

# MAXON®

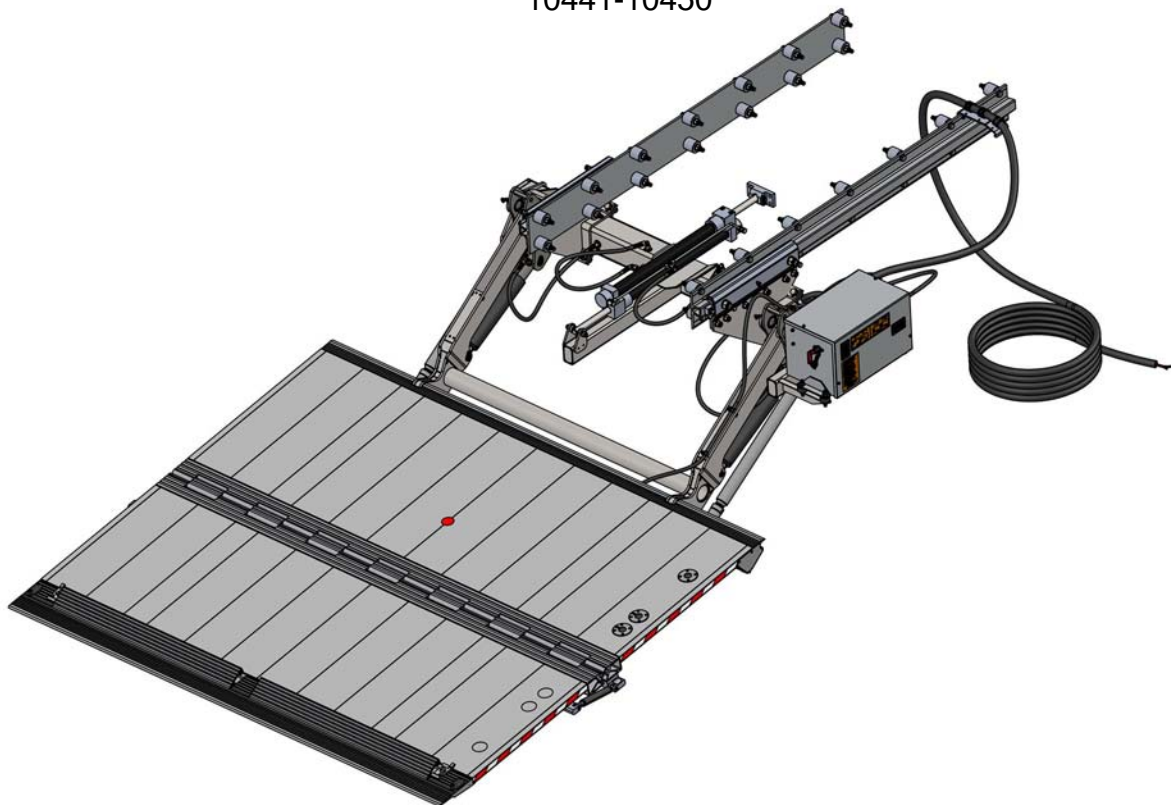
## INSTALLATION MANUAL

### FOR THE “AHT TAILGATE LOADER” ULTK-1000ST/AL

for Serial Number:

10412-10416

10441-10450



Designed for Maxon by:



Maxon Lift Corp. 11921 Slauson Ave., Santa Fe Springs, CA 90670  
800.227.4116 Fax 888.771.7713, [www.maxonlift.com](http://www.maxonlift.com)

September 2020

## SERVICE QUALIFICATIONS TO INSTALL STEEL TAILGATE LOADER

The installer should be well trained and should familiar with the installation of the AHT tailgate loader.

Carefully read the manual **before starting to install** the AHT tailgate loader.

Only mature adults, age 18 and above, should install the AHT tailgate loader.

Installer should be well qualified for installing the electrical and hydraulic equipment.

### INSTALLATION GUIDELINES

- 1) Remove bumpers, lights etc, from rear of vehicle and cut out the rear of the frame, if necessary, as shown in diagram.
- 2) Mount the sliding rails to the vehicle frame. They must be parallel.
- 3) Slide the sliding brackets on the rails.  
Raise the hoisting unit, to the sliding brackets and install it.
- 4) Adjust the sliding brackets.
- 5) Connect both battery cables.
- 6) Remove transport filler cap and insert dipstick in the power pack.
- 7) Connect cab cut off switch.
- 8) Mount the platform to the hoisting unit with the pins provided.
- 9) Manually move the tailgate loader out and hydraulically lift the arms to floor level.  
Install the endstop cube on the sliding rail.
- 10) Connect the feed cylinder to the vehicle frame. Check the measurements.
- 11) Connect the cable for foot control with power pack.
- 12) Remove tilting lock.
- 13) Install bumpers.
- 14) Check oil, locking brackets, hydraulic hoses and lubricate the tailgate loader
- 15) Install lights, license plates, etc.

## WARNINGS

**Comply with the following WARNINGS and SAFETY INSTRUCTIONS while installing Liftgates. See Operation Manual for operating safety requirements.**

Installing and maintaining a liftgate can expose you to chemicals, including lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, install and maintain liftgate in a well-ventilated area and wear **proper Personal protective equipment (PPE)**. For more information go to **[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)**.

- Do not stand, or allow obstructions, under the platform when lowering the Liftgate. **Be sure your feet are clear of the Liftgate.**
- **Keep fingers, hands, arms, legs, and feet clear of moving Liftgate parts (and platform edges) when operating the Liftgate.**
- **Correctly stow platform when not in use. Extended platforms could create a hazard for people and vehicles passing by.**
- **Make sure vehicle battery power is disconnected** while installing Liftgate. Connect vehicle battery power to the Liftgate only when installation is complete or as required in the installation instructions.
- If it is necessary to stand on the platform while operating the Liftgate, keep your feet and any objects clear of the inboard edge of the platform. Your feet or objects on the platform can become trapped between the platform and the Liftgate extension plate.
- Never perform unauthorized modifications on the Liftgate. Modifications may result in early failure of the Liftgate and may create hazards for Liftgate operators and maintainers.
- Recommended practices for welding on steel parts are contained in the current **AWS (American Welding Society) D1.1 Structural Welding Code - Steel**. Damage to Liftgate and/or vehicle, and personal injury can result from welds that are done incorrectly.
- Recommended practices for welding galvanized steel are contained in the current **AWS (American Welding Society) D19.0 Welding Zinc-Coated Steel**. Damage to Liftgate and/or vehicle, and personal injury can result from welds that are done incorrectly.

## SAFETY INSTRUCTIONS

- Read and understand the instructions in this **Installation Manual** before installing Liftgate.
- Before operating the Liftgate, read and understand the operating instructions in **Operation Manual**.
- Comply with all **WARNING** and instruction decals attached to the Liftgate.
- Keep decals clean and legible. If decals are illegible or missing, replace them. Free replacement decals are available from **Maxon Customer Service**.
- Consider the safety and location of bystanders and location of nearby objects when operating the Liftgate. Stand to one side of the platform while operating the Liftgate.
- Do not allow untrained persons to operate the Liftgate.
- Wear appropriate safety equipment such as protective eyeglasses, faceshield and clothing while performing maintenance on the Liftgate and handling the battery. Debris from drilling and contact with battery acid may injure unprotected eyes and skin.
- Be careful working by an automotive type battery. Make sure the work area is well ventilated and there are no flames or sparks near the battery. Never lay objects on the battery that can short the terminals together. If battery acid gets in your eyes, immediately seek first aid. If acid gets on your skin, immediately wash it off with soap and water.
- If an emergency situation arises (vehicle or Liftgate) while operating the Liftgate, release the control switch to stop the Liftgate.
- A correctly installed Liftgate operates smoothly and reasonably quiet. The only noticeable noise during operation comes from the power unit while the platform is raised and lowered. Listen for scraping, grating and binding noises and correct the problem before continuing to operate Liftgate.

## NOTICE

- Maxon Lift is responsible for the instructions to correctly install **MAXON** Liftgates on trucks or trailers only.
- Liftgate installers, not Maxon Lift, are responsible for reviewing and complying with all applicable Federal, State, and Local regulations pertaining to the trailer or truck.
- Installers of the liftgate should ensure that all trucks and trailers are equipped with grab handles as needed. Refer to Technology Maintenance Council (TMC) RP 1428: Entry And Egress Guidelines for Vehicles With Fold-Under Type Liftgates.

## UNPACKING THE TAILGATE LOADER

Complete delivery will be shipped of several load units. There are three different load units:

- Hoisting unit



- Platform

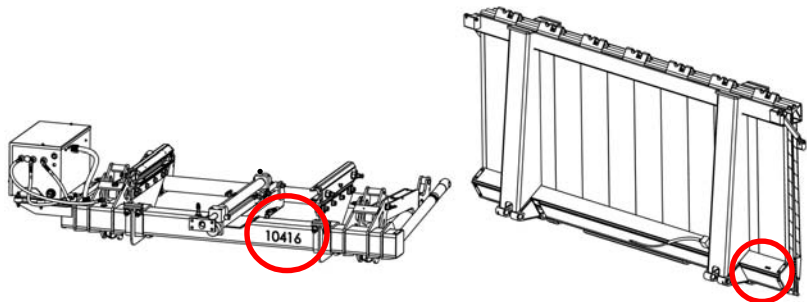


- Rails



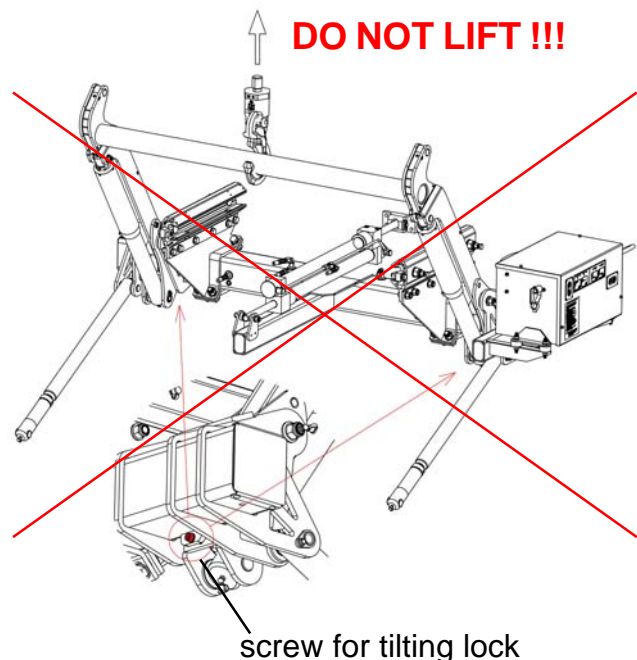
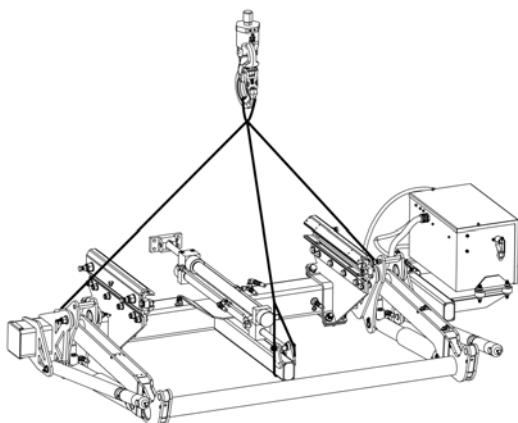
Hoisting unit includes cross beam, lifting arm, all cylinders, lever arms, sliding brackets and power pack.

**ATTENTION:** The hoisting unit and the platform are matched as they will be tested as the same unit. Position of serial number shown in picture.



**CAUTION:** Never lift the hoisting unit with the lifting arm at the stabilizer. (see picture)

The screws for the tilting lock can break. This can lead to further damage to the tailgate loader. (Remove the screws after finishing the installation.)



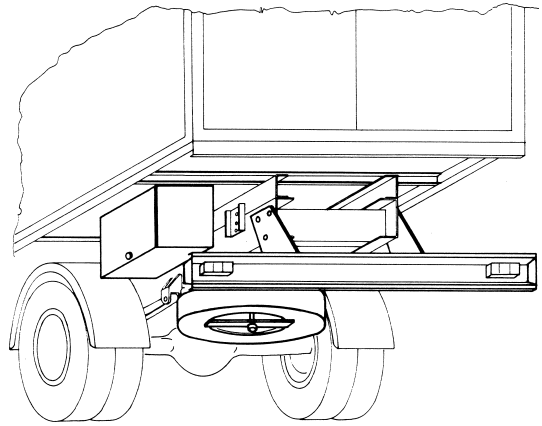
Always lift the complete hoisting unit evenly, being careful to raise the lift arm with lever arms at the same time.

If manually lifting the hoisting unit, be sure the lift arm and the lever arms are secured.

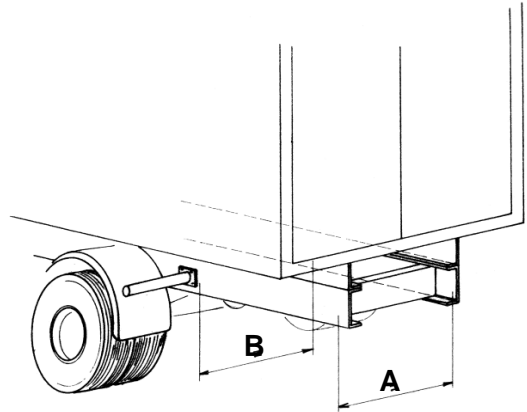
## PREPARING FOR INSTALLATION

Remove rear lights, bumper, toolbox and spare wheel, if necessary.

**Disconnect the battery cable** to prevent damage to the battery while welding.

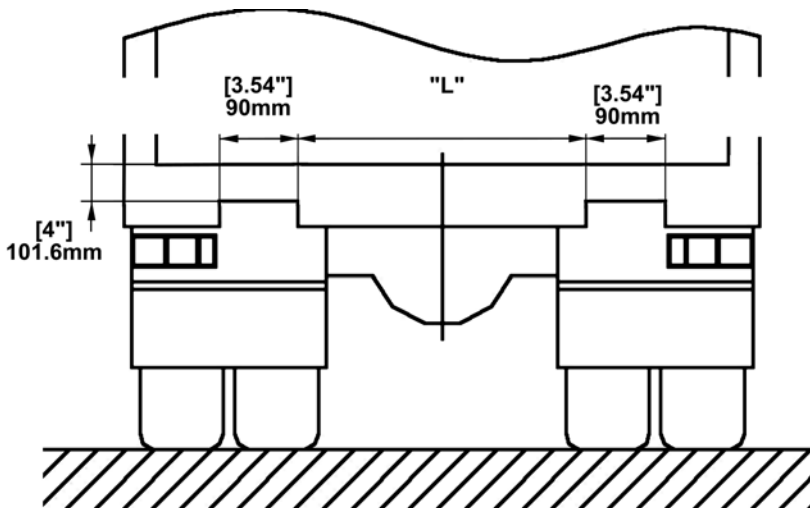
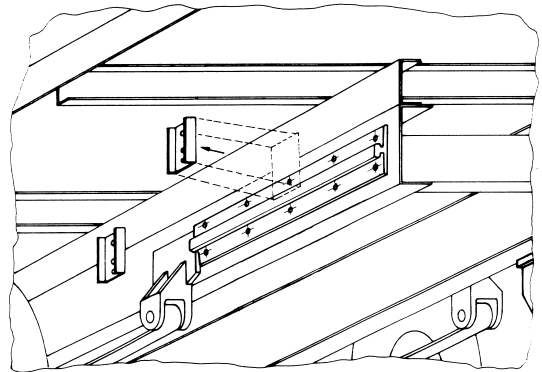


Measure the main frame of the vehicle. The sliding rails **must be** within 1mm (0,039") of being parallel. - "A" and "B" must be the same.



