

TWIN

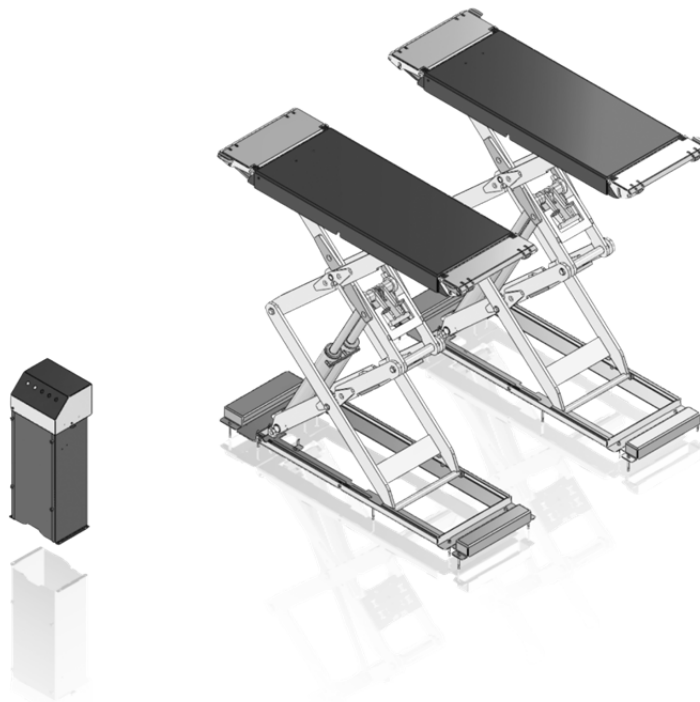


TWIN F III 3.0 | 4.0

Scissors Lift

Original Operating Instructions

BA082601-en



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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.
- 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 Safety Instructions for Commissioning

- The lift shall be installed and commissioned by authorized service personnel only.
- The control desk 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 0...40 °C.

1.6 Safety Instructions for Operation

- Observe the detailed operating instructions.

- The lift may only be operated by trained personnel over 18 years of age.
- At initial operation, check the functionality of the safety devices.
- The control desk 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.
- 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.
- 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.
- Do not use the lift for transporting persons.
- 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.
- Observe the installation instructions for the axle lift.
- Use both hands when moving the axle lift.
- The axle lift must be in rest position during raising and lowering cycles.
- Do not allow anyone to climb on lift or inside raised vehicle.
- Comply with the applicable accident prevention regulations.
- Keep lift and vehicle free of tools and parts.
- Keep the lift and lift area clean.
- 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.

1.7 Safety Instructions for Servicing

- 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.

1.8 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.

1.9 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.

1.10 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.

1.11 What to Do in the Event of an Accident

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

2 Description

2.1 General Information

The lift models TWIN F III 3.0 / 4.0 and RDSF III 3.0 / 4.0 are equipped with two support plates on a scissors superstructure. The drive system consists of four hydraulic cylinders arranged in a master-slave system. The lift is operated via a dead man's type control using pushbuttons.

