



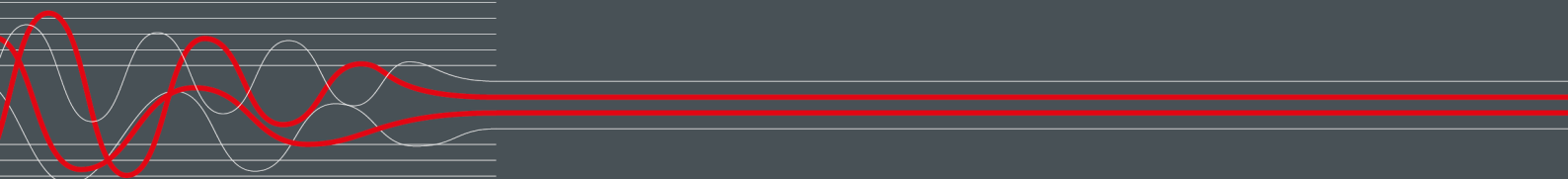
MAHAGROUP

MA STAR 3.5 | 5.5 | 6.5

Two Post Lifts

Original Operating Instructions

BA364501-en



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The contents of this edition have been checked with great care. However, errors cannot be fully excluded. Subject to technical change without notice.

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1 General Safety Instructions

1.1 Introduction

- These operating instructions must be read carefully and understood before work commences.
- Please observe the specific safety information provided for the respective sections of the operating instructions.
- Adhering to the procedures, sequences and corresponding safety instructions is essential.
- A printed copy of the operating instructions must always be kept by the lift.
- The relevant regulations regarding accident prevention and health and safety must be observed.

1.2 Symbols and Signal Words

1.2.1 Personal Injury



DANGER

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



WARNING

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



CAUTION

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

1.2.2 Property Damage

NOTICE

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

1.2.3 Information



indicates important information notes.

1.3 What to Do in the Event of Defects or Malfunctions

- If a malfunction occurs, e.g. uncontrolled raising and lowering or in the case of load-bearing components of the structure becoming deformed, immediately lower the lift to the ground to its initial position or support the structure.
- Turn off the main switch and secure against unauthorised use.
- Contact service team.

1.4 What to Do in the Event of an Accident

- Notify first aiders, the ambulance service and/or immediate care doctor:
 - Where did the accident happen (address, workshop, ...)?
 - What happened?
 - How many are injured?
 - What injuries have occurred?
 - Who is reporting the accident?
- Keep calm and answer questions.

1.5 Requirements on Operating and Service Personnel

All persons involved in the operation, maintenance, installation, dismantling and disposal of the equipment must

- be 18 years of age or older,
- have the mental and physical capacity for their role,
- be qualified and have the documentation to verify this,
- have read and understood the operating instructions, and in particular the instructions on the procedure in the event of a malfunction,
- have had certified training regarding safety regulations,
- show knowledge and experience in handling the equipment and the dangers posed.

2 Description

2.1 Service Life

The lift has been designed and tested for 22,000 load cycles according to DIN EN 1493. After reaching this number of cycles, or after a maximum of 10 years, the lift must be replaced by a new product or be given a general overhaul.

A general overhaul must be carried out by the manufacturer or persons authorised by them. Load-bearing structures must be inspected and, if necessary, other parts must be replaced according to the manufacturer's specifications.

2.2 General Machine Description

2.2.1 Design and Basic Functions

The lift consists of two industrially rolled columns with welded-on base plate (MA STAR 3.5) or of two edged, welded column profiles with base plate (MA STAR 5.5 and 6.5) respectively. The base plates ensure the columns are securely anchored to the ground. The column profile bears the weight of the lifted vehicle, accommodating the lifting carriage on the inner panel and the control unit on the outer panel. The cable routing on the back is covered by plastic panels and is only interrupted by the control unit.

Depending on the version, the columns are either mounted symmetrically (MA STAR 3.5 S, 5.5 and 6.5) or asymmetrically (MA STAR 3.5 A only) on their respective base plates.

Each lifting carriage is guided by eight sliding blocks per horizontal surface. The lifting carriage contains the spindle-nut package with nut breakage detection. Two support arms are attached to each lifting carriage, which in turn each accommodate a height-adjustable support disc. In a lowered position, the support arms are able to pivot freely. In a raised position, toothed segments automatically prevent the supports arms from moving.

The lift drive consists of an electric motor with an electric release brake, which moves a spindle via a belt drive. A lifting or lowering movement is thereby triggered via the anti-rotation secured nut in the lifting carriage depending on the direction of rotation.

The intuitive control unit is located on the back of one, or both, column(s) depending on the design. Power is supplied via a connector plug at the upper end of the main column. The unit enables all functions for the safe operation of the lift and displays all operating states and errors that occur.

Depending on the situation, a signal sound indicates errors, incorrect operation or the reaching of the CE-defined stop height during the lowering process.

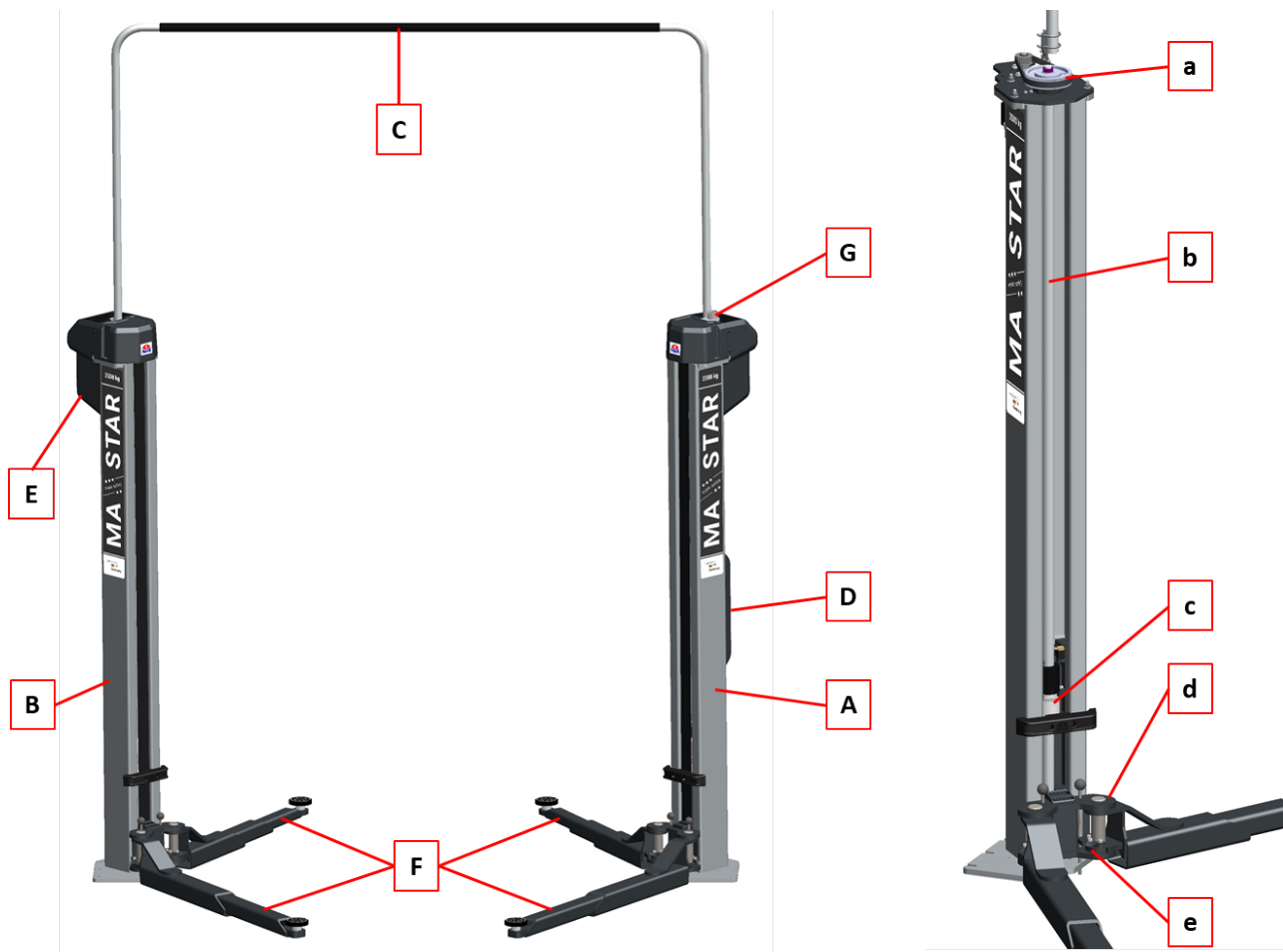
Proximity switches detect end positions, asynchronism and nut breakage.

The relevant direction button light turns off to indicate when an end position has been reached.

2.2.2 Intended Use

- This lift is exclusively intended for the safe lifting and lowering of passenger cars and commercial vehicles up to a total weight of 3.5 t (MA STAR 3.5) or 5.5 t (MA STAR 5.5) or 6.5 t (MA STAR 6.5) within the scope of maintenance and repair work.
- In compliance with the load distribution regulations of DIN EN 1493, the permitted load capacity on the identification plate must not be exceeded. Only vehicles which are suitable for the lifting equipment due to their shape and the positioning of their lifting points may be lifted.
- The lifting of other vehicles and loads is not permitted.
- Carrying of passengers is not permitted.
- The lift must not be modified without express written permission from the manufacturer. Non-compliance invalidates the declaration of conformity.
- The lift must not be operated in potentially explosive and flammable operation rooms or in damp rooms (e.g. washing facilities).
- The lift must only be operated in the temperature range of 5 °C to 40 °C at a maximum humidity of 50 % (at 40 °C).
- The lift must be protected from direct weather conditions at all times.
- The lift must only be operated on level and sufficiently load-bearing ground (see the foundation specifications!).

