TWIN

TWIN F IV 3.0 | 3.5

Scissors Lift

Original Operating Instructions

BA083101-en

TWIN F IV 3.0 A
TWIN F IV 3.0 U
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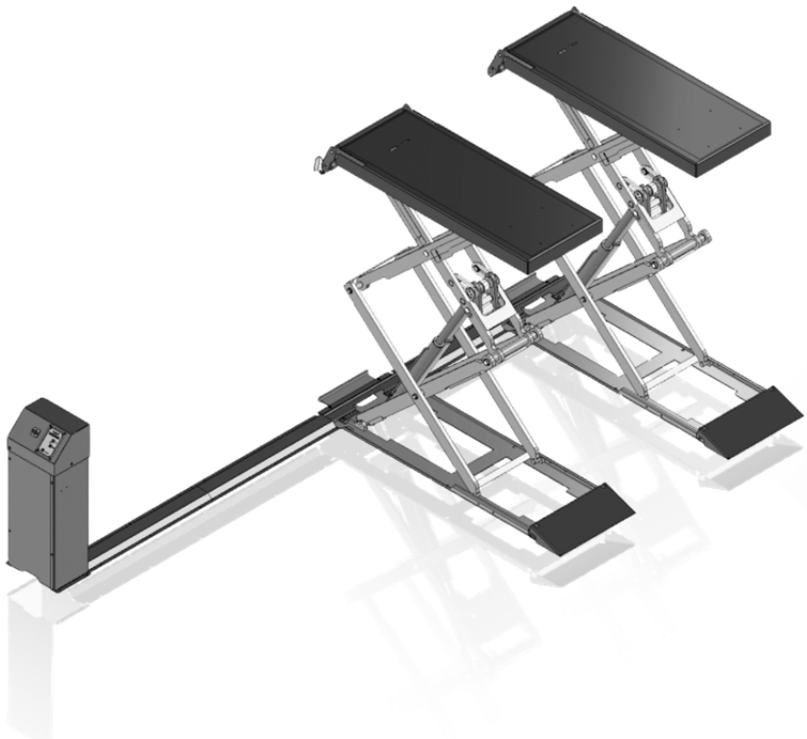

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1 Safety

1.1 Introduction

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

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

1.2 Symbols

Important safety instructions. Failure to comply with instructions could result in personal injury or property damage.

Important information.

1.3 Intended Use

- This lift shall be used exclusively for the safe lifting of motor vehicles. Observe the rated load capacity and load distribution.
- The lift shall not be modified without the express written consent of the manufacturer. In case of non-compliance the declaration of conformity becomes void.
- The lift can be re-positioned on-site adhering to the mandatory ambient conditions.

1.4 Inappropriate Use

Any use other than described is inappropriate, for example:

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

1.5 Requirements on Operating and Service Personnel

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

- be mentally and physically suited for these activities,
- be at least 18 years old,

- be trained and instructed in writing,
- have read and understood the operating instructions, especially the instructions what to do in the event of defects or malfunctions,
- be on record as having been instructed in safety guidelines,
- have practical experience in working with vehicle lifts and the hazards inherent in such equipment.

1.6 Safety Instructions for Commissioning

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

1.7 Safety Instructions for Operation

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

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

- The main switch serves as emergency stop switch. In case of emergency turn it to "0".
- Protect the lift against unauthorized usage by padlocking the main switch.
- Protect all parts of the electrical equipment from humidity.
- Use caution with operating vehicle engines. Danger of poisoning!
- When removing heavy vehicle components, the centre of gravity can change. In such circumstances appropriate action must be taken as required.
- Residual risk: Tripping over runways of surface mounted lifts, tripping over tools.

