

User manual



Machine : Automatic Pallet Wrapper
Type : Turntable
Model : Matco B-400

Versie 1.0

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1 Safety

1.1 Safe use

We use the following symbols to warn about dangers and possible sources of risk. Get to know them well! Ignoring a warning can lead to personal injury and/or damage to the apparatus itself or other devices.



Attention:

Failure to observe warnings may result in a fatal accident, personal injury or damage to equipment



Attention:

Live Electrical Components. Failure to observe warnings may result in a fatal accident, personal injury or damage to equipment



Attention:

Danger from rotating parts



Prohibited – Prohibited for untrained persons!

Risk of entering a dangerous area

1.2 Qualified personnel

Our definition of "qualified personnel" in this context is "personnel with a thorough knowledge of the apparatus itself and how to operate and maintain it safely". Qualified personnel must be physically fit enough to implement the necessary tasks, have a good knowledge of all the relevant safety precautions and be trained to install, operate and/or maintain the apparatus safely. The company using the apparatus is responsible for ensuring that the personnel comply with these conditions.

1.3 Accident prevention

- Use of the installation by untrained persons is prohibited.
- Never allow persons to use the apparatus if they are under the influence of medication that may impair reaction times, or persons who are not in physically fit condition for operating the installation.
- Safety guards must be checked before starting the machine – They may not be loose or removed.
- Shut down the installation before performing any cleaning and repair tasks.
- If it is necessary to remove any safety equipment to allow installation, repairs or maintenance, the safety materials must be replaced immediately after completing the task.
- Keep body parts and clothes away from rotating parts. Do not wear neckties or loosely hanging clothes when using or maintaining machines with rotating parts. Remove wristwatches, chains and similar jewellery. Cover or tie up long hair before carrying out any task on or with the machine.
- All persons must study the manual thoroughly before starting work with the machine.
- Only machines with suitable protection rating may be used in humid conditions.
- Do not use the apparatus in an area with explosion risk.
- Always use the apparatus in a well-ventilated space.

Dangerous situations may result from failure to respect the above conditions.

2 Utilization

2.1 Intended use

The pallet wrapper, hereinafter referred to as "the installation" may only be used for transporting suitable products, i.e. those that meet the criteria stated in section **Fout! Verwijzingsbron niet gevonden.** "machine". In case of doubt, the manufacturer must be consulted for permission.

Use of the installation in any way other than specified in the description can lead to danger, which can damage the installation and/or threaten the safety of operator or other persons near it.

To ensure safety, all personnel must read these operational instructions thoroughly before commissioning the installation, resolving faults or implementing maintenance.

Personnel must at least read the Installation chapter (**Fout! Verwijzingsbron niet gevonden.**) thoroughly before handling, storing and installing the machine.

We would like to bring your attention to the Safety chapter (1), which specifies the intended use and the unsafe situations that cannot be prevented through the design and production of the machine.

2.2 Improper use

The installation may not be operated under the following conditions:

- In bad condition
- In an environment with risk of explosion (Unless the machine is especially equipped)
- When using unsuitable materials and auxiliary items
- Without full respect to the values specified in the "Technical data"
- In a humid environment

The following materials may not be processed in the installation:

- Materials presenting a risk of explosion or fire
- Caustic and corrosive materials
- Foodstuffs. (Unless the machine is especially equipped)

2.3 Field of application

The installation is intended for industrial applications.

2.4 Other risks

Constructively, everything has been done to protect users from possible dangers. Some other dangers are unfortunately unavoidable. Users must be aware of the following:

- The risk of entering a dangerous area

The risk of entering a dangerous area

It is possible to enter dangerous areas when loading and unloading products.



Attention: Prohibited for untrained persons!

Risk of entering a dangerous area.

2.5 The scope of this manual

This manual is only valid in combination with all the other documentation included in the instructions for use. In the case of custom models, this manual may be extended with extra specifications and/or supplementary documentation.

