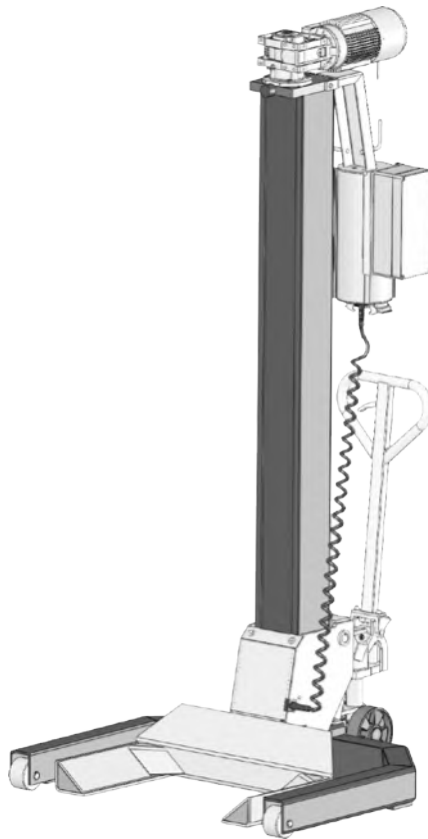


RGE

Mobile Column Lift

Original Operating Instructions

BA490801-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 is to be used exclusively for the safe lifting of commercial and agricultural vehicles such as trucks, buses, tractors etc. Observe the rated load capacity.
- The lift may not be modified without the express written consent of the manufacturer. In case of non-compliance the declaration of conformity becomes void.

1.4 Inappropriate Use

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 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.

1.6 Safety Instructions for Commissioning

- Use the lift on a hard, level surface only.
- The standard lift version may not be installed and commissioned in the vicinity of explosives or flammable liquids.

1.7 Safety Instructions for Operation

- Read the detailed operating manual.
- Lift operation by trained personnel over 18 years only.
- Do not exceed the rated load capacity per column as indicated on the lift nameplate.
- Ensure an unobstructed movement of lift and vehicle.
- After raising the vehicle briefly, stop and check the lift supports for secure contact with the vehicle.
- Closely watch lift and vehicle during raising and lowering cycles.
- The working area which cannot be overviewed by the operator should be monitored by a second person.
- When operating the lift in single or group mode, make sure the vehicle is not tilted.
- Do not allow anyone to stay in lift area during raising and lowering cycles.
- Do not allow anyone to climb on lift or inside raised vehicle.
- Keep lift and vehicle free of tools and parts.
- When using the lift outdoors, lower the vehicle and stop operation when the wind velocity exceeds 6 m/s.
- Push the support forks completely under the wheels or lift points of the vehicle to be raised.
- Do not drive over or pinch electrical cables.

1.8 Safety Instructions for Servicing

- Service work may be done by authorized service technicians only.
- Turn off and padlock the main switch before doing any repair, maintenance or setup work.
- Disconnect the mains plug before opening the control box.
- Work on the electrical equipment may be done by service technicians or certified electricians only.
- Ensure that ecologically harmful substances are disposed of only in accordance with the appropriate regulations.
- Do not use high pressure or steam jet cleaners. Use of caustic cleaning agents may damage the lift.
- Do not replace or override the lift safety devices.

1.9 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.

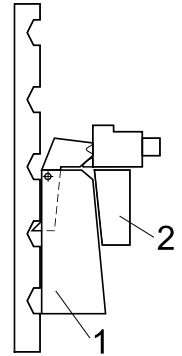
1.10 What to Do in the Event of an Accident

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

1.11 Safety Features

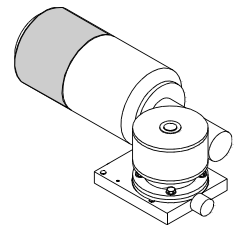
1.11.1 Locking Device

The locking device serves to prevent inadvertent lowering motions caused by gear, load nut or lifting screw failure. The carriage is blocked by safety wedge (1) and counterwedge (2).



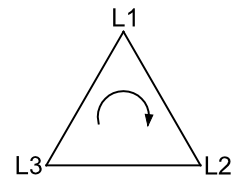
1.11.2 Braking Motor

The motors are equipped with AC spring pressure brakes. Once the motors are switched off, the brakes prevent any further movements.



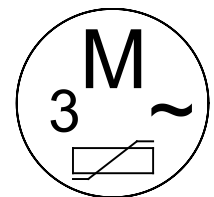
1.11.3 Phase Sequence Relay

The phase sequence relay in the power supply unit ensures safe and independent operation.



1.11.4 Thermal Overload Protection

Overload protection via electronically monitored thermostwitches.



1.11.5 Safety Shutdown after Motor Overload

The motor load is permanently monitored by the control PCB. If an overload of $\geq 15\%$ occurs, the system will switch off automatically. In this case the lift cannot be raised any more, but it can be normally lowered to bottom position.

1.11.6 Warning and Information Labels

Do not change or remove the warning and information labels. Order replacement for defective labels.

2 Description

2.1 General Information

The mobile column lifts of the RGE series are produced as wheel engaging or universal lifts. Depending on the version, the lift system consists of 2 or 4 columns and can be expanded to 6 columns in the standard version.

The lift can be expanded up to 12 columns when using a special power supply unit.

All components are easily accessible under the lifted vehicle due to a generous maximum lifting height of 1750 mm.

The lift is a mobile unit whereby the columns can be substituted with stands when vehicles are to be worked on for a longer period of time. The lifting columns are free to be used on other vehicles.

2.2 Noise Emission

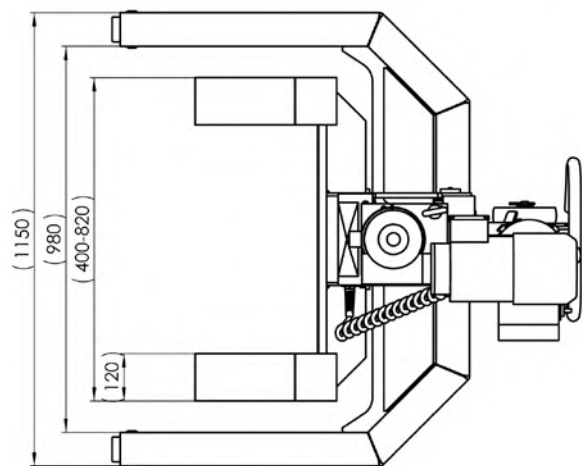
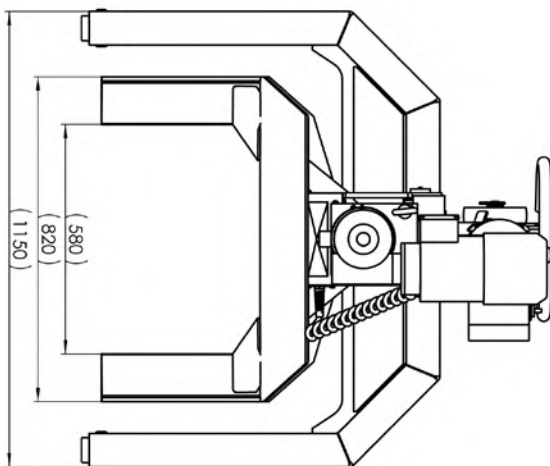
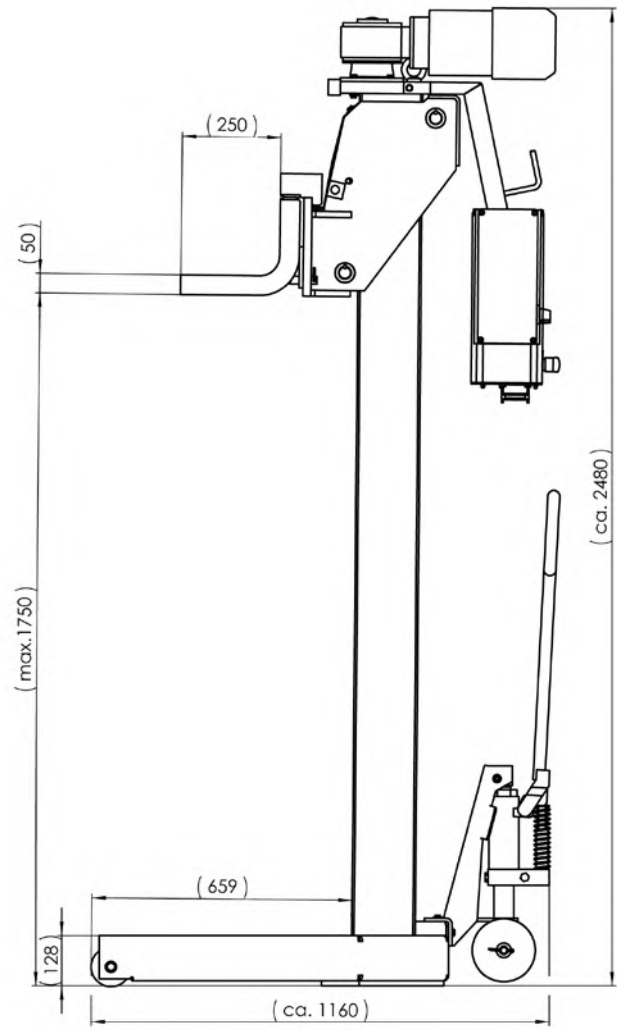
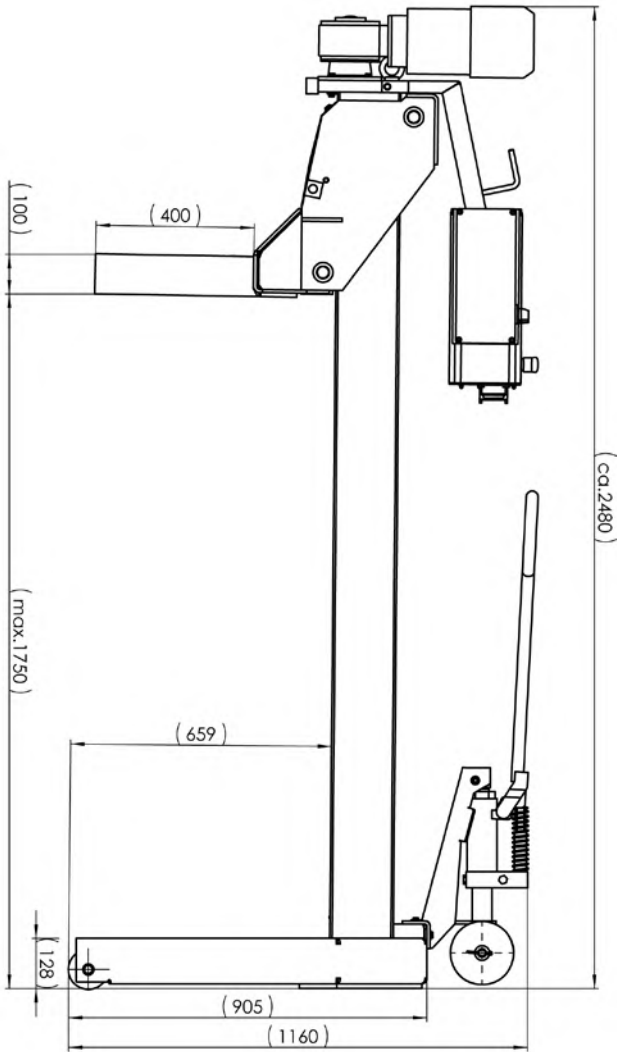
The sound pressure level is lower than 70 dB(A) in the working area of the operator.

