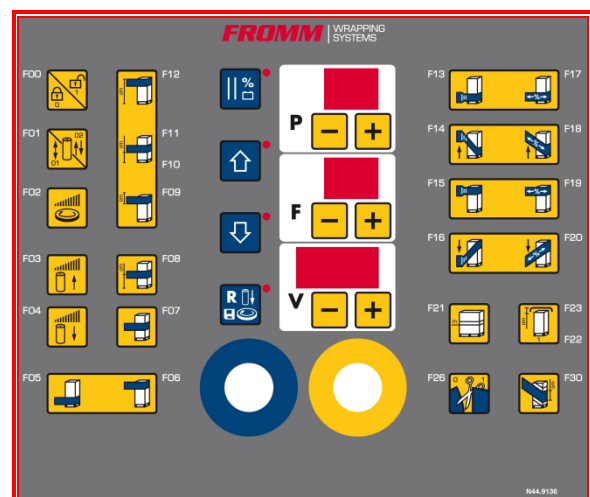


# FROMM

## SEMI – AUTOMATIC SELF PROPELLING ROBOT Wrapping Machine Series FR3xx/FR4xx Version 04 FR3.1512

FR3.1512-Manual OP2-32.22X.XXX.04.EN 03/ ORIGINAL MANUAL © 06/17



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**BE Opgelet!**

Leest U in elk geval de gebruiksaanwijzing, vooraleer de machine wordt opgesteld, geïnstalleerd en in gebruik genomen wordt. Daardoor zorgt U voor Uw eigen veiligheid en vermijdt U schade aan Uw machine.

**DE Achtung!**

Lesen Sie unbedingt die Gebrauchsanweisung vor Aufstellung-Installation-Inbetriebnahme. Dadurch schützen Sie sich und vermeiden Schäden an Ihrem Apparat.

**DK OBS!**

De bør absolut læse bruganvisningen, inden maskinen opstilles, installeres og tages i brug. Derved beskytter De Dem selv og undgår skader på maskinen.

**ES Atención!**

Resulta imprescindible leer las Instrucciones de manejo antes de proceder al Emplazamiento/ Instalación/Puesta en servicio del aparato, con objeto de protegerse a si mismo y evitar el deterioro de la máquina debido a un manejo incorrecto.

**FR Attention!**

Lisez impérativement le mode d'emploi avant l'installation/la mise en service. Vous vous protégerez ainsi et éviterez des détériorations sur votre appareil.

**GB Important!**

Read the operating instructions carefully before installation and before using this machine for the first time.

You will avoid the risk of causing harm to yourself or to your machine in this way.

**GR Προσοχή!**

Πρίν την εγκατάσταση, σύνδεση και αρχική λειτουργία της συσκευής διαβάστε προσεκτικά τις οδηγίες χρήσης.

Έτσι προστατεύετε τον εαυτό σας και αποφεύγετε πιθανές βλάβες συσκευής.

**IT Attenzione!**

Leggere assolutamente le istruzioni d'uso prima di procedere alla posizionatura – installazione - messa in funzione. In questo modo ci si protegge e si evitano danni all'apparecchio.

**NO NB!**

De må lese bruksanvisningen før oppstilling, installasjon og start av maskinen! Gjør det for å unngå skade på Dem selv og maskinen.

**NL Let op!**

Lees beslist de gebruiksaanwijzing voor het plaatsen, installeren en in gebruik nemen van uw machine. Dat is veiliger voor Uzelf en U voorkomt onnodige schade aan Uw machine.

**PL Ważne!**

Przed instalacją maszyny, bądź przed przystąpieniem do pracy z maszyną po raz pierwszy, należy dokładnie przeczytać i zapoznać się z niniejszą instrukcją obsługi.

W ten sposób uniknie się ryzyka mogącego spowodować uraz ciała bądź uszkodzenie maszyny.

**PT Atenção!**

Leia as instruções de utilização antes da montagem - instalação e - primeira utilização. Assim evita avarias no aparelho.

**SE OBS!**

Läs bruksanvisningen noga före uppställning, installation och användning. Ni förebygger därmed olycksrisker och undviker skador på maskinen.

**FI Huomio!**

Tutustukaa huolellisesti käyttöohjeeseen ennen laitteen asennusta ja käyttöönottoa. Näin välttytte mahdollisilta vahingoilta käyttäessä konetta.

## MACHINE MAKE – UP

THE FR3xx FROMM series is a wheeled robot, which independently rotates around stabilized products to wrap and stabilize them by means of stretch film.

It is controlled by a dedicated electronic control unit including a FROMM-PLC for execution of the various processes.

Particular attention must be paid to charging the robot battery in order to ensure a lifetime as long as possible. (refer to the chapter BASIC OPERATIONS and ASSEMBLY ESQUENCE)

Serial number

Delivery Date

Art.-Nr.	Model		
32.221.120	FR330	OP2/B1/H2200mm/C2	
32.221.140	FR350	OP2/B1/H2200mm/C4	
32.221.160	FR390	OP2/B1/H2200mm/C6	
32.221.170	FR400	OP2/B1/H2200mm/C7	
32.222.120	FR330	OP2/B2-24V-110Ah/H2200mm/C2	
32.222.140	FR350	OP2/B2-24V-110Ah/H2200mm/C4	
32.222.160	FR390	OP2/B2-24V-110Ah/H2200mm/C6	
32.222.170	FR400	OP2/B2-24V-110Ah/H2200mm/C7	
32.223.120	FR330	OP2/B3-24V-120Ah/H2200mm/C2	
32.223.140	FR350	OP2/B3-24V-120Ah/H2200mm/C4	
32.223.160	FR390	OP2/B3-24V-120Ah/H2200mm/C6	
32.223.170	FR400	OP2/B3-24V-120Ah/H2200mm/C7	
<hr/>			
32.221.220	FR331	OP2/B1/H2500mm/C2	
32.221.240	FR351	OP2/B1/H2500mm/C4	
32.221.260	FR391	OP2/B1/H2500mm/C6	
32.221.270	FR401	OP2/B1/H2500mm/C7	
32.222.220	FR331	OP2/B2-24V-110Ah/H2500mm/C2	
32.222.240	FR351	OP2/B2-24V-110Ah/H2500mm/C4	
32.222.260	FR391	OP2/B2-24V-110Ah/H2500mm/C6	
32.222.270	FR401	OP2/B2-24V-110Ah/H2500mm/C7	
32.223.220	FR331	OP2/B3-24V-120Ah/H2500mm/C2	
32.223.240	FR351	OP2/B3-24V-120Ah/H2500mm/C4	
32.223.260	FR391	OP2/B3-24V-120Ah/H2500mm/C6	
32.223.270	FR401	OP2/B3-24V-120Ah/H2500mm/C7	

**MACHINE MAKE – UP**

32.221.320	FR332	OP2/B1/H2800mm/C2	
32.221.340	FR352	OP2/B1/H2800mm/C4	
32.221.360	FR392	OP2/B1/H2800mm/C6	
32.221.370	FR402	OP2/B1/H2800mm/C7	
32.222.320	FR332	OP2/B2-24V-110Ah/H2800mm/C2	
32.222.340	FR352	OP2/B2-24V-110Ah/H2800mm/C4	
32.222.360	FR392	OP2/B2-24V-110Ah/H2800mm/C6	
32.222.370	FR402	OP2/B2-24V-110Ah/H2800mm/C7	
32.223.320	FR332	OP2/B3-24V-120Ah/H2800mm/C2	
32.223.340	FR352	OP2/B3-24V-120Ah/H2800mm/C4	
32.223.360	FR392	OP2/B3-24V-120Ah/H2800mm/C6	
32.223.370	FR402	OP2/B3-24V-120Ah/H2800mm/C7	
32.221.161	FR390	OP2/B1/H2200mm/C6 With cutting device	
32.221.171	FR400	OP2/B1/H2200mm/C7 With cutting device	
32.222.161	FR390	OP2/B2-24V-110Ah/H2200mm/C6 With cutting device	
32.222.171	FR400	OP2/B2-24V-110Ah/H2200mm/C7 With cutting device	
32.223.161	FR390	OP2/B3-24V-120Ah/H2200mm/C6 With cutting device	
32.223.171	FR400	OP2/B3-24V-120Ah/H2200mm/C7 With cutting device	
32.221.261	FR391	OP2/B1/H2500mm/C6 With cutting device	
32.221.271	FR401	OP2/B1/H2500mm/C7 With cutting device	
32.222.261	FR391	OP2/B2-24V-110Ah/H2500mm/C6 With cutting device	
32.222.271	FR401	OP2/B2-24V-110Ah/H2500mm/C7 With cutting device	
32.223.261	FR391	OP2/B3-24V-120Ah/H2500mm/C6 With cutting device	
32.223.271	FR401	OP2/B3-24V-120Ah/H2500mm/C7 With cutting device	
32.221.361	FR392	OP2/B1/H2800mm/C6 With cutting device	
32.221.371	FR402	OP2/B1/H2800mm/C7 With cutting device	
32.222.361	FR392	OP2/B2-24V-110Ah/H2800mm/C6 With cutting device	
32.222.371	FR402	OP2/B2-24V-110Ah/H2800mm/C7 With cutting device	
32.223.361	FR392	OP2/B3-24V-120Ah/H2800mm/C6 With cutting device	
32.223.371	FR402	OP2/B3-24V-120Ah/H2800mm/C7 With cutting device	

## GENERAL

The FR3xx/FR4xx robot is an semi-automatic pallet wrapping machine.

The operator has to place the robot near the pallet, (the wheel, mounted in the reading arm, have to follows the outline of the product) and connect the film on the pallet.

The tension or stretch can be adjusted on the operating panel or carriage.

Depending on the functionality of the machine, the operator can start the wrapping process or initially he has to setup the wrapping cycle, speed of turntable and carriage.

The process will be activated by pressing the start button. After completing the cycle, the robot will stop, the film can be disconnected and the operator can take away the pallet.

- This manual is only intended for a semi-automatic pallet stretch wrapping machine, mentioned at page one, as delivered by FROMM Stretch Wrapping Division.
- FOR EVERYTHING IN THIS MANUAL IS VALID, IF APPLIED!
- THE ORIGINAL, SIGNED FACTORY MANUAL HAS TO REMAIN INSIDE THE ELECTRICAL BOX OF THE MACHINE, TOGETHER WITH THE MACHINE ELECTRICAL PLAN AND INVERTER MANUALS.
- Pre- stretching (Stretching out) the film prior to application on the goods reduces the costs of packaging and is easier on the environment. (Available pre stretch depend on the model)
- Refer to chapter for the technical data, which describes the installation in detail and for the complete size of the installation.
- Read carefully at least the chapters **HANDELING AND TRANSPORT** and **INSTALLATION**.
- For safety reasons the entire instruction manual should be read before setting in operation the machine/installation, solving failures and executing maintenance.
- We particularly draw your attention to the chapters **SAFETY INSTRUCTIONS** and **WARNINGS** which point out the intended use and unsafe situations that could not be prevented in the design and manufacture of the wrapping machine.
- It is strictly prohibited to tamper with the machine It is prohibited to feed the machine with unforeseen, corrosive or inflammable products since the machine is not the explosion-proof type.
- The duration of guarantee is provided the following are observed: the use for which the machine was designed, built and protected, in addition to recommendations, information - including matters of general knowledge - details plus the safety and health technical limits notified to by the Manufacturer to the User by virtue of the operating use.
- We cannot accept any claim for warranty if non-original spare parts are utilized.
- If the machine is used beyond its operating limits and if the manufacturer's features are altered in any way, such use is considered **improper**. In this case **MANUFACTURER** is relieved of any liability for injury/damage caused to people/property due to failure to comply with these guidelines.
- For all the aforementioned reasons, we recommend that our customers always notify the Service Department.

## SERVICE DEPARTMENT

Please contact, in case of problems:

## SAFETY INSTRUCTIONS



### ATTENTION!

***The following conditions have always to be satisfied, unless otherwise indicated in other instructions in this manual.***

- This wrapping machine has been delivered by FROMM Stretch Wrapping Division and may only be applied for wrapping of pallets / products which meet the requirements as mentioned in the description of the machine in chapter TECHNICAL DATA.  
Any other use of the machine as for the described purpose may cause danger due to damage to the machine and/or the safety of the operator or other persons in the neighbourhood of the machine.
- Read this manual carefully before using the machine, and be aware of the residuals risks which could not be excluded during the development of this machine.
- In any case all the components must be disposed of by scrupulously complying with the corresponding laws in force in the country in which the machine is used, and only by qualified persons who are capable of assessing possible risks.
- Only personnel trained for the purpose may operate the machine
- Use the emergency stop to halt the machine immediately
- Only trained electricians may perform electrical work on the machine
- Don't find yourself close to the carriage when the machine is in operation. Be careful especially in the lowering phase of the carriage. (Use the emergency stop to halt the machine immediately).
- Don't find yourself near the robot when is in operation.  
(Use the emergency stop to halt the machine immediately).
- Don't touch the pallet when the machine is in operation.  
(Use the emergency stop to halt the machine immediately).
- Don't place or insert your hand and fingers between mast and carriage.  
(Use the emergency stop to halt the machine immediately).
- Don't put your hand or fingers in the mast.  
(Use the emergency stop to halt the machine immediately).
- Don't put your hand or fingers near the wheels for the carriage movement.  
(Use the emergency stop to halt the machine immediately).
- Don't put your hand or fingers in the electrical box.  
(Use the emergency stop to halt the machine immediately).
- Don't put your finger in the space between the robot and the floor.  
(Use the emergency stop to halt the machine immediately).
- When installing the machine, as a precaution, always check that the controls and safety systems are correctly mounted and operating efficiently. If any malfunctions are noted, immediately stop the production cycle and ask the authorized technical service to intervene

- Examine the data-plates. If they are in poor condition, replace them with utmost urgency, strictly and directly contacting the authorized technical service or the Manufacturer
- The requirements, as mentioned in chapter **MAINTENANCE INSTRUCTIONS** should be satisfied during adjustment and maintenance activities
- People should not step on to means of transport, unless indicated clearly otherwise
- People should not find themselves above the means of transport
- Do not place tools and components on the machine
- Safety devices should not be bridged and put out of operation
- The manufacturer will only make the machine ready for operation, when the electrical main connection satisfies the standards applicable in the country of delivery
- The supplier will do the training of the operating personnel. If not, the training will have to be done properly by the company that takes care of the installation.
- The machines are designed and implemented conforming to the safety laws in force. Consequently, no intrinsic fire risks are envisaged when the machine is used normally
- As such, the equipment provided against the possibility of **fire outbreaks** inside the company are sufficient for any problems caused by the material used for the process
- In the event a fire breaks out and fire extinguishers are used, it is recommended that extinguishers filled only with CO2 be used, so as not to damage both the equipment on the machine and the wiring system
- In the event of **flooding**, it is compulsory that all the power supplies be disconnected before entering the room in which the machine is installed
- In the event the wrapping machine was subjected to a flooding, contact the Customer technical service of MANUFACTURER
- You are strictly recommended not to work in the machine while wearing unsuitable clothing (unbuttoned, ample garments) or personal objects (bracelets, watches, rings, etc.)



