DUO CM

Scissors Lift

Original Operating Instructions

BA082901-en

DUO CM 4.2 A	R-AS40CM A
DUO CM 4.2 U	R-AS40CM BA
DUO CM 5.0 A	R-AS50CM A
DUO CM 5.0 U	R-AS50CM BA

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Dear Customer,

MAHA is one of the world's leading manufacturers of testing and lifting technology and places particular emphasis on quality and performance. The company's concept includes the development, manufacture and sale of products for use in automotive workshops, by vehicle manufacturers and testing organisations.

MAHA's claim is to also be a leader in the areas of reliability, safety and sustainability – this can be seen in many details that have been developed with these aspects in mind.

We are convinced that you will be more than satisfied with the quality and performance of our products for many years. With the purchase of our products you will also receive professional assistance in case of need for service and repair.

Please remember to keep these operating instructions in a safe place. Accurately following their contents will significantly extend the life of your product and also increase its resale value. If you sell your product, please also pass on the operating instructions.

MAHA is constantly working on the further development of all products and therefore reserves the right to make changes, e.g. in shape and appearance, without prior notice.

Extensive accessories, useful assembly material and auxiliary materials are available for our products. For further information, please ask your dealer or your MAHA contact person at any time.

Thank you for choosing a MAHA product!

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1 Safety

1.1 Introduction

Thoroughly read this manual before operating the equipment and comply with the instructions. Always display the manual in a conspicuous location.

Personal injury and property damage incurred due to non-compliance with these safety instructions are not covered by the product liability regulations.

1.2 Symbols and Signal Words

1.2.1 Personal Injury

DANGER

indicates an immediate hazard which, if not avoided, will result in death or severe personal injury.

WARNING

indicates a potential hazard which, if not avoided, could result in death or severe personal injury.

CAUTION

indicates a potential hazard which, if not avoided, could result in moderate or minor personal injury.

1.2.2 Property Damage

NOTICE

indicates a potentially harmful situation which, if not avoided, could result in damage to the equipment or surrounding objects.

1.2.3 Information

indicates important information notes.

1.3 Intended Use

- This lift shall be used exclusively for the safe lifting of motor vehicles. Observe the rated load capacity and load distribution.
- The lift shall not be modified without the express written consent of the manufacturer. In case of non-compliance the declaration of conformity becomes void.

1.4 Inappropriate Use

WARNING

Any use other than described is inappropriate, for example:

- Climbing on the lift supports
- Transporting persons on the lift supports
- Usage as mobile work platform or for other lifting operations

1.5 Requirements on Operating and Service Personnel

WARNING

All persons employed in the operation, maintenance, installation, removal and disposal of the device must

- be at least 18 years old,
- be mentally and physically suited for these activities,
- be demonstrably trained and instructed in writing,
- have read and understood the operating instructions, especially the instructions what to do in the event of defects or malfunctions,
- be on record as having been instructed in safety guidelines,
- have practical experience in working with vehicle lifts and the hazards inherent in such equipment.

1.6 Safety Instructions for Commissioning

WARNING

- The lift shall be installed and commissioned by authorised service personnel only.
- Use personal protective equipment.
- All safety features must be checked for proper function at commissioning.
- The control desk (if present) shall not be installed in the danger zone of the lift.
- The standard lift version shall not be installed and commissioned in hazardous locations, outdoors, in moist rooms (e.g. car wash) or outside a temperature range of 5…40 °C (41…104 °F).

1.7 Safety Instructions for Operation

WARNING

- Observe the detailed operating instructions.
- Observe all accident prevention regulations.
- Use personal protective equipment.
- The standard lift version shall not be operated in hazardous locations, outdoors, in moist rooms (e.g. car wash) or outside a temperature range of 5…40 °C (41…104 °F).
- To ensure safe operation, check the functionality of all safety devices before using the lift.
- The control desk (if present) must be positioned in such a way that there is an unobstructed view to the complete working area and the emergency stop can be accessed at all times.
- All structural parts of the equipment must be visually checked at regular intervals.
- Supply of suitable illuminating devices is the owner's/operator's responsibility.
- Do not allow anyone to stay in the danger zone when driving on or off the lift.
- Lifts with cylinder and runways: when lifting vehicles with a short wheelbase, make sure that one axle is in front of the lifting cylinder, the other behind it.
- Lifts with wheel-free jack: before driving on or off the lift or wheel-free jack, make sure the jack is in bottom position.
- If the operator is unable to see all parts of the danger zone, a trained second person must monitor such areas.
- Center the vehicle on the lift when it is in fully lowered position.

- After positioning the vehicle on the lift secure it against roll-off.
- Lifts with runways: make sure the vehicle tyres do not contact the roll-off protection when raising or lowering the lift.
- Lifts with runways: modifications (such as usage of extensions) are permissible only under the condition that the functionality of the roll-off protection is maintained (protective position of ≥ 0.1 m above the runways).
- The load rating on the identification plate must not be exceeded.
- Keep the path of movement free of obstructions.
- Only use the vehicle manufacturer's recommended lift points.
- Only use lifting supports approved by the vehicle manufacturer.
- The vehicle must be lifted as a whole. usage of external hoisting and support devices in combination with the lift must be approved by the manufacturer.
- Do not use the lift for transporting persons.
- Lifts with support arms or wheel-free jack: when raising the lift, all support points at the vehicle body must be engaged at the same time.
- Lifts with support arms or swing arm jack: use one additional extender or one support block only for each support point.
- Lifts with support arms or swing arm jack: check arm restraints for secure engagement as soon as support arms contact vehicle lift points.
- Lifts with wheel-free jack: secure engagement of the vehicle must be ensured by using appropriate means (e.g. lashing straps).
- After raising the vehicle briefly, stop and check the lift supports for secure contact.
- Make sure the vehicle doors are closed during raising and lowering cycles.
- Make sure the parking brake is applied during raising and lowering cycles.
- Closely watch lift and vehicle during raising and lowering cycles.
- Do not allow anyone to stay in lift area during raising and lowering cycles.
- Lifts with support arms or wheel-free jack: after setting down the vehicle, check the lift supports for secure contact before raising the vehicle again.
- Axle lift (if present): observe the installation instructions. Use both hands when moving the axle lift. The axle lift must be in park position during raising and lowering cycles.
- Axle lift (if present): the vehicle must be additionally secured against rolling off while one axle is in a raised position.
- Do not allow anyone to climb up the lift or the raised vehicle.
- Before leaving the lift, fully lower the vehicle or secure it against accidental lowering.
- Keep lift and vehicle free of tools and parts.
- Keep the lift and lift area clean. Risk of slippage on oily floors!
- The main switch serves as emergency stop switch. In case of emergency

turn it to “0”.

- Protect the lift against unauthorized usage by padlocking the main switch.
- Protect all parts of the electrical equipment from humidity.
- Use caution with operating vehicle engines. Danger of poisoning!
- When removing heavy vehicle components, the centre of gravity can change. In such circumstances appropriate action must be taken as required.
- Residual risk: Tripping over runways of surface mounted lifts, tripping over tools.

1.8 Safety Instructions for Servicing

WARNING

- Use personal protective equipment.
- Service work must be done by authorized service technicians.
- Turn off and padlock the main switch before doing any repair, maintenance or setup work.
- The system must be unpressurized during maintenance work.
- Work on pulse generators or proximity switches must be done by authorized service technicians.
- Work on the electrical equipment must be done by service technicians or qualified electricians.
- Ensure that ecologically harmful substances are disposed of in accordance with the appropriate regulations.
- Do not use high pressure or steam jet cleaners. Do not use caustic cleaning agents.
- The lift's safety devices must be set by authorized service technicians.
- Do not replace or override the safety devices.

1.9 Safety Instructions for Handling Hydraulic Fluid

CAUTION

- Neutralise hydraulic fluid spills with binder.
- Remove contaminated clothing immediately.
- Inhalation: If symptoms persist, seek medical treatment.
- Skin contact: Wash skin immediately with soap and water. If skin irritation persists, seek immediate medical advice.
- Eye contact: Rinse thoroughly with water and seek medical advice.
- Ingestion: Do not induce vomiting. Seek immediate medical attention.

1.10 What to Do in the Event of Defects or Malfunctions

WARNING

- In case of defects or malfunctions such as uncontrolled lift movement or deformation of the superstructure, support or lower the lift immediately.
- Turn off the main switch and secure it against unauthorized usage. Contact service.

1.11 What to Do in the Event of an Accident

- The injured person is to be removed from the danger area. Find out where dressing and bandages are kept. Seek first-aid.
- Provide first-aid (stop bleeding, immobilise injured limbs), report the accident and seal off the accident site.
- Immediately report any accident to your supervisor. Make sure a record is kept of every occasion first-aid is provided, e.g. in an accident book.
- Remain calm and answer any questions that may arise.

1.12 Safety Features

Dead Man's Type Control

The operator is required to hold the control in the engaged position to initiate and maintain a particular operation.

Roll-off Protection

Once the runways are raised, the approach ramps rise and act as chocks.

Longitudinal Light Barriers as Pinch Point Protection (Option)

The outside edges of the runways are equipped with light barriers. Once the light beam is interrupted, the lift stops immediately.
After the error has been corrected, the hazard point is always enabled first by raising the lift.

CE Stop

The lift stops shortly before reaching bottom position. The lift can be lowered completely by pressing the LOWER button again. An audible signal sounds until the lift has reached its lower end position.

Measuring System for Runway Synchronization

Synchronization is achieved through a magnetostrictive measuring system monitoring the level difference between both runways. Once a preset level difference is exceeded, the lift stops immediately.

Pressure Relief Valve

The working pressure of the hydraulic system is limited by the pressure relief valve.

Seat Valves

Positive-control seat valves at the hydraulic cylinders prevent sudden lowering movements of the lift in the event of a rapid pressure drop in the hydraulic system, e.g. due to line break.

Safety Latch

The safety latch prevents sudden lowering movements caused by a pressure drop in the hydraulic system or cylinder leakage.

2 Description

2.1 General Information

The lifts of this series are equipped with two runways supported by a scissors structure. The drive system consists of two hydraulic cylinders with hydraulic power unit. The lift is operated via an electric dead man's type control using pushbuttons, synchronization is achieved through a magnetostrictive measuring system.

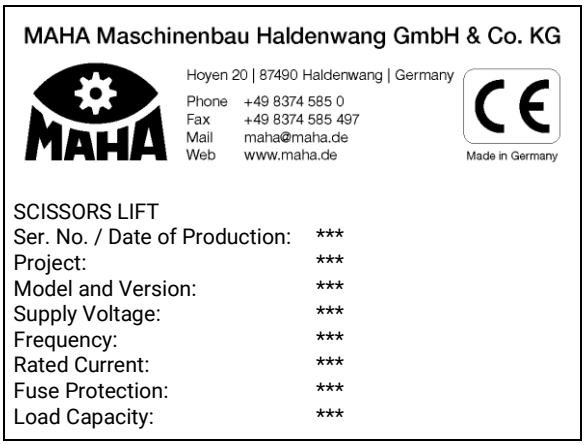
2.2 Technical Data

	DUO CM 4.2 A	**DUO CM 4.2 U**	**DUO CM 5.0 A**	**DUO CM 5.0 U**
Load capacity CE	4200 kg		5000 kg	
Lifting height max.	2075 mm		2140 mm	
Full travel	1850 mm			
Lifting/Lowering time, load-depend.	approx. 40/40 s		approx. 50/40 s	
Overall dimensions (LxWxH) [mm]	5900x2075x240	4400x2075x240	6800x2210x290	5200x2210x290
Drive-on height (w/o accessories)	240 mm	–––	290 mm	–––
Installation depth	–––	250 mm	–––	300 mm
Runway dimensions (LxWxH)	4400x617x126 mm		5200x630x176	
Runway length, optional	4800 mm		–––	
Drive power	2.5 kW			
Operating pressure	190 bar			
Power supply	3/N/PE 400 V 50 Hz			
Fuse gG	16 A			
Weight (w/o/with packaging)	2650/2700 kg		3000/3200 kg	
Packaging dimensions (LxWxH)	4500x800x800 mm		5300x800x800 mm	
Hydraulic oil quantity (not incl.)	40 L			

	R-AS40CM A	R-AS40CM BA	R-AS50CM A	R-AS50CM BA
Load capacity CE	4000 kg		5000 kg	
Lifting height max.	2075 mm		2140 mm	
Full travel	1850 mm			
Lifting/Lowering time, load-depend.	approx. 40/40 s		approx. 50/40 s	
Overall dimensions (LxWxH) [mm]	5900x2075x240	4400x2075x240	6800x2210x290	5200x2210x290
Drive-on height (w/o accessories)	240 mm	–––	290 mm	–––
Installation depth	–––	250 mm	–––	300 mm
Runway dimensions (LxWxH)	4400x617x126 mm		5200x630x176	
Drive power	2,5 kW			
Operating pressure	190 bar			
Power supply	3/N/PE 400 V 50 Hz			
Fuse gG	16 A			
Weight (w/o/with packaging)	2650/2700 kg		3000/3200 kg	
Packaging dimensions (LxWxH)	4500x800x800 mm		5300x800x800 mm	
Hydraulic oil quantity (not incl.)	40 L			

2.3 Sample Nameplate

Lifts of this series have one large and one small nameplate each at the control desk and at the hydraulic power unit. In the event of customer complaints, hotline requests or spare parts orders, serial number and YoM of the lift should always be indicated.



3 Transport and Storage

NOTICE

Check package to ensure it is complete, in accordance with the order confirmation. Report any transport damage to the carrier immediately.