2.3 Specifications

	RGE	RGE GPGU	RGE T
Load capacity per column	7500 kg	7500 kg	5000 kg
Full travel	1750 mm	1750 mm	1750 mm
Raising / Lowering time	113 s	113 s	113 s
Raising speed	0.92 m/min	0.92 m/min	0.92 m/min
Tyre diameter	900...1250 mm	---	600...2000 mm
Motor power	1.5 kW	1.5 kW	1.5 kW
System of protection	IP 54	IP 54	IP 54
Supply voltage	3~ 380/220 V; 50 Hz	3~ 400 V; 50 Hz	3~ 400 V; 50 Hz
Net weight per column	452 kg	502 kg	542 kg
Surface load	0.5 N/mm ²	0.5 N/mm ²	0.5 N/mm ²

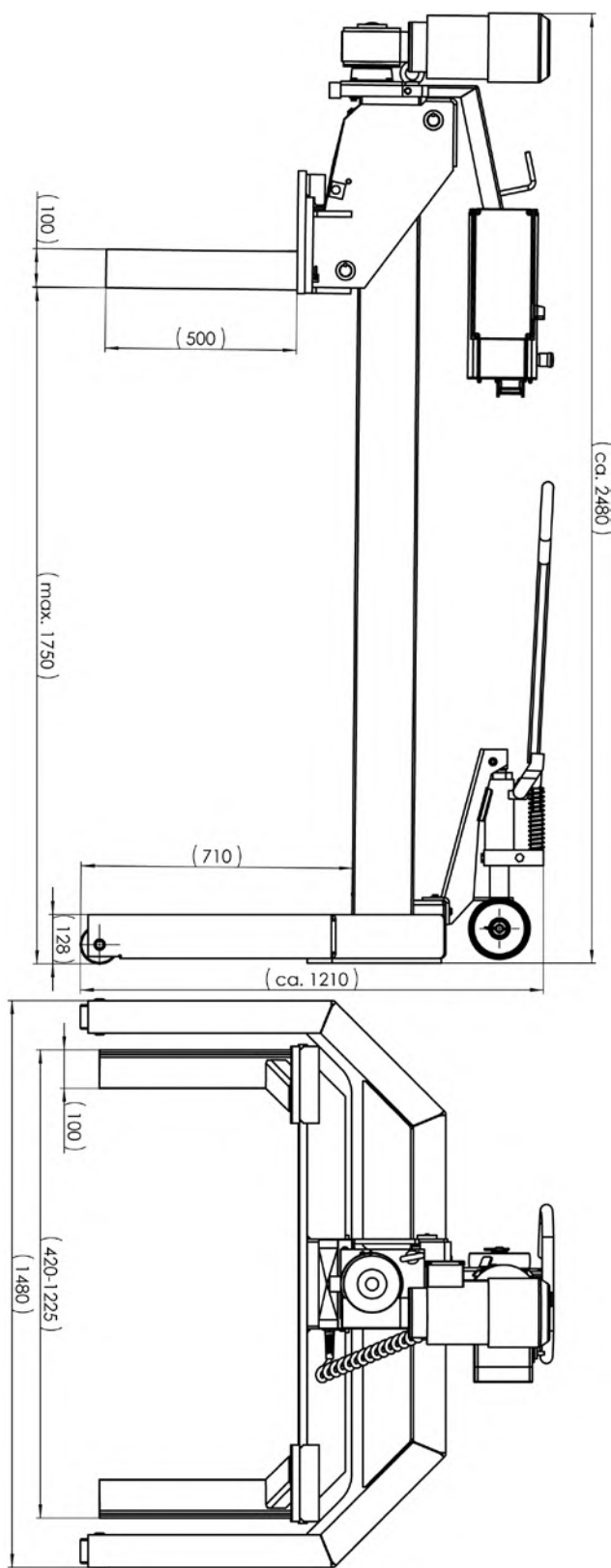


The properties indicated apply to lifts running at operating temperature. Specifications are subject to change without notice.



RGE

RGE GPGU



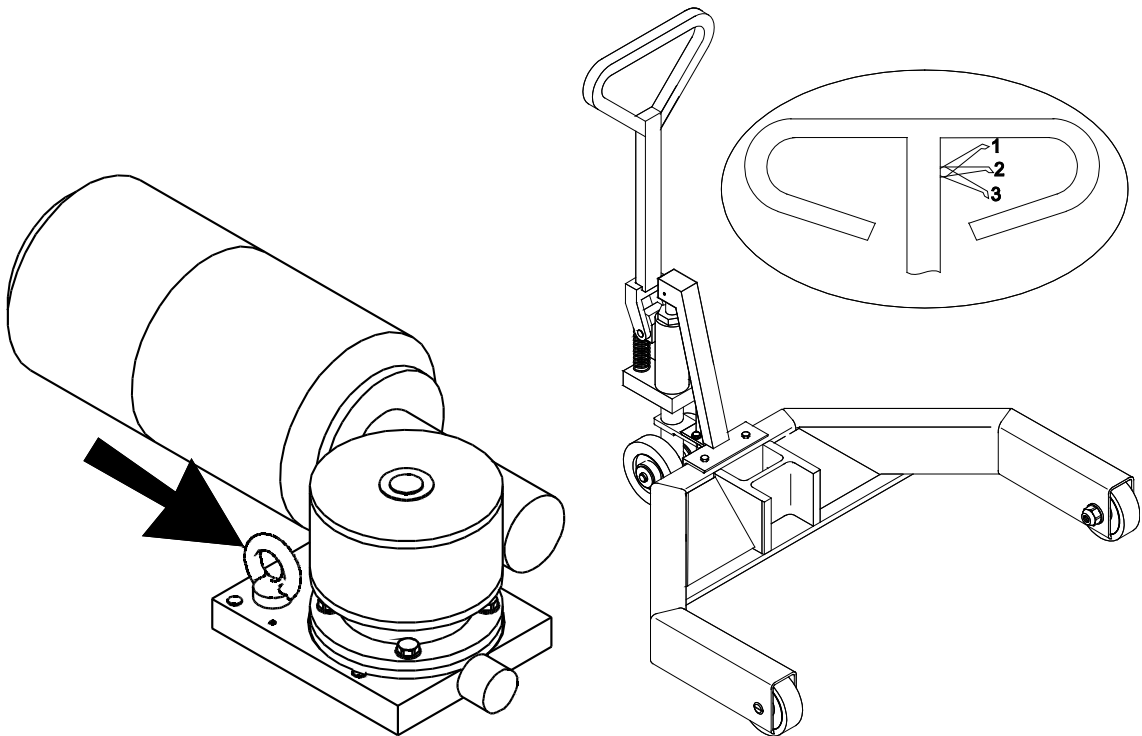
RGE T

2.4 Sample Nameplate



3 Operation

3.1 Handling / Moving the Columns



Screw a lifting-eye bolt M16 into the tap hole on the motor plate of the column. Insert a chain or strap through the ring and lift the column using a hoist or forklift.

