Installation Instructions

Tail Lift

Z 2500-130/150

ZEPRO
Tel.: +46 (0)10-459 05 00
E-mail: zeprotech@hiab.com | zepro.com

75981TL
2024-09-23

ZEPRO

Contents

1 Important information

1.1 Attention!

The following warning signs appear in the installation instructions and are intended to draw your attention to circumstances that can potentially cause problems, near misses, personal injury and/or damage to the product, etc.

⚠ WARNING!
WARNING indicates a potential hazard, which if ignored may lead to serious, life-threatening injury.

⚠ CAUTION!
CAUTION indicates a potential hazard, which if ignored, may lead to minor injuries.

IMPORTANT!
IMPORTANT indicates a risk of equipment damage.

NOTE!

NOTE refers to additional information that may help the reader understand, or perform, a given operation.

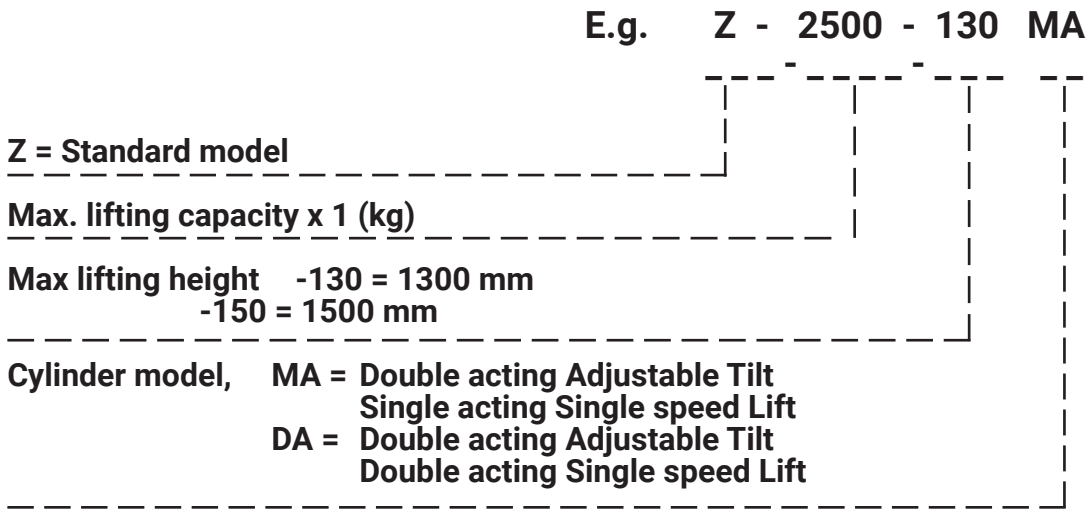
1.2 Technical support

If technical support is needed, please contact ZEPRO. Tel: +46 (0)10-459 05 04, E-mail: zeprotech@hiab.com.

Always be ready to state the tail lift's production number to guarantee you receive the correct information. The production number is given on the identification plate located on the tail lift frame.

Image 1. Identification plate

1.3 Identification



1.4 CE marking

ZEPRO tail lifts for sale on the European market are CE marked (Conformité Européenne). The manufacturer guarantees that the product complies with the EU Machinery Directive.

Follow the installation instructions carefully. Modifications not approved in writing by the manufacturer are not permitted. Welding is not permitted.

CE

1.5 Product approval

Properly assembled, this product meets relevant requirements according to EN 1756-1:2001 + A1:2008.

1.6 Hydraulic oil

If the hydraulic oil needs to be replenished, only the oil recommended by ZEPRO is permitted to be used.

Hydraulic systems with hydraulic oil tanks without labelling are only permitted to be filled with highly refined mineral oil (art. no. 21963, 1 litre).

Hydraulic systems with hydraulic oil tanks marked with a specification for the hydraulic oil are only permitted to be filled with the oil specified on the label.

1.7 Guarantee

The ZEPRO warranty applies only if assembly has been carried out according to ZEPRO's assembly instructions by a ZEPRO approved bodybuilder.

After installation, testing and verification, register the tail lift's delivery card to validate the warranty.

1.8 Repainting

IMPORTANT!
Piston rods and cylinder covers must not be painted. Among other things, this can damage the cylinder gaskets.
Boots, hydraulic hoses and cables may not be coated/painted as the solvent in the paint can damage the hoses and cables and impair durability.

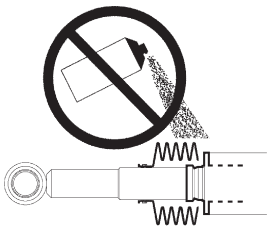


Image 2. Piston rods, cylinder covers and boots

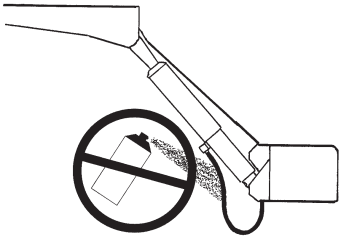


Image 3. Hydraulic hoses

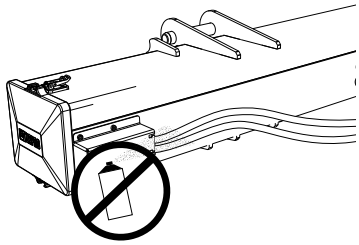


Image 4. Cables

1.9 Battery maintenance

When storing for longer than 1 week, it is recommended to disconnect the lift from the battery via the main switch or by releasing the lift's main fuse, in order to reduce the risk of the battery discharging. The length of time the vehicle can be stored without the battery charge level becoming too low depends on the condition of the battery, the charge level prior to storage and how much power other components in the vehicle take from the battery. After a period of storage, the battery must always be charged fully before operating the lift.

When the lift is operated repeatedly without starting or using the vehicle during lift installation or carrying out service and repairs, use the battery charger between operations to maintain battery charge.

IMPORTANT!
The battery charger must be disconnected when operating the lift. Risk of material damage.

2 Safety rules

2.1 Moving parts - free movement

⚠ WARNING!

During final inspection*, the space occupied by the moving cylinders must be cleared and made safe. There is a risk of collision between the cylinder and the following items: subframe, truck chassis, beam for rear light (number plate) and the chassis bracket of the lift (with a short overhang).

**Final inspection to be carried out with the platform at the vehicle floor and tilted down 10°. The clearance from the closest part of the cylinder must be at least 40 mm.

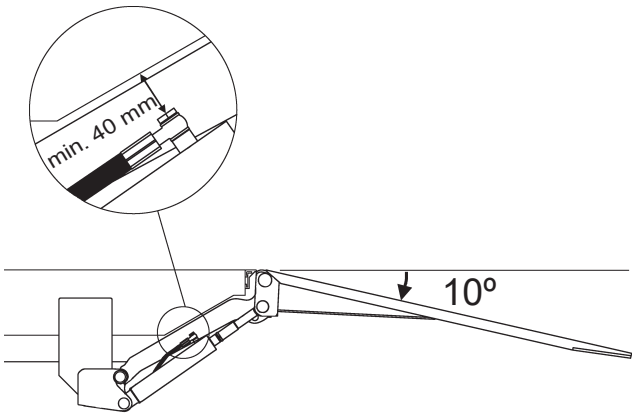


Image 5. Clearance to the closest part of the cylinder must be at least 40 mm

⚠ WARNING!
The platform may not be tilted down more than 10º from the horizontal.

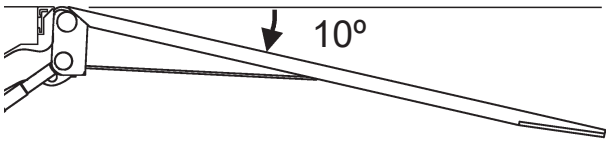


Image 6. The platform may not be tilted down more than 10º from the horizontal

2.2 Connection of third-party equipment is forbidden

⚠ WARNING!
Connecting third-party equipment (electric or hydraulic) to Zepro tail lifts is forbidden. Connecting third-party equipment could interfere with the lift's system and its safety functions. Risk of injury and damage. If it is necessary to install other equipment, check the vehicle manufacturer's body instructions and use the attachment features on the vehicle.

2.3 Installation

⚠ WARNING!
Installation where the platform cannot reach ground level is prohibited.

⚠ WARNING!
ZEPRO tail lifts are only approved for installation using ZEPRO assembly kits.

IMPORTANT!
All specified tightening torques apply when using torque wrench or screw/nut runner with torque control. Torque spread max ±5%.

3 Before installation

3.1 Vehicle chassis requirements

In order to comply with the applicable underrun protection standards, there are requirements for the vehicle chassis on which the rear tail lift is mounted.
The moment of inertia in a cross-section on the current frame beam (excluding any support frame) shall not be less than 937 cm4. The cross-section of the frame beam shall therefore have at least dimensions of 220x70x4 mm, corresponding to a surface moment of inertia of 937cm4 around the x-axis. See illustration. If in doubt, contact ZEPRO for support.

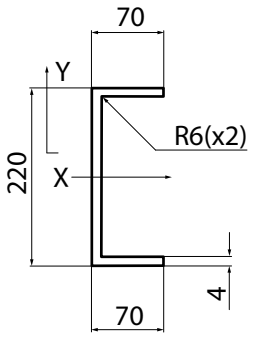


Image 7. The cross-secton of the frame beam

⚠ WARNING!

The above dimensions are the minimum permitted for the installation of underrun protection. The strength requirements for mounting the tail lift usually require larger dimensions.

3.2 Statutory dimensions for underrun protection

Distance between the beam and the ground when the vehicle is unloaded:
Max. 450 mm for vehicles with air suspension.
Max. 500 mm for vehicles with conventional suspension.
If the exit angle with the above setting is less than 8º, the distance between beam and ground in an unladen vehicle may be increased until the angle is 8º, but to Max. 550 mm.
Horizontal distance from the outermost part of the platform to the underrun protection: Max. 300 mm. See illustration below.

NOTE!

The underrun protection may be placed further back and lower.

NOTE!
The underrun protection is included in the total length of the vehicle!

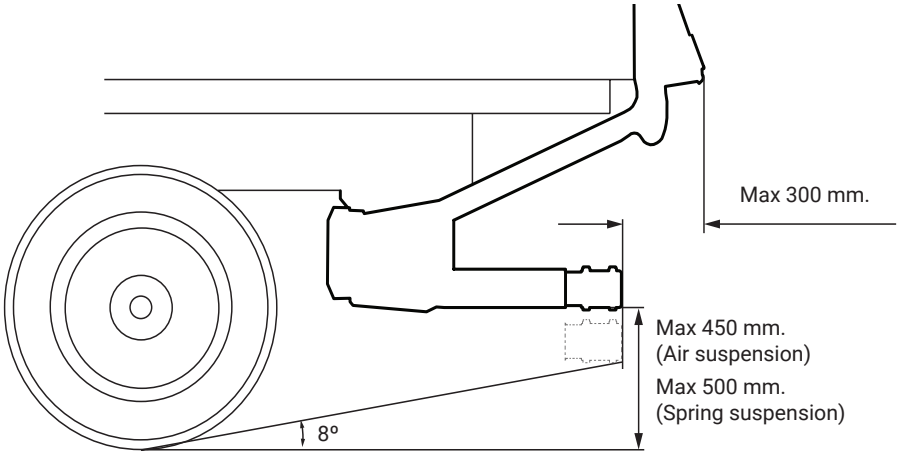


Image 8. Statutory dimensions

Horizontal distance from the outer edge of the beam to the outside of the wheel: Max. 100 mm. See Image 9.

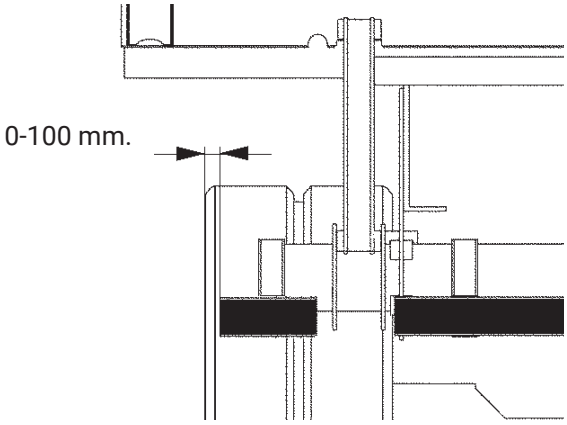


Image 9. Statutory dimensions

The lateral distance between the underrun protection and the moving parts of the tail lift must not exceed 25 mm. See Image 10.

Each of the individual parts of the underrun protection must have a surface area of at least 350 cm^2. See Image 10.

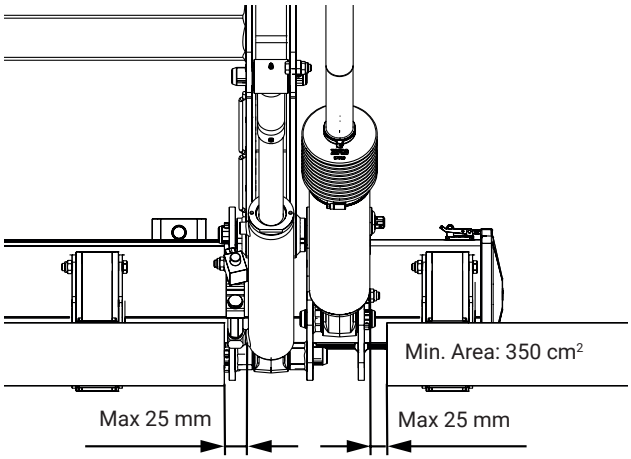


Image 10. Statutory dimensions

3.3 Calculating the installed dimensions

For easier installation it is useful to calculate and specify the necessary dimensions in advance. Determine the C dimension first, then obtain the other dimensions from the relevant table. You should try to place the lift as high as possible within the specified C dimension in the table.

3.3.1 C dimension

The C dimension is the distance between the top of the support frame and the vehicle floor level. This dimension governs how far the lift needs to be installed under the vehicle body (D dimension) and the space there will be between the lift arms in the upper position and the vehicle floor level (A dimension).

3.3.2 D dimension

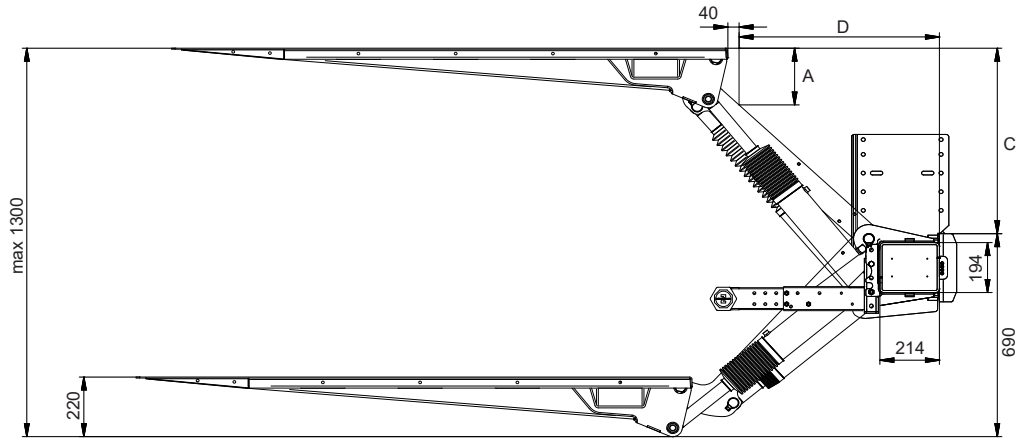
The D dimension is the space the lift needs, measured from the rear edge of the body to the front edge of the support frame (in the direction of the vehicle). Once the C dimension is determined, the D dimension can be obtained from the table.

3.3.3 A dimension

The A dimension is the space provided for the rear beam, i.e. the space there will be between the lift arms and the vehicle floor with the lift in the raised position. The A dimension depends on the C dimension.

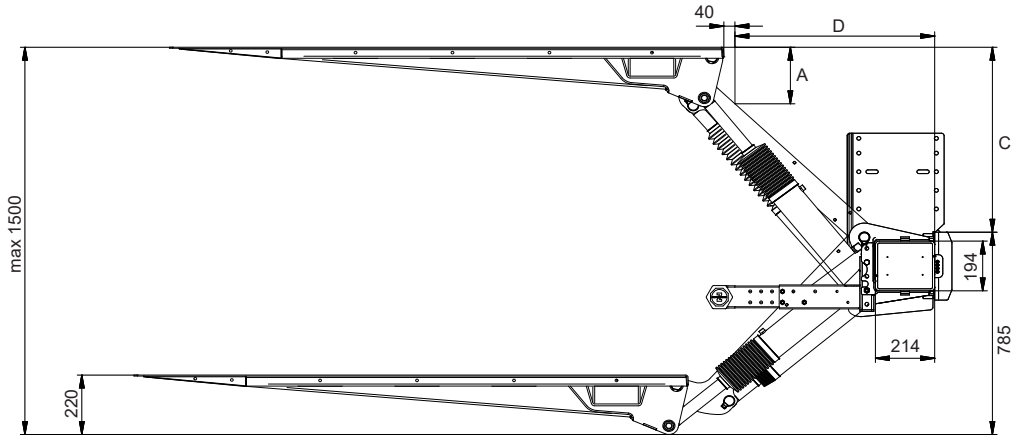
3.3.4 H dimension

The H dimension is the height from the ground (unloaded) to the vehicle floor level. The H dimension must not be greater that the maximum lifting height of the lift. The platform must always be able to reach ground level.



C	A	D
610	202	685
570	187	728
520	172	773
470	160	812
420	150	844
370	142	871
330	136	890

Image 11. Z 2500-130



C	A	D
715	211	736
680	197	777
630	182	828
580	170	871
530	159	909
480	151	941
430	143	969
360	134	1002

Image 12. Z 2500-150

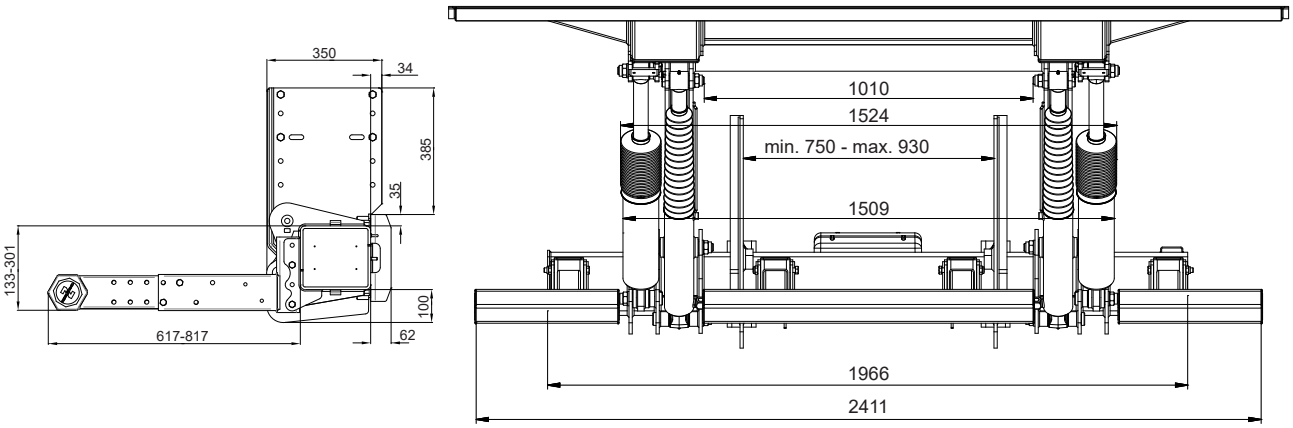


Image 13. Z 2500-130/-150

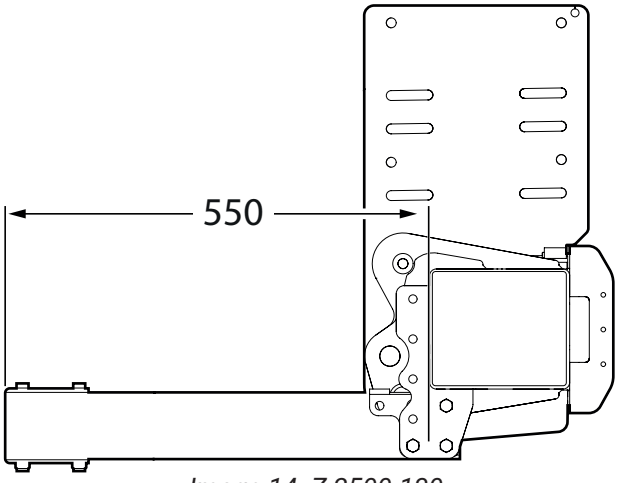


Image 14. Z 2500-130

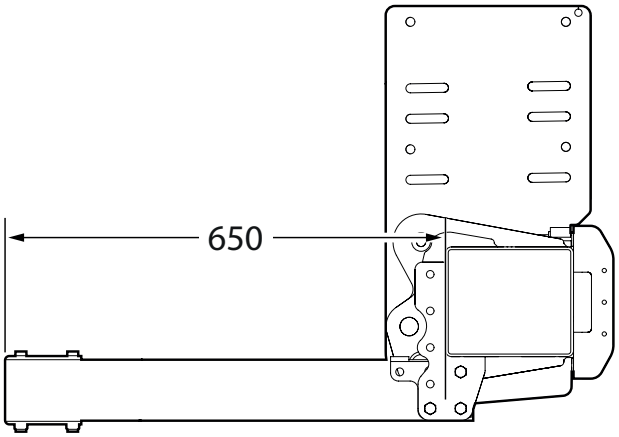


Image 15. Z 2500-150

NOTE!
The underrun protection is included in the total length of the vehicle!