During loading, unloading and transport always use suitable lifting equipment, material handling equipment (e.g. cranes, forklifts, etc.) and the right load handling attachments and slings. Always ensure that the parts to be transported are suspended or loaded properly so that they cannot fall, taking into account size, weight and the centre of gravity.

Store the packages in a covered area, protected from direct sunlight, at a low humidity and with temperatures between 0...+40 °C (32…104 °F). Do not stack packages.

When unpacking, take care to avoid any possibility of injury or damage. Keep at a safe distance when opening the package strapping, do not allow any parts to fall out.

4 Installation and Initial Operation

WARNING

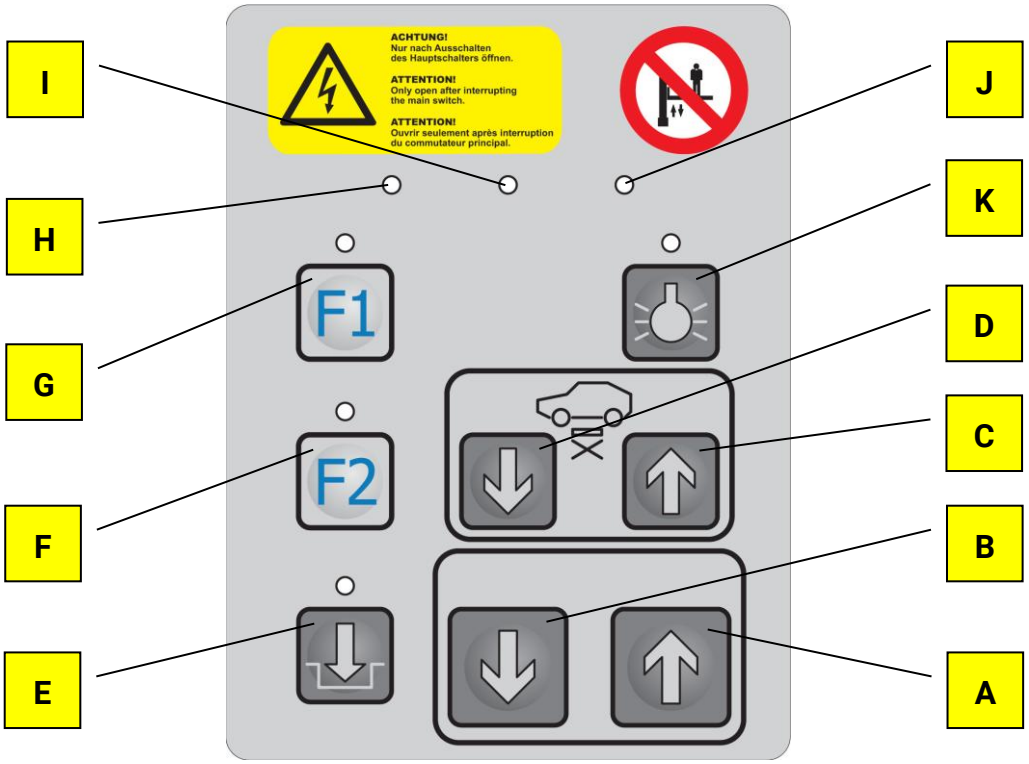
Installation and initial operation of the equipment may be done only by authorized and trained service technicians provided by the manufacturer, licensed dealers or service partners.

5 Operation

5.1 Main Switch

- Main switch in position 0: Power supply OFF
- Main switch in position 1: Power supply ON
- When in position 0, the main switch can be protected against tampering by means of a padlock.

5.2 Controls and Indicators



	Function	Short Form
A	Raise lift	LIFT UP
B	Lower lift	LIFT DOWN
C	Raise wheel-free jack	WFJ UP
D	Lower wheel-free jack	WFJ DOWN
E	Lower onto locks	LOCK
F	Hydraulic inclination (DUO CM only)	F2
G	Unlock sliding plate (DUO UC only)	F1
H	LED red (Malfunction or Error code)	
I	LED yellow (Warning or Error code)	
J	LED green (Ready for operation)	
K	Illumination	

NOTICE

The pushbuttons of the membrane keypad are designed for normal workshop use and actuation by normal finger pressure. Actuation with other means or tools (e.g. screwdriver) or with excessive pressure will damage the pushbuttons and significantly reduce their service life.

The sensing elements under the membrane consist of mechanical parts that are subject to natural wear. In addition, the materials of the actuating elements are subject to an aging process, regardless of the load.

In order to ensure safe operation and the highest possible availability of the system, MAHA recommends that the keypad board and the membrane be replaced periodically every 5 years.

5.3 Display Codes

LED Code			
RED	**YELLOW**	**GREEN**	
---	---	Lighting	Ready for operation
---	---	Flashing	Service interval expired
---	Flashing	Lighting	Information message; count flash code, contact service
Lighting	Flashing	---	Error message; count flash code, contact service
Flashing	---	Lighting	Emergency operation, service mode enabled
Flashing	Flashing	Lighting	Emergency operation, service mode enabled, position sensor disabled
Flashing	Flashing	Flashing	Lighting up briefly: Control unit not (yet) enabled

5.4 Using Support Blocks

1 The support blocks are approved for usage on lifts with a rated load capacity of 3,500 kgs.

2 Always use four original MAHA support blocks of identical size and shape.

3 Do not use support blocks with cracks, broken-off pieces or other damage.

4 Check that all support blocks and rubber pads are free of oil, grease, dirt or debris.

5 Place the support blocks under the vehicle manufacturer‘s recommended lift points.

6 Note correct positioning of the support blocks.

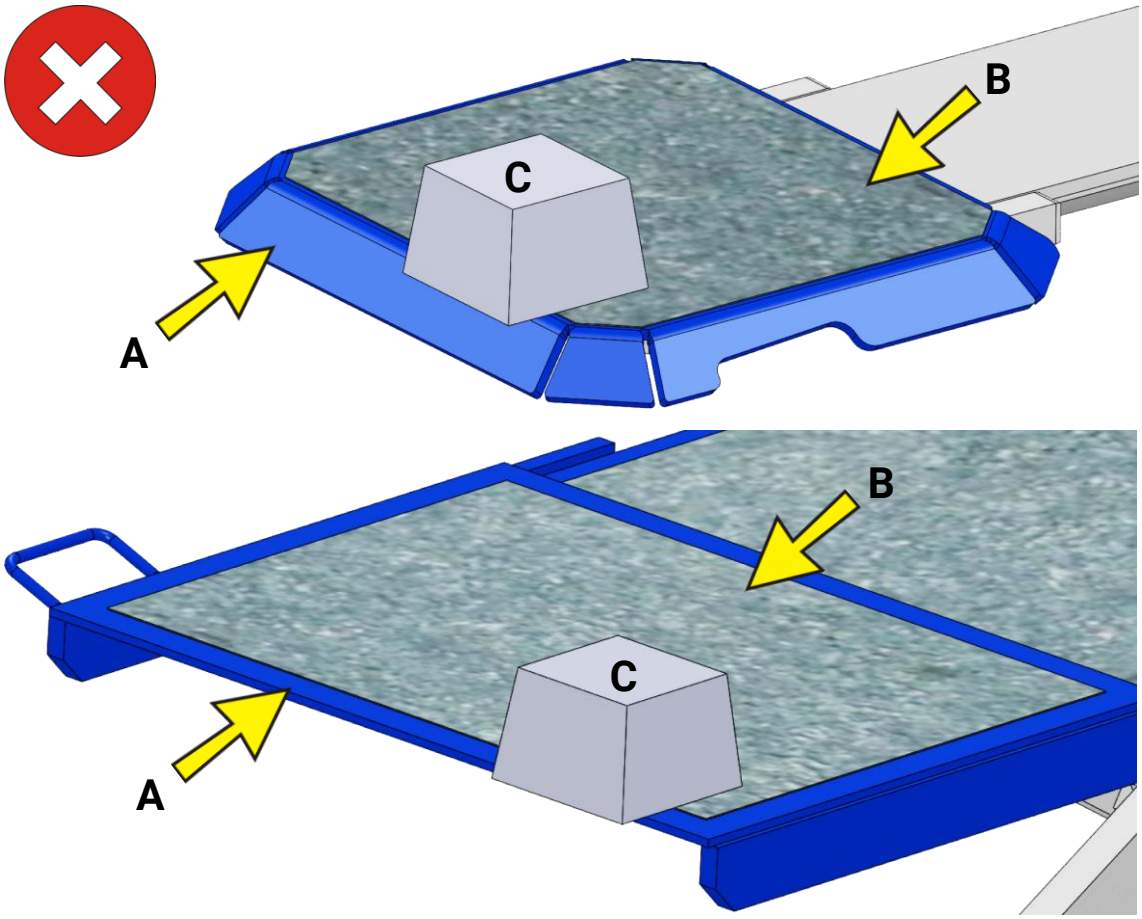
7 Raise the vehicle until the tyres clear the floor. Stop and recheck the lift supports for secure contact with the vehicle body.

The support block must be placed fully on the surface without extending byond the edges.

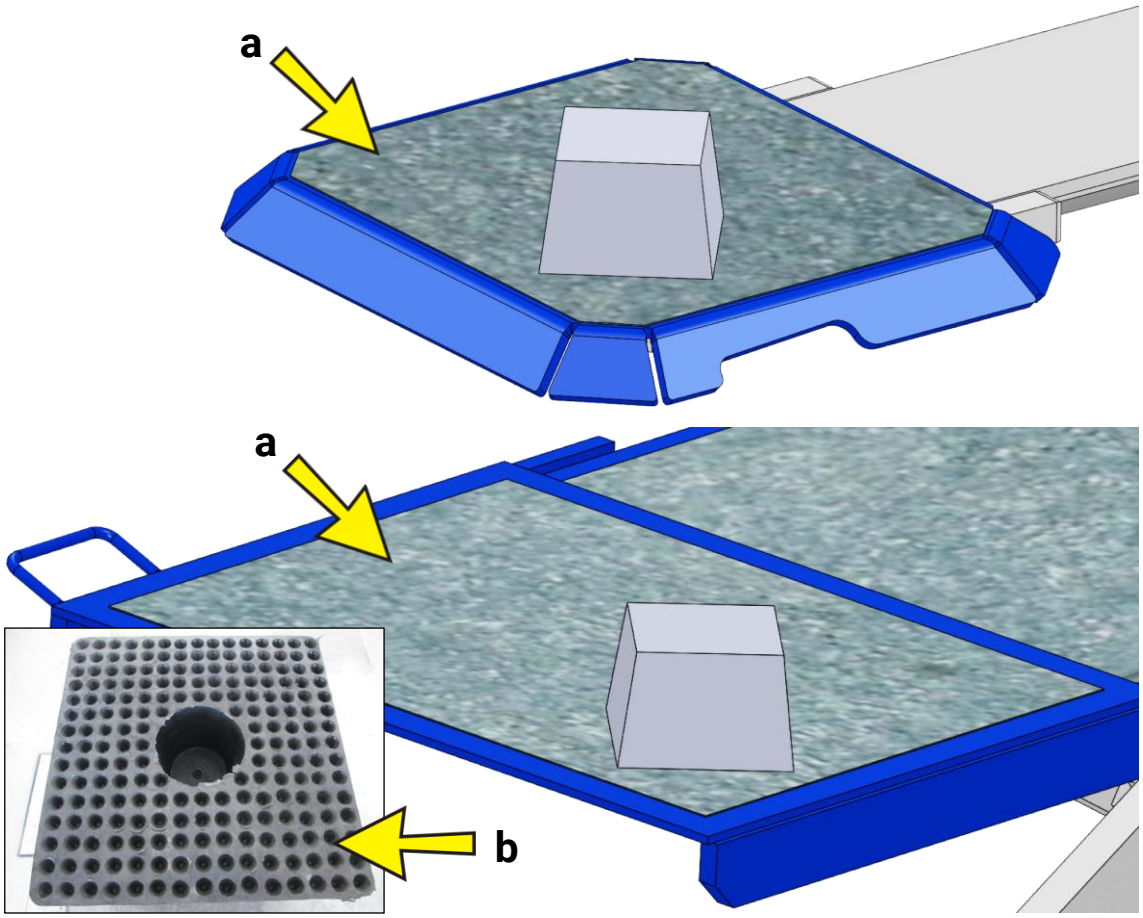
A Extension

C Support block

B Support surface; available are:
- Granulate coating
- Granulate foil
- Rubber plate