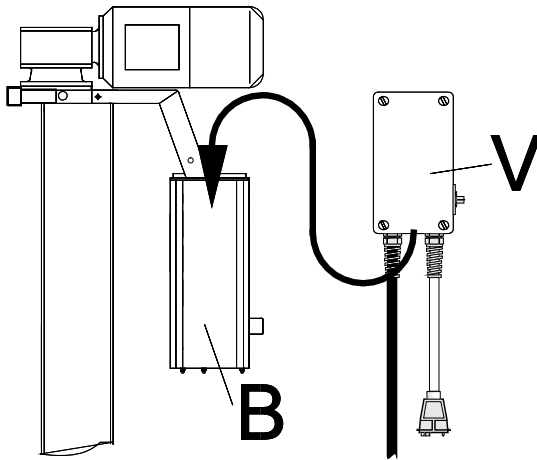
Close hydraulic valve by putting valve lever in position 3.

Pump with handle to raise the moving gear. Move column to desired position.

To lower the moving gear, open the hydraulic valve by putting the valve lever in position 1. The column is ready for operation.

Position 2 is the neutral position.

3.2 Installing the Power Supply Unit



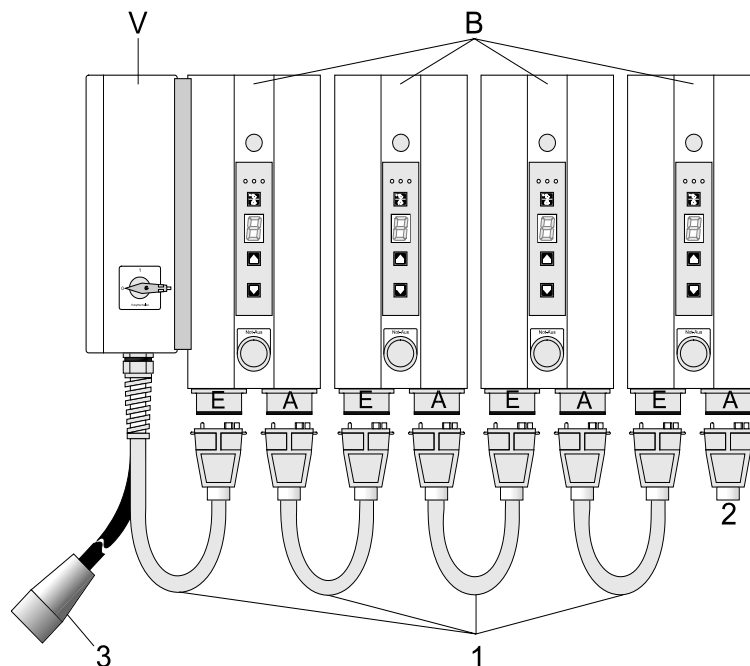
Attach the power supply unit (V) to the left-hand sidewall of the control unit (B), as seen from the controls, to ensure easy accessibility of the main switch.

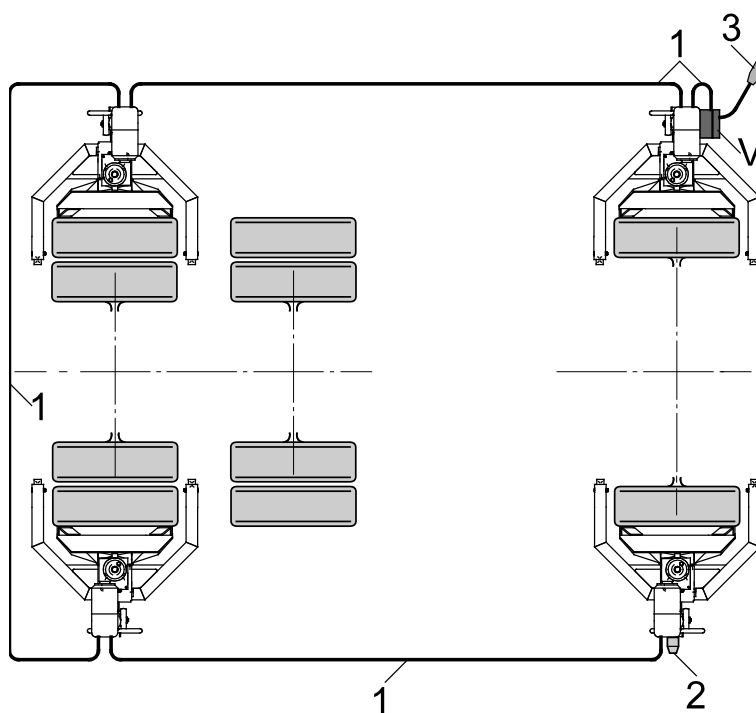
3.3 Lift Positioning

Connection Diagram

- 1 Connecting Cable
- 2 Dummy Plug
- 3 Mains Plug

- B Control Unit
- V Power Supply Unit
- E Input Terminal
- A Output Terminal





- Use the lift on a hard, level surface only, preferably concrete.
- Apply the parking brake after positioning the vehicle.
- Push the support forks completely under the wheels/lift points of the vehicle.
- Attach the power supply unit (V) to the control unit (B) of the column closest to the mains socket.
- Interconnect the columns using connecting cables (1) between input terminals (E) and output terminals (A). Connect a dummy plug or the remote control (2) to the output terminal of the last column.



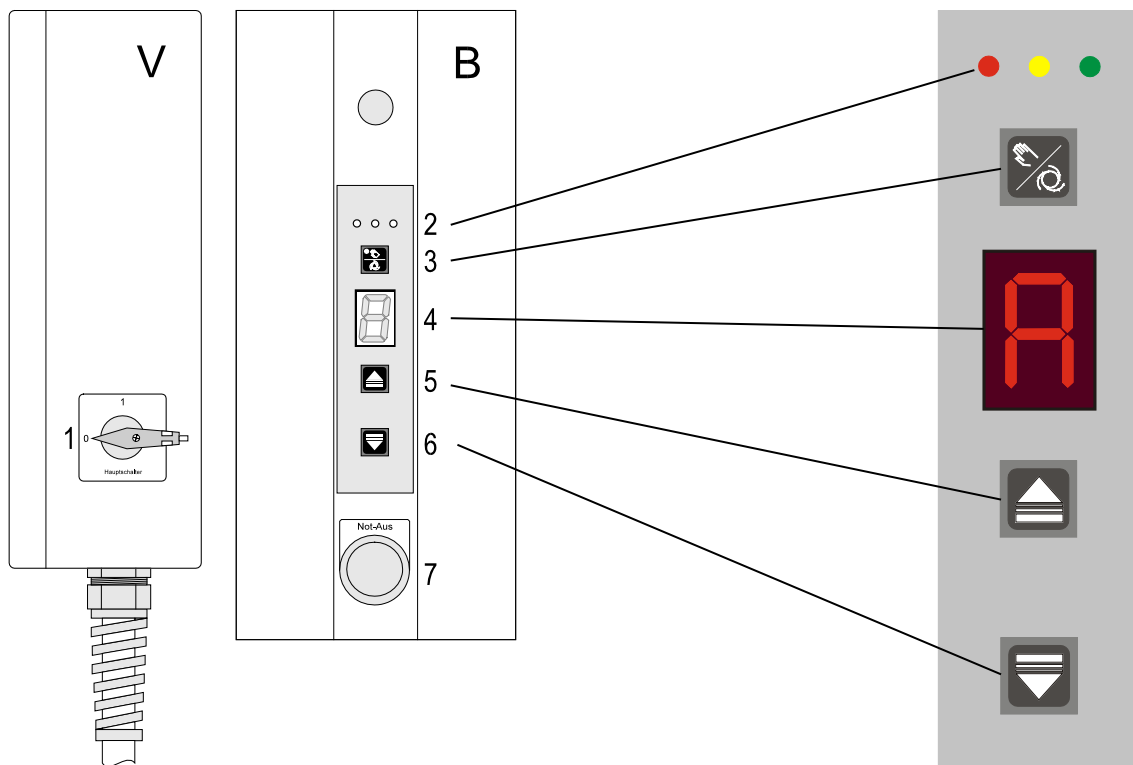
Do not drive over or pinch electrical cables.



