

# **CL Challenger Lifts**

## Installation, Operation & Maintenance Manual MOBILE COLUMN LIFT



## MODELS CLM16 & CLM16-W

**16,000 LBS. CAPACITY PER COLUMN**

200 Cabel Street, P.O. Box 3944 Louisville, Kentucky 40201-3944

Email: [sales@challengelifts.com](mailto:sales@challengelifts.com) Web site: [www.challengelifts.com](http://www.challengelifts.com)

**Office 800-648-5438 / 502-625-0700 Fax 502-587-1933**

**IMPORTANT: READ THIS MANUAL COMPLETELY BEFORE  
INSTALLING or OPERATING LIFT**

# 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 certified service technician.
4. To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids.
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 CHALLENGER replacement parts.
10. Always wear safety glasses. Everyday eyeglasses only have impact resistant lenses, they are not safety glasses.
11. Inspect your lift daily.
12. Only permit qualified personnel to operate, maintain or repair the lift.
13. Only a CHALLENGER certified installer or technician is allowed to install the lift.
14. Do not allow anyone to climb on lift, stay inside or under vehicle during lift operations.
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 use vehicle manufacturer's recommended lift points.
18. Only have Certified CHALLENGER Service Technicians or certified electricians (with prior written consent of CHALLENGER LIFT, INC.) maintain or repair the electrical equipment.
19. Carefully observe all national and international health and safety regulations.

## SAVE THESE INSTRUCTIONS

## 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.

**SAFETY INSTRUCTIONS**

If attachments, accessories or configuration modifying components that are located in the load path, affect operation of the lift, affect the lift electrical listing or affect intended vehicle accommodation are used on this lift and, if they are not certified for use on this lift, then the certification of this lift shall become null and void. Contact the participant for information pertaining to certified attachments, accessories or configuration modifying components.

www.autolift.org ©2007 by ALI, Inc. ALI / WLSIA01

**SAFETY INSTRUCTIONS**

If attachments, accessories or configuration modifying components that are located in the load path, affect operation of the lift, affect the lift electrical listing or affect intended vehicle accommodation are used on this lift and, if they are not certified for use on this lift, then the certification of this lift shall become null and void. Contact the participant for information pertaining to certified attachments, accessories or configuration modifying components.

# 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.

## Warnings



Clear area if vehicle is in danger of falling.



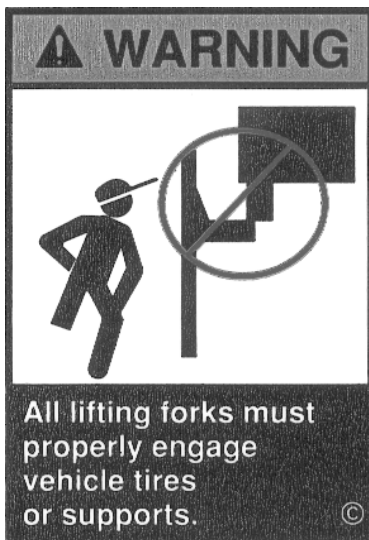
Remain clear of lift when raising or lowering vehicle.



Locate lift on firm, level surface, preferably concrete.



Be sure intended lifts are moving together evenly.



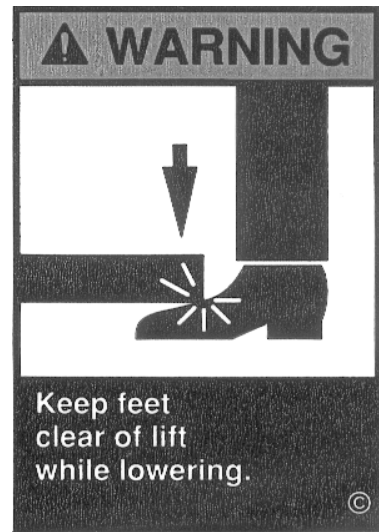
All lifting forks must properly engage vehicle tires or supports.



Do not drive over or pinch electrical cables.



Keep feet clear of lift while lowering.





## OWNER/EMPLOYER RESPONSIBILITIES

### **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.

### **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-May2000, Vehicle Lift Points for Service Garage Lifting.

### **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.

### **Periodic Routine Maintenance**

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

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

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

### **Repair Maintenance**

The owner/employer shall perform repair maintenance procedures whenever considered necessary by lift operator, lift inspector or routine 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.

### **Modifications**

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



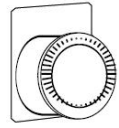
## Safety Features



Do not use the lift with any safety devices inoperative !!!

### Emergency Stop Button

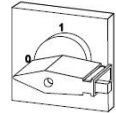
Serves to disconnect the lift in case of emergency.



### Main Switch

Serves to turn the lift ON and OFF.

When in position 0 the switch can be padlocked (also see Lockout/Tag out Procedure in Maintenance Instructions).



### Control Elements

#### DEAD MAN TYPE CONTROL

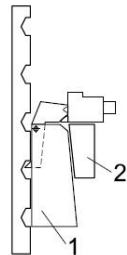
The operator is required to hold the switch/button in the engaged position to raise/lower the lift.

#### CABLE REMOTE CONTROL BUTTONS

The buttons are flush mounted to avoid inadvertent actuation.

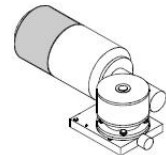
### Locking Device

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



### Electric Drive Motor

The motors are equipped with electrically actuated brakes (plus manual override). Once the motors are turned off, the brakes engage and prevent any further lift movements.



### Thermal Overload Protection

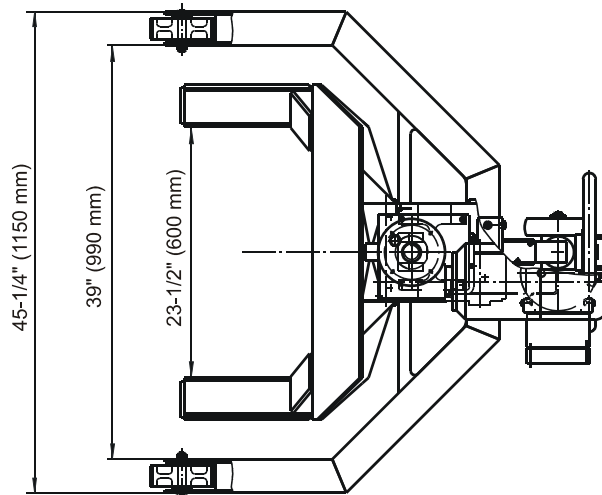
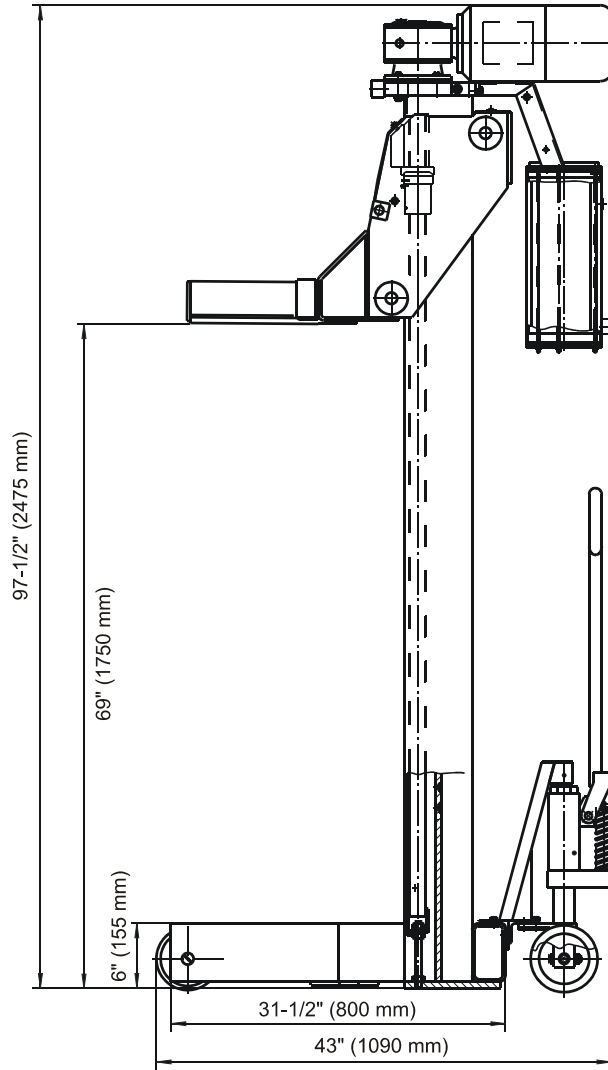
Overload protection via electronically monitored thermo-switches.

### Warning and Information Labels

**SAFETY INSTRUCTIONS**

Do not change or remove the warning and information labels. Order replacement if damaged, missing or illegible !!!

# Specifications



	Standard	Metric
Rated load capacity (per column)	16,000 lbs	7,273 kg
Raising / Lowering time	113 s	
Supply voltage	3~208/230/440/480 V, 60 Hz	
Control voltage	24 V	
Fuse protection (per column)	7 A @ 208/230V 4 A @ 440/480V	
Motor power	2.5 hp	1.8 kW
Weight (per column)	950 lbs	432 kg

Specifications are subject to change without notice.



**If the MCL Mobile Column Lifting System contains more than four (4) columns and is operated at 208/230V, connection cables CC-33-4 or CC-50-4 have to be used !!!**



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.**

# Installation

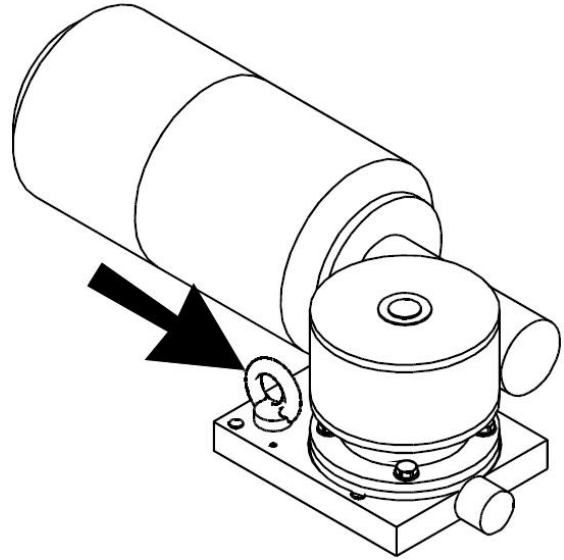
## Handling / Location

### CAUTION

Make sure the columns are lifted properly by the structure and NOT by the carriage.

Make sure all items in use to lift the column are rated for at least the weight shown in the specifications.

Screw an eye bolt M16 into the threaded hole on top of the motor plate of the column. Insert a chain or strap through the eye and lift the column using a hoist or forklift.



### CAUTION

Lift installation by qualified personnel only.

#### IMPORTANT NOTE:

Lift may be used for both indoor and outdoor applications!

### ATTENTION

Floor Slope

Ensure that area where columns are installed/used the floor does not slope more than two (2) degrees in any given direction !!!

### ATTENTION

Important Information

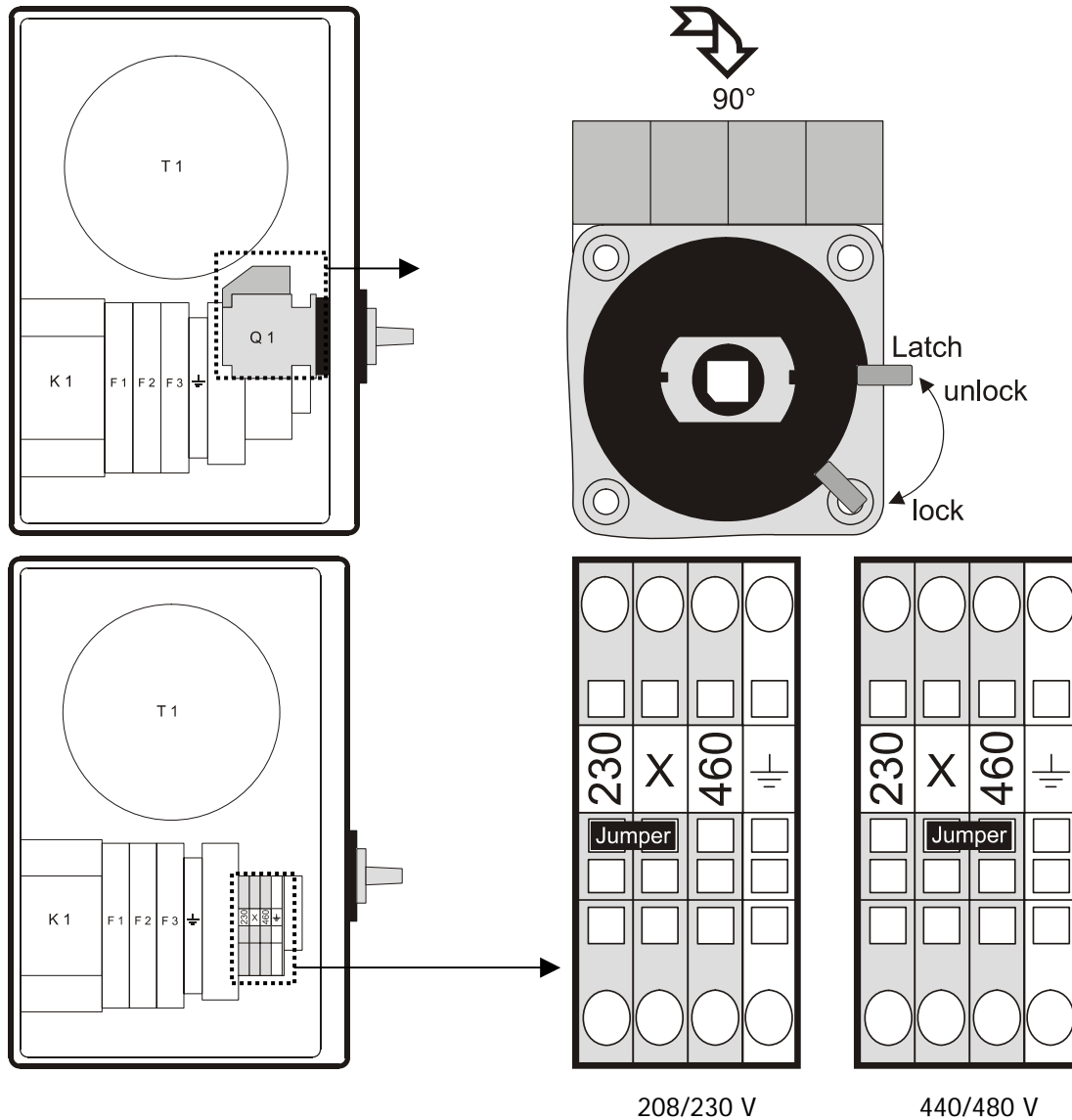
For further installation information, please refer to ANSI/ALI ALIS, Safety Requirements for Installation and Service of Automotive Lifts !!!

