



4-Post Lift
AR43-5MB,
SM40, SM40-47BMW, SM40LT,
SM55-M51VAS, SM60

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Table of Contents

1. Introduction.....	1	6.2 Leveling the rolling jacks.....	22
1.1 About this operating manual	1	6.3 Emergency manual function	22
1.2 Warning and information symbols.....	1	7. Technical data	24
1.3 Intended use.....	2	8. Cleaning	25
1.4 Incorrect use, incorrect behavior	2	9. Maintenance and repair	26
1.5 Internal accident, health and safety, and environmental information	2	9.1 Qualification of maintenance and repair staff	26
2. Safety	3	9.2 Maintenance and repair safety regulations	26
2.1 Operators	3	9.3 Maintenance work.....	27
2.2 Basic safety requirements.....	3	9.4 Approved hydraulic oils.....	30
2.3 Permitted axle loads and weight distribution	4	9.5 Check, refill, change the hydraulic oil ..	31
2.4 Ban on unauthorized modifications or alterations	5	9.6 Repair work (Repairs).....	32
2.5 Experts, competent persons	5	10. Transport, Storage	35
2.6 Maintenance contractors, installation staff.....	5	10.1 Transport.....	35
2.7 Safety inspections by competent persons.....	6	10.2 Offloading.....	36
3. The 4-Post Lift.....	7	10.3 Storage	36
3.1 Overview of parts	7	11. Assembly	37
3.2 General workflow.....	7	11.1 Assembly safety instructions	37
3.3 Work area, danger zones.....	8	11.2 Quick assembly instructions	37
3.4 Safety mechanisms	8	11.3 Site specifications	38
3.5 Control unit.....	12	11.4 Installation preparations.....	38
4. Operation.....	13	11.5 Prepare the runways.....	39
4.1 Emergency stop	13	11.6 Prepare the cross beams.....	39
4.2 Switch the machine on	13	11.7 Set up the cables	41
4.3 Determine the vehicle data	13	11.8 Fasten the runways to the cross beams	41
4.4 Driving on	14	11.9 Insert the latch bars	42
4.5 Lifting/lowering	14	11.10 Assemble the lift column	42
4.6 Drive off	15	11.11 Attach the latch bars and cables ..	44
4.7 Switch the machine off	15	11.12 Attach the flexible hose	45
5. Problems, causes, actions	16	11.13 Assemble the hydraulics module..	45
5.1 Troubleshooting by the operator	16	12. Electrical connections	47
5.2 Troubleshooting by authorized maintenance contractors.....	18	12.1 Safety instructions for connecting power cables.....	47
6. Authorized lowering	21	12.2 Connect the lift power supply.....	47
6.1 Manually lowering the lift when there is a height difference of > 50 mm.....	21	13. Commissioning	49
		13.1 Test the pneumatic and hydraulic system	49

13.2 Test the safety mechanism	49
13.3 Align the rolling jacks.....	50
13.4 Leveling the main lift.....	50
14. Wheel alignment kit AK... (optional)	52
14.1 Supplied parts	52
14.2 Assembly.....	52
14.3 Adjustment work.....	53
15. Disassembly.....	55
16. Disposal.....	55
16.1 Environmental procedures for disposal	55
16.2 Packaging.....	55
16.3 Oils, grease, and other chemical substances	55
16.4 Metals / Electronic waste	55

ANNEX

- SM40-47, SM40-47BMW und SM40-51:
Pneumatic circuit diagram, wiring diagrams,
hydraulic circuit diagram, spare parts lists
- SM55-M51 VAS, AR43-5MB, SM60-51 and
SM60-55:
Pneumatic circuit diagram, wiring diagrams,
hydraulic circuit diagram, spare parts lists
- SM40LT-47and SM40LT-51:
Pneumatic circuit diagram, wiring diagrams,
hydraulic circuit diagram, spare parts lists
- Maintenance schedule: Instructions for conduct-
ing visual inspections and function testing
- Inspection log

1. Introduction

1.1 About this operating manual

The post lift conforms to state of the art technology and complies with the applicable occupational health & safety and accident prevention regulations. Notwithstanding, improper use or use other than that which is intended may result in a risk of fatal or physical injury to the user or third parties and may also result in damage to property.

It is therefore imperative that the relevant people carefully read and understand this operating manual. Read the instructions carefully to prevent incorrect use, potential hazards and damage. The post lift should always be operated according to regulations.

Please note the following:

- The operating manual must be kept near the lift and be easily accessible for all users.
- This operating manual provides information on the post lifts SM40, SM55M51 VAS, SM60, AR43-5MB and the SM40LT variant with rolling jacks.
- **Make sure that you have read and understood Chapter 2, Safety and also the operating instructions supplied with the machine.**
- We assume no liability for damage and operational breakdowns which may occur as a result of non-compliance with the instructions contained within this operating manual.
- Installation and commissioning of the lifts is described in detail in Chapters 11 to 13. Installation may only be carried out by authorized installation specialists and qualified electricians.
- If you should run into difficulties please contact a specialist, our customer service or spare parts department or one of our representatives.
- Illustrations may differ from the supplied version of the machine. Functions or processes to be carried out remain the same.

Disclaimer:

We assume no responsibility for printing errors, mistakes and technical changes. The brands and trademarks mentioned in this document refer to their owners or the products thereof.

1.2 Warning and information symbols

Warnings are identified by the following symbols, depending on the hazard classification.

Be especially aware of safety and hazards when working in situations identified by warning symbols. Comply with the occupational health & safety and accident prevention regulations which are applicable in your country.



DANGER

Risk of death or injury

Direct threat to life and health of people. Non-compliance may lead to death or serious injury.



WARNING

Risk of death or injury

Potential risk to life and health of people. Non-compliance may lead to serious or critical injury.



CAUTION

Risk of injury

Potentially hazardous situation. Non-compliance may lead to minor or moderate injury.

ATTENTION Damage to property

Potentially hazardous situation. Non-compliance may lead to damage to property.

Other Symbols



INFO symbol

Useful information and Tips.



Bullet point:

For lists with key information on the respective subject.

1. **Handling instructions:**

Carry out the detailed steps in sequence.

➔ **Handling instructions, warning**

Carry out the detailed steps in sequence.

1.3 Intended use

The post lift may only be used:

- In indoor areas for lifting unoccupied motor vehicles.
- For lifting vehicles with a max. load capacity of 4000 kg, 5500 kg or 6000 kg, according to the lift variant. The permitted load capacity of the rolling jack is max. 3000 kg.
- If the weight is distributed correctly. By default, the load should be centered in the direction of motion. If the main load (e.g. engine) is however at the front or the back, the following applies:
 - main lift: at front max. 2/3, at back 1/3 of load or vice versa.
 - for rolling jacks: at front max. 3/5, at back 2/5 of load or vice versa.
- With correctly aligned, adjustable runways. The vehicle must be approximately centered on the two runways.
- In accordance with the technical data in Chapter 7, in technically sound condition.

1.4 Incorrect use, incorrect behavior

Incorrect behavior presents a residual risk to the life and health of the people working in the lift area.

The manufacturer assumes no liability for damage resulting from use other than the intended purpose and from incorrect behavior.

The following is prohibited:

- Climbing onto or riding on the post lift or the load.
- Lifting when there are people in the vehicle.
- Lifting/lowering when people or animals are in the danger zone, in particular below the lift.
- Jerky lifting or lowering. Do not cause the lift to vibrate.
- Throwing objects onto or under the lift.
- Lifting a vehicle at the incorrect pick-up points when using a rolling jack.
- Lifting a load on only one runway of the main lift or the rolling jack.
- Loitering or working in the danger zone when it is not lowered into the lock position (latch bars).
- Activating the machine when safety equipment or mechanisms are not in place (Example: locking latches are not fitted).
- Driving onto the lift when the adjustable runways are incorrectly aligned.

- Lifting loads not listed in Chapter 1.3.
- Lifting vehicles containing hazardous goods.
- Operating outdoors or in workshops at risk from fire or explosion.
- Washing cars on the post lift.
- Modifications of any kind.

1.5 Internal accident, health and safety, and environmental information

This operating manual does not include the operating instructions which need to be drafted by the user of the post lift.

The internal operating instructions regulate actions within the company for the prevention of accidents, and risks to health & safety and the environment.

These also include actions in the case of an emergency, first aid measures etc.

2. Safety

2.1 Operators

The post lift may only be operated without supervision by persons who:

- Are 18 years old and above.
 - Are familiar with the basic regulations on health & safety and accident prevention.
 - Have been trained to handle and operate the post lift.
 - Have proven their ability to do so to the company.
 - Have been expressly appointed in writing to operate the lift.
 - Have read and understood the operating manual.
-

2.2 Basic safety requirements

- Only operate the post lift after a specialist has certified in the inspection log that it has been correctly set up.
- Always follow the operating instructions (labels on the post lift).
- If several people work on the post lift, a supervisor must be appointed by the company.
- The post lift may only be operated in technically sound condition with regard to safety and with all safety mechanisms in place.
- The control box or control unit may only be opened by a qualified electrician.
- Safety inspections must be conducted regularly, at least once annually.
- If signs of a defect appear, immediately shut down the post lift, inform a supervisor and contact the customer service if necessary.
- Keep the work area clean and free of oil, grease, and contamination.
- Before lifting/lowering, check that the acoustic alarm (buzzer) works.
- Before standing or working in the danger zone underneath the main lift/rolling jack, lower it into the lock position (latch bars) using the "Down" button.
- There must be no obstacles in the path of the main lift or the rolling jack.
- Always monitor the load carefully when lifting and lowering.
- Always stop the vehicles safely, centered on the runways. Secure the vehicle against rolling with wheel chocks.

- For lifts with rolling jacks:
Always lift the vehicle with the rolling jack on the pick-up points approved by the vehicle manufacturer. Lift it for a short distance and check that the pick-up points are secure. Only then can the vehicle be moved to the required height.
- Take steps against traffic in the area of the post lift. Do not park other vehicles in the danger zone.
- Do not load main lifts and rolling jacks beyond the permitted capacity, comply with the permitted axle loads and load distribution in accordance with Chapter 2.3.
- When disassembling or fitting heavy vehicle parts, watch out for dangerous shifts in the weight balance, in particular when the vehicle is supported by rolling jacks. Secure the vehicle beforehand.
- Always fully lower, switch off and secure main lifts and rolling jacks to prevent unauthorized use after completion of work (turn main switch to "OFF" and lock).
- Follow the maintenance and service schedule, record performance of maintenance and servicing (→Chapter 9).
- Installation, maintenance and servicing may only be carried out by authorized specialists (maintenance contractors) (→Chapter 9).
- Only qualified electricians may work on the electrics.
- Only trained people with knowledge of hydraulics/pneumatics may work on hydraulic or pneumatic equipment.
- Appropriate personal protective equipment must be worn when working in the area of the lift in accordance with the applicable health & safety and accident prevention regulations. For example, protective gloves, protective goggles, safety shoes.
- Only original spare parts from the manufacturer may be used.
- The lift must be inspected by a specialist after repairing any supporting parts.

2. Safety

2.3 Permitted axle loads and weight distribution

Before lifting the vehicle, you must ensure that the weight distribution is correct.

When the weight distribution is correct (default position in direction of motion) the main load is located at the front (e. g. engine).



WARNING

Risk of injury through toppling of the vehicle when incorrectly loaded.

- Comply with the permitted load capacity as in Fig. 1 and 2.
- Comply with the permitted weight distribution as in Fig. 1 and 2.
- Comply with the approved distances between pick-up points as in Fig. 3.

Figure 1: SM40LT (with rolling jack)

Load capacity

- Main lift 4000 kg
- Rolling jack 3000 kg

Permitted weight distribution

- Main lift
 - front max. 2/3:
F1 = max. 2670 kg
 - back max.1/3:
F2 = max. 1330 kg
- Rolling jack
 - front max. 3/5:
F1: 1800 kg
 - back max.2/5:
F2: 1200 kg

Figure 2: SM40, AR43-5MB, SM55M51 VAS or SM60

Load capacity

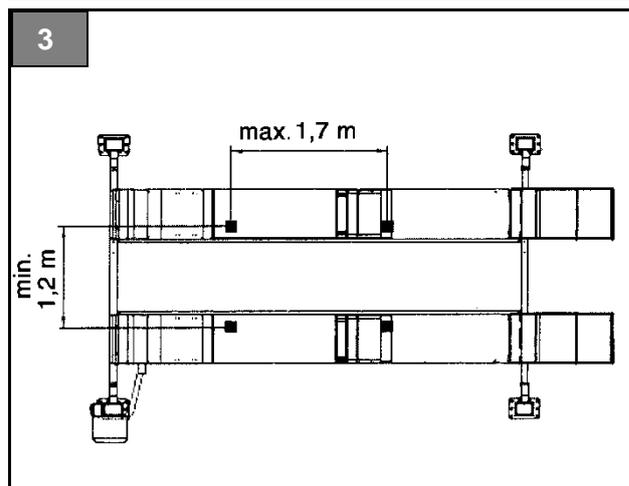
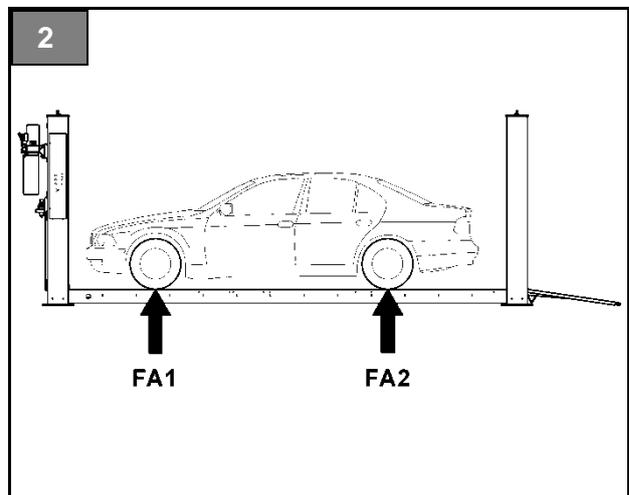
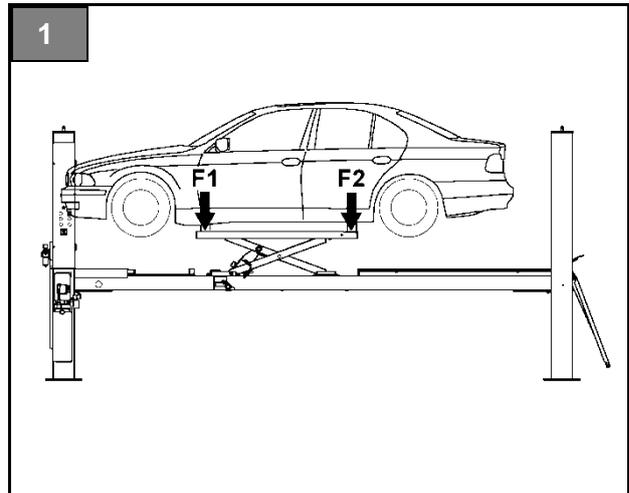
- AR43-5MB 4000 kg
- SM40, SM40-47 BMW 4000 kg
- SM55M51 VAS 5500 kg
- SM60 6000 kg

Permitted weight distribution

- SM40
 - front max. 2/3:
FA1 = max. 2670 kg
 - back max.1/3:
FA2 = max. 1330 kg
- SM60
 - front max. 2/3:
FA1 = max. 4000 kg
 - back max.1/3:
FA2 = max. 2000 kg

Figure 3: Approved distance between pick-up points on rolling jacks

- Length max. 1.7 m
- Width min. 1.2 m



- SM60
 - front max. 2/3:
FA1 = max. 3667 kg
 - back max.1/3:
FA2 = max. 1833 kg

2.4 Ban on unauthorized modifications or alterations

- Unauthorized modifications and alterations to the post lift are not permitted for safety reasons.
- The operating permit shall also be deemed null and void.
- The Declaration of Conformity also becomes null and void.

2.5 Experts, competent persons

The post lift must be inspected after commissioning and at regular intervals (after max. one year), as well as after design modifications or repair of supporting parts. **Inspections may be carried out by the following people:**

Certified expert

These are people who have **specialist knowledge** in the field of lifts based on their professional training and experience.

Experts should be able to inspect lifts and make an expert assessment thereof.

TÜV experts, specialist engineers from the manufacturer or self-employed specialist engineers can be used for inspections.

Competent persons

These are people who have **adequate knowledge** in the field of lifts based on their professional training and experience.

They are sufficiently familiar with health & safety and accident prevention regulations as well as with lift technology in order to be able to assess the occupational health & safety compliance of lifts.

2.6 Maintenance contractors, installation staff

Maintenance, servicing and installation work may only be done by companies or specialists authorized by the manufacturer.

These people trained in the field of lifts are competent persons, who are trained for maintenance as well as repair work.

A competent person is a person who has adequate knowledge based on his professional training and experience and is also familiar with key regulations so that he:

- Can assess the work assigned to him,
- Can recognize potential risks,
- Can take actions required to eliminate the risk,
- And has the required knowledge of repair and fitment.

The specialist knowledge of a competent person must enable him to be in a position to

- Read and fully understand circuit diagrams,
- Fully understand the context with particular regard to any installed safety equipment.
- Possess knowledge of the function and design of system components.

Simple faults on the post lift may be rectified by operating staff.

In the event of a more serious fault, contact an authorized maintenance contractor.

2.7 Safety inspections by competent persons

Safety inspections must be carried out to guarantee the safety of lifts.