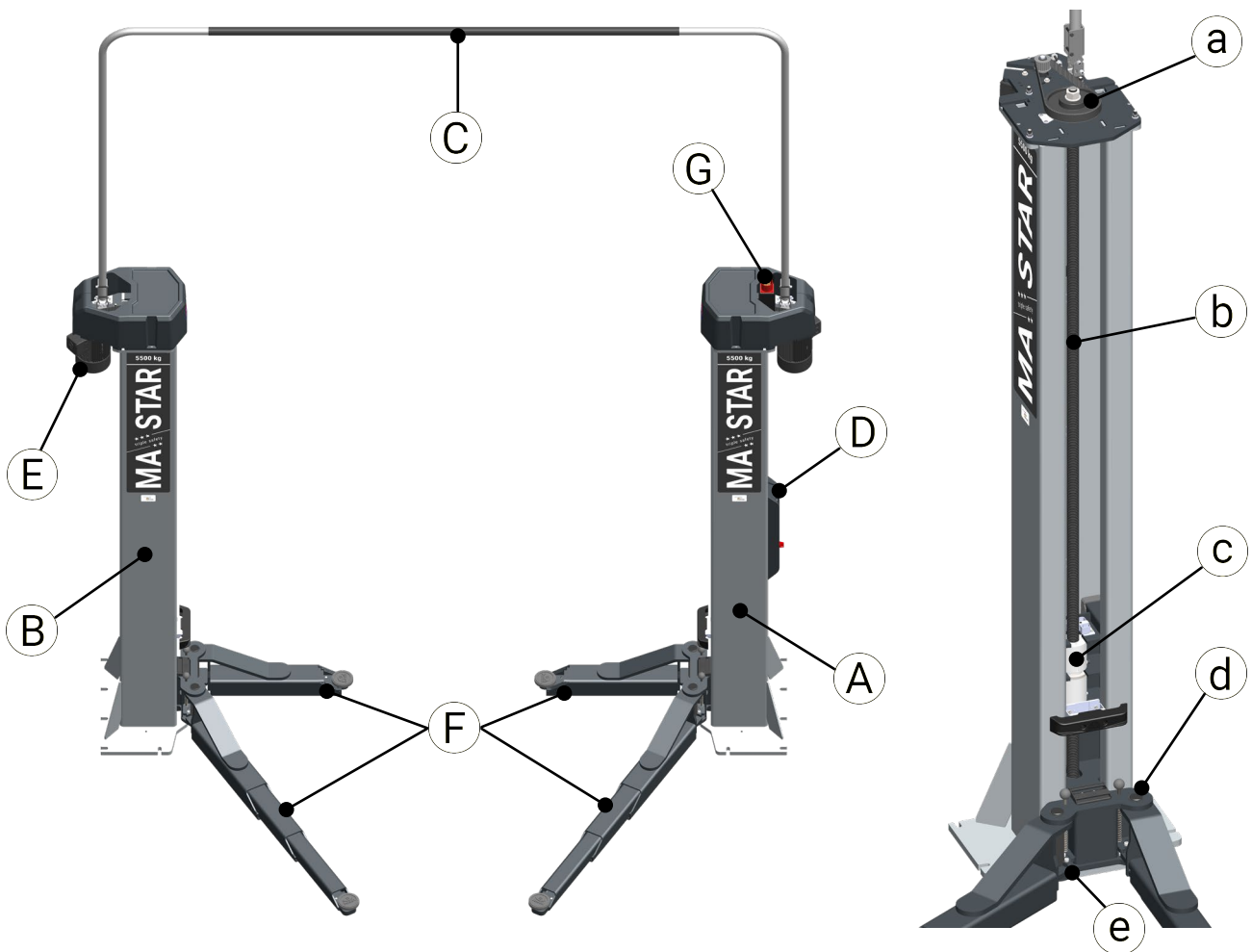
2.2.3 Overall View with Components MA STAR 3.5



- A** Control column
- B** Opposite column
- C** Cable bridge
- D** Control unit
- E** Drive motor
- F** Support arms
- G** Connector plug

- a** Toothed belt drive
- b** Trapezoidal spindle
- c** Nut package
- d** Lifting carriage (with support arm brackets)
- e** Support arm lock

2.2.4 Overall View with Components MA STAR 5.5 / 6.5

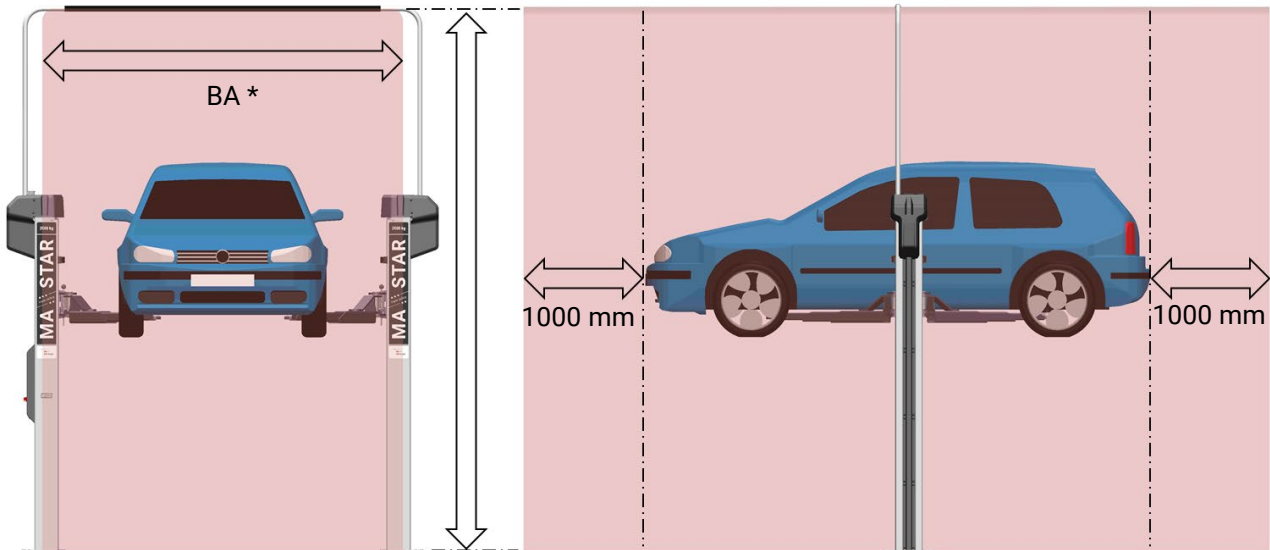


- A** Control column
- B** Opposite column
- C** Cable bridge
- D** Control unit
- E** Drive motor
- F** Support arms
- G** Connector plug

- a** Toothed belt drive
- b** Trapezoidal spindle
- c** Nut package
- d** Lifting carriage (with support arm brackets)
- e** Support arm lock

2.3 Technical Data

2.3.1 Danger Zone



* Dimension BA refers to the respective installation width of the lift (see Technical data: Outer column width).

2.3.2 Technical Data MA STAR 3.5 A

Total height [HG].....	4499 mm**
Total width [BG]	3592 mm*
Clear height [HL]	4452 mm**
Column height [HS]	2943 mm**
Vertical travel [HW].....	1885 mm
Length of stroke max. [HO].....	1995 mm**
Pivoting height [HU].....	100 mm** (80 mm***)
Adjusting range of support disk [HT].....	80...110 mm**
Extension length of short support arm [LT]	630...1240 mm
Pivoting range of short support arm.....	180°
Extension length of long support arm [LL]	920...1490 mm
Pivoting range of long support arm	102,5°
Column clearance [BL]	2660 mm*
Outer column width [BA]	3242 mm*
Baseplate overlap [BP]	55 mm
Outer width of baseplate [BGa]	3351 mm*
Inner width of baseplate [BGi]	2643 mm*
Drive-through clearance [BH].....	2400 mm (2300...2450 mm)

Load capacity CE.....	3500 kg
Operating temperature.....	+5...+40 °C
Dead weight (incl. packaging).....	650 kg (740 kg)
Packaging dimension (L x W x H).....	2900 mm x 1100 mm x 710 mm
Anchorage.....	HILTI HIT-HY 200-A + HAS-U 5.8 M16
Concrete quality	min. C20/25 (DIN EN 1992)
Required minimum concrete base thickness without screed	180 mm
Rated capacity	2 x 3.0 kW (S3-20%)
Power supply 50 Hz	3 x 400 V + N + PE; C16A + RCD (30 mA)
.....	3 x 220...230 V + N + PE; C25A + RCD (30 mA) (VZ 990492)
Power supply 60 Hz .	3 x 380...400 V + N + PE; C16A + RCD (30 mA) (VZ 990491)
.....	3 x 220...230 V + N + PE; C25A + RCD (30 mA) (VZ 990499)
Lifting time.....	40 s

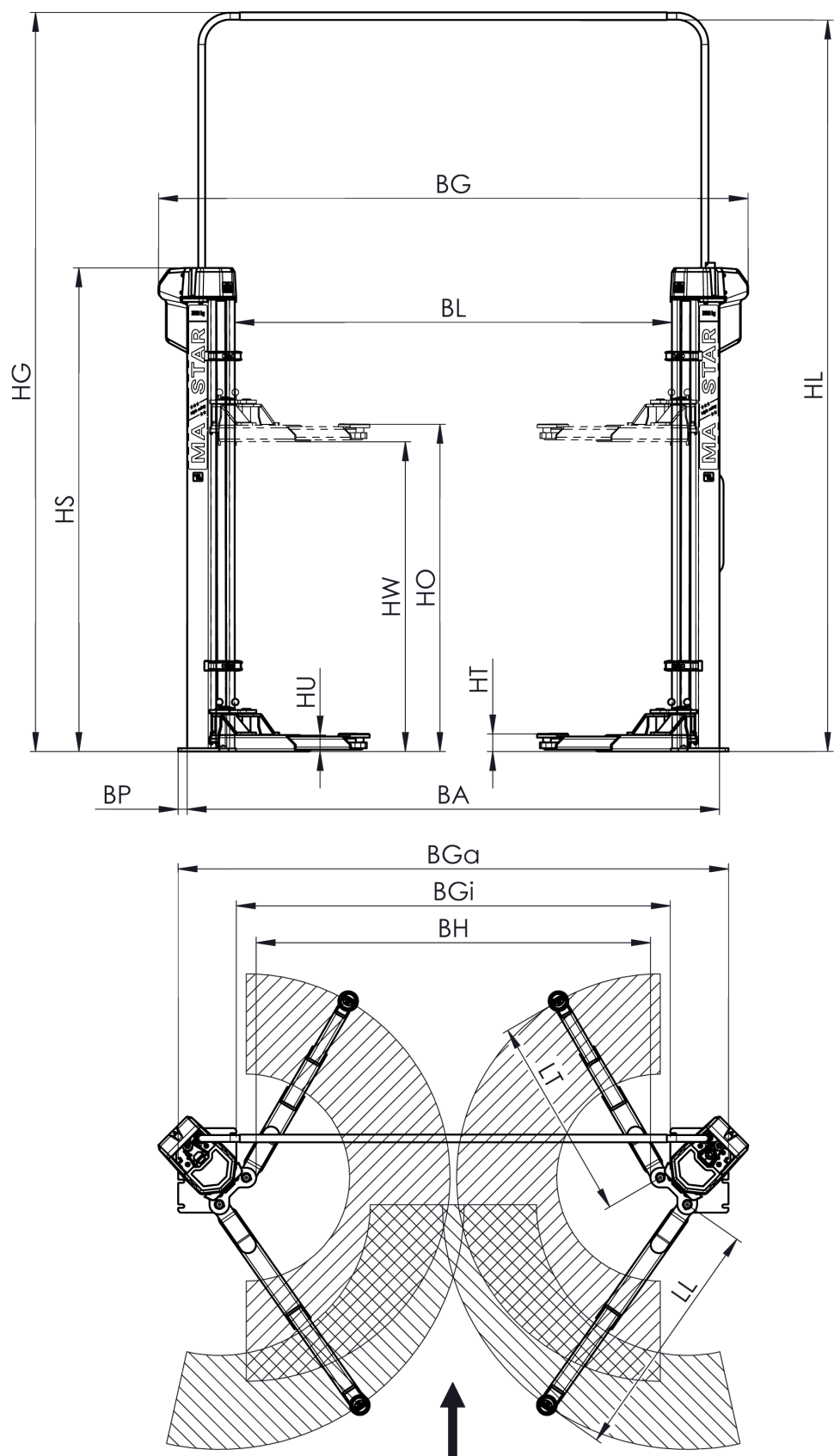
* Dimensions refer to recommended drive-through clearance BH = 2400 mm

