

# User manual



*Machine* : *Semi-automatic pallet wrapper*  
*Type* : *Turntable*  
*Model* : *Matco A400*  
*Year of manufacture* : *2018*

*Serial number:*

Version 1.0

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# 1 Safety

## 1.1 Safe use

The following symbols are used to warn against dangers and possible sources of danger. Become familiar with them! Not paying attention to a warning can result in personal injury and/or damage to the equipment or other equipment.



**Watch out:**

Not observing this can result in a fatal accident, personal injury or damage to equipment.



**Watch out:**

Voltage. Not observing this can result in a fatal accident, personal injury or damage to equipment.



**Watch out:**

Danger: rotating parts



**Watch out:**

Danger of entering a hazardous area.

## 1.2 Qualified personnel

“Qualified personnel” is defined here as personnel with thorough knowledge of equipment and of working safely with and maintaining of the equipment. Qualified personnel is physically capable of carrying out the required tasks, is familiar with all relevant safety regulations and is trained in the safe installation, operation and/or maintenance of the equipment. It's the responsibility of the company that uses the equipment to ensure that the personnel meets these requirements.

### **1.3 Accident prevention**

- Use of the machine by unauthorised persons is prohibited.
- Personnel under the influence of medicine that influences reaction time or who are incapable of operating this equipment for physical reasons are not allowed to use the equipment.
- Protective hoods must be checked before the machine is switched on, they are not allowed to be loose or be removed.
- Turn off the machinery before carrying out cleaning and/or repair work.
- If you have to remove a safety element for installation, maintenance or for repair, then the safety element must be reapplied immediately after terminating the work.
- Keep parts of the body and clothing away from rotating parts. Do not wear any loose clothing or ties when using, or carrying out maintenance, to machines with rotating parts. Take off watches, rings, necklaces and other jewellery. Cover or tie long hair back before doing any work with or to the machine.
- Before using the machine you must first study the manual.
- In a humid environment you may only use equipment of a specific safety element class.
- Do not use the equipment in an explosive environment.
- Only use the machine in a properly ventilated space.

**Dangerous situations can occur if the previous measures aren't observed.**

## 2 Use

### 2.1 Intended use

The winder will from now on simply be referred to as machine and may only be used for winding the appropriate products that meet the data as mentioned in the description. In case of doubt, ask the manufacturer for permission.

Any other use of the machine than the described may result in danger regarding damage to the machine and/or for the safety of the operator or for those in the proximity of the machine.

Before operating the machine, resolving failures and carrying out maintenance, read the whole manual with respect to safety.

Before using, storing and installing this machine, you have to at least read chapter 4 installation.

We mainly draw attention to paragraph 1 Safety, which refers to the intended use and to unsafe situations that could not be avoided in the design and manufacture of the machine.

### 2.2 Improper use

The machinery may not be used under the following circumstances:

- In imperfect condition.
- In a dangerously explosive environment (unless the machine is intended for this).
- When using unsuitable materials and auxiliaries.
- Without taking account of the values under “Technical data”.
- In a humid environment.

The following materials may not be processed in the machinery:

- Dangerously explosive and inflammable materials.
- Erosive and corrosive materials.
- Food (unless the machine is intended for this).

### 2.3 Scope

The machinery is intended for industrial use.

### 2.4 Residual dangers

Everything was done constructively to protect the user against possible dangers. However, several residual dangers cannot be avoided. The user must take account of the following:

### ***Danger of a hazardous area***

When applying products to the machine it is possible that a hazardous area is entered.



**Watch out: No access for unauthorised persons!**  
Danger of entering a hazardous area.

## ***2.5 Regarding this manual***

This manual is only valid in combination with other documentation of the user manual. For special use, this manual may be supplemented with extra specifications and/or supplements. The images only show the essential parts of the machinery.

## ***2.6 Images and parts of the machinery***

The images on the following pages clarify the operation, installation and maintenance of important parts. These subjects are individually described in the next chapters or in a separate manual.