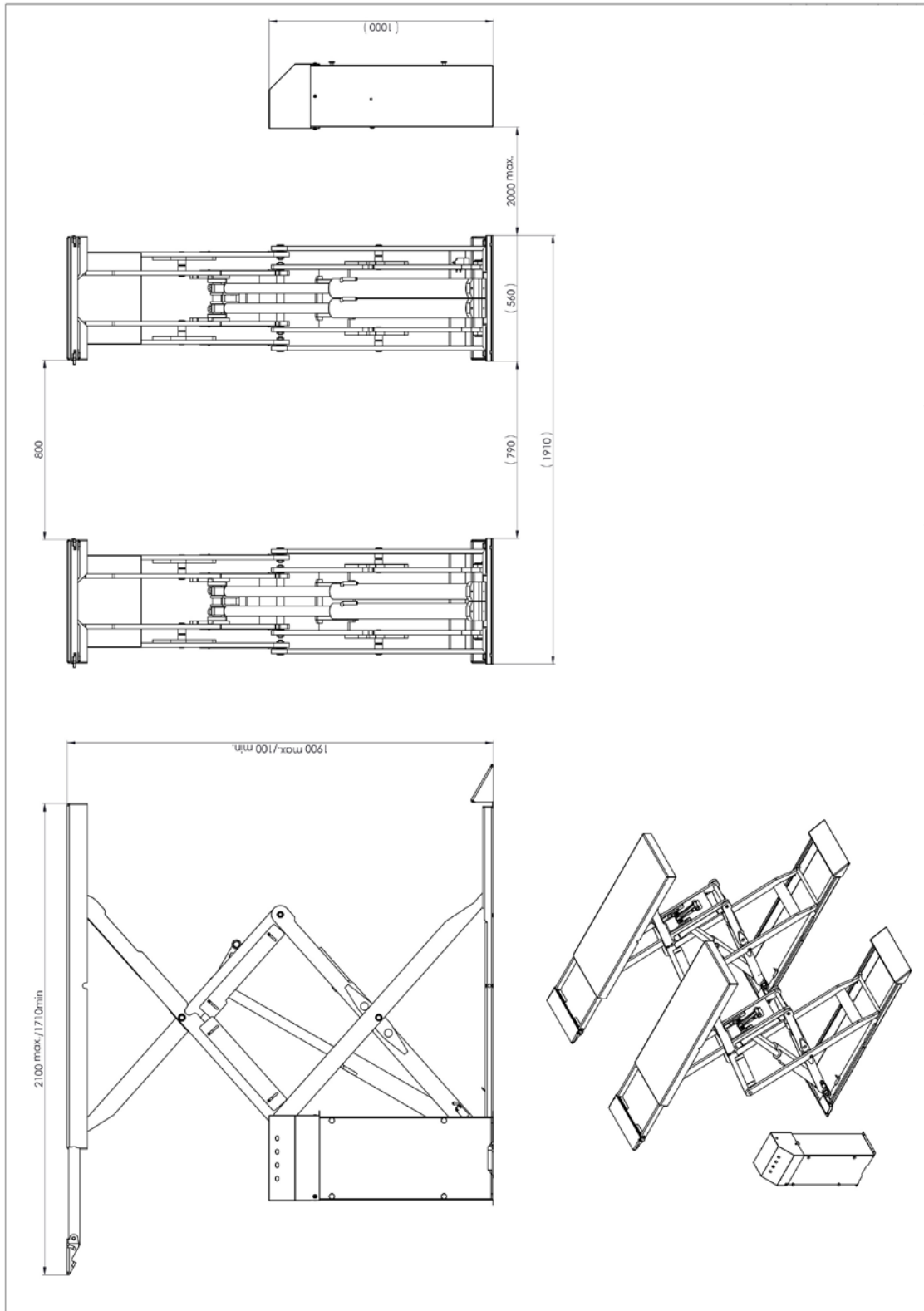
2.2 Specifications

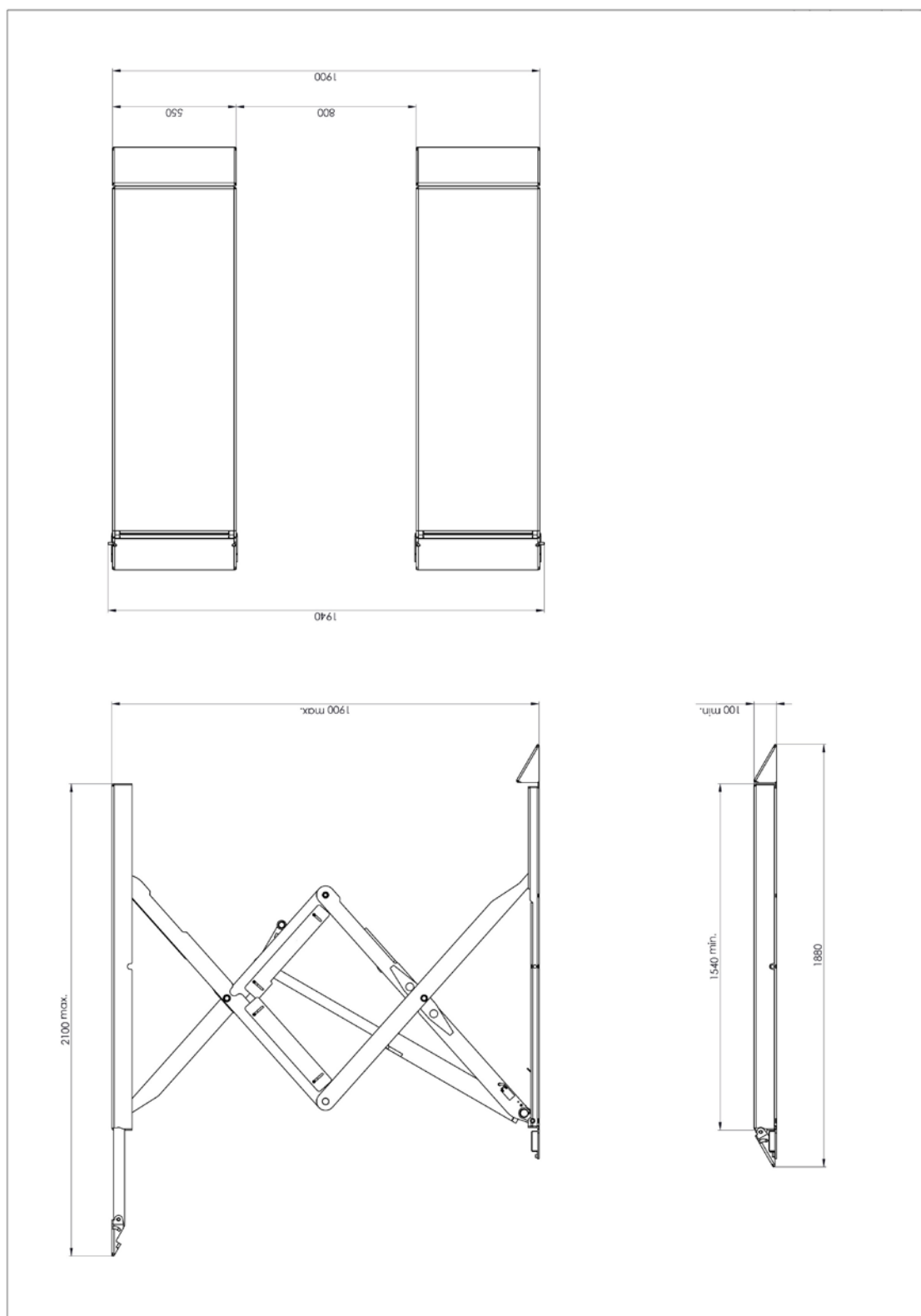
	TWIN F III 3.0 RDSF III 3.0	TWIN F III 4.0 RDSF III 4.0
Load capacity CE	3000 kg	4000 kg
Working pressure	270 bar	270 bar
Support plate width	550 mm	650 mm
Support plate length	1540...2100 mm	1540...2070 mm
Overall width	1910 mm	2100 mm
Lifting height max.	1900 mm	2000 mm
Lifting height min.	100 mm	135 mm
Supply voltage	3 x 400 V	1 x 230 V / 3 x 400 V
Shipping weight	800 kg	1145 kg
Power unit	2,2 kW	
Fuse protection	16 A time-delay	
Raising / Lowering time	approx. 42 s	
Reservoir capacity	8,4 l	
Noise emission	< 70 dB(A)	