Attention: Using VZ 971607 (door strike protection) the drive-through clearance is reduced by 35 mm.

** Using VZ 971594 (mounting plates for reduced foundation thickness) the marked dimensions increase by 20 mm.

*** Pivoting height for VZ 971459 (supports arms for sports cars).

2.3.3 Installation Diagram MA STAR 3.5 A



2.3.4 Technical Data MA STAR 3.5 S

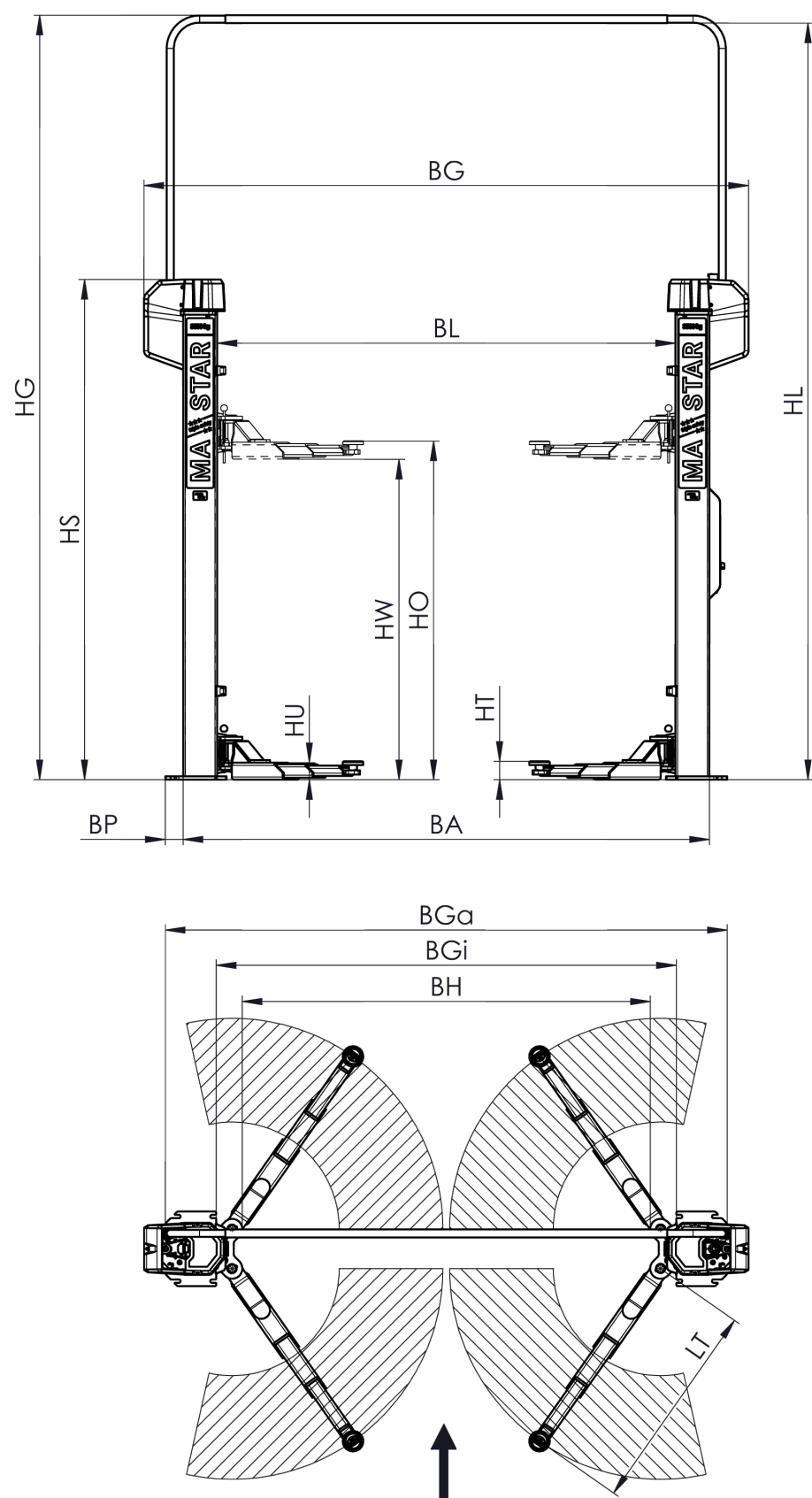
Total height [HG].....	4499 mm**
Total width [BG]	3557 mm*
Clear height [HL]	4452 mm**
Column height [HS]	2943 mm**
Vertical travel [HW].....	1885 mm
Length of stroke max. [HO].....	1995 mm**
Pivoting height min. [HU]	100 mm**
Adjusting range of support disk [HT].....	80...110 mm**
Extension length of support arm [LT]	630...1240 mm
Pivoting range of support arm	102,5°
Column clearance [BL]	2697 mm*
Outer column width [BA]	3097 mm*
Baseplate overlap [BP]	105 mm
Outer width of baseplate [BGa]	3307 mm*
Inner width of baseplate [BGi]	2707 mm*
Drive-through clearance [BH].....	2400 mm (2200...2400 mm)
Load capacity CE.....	3500 kg
Operating temperature.....	+5...+40 °C
Dead weight (incl. packaging)	635 kg (725 kg)
Packaging dimension (L x W x H)	2900 mm x 1100 mm x 710 mm
Anchorage.....	HILTI HIT-HY 200-A + HAS-U 5.8 M16
Concrete quality	min. C20/25 (DIN EN 1992)
Required minimum concrete base thickness without screed	180 mm
Rated capacity	2 x 3.0 kW (S3-20%)
Power supply 50 Hz	3 x 400 V + N + PE; C16A + RCD (30 mA)
.....	3 x 220...230 V + N + PE; C25A + RCD (30 mA) (VZ 990492)
Power supply 60 Hz .	3 x 380...400 V + N + PE; C16A + RCD (30 mA) (VZ 990491)
.....	3 x 220...230 V + N + PE; C25A + RCD (30 mA) (VZ 990499)
Lifting time.....	40 s

* Dimensions refer to recommended drive-through clearance BH = 2400 mm.

Attention: Using VZ 971607 (door strike protection) the drive-through clearance is reduced by 35 mm.