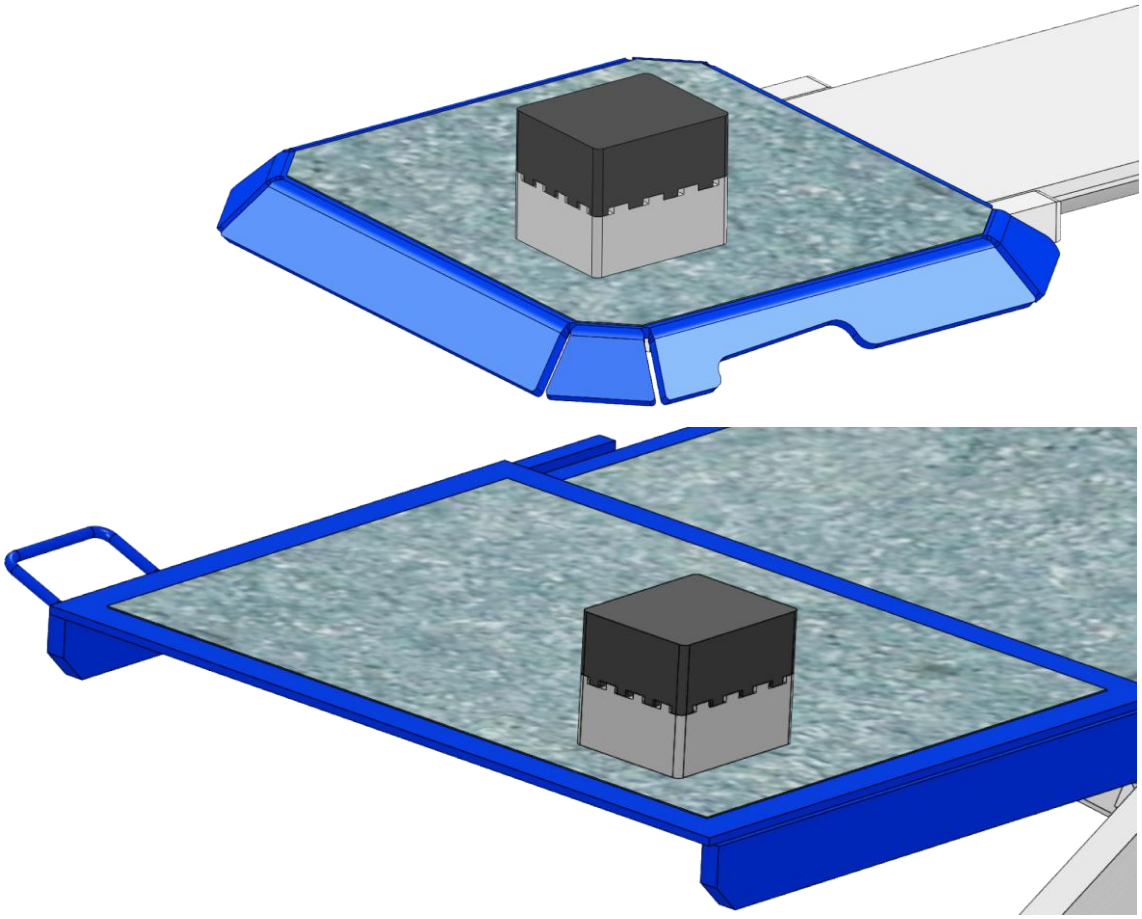


Diagonal positioning is permissible only with granulate coated surfaces (a). If knobbly pads are used, these must mesh with the support blocks (b).



5.4.1 Stacking Two Blocks on Top of Each Other

Only the “DUO“ hard rubber blocks (VZ 975074) and the ductile plastic blocks (VZ 970045) may be stacked on top of each other, but not more than two blocks per lifting point.



5.5 Raising

- Lift is in bottom position.

1 Center the vehicle on the lift.

2 Protect the vehicle against roll-off (parking brake, chocks).

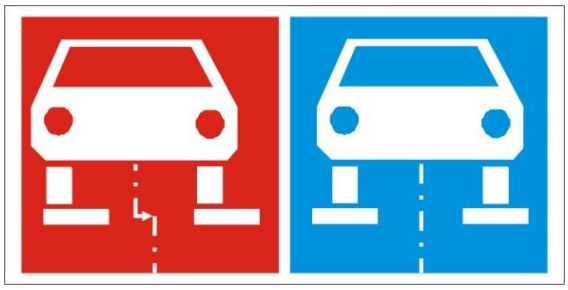
3 Leave vehicle and stay clear of lift.

4 Press LIFT UP button until the desired height is reached.

- Lift stops once button is released or upper limit stop is reached.

When the lift is below the pinch point, it can be raised only with the wheel-free jack in its defined park position.

Make sure to center the vehicle on the lift. Eccentric positioning may result in faulty measurement.



5.6 Lowering

1 To lower the lift press the LIFT DOWN button until the desired height is reached.

- Lift briefly raises to disengage the latches from the mechanical locks.
- Lift stops once button is released or lower limit stop is reached. The lift always stops shortly before bottom position.

2 To lower the lift completely, release the LIFT DOWN button and push it again.

- During lowering of lift an audible signal sounds.

3 Release parking brake, remove chocks and drive the vehicle off the lift.

- When completely lowering the lift, be sure to push the LIFT DOWN button until the LED of the LOCK button lights up.
- The lift can be fully lowered only when the axle lift is in its home position.

5.7 Hydraulic Inclination

CAUTION

Apply the parking brake before enabling the runway inclination!

Button F2 is used for controlling the runway inclination. 5 seconds after pushing the button for the last time, the direction of movement can be changed: from "inclined position" to "horizontal position" or vice versa.

If direction "horizontal position" has been selected, the runways will move until they are in a fully horizontal position.

If the lift is positioned above the CE stop level, the runway inclination cannot be operated and lamp F2 is permanently on. If button F2 is pushed, the lamp goes off.

Button F2	**LED F2**	**Runways**
Below CE stopp		
Not pushed	Off	Do not move
Pushed	On	Move to inclined position
Pushed	Flashing briefly	Move to horizontal positon
Above CE stop		
Not pushed	On	Do not move
Pushed	Off	Do not move

5.8 Routing the Manual Lowering Rope on Lifts with Power Unit in Middle Platform

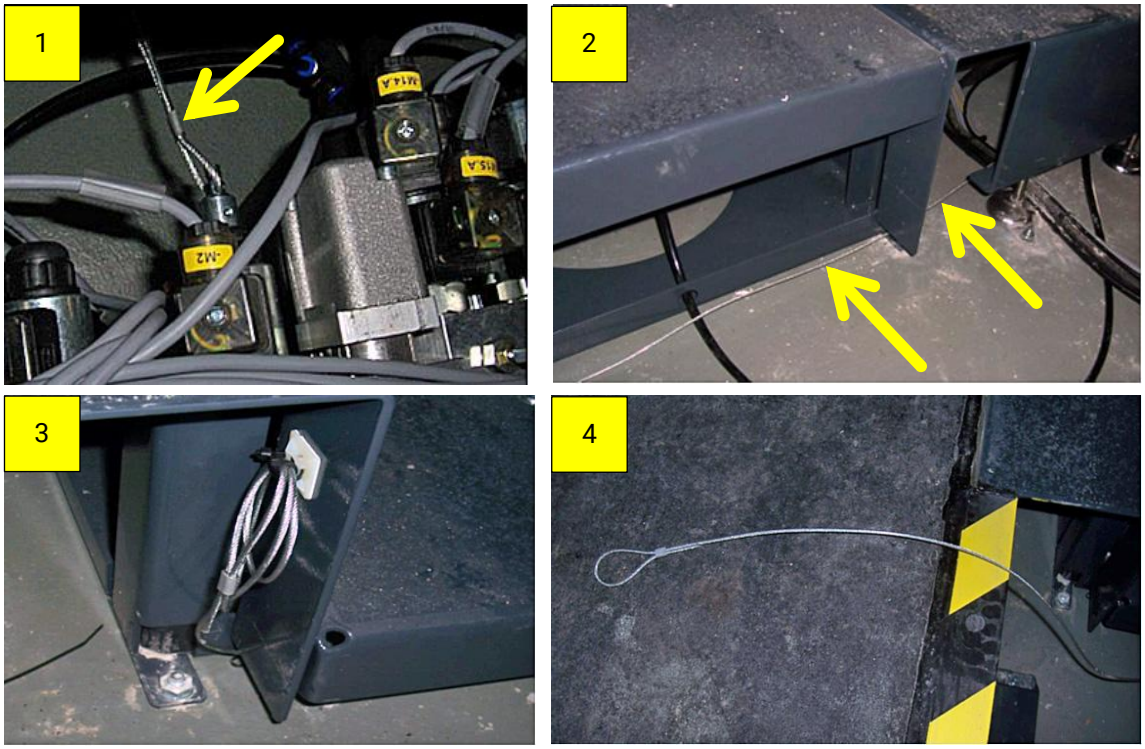
5.8.1 Manual Lowering Rope with 5.5 kW Unit in Middle Platform

1 When commissioning for the first time, remove the wire rope from the lowering valve +C-M2 in direction of the pull.

2 Remove the wire rope from the middle platform at the side, and guide it below the lifting floor.

3 Wind the end of the wire rope to a loop. Fasten the wire rope loop to the inside of the lift floor plate with a cable and an adhesive clamp.
IMPORTANT: Avoid mechanical stress (no strain) when fastening!

4 When using the emergency lowering device, remove the wire rope from the attachment and leave the hazard area. Activate lowering valve +C-M2 via the wire rope.



5.9 Optional Equipment

5.9.1 Wheel-Free Jack

Raising

- Vehicle must be centered over the wheel-free jack.

1 Lift the extensions using the handles and position them under the vehicle lift points.

2 If required, use additional spacer blocks under the vehicle.

3 Raise the vehicle briefly using button <WFJ UP> and check for secure contact of the extensions at the vehicle manufacturers' recommended lift points. Then raise the vehicle to the desired height.

- Raising motion is stopped when button is released or upper limit stop is reached.

Lowering

1 Use button <WFJ DOWN> to lower the wheel-free jack.

- Lowering motion is stopped when button is released or lower limit stop is reached. An audible warning signal sounds while the jack is lowering.

5.9.2 Cable Remote Control

WARNING

Connection only permitted by qualified electrician. The operator is responsible for ensuring that nobody is within the danger area.

A cable remote control is optionally available for the lift. With this it is possible to operate the lift away from the control box. This gives the operator the opportunity to gain improved visibility into the hazardous area.

The cable remote control is generally equipped with the large control element and additionally with an emergency stop button.

Handover of the control

– Control box to cable remote control:
Press the F1 and F2 buttons on the control box simultaneously. Subsequently, control is only possible via the cable remote control.

– Cable remote control to control box:
Press the F1 and F2 buttons on the cable remote control simultaneously.
Subsequently, control is only possible via the control box.

When not in use, properly wind up the cable of the cable remote control and store it safely.

5.10 Manual Lowering of the Lift

5.10.1 Important Notice Regarding Manual Lowering

WARNING

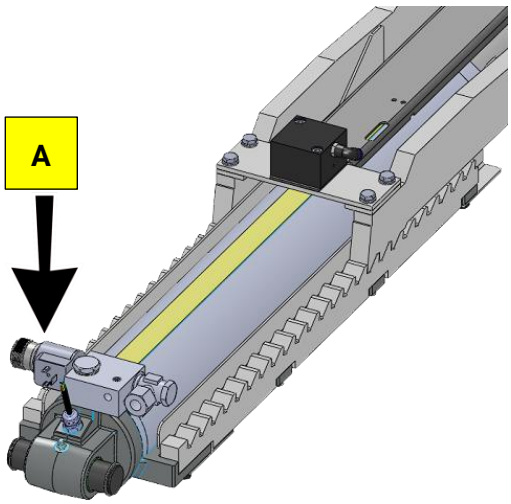
- **Perform actions in the sequence described! The sliding shoes must only be attached after the seat valves have been mechanically disabled.**
- **If the lowering procedure needs to be interrupted, first remove the sliding shoes and then enable the cylinder's seat valves. The latches are now in the safety position.**
- **If the lift and the wheel-free jack need to be lowered manually, first lower the wheel-free jack to the home position. See section 'Manual Lowering of the Wheel-Free Jack'.**
- **After manual lowering, restore the valves to their previous operating state.**

5.10.2 Sequence of Actions for Manual Lowering

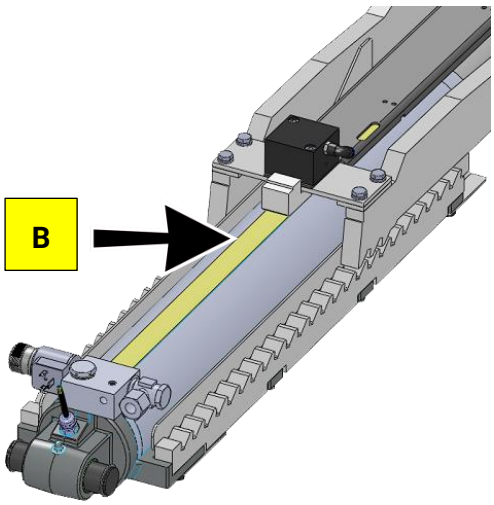
CAUTION: Ensure that actions are performed in this sequence!

1 Open the seat valves (A) of the main cylinders.
2 Place the sliding shoes (B) underneath the latches.
3 Leave the hazard zone.
4 Actuate the release valves.
5 Close the seat valves of the main cylinders.
6 Remove the sliding shoes.

See in-depth description on the following pages.