## ADDITIONAL SAFETY INSTRUCTIONS ROBOT FR3xx



### ATTENTION!

***The following conditions have always to be satisfied, unless otherwise indicated in other instructions in this manual.***

- The room in which the machine is housed must not have any shadow areas, annoying bright lights or hazardous stroboscopic effects caused by the lighting supplied by the manufacturer.
- The machine can operate in clear air conditions at ambient temperatures of + 5°C to + 40°C. The machine must be used **EXCLUSIVELY BY QUALIFIED PERSONNEL**.
- Before starting work, the operator must be perfectly familiar with the position and functioning of all the controls and machine features. Daily check all the safety devices on the machine.
- Before starting the working cycle, the operator must ensure that there are no **EXPOSED PERSONS** in the **HAZARDOUS ZONES**.
- The areas where the operator stands must always be kept clear and free of oily residues. Any operations that need to be carried out with some of the safety devices disabled must be performed by one person only, and unauthorised persons may not access the machine during this time.
- IN OBSERVANCE OF Machine Directive 2006/42/EC AND SUBSEQUENT AMENDMENTS AND EN23741, FROMM STRETCH DECLARES THAT THE NOISE EMITTED BY THE MACHINE IN QUESTION FALLS WITHIN THE LIMITS ESTABLISHED BY THE ABOVE MENTIONED REGULATIONS.

- **HAZARDOUS ZONES**

HAZARDOUS ZONE means any zone within and/or in the vicinity of a machine in which the presence of an exposed person constitutes a risk to the safety and health of that person.

- The MACHINE has a number of HAZARDOUS ZONES in which the residual risks have been reduced, but not completely eliminated:

**Risk of getting trapped.**

Never stand in contact with the product to be wrapped, since there is a risk of falling or getting trapped in the film winding zone.

- **OPERATOR STANDING ZONE**

STANDING ZONE means the zone where the OPERATOR MUST STAND during NORMAL MACHINE OPERATION.

Once the robot has been programmed and activated, no further action is required by the operator. Therefore, do not stand in the working area around the product to be wrapped and stabilised.

- **MACHINE STATE:**

STATE means the operating mode (AUTOMATIC, JOG, MANUAL, TIMED STOP, EMERGENCY STOP ...) and the condition of the safety devices on the machine (emergency stop pressed, type of "energy source isolation". Regarding isolation of the energy sources, it will be pointed out when the emergency switch needs to be locked and the power connector disconnected.

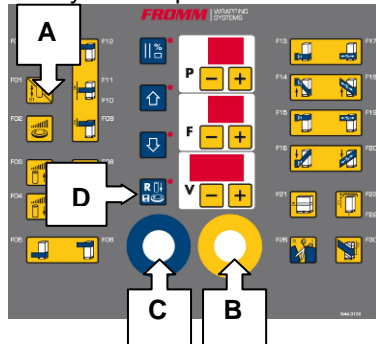
## SAFETY DEVICES



We urge on you again that all safety devices are installed for the safety of the operator etc. and should not be bridged and put out of operation.

Refer to the drawing below for the applied references.

Survey control panel

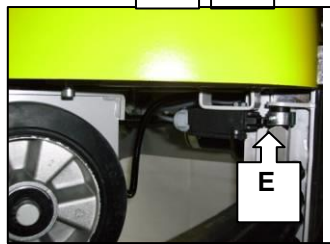


A = Acoustic signal

B = Emergency stop

C = Light On, when the power is On

D = Main switch



E = Crush-proof guard

E =

This is a mobile crush-proof guard, interlocked by means of a micro switch. Any time underlying foreign matter comes into contact with the guard, it inverts the film carriage's motion and causes the machine to stop in phase.



F = Carriage guard

F = **COVER**

Do not remove the fixed guards when the machine is running and always refit them after any maintenance operation



	<b>WARNING: ON PARTICULARLY SMOOTH OR SLIPPERY FLOORS, THE ROBOT MAY STOP WITH A SLIGHT DELAY</b>
	<b>WARNING: DO NOT REMOVE THE SAFETY BUMPER AND ALWAYS REFIT IT AFTER ANY MAINTENANCE OPERATION</b>
	<b>DO NOT REMOVE THE FIXED GUARDS WHEN THE MACHINE IS RUNNING AND ALWAYS REFIT THEM AFTER ANY MAINTENANCE OPERATION</b>

## WARNINGS

- The mean weighed noise level of the machine is less than 80 dBa. It is possible that, depending on the applied film, during wrapping of the pallets / products incidentally a noise level with a maximum of 80 dBa will be measured. Carrying of noise protecting devices is advised.
- One has to reckon with the possibility that the film (roll) contains an electrostatic charge.
- Utmost caution has to be taken with respect to the complete electrical installation. ONLY trained persons may carry out activities to it, after having taken the required safety measures as mentioned in the chapter **SAFETY INSTRUCTIONS**.
- One has to reckon with the European safety requirements and standards if the machine has to be adapted and thus safety measures or protection covers also have to be adapted.
- Touching the electrical equipment will hazard your personal safety.
- Persons who carry out changes in or adaptations (function, operation or principles) to the machine are fully responsible for those changes and/or adaptations.
- All relevant safety measures should be taken when carrying out any activity on the machine, especially during maintenance activities and solving failures.  
Take care that the main switch is switched off (position "0") and locked (If possible), or that the power cable is disconnected in order to prevent other persons in putting in action the machine during your activities.  
All the normally valid safety measures or customs with respect to safety should also be taken during those activities.
- Playing with or around the machine may cause dangerous situations with a machine in operation. This playing is never allowed!



- All other prescriptions and laws with respect to working conditions and safety on the working spot should be observed with this machine.
- An acoustic signal device has been installed in the control cabinet, which will be activated first during a short period, as a warning every time before the machine is starting.

## EXPLANATION IDENTIFICATION STICKER

An identification sticker with the following information has been mounted at the backside of the base-unit.

	WRAPPING SYSTEMS
<input type="text"/>	FROMM Wrapping Systems s.r.l.
<input type="text"/>	Viale del Lavoro, 21
N° <input type="text"/>	37013 Caprino V.se
	Verona - Italia
<input type="text"/> V~	Hz <input type="text"/> KW  A
 <input type="text"/>	Made in EU

- Name of the manufacturer** : FROMM Wrapping Systems s.r.l.
- Type** : Machine type.
- Serialnr.** : Production number of manufacturer.
- Voltage** : Supply voltage.
- Power** : Used power
- Fuse** : 5 Amp
- Year of manufacture** : Year in which the machine has been built by manufacturer.

Besides, the CE-mark has been placed on the identification plate:

### CE-mark

Machine fulfils the applied requirements as mentioned in the CE - machine directives

**2006/42/EC (Directive)**  
**2004/108/EC (Electromagnetic compatibility)**  
**2006/95/EC (Low tension)**

- It is strictly prohibited to remove the identification sticker or to replace it with any other similar one of any type.
- Should the CE mark sticker be damaged for any reason, please notify the MANUFACTURER immediately.

## TECHNICAL DATA

<b>Machine</b>	<ul style="list-style-type: none"> <li>- Maximum speed machine</li> <li>- Maximum speed carriage</li> <li>- Capacity</li> <li>- Operational hours</li> <li>- Sealing height FR3xx</li> <li>- Sealing height FR3xx</li> <li>- Sealing height FR3xx</li> </ul>	95 M/Min 3,4 M/Min max. 20 pallets/hr. 8 hrs/day, 5 days/week minimum of 2000mm / 78.74" minimum of 2500mm / 98.42" minimum of 2800mm / 110.23"
<b>Weight</b>	<ul style="list-style-type: none"> <li>- Total weight FR3xx</li> <li>- Total weight FR3xx</li> <li>- Total weight FR3xx</li> </ul>	approx. 330kg approx. 335kg approx. 345kg
<b>Conditions</b>	<ul style="list-style-type: none"> <li>- Environmental temperature</li> <li>- Environment</li> </ul>	+ 5 to +40°C clean, dry and non-aggressive
<b>Electrical</b>	<ul style="list-style-type: none"> <li>- Power supply</li> <li>- Control voltage</li> <li>- Battery Voltage</li> <li>- Battery</li> <li>- Charging time</li> <li>- Installed power</li> <li>- Protection class</li> </ul>	1 x 230 V 50/60Hz 24 VAC 24 Volt (2 x 12Volt) 90-100 Ah 8 – 10 hours 1 kW / 5 Amp IP 54
<b>Pallet goods</b>	<ul style="list-style-type: none"> <li>- Max. Pallet dimensions (Length x width)</li> <li>- Min. Pallet dimensions (Length x width)</li> <li>- Height with load FR3xx (pallet included)</li> <li>- Height with load FR3xx (pallet included)</li> <li>- Height with load FR3xx (pallet included)</li> <li>- Dimensions of load outside pallet</li> <li>- Top of load</li> </ul>	No Maximum  600 x 600 x 140mm 23.62" x 23.62" x 5,51"  min. 19,69" / max. 86,61"  min. 19,69" / max. 106,29"  min. 19,69" / max. 118.11"  max. 20mm / 0,79" per side flat
<b>Stretch-film</b>	<ul style="list-style-type: none"> <li>- LLDPE Material</li> <li>- Spool core diameter</li> <li>- Outer diameter of spool</li> <li>- Film width</li> </ul>	Max 27µ / 0.0011" 76 mm / 3" Max. 250mm / 9,84" Max. 500mm / 19,69"
<b>Colors</b>	<ul style="list-style-type: none"> <li>- Mast</li> <li>- Chassis</li> <li>- Machine Cover</li> <li>- Film carriage</li> </ul>	: Blue, RAL 5010 : Grey, RAL 9006 : Yellow, RAL 1021 : Yellow, RAL 1021

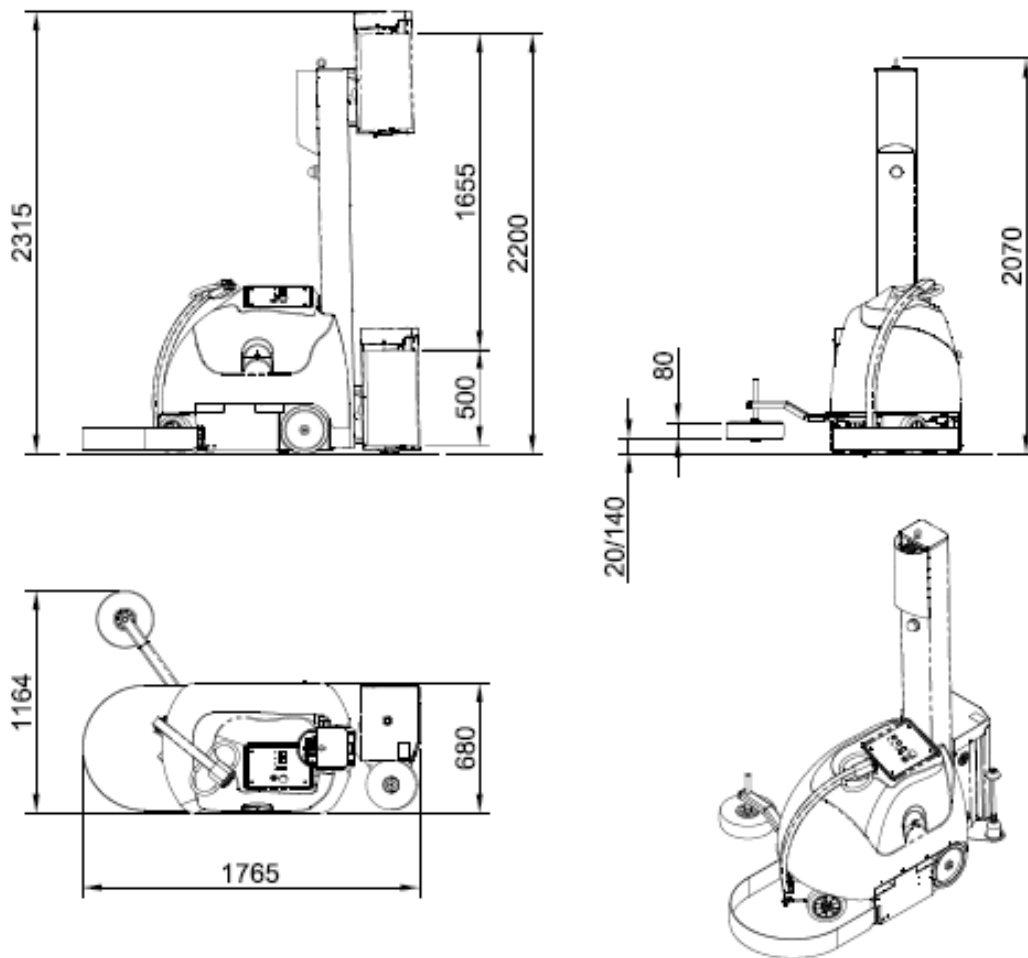
Should the need arise to work with products having a different nature than the above mentioned ones. It is essential that you contact the technical service of MANUFACTURER in order to receive written authorization.