1.8 Safety Instructions for Servicing

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

1.9 Safety Instructions for Handling Hydraulic Fluid

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

1.10 Additional Safety Instructions for Lifts with Transport Frame for Mobile Use

- The lift shall not be exposed to direct, external weather conditions (snow, rain, etc.).
- The lift shall not be erected, stored and commissioned in explosion- and fire-endangered operating halls or in moisture-endangered rooms (wash halls). Above and beyond this, storage is only allowed in enclosed rooms.
- The lift shall only be positioned and operated on an even surface.
- The maximum permissible inclination of the surface is 2 %.
- The underground surface shall be paved (cement, blacktop) and have sufficient solidity to bear the load of the pressure forces that are created.
- The static friction between the underground and the lift contact surface shall be sufficient to prevent sudden slipping. The lift shall not be used on snow-covered, icy underground surfaces. The lift shall not be positioned and operated on surfaces which have been contaminated with oil, gasoline or lubricants.
- It is forbidden to operate the lift on unpaved surfaces (e.g. grass, gravel etc.).
- Clean up the underground surface which may endanger the solid stance of the lift before erection (e.g. gravel, stones).
- No objects (wooden boards etc.) shall be laid under the lift to compensate for uneven surfaces. In this case, another, safer erection spot shall be chosen.
- The lift's erection surface shall be cleared and kept clean of any objects sticking to it or any other impurities (gravel, oil).
- Before lifting a vehicle, the lift stability shall be checked by the operating personnel.
- Vehicles shall only be lifted if the lift has been removed from the transport unit (forklift, brakable dolly).
- An additional stroke length extension or lifting of the loaded lift is forbidden.
- The lift shall only be moved with suitable lifting and transport devices (ground conveyor). The supports of the lifting and transport units shall fit to the supplied transport frame. Only forklifts and dollies designed to meet valid machinery directives shall be used.
- The forks of the used lifting and transport unit (ground conveyor) shall be placed at least 1000 mm deep in the transport frame.
- The lift shall only be lifted using the transport frame. A different form of lifting is not allowed.
- The proper securing of the operating unit for transport shall be done as shown in the operating manual.
- The operating unit shall only be transported in the shown position.
- During transport the side of the control cabinet with a label attached to it shall be in an up position.

- Immediately after transport the control cabinet shall be placed in an upward position. The lift shall not be stored with the control cabinet in a horizontal position.
- Only one lift shall be transported at a time.
- The lift shall only be transported in its retracted position.
- The supplied retaining bracket shall be attached for the lift transport.
- No other objects shall be placed and/or transported on the lift during transport.
- The valid accident prevention and safety regulations of the respective transport device shall be adhered to for the load security and transport.
- Movable forks which are part of the transport unit shall be locked.
- Only lifting and transport units (e.g. manual dolly, forklift) with driving and parking brakes for controlled driving shall be used.
- The lifting and transport unit shall have a load capacity of at least 1000 kg.
- Using manual force the lift shall only be moved on an even surface (maximum inclination 2 %).
- Secure the lift against unintended movement using the parking brake if it remains on the lifting and transport unit after transporting.
  The lift shall not be stored for a longer time period in a raised position on the transport unit.
- It is prohibited to move the lift on slippery (e.g. snow-covered) ground.
- When moving the lift or during normal operation never pinch or kink the hydraulic hoses.
- Never drive over the hoses with a vehicle, dolly etc.
- No objects shall be placed on the hoses.
- Damaged or leaking hoses shall be replaced immediately.

1.11 What to Do in the Event of Defects or Malfunctions

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

1.12 What to Do in the Event of an Accident

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

2 Description

2.1 General Information

This lift model is equipped with two support plates mounted to a scissors structure. The drive system consists of four hydraulic cylinders with hydraulic power unit. The lift is operated via an electric dead man's type control using pushbuttons, synchronization is achieved through a cable control system.