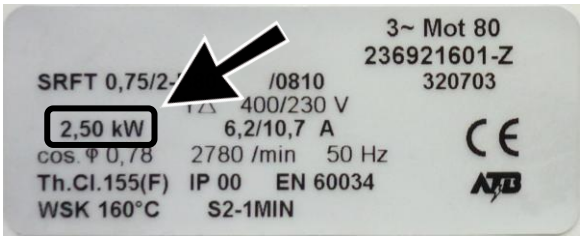
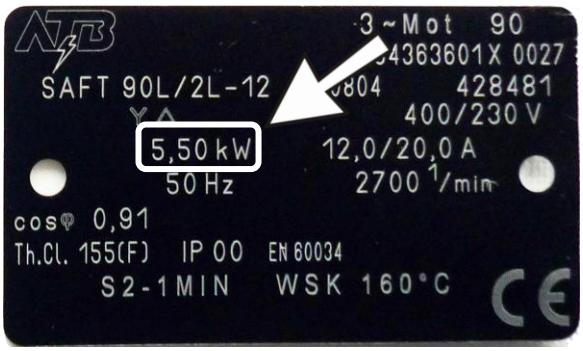
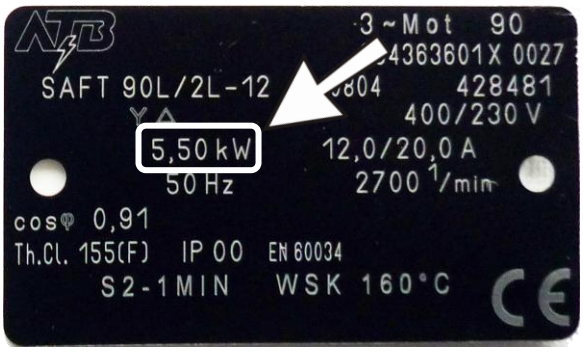
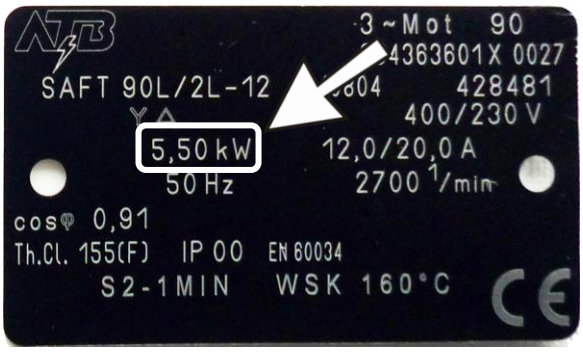


Latch engaged



Latch disengaged

5.10.3 Identifying the Hydraulic Power Unit

Version	Power unit	Raising/ Lowering time	Identification (Motor nameplate)
1	2.5 kW	40 s / 50 s	
2	5.5 kW	20 s / 30 s	
3	2x 5.5 kW	12 s / 15 s	 

5.10.4 Manual Lowering with 2.5 kW or 5.5 kW Power Unit in the Control Desk

1 Open the cap of seat valve **+A-M1** (by turning it anticlockwise), making sure not to lose the sealing ring.

2 Remove the coil with plug-in connector from the valve and tighten the cap (without coil) finger-tight. The seat valve is now disabled.

3 Place the sliding shoe underneath the latch on side **+A**. You may need to use the hand pump to do this. After several pumping movements, the latch can be raised by hand.
If you use the hand pump, be aware of offset! Raise the sides one after the other – the valve on the other side must be closed in each case.

4 Repeat steps 1 to 4 for side **+B**.

5 Use the key ring to pull up lowering valve **+C-M2** *slowly*. The lift is lowered. Be aware of offset and hazard zone! To stop the lowering movement, release the valve.

CAUTION

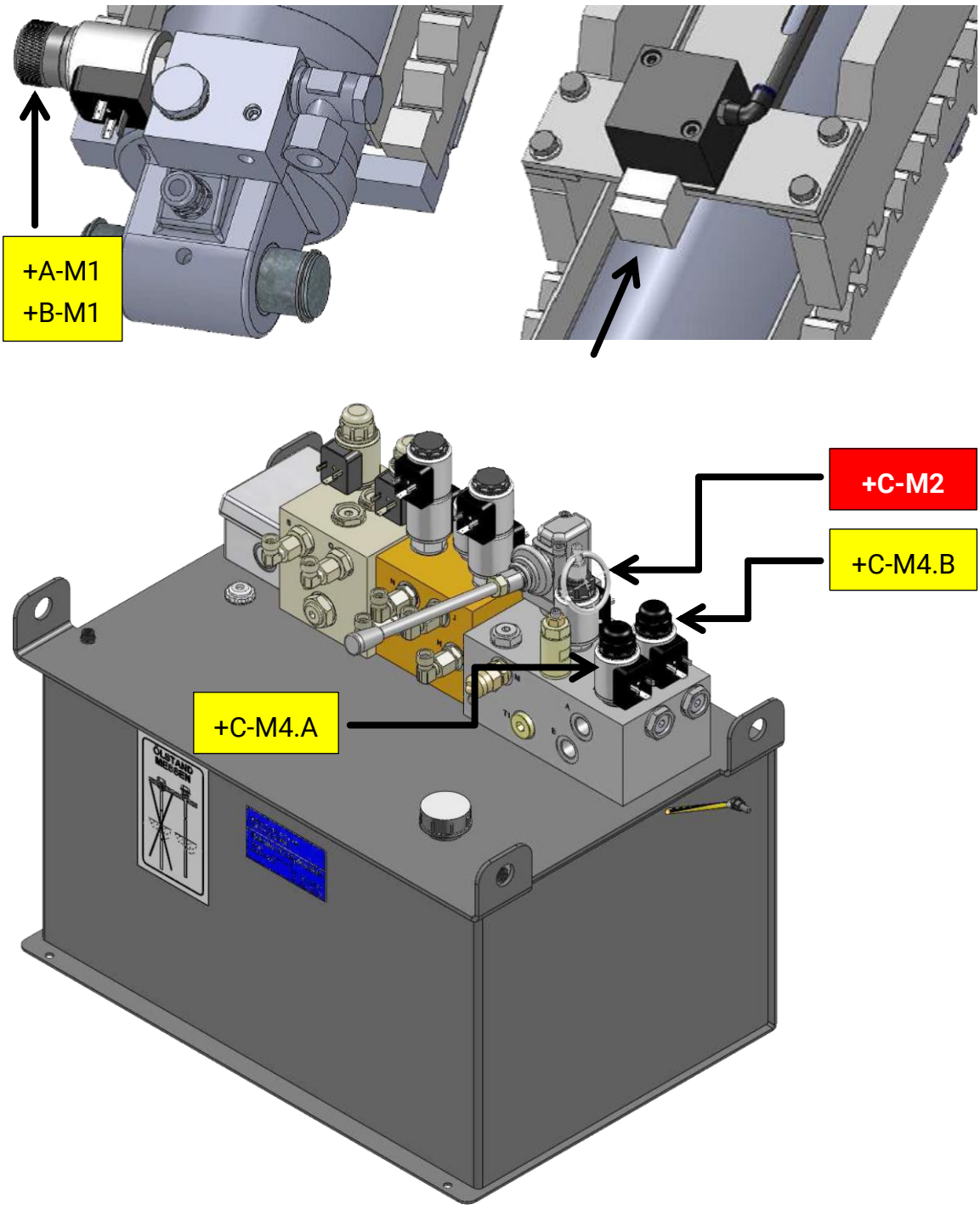
The height offset should remain < 50 mm – adjust the height of the runways as necessary. Either use the hand pump to raise the lower side or use bypass valve **+C-M4.A** or **+C-M4.B** to lower the higher side.

6 Lower the lift to the home position, remove the vehicle, rectify errors.

7 Raise the lift without any load.

8 Remove the sliding shoes.

9 Attach the coils with plug-in connectors to both seat valves and tighten the caps finger-tight (by turning them clockwise). The valves have now been returned to a functioning state.


+A-M1
+B-M1
+C-M2
+C-M4.B
+C-M4.A

5.10.5 Manual Lowering with 2 × 5.5 kW Power Unit in the Control Desk

Disengage Latch

If the latch can be disengaged, continue to point “Perform Manual Lowering”.

1 Use hand pump.

Raise the sides one after the other – the seat valve (**+C-M5.A / +C-M5.B**) on the other side must remain active in each case.

a) Disable seat valve **+C-M5.A** or **+C-M5.B**.

Unscrew and remove the protective cap from the valve and unscrew the knurled screw (anticlockwise).

b) Disengage latches.

Use the hand pump until latch is fully disengaged. ***Warning!*** Be aware of offset!

c) Enable seat valves **+C-M5.A** or **+C-M5.B**/bring them to an operating state.

Re-screw knurled screw (clockwise), attach protective cap.

2 Repeat actions for other side.

Perform Manual Lowering

1 Disable seat valves **+A-M1.A** and **+B-M1.B** (main cylinder).

Unscrew and remove the protective cap from the valve and unscrew the knurled screw (anticlockwise).

2 Place sliding shoe underneath latches on side +A and +B (main cylinder).

3 Leave hazard zone.

4 Lower the lift.

a) Lowering process:

Operate bypass stop valves **+C-M4.A** and/or **+C-M4.B** manually – lift lowers! ***Warning!*** Be aware of offset throughout entire lowering process!

5 Remove vehicle.

6 Determine cause of fault and rectify it.

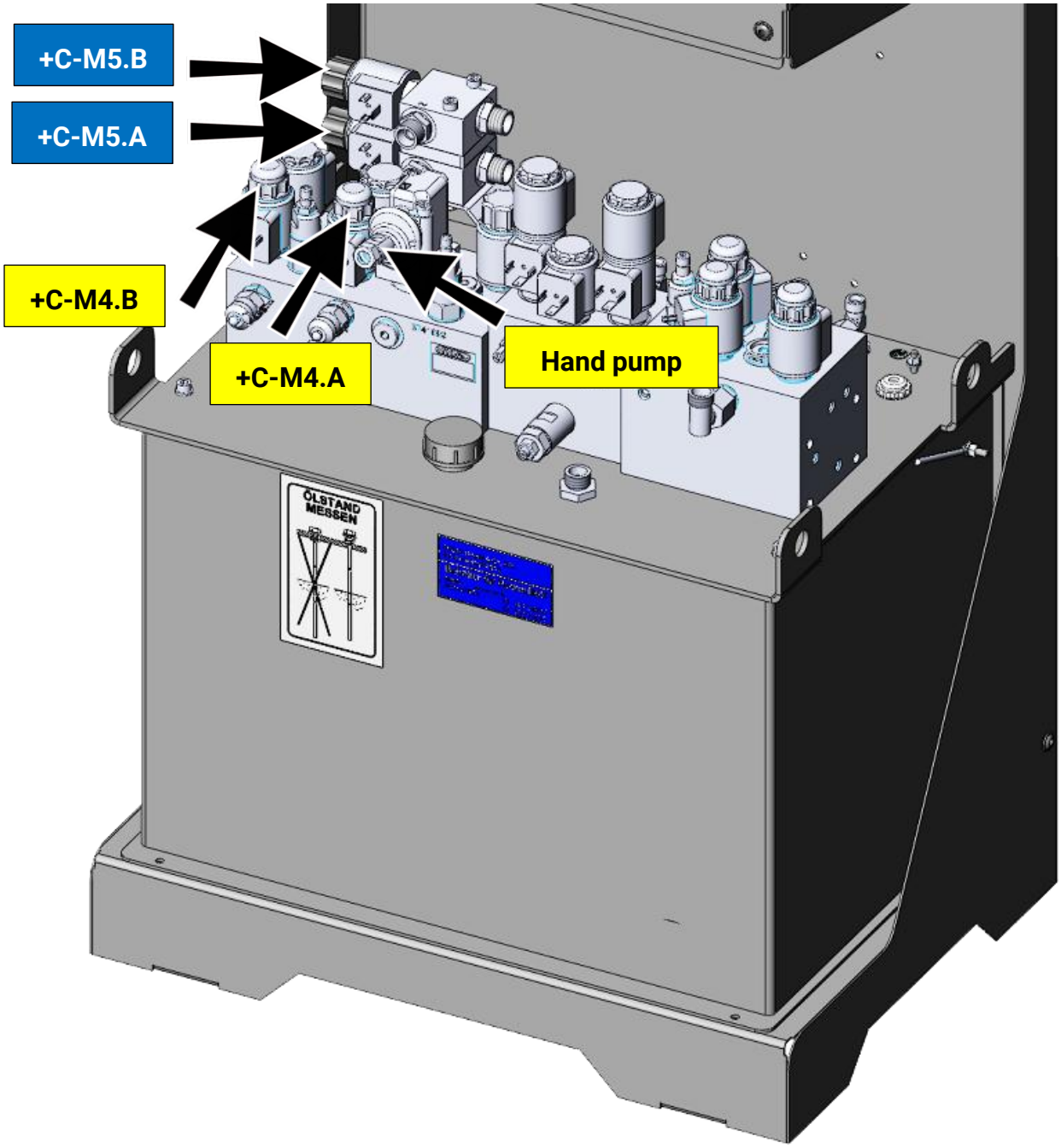
7 Raise the lift without any load.

Warning: Lift may lower a few millimetres when the “UP” button is pressed!

8 Remove sliding shoes (main cylinder).

9 Enable seat valves **+A-M1.A** and **+A-M1.B**/bring them to an operating state.

Re-screw knurled screw (clockwise), attach protective cap.


+C-M5.B
+C-M5.A
+C-M4.B
+C-M4.A
Hand pump
ÖLSTAND MESSEN

5.10.6 Manual Lowering with 5.5 kW Power Unit in the Middle Platform

1 Open the cap of seat valve **+A-M1** (by turning it anticlockwise), making sure not to lose the sealing ring.

2 Remove the coil with plug-in connector from the valve and tighten the cap (without coil) finger-tight. The seat valve is now deactivated.

3 Place the sliding shoe underneath the latch on side **+A**. You may need to use the hand pump to do this. After several pumping movements, the latch can be raised by hand.
If you use the hand pump, be aware of offset! Raise the sides one after the other – the valve on the other side must be closed in each case.

4 Repeat steps 1 to 4 for side **+B**.

5 Use the wire rope to pull lowering valve **+C-M2** forwards *slowly*. The lift is lowered. Be aware of offset and hazard zone! To stop the lowering movement, release the valve.