** Using VZ 971603 (mounting plates for reduced foundation thickness) the marked dimensions increase by 20 mm.

2.3.5 Installation Diagram MA STAR 3.5 S

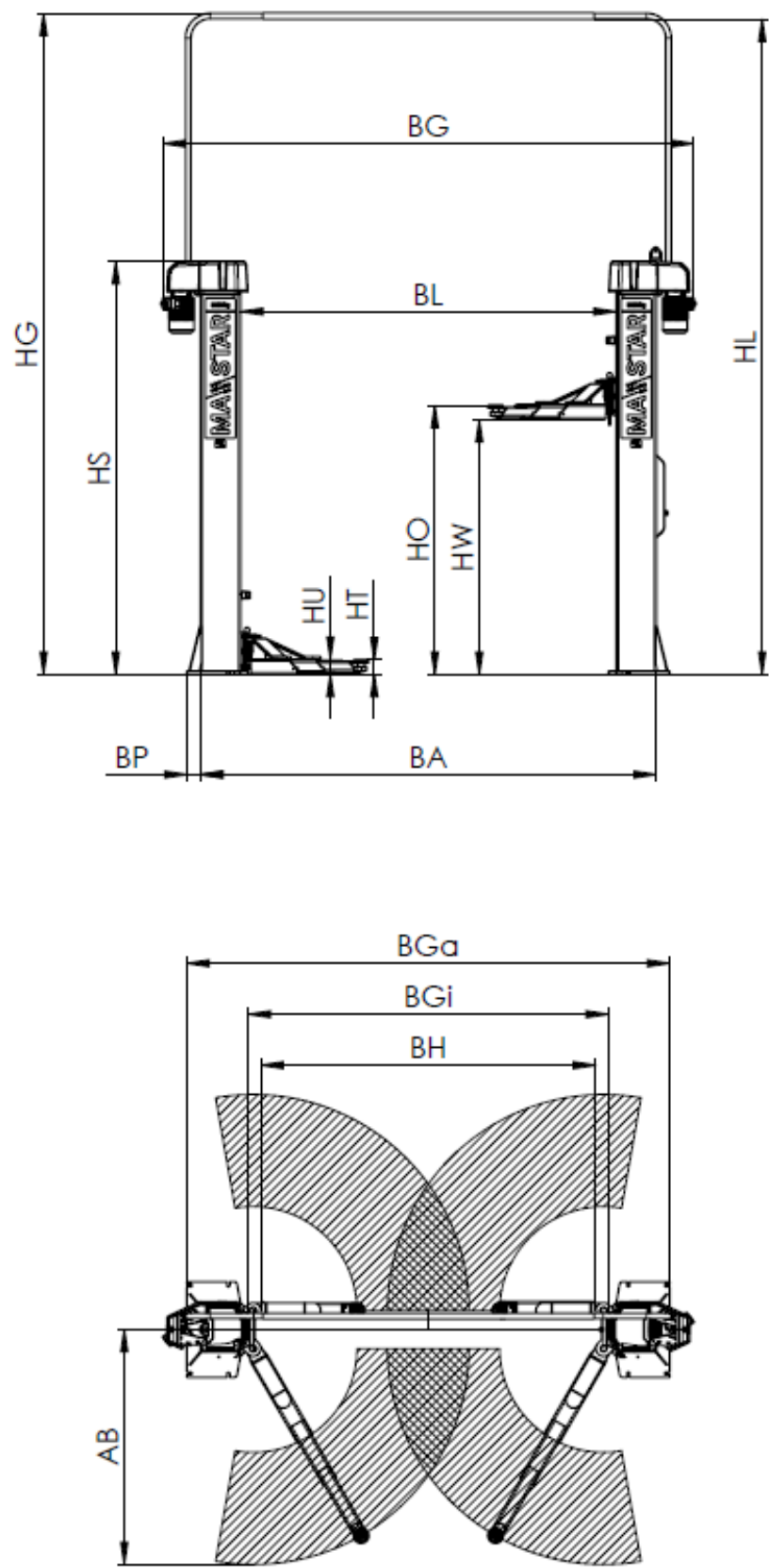


2.3.6 Technical Data MA STAR 5.5

Total height [HG].....	5193 mm
Total width [BG]	4200 mm*
Clear height [HL]	5146 mm
Column height [HS]	3243 mm
Vertical travel [HW].....	1950 mm
Length of stroke max. [HO].....	2065 mm
Pivoting height [HU].....	120 mm
Adjusting range of support disc [HT].....	85...115 mm
Pivoting range of support arm	100°
Pick-up range [AB]	965...1845 mm
Column clearance [BL]	2949 mm*
Outer column width [BA]	3579 mm*
Baseplate overlap [BP]	105 mm
Outer width of baseplate [BGa]	3789 mm*
Inner width of baseplate [BGi]	2829 mm*
Drive-through clearance [BH]	Standard2630 mm
	Slim2530 mm
	Wide2780 mm
Load capacity CE.....	5500 kg
Operating temperature.....	+5...+40 °C
Dead weight (incl. packaging)	1320 kg (1525 kg)
Packaging dimension (L x W x H). 2 packages, each with	3185 x 800 x 1000 mm
Anchorage.....	HILTI HIT-HY 200-A + HAS-U 5.8 M16
Concrete quality	min. C20/25 (DIN EN 1992)
Drive power	2 x 4.0 kW (S3-20%)
Power supply 50 Hz	3 x 400 V +N + PE; C32A + RCD (30mA)
Lifting/Lowering time.....	approx. 40 s/40 s

* Dimension refers to Drive-through clearance BH = 2630 mm

2.3.7 Installation Diagram MA STAR 5.5

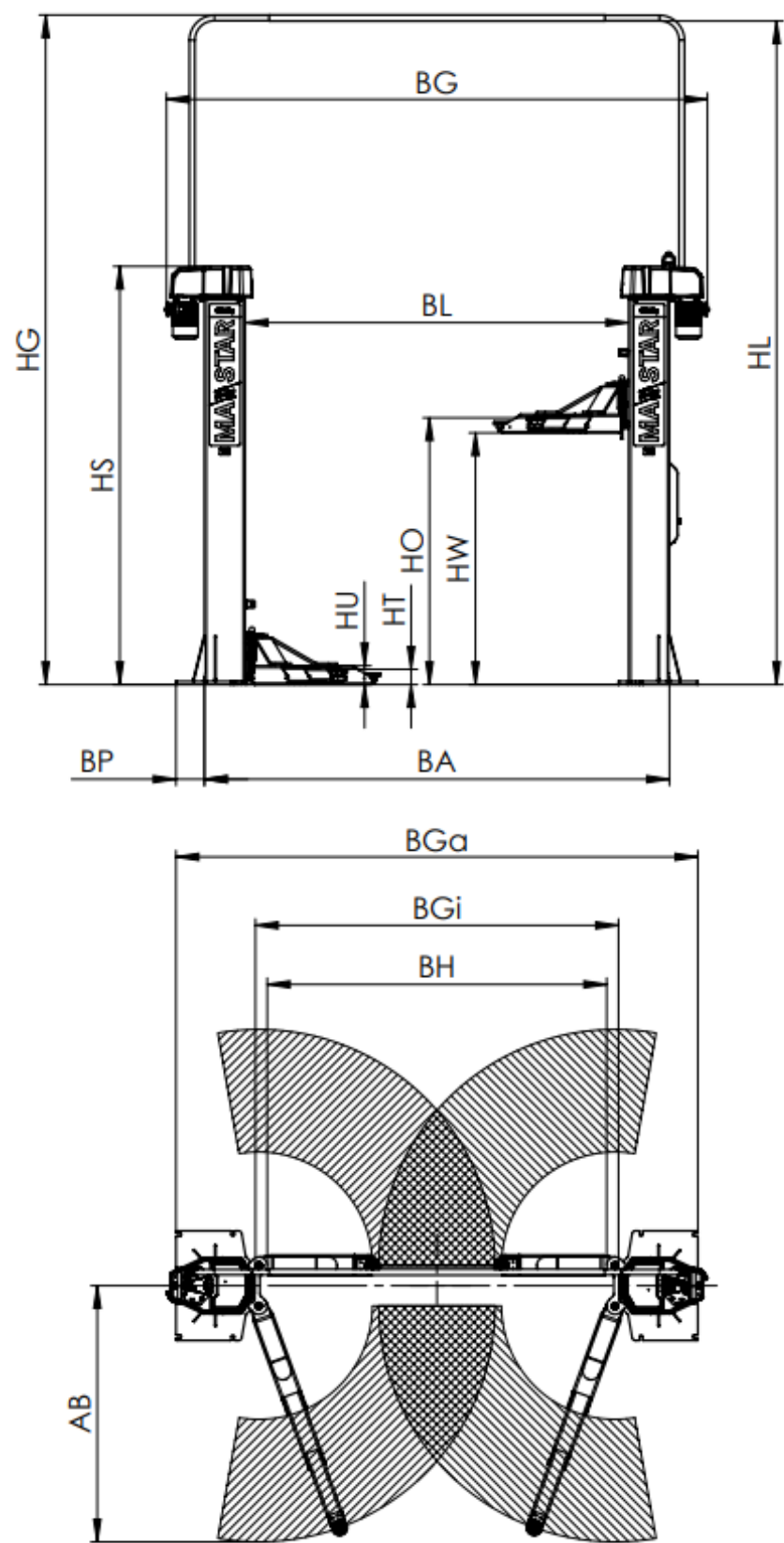


2.3.8 Technical Data MA STAR 6.5

Total height [HG].....	5193 mm
Total width [BG]	4192 mm*
Clear height [HL]	5146 mm
Column height [HS]	3243 mm
Vertical travel [HW].....	1950 mm
Length of stroke max. [HO].....	2065 mm
Pivoting height [HU].....	144 mm
Adjusting range of support disc [HT].....	85...115 mm
Pivoting range of support arm	100°
Pick-up range [AB]	1037...1987 mm
Column clearance [BL]	2973 mm*
Outer column width [BA]	3603 mm*
Baseplate overlap [BP]	220 mm
Outer width of baseplate [BGa]	4043 mm*
Inner width of baseplate [BGi]	2813 mm*
Drive-through clearance [BH] Standard	2630 mm
Wide	2780 mm
Load capacity CE.....	6500 kg
Operating temperature.....	+5...+40 °C
Dead weight (incl. packaging)	1520 kg (1525 kg)
Packaging dimension (L x W x H). 2 packages, each with	3185 x 800 x 1000 mm
Anchorage.....	HILTI HIT-HY 200-A + HAS-U 5.8 M20
Concrete quality	min. C20/25 (DIN EN 1992)
Drive power	2 x 4.0 kW (S3-20%)
Power supply 50 Hz	3 x 400 V +N + PE; C32A + RCD (30mA)
Lifting/Lowering time.....	approx. 44 s/44 s

* Dimension refers to Drive-through clearance BH = 2630 mm

2.3.9 Installation Diagram MA STAR 6.5



2.4 Control Description

The lift is operated at the control unit with two push buttons. These have arrows, which show the direction of movement. Their blue light, which activates according to operating status and possible directions of movement, enables intuitive operation of the lift.

Above the two control buttons is a fault indicator, which is backlit in either a flashing or continuous red in the case of a malfunction.

The lift can be equipped with a second control unit on the opposite column. The arrangement and function of the operating buttons and fault indicator remain the same, there is also an additional emergency stop button.

The lift can additionally be fitted with a height limit light barrier and/or an additional signal sound indicator.

2.4.1 Control Buttons



Up arrow: Move up / Raise

Down arrow: Move down / Lower

These functions are only active when the button is backlit in blue.

2.4.2 Fault Indicator



The fault indicator is located directly above the control buttons and is backlit in either a flashing or continuous red in the case of a malfunction.

3 Transport, Handling and Storage

3.1 Safety Information



WARNING

- Wear personal protective equipment.
 - Standing under a suspended load is prohibited.
 - The transport and storage of packages is only permitted using original transport racks. Observe the max. stacking height.
 - Before removing the packaging straps, secure the packages against falling and maintain a safe distance. Rebounding packaging straps can cause injuries!
 - Only lift and set up the lift columns using the marked connection points. Pay attention to the centre of gravity (marked COG).
 - Only use lifting equipment and slings that are suitable in terms of type and permitted load capacity.
 - Always ensure that the parts to be transported are suspended or loaded properly and in a fall-proof manner, taking into account their size, weight and centre of gravity. Observe transport regulations.
-

3.2 Scope of Delivery

3.2.1 Scope of Delivery MA STAR 3.5

Each lift is dispatched from the place of manufacture with packaging as standard. The delivery contains:

- 2 columns (in transport racks), bolted and packed on a pallet
- 1 instruction manual
- 1 set (4 pieces) support arms
- 4 support arm bolts with mounting parts
- 4 lock elements
- 4 support discs
- 1 set impact protectors for support arms
- 1 set connector cables
- 1 cable bridge with mounting parts
- 1 set covers (2/4 elements for 2 columns)
- 1 spindle oil 500 ml
- Optional: Accessory pack; may vary in size and weight depending on contents.