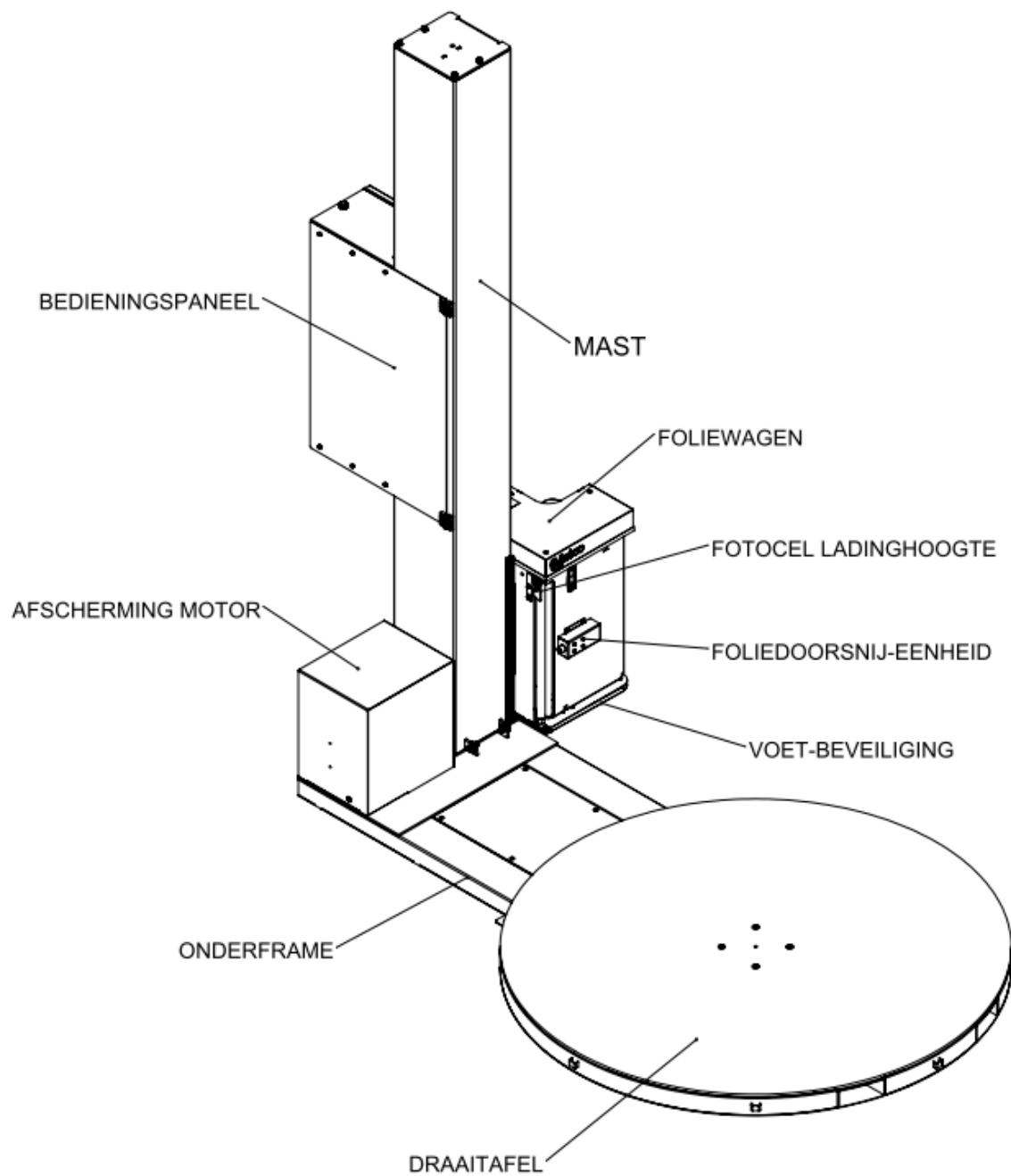
## 3 Technical details

### 3.1 Essential components



**Please note:**

The machine may not be used if protective hoods aren't present



### 3.2 Description

The Matco A400 is a simple pallet wrapper of which safety, ease of use and a robust industrial design are keywords. The machine is equipped with a powered pre-stretch system, a foil carriage with 'simple foil feed system' and a foil puncture system. Due to the analogue sensor with angle compensation set-up you save a maximum amount of foil. The machine consists of A-components, making this machine extremely maintenance poor. The Matco A400 has a capacity of 30 pallets per hour. See the blueprint on the next page for the machinery's measurements.

#### MACHINE

Rotational speed rotation arm, maximum	3 - 12 rpm
Clear height	minimum 3,000 mm
Total weight	approx. 500 kg
Operational temperature	+0 to +45°C
Environment	clean, dry, non-corrosive

#### ELECTRIC

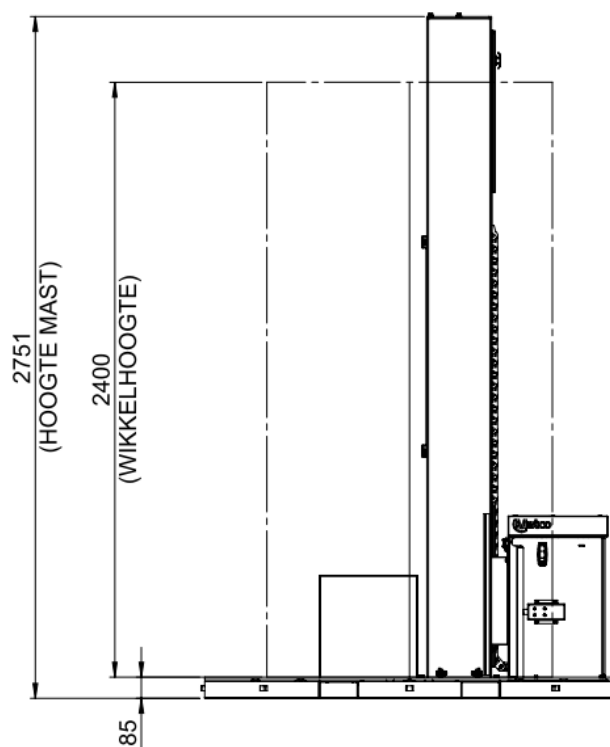
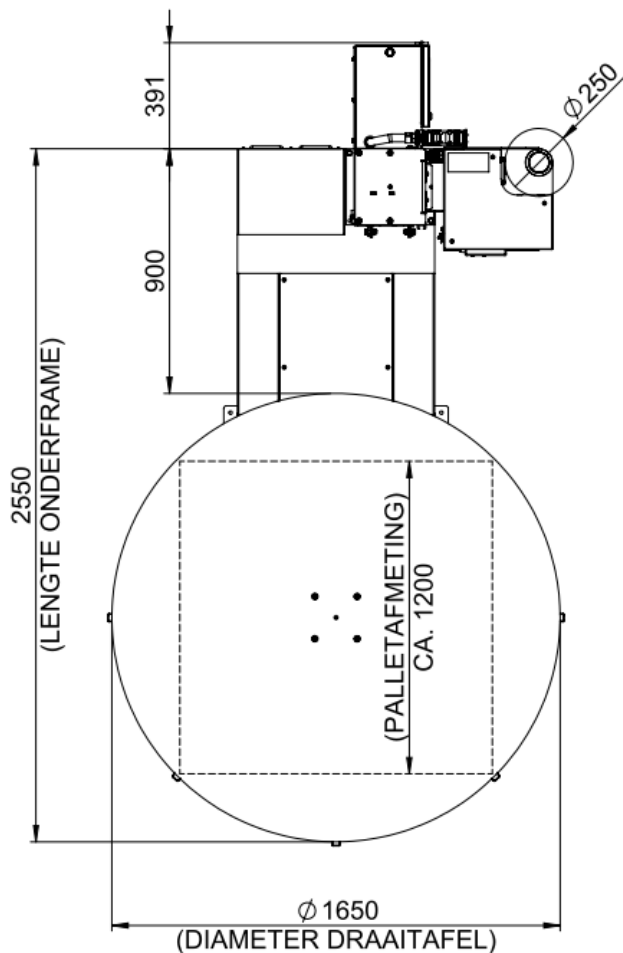
Connection	1x230 VAC - 50 Hz, with safety ground
Operating voltage	24 V DC
Installed power	approx. 1.1 kW
Insulation class	IP 22

