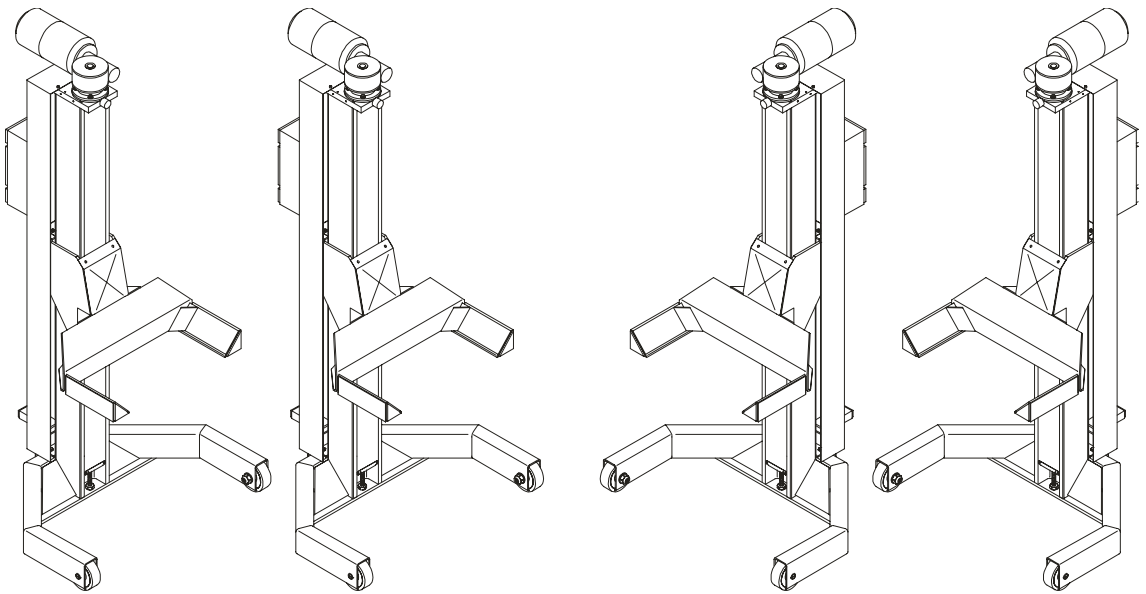


Mobile Wheel Engaging Lift

MCL 16



Operation & Maintenance Manual

EDITION

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The contents of this edition have been checked with great care. However, errors cannot be fully excluded. Please contact MAHA should you find errors of any kind.

These instructions are intended for users with previous knowledge in the field of automotive vehicle service lifts.

Subject to technical change without notice.

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1 Safety

IMPORTANT SAFETY INSTRUCTIONS

1. **Thoroughly read all decal and manual instructions before installing, operating or maintaining the lift.** They are provided to prevent personal injury and property damage. Replace any decal unreadable or missing on your lift.
2. Care must be taken as burns can occur from touching hot parts.
3. Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged – until it has been examined by a qualified serviceman.
4. To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).
5. Adequate ventilation should be provided when working on operating internal combustion engines.
6. Keep hair, loose clothing, fingers, and all parts of body away from moving parts.
7. To reduce the risk of electric shock, do not use on wet surfaces or expose to rain.
8. **ONLY** use your lift as described in this manual. **ONLY** use manufacturer's recommended attachments.
9. **ONLY** use genuine MAHA replacement parts.
10. **ALWAYS** wear safety glasses. Everyday eyeglasses only have impact resistant lenses, they are **NOT** safety glasses.
11. **DAILY** inspect your lift.
12. **ONLY** permit qualified personnel to operate, maintain or repair the lift.
13. **ONLY** authorized service personnel are allowed to commission the lift.
14. **DO NOT** allow anyone to climb on lift or stay inside vehicle during raising or lowering cycles.
15. **ALWAYS** keep lift and lift area clean and free of tools, parts, debris, grease etc.
16. **NEVER** overload your lift. The rated load capacity is indicated on the lift nameplate.
17. **ALWAYS** raise the vehicle using all adapters. **NEVER** load single adapters individually.
18. **ALWAYS** use vehicle manufacturer's recommended lift points.
19. **ONLY** have certified electricians maintain or repair the electrical equipment.
20. **CAREFULLY** observe all national and international health and safety regulations.

SAVE THESE INSTRUCTIONS

1.1 Safety Instructions



SAFETY INSTRUCTIONS

Read operating and safety manuals before using lift.

SAFETY INSTRUCTIONS

Proper maintenance and inspection is necessary for safe operation.



SAFETY INSTRUCTIONS

Do not operate a damaged lift.

1.2 Cautions



Lift to be used by trained operator only.



Authorized personnel only in lift area.



When moving lift, be careful to avoid tipping.



Check for overhead obstructions before raising vehicle.

1.3 Warnings



Clear area if vehicle is in danger of falling.



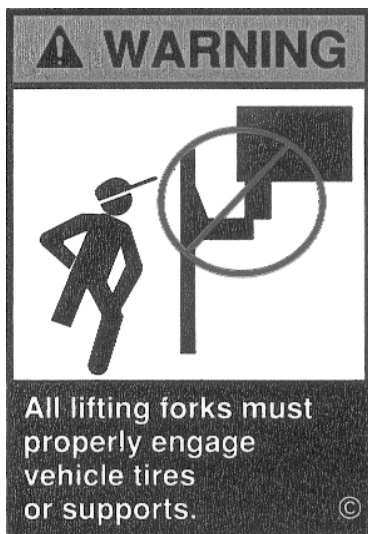
Remain clear of lift when raising or lowering vehicle.



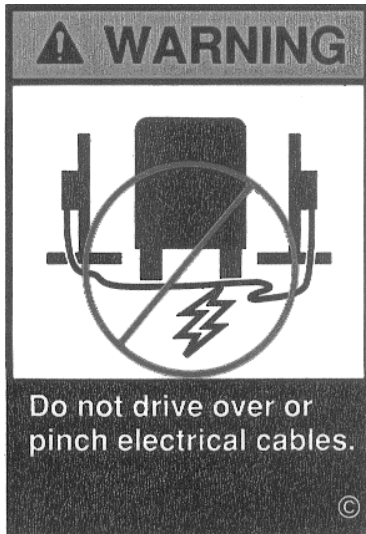
Locate lift on firm, level surface, preferably concrete.



Be sure intended lifts are moving together evenly.