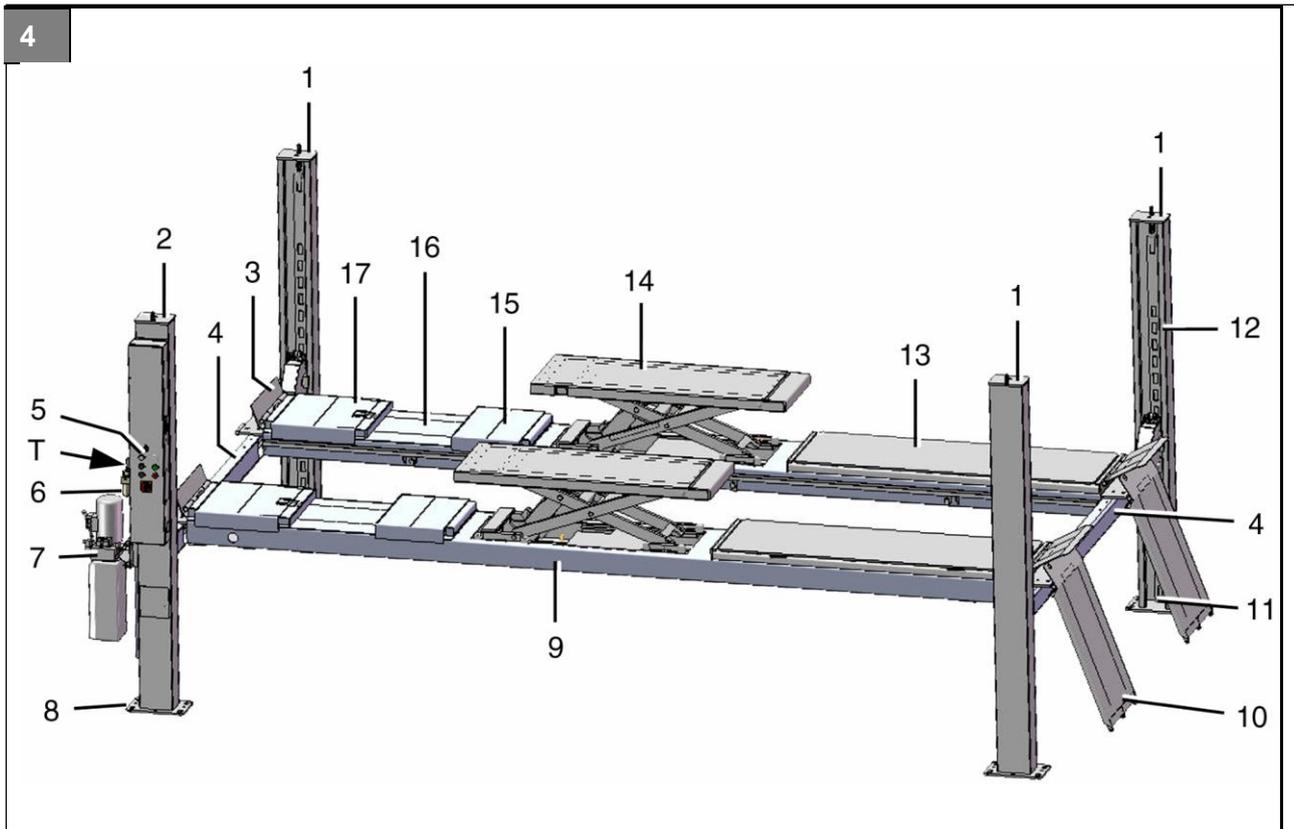
Safety inspections should be carried out in the following cases:

- Before initial operation, after initial installation. Use the form "Initial safety inspection before installation".
- After initial operation at regular intervals, but at least once a year. Use the form "Regular Safety Inspection".
- After any design modification to parts of the lift. Use the form "Unscheduled Safety Inspection".

i The initial safety inspection as well as the safety inspections must be carried out by a **competent person**. We recommend that you also perform maintenance in the course of the inspection.

i Unscheduled safety inspections and special maintenance work are required in the event of design modifications to the lift (fitting additional parts). The safety inspection must be carried out by a **competent person**.

i **Use the form supplied in the Annex** containing lists for carrying out safety inspections. Please use the relevant form and staple it to the manual after completion.



3. The 4-Post Lift

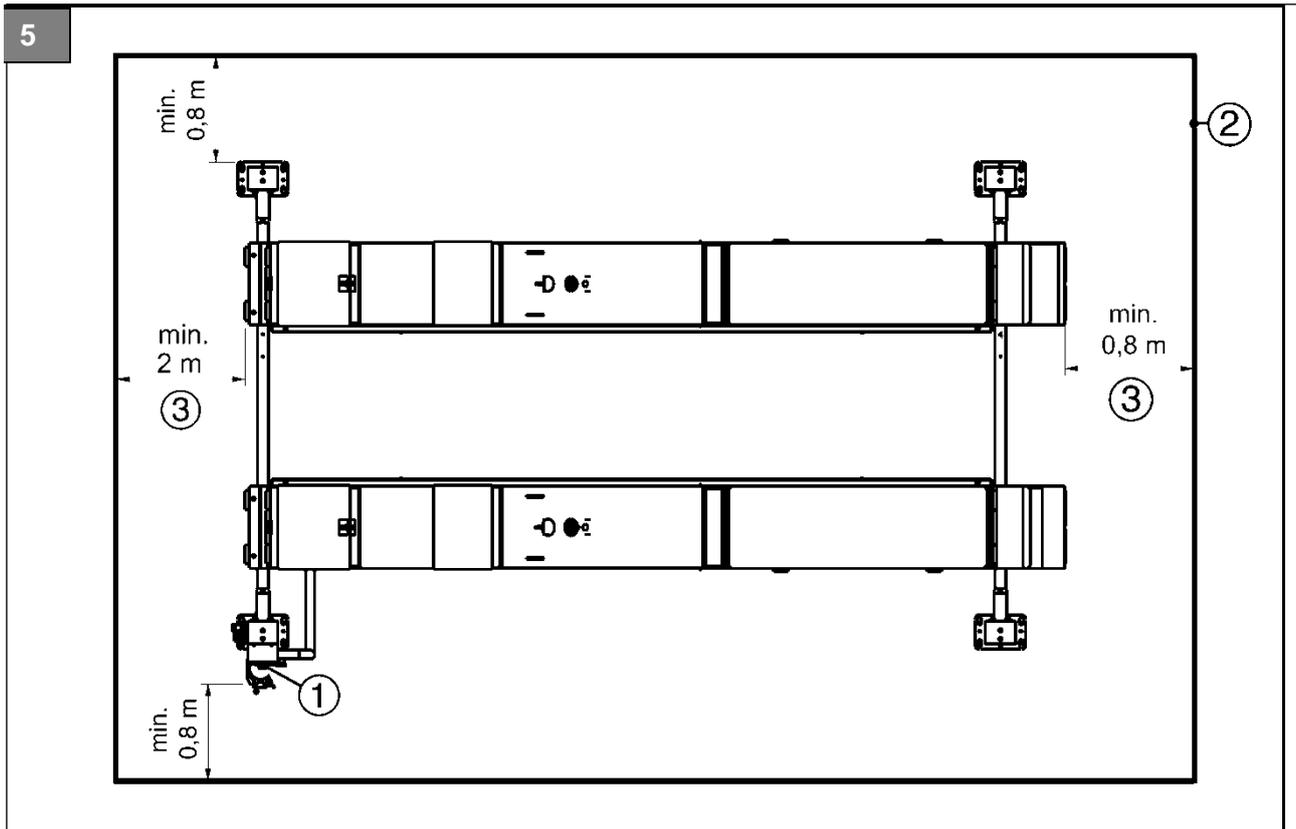
3.1 Overview of parts

Figure 4: Example of a 4-post lift with rolling jack

- 1 Standard lift column
- 2 Lift column with control unit
- 3 Automatic ramp chock
- 4 Cross beams
- 5 Control unit
- 6 Compressed air unit with lubricator (Option)
- 7 Hydraulic unit with engine and tank (11 liters)
- 8 Base plate
- 9 Fixed runway
- 10 Drive-on ramp
- 11 Latch bar locking latch
- 12 Latch bar
- 13 Slip plate
- 14 Rolling jacks (SM40LT only)
- 15 Filler plate
- 16 Adjustable runway
- 17 Adjustable filler plate
- T Nameplate

3.2 General workflow

- After determining the vehicle data and aligning the runways, the vehicle is driven onto the main lift and secured against rolling.
- The vehicle is raised to the desired height with the main lift.
- With optional rolling jack:
If a rolling jack is used, the manufacturer-approved pick-up points on the vehicle are selected and the matching supports are placed underneath. After adjusting the selector on the control unit and checking that the weight distribution is correct, the vehicle is lifted by the rolling jack, and the locking latch then locks. Only then can work continue in the danger zone.
- Main lifts and rolling jacks are fitted with a pneumatic locking mechanism.
- If the lift lowers even slightly, for safety reasons it automatically moves into the latch bar (locking latch).
- After completion of the work, the vehicle is lowered again to the ground and driven off.



3.3 Work area, danger zones

Figure 5: Work area, danger zones

- 1 Control area
- 2 Work area and danger zone
- 3 Vehicle overhang

 **Risk of injury in the danger zone of the post lift in the event of incorrect behavior.**

WARNING

- Only remain in the danger area if you have been trained and briefed and assigned to the area.
- Keep the work area clean.
- Keep escape routes clear so that you can leave the danger zone quickly and safely in the event of an emergency.

3.4 Safety mechanisms

See figures 6 ... 15

 **Safety mechanisms protect both people and lift. They must not be disabled!**

WARNING

- Post lift danger zones are protected by safety mechanisms.
- Function and condition of the safety mechanisms must be checked daily!
- If safety mechanisms are triggered, the post lift stops immediately.
- If safety mechanisms are defective, the post lift must be taken out of use immediately and the main switch locked with a padlock. Any further use must be prevented until the machine is fully repaired!
- If the post lift is moved or taken out of use for long periods, check the safety mechanisms before re-commissioning and repair if necessary.

1 Buzzer

Acoustic alarm. Sounds:

- When lowering the main lift < 120 mm (foot protection).
- When lowering the rolling jacks (hand and finger protection).
- When troubleshooting (lifting/lowering using the override switch, for height equalizing or during emergency manual lowering).

2 Lockable main switch

"ON" setting: Post lift ready for use.

"OFF" setting: Post lift out of use. The mains voltage is still present inside the control box. Switching off (OFF) immediately stops any movement of the post lift (= emergency stop).

3 Locking latch on each lift column

The locking mechanism consists of a latch bar and roller with cam shaft. Latch bar with 100 mm locking latch notches.

If a fault occurs in the hydraulic system or if the cable breaks or becomes slack, the brake mechanism is activated. The cam is pressed against the latch bar through a powerful spring action. In addition a lock cam latches (via an air piston) into the latch bar. All up or down movements stop immediately. Any further lowering is prevented.

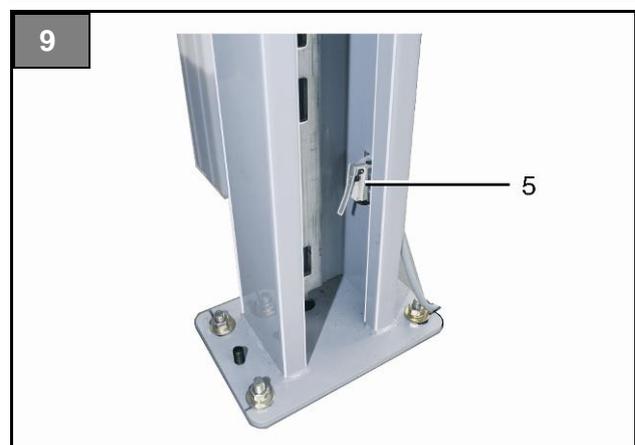
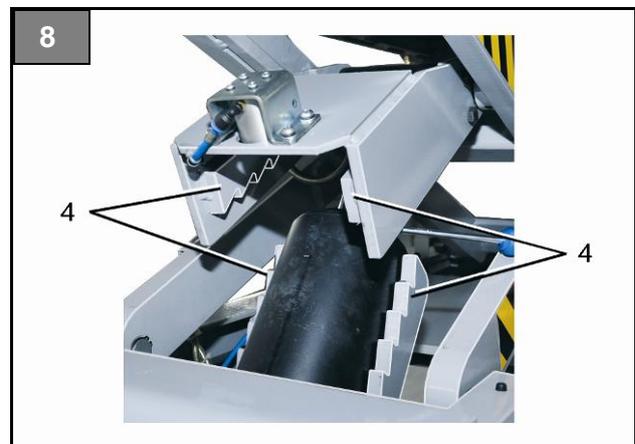
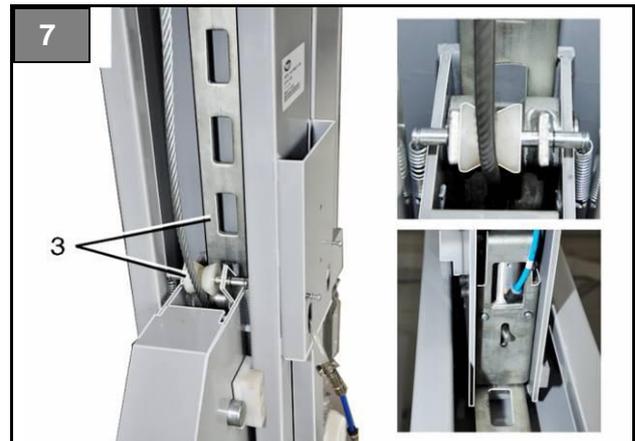
4 Locking latch on both rolling jacks

The locking mechanism consists of toothed lock bars. On releasing the lift or lower button, the upper bracket swings down. The lock bars engage (ratchets).

5 Foot protection switch on the lift column with control unit

Deactivates the lowering process at a lift height of 120 mm (foot protection, otherwise a crushing or shearing hazard exists).

You can only lower from this height by pressing the "Down" button and the "Lower in danger zone" button (2-button safety switch).



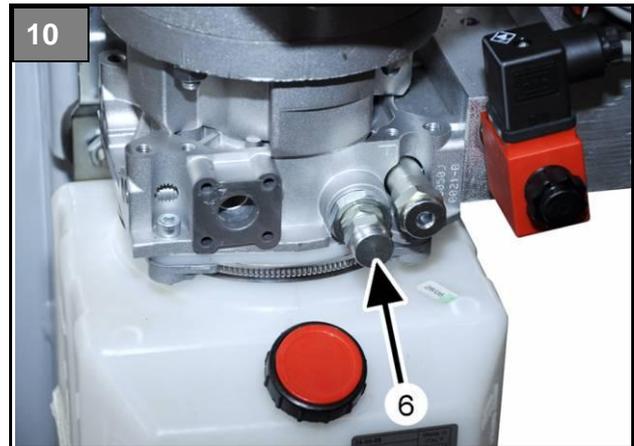
Buzzer

3. The 4-Post Lift

6 Pressure control valve

The pressure control valve (→arrow) is factory set to ca. 210 bar.

Prevents a sudden lowering of the lift in the event of a leak in the hydraulic hose (lowering speed = max. 1.5 x default speed).



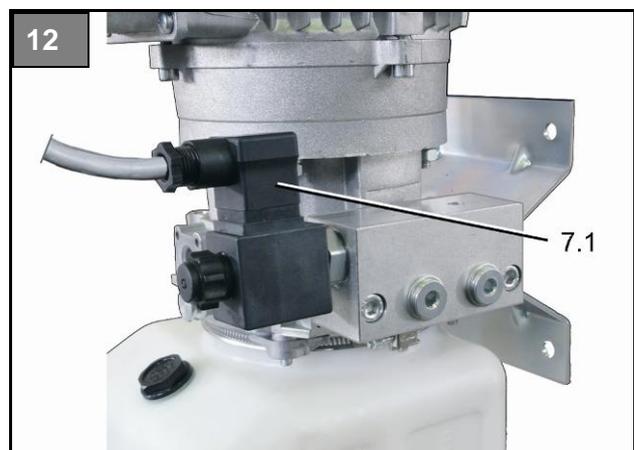
7 Lowering valve (emergency release) and emergency manual valves

- Pos. 7.1 Lowering valve for emergency release of the main lift or the rolling jack (Fig. 12 = default configuration).

- Pos. 7.2 and 7.3: Emergency manual valve for main lift and rolling jack. Fitted differently according to variant. Before use check assignment to main lift and rolling jack.



During a power failure the valves close and stop any movement.



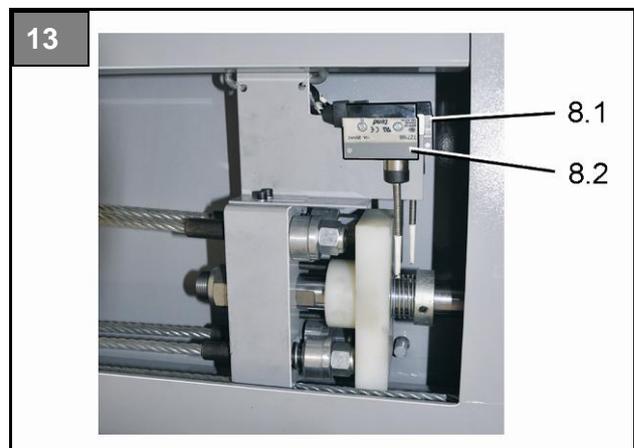
8 Broken cable and slack cable switch

- Pos. 8.1: Broken cable switch:

This switch is activated if the cable is broken. All movement of the post lift stops immediately. The control buttons will not function. Consult a competent person for repair.

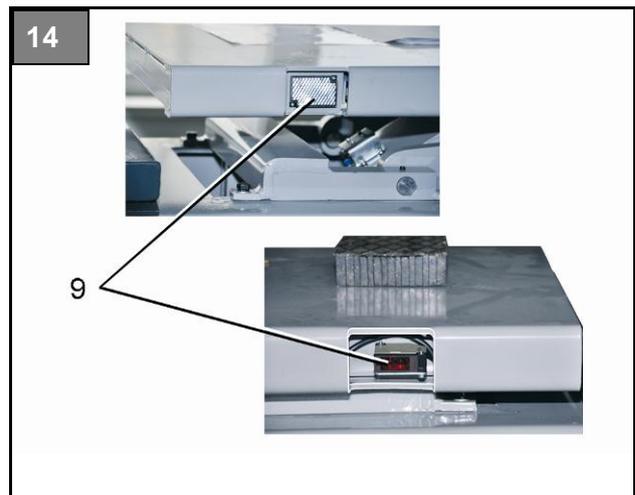
- Pos. 8.2: Slack cable switch:

This switch is activated when the cable is too slack. All movement of the post lift stops immediately. The Down button will not function. The Up button will however function in order that the cable can be pulled tight again by raising the lift slightly.



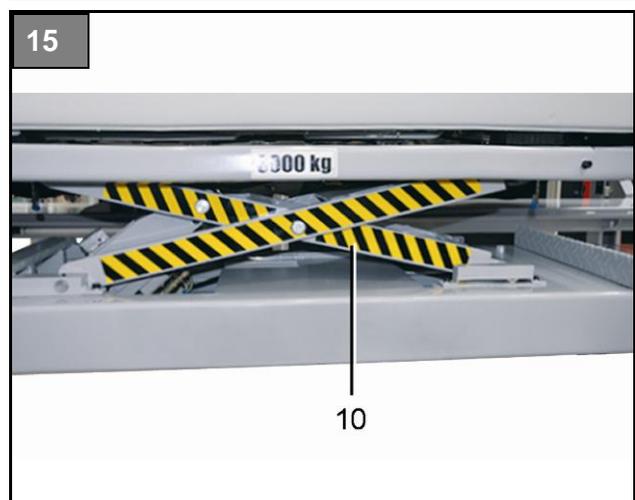
**9 Photo sensor for rolling jack runways:
Guards against height differences of >
50 mm between the runways**

Stops the lowering or lifting process if the difference in height between the two runways is greater than 50 mm.