#### PALLET

Pallet measurements (L x W x H)	Max. 1200x1000x144 mm
Loaded height (incl. pallet)	min. 500 mm / Max. 2500 mm
Load outside pallet	50 mm maximum per side
Weight loaded pallet turntable Ø 1650mm	min. 200 kg / Max. 1,650 kg
Weight loaded pallet turntable Ø 2000mm	min. 200 kg / Max. 2,000 kg
Loading top	flat



### 3.3 Measurements



## 4 Installing



### **Watch out:**

Only allow qualified personnel to carry out the following tasks. Observe all safety regulations from this manual and from all other relevant documentation.

### **4.1 Unpacking**

Unpack carefully and check for transport damage. Store pallet, attachment and material for possible later transportation or remove as waste in accordance with the applicable instructions.

Only lift with a suitable floor transport device (pallet jack or fork-lift truck).

### **4.2 Transport**

- For weight, see “Technical data”. Only use suitable lifting devices.
- When moving the machine the present adjustable feet must be off the ground. If the machine doesn't need to be moved, then the adjustable feet must always provide support on the ground.
- Protect with suitable packaging against damage, moisture and dust.
- Avoid hitting and bumping.

### **4.3 Storage**

Do not store the machine in the open air! Protect the machine against moisture, dust and strong temperature fluctuations (risk of condensation).

### **4.4 Waste processing**

If the machine has served its purpose and/or there is no longer any use for it, transport the product as waste in accordance with the applicable regulations.

### **4.5 Placement**

Only place in an environment that meets the instructed safety element classification. Place the machine in a properly ventilated environment Do not place dangerously explosive environment!

Protect against vibrations. Remove transport safety elements (if present).

Provide enough space, especially above the machinery. For measurements, see “Technical data”.

## 4.6 Plugging in



**Watch out:**

Harmful Voltage. Not observing these safety regulations can result in a fatal accident, personal injury or damage to equipment.

Connection to power sources:

- Preferably connect the machine via a power cable with plug on a feed point with wall socket with safety ground, which is secured with a fuse.
- The supply system must in principle meet the applicable regulations, with regard to permitted voltage variations, wrinkling, limiting harmonic content, etc.

## 4.7 Attachment

The concrete floor must be entirely smooth and horizontal.

## 5 Operation

### 5.1 Filling foil

- 1 - Place a foil roll (direction of unwinding depends on the side of the cling).
- 2 - Apply foil according to the illustration below.

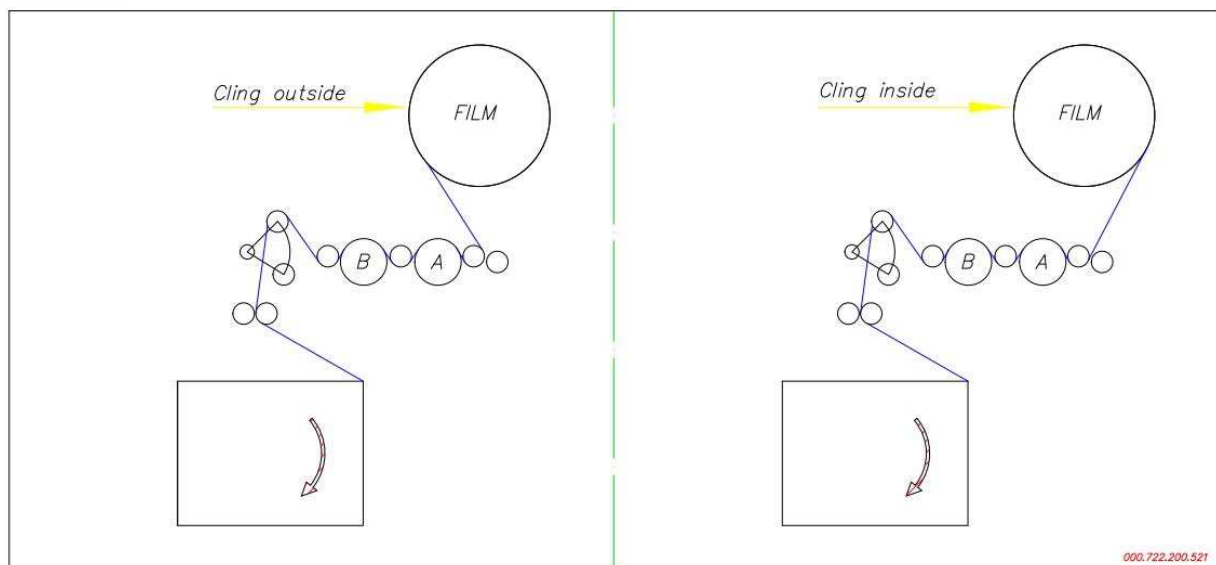
**CI = CLING INSIDE** (adhesive side)

This is how the foil has to be placed in the braking system if the adhesive side is on the inside of the foil, when unwinding it from the foil roll.