## Jumper Setting



Prior to initial operation make sure the jumpers are set correctly. Non-compliance may result in damage to motor and power supply unit !!!

## Power Supply Unit

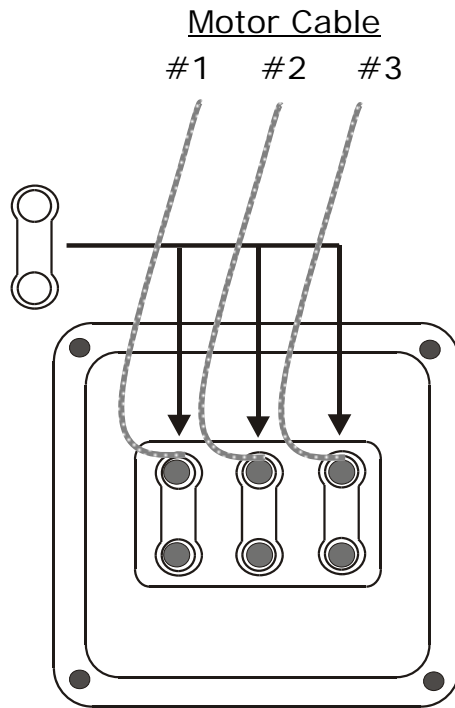


**!!! Before opening power supply unit (MCB), ensure that it is disconnected from the Main Power Supply (Wall Outlet) !!!**

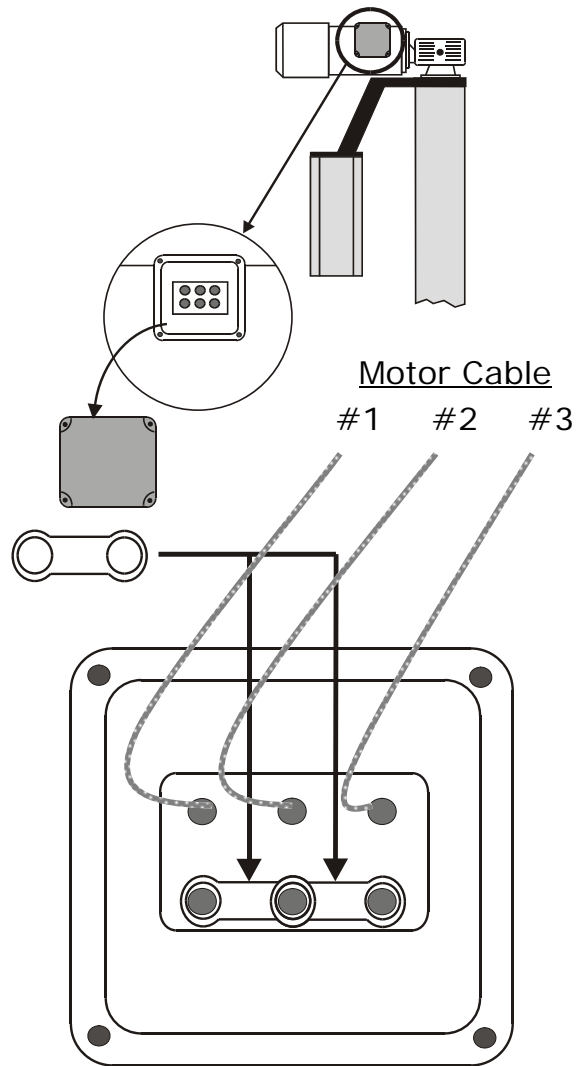
- 1) Open the power supply unit.
- 2) For ease of access, unlock main switch Q 1 (see illustration) and pull it off the square pin.
- 3) Verify the jumper setting corresponds to the line voltage.
- 4) If necessary, change the jumper setting using needle nose pliers.
- 5) Reinstall and lock the main switch.
- 6) Close the power supply unit.

## Motor

- 1) Remove the cover of motor junction box.
- 2) Verify the jumper setting corresponds to the line voltage.
- 3) Reinstall cover of motor junction box.



For 208/230 V, **three** jumpers must be set vertically.



For 440/480 V, **two** jumpers must be set horizontally in the lower row of terminals.

## 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.

## 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.

# Operation



**In case of defects or malfunctions such as jerky lift movement or deformation of the superstructure, support or lower the lift immediately !!!**

**Turn off and lock the main switch. Contact CHALLENGER LIFTS, INC. Immediately !!!**

**Use lift only as indicated by the supplied instructions !!! Should you have further questions, please contact CHALLENGER LIFTS, INC. !!!**

## Moving the Columns

### Hydraulic Dolly

Close hydraulic valve by putting valve lever in position 3.

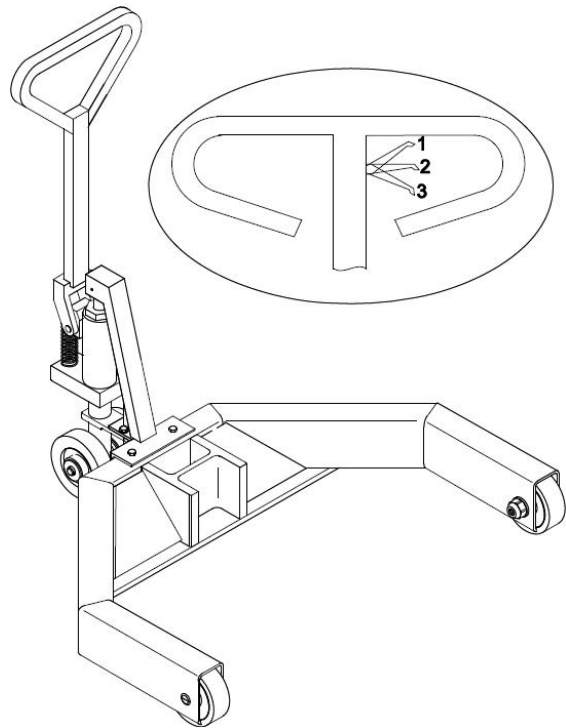
Pump with handle to raise the moving gear.

Move column to desired position.

To lower the moving gear, open the hydraulic valve by putting the valve lever in position 1.

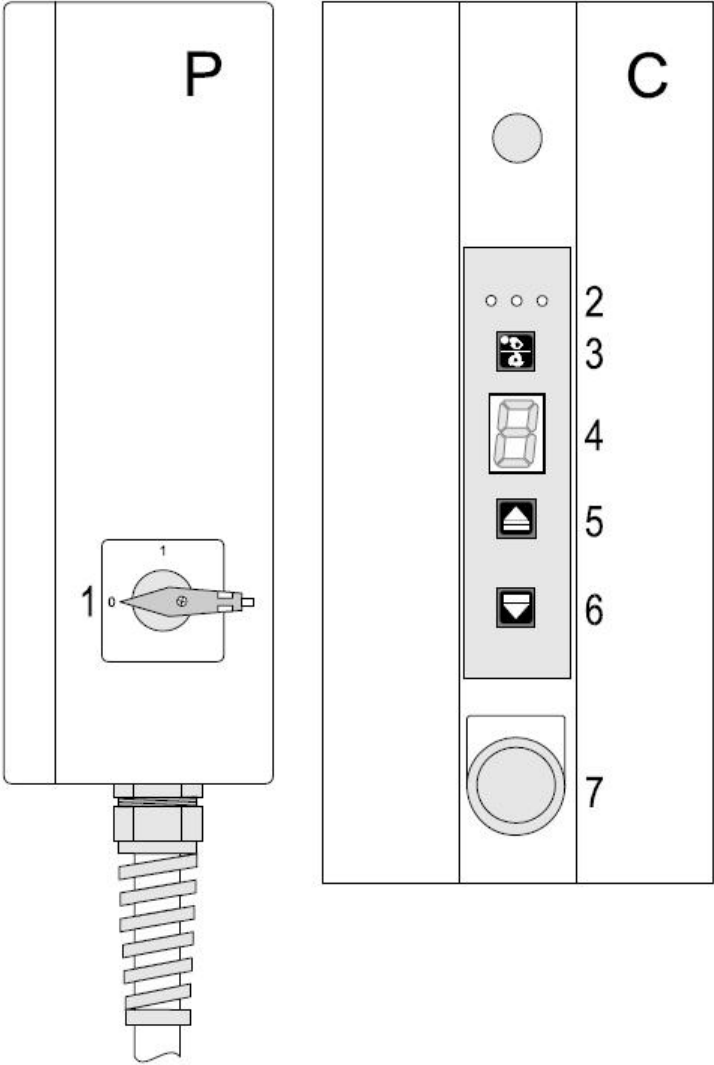
The column is ready for operation.

Position 2 is the neutral position.





**Controls  
Overview**

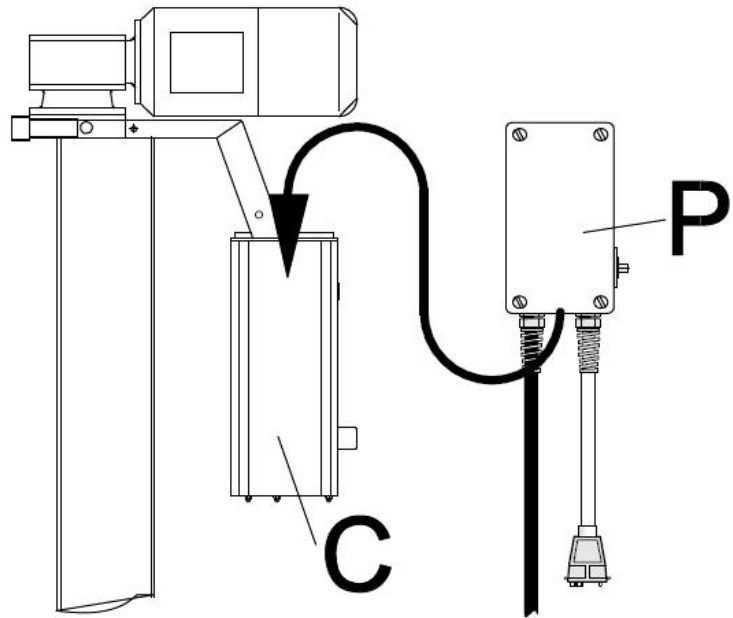


**P** Power Supply Unit  
**C** Control Unit

Main Switch **1**  
LED Display **2**  
Selector Button **3**  
Seven-Segment Display **4**  
"Raise" Button **5**  
"Lower" Button **6**  
Emergency Stop Button **7**

## Installing the Power Supply Unit

Attach the power supply unit (P) to the left side of the control unit (C) to ensure easy access to the main switch.



## Main Switch



The main switch can also be used as an Emergency Stop switch. Turn to position 0.

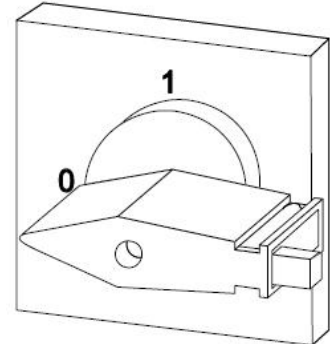
Position 1: Lift is ready for operation.

Position 0: Lift is disconnected from mains supply. In this position the switch can be padlocked.

### **NOTE:**

After turning the unit ON, wait approx. 3 seconds until the control has performed a self-test.

The lift is now in automatic mode. **(A)**



## Control Elements

---

### LED Display

Indicates operating and error states.

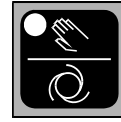


---

### Selector Button (on Control Unit)

Use this button to select between:

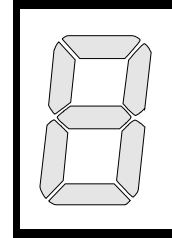
- ♦ Automatic mode (A)
- ♦ Single mode (S)
- ♦ Group mode (G)



---

### Seven-Segment Display (on Control Unit)

Indicates operating and error codes.



---

### 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.



---

### 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.



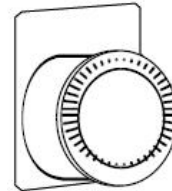
---

### Emergency Stop Button (on Control Unit)

In case of emergency press this button to interrupt all lift functions immediately.

Pull out the button to make the lift ready for operation again.

**Make sure that prior cause of emergency has been resolved before operating the lift again!**



---

## Overload Protection:

The lift control is equipped with an automatic overload protection device, shutting the lift off, in case the rated load capacity is exceeded. In such case, the control only allows the lowering of the lift.

**Always ensure that the operator observes the maximum rated load capacity.**

## Lift Positioning

- ♦ Use the lift on a hard, level surface only, preferably concrete (Keep the lifted weight in mind!)
- ♦ 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 (P) to the control unit (C) of the column closest to the main power supply in your building.

Interconnect the columns using connecting cables (1) between input terminals (IN) and output terminals (OUT). Connect a dummy plug or the cable remote control (2) to the output terminal of the last column.

- ◆ **NOTE:**  
Secure the connecting cable plugs using the safety clamps.
- ◆ After connecting all columns plug MCB into wall outlet. Recheck all electrical connections.
- ◆ Once the main switch is turned on, the lift is ready for operation.

