

PALFINGER TAIL LIFTS

OPERATING MANUAL

**SUPPLEMENT
VERTICAL LIFTS**



Operating manual

for

PALFINGER Tail Lifts tail lifts

Supplement

Vertical lifts

MBB V 1000 SCL

MBB V 1500 SCL

MBB V 2000 SCL

MBB V 2500 SCL

MBB V 3000 SCL

MBB V 1500 SML

MBB V 2000 SML

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About this manual

This document is a supplement to the existing operating manual with special instructions for vertical lifts and must always be used in combination with this document.

This manual contains important information for the safe and proper assembly, operation, maintenance and simple rectification of faults on the **PALFINGER Tail Lifts** tail lift.

- Read this entire manual and pay special attention to
- the chapter 'Important safety information' before
- working with the tail lift.

Additional documentation

- Operating manual (standard)
- Assembly manual
- Assembly drawing
- Spare parts catalogue (online)
- Test book
- Attachment inspection (on request)

IMPORTANT SAFETY INFORMATION

The **PALFINGER Tail Lifts** tail lift was manufactured according to the state of the art and generally recognised good engineering practices. Nevertheless, there is the danger of personal injury and property damage if you fail to observe the following general safety instructions and warning notices before the handling instructions in this manual.

- Therefore, read this entire manual carefully before you operate the tail lift.
- Keep the manual on hand so that it is always accessible for all users.
- If you sell or lend the vehicle with the tail lift always hand over this operating manual with the vehicle.

Intended use

- Only use the tail lift for the loading and unloading of cargo. In the process, only the operator may stand on the platform while it is operated.
- Comply with the performance limits specified in the technical data. The intended use also requires that you have read and understood this manual, and especially the chapter 'Important safety information'. Unintended use of the tail lift includes the following:
 - use within areas of application that are not specified in this manual,
 - use under operating conditions that deviate from the conditions described in this manual.


Personnel qualifications

The tail lift may only be operated by persons:

- who have read and understood this manual, and especially the chapters 'Important safety information' and 'General operation', and are
- familiar with the method of operation and handling of the tail lift.

Warning notices in this manual

Warning notices are provided before a prompt for action in this manual when there is a danger of personal injury or property damage. Warnings are structured as follows:

SIGNAL WORD	Description of the type and source of danger
	Description of the consequence if the danger is disregarded ▶ Description of the measures for averting the danger

The measures described to avert danger must be complied with!
The signal word indicates the severity of the danger:

Signal word	Use
DANGER!	Indicates an imminent, great danger that will result in severe injury or even death when the danger is not avoided.
WARNING!	Indicates a potential danger that can result in severe injuries or even death when the danger is not avoided.
CAUTION!	Indicates a potentially dangerous situation that can result in moderate or minor bodily injury or property damage when it is not avoided.

Pay particular attention



General instructions

- Always keep this manual in the vehicle.
- Structural modifications may only be performed by **PALFINGER Tail Lifts** contract workshops. Your nearest contract workshop and other contact information can be found in the workshop directory.
- Only use **PALFINGER Tail Lifts** original parts during assembly work.
- Observe all applicable accident prevention regulations.



When switching on

- Before switching on the tail lift, perform a daily inspection
- to determine whether all safety and warning devices are present and functional.
- Warning strips
- Warning lights
- Handles
- Roll bar



During operation

- Ensure that the tail lift is unlocked before you start it up.
- Ensure that the loading area is sufficiently lit.
- Never transport people on the tail lift.
- Always load the tail lift so that the weight is distributed evenly.
- Secure the load on the tail lift so that it cannot topple over.
Roller containers without brakes may only be transported on the tail lift if they have been secured from rolling away.
- Keep the area of movement around the vehicle clear.



Before carrying out maintenance

- Switch off the main battery switch or disconnect the earth cable.
- Secure and/or relieve the springs before replacement.
- If hydraulic oil escapes, do not reach into the stream.
- When carrying out maintenance work under the platform, secure the runners to prevent downward movement.



During disposal

- Dispose of oils and filters according to the regulations in your country.

