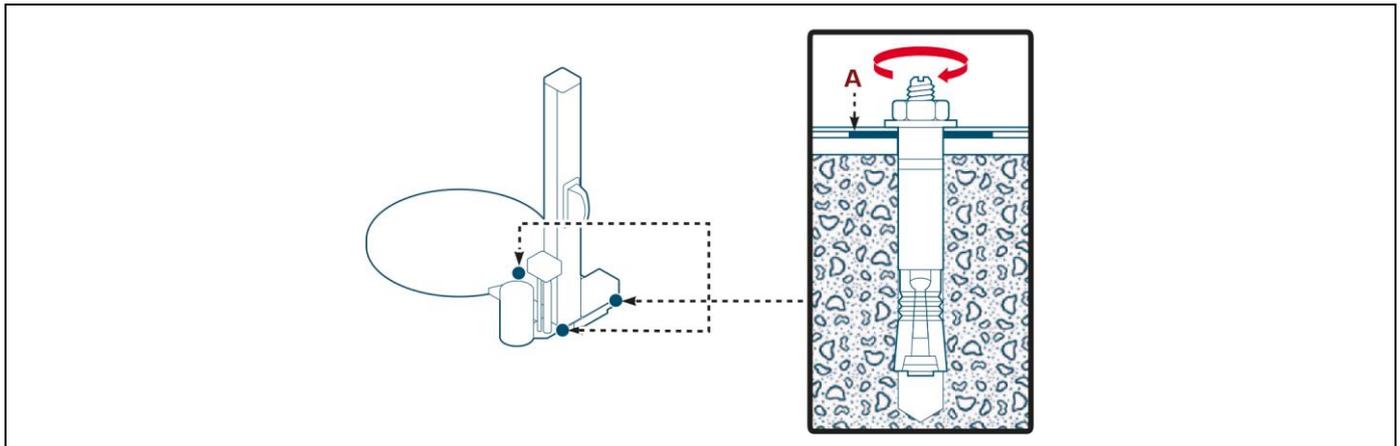
Depending on the floor type, it may be necessary, before laying the machine, to lay foundations in correspondence of the various supporting legs.

Laying the foundations and fixing the machine is essential to ensuring the machine stability and functionality.



**Important**

Should it be necessary, insert metal plates (A) between the screws and the floor.



#### 4.7. MACHINE UNDERGROUND INSTALLATION

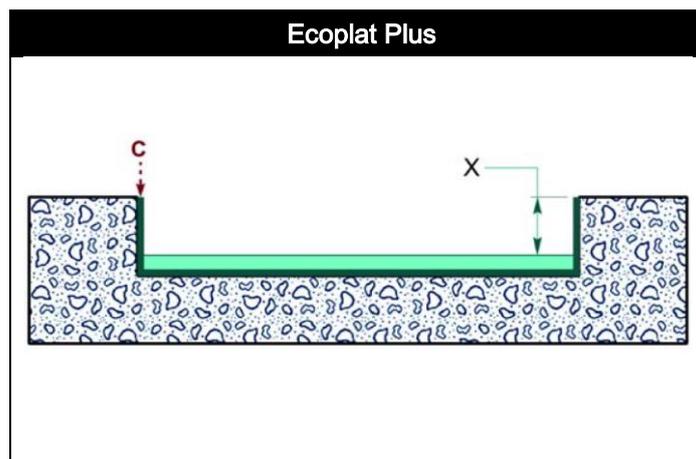
Dig a pitch in the floor to insert the template (C) and fix it with a concrete casting.

The template (C) is supplied on request (Optional).



**Important**

The depth (X) must be equal to the machine base height.



#### 4.8. RECOMMENDATIONS FOR CONNECTIONS



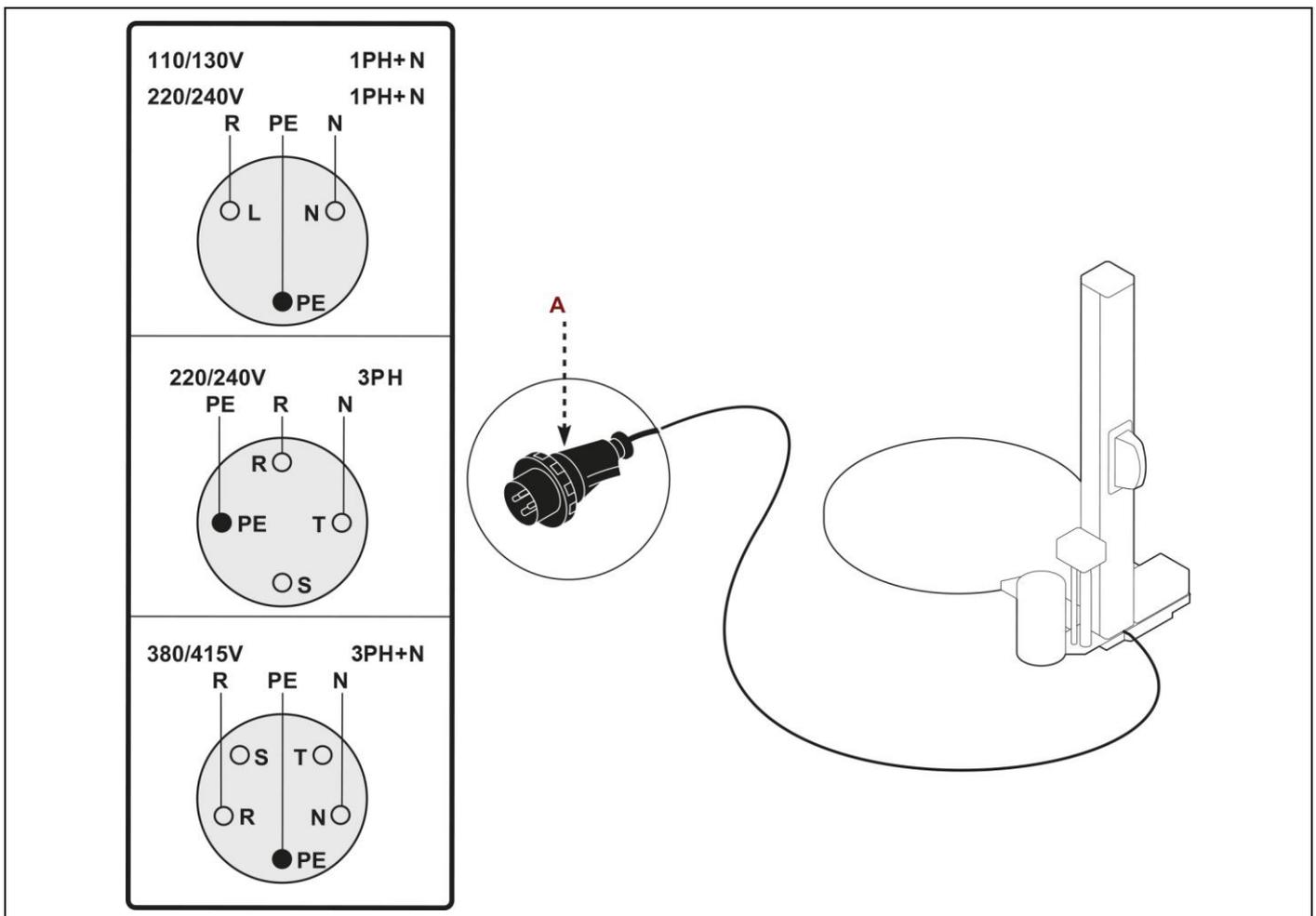
##### Important

The connections must be made in accordance with the specifications supplied by the Manufacturer in the enclosed diagrams. The person authorised to carry out said operation must have the skills and experience acquired and acknowledged in the specific sector, must perform the connection in accordance with the best practice and take into account all the regulatory and legislative requirements. Once the connection has been completed, before commissioning the machinery, it is necessary to perform an overall check to verify if said requirements have been complied with.

#### 4.9. ELECTRICAL CONNECTION

Proceed as follows for the electrical connection.

1. Check that the line voltage (V) and frequency (Hz) correspond to those of the machine (See identification plate and wiring diagram).
2. Turn main switch to pos. **0 (OFF)**.
3. Connect the power cable (if supplied) to the socket (A), as shown in the figure, in accordance with the mains supply.
4. The earth wire (yellow-green) must be connected to its earth terminal **PE**.
5. Power the machine using the main switch.
6. Press the "Reset" button.
7. When the "Start" button is pressed, the plate should turn clockwise.



## 5. INFORMATION ON ADJUSTMENTS

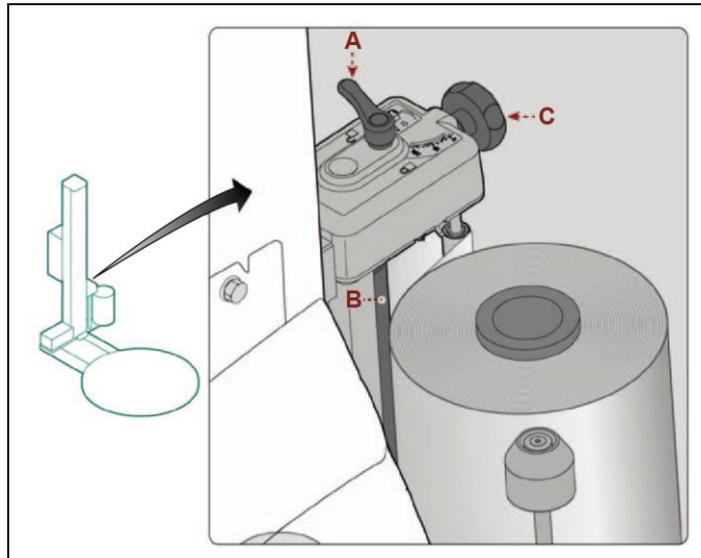
### 5.1. RECOMMENDATIONS FOR ADJUSTMENTS

- Before performing any operation, the authorised operator must make sure to have understood the "Instructions for use".
- Activate all the safety devices provided, stop the machine and assess whether there is any residual energy before carrying out the operations.
- Provide suitable safety conditions in compliance with the regulations on workplace safety to prevent and minimise the risks.
- Pay attention to the safety warnings, do not misuse the machine and assess the possible residual risks.

### 5.2. "FILM STRETCH" ADJUSTMENT

#### 5.2.1. SPOOL CARRIAGES OF "FRD" TYPE

1. Use the lever (A) to lock and unlock the roller (B).
2. Use the handwheel (C) to adjust the braking action of the stretching roller (B) which determines the film stretch.