CAUTION

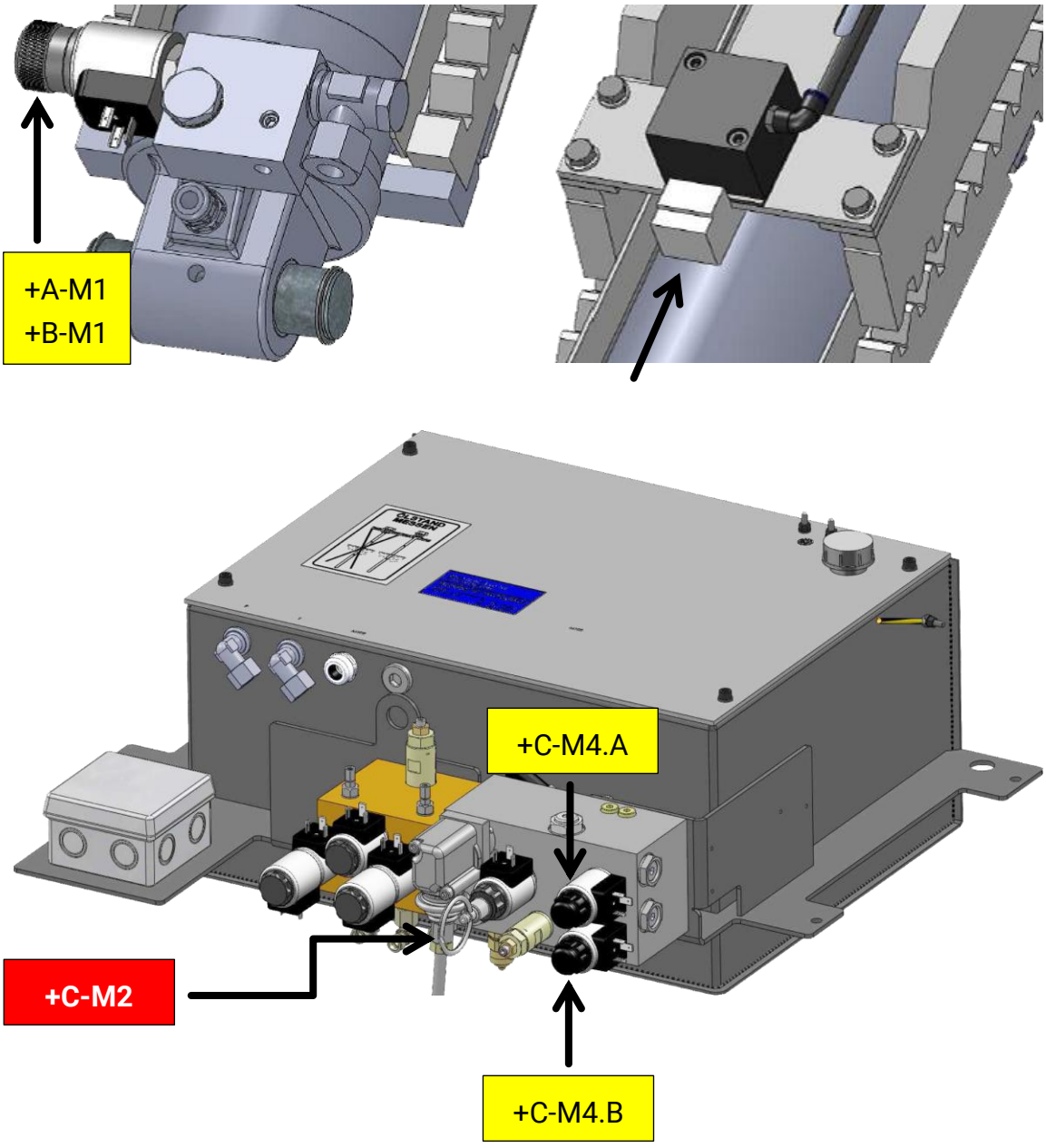
The height offset should remain < 50 mm – adjust the height of the runways as necessary. Either use the hand pump to raise the lower side or use bypass valve **+C-M4.A** or **+C-M4.B** to lower the higher side.

6 Lower the lift to the home position, remove the vehicle, rectify errors.

7 Raise the lift without any load.

8 Remove the sliding shoes.

9 Attach the coils with plug-in connectors to both seat valves and tighten the caps finger-tight (by turning them clockwise). The valves have now been returned to a functioning state.


+A-M1
+B-M1
+C-M4.A
+C-M2
+C-M4.B

5.10.7 Manual Lowering with 2 × 5.5 kW Power Unit in the Middle Platform

Disengage Latch

If the latch can be disengaged, continue to point “Perform Manual Lowering”.

1 Use hand pump.

Raise the sides one after the other – the seat valve (**+C-M5.A / +C-M5.B**) on the other side must remain active in each case.

a) Disable seat valve **+C-M5.A** or **+C-M5.B**.

Unscrew and remove the protective cap from the valve and unscrew the knurled screw (anticlockwise).

b) Disengage latches.

Use the hand pump until latch is fully disengaged. *Warning!* Be aware of offset!

c) Enable seat valves **+C-M5.A** or **+C-M5.B**/bring them to an operating state.

Re-screw knurled screw (clockwise), attach protective cap.

2 Repeat actions for other side.

Perform Manual Lowering

1 Disable seat valves **+A-M1.A** and **+B-M1.B** (main cylinder).

Unscrew and remove the protective cap from the valve and unscrew the knurled screw (anticlockwise).

2 Place sliding shoe underneath latches on side +A and +B (main cylinder).

3 Leave hazard zone.

4 Lower the lift.

a) Open stopcock (manual lowering control unit).

b) Lowering process:

Pressing the buttons on the manual lowering control unit causes the bypass stop valves (**+C-M4.A / +C-M4.B**) to be pneumatically actuated – lift lowers! *Warning*: Be aware of offset throughout entire lowering process!

c) Close stopcock (manual lowering control unit).

5 Remove vehicle.

6 Determine cause of fault and rectify it.

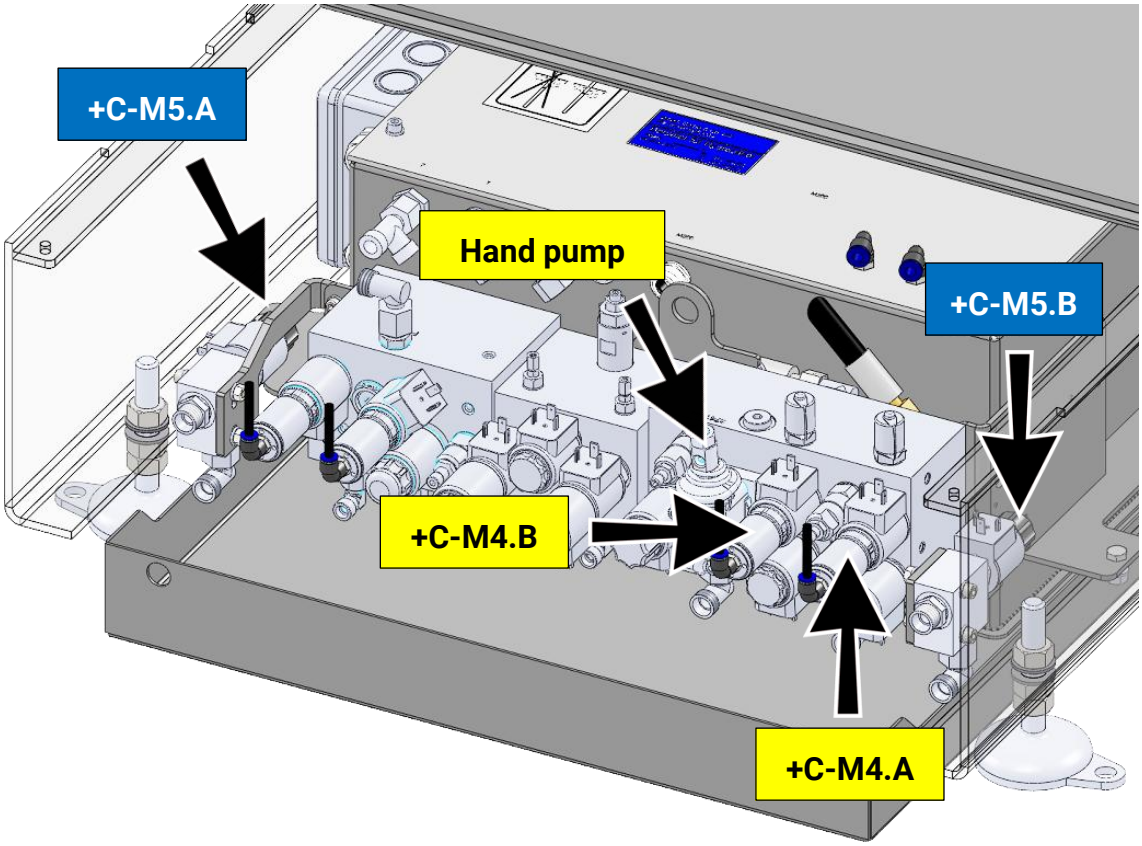
7 Raise the lift without any load.

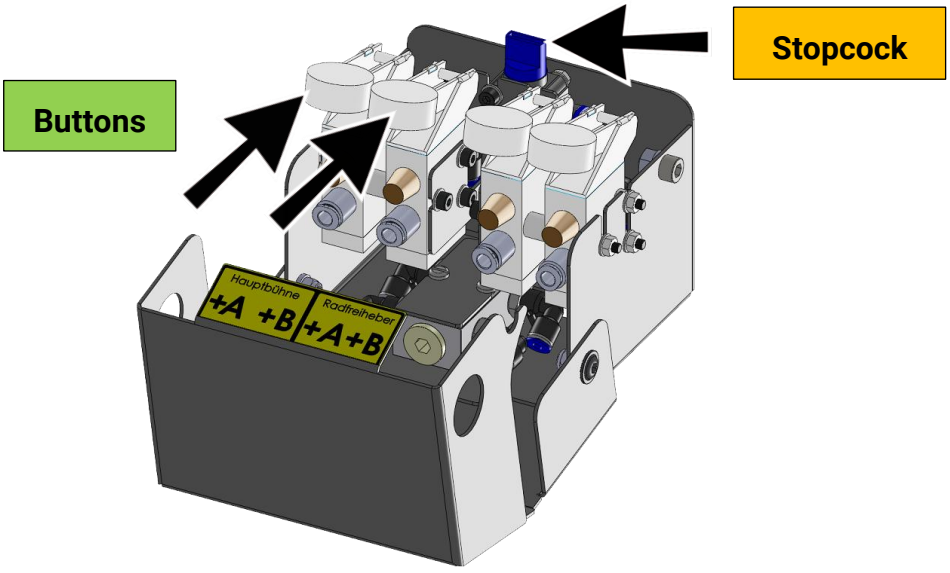
Warning! Lift may lower a few millimetres when the “UP” button is pressed!

8 Remove sliding shoes (main cylinder).

9 Enable seat valves **+A-M1.A** and **+A-M1.B**/bring them to an operating state.

Re-screw knurled screw (clockwise), attach protective cap.


+C-M5.A
Hand pump
+C-M5.B
+C-M4.B
+C-M4.A


Stopcock
Buttons
Hauptbühne
+A
+B
Radfelgheber
+A+B

5.11 Manual Lowering of the Wheel-Free Jack

5.11.1 Manual Lowering of Wheel-Free Jack with 2.5 kW or 5.5 kW Power Unit

1 Disable seat valves **+A-M50** and **+B-M50** (wheel-free jack cylinder).

Screw in knurled screw (clockwise).

2 If excessive offset is present, use **+C-M4.A** or **+C-M4.B** to lower the higher side.

3 Use key ring to pull up release valve **+C-M2** *slowly*. The wheel-free jack is lowered. Be aware of offset and hazard zone! To stop the lowering movement, release the key ring.

4 Enable seat valves **+A-M50.A** and **+B-M50.B**/bring them to an operating state.

Unscrew knurled screw (anticlockwise).

5 Remove vehicle.

6 Determine cause of fault and rectify it.

5.11.2 Manual Lowering of Wheel-Free Jack with 2 x 5.5 kW Power Unit in the Control Desk

1 Disable seat valves **+A-M50.A** and **+B-M50.B** (wheel-free jack cylinder).

Screw in knurled screw (clockwise).

2 Lower wheel-free jack.

a) Lowering process:

Actuate bypass stop valve **+C-M54.A** and/or **+C-M54.B** manually – wheel-free jack lowers!

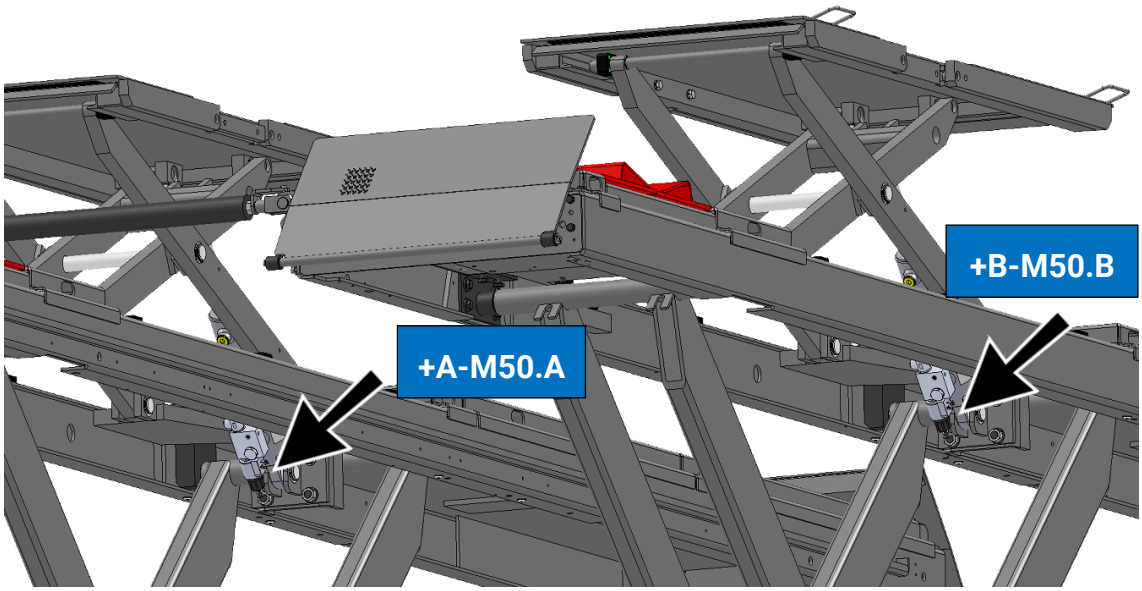
Warning: Be aware of offset throughout entire lowering process!