Remove any obstruction attached to the frame of the vehicle that would interfere with the **installation of the sliding rails**.

Check the vehicle main frame for rivets or bolts where sliding rails will be located.



Cut out the rear of the frame, if it is necessary.

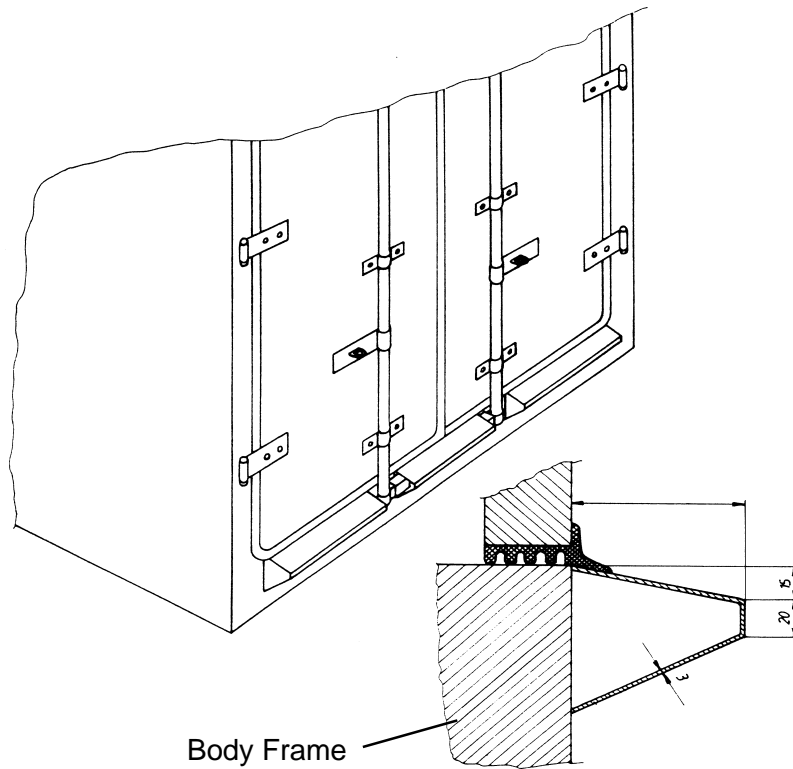
**Reinforce the cutouts.**

**ULTK-1000:**

L=1260mm (49,6")

## PREPARING FOR INSTALLATION

### Installing on a truck body with rear doors:

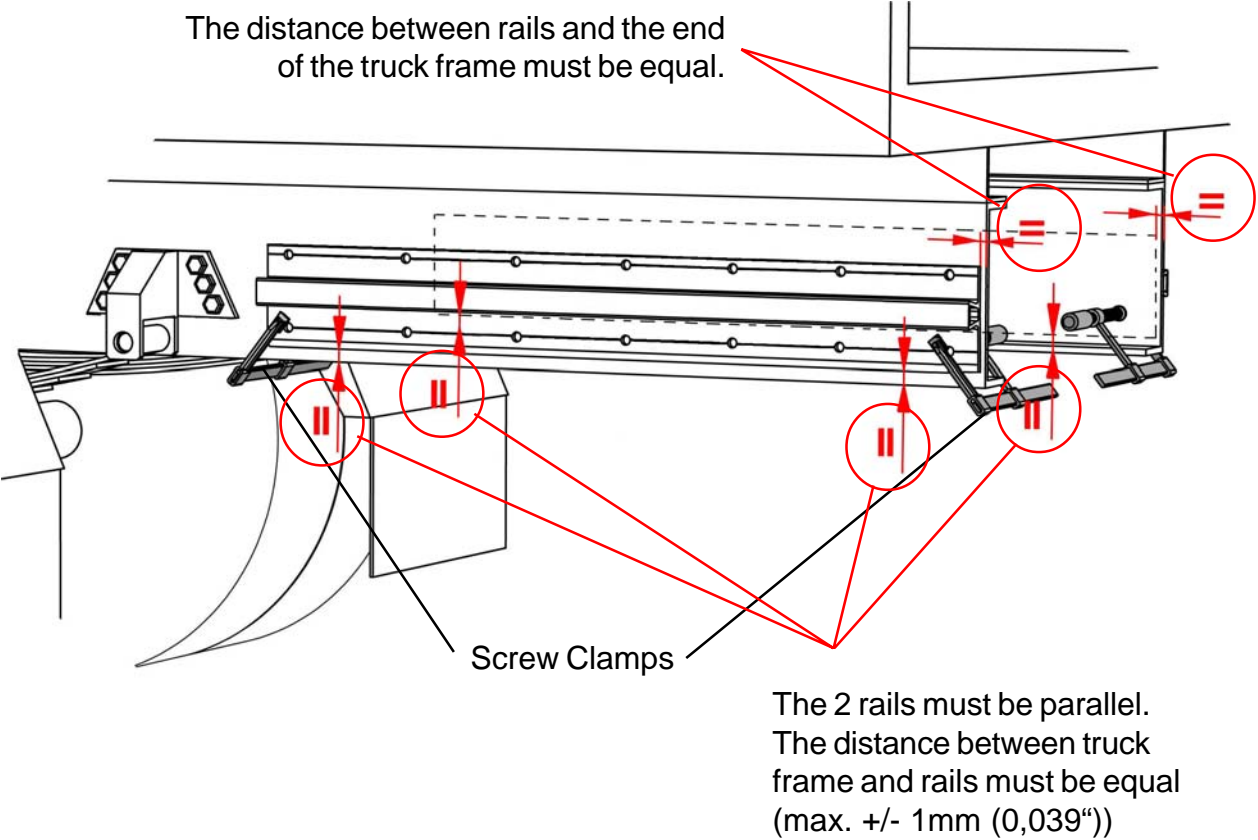


Refrigerated bodies with swing doors need an end profile made from stainless steel, welded to the body as shown in the above drawing, on the right. Profile must be 1" deeper than door locks.

# INSTALLATION INSTRUCTIONS

## Install the rails

Before you can install the tailgate loader you have to mount the 2 rails onto the truck frame. Clamp the 2 rails with screw clamps onto the truck frame.



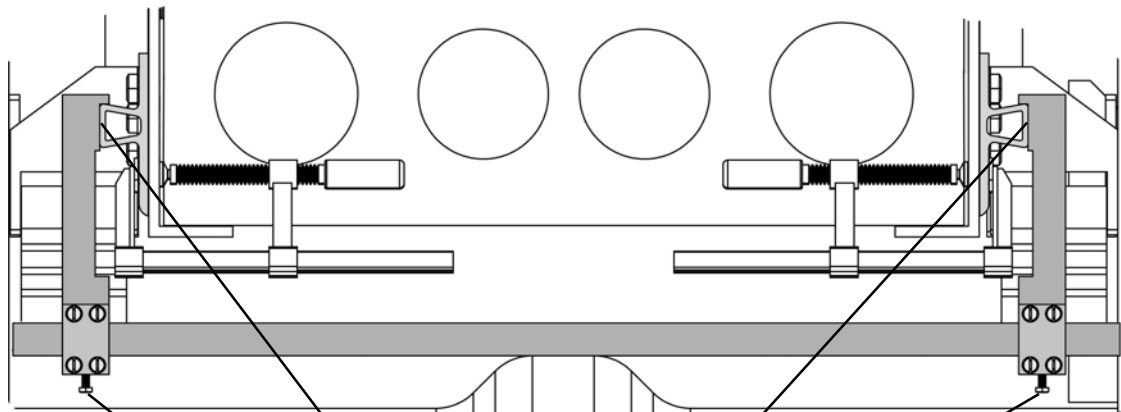


# INSTALLATION INSTRUCTIONS

## Install the rails

**Position the the rails as shown in the drawings.**

Place 1 checking device onto the rails as shown in the picture below.  
(checking devices are not included in delivery)

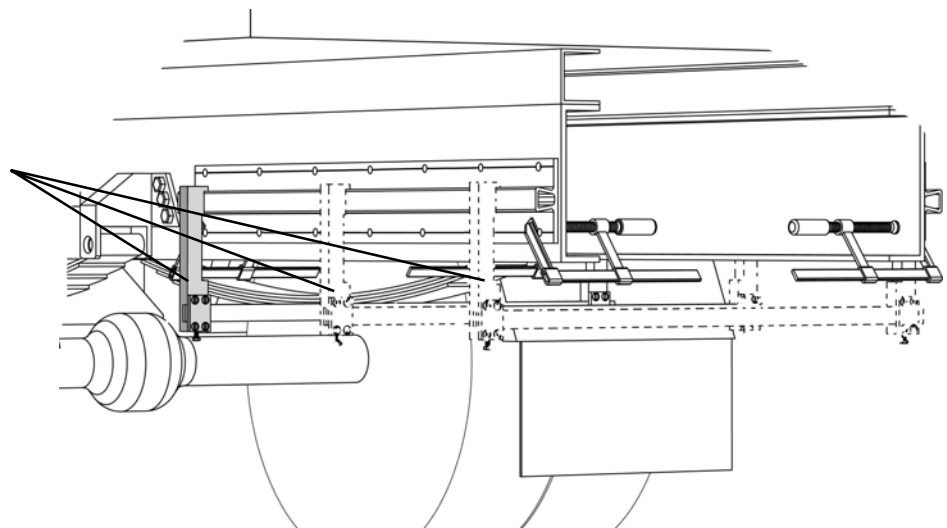


**CONTACT** between rail and checking device.

Fasten the screw if the correct width is adjusted.

Check the width of the rails with 1 checking device on the front, middle and rear.  
If the difference between front, middle and rear is larger than 1mm (0.039"), the rails must be shimmed.  
max. Tolerance +/-1mm (0,039")

Check the width of the rails on the front, middle and rear side.

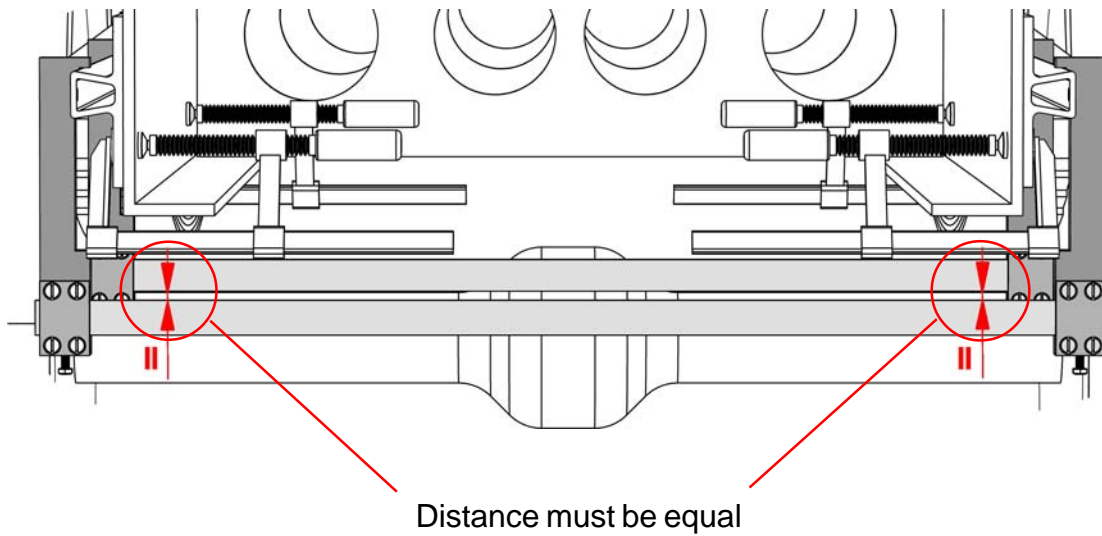


# INSTALLATION INSTRUCTIONS

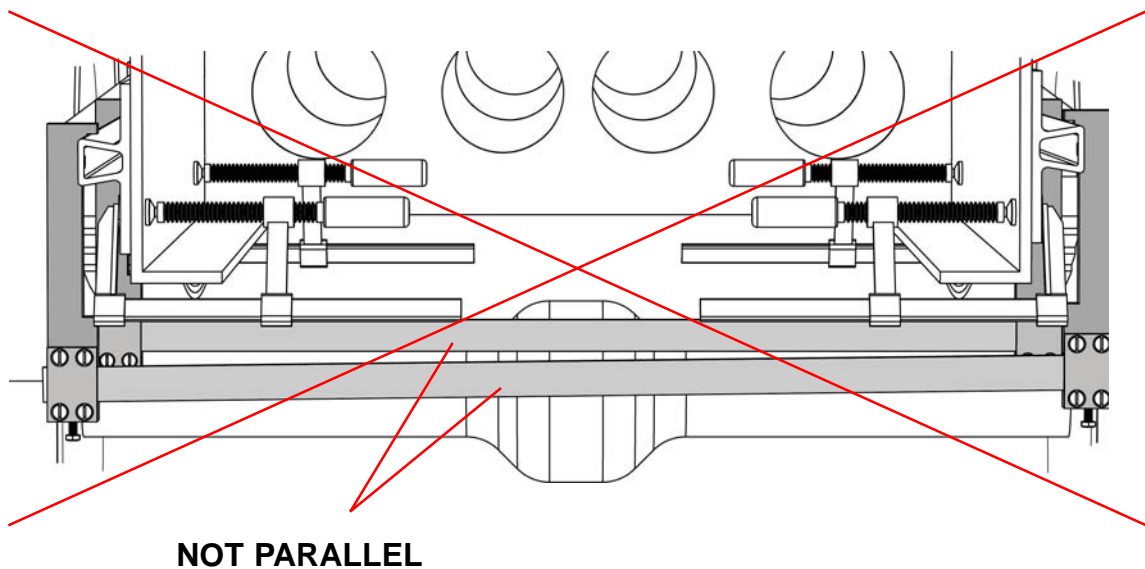
## Install the rails

Now place the second checking device onto the rail. One on the front and the other on the rear of the rail.

If you looking behind from the truck, the 2 checking devices must be parallel.