10 Rolling jack warning stripes (yellow-black)

Warning stripes on the rolling jack scissors. Hand and finger protection warning, otherwise a crushing and shearing hazard may exist during the lifting or lowering process.



3.5 Control unit

i All movement of the lift stops immediately when you release a pressed button.

Figure 16: Control unit in the lift column

1 **Selector**, only for SM40LT variant with rolling jack:

- Left setting: Main lift active
- Right setting: Rolling jack active

2 **UP button**

For main lifts or rolling jacks.
Functions only if the button is pressed.
Post lift /rolling jack runways move up.

3 On/off switch for optional lighting.

4 **DOWN button**

●For main lifts or rolling jacks.
Functions only if the button is pressed.

i The main lift or rolling jack runways move up for around 2 seconds to release themselves from the locking latches.

Runways move down until the automatic shut-off is activated 120 mm above the ground (foot protection, otherwise this may present a crushing and shearing hazard). The lowering process stops.

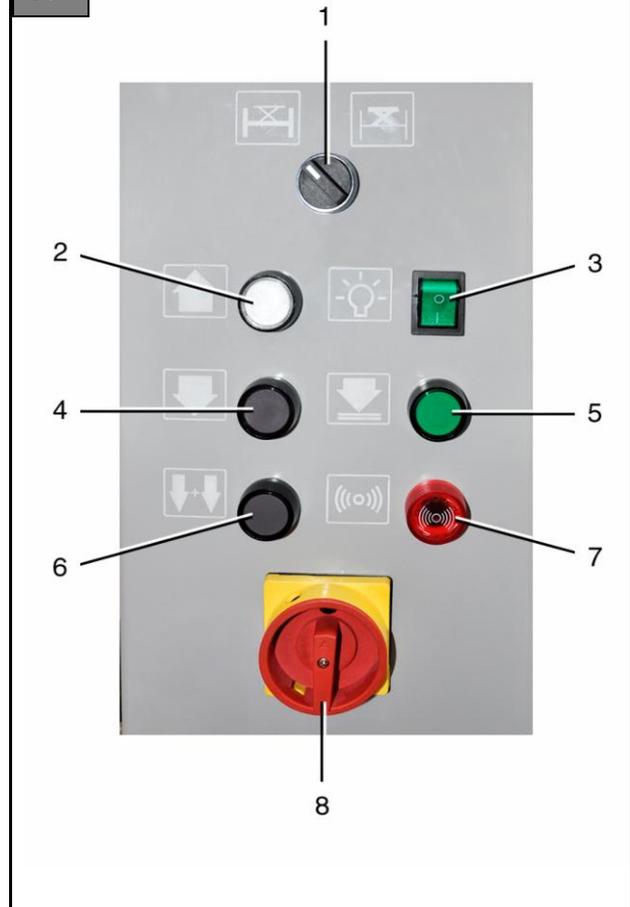
5 **LOCK button**

- For main lifts or rolling jacks.
Functions only if the button is pressed.
- Main lift: Locks the cross beams in the latch bars of the four lift columns. Keep button pressed until all cross beams lock securely into the latch bars.
- Rolling jack: Lowers both runways onto the toothed lock bars (ratchets). Keep button pressed until both runways lock securely into the latch bars.

6 **DOWN button in the danger zone below 120 mm**

- For main lifts or rolling jacks.
Only functions after the 120 mm automatic shut-off has reacted to DOWN (4). The runways can then be lowered completely if both buttons (5) and (6) are pressed at the same time. A buzzer sounds throughout the entire lowering process.

16



7 **Buzzer**

Acoustic alarm. Sounds:

- When the main lift is being lowered < 120 mm (Foot protection)
- When the rolling jack is being lowered (hand and finger protection).
- When troubleshooting (lifting/lowering using the override switch, for height equalizing or during emergency manual lowering).

8 **Lockable main switch**

"ON" setting: Post lift ready for use.

"OFF" setting: Post lift out of use. The mains voltage is still present inside the control box.

Switching off (OFF) immediately stops any movement of the post lift (= emergency stop)..

4. Operation



DANGER

Risk of injury when lowering the load onto objects below the lift or the vehicle. Vehicle may topple over.

- Before lowering, you must remove all objects from underneath the lift. This applies in particular to chassis stands and auxiliary jacks.
- Always monitor the lift and vehicle carefully when lifting or lowering.



DANGER

Risk of fatal injury if load is incorrectly distributed on both rolling jacks. Vehicle may topple over.

- Check that axle loads and weight distribution are correct in accordance with Chapter 1.3.
- Secure the load with adequately sized chassis stands.



DANGER

Risk of fatal injury in the event of malfunction or damaged parts.

- Shut down post lift. To do so, set the main switch to "OFF" and lock it with a padlock.
- Consult a competent person.



When working with the post lift, make sure you follow the instructions listed in Chapter 2. Safety.

4.1 Emergency stop

1. To perform an emergency stop, set the main switch to OFF ("OFF" setting). The main lift or the rolling jack stops immediately.

4.2 Switch the machine on

1. Switch on the power supply with the main switch ("ON" setting).
2. Check the operational status of the main lift and the rolling jack.
3. Check the functionality of the control buttons.
4. Check the functionality of the buzzer. To do so raise the runways slightly from the bottom position and lower again. A buzzer must sound when lowering.
5. Lower the main lift (including drive-on ramps) rolling jack completely.
6. Keep work area and runways clean (no objects lying around, no grease, no oil).

4.3 Determine the vehicle data

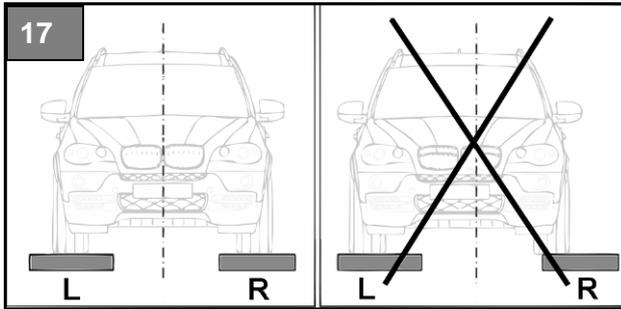
1. Determine the weight details and the vehicle height (see vehicle license).



Check the vehicle center of gravity, check the load and body. Check the permitted weight distribution on the lift.

2. Compare details with the nominal data of the lift.
3. Determine the approved pick-up points according to the manufacturers specifications.
4. If the vehicle data is not available, ask the supervisor.

4.4 Driving on



1. If required, set the adjustable runways (Fig. 17, Pos R) according to the width of the vehicle. To move them, loosen 2 runway bolts on each of the two cross beams, move the runways in parallel, then tighten the bolts again.
2. Drive the vehicle onto the runways centered on both sides (have someone guide you on). Make sure that the wheels do not hang over the edges of the runways.
3. Apply the vehicle handbrake, get out, and close all vehicle doors.
4. Secure the vehicle with chocks against rolling.
5. Place supports or pads at the 4 approved pick-up points. Only use supports or pads approved by the manufacturer. These must be correctly and stably positioned.
6. Take safety measures to ensure that neither people nor loads can collapse or fall and loads cannot slip. Make sure the weight distribution is correct.

4.5 Lifting/lowering



Risk of injury in the post lift zone.

DANGER

- Do not put people at risk when the lift or rolling jack moves.
- Always monitor the danger zones when lifting or lowering.
- No-one must stand in the traffic zone of the lift.



WARNING

Danger of crushing and shearing of limbs (foot, toe, finger etc.). Possible uncontrolled movement when lowering in the danger zone (below the runways, cross beams) or when moving the rolling jack scissors.

- No parts of the body below the runways, cross beams, or in the rolling jack scissors zone.
- A buzzer sounds during the lowering process in the danger zone < 120 mm.
- Do not place objects below the lift or the rolling jack.

ATTENTION **Damage to high vehicles when LIFTING and LOWERING. Vehicles which are too high may collide with the ceiling.**

- Even when LOWERING, the main lift or rolling jack briefly moves up (out of the latches).
- Monitor the process constantly.
- Make sure that the vehicle does not collide with the ceiling.



The lifting or lowering process must be carried out uniformly so that the load does not change position.



If the vehicle does not remain stable, end all movement immediately. Then turn the main switch to "OFF" and lock it. The vehicle must now be lowered by an authorized competent person.

Raising the lift

1. Set the selector to the left (main lift).
2. Lift the main lift slightly with the UP button.
3. Check the steadiness and pick-up stability of the vehicle.
4. Only start to lift smoothly and to the required height if the vehicle is stable.

ATTENTION Destruction of the hydraulic pump. Operating error, when the main lift is moved for long periods to its full rise.

→ Only move the lift to just below its full rise. Then release the button.

5. Lower the main lift with the "Lock" button to the lock position.

i Comply with occupational health & safety and accident prevention regulations. Use safety stands when disassembling heavy parts. Check that weight distribution is correct.

Raise the rolling jack

6. Set the selector to the right (rolling jack).
7. Check the position of the supports or pads and correct if necessary.
8. Lift the vehicle slightly with the Up button.
9. Proceed as described above (Pos. 3 to 5).

i Lifting with a slack cable

If the main lift is on the skew, the slack cable switch activates a stop. Only the lift function is still active. The buzzer sounds continuously throughout the lifting. The lift function is also locked if the cable breaks.

If the cable is slack, press the Up button. Raise the lift so that all 4 cables are tensioned.

Lowering the main lift or rolling jack

1. Remove all objects in the lift and rolling jack zone, in particular under the lift and rolling jacks.
2. Set the selector to the desired position.
3. Using the Down button, steadily lower the lift or the rolling jack until the automatic shut-off (120 mm) is activated.

To do so, first move the runways up for around 2 seconds to release them from the ratchets.

Only then move the runways down until the automatic shut-off is activated. The lowering process stops.

i When lowering, make sure that the main lift lowers smoothly. If not then stop the process.

i If the main lift is skew, move it upwards slightly so that the cables pull tight. Then continue the lowering process. If this does not work, consult a competent person.

4. To completely lower the lift press "Lock" and "Lower in the danger zone" together.

Move the main lift or rolling jack right to the bottom position. Make sure that the drive-on ramps are fully lowered.

4.6 Drive off

1. Remove chocks.
2. Carefully drive the vehicle off the lift and away from the lift area (have someone to guide you).

In doing so, make sure that the wheels never run over the edge of the runways or alongside them.

4.7 Switch the machine off

1. Disconnect the power supply with the main switch ("OFF" setting) and lock the switch with a padlock.

5. Problems, causes, actions

The following lists contain information on potential problems, their causes, and actions to rectify the fault.

i **Repairs to safety mechanisms on the lift may richtungen only be carried out by authorized maintenance contractors (component persons).**

During a breakdown (power failure), the lift remains automatically in safe mode. This means that all movement is halted.

i If the lift is out of order for long periods, carry out the following steps:

1. Lower the lift to the lowest position.
2. Switch the main switch to Off and lock with a padlock.
3. Disconnect the power supply and air supply.

5.1 Troubleshooting by the operator

The following troubleshooting measures may only be carried out by an authorized operator.

Before doing so, make sure that power supply is connected, the main switch is in the "ON" position and an air supply of 6...8 bar is connected.

i If the problem is not rectified by the listed measures, you must seek advice from a competent person.

i The troubleshooting measures listed in 5.2 may only be carried out by maintenance contractors.

Problem	Possible cause	Actions
The motor is not running.	<ul style="list-style-type: none"> ● Mains fuse is faulty. 	Reset or change the mains fuse.
<p>The runways lower unevenly during the lowering process → Lift or rolling jack runways tilted.</p> <p>Main lift</p> <ul style="list-style-type: none"> ● Slack cable switch or broken cable switch activated. ● Can lift when cable is slack. If cable is broken the whole lift is locked. ● Lowering locked. <p>Rolling jack</p> <ul style="list-style-type: none"> ● Photosensor disconnected. ● Height difference > 50 mm. ● Whole lift is locked. 	<ul style="list-style-type: none"> ● An object is blocking the downward motion. The lowering process is aborted. ● Load unevenly distributed. ● Settling function still active: main lift and rolling jack partly still in the lock position (Lock bar/ratchets). ● Slack or broken cable on one of the lift columns. 	<p>Main lift</p> <ol style="list-style-type: none"> 1. Move lift up slightly. Make sure that all cables are tensioned. 2. Remove objects from under the lift. 3. Carry out adjustments. To do so, lower the lift completely. 4. Check that lift is being correctly operated. 5. If this cannot be done: (→Chapter 6. Authorized lowering) or (→Chapter 9. Maintenance/repair). <p>Rolling jack</p> <ol style="list-style-type: none"> 1. Consult a competent person (→Chapter 6. Authorized lowering).

5. Problems, causes, actions

Problem	Possible cause	Actions
Control unit does not work. A buzzer sounds.	<ul style="list-style-type: none"> ● Runways misaligned. Misalignment protection activated. 	Consult maintenance contractors (→Chapter 6. Authorized lowering).
Lowering process stops abruptly. A buzzer sounds, control unit is out of order.	<ul style="list-style-type: none"> ● Cable too slack. ● Cable broken. 	<ol style="list-style-type: none"> 1. Switch main switch to "OFF" and lock it. 2. Consult maintenance contractors. Change the cable.
The main lift does not react when being lowered. Only rolling jack can be lowered. A buzzer sounds.	<ul style="list-style-type: none"> ● Cable too slack or damaged. Slack cable switch activated. 	<ol style="list-style-type: none"> 1. Switch main switch to "OFF" and lock it. 2. Consult maintenance contractors. Tighten and adjust cable (→Chapters 11.11 und 13.4). Restart.
The process stops after a few centimeters when lowering into the lock position.	<ul style="list-style-type: none"> ● Pneumatic solenoid valve not supplied with compressed air. 	Check compressor connection.
Lift button does not work. Main lift or rolling jack: Runways do not move up.	<ul style="list-style-type: none"> ● Hydraulic oil level too low. 	<ol style="list-style-type: none"> 1. Refill hydraulics up to gauge mark (→Chapter 9.4). 2. Check with dipstick. <p>Attention: Using rapeseed based oil destroys the seal.</p> <p>Use only biodegradable oils (HEES-oils based on synthetic esters). The water content of the oil may not exceed 2 %.</p> <p>Do not mix bio-oils with mineral oils.</p>
Runways do not lift with a load. They do however rise without a load.	<ul style="list-style-type: none"> ● The lift is overloaded. Rated load capacity exceeded, maybe on one runway. ● Hydraulic pressure incorrectly set on pressure control valve. 	<ol style="list-style-type: none"> 1. Check vehicle weight. If necessary re-position the vehicle (→Chapter 2.3. rated weight distribution). 2. Correct setting on pressure control valve.
Power failure on main lift which is locked in the latch bars.	<ul style="list-style-type: none"> ● No mains supply. 	Can only be lowered with manual pump and optional hydraulic power unit.

5.2 Troubleshooting by authorized maintenance contractors

Problem	Possible cause	Actions
Control unit does not work. A buzzer sounds.	<ul style="list-style-type: none"> ● Runways misaligned. Misalignment protection activated. 	Lower the lift or rolling jack, →Chapter 6. Authorized lowering.
The main lift does not react when being lowered. Only rolling jack can be lowered. A buzzer sounds.	<ul style="list-style-type: none"> ● Cable too slack or damaged. Slack cable switch activated. 	<ol style="list-style-type: none"> 1. Tighten and adjust cable (→Chapter 11.11 und 13.4), Change if necessary. 2. Lower lift completely (→chapter 6). 3. Carry out function test.
Lift does not work. A buzzer sounds	<ul style="list-style-type: none"> ● Fuses damaged. ● Thermal protection disconnected. ● Transformer damaged. 	Depending on cause: <ul style="list-style-type: none"> ● Reset or replace fuses. ● Connect thermal protection. ● Replace transformer.
The motor is not running.	<ul style="list-style-type: none"> ● Incorrect supply voltage to the motor. ● Wiring loose. ● Faulty motor. ● Faulty limit switch. 	Depending on cause: <ul style="list-style-type: none"> ● Supply the correct voltage to the motor. ● Check all wiring connections and repair or insulate if necessary. ● Test function of the Up switch. Replace if necessary. ● Check function of overhead limit switch. Replace if necessary. ● Change hydraulic power unit for motor.
Up button does not work. Runways do not move up(main lift or rolling jack).	<ul style="list-style-type: none"> ● Lowering valve is open. ● Pump is sucking air. ● Suction pipe disconnected from pump. 	Depending on cause: <ul style="list-style-type: none"> ● Clean or replace lowering valve. ● Tighten fittings on suction pipe. ● Replace suction pipe.
Runways do not lift with a load. Runways rise however without a load.	<ul style="list-style-type: none"> ● Insufficient voltage supplied to motor hydraulic power unit. ● Lowering valve is dirty. ● Release valve incorrectly set. 	Depending on cause: <ul style="list-style-type: none"> ● Supply the correct voltage to the motor. ● Clean the lowering valve. ● Adjust release valve.
Runways lowering slowly.	<ul style="list-style-type: none"> ● Check valve is dirty. ● Lowering valve dirty. ● External oil leaks on pipes and hoses. ● Dirty installation space (Check valve and lowering valve). 	Depending on cause: <ul style="list-style-type: none"> ● Clean check valve. ● Clean lowering valve. ● Eliminate leaks.

5. Problems, causes, actions

Problem	Possible cause	Actions
Lift speed too low.	<ul style="list-style-type: none"> ● Air has mixed with oil or is being sucked in. ● Hydraulic hose is loose. 	Depending on cause: <ul style="list-style-type: none"> ● Change oil (→ Chapter 9.4). ● Tighten fittings on suction pipe. ● Secure the oil return tube.
Leak in hydraulic power unit	<ul style="list-style-type: none"> ● Hydraulic pump is faulty. 	Repair hydraulic pump.
Fault on hydraulic pump.	<ul style="list-style-type: none"> ● Pressure control valve set incorrectly. ● Overloading (vehicle too heavy). 	Depending on cause: <ul style="list-style-type: none"> ● Correct the pressure control valve. ● Replace hydraulic pump. Do not put excessively heavy vehicles onto the lift.
Hydraulic oil leaking from the filler/breather cap.	<ul style="list-style-type: none"> ● Air has mixed with the oil or is being sucked in. ● Oil return line is loose. ● Hydraulic hose is damaged. 	Depending on cause: <ul style="list-style-type: none"> ● Change oil (□ Chapter 9.4). ● Tighten fittings on suction pipe. ● Attach return line. ● Replace hydraulic hoses.
Runways lift unevenly (Height difference in runways).	<ul style="list-style-type: none"> ● Cables are out of adjustment ● Lift not leveled. ● Floor is uneven. 	Depending on cause: <ul style="list-style-type: none"> ● Correct the cable tension (→Chapter 11.11 and 13.4). ● Reset and accurately level the lift. ● Place spacers/shims underneath (→Chapter 13. Commissioning).
Anchor is loose.	<ul style="list-style-type: none"> ● Assembly fault, for example drill holes are too big or load capacity of concrete floor is inadequate. 	Depending on cause: <ul style="list-style-type: none"> ● Repair the lift. ● Re-install (→Chapters 11 to 13). Follow installation requirements.
Runways either do not lift to full rise or they chatter during lifting.	<ul style="list-style-type: none"> ● Hydraulic oil level too low. 	Check oil level. If required bleed the hydraulic cylinder (→Assembly manual).
Runways do not lower.	<ul style="list-style-type: none"> ● Inadequate air supply. ● Locking latches are offset. 	Depending on cause: <ul style="list-style-type: none"> ● Check air pressure and adjust if necessary (6 ... 8 bar). ● Check whether air lines are leaking or crushed. ● Check locking mechanism, repair if necessary.