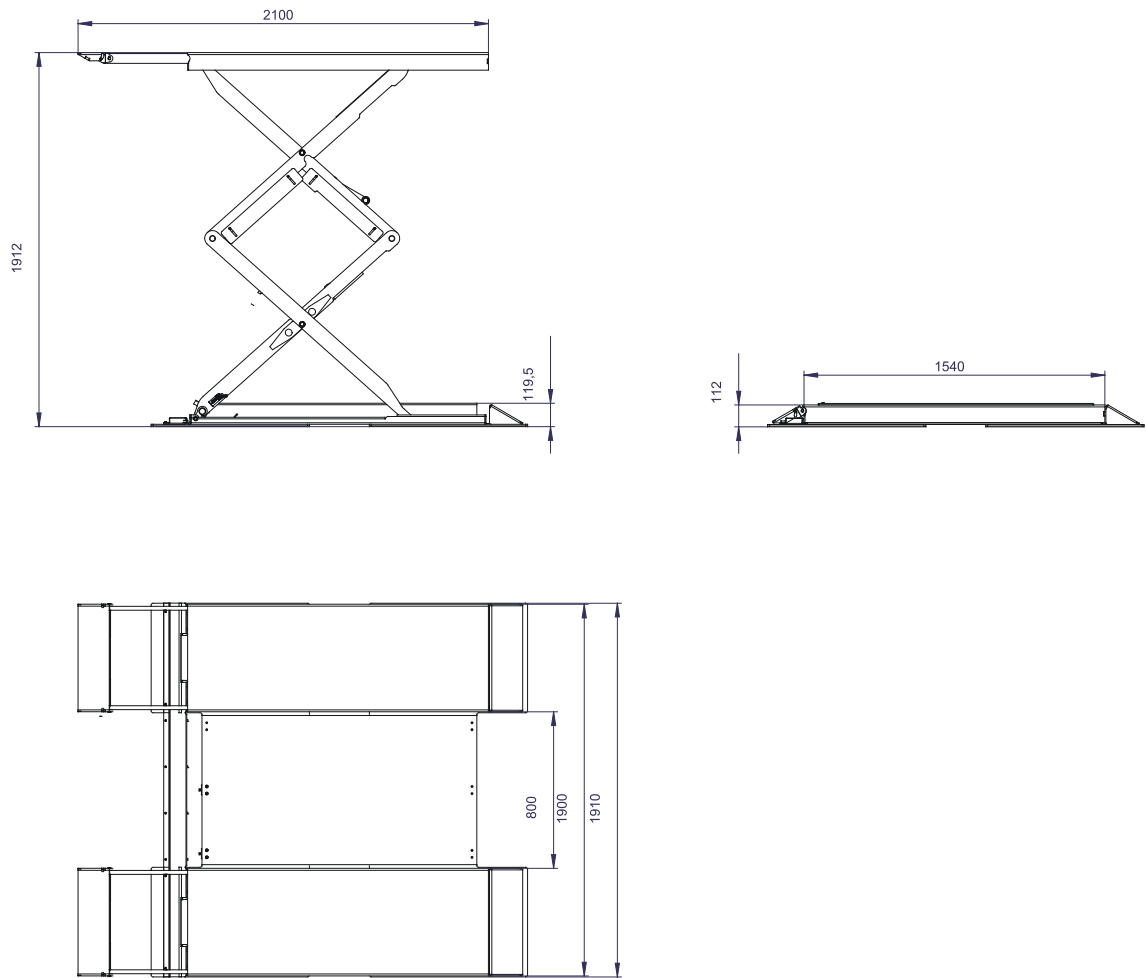
The properties indicated apply to lifts running at operating temperature.
Specifications are subject to change without notice.