3.4 Rear beam cut-outs

It is often necessary to create cut outs in the rear beam to provide space for the platform arms when the platform is in the upper position. The size of the cut outs depends on the calculated installed dimension “A”, see illustration below.

1. Measure and mark the location and depth of the cut outs on the rear beam. The two cut outs must be centred on the rear beam, i.e. both cut outs must be an equal distance from the mid-point of the beam.
2. Cut along the markings.
3. Grind away any burrs or sharp edges.

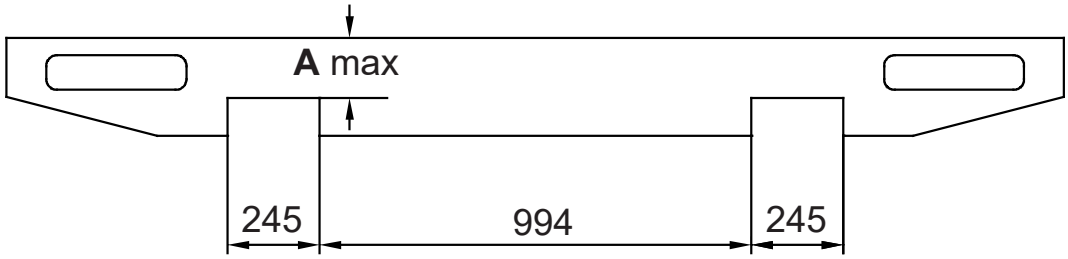


Image 16. Rear beam cut-outs

3.5 Prepare the tail lift

1. Position the support frame under the vehicle's chassis.
2. Remove the protective cover mounted using to quick release locks; see Image 17.
3. Fold out the control card / relay card (B) and loosen the cabling at the connector on the hydraulic unit; see Image 18 and Image 19.
4. Release the hydraulic unit by unscrewing the wing nut and corresponding screw (C); see Image 20 and pull out the hydraulic unit until the tank cap is accessible; see Image 22.

> ⚠ **CAUTION!**
> Make sure no cables are pinched or in any other way damaged when the control card / relay card is folded out or removed. Do not pull out the hydraulic unit more than necessary; make sure it is not pulled completely out of the frame, as this can entail a risk of injury and damage to the equipment.

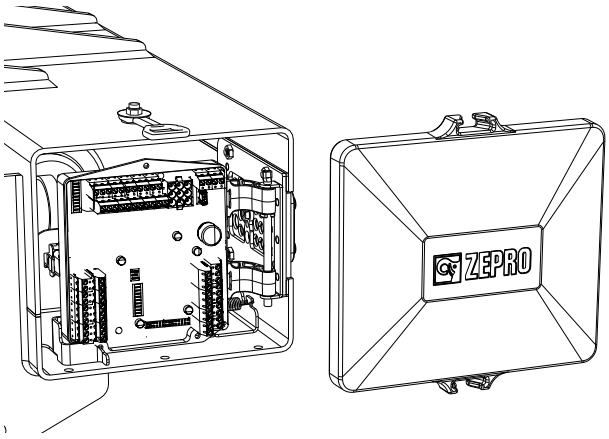


Image 17. Remove the protective cap

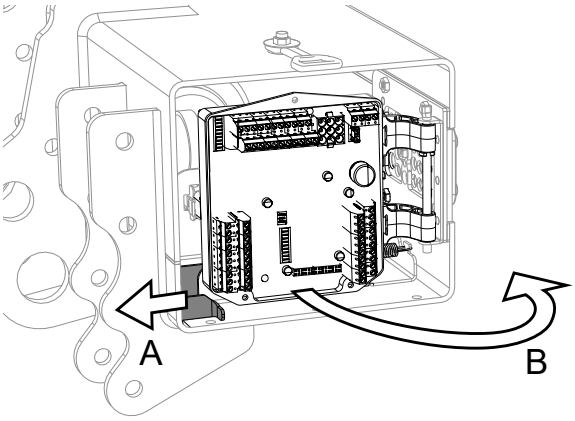


Image 18. Release mechanism

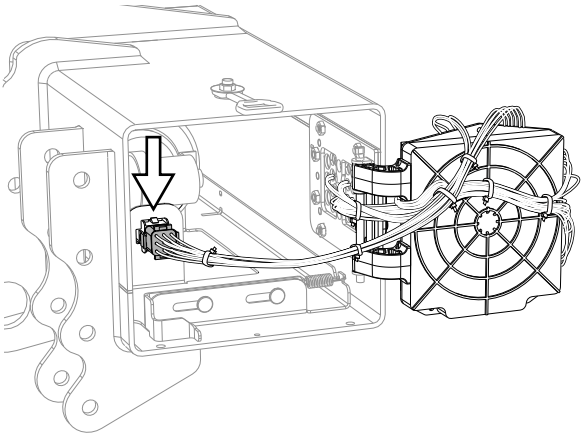


Image 19. Connection socket

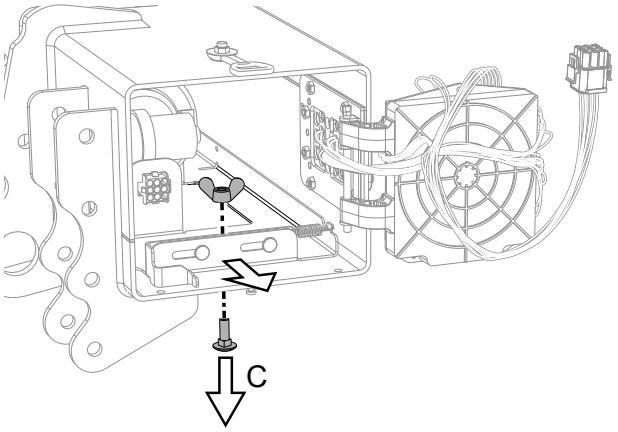


Image 20. Releasing the hydraulic unit

5. Check whether the hydraulic tank is fitted with a transport plug seal. If so, replace it with the regular tank cap supplied.

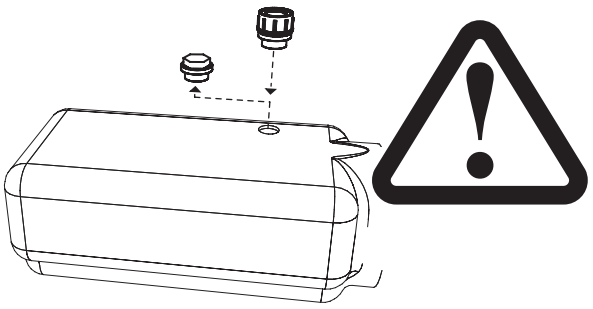


Image 21. Where necessary, replace the transport plug with a regular tank cap

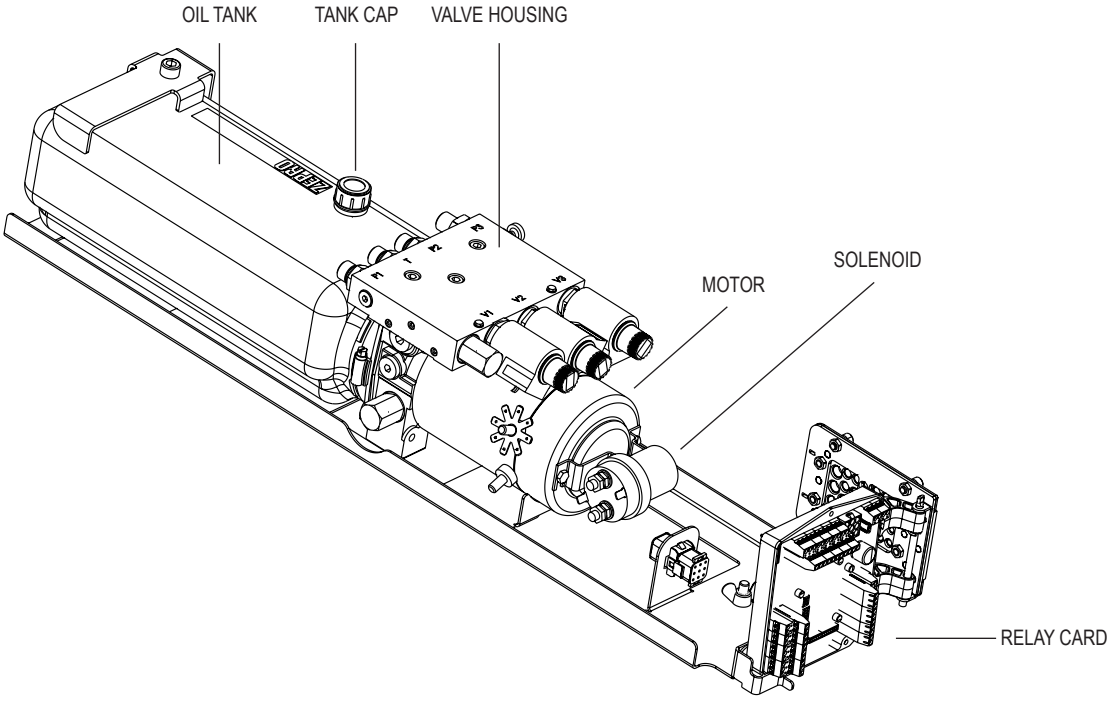


Image 22. Hydraulic unit and relay card

3.6 Temporary connection

When the tail lift is installed, it is sometimes necessary to operate its functions in order to change the position of the cylinders and the lift arms. Temporarily connect the lift to enable the lift functions.

1. If the actuator is not connected, connect a suitable control device to Ctrl 1/C1, see section 3.6.2/3.6.3.
6. Connect the tail lift's main power cable to battery +12/24V.
7. Connect the negative battery terminal to the tail lift's earth cable (GND).

4a. On lifts with a connected cab circuit breaker (CS), ensure it is in the ON position

4b. On lifts without a connected cab circuit breaker (CS), follow the respective procedure:

Relay card TLC-B1: When operating, connect a cable (jumper) between an available power supply connection (+) and CS on the relay card to simulate switch CS being on. Remove the cable immediately after completed operation.

Control card ZePRO1: When operating, connect the cable (jumper) between the CSPWR and CS on the control card to simulate that the CS switch is turned on. Remove the jumper immediately after completed operation.

> ⚠ **WARNING!**
> Take great care while running the lift functions and make sure nothing gets pinched: risk of personal injury and material damage.

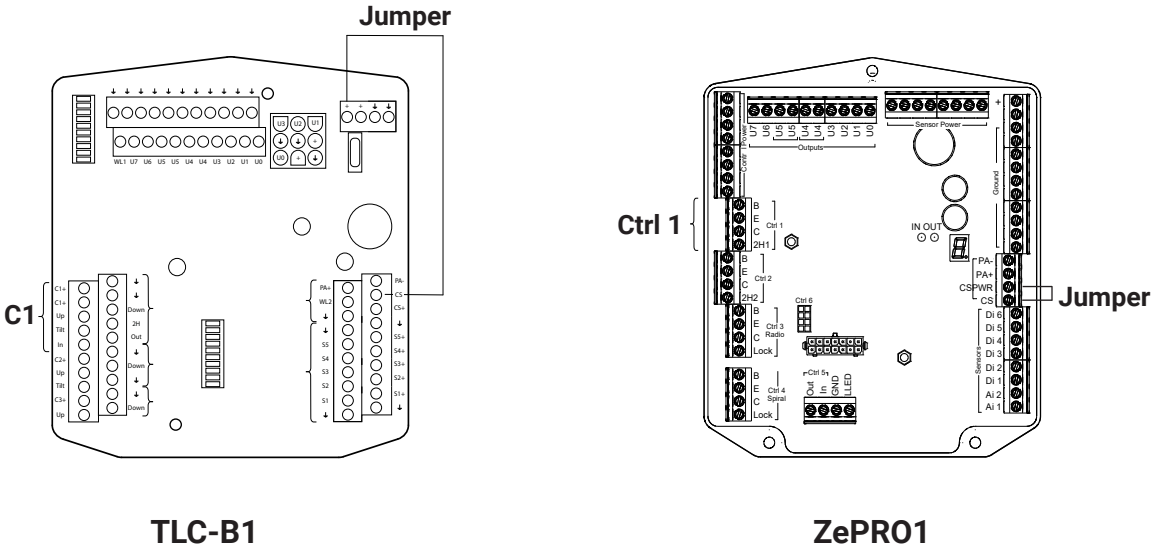


Image 23. Temporary connection

3.6.1 Battery maintenance

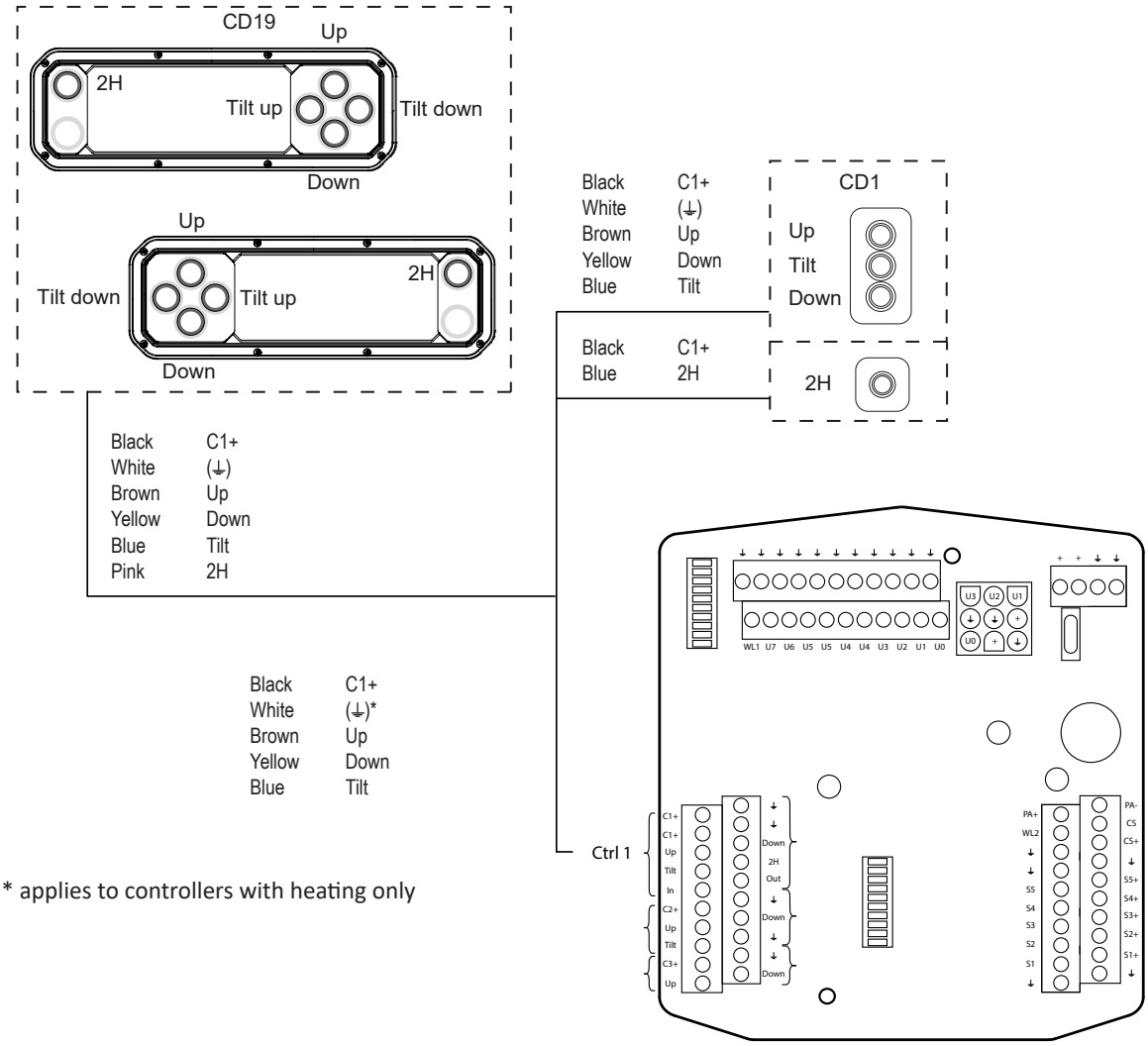
When installing the lift, when the lift is operated repeatedly, the battery charger must be used between operations to maintain the battery charge level.

> **IMPORTANT!**
> The battery charger must not be connected when operating the lift. Risk of material damage.

3.6.2 Connecting the control device to the TLC-B1 relay card

The connection of warning lights and the most commonly occurring controller (CD (Control Device)) models is shown below. Possible controller models vary depending on lift model, configuration and relevant market.

> ⚠ **WARNING!**
> Make sure the control relay is disconnected from power before connecting. Connecting more than one controller to each connection is not permitted. Risk of material damage.

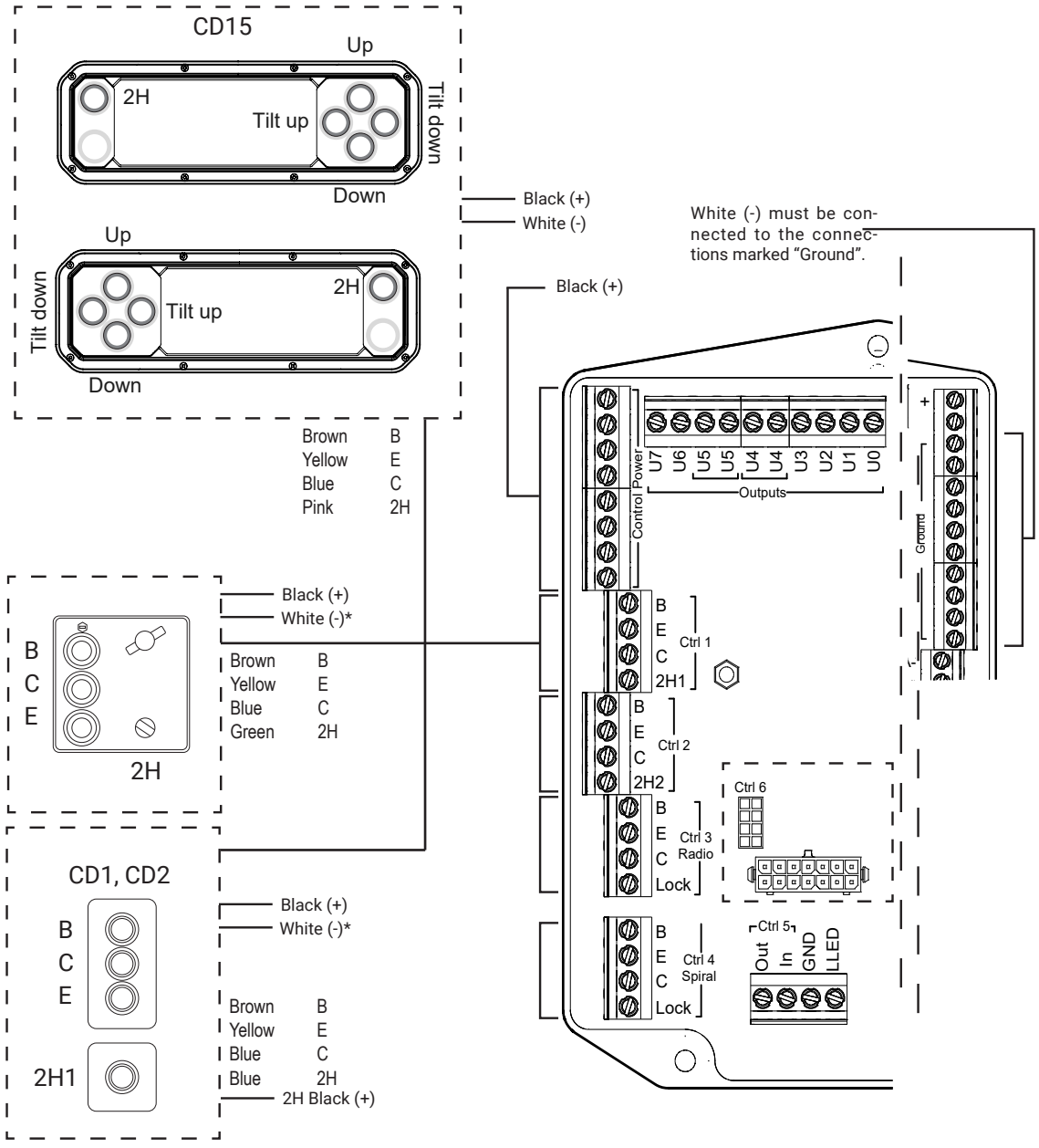


* applies to controllers with heating only

3.6.3 Connecting the control device to the ZePRO1 control card

The most commonly occurring controller (CD Control Device) models are shown below. Possible controller models vary depending on lift model, configuration and relevant market.