**WRONG** - The 2 checking devices are not parallel ==> The 2 rails are not parallel.

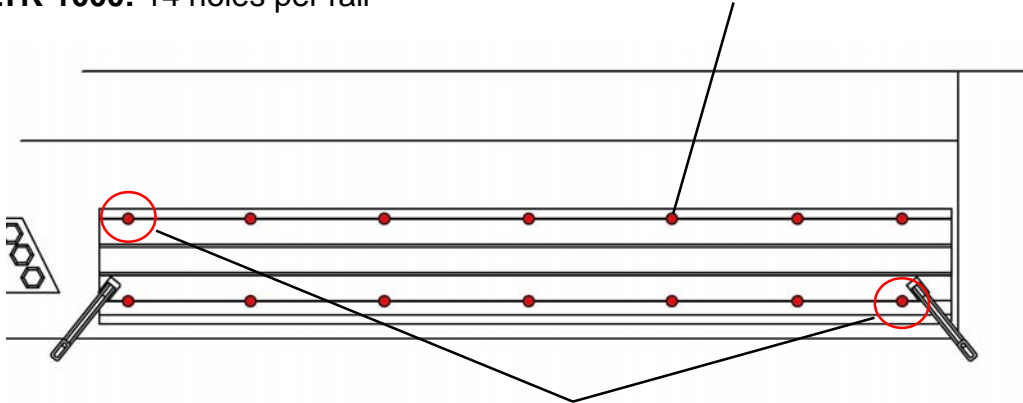


# INSTALLATION INSTRUCTIONS

## Install the rails

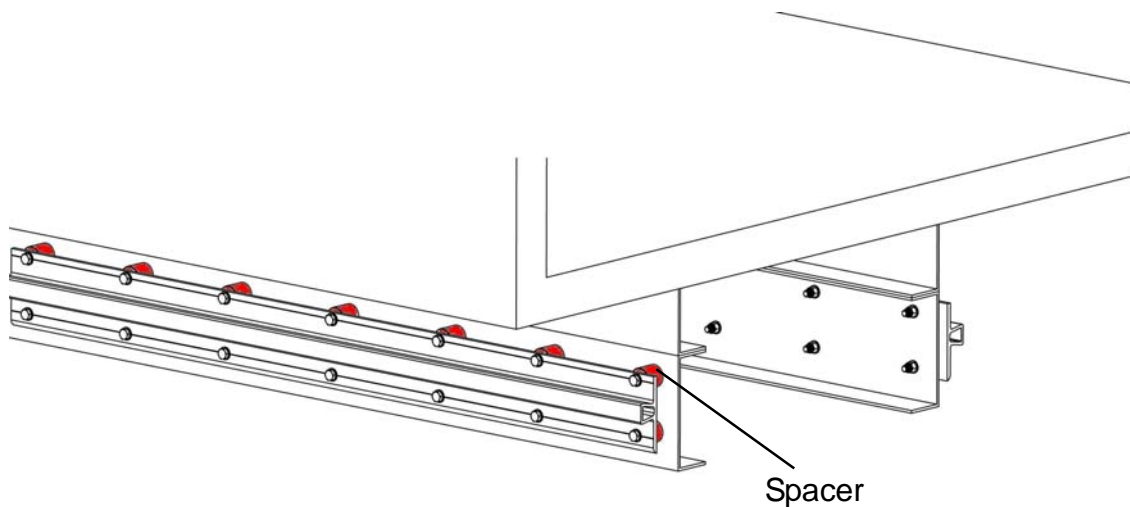
If all dimension are OK and the 2 rails are parallel, drill holes  $\varnothing 14$  (9/16") in the truck frame.

**ULTK-1000:** 14 holes per rail



Drill 2 holes in the truck frame, put a bolt in each one and secure. Then drill all other holes. If all holes are drilled, remove all screw clamps and the rails.

Mount the 2 rails again with spacers.



**ULTK-1000:** 14 pieces screws M14x100 per rail (max. 135Nm (100ft lbs))  
14 pieces spacer per rail

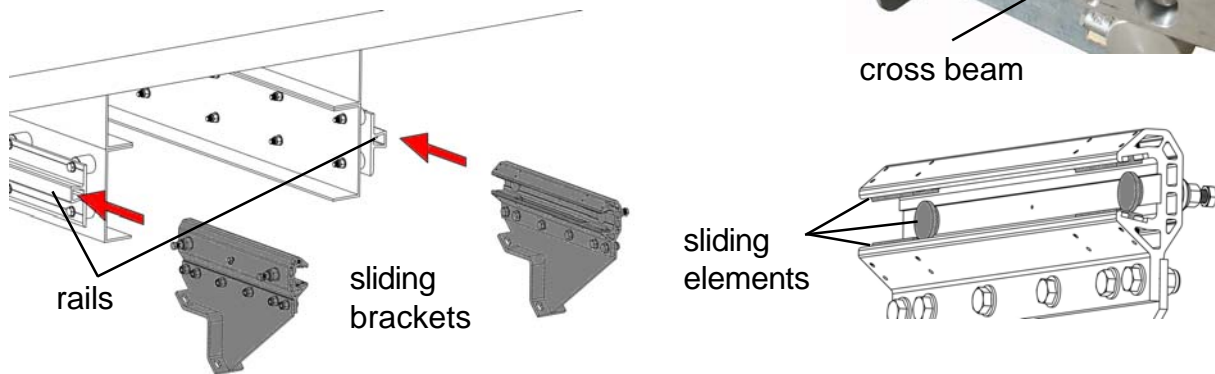
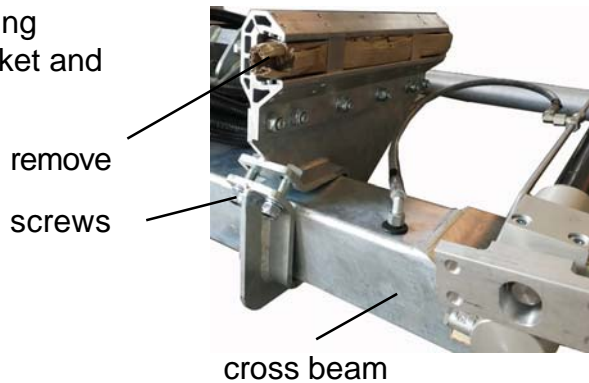
If the **rails are mounted again** on both sides with the spacers, **check the width and the parallelism** of the rail again. Adjust it if necessary.

# INSTALLATION INSTRUCTIONS

## Install the sliding brackets

Remove the carton and the plates from the sliding brackets. Loosen the 4 screws per sliding bracket and remove it from the cross beam.

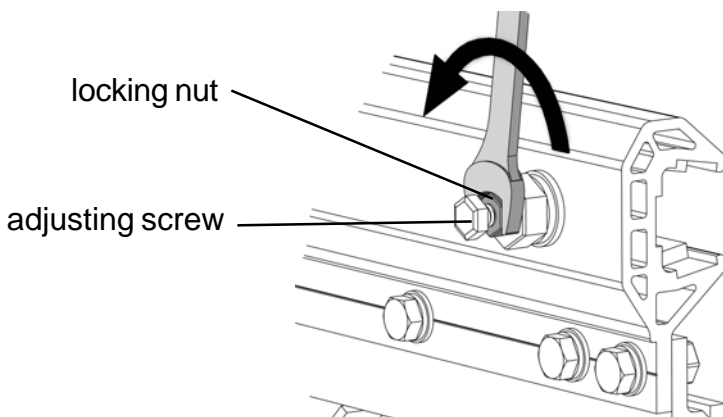
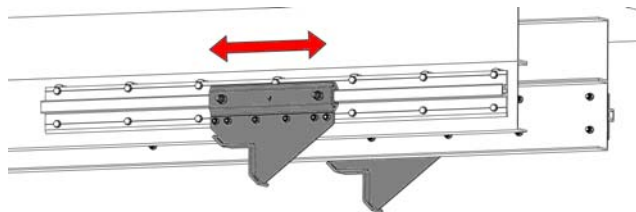
Move the sliding brackets onto the rails.



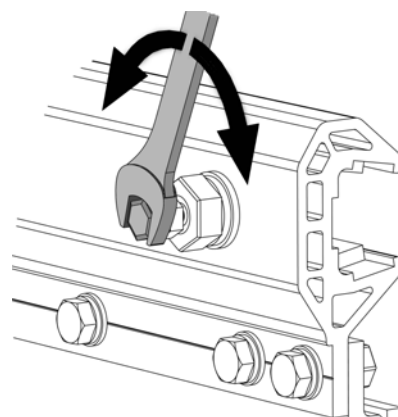
**ATTENTION:** All sliding elements must place in the sliding brackets. (6 sliding elements per sliding bracket)

## How to adjust the sliding brackets

- Loosen the locking nut
- Adjust the easy movement of the sliding brackets by turning the adjusting screw.
- Hold the adjusting screw and fasten the locking nut.



Loosen the locking nut

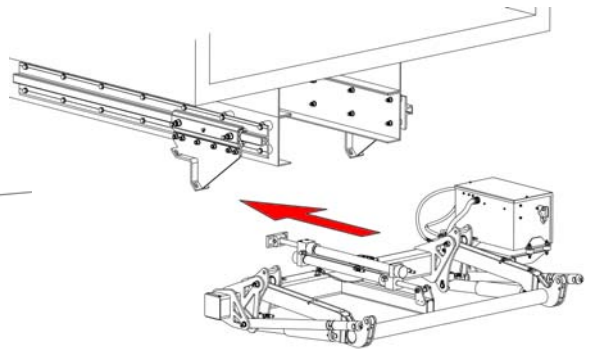
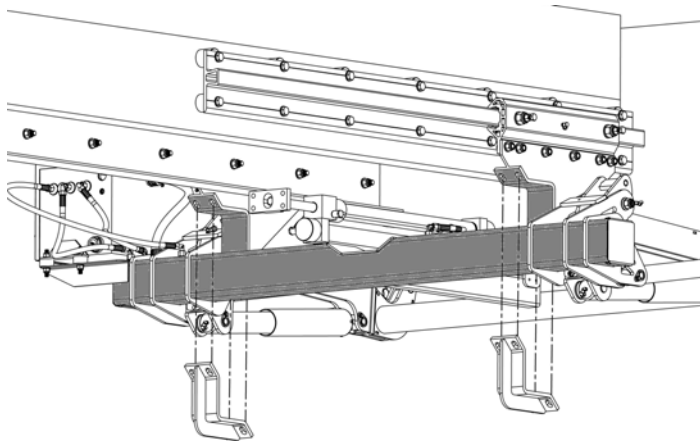


Adjust the sliding bracket

# INSTALLATION INSTRUCTIONS

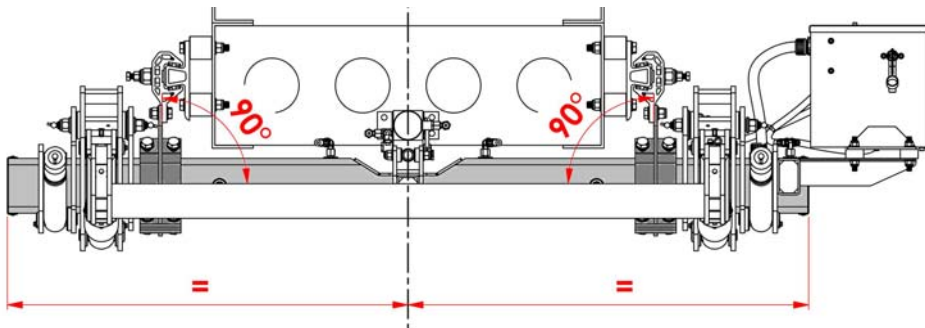
## Position the hoisting unit

Place the hoisting unit with a fork lift under the truck. The cross beam of the tailgate loader must be under the sliding brackets. The tailgate loader must be centred to the truck.

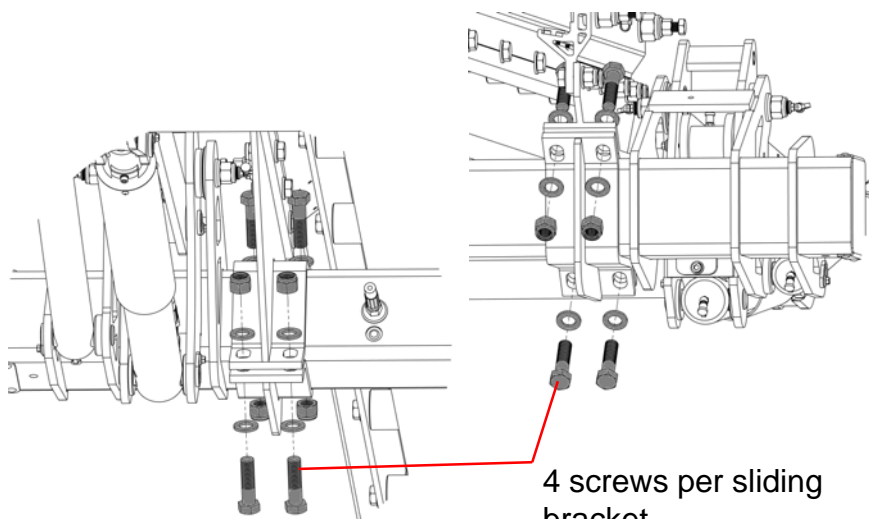


Raise the hoisting unit with a fork lift to the correct position and install the sliding brackets onto the cross beam. Don't fasten the 4 screws per sliding bracket complete.

**ATTENTION:** The angle between sliding bracket and cross beam must be  $90^\circ$ .  
The position of the cross beam must be centred to the truck.



If the hoisting unit is in the correct position, fasten all screws at the sliding brackets. (4 per sliding bracket)



**ULTK-1000:** M16x60 (max. 195Nm (145ft lbs))

# INSTALLATION INSTRUCTIONS

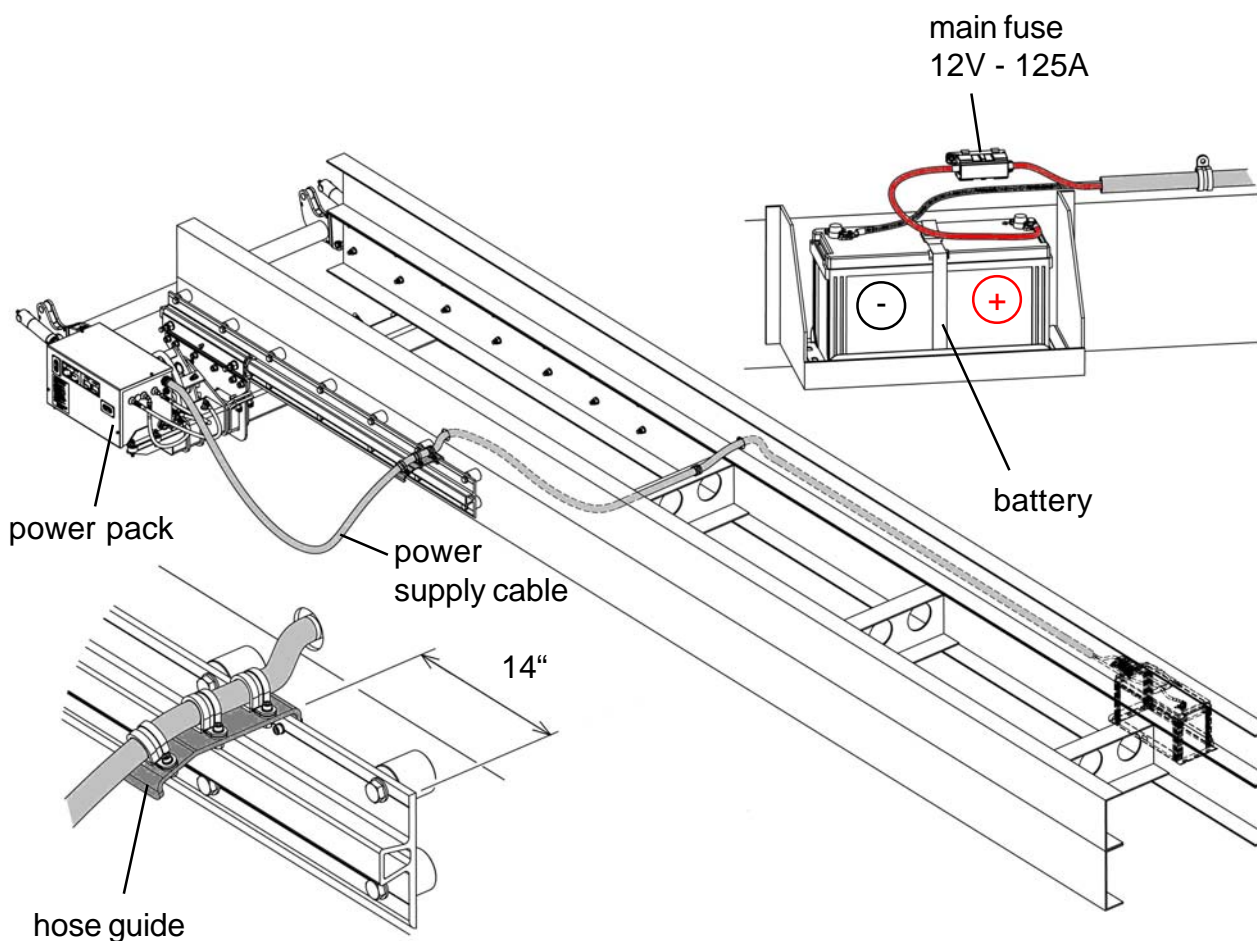
## Energize the power pack

**POORLY MAINTAINED OR UNDERSIZED BATTERIES OR A BAD GROUND CAN DAMAGE THE STARTER SWITCH!!!**

- NOTE:**
- Do not use the main frame of the vehicle as negative!
  - All battery power leads must have a core area not less than 35mm<sup>2</sup> (2 AGW) and be double insulated.
  - Check the correct capacity and size of the batteries suited for the job!
  - Check the voltage of vehicle and tailgate loader.  
Be sure they are the same!
  - Also check the fuse in the power pack. 12V = 25A

**Install the power supply cable** like in the picture below.

- Install the hose guide on the rail with the screws. Fix the hose with the power supply cable on the frame with clamps.
- Connect both battery cables (**positive** and **negative**) directly from the power pack to the batteries.
- Connect 125A main fuse within 18" of battery **positive** terminal.