Secure the connecting cable plugs using the safety clamps.
The plugs and terminals are coded.

- Connect the mains plug (3) of the master column with the 400 V mains socket. Recheck the electrical connections.
- Once the main switch is turned on, the lift is ready for operation.

3.4 Controls



V Power Supply Unit

B Control Unit

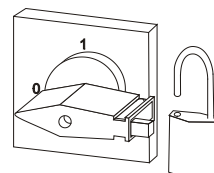
- 1 Main Switch
- 2 LED Display
Indicates operating and error states.
- 3 Selector Button (on Control Unit)
Use this button to select between: Automatic / Single / Group mode
- 4 Seven-Segment Display (on Control Unit)
Indicates operating and error codes.
- 5 RAISE Button (on Control Unit)
Press and hold this button to raise the lift. Lift stops once button is released or upward travel stop is reached.
- 6 LOWER Button (on Control Unit)
Press and hold this button to lower the lift. Lift stops once button is released or downward travel stop is reached.
- 7 Emergency Stop Button (on Control Unit)
In case of emergency press this button to disconnect the lift from the mains supply.
Pull out the button to make the lift ready for operation.

3.5 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.



3.6 Emergency Stop

In case of emergency push the emergency stop button to stop the lift movement immediately.



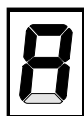
To make the lift ready for operation, unlock the emergency stop button and switch off the lift briefly using the main switch.

3.7 Operating Modes

3.7.1 Automatic Mode



Select "Automatic mode" by pressing this button on each column.



Activation of this operating mode is indicated by the letter A on the seven-segment display.



Use these buttons on the control unit to raise or lower the lift.

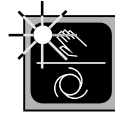
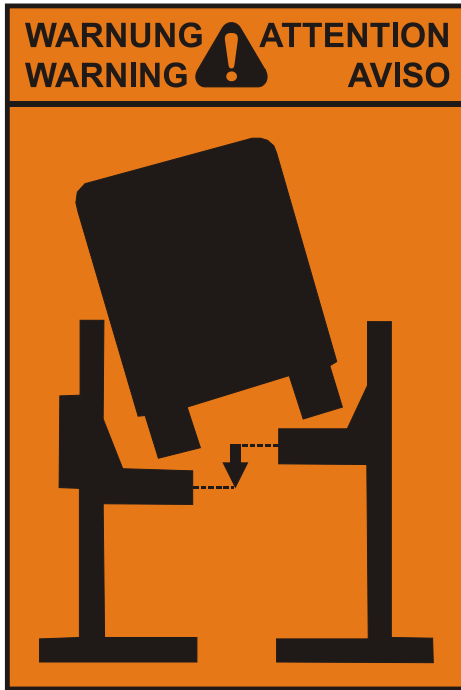


After switch-on the lift is in automatic mode.

3.7.2 Single Mode



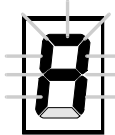
When operating the lift in Single mode, make sure the vehicle is not tilted. Otherwise the vehicle may fall off the lift!



Select "Single mode" by pressing this button on the desired column.



Activation of this operating mode is indicated by the lit LED on the selector button and the letter S on the seven-segment display.



The columns not in Single mode are temporarily inoperative. This is indicated by the letter A flashing on the seven-segment display.



or

Use these buttons to raise or lower the lift.



The single mode can also be used for several columns simultaneously



Height offsets between individual columns will be maintained after switch-over to automatic mode. The offset can be removed either

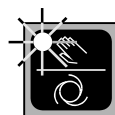
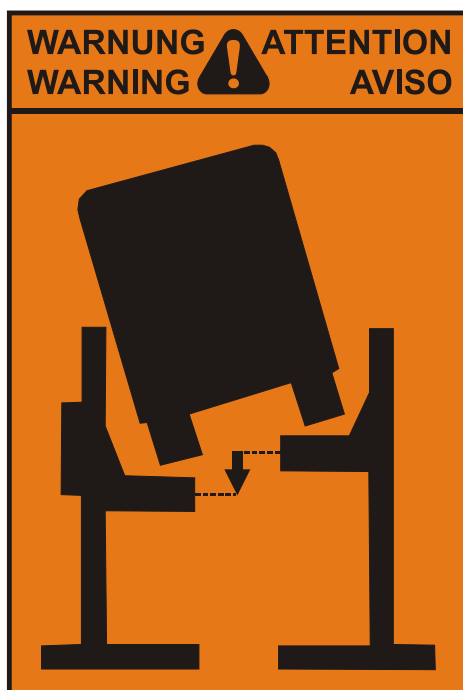
- by equalizing the carriages in single mode or
- by lowering all carriages to bottom position in automatic mode.

- Lift switches off once first carriage reaches upward travel stop.

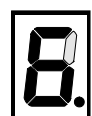
3.7.3 Group Mode



When operating the lift in Group mode, make sure the vehicle is not tilted. Otherwise the vehicle may fall off the lift!

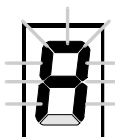


2 sec



Select "Group mode" by pressing and holding this button for approx. two seconds.

Activation of this operating mode is indicated by the lit LED on the selector button and the letter G on the seven-segment display.



The columns not in Group mode are temporarily inoperative. This is indicated by the letter A flashing on the seven-segment display.



or

Use these buttons to raise or lower the lift.



3.7.4 Cable Remote Control

A remote control (model TCNA 10-2) is optionally available.

The RAISE, LOWER and Emergency Stop buttons have the same functions as the corresponding buttons on the column control units.



Except for the emergency stop button, the remote control is not usable in single mode.

3.8 Emergency-down Function, Mechanical



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

In case of power failure or defects the lift can be lowered manually.



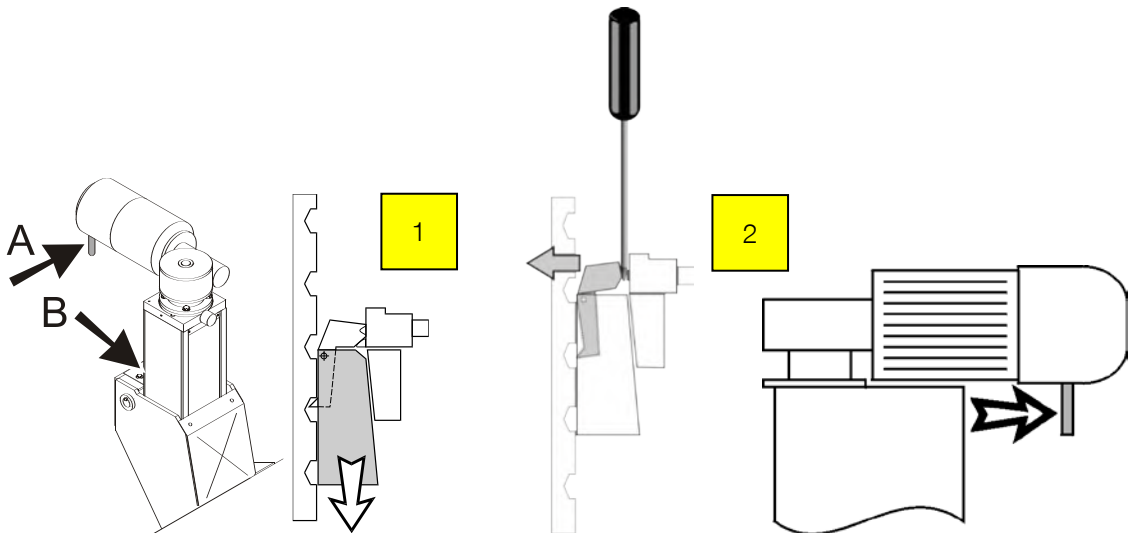
Once the locking device is in engagement, manual lowering is no longer possible.

The following components are required for manual lowering:

A Lever at brake motor

B Locking device

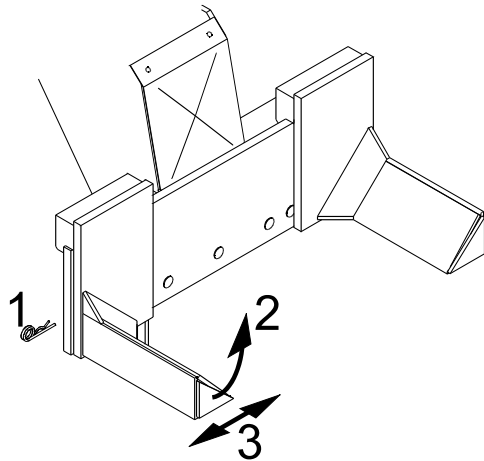
- 1 Pull or shake the safety wedge downward on each column.
- 2 First push onto the latch using a long screw driver, then additionally push the manual release lever (in arrow direction).
Intermittently lower the columns in increments of approx. 50 mm (2 in), until the lift is in bottom position.