5. Problems, causes, actions

Problem	Possible cause	Actions
Locking latches not latching or cannot be released.	<ul style="list-style-type: none">● Compressed air supply interrupted.● Faulty control valve for air supply.● Locking mechanism is jammed.● Air cylinder for locking mechanism is dirty.	Check locking mechanism, repair if necessary.
Lowering process stops abruptly. A buzzer sounds, the control unit is out of order.	<ul style="list-style-type: none">● Cable is too slack.● Cable broken.	Depending on cause: <ul style="list-style-type: none">● turn main switch to "OFF" and lock it.● Check all cables. Replace faulty or warped cables (→Chapter 9.6).

6. Authorized lowering

Only by authorized competent persons



WARNING

Risk of injury in the case of incorrect behavior. Only authorized competent persons may lower lifts as described below.

- Cordon off the danger zone, prevent access by all persons.
- Constantly monitor the danger zones when lifting or lowering.
- No-one may remain in the lift traffic zone.
- Only qualified electricians may carry out work on the electrics.

Figure 18

- 1 Electronic alignment control button:
Functions only when the photosensor is disconnected
- 2 Rolling jack leveling button

18



6.1 Manually lowering the lift when there is a height difference of > 50 mm

After the photosensor has been activated when the height difference between the runways is **above 50 mm**, the rolling jacks are locked completely. The main lift can also no longer be lowered.

To correct this, proceed as follows. A buzzer sounds throughout the entire lifting/lowering process.

1. Secure the danger zone, see above.
2. Remove the safety cover on the side of the control unit.
3. Set the selector on the main lift or rolling jack as required.
4. Push the electronic alignment control button (1) together with the UP or DOWN button. In doing so, the main lift or rolling jack move up to full rise and then down to the bottom position.
5. If both runways are lowered completely onto the floor, turn the main switch to the "OFF" position, wait a short while, then turn the main switch to the "ON" position.

- 6 Conduct a function test. The lift is now ready for operation again.
- 7 Attach the side safety cover and screw back into place.

6.2 Leveling the rolling jacks



Risk of injury due to height difference in the runways when the lift is loaded. Vehicle may topple over.

DANGER

- Adjust the height of the runways slightly.
- Avoid large differences in height between the runways.
- Consult a competent person if lift is too skewed.



The height level of the left or right runways can be manually adjusted by pressing the red button (2). This is done by equalizing the hydraulic fluid within the hydraulic system.

1. Push the red leveling button (Fig. 18, Pos. 2) together with the UP button until both runways are at the same height.
An adjustment process is carried out when the buttons are pressed.
2. If necessary, release the buttons and repeat the process again until the runways are at the same height.
3. Push in the leveling button together with the DOWN button until both runways are completely lowered onto the floor.
4. Turn the main switch to the "OFF" position, wait a short while, then turn the main switch to the "ON" position.
5. Carry out a function test. The lift is now ready again for operation.
6. Attach the side safety cover and screw back into place.

6.3 Emergency manual function

Even if the post lift fails totally, the vehicle can be lowered, for example by disconnecting the power supply.

The main lift rolling jacks can be lowered from one locking latch to the next, albeit step by step.

Example: Lowering the main lift:

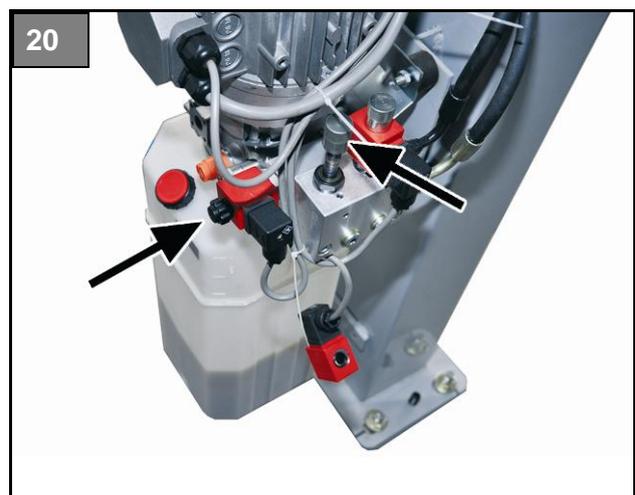


Depending on the assembly situation it may be that the emergency manual valves are fitted the wrong way round. Always check using the cable routing and colour as a guide and using a function test, check the assignment of the valves to the rolling jacks and main lift.

1. Secure the danger zone, see Warnings.
2. Remove the metal cap from the valve.



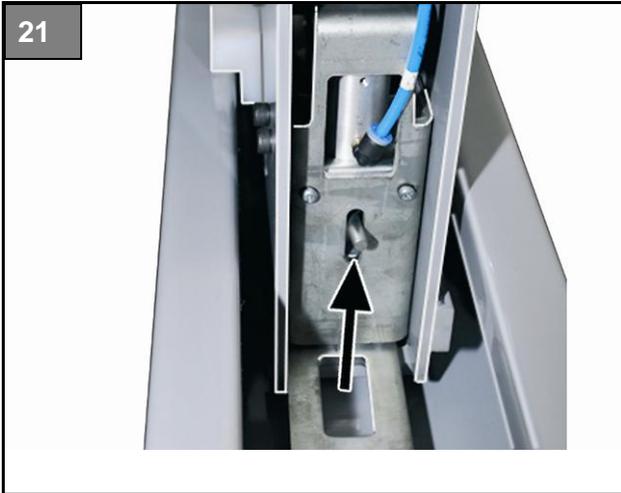
3. Remove the valve from the threaded rod and screw on the metal cap completely (Emergency Manual = active).



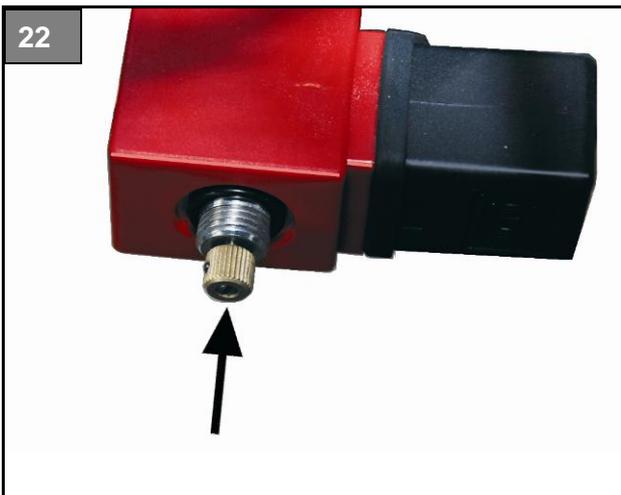
4. Remove the plastic cap from the lowering valve.

6. Authorized lowering

5. Release the air cylinders on all 4 lift columns with the release pins. Then turn the brass screw again to the left. The lift drops back into the next lock position.



6. Turn the brass screw to the left to lower the main lift to the next lock position.



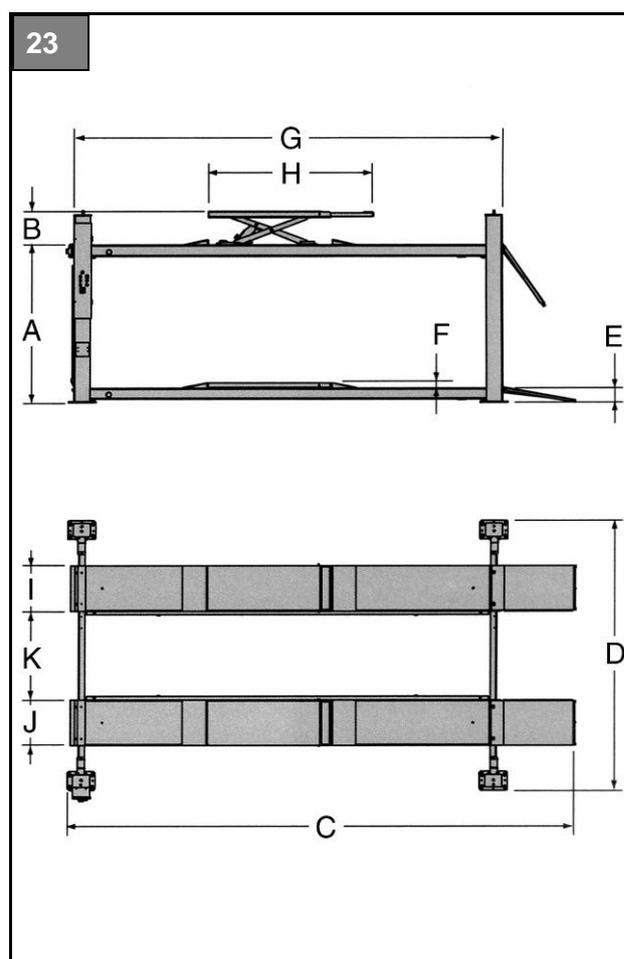
7. Repeat the process until the main lift has been lowered completely to the floor.
8. Turn the brass screw to the right as far as it will go to close the pressure control valve, otherwise the lifting function will not work.
9. Screw on the plastic cap.
10. Refit the emergency manual valve. Make sure that the metal cap is screwed on completely, otherwise the lifting function will not work.

7. Technical data

7. Technical data

	SM40-47 SM40-51 SM40LT-47 SM40LT-51 SM40-47 BMW	SM55- M51 VAS AR43- 5MB SM60-51 SM60-55
A Load capacity		
Lift	4000 kg	6000 kg
Rolling jack	3000 kg	
B Stroke		
SM55-M51/ AR43-5MB	1943 mm	1890 mm
SM40-47BMW	1943 mm	1890 mm
SM40-47 / SM60-51	1750 mm	
SM40-51 / SM60-55	1750 mm	
SM40LT-47	390 mm	
SM40LT-51	390 mm	
LT-47 rolling jack		
LT-51 rolling jack		
C Overall length with drive-on ramps		
SM40-47 / SM55-M51	5788 mm	5396 mm
VAS/AR43-5MB/	6188 mm	6796 mm
SM60-51	5788 mm	
SM40-51 / SM60-55	6188 mm	
SM40LT-47		
SM40LT-51		
SM40-47BMW		
D Overall width	3320 mm	3403 mm
E Drive-on height		
Lift	175 mm	190 mm
SM40-47BMW	66 mm	
F Rolling jack		
G Runway length		
SM40-47 / SM60-51	4700 mm	5100 mm
SM40-51 / SM60-55	5100 mm	5500 mm
SM40LT-47	4700 mm	
SM40LT-51	5100 mm	
H Rolling jack	1490 to 2000 mm	
I Runway width	560 mm	560 mm
J Rolling jack	560 mm	
K Inner distance between runways, 3 positions	800 mm 950 mm 1100 mm	800 mm 950 mm 1100 mm
Motor power rating	3 kW	3 kW
Electrical connection	400 v, 50 Hz (3+N+PE)	400 v, 50 Hz (3+N+PE)
Compressor connection	8...10 bar	8...10 bar
Lift time lift	45 Sec.	45 Sec.
Lift time rolling jack	10 Sec.	

Hydraulic system operating pressure	190 bar	190 bar
Hydraulic oil tank capacity	11 liters	11 liters
Noise level	70 dB(A)	70 dB(A)
Ambient temperature range	0...50 °C	0...50 °C
Relative humidity range (without condensation, at 20 °C)	30...95 %	30...95 %



Nameplate with details of lift model, serial number, year of manufacture etc. For the position of the nameplate see → Fig. 1.

8. Cleaning

- Only clean the lift when not loaded (without vehicle).
- Clean main lift, rolling jack and all work areas **daily**. In doing so, always keep all post lift components clean.

i **If the lift is in a particularly dirty environment, clean accordingly more frequently.**

- Do not use abrasive cleaning materials on lift parts and covers. Use lint-free cloth.
- Do not use compressors or high pressure cleaners for cleaning work.
- Always consult a maintenance contractor if you identify a hazard.
- Prior to maintenance make sure that fittings and fixtures are free of oil, lubricants, and cleaning materials.
- **Cables (running steel cable) must be regularly lubricated with a suitable lubricant**, from example from Duotac, CRC or Mobil (Mobilarma 798).

This can significantly increase the service life of the cable. Lubricant can be applied by spraying, dipping, or brushing.

i **Do not clean cable with water. Make sure that steel cable is properly lubricated.**

9. Maintenance and repair



DANGER

Inadequate maintenance and repair work may cause serious injury and also lead to damage to property. A safety risk as well as a risk of fatal injury exists during operation.

- Follow the maintenance and repair instructions below carefully.
- Regularly clean the post lift (→ Chapter 8).
- Comply with maintenance intervals (→ Chapter 9.3). This will keep the post lift in perfect working condition and guarantee safe operation.
- Maintenance and repair work must be documented (→ annex, maintenance schedule, regular maintenance reports, and repair reports).

9.1 Qualification of maintenance and repair staff

Maintenance and repair work may only be carried out by an authorized **maintenance contractor** (→ Chapter 2.6).

9.2 Maintenance and repair safety regulations

- Only qualified electricians may work on electrical equipment on the machine.
- Only qualified staff with specialist knowledge and experience with hydraulics or pneumatics may work on hydraulic or pneumatic equipment.
- **Ensure that you follow the instructions listed in 2, Safety.**
- When working on the hydraulics or on pneumatic equipment, ensure that you follow the safety regulations listed in the supplied power unit operating instructions annexed to this manual.
- Only perform maintenance on unloaded lifts and rolling jacks.
- Main lifts and rolling jacks must be lowered completely or latched into the lock positions (locking latches).
- Prevent environmental hazards:
 - Mineral-oil-based hydraulic oil is combustible and a water pollutant. It must only be used in conjunction with the relevant safety data sheet and if all specified measures contained therein are implemented.
 - Provide suitable oil drain pans and oil absorbents.
 - Ensure that no hydraulic oils, lubricants or cleaning materials contaminate the soil or leak into the drainage system.
 - Comply with local regulations for handling water pollutants, for example for absorbing leaking fluids or fluids from oil separators.
- Avoid contact with or inhalation of toxic substances such as hydraulic fluid.
- Wear protective clothing, for example protective goggles, protective gloves etc.
- Before all maintenance and repair work:
 - secure the post lift zone with a red-white chain and warning notices.
 - turn the main switch to OFF ("OFF" Position).
 - disconnect the air supply (manometer on the compressor unit to 0 bar).
 - inform all persons in the area about the maintenance and repair work.
- Only use original spare parts from the manufacturer.
- Tighten all fittings after maintenance work according to the specified torque figures.
- The default setting for safety valves must be a maximum of 10 % or a minimum of 20 bar above the operating pressure of the machine. The safety valve settings may not be adjusted.
- Remove all used materials, tools and other objects from the danger zone after cleaning, maintenance, and repair work.
- Dispose of hydraulic oils, lubricants, cleaning materials, and replaced parts in accordance with environmental regulations.

9.3 Maintenance work

 **Potential crushing and shearing hazard to limbs caused by uncontrolled lowering motion.**
WARNING

- In particularly dirty environments, maintain the post lifts accordingly more frequently.
- Only perform maintenance on unloaded lifts, i.e. without vehicle.
- Before maintenance work lower the main lift completely or lower and latch into the lock (locking latches).
- Turn the main switch to OFF ("OFF" setting) and lock with a padlock.
- Cordon off the maintenance area to unauthorized persons (red-white chain, warning notices).
- Disconnect the air supply (Compressor unit manometer to 0 bar).
- Inform all persons in the area about the maintenance work.

 **Risk to people and the environment caused by toxic substances when emptying or filling the hydraulic oil tank or lubricator (Compressor unit).**
WARNING

- Avoid contact with or inhalation of hydraulic oil or Vaseline oil.
- Provide a suitable oil drain pan and oil absorbent.
- Ensure that used oil does not contaminate the soil or wash away into the drainage system.
- Comply with local regulations for handling water pollutants.
- Dispose of used oil in an environmentally friendly manner.
- Hydraulic oil is highly inflammable, combustible.

 **Risk of fatal injury if anchor bolts are loose. Post lift may slip, the load may collapse.**
DANGER

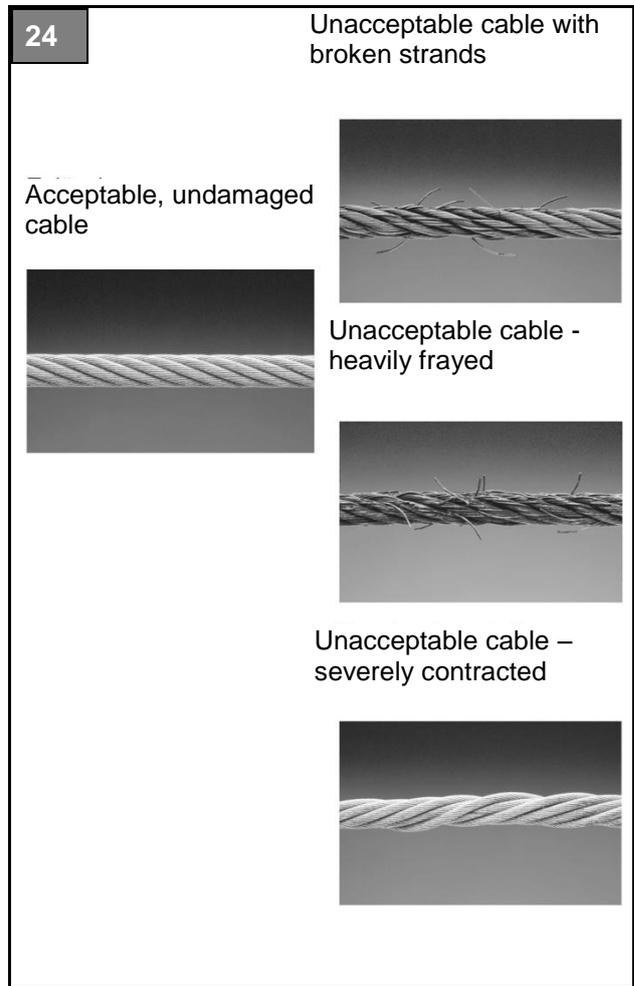
- Stop operating the post lift.
- Secure the post lift. If this cannot be done, provide an approved foundation then anchor and secure the post lift properly.