### 5.2.2. SPOOL CARRIAGES OF "FRD for mesh" TYPE

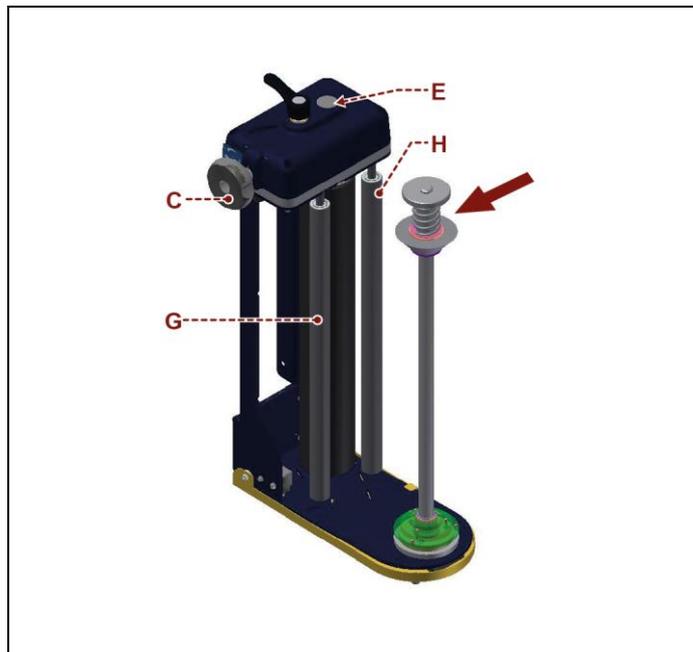
1. Work on the handwheel (C) until reaching the value displayed on the index (E).

The brake shaft for mesh is an accessory that can be mounted on the carriage later on. This optional allows the system to use a mesh reel with a std "FRD" carriage.



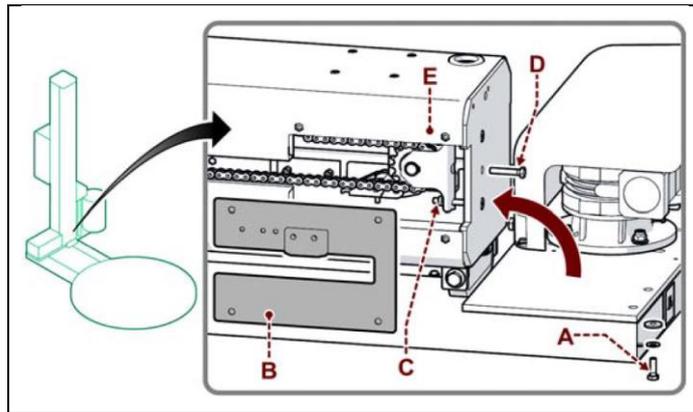
**Important**

For a correct tensioning of the mesh, adjust the braking effect so that the outfeed roller (G) is more braked than the infeed roller (H); moreover, it is necessary to avoid braking the stretching rollers too much to prevent the mesh from slipping.



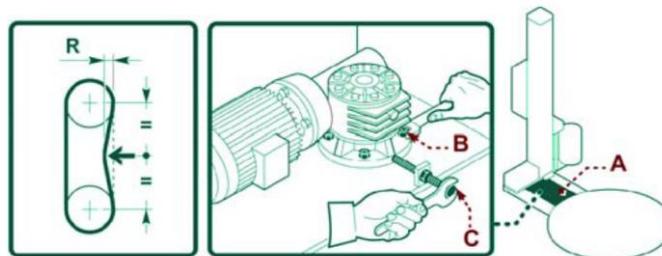
### 5.3. SPOOL CARRIAGE LIFTING CHAIN ADJUSTMENT

1. Lift the spool carriage (with the machine operating in “manual mode”) until it reaches the “upper” limit switch.
2. Switch the machine off.
3. Loosen the screws (A) and tilt the pole resting it on the plate.
4. Remove the guard (B).
5. Loosen the nuts (C).
6. Tighten the screw (D) "M8x50 UNI 5739" (not supplied) with a torque wrench (not supplied) to the torque of **3 Nm**.
7. Screw the nuts (C) again until reaching the chain tensioner (E) level.
8. Loosen the screw (D).
9. Refit the guard (B).
10. Place the pole back in its vertical position and tighten the screws (A).



### 5.4. ROTARY TABLE CHAIN ADJUSTMENT

1. Remove the cover (A).
2. Loosen the fastening screws (B) of the reduction unit.
3. Tighten the screw (C) with a torque wrench (not supplied) to **5 Nm**.
4. Tighten the reduction unit fastening screws (B) when adjustment is completed.
5. Refit the guard (A).



## 6. INFORMATION ABOUT THE USE

### 6.1. RECOMMENDATIONS FOR OPERATION AND USE

- When using the machine for the first time, the operator must read the manual and identify the control functions and simulate some operations, especially machine start and stop.
- Make sure that all safety devices are properly installed and efficient.
- Only carry out the operations foreseen by the Manufacturer and do not tamper with any device to obtain different performance levels.



#### **Important**

The frequency of the accidents derived from machine use depends on many factors that cannot always be foreseen and controlled.

Some accidents may be caused by unpredictable environmental factors, others are mainly due to users' behaviours.

On first use, and if required, in addition to being authorised and appropriately informed, the personnel must simulate some manoeuvres to identify the main controls and functions.

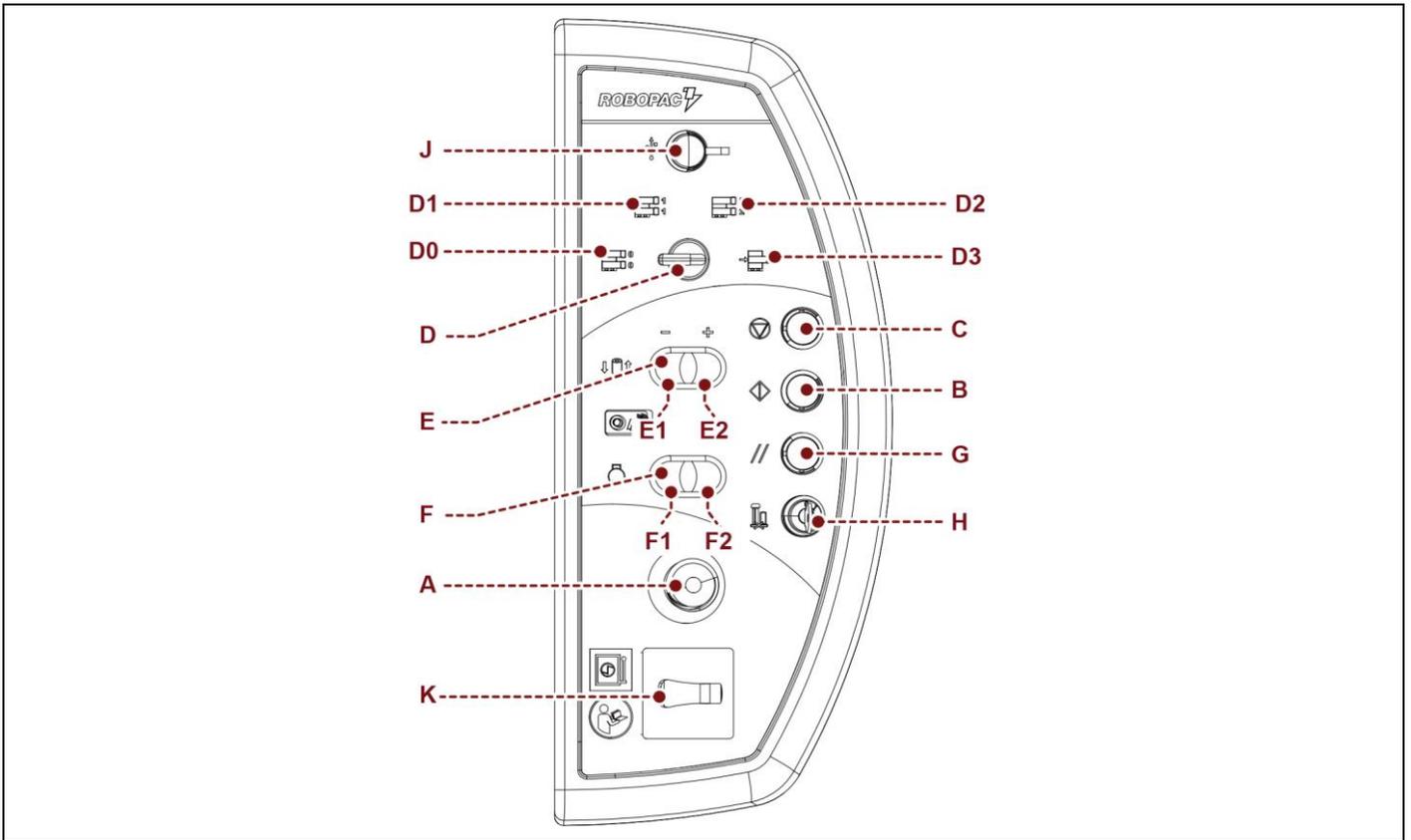
Only carry out the operations foreseen by the Manufacturer and do not tamper with any device to obtain different performance levels.

Make sure the safety devices are properly installed and efficient before use.

Users, besides complying with these requirements, must apply all the safety regulations and carefully read the descriptions of the controls and commissioning.

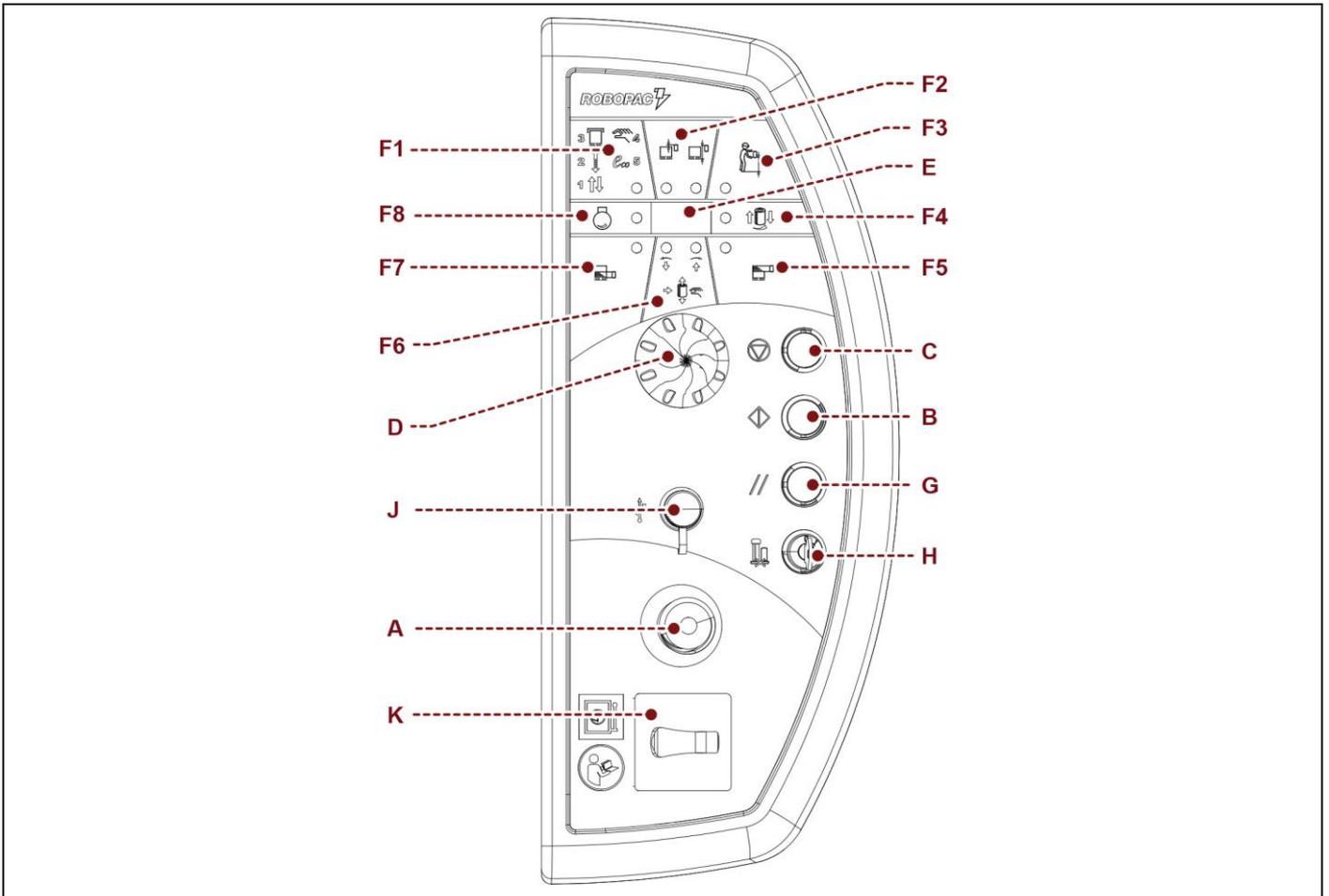
## 6.2. DESCRIPTION OF CONTROLS (ECOPLAT PLUS BASE)