PALFINGER Tail Lifts tail lifts

Congratulations on the purchase of your new tail lift from **PALFINGER Tail Lifts!**

With more than 50 years of experience with hydraulic tail lifts, **PALFINGER Tail Lifts GmbH** is one of the world's leading manufacturers of these extremely helpful loading systems.

PALFINGER Tail Lifts branded tail lifts and predecessor brands such as Hubfix, Interlift and Hayons Inter are currently in use in more than 40 countries around the world.

More than 100,000 tail lifts from the factory near Bremen can be found on five continents.

The unique service network with over 2,500 service centres in Europe alone guarantees unlimited and optimum logistics.

Your new **PALFINGER Tail Lifts** tail lift has innovative and reliable technology. It was carefully manufactured by our employees.

This assures the best conditions for long and fault-free service.

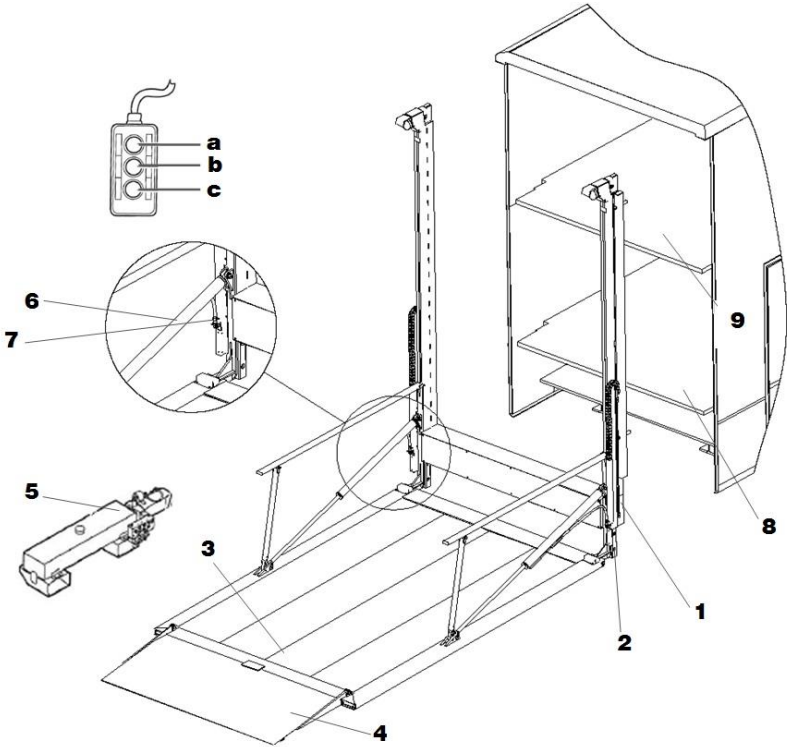
In order to familiarise you with your new tail lift, we request that you carefully read through this operating manual. The necessary safety instructions for operation of the tail lift are provided here.

Should you have any further questions about your tail lift, the service team of **PALFINGER Tail Lifts** is at your disposal.

SCOPE OF DELIVERY

- Tail lift
- Sticker – ETMA notices
- Large type plate (for the platform)
- Small type plate (for the lifting mechanism)
- Load diagram
- Operating manual
- Operating manual (vertical lift supplement)
- Test book
- Starter kit, consisting of:
 - Large company plate (for the platform)
 - Short operating manual
 - Large TÜV plate
 - Small TÜV plate

VERTICAL LIFT OVERVIEW



- 1. Guide frame
- 2. Guide
- 3. Platform
- 4. Loading ramp
- 5. Hydraulic unit with oil tank

- 6. Closing cylinder
- 7. Hydraulic hoses
- 8. Deck 1
- 9. Deck 2

- a. Platform operation
- b. Platform operation (combination switch)
- c. Platform operation

INTRODUCTION

In collaboration with a manufacturer of vertical lifts, PALFINGER Tail Lifts has developed a tail lift system for transport vehicles (lorries and trailers) that is ideally suited for lifting loads of up to 3000 kg. The tail lift is exclusively intended for the vertical transport of cargo. Cargo can be transported to different levels and loaded and unloaded with the tail lift system. **The tail lift system is expressly not intended for the transport of people!**

The tail lift system was developed with a partner company of PALFINGER Tail Lifts in an intensive research and testing programme. One of the aims of this programme was to develop a lift with ideal operating comfort, function, safety, ease of maintenance and service life while fulfilling all current EC standards and regulations. Please read this operating manually carefully and attentively before commissioning your tail lift.