The images only show the installation's essential parts.

2.6 Images and parts of the installation

Primarily, the images on the following pages show the parts necessary for operation, installation and maintenance of key components, which are described in this section and respectively in the following sections of this guide or in a separate manual.

3 Technical Data

3.1 Machine

Speed	3 to ~12 rpm
Maximum load weight	2000 kg
Total weight	675 kg
Operating temperature	+ 5 to + 30 °C

3.2 Electrical

Connection	AC 230V ±10% (50Hz)
Residual-current device	>30 mA
Electricity consumption by sector	1.5 kW
Insulation class	IP 54

3.3 Dimensions and weight

Weight	675 kg
Dimensions in mm (Length x Width x Height)	2800x1650x2860
Product dimensions in mm (length x width x height)	1200x1200x2400 (max.)

3.4 Noise emission

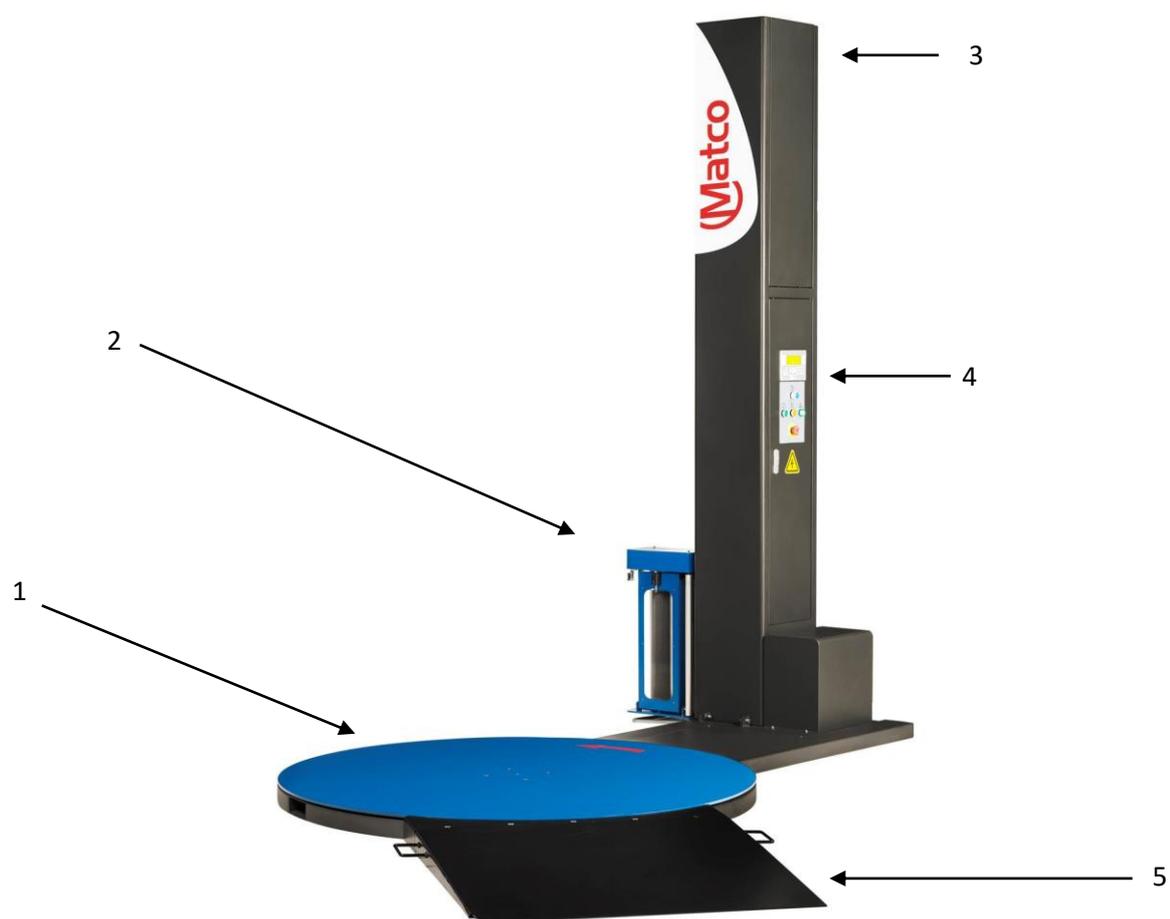
Less than 72 dBA during normal operation

4 How it works

4.1 Essential components



Attention:
Use of the installation without safety guards is prohibited.