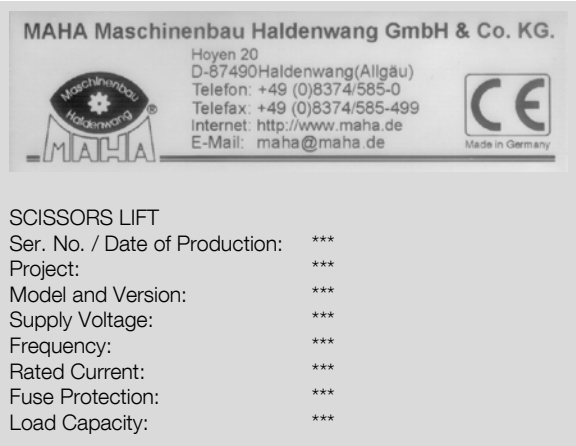
2.2 Specifications

	3.0 A	3.5 A
Fuse (time-delay)	16 A	
Working temperature range	5…40 °C	
Support plate width	605 mm	
Support plate length	1550 mm	
Support plate length max.	2100 mm	
Working pressure, hydraulic	260 bar	
Overall width (recommended)	1955 mm	
Shipping weight	800 kg	
Lifting height max.	1900 mm	
Raising time, load-dependent approx.	40 s	
Hydraulic power unit	3.6 kW	
Hydraulic fluid qty.	9 l	
Noise emission	< 70 dB(A)	
Mains frequency	50 Hz	
Mains voltage	400 V	
Phases	3	
Pinch point protection	Audible warning signal	
Lowering time, load-dep. approx.	40 s	
Load capacity	3000 kg	3500 kg
Drive-over height	105 mm	
Shipping dimensions W x H x L	750 x 700 x 1960 mm	

	3.0 U	3.5 U
Fuse (time-delay)	16 A	
Working temperature range	5…40 °C	
Support plate width	605 mm	
Support plate length	1550 mm	
Support plate length max.	2100 mm	
Working pressure, hydraulic	260 bar	
Installation depth	115 mm	
Overall width (recommended)	2000 mm	
Shipping weight	800 kg	
Lifting height max.	1885 mm	
Raising time, load-dependent approx.	40 s	
Hydraulic power unit	3.6 kW	
Hydraulic fluid qty.	9 l	
Noise emission	< 70 dB(A)	
Mains frequency	50 Hz	
Mains voltage	400 V	
Phases	3	
Pinch point protection	Audible warning signal	
Lowering time, load-dep. approx.	40 s	
Load capacity	3000 kg	3500 kg
Shipping dimensions W x H x L	750 x 700 x 1960 mm	

2.3 Sample Nameplate

Lifts of this model series have one nameplate each at the control desk and on the bottom side of both support plates. In the event of customer complaints, hotline requests or spare parts orders, serial number and YoM of the lift should always be indicated.



3 Transport and Storage

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

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

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

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

4 Installation and Initial Operation

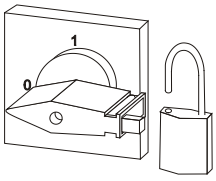
Installation and commissioning of the equipment must be carried out by specially trained personnel, authorised for the task. Specialist personnel includes authorised, trained skilled staff from the manufacturer, the dealer and the relevant service partners.

5 Operation

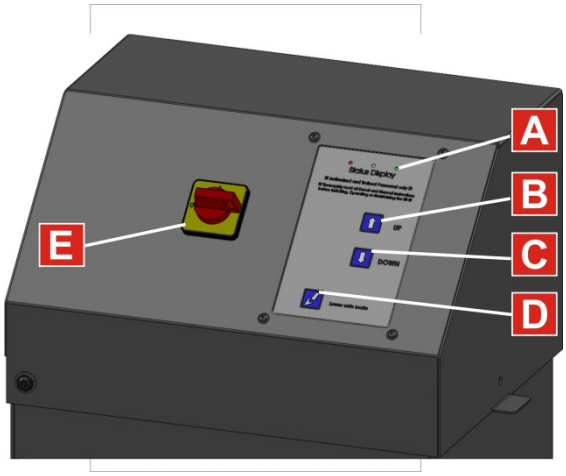
5.1 Main Switch

The main switch is used as emergency switch. In case of emergency turn it to position 0.

- Main switch in position 0: Power supply is interrupted
- Main switch in position 1: Lift is ready for operation
- When in position 0, the main switch can be protected against tampering by means of a padlock.



5.2 Controls and Indicators



A LED Display: Operating Status
The operating status is indicated by red, yellow and green LEDs. See also section "Troubleshooting".

B Button: Raise
When this button is pushed, lift raises until button is released or upper limit stop is reached.

C Button: Lower
When this button is pushed, lift lowers until button is released or lower limit stop is reached.

D Button: used for saving/deleting the maximum lifting height

E Main Switch

5.3 Display Codes

LED Code			
RED	YELLOW	GREEN	
---	---	Lighting	Ready for operation
Lighting	Flashing 4x	---	Undervoltage
Lighting	Flashing 5x	---	Height offset too large
Lighting	Flashing 6x	---	Internal keyboard defective
Lighting	Flashing 8x to 30x	---	Contact service

5.4 Saving and Deleting the Maximum Lifting Height

Saving the Maximum Lifting Height

Optional, with software V2.26 and higher.