3.9 RGE GPGU: Adjustment of Support Forks

The fork width can be adjusted to different wheel sizes.

- Remove cotter pin (1).
- Lift the front end of the fork (2) and adjust as required (3).
- Let the fork lock into place using one of the location holes and secure by inserting the cotter pin.



3.10 Operation with more than 6 Columns

Using the optionally available special control unit, the RGE lift can be operated with up to 12 columns – 2 column branches with 6 columns each.

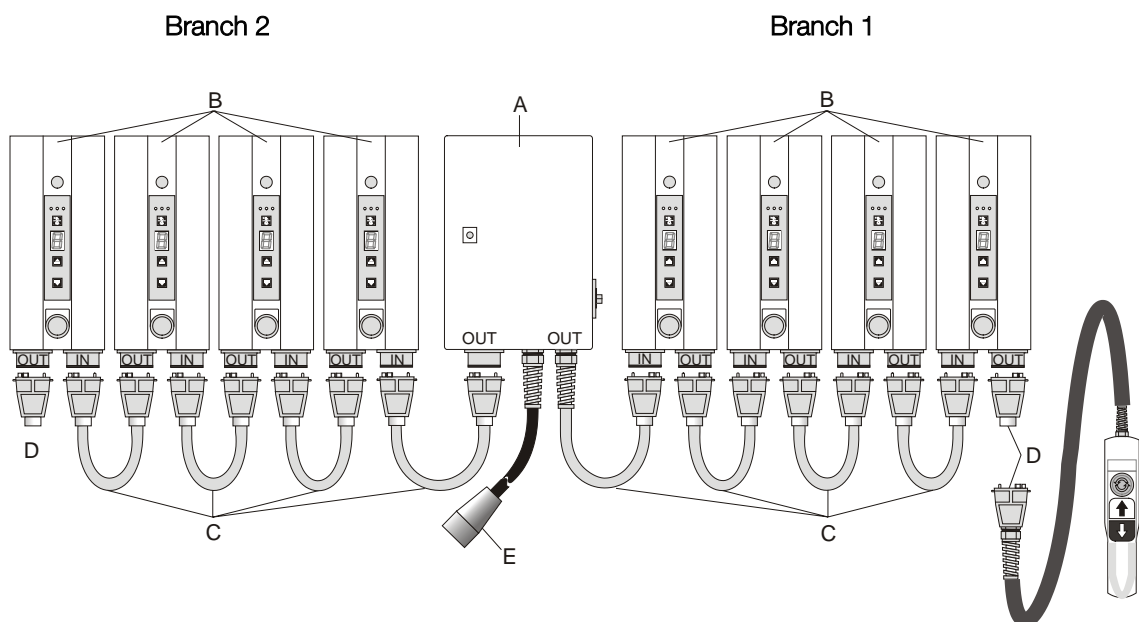
A Special control unit

C Connecting cable

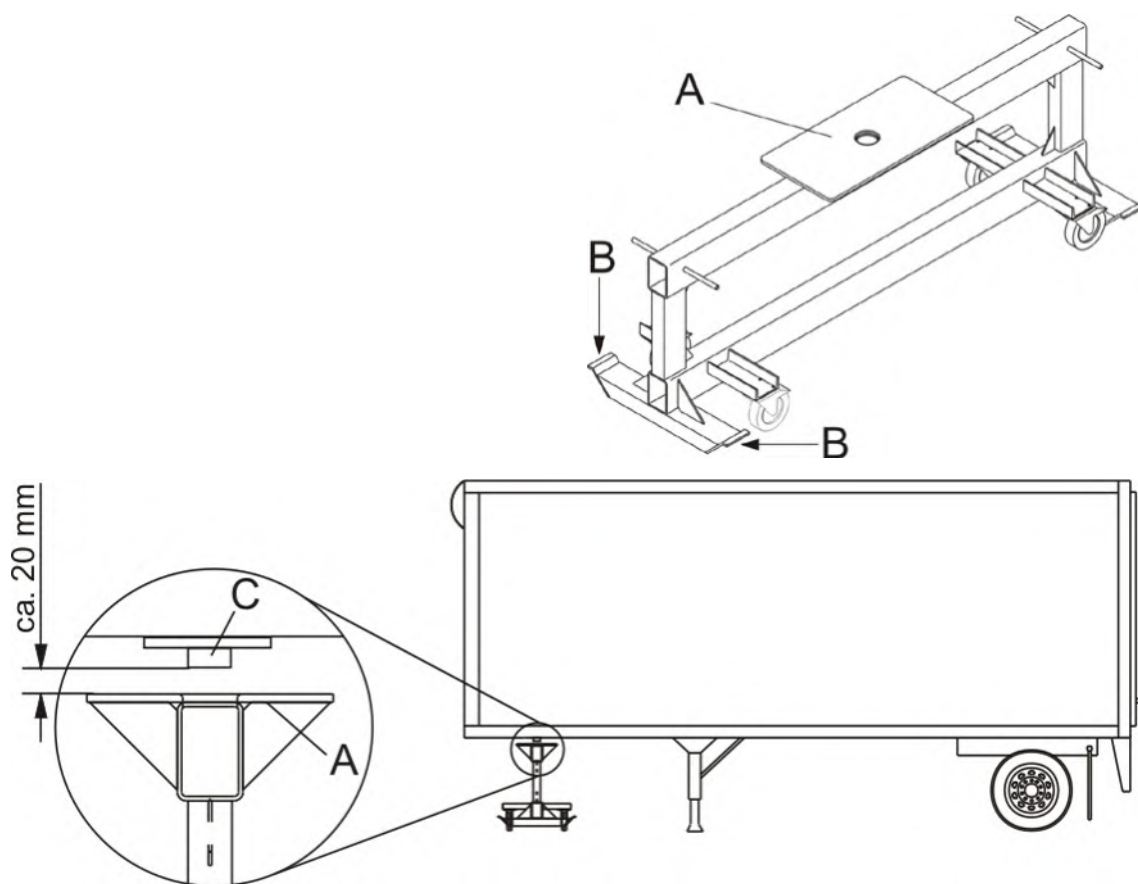
D Dummy plug or Cable remote control

B Control unit

E Power cord with Mains plug



3.11 Transverse Beam for Semitrailers



A Support plate with location hole for central pivot of semitrailer

B Lift points for support forks

- 1 Position transverse beam under central pivot (C) of semitrailer.
- 2 Lower semitrailer until central pivot is approx. 20 mm above support plate (A).
Do not load the rollers of the transverse beam with the weight of the semitrailer.
- 3 Check for alignment of central pivot and location hole. Adjust if required.
- 4 Position the columns.
- 5 Raise the semitrailer being sure the central pivot engages the location hole.

4 Maintenance



Danger! Electric shock hazard!

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

4.1 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.
-

4.2 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!