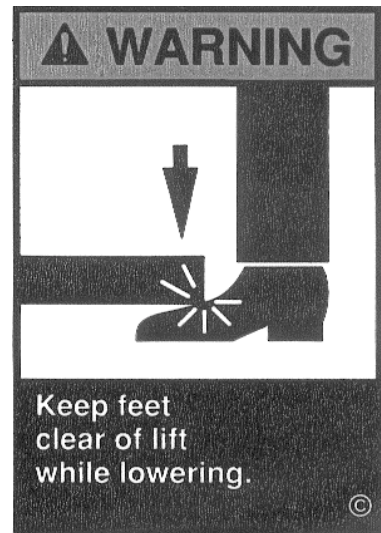
All lifting forks must properly engage vehicle tires or supports.



Do not drive over or pinch electrical cables.



Keep feet clear of lift while lowering.



1.4 Rated Load Capacity



1.5 Owner/Employer Responsibilities

1.5.1 Lift Operator Qualifications and Training

The owner/employer shall ensure that all lift operators have the appropriate qualifications and that they are trained in the safe operation of the lift by making use of the following materials: manufacturer supplied operation & maintenance manual; ALI/SM 93-1, ALI Lifting It Right safety manual; ALI/ST 90 Safety Tips card; ANSI/ALI ALOIM-1994, American National Standard for Automotive Lifts – Safety Requirements for Operation, Inspection and Maintenance; ALI/WL series, ALI Uniform Warning Label Decals/Placards; and, if required, ALI/LP-Guide, Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts.

Operator training shall be appropriately documented in accordance with ANSI/ALI ALOIM-1994.

1.5.2 Display of Information Materials

The owner/employer shall display the following information materials in a conspicuous location in the lift area: manufacturer supplied operation & maintenance manual; ALI/SM 93-1, ALI Lifting It Right safety manual; ALI/ST 90 Safety Tips card; ANSI/ALI ALOIM-1994, American National Standard for Automotive Lifts – Safety Requirements for Operation, Inspection and Maintenance; ALI/WL series, ALI Uniform Warning Label Decals/Placards; and, if required, ALI/LP-Guide, Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts and ANSI/SAE J2184-OCT92, Vehicle Lift Points for Service Garage Lifting.

1.5.3 Periodic Inspection

The owner/employer shall establish a periodic inspection procedure in accordance with the lift manufacturer's recommendations or ANSI/ALI ALOIM-1994.

The owner/employer shall ensure that all lift inspectors have the appropriate qualifications and that they are trained in the inspection of the lift.

Periodic inspections shall be appropriately documented in accordance with the manufacturer's recommendations or ANSI/ALI ALOIM-1994.

1.5.4 Periodic Preventive Maintenance

The owner/employer shall establish a periodic preventive maintenance procedure in accordance with the lift manufacturer's recommendations or ANSI/ALI ALOIM-1994.

The owner/employer shall ensure that all preventive maintenance personnel have the appropriate qualifications and that they are trained in the preventive maintenance of the lift.

Periodic preventive maintenance shall be appropriately documented in accordance with the manufacturer's recommendations or ANSI/ALI ALOIM-1994.

1.5.5 Repair Maintenance

The owner/employer shall perform repair maintenance procedures whenever considered necessary by lift operator, lift inspector or preventive maintenance personnel. Repair maintenance shall be performed in accordance with the lift manufacturer's recommendations or ANSI/ALI ALOIM-1994.

The owner/employer shall ensure that all repair maintenance personnel have the appropriate qualifications and that they are trained in the repair maintenance of the lift.

Repair maintenance shall be appropriately documented in accordance with the manufacturer's recommendations or ANSI/ALI ALOIM-1994.

The owner/employer shall provide appropriate lockout/tagout means for all energy sources in accordance with ANSI Z 244.1-1982 (R 1993), Safety Requirements for the Lockout/Tagout of Energy Sources. This shall be done before any repair work is performed.

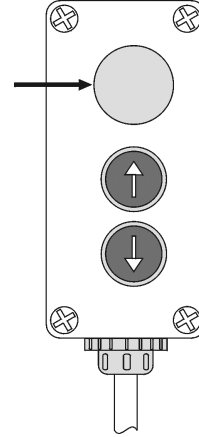
1.5.6 Modifications

The owner shall not modify or reconstruct any lift without the manufacturer's express written consent.

1.6 Safety Features

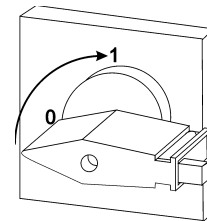
1.6.1 Emergency Stop

Serves to interrupt the power supply to the system.

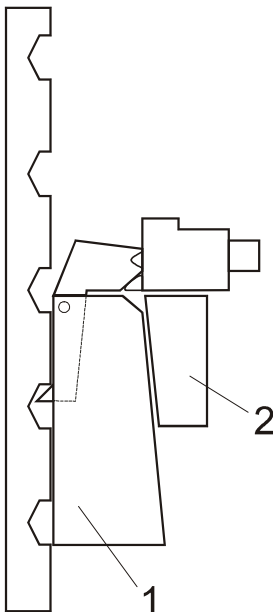


1.6.2 Main Switch

Serves to switch the lift on and off and also as emergency stop.



1.6.3 Safety Wedge



The safety wedge serves to prevent inadvertent lowering motions of the lift caused by gear, load nut or screw pillar fracture. The carriage is blocked by safety wedge (1) and counterwedge (2).