- A) Emergency stop button:**  
it is used in case of imminent risk to stop, with a voluntary action, the machine parts which may pose a risk. For further details, see the paragraph “description of safety devices”.
- B) “Cycle start” button:**  
it is used to start the wrapping automatic cycle.  
The button indicator light on indicates that the electrical power supply is activated.
- C) “Cycle stop” button:**  
it is used to stop the wrapping automatic cycle.
- D) “Upper and lower wrapping” selector:**  
used to set the number of wraps (upper and lower) to be performed on the pallet.
- **D0:** no wrapping.
  - **D1:** one wrapping on the top and bottom.
  - **D2:** two wrappings on the top and bottom.
  - **D3:** reinforcing wrapping
- When the selector is set to position “D3”, the film carriage stops to allow reinforcing wrapping to be performed. As long as the selector remains in position “D3”, wrapping is performed in the same point. Set the selector to one of the “D0-D1-D2” positions to restart the film carriage.
- E) Carriage “upstroke/downstroke speed” button:**  
used to set the film carriage upstroke and downstroke speed while the carriage is in motion.
- Pressed on (**E1**), the button decreases film carriage speed.
  - Pressed on (**E2**), the button increases film carriage speed.
  - If either buttons (**E1 - E2**) are pressed together with button (**C**), they move the film carriage (in “manual” mode).
- F) “Table rotation speed” button:**  
used to set to table rotation speed, with the rotary table in motion.
- Pressed on (**F1**), the button decreases table rotation speed.
  - Pressed on (**F2**), the button increases table rotation speed.
  - Pressing key (**F2**) together with button (**C**) (Stop button) allows moving the table (in “manual mode”).
- G) “Reset” button:**  
it is used to reset the machine before restarting it after an emergency stop or after a shut-down due to the disconnection of the power supply.
- H) Emergency override key-operated switch:**  
it is used to temporarily bypass the carriage emergency.  
When the key is turned to the “I” position (hold to run), the “start” button (**B**) lights up. When the “start” button (**B**) is pressed, the carriage is raised.
- J) USB port:**  
used to update the machine software.  
If a USB flash drive containing updated software is inserted into the port, the software will be installed on the machine when it is turned on.
- K) Main disconnecter:**  
it enables and disables the power supply.
- Pos. “O”: power supply off.
  - Pos. “I”: power supply on.



### 6.3. DESCRIPTION OF CONTROLS (ECOPLAT PLUS FRD)

- A) **Emergency stop button:**  
it is used in case of imminent risk to stop, with a voluntary action, the machine parts which may pose a risk.  
For further details, see the paragraph “description of safety devices”.
- B) **“Cycle start” button:**  
it is used to start the wrapping automatic cycle.
- C) **“Cycle stop” button:**  
it is used to stop the wrapping automatic cycle.
- D) **Multi-function selector:**  
it allows activating and setting machine functions.  
Turn the selector (clockwise or counter-clockwise) until the LED for the desired function turns on.
- E) **Digital display:**  
it shows the working parameters and alarm codes.
- F) **Machine functions:**
  - F1-F8: these are the various functions available on the machine (see the “Machine functions” section).
- G) **“Reset” button:**  
it is used to reset the machine before restarting it after an emergency stop or after a shut-down due to the disconnection of the power supply.
- H) **Emergency override key-operated switch:**  
it is used to temporarily bypass the carriage emergency.  
When the key is turned to position “I” (hold to run), the user interface screen will display the page “emergency override” and this allows the carriage alone to be lifted by pressing the “multi-function selector” (D).
- J) **USB port:**  
used to update the machine software.  
If a USB flash drive containing updated software is inserted into the port, the software will be installed on the machine when it is turned on.
- K) **Main disconnecter:**  
it enables and disables the power supply.
  - Pos. “O”: power supply off.
  - Pos. “I”: power supply on.



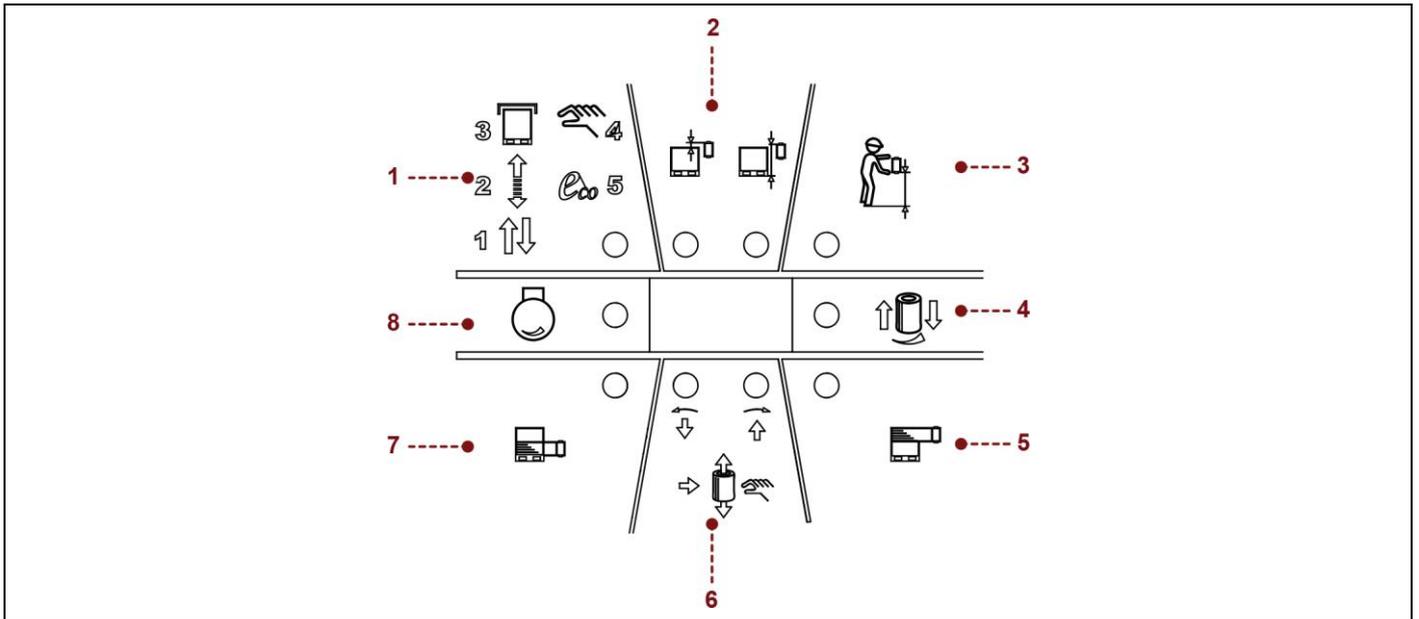
### 6.3.1. MACHINE FUNCTIONS

To view and/or set the functions, turn or press the multi-function selector.

Functional logic diagrams show the navigation modes.

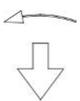
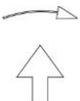
The illustration corresponding to each view shows the abbreviation which indicates the activation mode.

- Abbreviation "**R**":  
turn the control to access the views or to modify the values.  
To modify the values, press the control, turn it until the concerned value is displayed and press it again to save it.
- Abbreviation "**P**":  
Press the control to activate the selected function.
- Abbreviation "**PH**":  
It indicates a long press of the multi-function selector (D), which provides access to the second level functions.



Ref.	Code activation mode	Icon	Description
1	P		Wrapping type program selection
	R	1 ↑↓	“Double wrapping” cycle
	R	2 ↑	“Single wrapping” cycle
	R	3 [Feeder]	“Double wrapping with feeder” cycle
	R	4 [Hand]	Manual cycle
	R	Eco 5	Eco cycle

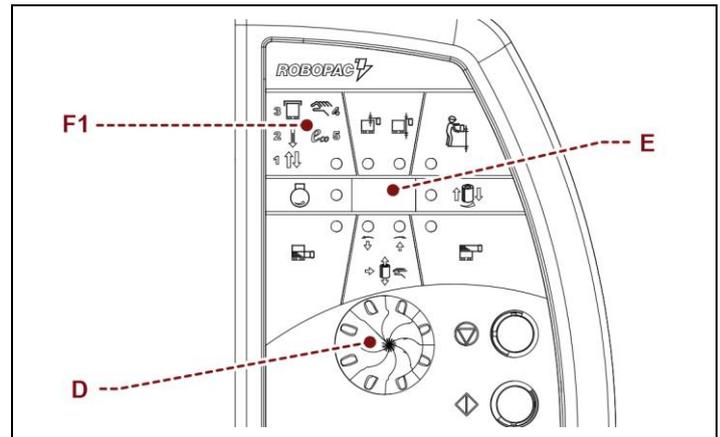
2	PH		Photocell or Altimeter selection (after having selected the photocell or altimeter (PH), the (P) action is used to access the adjustment mode for the selected parameter)
	R	[Photocell]	Photocell delay adjustment via the rotation of the multi-function selector.
	R	[Altimeter]	Altimeter adjustment via the rotation of the multi-function selector

3	P	<b>Carriage "Home" height adjustment</b>	
	R		Carriage "Home" height adjustment, by rotating the multi-function selector, the height can be adjusted at 5-centimetre intervals, up to a maximum height of 1 metre
4	P	<b>Carriage upstroke / downstroke speed adjustment</b>	
	R		Carriage upstroke / downstroke speed adjustment via the rotation of the multi-function selector.
5	P	<b>Adjustment of the number of cycles at the top of the pallet</b>	
	R		Adjustment of the number of cycles at the top of the pallet via the rotation of the multi-function selector.
6	P	<b>Manual controls</b>	
	P		Carriage downstroke in manual mode by keeping the multi-function selector turned to the left
	P		Carriage upstroke in manual mode by keeping the multi-function selector turned to the left
7	P	<b>Adjustment of the number of cycles at the base of the pallet</b>	
	R		Adjustment of the number of cycles at the base of the pallet via the rotation of the multi-function selector.
8	R	<b>Machine rotation speed adjustment</b>	
	R		Machine rotation speed adjustment (max speed 10 RPM)

## 6.4. MULTI-FUNCTION SELECTOR USAGE MODE (ECOPLAT PLUS FRD)

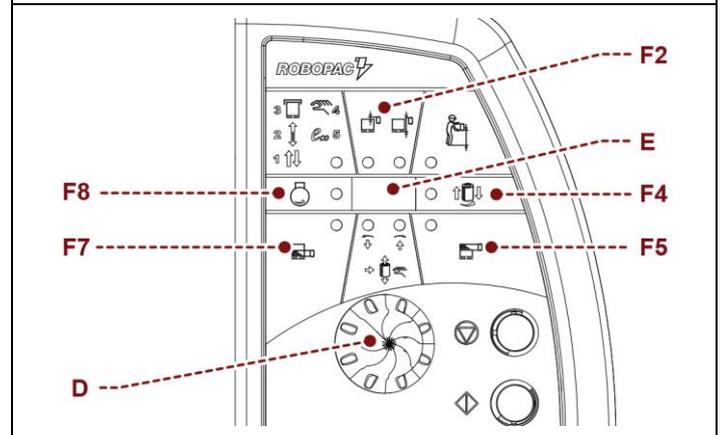
### To select the wrapping cycle:

1. Turn the selector to the first function on the line on the upper left (**F1**).
2. Press the selector (**D**).  
The LED starts flashing.
3. Turn the selector to select the number of the work cycle.
4. Press the selector to confirm the selection.  
The identification number appears on the display (**E**).  
The machine is ready to start the cycle.