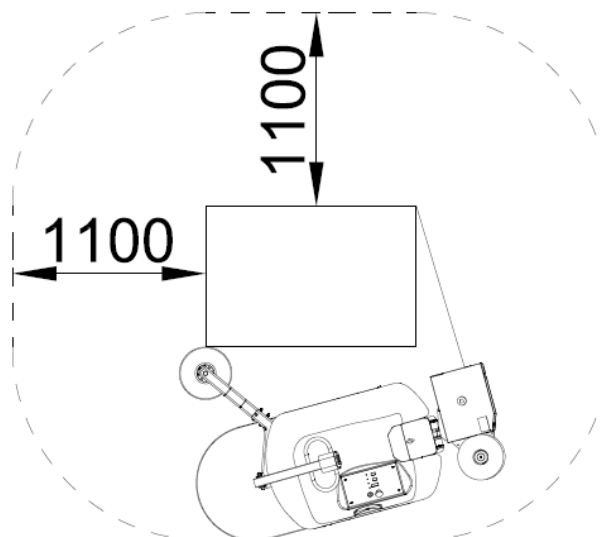
**WARNING : do not use film thicker than 27 microns without consulting the Manufacturer**

## DIMENSIONS FR3xx/FR4xx

Refer to the LAYOUT on this page for the dimensions.









## DIMENSIONS DURING WRAPPING




## EXPLANATION OF PICTOGRAMS

**ATTENTION!!** (FOR EVERYTHING IS VALID, IF APPLIED!)








### WARNINGS

 Fig 1	Figure 1:  DANGER High voltage present.
 Fig 2	Figure 2:  Danger Sign
 Fig 3	Figure 3:  Risk of crushing one's hands
 Fig 4	Figure 4:  Risk of crushing hands and feet
 Fig 5	Figure 5:  Falling hazard
 Fig 6	Figure 6:  Sharp objects

### COMMAND PLATES



 Fig 7	Figure 7:  It is prohibited to pass by within the lifting equipment's ray of action
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## EXPLANATION OF PICTOGRAMS


 Fig 8	Figure 8:  Do not use bare flames and do not smoke
 Fig 9	Figure 9:  Don't access the area while the machine is working
 Fig 10	Figure 10:  Don't remove the SAFETY DEVICES
 Fig 11	Figure 11:  Don't execute any work before taking off the voltage of the machine
 Fig 12	Figure 12:  Truck insertions
 Fig 13	Figure 13:  Lifting points
 Fig 14	Figure 14:  This identifies situations in which <b>THE SUPPLIER</b> must be contacted



## EXPLANATION OF PICTOGRAMS

 Fig 15	Figure 15:  Very important guidelines that must strictly be complied with. Otherwise machine operators could be at risk, the consequence of which would be the voiding of any form of warranty and liability on behalf of <b>FROMM PACKAGING SYSTEMS</b> .
 Fig 16	Figure 16:  Operations that must never be performed.

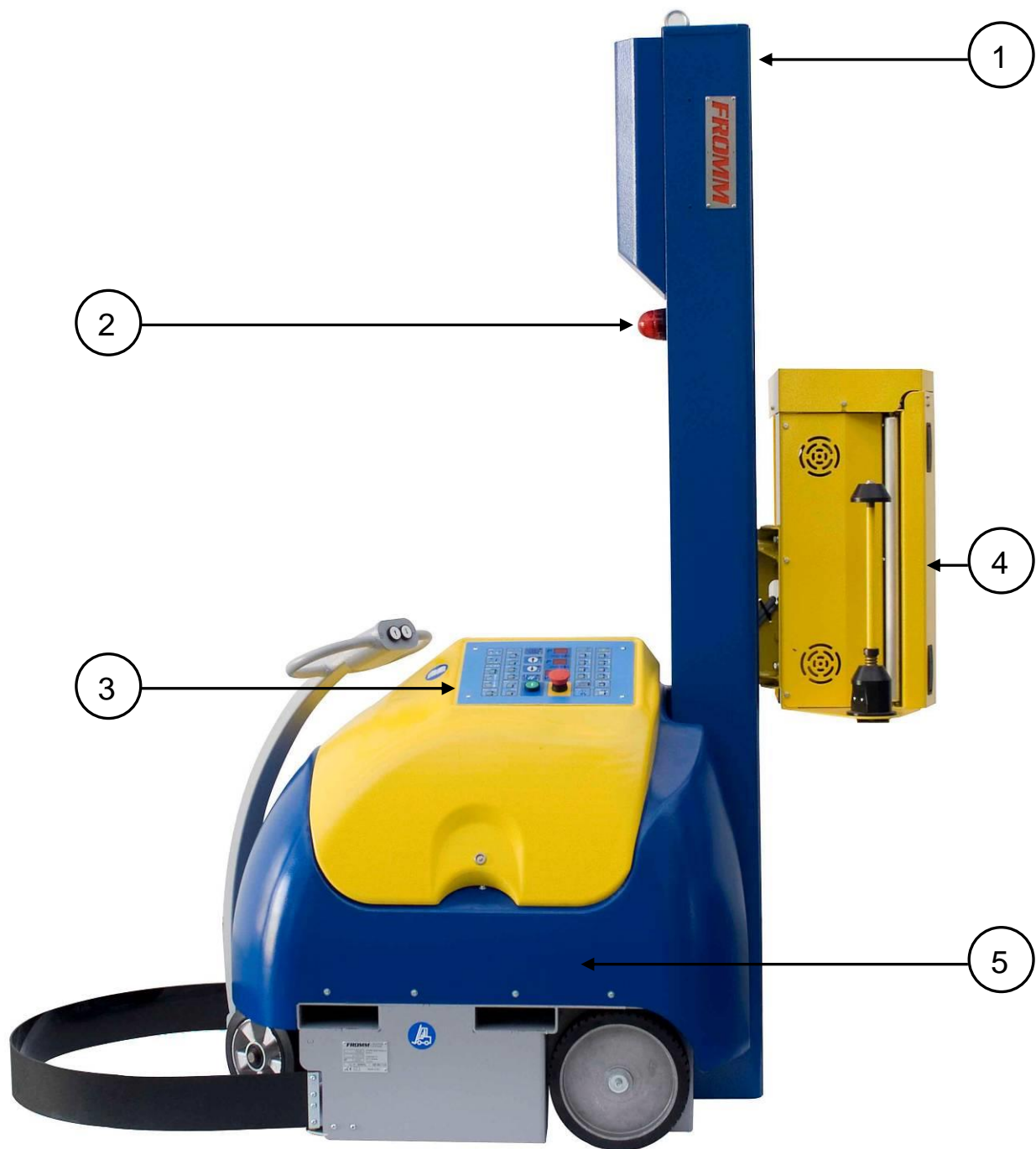
### CE-MARK

 Fig 17	Figure 17:  Machine fulfils the applied requirements as mentioned in the CE-machine directives.
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## MAIN COMPONENTS

The installation as delivered consists of the following parts:

- 1- Mast
- 2- Flash Light
- 3- Control cabinet with control panel
- 4- Film carriage
- 5- Robot cover incl. battery compartment and electronic switch board.



## HANDLING & TRANSPORT



### ATTENTION!

All mentioned activities may only be executed under supervision of qualified personnel from the manufacturer or his representatives!

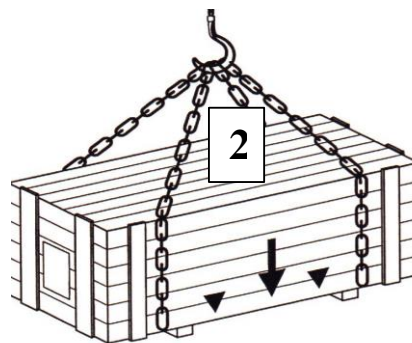
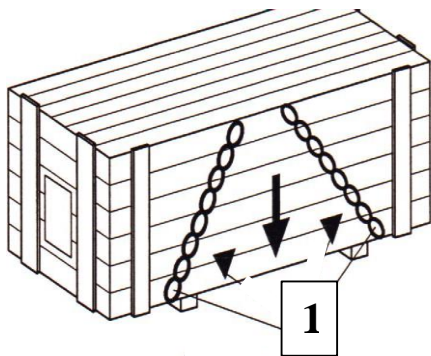
Pay attention that proper hoisting and lifting tools are used for handling of the machine.

The machine is supplied in a wooden crate insulated by plastic air bubble film. It is advisable that two another operators be in attendance on the ground when the machine is moved by means of the mechanical equipment driven by the operator in charge since the size of the machine may prevent a clear view during the various phases of the handling operations.

Depending on weight, dimensions, location of machine on the vehicle, available installation space lifting methods and points suitable for the operations described below must be used, fully observing the current safety and health laws and the Manufacturer's recommendations.

Lifting and handling of packing in a wooden crate by crane

- use a crane and sling of sufficient strength
  - bring the vehicle near to the lifting pallet
  - pass the sling (and/or ropes - chains) around the case in the positions indicated by the external markings (1);
- First check that the case - sling/hook (2) are well secured, then carefully lift the case and place it in the designated area, moving it gently.



## HANDLING & TRANSPORT

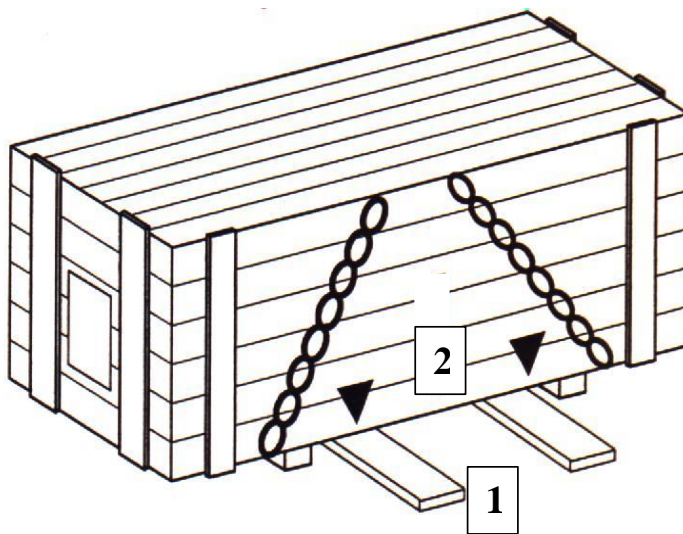


### Lifting and handling of packing in a wooden crate by fork-lift truck

Lifting and transport must be affected by a fork-lift truck suitable to bear the weight of the machine, its accessories and packing.

Always check in advance that sufficient space is available for the operations.

- slide the forks (1) of the truck under the casals support base, in line with the indicator-marks printed (2).
- lift the load after ensuring it is stable, and transport it to the area in which packing is to be removed, avoiding jerks and dangerous cambers.



Following measures have to be taken for transport and storage of the machine:

- One has to take care for a suitable storage environment respectively packaging during long-term storage.

Drag bands etc., if used, in order to attach several parts may never be tightened over vulnerable parts, such as control panel, ventilation grills, etc.).

### Handling the unpacked machine

Should any machine components be shipped together with the machine, handle them adopting all safety precautions



insert the forks of the suitable lifting equipment within the specific guides (1)

1

### Machine storage

The machine and any components packed together with it are protected by a plastic covering that does not guarantee long storage times.

**The machine must never be stacked nor is it capable of supporting external loads.**

## INSTALLATION INSTRUCTION

### ATTENTION!

All mentioned activities may only be executed under supervision of qualified personnel from the manufacturer or his representatives!

FOR EVERYTHING IS VALID: IF APPLIED!

Refer to layout in **SAFETY DEVICES** for mentioned position numbers.

### General guideline

Always check in advance that the minimum conditions for machine placing and operation are observed, in particular: ambient conditions (suitable floor), temperature, humidity, lighting and suitability of the designated area.

Installation in rooms subject to the risks of flooding, explosion and fire is strictly forbidden.

The area necessary for installation of the wrapping machine is the area according to the dimensions on the layout plus enough space for installing and working on the machine.

Installation must be executed by qualified personnel, directly coordinated by the authorized Technical Service, fully observing the instructions that follow, in addition to current safety and health laws.

As a precaution, always check for any damage caused during transport and handling work.

If necessary, contact the Manufacturer directly.

### Temperature

For safety make sure the machine is operating at ambient temperature in the range +10°C to +30°C.

If other values are measured, contact the Authorized Technical Service with utmost urgency.

### Work areas

It is strictly forbidden to locate and/or use the machine if the ambient conditions are liable to cause risks of explosion or inflammability.

Ensure that the following are not present: dust concentration, gas, dangerous fumes and particles, electrostatic fields, excessive electro-magnetic flow, or anything else that might be harmful to persons so exposed or to the efficient running of the machine.

In any event, observe the current safety and health laws.

The machine should be placed on a flat, rigid, vibration-free concrete floor

Never access the high parts of the machine improperly.

### Energy sources

The client must provide a cable suited for the required supply voltage up to the control cabinet, of which the diameter of the conductors can manage the total of the required power as mentioned in chapter **TECHNICAL DATA**

The wrapping machine should preferably be connected to the customer's supply voltage wall socket with a connecting cable with a standard CEE-plug, being fused with a 16A-fuse (slow).

For the correct plug check chapter **TECHNICAL DATA**

A main switch preceding the plug has to be provided by the customer, if necessary.

The mains supply must satisfy the applicable standards, such as permitted voltage fluctuations, ripple-generation, reduction of high harmonics, etc.