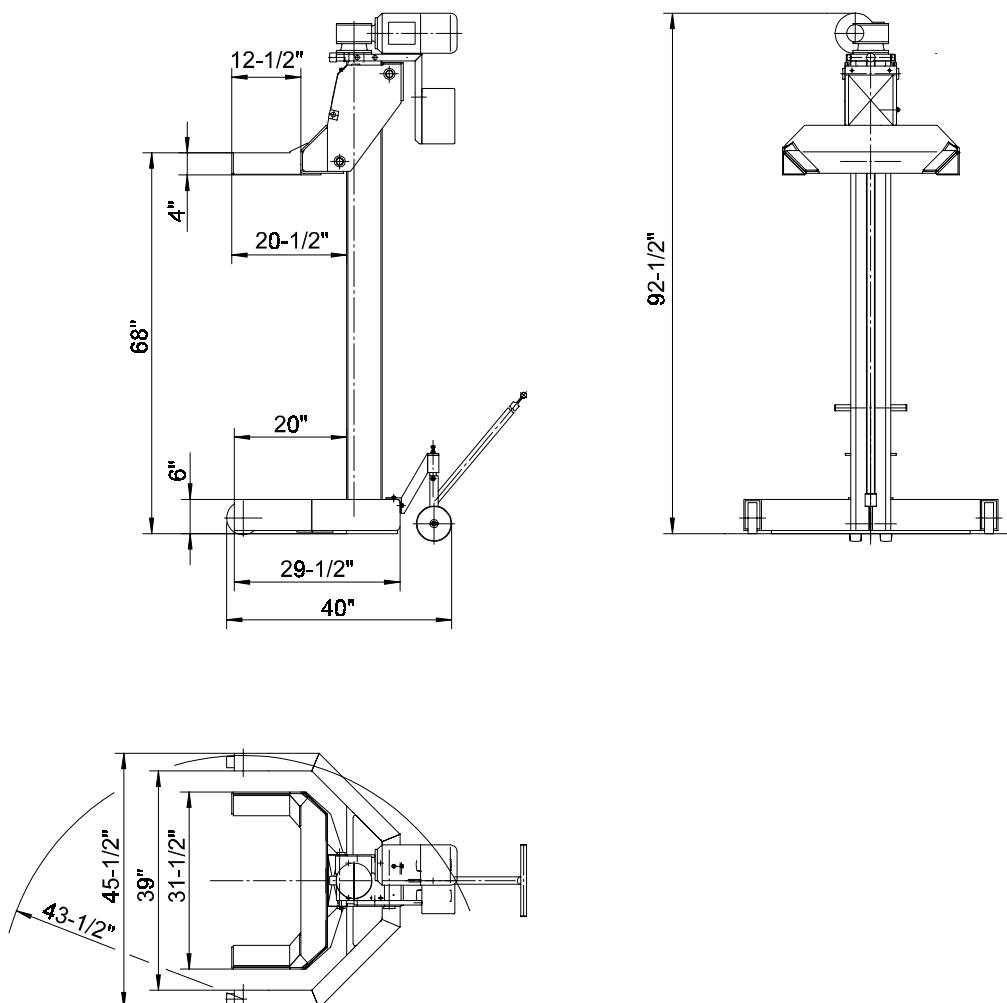
1.6.4 Braking Motor

The motor is equipped with a.c. spring pressure brakes. Once the motors are switched off, the brakes prevent any further lift movements.

2 Specifications

Rated load capacity (per column)	16000 lbs (7200 kg)
Height overall	7' 8-1/2" (2350 mm)
Lifting rise	5' 8" (1720 mm)
Raising/lowering time	approx. 105 s
Supply voltage	3 phase 220 V / 3 phase 480 V
Control voltage	230 V / 110 V / 24 V
Amperage	see table below
Fuse protection (per column)	4 amp
Motor power	2 hp (1.5 kW)
System of protection	IP55
Tire size	8.25 to 12.00-20/12 R 22.5
Dead weight (per column)	approx. 900 lbs (400 kg)

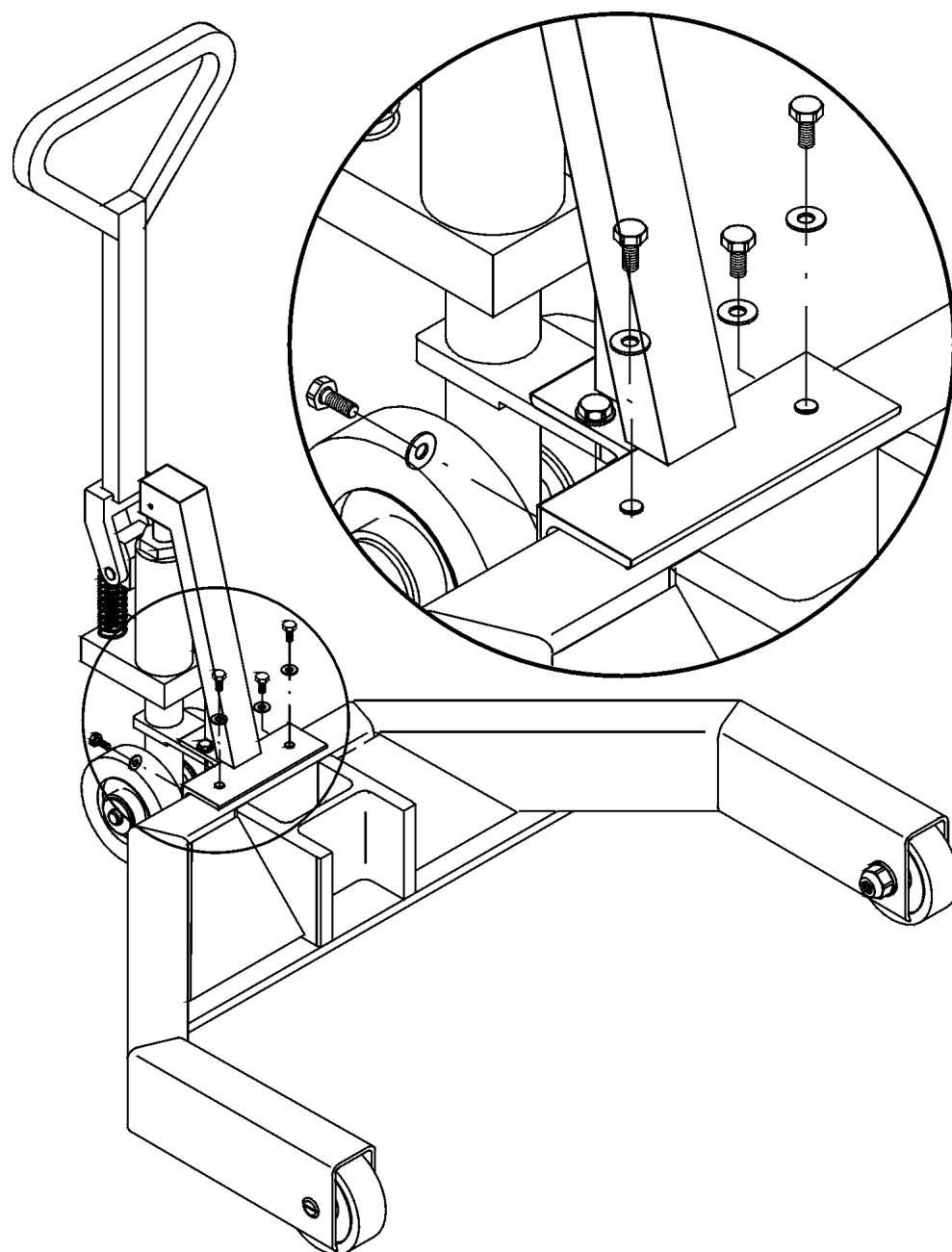
Recommended minimum clearance from lift system including vehicle to nearest obstruction/wall is five (5) ft. Ensure adequate clearance above lift to prevent vehicle from making contact with overhead obstructions.