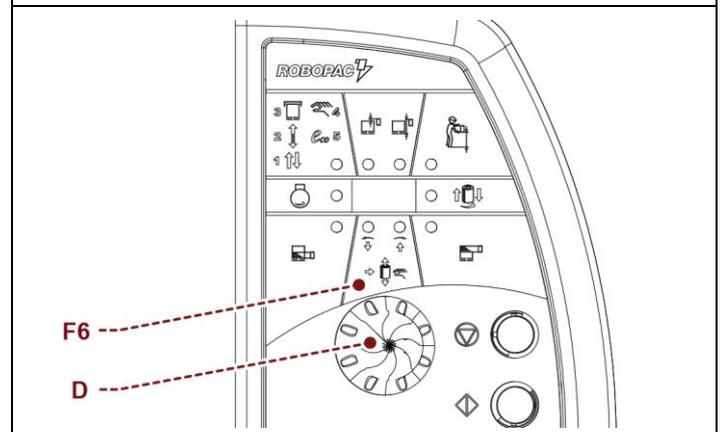
### To change the production parameters:

1. Turn the selector to one of the functions (**F2-F4-F5-F7-F8**).
2. Press the selector (**D**).  
The LED starts flashing.  
The set value appears on the display (**E**).
3. Turn the selector to change the value.
4. Press the selector to save the change.  
The LED remains on steady.



### To move the film carriage in manual mode:

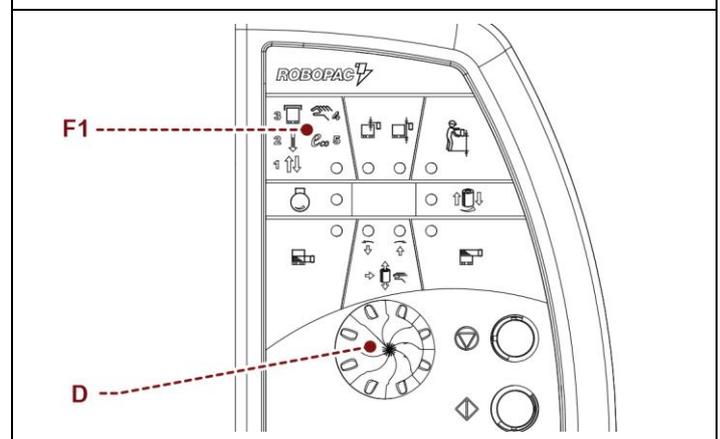
1. Turn the selector to the function (**F6**).
2. Press the selector (**D**).  
The LEDs start flashing.
3. Turn the selector to move the carriage.
  - Clockwise: carriage moves up.
  - Anticlockwise: carriage moves down.
4. Press the selector to quit the function.  
The LED remains on steady.



### To perform multiple reinforcing wrapping:

During the double cycle (**F1 sel. 1**) or single cycle (**F1 sel. 2**), press the selector (**D**) for at least 2 seconds while the film carriage is in the upstroke or downstroke phase to stop the film carriage and obtain reinforcing wrapping.

To carry out several reinforcing wrappings at the same point, press selector (**D**) a few times (maximum 5). The carriage will resume moving once the set number of wrapping operations have been completed.



### To view the production data:

Activate the main electrical disconnect and at the same time press selector (D).

The following message appears on the display (E):

- "d1" cycle partial counter.

To reset, briefly hold the selector down (for about 3 seconds).

- "d2" – cycle total counter (1000÷999000)
- "d3" – cycle total counter (0÷999)
- "d4" – Software revision version
- "d5" – Power supply voltage
- "d6" – Board temperature
- "d7" – Machine run status time counter

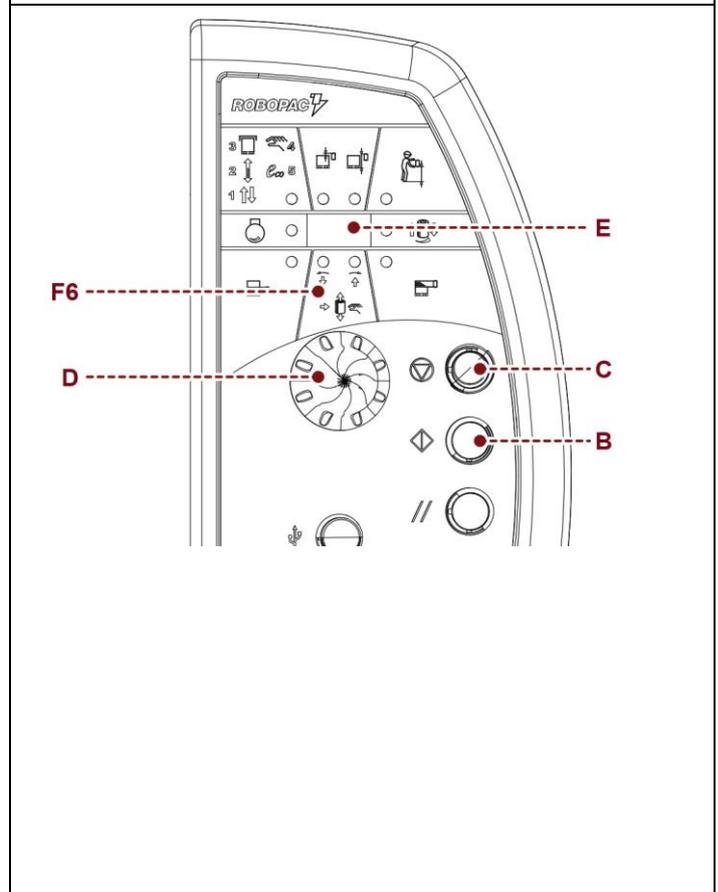
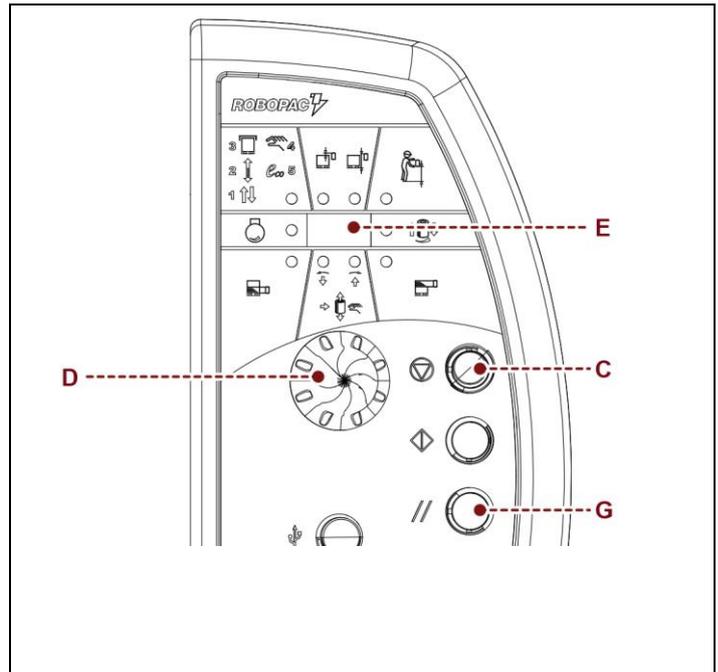
Upon pressing the "Cycle stop" (C) button, the machine will prompt the user to press the "Reset" button (G).

### To program the "Eco" wrapping cycle:

Select the "Eco" cycle (F1 sel. 5)

The "Eco" wrapping cycle can be customised in order to optimise it and reduce waste in terms of time and wrapping material.