1 Position lift at desired height.

2 Main switch OFF.

3  +  Push and hold these buttons, then main switch ON.
➢ Green LED flashing, maximum lifting height is saved.

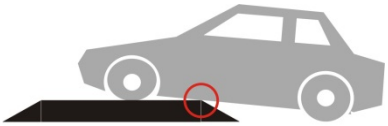
Deleting the Maximum Lifting Height

Optional, with software V2.26 and higher.

1 Main switch OFF.

2  +  Push and hold these buttons, then main switch ON.
➢ Green LED flashing, maximum lifting height is deleted.

5.5 Driving onto the Lift



1 Make sure the ramps are locked before driving onto the lift!

2 Approach and exit the lift very slowly! The chassis of low vehicles may hit the floor.

3 Observe correct approach direction! Do not engage the vehicle perpendicular to lift!

5.6 Using Support Blocks

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

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

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

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

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

6 Note correct positioning of the support blocks.

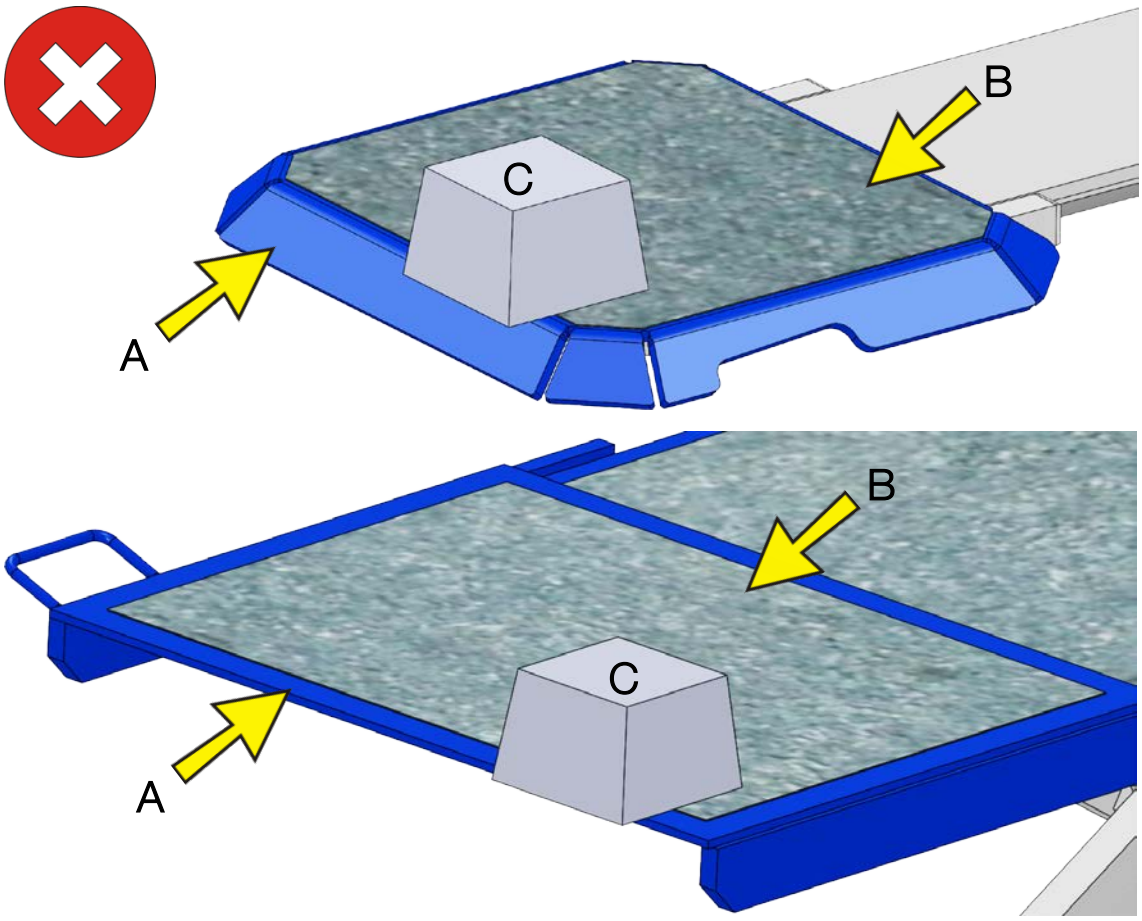
7 Raise the vehicle until the tyres clear the floor. Stop and recheck the lift supports for secure contact with the vehicle body.