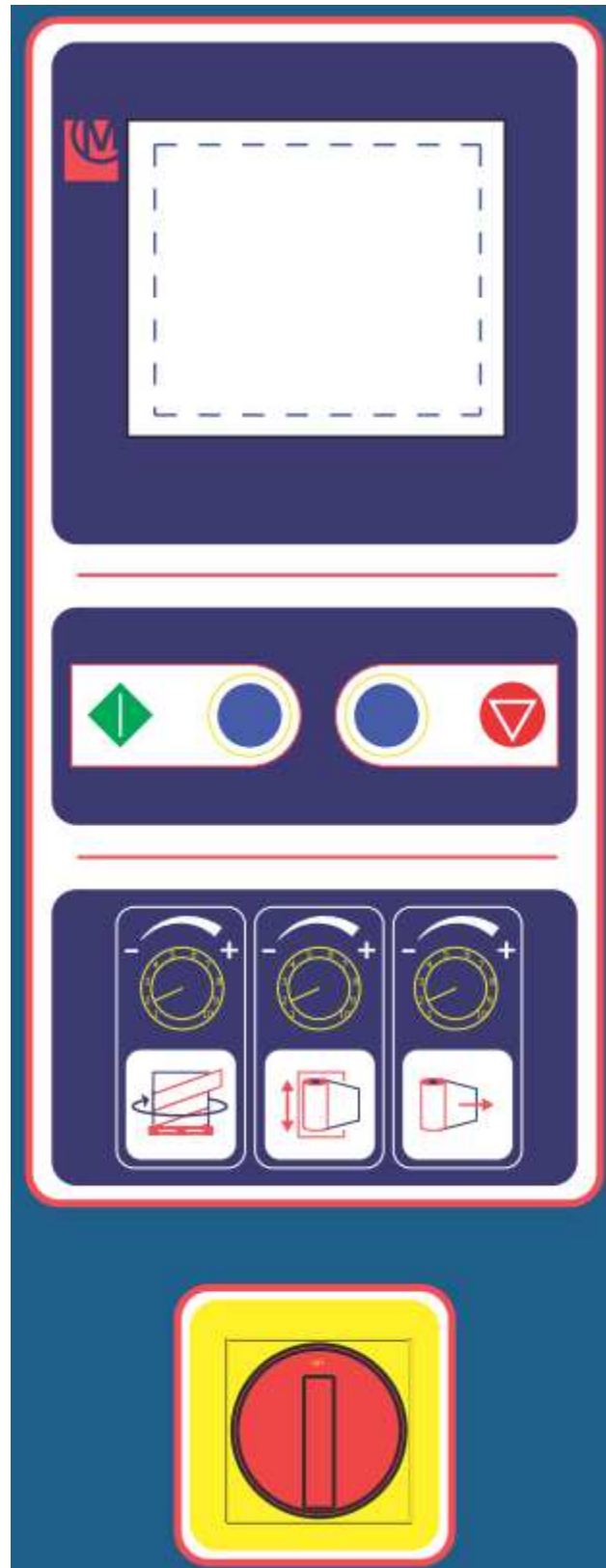
**CO = CLING OUTSIDE** (adhesive side outside)

This is how the foil has to be placed in the braking system if the adhesive side is on the outside of the foil, when unwinding it from the foil roll.

Foil	
Foil diameter	Max. 250 mm
Diameter sleeve	76.4 mm (3 inch)
Foil width	Max. 500 mm
Thickness	17 - 30 µm



## 5.2 Control panel



### 5.3 Control panel explanation

The first thing that strikes on the control panel is the operator panel. This includes many functions and options that are explained in paragraph 5.6 *Operating screens*. The operating panel also includes several push buttons and potentiometers. These are explained below.

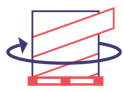


This button starts the automatic winding program.

After pressing the "START" button the green indicator light in the push button lights up.



This button stops the automatic winding program.

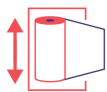


The potentiometer is there to adjust the turntable speed.

Turning right (CW \*) increases speed  
Turning left (CCW \*\*) decreases speed

The setting can vary between 0 and 12 rotations per minute

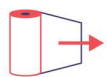
The setting depends on the type of load  
Unstable load: low(er) lower turntable speed  
Stable load: high(er) turntable speed



The potentiometer is there to adjust the film carriage.

Turning right (CW \*) increases speed  
Turning left (CCW \*\*) decreases speed

The setting depends on the type of load  
Unstable load: low(er) foil carriage speed  
Stable load: high(er) foil carriage speed



The potentiometer is there to adjust the foil carriage speed.

Turning right (CW) reduces the foil feed speed (= more stretch)  
Turning left (CCW) increases the foil feed speed (= less stretch)

The setting depends on the type of load  
Unstable load: high(er) foil carriage speed  
Stable load: low(er) foil carriage speed



With the main switch / emergency switch the power supply for the whole machinery is switched on and off.

\*CW: ClockWise (to the right)  
\*\* CCW: Counter ClockWise (to the left)

## ***5.4 Starting up the machine***

The machine starts in the following stages:

### **1. Switching on the machine**

Turn the main switch of the machine from the '0 position' to the '1 position'. This supplies the machine with power and switches it on.

### **2. Resetting the emergency stop and failures**

By resetting the emergency stop you put voltage on the electrical circuit. Make sure no emergency stops are pressed in.

### **3. Making sure that no failures are indicated**

Reset the failures.

### **4. Press the 'START' button**

An acoustic signal will sound ( $\pm 3$  sec.) during which the operator must exit the danger zone. When this signal ends, the machine starts.

## ***5.5 Stopping the machine***

You can interrupt the automatic cycle in the following ways:

### **1. By pressing the stop push button**

This is the most common way of stopping the machine. The machine will stop in a natural way.

### **2. By using the emergency off switch**

Operating the emergency off switch results in the machine going to the emergency setting. The voltage is then taken off the machine and the machine stops as quickly as possible, but not in a natural way. This way of stopping is only recommended if there is immediate danger.

When you have stopped the machine, you can restart it according to the procedure described above. The machine resumes its functions the moment it is started.

## 5.6 Operating screens

The operator panel is a so-called 'Touch panel'. The various functions as described in this manual can be operated by touching the screen.

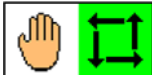








If the voltage is switched on again, the main menu will reappear on the operating panel.