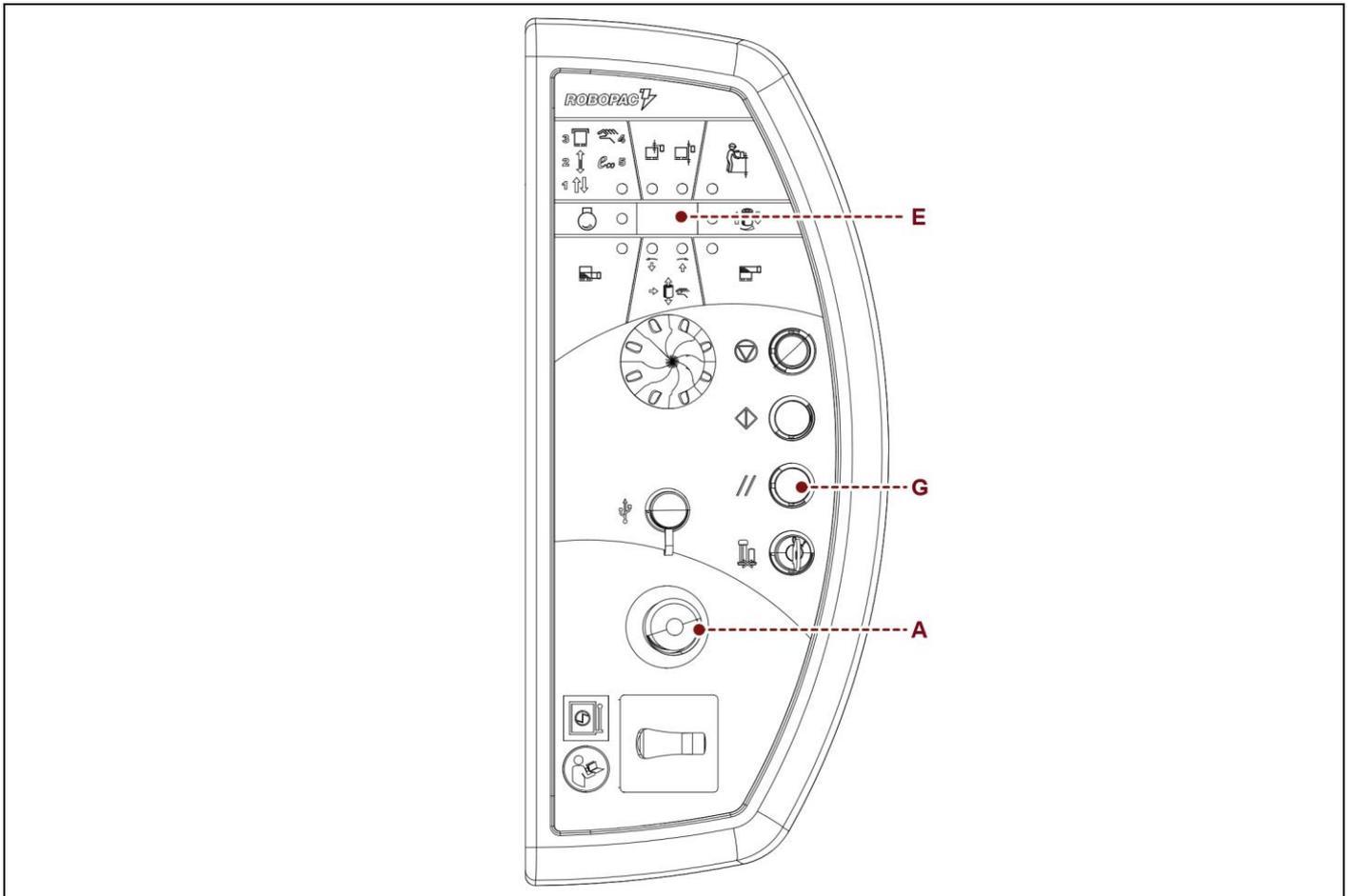
1. Press and hold down the selector (D) and simultaneously press the "cycle stop" button (C). The message "rEC" appears on the display (E). "Self-learning" mode is activated. The system records all operations required to customise a wrapping cycle (Max 20 steps).
2. Upon pressing the "Cycle start" button (B) the carriage is returned to the lower limit switch. Upon pressing the "Cycle start" button (B) again, the table rotation is activated and the film carriage movement is simultaneously activated in manual mode (F6).
3. Engage the selector (D) to move the film carriage.
4. When the film carriage is returned to the "lower" limit switch position, press the "Cycle stop" button (C) to stop recording. The rotary table runs a synchronised stop.
5. Press and hold down the selector (D) and simultaneously press the "Cycle stop" button (C) to exit the recording mode.



## 6.5. MACHINE SWITCHING ON AND OFF

1. Turn the main switch (A) to "I" (ON) to activate the power supply.  
The LEDs turn on to indicate that the system is running machine check-up routine and the display (E) shows the installed software version for a few seconds.  
After the check-up routine, the display shows the message "rES".
2. Press the "Reset" button (G).  
The machine gets ready to start the cycle.  
Display (E) shows the identification number of the programmed wrapping cycle.
3. Perform the cycle starting operations (see "Cycle start and stop").

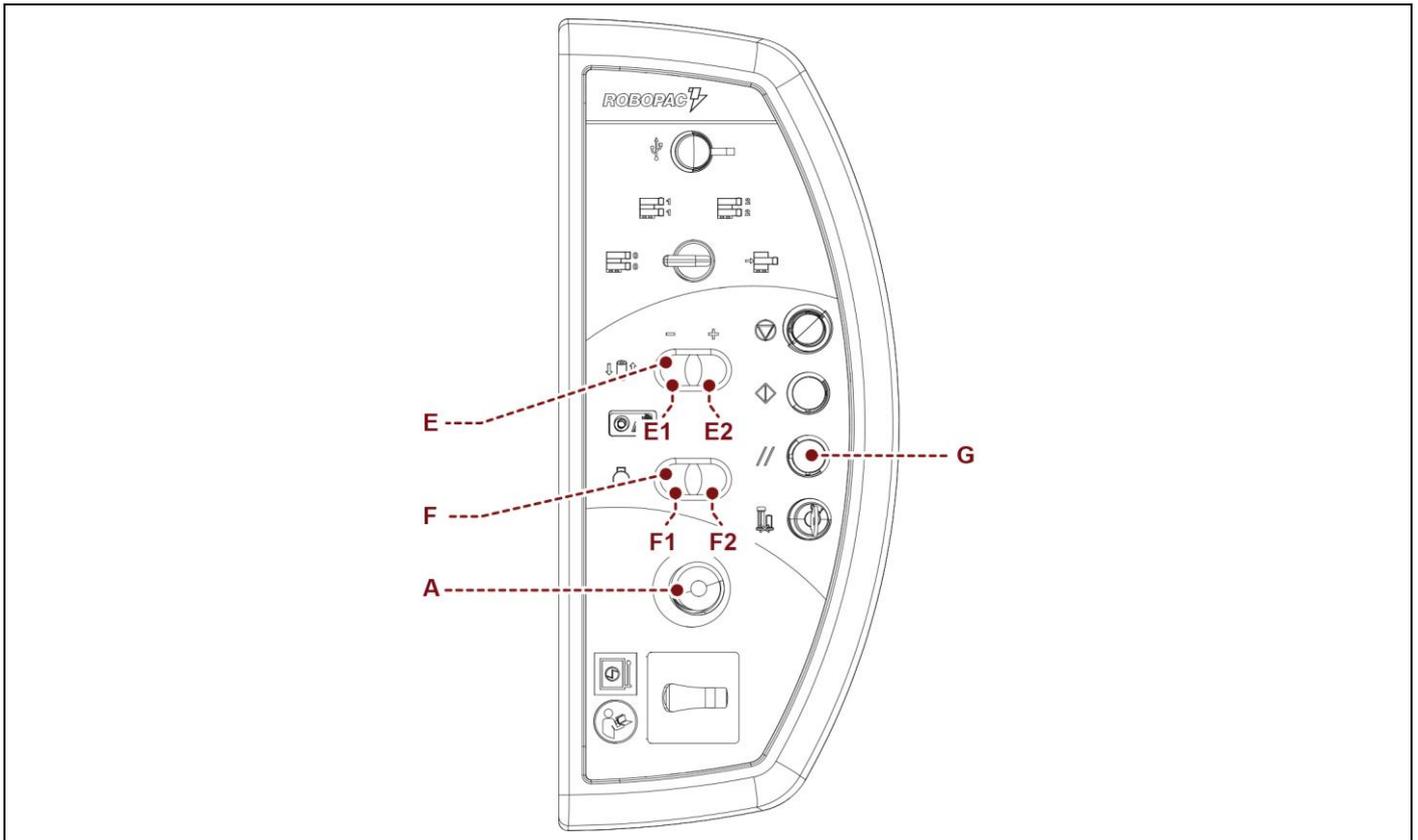
Turn the main switch (A) to 0 (OFF) to switch the machine off.



## 6.6. SETTING THE WRAPPING CYCLE END DELAY

This operation serves to set the film carriage overrun during the upstroke phase, after the photocell has determined the height of the pallet (only for ECOPLAT PLUS model machines).

- 1 Turn the main switch (A) to "I" (ON) to activate the power supply.
- 2 Wait for the blue light on the "Reset" button (G) to turn on.
- 3 Press and hold down the buttons (E1-E2), and then press the "Reset" button (G).  
Keep the buttons pressed until the film carriage reaches the desired distance.
- 4 When the buttons are released, the film carriage stops and its "overrun" movement is saved.
- 5 Turn the main switch (A) to "0" (OFF) to switch the machine off.  
The machine is ready to start the cycle.



## 6.7. CYCLE START AND STOP

Proceed as follows.

1. Place the pallet on the rotary table and move the loading device away.
2. Tie the film end to the pallet.
3. Set the cycle parameters.
4. Press the "Cycle Start" button (B).

The machine starts the wrapping cycle, based on the previously set operating mode.

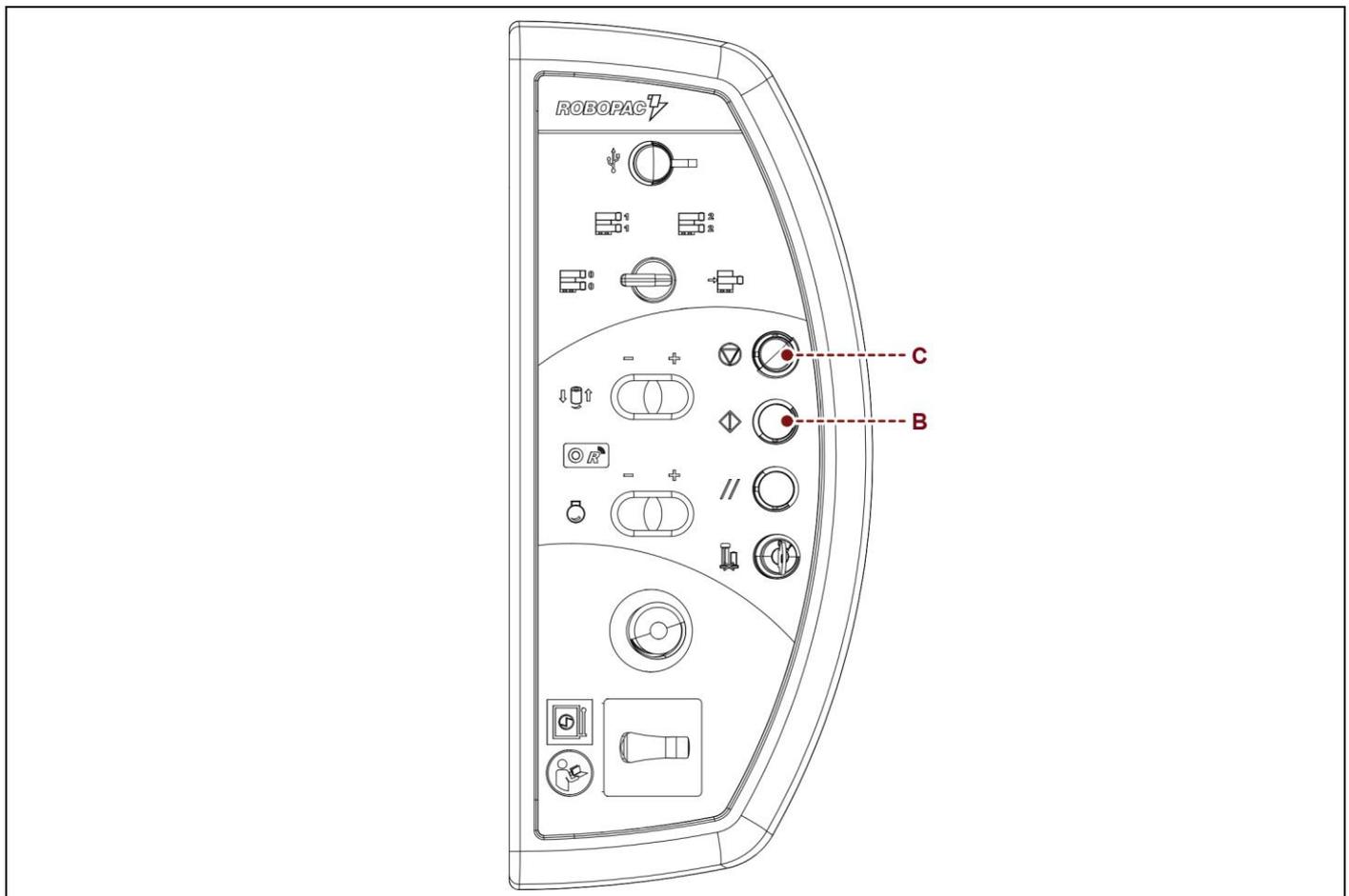
- Setting the manual wrapping cycle activates the rotary table rotation.  
The operator must activate the multi-function selector to move the film carriage up and then down so as to complete the wrapping.  
Once wrapping is completed, the rotary table will run a synchronised stop when film carriage reaches the "low" limit stop position.  
Press "cycle stop" button to stop the cycle without taking the film carriage to "down" limit stop.
- Setting the automatic wrapping cycle activates the rotary table rotation.  
The film carriage performs the programmed wrapping and, once this stage is over, automatically stops with the rotary table synchronised.  
To temporarily suspend the cycle, press the "Cycle Stop" button (C).  
Press the "Cycle Start" button (B) to restart it.