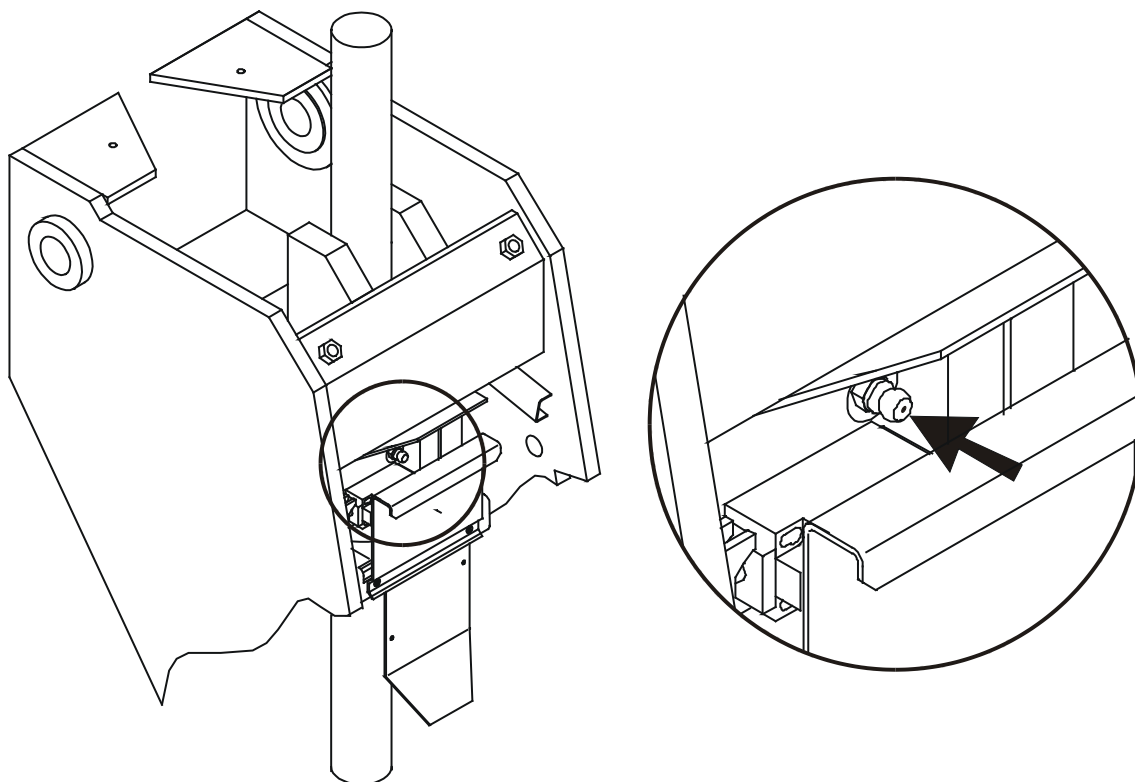
4.3 Spare Parts

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

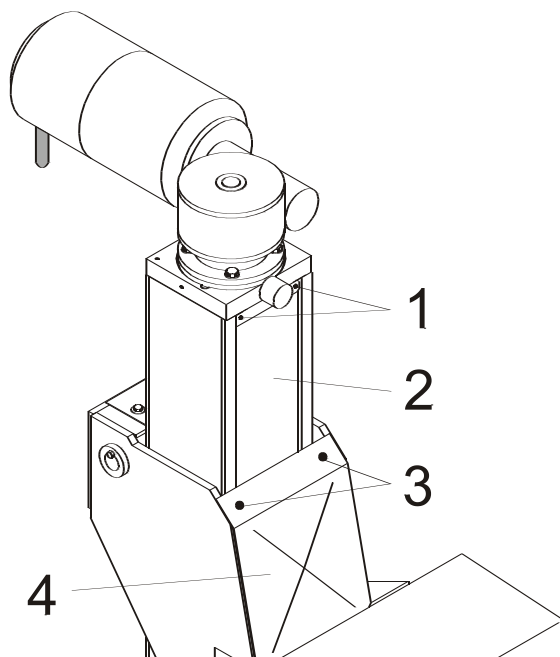
4.4 Maintenance by the Operator

4.4.1 Recirculating Ball Nut

Twice a year grease the recirculating ball nut with 4...7 strokes from a grease gun. The lubricator is located at the recirculating ball nut inside the carriage.

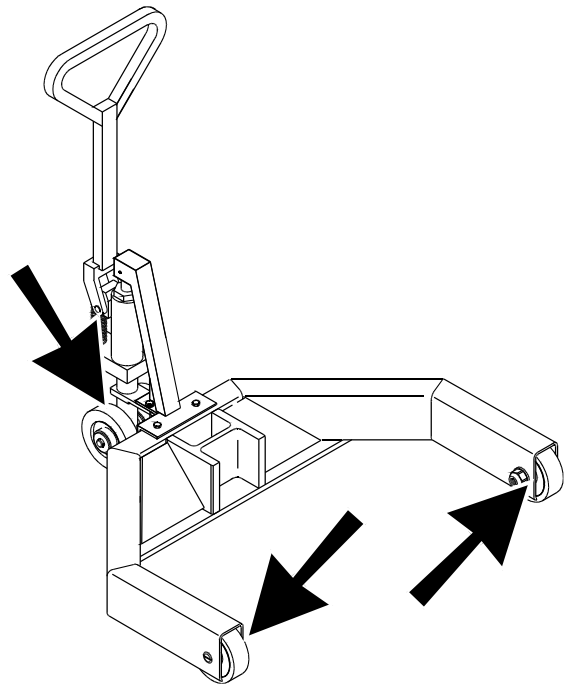


To make the lubricator accessible, remove the screws (1 and 3). Then remove cover plate (4) and fastening strip of rubber cover (2). Fold down the rubber cover.

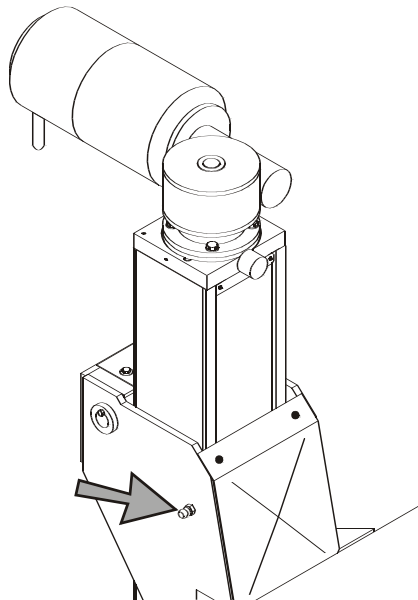


4.4.2 Moving Gear

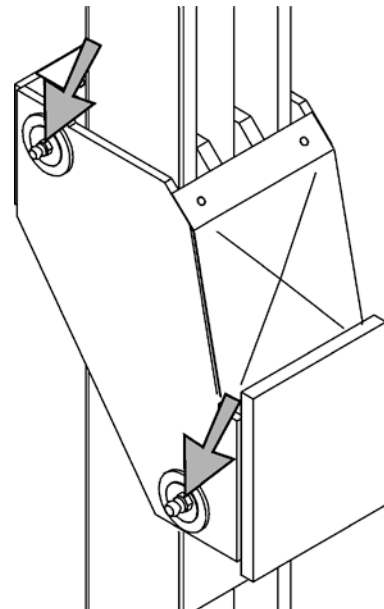
Periodically oil the rollers of the moving gear. If they are equipped with lubricators, lubricate using a grease gun.



4.4.3 Options



Recirculating ball nuts with outside lubricator (option) should be greased every six months with four to seven strokes from a grease gun.

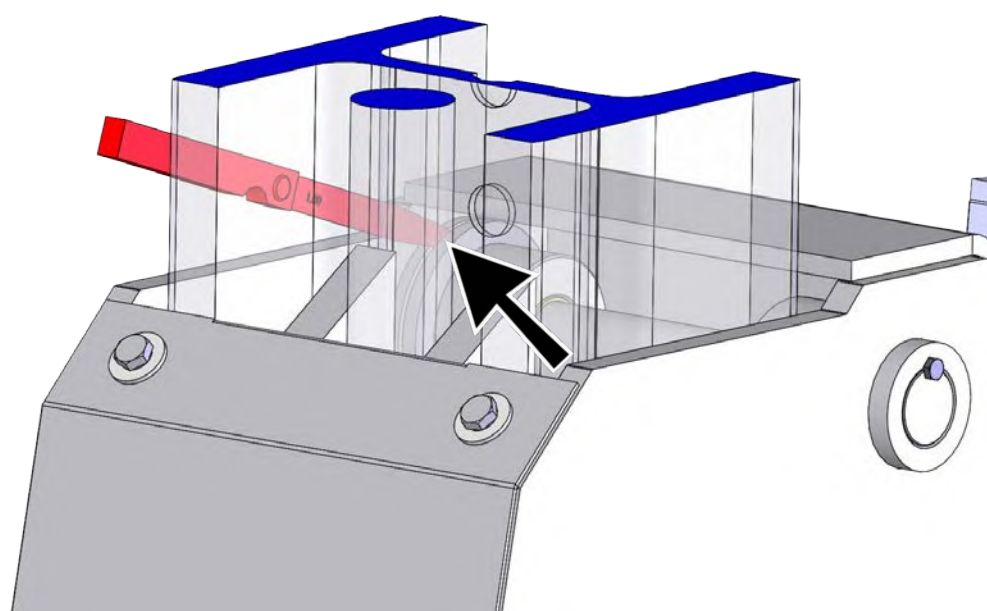
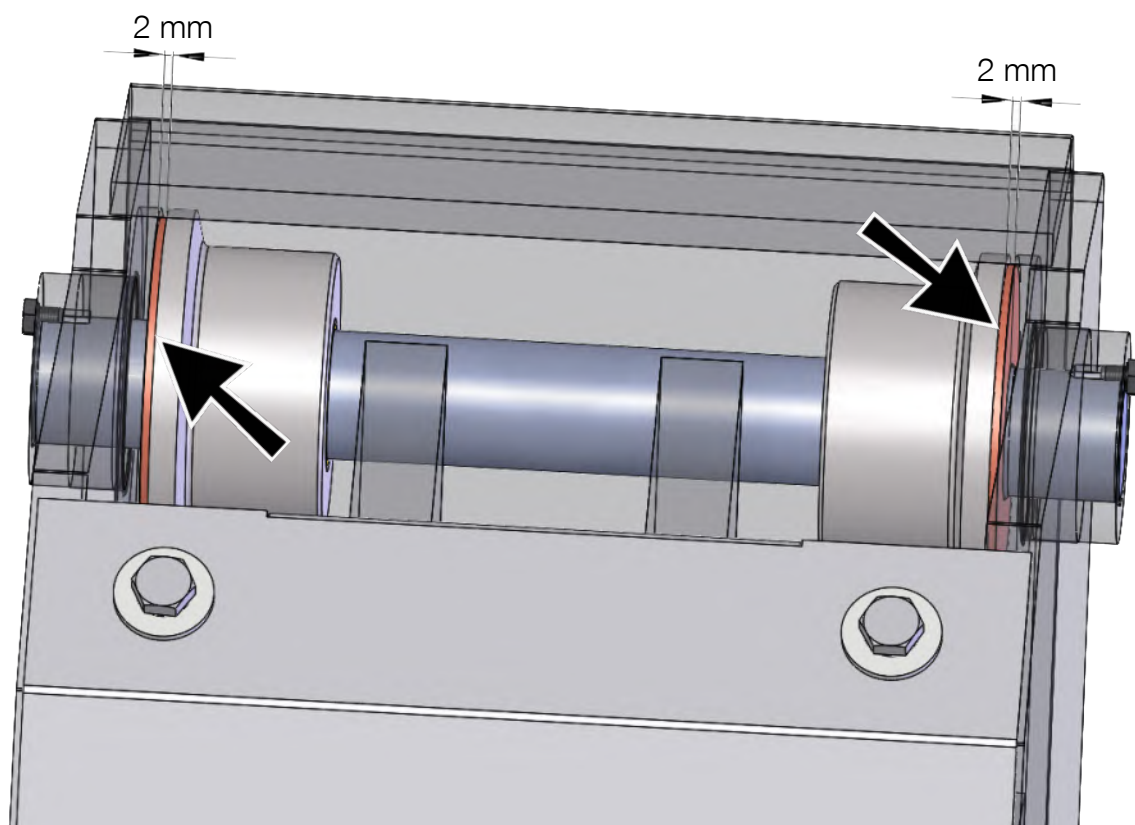