### 5.6.1 Main menu



*This is an example, reality may differ.*

The main menu is the first operating screen you see. Via this screen you can switch to all underlying screens by using the buttons. The main menu includes following functions:

- |   |   |   |  |
|---|---|---|--|
|  | Selection button between manual and automatic operation. The green illuminated selection is active. |  | Programme parameters<br>(See paragraph 5.6.3)  |
|  | Manual operation<br>(See paragraph 5.6.2)   |  | Messages<br>(See paragraph 5.6.4)              |
|  | Reset to home position (hard reset)   |  | Supplier information<br>(See paragraph 5.6.5)  |
|  | Program choice, there is a choice of program 1 to 5   |  | Service / System data<br>(See paragraph 5.6.7) |
|  | Reset messages  |   |  |



## 5.6.2 Manual operation



*This is an example, reality may differ.*

This is the menu for manual operation of the winder. It includes the following functions:



This button is for the manual operation of the rotation arm. The movement stops when releasing the button.



This button is for the manual operation of the foil carriage. When using this button the foil carriage goes up. The movement stops when letting go of the button or when the end position is reached.



This button is for the manual operation of the foil carriage. When using this button the foil carriage goes down. The movement stops when letting go of the button or when the end position is reached.



This button is for the manual operation of the foil puncturer. When using this button the puncturer moves forward. The movement stops when releasing the button.

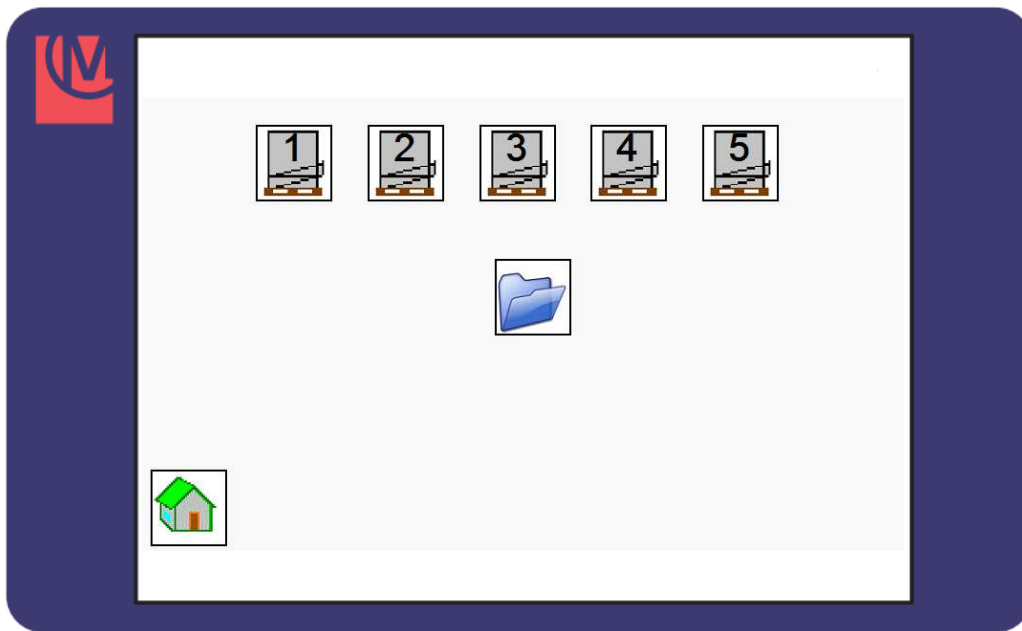


This button is for the manual operation of the foil puncturer. When using this button the puncturer moves backwards. The movement stops when releasing the button.



This button sends you back to the main menu.  
(See paragraph 5.6.1)

### 5.6.3 Program parameters



*This is an example, reality may differ.*

If the user chooses the second option, then this screen appears. Here you can enter the program parameters in a winding program. You do need a password for this. This password is only known by people in your company who are authorised to create or adapt settings.

This menu includes the following functions:



This button is for choosing the program. Choose the program you want to change here by clicking it.

In total, five standard winding programs can be set. We treat the settings for one winding program. This winding program includes several parameter settings. What can be set can be found on the following pages.

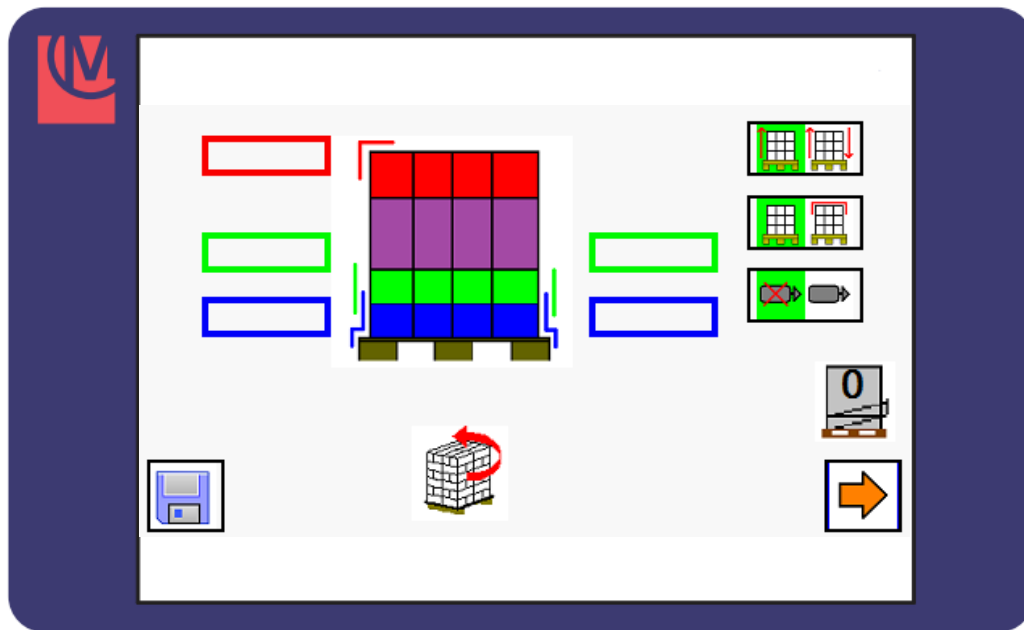


This button is for opening parameters of the previously chosen program above.