⚠ WARNING!
Make sure that the control card is disconnected from the power before connecting. Connecting more than one controller to each connection is not permitted. Risk of material damage.



* applies to controllers with heating only

4 Installation

NOTE.

Also consult the vehicle manufacturer's body instructions and Zepro's instruction booklet before installation.

⚠ WARNING!

Zepro tail lifts are only approved for installation with Zepro installation kits.

4.1 Support frame

1. Measure and mark the midpoint of the rear beam of the vehicle. See Image 24.
2. Bolt or spot-weld the mounting jig to the rear beam, so that both mid-points are aligned. See Image 25.
3. Position the support frame under the vehicle chassis.
4. Raise the lift arms to the highest position.
5. Attach the lift arms to the eye of the jig. Use the steel platform's normal bolts.
6. The support frame should be positioned as high as possible within the specified C dimension. Adjust the frame to the ideal height under the chassis. Use the lift's packaging and a forklift, See Image 26. The frame must be positioned parallel with the floor of the vehicle body and must not be in contact with the vehicle chassis; there must be a few millimetres of play. If necessary adjust the angle of the arms by carefully operating the lift.
7. Install the brackets on the support frame so that its opening is facing towards the front of the vehicle, and adjust the position of the frame so they are in contact with the vehicle chassis.
8. Install the U-profile with associated washers and nuts, but do not tighten these. Screw on the nuts alternately until the U-profile is aligned in contact with the frame, see Image 27.

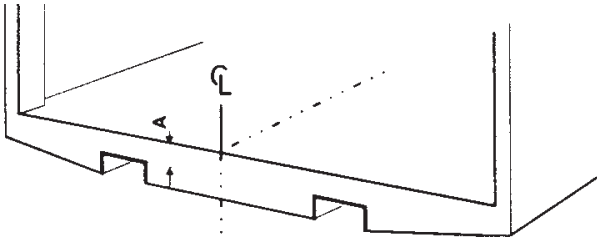


Image 24. Measure and mark the midpoint of the rear beam of the vehicle.

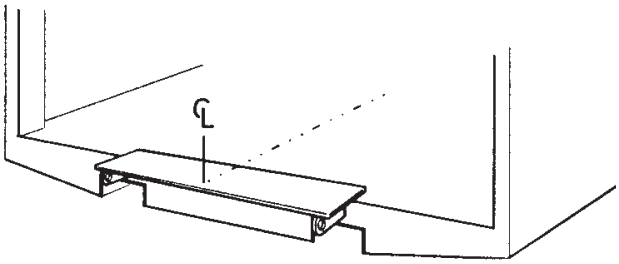


Image 25. Bolt or spot-weld the mounting jig to the rear beam Art. nr. 57370TL for Z 2500

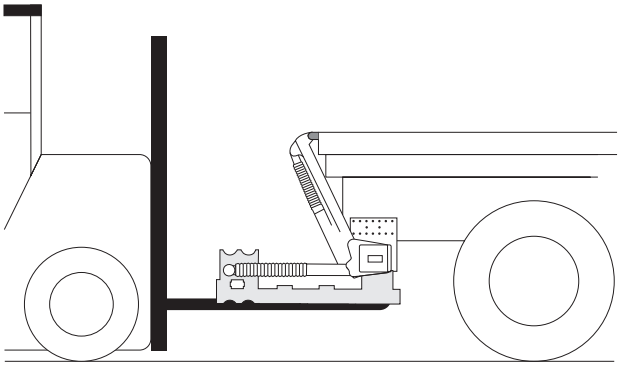


Image 26. Use the lift's packaging and a forklift.

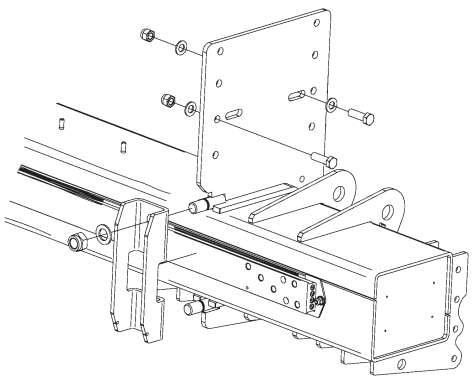


Image 27. Install the U-profile with associated washers and nuts

When installing on chassis with pre-drilled holes, go directly to point 16.

9. When installing on a frame without pre-drilled holes, install first with a screw in the brackets' slot-shaped holes. On the vehicle chassis, mark the middle of the brackets' slot-shaped holes and then drill Ø14 mm holes in the frame, see Image 29.
10. Bolt the brackets securely on the outside of the vehicle chassis. Use M14x45 bolts and install the associated washer and nut on the inside of the vehicle chassis. Install the bolts but do not tighten.
11. Check and perform fine adjustment regarding the position of the lift. Then tighten the bolts with a torque wrench.
    Tightening torque: 120 Nm.
12. Using a torque wrench, tighten the bolts holding the U-profiles. **Tightening torque: 280 Nm.**
13. Drill holes in the vehicle chassis for mounting bolts, Ø14 mm. Drill in the outer holes of each bracket. Use M14x45 bolts and install the associated washer and nut on the inside of the vehicle chassis. Installation must be performed with at least 6 bolts in the outer holes. The bolt that was installed initially in the slot-shaped hole may not be included in this figure. If necessary, this bolt can now be moved to one of the outer holes, see illustration. Then tighten the bolts with a torque wrench.
    Tightening torque: 120 Nm.

NOTE.

Welding is not permitted on the chassis brackets.

Do not move the lift all the way to the armstops or with the platform fitted before all the bolts are fully tightened against the chassis.

Do not place the lift under load until:

- the correct number of bolts have been installed and torque-tightened.
- the vehicle body is installed to reinforce the truck chassis.

14. Remove the mounting jig.

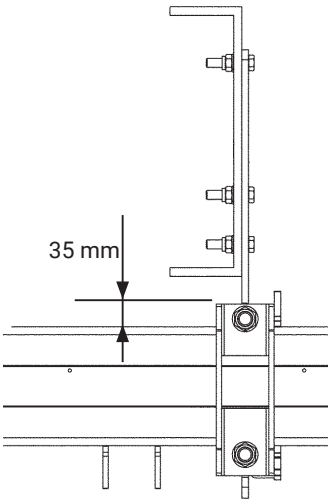


Image 28. The chassis bracket requires at least 35 mm clearance between vehicle chassis and support frame

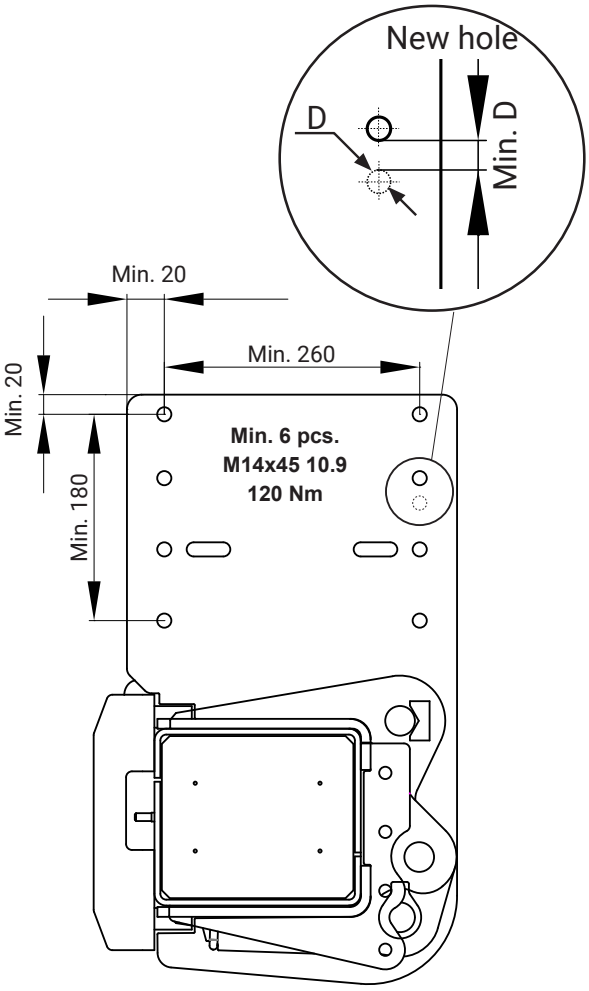


Image 29. Install the chassis bracket with at least six M14x45 10.9 bolts

When installing on chassis with pre-drilled holes

15. Bolt the brackets securely on the outside of the vehicle chassis. Install in the slot-shaped holes with at least 6 screws. Use suitable bolts (durability equivalent to M14 10.9 or higher) and install the associated washer and nut on the inside of the vehicle chassis. Install the bolts but do not tighten. See Image 30.
16. Check and perform fine adjustment regarding the position of the lift. Then tighten the bolts with a torque wrench. **Tightening torque: Standard for selected screw.**
17. Using a torque wrench, tighten the bolts holding the U-profiles. **Tightening torque: 280 Nm.**
18. Drill holes in the vehicle chassis for mounting bolts in each bracket's two upper round holes. Use suitable bolts (durability equivalent to M14 10.9 or higher) and install the associated washer and nut on the inside of the vehicle chassis. See Image 30. Tighten the bolts with a torque wrench. **Tightening torque: Standard for selected screw.**

> ⚠ **WARNING!**
> Welding is not permitted on the chassis brackets.
> Do not run the lift against the arm stop or with the platform installed until all bolts are properly tightened against the frame.
>
> Do not place the lift under load until:
> - the correct number of bolts are installed and tightened to torque.
> - the body is mounted to strengthen the truck frame.

19. Remove the mounting jig.

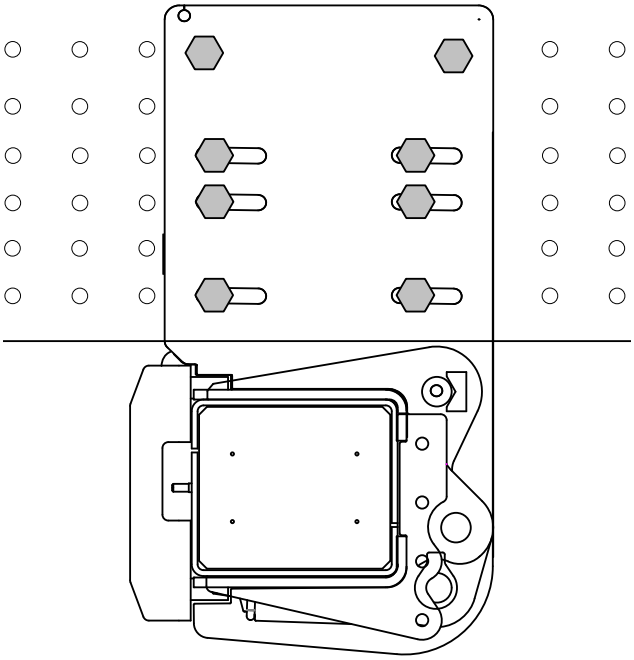


Image 30. Installing the chassis bracket on vehicle chassis with pre-drilled holes

4.2 Platform

1. Check that all included components are clean, cleaning them where necessary.
2. Lubricate the metal bushings on the upper bearing of the arms. Ensure that the small holes on the inside of the bushings are filled with grease. See illustration. Use LE lubricant 4622 or the equivalent.

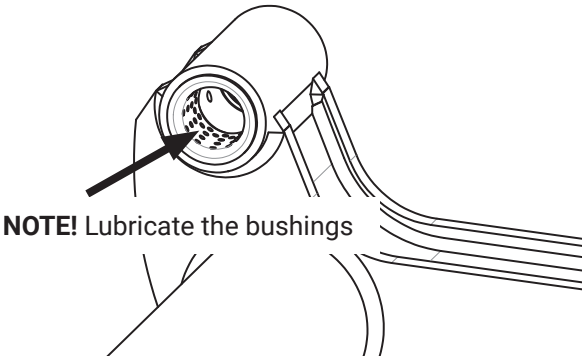


Image 31. Carefully lubricate the metal bushings

IMPORTANT!
Carefully lubricate the metal bushings on the upper bearing of the arms. Make sure the small holes are filled with grease. After installing the platform, grease all bearings including the two regular grease nipples; see section "10 Lubrication and fluid level check" on page 66.

3. Fit the platform to the arms using the supplied shafts and screws. Tighten the bolts using a torque wrench. **Tightening torque: 80 Nm.**

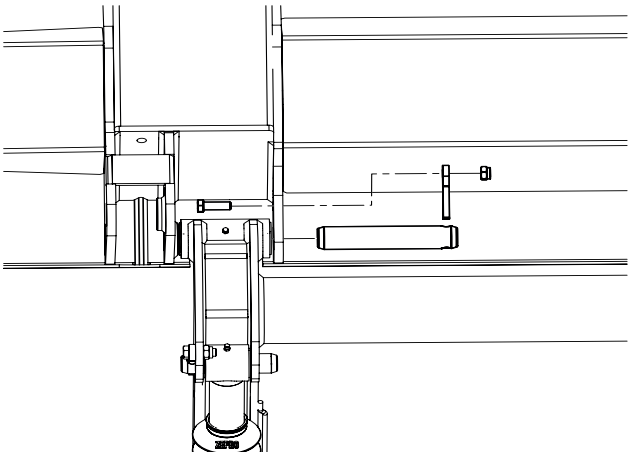


Image 32. Fitting the platform to the arms

4. Fit one of the tilt cylinders to the platform. Use the supplied shaft and support wheel.

IMPORTANT!
Make sure the cylinder is installed with the grease nipples facing up.

Lubricate the bushings and shaft! Use LE lubricant 4622 or the equivalent.

Tighten the bolts using a torque wrench.
Tightening torque: 80 Nm.

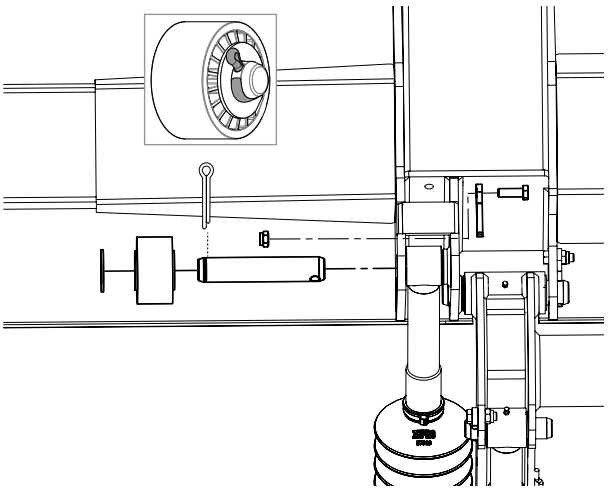


Image 33. Fitting the tilt cylinder to the platform

5. Test the lift by carefully raising it to the vehicle floor level and tilting it to the vertical position. Check the position in relation to the rear beam and side posts of the vehicle. See illustration.

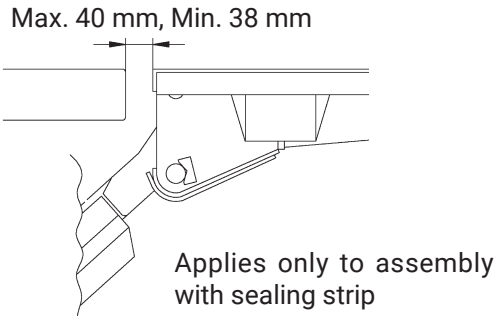
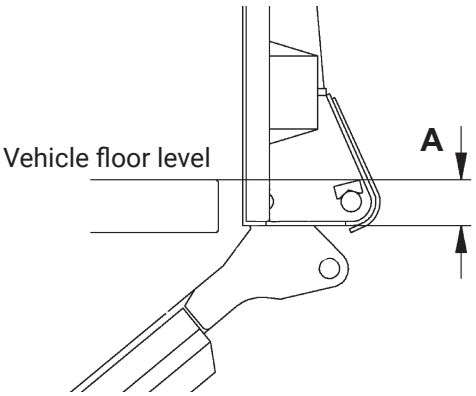


Image 34. Check the position in relation to the rear beam of the vehicle



Type	Steel	Aluminium, Plan 40 mm	
A (mm)	81	81	

Image 35. The platform underhang (A) varies according to platform type, and this should be taken into account when fitting the upper seal.

4.2.1 Adjusting the tilt angle

IMPORTANT!
Make no adjustments to the cylinders before installing them on the platform. The tilt cylinders are factory preset.

1. Loosen the rubber bellows at the bottom where they are secured with hose clips.
2. Tilt up and move both tilt cylinders all the way up.

   NOTE!
   Always make adjustments with full hydraulic pressure in the tilt cylinders.

3. Loosen the three lock screws on the cylinder fitted to the platform, see illustration.

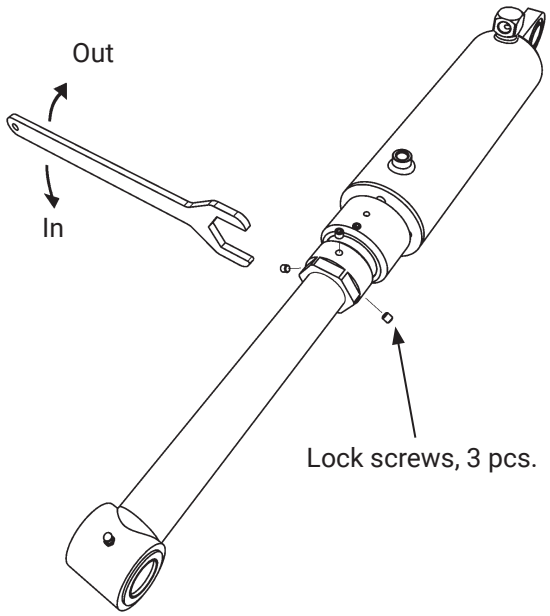


Image 36. Adjusting the tilt angle

4. Turn the adjuster sleeve until the platform fits perfectly against the seal on the body. Image 37.

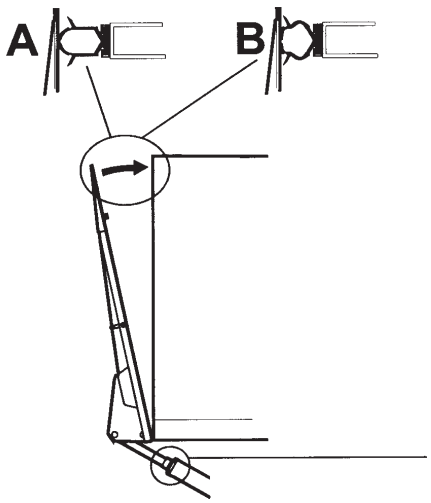


Image 37. Adjusting the fit to the vehicle body

5. Undo the three locking screws on the other tilt cylinder. Image 38.
6. Turn the adjuster sleeve until the tilt cylinder aligns with the platform attachment point. See Image 38.

> **IMPORTANT!**
> The max. length of both cylinders must be adjusted equally to avoid unwanted bending forces.

7. Install the other tilt cylinder on the platform attachment point. Use the shaft and support wheel supplied.

> **IMPORTANT!**
> Make sure the cylinder is installed with the grease nipples facing up.
>
> Lubricate the bushings and shaft! Use LE lubricant 4622 or the equivalent.