Carriage axles equipped with a lubricator (option) should be periodically greased using a grease gun.

4.4.4 Thrust Washers

Visual Inspection with Feeler Gauge

Once a month check the bronze thrust washers for wear using a feeler gauge (see illustration). New thrust washers have a thickness of 2 mm. Once a single washer shows signs of excessive wear (more than 1 mm), it must be replaced.



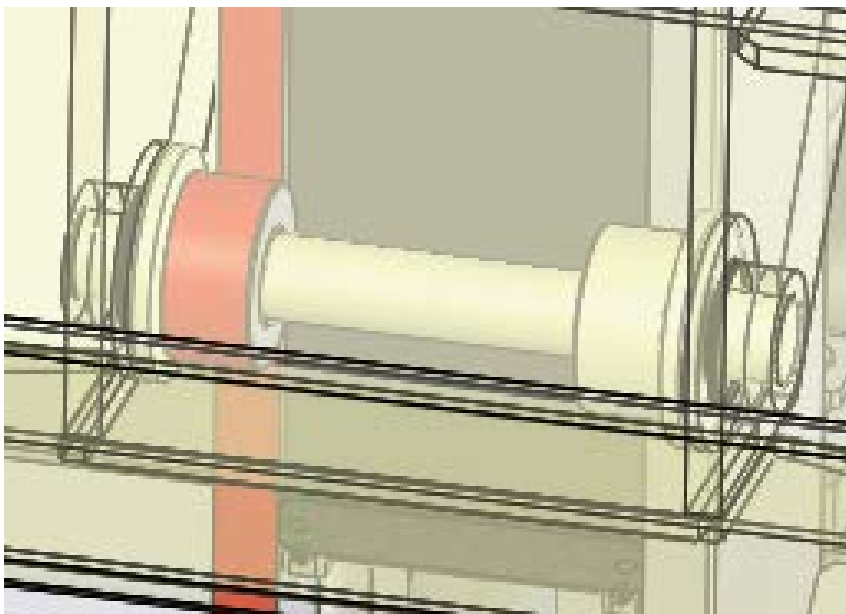
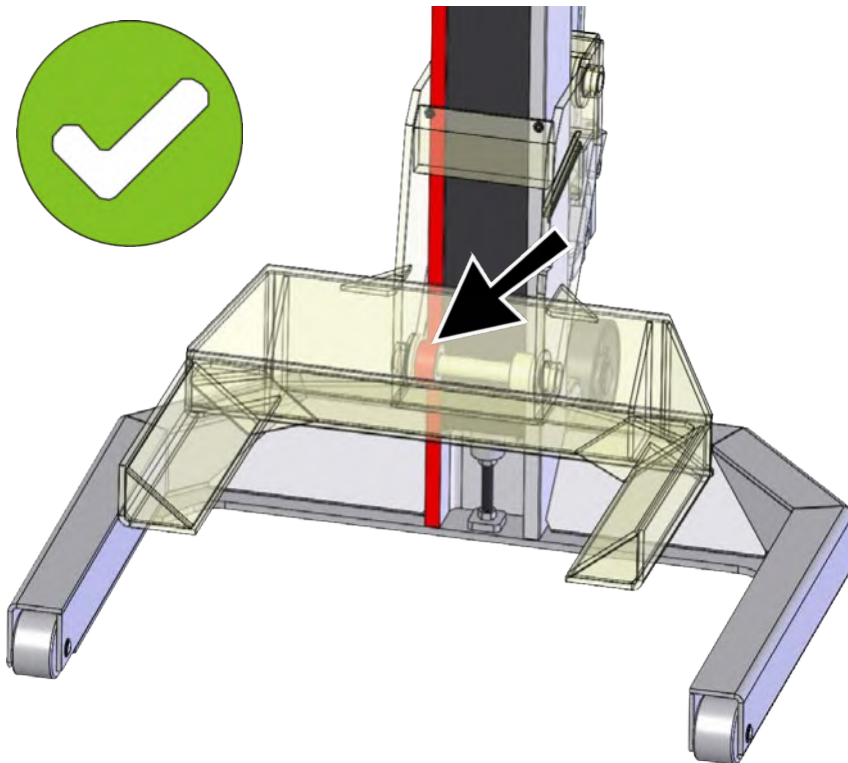
Shaking Test on Lifting Carriage

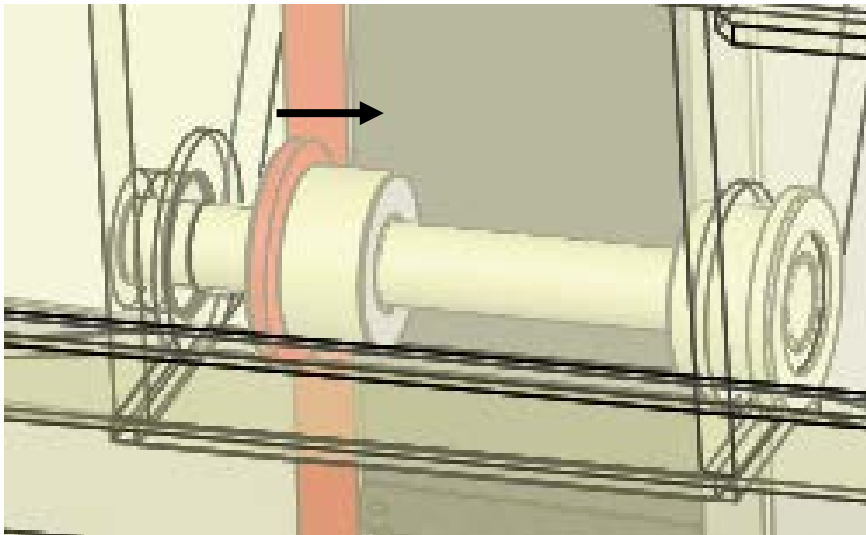
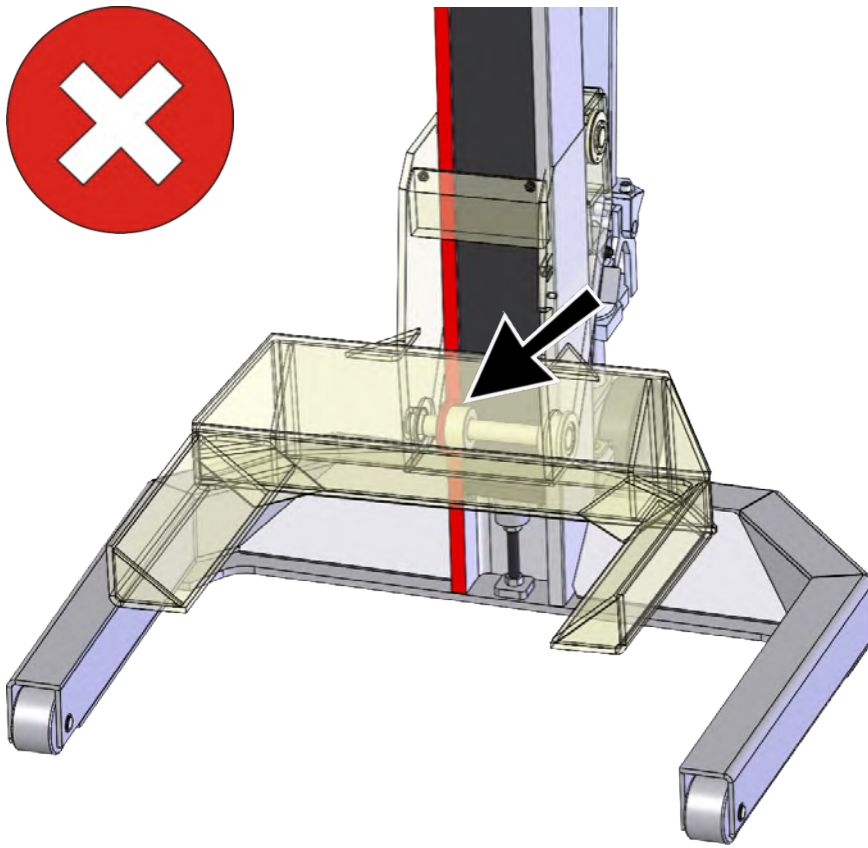
In addition to the visual inspection, perform a shaking test on the lifting carriage every three months. To do this, hold the carriage firmly by the support fork, then pull it forward making a twisting movement.