The terms 'left', 'right', 'front' and 'rear' used in this manual refer to the situation as observed in the direction of travel when standing behind the vehicle with the mounted tail lift.

Intended use

The tail lift system is exclusively intended for the vertical transport of cargo. Any other use voids any liability of PALFINGER Tail Lifts.

Target group

This operating manual is intended for authorised and technically qualified persons.

Authorised persons are

- those who have obtained a specific level of knowledge from education and training (internal training specific to tail lift systems), and who
- have the necessary capacity to operate the machine, including a Class C driver's licence for installation of the tail lift on a lorry and Class CE driver's licence for installation of the tail lift on a trailer.

Technically qualified persons are

- those who are authorised and who
- have obtained a specific level of knowledge from education and training, and who
- are familiar with the technology of the machine and the potential dangers and risks (e.g. a PALFINGER Tail Lifts service technician).

The term 'operation' means: working with the machine, cleaning the machine and carrying out simple maintenance tasks.

This operating manual is provided to guarantee safe and efficient interaction between the operating personnel and machine.

Marking symbols (stickers on the tail lift)

The following symbols are used in order to draw attention to specific aspects or actions.



WARNING: DANGER/LIFE-THREATENING DANGER

- If the prescribed process is not carefully observed, (severe) injury to the operating personnel or other persons can occur.
- Life-threatening danger: there is an immediate, life-threatening risk.



CAUTION

- If the prescribed process is not carefully observed, the machine can be damaged.



ATTENTION

- Supplemental information that indicates potential problems.

Liability

- Arbitrary modifications of the machine are not permitted. Violations of this requirement shall void any product liability and responsibility of the manufacturer; any damages occurring as a result of this, as well as those suffered by third parties, shall be excluded from any compensation for damages.

SPECIFICATIONS

Dimensions of the tail lift (model-specific)

Max. height:	3900-4200 mm (mounted on the vehicle)
Max. width:	2420-2530 mm
Max. depth:	275-450 mm with tail lift folded in
Max. depth:	2900-5050 mm with tail lift folded out (horizontal)

Functions

- The hydraulic tail lift system is controlled with a portable control unit and has the following functions:
 - Raising and lowering of cargo on the loading platform
 - Folding the loading platform in and out
- The tail lift system does not have an Emergency Stop, because two-handed operation is required. The platform does not move without actuation of the controls. For the function of the operating system, refer to the section 'Function of the tail lift system'.

Maintenance

Maintenance is carried out by qualified and certified service centres. An overview of these service centre can be requested from PALFINGER Tail Lifts. Maintenance takes place annually in the scope of a general inspection based on a checklist. This checklist was created by PALFINGER Tail Lifts and is provided to the service centres on request.

The tail lift system must be cleaned regularly after each use.

A monthly cleaning with a steam cleaner is sufficient for use of the lift loading and unloading of cargo.

SAFETY

Safety requirements



LIFE-THREATENING DANGER

- Due to the risk of inhalation of exhaust gas, the vehicle on which the tail lift is installed may never be started, used or test-operated in a closed room.
- The tail lift may only be operated if the vehicle is at a standstill with the parking brake engaged.
- The tail lift must always be horizontal at the bottom position when work is carried out on the machine.
- Only work with the machine if all safety equipment is complete, intact and fully functional!
- Do not enter the working and danger area of the machine!
- Remove the ignition key of the transport vehicle when the machine is not in use.