The number of delivered packages and contents must be checked for damage and completeness according to the order confirmation. Any transport damage must be documented immediately and reported to the delivery carrier.

3.2.2 Scope of Delivery MA STAR 5.5 / 6.5

Each lift is dispatched from the place of manufacture with packaging as standard. The delivery contains:

1st package:

- 1 column (in transport racks), bolted
- 2 cover hoods
- 1 instruction manual
- 1 set (2 pieces) support arms
- 4 lock elements
- 4 support discs
- 1 set impact protectors for support arms
- 1 spindle oil 500 ml

2nd package:

- 1 column (in transport racks), bolted
- 1 set connector cables
- 1 cable bridge with mounting parts
- 1 set (2 pieces) support arms
- Optional: Accessory pack; may vary in size and weight depending on contents.

The number of delivered packages and contents must be checked for damage and completeness according to the order confirmation. Any transport damage must be documented immediately and reported to the delivery carrier.

3.3 Packaging Information

3.3.1 Packaging MA STAR 3.5 A

Dimensions (L x W x H)..... 2925 x 1100 x 710 mm

Weight740 kg

3.3.2 Packaging MA STAR 3.5 S

Dimensions (L x W x H)..... 2925 x 1100 x 710 mm

Weight720 kg

3.3.3 Packaging MA STAR 5.5

Dimensions (1st and 2nd package) (L x W x H) 3185 x 760 x 960 mm

Weight (1st package).....796 kg

Weight (2nd package).....798 kg

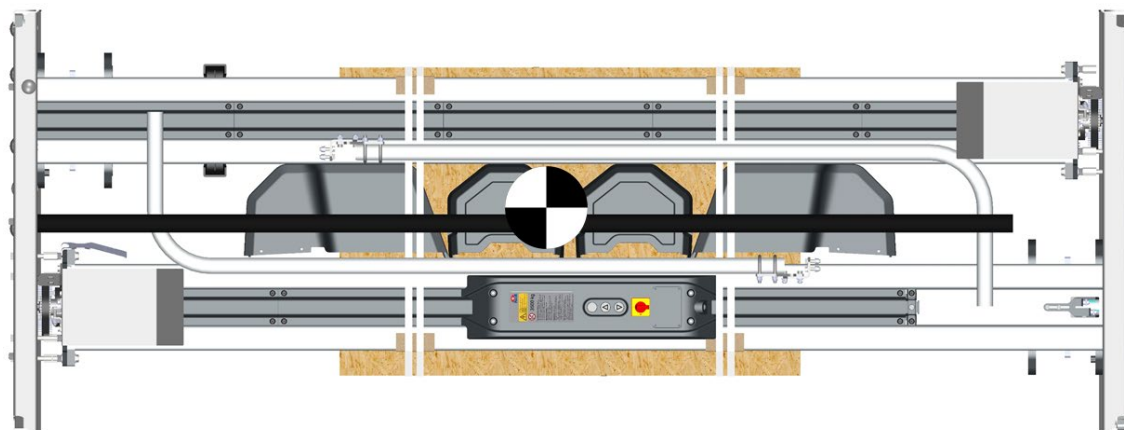
3.3.4 Packaging MA STAR 6.5

Dimensions (1st and 2nd package) (L x W x H) 3185 x 800 x 1100 mm

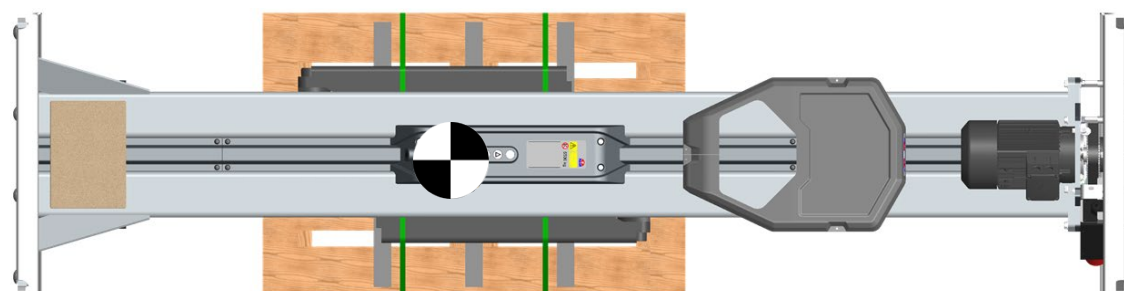
Weight (1st package).....888 kg

Weight (2nd package).....892 kg

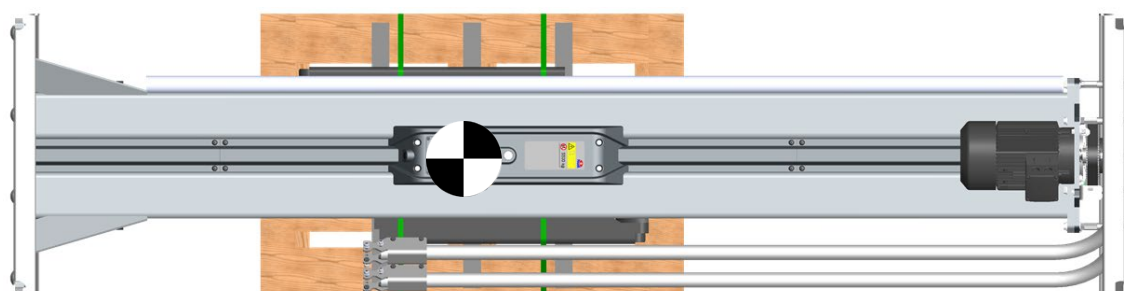
3.3.5 Centre of Gravity of the Packaged Lift



Centre of gravity of the packaged lift, MA STAR 3.5



Centre of gravity of the packaged lift, MA STAR 5.5 / 6.5, package 1



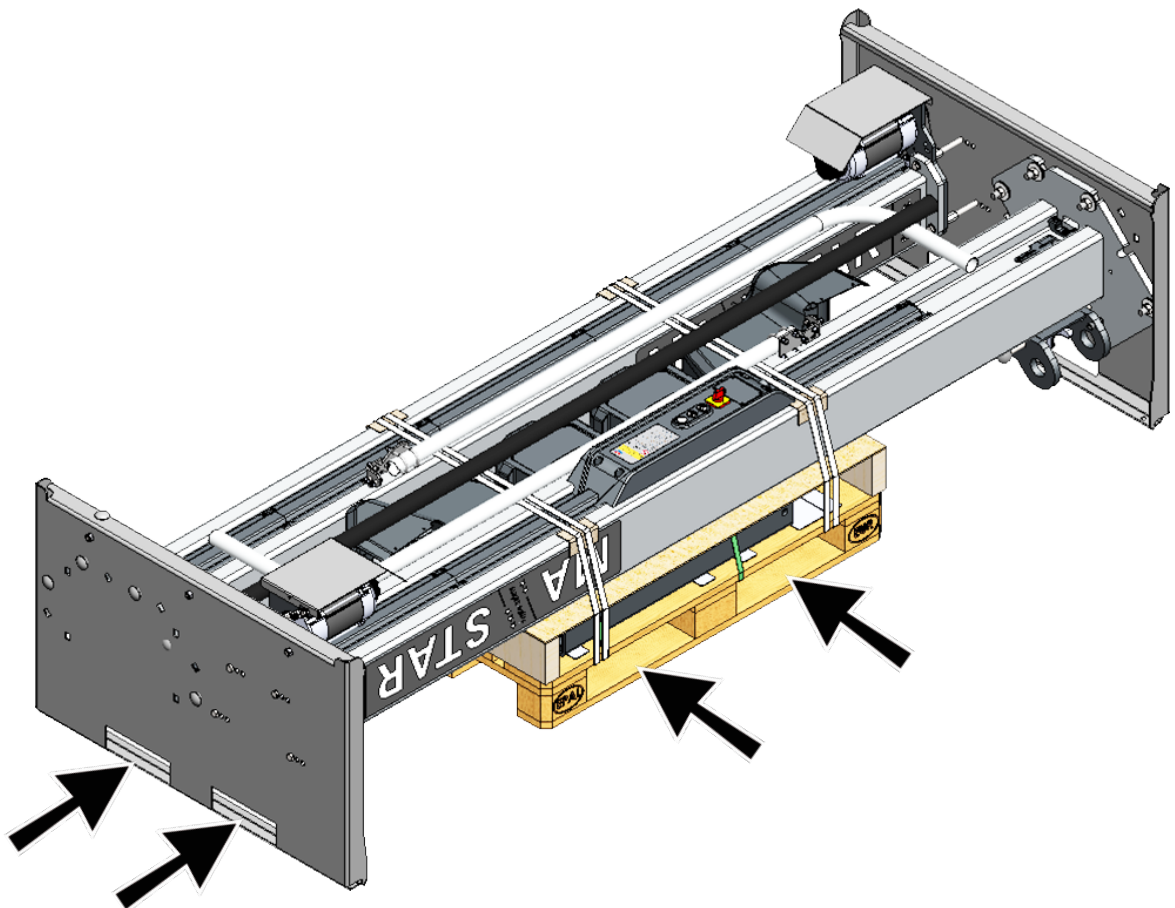
Centre of gravity of the packaged lift, MA STAR 5.5 / 6.5, package 2