Essential components			
1	Draaiplateau	4	Bediening
2	Foliewagen	5	Oprit
3	Mast		

4.2 Description of essential components

1. Turntable

The pallet that is to be wrapped is placed on this turntable. When the system is started the turntable begins to turn. And at the end of the cycle it stops automatically at its '0 position'.

2. Film carriage

The film carriage controls the application of film to the pallet. The up and down motion of the film carriage wraps the entire pallet.

3. Mast

The mast contains the chains and a motor that move the film carriage. This also includes the control cabinet, which contains all the electrical components.

4. Controls

The controls are located on the side of the mast. There is also a light that indicates whether the system is switched on.

5. Ramp

The machine can be supplied with a ramp. This makes it easier to get pallets on and off.

4.3 Description

This semi-automatic pallet wrapper makes it possible to wrap pallets with just the press of a button. The turntable automatically rotates the pallet, while the film carriage moves vertically along the pallet. This results in wrapping of the pallet from top to toe.

5 Installing



Attention:

Provide some qualified personnel to carry out the following tasks. Observe all the safety instructions in this document and all other relevant documentation.

5.1 Unpacking

Unpack the installation carefully and check for any transport damage. Retain the pallet, fixings and wrapping material for possible future transport or dispose of it in accordance with the appropriate waste handling regulations.

5.2 Transport

- Only lift using the purpose-built lifting rings.
- For the weight, see "Technical data". Only use suitable lifting gear.
- Protect the installation from damage, damp and dust, using suitable packing materials.
- Avoid bumps and shocks.

5.3 Storage

Do not store the installation outdoors! Protect it against dust and great temperature changes (condensation formation).

5.4 Waste disposal

When the installation reaches the end of its working life or there is no further use for it, the equipment should be handled according to the currently valid waste disposal regulations.

5.5 Installing

Only install the installation in a location that conforms to the stated safety classification. Install the installation in a well-ventilated space. Do not put it in an area with any risk of explosion!

Protect the installation against vibration. Remove transport protection materials (when present).

Make sure there is enough free room, especially above the installation. See "Technical data" for the dimensions.

5.6 Electrical connection



Attention:

Danger of live electricity. Failure to observe warnings may result in a fatal accident, personal injury or damage to equipment.

- Connecting to a power source:
 - By preference, you should connect the installation using a fused and earthed power line, using a grounded wall outlet.
 - The power supply must comply in principle with valid requirements and standards regarding acceptable voltage variations, sags, limits on higher harmonics, etc.

6 Controls:

6.1 Mounting the film

- 1 - Mount the new film roll (out-rolling direction is dependent on the side with the cling effect).
- 2 - Install the film according to the drawing below.

CI = CLING INSIDE (Clinging surface inwards)

The film must be mounted in the braking system this way when using "differential cling" films, wherein the adhesive side is located on the inside, when it is unwound from the film roll.