TWIN F III 3.0 / RDSF III 3.0

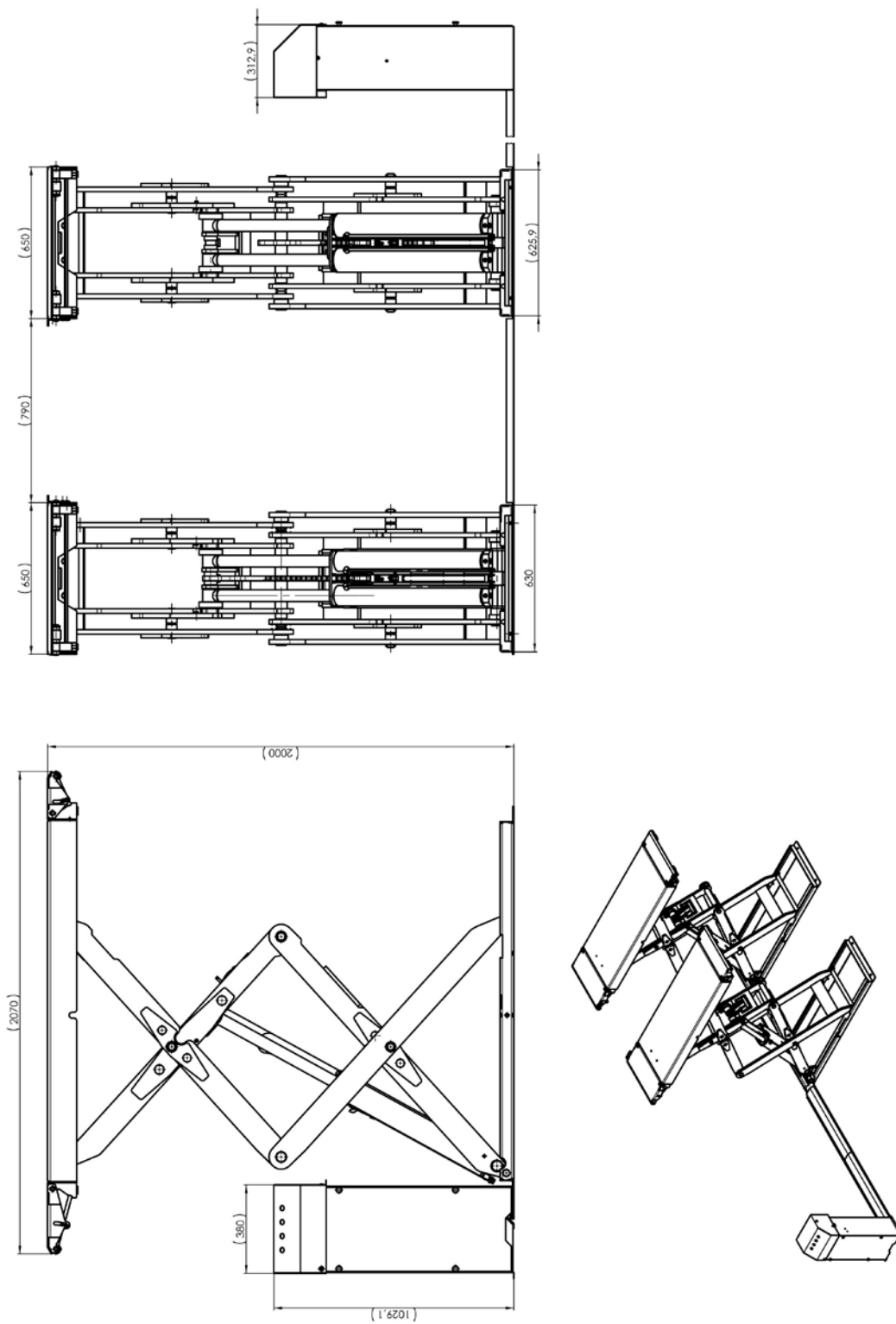


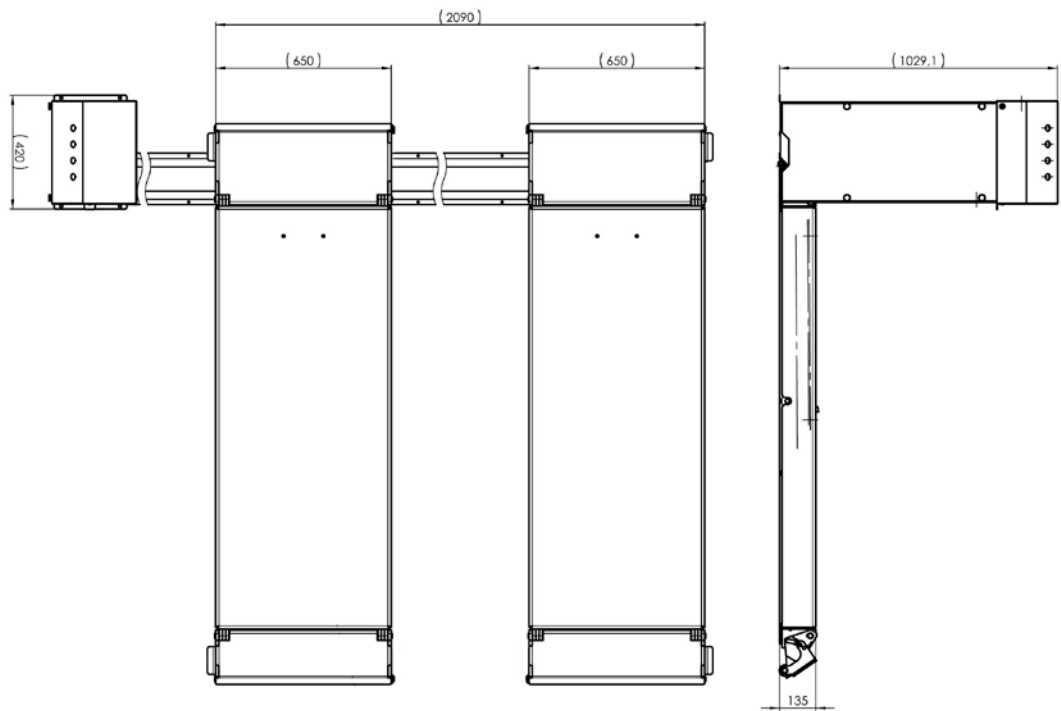


TWIN F III 3.0 / RDSF III 3.0 with Transport Frame for Mobile Use



TWIN F III 4.0 / RDSF III 4.0





2.3 Sample Nameplate

MAHA Maschinenbau Haldenwang GmbH & Co. KG.
 Hohen 20
 D-87490 Haldenwang (Allgäu)
 Telefon: +49 (0)8374/585-0
 Telefax: +49 (0)8374/585-499
 Internet: <http://www.maha.de>
 E-Mail: maha@maha.de




Made in Germany

SCISSORS LIFT
 Ser. No. / Date of Production: ***
 Project: ***
 Model and Version: ***
 Supply Voltage: ***
 Frequency: ***
 Rated Current: ***
 Fuse Protection: ***
 Load Capacity: ***

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 Requirements on the Operator



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

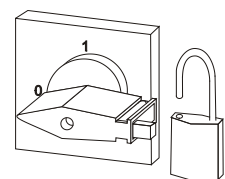
- be at least 18 years old,
- be trained and instructed in writing,
- have read and understood this manual
- be on record as having been instructed in safety guidelines.

5.2 Main Switch

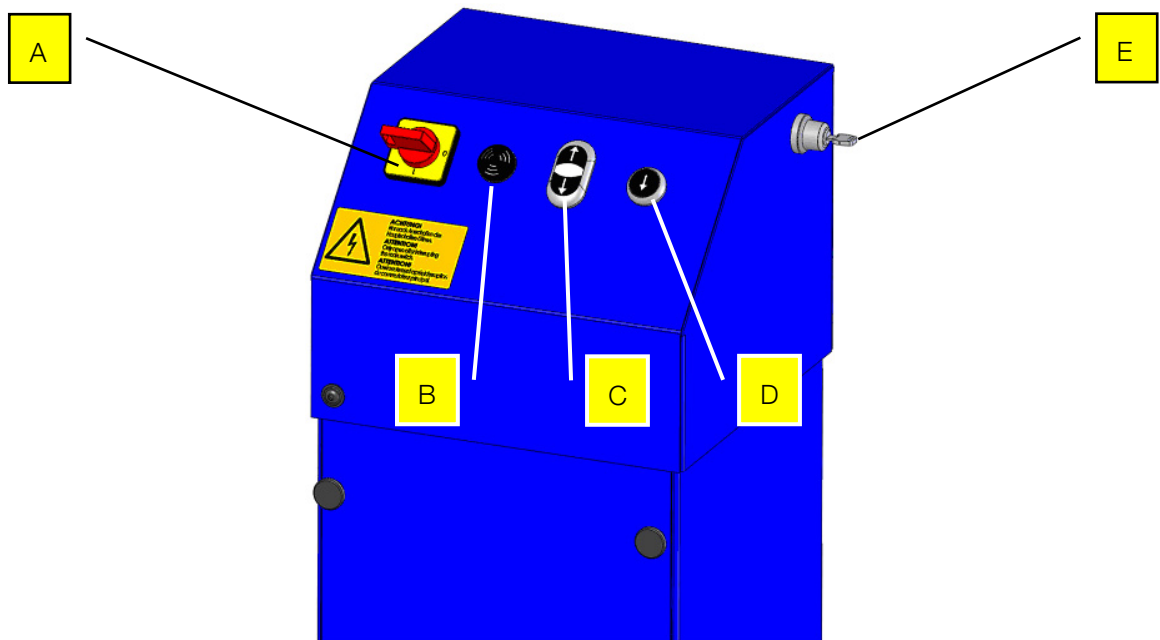


The main switch is used as emergency switch. In case of emergency turn it to position 0.