This button sends you back to the main menu.  
(See paragraph 5.6.1)


### 5.6.3.1 Windings parameters




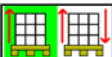
*This is an example, reality may differ.*


This is the first screen with adjustable parameters per program. This screen includes the following functions:


- 


Here you enter how many windings you want to have at the underside of a pallet. With these extra windings the load can be attached to the pallet tighter. The input field left of the pallet is for the start of the cycle and at the right for the end. The colour of the input field refers to the part of the pallet to wind.
- 


Here you indicate how many base windings are required on the pallet. These windings ensure that the base windings are tightly connected with the rest of the pallet. The input field left of the pallet is for the start of the cycle and at the right for the end. The colour of the input field refers to the part of the pallet to wind.
- 


Here you indicate how many base windings are required at the top of the pallet. These windings provide extra stability to the top layer of the pallet. The colour of the input field refers to the part of the pallet to wind.
- 

This button is the option button between single and spiral winding. The green illuminated selection is active.
- 

This button is the option button between winding with or without top layer. The green illuminated selection is active.
- 

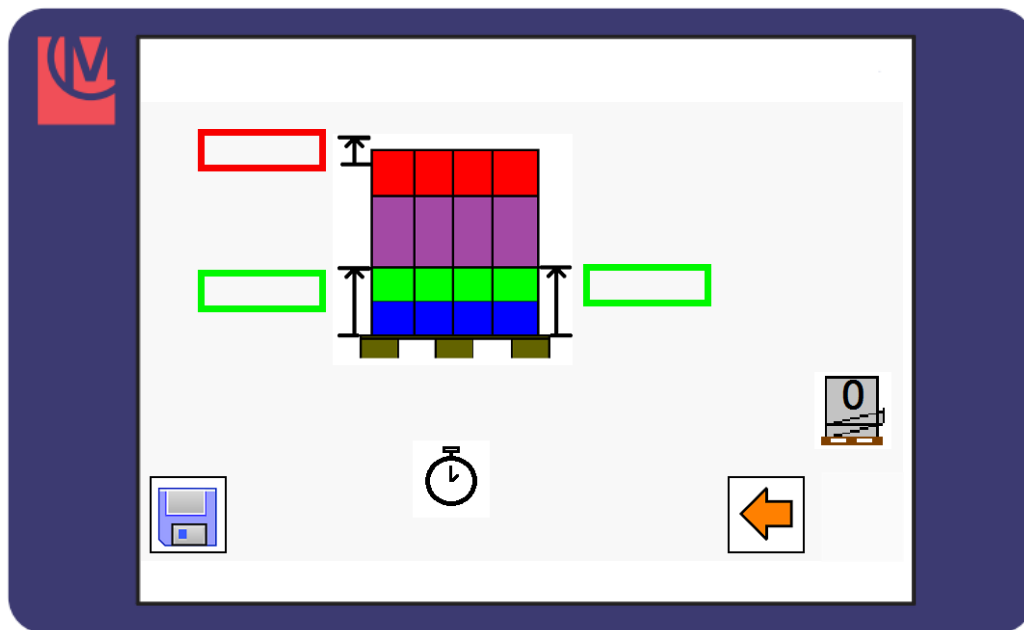
This button is the selection button for using or not using the foil puncturer. The green illuminated selection is active.
- 

This button is for saving the parameters. If it is operated, the changes are filed in the right program and you return to the "Program parameters" menu. *(See paragraph 5.6.3)*
- 

This is a graphic representation to visualise in which program the changes are saved.
- 






This button is to continue to the next parameter menu. *(See paragraph 5.6.3.2)*

### 5.6.3.2 Parameter times

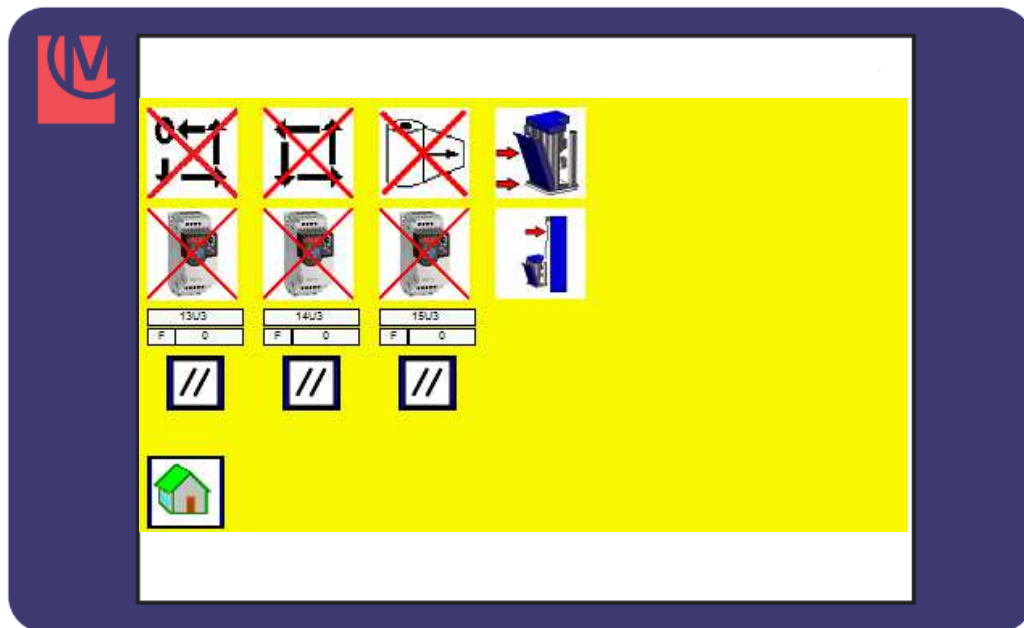


*This is an example, reality may differ.*

This is the third screen with adjustable parameters per program. This screen includes the following functions:

-  Here you indicate the required time for the base windings. This adjustable time is to determine the height at which you want to make the base windings. The foil carriage will move up the number of set seconds. The input field left of the pallet is for the start of the cycle and at the right for the end.
-  Here you indicate the required time for the overlap. This adjustable time is to determine how long the foil carriage has to move over the top of the pallet. The foil carriage will move up the number of set seconds.
-  This button is for saving the parameters. If it is operated, the changes are filed in the right program and you return to the "Program parameters" menu. *(See paragraph 5.6.3)*
-  This is a graphic representation to visualise in which program the changes are saved.
-  This button is to continue to the previous parameter menu. *(See paragraph 5.6.3.1)*

## 5.6.4 Messages



*This is an example, reality may differ.*

This screen treats the messages/failures of the machine.

If something interrupts the machine, the message button in the main menu appears (See paragraph 5.6.1). When you press this, you see this screen. In this screen you get a message stating what is wrong with the machinery. This must first be solved before the machine can be started. This screen includes the following functions:



Here you see a message image. These appear when something is wrong with the machine. You can find out what all messages mean in the enclosed list.

13U3	
F	0

Here you can see the message table for the frequency regulators. When this appears, this is in combination with the image of a frequency regulator. This table includes the regulator in question and the error code. What the error code means can be found in the frequency regulator manual.



Here you can see the reset button of the frequency regulator. When you have solved the problem you must reset the frequency regulator.



This button sends you back to the main menu.  
(See paragraph 5.6.1)

## 5.6.5 Supplier information



*This is an example, reality may differ.*

In this menu you can find information of the supplier who supplied the machinery. This screen includes the following functions:

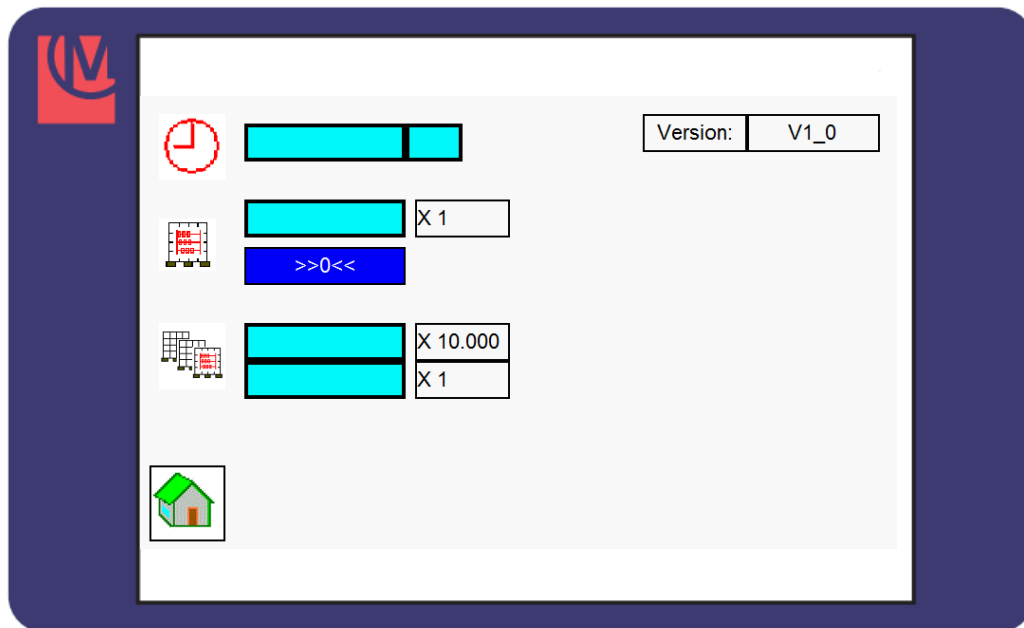


This button is to continue to the next menu.  
(See paragraph 5.6.6)



This button sends you back to the main menu.  
(See paragraph 5.6.1)

## 5.6.6 Statistics



*This is an example, reality may differ.*

In this menu you can find the various statistics of the machinery. This screen includes the following functions:



Here you can see the operating hours counter. The field next to this graphic representation shows how many hours the machinery is in operation.



Here you can see the day counter. The field next to this graphic representation shows how many pallets have been wound that day.



With this button you can reset the day counter to 0, so you can reset the previously mentioned pallet per day or at the desired moment.