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

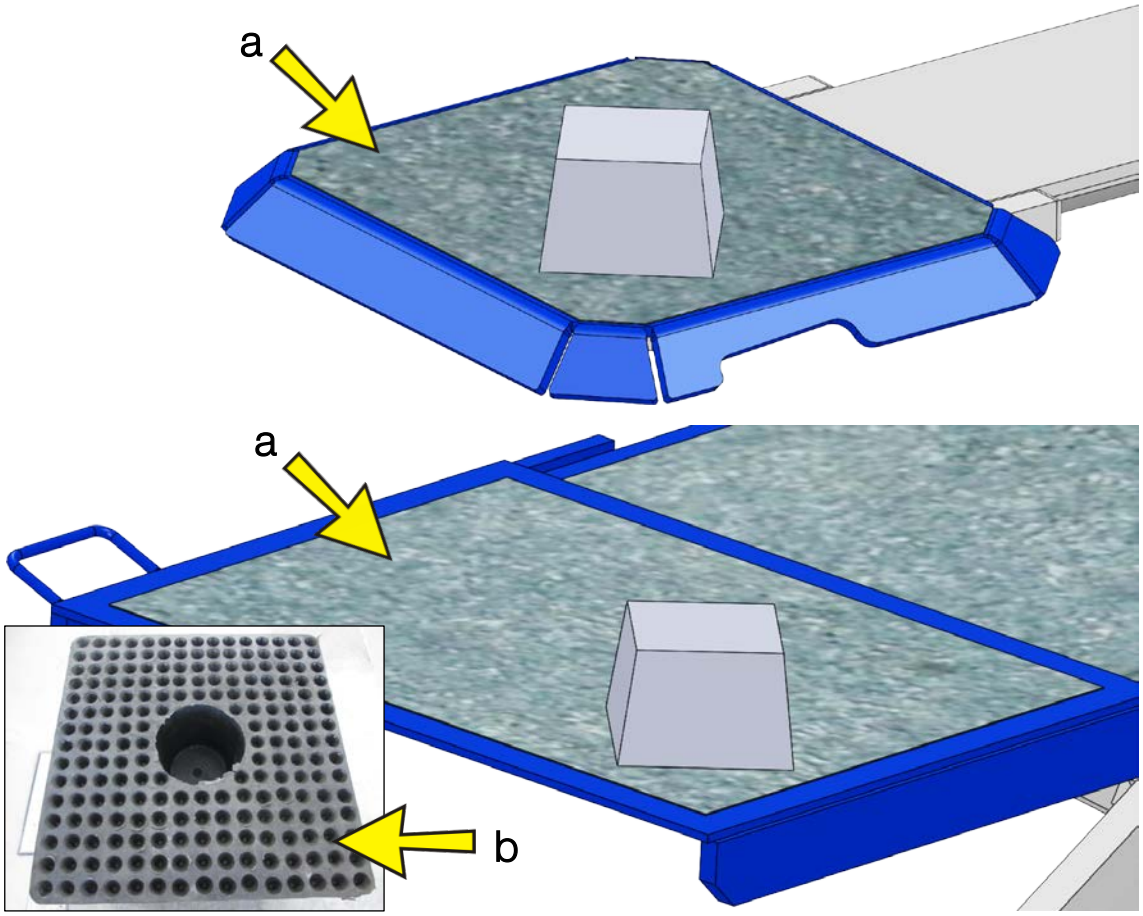
A Extension

C Support block

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

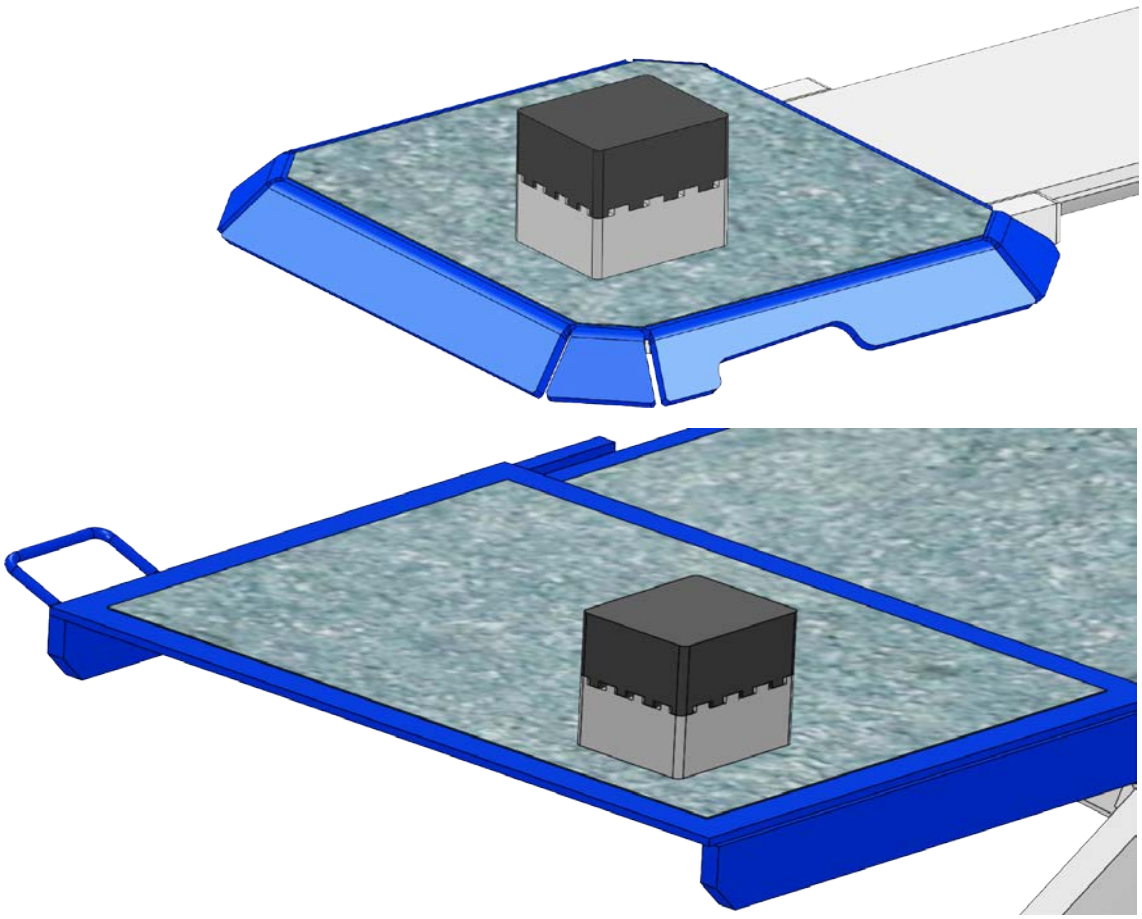


Diagonal positioning is permissible only with granulate coated surfaces (a). If knobbly pads are used, these must mesh with the support blocks (b).



5.6.1 Stacking Two Blocks on Top of Each Other

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



5.7 Raising and Lowering

1 Turn the main switch to position 1.
- Lift is ready for operation.

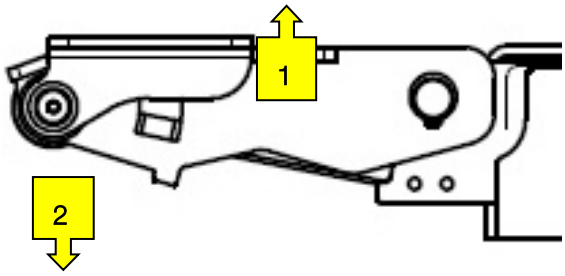
2 Push and hold the RAISE button until the lift reaches the desired height.
- Lift stops once button is released or upper limit stop is reached.

3 Push and hold the LOWER button until the lift reaches the desired height.
- Lift stops once button is released or CE-Stop is reached.

4 To lower the lift completely, release the LOWER button and push it again.
- The remaining lift travel to the lower limit stop is accompanied by an audible indicator.

Risk of injury!
Before lowering the lift to bottom position, verify that there are no persons or obstructions in the danger area.

5.8 Adjusting the Ramp



1 Raise lever to unlock.

2 Lower the ramp.

5.9 Bleeding the Hydraulic System

Bleeding of hydraulic system is done by authorized service technicians.