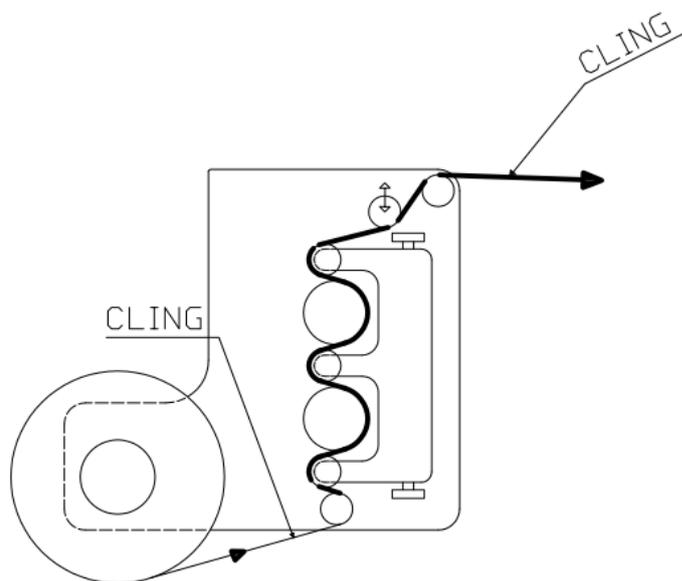
CO = CLING OUTSIDE (Clinging surface outwards)

The film must be mounted in the braking system this way when using "differential cling" films, wherein the adhesive side is located on the outside, when it is unwound from the film roll.

When using "double-sided-cling" films, it does not make any difference, in principle, which way round you mount the film.

Film properties:

Film roll diameter	: max. 300 mm
Sleeve diameter	: 76.2 mm (3")
Width	: 500 mm
Thickness	: 17-35 μ

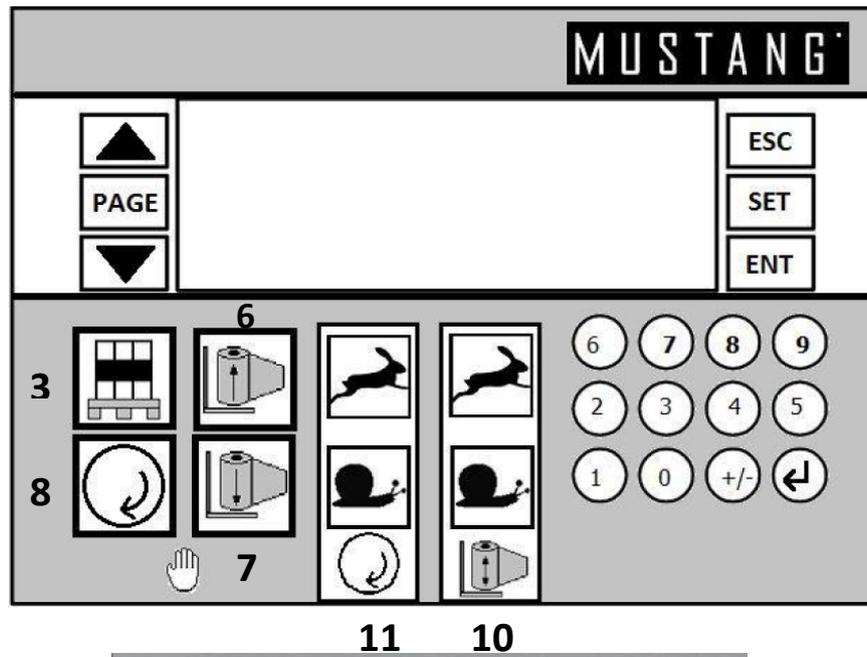


6.2 Settings on the machine

6.2.1 Loading height

This is an adjustable photocell (probe) installed on the film carriage. By placing the photocell higher or lower, the film overlap at the top of the pallet will become smaller or larger, respectively.