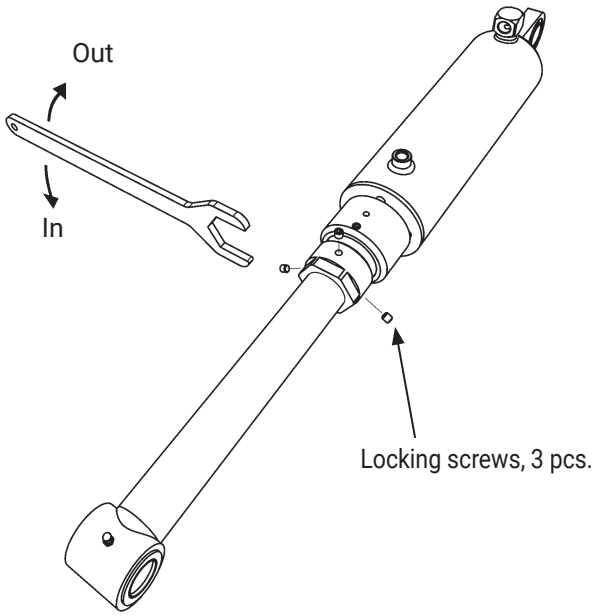


Image 38. Adjusting the tilt angle

8. Tighten the bolts using a torque wrench. **Tightening torque: 80 Nm.**
9. Adjust both cylinders alternately until the platform touches the vehicle body; see Image 37 (B).
10. Tighten the adjuster sleeve locking screws using a torque wrench **Tightening torque: 3-5 Nm.**

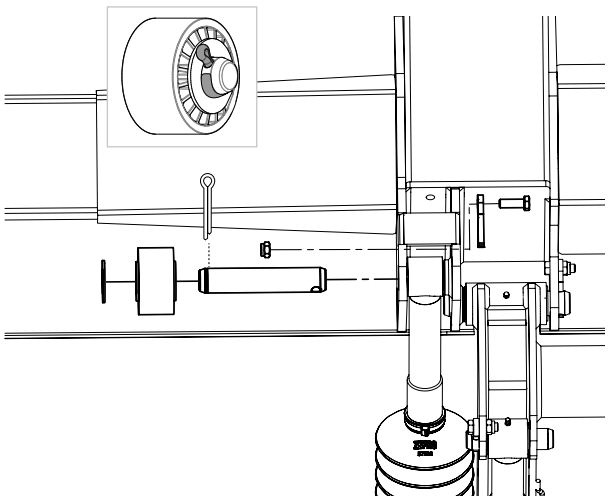


Image 39. Install the tilt cylinder on the platform

IMPORTANT!
After finishing the adjustment, make sure the distance between the adjusting collar and the end of the thread is no more than 30 mm.

11. Fit the tilt cylinder boots. Image 41.

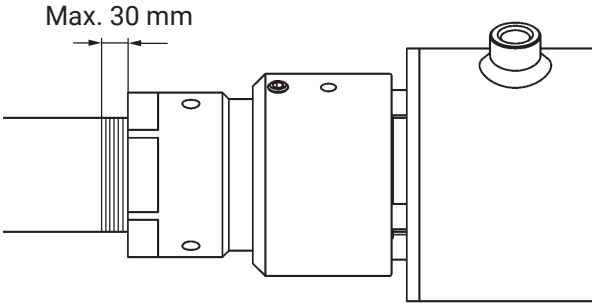


Image 40. Adjusting the tilt angle

Lift model	A
2500-130	142 ±5
2500-150	252 ±5

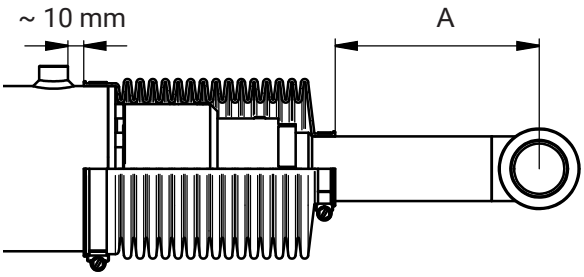


Image 41. Installing boots

4.2.2 Adjusting the downward tilt angle

NOTE!
It is necessary to adjust the tilt angle 90º to the body before adjusting the tilt down angle (see previous page).

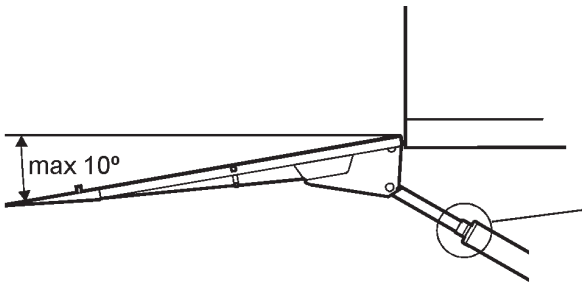


Image 42. The tilt angle must be adjusted to max.10° down

⚠ WARNING!
To make sure the lift is safe and CE compliant, the downward tilt angle must be adjusted to max 10° if people will be present on the platform.

1. Raise the lift to the vehicle floor. Image 42.
2. Loosen the lock screw of the end stop (2). Screw the end stop all the way back towards the platform (3). Image 43.
3. Tilt the platform down to max. 10° below the horizontal. Image 42.
4. Adjust the end stop all the way to the top of the cylinder (4). Image 43.
5. Tighten the lock screw in the end stop (5). See illustration. Image 43.

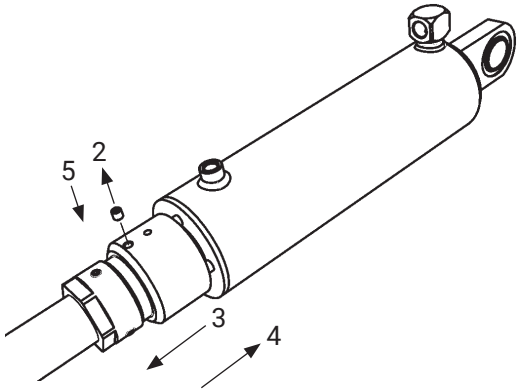


Image 43. End stop with lock screw

The tightening torque for lock screws is between 3-5 Nm

Test all functions.

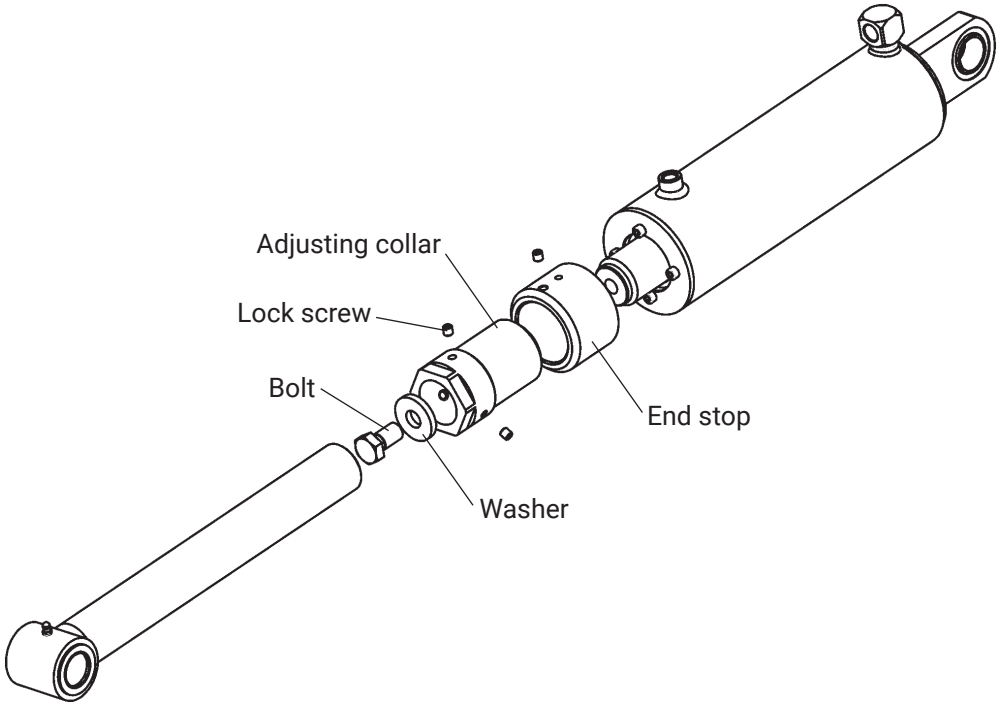


Image 44. Tilt cylinder

4.3 Armstops

Fit end stops between the lift arms and the rear member of the vehicle floor. The left and right end stops must be reached at the same time, as high up the lift arm as possible. Installation must take place against the vehicle body.

⚠ WARNING!
It is not permitted to perform welding in the lift arm. Installation must take place against the vehicle body.

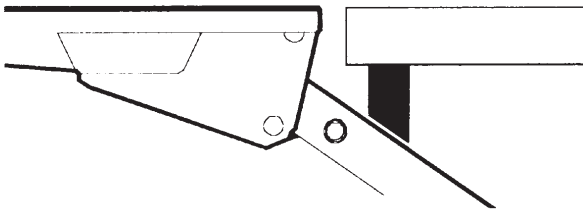


Image 45. Fit end stops between the lift arms and the rear beam of the vehicle floor

4.4 Sealing strip (horizontal)

The track is fitted using the self-tapping screws provided.

1. Mark where to drill holes for the self-tapping screws.
2. Drill holes (Ø 7.2 mm) for the screws.
3. Fit the horizontal stop strip (steel or aluminium).
4. Fit the rubber strip to the track.

4.5 Sealing strip (vertical)

1. Fit the tracks with contersunk screws, rivets or by spot welding.
2. Fit the rubber strip to the track.
3. Secure the rubber strips by swaging the tracks together at the bottom.

NOTE.
To fit an upper edge seal, create a 45° mitre against the vertical strips.

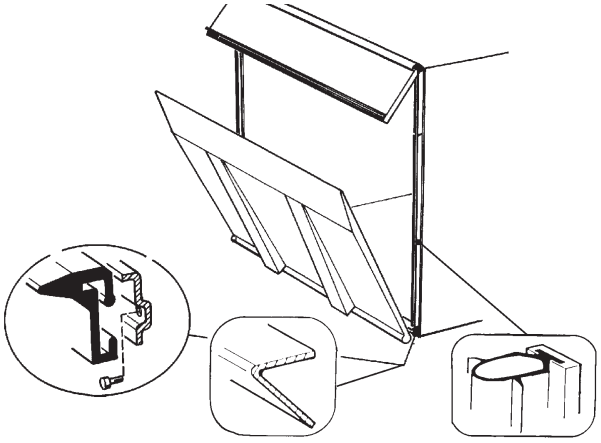


Image 46. Installing a sealing strip

4.6 Adjustable underrun protection

Test the position of the underrun protection without tightening the bolts to check that the statutory dimensions are obtained. Adjust if necessary then tighten the bolts with a torque wrench.

1. Fit the inner part of each bracket at one of four heights. Select the height that meets the statutory requirements, see section "3.2 Statutory dimensions for underrun protection" on page 9. Use the corresponding bolts M12x100. Assemble without tightening the bolts, see Image 49.

4. Fit the outer part of each bracket at one of five positions. Select a position that meets the statutory requirements, see section "3.2 Statutory dimensions for underrun protection" on page 9.

> **⚠ WARNING!**
> Check carefully that there is no risk of the outer part of each bracket colliding with any part of the cylinders when using the lift's functions. In particular, check in relation to the cylinders' hose connections, especially when the outer part of the brackets are installed a long way in.

Use the associated bolts M12x80. Assemble without tightening the bolts. See Image 49.

5. Check that the installation meets the statutory requirements, see section "3.2 Statutory dimensions for underrun protection" on page 9.

6. Tighten all the bolts using a torque wrench. **Tightening torque: 80 Nm.**

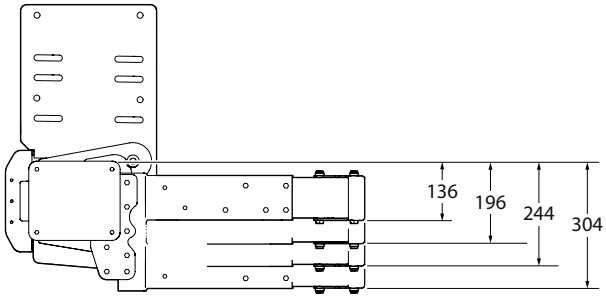


Image 47. The inner part of the brackets can be fitted at one of four heights

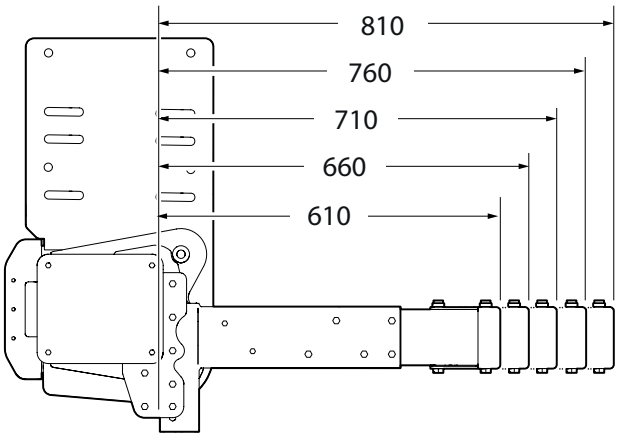


Image 48. The outer part of the brackets can be fitted in one of five positions

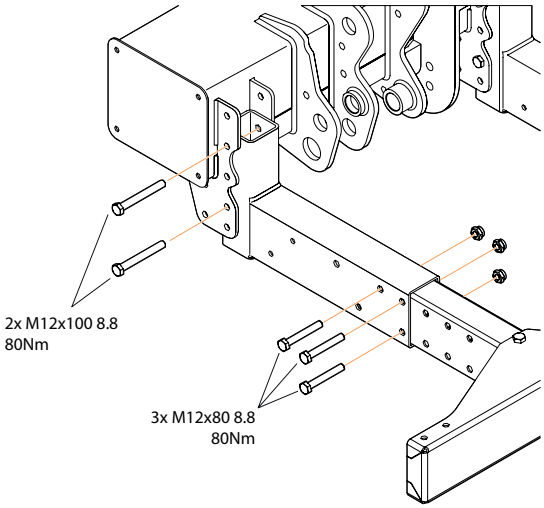


Image 49. Installing underrun protection

NOTE!
The underrun protection is included in the total length of the vehicle!

4.6.1 Fixed underrun protection

1. Install the brackets on the tail lift frame using 3 x M12x100 bolts each, without tightening them. See Image 50.
2. Install the centre sheet-metal profile using 4 x M12x110 bolts on the brackets. See Image 51. **Tightening torque 55 Nm.**
3. Tighten the bolts used to install the inner brackets in step 1. **Tightening torque 55 Nm.**
4. Install the outer sheet-metal profiles using 2 x M12x110 bolts each. See Image 52. **Tightening torque 55 Nm.**

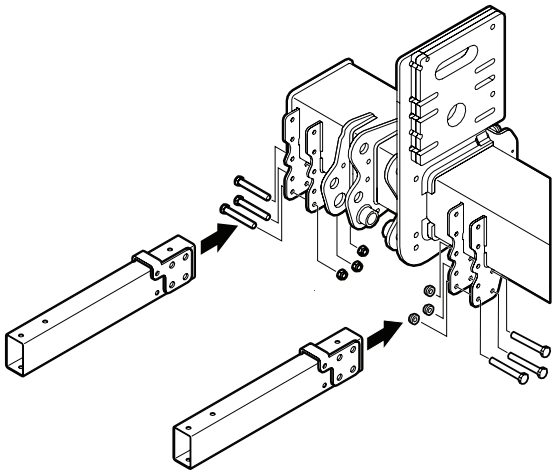


Image 50. Installing brackets on the frame

NOTE!
The underrun protection is included in the total length of the vehicle!

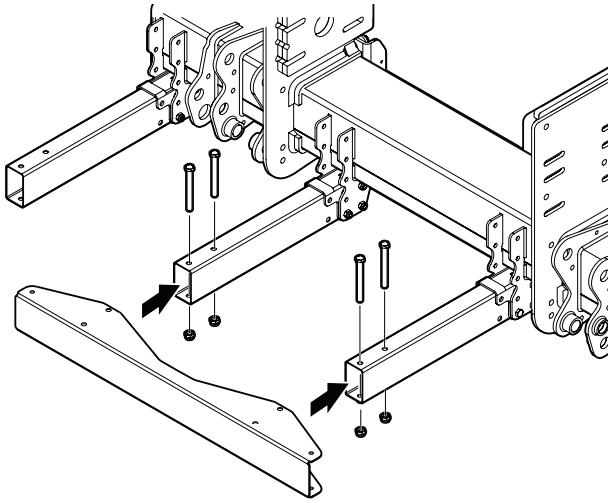


Image 51. Installing the inner sheet-metal profile

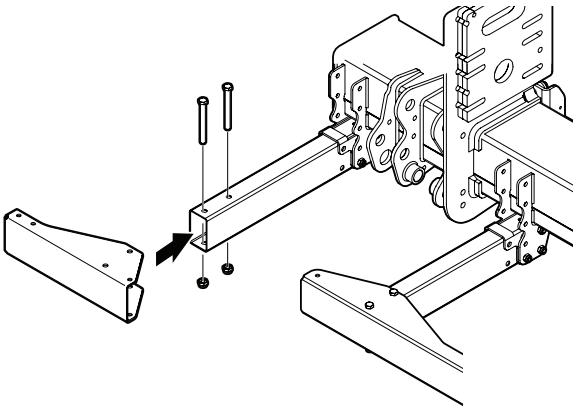


Image 52. Installing the outer sheet-metal profile

4.7 Purging the cylinders

Purge the lift cylinders by lowering the platform all the way to the ground a few times. It may be necessary to raise the truck to allow the platform to be lowered completely.

Purge the tilt cylinders by tilting the platform all the way up to the vehicle body and then all the way down.

4.8 Platform tilt speed

The downward tilt speed of the platform when operating within its working range (from 45° downwards) must not exceed 4°/second.

4.8.1 Setup

1. Put the platform at an angle of 45°.
7. Run the "Tilt down" function without using the 2H function and at the same time see how long it takes for the platform to reach horizontal position.
8. Calculate the tilt speed of the platform by dividing the number of degrees (45°) by the time taken. The result must not be greater than 4°/second.
9. If necessary, adjust the tilt speed using the knob on the hydraulic unit. The knob is fastened with a check nut. Then repeat steps 1-4 until the desired tilt speed is attained. Fasten the check nut once setup is complete.

> ⚠ **WARNING!**
> The downward tilt speed of the platform when operating within its working range (from 45° downwards) must not exceed 4°/second. Higher speed means an increased risk of personal injury.

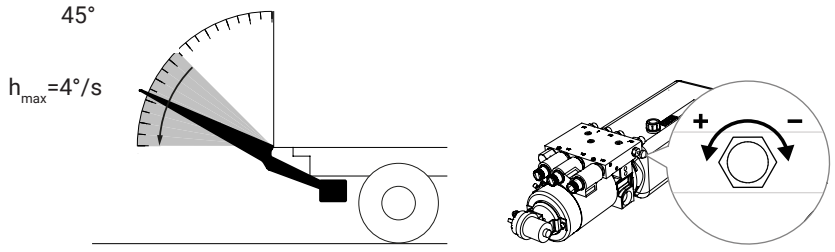


Image 53. Setting the tilt speed downwards within the working range (from 45° downwards)

4.8.2 Quick opening

The quick opening function is activated if the 2H button is held in at the same time as the buttons for the "Tilt down" function are held in, provided that the angle of the platform is then outside the working area (i.e. above 45°). As long as these buttons are held in, the platform will be tilted downwards at the highest possible speed to -10º. In this way, the time for opening the platform from vertical to horizontal position can be minimised without sacrificing safety.

4.9 Angle sensor / Inclinometer

4.9.1 Tail lift without autotilt

1. Install the angle sensor on the platform using the nuts, bolts and washers supplied and attach the cable using cable time; see. Image 54.
2. Connection is described later in section 6.

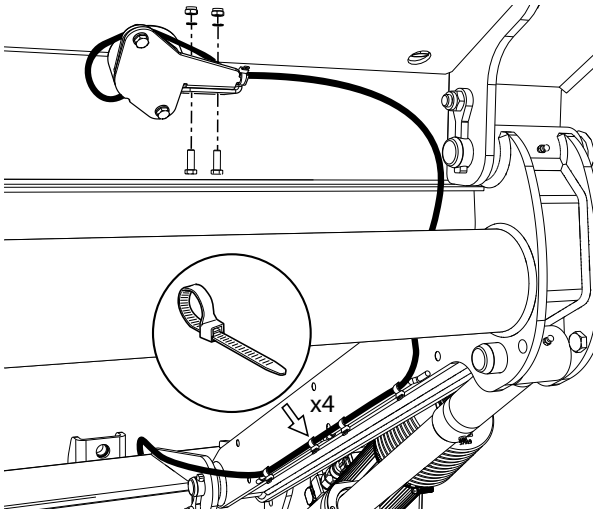


Image 54. Installing the angle sensor

4.9.2 Tail lift with inclinometer for autotilt

1. Install the inclinometer on the platform using the nuts, bolts and washers supplied and attach the cable using cable time; see. Image 55.
2. Connection is described later in section 6.