Daily inspection

1. Check whether the automatic wheel chocks, drive-on ramps, or the chocks and drive-on

chocks are damaged or show signs of wear. Replace damaged or worn parts.

2. Check the function of the locking latches on the main lift (visual inspection). To do so, lock the main lift in the locking latches then raise and tension the cable.
3. Check horizontal alignment of runways. Runways must be horizontally aligned and at the same height. If not, correct the alignment (→Chapter 13. Commissioning).
4. Check the cables and cable sheaves for wear along their entire length (visual inspection). If necessary, raise the main lift. Promptly replace damaged or worn parts.



 Cables normally break if they show signs some of the damage illustrated here. These tend to be damaged, frayed, overstretched, or warped cables, sometimes of different diameters.

9. Maintenance and repair

5. Test the buzzer (→ Chapter 3.4, Pos. 1).
A buzzer must also sound when lowering in the foot protection zone.



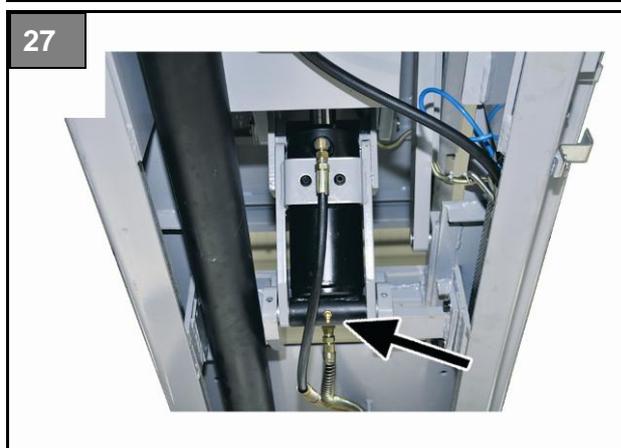
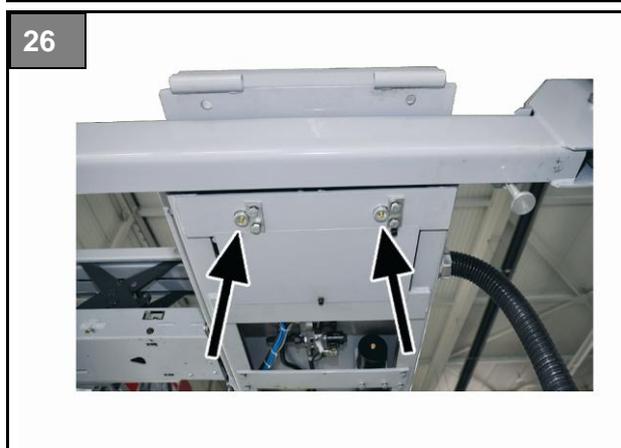
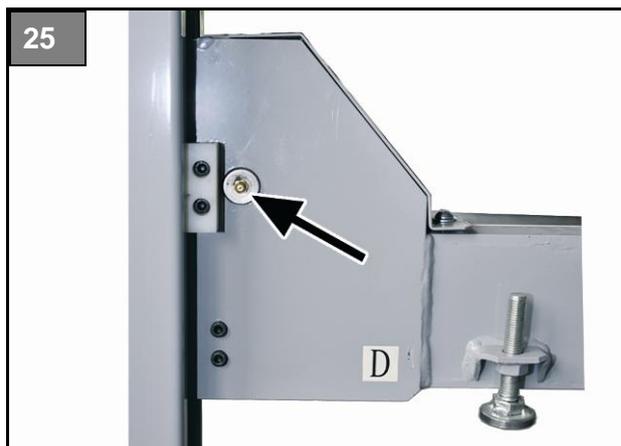
If the buzzer is faulty the post lift must not be operated.

Monthly maintenance

1. Turn the main switch to OFF ("OFF" setting) and lock with a padlock.
2. Check whether the runways and rolling jacks are horizontally aligned during lifting and lowering and move up and down. Re-adjust stretched cables (→Chapter 13. Commissioning).
3. Check whether screw fittings have come loose. This applies in particular to screw fittings between drive-on surfaces and cross beams.
4. Check the hydraulic oil level (Hydraulic tank). If necessary, refill with approved hydraulic oil (→Chapter 9.4) ("max" mark. Empty tank capacity 11 liters).
5. Inspect the tank cover of the hydraulic tank. The vent cap must be clean so that no vacuum can form.
Clean if necessary.
6. Check hydraulic component seals (visual inspection).
7. Turn main switch to ON ("ON" setting).
8. Check that control buttons and switches function properly.
9. Carry out a function test with and without load.
10. Complete a maintenance report (→ Annex).

Six month maintenance

1. Raise lift and rolling jacks.
2. Turn main switch to OFF ("OFF" setting) and lock with a padlock.
3. Lubricate post lift with approved lubricant (→Chapter 9.4).
 - Fig. 25: 4x Cross beam grease fitting with grease press
 - Fig. 26: 8x Runways grease fitting for main lift with grease press
 - Fig. 27: 2x Rolling jack grease fitting with grease press
 - Fig. 28: 2x Rolling jack grease fitting with grease press
 - Lightly grease the rolling jack slides running surfaces.
4. Turn the main switch on ("ON" setting).
5. Conduct function test. Lower lift and rolling jack completely.
6. Complete a maintenance report (→ Attachment).



Annual maintenance

1. Turn the main switch off (Position "OFF") and lock with padlock.
2. Lubricate cross beam cable sheaves with grease (Consistency classification II).
3. Check Hydraulic cylinder and Hydraulic hoses for leaks (visual inspection).
4. Inspect electrical cables for damage (visual inspection).
5. Turn the main switch on again (Position "ON").
6. Check that control buttons and switches function properly.
7. Replace illegible or missing labels on the post lift. Re-order from the manufacturer.
8. Conduct safety inspections (→Chapter 2.7).
9. Complete maintenance report and inspection report from safety inspection (→ Annex).

Depending on the level to which it has degraded

1. Change the hydraulic oil (→Chapter 9.5).

9.4 Approved hydraulic oils

Important information

- Only use hydraulic oils in accordance with DIN 51524 for the hydraulic system.
- Only use biodegradable oils (HEES-based on synthetic esters).
- Use PTFE seals or foam elastomers if the water content is high.

ATTENTION Seals may be destroyed if the incorrect hydraulic oil is used.

- Do not use rapeseed based oils.
- The water content of the hydraulic oil must not exceed 2 %.
- Do not mix bio-oils with mineral oils. Mixing leads to foaming problems and corrosion damage.
- Make sure that the oil is not contaminated by any other oil or water.
- Use a proportionally lower viscosity bio-oil as a replacement for mineral oil. This improves the lubrication properties, reduces energy consumption and generates less heat.

HEES32-bio-oils can, for example, be used as a replacement for mineral oil HLP46:

- PLANTOSYN 3268
- BECHEM HYDROSTAR HEES 46 longlife
- BP Biohyd 32
- Mobil EAL Hydraulic Oil 32 and 46

Oils and grease

Only use consistency classification II oils and grease.

Water pollutants

Oils and grease are water pollutants in terms of the Water Management Act (WGH).

Always dispose of these in an environmentally friendly manner in compliance with the applicable regulations in your country (→Chapter 16. Disposal).

9.5 Check, refill, change the hydraulic oil



Risk to people and the environment from toxic substances when filling the hydraulic oil tank.

WARNING

- Avoid contact with and inhalation of hydraulic oil.
- Wear protective clothing (protective goggles, protective gloves).
- Provide suitable oil drain pans and oil absorbers.
- Ensure that no hydraulic oils, lubricants, or cleaning materials contaminate the soil or leak into the drainage system.
- Comply with local regulations for handling water pollutants, for example for absorbing leaking fluids or fluids from oil separators.
- Hydraulic oil is highly inflammable, combustible.

1. Check hydraulic oil level on the hydraulic oil tank.



The oil level must not exceed the minimum value ("min").

2. Place the oil drain pan under the tank, remove tank cap and refill hydraulic oil to the "max" mark.
3. Ensure that the vents work and that no vacuum is generated.
4. Screw on the tank cap so that the tank is properly sealed.
5. Remove oil residues on the floor or on the lift with an approved detergent. Dispose of used cleaning cloths in the correct manner.
6. Complete a maintenance report (→ Annex).

An oil change is carried out depending on the extent to which the hydraulic oil has degraded.

To do so, proceed as follows:

1. Lower all runways (main lift and rolling jack) completely, turn main switch off ("OFF" position) and lock it.
2. Place the oil drain pan under the hydraulic oil tank, completely disassemble the tank and empty out the remaining oil into the drain pan.

29



3. Replace the hydraulic oil tank in the correct manner.
4. Fill approved hydraulic oil up to the "max"-mark. Maximum capacity of empty tank is 11 liters.
5. On the , AR43-5MB, SM55-M51VAS or SM60, bleed the main cylinder. On the SM40LT variant, bleed all 3 hydraulic cylinders.
6. Remove oil residues on the floor or on the lift with an approved detergent. Dispose of used cleaning cloth in the correct manner.
7. Turn main switch back on ("ON" setting).
8. Check that control buttons and switches function properly.
9. Carry out function tests with and without load.
10. Complete maintenance report (→ Annex).

9.6 Repair work (Repairs)



DANGER

If repairs are carried out incorrectly, they may cause serious injury and also lead to damage to property. A safety risk as well as a risk of fatal injury exists during operation.

- Repairs may only be carried out by trained customer service staff.
- Follow all safety regulations and warnings in this chapter.
- Always follow the repair instructions below.
- Repair work must be documented (→ Annex, inspection logbook).



Always refer to the information received during the manufacturer's training.

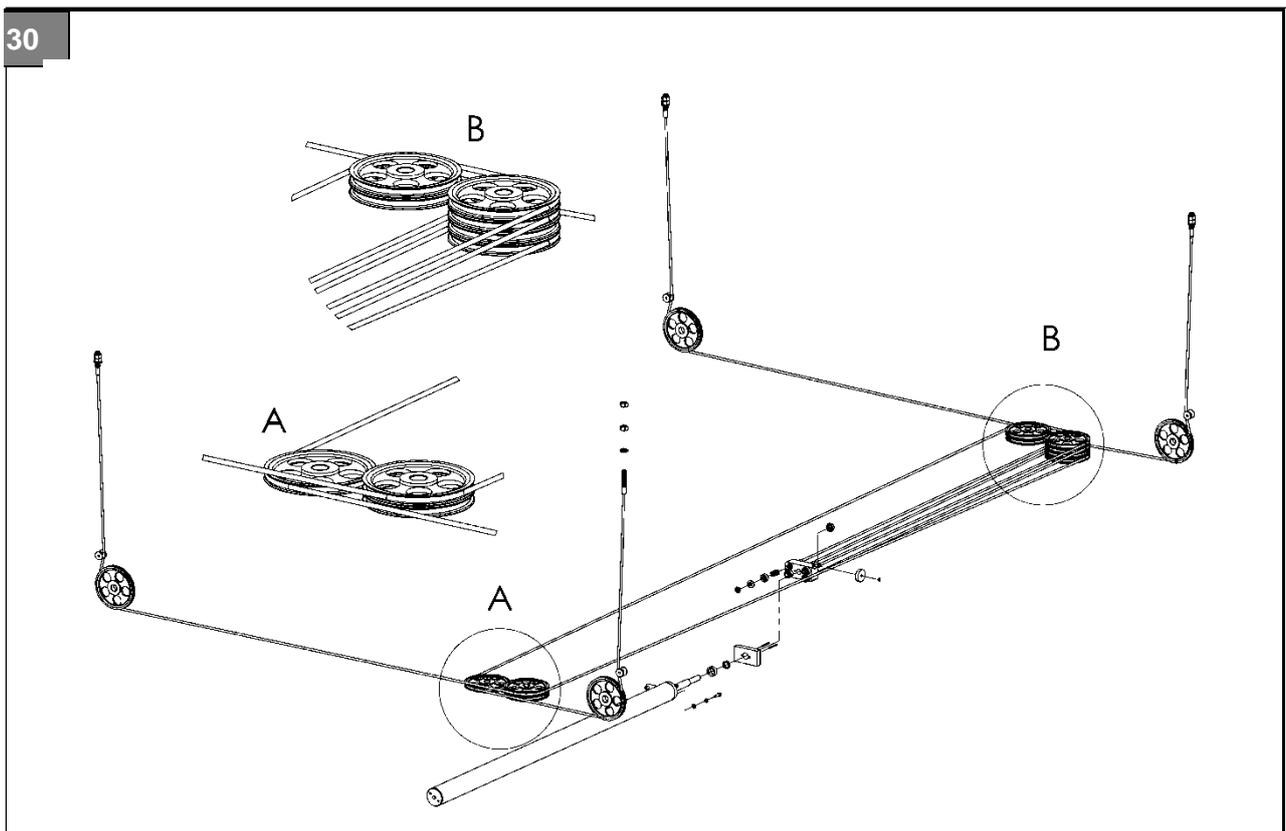
Changing the cylinder

1. Lower the post lift into a suitable position until all 4 latches are completely latched in the latch bars.
2. Check the latching (visual inspection). All 4 latches must be 100 % latched and the cables unloaded.
3. Turn the main switch off ("OFF" setting) and lock with a padlock.
4. Disconnect the mains fuse and attach a warning notice preventing unauthorized reconnection.
5. Loosen the cable retainers.
6. Activate the hydraulic system without pressure.
7. Disconnect the air supply / remove fitting.
8. Change cylinder.
9. Reassemble in reverse order.

Worn ratchets

1. Proceed as above under Change cylinders, Pos. 1 to 4.
2. To safeguard against unforeseen lowering, also place suitable supports under the post lift at the lift columns.
3. Loosen the ratchet mounting screws.
4. Activate the hydraulic system without pressure.
5. Disconnect the air supply at the air cylinder fitting.
6. Disassemble the ratchet.

30

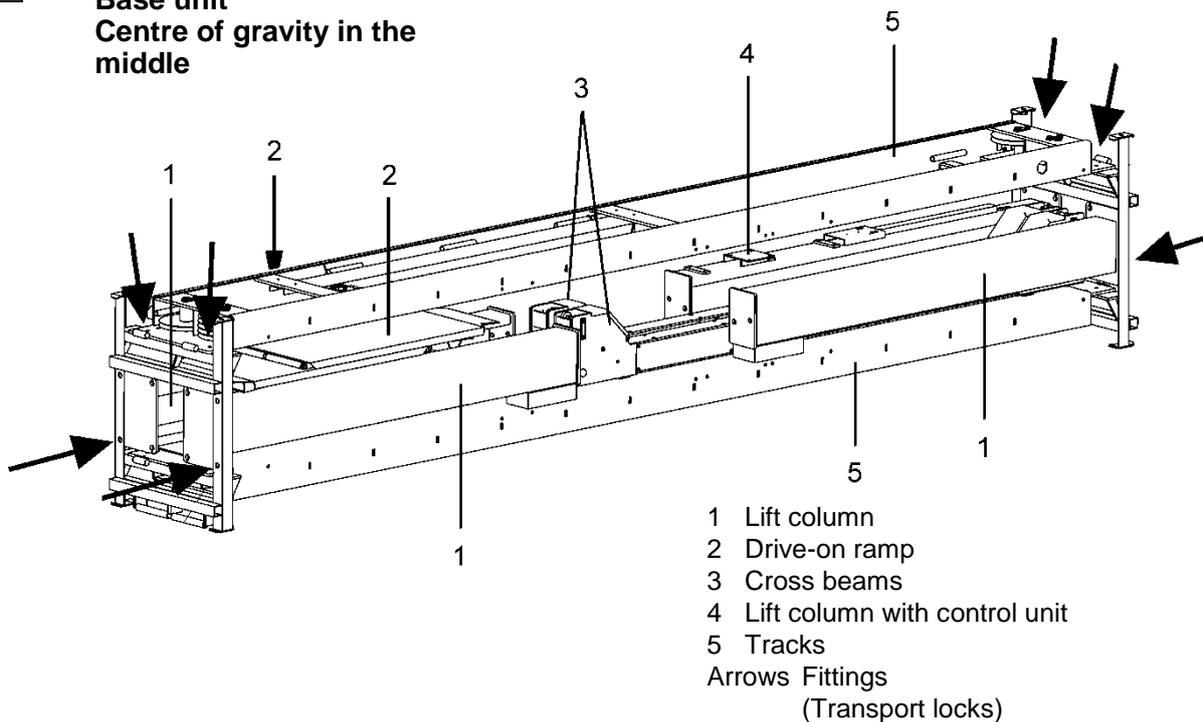


Replace cables/cable sheaves

- Damaged cables must be replaced promptly.
- **If cables / cable sheaves are damaged, inform maintenance contractors and customer service immediately.**
- **Always replace all cables together as a set.**
- If the cable is too slack → Chapter 13. Commissioning.
- Replace cables as per the manufacturers training.

31

Base unit
Centre of gravity in the middle



- 1 Lift column
- 2 Drive-on ramp
- 3 Cross beams
- 4 Lift column with control unit
- 5 Tracks
- Arrows Fittings
(Transport locks)

10. Transport, Storage



Crushing and shearing hazard for limbs when unloading.
Caused by collapsing or slipping of the load.

DANGER

- Only unload the packing unit and transport to the installation site with a forklift truck or pallet jack with a sufficient load capacity.
- Only use hoists approved for the total weight (straps, chains etc.).
- Attach these so that the load cannot slip (check the centre of gravity of the load).
- Only secure individual components to load-bearing parts. Always lift vertically, steadily and without jerking.
- Carry out a visual inspection before offloading.
- Do not stand close to or underneath swinging loads.
- Constantly monitor the danger zone when lifting or lowering.
- Always transport hydraulic components empty of oil.

ATTENTION Lift components may be damaged if offloaded incorrectly.

- Do not damage plates on the underside of the lift when lifting.
- Several parts are inserted into the components, for example into the runways. Offload these carefully to prevent damage.
- When offloading, proceed from top to bottom.

10.1 Transport

The lift is supplied in a packing unit (base unit) plus a separate hydraulic power unit. The optional wheel alignment kit is also supplied in a packing unit. The respective packing unit comes with the following documentation:

- Transport description giving suitable suspension points, total weight, centre of gravity, required cable lengths, transport locks, etc.
- List of all individual components included in delivery.

10.2 Offloading

7. Inspect the shipment for any shipping or transport damage. Immediately report any damage to your supervisor and to the transport firm.
8. If there is any transport damage, contact the transport firm.
9. Transport the packing unit to the installation site. This must conform to the approved environmental conditions (→Chapter 7. Technical data).
10. Unfasten the transport locks for the large parts on the front of the packing unit.
11. Offload the runways and cross beams and set down carefully.

i Recommended: Raise the runways and cross beams slightly, for example set down onto stable wood beams. This will also enable you to better route the pneumatic lines and electrical cables later.