AMPERAGE	2 Columns	4 Columns	6 Columns
Three Phase 220V	16 amps	32 amps	
Three Phase 480V	10 amps	20 amps	30 amps

3 Installation

The lift columns are fully assembled and operative at delivery. To mount dolly to column use 4 hex head cap screws M8x20 DIN 933 and 4 washers A8.4 DIN 125.



Complete RGM 6-16 moving gear with hydraulic dolly.

3.1 Final Checkout Procedure

- ▶ Visually check the columns for shipping damage.
- ▶ Run the lift through several full cycles.
- ▶ Ensure that all controls are operating correctly.
- ▶ Ensure that carriages are synchronized during the up and down movements.

3.2 Operational Test

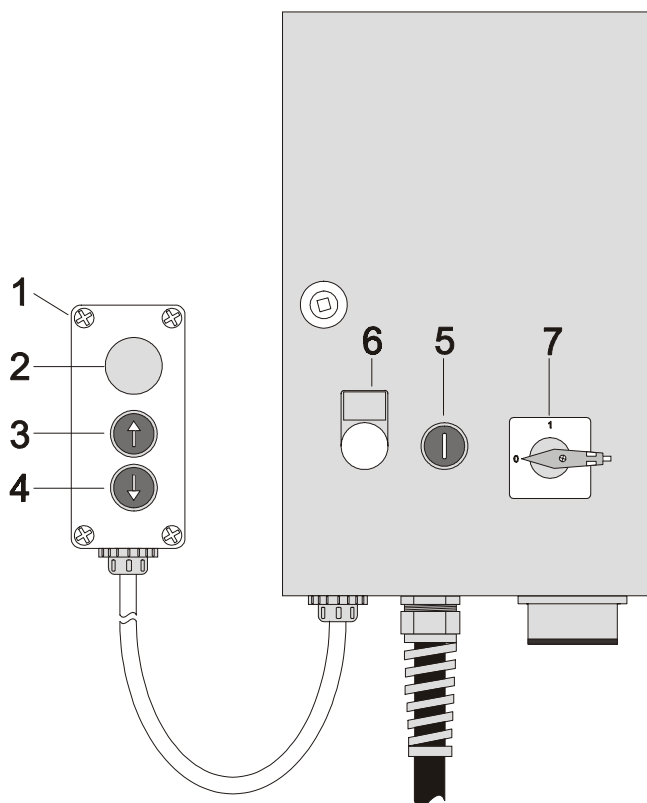
- ▶ Load the lift with a vehicle appropriate for this lift.
- ▶ Run the lift through several full cycles.
- ▶ Ensure that all controls are operating correctly.
- ▶ Ensure that carriages are synchronized during the up and down movements.

Please give all lift-specific, operation, inspection, and maintenance instructions to the owner/user/employer along with any other instructional materials furnished with the lift.

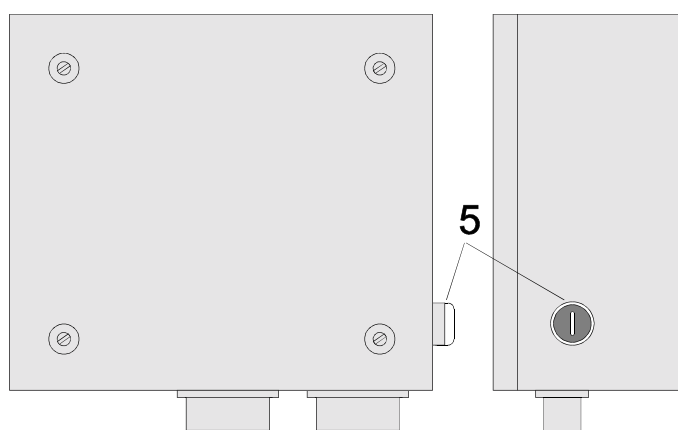
4 Operation

4.1 Controls

Control box of master column with cable remote control and power supply cable.

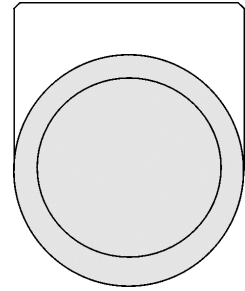


Control box of slave column, front and side views.

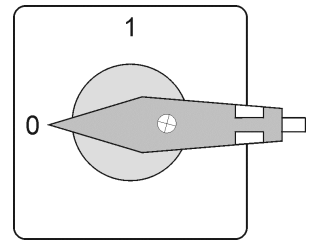


- | | |
|------------------------|------------------------------|
| 1 Cable remote control | 5 SINGLE OPERATION button |
| 2 EMERGENCY STOP | 6 Power supply control light |
| 3 RAISE button | 7 Main switch |
| 4 LOWER button | |

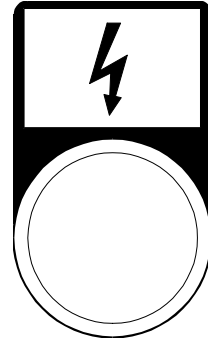
EMERGENCY STOP (mushroom button)
Press this button in case of emergency.
Clockwise turn button to continue operation.



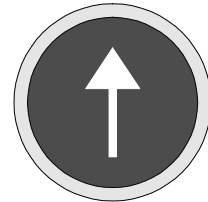
MAIN switch (rotary type)
MAIN switch is located on control box of master column.
Position 1: Lift is operative.
Position 0: Lift is disconnected from power supply. In this position the switch can be locked.



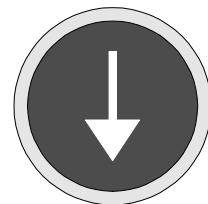
POWER (white control lamp)
Lamp lights up once main switch is turned on.



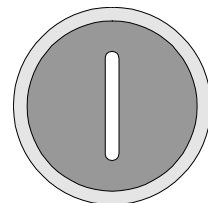
RAISE button
Press and hold button to raise lift. Release button to stop lift.