5. Cut the film.
6. Remove the pallet and position a new pallet to start a new cycle.



### Caution - warning

Do not stretch or pre-stretch the film excessively and do not wrap the product with too many wrappings in order to prevent damaging the packages and the products contained in them.



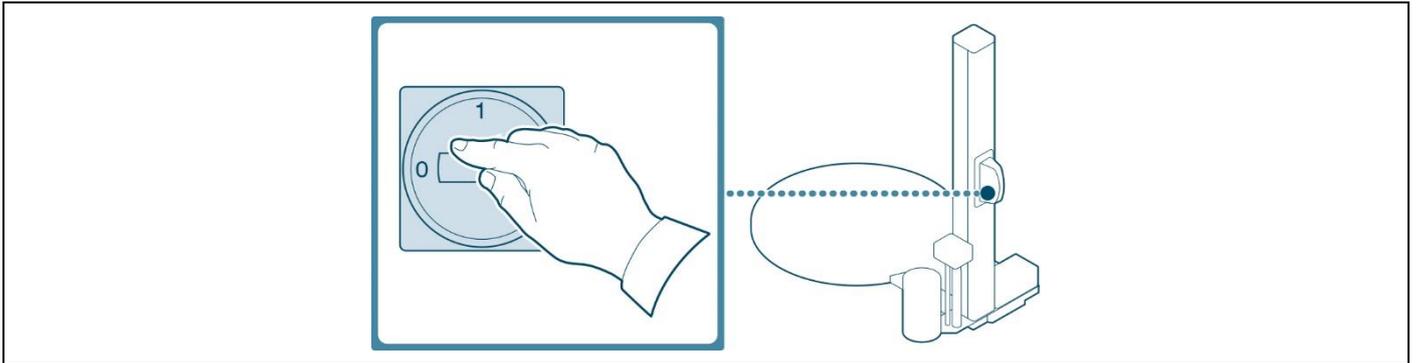
## 6.8. EMERGENCY STOP AND RESTART

Proceed as follows.

1. Turn the main switch (A) to “0” (OFF) under an imminent risk.  
Machine functions stop immediately.
2. After setting the working conditions back to normal, release the switch to allow the machine to resume operating.

Restart as follows.

1. Press the “Reset” button.  
The machine gets ready to start the cycle.
2. Repeat all automatic cycle starting operations (see “Cycle start and stop”).



## 6.9. SPOOL LOADING

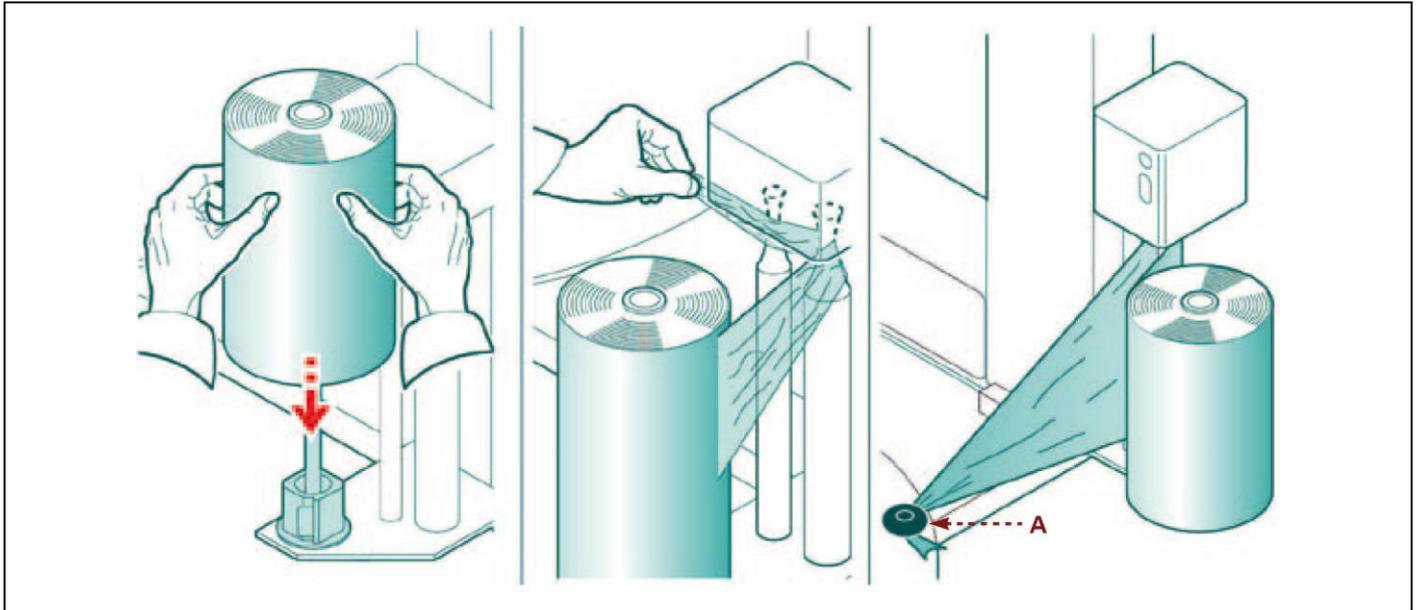
1. Insert the film reel into its seat on the film carriage.
2. Gather the film to make a thin cord and make it pass between the double-cone surfaces.



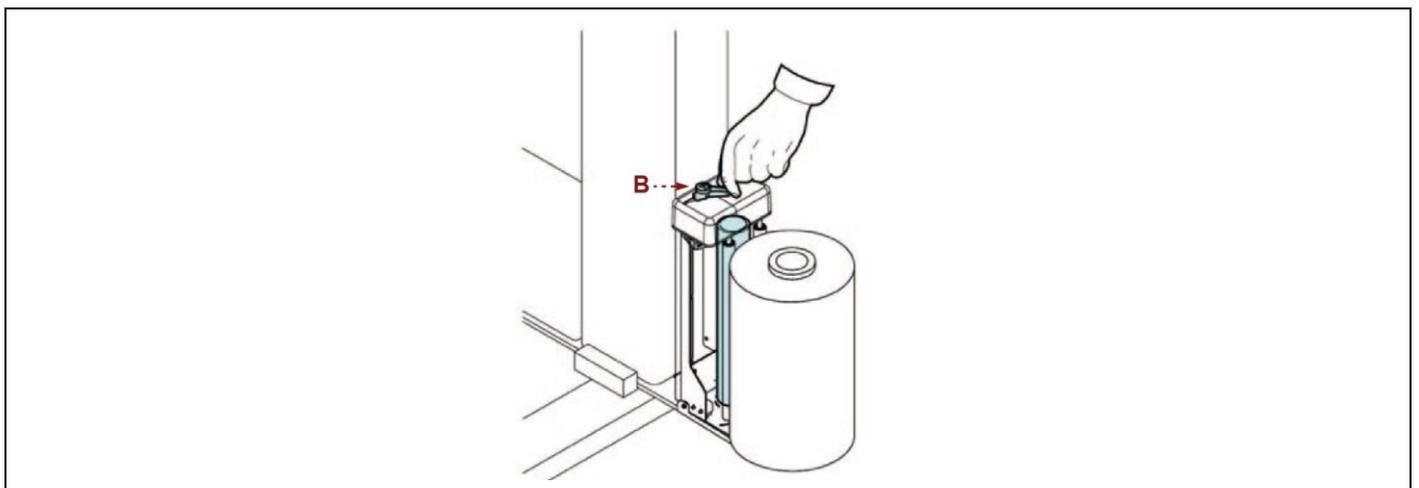
### Important

Unwind the film following the path engraved on the film carriage plate.

3. Pull the cord outwards.  
The film automatically moves down to the roller and covers it over its entire length.
4. Lock the film end into the suitable locking disc (A) on the rotary table.



To allow film or mesh routing between rollers and unwinding on carriages of "FRD" type, it is necessary to unlock the brake by turning the handwheel (B) to pos. "0".



## 7. MAINTENANCE INFORMATION

### 7.1. RECOMMENDATIONS FOR MAINTENANCE

- Proper maintenance will allow a longer life span and constant compliance with safety requirements.
- Before performing any operation, the authorised operator must make sure to have understood the "Instructions for use".
- Pay attention to the safety warnings, do not misuse the machine and assess the possible residual risks.
- Carry out the interventions with all the safety devices enabled and wear the required PPE.
- Indicate the intervention areas and prevent access to the devices that, if activated, could cause unexpected hazards and compromise safety.
- Do not carry out interventions that are not described in the manual but contact an service centre authorised by the Manufacturer.
- Do not dispose of materials, polluting liquids and the waste generated during the interventions into the environment but dispose of them according to the standards in force.



#### **Danger - warning**

Before performing any maintenance operation, activate all safety devices provided and evaluate whether it is necessary to inform the personnel operating on the machine and the personnel nearby.

In particular, demarcate the neighbouring areas to prevent access to the devices that could, if activated, cause unexpected hazardous conditions posing a risk for people's safety and health.



#### **Danger - warning**

Maintenance operations must be performed with the machine disconnected from the power and pneumatic supplies.

The periodical check of the operation of some of the most important parts of the machine, may help to avoid operation problems and to maintain the machine to the maximum operating levels.

## 7.2. PERIODICAL MAINTENANCE INTERVALS



### Important

Keep the machine in maximum efficiency conditions and perform all the scheduled maintenance operations provided for by the Manufacturer.

Proper maintenance will provide the best performance, a longer life span and constant compliance with safety requirements.