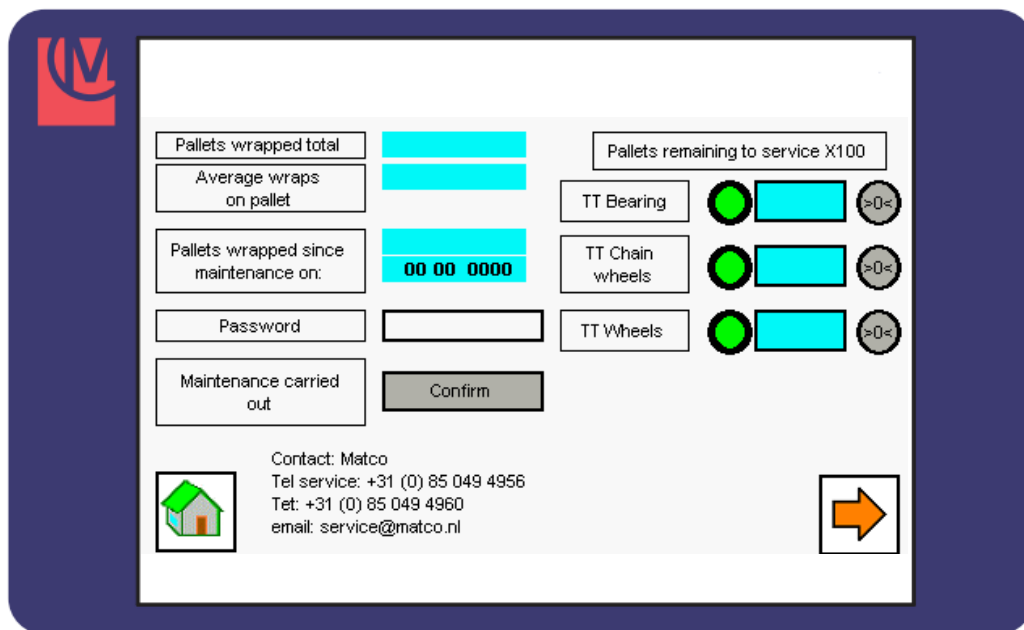


Here you can see the pallet counter. The fields next to this graphic image show how many pallets the machinery has wound.




This button sends you back to the main menu.  
*(See paragraph 5.6.1)*


## 5.6.7 Service / System data





This is an example, reality may differ.


If you choose this menu, the user first sees the service screens. The various wear parts are described in these screens. These parts also offer service advice in the form of the number of pallets to service. This advice depends on the weight of the pallets and the user environment. It also includes the following functions:

- 

This is the indicator lamp for the lifespan of a specific component. If just 10% of the recommended lifespan remains, it will turn orange. It turns red in case of 0%.
- 

When a service has been carried out and a part has been replaced, the counter of the part can be reset with this button. This button only appears if the authorised member of staff has logged in with a special code.
- 

This message is not visible on this page, but on the main menu (*paragraph 5.6.1*). The message becomes visible when a service needs to be carried out. If this appears, please contact the service of Matco B.V. so they can help you further.
- 

This button is to continue to the next menu. Here you can also find a page that includes part of the service.
- 

This button sends you back to the main menu.  
(See *paragraph 5.6.1*)



## 6 Maintenance



### Watch out:

- Switch off the main switch and lock it with a padlock, before maintenance work is done to the machine.
- Make sure that others cannot switch on the machine.
- Make sure that protective hoods and similar are assembled when switching on the machine.

### 6.1 General

The machine will have a longer lifespan due to preventive maintenance. This means that the condition of the various parts of the machine need to be checked weekly, monthly or annually.

The ambient conditions influence the lifespan. The indicated maintenance frequency applies for normal operating conditions (eight hours a day, 20°C, clean environment).

In case of harder conditions, you are advised to carry out maintenance more often. Keep rotating parts free from dirt.

### 6.2 Recommended spare parts

When ordering parts, note the following:

- 1 Give the serial number of the machine.
- 2 For electrical parts, state the position (diagram) number, the description, the article number and the make.
- 3 For mechanical parts, state the drawing number, the position, the article number and the description.

#### RECOMMENDED PARTS

To solve unexpected failures as soon as possible, you are recommended to have certain spare parts in stock. The machine parts are in exploded view drawings. These can be found at the end of this manual.

### 6.3 Maintenance diagram

Maintenance frequency	8 hours	40 hours	100 hours	200 hours	500 hours	1000 hours	2000 hours
Clean daily	X						
Clean photocell lens			X				
Chain under turntable				3			
Turntable sprockets				X			
Geared belt pulley for the benefit of front carrier							
Cord for the benefit of carrier						X	
Bearings						X	
Running wheels foil carriage						X	
Running wheels turntable						X	
Limit/proximity switch						X	
Motor reducers						X	1
Electrical system						X	

The numbers in the maintenance diagram refer to the lubricants to be used in the table of lubricants.



**Please note:**

Check safety stickers/indications. Where damaged/missing, these need to be replaced/placed.

#### Lubricants

SYMBOL	LUBRICANT					
	SHELL	BP	ESSO	MOBIL OIL	TEXACO	GLEITMO
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)	
9						FIN GREASE OG
10			UNIREX EP			

## 6.4 Inspections

Inspections	Activities
Electrical system	<ul style="list-style-type: none"> <li>- Check the switches and other operational buttons for proper functioning.</li> <li>- Check the signal lights.</li> <li>- Check the magnet switches and relays for fusion penetration and humming.</li> <li>- Check the wiring and connections.</li> <li>- Check the photocells and possible reflectors for operation and adjustment (lenses must be clean).</li> <li>- Check the limit and proximity switches for operation and adjustment.</li> </ul>
Motors/motor reducers	<ul style="list-style-type: none"> <li>- Check the ventilator.</li> <li>- Check the ventilator hood for damage.</li> <li>- Check the oil level of the gear casing (refill if necessary).</li> <li>- Check if the fixing bolts are fixed and tighten if necessary.</li> <li>- Check the rotating parts and lubricate if necessary.</li> </ul>
Turntable roller	<ul style="list-style-type: none"> <li>- Check the tooth flank wear of cogwheels.</li> <li>- Checking and lubricating the cogwheels.</li> <li>- Check whether the drive sprockets on the motor axle has wound down. If necessary, align and tighten the locking screws.</li> </ul>
Mast	<ul style="list-style-type: none"> <li>- Check the lifting straps for wear. If there is visible wear the replace the belt</li> </ul>
Foil carriage	<ul style="list-style-type: none"> <li>- Check whether there are any foil remnants in the braking system.</li> <li>- Check the wiring of the foil carriage in mast via running wheels.</li> <li>- The running wheels must have a maximum play of 2 mm compared to the conductor. Replace in case of wear if necessary.</li> <li>- The conduction construction for the foil carriage in the mast may NEVER be lubricated!</li> <li>- Check whether the foil carriage runs parallel.</li> <li>- The foil carriage may sag max. 2 - 3 mm</li> <li>- Check the toothed wheel pulley and the toothed wheels of the pre-stretched system for wear. Replace if necessary.</li> </ul>