1 Connecting Cable

2 Dummy Plug

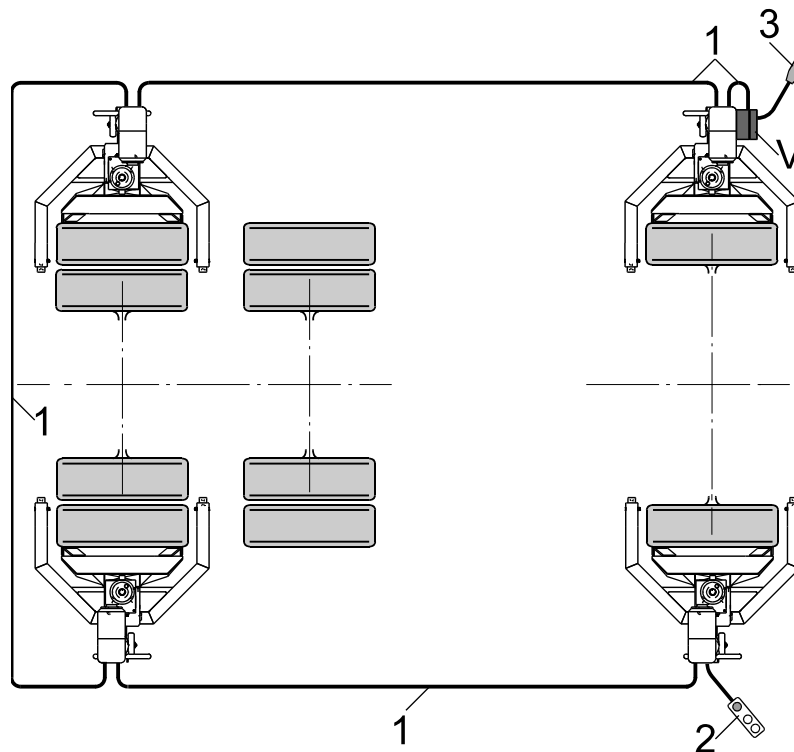
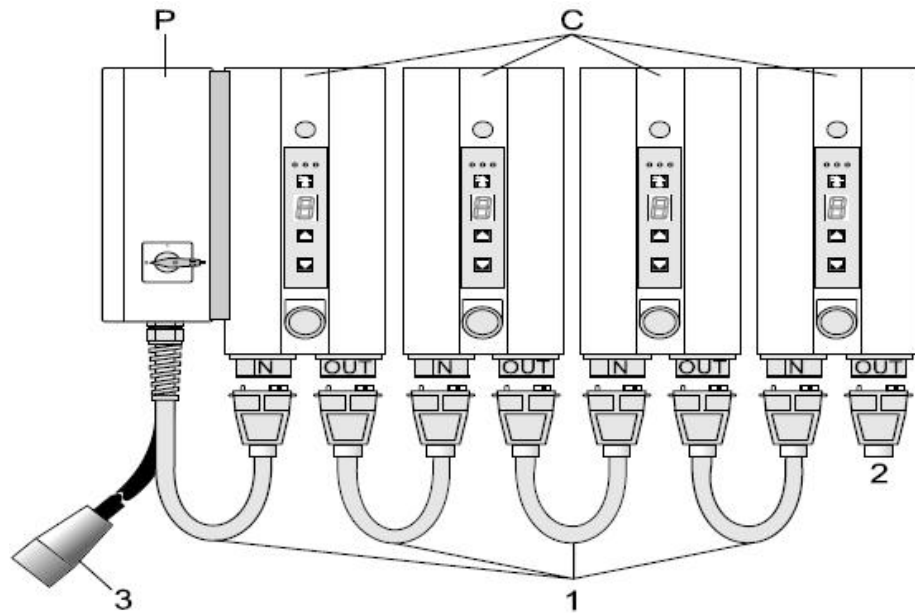
3 Main Plug (NOT included)

Power Supply Unit **P**

Control Unit **C**

Input Terminal **IN**

Output Terminal **OUT**



## Small Wheel Adapter Usage



**Please read the following information carefully before using your lifting system**

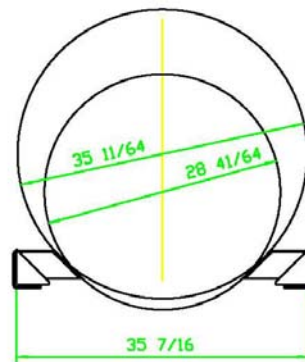
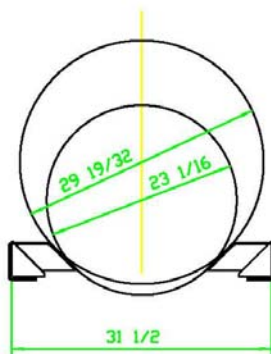
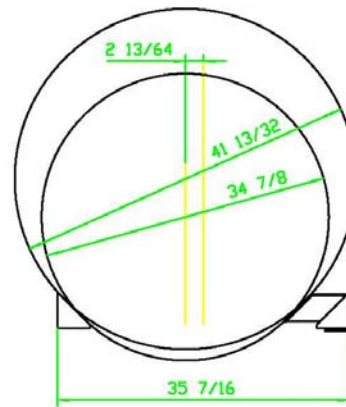
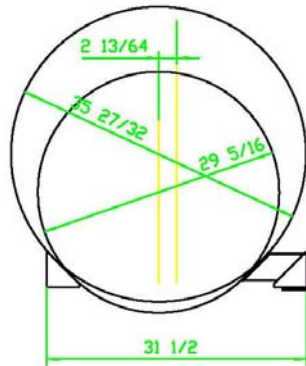
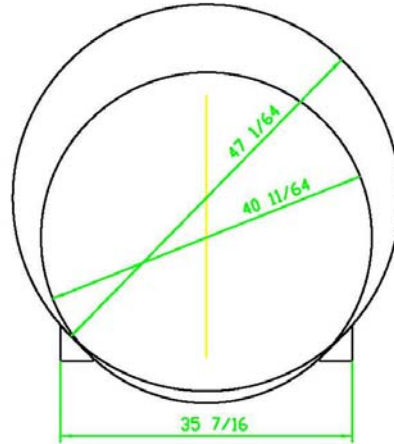
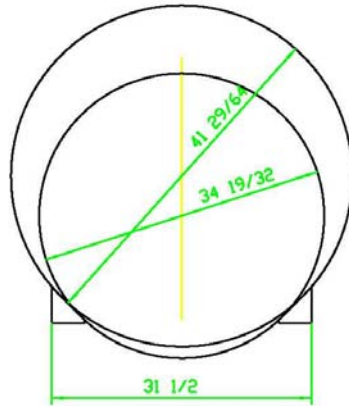
**!!!**

**Use the following tables to determine which carriage combined with which Small Wheel Adapter best fits the size tire on the vehicle you intend to lift!!!**

# SMA-2H

## Standard Carriage

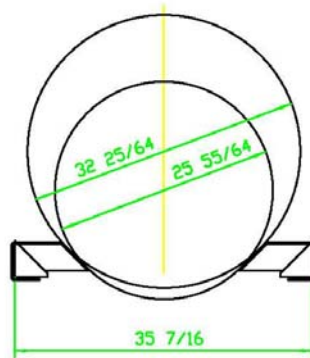
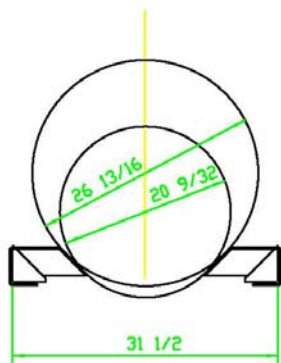
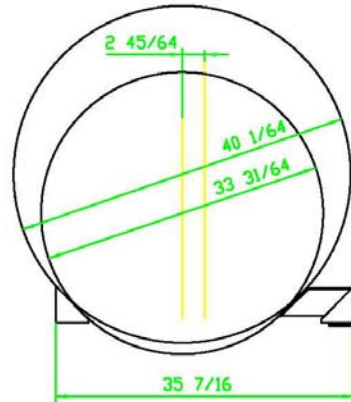
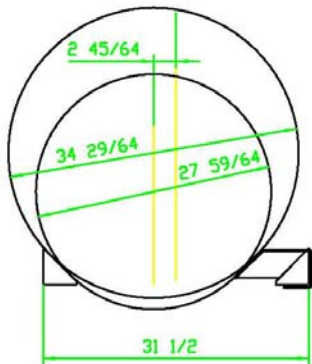
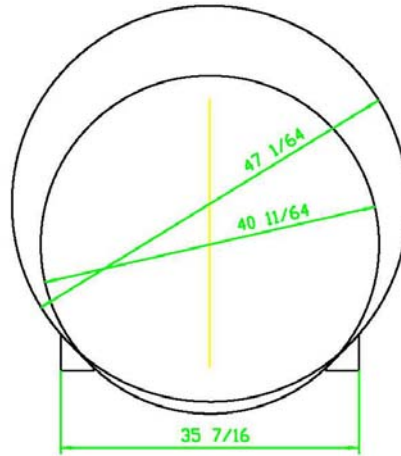
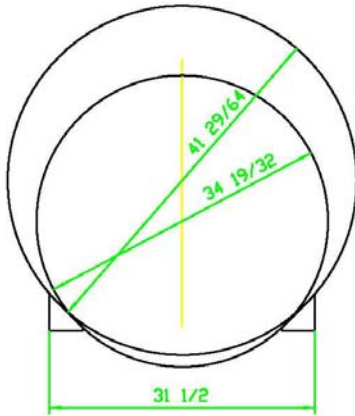
## Wide Body Carriage



# SMA-2

## Standard Carriage

## Wide Body Carriage



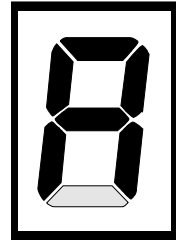
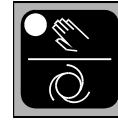


# Operating Modes

## 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.



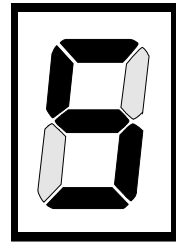
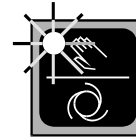
or



## Single Mode

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

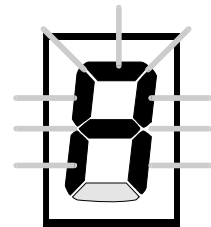
Activation of this operating mode is indicated by the lit LED on the selector button and the letter **S** on the seven-segment display.



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



**!!! SAFETY WARNING !!!**  
**!!! DO NOT TILT VEHICLE !!!**



Use these buttons to raise or lower the lift.

### NOTE:

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 or group mode or
- by lowering all carriages to bottom position in automatic mode.

Lift stops once first carriage reaches upward travel stop.



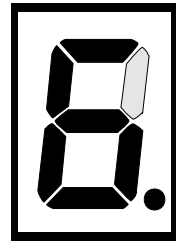
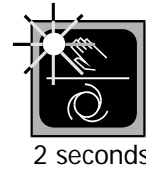
or



## Group Mode

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

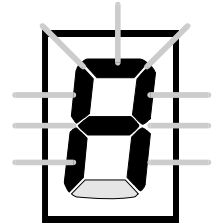
Activation of this operating mode is indicated by the lit LED on the selector button and the letter **G** on the seven-segment display.



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



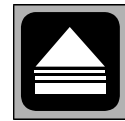
**!!! SAFETY WARNING !!!**  
**!!! DO NOT TILT VEHICLE !!!**



Use these buttons to raise or lower the lift.

NOTE:

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 or group mode or  
 – by lowering all carriages to bottom position in automatic mode.  
 Lift stops once first carriage reaches upward travel stop.



or



## Trouble-Shooting Codes of Seven-Segment Display and LED Display



Error codes E5 and E6 are not used. This is to avoid confusion with the code letters for single and group mode.

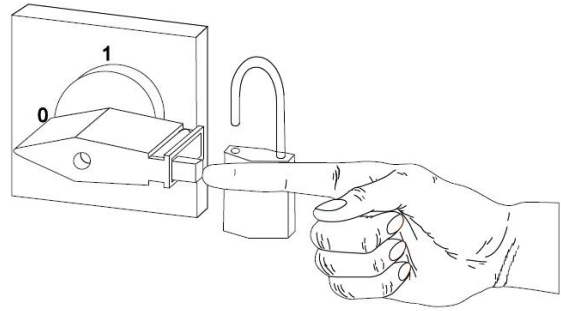
Error codes E4 and E8 are not used at present.

Error Code	LED	Description
<b>A</b> or <b>S</b> or <b>G</b>	green	Normal operation, no errors. See "Operating Modes: Automatic Mode / Single Mode / Group Mode" in this manual.

<b>U</b>	yellow	<p>Uncontrolled operation</p> <p>Error code appears on columns which do not communicate via CAN bus (e.g. due to bus line failure or use of wrong connecting cable). Operating the lift is still possible.</p> <p>Synchronization control is disabled, synchronization monitoring remains active.</p>
<b>E1</b>	red	<p>Safety switch triggered</p> <p>Once any safety switch is triggered, the lift stops and this error code appears. On all other columns the green LEDs are flashing.</p> <p>To restore operability switch the respective column to single mode. Then raise the carriage to unlock the safety wedge or to remove the obstacle.</p>
<b>E2</b>	red	<p>Overheated motor</p> <p>Once a thermoswitch is triggered, the lift stops and this error code appears on the respective column. On all other columns the green LEDs are lighting up and their carriages can be moved approx. 1".</p> <p>After the motor has cooled down, the red LED goes out and the lift is ready for operation.</p>
<b>E3</b>	yellow	<p>Insufficient speed / Overspeed</p> <p>Once the control detects any irregularities of motor speed, the lift stops and this error code appears on all columns.</p> <p>After release of the control element the error is removed automatically and the lift is ready for operation.</p>
<b>E4</b>	red	<p>Max. Lift Capacity has been exceeded.</p> <p>Once the control detects that the max. load capacity has been exceeded, it shuts the complete system off and the operator can only lower the vehicle at this point.</p> <p>Remedy: Lower lift all the way to bottom stop. Decrease weight of vehicle if possible, or use more MCL columns to lift same vehicle.</p>
<b>E7</b>	red	<p>EMC / Communication issue</p> <p>If EMC issues occur at one or several column(s), the complete lift system stops. The yellow LED lights up on the affected columns and this error code is displayed.</p> <p>The error can be acknowledged by turning the main switch off and on again. Then reset the lift system counter by lowering it to the bottom position.</p>
<b>E9</b>	red	<p>Phase failure</p> <ul style="list-style-type: none"> <li>◆ Phase failure of power supply: This error code appearing on all columns. Lift stops and remains inoperative until power supply has been restored.</li> <li>◆ Phase failure of lift system (e.g. due to connecting cable failure): This error code appearing on all columns. Lift stops, carriages of columns without phase failure can be moved approx. 1".</li> </ul> <p>Once the power supply has been restored the lift is ready for operation.</p>

## Locking the Main Switch

Use a padlock to protect the lift against unauthorized usage.  
In addition to locking the main switch, it is also possible to remove the End Plug from the system in order to make the lift system in operational.



## Manual Lowering

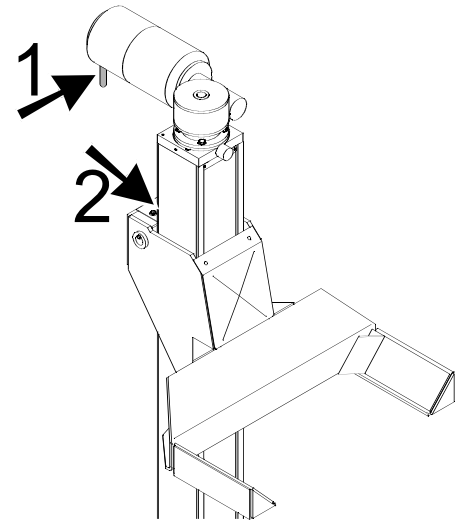
### NOTE:

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

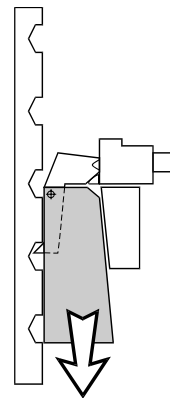


**AUTHORIZED PERSONNEL ONLY! DO NOT RESTART LIFT BEFORE ERROR HAS BEEN RESOLVED !!!**

- 1 Manual release lever
- 2 Locking device (between column and carriage)



- ◆ Pull or wiggle the safety wedge downward on each column.