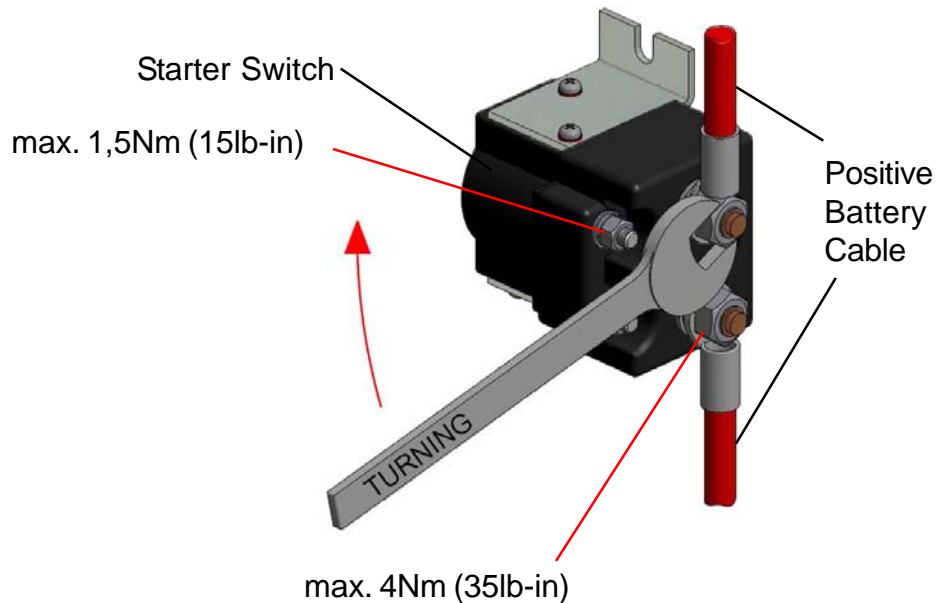




# INSTALLATION INSTRUCTIONS

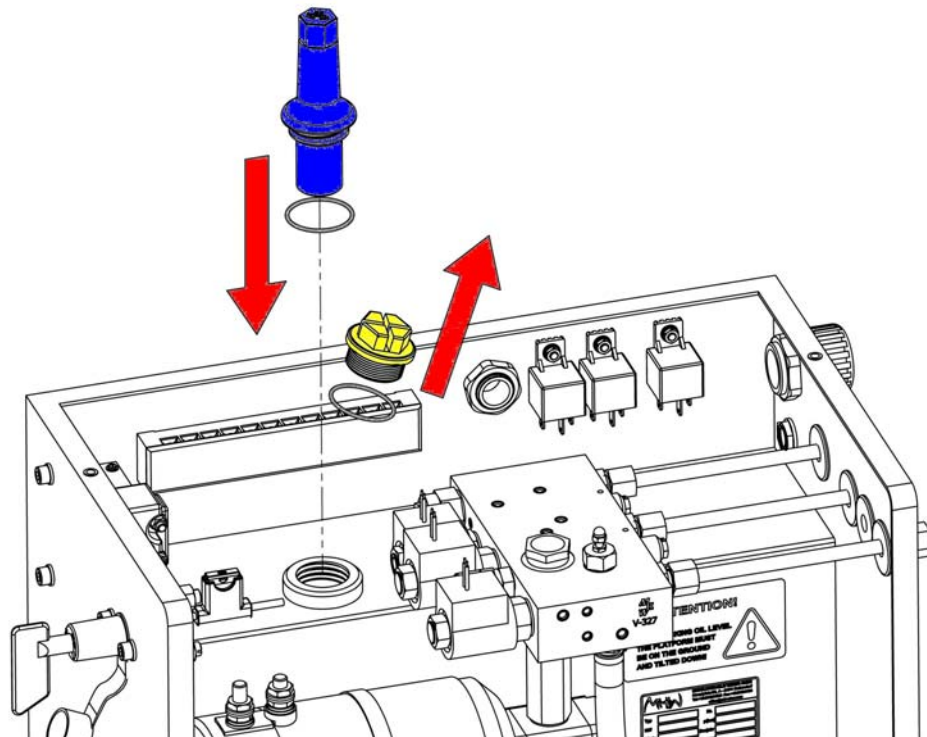
## Energize the power pack

**ATTENTION:** If you change the starter switch or fixing the battery cable, do not overtighten the nuts. Same on the poles of motor and battery main switch.



**Remove transport filler cap (yellow) and insert dipstick (blue)**

**CAUTION:** There is no breather in transport filler cap. The pump or reservoir will be damaged if not removed.

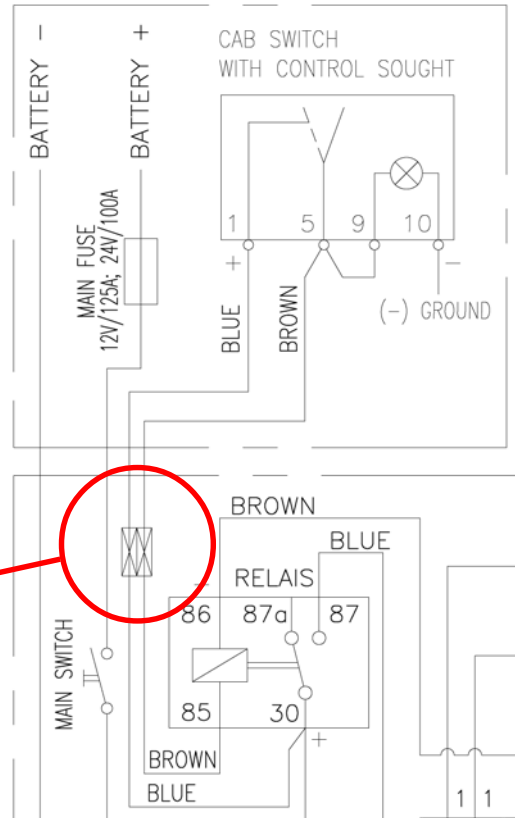
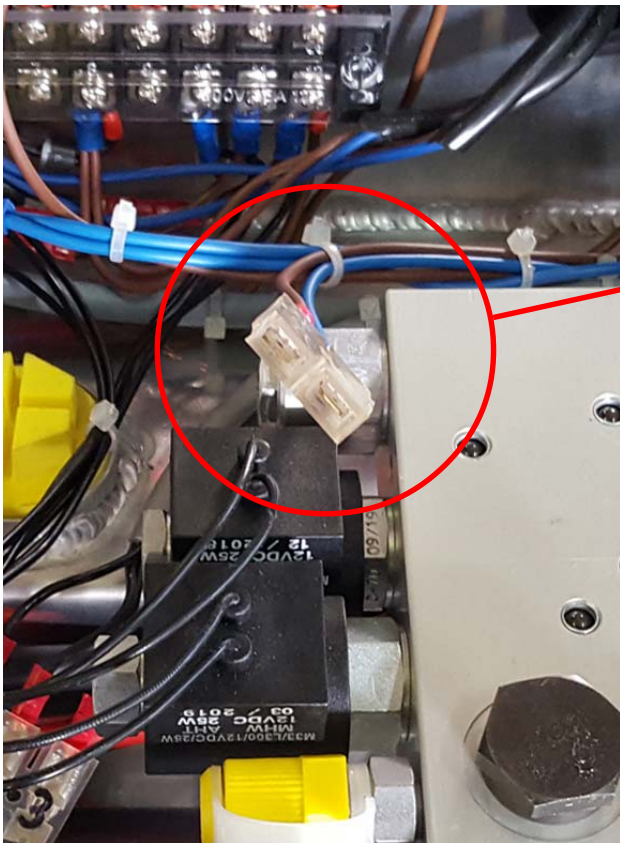


# INSTALLATION INSTRUCTIONS

## Energize the power pack

Connect the **cab cut off switch** to the connector (2 pole) of the pre-installed relay in the power pack.

Detail from Electrical Wiring Diagram



Energize the power pack and actuate the **valve** to be sure they are **operating properly**.

**NOTE:** Power unit operating temperature should be in between -20°C to +70°C.

**Check** a new power pack **for leakage** after a short period of time. Tighten any fittings that may be leaking.

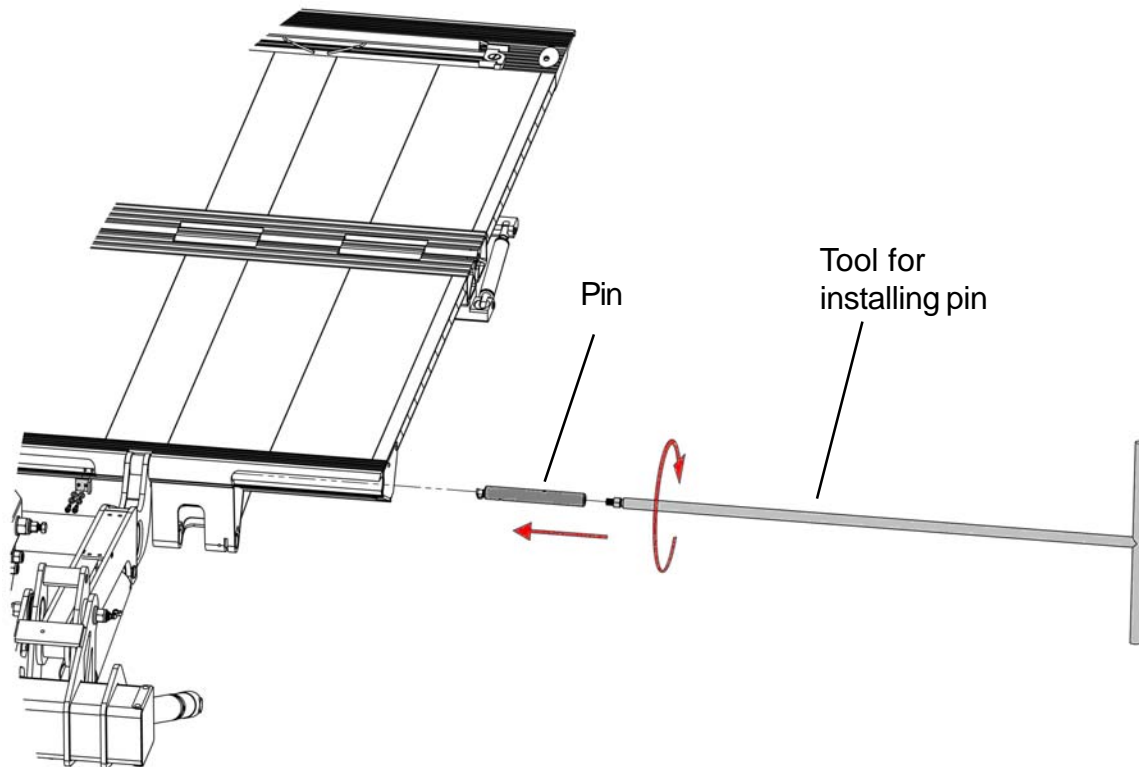


# INSTALLATION INSTRUCTIONS

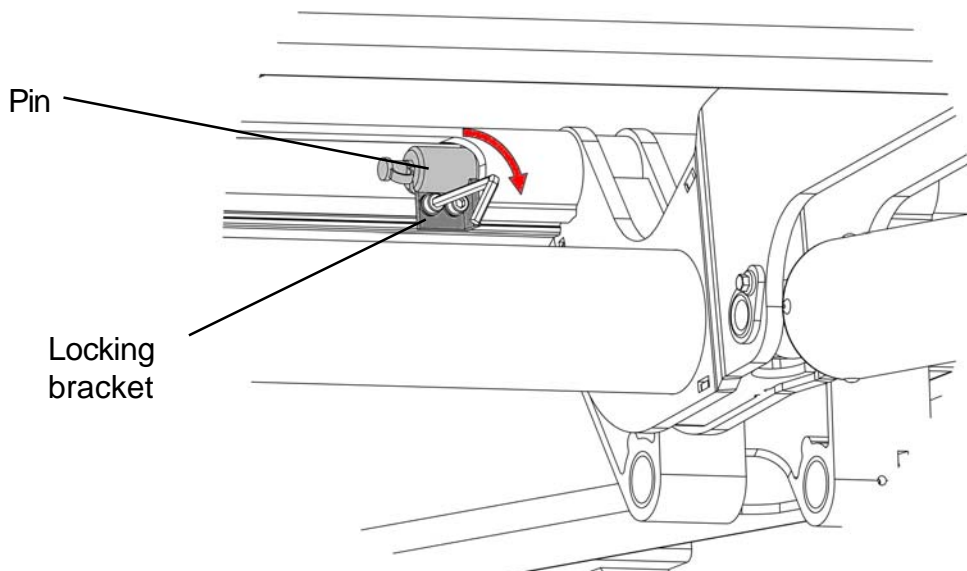
## Installing the platform

It is **not necessary to use a hammer** when installing platform pins. They should fit the bushing and slide in very easy. A tool to install the pins is not included in the delivery. Screw the pin on the tool and **turn it clockwise, while pushing**, to get the pin into the correct position to lock it into place.

It is important that the bushings are not damaged or moved while installing the pins.