### Maintenance interval table

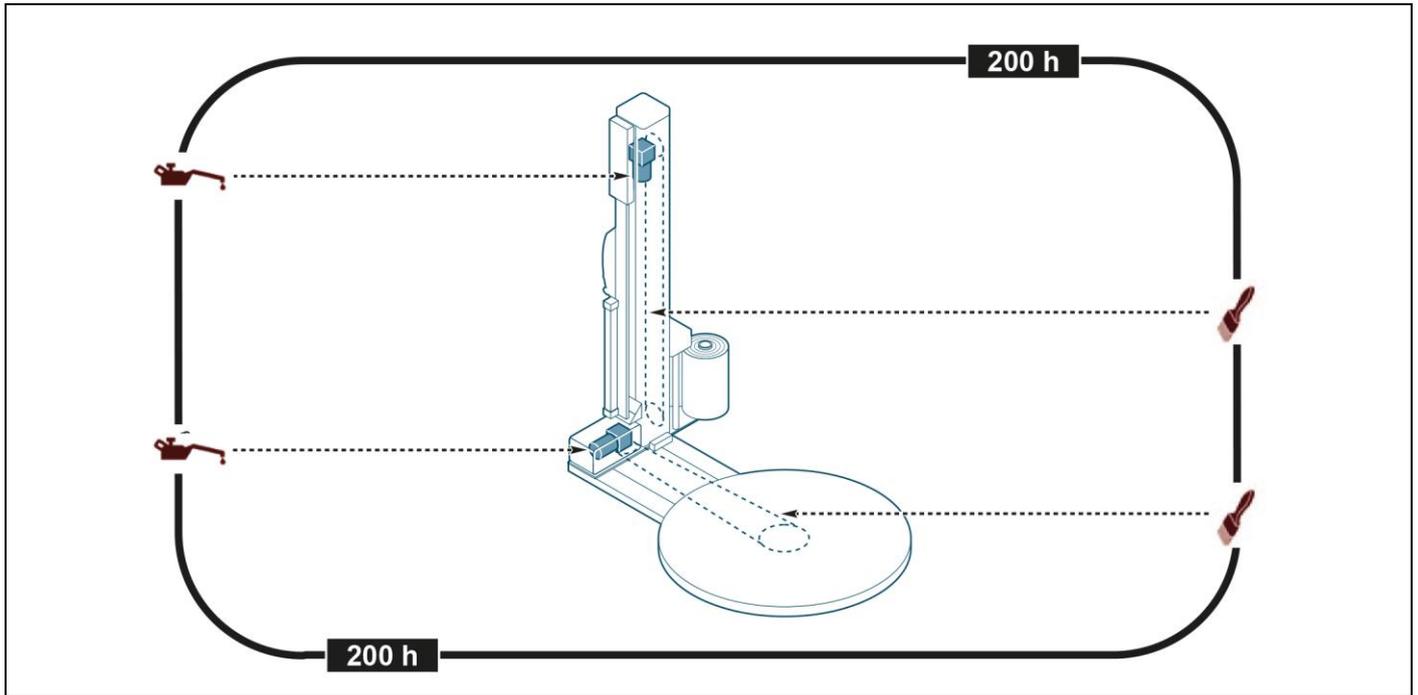
Frequency	Component	Type of intervention	Intervention mode	Reference
Every 40 hours or 1000 cycles (*)	Machine	Cleaning	cloth or air blow	-
Every 200 hours or 5000 cycles (*)	Rubber rollers	Cleaning	Clean with alcohol	-
	Lifting chains	Greasing	-	See "Lubrication point diagram"
		Tensioning check	Adjust	See "Film carriage lifting chain adjustment"
	Table rotation chain	Greasing	-	See "Lubrication point diagram"
		Tensioning check	Adjust	See "Rotary table chain adjustment"
	Reduction units and gearmotors	Checking lubricant level <sup>1</sup>	Top up, if necessary, with lubricant of the same type	See lubricant table
Every 2000 hours or 10000 cycles (*)	Lifting chains	Wear check	-	-
	Safety devices	Efficiency check	-	-
	Table rotation chain	Wear check	-	-
Every 5000 hours or 50000 cycles (*)	Rotary table wheels	Replacement	-	See "Replacing the rotary table wheels"
	Carriage lifting wheels	Replacement	-	-
	Reduction units and gearmotors	Lubricant change <sup>1</sup>	Use lubricant with the same characteristics	See lubricant table

<sup>1</sup> Reduction units and gearmotors can be lubricated with grease, oil or for life, depending on their type. Topping up and/or change must not be performed in case of life-lubed reduction units and gearmotors.

\* Cycle timings have been defined on the basis of the standard cycle. The standard cycle is the following: **500 mm** high film reel, **1500 mm** high pallet, pallet weight equal to **1500 kg**, total wrapping cycle consisting of two turns at the base, two turns at the top with rotation speed of **12 r.p.m.** or **80 m/1'** and carriage upstroke and downstroke speed equal to **4 m/1'**.

### 7.3. LUBRICATION POINT DIAGRAM

The diagram shows the main parts concerned by the lubrication interventions and their intervals.



	Spread grease over it.
	Check the lubricant level. Do not top up and/or change in life-lubed reduction units and gearmotors.

## 7.4. LUBRICANT TABLE

The table below lists the specifications of the lubricants recommended by the Manufacturer for each component and/or reference area.

**Use lubricants (oils and greases) recommended by the Manufacturer or with similar chemical-physical features.**

### Lubricant characteristics

Lubricant type	Code	Parts to be lubricated
Mineral oil	23°C / 50°C - 320 CST 40°C MELLANA OIL 320 IP SPARTAN EP 320 ESSO BLASIA 320 AGIP MOBILGEAR 632 MOBIL OMALA EP 320 SHELL ENERGOL GR-XP 320 BP	Gear reduction unit
Mineral oil	32°C / 50°C - 460 CST 40°C MELLANA OIL 460 IP SPARTAN EP 460 ESSO BLASIA 460 AGIP MOBILGEAR 634 MOBIL OMALA EP 460 SHELL ENERGOL GR-XP 460 BP	Worm screw reduction unit
Grease	TELESIA COMPOUND B IP STRUCTOVIS P LIQUID KLUBER TOTALCARTER SYOO TOTAL	Gear reduction unit and worm screw reduction unit
Synthetic oil	TELESIA OIL IP SYNTHESO D 220 EP KLUBER BLASIA S 220 AGIP	Gear reduction unit and worm screw reduction unit
Lithium grease	ALVANIA R2 SHELL HL 2 ARAL ENERGREASE LS2 BP BEACON 2 ESSO MOBILIX MOBIL	Bearings with support
Synthetic oil	-5°C / +5°C VG 68 (SAE 20) +5°C / +25°C VG 100 (SAE 30)	Film carriage lifting chain
Synthetic oil	+25°C / +45°C VG 150 (SAE 40) +45°C / +70°C VG 220 (SAE 50)	Table rotation chain



#### Important

Do not mix together oils of different brands or having different characteristics.

## 7.5. MACHINE CLEANING

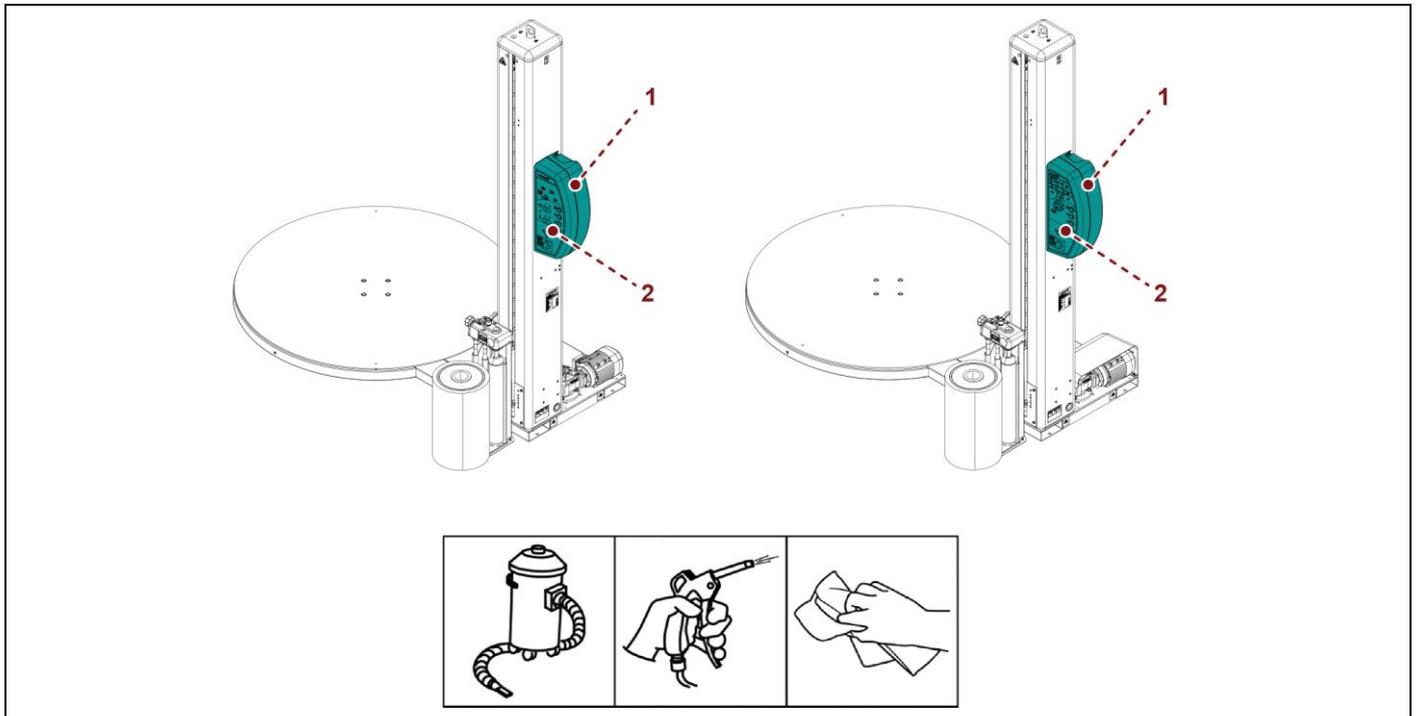
General cleaning of the machine is fundamental to guarantee its efficiency over time.

The whole machine must be kept free from dust, dirt and foreign bodies.

The chrome-plated shafts must be cleaned with a cloth and slightly lubricated with a cloth soaked in Vaseline oil.

The parts in plastic material (1) must be cleaned with a slightly damp cloth; do not use alcohol, petrol or solvents. Use only a dry cloth to dust the control panel (2).

For the cleaning of the parts inside the machine consult our technical assistance service.



## 8. FAULT INFORMATION

### 8.1. ALARM MESSAGES

In the event of a breakdown during operation the machine stops automatically and alarm messages appear on the display.

The table lists the displayed messages, the type of problem, the causes and possible solutions.



#### Important

For these operations a precise technical expertise or ability is required; therefore, these operations must be exclusively performed by qualified personnel with certified experience acquired in the specific field of intervention.

#### Alarms list Ecoplat Plus

In Ecoplat Plus, the alarms are shown with a “Reset” button flash code. (e.g.: film breakage alarm, the button will flash 5 times consecutively, followed by a short pause).

The sequence of flashes will be repeated until the alarm is reset (by pressing the “Reset” button).