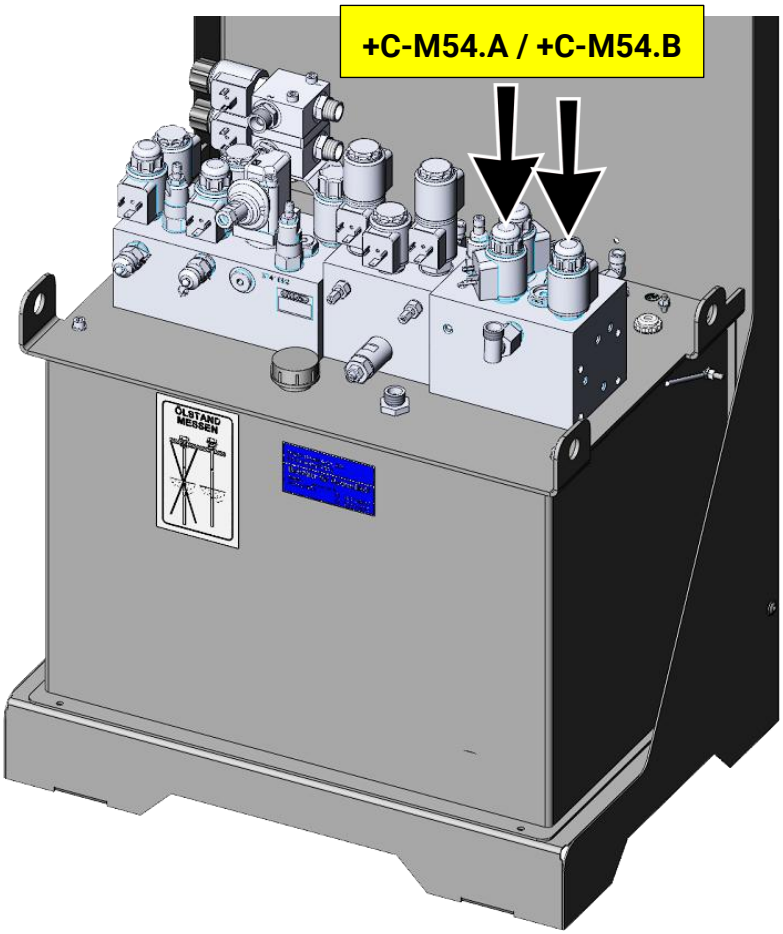
b) Enable seat valves **+A-M50.A** and **+B-M50.B**/bring them to an operating state.

Unscrew knurled screw (anticlockwise).

3 Remove vehicle.

4 Determine cause of fault and rectify it.


+B-M50.B
+A-M50.A


+C-M54.A / +C-M54.B
ÖLSTAND MESSEN

5.11.3 Manual Lowering of Wheel-Free Jack with 2 x 5.5 kW Power Unit in the Middle Platform

1 Disable seat valves **+A-M50.A** and **+B-M50.B** (wheel-free jack cylinder).

Screw in knurled screw (clockwise).

2 Lower wheel-free jack.

a) Open stopcock (manual lowering control unit).

b) Lowering process:

Targetedly pressing the buttons on the manual lowering control unit causes the bypass stop valves (**+C-M54.A / +C-M54.B**) to be pneumatically actuated – wheel-free jack lowers!

Warning: Be aware of offset throughout entire lowering process!

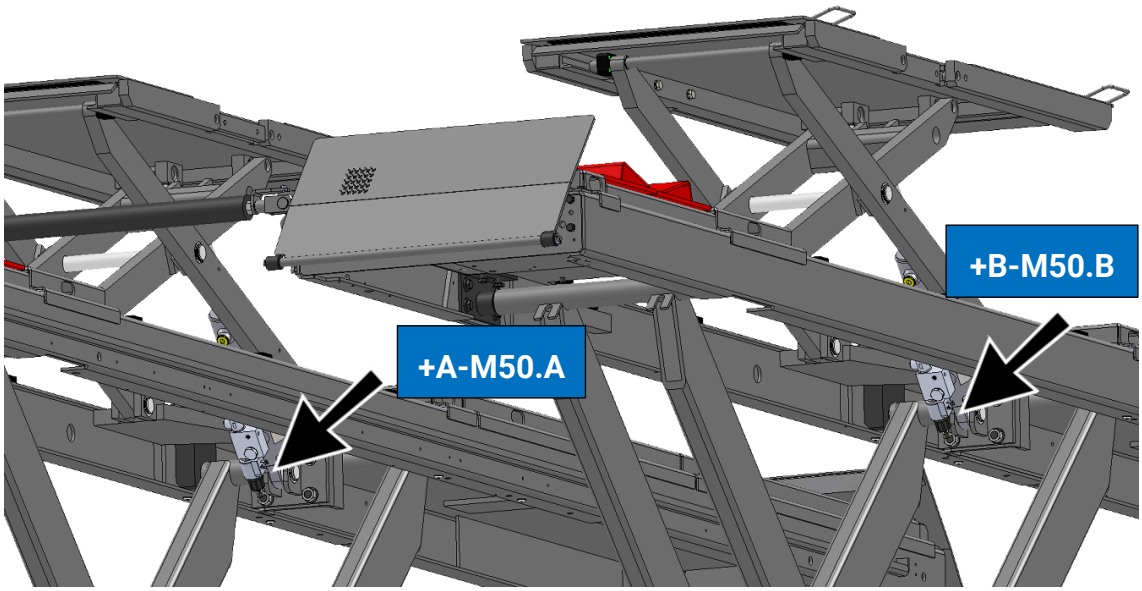
c) Enable seat valves **+A-M50.A** and **+B-M50.B**/bring them to an operating state.

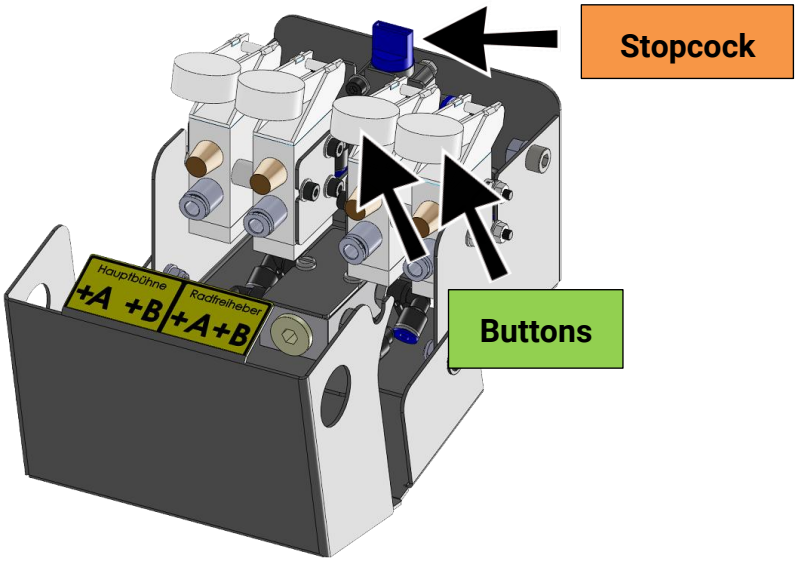
Unscrew knurled screw (anticlockwise).

d) Close stopcock (manual lowering control unit).

3 Remove vehicle.

4 Determine cause of fault and rectify it.


+B-M50.B
+A-M50.A


Stopcock
Buttons
Hauptbühne
+A +B
Radfreiheber
+A+B

6 Maintenance

6.1 Maintenance and Inspection

6.2 Maintenance Schedule

Interval	Maintenance items	Procedure
1 month	Load-bearing components (more than 88,000 load cycles)	Check for damage, replace as necessary.
3 months	Hydraulic system	Check fluid level, top up if necessary.
		Check hydraulic system for leakage.
		Check power unit for unusual noise during operation, check fastening screws for tight fit.
	Sliding blocks, sliding tracks and sliding surfaces of extensions	Check if sliding blocks have reached their wear limit, replace as required. Slightly grease the sliding tracks and sliding surfaces of the extensions.
	Load-bearing components (between 68,000 and 88,000 load cycles)	Check for damage, replace as necessary.
6 months	Hydraulic fluid	Check fluid for soiling and aging, replace if necessary.
	Load-bearing components (between 48,000 and 68,000 load cycles)	Check for damage, replace as necessary.
12 months	General inspection	Check all components for damage, replace as necessary.
	Load-bearing components (less than 48,000 load cycles)	Check for damage, replace as necessary.
5 years or 120,000 pushbutton actuations	Membrane keypad	Replace keypad board and membrane.
6 years	Pressure hoses	Replace pressure hoses.

6.3 Inspection of Load-Bearing Components

6.3.1 Inspection Procedure

The welds of all relevant components, as listed in section 4 below, must be inspected by a qualified professional in accordance with DIN EN ISO 9712. The welds shown serve as clarification and illustrate areas to be inspected. All welds within the marked areas must be inspected.

Visual inspection is to be carried out in accordance with DIN EN ISO 17635 and DIN EN ISO 17637. Before inspection of the welds begins, these must be thoroughly cleaned without any residue remaining. Cleaning agents that are gentle on the coating should be used for this to prevent distortion of the inspection findings (see section “Maintenance > Care Instructions”).

As the coating adheres strongly to the base surface, cracks in the surface coating are a clear indication of cracks in the base material. If any cracks in the coating are found, any loosely attached pieces of coating should be removed (with a steel brush, for example) so that a reliable statement can be made about the cracking in the base material. In cases of doubt, this can be verified easily by means of a dye penetrant inspection in accordance with DIN EN ISO 3452-1, -2.

If, contrary to expectations, there are no cracks in the base material despite cracks in the coating layer, the inspected weld can be repainted. The condition of the inspected welds must be documented, including the name of the person carrying out the inspection, the date of inspection, the serial number of the lift, the location and size of the cracks, and photo evidence (see separate file “Inspection Report”).

6.3.2 Inspection Schedule

Welds must be inspected and documented according to the inspection schedule specified by MAHA (see table). One lift of an average weighing vehicle from bottom position represents one load cycle.

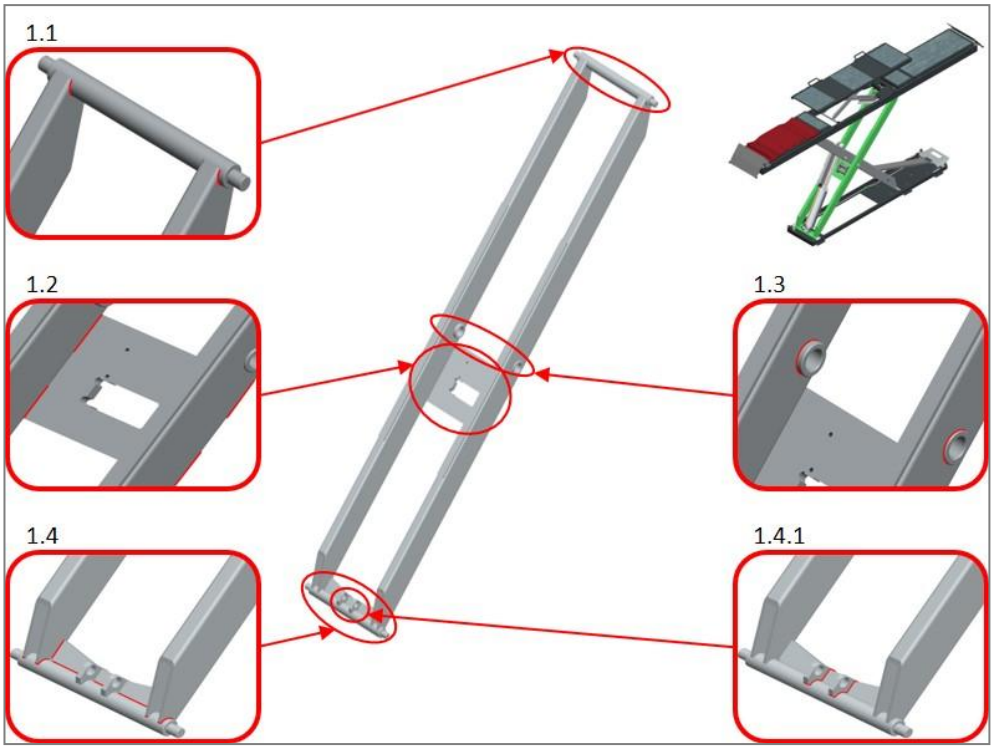
Load cycles	Inspection schedule
< 48.000	Annually
< 68.000	Every 6 months
< 88.000	Every 3 months
> 88.000	Monthly