6.3 Control



6.3.1 Control panel

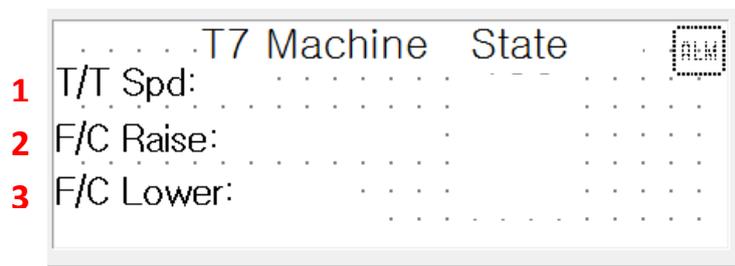
1. **General switch:** Main switch. This main switch is located on the side of the machine.
2. **Power indicator:** Indicates that the machine is powered on.
3. **Reinforce:** When the film carriage has arrived at the desired height, press this button and the selected number of wraps are made at this height; then the cycle continues.
4. **Auto-start:** When the machine is in its starting position and this button is pressed the machine will start the wrapping cycle. When the machine is not in starting position this button causes it to reset, moving back to the starting position.
5. **Pause/Stop:** With a press of this button the machine can be stopped or paused during the wrapping cycle. Pressing start again causes the cycle to continue.
6. **Carriage up:** When the machine is stopped the film carriage can be moved up with this button.
7. **Carriage down:** When the machine is stopped the film carriage can be moved down with this button.
8. **Turntable jog:** When the machine is stationary the turntable can be rotated with this button.
9. **Emergency stop:** When the emergency stop button is pressed the machine stops immediately. Twist clockwise to reset the emergency stop.
10. **Carriage speed:** The speed of the film carriage. The button with the rabbit on it increases the speed. The button with the snail reduces the speed. In combination with the speed of the turntable, this determines the amount of film overlap as the carriage is being raised and lowered. During the raising movement the rabbit and snail buttons can be used to change the upward speed. When the film carriage is being lowered you can adjust this speed in the same way.
11. **Turntable speed:** The speed of the turntable. The button with the rabbit on it increases the speed. The button with the snail reduces the speed. Higher speeds are for pallets with a stable load.
12. **Film tension:** Adjusts how tightly the film is wrapped around the pallet. Turning the potentiometer clockwise wraps the pallet more tightly.

6.3.2 Control screens

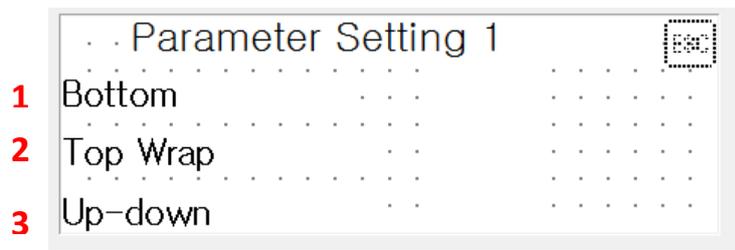
The panel itself has multiple menus. These allow the user to do things such as setting the machine parameters. These menus are discussed briefly on the following pages. These screens may differ from those on your machine.

When it is necessary to change a parameter, this is done as follows:

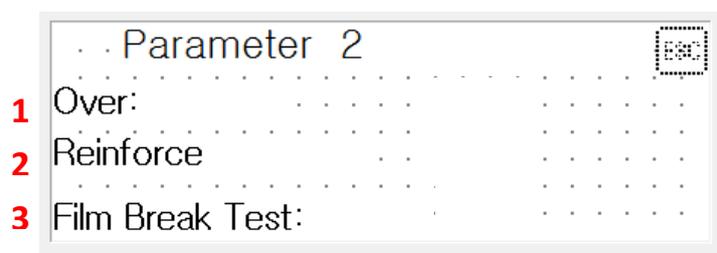
Pressing the 'Set' button opens the selected screen. Now the 'Set' button is pressed again to choose from the various parameters. The parameter can be changed by entering a number within the range. Alternatively, the arrow keys can be used to adjust the values up and down. Once a value chosen, it is confirmed with the 'Ent' button. To exit the screen, press the 'Esc' button.