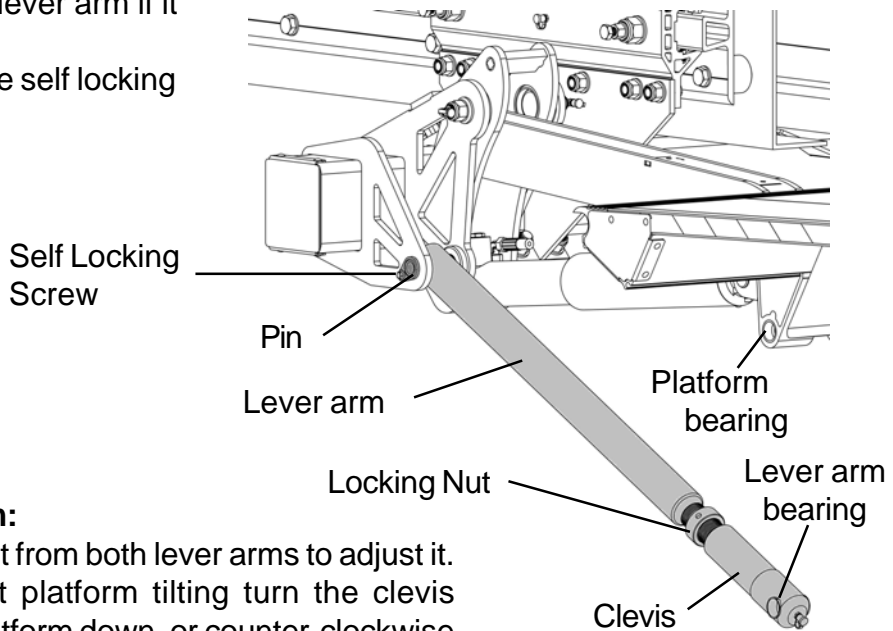
If the pin is in its correct position, lock it with the locking brackets as shown in picture below. After locking the pin turn the tool counter-clockwise to remove it. Do this installation on both sides.



# INSTALLATION INSTRUCTIONS

## Installing the adjustable lever arm

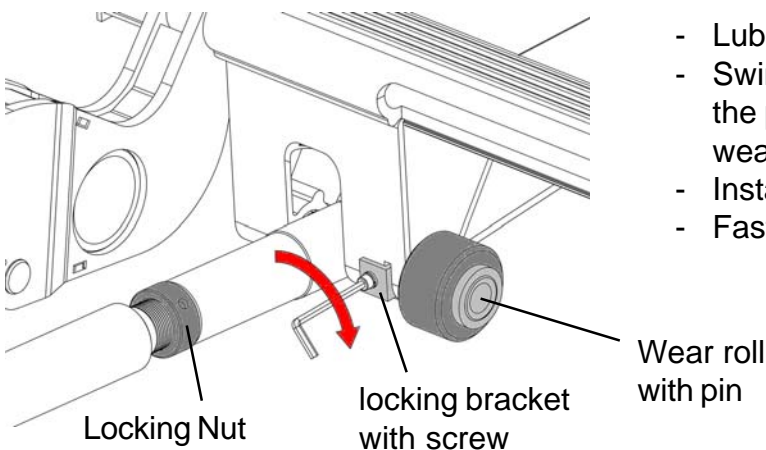
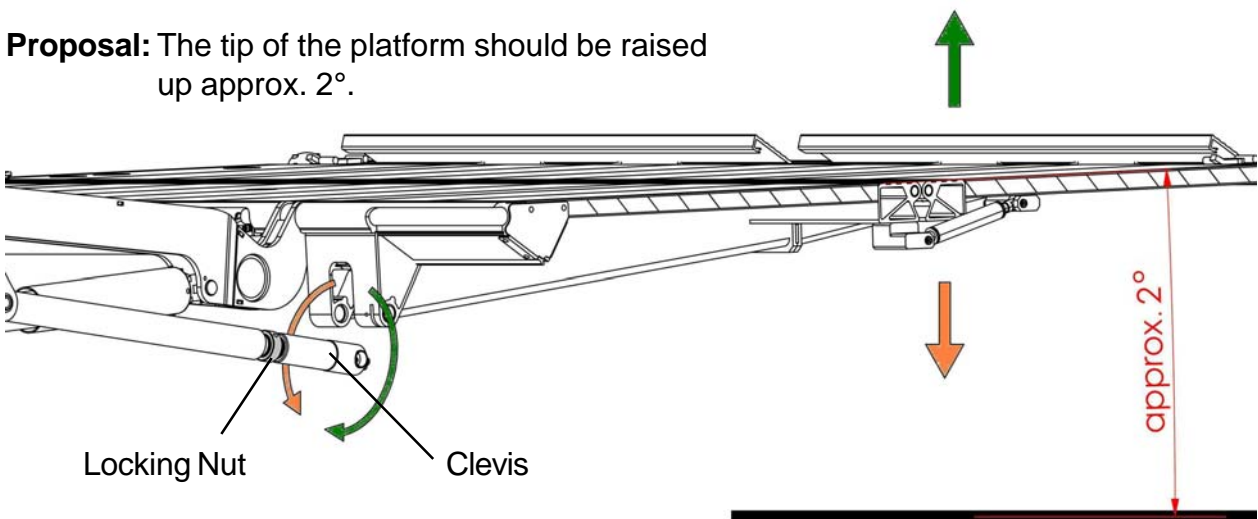
- Install the adjustable lever arm if it is not mounted.
- Secure the pin with the self locking screw.



## Adjustment of platform:

- Loosen the locking nut from both lever arms to adjust it.
- To adjust the correct platform tilting turn the clevis clockwise to tilt the platform down, or counter-clockwise to tilt the platform up.
- Turn the clevis until the desired platform tilting is reached.

**Proposal:** The tip of the platform should be raised up approx. 2°.

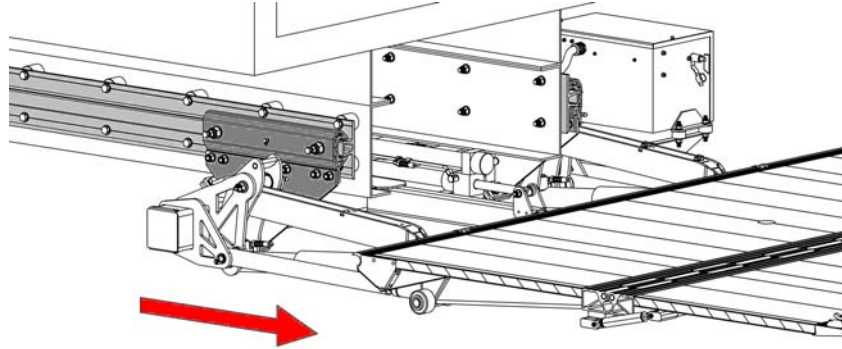


- Lubricate the bushing and pin.
- Swing the lever arm to the bearing of the platform and install the pin and wear roll.
- Install the locking bracket with screw.
- Fasten the locking nut.

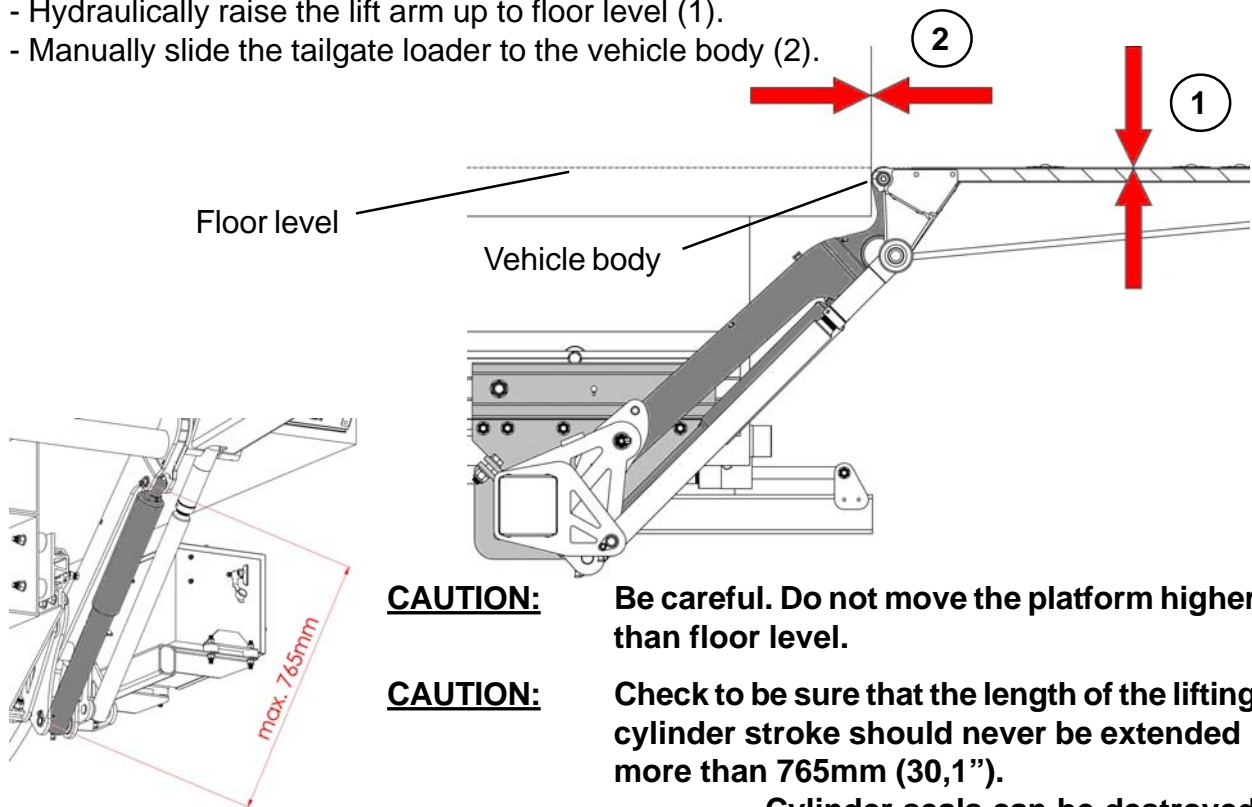
# INSTALLATION INSTRUCTIONS

## Setting of the maximum slide out position

- Manually slide the tailgate loader out to the end of the rail.



- Hydraulically raise the lift arm up to floor level (1).
- Manually slide the tailgate loader to the vehicle body (2).



**CAUTION:** Be careful. Do not move the platform higher than floor level.

**CAUTION:** Check to be sure that the length of the lifting cylinder stroke should never be extended more than 765mm (30,1”).

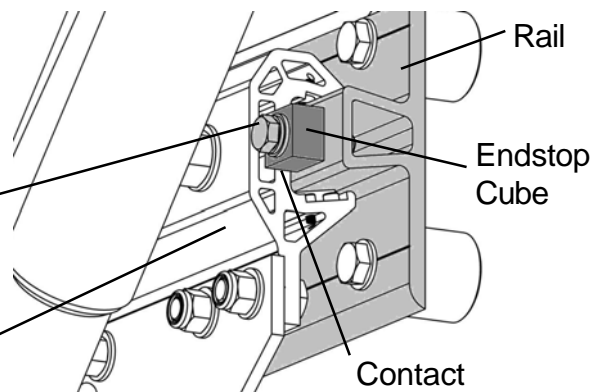
Cylinder seals can be destroyed when this measurement is exceeded.

when this

- Screw the endstop cube onto the rail on both sides. The cube must make a contact with the sliding bracket.

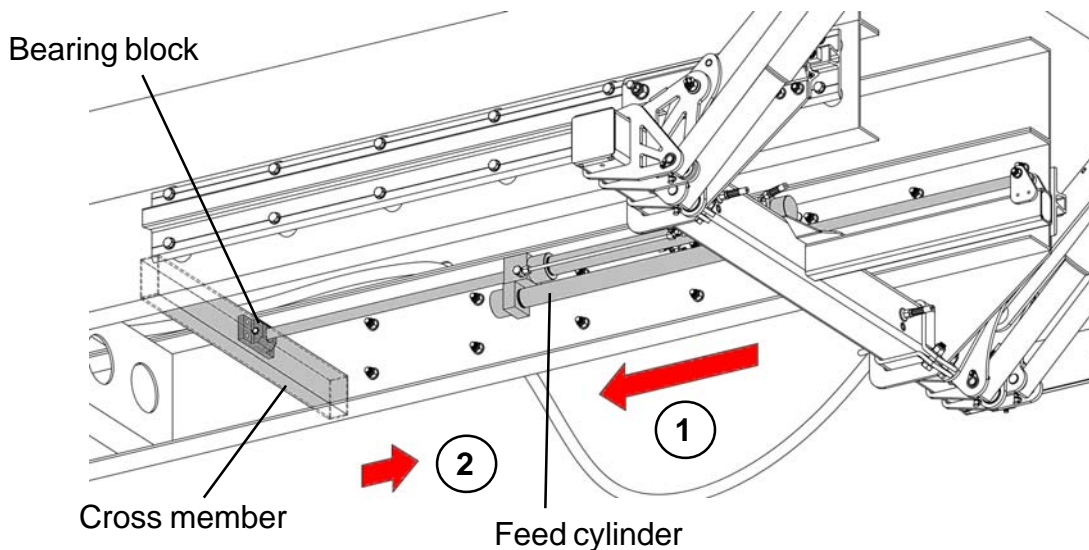
Screw M12x50  
max. 80Nm (60ft lbs)

Sliding Bracket



## INSTALLATION INSTRUCTIONS

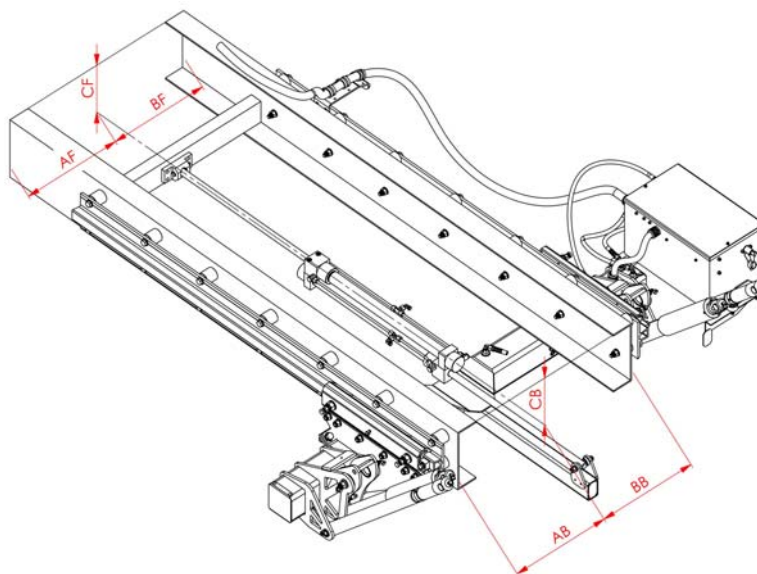
### Attaching the feed cylinder to the vehicle frame Positioning the bearing block for the feed cylinder



The tailgate loader must be in the **full out position** against the stop.  
Energize the feed cylinder with the bearing block to its **maximum position (1)**.  
If the feed cylinder is extended completely, **retract (2)** it **less 5-10mm (1/4" - 3/8")**.  
Install a **cross member** on the truck frame and screw on the bearing block with the feed cylinder.

**ATTENTION:** Cover the piston rod of the feed cylinder and disconnect the battery cable before welding!

**NOTE:** It is very important that the instructions on the next page are followed exactly. Damage will occur to the cylinder rod and the cylinder seals if the cross member and the bearing block is not properly installed.