 **WARNING**

**Intermittently lower the columns in increments of approx. 2" !!!**

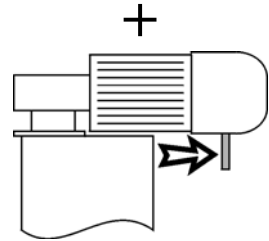
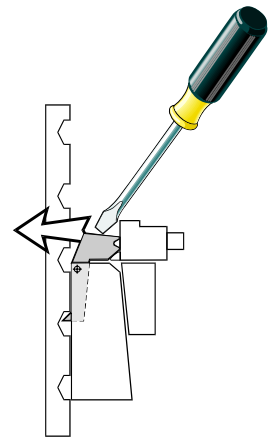
♦ **Simultaneously**

- push the latch inward (arrow) using a long screw driver and
- Carefully pull the manual release lever outward (arrow). **(Use extreme caution to ensure safe lowering speed!)**

The lowering speed will vary depending on the weight of the raised vehicle.

**NOTE:**

The latch must be pushed first. Otherwise the safety wedge will engage and lock the carriage.



# Maintenance



Turn off the main switch before performing any maintenance, repair or setup work, and protect it against unauthorized usage. (Lock-out / Tag-out) !!!

**DO NOT SERVICE THE ELECTRICAL PORTION OF THE LIFT AT ANY TIME WITHOUT PRIOR AUTHORIZATION FROM CHALLENGER LIFTS, INC. !!! PLEASE REFER TO THE MAINTENANCE INSTRUCTIONS FOR THE PROPER LOCKOUT / TAGOUT PROCEDURE !!! FOR MORE INFORMATION REFER TO THE LOCKOUT / TAGOUT PROCEDURE IN THE MAINTENANCE INSTRUCTIONS AND ANSI Z244.1 !!!**

## Annual Inspection

Once annually have your lift inspected by a trained service technician.

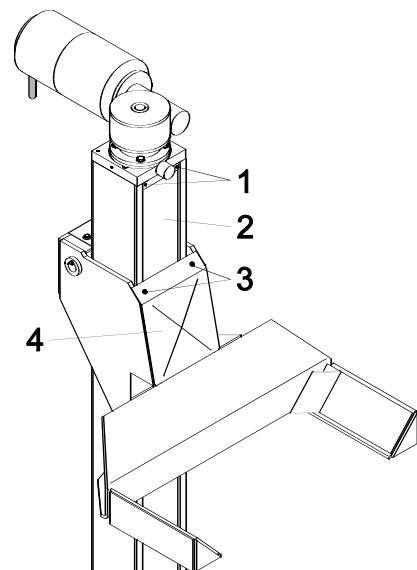
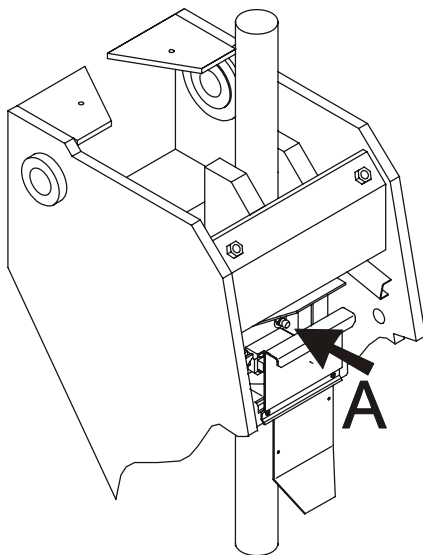
## Maintenance by the Operator

Establish a periodic routine maintenance procedure to ensure trouble free operation and long service life.

Servicing of safety devices and electrical equipment by authorized and trained personnel only.

## Re-circulating Ball Nut

Grease the re-circulating ball nut with 4 to 7 strokes from a grease gun at least every six months. Use commercial antifriction-bearing grease.

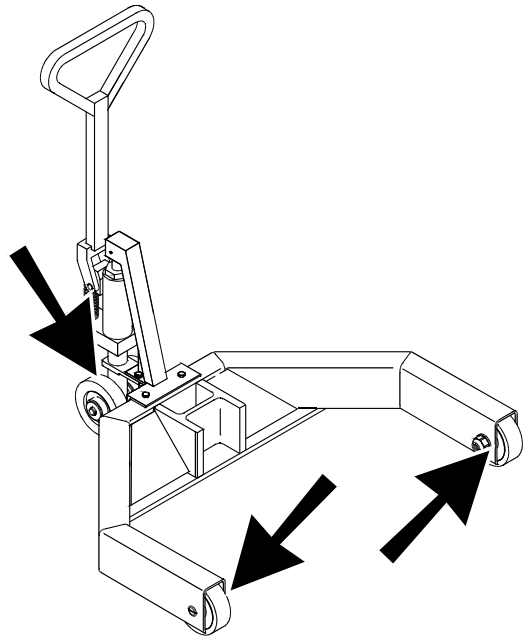


- ◆ To make the grease fitting (A) accessible, remove screws (1 and 3). Then remove cover plate (4) and fastener of rubber cover (2).

Fold down the rubber cover.

## Moving Gear

Regularly oil or grease the rollers of the moving gear.



## Cleaning



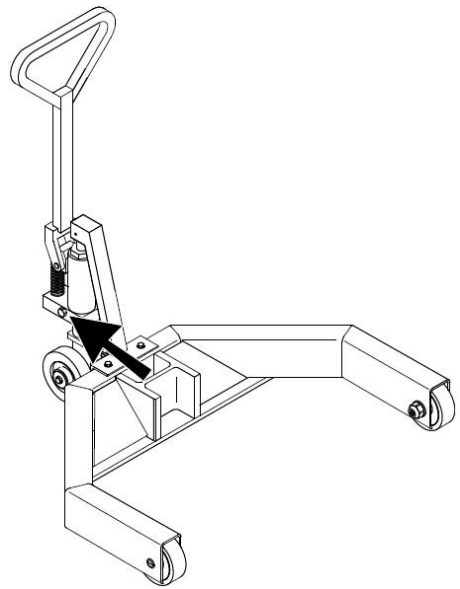
**Caustic cleaning fluids, salt water and brake fluid attack coatings and sealing materials. Wash these substances off the lift immediately. Do not use high pressure or steam jet cleaners !!!**



## Load Capacity of Hydraulic Dolly

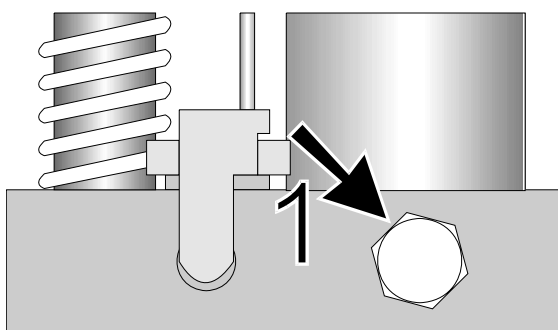
If the dolly is not able to lift the unloaded column, adjust the hydraulic pressure.

The adjusting device is located below the lifting gear (see arrow).

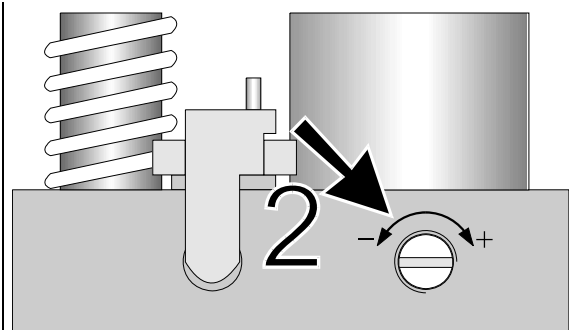


**Adjust the load capacity in a way that the lifted dolly supports the weight of the *unloaded* column only.**

If the load capacity is set too high, the dolly will not lower automatically once a vehicle is lifted. This may result in equipment damage.



- ◆ Remove screw plug (1) using a wrench.



- ◆ Using a screwdriver, turn the adjusting screw (2):  
*to the left → to reduce the load capacity*  
*to the right → to increase the load capacity.*
- ◆ Reinstall the screw plug.

# Troubleshooting

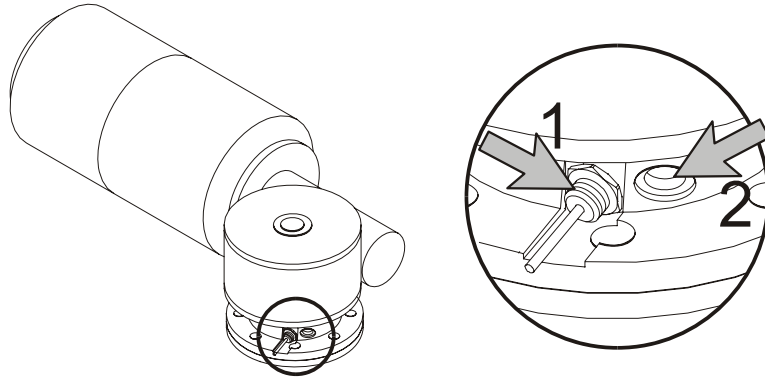
<b>Error Code / LED / Lift Behavior</b>		
	<b>Possible Cause</b>	<b>Remedy</b>
<b>E1 / Red LED on one column, green LED on all others. / Lift has stopped.</b>		
	Carriage contacted obstacle while being lowered.	Switch column to single mode. Raise carriage and remove obstacle.
<b>E2 / Red LED on one column. / Lift has stopped.</b>		
	Motor overheated.	Let motor cool down.
<b>E3 / Yellow LED on all columns. / Lift has stopped.</b>		
	Insufficient speed / Over speed.	Release control element.
<b>E4 / Red LED on all columns. / Lift has stopped.</b>		
	Max. Lift Capacity has been exceeded.	Lower lift all the way to bottom stop. Decrease weight of vehicle if possible, or use more MCL columns to lift same vehicle.
<b>E7 / Red LED on one or several column(s). / Lift has stopped.</b>		
	EMC / Communication issue.	Turn main switch off and on again. Reset lift counter by lowering it to bottom position.
<b>E9 / Red LED on all columns. / Lift is inoperative.</b>		
	Phase failure of supply system.	Remove phase failure.
<b>E9 / Red LED on one or several column(s). / Lift has stopped.</b>		
	Phase failure of lift system due to defective connecting cable.	Replace connecting cable.
<b>U / Yellow LED on one or several column(s). / Lift operation is still possible.</b>		
	Bus line failure in connecting cable.	Replace connecting cable.
	CAN bus without terminating resistor.	Check terminating resistors of CAN bus in dummy plug and power supply unit. Contact your CHALLENGER certified service technician.
	CAN controller out of step or defective.	Turn the lift off and on again. If error persists, contact your CHALLENGER certified service technician.
	Controller in sleep mode due to short-circuit of CAN lines.	Contact your CHALLENGER certified service technician.

# Maintenance

## Sensors

### Speed Measurement

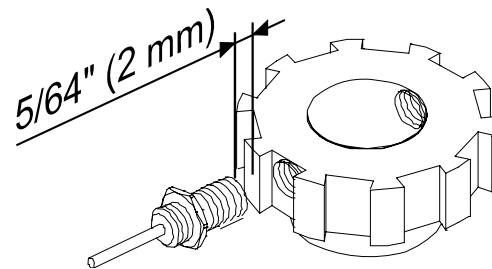
Proximity switch B3 – used for speed measurement – is located in a threaded hole at the worm gear unit (1). Use the inspection hole (2) to check for correct adjustment of the proximity switch.



#### Adjusting Proximity Switch B3:

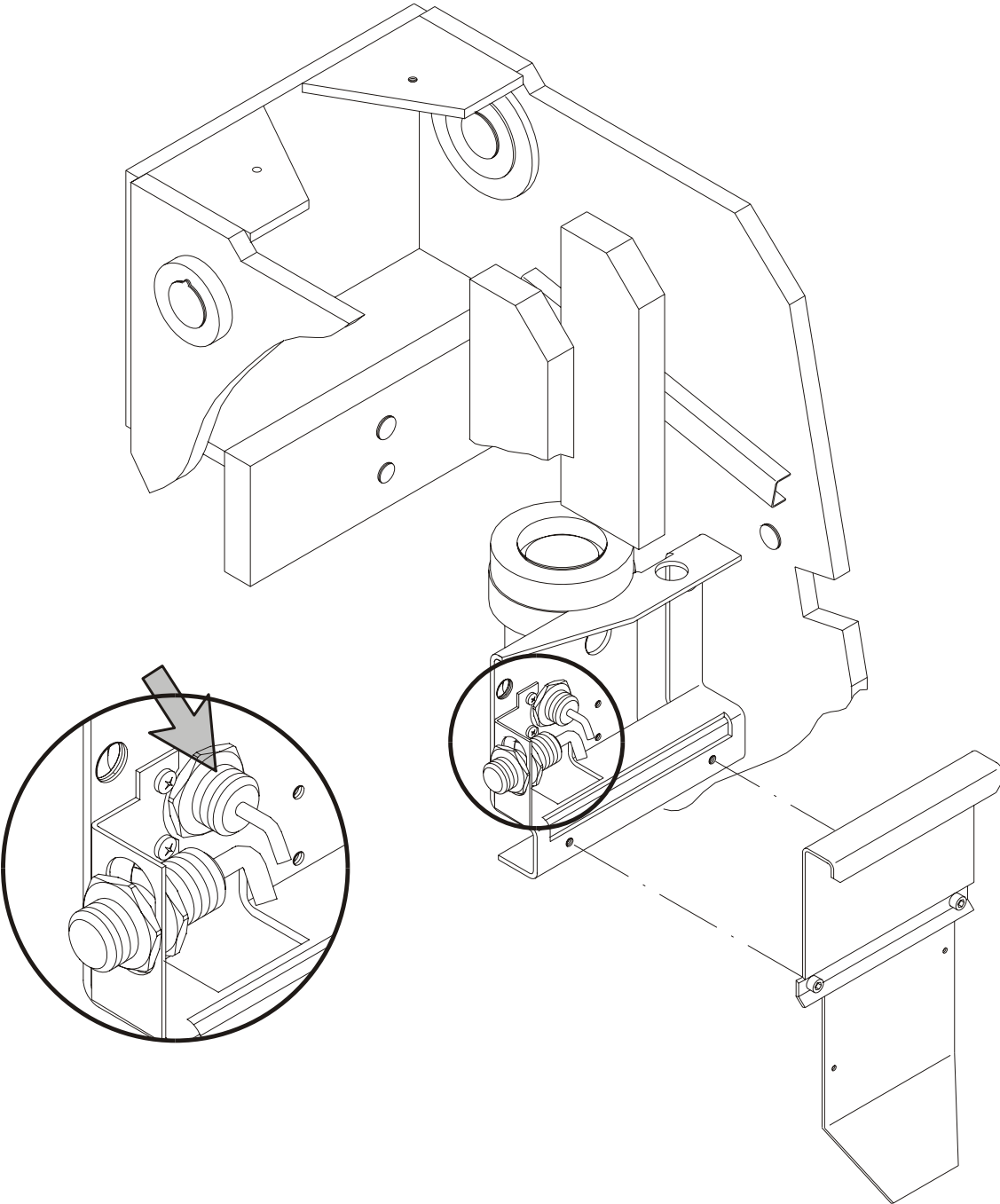
Set a clearance of  $5/64$ " between proximity switch and outer edge of castle nut.