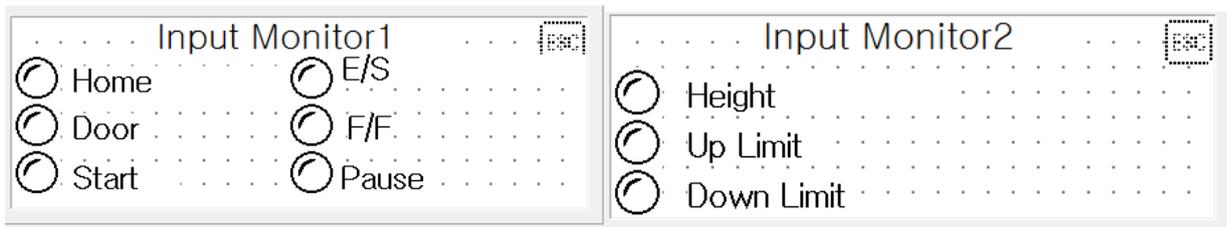
This is the speed screen for the machine. On this screen you can see how the machine is configured. You see the speed that is set for the turntable (**1**) and the speeds at which the film carriage is raised (**2**) and lowered (**3**). The range of these settings is 1-100.



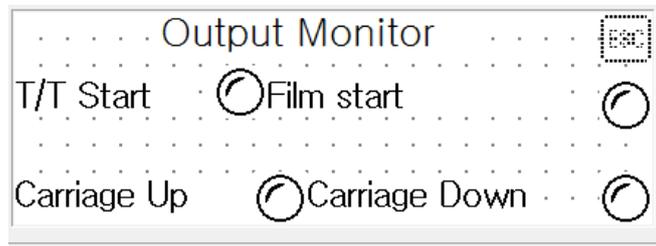
This is the first parameter screen. This screen allows you to set the number of wraps. Here you can set the number of bottom wraps (**1**) and also the number of top wraps (**2**). You can also set the number of strokes (**3**) the film carriage makes. This is how many times it moves up and down. The range of these settings is 1-20.



This is the second parameter screen. Here you can set the size of the overlap (**1**). You can also set the number of reinforcement wraps (**2**) and switch the film breakage notification on or off. The range of the overlap and reinforce settings is from 1-20. For the film break test (**3**) you can only choose between 0 and 1: 0 disables the notification, and 1 switches it on.



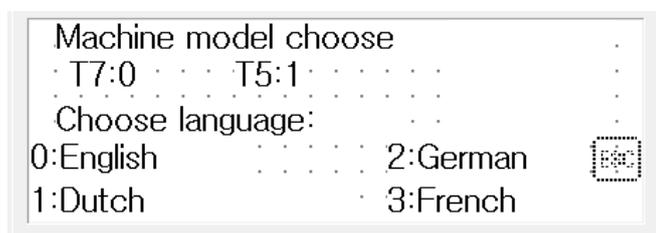
These are the screens for the input signals. Signal indicators show which incoming pulses the machine is receiving. These come from a number of sensors and switches.



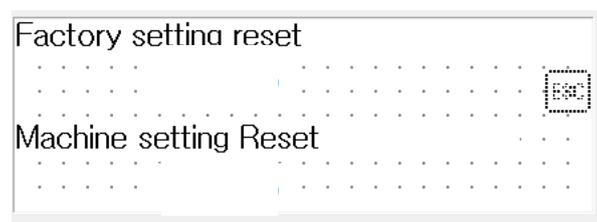
This is the screen for the output signals. Signal indicators show which outgoing pulses the machine is sending to the corresponding components. These correspond to a number of moving parts of the machine.



Some screens are protected against changes. The user must first log in on this screen in order to change the protected settings. This screen is selected by means of the 'Page' button. The password for the lowest level is: **8888**.



This screen shows the machine model and the language in which the screens are displayed.



This screen allows you to reset all previously made settings to restore the machine to the original settings. The upper reset restores the machine to the factory settings. The bottom reset sets all the parameters to 0.

7 Maintenance



Attention:

- Switch off the main breaker and secure it with a padlock, before implementing any maintenance operations on the installation.
- Ensure that other people cannot put the installation into operation.
- Ensure that safety guards and suchlike are installed when the installation is activated.