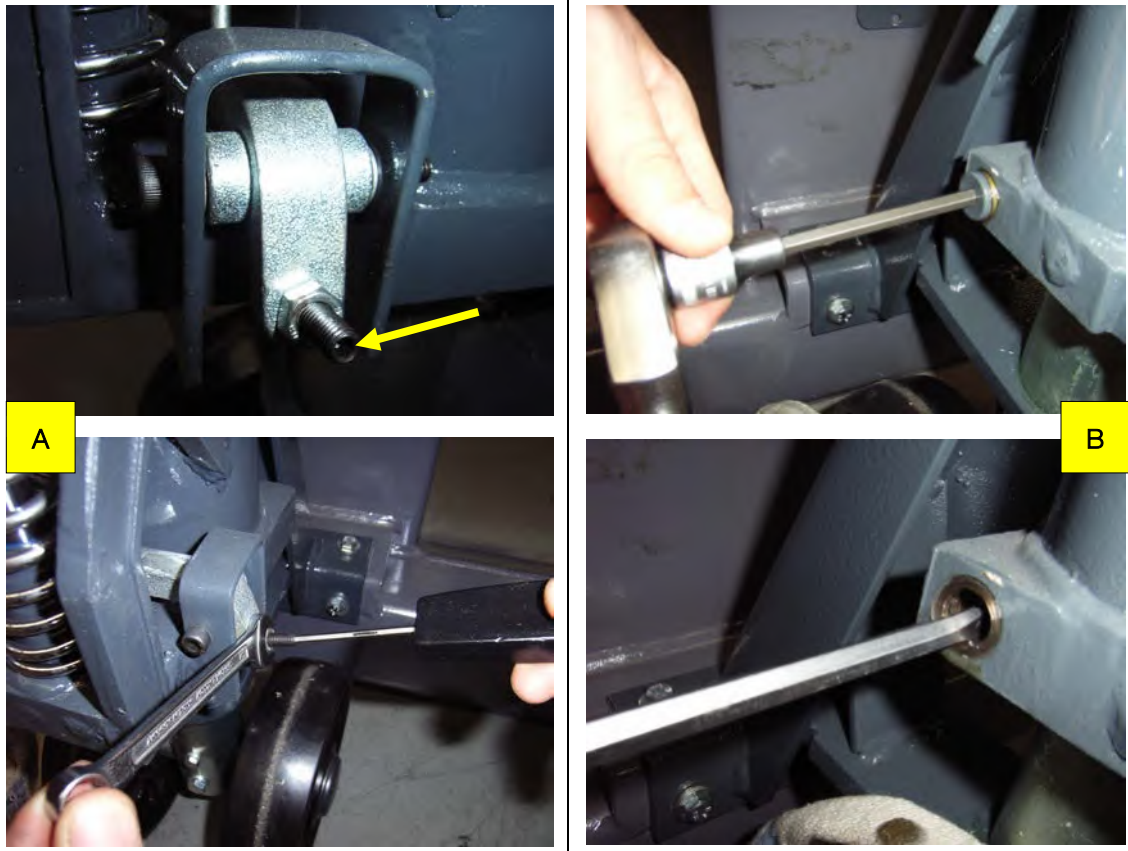
WARNING

If the guide rollers jump out of the guide track during the shaking test, the lifting column must be shut down until the thrust washers have been replaced.





4.5 Setting the Hydraulic Jack



Note that the jack must be mounted to the column when making any settings.

A: Setting the Lowering Speed

The lowering valve is located on the right-hand side of the cylinder. To set the lowering speed, adjust the threaded pin using an Allen key while holding the lock nut firmly with an open-end wrench. Check for correct setting by carefully lowering the jack.







Threaded Pin	↻ OPEN	↗ INCREASE	Lowering Speed
	↻ CLOSE	↘ REDUCE	




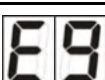

B: Setting the Responsiveness of the Automatic Lowering Function

The automatic lowering valve is located on the left-hand side of the cylinder. Remove the screw plug using an Allen key, then insert a flat-tip screwdriver to set the adjusting screw. Soak up leaking fluid with a rag. Reinstall the screw plug.

Adjusting Screw	↻ OPEN	↘ REDUCE	Responsiveness
	↻ CLOSE	↗ INCREASE	

5 Display Codes

Display Code	LED	Cause	Action
	Green	<i>Normal operation, no errors.</i> See "Operating Modes; Automatic Mode, Single Mode and Group Mode in this manual.	Normal operation.
	Yellow on 1 or several columns	<i>Uncontrolled operation.</i> Bus line failure. CAN bus without terminating resistor. CAN controller out of step or defective. Controller in sleep mode due to short-circuit of CAN lines.	Replace connecting cable. Check terminating resistors of CAN bus in dummy plug and power supply unit, contact service. Turn the main switch off and on again. If error persists, contact service. Replace connecting cable. Contact service if necessary.
	Yellow on 1 column, Green on all others	<i>Safety switch triggered.</i> Carriage has made contact with obstacle.	Switch column with error message to single mode. Raise carriage to unlock the safety wedge or remove obstacle.
	Red on 1 column	<i>Thermoswitch triggered.</i> Overheated motor. Lift stops and error message appears.	Let the motor cool down. Check thermoswitch, motor and column. Acknowledge error with selector button on control panel. Red LED will go out and the lift is ready for operation.
	Yellow on all columns	<i>Insufficient speed / Overspeed.</i> Lift stops when irregular motor speed is detected.	Release control element. The error is removed and the lift is ready for operation.
	Red on all columns	<i>Overloaded lift.</i> Maximum permissible load exceeded.	Lower lift to bottom position. Acknowledge error with selector button on control panel.

Display Code	LED	Cause	Action
	Red on all columns	<i>Proximity switch defective.</i> Proximity switch defective due to short-circuit or broken wire.	Proximity switch must be replaced, contact service. Acknowledge error with selector button on control panel.
	Red on all columns	<i>Height difference between columns.</i> Maximum permissible height difference exceeded.	Turn the main switch off and on again. Zeroize the lift by lowering each column to bottom position in single mode. If error persists, contact service.
	Red on all columns	<i>CAN bus error.</i> CAN bus connection was briefly interrupted.	Turn the main switch off and on again. Lower lift to bottom position. Red LED will go out and the lift is ready for operation.
	Red on all columns Red on 1 or several columns	<i>Phase failure of supply system.</i> The lift stops and remains inoperative until power supply has been restored. <i>Phase failure of lift system.</i> Phase failure of lift system due to defective connecting cable.	Remove phase failure. Replace faulty connecting cable.
	Red on all columns	<i>Cyclic Redundancy Check error.</i> Hardware error occurred while data being read from or written to the EEPROM.	PCB must be replaced, contact service.

6 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.

7 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.

8 Disposal

If you want to dispose of the equipment, please contact your MAHA dealer or the following address, indicating equipment type, date of purchase and serial number:

MAHA Maschinenbau Haldenwang GmbH & Co. KG
Hoyen 20
87490 Haldenwang
Germany

Phone: +49 (0) 8374 585 0
Fax: +49 (0) 8374 585 500
Email: altgeraete@maha.de

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

9 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: RGE / RGE GPGU / RGE T / RGE TS
Designation: Mobile Column Lift; Rated Load Capacity per Column 5000 / 7500 kg
Directives: 2006/42/EC; 2014/30/EU
Standards: EN 1493; EN 60204-1

10 Company Information

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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.

Document

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