Clearance can be checked via inspection hole using a feeler gauge.



Gear box casing removed.

# Lower Limit Switch

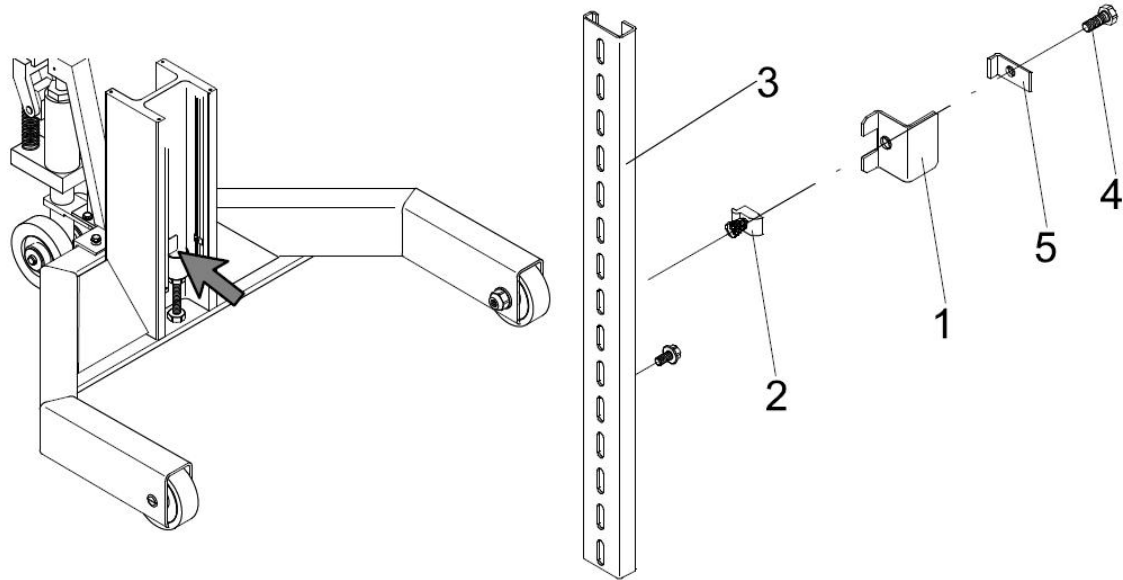


### Adjusting the Bottom Stop:

The bottom-stop angle (1) is mounted to a rail (3) in the lower part of the column.

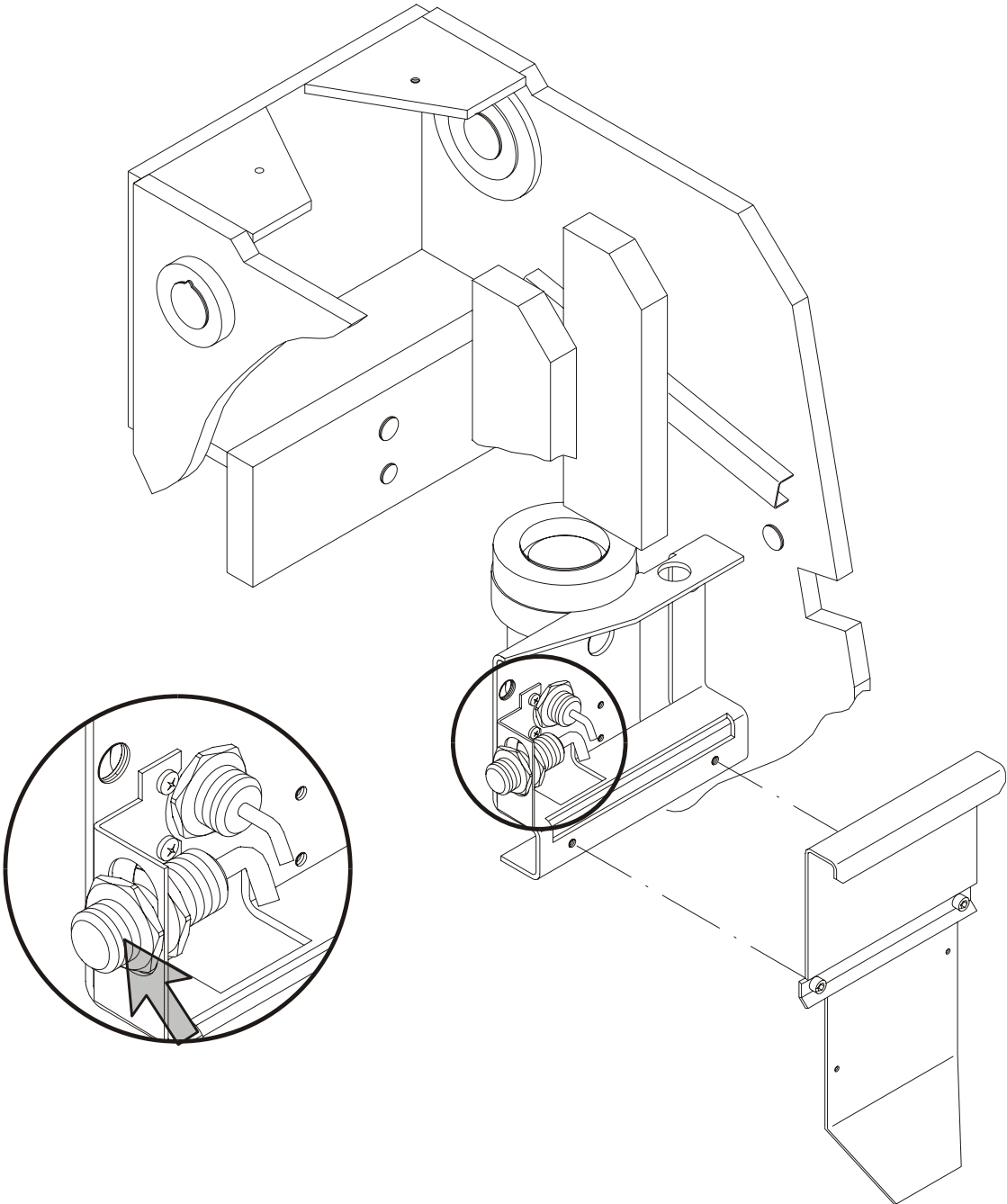
To adjust the stopping point release the slider block clamp (2, 5) by opening the screw (4). Position the bottom-stop angle as required.

**Ensure that carriage stops BEFORE it makes contact with the base! Non-compliance could result in damage of lift components!**



Item	Description
1	Bottom-Stop Angle
2	Slider Block Clamp, Inside Part
3	Mounting Rail
4	Countersunk Screw M6x12 DIN 7991
5	Slider Block Clamp, Outside Part

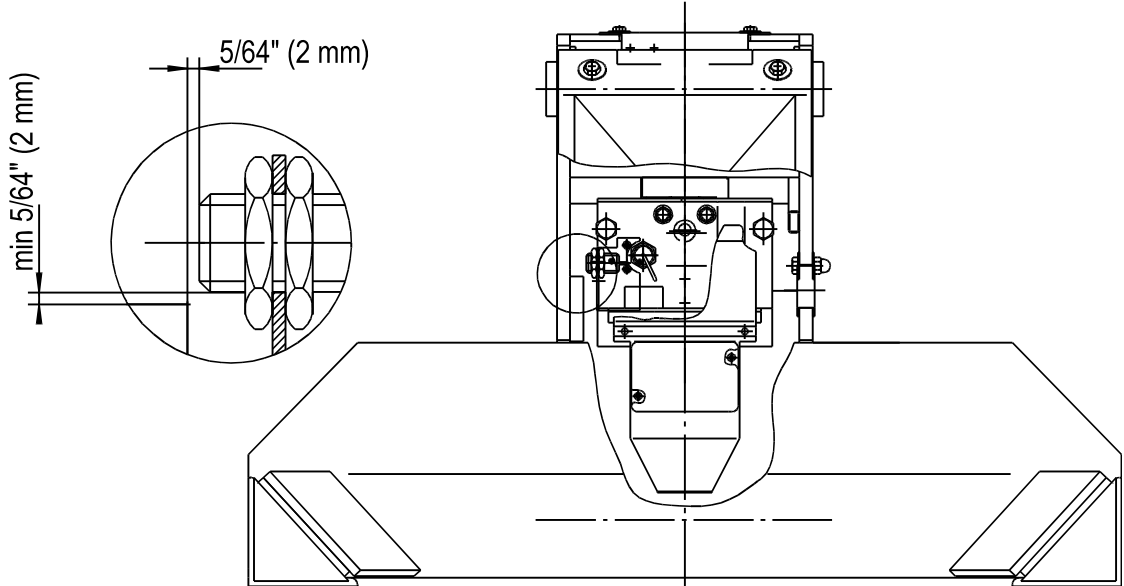
# Safety Switch (Old Design)



Note that the switch-off bracket is available in three versions. See below.

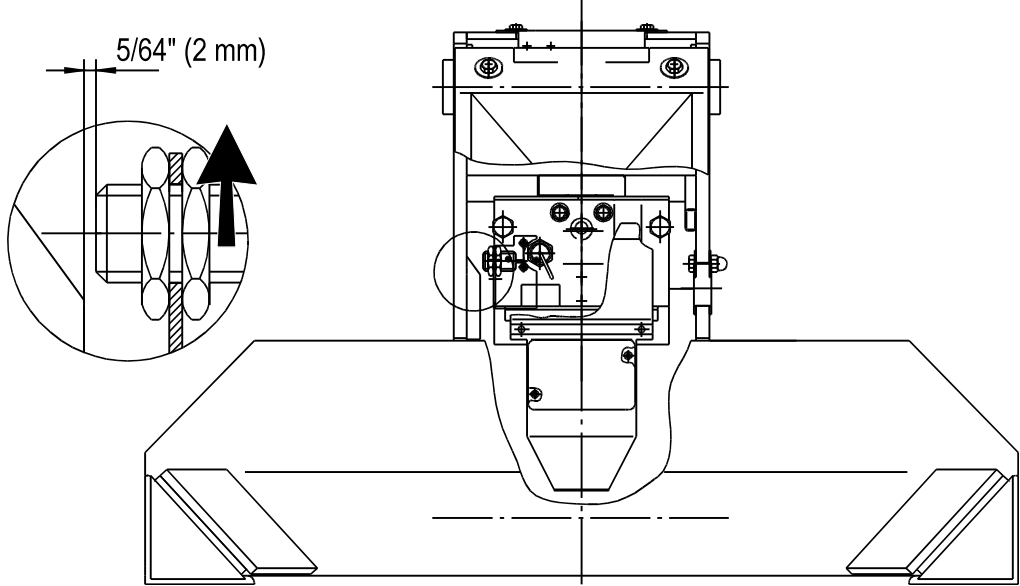
### Switch-off Bracket *without* Ramp

Adjust proximity switch B2 as per drawing below.



### Switch-off Bracket *with* Ramp

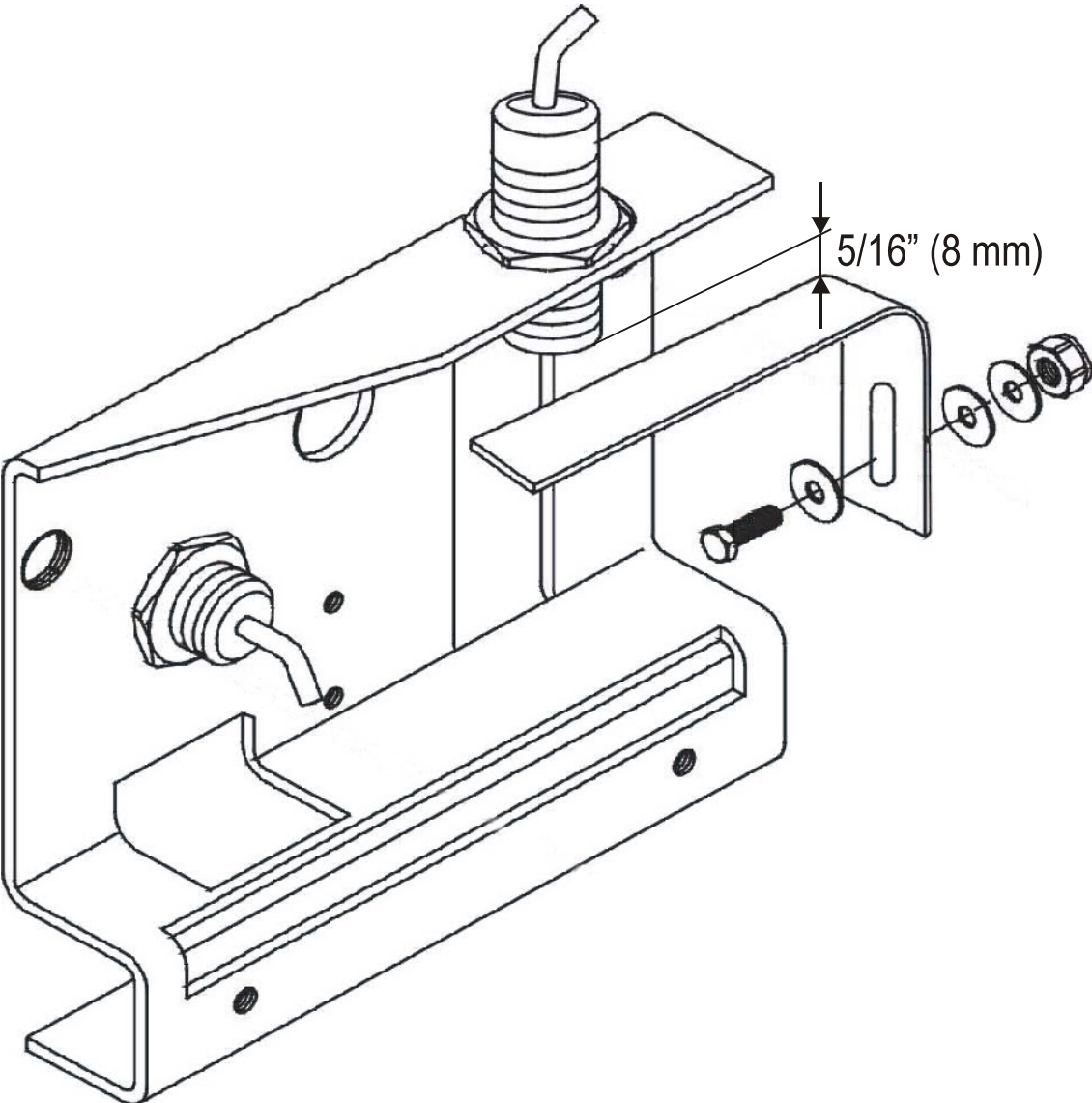
Manually push the proximity switch to its topmost position. Then set a clearance of 5/64 inch (2 mm) between proximity switch and switch-off bracket.