## INSTALLATION INSTRUCTION



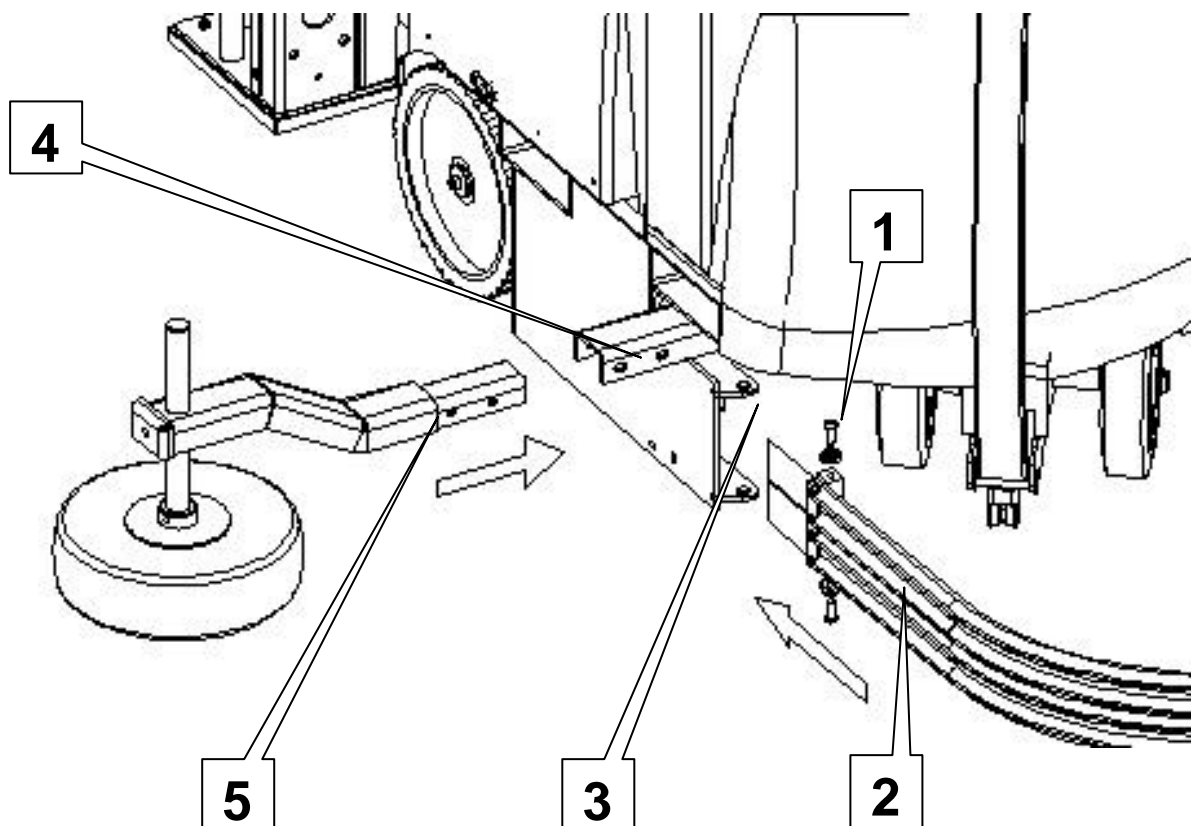
### ATTENTION!

All mentioned activities may only be executed under supervision of qualified personnel from the manufacturer or his representatives!

During maintenance, repair or adjustment operations, the emergency buttons on the control panel must always be activated and the battery disconnected.

FOR EVERYTHING IS VALID: IF APPLIED!

- **Safety bumper unit:**  
Undo the screws (1), fit the bumper unit (2) as shown in the drawing and then screw the screws (1) back in through the holes (3).
- **Feeler wheel unit:**  
Undo the screws (4), fit the wheel unit (5) as shown in the drawing and then screw the screws (4) back in.



## ASSEMBLY SEQUENCE



### 1. Check the functionality of the EMERGENCY SWITCH (Fig 1)



Fig 1

The machine is equipped with a safety device consisting of a series of electromechanical contacts that deactivate the motor when the emergency button is pressed.

The machine safety devices are activated with the emergency button that converges in this device, which by means of a REDUNDANT and AUTOMATIC CONTROL function on the intermediate relays on which the emergency switches rest, activates a safety circuit that stops the main motor.

This assures that the machine stops immediately from all points of operating condition.

**C2 Carriage:** delivers film during wrapping adjusting the film application tension. The tension is adjusted by a roller fitted with a mechanical brake which can be manually adjusted with a knob on the carriage.

### 2. Carriage C2

With this carriage, the tension with which the film is applied to the pallet can be adjusted.

The carriage **C2** is composed of a rubber-coated roller (1) and a roller (2) with mechanical brake.

Operating the knob (3) the braking action is adjusted and, consequently, the film tension.

Upon starting, the film must be loaded on to the carriage. Insert the roll (5) on to the centering pin (4).

Run the film between the rollers (1) & (2), following the path shown in Figure A. Diagram A is also shown on the carriage. The symbol with the triangles identifies the side of the film on which the adhesive (if present) is applied.

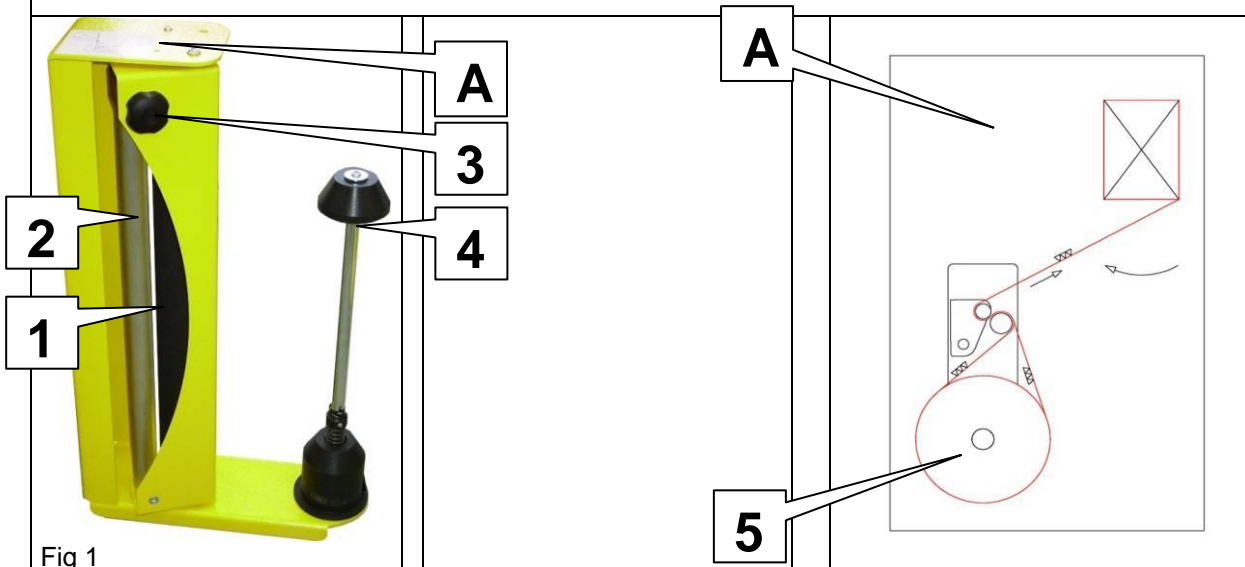


Fig 1



## ASSEMBLY SEQUENCE



**C4 Carriage:** delivers film during wrapping adjusting the film application tension. The tension is adjusted by a roller fitted with an electromagnetic brake.

The tension can be adjusted via the machine operating panel.

### 3. Carriage C4

The film carriage 2, is composed from a rubber-coated roller (1) in combination with electromagnetic brake and idle rollers (2).

Adjusting the OP, the braking action is adjusted and, consequently, the film tension.

Upon starting, the film must be loaded onto the carriage. Slide the roll (3) onto the core holder of the carriage. Feed the film between the rollers (1) & (2), following the path shown in Figure A. Diagram A is also shown on the carriage.

The symbol with the triangles identifies the side of the film on which the adhesive (if present) is applied.

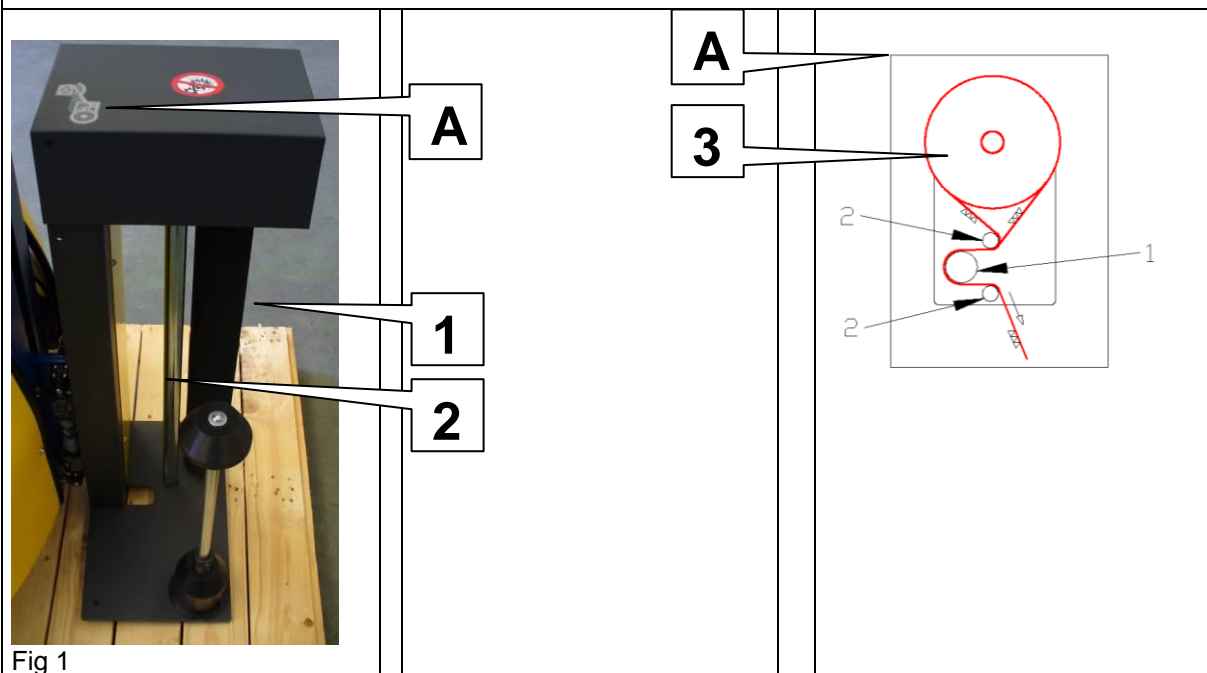


Fig 1



## ASSEMBLY SEQUENCE



### C6 Carriage: Carriage with one motor pre-stretch system.

The film can be pre-stretched by means of a mechanical control generated by a pair of gears (fixed mechanical ratio). The application tension is manually adjusted and controlled by a sensor which measures its value.

The tension can be adjusted via the machine operating panel.

#### 4. Carriage C6

With this carriage version, the tension with which the film is applied to the pallet can be adjusted via the Operating panel

This carriage allows pre-stretching the film according to fixed ratios determined by interchangeable gears.

The pre-stretch ratios usable are:

- 150% (1 metre of film is pre-stretched to a length of 2.5 metres).
- 200% (1 metre of film is pre-stretched to a length of 3.0 metres).
- 250% (1 metre of film is pre-stretched to a length of 3.5 metres).

The carriage is fitted with a sensor **(4)** connected to the out-feed roller, which measures the tension of the film applied to the pallet, and the Operating Panel (OP) to adjust this value.

A specific circuit board integrates the signal of the sensor **(4)** and the adjustment set with the OP in order to dynamically control the speed of the pre-stretch roller drive motor and thus the film tension.

The carriage is fitted with a gear-motor which drives three rubber-coated rollers **(1)**, **(2)** and **(3)** by means of toothed gearing. The different transmission ratios generate different speeds of the rollers **(1)**, **(2)** and **(3)** creating the pre-stretch action.

The carriage also features a set of 3 idle rollers which are used to increase the winding angle of the film on the rubber-coated rollers.

Upon starting, the film must be loaded onto the carriage.

Slide the roll **(5)** onto the centring pin **(6)**. Open the door and run the film between the rollers following the path shown in Figure A. Diagram A is also shown on the carriage. Close the door making sure that it is properly locked.

The symbol with the triangles identifies the side of the film on which the adhesive (if present) is applied.

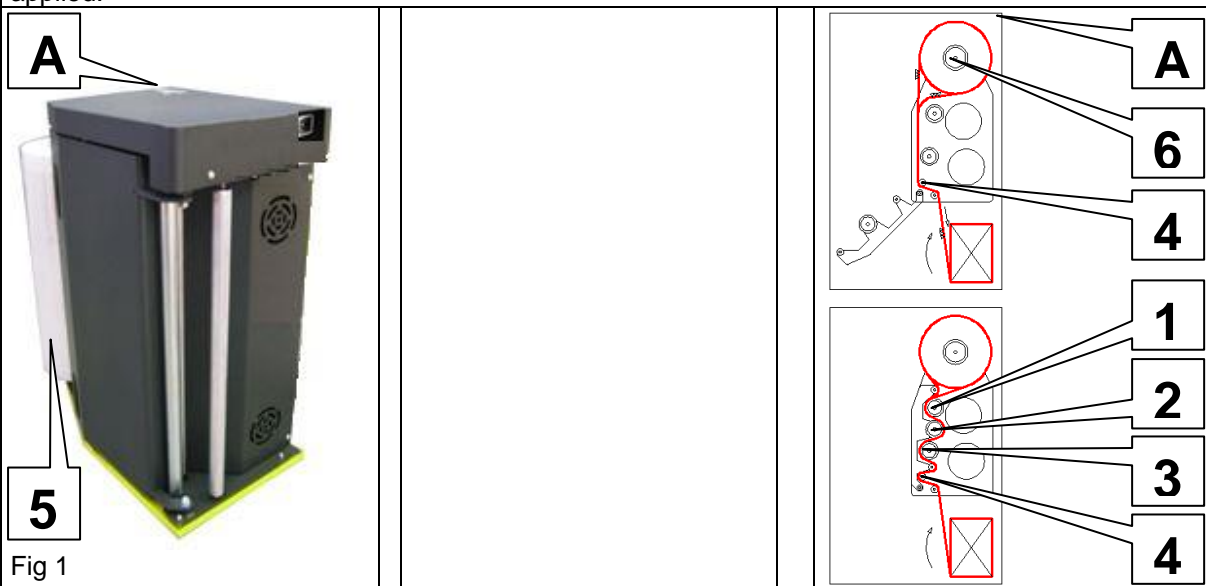


Fig 1

## ASSEMBLY SEQUENCE



**C7 Carriage:** Film carriage with a two motor pre stretch system.

Pre-Stretch can be changed by adjusting the settings on the operating panel

The application tension is manually adjusted and controlled by a sensor which measures its value.