**WARNING**

- In addition to the specific instructions in this operating manual, also observe the general safety and accident prevention regulations.
- Familiarise yourself with all systems and controls before commissioning the machine. Once you have begun working it is too late!
- Prior to starting up the machine, always ensure safety with regard to the work to be performed and the traffic situation.
- Wear close-fitting clothing when operating the machine. Avoid loose articles of clothing.
- The machine may only be operated by one person.
- Before downward travel, always ensure that the tail lift is engaged in the locking hooks!
- Damage must be repaired promptly before the next subsequent use of the machine (for this purpose, please contact PALFINGER Tail Lifts).
- Check each day whether hydraulic lines and hoses are free from damage. Damaged lines/hoses must be replaced immediately with lines/hoses having the required quality (SAE 100 R2A according to DIN 20022/2). Never attempt to stop oil leaks with your hands. The oil can penetrate the skin and cause blood poisoning.

**ATTENTION**

- Observe the legal regulations for roadway freight transport. In the process always consider the lighting and (side) reflectors!
- Learn the exact weight of the load and check to ensure that the permissible bearing capacity of the tail lift is not exceeded.

Safety symbols

As protection against injuries, various stickers with safety and warning notices are affixed to your tail lift (see Figure 1). In the process, residual risks that can arise during operation of the machine despite its safe design are identified. Before commissioning the machine, always read the operating manual and following the instructions provided there.



Before use, carefully read through the manual (circled in violet).



General warning notice (sticker on the side edge and under / on the rear side of the loading platform, circled in green). Warning of the danger of entrapment under the loading platform and/or between the platform and the frame when retracting the tail lift system.



Danger of entrapment of the feet between the rear side of the vehicle and the tail lift system (3 stickers on the rear side of the tail lift system, circled in red).

Danger of entrapment of the feet between loading platform and the ground (sticker on the side edge of the loading platform, circled in red).



Contour marking on the side edges of the platform

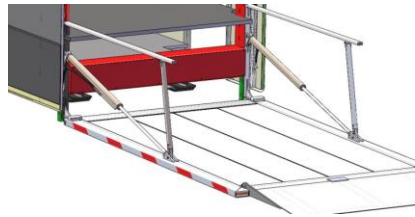


Figure 1 - Safety symbols

Check whether all stickers are present. Otherwise, shut down the machine! (See Figure 1.) The stickers must always be clean and legible. Replace damaged stickers immediately. New stickers are available from PALFINGER Tail Lifts.

Explanation of the safety symbols



Warning! Read the operating manual before commissioning and observe all safety requirements!



Warning! Damaged hoses can cause harm to the health and damage to the environment. Work on the hydraulic system may only be carried out when the system is depressurised!



Warning! The tail lift is not equipped for the vertical transport of people. The tail lift system is expressly not intended for the transport of people!

FUNCTION AND OPERATION OF THE MACHINE



Warning! Observe the safety requirements (see section 'Safety')!



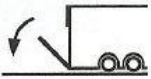
Attention! The tail lift system may only be operated when the vehicle is at a standstill!



Attention! Do not exceed the permissible load weight. If the system is overloaded, it automatically shuts down!

Function of the tail lift system

Operation via a handheld cable switch with two-handed operation



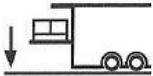
Opening the platform

Press and hold the push-buttons **(a + b)** on the handheld cable switch. Hold both push-buttons in this position until the platform is positioned horizontally.



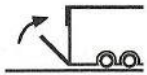
Raising the platform

Press and hold the push button **(a)** on the handheld cable switch until the platform reaches the desired height.



Lowering the platform

Press and hold the push button **(c)** on the handheld cable switch until the platform reaches the desired height.



Closing the platform

Press and hold the push-buttons **(c + b)** on the handheld cable switch. Hold both push-buttons in this position until the platform is completely closed.

Emergency Stop: The tail lift system does not have an Emergency Stop, because two-handed operation is required. The platform does not move without actuation of the controls.

MAINTENANCE AND LUBRICATION

General instructions



Warning: Installation, recurring maintenance and repairs may only be carried out by the technically qualified personnel of PALFINGER Tail Lifts, service centres authorised by PALFINGER Tail Lifts or after prior agreement of PALFINGER Tail Lifts.



Warning: The engine of the transport vehicle must always be switched off and the ignition key must be removed for repair, maintenance, cleaning and troubleshooting tasks. Carefully follow the instructions in the operating manual!