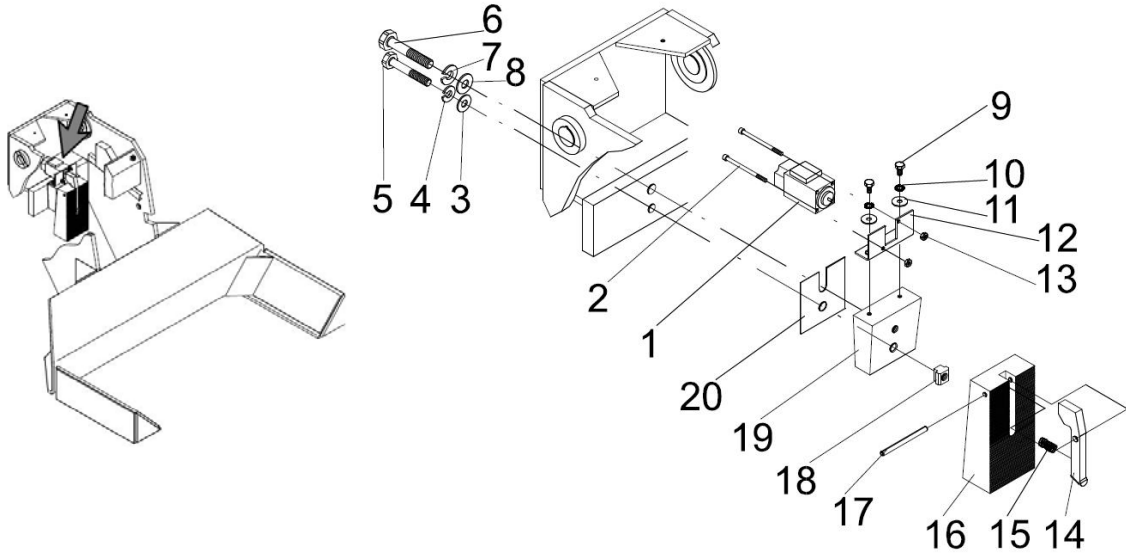
# Safety Switch (New Design)

Set a clearance of 5/16" (8 mm) between proximity switch and switch-off angle.



# Solenoid Switch of Safety Catch

The solenoid switch (1) keeps the latch (14) in the disengaged position to prevent the wedge and counterwedge (16, 19) from engaging during normal operation.



Item	Description
1	Solenoid Switch
2	Allen Screw M4x70 DIN 912
3	Washer A10.5 DIN 125
4	Spring Washer A10 DIN 127
5	Hex Head Cap Screw M10x65 DIN 933
6	Hex Head Cap Screw M12x70 DIN 933
7	Spring Washer A12 DIN 127
8	Washer A13 DIN 125
9	Hex Head Cap Screw M6x12 DIN 933
10	Serrated Lockwasher A6.4 DIN 6798
11	Washer A6.4 DIN 9021
12	Solenoid Switch Support
13	Hex Nut M4 DIN 934
14	Latch
15	Compression Spring 0.4x5x16
16	Wedge
17	Dowel Pin 6x80 DIN 1481
18	T-Nut M10x12 DIN 508
19	Counterwedge
20	Spacer Plate

# Lockout Procedure

---

## A) Purpose

This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

## B) Compliance With This Program

All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.

---

## C) Lockout Procedure

### a) Sequence of Lockout

(1) Notify all affected employees that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.

b) Owner/Responsible Party, please identify Name(s)/Job Title(s) of affected employees and how to notify per your company policy here.

(2) Type and magnitude of the energy:

- Electrical: 208/230V/440/480V-Three Phase, secured with 15A/30A/50A breakers respective to MCL system in use, Lockable Main Switch

(3) If the machine or equipment is operating, shut it down by the normal stopping procedure:

- Lower lift to bottom position and remove vehicle from lifting area.

---

### Type(s) and location(s) of machine or equipment operating controls.

(4) De-activate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s):

---

### Type(s) and location(s) of energy isolating devices.

(5) Lock out the energy isolating device(s) with assigned individual lock(s).

- Turn off Main Switch and switch the applicable breaker to the OFF-Position.

(6) Stored or residual energy (such as that in capacitors, hydraulic systems, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.

- Check again that lift is in fully lowered position.

---

Type(s) of stored energy - methods to dissipate or restrain.

(7) Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate.

(8) The machine or equipment is now locked out.

---

Restoring Equipment to Service.

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken.

(1) Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.

(2) Check the work area to ensure that all employees have been safely positioned or removed from the area.

(3) Verify that the controls are in neutral.

(4) Remove the lockout devices and reenergize the machine or equipment.

(5) Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for used.

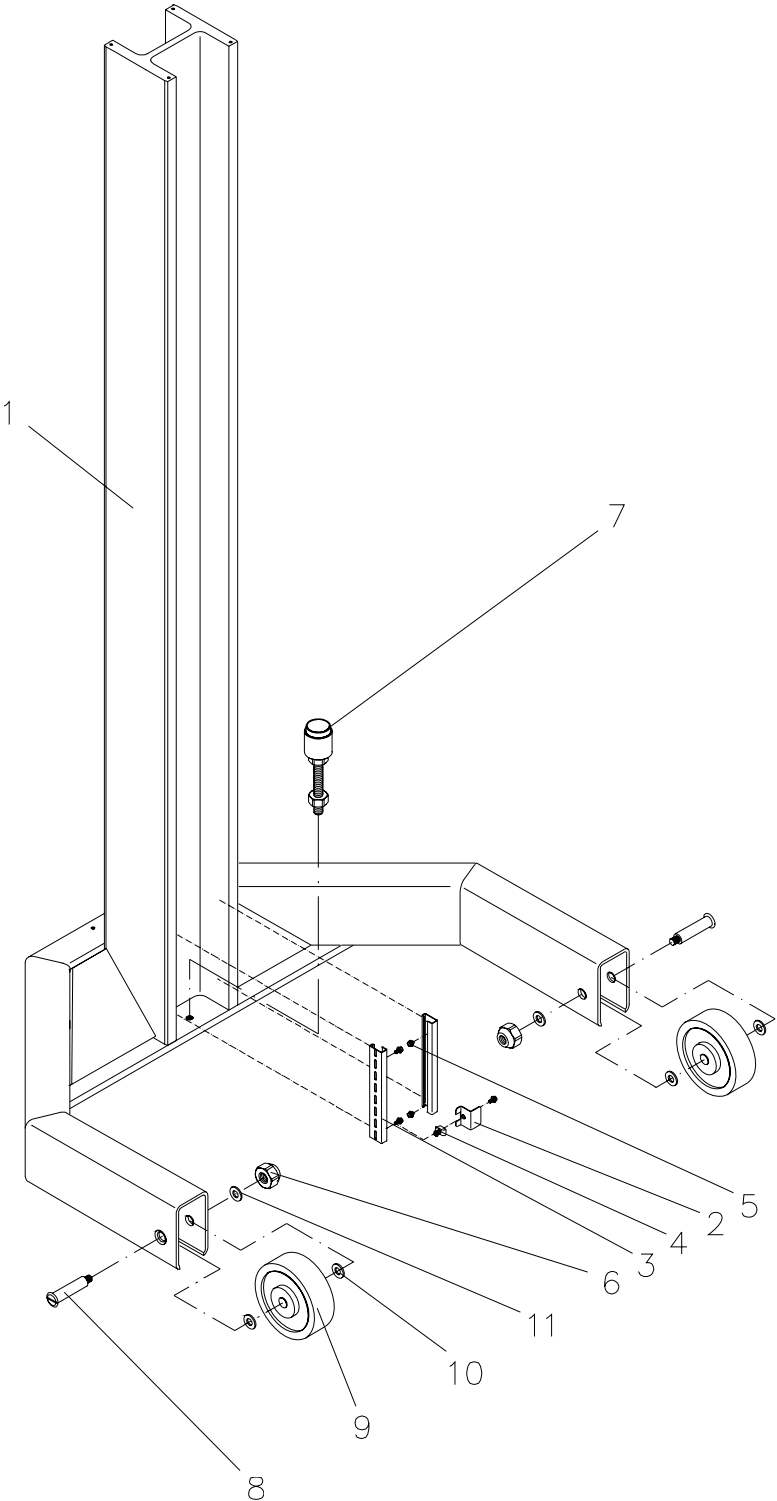
!!! For more information please refer to ANSI Z244.1 !!!

# Parts Breakdown

## Column

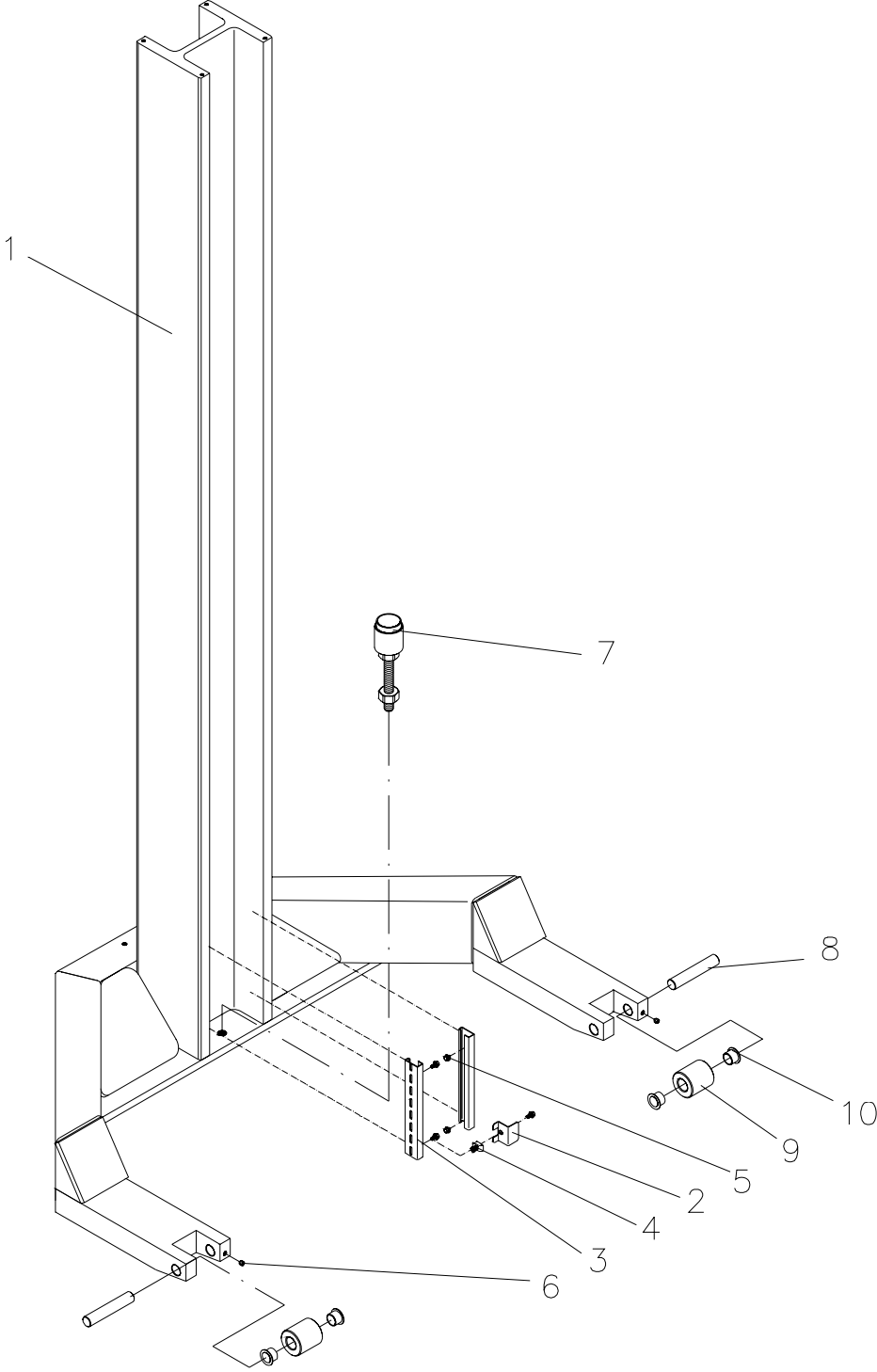
Additional base frame heights available upon request !!!

### Column, Base Frame Height 6"



<b>Item</b>	<b>Description</b>
1	Base Frame 6" (155 mm) Base Frame 6" (155 mm), Extended Column
2	Switch-off Angle
3	Mounting Rail, Asymmetrical
4	Slider Block Clamp M6x15
5	Tapping Screw M5x8
6	Hex Nut M12, Self-Locking
7	Screw Bearing
8	Axle
9	Heavy Load Wheel
10	Shim Ring 20x28x2
11	Washer A13

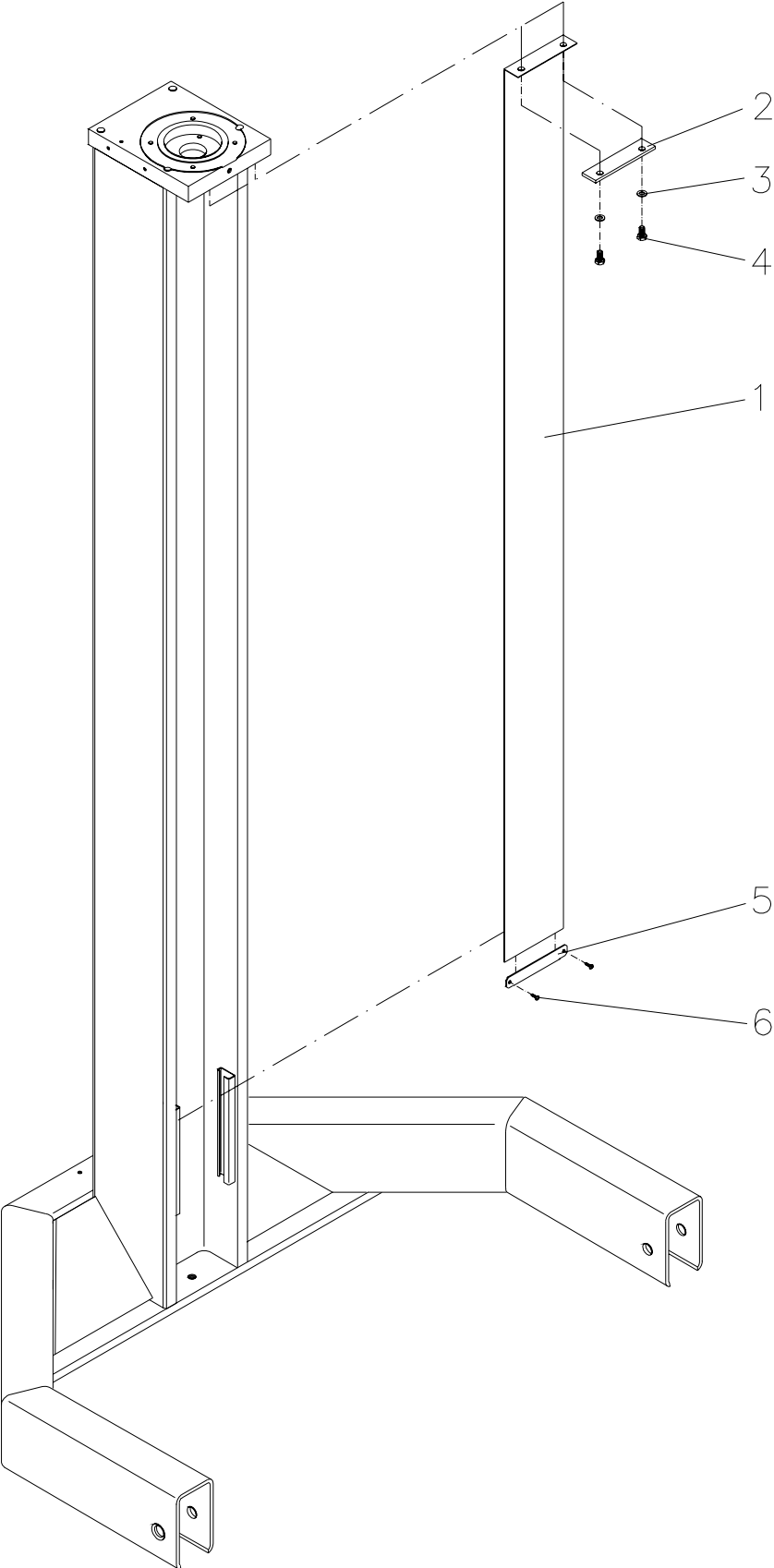
# Column, Base Frame Height 2"