- 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.



5.3 Controls



A Main Switch

B Audible Indicator

C Buttons RAISE/LOWER

D Button CE-STOP

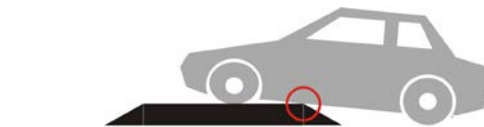
E Key Switch

- Use the main switch (A) to switch the lift on and off.
- When button RAISE or LOWER (C) is pushed, the lift moves until the button is released or the limit stop is reached.
- When fully lowering the lift, the support plates stop automatically at a height of 300 mm above bottom position. Release the LOWER button and push the CE STOP button (D). The remaining lift travel is accompanied by an audible indicator (B).
- The key switch (E) is used for manually levelling the support plates. See section "Equalizing the Support Plates".

5.4 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!



5.5 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.

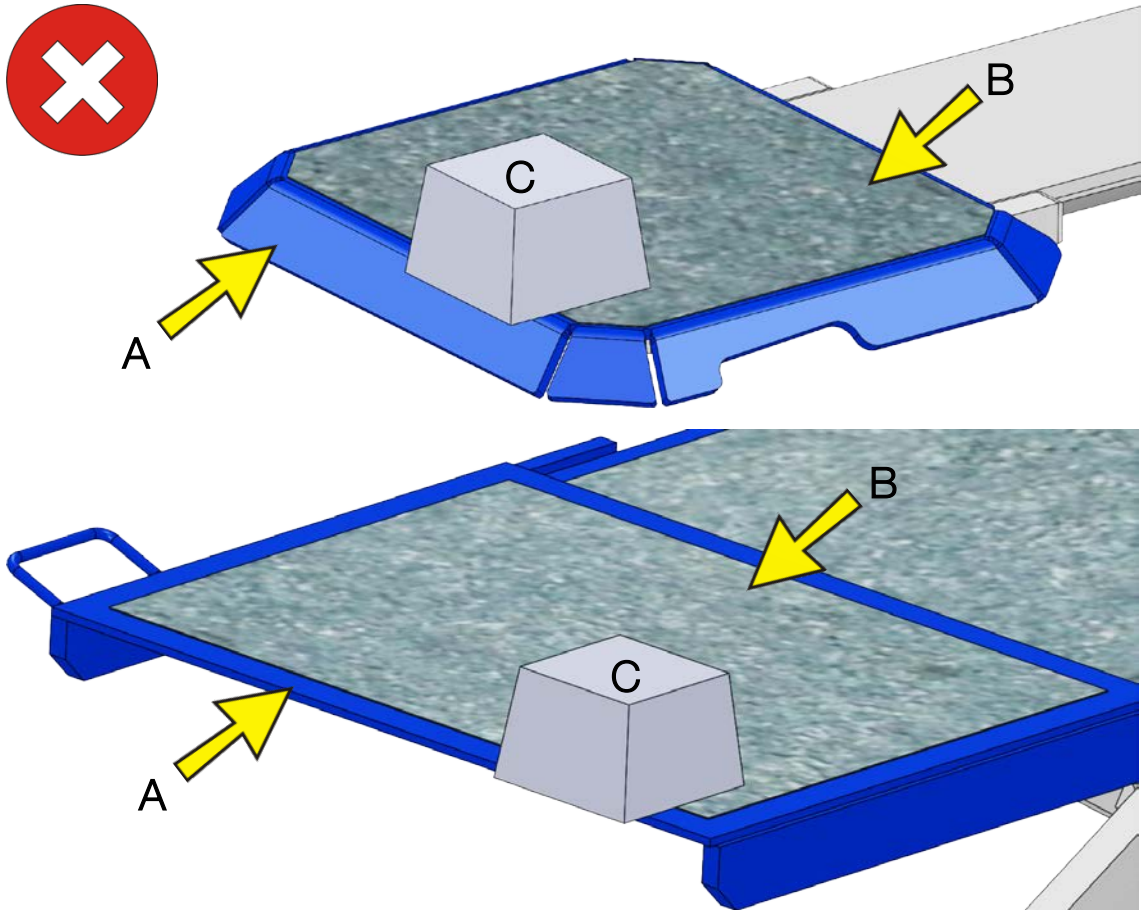
The support block must be placed fully on the surface without extending beyond the edges.