3.4 Transport and Handling

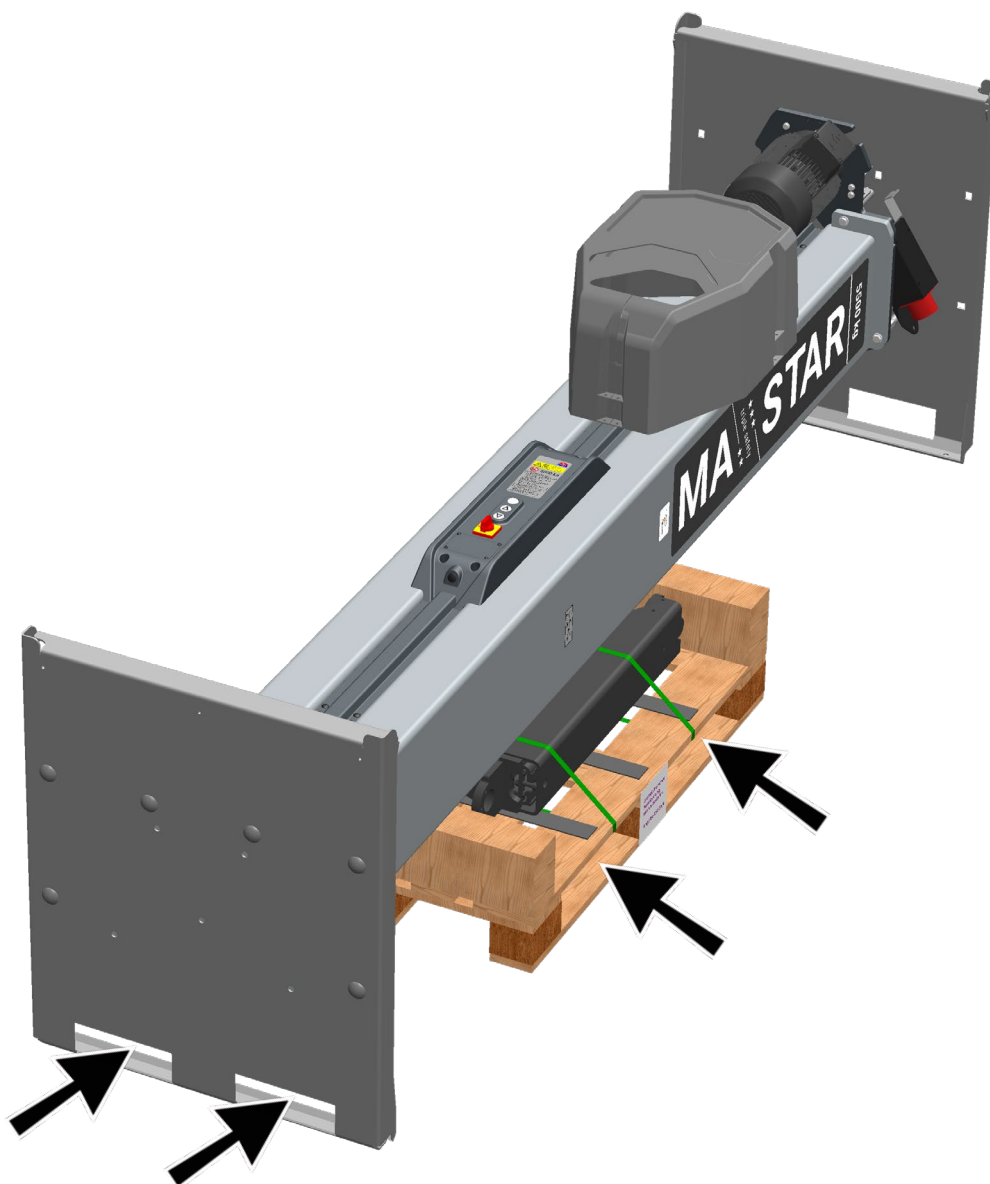
The transport and handling of the lift is only permitted using the original transport racks. The pick-up points shown below must be used for the loading and unloading of the packaged lift.

IMPORTANT: Strapping of the columns is not permitted!

The dimensions and centre of gravity of the packaged lift are shown in the section "Packaging Information".



Lift in transport rack on pallet, pick-up points MA STAR 3.5



Lift in transport rack on pallet, pick-up points MA STAR 5.5 / 6.5

3.5 Storage

The packages must be stored in a covered location and protected from direct sunlight. They must be stored at low humidity and at a temperature between 0 °C and +40 °C.

The lifts may only be stacked in the original transport racks, with a maximum stacking height of three lifts (MA STAR 3.5) or two lifts (MA STAR 5.5 / 6.5) respectively. See also section "Transport and Handling".

Packaging waste must be disposed of in accordance with applicable environmental regulations.

4 Operation

4.1 Safety Information



WARNING

- Observe the detailed operating instructions.
- Comply with legal accident prevention regulations.
- Wear personal protective equipment.
- Carry out visual and operational checks daily before the commencement of work (see also section "Test and Maintenance Schedule").
- Defects must be corrected immediately in a competent manner.
- The rated load capacity according to the type plate must not be exceeded.
- Only vehicles suitable for the lifting equipment due to their shape and the positioning of their pick-up points may be lifted.
- Operation of the lift is only permissible with mounted and intact protective covers and safety devices.
- Never touch moving parts.
- Never use additional lifting gear for an already raised load.
- Before driving a vehicle onto the lift, the support arms must be in their lowered initial position and moved backwards completely. Otherwise damage to the equipment may occur.
- Driving onto the lift should be at walking pace only and as close to the centre of the columns as possible.
- Vehicles may only be lifted with support arm locks intact and undamaged support discs. Risk of vehicle falling and causing personal injury.
- Support disc raisers may only be used in their single form. A combination of support disc raisers per support disc is not permitted.
- Maintain a safe distance from the vehicle and lift in all directions.
- Keep the movement range of the load and lift free from obstacles. Use a guide if visibility is restricted.
- Vehicles doors must be closed during lifting and lowering.
- The vehicle can be strapped to the lift if necessary. Shifts in the centre of gravity of the vehicle through installation/removal of heavy vehicle parts may otherwise lead to the vehicle sliding off.
- After raising just off the floor, check that the vehicle has been picked up securely and that the support arms are locked correctly. If necessary, lower the vehicle and pick up again.
- The transport of passengers is prohibited.
- Climbing on the raised vehicle or on the lift is prohibited.
- There must not be any people or objects within the safety zone of the lift and

the load during the raising and lowering process.

- Monitor the load and the lift during raising and lowering. In the event of an irregularity, the emergency stop button (main button on the main operating column or the emergency stop button on the second control unit on the opposite column), must be pressed immediately.
ATTENTION: The 230V plug sockets on the operation unit(s) still carry power even after the system has been switched off!
 - There is a risk of tripping on floor-mounted lifting equipment and on the foundation anchor of the lift.
 - Parts must not be placed on the lift or the vehicle to be lifted.
 - Keep the lift and the working area clean. **ATTENTION:** Risk of slipping on oily surfaces!
 - Protect all parts of the electrical system from moisture.
 - Be careful when running vehicle engines. **ATTENTION:** Risk of poisoning!
 - Changes to or overriding of the safety features installed is prohibited!
 - Inching mode should be avoided to prevent the motor from overheating. Run through swiftly instead.
 - During work breaks and at the end of the working day, the system must be switched off and secured against unauthorised use.
-

4.2 Intuitive Control and Operating States

The lift has been fitted with an intuitive operating system. Depending on the operating status, illuminated buttons provide a visual indication of the lift's available options regarding direction of movement.

Status	Lift switched off	When switching on the lift (software mode)	Only raising possible	Raising and lowering possible	Only lowering possible	Error, lift not ready for operation
Visual indicator						
Cause		Flashing 3x → 3.5 t 400 V 50 Hz Flashing 4x → 3.5 t 230 V 50 Hz or 3.5 t 230/400 V 60 Hz Flashing 5x → 5.5 t / 6.5 t 400 V 50 Hz	– Initial position – Obstacle met	– When raising and lowering	– Max. lifting height reached – Height limit light barrier reached – Overload/ lift heavy going	– See section "Error Chart"

4.3 Preparations

4.3.1 Initial Position/Ready for Operation

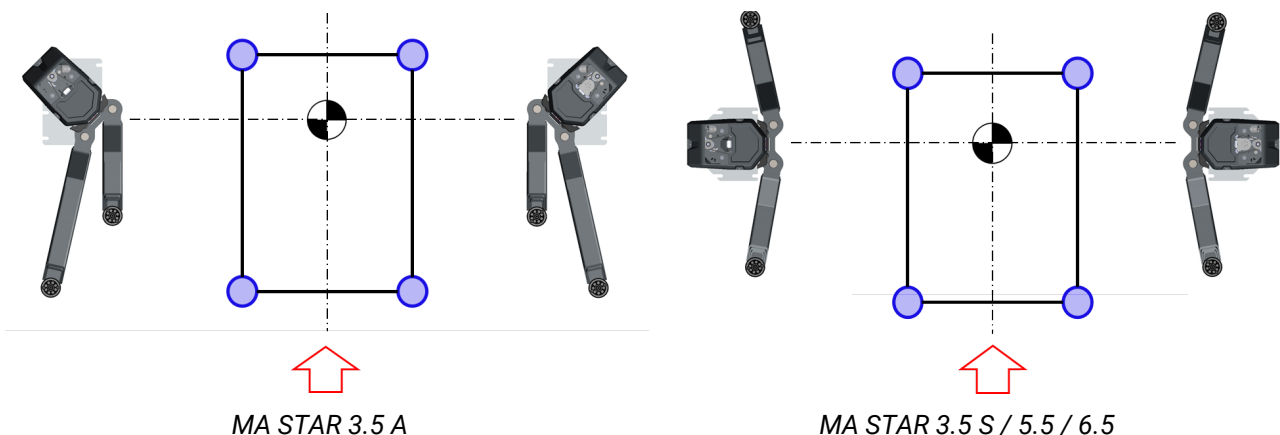
- The main switch must be at position 0.
- The lift must be fully lowered.
- The support arms must be pivoted completely away from the working area (initial position, see diagram.)



4.3.2 Positioning of the Vehicle

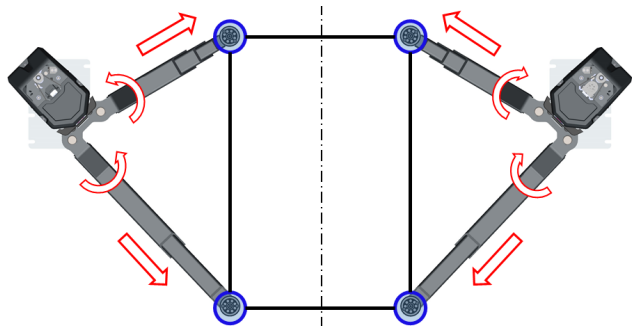
- Carefully drive the vehicle forwards, centrally between the lift columns, and then apply the parking brake.
- The centre of gravity of the vehicle should be as central as possible between the lift columns.
- Tip: If it is necessary to open the doors completely, the vehicle can also be positioned backwards between the lift columns.

IMPORTANT: Again, ensure that the vehicle's centre of gravity is as central between the two lift columns as possible!