6.3.3 Detection of Cracks and Shutting down of the Lift

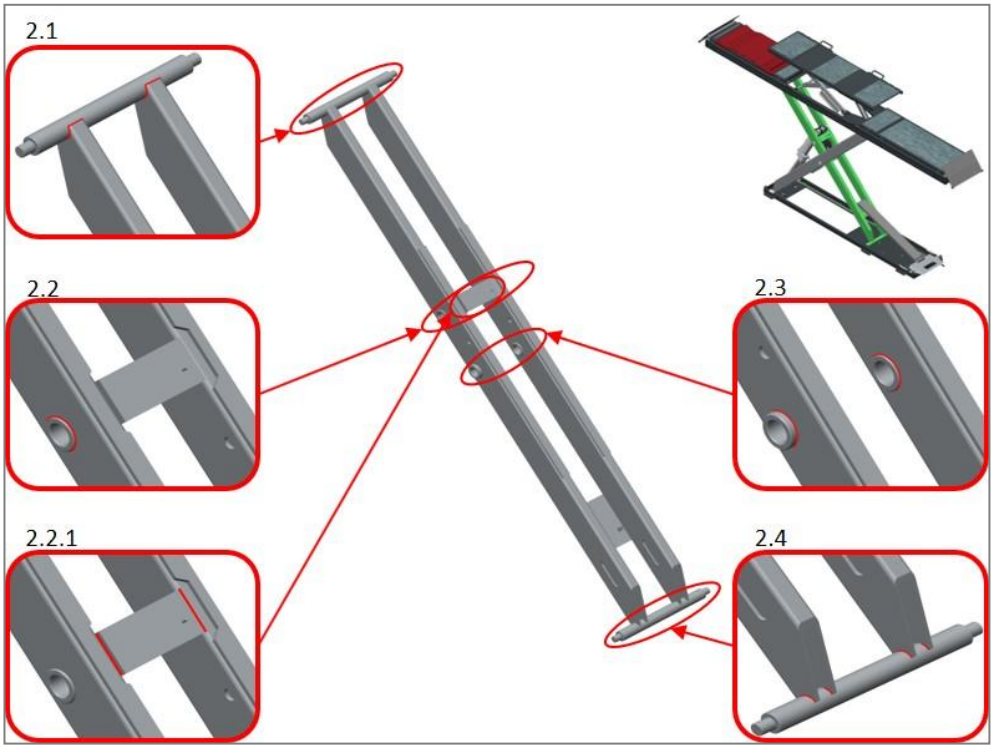
As soon as cracks are detected on one section of the lift, it must be shut down immediately and the relevant components then replaced by a trained professional. When the lift has reached the maximum of 120,000 load cycles, the main scissors must be replaced. This replacement must be carried out, even if defects have not been detected until this point.

6.3.4 Relevant Components and Welds to be Inspected

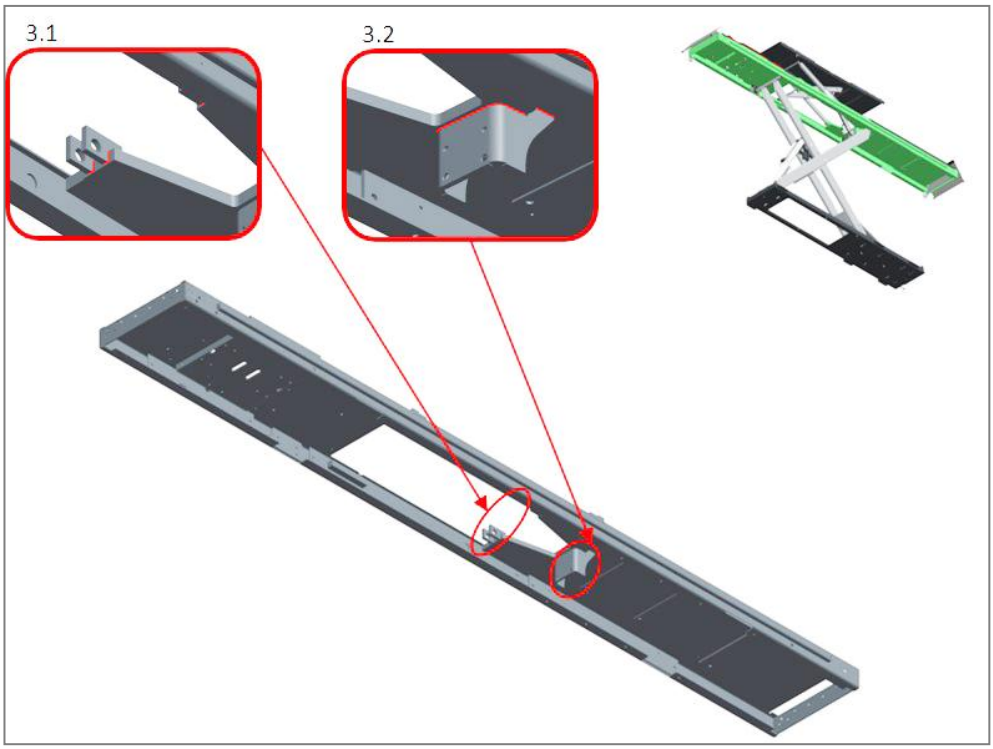
(Illustrations are exemplary.)



1 Outer arm of main scissors



2 Inner arm of main scissors

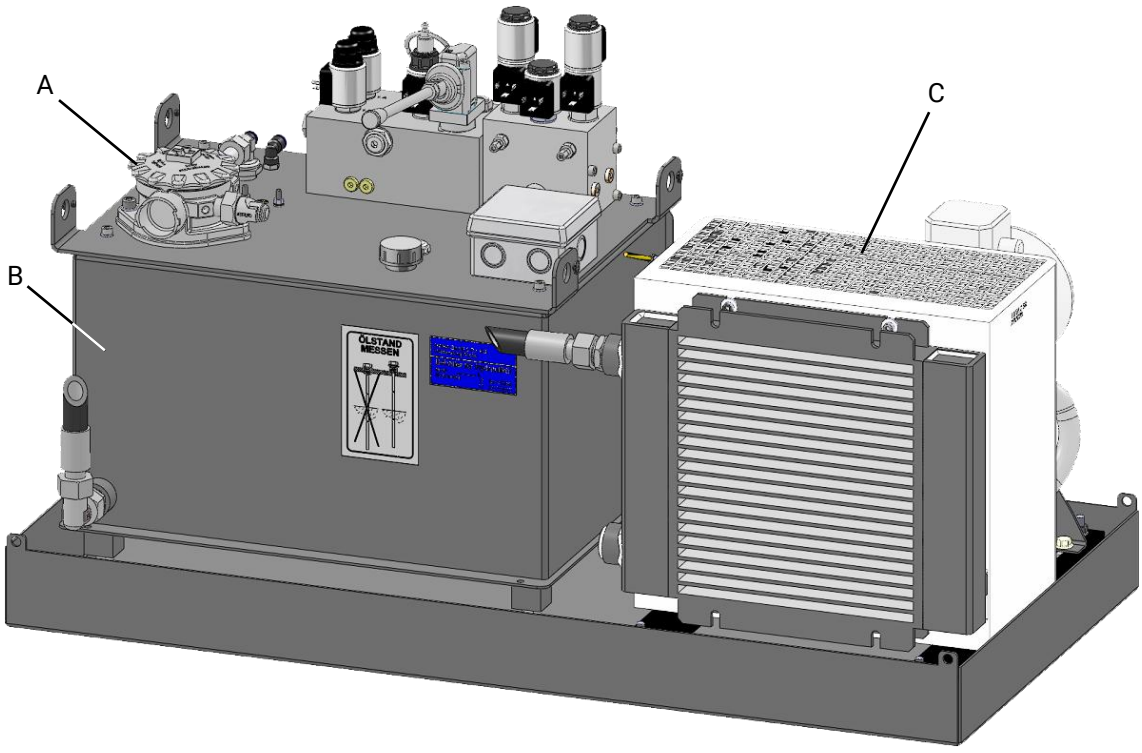


3 Runway

6.4 Replacing the Filter Element

The filter element of the return flow filter must be replaced as required, but at least once per year, by an authorised service technician.

A Filter element of return flow filter **B** Hydraulic power unit **C** Oil cooler (optional)



6.5 Checking the Oil Level

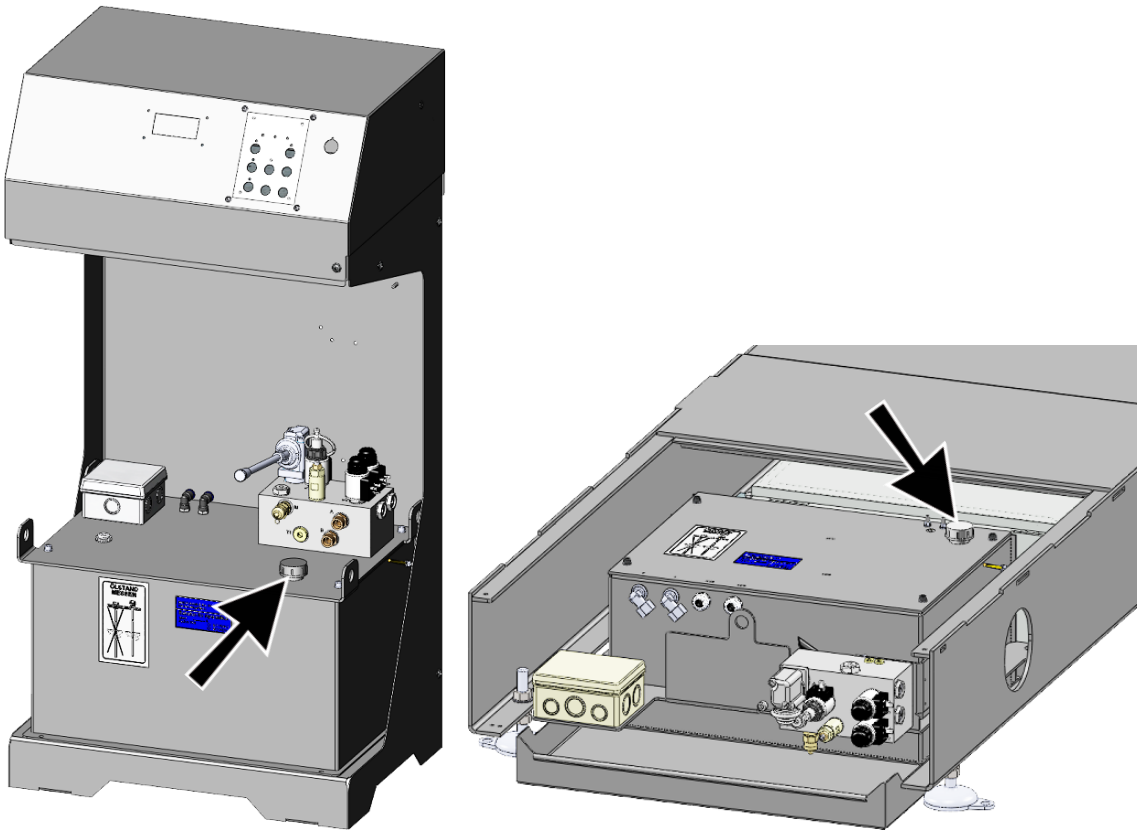
1 Lower lift and wheel-free jack into bottom position.

2 Check the fluid level (see label on power unit).

3 Open the filler neck and top up the reservoir. For specification and fluid quantity see label on power unit.

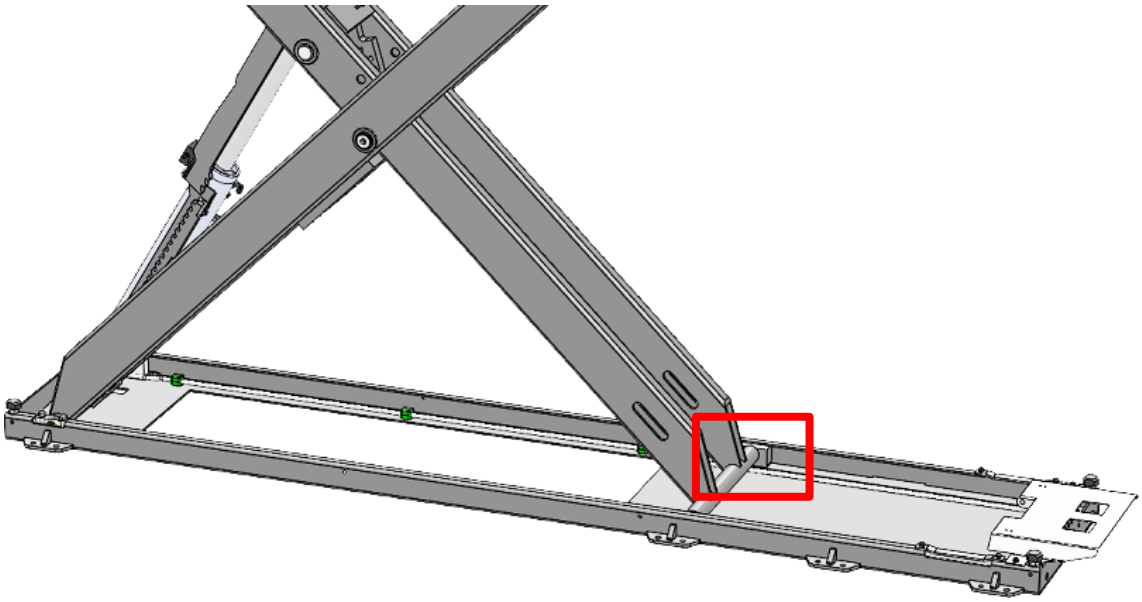
4 Also perform a visual check of all hydraulic pipes and hoses.