A Extension

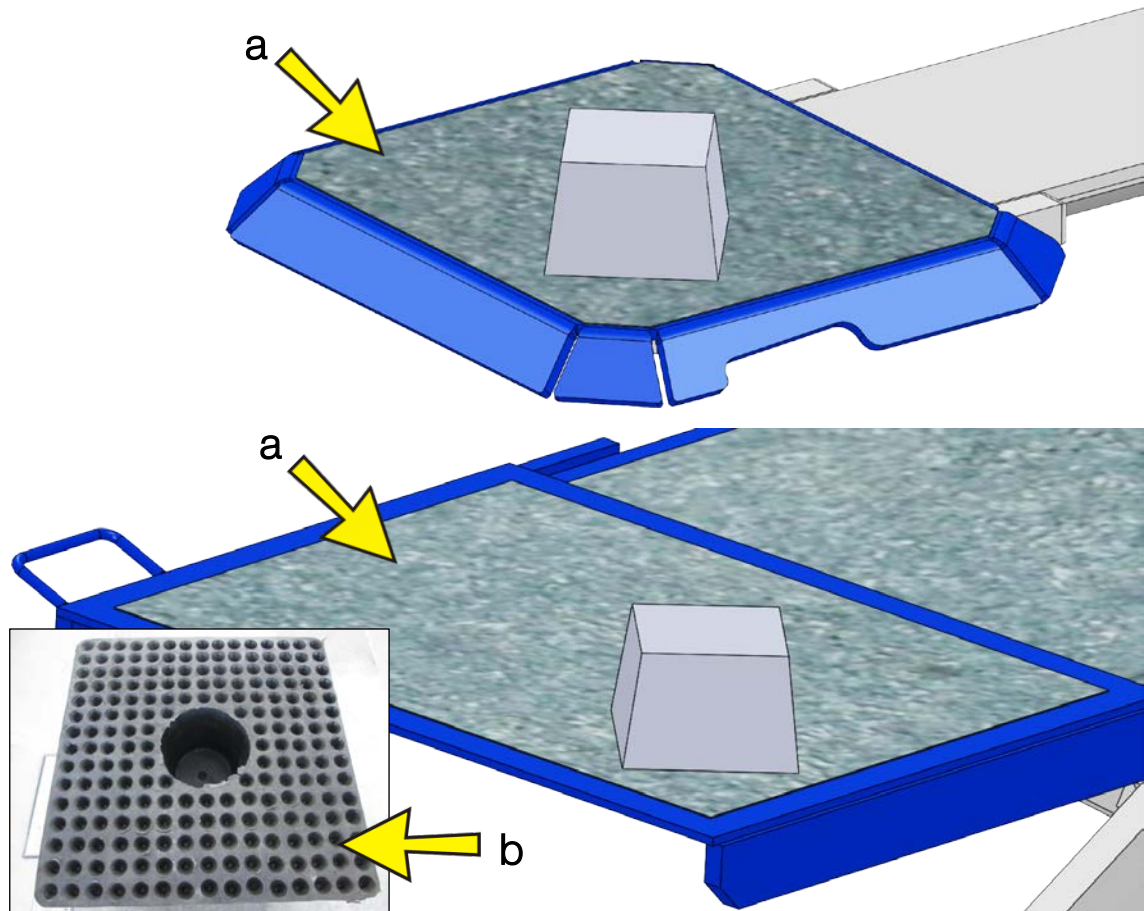
C Support block

B Support surface; available are:

- Granulate coating
- Granulate foil
- Rubber plate

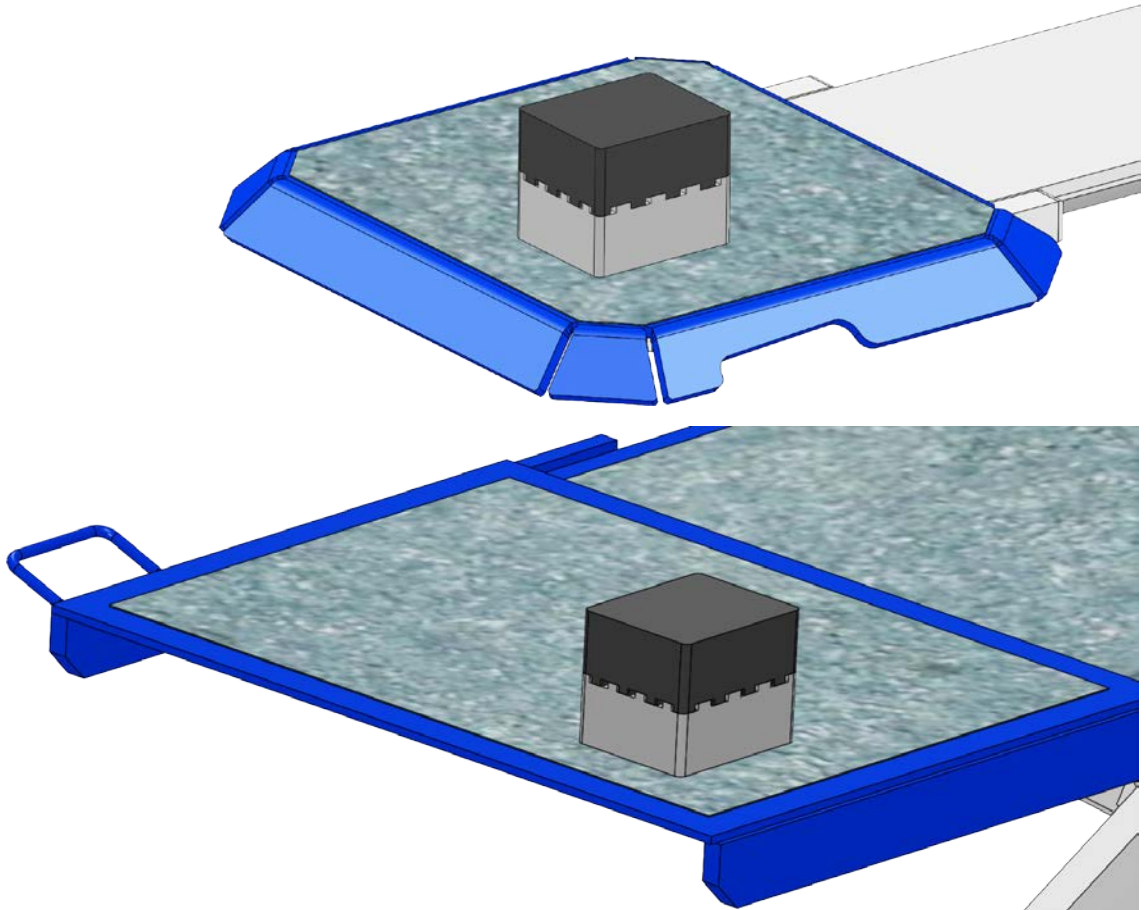


Diagonal positioning is permissible only with granulate coated surfaces (a). If knobby pads are used, these must mesh with the support blocks (b).



5.5.1 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.



5.6 Raising and Lowering

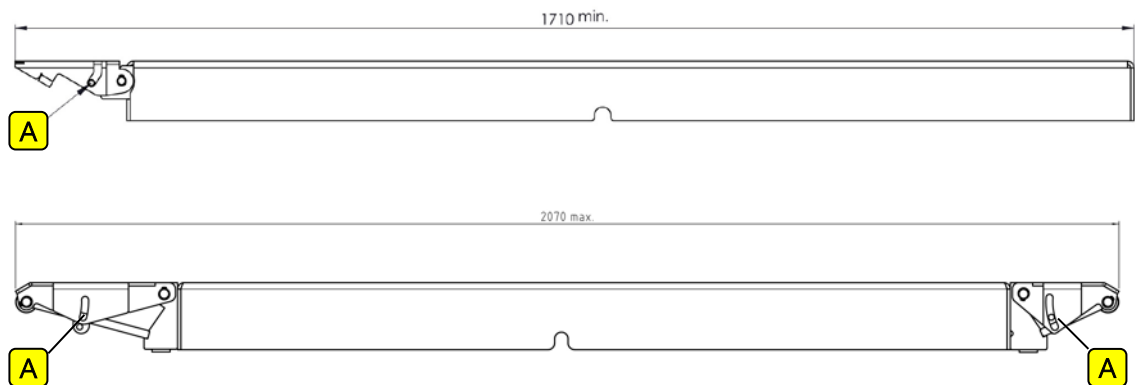
- 1 Turn the main switch to position 1.
→ Lift is ready for operation.
- 2 Push and hold the RAISE button until the lift reaches the desired height.
→ Lift stops once button is released or upper limit stop is reached.
- 3 Push and hold the LOWER button until the lift reaches the desired height.
→ Lift stops once button is released or CE-Stop is reached.
- 4 To lower the lift completely, release the LOWER button and push the CE-STOP button.
→ 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.