**Be sure these measurements are correct:**

$$AF = AB \quad BF = BB \quad CF = CB$$

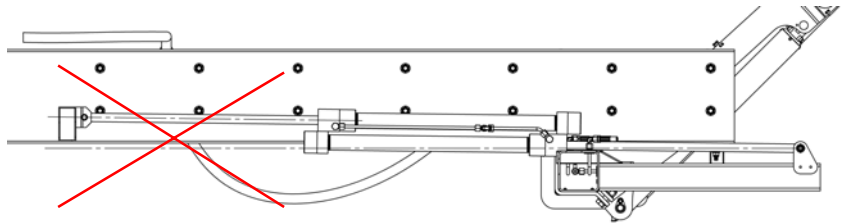
**F = front B = back**

## INSTALLATION INSTRUCTIONS

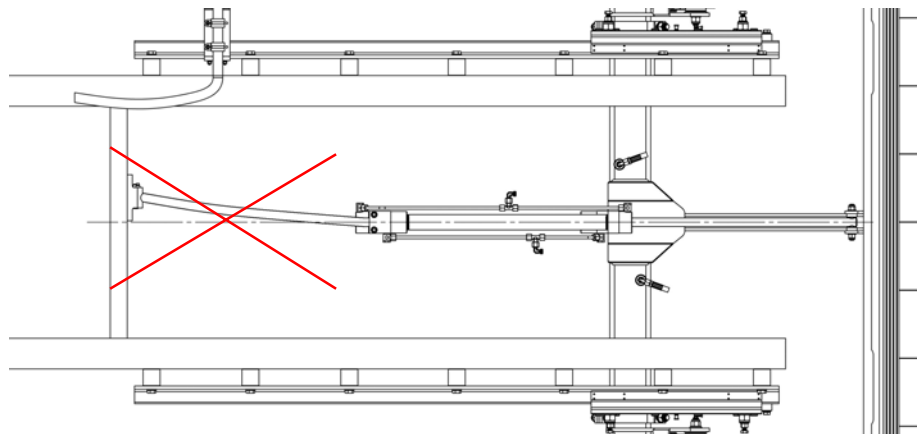
### Attaching the feed cylinder to the vehicle frame Positioning the bearing block for the feed cylinder

It is very important that the feed cylinder be absolutely parallel with the vehicle frame. The pictures below show some problems that could happen if not installed properly.

**WRONG**

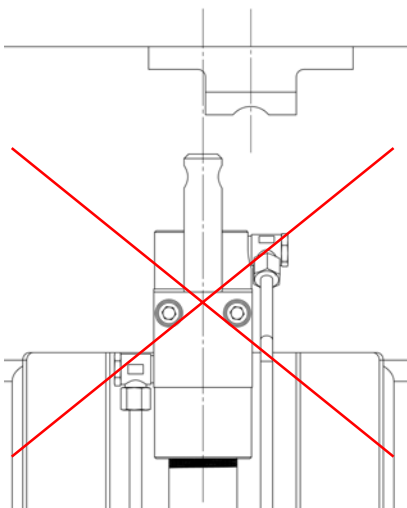


**WRONG**

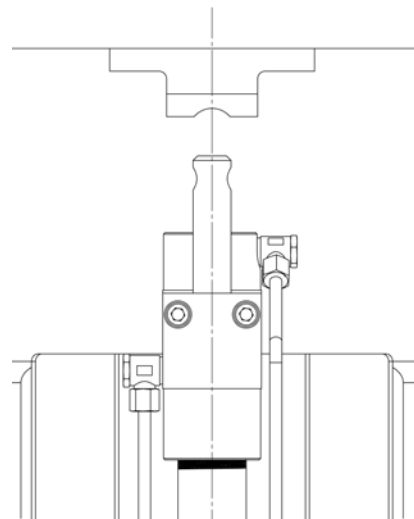


Energize the feed cylinder all the way to the minimum position. (Cylinder closed) Lower the platform and **manually** push the tailgate loader in until the bearing block touches the cross member. Attach the bearing block to the cross member.

**WRONG**



**RIGHT**

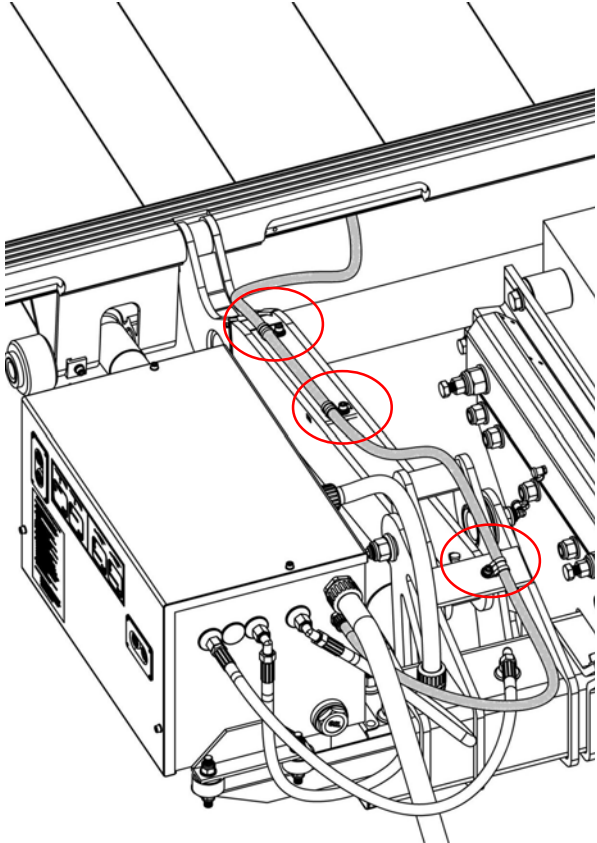
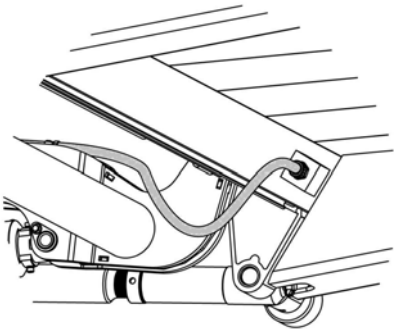




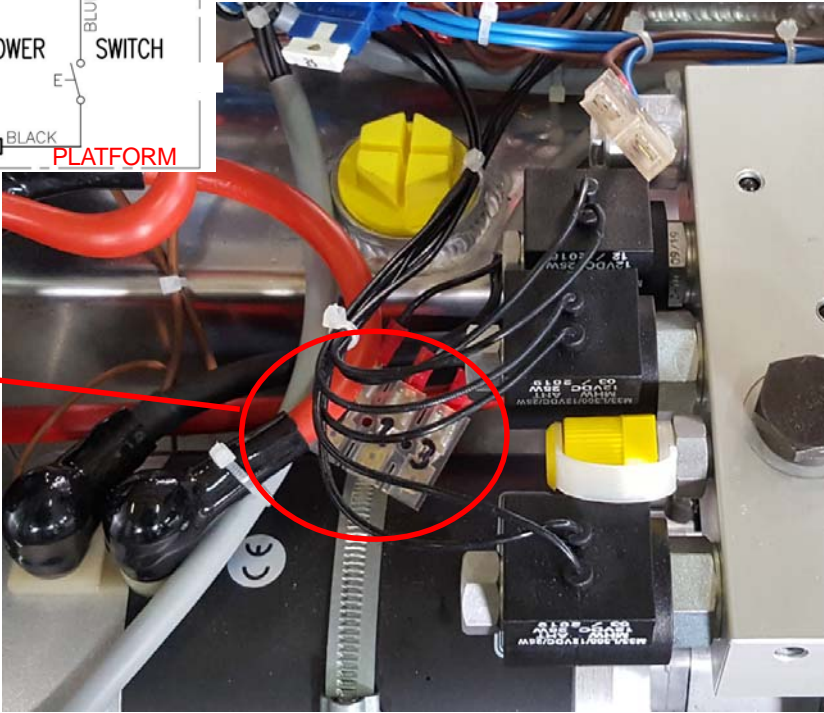
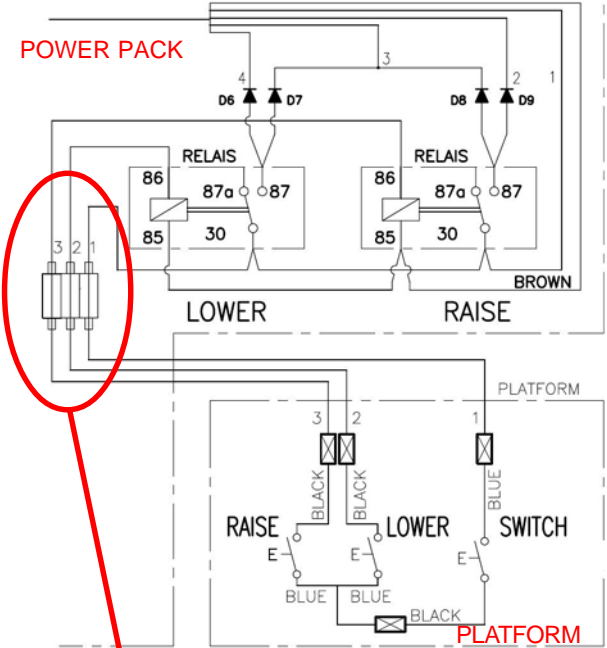
# INSTALLATION INSTRUCTIONS

## Installing the foot control

To install the foot control connect the cables from the platform to the connector in the power pack (3 pole). Fix the hose as shown in picture.



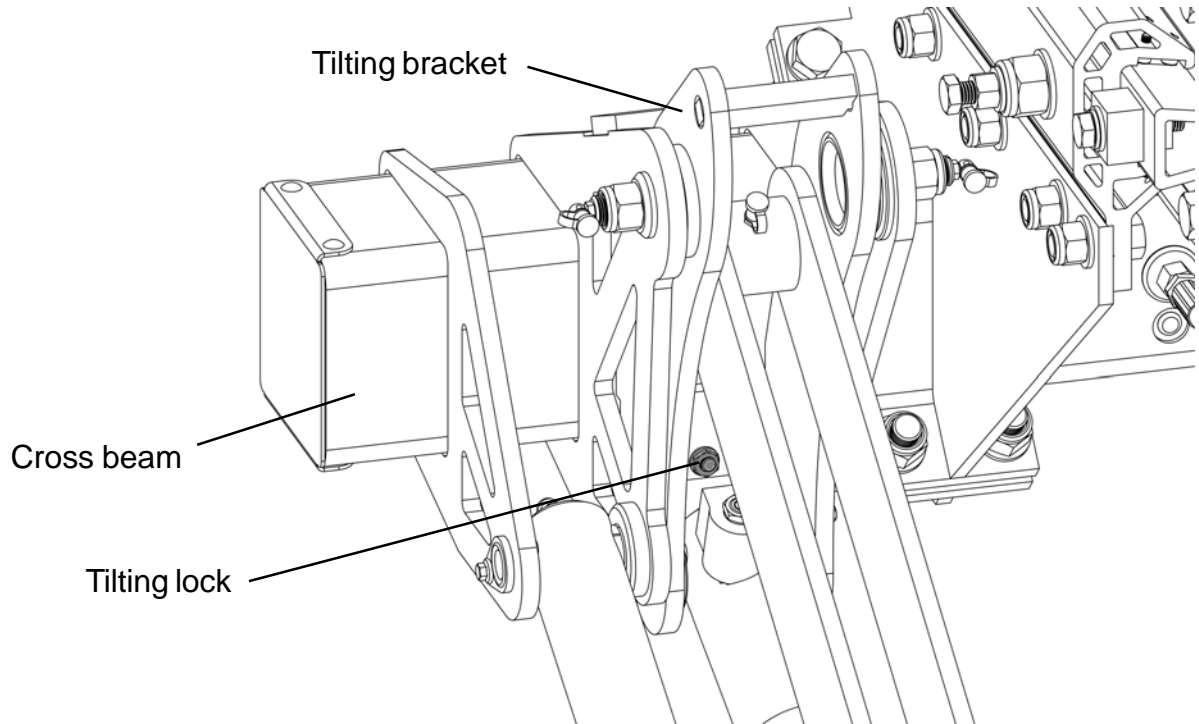
Detail from Electrical Wiring Diagram.



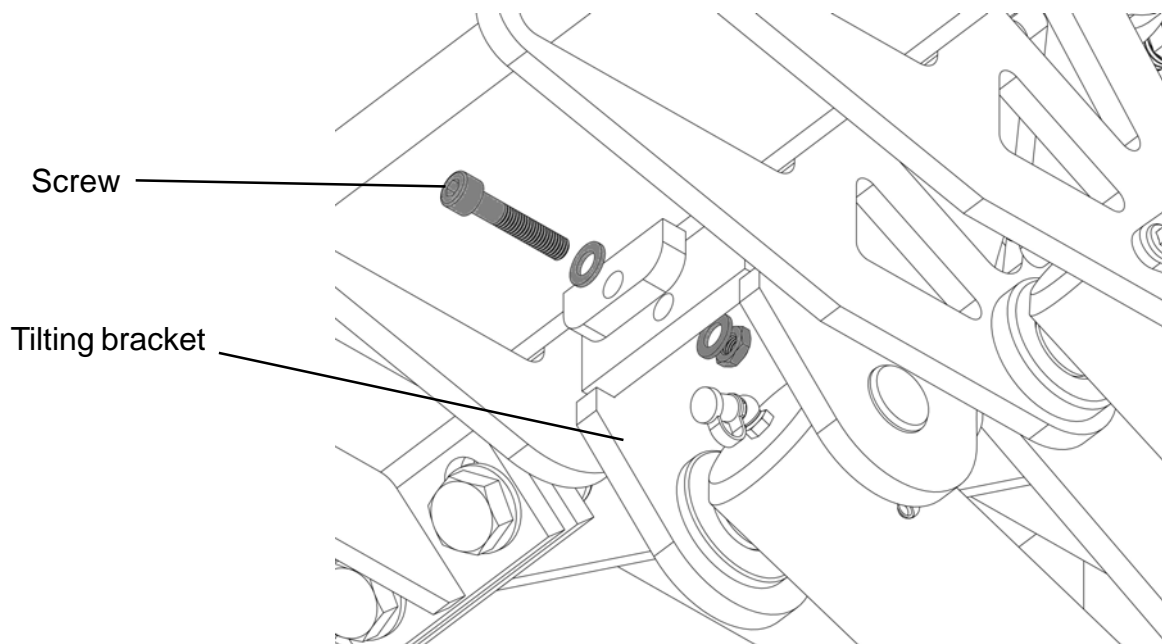
# INSTALLATION INSTRUCTIONS

## Remove Tilting Lock

The tilting lock (screw) prevents the automatic leveling from working until the installation is complete. It is the last thing to remove on both sides.



**ATTENTION:** Before removing the screws the platform must be raised from ground.



## FINISHING THE INSTALLATION

### How to adjust the flow control valve

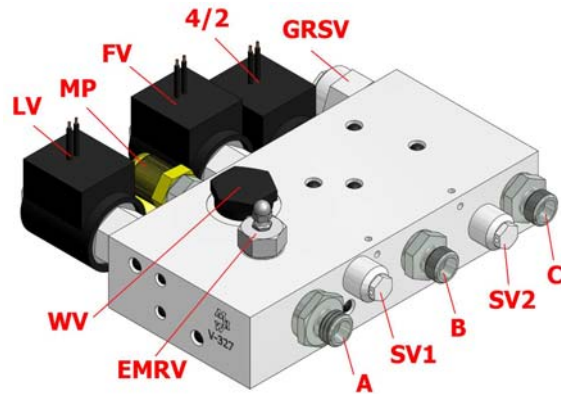
The lifting speed **is not adjustable**.