12. Remove all other components from the pallet and set down carefully.
13. Inspect the supplied parts according to the packing list provided.
14. Dispose of packaging in an environmentally friendly manner, in compliance with the regulations applicable in your country (→Chapter 16. Disposal).

10.3 Storage

Lift components must always be stored in a dry place (no corrosion protection).

Recommended Storage Conditions

- Ambient temperature: -5 ... +50
- Relative humidity, 30 % ... 95 %
with condensation, at 20 °C

i The manufacturer provides no warranty for corrosion damage caused by incorrect storage.

11. Assembly



GEFAHR

Incorrect installation work may lead to serious injury and material damage. A safety risk as well as a risk of fatal injury exists during operation.

- Follow the instructions below carefully.
- Only customer service staff authorized by the manufacturer may assemble and commission the post lift.
- Correct installation and commissioning must be documented in the inspection logbook. To do so, use the form "Initial safety inspection before installation".

11.1 Assembly safety instructions

- Verify that the foundation is suitable before assembling.
- Think about and prevent potential sources of danger before assembly (→Chapter 1. Intended use, improper use, incorrect behavior, and internal incident, health & safety, and environmental information).
- Operators must be able to view the post lift and the danger zone in full from the control unit (→Chapter 3.3. Work area, danger zone).
- Refer to the technical data in chapter 7.
- Route and protect on-site power cables according to manufacturers specifications.
- Only qualified electricians may carry out electrical work on the electrical equipment of the machine.
- Only qualified staff with specialist knowledge and experience with hydraulics or pneumatics may work on hydraulic or pneumatic equipment.
- When working on the hydraulics or on pneumatic equipment, ensure that you follow the safety regulations listed in the supplied power unit operating instructions annexed to this manual.
- **Ensure that you also follow the instructions listed in 2. Safety.**

11.2 Quick assembly instructions



The lift components are already pre-assembled ex works. When assembling these must simply be joined together, electric, pneumatic, and hydraulic lines must be properly connected.

1. Determine the installation site of the post lift. Check the foundation. If necessary, reinforce the foundations at the point where the lift columns will be positioned.
2. Make preparations for installation. Prepare electrical and pneumatic connections. Check the foundation for unevenness and level it out. Use spacers and shims.
3. Set down both runways and prepare them for assembly.
4. Set down both cross beams and prepare them for assembly. Disassemble the cable sheaves.
5. Set up the cables. To do so, pull out the cables from the cross beams and tension them.
6. Fasten the runways to the cross beams.
7. Insert the latch bars into the latch bar brackets.
8. Stand the lift columns upright, anchor and secure to the floor.
9. Secure the latch bars and cables.
10. Attach flexible hoses.
11. Assemble the hydraulics module. Fill the hydraulics tank.
12. Connect the electrics.
13. Power up the post lift and connect the pneumatic lines (when it stops, it will automatically lock in the latch bars).
14. Carry out initial commissioning. Make minor adjustments to the post lift.
15. Fit the automatic wheel chocks, drive-on ramps and other additional components.

11.3 Site specifications

- The post lift may only be installed above ground and indoors.
- Refer to the building plans when selecting a site.
- When anchoring to the floor, take into account any pipes, cables, and supply lines lying there.
- Ensure that the load capacity of the foundation is adequate.
 - Support surface for lift columns: Reinforced concrete, concrete quality C20/C25
 - Floor load capacity for each lift column (34 x 23 cm): Min. 2000 kg.
 - Floor must be designed for a floor anchor.

i Do **not** fit post lifts onto asphalt or a similar unstable surface, since the anchor may come loose in the floor.

- Comply with the specified minimum distances and clearances (→Chapter 3.3. Work place, danger zone):
 - Min. work area for loading and movement: 8.58 m x 4.86 m.
 - Min. distance around sides: 0.8 m, without through traffic 0.6 m
 - Min. ceiling height / lamp height: 2.032 m + overhead clearance of largest vehicle.

i Take account of the max. required hall height/room height. For variants with rolling jack, also factor in the max. extension height of the rolling jack.

i For wheel alignment lifts, take into account the vehicle or alignment system manufacturer's specifications.

- Runways must be fitted straight and level. Height tolerance ± 5 mm, max. difference between diagonals 6 mm.

i Tighter tolerances are defined for the optional wheel alignment kit, according to manufacturer's specifications.

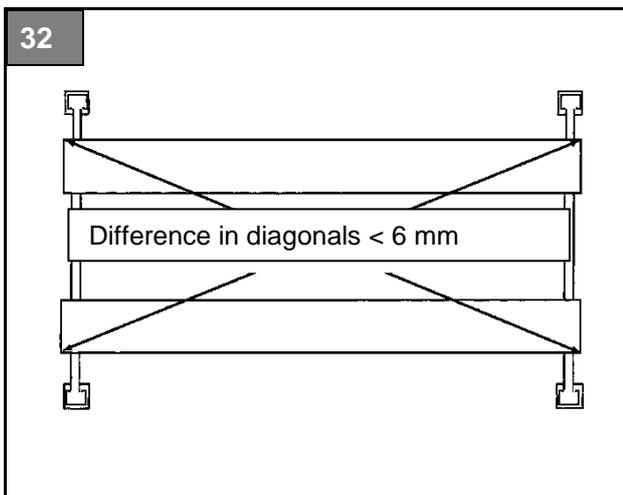
- Factor in sufficient space for the approach and drive-off. Take drive-on ramps into account.
- Take note of the maximum bearing pressure under the lift column. Take into account the weight distribution and the dead load of the lift parts.

11.4 Installation preparations

1. Provide an electrical and pneumatic outlet close to the lift column with the control unit:
 - Electrical, according to the lift variant : 230 V AC or 400 V (3xL+N+PE), 5 x 2.5 mm²
 - Pneumatic: 6...8 bar. When using a pneumatic axle jack (Optional) 8...10 bar.
2. Level out any uneven floor areas around the lift columns. If required, fill bearing surfaces for lift columns with reinforced concrete (concrete quality C20/C25).
3. Equalize slight differences in height between lift columns using spacers or shims (optional accessories).

i The permitted height tolerance between the lift columns is ± 5 mm. The 4 lift columns must be leveled exactly to the same height so that the runways are horizontal. This is also important when settling the lift onto the latch bars.

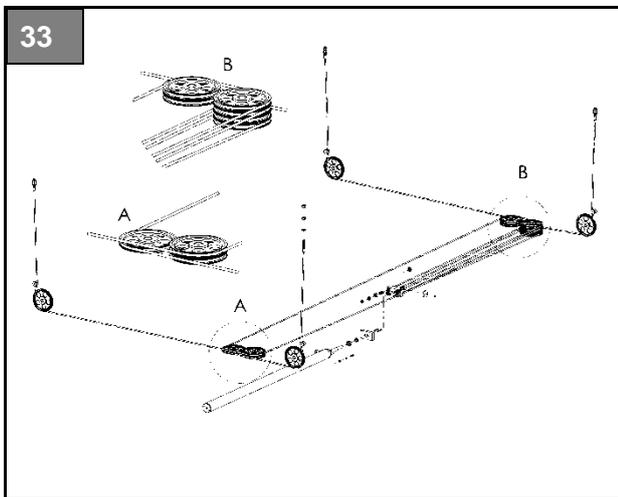
Use only original spacers or shims (→optional accessories).



11.5 Prepare the runways

- i** Cables and sheaves are prefitted in the runways and secured by transport locks.
- i** The runways can be fitted with the approach area on the left or right.
- i** Always attach the fixed runway to the lift column with the control unit.

1. Set down both runways onto stable wood beams at the installation site with a distance of around 0.9 m between them. Use the A to D markings. Label "A" of the fixed runway to the power supply.
2. Pull out the cables and pneumatic lines on the front ends of the runways. These must be rolled in under the runways and secured).



3. Insert the cables into the cable sheaves of the runways. Make sure they are correctly positioned in the cable sheaves.
4. Lubricate the cable sheave grooves on both front ends of the fixed runways (for grease see → Chapter 9.4).

34

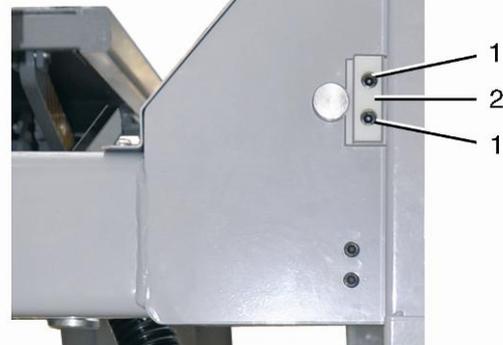


5. Insert the fitting (metal guard) for flexible hoses from inside and outside into the fixed runway and tighten.

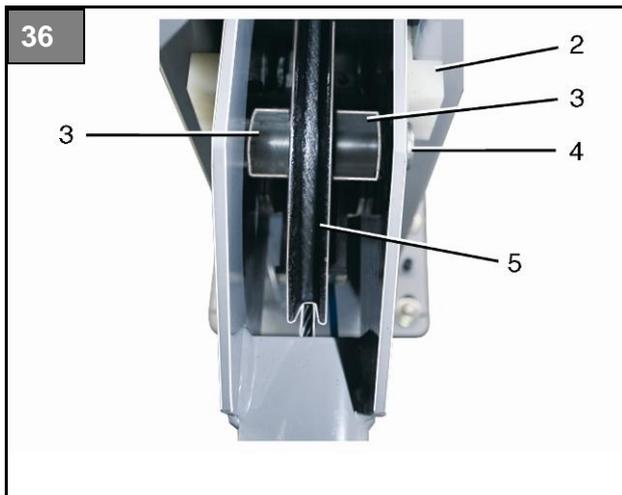
11.6 Prepare the cross beams

1. Position both cross beams under the runway beams at the ends of the runways. Make sure that markings A to D match up.
2. Pull out the cable sheaves on the right and left of the two cross beams.

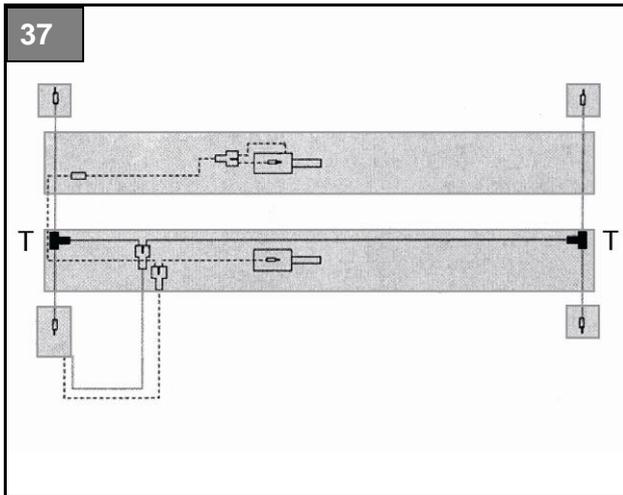
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3. On each cross beam, remove the M8 screws and (1) and the outer guides (2) (Guide = twist lock).

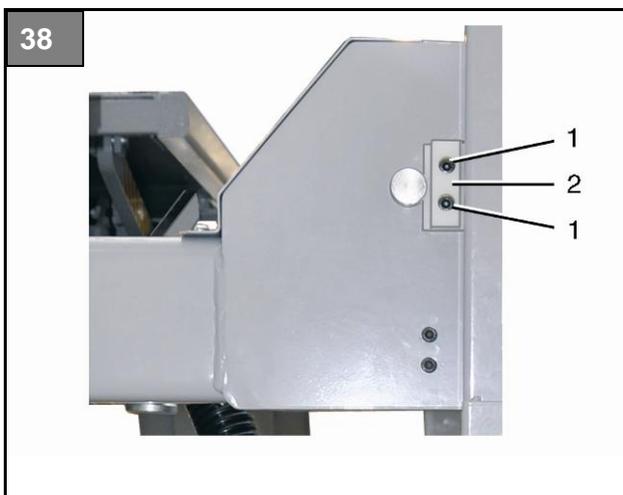


4. On each axle (4), pull out the cross beam cable sheave (5), disassemble the two distance sleeves (3) and take out the cable sheave (5).
5. Route the cable assembly with the electrical, pneumatic, and hydraulic lines through the fitting (Fig. 34).
6. If the optional lighting is used, route the lighting power cable into the cable conduit of the runways and cross beams and through the fitting (→Fig. 34).



6. Connect the pneumatic lines of the adjustable runway to the two T-connectors (→ Pneumatic circuit diagram).
7. For variants with rolling jacks: Route the hydraulic line of the adjustable runway in the cross beams and through the fitting (→ Fig. 34).

11.7 Set up the cables



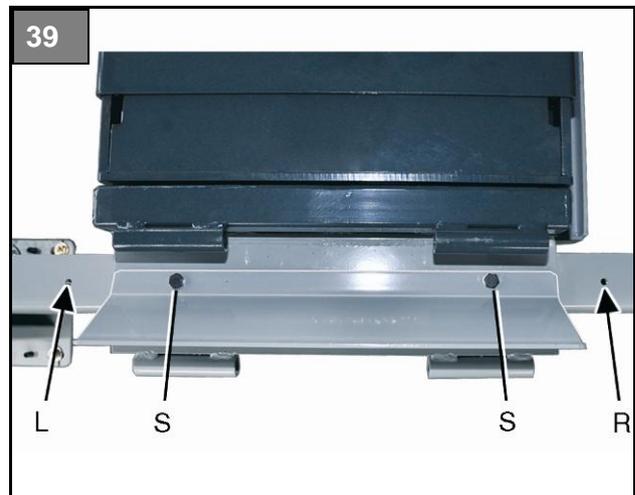
1. Pull out the 4 cables according to the cable diagram through the cross beam and route them out of the cross beams. They must protrude from the cross beam by about the same distance.

ATTENTION Malfunction if cables are crossed or slack.

→ Ensure that the cables are pulled tight within the cross beam and are not crossed.

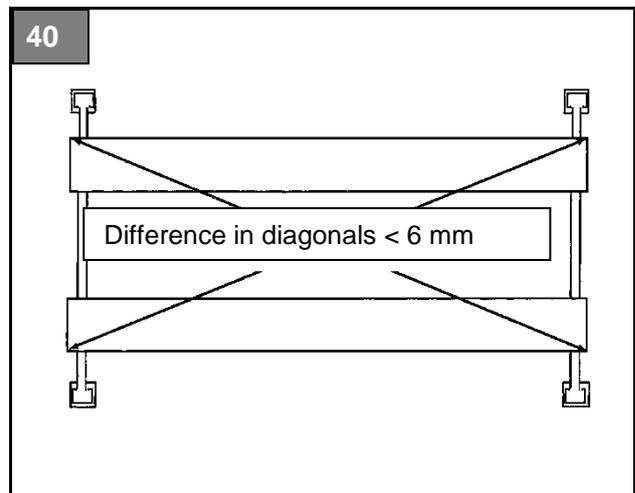
2. Fit the cross beam cable sheaves (→ Fig. 30 and 33). To do so, insert the cable sheave and the two distance sleeves into the cross beam for each cross beam. Slide the greased axle into the side and secure the guide.

11.8 Fasten the runways to the cross beams



1. Align the fixed and adjustable runways with the cross beam mounting holes (S) at the front and back. In doing so, make sure that the cables and lines are in the correct position. Cables must not fall out of the grooves of the sheaves.

For alternative mounting positions for the adjustable runways, see → Pos. (L) and (R).



2. Check the difference in length between the two lift diagonals (between the corner points of the cross beams). Maximum allowed difference between the two diagonals = 6 mm.

11. Assembly

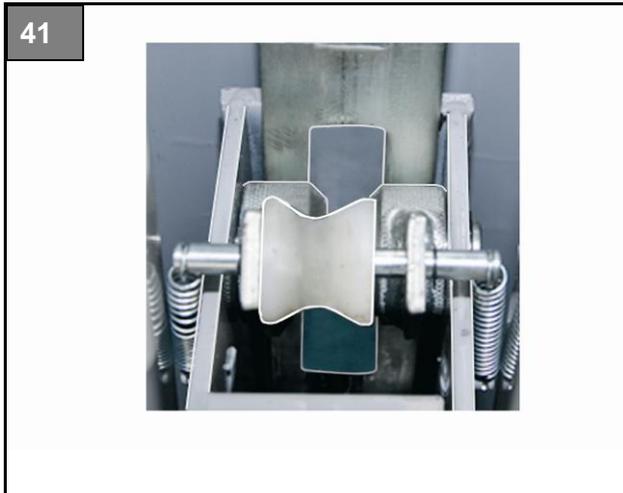
- Fit the two runways to the cross beams with the supplied M10 bolts (→ Fig. 39).

Tightening torque table in Nm where $\mu = 0,12$

Thread	Property class			
	5.6	8.8	10.9	12.9
M 4	1.3	3	4.6	5.1
M 5	2.7	5.9	8.6	10
M 6	4.7	10.1	14.9	17.4
M 8	11.3	24.6	36.1	42.2
M 10	22.9	48	71	83
M 12	39	84	123	144
M 14	62	133	195	229
M 16	96	206	302	354
M 18	133	295	421	492
M 20	187	415	592	692

- Check diagonal length. Correct the alignment if necessary.

11.9 Insert the latch bars



Insert the 4 latch bars into the safety locks. To do so:

- Push the roller with the cam shaft to the back (arrow), so that there is a small gap.
- Insert latch bar and slide almost to the floor (leave a small gap for the lift column base plate).

11.10 Assemble the lift column

Proceed as follows on all 4 lift columns.

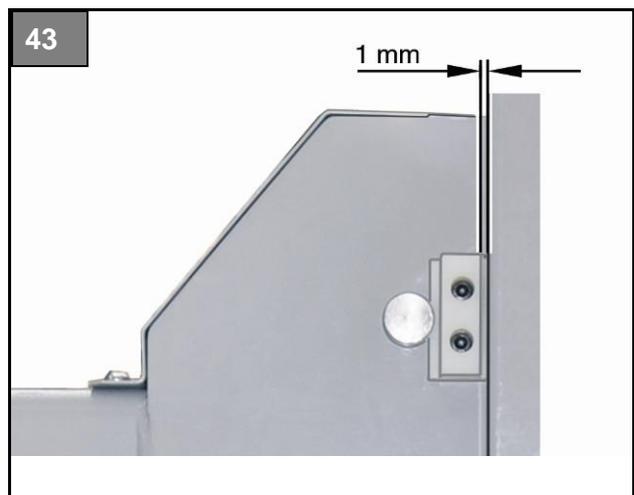
Make sure the lift column with the control unit is correctly positioned.