No. of flashes	Problem	Cause	Solution
1 flash	Inverter communication alarm	Electronic fault	Contact technical support
2 flashes	Plate alarm	Emergency plate pressed	Release the emergency plate and reset the machine
3 flashes	Motor alarm	Inverter overload	Remove the overload cause. Switch the machine off and then on again
4 flashes	Table alarm	A fault or an obstacle is preventing the table from moving	Remove the fault cause. Switch the machine off and then on again
5 flashes	Film breakage alarm	Film breakage detected during a wrapping cycle	Re-join the film to the product and reset the machine) (Only available with R-Connect with film monitoring device)
6 flashes	Carriage alarm	A fault or an obstacle is preventing the film carriage from moving	Remove the fault cause. Switch the machine off and then on again
7 flashes	Pallet start alarm	If the pallet is not present on the machine, the machine will remain stationary when the CYCLE START button is pressed	Position the product on the table and start a new cycle

## Alarms list Ecoplat Plus FRD

In Ecoplat Plus FRD, the alarms are shown directly on the machine display, along with the code for the alarm itself.

Code	Problem	Cause	Solution
E02	Plate alarm	Emergency plate pressed	Release the emergency plate and reset the machine
E31	Rotation motor alarm	Inverter overload	Remove the overload cause. Switch the machine off and then on again
E32	Lifting motor alarm	Inverter overload	Remove the overload cause. Switch the machine off and then on again
E60	Film breakage alarm	Film breakage detected during a wrapping cycle	Re-join the film to the product and reset the machine
E61	Table rotation alarm	A fault or an obstacle is preventing the table from moving	Remove the fault cause. Switch the machine off and then on again
E64	Carriage lifting alarm	A fault or an obstacle is preventing the film carriage from moving	Remove the fault cause. Switch the machine off and then on again
E69	Generic alarm	The maximum number of self-learning mode steps has been reached	Reset the machine. Repeat the self-learning procedure
E74	Pallet start alarm	If the pallet is not present on the machine, the machine will remain in STOP mode when CYCLE START is pressed	Position the product on the table and start a new cycle
E83	HMI communication alarm	Electronic fault	Contact technical support
E83	Inverter communication alarm	Electronic fault	Contact technical support
E98	Carriage bypass alarm	Suspension of the emergency due to the rotation of the key-operated selector	Release the selector and reset the machine

## 9. REPLACEMENT INFORMATION

### 9.1. RECOMMENDATIONS FOR REPLACING MACHINE PARTS

- Before performing any operation, the authorised operator must make sure to have understood the "Instructions for use".
- Carry out the interventions with all the safety devices enabled and wear the required PPE.
- Demarcate the surrounding areas and put in place adequate safety measures, as provided for by the standards on workplace safety, in order to prevent and minimise the risks.
- Do not carry out interventions that are not described in the manual but contact a service centre authorised by the Manufacturer.
- Do not dispose of materials, polluting liquids and the waste generated during the interventions into the environment but dispose of them according to the standards in force.
- Replace the components only with original spare parts or parts with similar design and construction features. The use of similar but non-original spare parts may result in improper repairs, altered performance and economic damage.
- Safety components and/or devices must be replaced only with original spare parts to preserve the safety level required.



#### Important

Before performing any maintenance operation, activate all safety devices provided and evaluate whether it is necessary to inform the personnel operating on the machine and the personnel nearby.

In particular, demarcate the neighbouring areas to prevent access to the devices that could, if activated, cause unexpected hazardous conditions posing a risk for people's safety and health.

When replacing worn parts, use only original spare parts.

The Manufacturer is not responsible for any damage to property or injuries to people caused by the use of non-genuine spare parts or which may result from repairs not authorised by the Manufacturer.

When ordering new spare parts, follow the instructions given in the spare parts catalogue.

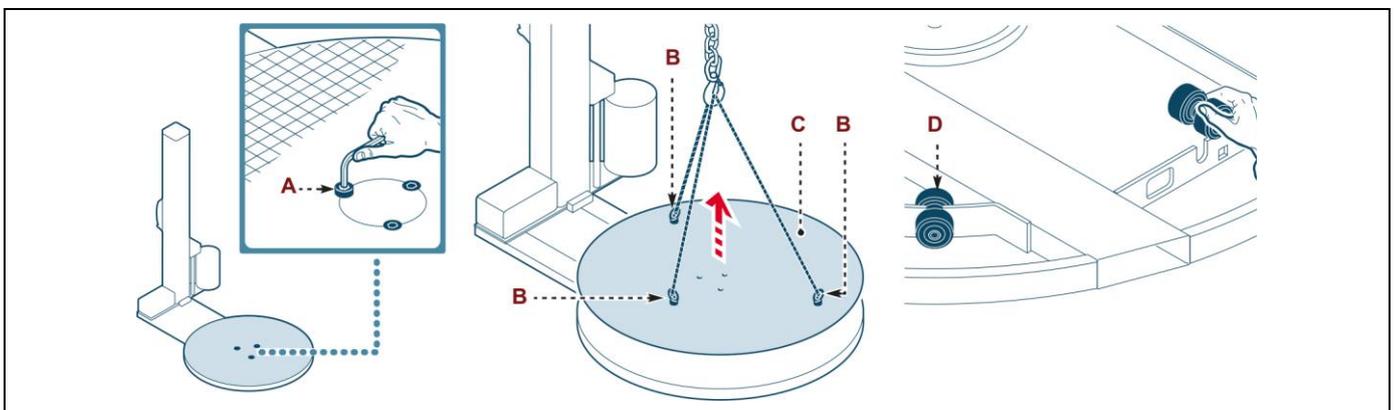
### 9.2. REPLACING THE ROTARY TABLE WHEELS

1. Loosen the screws (A).
2. Fit the eyebolts (B) and remove the upper plate (C).
3. Lift the table and place it on the ground.
4. Replace the wheels (D).
5. Reposition the table on the base and fasten it with the screws.
6. Restart the machine to check its proper operation.



#### Caution - warning

Before restarting the machine, check that there are no tools or other material near the moving parts.



### 9.3. RECOMMENDED SPARE PARTS LIST

List of the spare parts that wear easily and that should be always available to avoid long machine downtimes:

- No. **8 / 14** double wheels for base.
- No. **8** carriage supporting wheels.
- No. **1** braked roller pad

To order them, contact your local dealer and refer to the spare parts catalogue.



#### **Important**

Replace worn parts with original spare parts.

Use oils and greases recommended by the Manufacturer.

All the above will ensure the proper operation of the machine and the correct level of safety.

### 9.4. MACHINE DECOMMISSIONING AND SCRAPPING

#### 9.4.1. MACHINE DECOMMISSIONING

- Cut off any supply to the machine (power, pneumatic, etc.) so that it cannot be restarted and position it in a place that cannot be easily accessed.
- Empty the systems, which contain hazardous substances, in a proper manner and in compliance with the laws in force at workplaces and with those on environmental protection.

#### 9.4.2. MACHINE SCRAPPING

- Scrapping must be performed by authorised centres with experienced personnel and by using the appropriate equipment for safe operating conditions.
- The person who performs the scrapping must identify any possible residual energies and implement a “safety plan” to eliminate unexpected risks.
- The components must be selected according to the chemical and physical features of the material and disposed of separately, in accordance with the applicable laws.
- Empty the systems, which contain hazardous substances, in a proper manner and in compliance with the laws in force at workplaces and with those on environmental protection.

## 10. ANNEXES

### 10.1. WARRANTY CONDITIONS

**Robopac S.p.A.** commits, within the limits described herein, to replace or repair, free of charge, the parts that are defective during the 12 (twelve) months following the date indicated on the company's shipping documents.

To utilise the warranty, the user must immediately notify the company of the detected fault, always referring to the machine serial number.

**Robopac S.p.A.**, in its final judgement, will decide whether to replace the defective part or request it to be shipped for tests and/or repair.

By replacing or repairing the defective part, **Robopac S.p.A.** fully complies with its warranty obligations and will be released from all liabilities and obligations relative to transport, travel and lodge expenses for technicians and installers.

**Robopac S.p.A.** will in no case be held responsible for any losses due to lack of production or injuries to persons or damage to things caused by malfunctions or forced downtime of the machine covered by the warranty.

#### THE WARRANTY DOES NOT COVER:

- Transport failures.
- Damage due to incorrect installation.
- Improper use of the machine or negligence.
- Tampering with or repairs by unauthorised personnel.
- Lack of maintenance.
- Parts subject to normal wear and tear.

For purchased components and parts, **Robopac S.p.A.** offers the user the same warranty conditions that the company obtains from the suppliers of the aforementioned components and/or parts.

**Robopac S.p.A.** does not guarantee the conformity of machines to current standards in countries that are not part of the European Union.

Any adjustment to the regulations in force in the Country in which the machine is installed, will fall under the full responsibility of the user, who will be responsible also for the changes made, releasing **Robopac S.p.A.** from any obligation and/or liability relative to any claim that may be submitted by third parties due to non-compliance with the referenced standards.

# EC DECLARATION OF CONFORMITY

(Annex IIA DIR. 2006/42/EC)

**Robopac S.p.A.**

Via Fabrizio da Montebello, 81 - 47892  
Gualdicciolo Republic of San Marino

## DECLARES THAT THE MACHINE

		
<b>ROBOPAC MACHINERY</b> Robopac S.p.A. Via Fabrizio da Montebello, 81 47892 – Gualdicciolo Repubblica di San Marino <a href="http://www.robopac.com/">http://www.robopac.com/</a>		
		
DENOMINAZIONE DENOMINATION		
MODELLO MODEL		
MATRICOLA SERIAL NUMBER		
DATA DATE OF MANUF.		
ALIMENTAZIONE SUPPLY VOL.		[V]
FREQUENZA FREQUENCY		[HZ]
N° FASI PHASE		
ASSORBIMENTO ABSORPTION		[A]
POTENZA TOT. TOTAL POWER		[kW]
CONSUMO ARIA AIR CONSUMPTION		[nl/min]
PRESSIONE MAX MAX PRESSURE		[bar]
PESO WEIGHT		[kg]

## IS IN CONFORMITY WITH DIRECTIVES

DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 May 2006 on machinery, and amending Directive 95/16/EC.

DIRECTIVE 2014/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.

**Reference to harmonised standards and their annexes, at the applicable points:**

EN ISO 12100:2010, EN 60204-1:2006/A1:2009, EN 415-5:2010, EN 415-6:2013, EN 415-10:2014.

## THE PERSON AUTHORISED TO DRAFT THE TECHNICAL BOOKLET IS

<b>Ing. Pierangelo Laghi - R&amp;D Manager</b>	<b>c/o Aetna Group S.p.A.</b>	
<b>S. P. Marecchia, 59</b>	<b>47826 Villa Verucchio</b>	<b>Rimini, Italy</b>
<b>Document date and place</b>		<b>Ing. Pierangelo Laghi - R&amp;D Manager</b>
<b>San Marino,</b>		<b>Signature</b>

ROBOPAC MACHINERY  
**Robopac S.p.A.**  
 Via Fabrizio da Montebello, 81  
 47892 Gualdicciolo  
 Repubblica di San Marino

tel. (+378) 0549 910511  
 robopacmachinery@robopac.com  
 www.robopac.com

Decreto Riconoscimento del 05/12/1983  
 Capitale Sociale € 1.000.000 Cod. Op. Ec. 02346

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**ROBOPAC SPA**

Via Fabrizio da Montebello, 81 – 47892 Gualdicciolo, Repubblica S. Marino (RSM)  
Phone (+378) 0549 910511 - Fax (+378) 0549 908549 – 905946  
<http://www.aetnagroup.com>