5.10 Manual Lowering

Authorized personnel only! Do not restart the lift before the error has been remedied.

1 Mechanically disable +C-M2.

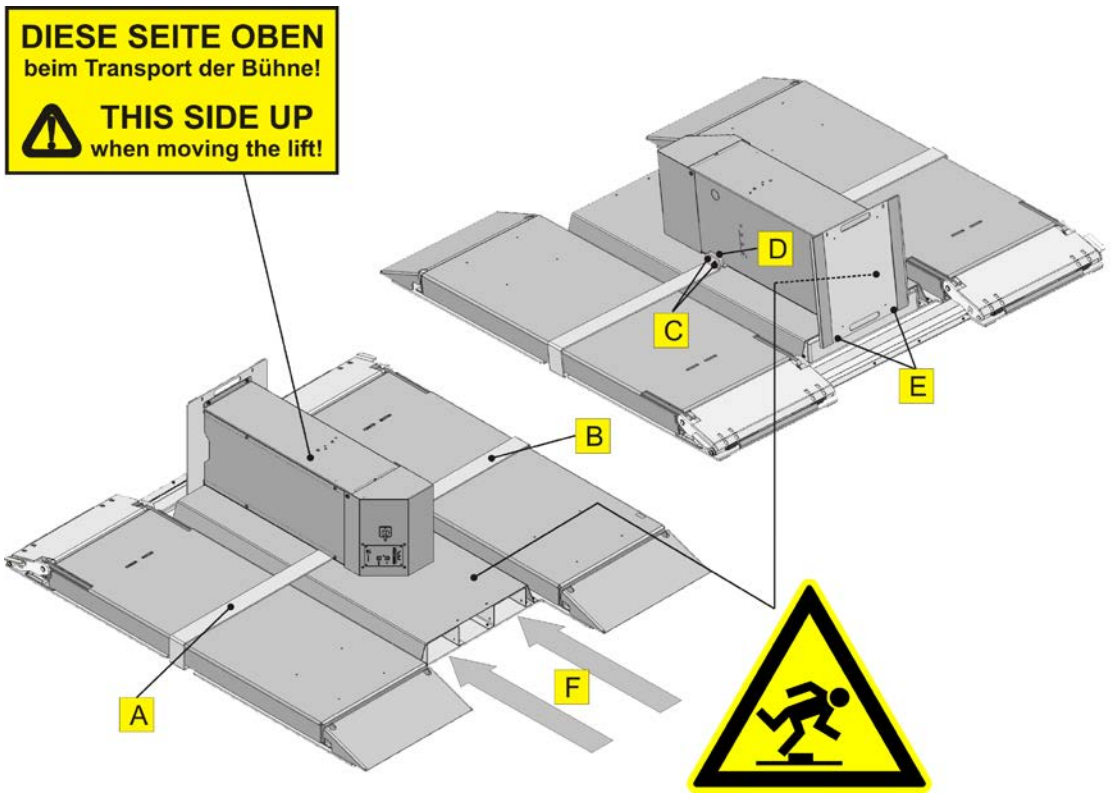
2 Push and hold +C-M1.A and +C-M1.B together. Caution: Both sides are lowering.

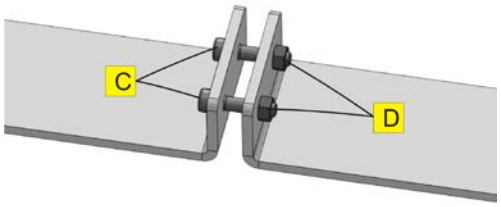
3 While lowering, check both sides for synchronized operation. If the height offset is too large, stop the lift and equalize by lowering the higher side. Then continue with lowering procedure.

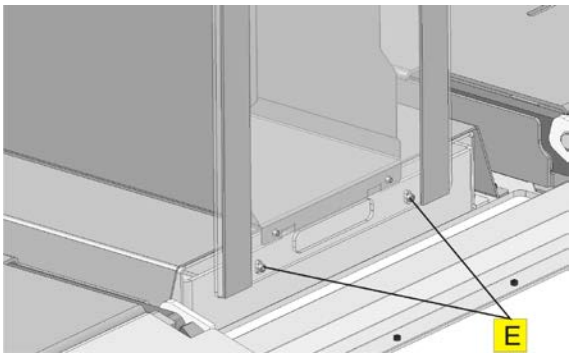
4 When the lift is in bottom position, re-enable +C-M2.