<b>Item</b>	<b>Description</b>
1	Base Frame 2" (50 mm)
2	Switch-off Angle
3	Mounting Rail, Asymmetrical
4	Slider Block Clamp M6x15
5	Tapping Screw M5x8
6	Setscrew M8x8
7	Screw Bearing
8	Axle
9	Roller
10	Plain Bearing GLY.PBG 202316.5 F

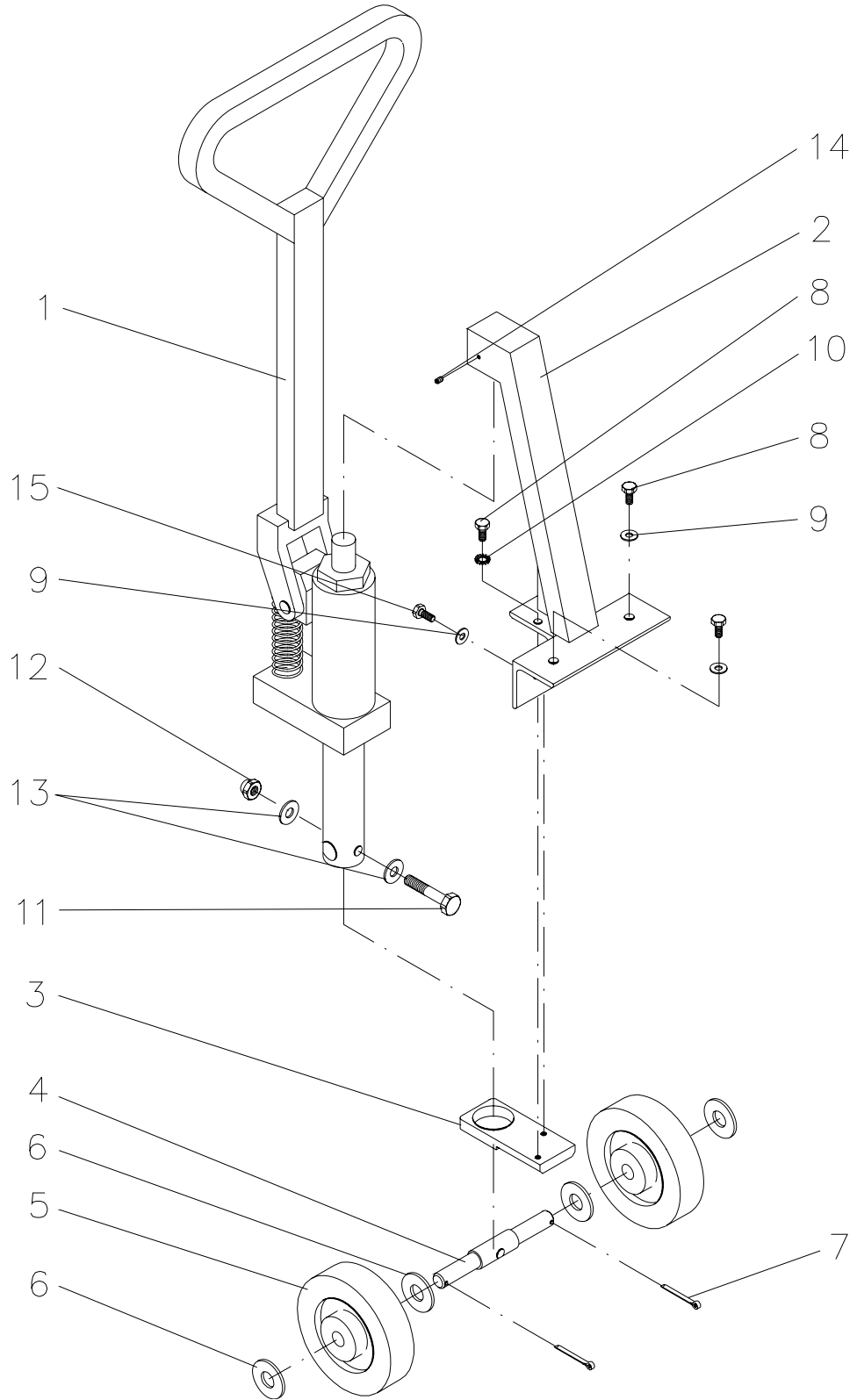


# Column Cover



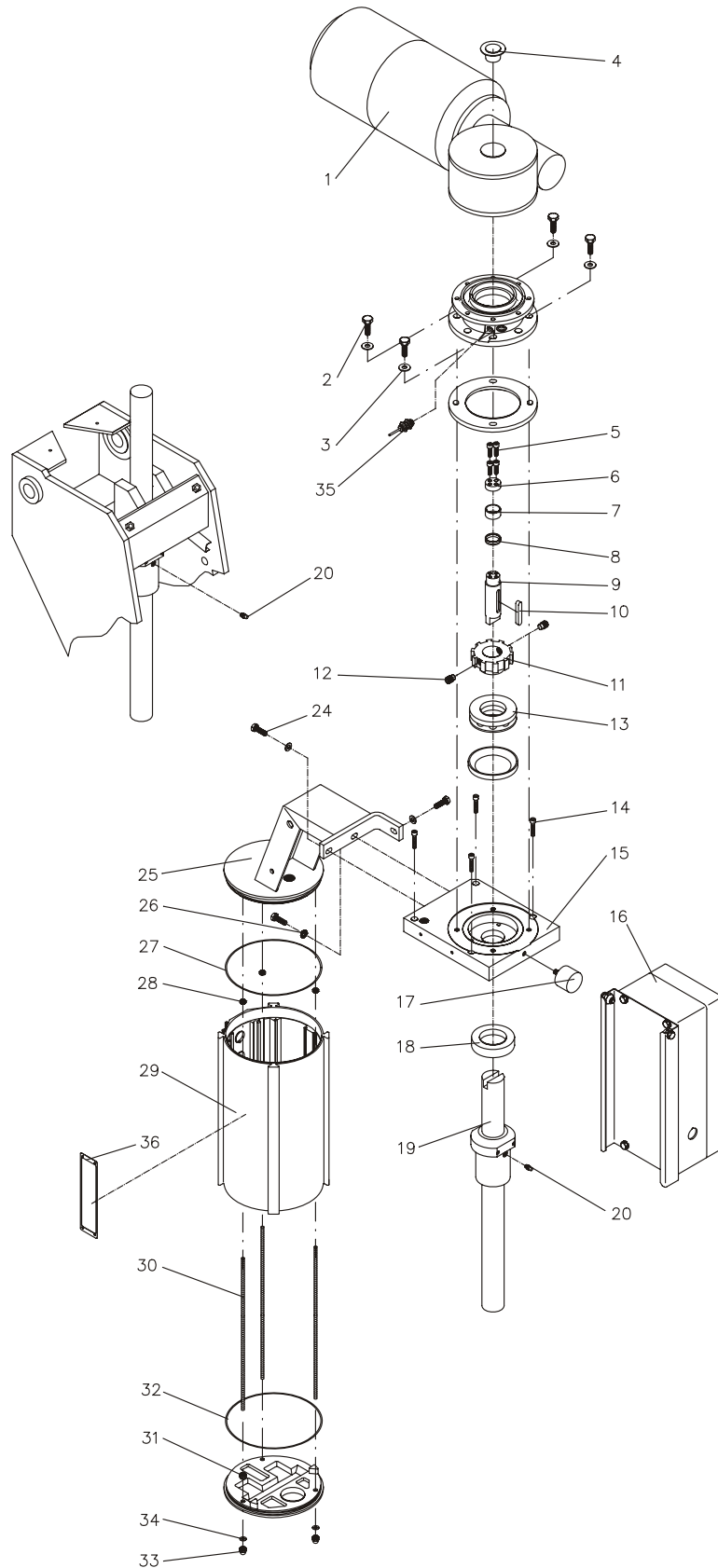
<b>Item</b>	<b>Description</b>
1	Rubber Band
2	Rubber Support
3	Washer A8.4
4	Hex Head Screw M8x16
5	Clamping Piece
6	Tapping Screw Ø3.5x13

# Dolly



Item	Description
1	Hydraulic Lifting Gear
2	Moving Gear
3	Lifting Gear Support
4	Axle
5	Plastic Wheel
6	Washer A21
7	Cotter Pin Ø5x50
8	Hex Head Cap Screw M8x20
9	Washer A8.4
10	Serrated Lockwasher A8.4
11	Hex Head Cap Screw M12x70
12	Hex Nut M12, Self-Locking
13	Washer A13
14	Setscrew M6x12
15	Hex Head Cap Screw M8x12

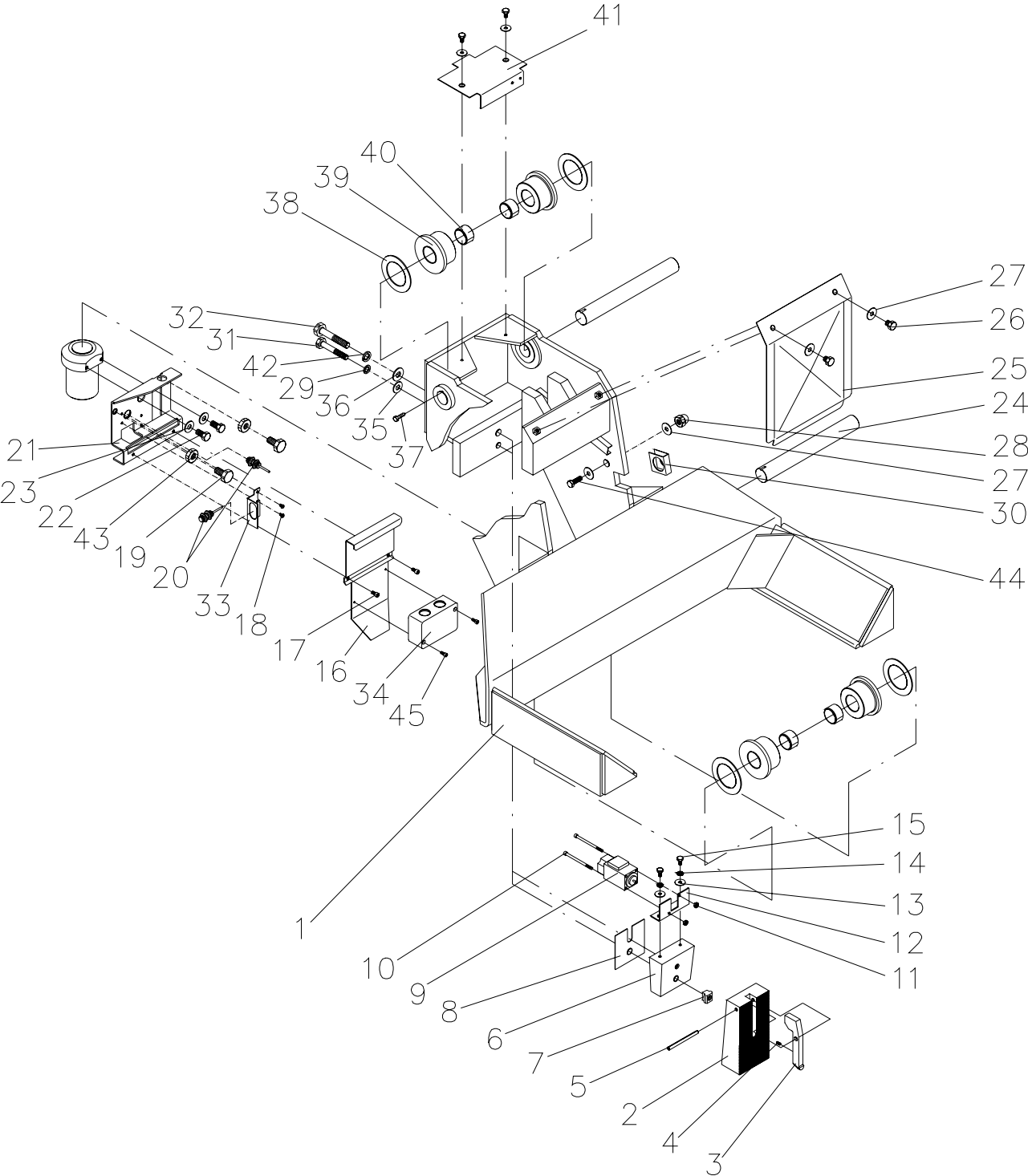
# Drive Assembly



<b>Item</b>	<b>Description</b>
1	Worm Gear Motor
2	Hex Head Cap Screw M8x30
3	Washer A8.4
4	Dummy Plug
5	Allen Screw M6x30
6	Clamping Plate
7	Ring
8	Clamping Element
9	Drive Pin
10	Feather Key A8x7x50
11	Castle Nut
12	Setscrew M12x18
13	Deep Groove Thrust Ball Bearing 53 309 U309
14	Allen Screw M6x20
15	Top Plate
16	Power Supply Unit Assy.
17	Rubber Buffer
18	Conical Socket
19	Recirculating-Ball Screw Recirculating-Ball Screw, Extended
20	Lubricator H3-M6
24	Hex Head Cap Screw M8x25
25	Control Casing Holder
26	Serrated Lockwasher A8.4
27	O-Ring 160x4
28	Hex Head Cap Screw M5
29	Control Casing
30	Threaded Rod M5
31	Hex Nut M5, Self-Locking
32	O-Ring 154x3
33	Hex Cap Nut M5
34	Washer A5.3
35	Proximity Switch Namur M12
36	Seal