7.1 General

Preventative maintenance will ensure that the installation has a longer working life. This means that there should be checks on the condition of different parts of the installation on a weekly, monthly or yearly basis.

The environmental conditions will affect the service life. The specified maintenance frequency applies to normal operational conditions (8 hours per day, at 20°C, in a clean environment).

Should the conditions be heavier, we recommend performing maintenance more frequently. Ensure that moving parts are free of dirt.

Please refer to the maintenance schedule in section 7.3 for information about the maintenance frequency required for the different systems and parts. Below we provide a few general hints and tips about maintenance tasks on the installation.

Pay attention to the lubrication recommendations and consult the maintenance schedule (see the Maintenance Schedule section 7.3), if applicable.

7.2 Recommended spares

The spare parts are shown in bold type in the component list of machine's parts.

When ordering spare parts, you should pay particular attention to the following:

- 1 Provide the machine's serial number.
- 2 For electrical parts, provide the (schematic) position number, description, article number and manufacturer's name.
- 3 For mechanical parts, provide the drawing and article numbers, position and description.

To facilitate solving unexpected faults as quickly as possible, we recommend keeping a number of spare parts in stock.

7.3 Maintenance schedule

Maintenance frequency	8 hours	40 hours	100 hours	200 hours	500 hours	1000 hours	2000 hours
Clean daily	X						
Chains				3			
Chain rollers				X			
Bearings						X	
Motor reducers Type R-, FA-, F-						X	1
Motor reducers Type S-						X	2
Electrical system						X	

The numbers in the maintenance schedule refer to the applicable products as shown in the lubricants table.



Attention:

Check safety stickers/ and indicators. When they are damaged or missing, they should be replaced.

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 (depends on the application)	
9						FIN GREASE OG
10			UNIREX EP			

7.4 Checks



Attention:

Provide some qualified personnel to carry out the following tasks. Observe all the safety instructions in this document and all other relevant documentation.



Attention:

Tracing faults can possibly require checking while the installation is under power. Take care to observe the safety regulations concerning working on live apparatus (active parts). Ignoring them can lead to danger of electric shock.

Checks	Tasks
Electrical system	<ul style="list-style-type: none"> - Check the switches, emergency stops and other operating buttons to ensure their correct operation. - Check the indication lights. - Check and test the thermal protections. - Check the magnet switches and relays with regard to burn-in and humming. - Check the cabling and connections. - Check the photocells and reflectors to ensure correct operation and adjustment (lenses must be clean). - Check the limit switches and approximation sensors on their correct operation and adjustment.
Motors/motor reducers	<ul style="list-style-type: none"> - Check the fan. - Check that the fan cover is undamaged. - Check the oil level in the gearbox (top up if required). - Check that the fastening bolts are tightened and, tighten them when required. - Check and lubricate moving parts if required.
Turntable	<ul style="list-style-type: none"> - Check cog mating-surface wear. - Check and lubricate the cogs. - Check whether the drive pinion on the motor shaft is running true. If required, align and fasten using clamp bolts.
Column	<ul style="list-style-type: none"> - Check the chain cogs and chain tensioner for wear.
Film carriage	<ul style="list-style-type: none"> - Check the chain tension on the lifting chain. If the chain can be pressed towards itself by more than 20 mm manually, it must be tensioned. - Check how the film carriage glides through the skid plates in the column. The skid blocks must run with maximum clearance of 2 mm in relation to the guide. Replace when worn. <i>If the film carriage is running jerkily, lubricate the guides with Teflon oil (or similar).</i> Working method Spray the oil on a cloth and then lubricate the guides using the cloth. If the oil is sprayed directly on the guide, there will often be too much oil present and dust will stick to it. This creates dust balls that will eventually impede the free movement of the guide. - Check that the film carriage runs in parallel. The film carriage may hang lopsided on the lifting chain by a maximum of 2-3 mm.