- Set down the lift column onto the assembly position with a forklift truck.
- Slide the lift column from the back onto the latch bar and align approximately with a plumb line.



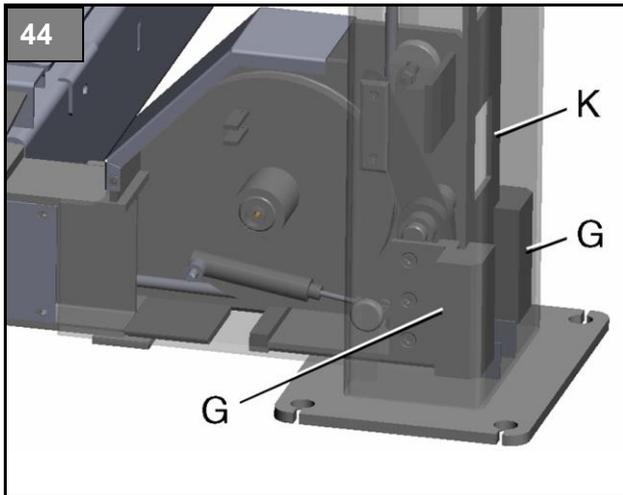
- Equalize any slight differences in height with the screws (S). Place spacers underneath in each case.

Equalize greater differences in height with shims (→ optional accessories). Make sure there is no differences in height between the lift columns (max. height difference between the 4 lift columns = 5 mm).



- SM 40 series and SM 40 LT series only:** Slide the lift columns onto the two guides of the

cross beams leaving a 1 mm gap and align precisely using a spirit level.



SM60 series only:

fasten the right and left slider blocks G to the lift column each with 3 bolts. Then slide the latch bar into the slider blocks.

Slide on the lift column onto the two cross beam guides leaving a gap of 1 mm and align precisely with a spirit level (see Fig.43).

5. Mark the 4 anchoring holes on the floor and for each lift column and drill (\varnothing 16 mm, 130 mm deep). Clean the drill holes.
6. Insert all 16 anchor bolts into the holes. Use a rubber mallet if necessary.

Approved anchor bolts

Manufacturer	Type	Thread
MKT	Anchor bolt BZ plus	M16
MKT	Anchor bolt BZ plus A4 or HCR	M16
MKT	Injection system VMZ (chem.)	105/M16 125/M16 145/M16
HILTI	HVZ (chem.)	M16x105
HILTI	Through bolt anchor HST, HST-R and HST-HCR	M16
Fischer	Anchor bolt FAZ II	M16
Fischer	High-bond anchor FHB II (chem.)	M16x95
Würth	FAZ M20	M16



Anchor bolt clamping zone

The clamping zone for these anchor bolts is the sum of the non-bearing flooring plus the thickness of the column base plate of 12 mm.

7. Fit the 4 lift columns onto the shims with approved nuts and bolt locking devices. Select the tightening torque according to the bolt manufacturer's specifications. Also consider the on-site conditions.



Risk of fatal injury if lift columns are not secured properly. Lift or load could topple or collapse.

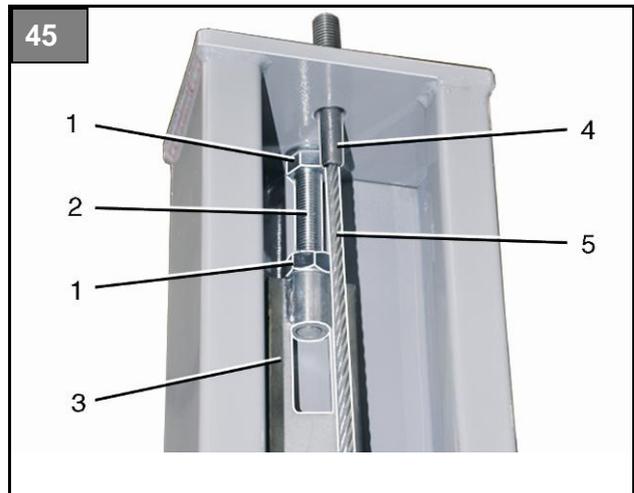
DANGER

- Comply with the specified torque on each bolt.
- If this is not possible, repair the floor according to specifications (→Chapter 11.3), **otherwise commissioning cannot be carried out.**

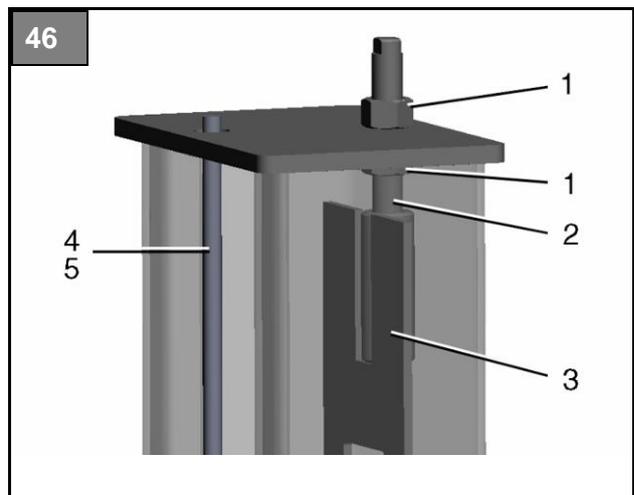
11.11 Attach the latch bars and cables

Proceed as follows on all 4 lift columns.

Series SM40 and SM40 LT:

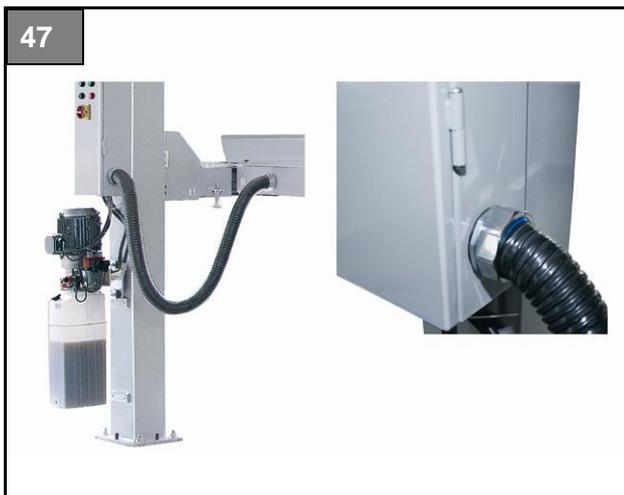


Series SM60



1. Insert the supplied threaded pins (2) from above through the top plate of the lift column and attach using 2 lock nuts (1) with washers for each pin (→ Fig. 45 and 46).
2. Insert the threaded pin (2) from above into the latch bar.
3. Adjust the latch bar (3) using the hex nuts (1) in such a way that it lies in a circular recess on the floor but does not make contact with the floor.
4. Tighten the hex nuts at top and bottom slightly, but do not yet tighten them fully.
5. Lock at the top using the M20 lock nut.
6. Screw the threaded sleeve (4) for the cable (5) into the top plate from below so that the cable is lightly tensioned. Do not yet secure the cable.
7. Secure the threaded sleeve at the top with an M20 lock nut and then with a jam nut.

11.12 Attach the flexible hose



8. Route the cable assembly with the electrical, pneumatic and hydraulic cables through the flexible hose into the control box.
9. Make sure that the flexible hose sits securely in the metal fitting of the fixed runway.
10. Then tighten the 2nd metal fitting on the control box.

11.13 Assemble the hydraulics module

- Only qualified staff with specialist knowledge and experience of hydraulics may work on hydraulic equipment.
- Always follow the safety regulations in the hydraulic power unit instructions in the annex to this manual.

The hydraulic power unit with motor and tank is supplied separately and is assembled as follows:

1. Screw the 4 threaded pins with rubber pads (2) into the lift columns.

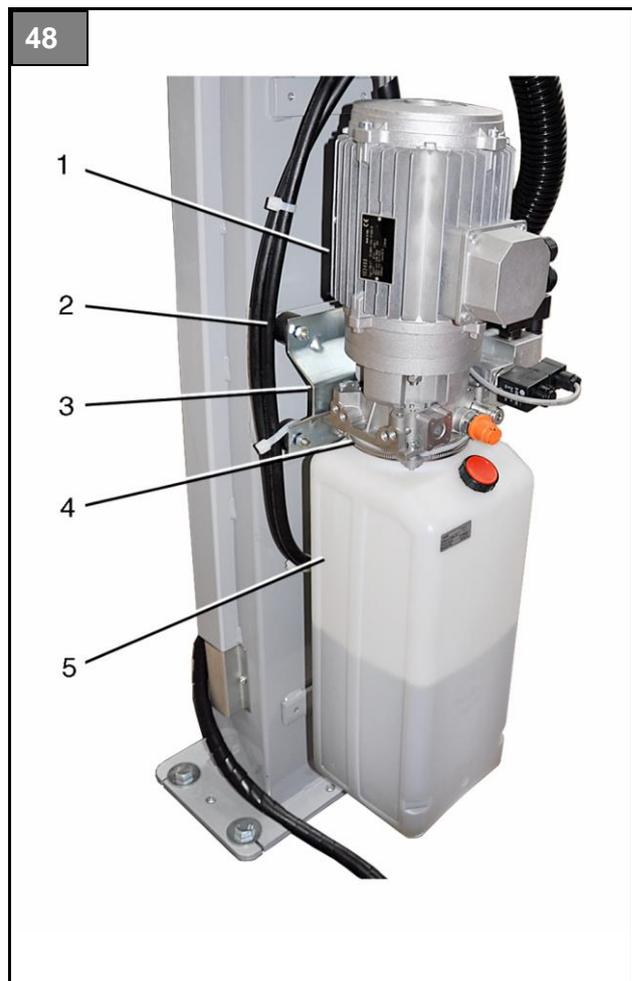


CAUTION

Risk of injury from heavy hydraulic power units.

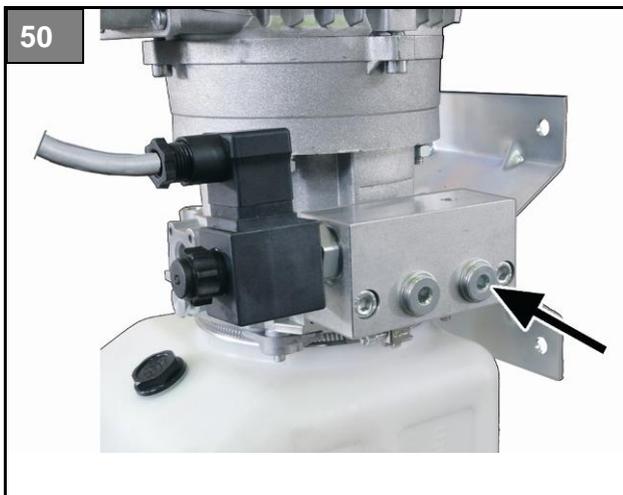
- If possible, assemble the complete unit in pairs.

2. Attach the complete hydraulic power unit to the 4 threaded pins with the mounting plate (3), fit spacers and secure with self-locking nuts.



11. Assembly

3. Connect the supply lines (Fig. 49, arrow) to the hydraulic block.
 - SM40LT with 2 emergency manual valves
 - metallic fittings for main lift
 - black fittings for rolling jacks
 - SM40, AR43-5MB, SM55-M51VAS and SM60 with 1 emergency manual valve
4. Open the tank cap and fill the tank with 11 liters of hydraulic oil. For approved hydraulic oil types, see → Chapter 9.4.



12. Electrical connections



Risk of electrocution. Faulty electrical work may lead to critical injury and also to damage to property.

DANGER

- Always follow the instructions below.
- Proper installation and commissioning must be documented in the inspection logbook. Use the form "Initial safety inspection before installation".

12.1 Safety instructions for connecting power cables

- Electrical connection work may only be carried out by qualified electricians.
- Before commissioning, check the mains voltage of the building wiring. This must match the specified post lift voltage (→see Annex or wiring diagram in the control box).
- The connection to the mains supply must be hard-wired!
The mains supply cable from the fuse box to the control box of the post lift must be hard-wired according to the wiring diagram. No plug outlets must be used.
- The motor is designed for clockwise phase rotation. The direction of rotation must be checked during connection (if necessary, reverse the polarity!).
- A motor protection switch designed for rated current and rated voltage must be fitted as overload protection. This must be provided by the lift user (not supplied).
- All leads/cables/hoses must be routed in cable conduits. Trip hazards must be avoided in the traffic and work zone.
- All main switches must be switched to "O" when working on the electrics of this machine. The mains power supply must be disconnected at the fuse box (disconnect the mains fuse) and isolated to prevent accidental reconnection. A clearly visible warning sign must be attached accordingly.

12.2 Connect the lift power supply

51



1. Disconnect the mains fuse and attach a sign warning against reconnection.
2. Connect the cable assembly terminals to the corresponding connectors. The connectors are coded so that only matching terminals can be connected.

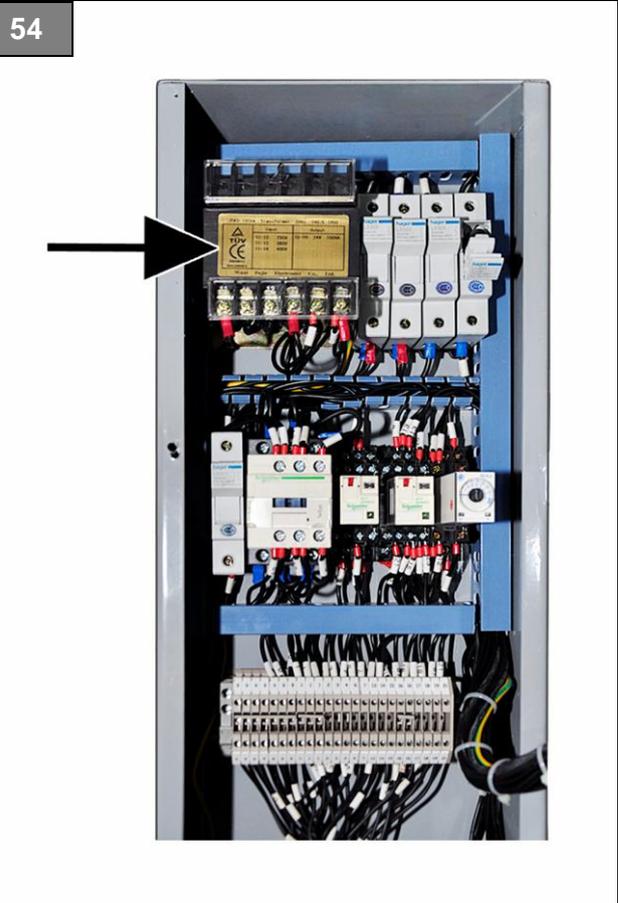
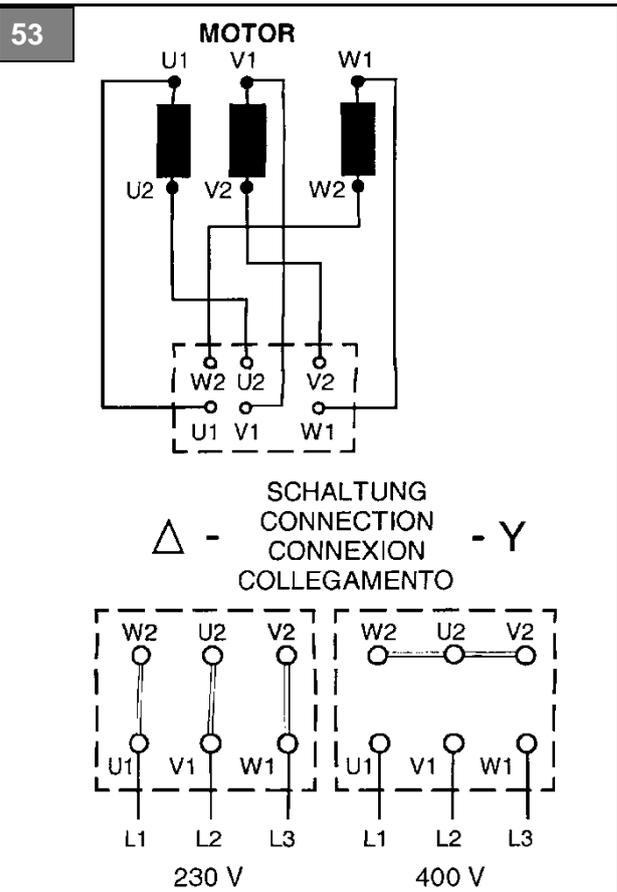
Connect 4 terminals to main lift, one terminal for rolling jack.
3. Feed the hydraulic supply lines and power cables from below through the lower knock-out in the control box and connect to the hydraulic power unit (→ Annex, Power unit operating instructions, hydraulics diagram).
4. Check the voltage, current and power ratings on the information plate. Make sure the approved structural conditions for connecting the power cables are in place.

12. Electrical connections

- Remove the motor connection box cover and route a 5-core power cable through the cable gland into the connection box accordingly.



- Route 2-core thermal contact switch power cables (Fig. 52) accordingly through the cable gland into the connection box and connect them (→circuit diagram in annex).
- Establish a mains connection (→Fig. 52 and 53)
 - Standard configuration with 400 V connection (3+N+PE): W2 – U2 – V2 bridge.
 - Alternatively 3 x 230 V- connection: Change the wiring on the transformer (→arrow, Fig. 54) to 230 V.
 Remove the six M5 nuts in the motor connection box, bridge U1–W2, V1–U2, W1–V2 according to the diagram and tighten the nuts again.
- Make sure that the equipment is properly earthed. Do not connect the earth conductor to gas, water, or telecommunications installations.
- Attach the motor connection box cover.
- Check the direction of rotation of the motor (see also direction of the arrow on the motor). To do so, close the control box, connect the mains fuse, turn the main switch to "ON" and push the Up button. Reverse the polarity if the direction of rotation is incorrect.



13. Commissioning

13.1 Test the pneumatic and hydraulic system

The pneumatic connections must be established on-site by the user.

1. Only connect the pneumatic line to the pneumatic female coupler.
2. Set the air pressure on the manometer to 6 ... 8 bar.
3. Set the main switch to ON.
4. Move the unloaded lift to full rise and the bottom position several times using the Up and Down buttons. This will completely remove any air pockets in the hydraulic system.
5. For variants with rolling jacks, move the unloaded rolling jacks up and down several times.
6. Carry out a visual inspection of the hydraulic and pneumatic system. In doing so, check all lines, especially the couplings. No leaks must be found.
7. Lower the lift and rolling jack completely and check the hydraulic oil level. This must also correspond to the maximum level.
8. Finally check that the hydraulic and pneumatic hoses and components are fitted securely.