The extending and retracting speed **is not adjustable**.

**The lowering speed is adjusted by the flow control valve.** (pos. "EMRV")

How to adjust the flow control valve:

- Be sure the adjustable flow control valves are not closed. To regulate the lowering speed, first loosen the M4 (5/16") nut and adjust it carefully until the correct lowering speed is attained. When the speed is correct, hold the screw in one hand, lock the nut with the other. (max. 1.5Nm = 13lb-in)
- The **lowering speed** should be as follows: Maximum lowering speed should be 6" (150mm) per second. (Maximum lowering speed is 50" in 8,5 seconds). (1270mm in 8,5 seconds)



### How to adjust the relief valve

**The hydraulic pressure is adjusted by the relief valves.** (pos. "SV1" & "SV2")

How to adjust the relief valves:

The relief valves are sealed at the factory. The seals **must not** be removed unless authorized by the factory. **Warranty is void if seal is broken.**

There are 2 different places to adjust the hydraulic pressure:

- 1) Relief valve "SV1" is to adjust the **LIFTING & RETRACTING** pressure. Factory setting is 230 bar (3335 PSI).
- 2) Relief valve "SV2" is to adjust the **EXTENDING** pressure. Factory setting is 100 bar (1450 PSI).

All relief valves are adjustable from 50-250 bar (725-3625PSI).

- Adjustment of the relief valve:
  - a) To adjust pressure, a **calibrated pressure gauge is required** and it should be connected at the test point (pos. "MP"). **NOTE: 1Bar equals 14.5PSI**
  - b) Remove the seal and cover from the adjusting nut.
  - c) Turn the adjusting screw with a hex wrench, **clockwise (for higher pressure) or counter-clockwise (for lower pressure)**. Be sure to keep an eye on the pressure gauge. The maximum pressure should be 230 bar (3335 PSI).
  - d) When pressure is correct, lock the cap screw and **check the pressure again** to be sure it has not changed. Seal the cover.

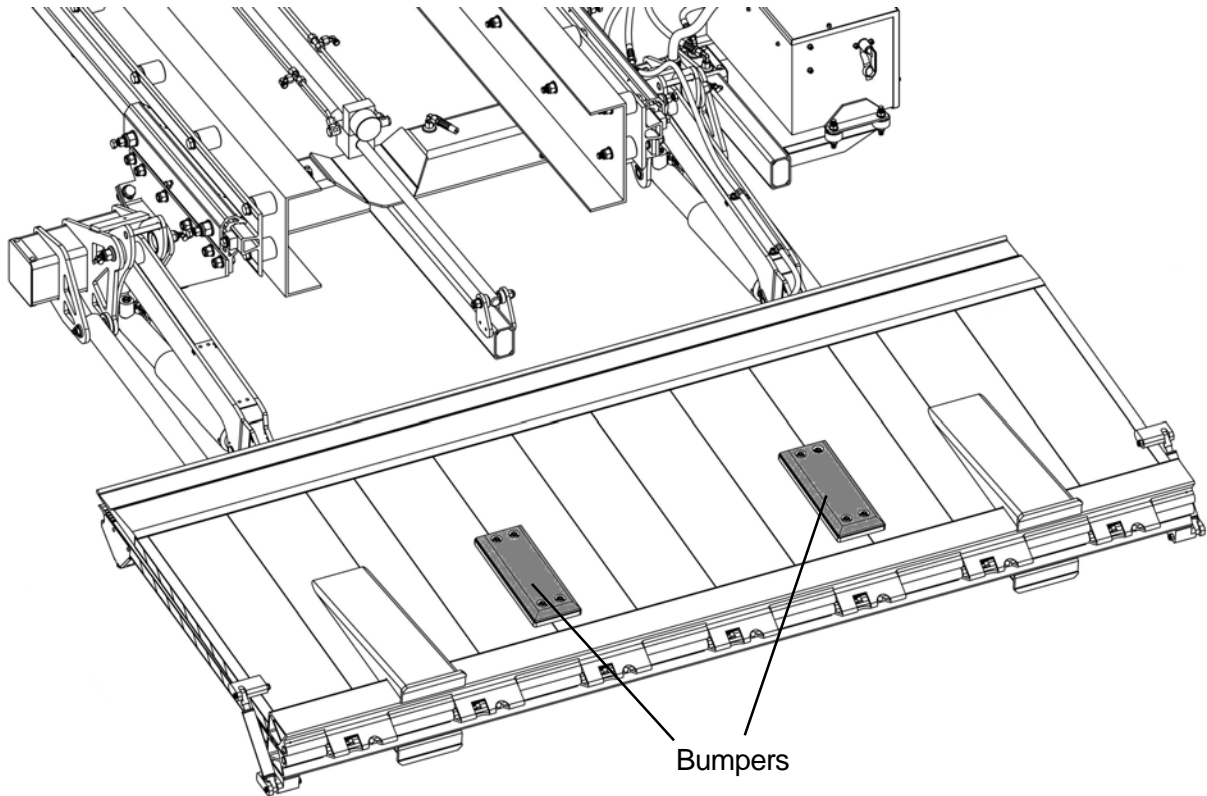
**Caution: Never bottom the relief valve. The power pack and/or hydraulic system could be damaged.**



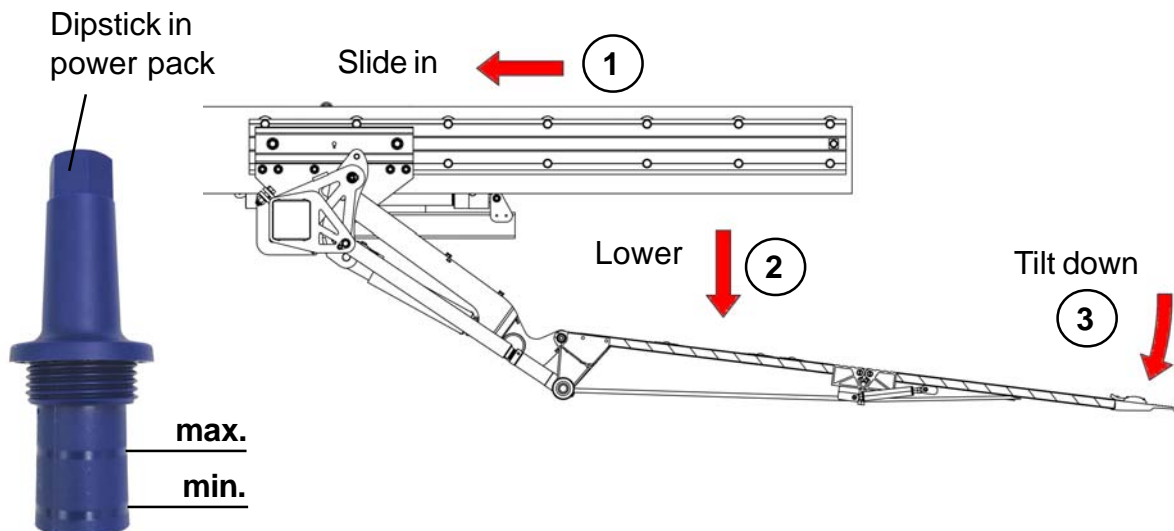
## FINISHING THE INSTALLATION

### Install the bumpers

- To protect the platform from being damaged, mount bumpers on platform. (not included in delivery)



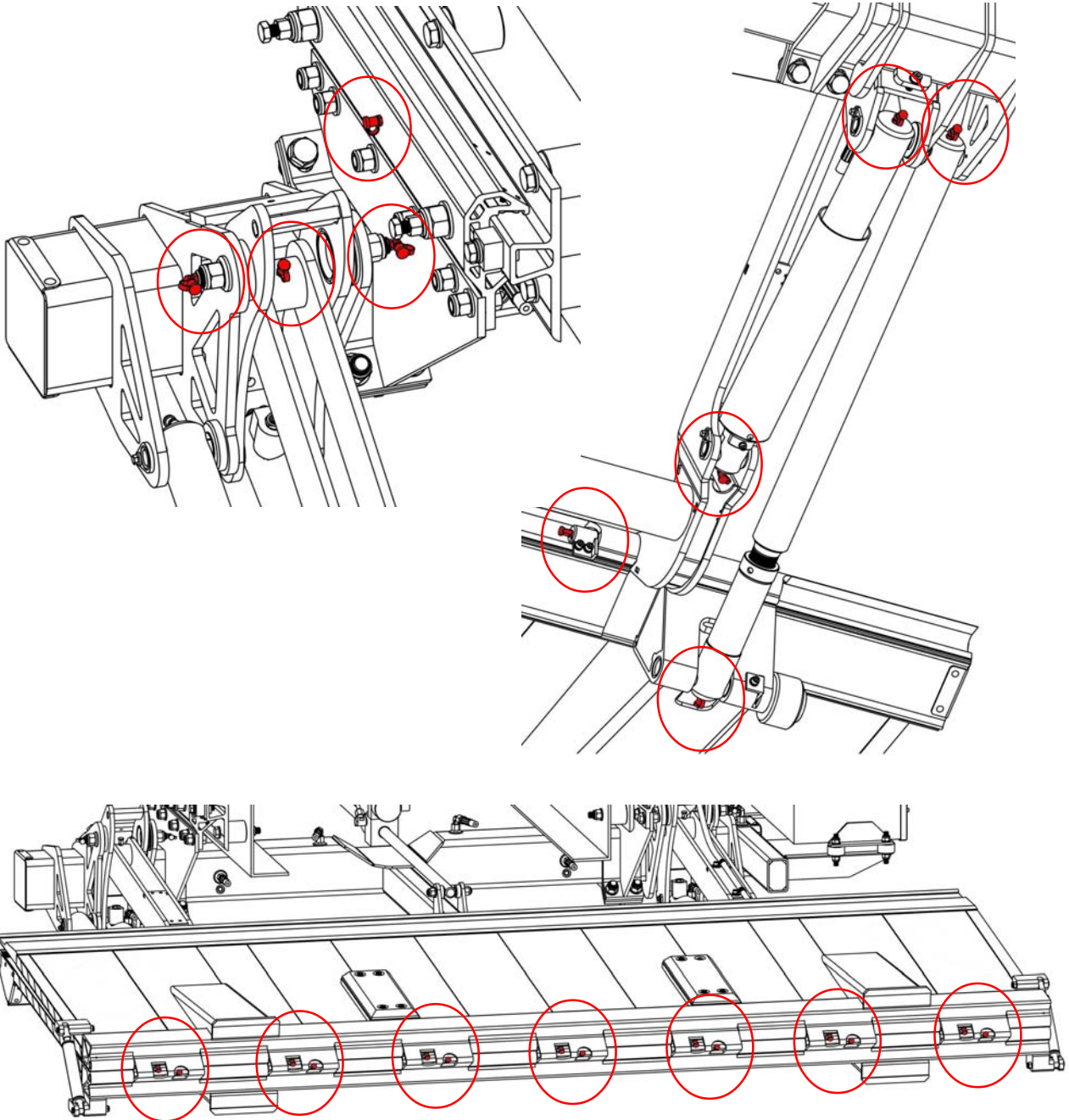
- Check the oil level, and add if necessary. All cylinders have to be retracted. We highly recommend hydraulic oil with ISO 22 viscosity.



## FINISHING THE INSTALLATION

### Lubricate all grease fittings

- Lubricate the tailgate loader at the shown grease fittings (32pcs).

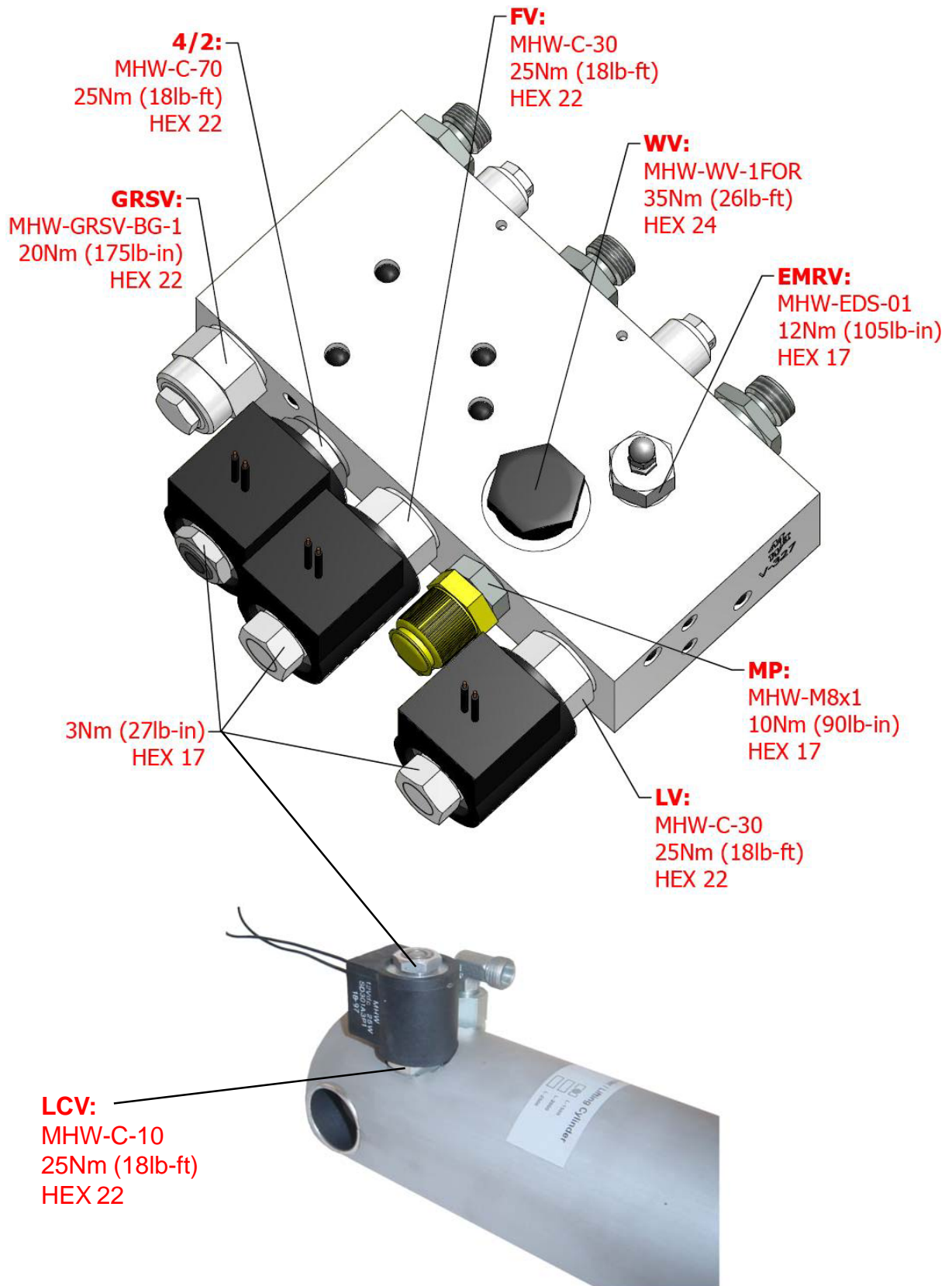


### Finishing the Installation

- Check all Locking brackets and self locking screw at pins.
- Check all hydraulic hoses and cylinders for tightness.
- Install cycle counter (not included in delivery) according electrical wiring diagram.
- Install flashing lights on platform. (not included in delivery)
- Install name plate of tailgate loader and labels.