LOWER button
Press and hold button to lower lift. Release button to stop lift.



SINGLE OPERATION button
To operate individual columns, simultaneously press SINGLE OPERATION button and RAISE or LOWER button.



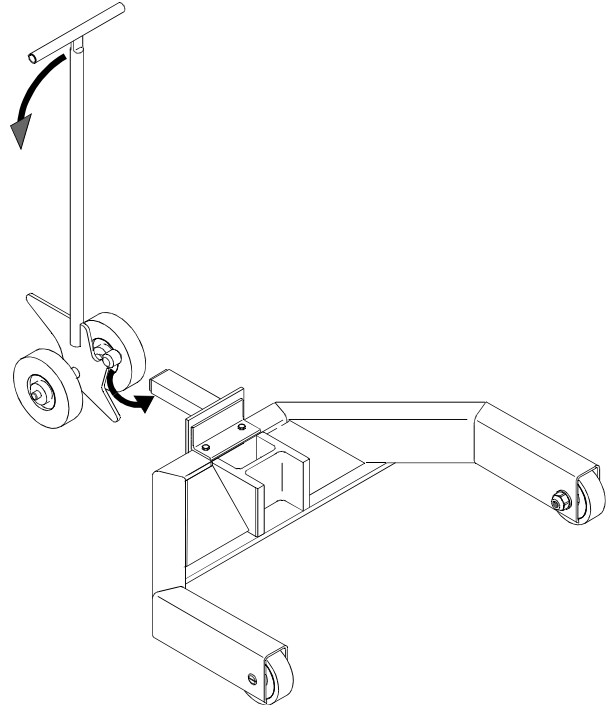
4.2 Moving the Columns

4.2.1 Moving the Columns with Movable Dolly

The standard version of the MCL 16 lift is equipped with a mechanical, movable dolly.

Insert dolly into shackle on column. Push down the pole and move column to desired position.

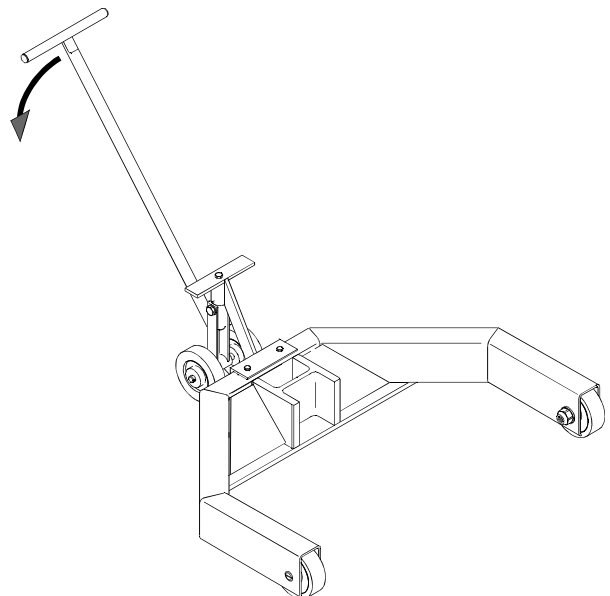
Release pole to lower the moving gear. The column is operative again.



Column, carriage, and motor removed.

4.2.2 Moving the Columns with Bolted Dolly

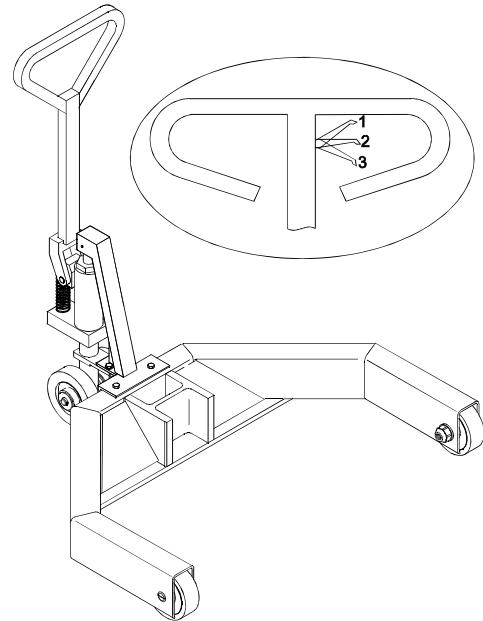
This type is bolted to each column and equipped with a hinge. Push down the pole and move column to desired position. Release pole to lower moving gear. The column is operative again.



Column, carriage, and motor removed.

4.2.3 Moving the Columns with Hydraulic Dolly

This type is equipped with a hydraulic device similar to that of an elevating truck. Close hydraulic valve by putting valve handle in position 3. Pump with pole several times. Move column to desired position. Open hydraulic valve by putting valve handle in position 1. The column is operative again. Position 2 is the neutral position.



Column, carriage, and motor removed.

CAUTION

To transport the lift over a longer distance screw a ring bolt into the thread on the column motor plate. Insert a chain or strap through the ring and transport the column using a hoist or forklift. **Do not use the carriages as lifting points when transporting the columns.**

SAFETY INSTRUCTIONS

Read operating and safety manuals before using lift.

©

SAFETY INSTRUCTIONS

Do not operate a damaged lift.