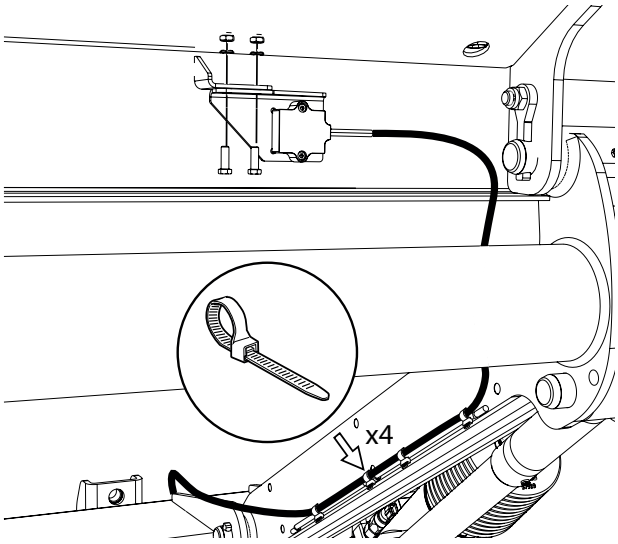


Image 55. Installing inclinometers

4.9.3 Tail lift with angle sensor IFM for autotilt

1. Install the angle sensor on the platform using the nuts, bolts and washers supplied and attach the cable using cable time; see Image 56
2. Route the cables and secure with cable ties.

Connection is described later in section 6.

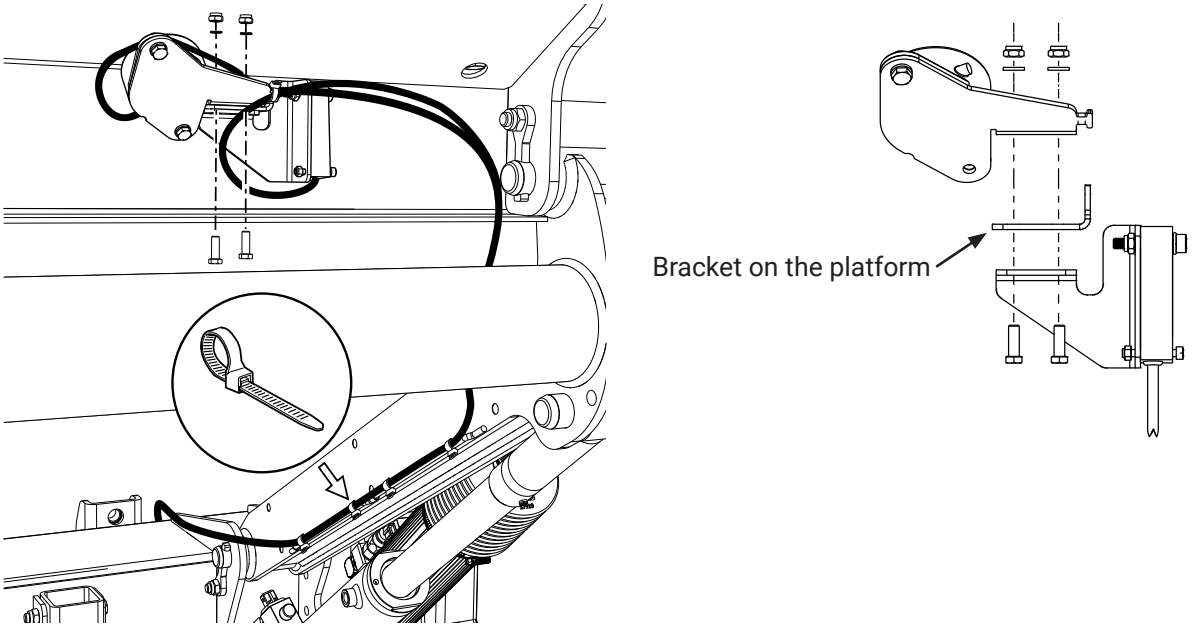


Image 56. Installing an angle sensor for auto tilt

Autotilt angle setting

By default, the autotilt angle is set to 0°. If necessary, the position of the angle sensor (autotilt angle) can be adjusted.

1. Loosen the two screws without removing them, see Image 57.
2. Adjust the position of the angle sensor to the desired angle, see Image 57.
3. Retighten the screws.

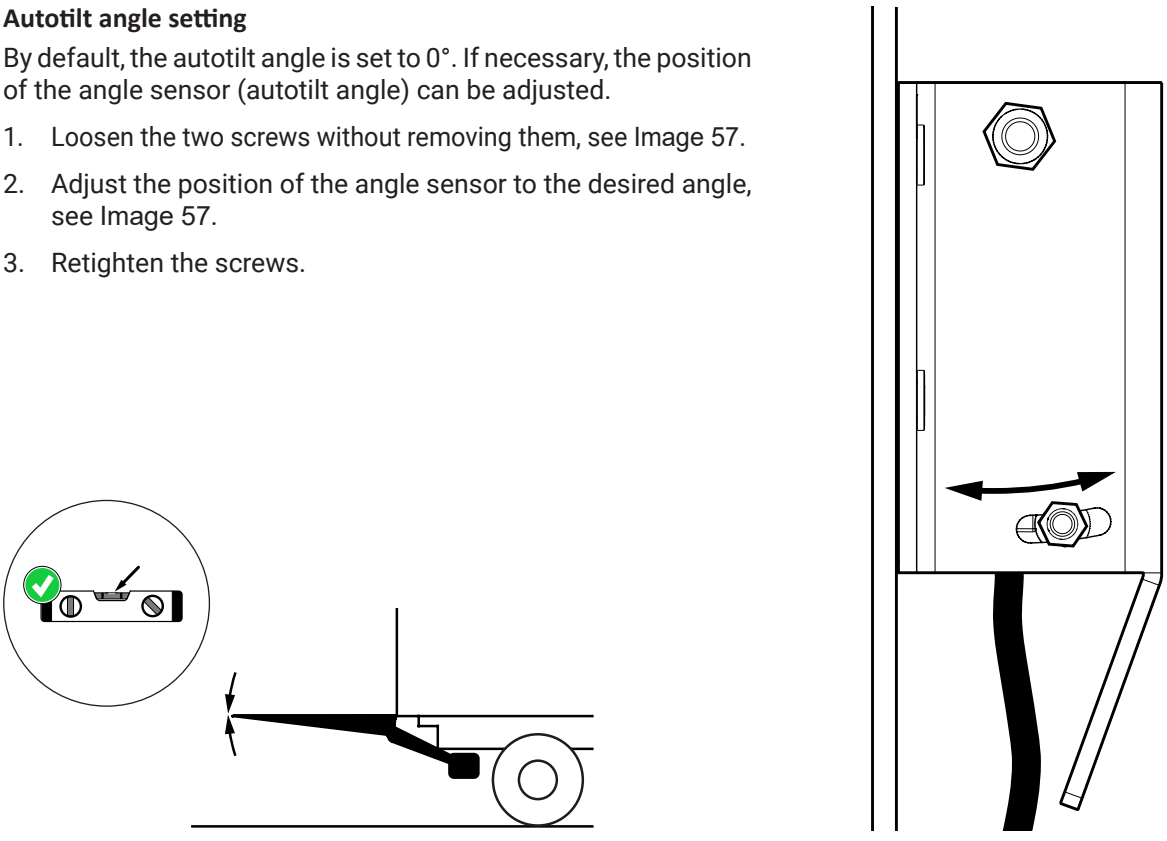


Image 57. Adjusting the autotilt angle

4.10 Controllers

1. Install the primary controller on the side of the vehicle normally facing away from the traffic. The distance between the vehicle's rear edge and the centre of the controller must be 300-600 mm. Connection is performed later in section 6 if this is not already done from the factory.
2. Any additional controllers can be installed in an optional location. Connection is described later in section 6.

IMPORTANT!

The controller's cable intake must always face downwards.

Pay attention and be careful when running cables to get longer life for the cables and to reduce the risk of unnecessary downtime.

The cable must not be fastened to brake lines or the vehicle's normal electrical system.

The cable must be protected by rubber grommets when it passes through beams or walls.

Cables must be installed sufficiently far from, or be protected against, sharp edges so they cannot chafe or otherwise sustain damage that could lead to a short-circuit and cable fires.

Take care not to bend cables with too tight a radius as this can cause damage.

⚠ WARNING!
The primary controller must always be fitted on the side that is facing away from moving traffic. Fitting in any other way involves increased risk of injury.

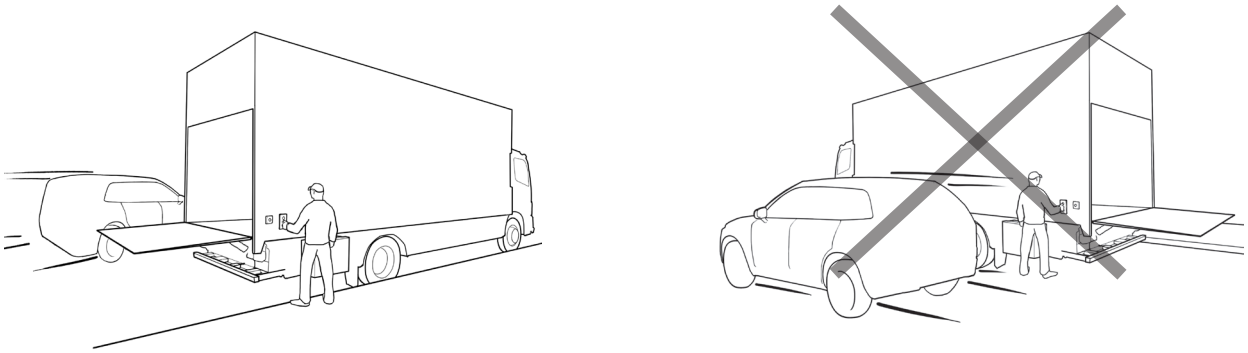


Image 58. Installing controllers

4.10.1 Controllers 3+1 (CD 1)

1. Fit the controllers in the desired locations. However, locate them such that the operator's working position is as safe as possible, and with an adequate overview of the load, tail lift and their working area.
3. The distance between the vehicle's rear edge and the centre of the controllers must be 300-600 mm. The distance between the controllers must be at least 260 mm. See Image 59.
4. Any additional controllers can be installed in an optional location.
5. Run the controller cabling to the tail lift cable grommet. Connection is described later in section 6.

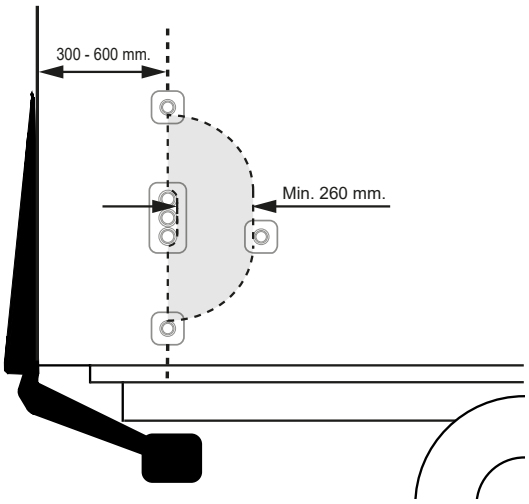


Image 59. Installing controller CD 1 with two-handed grip.

4.10.2 Controller UCU (CD 19)

The UCU can be delivered as either a vertical or a horizontal controller

Installation on the outside of the body

The cable is always connected to the control unit. If the cable needs to be disconnected from the control unit to be pulled through the wall:

1. Raise the connector latch to pull out the connector. See Image 60
2. When the cable has been pulled through the wall, reconnect it to the controller and secure it using the latch.
3. Keep enough cable in the space on the back of the panel so that the plug can be detached from the panel in case of replacement in the future. Image 60

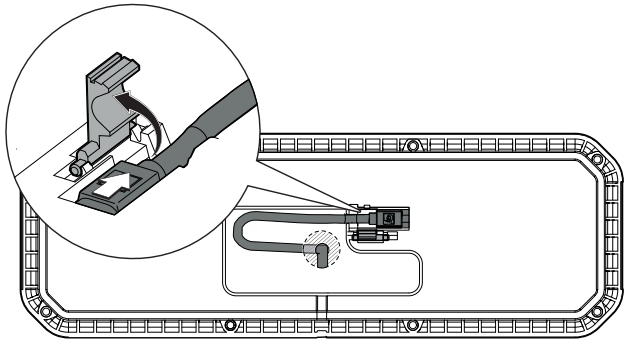
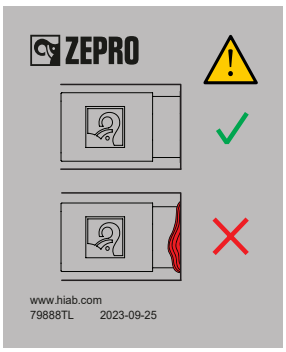


Image 60. Disconnecting the connector



NOTE!
Make sure that the connector is correctly fitted with the rubber seal not be visible

4. Carefully break off the outer part of the plug and place in the recess. See Image 61.
5. Then install the controller securely on the body. See Image 62

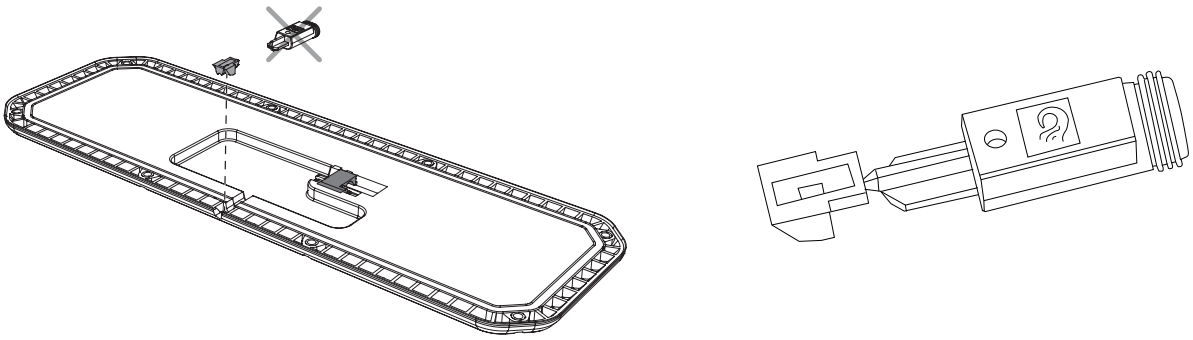


Image 61. Installation of plug for sealing UCU.

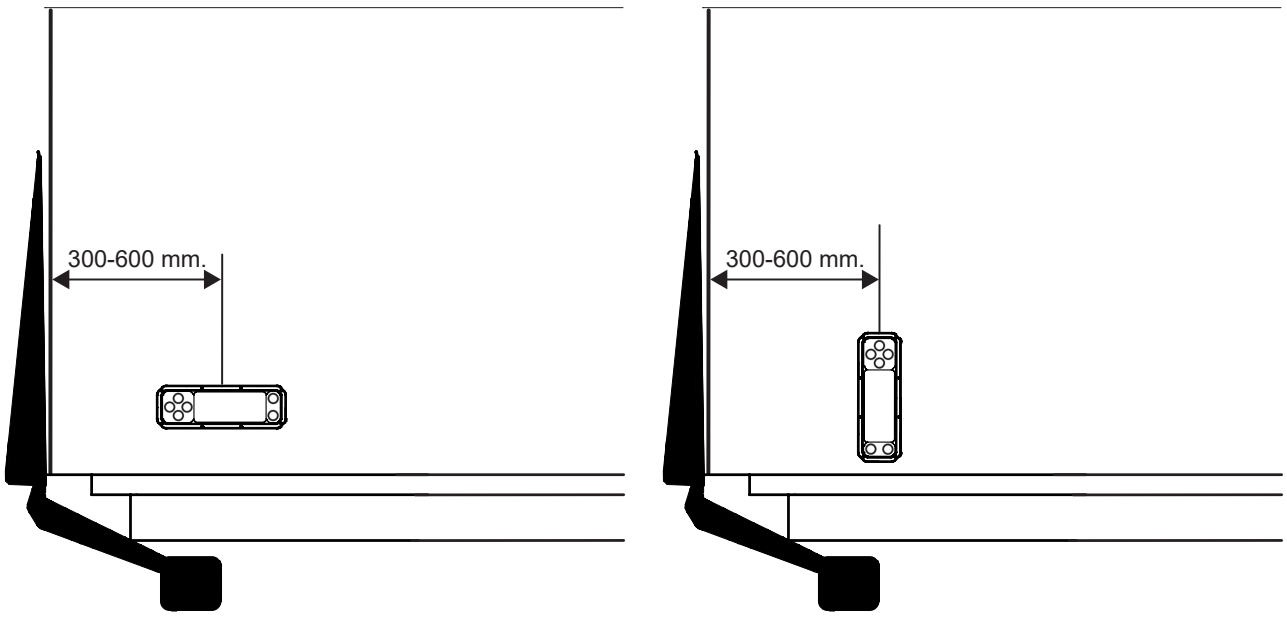


Image 62. Installing controllers

Installation on the underside of the body

The cable is usually connected to the controller and the controller bolted to the bracket at the factory. Bolt the bracket to the underside of the body. Use the self-adhesive drilling template supplied.

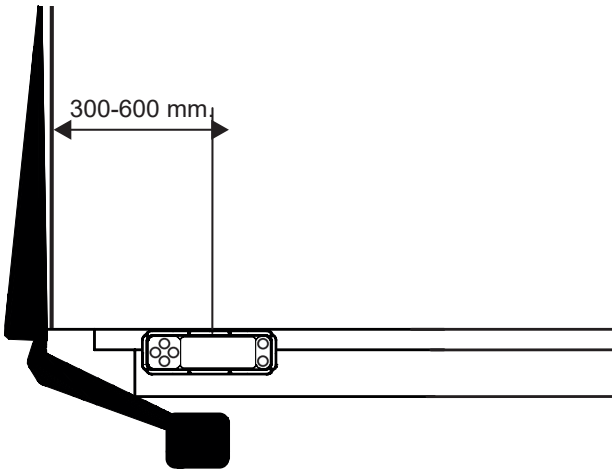


Image 63. Installing controllers

4.10.3 Connector for a hand-held controller

Installing the controller bracket

The connector is usually mounted on the bracket and connected to the lift. Bolt the bracket in the controller bracket. Use the nuts and bolts supplied.

Installation on the underside of the body

The connector is usually mounted on the bracket and connected to the lift. Bolt the bracket to the underside of the body. Use the self-adhesive drilling template supplied.

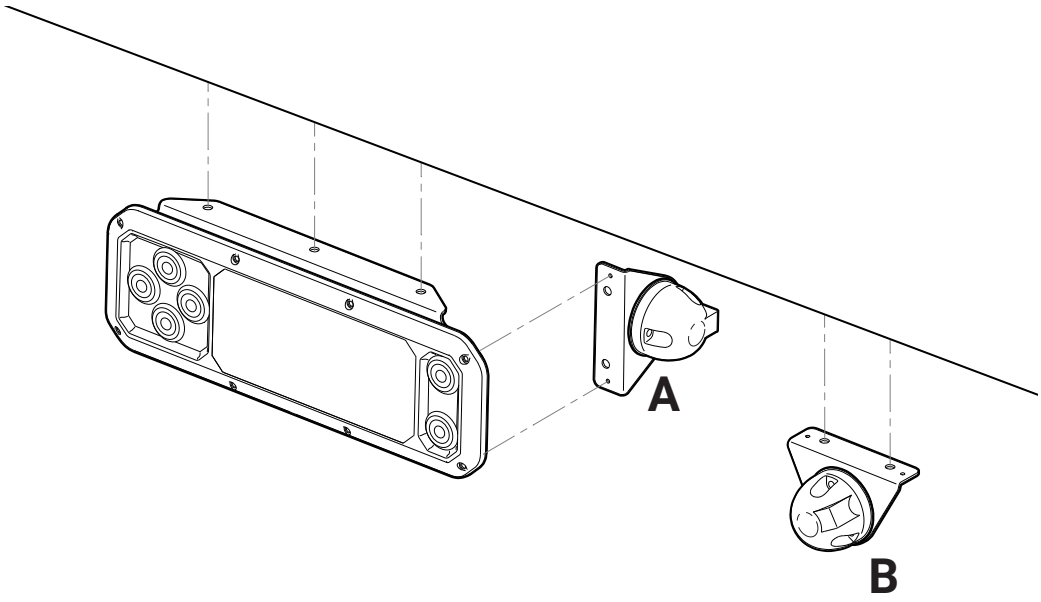


Image 64. Installing controller CD19 and the connector for a hand-held controller

5 Cable routing

5.1 General

IMPORTANT!