5.7 Operating the Ramp



Lift the ramp and reposition it using the lateral handle (A).

5.8 Bleeding the Hydraulic System

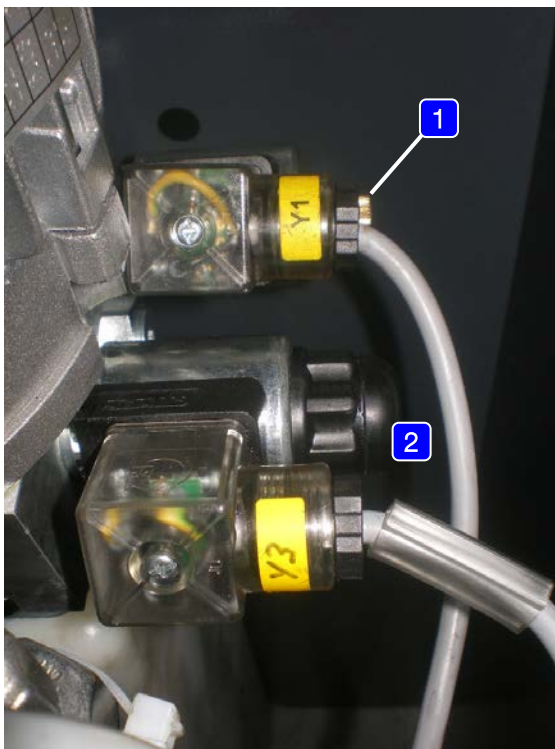


Bleeding of hydraulic system is done by authorized service technicians.

5.9 Manual Lowering

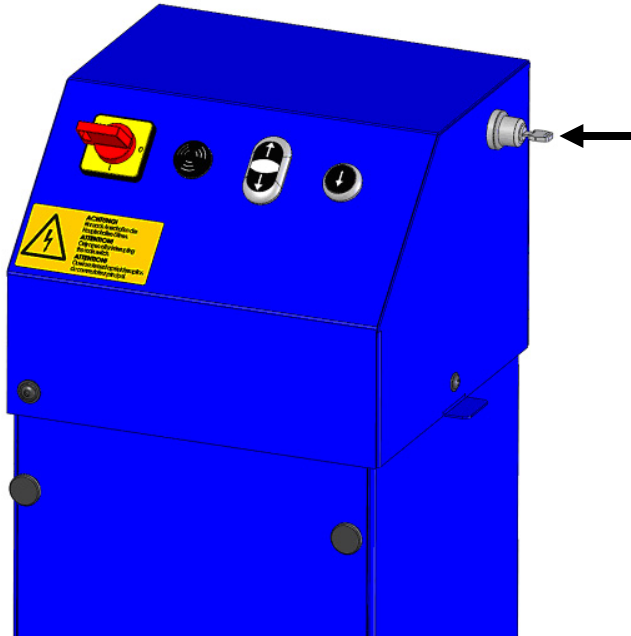


Authorized personnel only! Do not restart the lift before the error has been remedied.



- 1 Disable solenoid valve Y1 by closing it.
- 2 Push and hold solenoid valve Y3.
- 3 Push and hold solenoid valve Y2.
- 4 While lowering check the support plates for synchronized movement.
- 5 When the lift is in bottom position, release Y2 and Y3 and enable Y1 by opening it.

5.10 Equalizing the Support Plates



Requirements:

- Lift in unloaded condition.
- Lifting height not above 300 mm (CE Stop).

- 1 Actuate the key switch.
 - 2 Use button RAISE or LOWER to move the slave side in single operation.
 - 3 When both sides are level with each other, turn off the key switch.
- Lift is in normal operation mode.