### 5. Carriage C7

With this carriage version, the pre-stretch and film tension can be adjusted via the operating panel

The pre-stretch can be variable adjusted from 150% up to 400% pre-stretch.

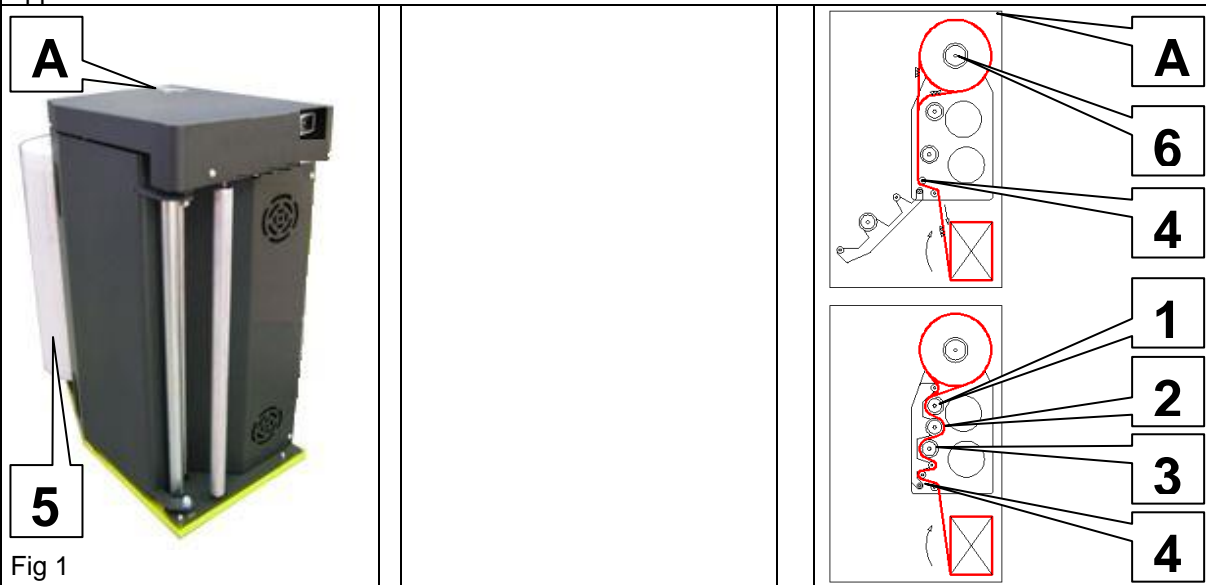
The carriage is fitted with a sensor **(4)** connected to the out-feed roller, which measures the tension of the film applied to the pallet, and the Operating Panel (OP) to adjust this value.

A specific circuit board integrates the signal of the sensor **(4)** and the adjustment set with the OP in order to dynamically control the speed of the pre-stretch roller drive motor and thus the film tension.

Upon starting, the film must be loaded onto the carriage.

Slide the roll **(5)** onto the centring pin **(6)**. Open the door and run the film between the rollers following the path shown in Figure A. Diagram A is also shown on the carriage. Close the door making sure that it is properly locked.

The symbol with the triangles identifies the side of the film on which the adhesive (if present) is applied.

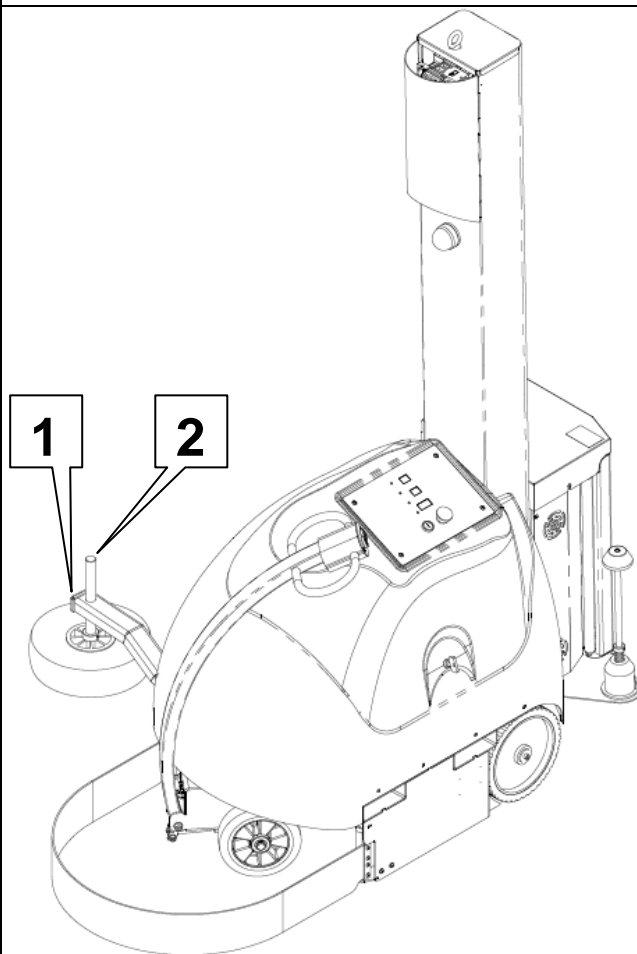


**ASSEMBLY SEQUENCE****6. Adjustment reading arm**

The reading arm, on which the wheel that follows the outline of the product to be wrapped is mounted, is subject to two adjustments:

a) Wheel height

Undo the screw (1), raise or lower the wheel pin (2) as shown in the drawing, position the wheel so that it runs around the pallet without depressions and/or protrusions, then tighten the screw (1).



**ASSEMBLY SEQUENCE****7. Steering force**

The arm steering or closure is controlled by a spring (3) coupled to a bracket (4) secured to the steering arm.

The bracket (4) can be set in different positions (5) to adjust the spring tension.

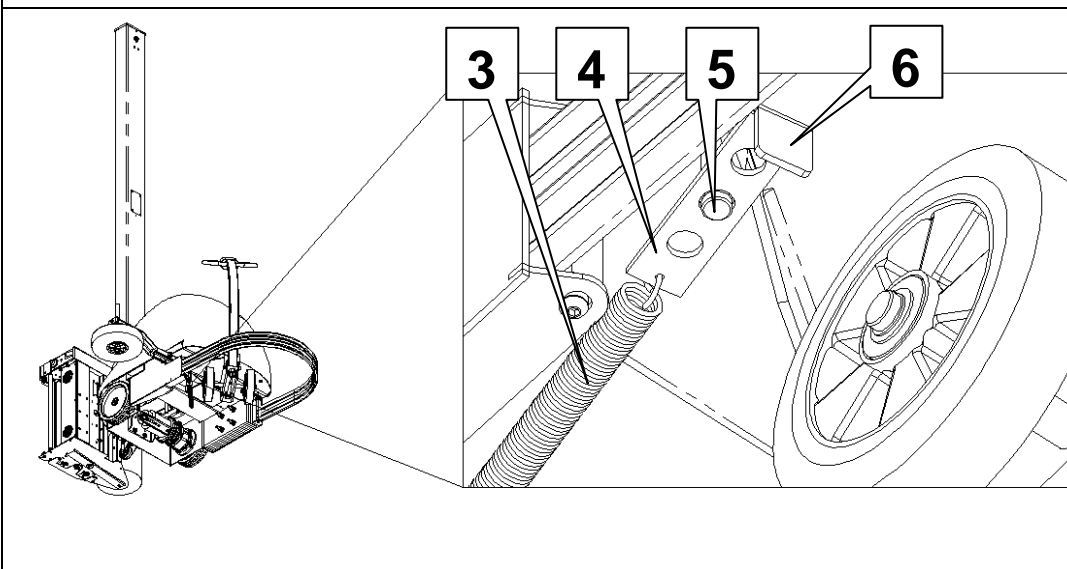
To change the position, release the bracket (4) pulling it by the tab (6) and reset it in the desired position.

A more rigid spring results in:

- Greater steering force
- Greater driving arm rigidity during manual movements
- The risk of lightweight pallets moving on slippery flooring.

A less rigid spring results in:

- Reduced steering force
- Reduced driving arm rigidity during manual movements
- The risk that the robot does not correctly follow the outline of the pallet during high-speed wrapping.



## ASSEMBLY SEQUENCE



### 8. Mast H.2500 – H.2800

(Fig 1) Lift the mast (1) coupling it with a rope. Put the mast in the support (2) of the base, screw the bolts inside the carter. Remove the rope. Connect the plug.

(Fig 2) 1.Power supply driver carriage (red wire (P or +) and black wire (M or -)

2.Power supply carriage motor up/down (wire "U2" and "V2")

3.Carriage signals

4.Cable for red light and for phonic wheel

5.Power supply robot

(Fig 3) At the end, final result

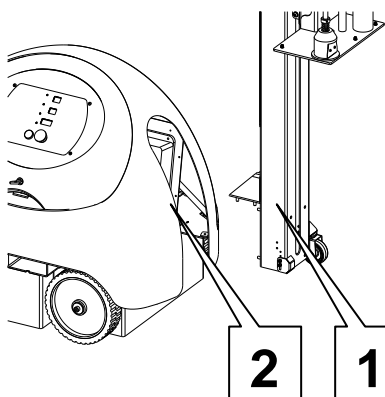


Fig 1

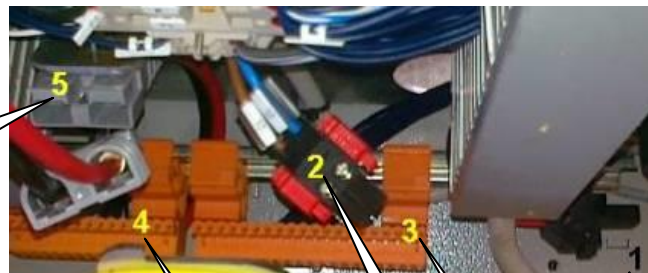


Fig 2

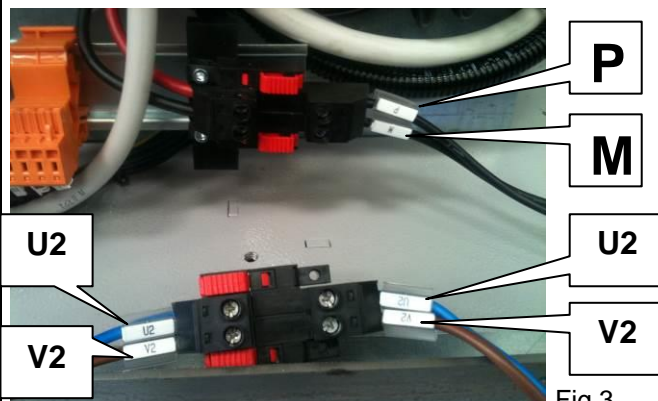
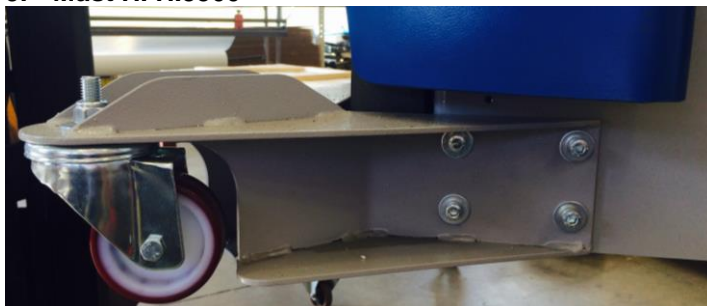


Fig 3

### 9. Mast H. H.3500



**Important: Add the wheels**

## FIRST SWITCH ON ROBOT



1. Connect batteries plug;
2. Release the emergency button;
3. Press "Reset";

Robot will show you:



P= A4 software for Robot  
 F= 34 version of the software V3.4  
 V= 567 rev b567

This happens when you switch on the program (the microprocessor shows you the image up).



During the switch on of the robot (at the end of the charger the program software) or if you press emergency, the display shows Error E3. It is enough to press reset.

E3= "Restart after shutdown or a power cut".