Warning: Always use the appropriate tool for (dis-)assembly work and wear gloves. Always provide for suitable supporting means when performing maintenance tasks on a machine in the raised position.



Attention: Any damage, including consequential damages due to insufficient lubrication are excluded from any warranty!



Attention: Do not allow fluids (e.g. hydraulic oil) to escape freely during maintenance work, because they can pollute the environment. Dispose of these materials according to the statutory environmental regulations.

Maintenance intervals

Tasks	Tasks	Depending on use	Monthly	Quarterly	Semi-annually	Annually
Check the effectiveness and presence of safety and warning devices	x					
Cleaning of the vertical lift		x				
Cleaning and greasing of runner surfaces in the guide frame			x			
Inspection of hoses for damage, kinks and leak		x				
Checking of the oil level and refilling as necessary			x			
Checking of screws and nuts firm tight seating			x			
Checking of screw fittings and lines of the hydraulic system for tight seating			x			
Greasing of low-maintenance bearings			x			
Oil change						x
Inspection of steel ropes			x			
Inspection of rope pulleys					x	

Working method

- **Check the effectiveness and presence of safety and warning devices**

Clean warning symbols until they are easy to recognise.

- **Cleaning of the vertical lift**

Clean the entire vertical lift, mainly the hinge parts. Remove sand, sludge, etc.

- **Cleaning and greasing of runner surfaces in the guide frame**

Move the platform to the bottom-most position. Grease the inside of the guide frame with a suitable lubricating oil.

- **Inspection of hoses for damage, kinks and leak**

Visually inspect all hydraulic hoses. Look especially for leaks around the connections.

- **Checking of the oil level and refilling as necessary**

Check the display window of the oil reserve. Top up with the appropriate oil as necessary in compliance with the oil supplier requirements.

- **Checking of screws and nuts firm tight seating**

Use appropriate tools to check the screw fittings. Re-tighten the connections as needed.

- **Greasing of low-maintenance bearings**

Use suitable lubricating oil to grease the bearings on the cylinder bar.

- **Oil change**

Use suitable oil and work according to the requirements of the oil reservoir supplier.

- **Inspection of steel ropes**

Move the platform to the bottom-most position. Move a finger along the cable to feel for any broken wires. The cable should feel consistently smooth. Any pricking sensation indicates the beginning of a rope break.

▪ Inspection of rope pulleys

All rope pulleys should run practically silently. Listen attentively to determine whether the bearings actually run silently. If you hear noise, it is an indication of potentially defective bearing.

Preventive maintenance

The following components must be replaced every two years as preventive maintenance:

- Lifting ropes
- Hydraulic hoses
- Rope pulleys with bearings

Faults**Causes of fault and fault rectification**

- In the event of a rope brake, the loading platform automatically falls to the locking hooks attached to the lifting column. In such situations, immediately contact PALFINGER Tail Lifts or a service centre authorised by PALFINGER Tail Lifts.
- In the event of a hose rupture, immediately contact PALFINGER Tail Lifts or a service centre authorised by PALFINGER Tail Lifts.
- If the tail lift is in an oblique position, the system can be aligned horizontally by PALFINGER Tail Lifts, a service centre authorised by PALFINGER Tail Lifts or a technically qualified person as follows:

The loading platform is fastened with a wire rope on both sides. The platform can only be aligned horizontally if the wire ropes are sufficiently tensioned. For this purpose, the lifting function of the platform must be briefly actuated.

There is a threaded bar to which the wire rope is connected at the height of the platform. By adjusting the screws in the threaded bar, the loading platform (left/right) can be aligned horizontally.

After adjustment, move the platform five times up and down in order to correct any play in the system.

- If the loading platform does not move completely up or the system cannot be completely retracted, check the following potential causes of fault:
 - Is the battery dead? / Check the power cable to the vehicle. / Replace the battery.
 - Is there sufficient hydraulic oil in the system? / Inspect the system for leaks before topping up.

In case of any questions or problems to which this operating manual does not offer an answer or solution, please contact PALFINGER Tail Lifts.

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