©

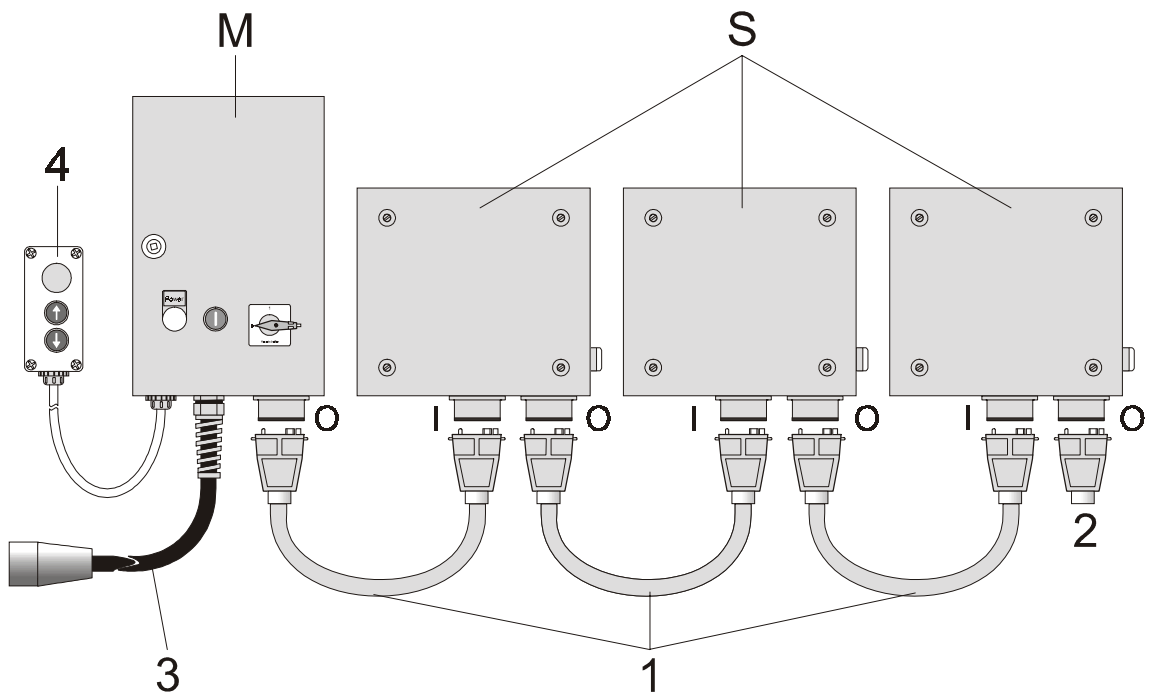
CAUTION

When moving lift, be careful to avoid tipping.

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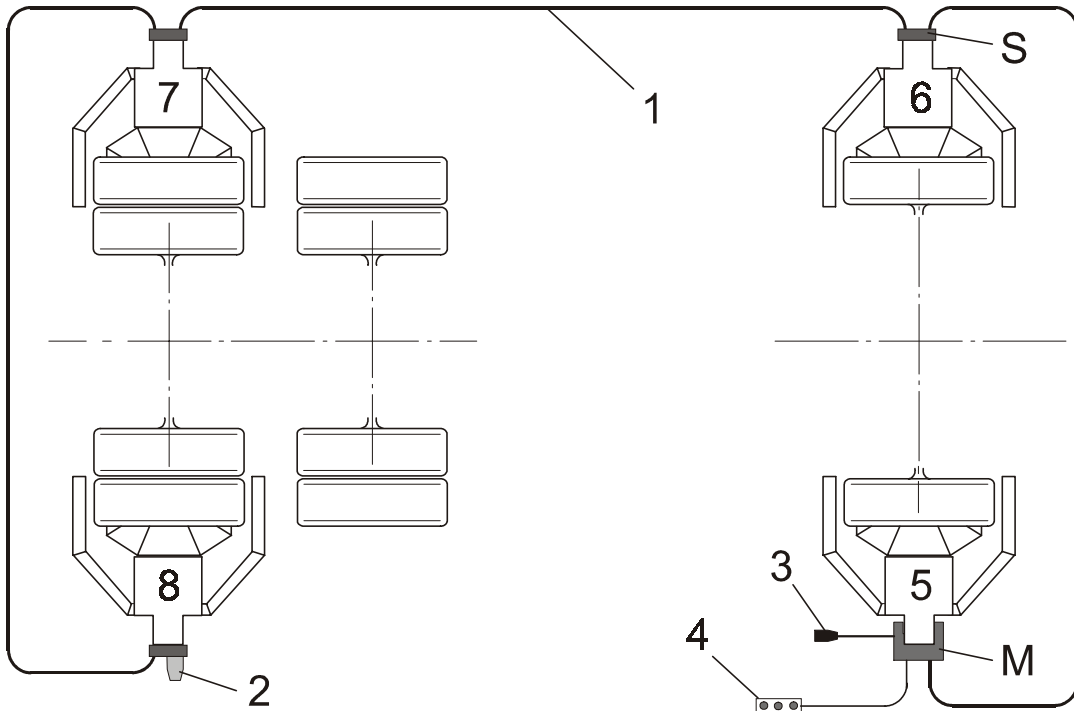
4.2.4 Positioning the Lift

- ♦ Use the lift on a hard, level surface only, preferably concrete. Be sure concrete thickness is adequate for supporting lift and vehicle.
- ♦ Apply parking brake after positioning vehicle.
- ♦ Position master column including control box (M), power supply cable (3) and cable remote control (4) in such a way that it is closest to the power point. The slave columns including control boxes (S) may be arranged in any order.
- ♦ Push forks fully under front and rear wheels of vehicle.



- ♦ Interconnect columns using connecting cables (1) between output terminals (O) and input terminals (I).





Connection diagram of the MCL 16 with 4 columns

1	Connecting cable	5	Master column
2	End plug	6/7/8	Slave columns
3	Power supply cable	M	Master control box
4	Cable remote control	S	Slave control box

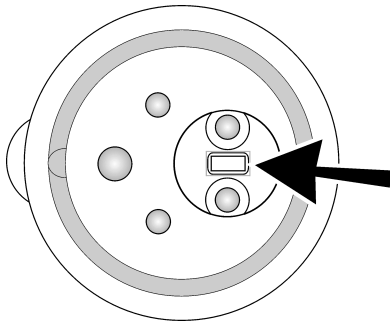
- ◆ Connect end plug (2) to output terminal (O) of last column.

SAFETY INSTRUCTIONS

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

- ◆ Connect power supply cable (3) of master column to power point and recheck lift.
- ◆ Turn on main switch on master column. The lift is operative.

4.3 Operating the Lift

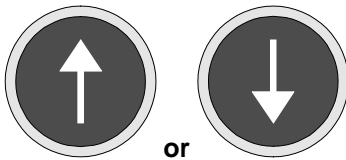


Before loading lift press RAISE button to check the lifting direction. If lift does not go up, turn phase inverter at mains plug:

- ◆ Press on phase inverter using a screwdriver to open lock (see arrow).
- ◆ Turn phase inverter 180°.

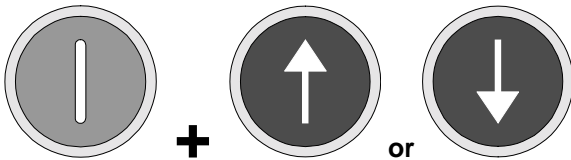


4.3.1 Joint Operation of All Columns



Press RAISE or LOWER button to raise or lower lift as required.

4.3.2 Single Operation of Individual Columns



Take the cable remote control to the desired column.