### **ATTENTION!**

After the first installation

Follow procedure below before starting the machine

- Wait 5 seconds and then make the first run in manual mode
- If the machine is running, follow procedure below

After installation or maintenance of the machine follow procedure below to check the efficiency of the safety devices, such as:

- ✓ **The interlocking of the mobile shock proof guard**
- ✓ **Emergency button**

*Check for the efficiency of the interlocked shockproof flexible guard and emergency button*

- start the machine
- activate the interlocked operator guard
- start the machine
- press the emergency mushroom-head button

**Check that the machine stops within a few fractions of a second**

## CONTROL PANEL

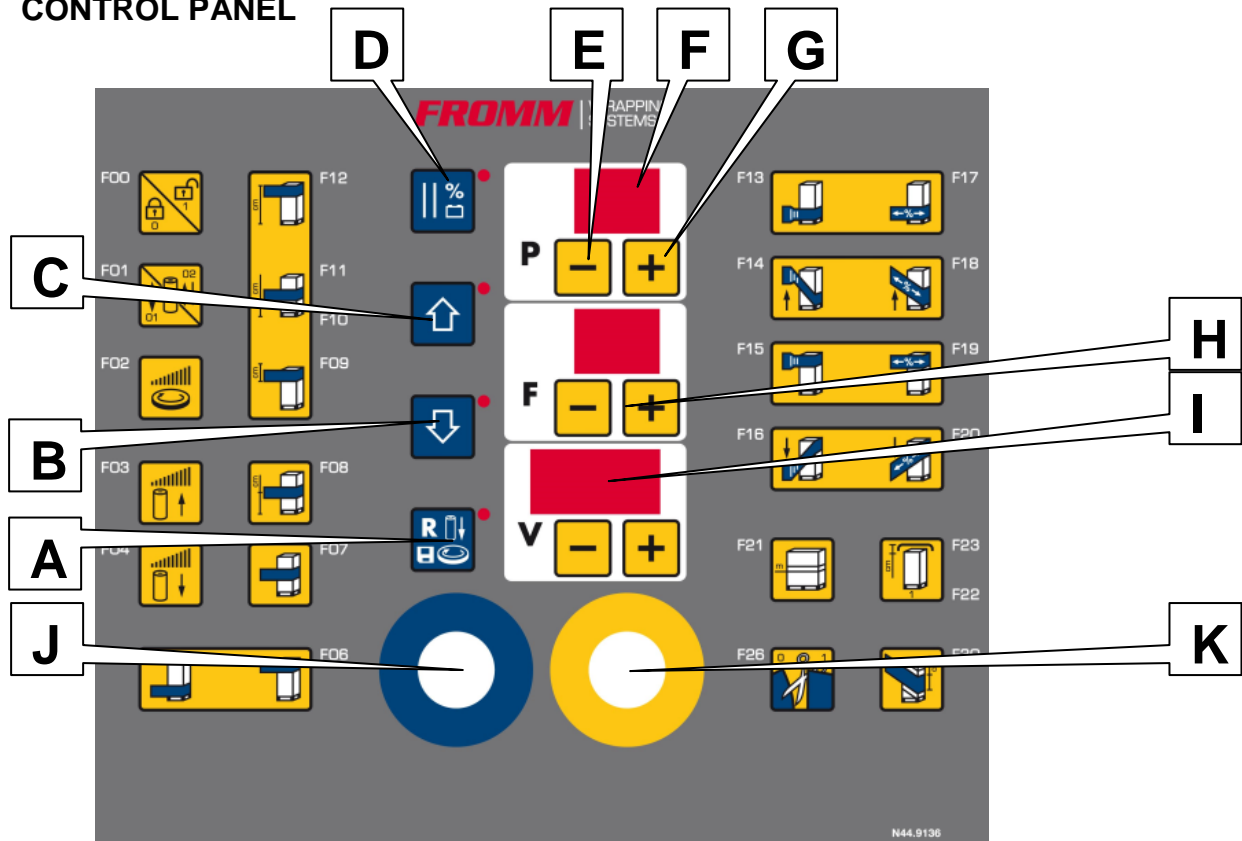


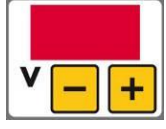
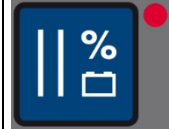
Figure 1: Console FR33x Generation V03 (Operating panel TWO)

- A = **Board on - Cycle or alarm reset (if present)**  
Short click on the reset button. Error acknowledged the machine continues for the position where it has been stopped.  
Click 1 sec. Error acknowledged, the machine resets the program and start to zero
- B = Hold-down button for manual carriage descent
- C = Hold-down button for manual carriage ascent
- D = **STOP button for cycle pause; the robot decelerates and stops; the cycle can be resumed from the same point**  
LED On = Battery had to be charged; Hold-down button = % Battery charger
- E = Value decrease button
- F = 2-digit display for selected program
- G = Value increase button
- H = 2-digit display for functions (parameters) of the selected program
- I = 3-digit display for the value of the function displayed
- J = **START button for programmed cycle**
- K = **EMERGENCY BUTTON**



## ALARMS & ERRORS

This alarms can be solve by the customer.

		<p><b>The V display is used for showing the alarms, noted at the same time by the flashing LED next to the key RESET:</b></p> <p>The right side LED will ONLY flash if there is a fault in the non-volatile parameters memory; if the alarm remains after turning on and off the device several times, it is necessary to substitute the EEPROM. Meanwhile the machine functions normally, however parameters cannot be saved.</p>
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### E01- EMERGENCY BUMPER PRESSED

Problem suggestion	Possible solution
<ul style="list-style-type: none"> <li>- An obstacle has stopped running the robot</li> </ul>	<ul style="list-style-type: none"> <li>- Remove the obstacle in front of the robot and press reset.</li> </ul>

### E09- STOP AFTER FILM BREAKAGE OR END THE FILM

Problem suggestion	Possible solution
<ul style="list-style-type: none"> <li>- The film is finished or broken</li> </ul>	<ul style="list-style-type: none"> <li>- Change reel or reattach the film</li> </ul>

### E16- CARRIAGE DOOR OPEN

Problem suggestion	Possible solution
<ul style="list-style-type: none"> <li>- The door is open</li> </ul>	<ul style="list-style-type: none"> <li>- Check if the door is properly closed</li> </ul>

### E32- DEAD BATTERY AT REST

Problem suggestion	Possible solution
<ul style="list-style-type: none"> <li>- The battery is discharge and the robot is at rest</li> </ul>	<ul style="list-style-type: none"> <li>- Recharge the battery.</li> </ul>

### E33- DEAD BATTERY IN TRACTION

Problem suggestion	Possible solution
<ul style="list-style-type: none"> <li>- The battery is discharge and the robot is in traction</li> </ul>	<ul style="list-style-type: none"> <li>- Recharge the battery.</li> </ul>



Should the problem persist, contact the Customer After-Sales Service of MANUFACTURER

**For the rest of the alarms, please contact the Customer After-Sales-Service of Manufacture.**



## INSERTING THE FILM

Place the new film reel (direction of unwinding depends on the side on which the cling is found).

Guide the film through the brake system according to the drawing on top of the carriage.

### Arrows on the inside of the roll means:

#### CI = CLING INSIDE

The film has to be guided through the brake system in this way when applying a "differential cling"-film with the cling on the inside of the film when unwinding the film from the film reel.

### Arrows on the outside of the roll means:

#### CO = CLING OUTSIDE

The film has to be guided through the brake system in this way when applying a "differential cling"-film with the cling on the outside of the film when unwinding the film from the film reel.

The way of guiding the film through the brake system when applying a "double sided cling"-film is basically not relevant.

<b>Stretchfilm</b>	- LLDPE Material	Max 27 µ / 0,000106"
	- Spool core diameter	76,2 mm / 3"
	- Outer diameter of spool	Max. 250 mm
	- Film width	Max. 500 mm

## INDICATIONS

### START-UP CYCLE ACTIVE

An acoustic signal device has been installed in the control cabinet, which will be activated first during some seconds as a warning every time before the AUTOMATIC PROGRAM is executed.

The operator will thus be able to leave the danger zone before the machine starts to operate.

The machine will only start to operate after this period has been elapsed.

### RESET MACHINE

The automatic program of the wrapping machine is interrupted and a failure indication will be displayed on the console, when the emergency stop is activated or any other failure is detected.

Wrapping can only be started again after pushing reset on the control panel. Thus, the failure is reset and the control voltage is activated again, assuming that the mains switch still has been switched on. The cause of the failure has to be solved first, of course.

## BASIC OPERATING INSTRUCTIONS



Left = 1  
Right = 2

Using the buttons (1) and (2), move the robot alongside the product resting the reference wheel against it and make sure that the robot is positioned parallel with one of the sides of the pallet to be wrapped at a distance between 30 and 50 cm.

From the opposite side of the stretch carriage extract the end of the film and attach it to the bottom of the product to be wrapped.

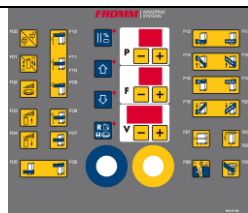







Fig 1

On the control panel (Fig 1) set the desired number of extra wraps around the bottom and top and press the green START button. The wrapping operation will automatically be carried out. (see section WRAPPING PROGRAMS)

**Up to 100 program can be created. To copy the parameters of an existing program to a virgin program, select the source program and, holding down the reset button, select the target program. Release the reset button to copy all the parameters.**

**NB: The virgin target program must always be released (F00=1)**

Button	Explanation
	F00 This parameter is used to prevent cycle parameters from being overwritten.
	F01 Film carriage movement : 01 Upwards and Downwards : Only upwards or only downwards : Not available with the Robot
	F02 Robot rotation speed : Selectable from 50 to 95 Mt/min;
	F03 Carriage ascent speed : Selectable from 0 to 100
	F04 Carriage down speed : Selectable from 0 to 100










## BASIC OPERATING INSTRUCTIONS



	F05      Number of bottom wraps
	F06      Number of top wraps
	F07      Number of intermediate wraps F08
	F08      Height at which the wraps are performed F07, The height or reference point is the centre of the film (As the roll is 50 cm high, a value less than 25 cm cannot be set)
	F09      Strip of film placed over the top of the product
	F10      Height from where the wrapping cycle <b><u>begins</u></b> , Below part of the film coil is the reference point for this setting.
	F11      Height at which the wrapping cycle <b><u>ends</u></b> , Below part of the film coil is the reference point for this setting.
	F12      Height at which the carriage ascent stops. Top part of the film coil is the reference point for this setting. ( By setting this parameter the photocell for reading pallet height will be disabled,
	F13      Film tension during <b><u>bottom wraps</u></b> of the wrapping cycle : Selectable from 0 to 100
	F14      Film tension during <b><u>carriage movement up</u></b> of the wrapping cycle : Selectable from 0 to 100

## BASIC OPERATING INSTRUCTIONS



	F15 Film tension during <u>Top wraps</u> of the wrapping cycle : Selectable from 0 to 100
	F16 Film tension during <u>carriage movement down</u> of the wrapping cycle : Selectable from 0 to 100
	F17 Film "pre-stretch settings during <u>bottom wraps</u> of the wrapping cycle : Selectable from 120 to 400 <b>(Only in combination with carriage 7, two motor pre-stretch)</b>
	F18 Film "pre-stretch settings during <u>carriage movement up</u> of the wrapping cycle : Selectable from 120 to 400 <b>(Only in combination with carriage 7, two motor pre-stretch)</b>
	F19 Film "pre-stretch settings during <u>Top wraps</u> of the wrapping cycle : Selectable from 120 to 400 <b>(Only in combination with carriage 7, two motor pre-stretch)</b>
	F20 Film "pre-stretch settings during <u>carriage movement down</u> of the wrapping cycle : Selectable from 120 to 400 <b>(Only in combination with carriage 7, two motor pre-stretch)</b>
	F21 Special pallet cycle for big pallets (product perimeter) (default value = 4.0 m)
	F22 Cycle with covering film : 1 Enabled : 0 Disabled
	F23 Descend distance with activation of parameter F22 : Small top-sheets, low value : Big top-sheets, higher value

## BASIC OPERATING INSTRUCTIONS



	<p>F24 Thickness of film being used : Selectable from 10 to 35 micron <b>(Only in combination with carriage 6 &amp; 7, one &amp; two motors pre-stretch with optional weighing kit fitted)</b></p> <p>Entering the thickness of the film within the range 10-35 micron means that the end of the cycle the amount of film used for the packaging can be determined.</p>
	<p>F25 Manual forward speed : Selectable from 0 to 40</p>
	<p>F26 Cycle with cutting (opt) : 0 Disabled : 1 Enabled</p>
	<p>F27 Cutting time after the phase : Selectable from 0 to 200 hundredths of a sec.</p> <p>Sets the position where film cutting and tensioning takes place during cutting</p>
	<p>F28 Film outfeed time after cutting : Selectable from 0 to 200 hundredths of a sec.</p> <p>Sets the amount of film that is fed out from the carriage after the film has been cut</p> <p>F29 Film outfeed time with shooting slow beginning of the cycle</p>
	<p>F30 Carriage ascent / descent step : Selectable from 0 to 50 step 1 : 0 Disabled &gt;0 Enabled</p> <p>This function is used to enable the carriage ascent / descent by steps; the value set corresponds with the ascent distance for each turn (in cm).</p> <p>N.B.: the value set in F21 must be the same as the perimeter of the product</p>
	<p>F31 Number step wraps (with F30)</p>
	<p>F32 Tension step wraps (with F30)</p>
	<p>F33 Pre-stretch step wraps (with F30)</p>

## BASIC OPERATING INSTRUCTIONS



		<b>Keyboard block:</b> Blocking panel Software Version 3.6 In this sequence (3 step): F + "keep pressed" F - "keep pressed" Reset	
		<b>Keyboard release:</b> Blocking panel Software Version 3.6 In this sequence (3 step): F + "keep pressed" F - "keep pressed" Reset	
		<b>Loading of parameters:</b> Takes place automatically by selecting the desired Program.	
		<b>Saving of parameters:</b> The virgin target programme must always be released (F00=1) Press the RESET button for more than 5 seconds. The LED will start to flash rapidly to indicate that the Parameters have been saved.	
		Up to 100 programmes can be created: To copy the parameters of an existing program to an virgin program, select the source program, <u>next</u> : Hold down the reset button and select the target program (using P+/-). After this has been done, release the reset button and the OP will copy all the parameters.  NB: The virgin target programme must always be released (F00=1)	
		<b>Automatic saving of last program used:</b> When the machine is turned on again, the parameters from the last program selected and started will be loaded.	
		The LED next to the MANUAL CARRIAGE RISE indicates the manual movement upward	
		The LED next to the MANUAL CARRIAGE indicates the manual movement downward	

## STARTING AND STOPPING OF THE ROBOT WRAPPING CYCLE

### Automatic run mode with settable cycles

Activate this run mode, after the machine has been turned on and the safety conditions have been complied with, by pressing the START pushbutton provided that the corresponding work cycle has been set via the pushbutton panel.

- Check for the charge condition of the battery on the control panel
- If the battery was charged beforehand, disconnect the battery charge cable from the socket
- Check that the reel is present on the corresponding reel-holding shaft and that the film's path is correct as shown in the diagram
- Check for the position of the feeler wheel and adjust it, if need be, along the sliding shaft using the lock screw
- Grasp the handlebar and press the forward start pushbutton
- Set the feeler wheel against the product arranged on the pallet
- Manually remove the lead edge of the film from the reel and attach to one of the pallet's corners
- Set the wrapping cycles on the control panel according to the modes outlined in
- Press the START pushbutton
- when the wrapping cycle is finished, manually cut the film and set the adhesive side against the pallet
- the pallet is ready to be picked up

**ATT.** The acoustic signal is active during approximately 3 seconds before the automatic wrapping cycle will be executed. The machine will only start to operate after this period has been elapsed.