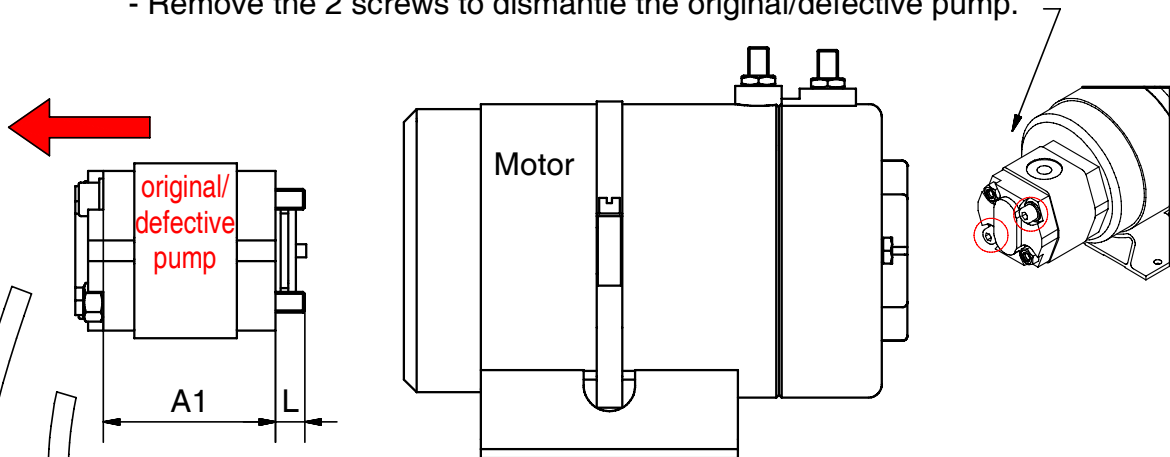
# TECHNICAL DESCRIPTION

## MAXIMUM TORQUES

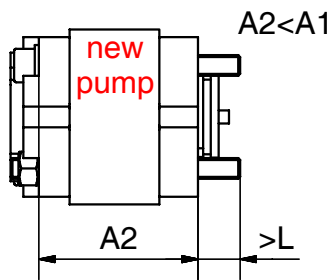


# HOW TO CHANGE THE HYDRAULIC PUMP

- Remove the 2 screws to dismantle the original/defective pump.

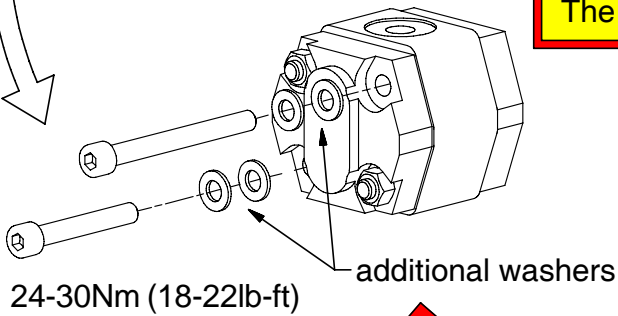


- If new and original/defective pump are not the same type, compare the measurement "A2" of new and the measurement "A1" of original/defective pump.

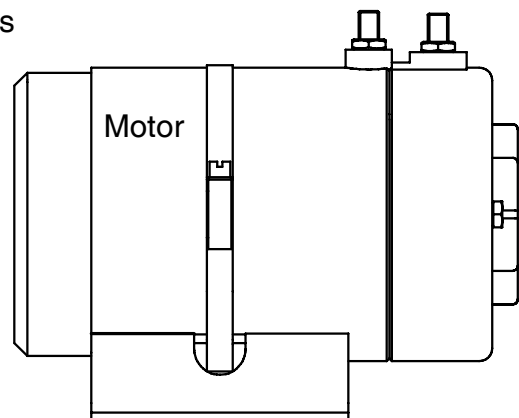
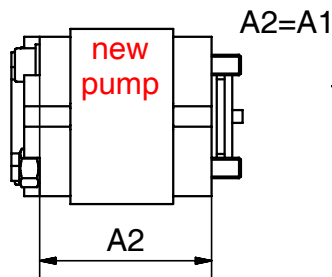


- If "A2" of the new pump is shorter than "A1" of the original/defective pump, additional washers must be placed to get the right screw length.

- **ATTENTION:** If measurement "L" is too long, the pump will not tighten on the motor. The new pump will be destroyed again!



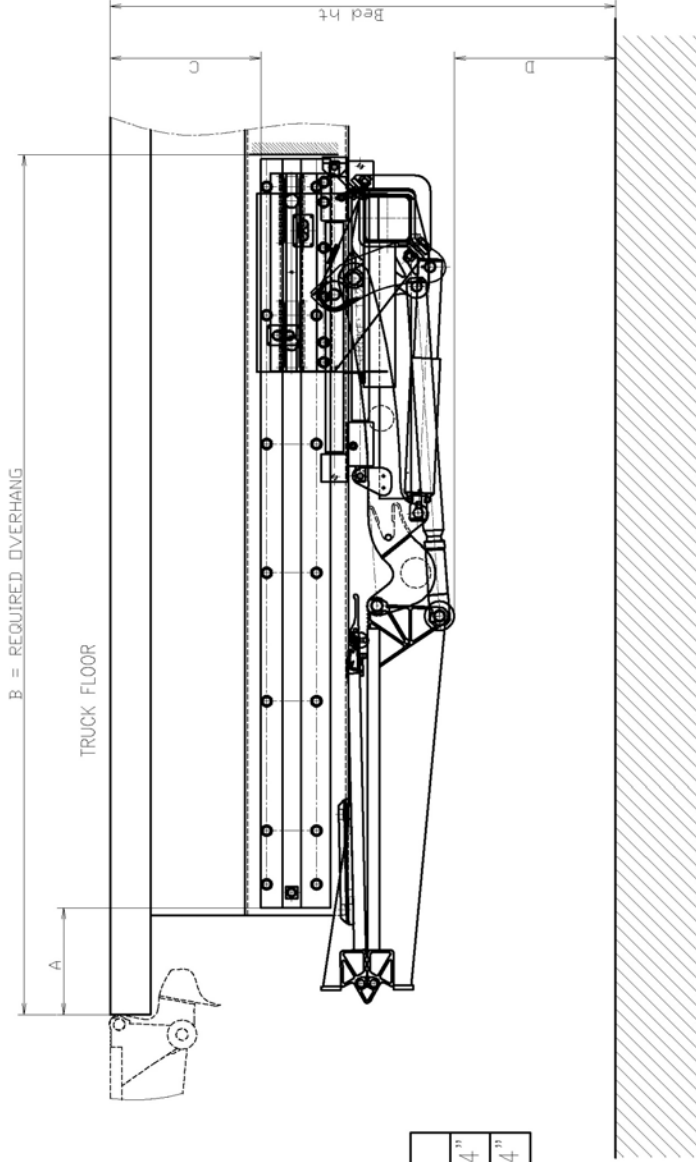
- If the screw length is correct, mount the new pump.



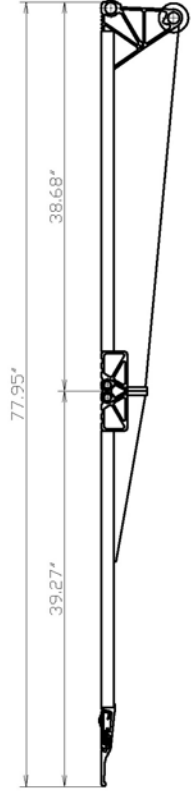


# INSTALLATION DRAWINGS ULTK-1000

# MAXON



Bed ht.	A	B	C	D
50"	10,61"	85,43"	14,91"	15,94"
46,5"	13,67"	88,5"	11,41"	15,94"



TAILLIFT TYPE: ULTK-1000ST/AL

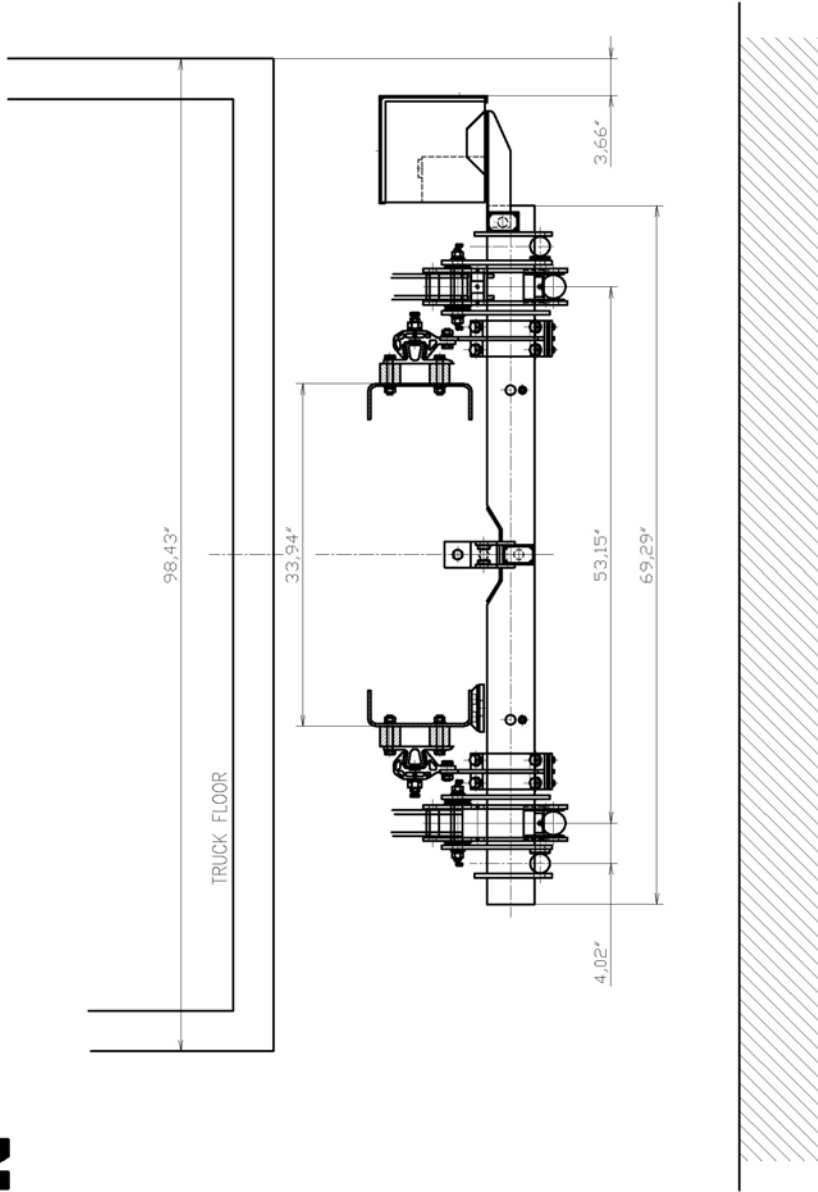
2200Lbs at 23.6"

PLATFORM LENGTH 77.95"

designed by:  
  
 18.06.2020  
 E262: M-DW-AR  
 L-10112-10118-1000ULIFT  
 L-10112-1000ULIFT

# INSTALLATION DRAWINGS ULTK-1000

# MAXON

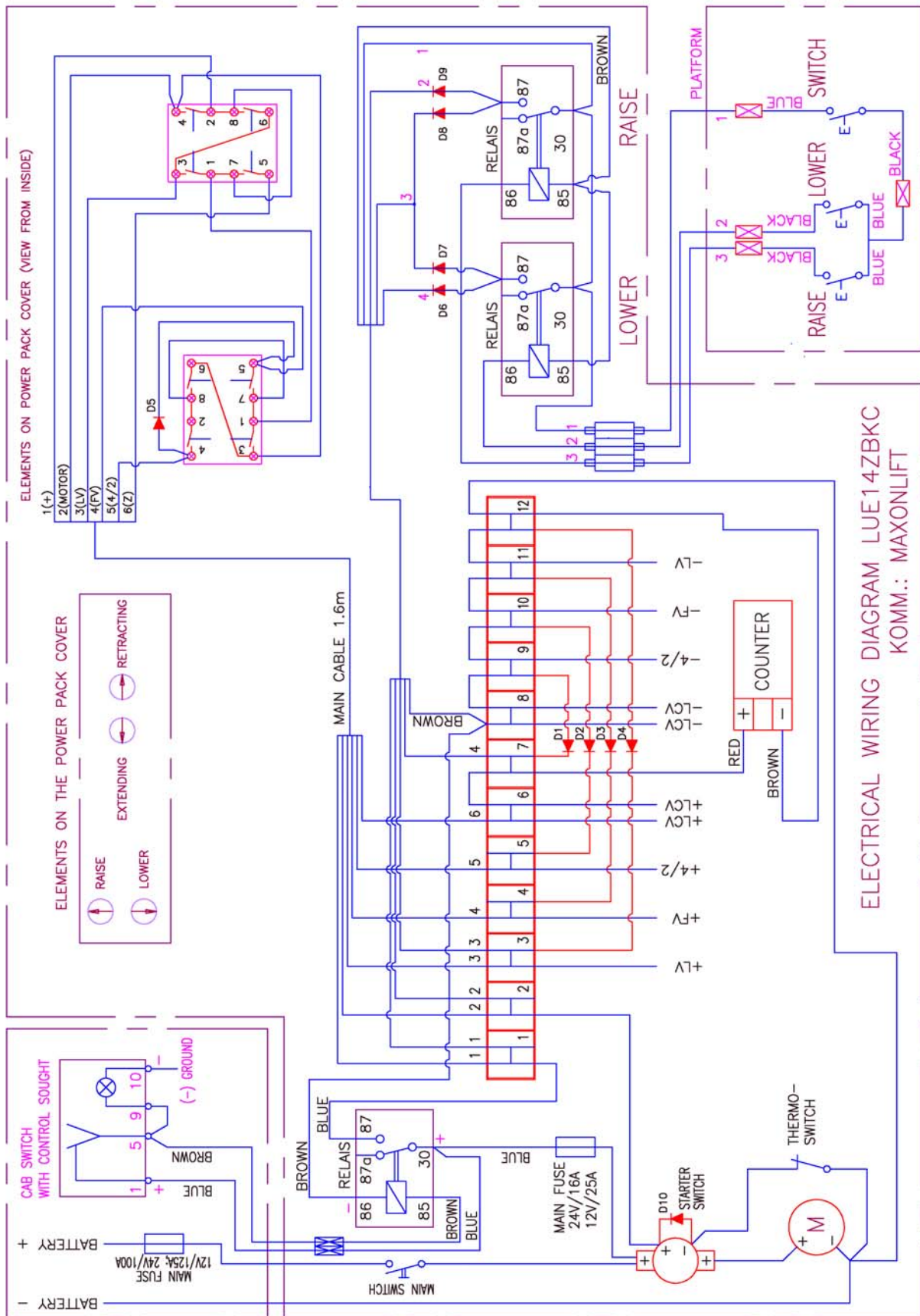


TAILLIFT TYPE: ULTK-1000ST/AL  
2200lbs at 23.6"  
PLATFORM LENGTH 77.95"

designed by:  
**AIT**  
18.06.2020  
EISENBERG & SÖHN  
Ludwig-Werkstätten



# ELECTRIC WIRING DIAGRAM



ELECTRICAL WIRING DIAGRAM LUE14ZBK  
KOMM.: MAXONLIFT



# HYDRAULIC SCHEMATIC