In order to ensure a high degree of reliability for many years to come, it is important that components such as batteries, chargers, main current and earth cables, fuses and main switches are dimensioned correctly and assembled with great accuracy. Insufficient battery power can permanently damage the electrical components in the tail lift (solenoid, electric motor, solenoid valves, relay board/control board and more.)

Insufficient main power and/or earth cable area may result in overheating, poor performance of the electrical system and shortened life expectancy of the main electrical components.

Earth connection must be made primarily to the negative terminal of the battery. Alternatively, another well-protected earthing point, which will not increase the voltage drop, can be used. The earthing point must be so well protected that increased voltage drop due to oxidation over time can be eliminated. Risk of material damage. Warranty rights do not apply to material damage caused by insufficient earthing.

Always install a shrink hose over the cable connection when installing cable terminals.

Pay attention and be careful during all cable routing to ensure longer cable life and reduce the risk of unnecessary downtime:

- Cables must not be clamped to brake lines or the vehicle's normal electrical system.
- The cable must be protected by rubber grommets when it passes through beams or walls.
- Cables must be installed sufficiently far from, or be protected against, sharp edges so they cannot chafe or otherwise sustain damage that could lead to a short-circuit and cable fires.
- Take care not to bend cables to too tight a radius as this can cause damage.

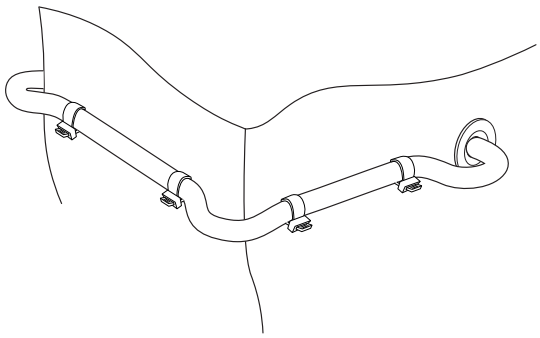


Image 65. Protect the cable against sharp edges and use cable grommets

Image 66. Always use shrink hose over the cable connection when fitting cable terminals

5.2 Maximum power consumption - Minimum recommended conductorcross sectional area

Z 2500 (200 bar)

Hydraulic unit 7100	24 volt
Pump - Motor unit	220 A
Minimum recommended conductor cross sectional area (copper cables, plus and minus cables)	
Control cable	1.5 mm^2
Supply cable, L < 13 m	35 mm^2
Supply cable, L = 13 - 19 m	50 mm^2
Supply cable, L > 19 m	50 mm^2 *
Battery	
Min. capacity, I_{min} (available for lift)	180 Ah
Min. voltage during operation, U_{min} (at lift)	18 Volt

**** Additional batteries required***

NOTE!

Make sure the tail lift has access to the minimum recommended current capacity (I_{min}).

Some vehicle models have restrictions regarding the amount of current the lift can access from the existing battery. Some vehicle models do not fully charge the battery. It may therefore be necessary to switch to a battery and sometimes also to a charger with a larger capacity.

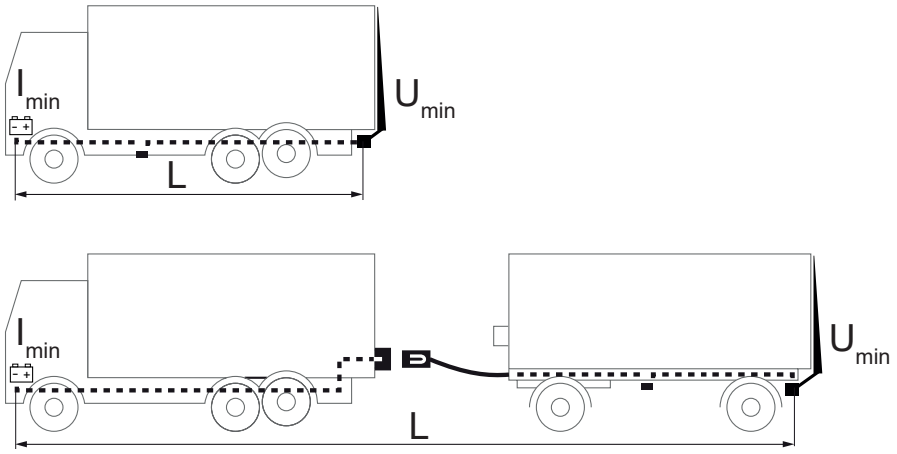


Image 67. Maximum power consumption - Minimum recommended conductor cross sectional area

5.3 Main power cable, earth cable, main fuse and main switch

Main switch should always be mounted when cab switches (CS) are not used, for example when installing on trailers. Main switches can also be installed in combination with cab switches (CS) if desired.

1. If the positive battery terminal is suitable for the main fuse of the lift, it can be used for mounting the fuse. Otherwise, secure the fuse box in a suitable, well-protected position as close to the battery as possible.
2. When using the fuse box, route the main power cable from the battery to the fuse box. Prepare the cable with cable terminals and shrink hose over the connections without connecting it. Connection is described later in section 6.
3. On tail lifts with cable-mounted quick connector for its earth connection, connect the earth cable to the quick connector.
4. Route/connect the tail lift earth cable to the negative terminal of the battery or to a well-protected earthing point.

> **IMPORTANT!**
> Earth connection must be made primarily to the negative terminal of the battery. Alternatively, another well-protected earthing point, which will not increase the voltage drop, can be used. The earthing point must be so well protected that increased voltage drop due to oxidation over time can be eliminated. Risk of material damage. Warranty rights do not apply to material damage caused by insufficient earthing.

When installing without main switch

5. On tail lifts with cable-mounted quick connector for its main power, connect the main power cable to the quick connector.
6. Route the main power cable from the tail lift to the fuse box/battery plus terminal. Prepare the cable with a cable terminal and shrink hose without connecting. Connection is described later in section 6.

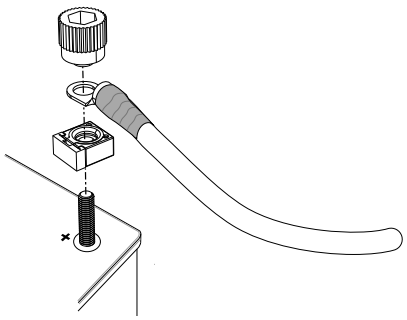


Image 68. Connection to the battery's positive terminal

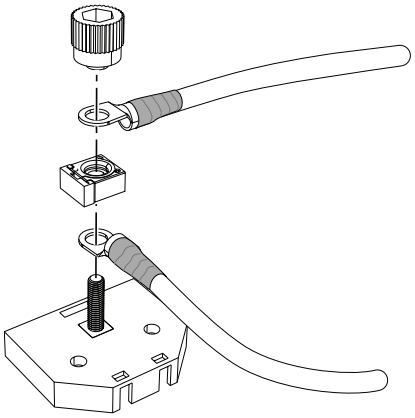


Image 69. Connection to the fuse box

5.3.1 Main power switch

1. The main power switch is installed on the bracket at the factory. Bolt the bracket to the underside of the body. Use the self-adhesive drilling template supplied.
2. Connect the main power switch cable to the quick connector on the tail lift power supply cable.
3. Connect the power supply cable to the other quick connector on the main power switch cabling.
4. Run the power supply cable from the main power switch to the fuse box / battery positive terminal. Prepare the cable with a cable terminal and shrink hose without connecting. Connection is described later in section 6.

IMPORTANT!
The positive cable to the battery and main fuse is connected later in Section 7, after the cable has been routed/installed.

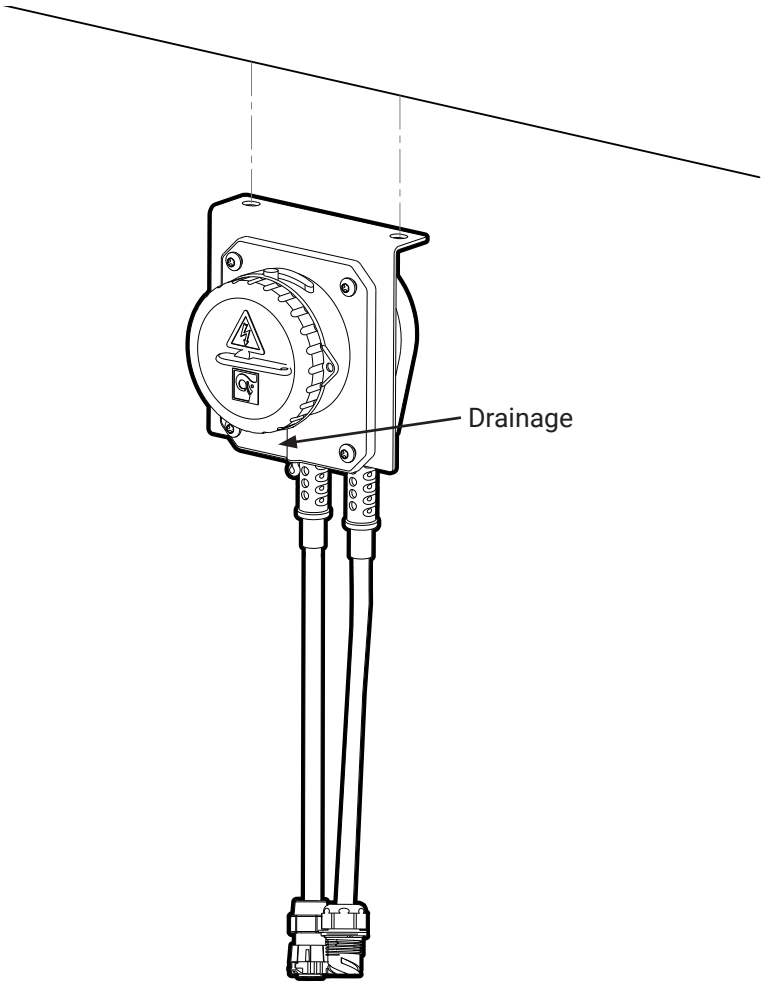


Image 70. Installing the main power switch

5.4 Control power cable

When using cab switches (CS), route the control current cable from the cab switch CS to the tail lift cable grommet. Connection is described later in section 6.

5.5 Open platform alarm

An open platform alarm must be installed in the form of a warning lamp in the cabin. Route the lamp cables to the tail lift cable grommet. Connection is described later in section 6.

5.6 Foot controller / Warning lights

If the tail lift is equipped with warning lights and/or foot controller, their cabling must be routed and connected according to the following description.

1. Connect the supplied cable to the connector on the foot controller/warning lighting cable.
2. Route the cable and install with cable ties according to Image 71 and Image 72. The quick connector must be positioned in such a way that it does not conflict with the underrun protection while the lift arm is in motion. Measure the distance (A) from the centre of the lift arm shaft to the centre of the underrun protection; see Image 73.
3. Measure the same distance (A) on the lift arm; see Image 73.
4. Then place the quick connector at least 100 mm outside or inside the measured point (A); see Image 73.

   Connection is described later in section 6.

IMPORTANT!

Route the cable between the platform and the lift arm tube such that it is well protected when the platform touches the ground.

Position the quick connector in such a way that it does not conflict with the underrun protection while the lift arm is in motion.

Leave enough slack to the first cable tie to avoid the risk of damage to the cable during lift operation.

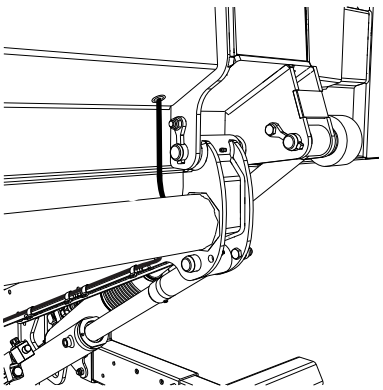


Image 71. Installing cabling

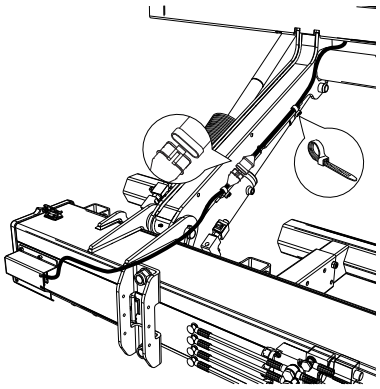


Image 72. Installing cabling

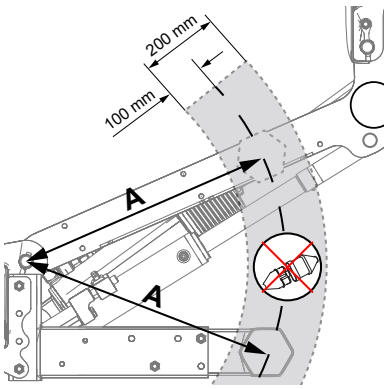


Image 73. Quick connector location

6 Connection

6.1 Cable grommet

6.1.1 Before connection

1. Disconnect the cable grommet's protective cover, which is secured with three screws; see Image 74.
2. Loosen the five screws on the cable grommet, see Image 75. Cables can now be installed/removed/adjusted in the grommet. The cable should be installed together with existing cabling using cable ties. Ensure the length of the cable is sufficient. The outer casing should be stripped back 350 mm. See Image 76.

6.1.2 After connection

1. Tighten the five screws once all cables are suitably located in the cable grommet, see Image 75.

   Tightening torque: 5 Nm.
2. Install the cable grommet's protective cover with the three bolts provided, see Image 74.
   Tightening torque: 8 Nm.

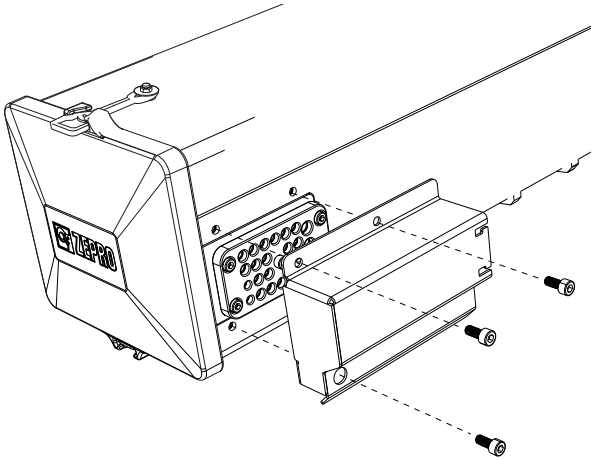


Image 74. Fasten the cable grommet's protective cover with three screws

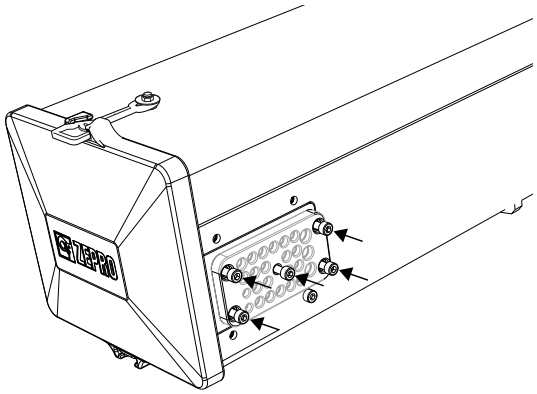


Image 75. Cable grommet's five screws

Image 76. The outer casing of cables should be stripped 350 mm.

6.2 Connection

IMPORTANT!
Make sure that the control board is disconnected from the power before connecting peripheral equipment. Risk of material damage.

1. Release and tilt out the relay board.
2. Run the cabling through the grommet.
3. Connect the relevant controller. See Section 6.2.1 - 6.2.2.
4. Where applicable, connect the warning lights. See Section 6.2.3 - 6.2.4.
5. Where appropriate, plug in cab switch (CS) and open platform alarm. See Section 6.2.5 - 6.2.7.
6. Route the cabling on the reverse of the control board / relay board and secure it with cable ties. See Image 77.
7. Tilt in and secure the relay board.
8. Replace the cable grommet, see Section 6.1.2.

IMPORTANT!
Ensure that no cables are pinched or in any other way damaged when the control board is tilted out/in.

NOTE!
The illustration shows the ZePRO1 control card, but the operation is the same regardless of the control card / relay card model.

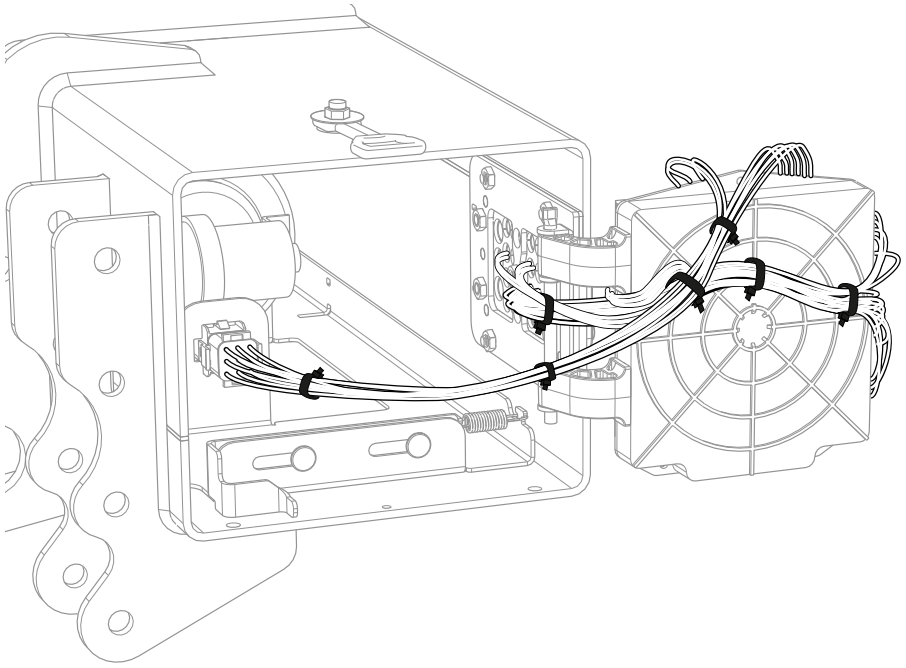
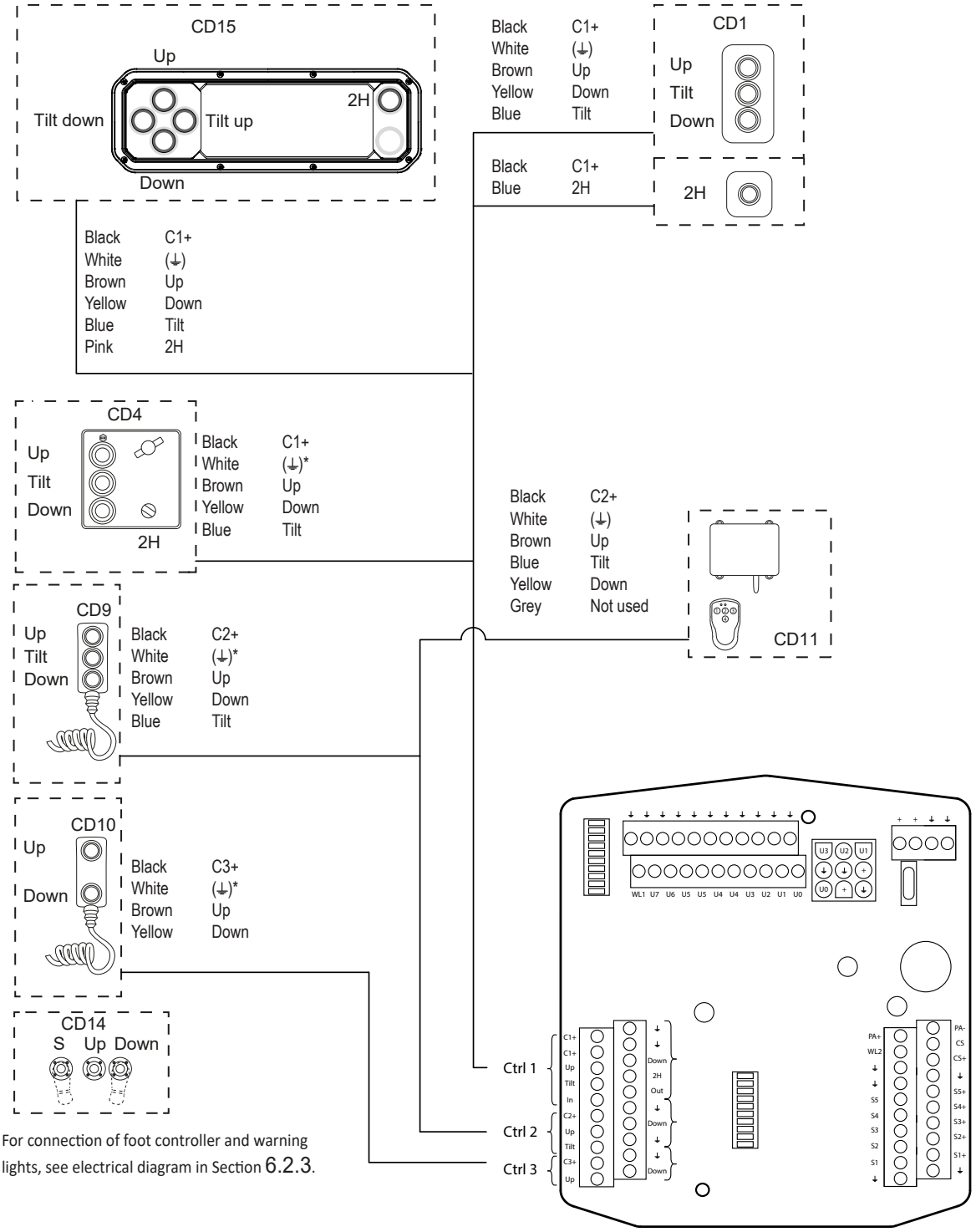


Image 77. Installing cabling with cable ties

6.2.1 Controller (TLC-B1)

Connection of warning lights and the most commonly occurring controller (CD (Control Device)) models are shown below. Possible controller models vary depending on lift model, configuration and relevant market.