# Carriage

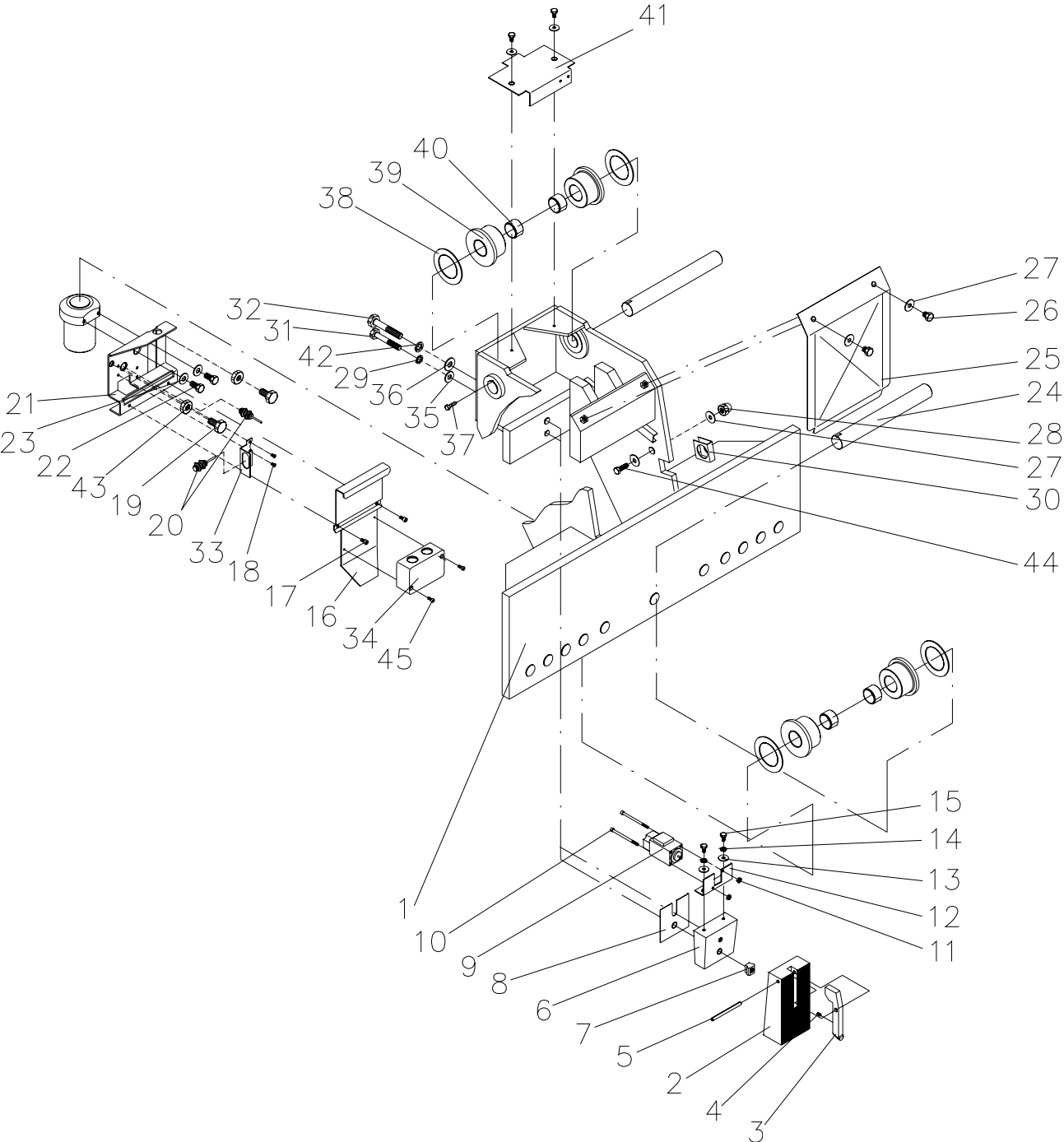
## Standard



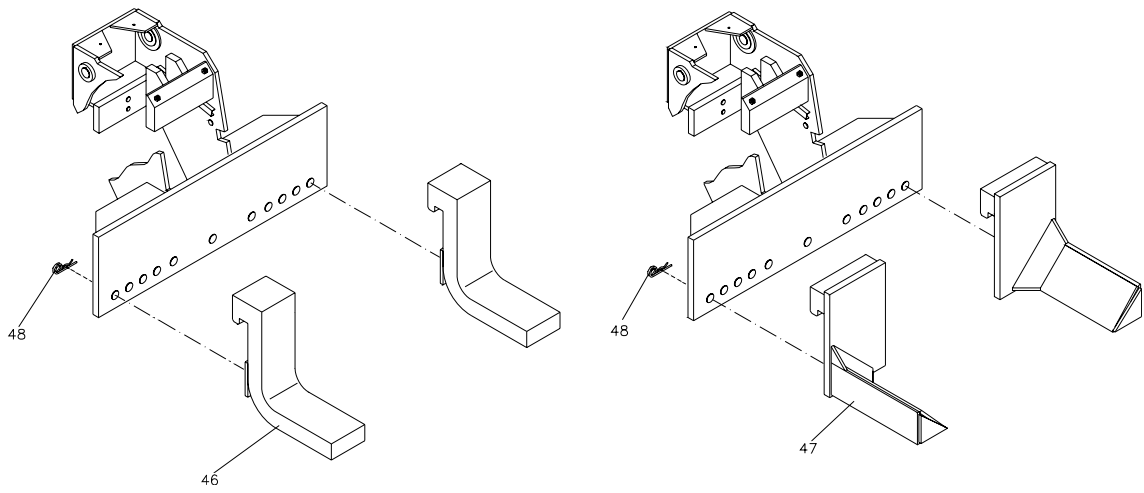
Item	Description
1	Carriage
2	Wedge
3	Latch
4	Compression Spring 0.4x5x16
5	Dowel Pin 6x80
6	Counterwedge
7	T-Nut M10
8	Spacer Plate 1 mm Spacer Plate 0.5 mm Spacer Plate 2 mm
9	Solenoid with Flange
10	Allen Screw M4x70
11	Hex Nut M4, Self-Locking
12	Solenoid Support
13	Washer A6.4
14	Serrated Lockwasher A6.4
15	Hex Head Cap Screw M6x12
16	Distributor Box Holder
17	Allen Screw M5x10
18	Phillips Screw M4x6 (see section "Safety Switch")
19	Hex Head Cap Screw M12x20
20	Proximity Switch Namur M18 (see section "Safety Switch")
21	Limit Switch Bracket (see section "Safety Switch")
22	Hex Head Cap Screw M8x16
23	Washer A8.4
24	Axle Axle (Carwash)
25	Cover
26	Hex Head Cap Screw M8x10
27	Washer A8.4
28	Hex Cap Nut M8
29	Spring Washer A10
30	Cable Support
31	Hex Head Cap Screw M10x65
32	Hex Head Cap Screw M12x70
33	Switch-off Angle (see section "Safety Switch")
34	Terminal Box
35	Washer A10.5
36	Washer A13
37	Tapping Screw M5x8
38	Thrust Washer GLY.PXG 527802 F
39	Roller
40	Plain Bearing GLY.PG 303440 F
41	Cover
42	Spring Washer A12
43	Hex Nut M12
44	Hex Head Cap Screw M8x25
45	Allen Screw M4x10



# Universal

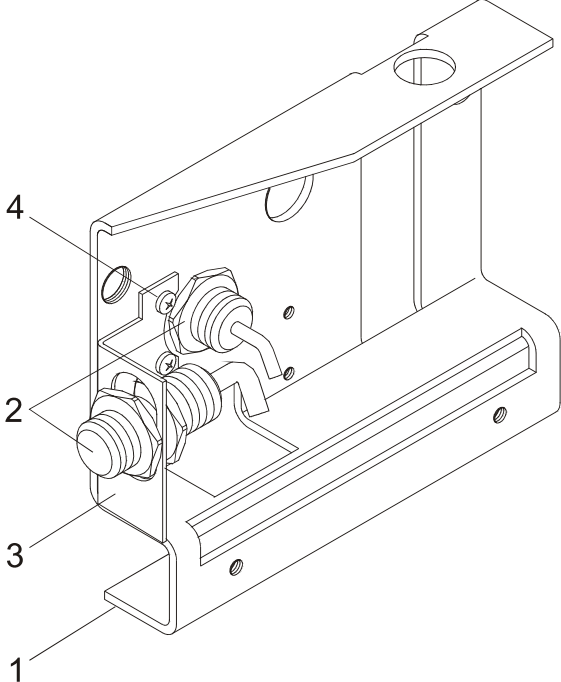


Item	Description
1	Carriage
2	Wedge
3	Latch
4	Compression Spring 0.4x5x16
5	Dowel Pin 6x80
6	Counterwedge
7	T-Nut M10
8	Spacer Plate 1 mm Spacer Plate 0.5 mm Spacer Plate 2 mm
9	Solenoid with Flange
10	Allen Screw M4x70
11	Hex Nut M4, Self-Locking
12	Solenoid Support
13	Washer A6.4
14	Serrated Lockwasher A6.4
15	Hex Head Cap Screw M6x12
16	Distributor Box Holder
17	Allen Screw M5x10
18	Phillips Screw M4x6 (see section "Safety Switch")
19	Hex Head Cap Screw M12x20
20	Proximity Switch Namur M18 (see section "Safety Switch")
21	Limit Switch Bracket (see section "Safety Switch")
22	Hex Head Cap Screw M8x16
23	Washer A8.4
24	Axle Axle (Car Wash)
25	Cover
26	Hex Head Cap Screw M8x10
27	Washer A8.4
28	Hex Cap Nut M8
29	Spring Washer A10
30	Cable Support
31	Hex Head Cap Screw M10x65
32	Hex Head Cap Screw M12x70
33	Switch-off Angle (see section "Safety Switch")
34	Terminal Box
35	Washer A10.5
36	Washer A13
37	Tapping Screw M5x8
38	Thrust Washer GLY.PXG 527802 F
39	Roller
40	Plain Bearing GLY.PG 303440 F
41	Cover
42	Spring Washer A12
43	Hex Nut M12
44	Hex Head Cap Screw M8x25
45	Allen Screw M4x10

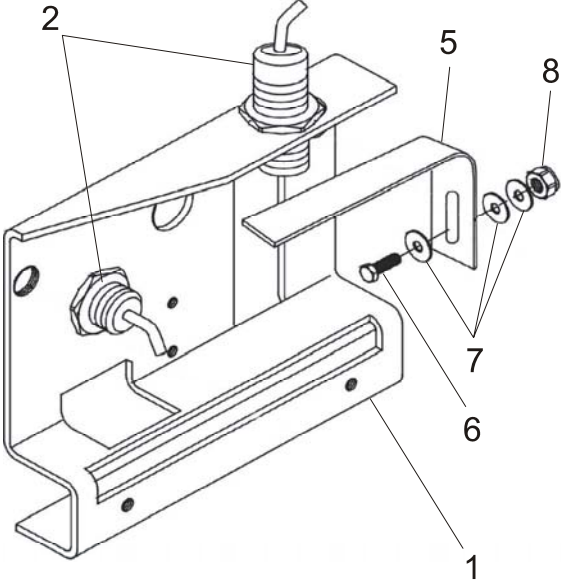


Item	Description
46	Support Fork Support Fork
47	Support Fork, Left Side Support Fork, Right Side
48	Cotter Pin

# Safety Switch



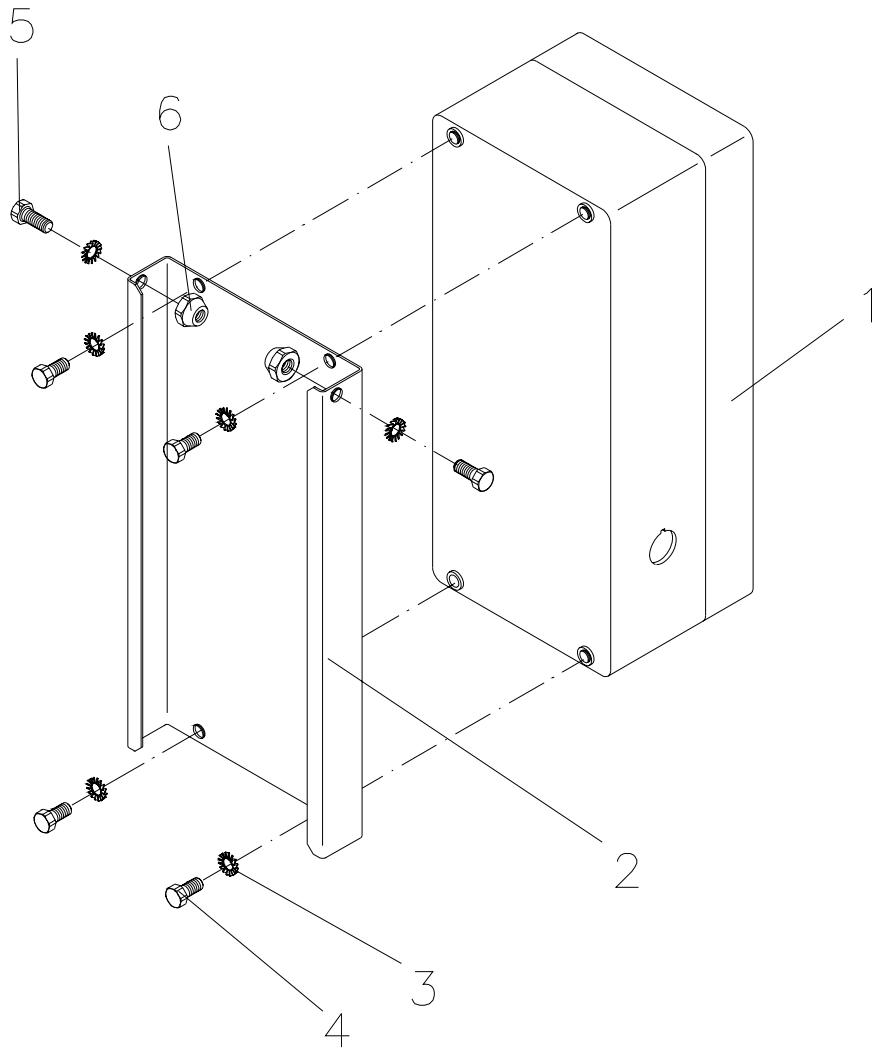
**Previous Design**



**New Design**

Item	Description
1	Limit Switch Bracket
2	Proximity Switch Namur M18
3	Switch-off Angle
4	Phillips Screw M4x6
5	Switch-off Angle
6	Hex Head Cap Screw M6x25
7	Washer A8.4
8	Hex Nut M6, Self-Locking

# Power Supply Unit



Item	Description
1	Switch Box
2	Mounting Bracket
3	Serrated Lockwasher A8.4
4	Hex Head Cap Screw M8x16
5	Hex Head Cap Screw M8x18
6	Hex Nut M8, Self-Locking