5.11 Lift with Transport Frame for Mobile Use

Pay close attention to section "Safety / Additional Safety Instructions for Lifts with Transport Frame for Mobile Use"!







Transport Preparation

1 Attach brackets (A) and (B) to the lift.

2 Securely connect brackets with screws (C) and nuts (D).

3 Place the operating unit on the mobile transport frame. Make sure that the label is showing on top. Attach to transport frame with locking screws (E).

4 Drive the lifting forks of the ground conveyer into the openings (F). The lifting forks must engage the transport frame with a depth of at least 1000 mm!

Changing the Filler Cap

For transport and storage use the filler cap *without* breather filter (s. Fig.). Before recommissioning the lift, screw on the filler cap *with* breather filter.

Labels

This label is located on the front and rear edge of the transport frame. (Warning symbol in accordance with BGV A 8 W14, DIN 4844-2 D-W014).

Explanation: Warning about tripping danger

This label is located on the side part of the operating unit. It must always be showing on top during transport!

6 Maintenance

Danger! Electric shock hazard!

Before doing any maintenance work, turn off the main switch and protect it against tampering.

6.1 Maintenance Schedule

Interval	Maintenance items	Procedure
3 months	Hydraulic system	Check fluid level, top up if necessary.
		Check hydraulic system for leakage.
		Check power unit for unusual noise during operation, check fastening screws for tight fit.
	Slider tracks and sliding surfaces of extensions	Grease slightly.
6 months	Hydraulic fluid	Check fluid for soiling and aging, replace if necessary.
12 months	General inspection	Check all components for damage.
6 years	Pressure hoses	Replace pressure hoses.

6.2 Care Instructions

- Periodically clean the equipment and treat it with a care product.
- Repair damage to the paintwork immediately to prevent corrosion.
- Usage of caustic cleaning agents or high pressure and steam jet cleaners may lead to equipment damage.

Regular care and maintenance is the key condition for functionality and long life expectancy of the equipment!

6.3 Annual Inspection

- The maintenance interval prescribed by the manufacturer is **12 (twelve) months**. This maintenance interval refers to normal workshop usage. If the equipment is used more frequently or under severe operating conditions (e.g. outdoors), the interval must be reduced accordingly.

- Maintenance work shall be done only by authorized and trained service technicians provided by the manufacturer, licensed dealers or service partners.
- In case of non-compliance the manufacturer's warranty becomes void.

6.4 Checking the Fluid Level

1 Lower lift into bottom position.

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

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

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

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

6.5 Troubleshooting

Error	Diagnosis	Remedy
Lift does not run.	Main switch turned off.	Turn on main switch.
	Power failure.	Check for cause.
	Power cord interrupted.	Replace defective cord.
	Fuses defective.	Replace fuses.
Lift does not raise.	Reverse motor rotation.	Interchange two phases at main switch.
	Low fluid level.	Top up fluid reservoir.
	RAISE button defective.	Contact service.
	Pump intake filter dirty.	Check and clean filter.
	Valve +C-M2 disabled after manual lowering.	Enable valve.
Lift capacity insufficient.	Pressure valves maladjusted.	Contact service.
	Pump defective.	
Lift does not lower.	LOWER solenoid valve defective.	Contact service.
	LOWER button defective.	
Support plates lowering without control button being pressed.	LOWER solenoid valve not fully closed.	Contact service.
	Leakage in at least two hydraulic lines.	Check connections for tight fit and hoses for damage, replace if necessary.
Lift shows jerky movements.	Air in hydraulic system.	Contact service.

6.6 Spare Parts

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

7 Service Lifetime

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

8 Dismantling

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

9 Disposal

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

10 Contents of the Declaration of Conformity

MAHA Maschinenbau Haldenwang GmbH & Co. KG

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

Model:	TWIN F IV 3.0 / 3.5; R-DSF IV 3.0 / 3.5
Designation:	Scissors Lift; Rated Load Capacity 3000 / 3500 kg
EC Directives:	2006/42/EC; 2014/30/EU
EN Standards:	EN 1493; EN 60204-1

11 Company Information

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Document

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