⚠ WARNING!
Make sure that the control board is not powered up before connecting. Connecting more than one controller to each connection is not permitted. Risk of physical damage.



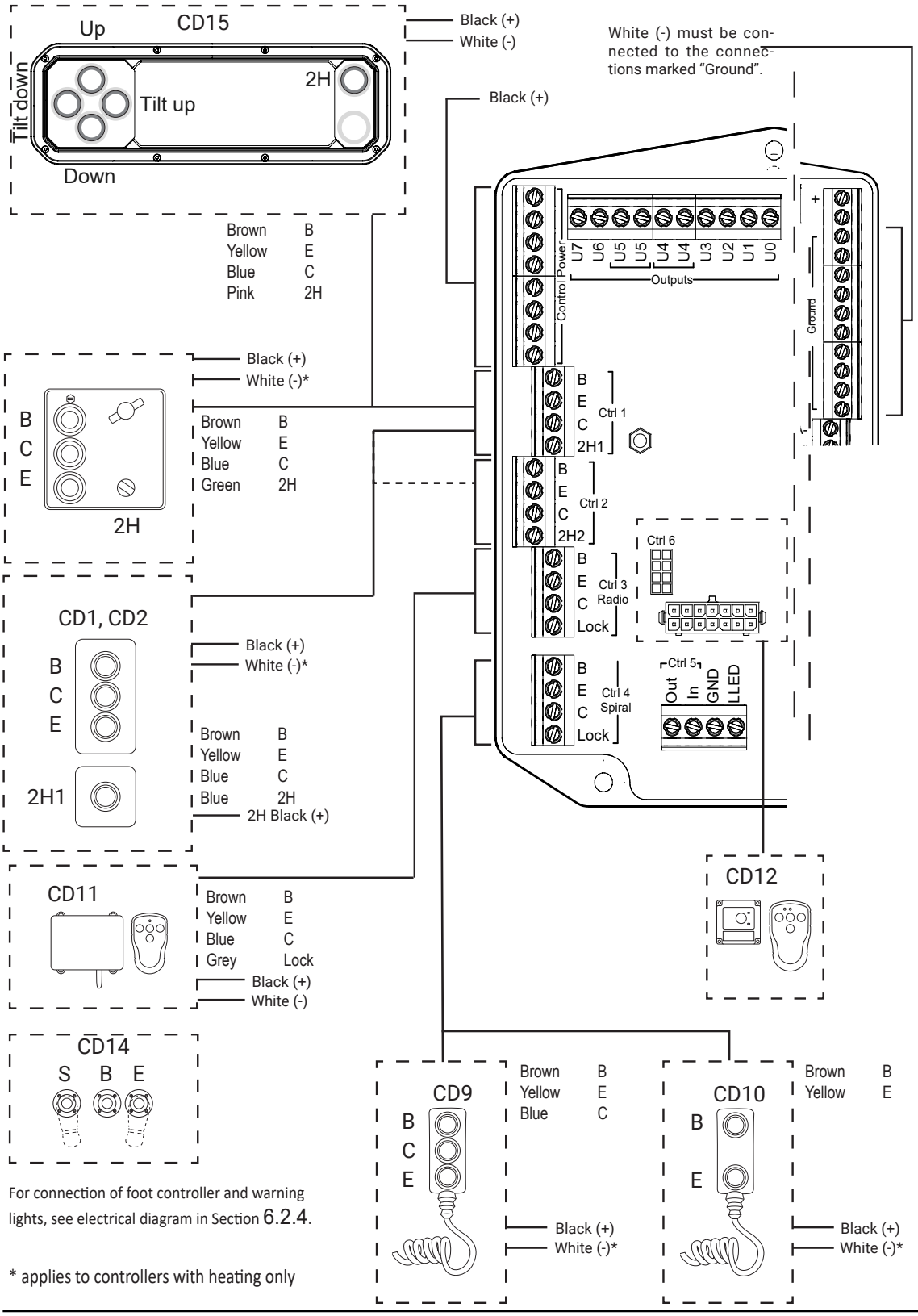
For connection of foot controller and warning lights, see electrical diagram in Section 6.2.3.

* applies to controllers with heating only

6.2.2 Controller (ZePRO1)

The most commonly occurring controller (CD Control Device) models are shown below. Possible controller models vary depending on lift model, configuration and relevant market.

⚠ WARNING!
Make sure that the control board is not powered up before connecting. Connecting more than one controller to each connection is not permitted. Risk of material damage.

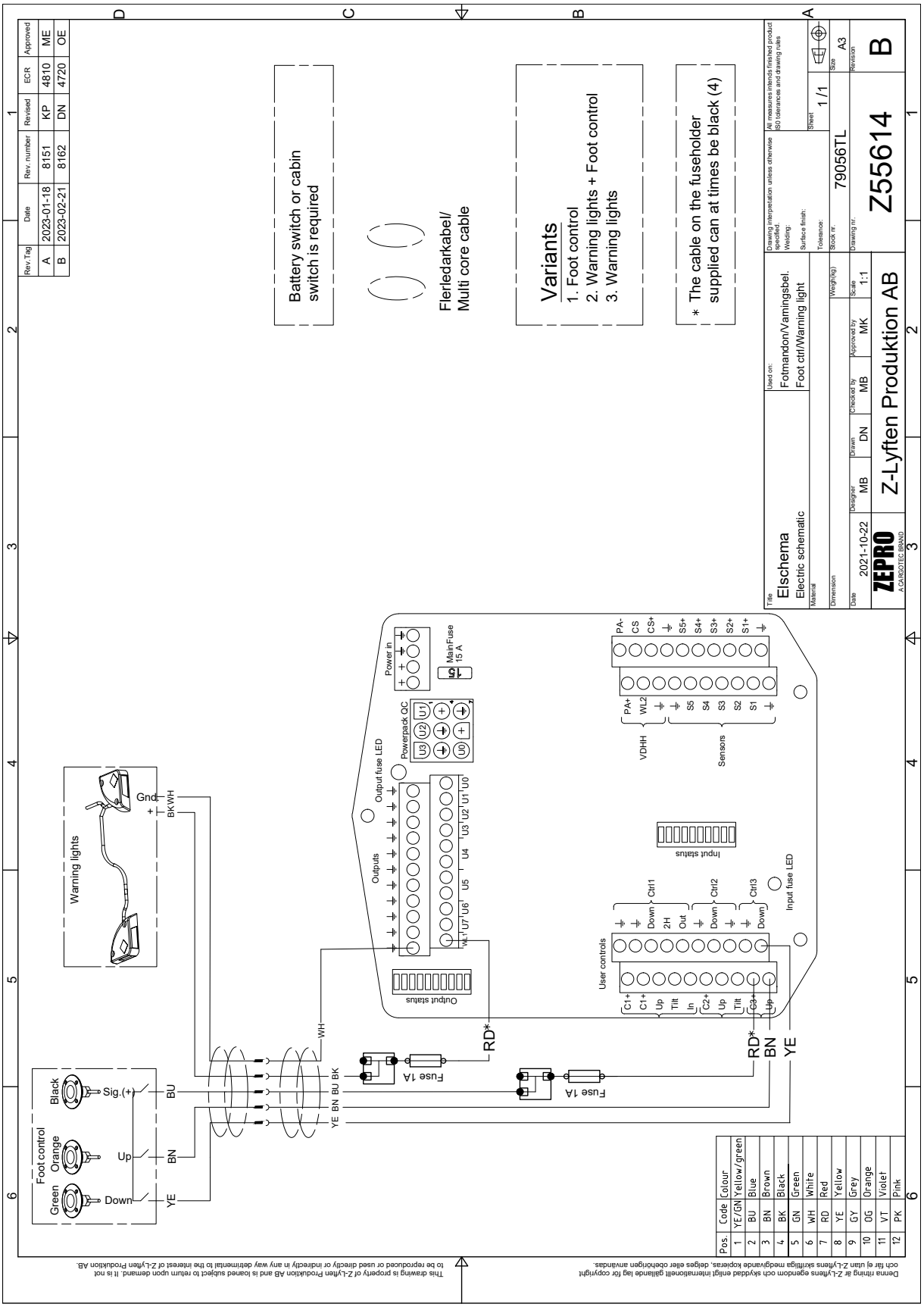


For connection of foot controller and warning lights, see electrical diagram in Section 6.2.4.

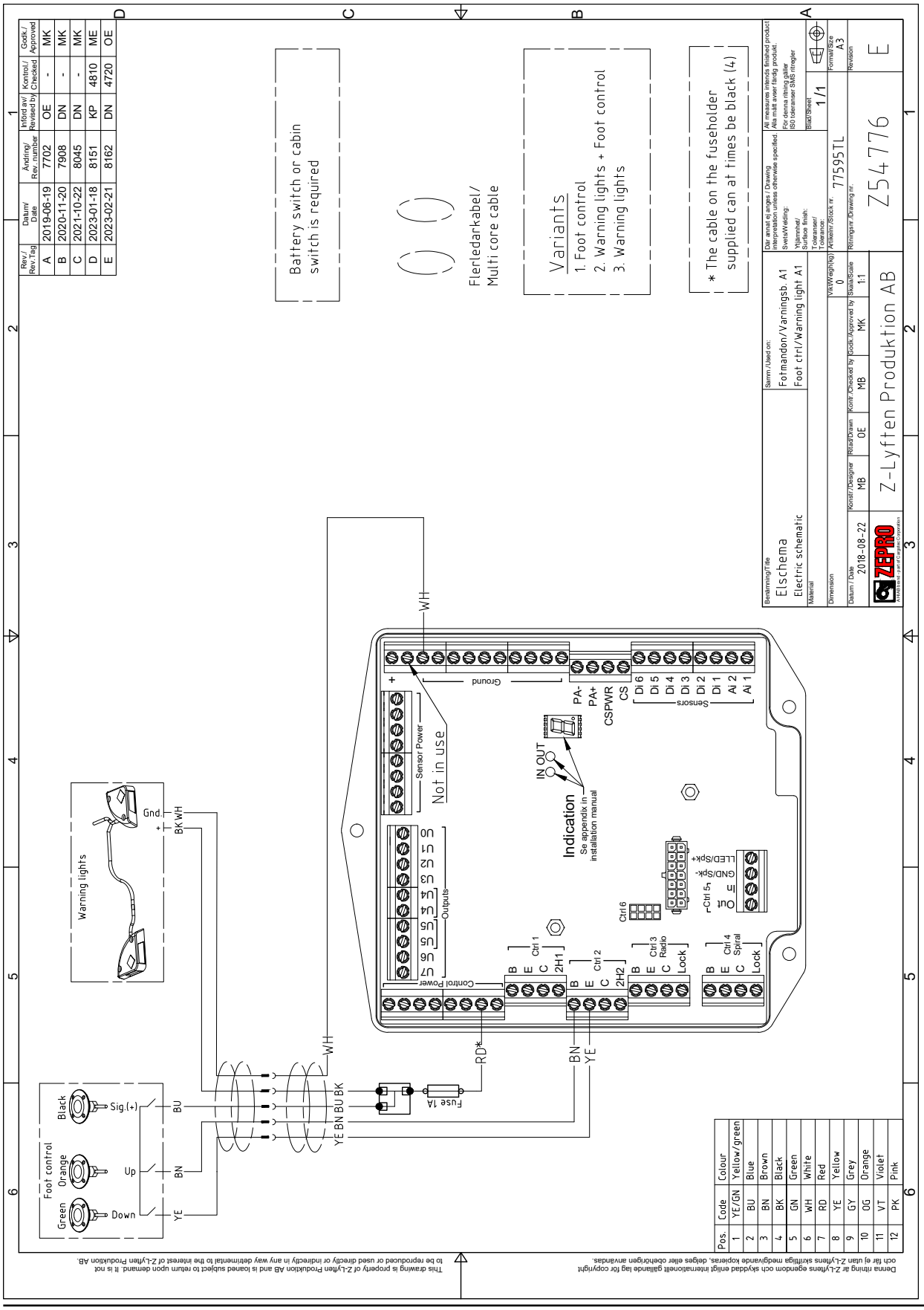
* applies to controllers with heating only

6.2.3 Warning light and foot controller (TLC-B1)

Signal is required on relay card input S3 for the warning light to work. Depending on the model, this can be done by connecting angle sensors between S3 and S3+ or with jumper

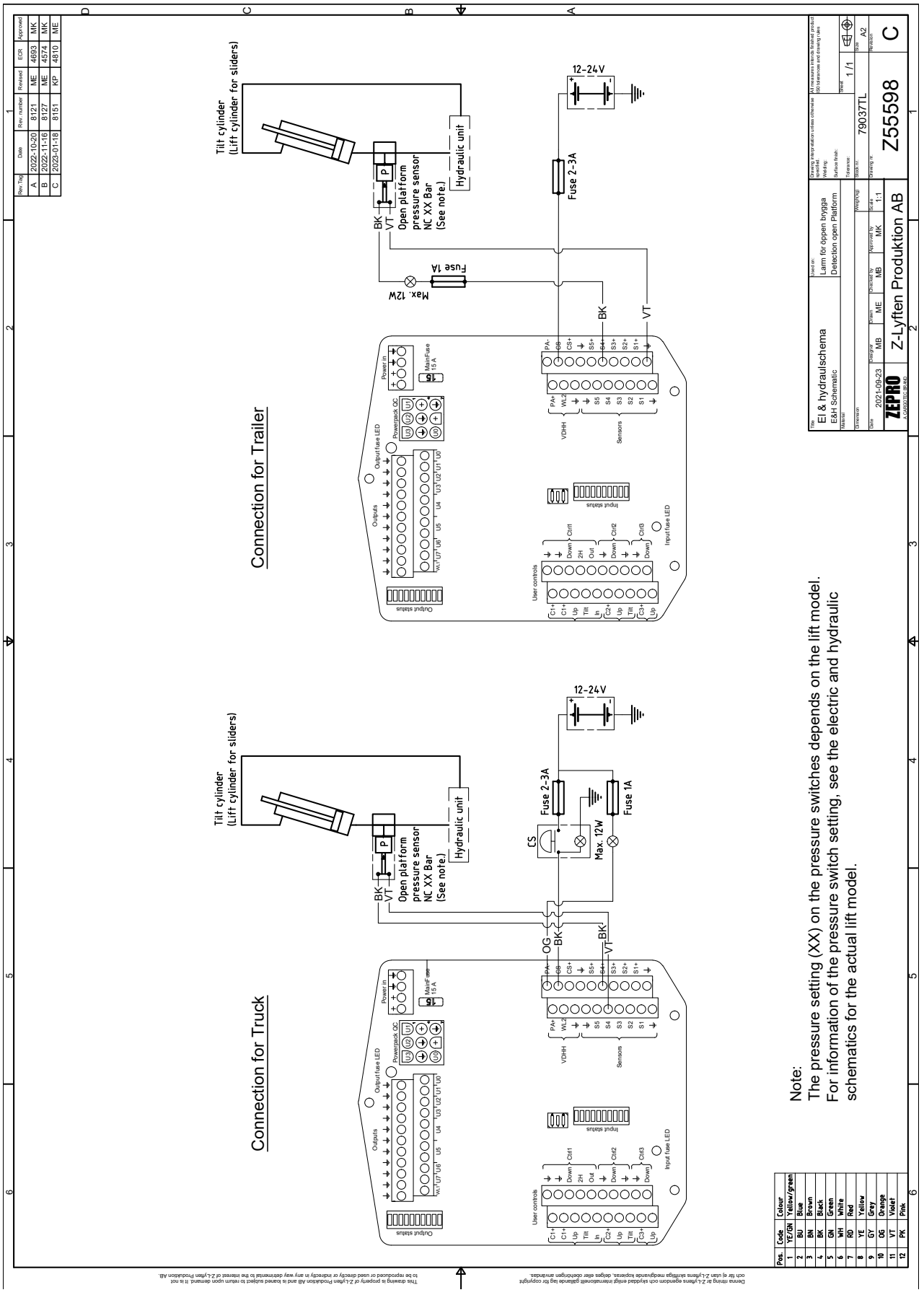


6.2.4 Warning lights and foot controls (ZePRO1)



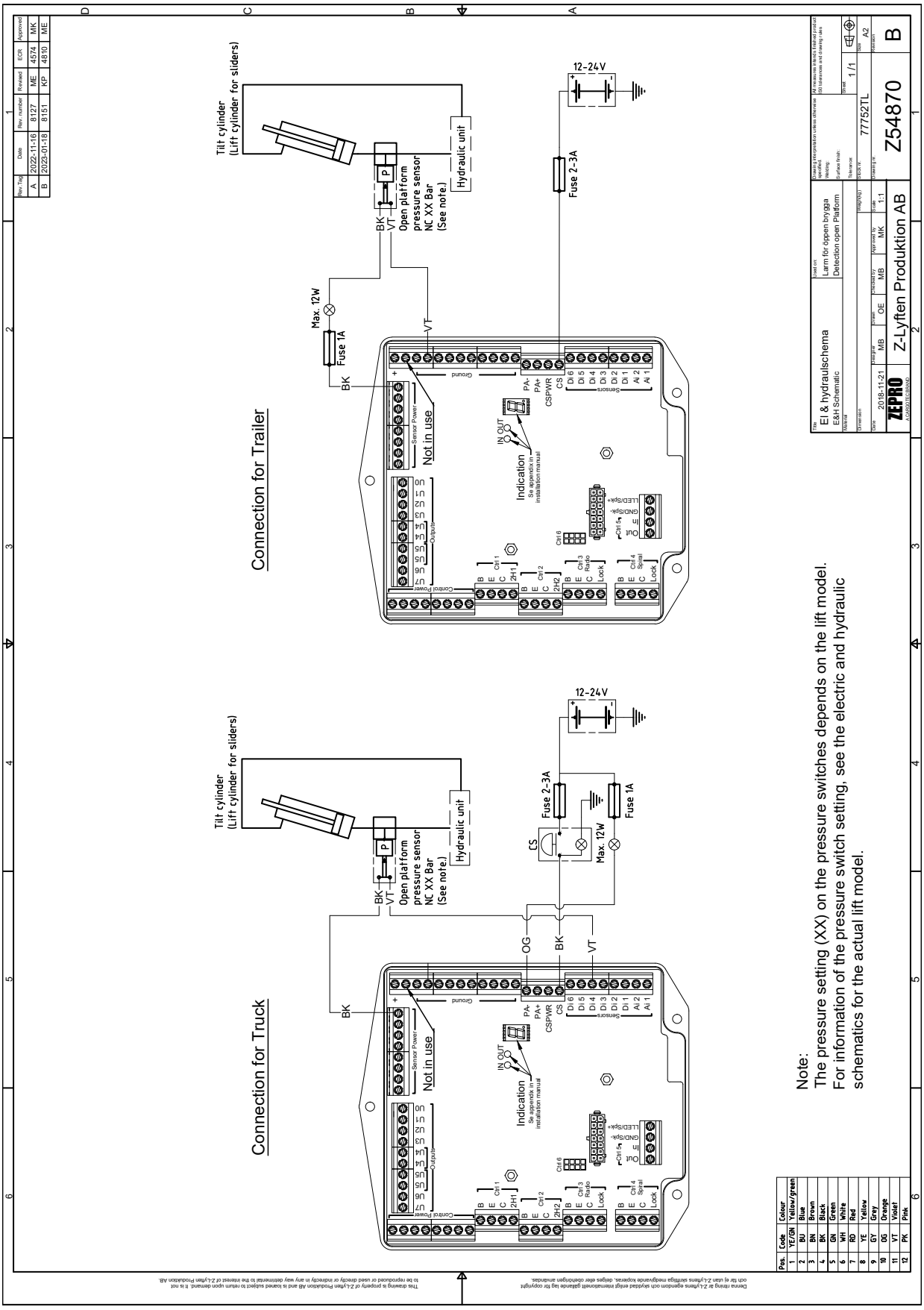
6.2.5 Cab switch and open platform alarm (TLC-B1)

Applies when installing without main switch



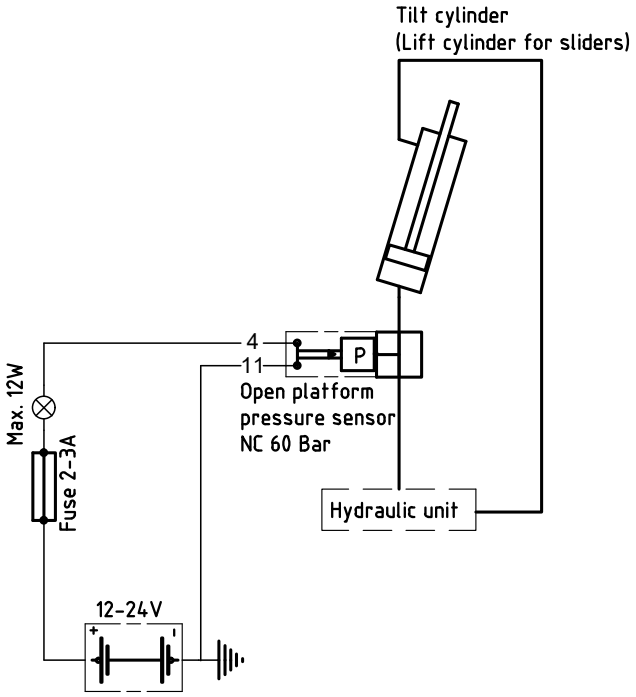
6.2.6 Cab switch and open platform alarm (ZePRO1)

Applies when installing without main switch



6.2.7 Open platform alarm

Applies when installing with main switch



7 Powering up the tail lift

1. If applicable, ensure that the main switch is in the "Off" position.
2. If applicable, ensure that the cab switch (CS) is in the "Off" position.
3. When using a fuse box, connect the cable (1) to the battery's positive terminal and to the fuse box and place the fuse (2) above, see Image 78.
4. When connecting directly to the positive battery terminal, place the fuse (2) on the positive terminal, see Image 79.
5. Connect the main power cable (3) to the fuse box / positive terminal, see Image 78 - Image 79.
6. Screw tight the cable connections and fuse with the knob (4). Install the cables at 90° or 180° from each other. Install the fuse at right angles to the cables; see Image 78 - Image 79.