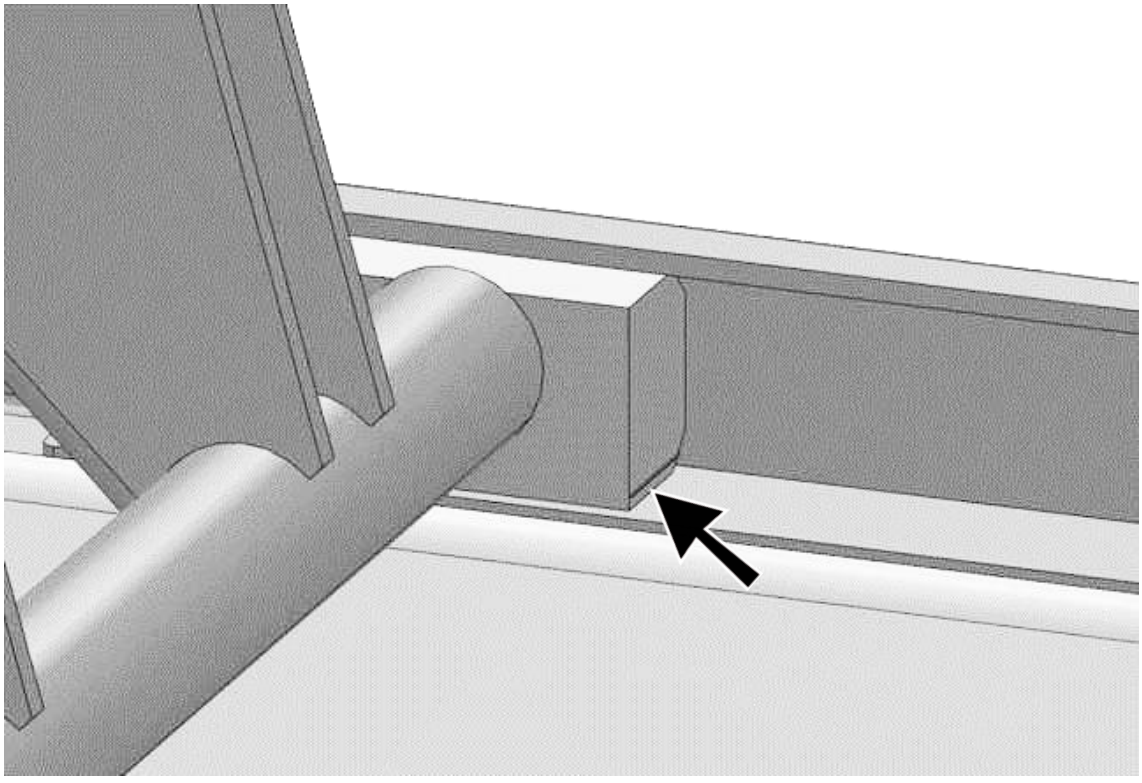
- Replace the hydraulic fluid periodically, depending on aging, soiling and water absorption.
- When topping up, use fluid with the same specification only.
- If the lift is operated permanently at an ambient temperature of < 15 °C (59 °F), use hydraulic fluid with a lower viscosity.
- The pressure hoses should be replaced as required, but after six years at the latest.



6.6 Checking the Sliding Blocks

Regularly check all four sliding blocks for wear (see illustration for wear limit mark). Once the wear limit is reached, the sliding blocks must be absolutely replaced.





6.7 Greasing Points

6.7.1 Lubrication Points at the Lift

Periodically lubricate all **pivot points** using spray grease.

A Cylinder Bearings

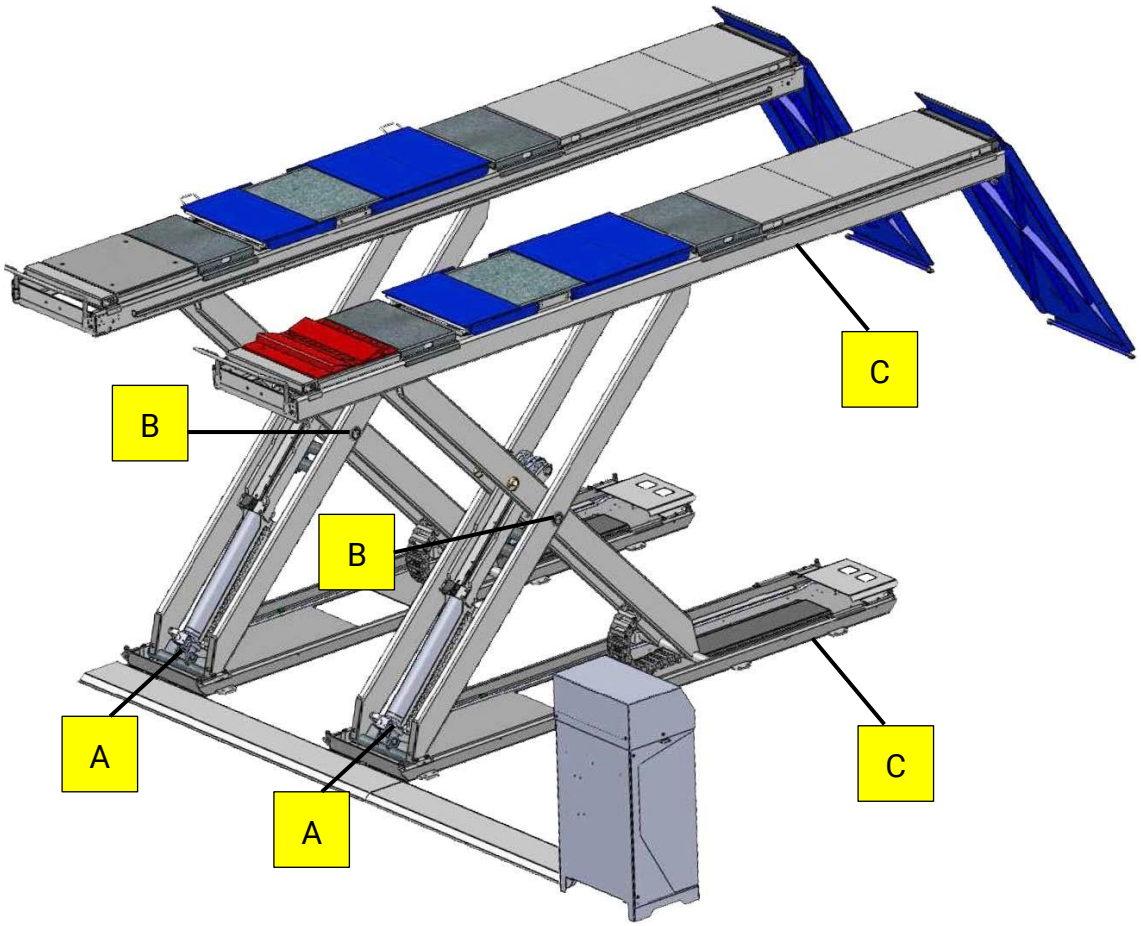
Grease cylinder bearing (bottom) and piston bearing (top) through the lubricator nipples using multipurpose grease. Remove waste grease.

B Scissors Pins

Grease the scissors pins through the lubricator nipples using multipurpose grease. Remove waste grease. (2 scissors pins per lifting unit, 2 lubricator nipples per scissors pin.)

C Slider Tracks

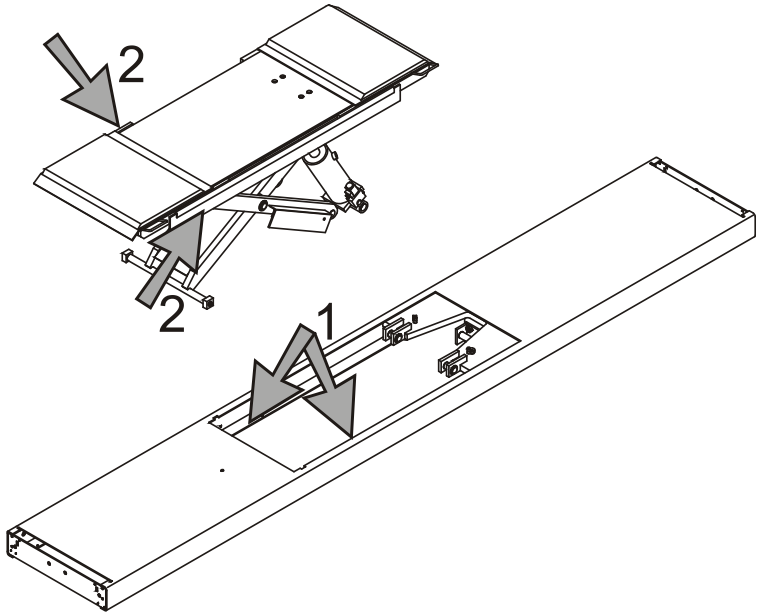
Clean the slider tracks in the base frame and the runway. Grease slightly using multipurpose grease.



6.7.2 Lubrication Points at Optional Accessories

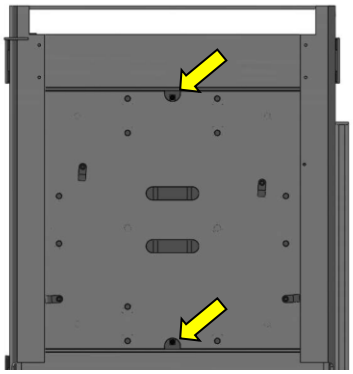
Wheel-Free Jack

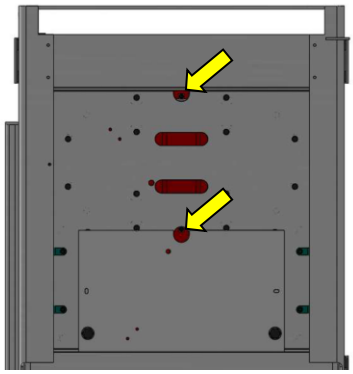
Clean the slide tracks in the runway (1) and in the support plate (2) and slightly lubricate with multipurpose grease.



Axle Play Detector, Model PMS

Using a greaser, lubricate with multipurpose grease through the lubrication nipples (accessible from bottom side). Remove waste grease.





6.8 Troubleshooting

Error	Diagnosis	Remedy
Lift does not run.	Main switch turned off.	Turn on main switch.
	Power failure.	Check for cause.
	Power cord interrupted.	Contact service.
	Fuses defective.	Contact service.
Lift does not raise.	Motor rotation reverse.	Contact service.
	Low fluid level.	Top up reservoir.
	RAISE button defective.	Contact service.
	Pump intake filter dirty.	Contact service.
Rated load cannot be raised.	Pressure valve maladjusted.	Contact service.
	Pump defective.	
Lift does not lower.	LOWER solenoid valve defective.	Contact service.
	LOWER button defective.	
Lift lowers without control button being pressed.	LOWER solenoid valve incompletely.	Contact service.
	Leakage in hydraulic system.	Contact service.
Lift shows jerky movements.	Air in hydraulic system.	Contact service.

6.9 Care Instructions

- Periodically clean the equipment and treat it with a care product.
- Repair damage to the paintwork immediately to prevent corrosion.
- Do not use caustic cleaning agents or high pressure and steam jet cleaners to avoid equipment damage.

6.10 Spare Parts

To ensure safe and reliable operation, only use original spare parts supplied by the equipment manufacturer.

7 Service Lifetime

In its standard version, this product is designed for 22,000 load cycles based on EN 1493. The maximum period of normal use in relation to the possible product life expectancy shall be evaluated and scheduled by a qualified person during the annual safety inspection.

8 Dismantling

Decommissioning and dismantling of the equipment may be done only by specially authorised and trained personnel provided by the manufacturer, licensed dealers or service partners.

9 Disposal

Pay attention to the product and safety data sheets of the lubricant used. Avoid damage to the environment. Should a disposal of the device be necessary it must be done in adherence with locally applicable legal regulations regarding environmental protection. Remove all materials properly sorted out and bring them to a suitable waste disposal service. Collect operating materials such as grease, oils, coolant, solvent-based cleaning fluids etc. in suitable containers and dispose of in an environmentally protective manner.

Alternatively, you may take the equipment to a specialised waste management plant to ensure that all components and operating liquids are properly disposed of.

10 Declaration of Conformity

See following page(s).

Original-EG-Konformitätserklärung
Original EC Declaration of Conformity

CE082901-de-en

MAHA SE & Co. KG

erklärt hiermit als Hersteller in alleiniger Verantwortung, dass nachstehend bezeichnetes Produkt in Konzeption und Bauart den grundlegenden Sicherheits- und Gesundheitsanforderungen der hier genannten Richtlinien entspricht.
Bei Änderungen am Produkt, die nicht von oben genannter Firma genehmigt wurden, verliert diese Erklärung ihre Gültigkeit.

herewith declares as a manufacturer its sole responsibility to ensure that the product named hereafter meets the safety and health regulations both in design and construction required by the directives stated below.
This declaration becomes void if any change is made to the product that was not approved by named company beforehand.

Typ | Model

DUO CM
R-AS40/50CM

Serialnummer | Serial Number

Bezeichnung | Designation

Scheren-Hebebühne

Scissors Lift

Richtlinien | Directives

2006/42/EG
2014/30/EU
2011/65/EU

2006/42/EC
2014/30/EU
2011/65/EU

Normen | Standards

DIN EN 1493
DIN EN 60204-1

Bevollmächtigter für die Zusammenstellung der technischen Unterlagen
Person Authorised to Compile the Technical File

Ralf Kerkmeier • MAHA SE & Co. KG • Hoyen 20 • 87490 Haldenwang • Germany

Haldenwang, 2025-11-17

Dr. Peter Geigle
Geschäftsführer | Managing Director

Muster | Sample

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