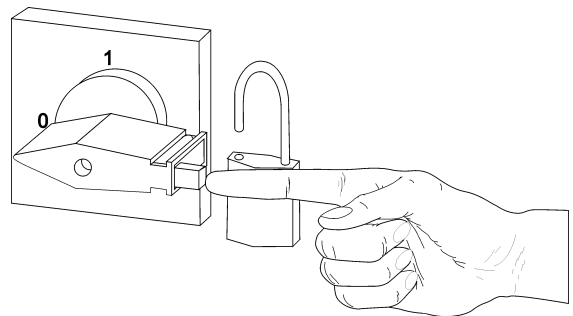
Simultaneously press the SINGLE OPERATION button on the column and the RAISE or LOWER button on the cable remote control.





4.4 Protection against Unauthorized Usage

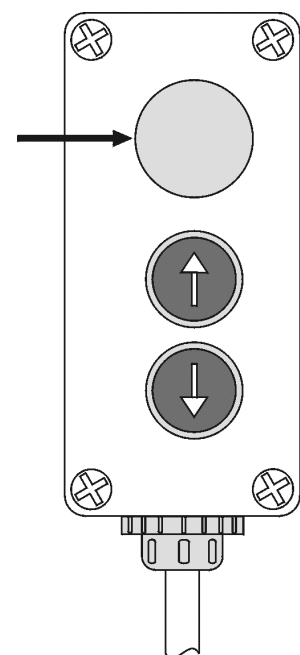
With main switch in position 0, push yellow bar and padlock the switch.



4.5 Emergency Stop

The emergency button is located on the cable remote control. In case of emergency press the button to disconnect the system.

Clockwise turn the button to reconnect lift to power supply.



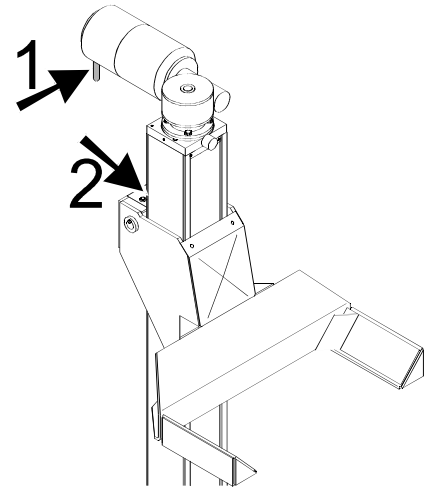
4.6 Manual Lowering



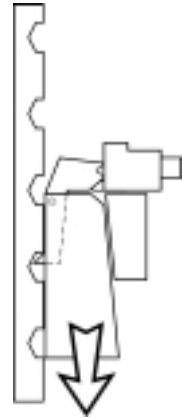
Trained personnel only!

In case of power failure or malfunction the lift can be manually lowered by means of

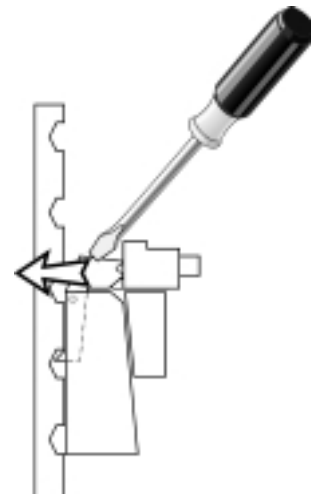
- 1 Manual release lever
- 2 Safety wedge



- ◆ Push or shake the safety wedge downward on each column.



- ◆ Push the latch inward (in direction of arrow) using a long screwdriver.
- ◆ Push the manual release lever outward (in direction of arrow).
- ◆ The carriage will lower due to the vehicle weight.

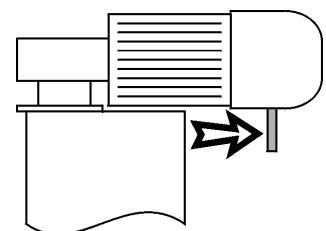


NOTE:

The latch must be pushed inward first, otherwise the safety wedge will engage and lock the carriage.



Intermittently lower each column in increments of 2 inches max. Carefully watch vehicle and lift while lowering.



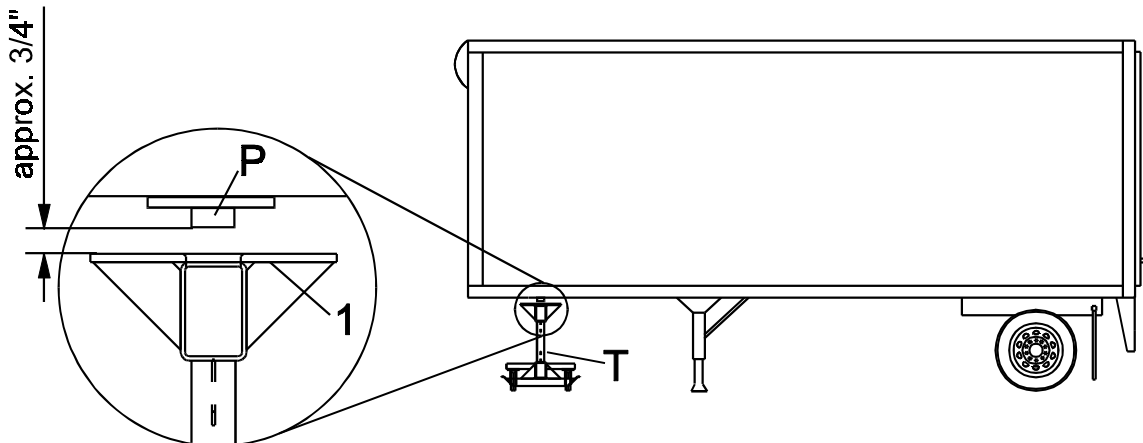
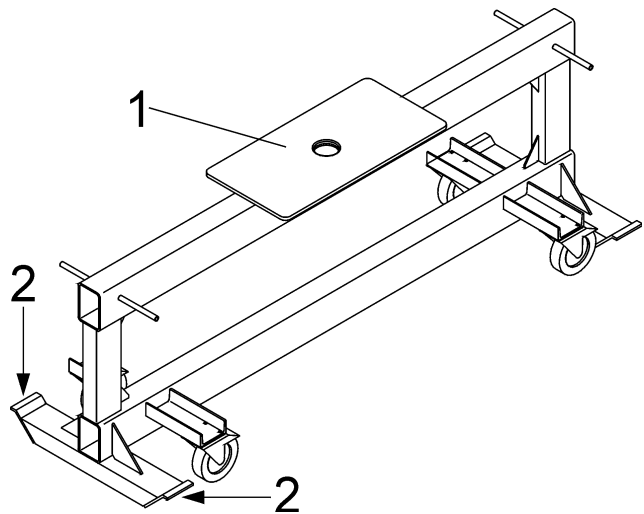
4.7 Defects / Malfunctions

WARNING

Immediately support the lift in case of malfunction or deformation of the superstructure. Turn off and lock the main switch. Contact MAHA service personnel.