**N.B.** The automatic wrapping cycle is only started, if the start conditions are fulfilled.  
A failure indication is displayed, if not all start conditions are fulfilled.  
The start conditions for the automatic wrapping cycle are:

- One of the WRAPPING PROGRAMS should be selected;
- Photocell "pallet height" should be activated;
- Emergency stop not activated;
- The interlocking of the mobile flexible strap;
- No failure detected;

### Immediate stop

This stop is commanded as follows:

- By pressing the stop pushbutton
- By pressing the emergency mushroom-head button
- By pressure exerted on the front flexible strap
- By the presence of an alarm that commands the immediate stop.

This stop mode envisages:

- The immediate stop of machine

**NOTE:** with this type of stop the machine can restart from the operating point in which it had stopped by, pressing the start button.

## WRAPPING PROGRAMS

### F01=02

#### 1. Single wrapping

After the pre-set number of bottom wraps have been completed, while the machine is running, the film carriage will go upwards. When the film carriage has arrived on top and the pre-set number of top wraps has been completed, the machine will halt. The film can be cut now on top.

After pushing start again the machine restarts with an descend only program.

### F01=01

#### 2. Double wrapping

The complete (double) wrapping program will be executed with this function. After completing the pre-set number of bottom wraps the film carriage will go upwards, then it halts to lay the top wraps, while the machine keeps running, and then it will go downwards again. Another number of pre-set bottom wraps is laid, after which the machine will halt. Now the film can be cut and the pallet can be transported.

### F22=1

#### 3. Double wrapping + TS

After the pre-set number of bottom wraps has been completed, while the machine is running, the film carriage will go upwards. When the film carriage has arrived on top it first, lays approx. 1 top wrap, move downwards and wait until the top sheet has been laid.

*To change the decrease distance alter the DIGITAL VALUE-SETTING*

*With + or – in the chapter BASIC OPERATION INSTRUCTIONS*

After pushing start the film carriage will go upwards again and wrapping in the top-sheet, after this the film carriage will go downwards again. Another number of pre-set bottom wraps is laid, after which the machine will halt. Now the film can be cut and the pallet can be transported

### F07

#### 4. Stiffed wrapping

The complete (double) wrapping program will be executed with this function. After completing the pre-set number of bottom wraps the film carriage will go upwards. At a certain pre indicated height.

*To change this parameter alter the DIGITAL VALUE-SETTING With + or –*

*in the chapter BASIC OPERATION INSTRUCTIONS.* The film carriage will halt and puts extra layers of film on the pallet then it halts to lay the top wraps, while the machine keeps running, then it will go downwards again. Another number of pre-set bottom wraps is laid, after which the machine will halt. Now the film can be cut and the pallet can be transported

### F10 & F11

#### 5. Pre set height

The complete (double) wrapping program will be executed with this function. *The starting height of the film-carriage can be adjusted,*

*by altering the DIGITAL VALUE-SETTING With + or – in the chapter BASIC OPERATION INSTRUCTIONS.*

After pushing start the film-carriage will go up until the pre-installed height. Then the film-carriage will halt to give the opportunity to fix the stretch-film to pallet. After pushing start again the machine will complete the pre-set number of bottom wraps, the film carriage will go upwards. then it halts to lay the top wraps, while the machine keeps running, after this it will go downwards again. Another number of pre-set bottom wraps is laid, at the pre fixed starting height, after which the machine will halt. Now the film can be cut and the pallet can be transported

### F12

#### 6. Double wrapping

See program 2 with one exception. In this program you can pre set the pallet-height with by changing the parameters on the control cabinet. This program is special made for goods witch cannot be read by the photoelectric sensor.



## POSSIBLE ERRORS AT THE FIRST TIME INSTALLATION!

Problem suggestion	Possible solution
<ul style="list-style-type: none"> <li>- The Robot shows the error <b>E01</b> (Emergency bumper pressed)</li> </ul>	<ul style="list-style-type: none"> <li>- The micro switch under the robot is not positioned in the correct way <b>Fig 1</b>. The tip of the micro switch has to be positioned at the center of the cam. To fix the micro switch to the robot.</li> </ul>
<ul style="list-style-type: none"> <li>- The Robot shows the error <b>E08</b> (Encoder block, the carriage is not moving)</li> </ul>	<ul style="list-style-type: none"> <li>- Check all the connections (<b>Fig 2a e Fig 2b</b>)</li> </ul>
<ul style="list-style-type: none"> <li>- The charging cycle does not start and the message "<b>bat</b>" is displayed</li> </ul>	<ul style="list-style-type: none"> <li>- Check the connection to the battery and the polarity (<b>Fig 3</b>)</li> </ul>
<div data-bbox="209 750 520 981" data-label="Image"> </div> <p data-bbox="197 1008 256 1037">Fig 1</p> <div data-bbox="587 757 911 981" data-label="Image"> </div> <p data-bbox="587 1008 662 1037">Fig 2a</p> <div data-bbox="587 1066 906 1256" data-label="Image"> </div> <p data-bbox="587 1249 662 1279">Fig 2b</p>	<div data-bbox="959 757 1401 1339" data-label="Image"> </div> <p data-bbox="959 1344 1023 1373">Fig 3</p>



Should the problem persist, contact the Customer After-Sales Service of MANUFACTURER

## BATTERY CHARGER / BATTERY “Version 04”

### GENERAL INFORMATION AND WARNINGS

- Electronic automatic battery charger with microprocessor suitable for any battery type;
- Fully automatic charging cycle with electronic setting: protected against overload, short-circuit at clamps and reversed polarity;
- Never disconnect the battery while charging: this could cause sparks;
- Never use the equipment in the rain, in areas used for washing or in damp areas;
- Before starting to charge, make sure the voltage of the equipment suits the voltage of the battery, that the charging current suits the capacity of the battery and that the selected charging curve (for lead-acid batteries or airtight gel batteries) is correct for the type of battery to be charged. In addition, make sure the rated input voltage of the charger suits the available supply voltage and the system is equipped with grounding;
- If necessary, replace the fuse with another of the same type and value as indicated on the rating plate;
- Use battery chargers only in well ventilated areas;
- Pay attention to any remarks of the battery manufacturer.

### For lead-acid batteries with liquid electrolyte:

- Control the water level after each charging process;
- Refill with distilled water only;
- Caution! The gases generated during charging are explosive. Do not smoke in the vicinity of the batteries. When working with cables and electrical equipment, avoid open flames and sparks;
- Attention: use protective glasses and gloves during battery maintenance. Battery acid causes injuries. In case of contact with battery acid, wash the affected parts with a lot of fresh water and consult a doctor if necessary.

### INSTRUCTIONS MANUAL CHARGER

You must read this manual carefully and follow the instructions when charging the batteries or starting up vehicles.

### MARS SERIES DESCRIPTION

The high-frequency battery chargers MARS-SERIES are designed for use in industrial environments. Particular attention was paid to meeting the needs different market applications require.

The battery chargers MARS-SERIES comply with the following European Directives:

89/336 EEC (electromagnetic compatibility)

72/23 EEC (safety of electrical equipment)

### Installation

Use the battery charger inside an environment with the features that can warrant user safety and correct operations for the device. It has to be: dry, ventilated and not dusty.

According to its protection degree IP, the battery charger, cannot be used under rain or water sprays.

The battery charger must not be installed in unsafe areas for the presence of other activities, like:

- chemical industries and wood industries: risk of flammable material.
- ceramics industries, due to the great quantity of dust.
- food and meat transformation industries, due to the great quantity of water and humidity.

In these cases it is necessary to install the battery charger in protected areas.

### Recommendations:

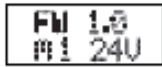
Do not close the input and the output for forced ventilation in order to allow a correct cooling of the unit.

For the same reason, do not store materials near the device and do not put liquid containers on the battery charger.

### Operation, commands, and views.

The chargers MARS-SERIES come with a backlit LCD display and three touch-sensitive buttons (touch) that enable the data exchange between the device and the user.

At power on, the display lights up and gives information on the model and software release housed on the microprocessor inside the charger. Ex:



Firmware 1.0 (software release 1.0) on MARS 2415 model.

It then provides compared to the options chosen. Ex:

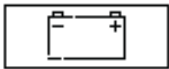


Voltage 15V, 12A current



Pb battery liquid, end of charge equalized.

Then you see the flashing battery symbol which means that the device is not connected to a battery.



When you connect a battery, the battery charger automatically begins to charge according to the options. The state of charge is symbolized by a progressive scale and displayed numerically in%.



The charger can be stopped by tapping the start/stop button on the left for 3 seconds. Pressing it again for 3 seconds the charger starts again and so on. The middle button is used to view, in sequence, the battery voltage, amps provided instantly and the Ah loaded up to that point. The right button turns on the power supply.

### FRONT BUTTON COMANDS



**V key:** The left button "V" sets the voltage between 12V and 24V. Press again to alternate between the two allowed values on the panel. When the charger is started (automatically) to load, becomes key Start / Stop. In this case, keeping the finger pressed for 3 seconds, the charger stops and allows you to disconnect the battery. After 5 seconds, if the battery is still attached, starts to load it.

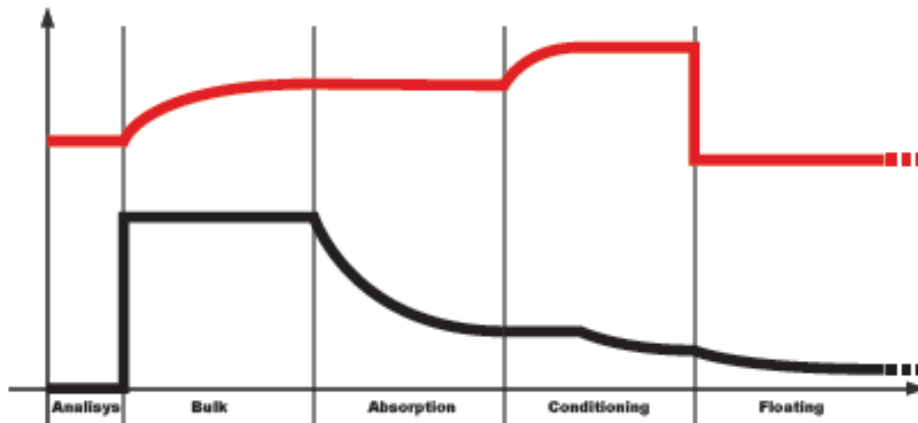
**MODE:** The middle button "MODE" sets the mode of the device among those permitted and described in the instruction manual.

**A button:** The button on the right "A" sets the current model of the allowed values for the model. Pressures repeated successively bring the allowed values on the panel. When the charger has been programmed as a power supply (Power Supply) assumes the function of the Start / Stop button. In this case a pressure of 3 seconds ago from the power supply, the next press 3 seconds it stops and so away. In this operating mode, the output current depends on the load and arrival at the maximum of size (15A MARS 2415 50A MARS 2450, MARS 24100 100A).

## CHARGING CURVES

The charging process is divided into 5 phases:

- 1 - Analysis.** At battery connection, there is the analysis of the battery.
- 2 - Bulk.** Phase of initial charge at constant current.
- 3 - Absorption.** Charging, constant voltage which decreases the current drawn from the battery.
- 4 - Conditioning.** Optional step of charging the batteries.
- 5 - Floating.** Charging in the final buffer, an optional alternative to equalization.



## CONNECTION TO THE MAINS

For connection to the mains use the outgoing cable from the unit to the end of which will be sufficient to connect a suitable plug together with an earth terminal.

Avoid the use of extension cords.

The socket outlet to which you connect the battery charger must be proportionate to its power and shall have built-in fuses or other protections.

Check the rating plate data with respect to:

V - (Supply voltage), KVA - (power) and A - (current)

### Ensure correct earthing.

The replacement of the power supply cable must be carried out by competent and authorized personnel.

## CONNECTION TO THE BATTERY

For the connection to the battery, there are two cables coming out of one positive (+) marked in red.

Be careful not to reverse the cables connected to the battery terminals: to this end, we recommend the use of special, one direction connectors, supplied by the manufacturer.

## PROTECTION DEVICES

The MARS Series chargers are protected from :

- Reverse polarity, with a fuse on the DC circuit;
- Accidental breakage, with a fuse on the power circuit;
- Overload and short circuit on the output, via electronic protection;
- Charger overheating due to special environmental conditions, with thermal protection device that excreting pause the charger and restores only when the temperature of its components back to normal.

## MAINTENANCE

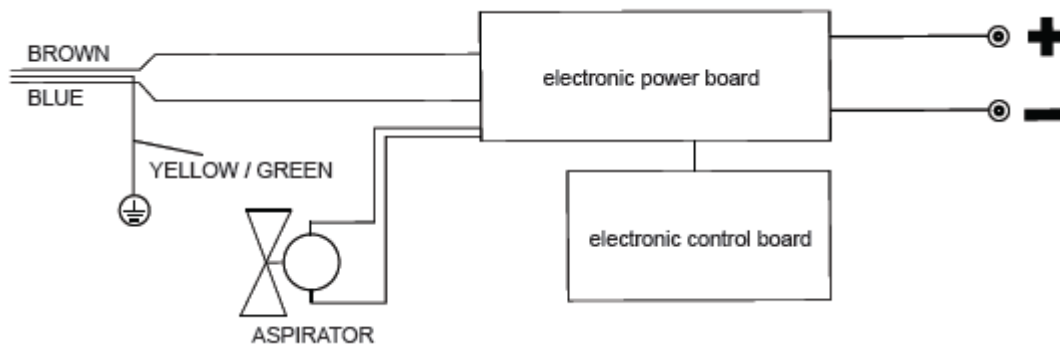
**Maintenance must be carried out only by specialized and authorized personnel.**

Control inspection and verification depend on the environment and on the operating conditions.

**Before beginning any inspections or maintenance, make sure that the battery and the power supply are disconnected.**

We recommend that all internal electrical connections are periodically checked to make sure that the wires and the lugs do not show signs of overheating due to a poor contact. Remove all accumulated dust.