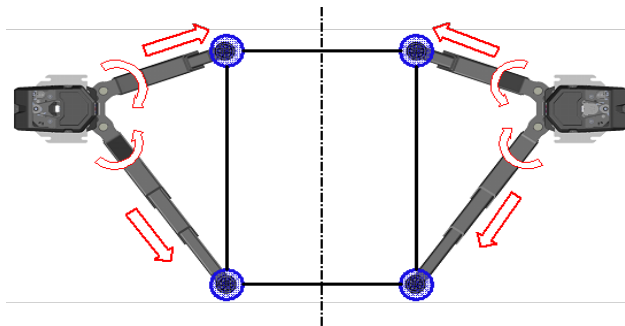


4.3.3 Positioning of the Support Arms and Support Discs

- Swivel and extend the support arms to position the support discs under the pick-up points specified by the vehicle manufacturer.
- Turn the support discs so that all four pick-up points are accessed evenly.



MA STAR 3.5 A



MA STAR 3.5 S / 5.5 / 6.5

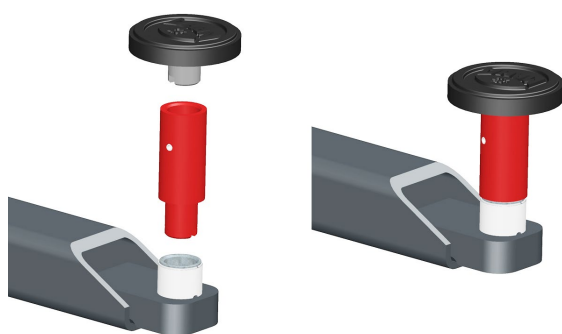
4.3.4 Support Disc Raisers

- The support disc raisers (partly optional) are available in the lengths 50 mm, 100 mm, 150 mm, 200 mm and 300 mm.
- By inserting the support disc raisers, the support discs can be adjusted in increments of 50 mm. Fine adjustments are possible by turning the support disc.



CAUTION

- Only **one** raiser may be used per support disc.
- The anti-rotation lock, which consists of a groove pin and a dowel pin inserted into a sleeve, must always be engaged.



4.4 Raising and Lowering Cycles

4.4.1 Inspection of the Load Pick-up Points and Support Arm Locks

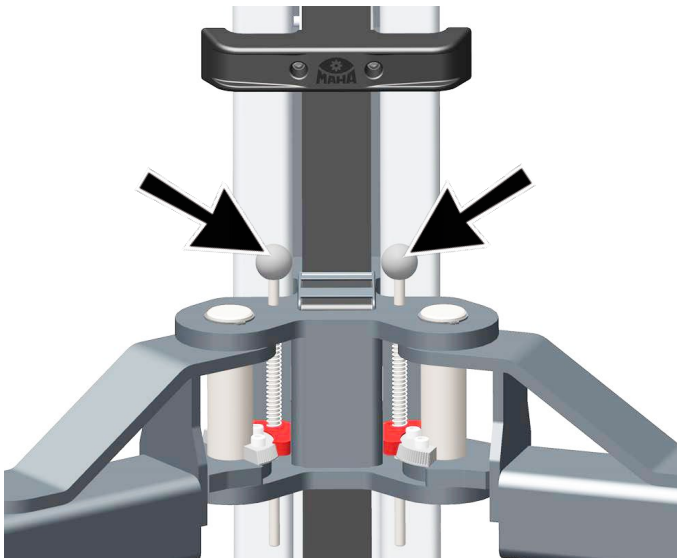


- Set the main switch to position 1.
After an initial flashing of all three lights, the UP button is permanently lit.
- Press the UP button until the support discs are in contact with the pick-up points of the vehicle.
- Check the position of the support discs and correct if necessary.
- Check that support arms lock securely. If necessary, move the support arms slightly until the toothed segments are engaged.



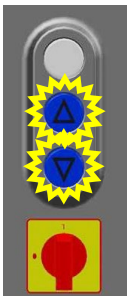
CAUTION

Never pull the lock pins under load!



Lock pins with toothed segments

4.4.2 Continuation of the Raising Process

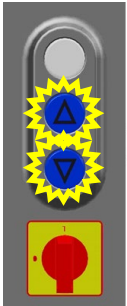


- Continue the lifting process by pressing the UP button until the desired lifting height is reached.
UP and DOWN buttons are lit.

4.4.3 Lowering Process and CE Stop



- Before lowering the vehicle, remove tools, support stands or similar obstacles from the working area of the lift.
The operator is responsible for ensuring that nobody is within the danger area.
- Press and hold the lit DOWN button until the desired lifting height is reached.
- The lift automatically stops when it has reached the CE-defined stop height.



- For full lowering back to the initial position, release the DOWN button after reaching the CE stop and press it again.
- UP and DOWN buttons are lit. A signal sound is activated when lowering within the CE-defined height range.

4.5 Vehicle in Raised Position



WARNING

When installing or removing heavy vehicle parts, ensure that the centre of gravity does not shift to a dangerous extent! The vehicle may tip off the lift. Secure vehicle by lashing it to the support arms with straps.

4.6 Driving off the Lift and Changeover

- After the lift has been lowered completely, turn the support arms out to the side and bring them back into starting position.
- Then drive the vehicle off the lift.

NOTICE

There is a risk of damage to the toothed segments and their function if the support arms come into contact with the wheels or other vehicle parts!

5 Inspection and Maintenance

5.1 Safety Information



WARNING

- The relevant health and safety regulations must be observed.
 - Wear personal protective equipment.
 - Service work may only be carried out by authorised service technicians.
 - Repairs, maintenance and set-up work may only be carried out when the machinery is stationary. The unit must be disconnected from the power supply and secured against being switched on again.
 - Work on the electrical part of the lift may only be carried out by qualified staff or specialist electricians.
ATTENTION: The 230V plug sockets on the operation unit(s) still carry power even after the system has been switched off!
 - Maintenance and repair work may only be carried out when the lift is load-free.
 - Only use original replacement parts.
 - Substances that are hazardous to the environment must be disposed of appropriately.
 - Do not use high or steam pressure equipment or harsh cleaning agents to clean the lift.
 - The safety features of the lift must be set by authorised service technicians.
 - The safety features must not be replaced or overridden.
-

5.2 Inspection and Maintenance Plan

Daily before operating

- Check the support arm extension stops.
- Check the functioning of the support arm locks.
- Visual check of the circlips on the support arm pins and the threaded inserts of the support discs

Weekly

- Check function and wear of load carrying equipment, replace as necessary.
- Check function and wear of support arm locks, lubricate as necessary.

Every 6 months

- Spindles and support nuts: Check fill level of oil pan in the lifting carriage, top up with SAE140 (Art. No. 1402567) gear oil as necessary.
- Check slider tracks for free movement, lubricate as required.
- Check support arm extensions for free movement, lubricate as required.
- Check support discs for damage, replace as necessary.
- Check threads of support discs for free movement, lubricate as required.
- Visual check of all accessible welding seams

Annually



- 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 authorised and trained service technicians provided by the manufacturer, licensed dealers or service partners.
 - Non-compliance invalidates the manufacturer's warranty.
-
- Check support nuts for wear and tear.
 - Check toothed belts for wear and tear, dirt and correct tension (MA STAR 3.5: 100...120 Hz; MA STAR 5.5 / 6.5: 106...111 Hz), replace belts if necessary.
 - Check all the lift's screw connections for a tight fit, retighten the screws if necessary (for tightening torques, see technical handbook).
 - Check all components for damage.
 - Brake torque is measured directly on the motor's drive shaft as part of the annual operating equipment inspection. The toothed belt must be removed for this. Brake torque must not fall below **3,5 Nm** (MA STAR 3.5) or **7.2 Nm** (MA STAR 5.5 / 6.5) respectively in both directions of rotation. If the torque falls below this value or there is a fault, the complete motor unit must be replaced!
 - Check optional compressed air components for function and tightness, replace if necessary.
 - Check tightening torque of anchor bolts, retighten if necessary (80 Nm).

Every 5 years

- Replace toothed belt.

5.3 Lubrication

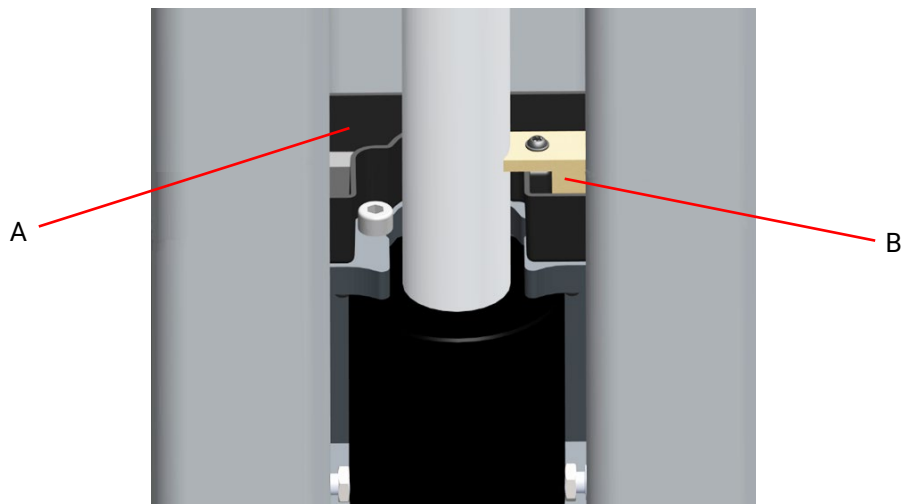
5.3.1 Lubricants

NOTICE

Only the following lubricants are approved for maintenance and servicing of the lift!

Lubrication point	Lubricant
Spindle / Load nut	Gear oil of viscosity class SAE 140 (Art. No. 1402567) IMPORTANT: If other lubricants are used, safe and trouble-free operation cannot be guaranteed!
Slider tracks	FUCHS LUBRITECH STABYL TA (Art.-Nr. 1405686) IMPORTANT: Usage of other lubricants may reduce the lifetime of the slider blocks!
Support arm extensions Threads of support discs Support arm lock	Multipurpose grease

5.3.2 Lubricating the Spindle and the Load Nut

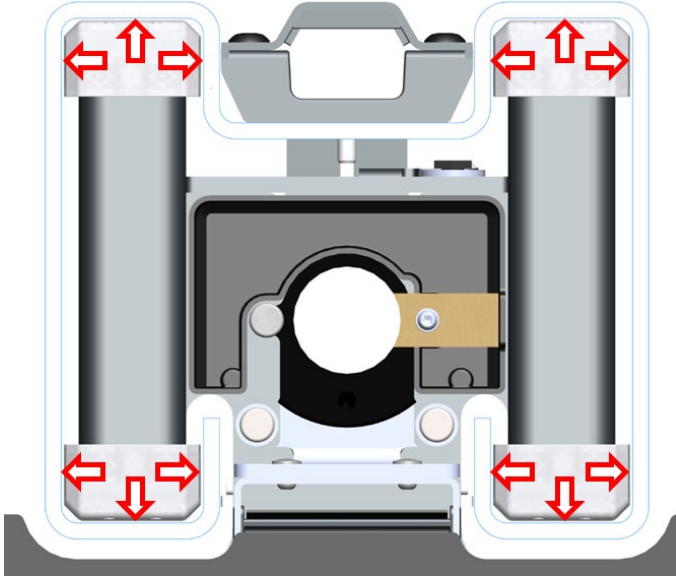


The oil pan (A) in the lifting carriage must always be filled so that a permanent film of lubricant is present on the spindle. Refill the oil pan no later than every 6 months or more often if necessary. Also check the lubrication felt (B) for wear and/or dirt and replace if necessary.