4.8 Transverse Beam for Semitrailers

- 1 Support plate with location hole for central pivot of semitrailer.
- 2 Lifting points.



- ◆ Position transverse beam (T) under central pivot (P) of semitrailer.
- ◆ Lower semitrailer until central pivot is approx. 3/4" above support plate (1).
- ◆ Check for alignment of central pivot and location hole, adjust as required.
- ◆ Position the lift.
- ◆ Raise semitrailer ensuring central pivot engages location hole of support plate.

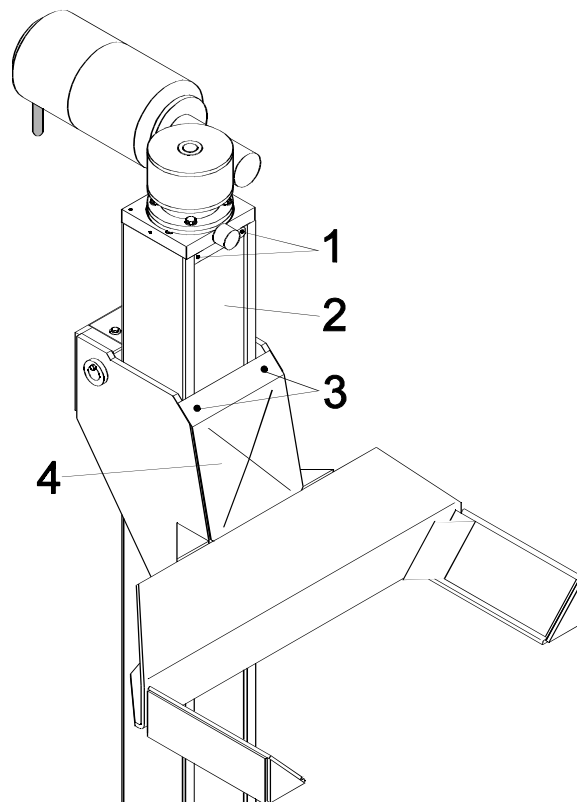
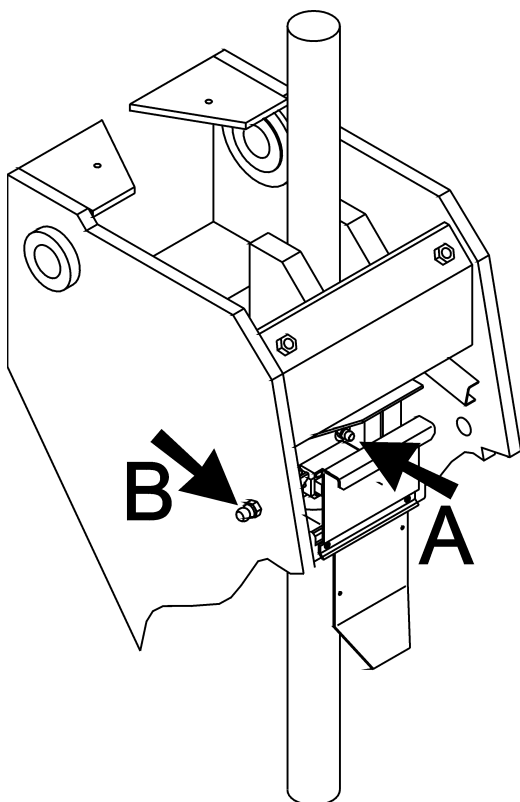
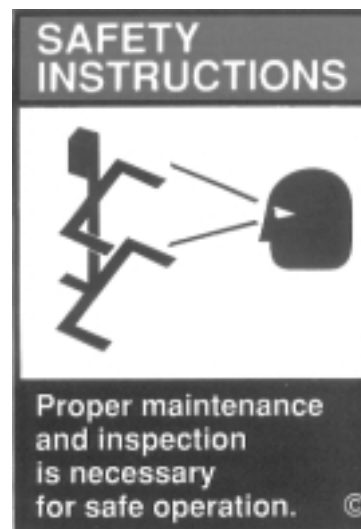
CAUTION

Never load rollers of transverse beam with weight of semitrailer.

5 Maintenance

5.1 Recirculating Ball Nut

- ◆ Grease recirculating ball nut through zerk fitting **A** at least once annually.
- ◆ Lifts equipped with zerk fitting **B** (special version) do not require removal of rubber cover and cover plate.
- ◆ Remove screws (1 and 3) to make zerk fitting **A** accessible. Then remove cover plate (4) and fastener of rubber cover (2). Fold down rubber cover.

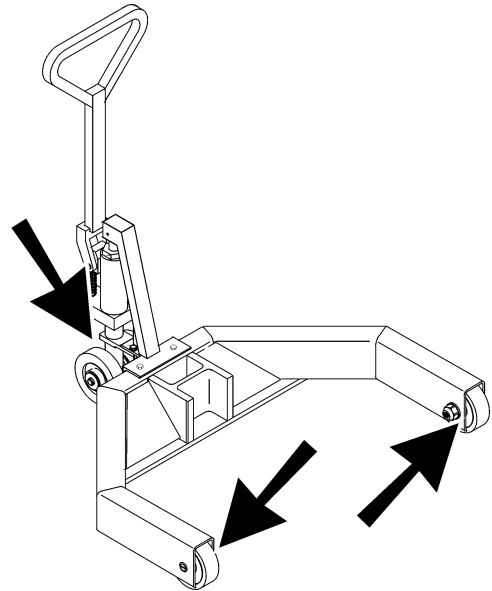


5.2 Motor

The worm gear has lifetime lubrication.

5.3 Moving Gear

Periodically lubricate wheels of moving gear.



5.4 Cleaning



Caustic cleaning fluids, salt water and brake fluid attack coatings and sealing materials. Wash these substances off the lift immediately.
Do not use high pressure or steam jet cleaners.

Periodically treat the lift with oil or wax spray.

5.5 Annual Inspection

Have your lift inspected by qualified service personnel at least once annually.