## WIRING DIAGRAM



## TRAXION BATTERY

[www.exide.com](http://www.exide.com)

12ELEM.2EPZS100 24VAH5 (100Mah)

12/2 EPzS 120, 24 V, 120 Ah/5h (120Mah)

Dimensions: 580 x 215 x 390 L x W x H (Battery housing has to be an steel box)

## AGM BATTERY

[www.exide.com](http://www.exide.com)

AGM ZENITH BATTERY 2x 12V 106Ah

Dimensions: 307 x 169 x 237 L x W x H

### Do you want to change the battery?

The connections of the traxion battery are the same those of the AGM battery.

When you remove the AGM batteries, also remove the bridge between them.

So, in the robot you have only 2 cables (+ and -) and the clamps are ok also for the traxion battery.

When change type of battery you have to change the charging curve.

FOR THIS OPERATION PLEASE CONTACT FROMM DISTRIBUTOR.

## MAINTENANCE INSTRUCTIONS FOR OPERATORS



### SAFETY!

- First switch off the main switch and lock it before carrying out maintenance on the installation.
- Take care, that other persons cannot put the installation in action.
- Take care, that the protection covers, etc. are remounted when putting the installation in action again.

The installation will have a long operational life due to preventive maintenance. This means, that the various parts of the installation have to be monitored on a weekly, monthly, semi-annually or annually schedule.

The operational lifetime is influenced by the environmental conditions. The indicated maintenance frequency is valid for normal operation conditions (8 hrs per day, 20° C, clean environment). One is advised to increase the maintenance frequency under more severe conditions. Keep rotating parts free from dirt.

### REMAINDER OF THE FILM

The machine has to be cleaned every day

Never use solvents to clean the machine. To remove dust or particles deposited during the size changeover operations, never use compressed air: only use rags and aspirators.

Check if any film and packaging remainder are present in the brake system and remove it.

## MAINTENANCE INSTRUCTIONS FOR OPERATORS



### DAILY

Particular attention must be given to the charging of the Robot battery in order to ensure a long lifetime. The electronic control unit also incorporates the battery charger which operates under a tight control of the main electronic control unit.

The frequency with which the battery charger must be charged depends on the machine. The most important rules to preserve battery life are:

- Do not leave the batteries half charged or fully discharged for a long period.
- Charge the batteries when the operating panel indicates that the battery is discharged. Extended use when batteries are discharged can cause irreparable damage.

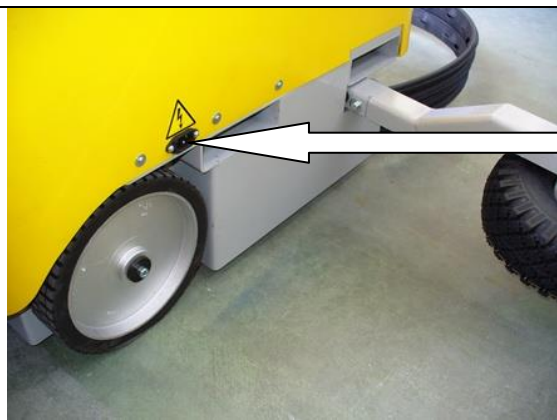


Figure 1

How to recharge:  
Connect the tension cable to the machine (Fig 1) and next to the electrical socket. Leave the Robot under charging.



Figure 1

After connecting the plug the process of charging will start in a few seconds. If the charging will be interrupted, the charging will re-start from the initial point of charging, when the connection is re-stored.

On the display: 100% indicates that the charging has been finished with success.

For any other reporting refer to the technical manual of the charger.

### WEEKLY

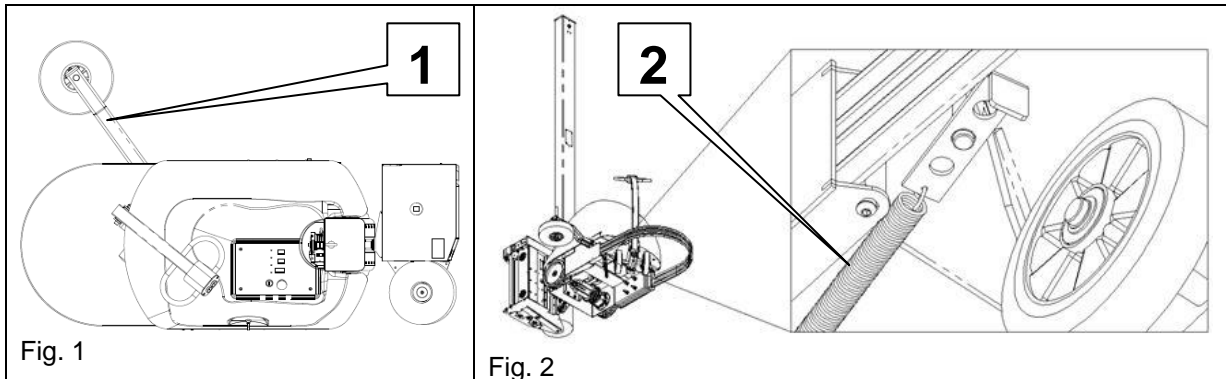
Cleaning. Using only isopropyl alcohol and a non-stringy cloth, thoroughly clean off any trace of dirt from all the working and transport surfaces of the machine, as dirt may cause surface friction and sliding problems. Where appropriate use only a cloth soaked in hot water.



## MAINTENANCE INSTRUCTIONS FOR OPERATORS

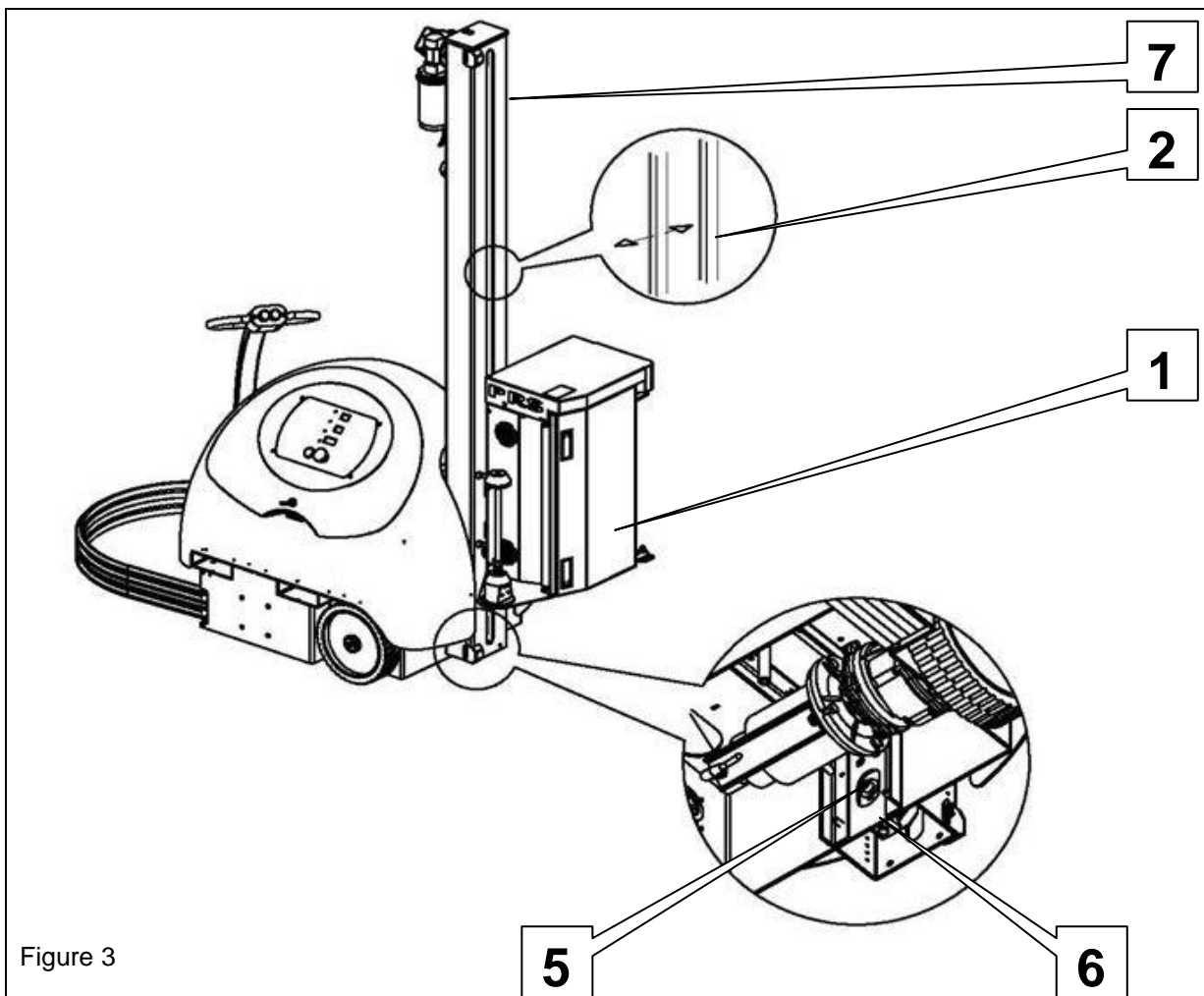


### HALF YEARLY



Check that the feeder wheel arm (1) always returns in HOME position. If not replace the spring.

Check the status for wear and tear of drive and guide wheels and the rubber coated roller of the roll-holder carriage; if necessary replace them.





**MAINTENANCE SCHEME**

MAINTENANCE FREQUENCY							
	8 hr	40 hr	100 hr	200 hr	500 hr	1000 hr	2000 hr
Daily cleaning	X						
Cleaning eye of photocell			X				
Shaft chain				4			
Bearings						X	
Friction discs						X	
Proximity and limit switches						X	
Electrical system							X
Sliding wheels							X
Support wheels							X

The numbers in the maintenance scheme refer to lubricants, which are to be applied in the table with lubricants (hereunder).

The symbol "X" in the maintenance scheme refers to remarks concerning the maintenance of or checking on the relevant part or system.

**LUBRICANTS**

No.	LUBRICANT					
	SHELL	BP	ESSO	MOBIL OIL	TEXACO	
1	OMALA 220	ENERGOL GR-XP 220	SPARTAN EP 220	MOBILGEAR 630	MEROPA 220	
2	OMALA 680	ENERGOL GR-XP 680	SPARTAN EP 680	MOBILGEAR 636	MEROPA 680	
3	TONNA T68	MACCURAT 68	FEBIS K 68 EP220	VACTA.4	WAX LUBRICANT X68	
4	ALVANIA R	ENERGREASE L2	BEACON 2	MOBILUX 2	MULTIFAK EP2	
5	TELLUS 46	HPL 46	NUTCO H46	DTE 26	RANDO HD46	
6	TORCULA 32	ENERGOL RD-E 80	AROX EP 56	ALMOBIL 1	ARIES 32	
7	TELLUS 15				RANDO HDZ 15	
8	RETINAX WB				STARPLEX PREMIUM 1 (depending on the application)	

## **MANUFACTURER**

FROMM Wrapping Systems S.r.l.  
Viale del Lavoro, 21  
37013 Caprino Veronese (VR)  
Italia

Tel. +39 0452057300  
Fax +39 0452057373

P.IVA 04146150232

[www.fromm-stretch.com](http://www.fromm-stretch.com)  
[info@fromm-stretch.com](mailto:info@fromm-stretch.com)

## **DOCUMENTATION**

For the spare parts, check the separately delivered spare-parts booklet.

Or download directly from our website:

**<http://www.fromm-stretch.com>**

Or contact your Fromm Distributor.

# CE-Declaration of Conformity

(CE machine directive 2006/42/EC - Annex IIA)

Manufacturer **FROMM Wrapping Systems S.r.l.**  
**Viale del Lavoro, 21**  
**37013 Caprino Veronese (VR)**  
**Italia**

Declare under our responsibility that the product

Model: **FR3xx/FR4xx**

Item number: **32.22x.xxx**

Serial number: **04.xxxxx**

Production year **2019**

Type of machinery **Pallet Stretch wrapping machine**

Following the provisions of directive:  
**2006/42/EC** (Directive)  
**2014/30/UE** (Electromagnetic compatibility)

Harmonized standards, national standards and other normative documents refer to Legislative Decree 17/2010 point 7.

**EN 12100 : 2010**  
**EN 60204-1 : 2006**

Technical file at: **FROMM Wrapping Systems S.r.l.**  
**Viale del Lavoro, 21**  
**37013 Caprino Veronese (VR)**  
**Italia**

Written in: Caprino Veronese (VR)  
Date: 2019

Name: Sig. Fromm Reinhard  
Function: Legale Rappresentante



A handwritten signature in blue ink, appearing to read 'Fromm', is written over a horizontal line.

## **WARRANTEE CONDITIONS**

### **FROMM Distributor to End-user.**

Warranty over a period of 12 months, using the machine in operation 8 hours a day, 40 hours a week. The warranty includes all deficiencies clearly resulting from poor manufacturing or faulty materials.

#### **The warranty excludes:**

- a) wearing parts.
- b) deficiencies resulting from improper stocking, incorrect handling and use as well as from using strapping / stretch film qualities not recommended by FROMM.
- c) deficiencies resulting from improper repair work made by the customer.

Warranty lapses as soon as the installation is not maintained according to supplied maintenance- and operating instructions.

The warranty concerns the parts to be replaced, inclusive the necessary repair hours.

Damage claims as a result of production shutdowns and claims for damage to persons and to property resulting from warranty deficiencies cannot be asserted by the customer.

### **Maintenance costs**

Ask your local distributor / supplier for the maintenance cost per year / service period.

Service will be provided according FROMM service conditions / contracts.

**SERVICE LOGBOOK**

Service / Maintenance executed	
Date:	
Engineer:	

Service / Maintenance executed	
Date:	
Engineer:	

Service / Maintenance executed	
Date:	
Engineer:	

Service / Maintenance executed	
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Service / Maintenance executed	
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**SERVICE LOGBOOK**

Service / Maintenance executed	
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