NOTICE

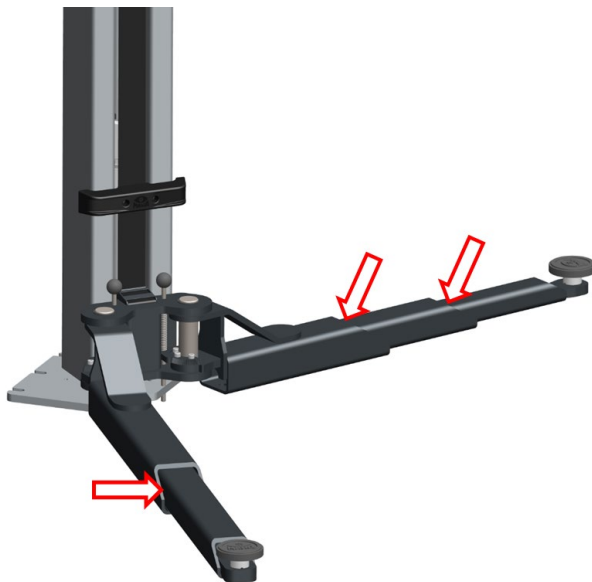
If there is dirt in the oil pan, this can impair the running characteristics of the lift!

5.3.3 Greasing the Slide Tracks



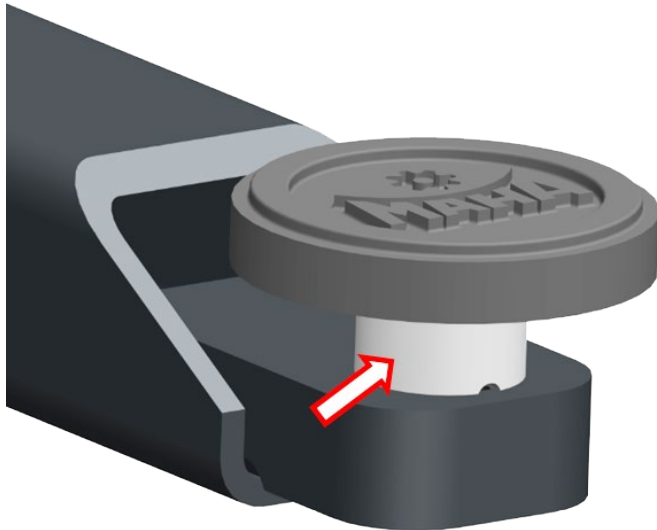
Lubricate the tracks of the slider tracks no later than every six months. To do so, move the lifting carriage to the lowest position. Then loosen and remove the spindle cover on the head plate. Lightly grease all slider tracks over the entire length with a brush.

5.3.4 Greasing the Arm Extensions



Check the support arms for free movement no later than every six months and lubricate the pull-out points if necessary.

5.3.5 Greasing the Disc Adapter Threads



Check the threads of the support discs for freedom of movement no later than every six months and lubricate if necessary.

5.4 Extended Warranty Terms

In addition to the standard warranty, a warranty applies to the material cost of nuts and spindles until five years after installation.

This is effective for:

- Support nut wear over the permissible 2 mm.
- Spindle wear; however, the material combination of plastic and steel virtually eliminates wear of the spindles, which are produced in rolling process.
- Compliance with and verification of annual maintenance by authorised and skilled personnel in accordance with the operating instructions.

6 Care Instructions

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



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

7 Troubleshooting

7.1 Safety Information



WARNING

- The relevant health and safety regulations must be observed.
 - Wear personal protective equipment.
 - Service work may only be carried out by authorised service technicians.
 - Repairs, maintenance and set-up work may only be carried out when the machinery is stationary. The unit must be disconnected from the power supply and secured against being switched on again.
 - Work on the electrical part of the lift may only be carried out by qualified staff or specialist electricians.
ATTENTION: The 230V plug sockets on the operation unit(s) still carry power even after the system has been switched off!
 - Maintenance and repair work may only be carried out when the lift is load-free.
 - Only use original replacement parts.
 - Substances that are hazardous to the environment must be disposed of appropriately.
 - Do not use high or steam pressure equipment or harsh cleaning agents to clean the lift.
 - The safety features of the lift must be set by authorised service technicians.
 - The safety features must not be replaced or overridden.
-

7.2 Error Chart

Display	Diagnostics	Remedy
Signal sound immediately upon switching on.	Button pressed by mistake.	Release button.
	Control panel has short circuit.	Notify service team.
The lift stops when lowering and the blue DOWN button light goes out.	Lift has reached its end position.	Lift can only move upwards. If necessary, the lower end position can be adjusted to ground conditions by the service team.
	Signal sound when DOWN button is pressed again: Lift has met an obstacle.	Free the lift by pressing the UP button, remove the obstacle.
Support arms hit the ground during lowering.	Lower end position has not been set correctly.	Notify service team.
The lift stops when rising and the blue UP button light goes out.	Lift has reached upper end position (max. lifting height).	Lift can only be lowered.
	Signal sound when UP button is pressed again: ceiling impact protection triggered.	Lower the lift by pressing the DOWN button. Signal sound after button is pressed again only if ceiling impact protection is present.
	Signal sound immediately after UP button goes off: lift heavy going (max. load capacity exceeded).	Lower the lift by pressing the DOWN button, reduce load. Signal sound issued immediately, without pressing button again. (If necessary, check for correct lift mode configuration!)
Signal sound when lowering.	Movement within shearing zone.	No action needed.
Red fault indicator light is permanently on.	Permissible control deviation exceeded.	Notify service team.
	Signal sound when pressing the UP or DOWN button: Support nut breakage.	
Red fault indicator light flashes continuously.	Sensor malfunction.	Notify service team.
	UP and DOWN buttons flashing when pressed: incorrect lift mode configuration.	

Display	Diagnostics	Remedy
DOWN button and UP button and red fault indicator flash more than 10 times.	Configuration mode.	Notify service team.
Red fault indicator flashes, blue DOWN button is lit.	Electrical emergency stop activated.	Lower the lift.
Red fault indicator light and blue UP/DOWN buttons are permanently lit.	Internal fault.	Turn off main switch and switch on again after approx. 5 seconds. Notify service team if the fault reoccurs.

8 Repairs



See repair instructions in the lift's technical handbook.

9 Decommissioning, Dismantling and Disposal

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.

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

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

10 Declaration of Conformity

See following page(s).



Original EC Declaration of Conformity

CE364501-en



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 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

MA STAR 3.5 A

MA STAR 3.5 A MB

MA STAR 3.5 S

VP Number

VP 251230 + VP 251232

VP 251235

VP 251231 + VP 251233

Designation

Two Post Lift

Rated Load Capacity: 3500 kg

Directives

2006/42/EC

2014/30/EU

Standards

DIN EN 1493:2010

DIN EN 60204-1

DIN EN ISO 13849-1

Person Authorised to Compile the Technical File

Ralf Kerkmeier

MAHA Maschinenbau Haldenwang GmbH & Co. KG, Hoya 20, 87490 Haldenwang, Germany

Haldenwang, 2020-03-05

Andreas Maier
Head of Mechanical Development



Original EC Declaration of Conformity

CE364601-en



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 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

MA STAR 5.5

MA STAR 5.5 MB

VP Number

VP 451186 + VP 451187

VP 451188

Designation

Two Post Lift

Rated Load Capacity: 5500 kg

Directives

2006/42/EC

2014/30/EU

Standards

DIN EN 1493:2010

DIN EN 60204-1

DIN EN ISO 13849-1

Person Authorised to Compile the Technical File

Ralf Kerkmeier

MAHA Maschinenbau Haldenwang GmbH & Co. KG, Hoya 20, 87490 Haldenwang, Germany

Haldenwang, 2021-07-12

Andreas Maier

Head of Mechanical Development



Original EC Declaration of Conformity

CE364701-en



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 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

MA STAR 6.5

VP Number

VP 451189 + VP 451190

Designation

Two Post Lift

Rated Load Capacity: 6500 kg

Directives

2006/42/EC

2014/30/EU

Standards

DIN EN 1493:2010

DIN EN 60204-1

DIN EN ISO 13849-1

Person Authorised to Compile the Technical File

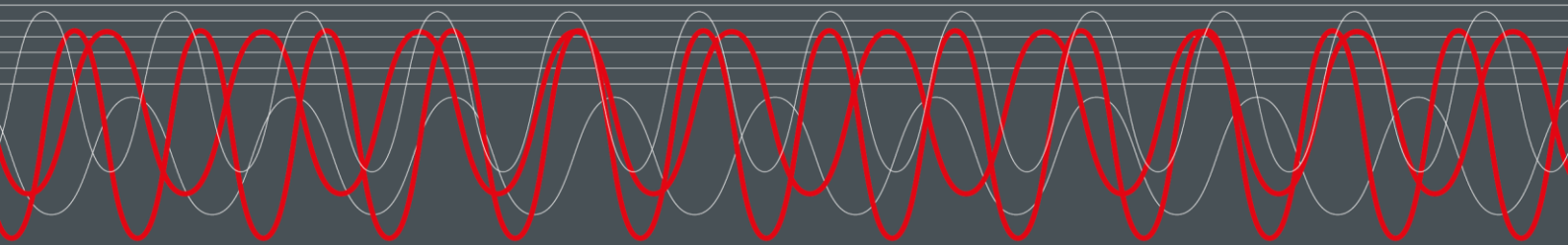
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Haldenwang, 2022-01-17

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