13.2 Test the safety mechanism

Test the "Lower in the danger zone" Function

1. Raise the main lift around ½ m with the Up button.
2. Push the Down button. The lowering process must stop at a height of around 120 mm (foot protection).
3. Push the Down button and Lock button together until the main lift has been lowered completely. A buzzer sounds constantly during the lowering process.
4. Test the safety shut-off for the rolling jack in the same way.

Test the "Anti-Misalignment" on the rolling jacks

5. Raise the rolling jacks with the Up button.
6. Mask the photosensors between the runways.
7. Push the Down button (whilst turning the selector to main lift and rolling jack respectively).
The Down function must be deactivated. Neither the main lift nor the rolling jacks may be lowered.
8. Remove the adhesive strips on the photosensor.

Test the "Slack cable" function

9. Lock the main lift to the latch bars with the Lock button. Press the button until the cables are completely slack.
10. Push the Electronic Alignment Control button (→Chapter 6) together with the Up button until the cables are tensioned and the buzzer switches off.

Test the "broken cable" function

1. Ensure that no vehicle is on the lift or the rolling jacks (lift unloaded).
2. Raise the main lift by around 1 m with the Up button.
3. Place a wood block under a cross beam directly next to a lift column and lower the main lift with the Down button.
4. Lower the main lift onto the wood block, until the lift column cable is slack.

The lowering process must now automatically stop and the locking latch (lock cams into the latch bar) must engage.

An alarm sounds. All functions on the control unit, with the exception of the Rolling Jack Down function must now be out of order.

5. Push the Electronic Alignment Control button (→Chapter 6) together with the Up button until the cable is tensioned again and the buzzer switches off.
6. Now carry out the test (steps 2 to 5) on the other lift columns.

13.3 Align the rolling jacks

1. Ensure that no vehicle is on the lift or the rolling jacks (lift is unloaded).
2. Test the alignment function as in Chapter 6.

13.4 Leveling the main lift

i Use a spirit level, an automatic level and marker discs on the driving surfaces for adjustment work (positions A and B), →Figure 58.

Make fine adjustments to lift columns

3. Ensure that no vehicles are on the lift or the rolling jacks (lift unloaded).
4. Using the spirit level, check the vertical alignment of the lift columns. If skewed, carry out the following steps.



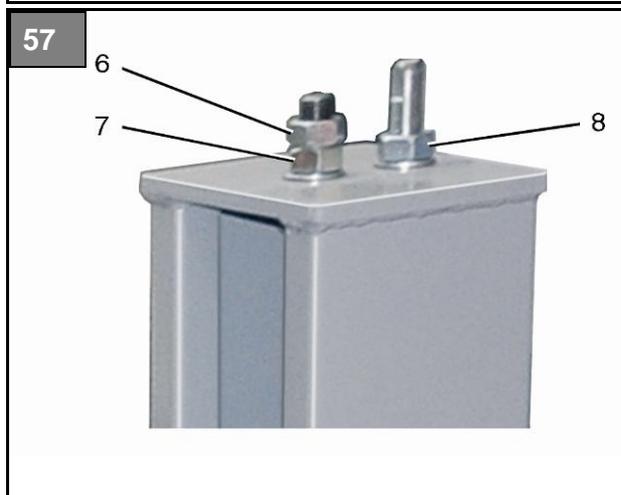
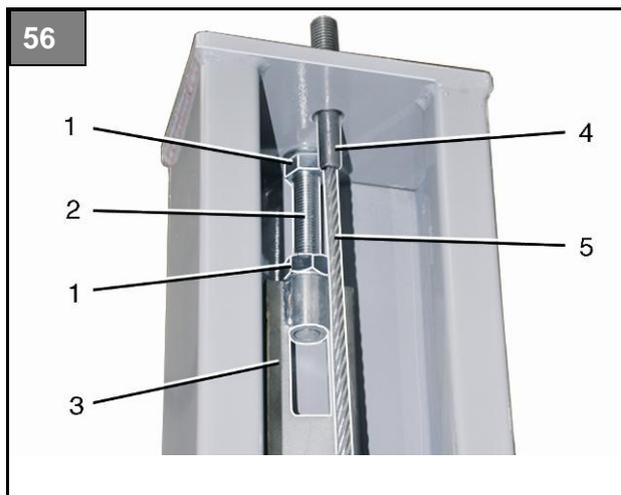
5. Loosen the nuts (2) and align the lift precisely with the 3 adjusting nuts (1). In each case, place shims underneath.

i When aligning the lift columns, push against the cross beam so that there is a gap of 0.5 mm between the two guides and cross beam. Then place shims underneath.

6. Tighten all 4 anchor bolts with the corresponding torque (→Chapter 11.8. Tightening torque table).

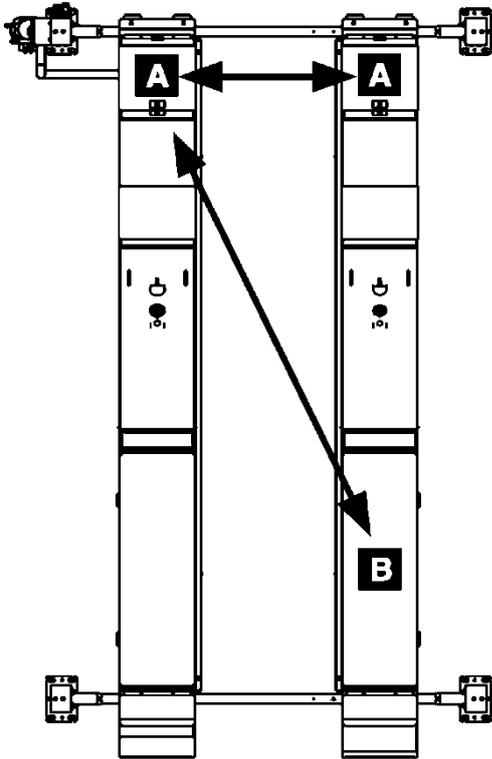
Fine adjustments to the latch bars and cables

1. Ensure that no vehicle is on the lift or the rolling jacks (lift is unloaded).
2. Raise the main lift by around 1 m with the Up button.
3. Lock the main lift into the latch bars with the Lock button. Make sure that it latches into all 4 latch bars.
4. Switch main switch to OFF.



5. Remove the top jam nut and lock nut ((6) and (7)) of the cables.
6. Adjust the threaded sleeves (4) of the cables (5) on all 4 lift columns so that the cables are completely slack.
7. Loosen the lock nut (8) of the latch bars.

58



8. Place markers A and B on the driving surfaces.
9. Using the automatic level, measure the distances between markers A and B for each lift column.

59



10. Using the adjusting nuts (1) adjust all 4 latch bars so that the two driving surfaces are aligned with a crosswise height tolerance of

± 1 mm and diagonal tolerances of ± 2 mm.

11. Tighten the adjusting nuts (1) of the 4 lift columns (lock them).
12. Then secure the lock nut at the top (Fig. 57, Pos. 8.)
13. Tension the threaded sleeves (4) of the cables (5) on the 4 lift columns slightly.
14. Turn the main switch to ON and lower the main lift to the floor.

i The rolling jacks are already height adjusted ex works and do not need to be leveled.

Adjust the cables

1. Drive a vehicle with a total weight of 2000 kg centered onto the main lift. Make sure that the vehicle is also centered laterally on both runways.
2. Push the Up button until all cables are tensioned and the acoustic alarm switches off.
3. Raise the main lift by around 1 m with the Up button.
4. Use the threaded sleeves (4) to adjust the cables (5) on all 4 lift columns so that they are evenly tensioned.
5. Secure the 4 threaded sleeves at the top with an M20 lock nut and jam nut (Fig. 57, Pos. 6 and 7).

14. Wheel alignment kit AK... (optional)

14. Wheel alignment kit AK... (optional)

14.1 Supplied parts

Wheel alignment Kit for post lift types SM40, , AR43-5MB, SM55-M51VAS SM40LT, and SM60, consisting of (2 parts of each):

- Adjustable filler plate
- Fixed filler plate
- Slip plate
- Optional: Turning radius gauge for the relevant wheel alignment system

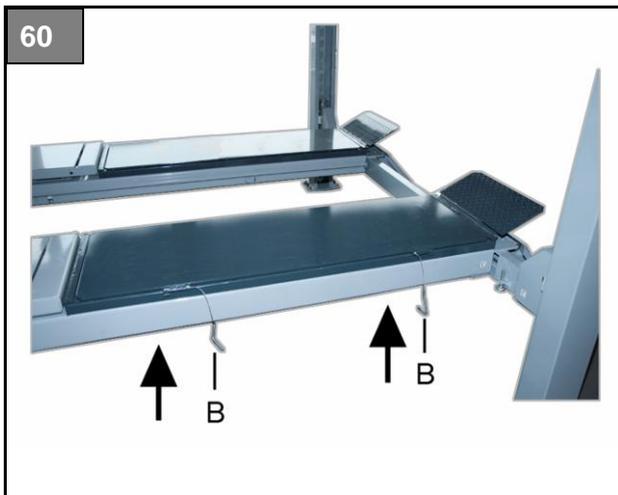
14.2 Assembly

These post lifts can be combined with wheel alignment systems from different manufacturers.

The post lifts must be converted for use. Thus, on each runway the base plate at the front and back must be replaced by filler plates and slip plates from the wheel alignment kit.

On each side:

1. Remove the base plate on the approach side (drive-on ramp side).
2. Insert the slip plate so that both bolts protrude from the underside of the runway.



3. Secure the slip plate (use the corresponding thread locker and nuts).
4. Insert the two locking pins ("B").

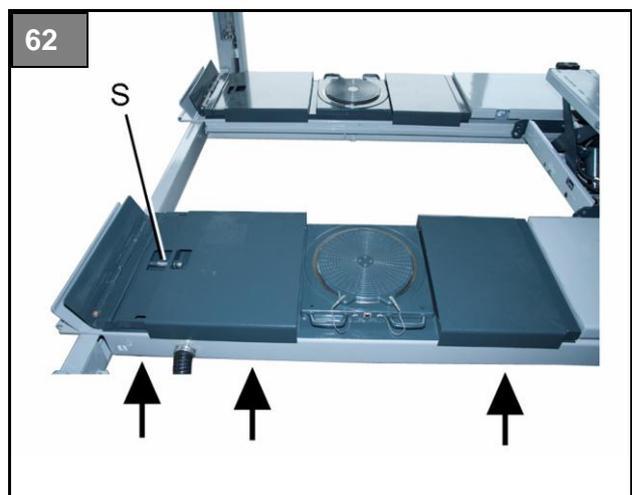
5. Remove the base plate on the drive-off side (automatic ramp chock end).



6. Insert the filler plate in such a way that all bolts protrude from the underside of the runway.

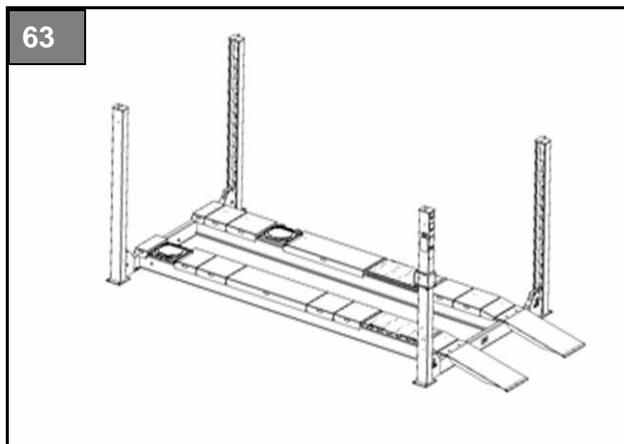
If an optional turntable is used, use the adjustable filler plate, the turning radius gauge and the small filler plate.

Depending on the wheel base, insert the adjustable filler plate before or behind the turning radius gauge.



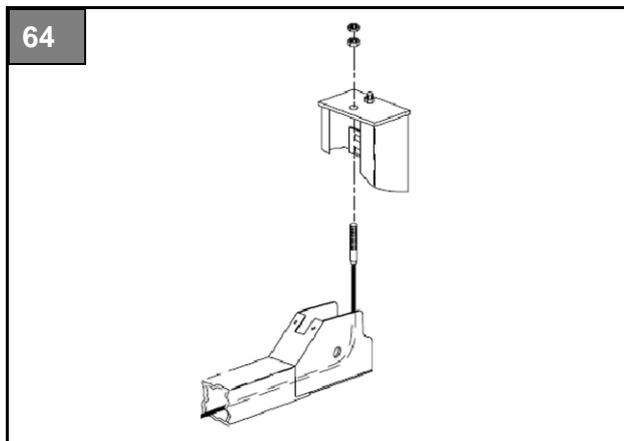
7. Then adjust the gap with the adjustment screw "S" so that all components lie one behind the other with small gaps in between.
8. Secure the slip plate (use the corresponding thread locker and nuts).
9. Insert the turntable locking pins.

14.3 Adjustment work



1. To begin making adjustments, first roughly level the runways.
2. To do so, adjust the 4 cables in such a way that the loaded runways of the lift are horizontal both lengthwise and diagonally.

To do this, place a spirit level onto the surface of the runway first lengthwise and then onto the cross beam.

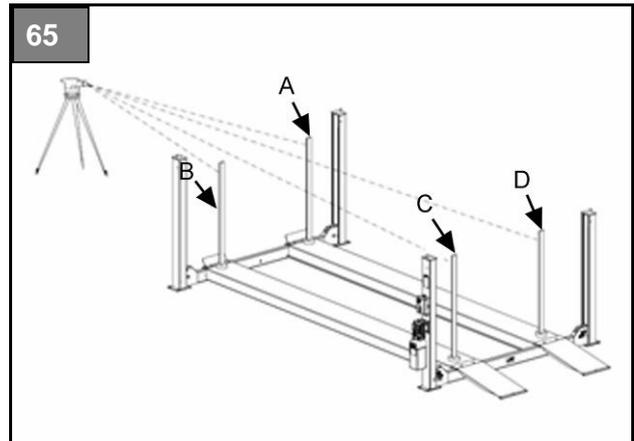


3. Lock the lift into the latch bar.
4. Adjust the cables with the nuts on the cable end. Then lock the nuts. Make sure that all latches are at the same height.

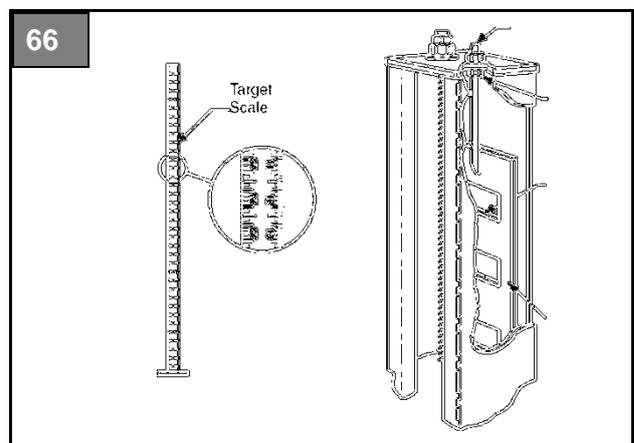
Adjust the runways according to the requirements of the vehicle manufacturer. To do so, the following measuring equipment is required:

- Automatic level
- Measuring stand with scale in mm.

5. Drive the vehicle onto the lift so that the front wheels stand on the turning radius gauge and the rear wheels on the slip plate. The vehicle must come to a halt virtually centered on the lift in the direction of motion.
6. Loosen the lock pins on the turning radius gauge and slip plates. Make sure that the vehicle can now slip easily on the plates and that no tension exists so that the adjustment work can be carried out precisely.
7. Now lower the lift into the bottom position.



8. Position the automatic level so that the measuring stands can be seen positioned one behind the other on the wheel footprints.
9. For each wheel footprint, note the measurements according to the scale on the measuring stand.
10. Using the 4 cross beam adjustment screws in the "bottom position", (→Fig. 25) adjust the height so that the readings from all 4 measuring points are the same after they have been checked again.



11. This concludes the initial adjustment work (initial measurement).

14. Wheel alignment kit AK... (optional)

12. Then lift the runways when loaded with the vehicle to the desired working height and lower into the four latch bars with the Lock button.
13. Make a note of the 4 measurements of the wheel footprint at this height.
14. Adjust the latch bars. To do so, loosen the jam nuts on the threaded rods and raise or lower the latch bar with the adjusting nut. Make sure that all 4 wheel footprints have the same height reading.
15. Then tighten the jam nuts of the threaded rods again.
16. Archive the measurement report with the updated measurements.

i For your safety, lock the post lift in the 4 latch bars during wheel alignment (locking latch). Only then may work be carried out in the danger zone and only then can wheel alignment be carried out precisely.

15. Disassembly

- Disassembly work may only be carried out by authorized qualified staff.
 - Only qualified electricians may work on the electrics.
 - Only trained persons with specialist knowledge of hydraulics/pneumatics may work on the hydraulic or pneumatic equipment.
1. To carry out disassembly work, switch off the equipment at the main switch (position OFF).
 2. Disconnect the mains fuse and attach a warning sign to prevent reconnection.
 3. Switch off the compressor unit (compressor unit manometer to 0 bar) and disconnect the line to the post lift.
 4. Disconnect the electricity supply.



WARNING

Risk of fatal injury through incorrect disassembly of hydraulic components. These are pressurized (up to 200 bar).

- Never disassemble hydraulic components (lift cylinders). These should always be detached as a single component.
 - The lift cylinder should only be properly disposed of by a certified company.
5. Empty the hydraulic oil tank, drain the hydraulic oil from the hydraulic hoses. Dispose of the hydraulic oil as described in Chapter 16.
 6. Remove grease and other chemical substances. Dispose of as described in Chapter 16.
 7. Disassemble lift columns, cross beams and runways (→Chapter 10 and 11).

16. Disposal

16.1 Environmental procedures for disposal

- Prevent environmental hazards.
- Avoid contact with or inhalation of toxic substances such as hydraulic fluid.
- Oils and lubricants are water pollutants under the terms of the Water Management Act WGH. Always dispose of these in an environmentally friendly manner in compliance with the regulations which apply in your country
- Hydraulic oil-based on mineral oil is a water pollutant and is combustible. Refer to the relevant safety data sheet for disposal.
- Provide suitable oil drain pans and oil absorbents to drain the oil.
- Ensure that no hydraulic oil, lubricants, or cleaning materials contaminate the soil or wash away into the drainage system.

16.2 Packaging

Do not dispose of with domestic waste! The packaging contains some recyclable material which must not be disposed of with domestic waste.

1. Dispose of packaging materials in compliance with local regulations.

16.3 Oils, grease, and other chemical substances

1. When working with oil, grease and other chemical substances, comply with the environmental regulations which apply to the relevant product.
2. Dispose of oil, grease and other chemical substances in compliance with the environmental regulations which apply in your country.

16.4 Metals / Electronic waste

This must always be properly disposed of by a certified company.





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