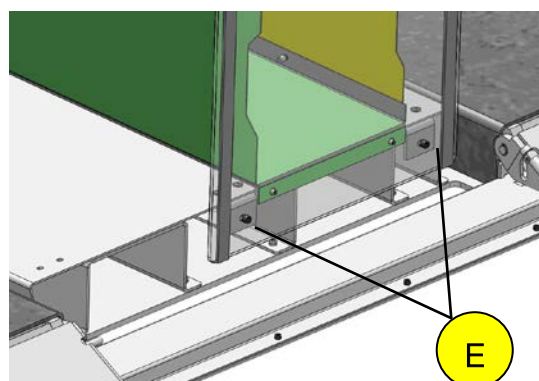
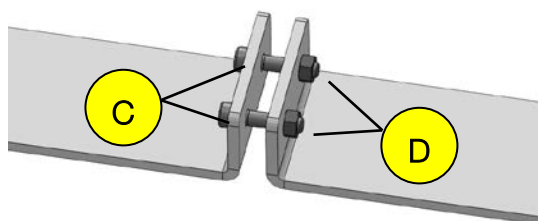
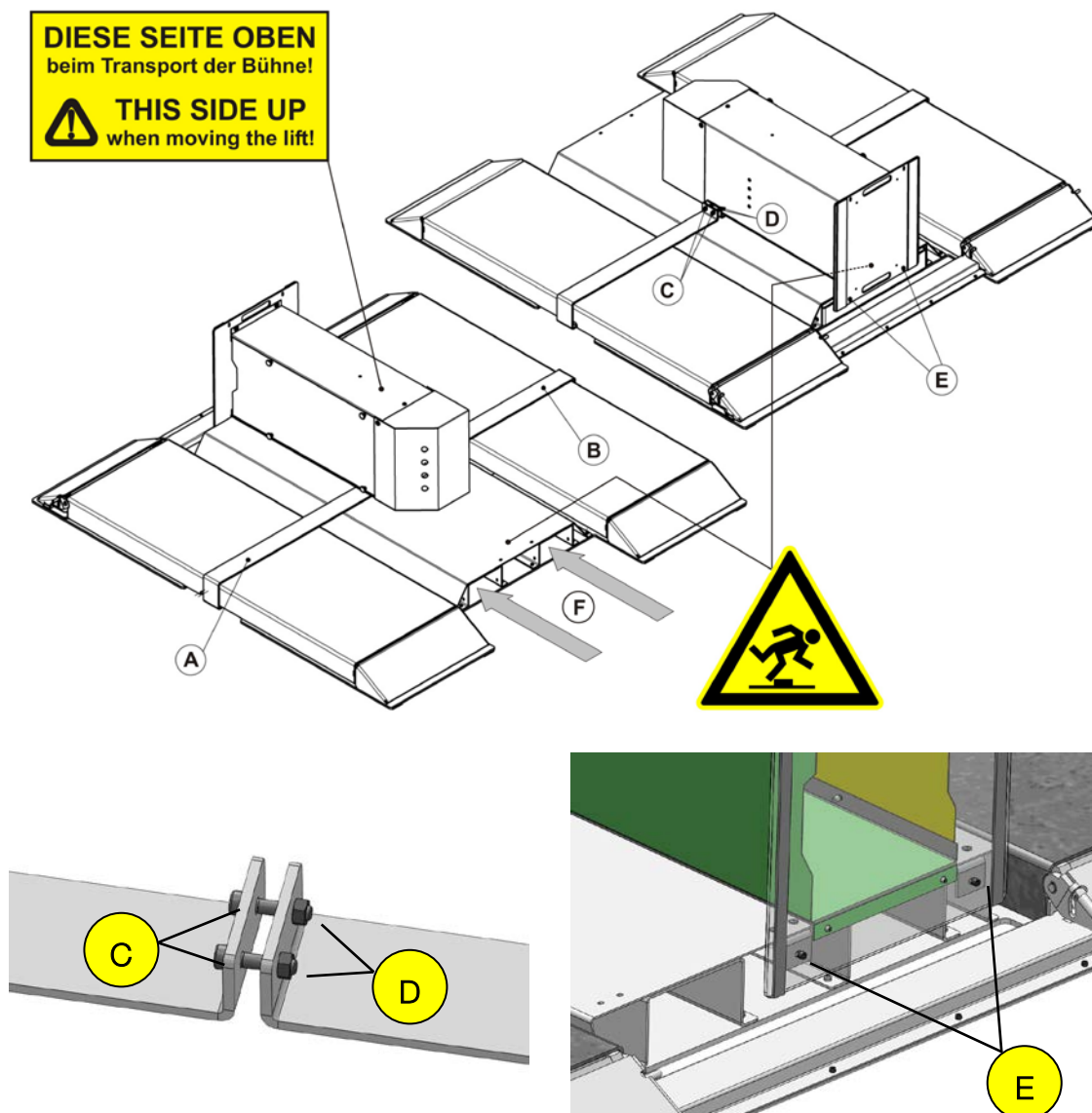


During normal operation, keep the key in a safe place to protect it against unauthorized usage.

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!

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 Annual Inspection

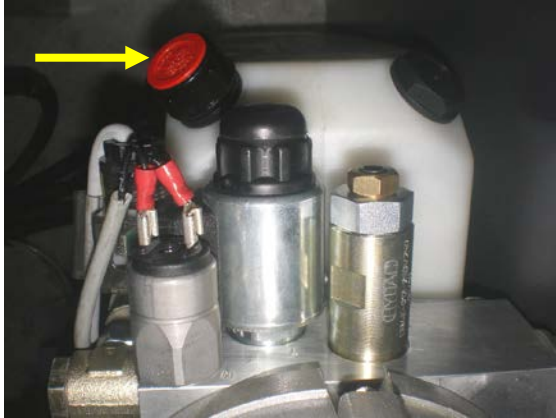


- The maintenance interval prescribed by the manufacturer is **12 (twelve) months**. This maintenance interval refers to normal workshop usage. If the equipment is used more frequently or under severe operating conditions (e.g. outdoors), the interval must be reduced accordingly.



- 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.

6.3 Refilling with Hydraulic Fluid



- 1 Check hydraulic fluid level every 3 months with a completely lowered lift.
- 2 Add missing fluid via the filler inlet. Make sure hydraulic fluid meets HLPD 32 specification.



- 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 $< 15\text{ }^{\circ}\text{C}$, use hydraulic fluid with a lower viscosity.
- The pressure hoses should be replaced as required, but after six years at the latest.

6.4 Cleaning

Periodically wash off aggressive substances and treat the lift with oil or wax spray.



Risk of damage!

Do not use high pressure or steam jet cleaners. Do not use caustic cleaning agents.

6.5 Spare Parts

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

6.6 Troubleshooting

Error	Diagnosis	Remedy
Lift does not run.	Main switch turned off.	Turn on main switch.
	Power failure.	Check for cause of power failure.
	Power cord interrupted.	Replace defective cord.
	Fuses defective.	Replace fuses.
Lift does not raise.	Motor rotation reverse.	Interchange two phases at main switch.
	Low fluid level.	Refill fluid reservoir.
	Button RAISE defective.	Check button and line, replace if necessary.
	Pump intake filter dirty.	Check and clean filter.
Lift capacity insufficient.	Pressure valve maladjusted.	Contact service.
	Pump defective.	
Lift does not lower.	LOWER solenoid valve defective.	Contact service.
	LOWER button defective.	
Lift raises and lowers considerably faster than usually.	RAISE and/or LOWER solenoid valve defective.	Contact service.
Support plates lower without control button being pressed.	LOWER solenoid valve does not close completely.	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.	Pressure valves maladjusted.	Contact service.
	Air in hydraulic system.	

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

Take the equipment to a specialised waste management company to ensure that all components and operating liquids are disposed of correctly.

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.

Typ: TWIN F III 3.0 / 4.0; R-DSF III 3.0 / 4.0
Bezeichnung: Scissors Lift; Rated Load Capacity 3000 / 4000 kg
EG-Richtlinien: 2006/42/EC; 2014/30/EU
EN-Normen: EN 1493; EN 60204-1

11 Company Information

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Document

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