IMPORTANT!
The knob must bear against and centre the cable lug so that it does not come into contact with the screw. Incorrect installation can cause the fuse to be ineffective. Risk of fire in the event of a short circuit.

7. Install the fuse box cover.
8. Where fitted, set the main switch to the ON position.
9. Where fitted, set the cab switch to the ON position.

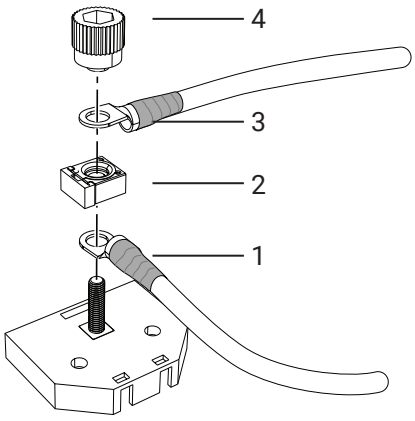


Image 78. Connection to the fuse box

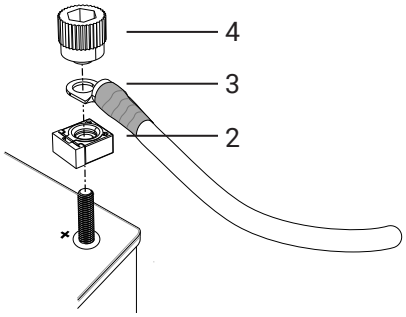


Image 79. Connection to the battery's positive terminal

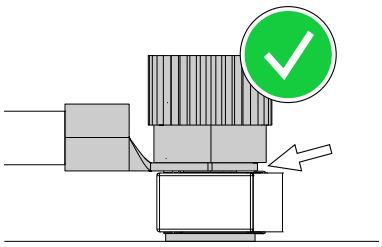


Image 80. Correct installation

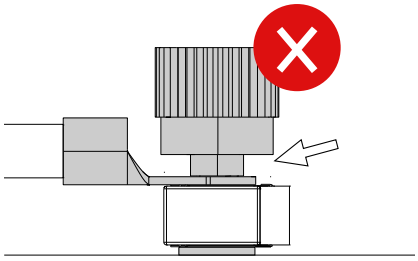


Image 81. Incorrect installation

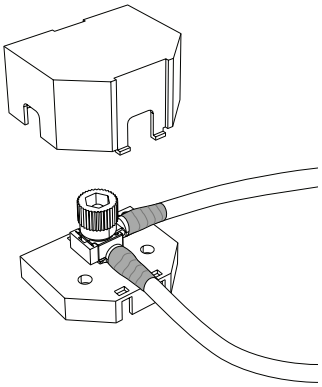
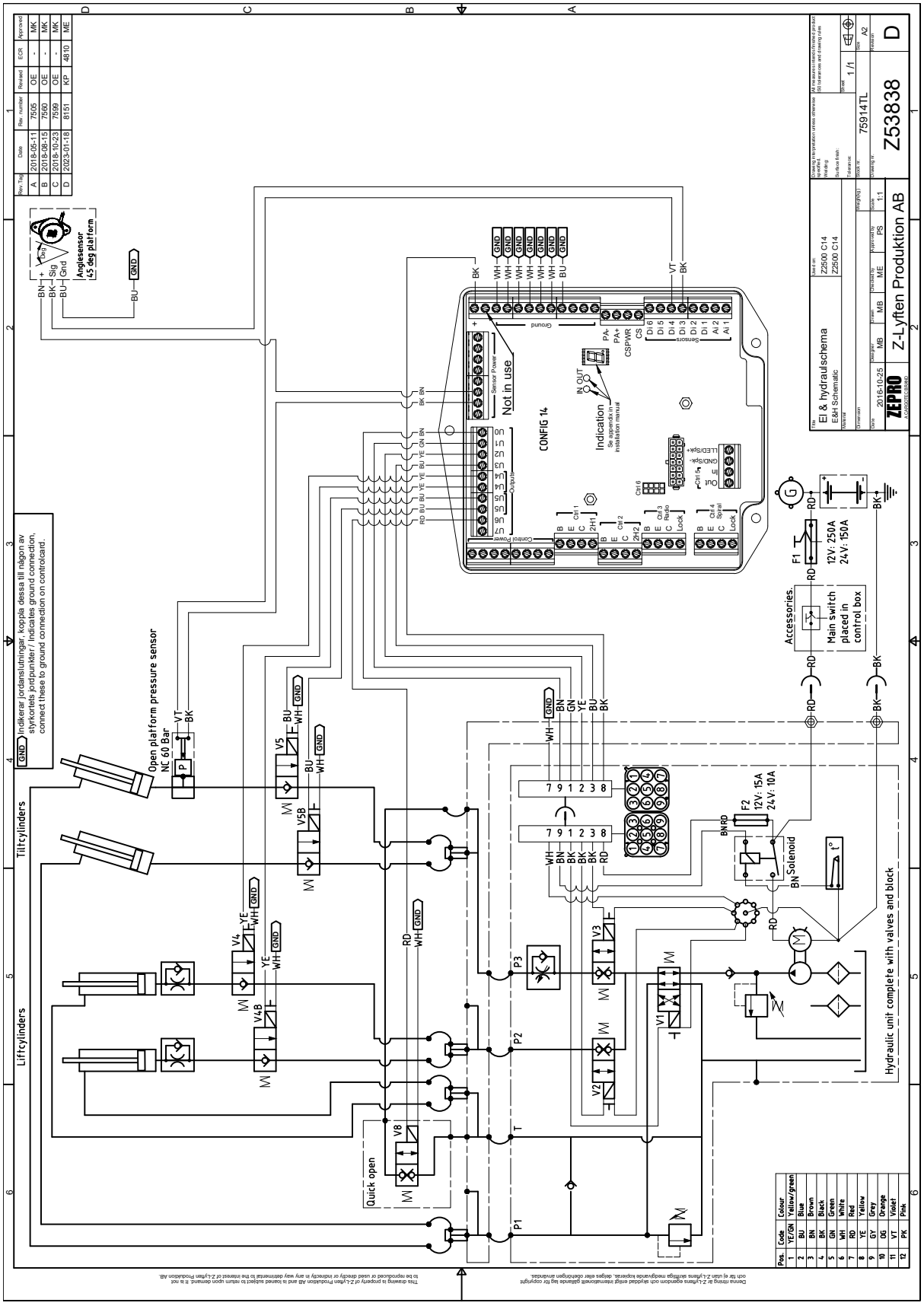


Image 82. Cover, fuse box

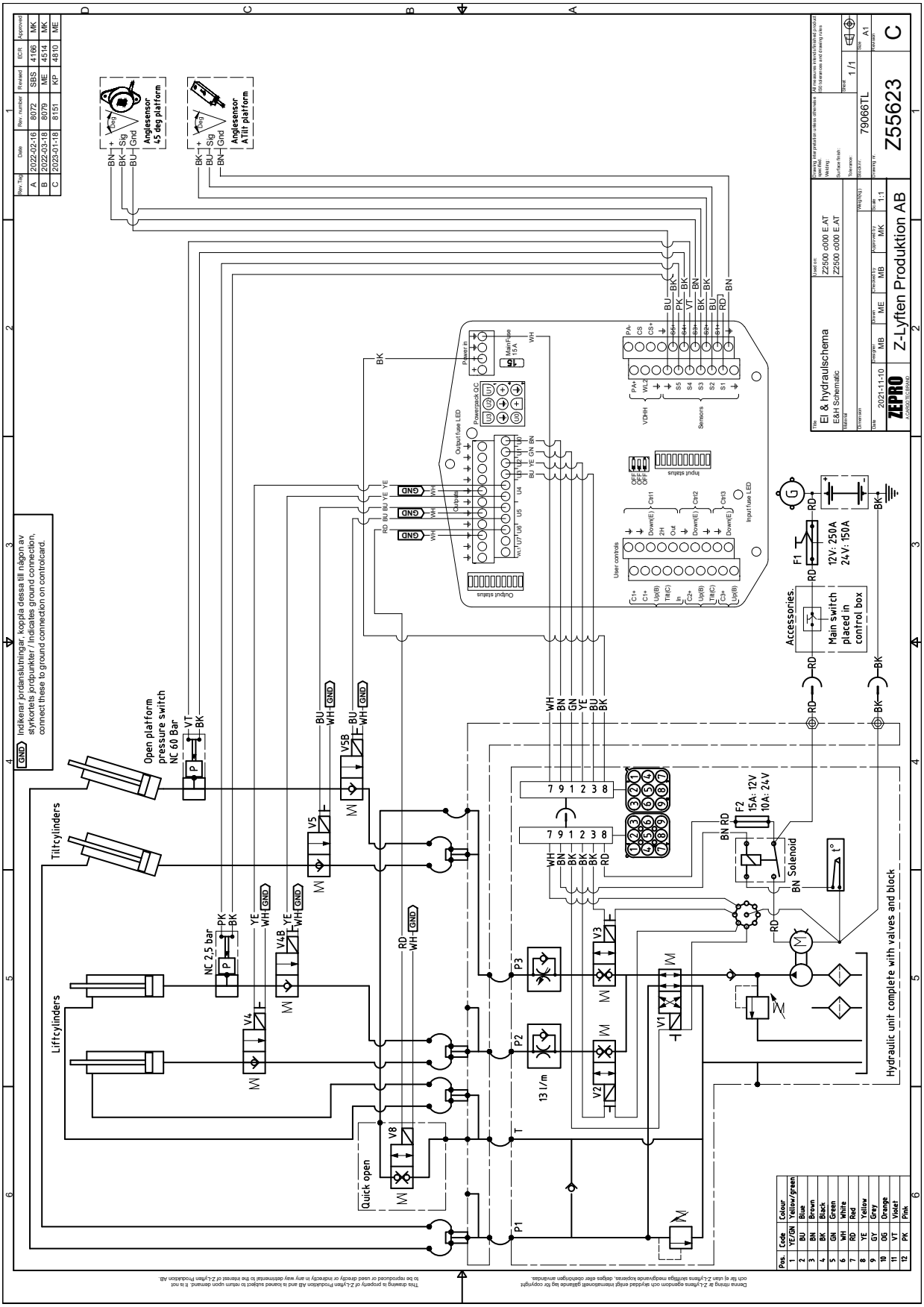
8 Electrical and hydraulic diagrams

8.1 Z2500-130/150 MA (ZePRO1)

Config 14, Firmvare 9.7 or later

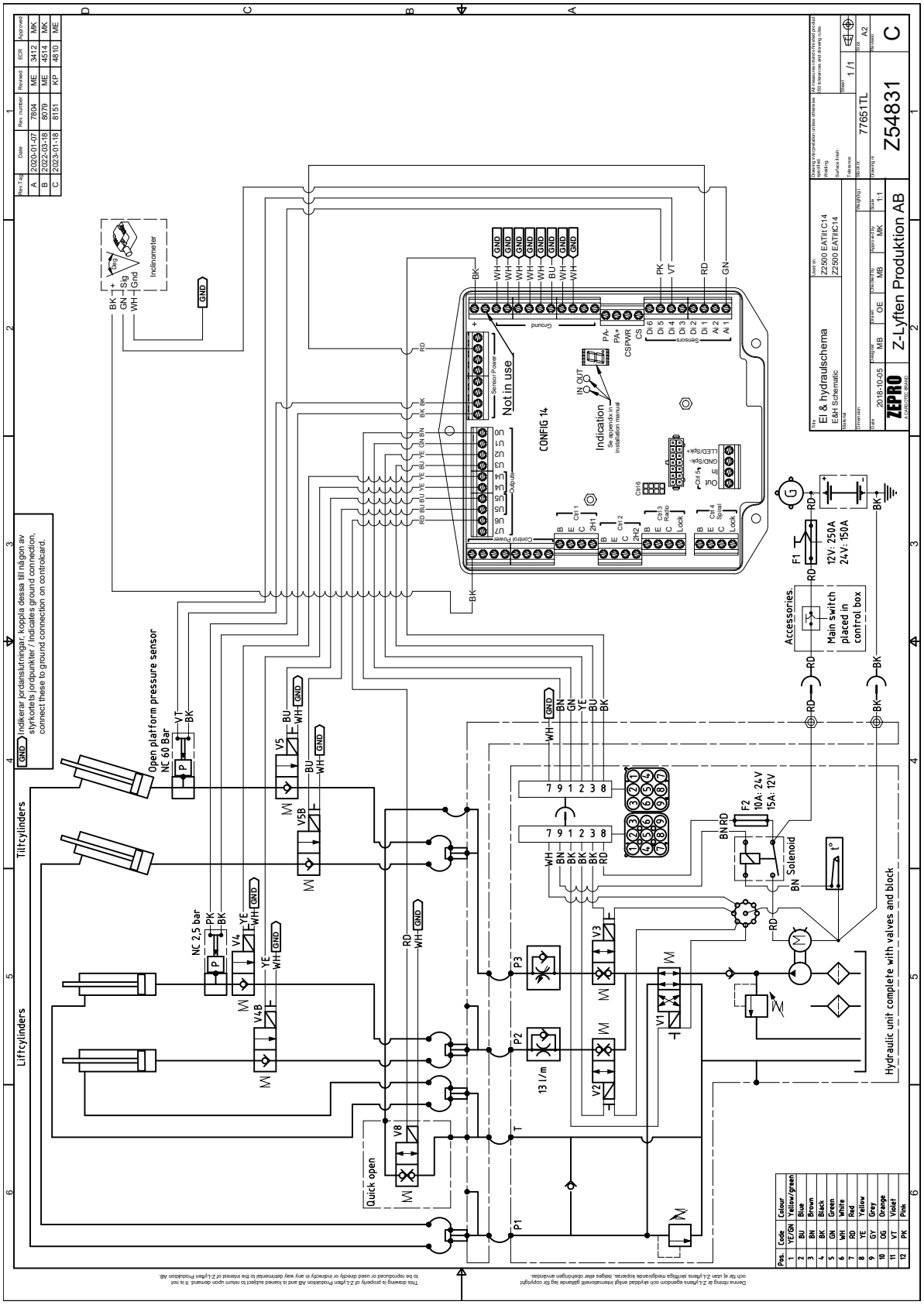


8.2 Z 2500 MA Autotilt (TLC-B1)

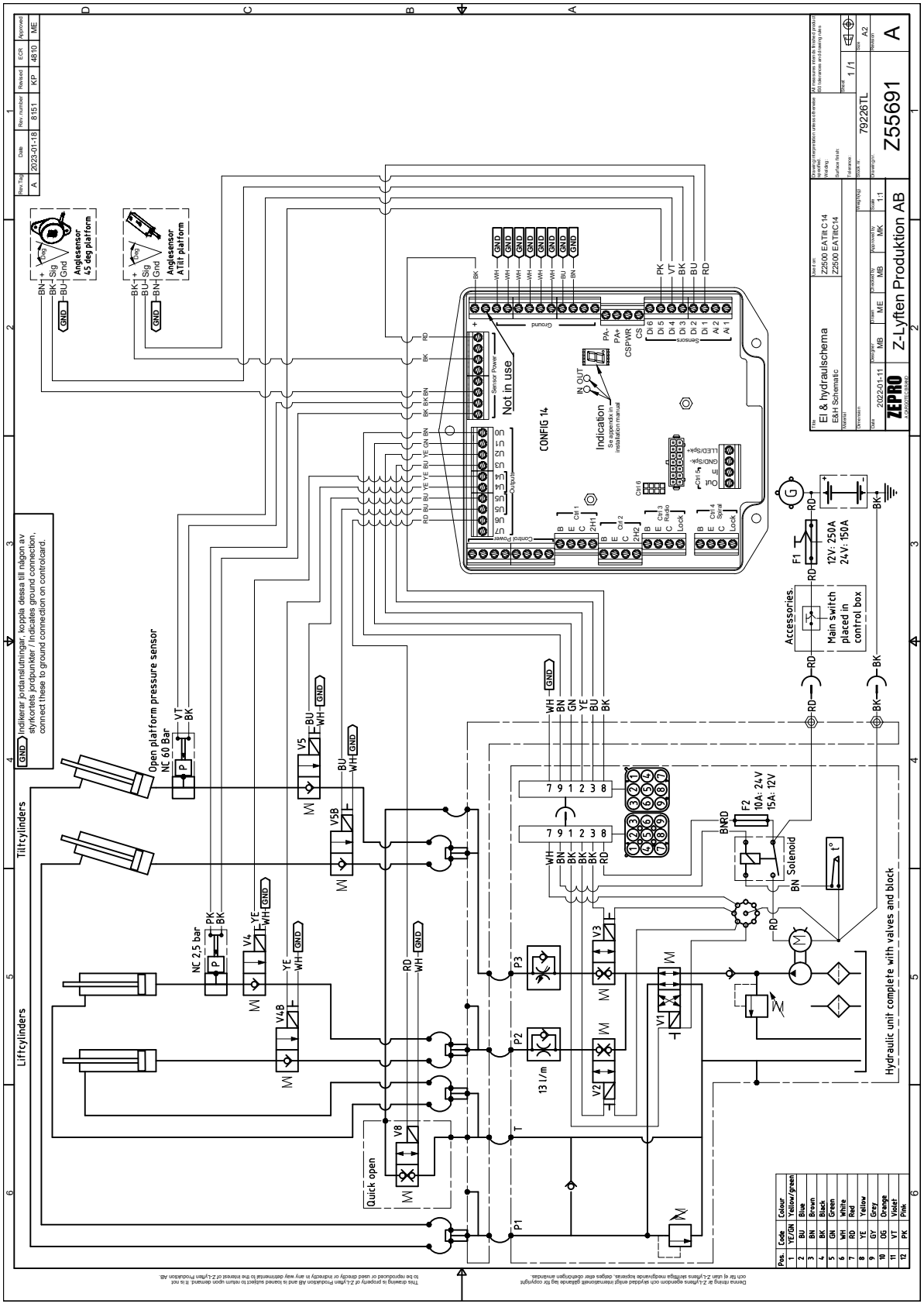


8.3 Z2500 MA Autotilt Inclinometer (ZePRO1)

Config 14, Firmvare 9.8 or later

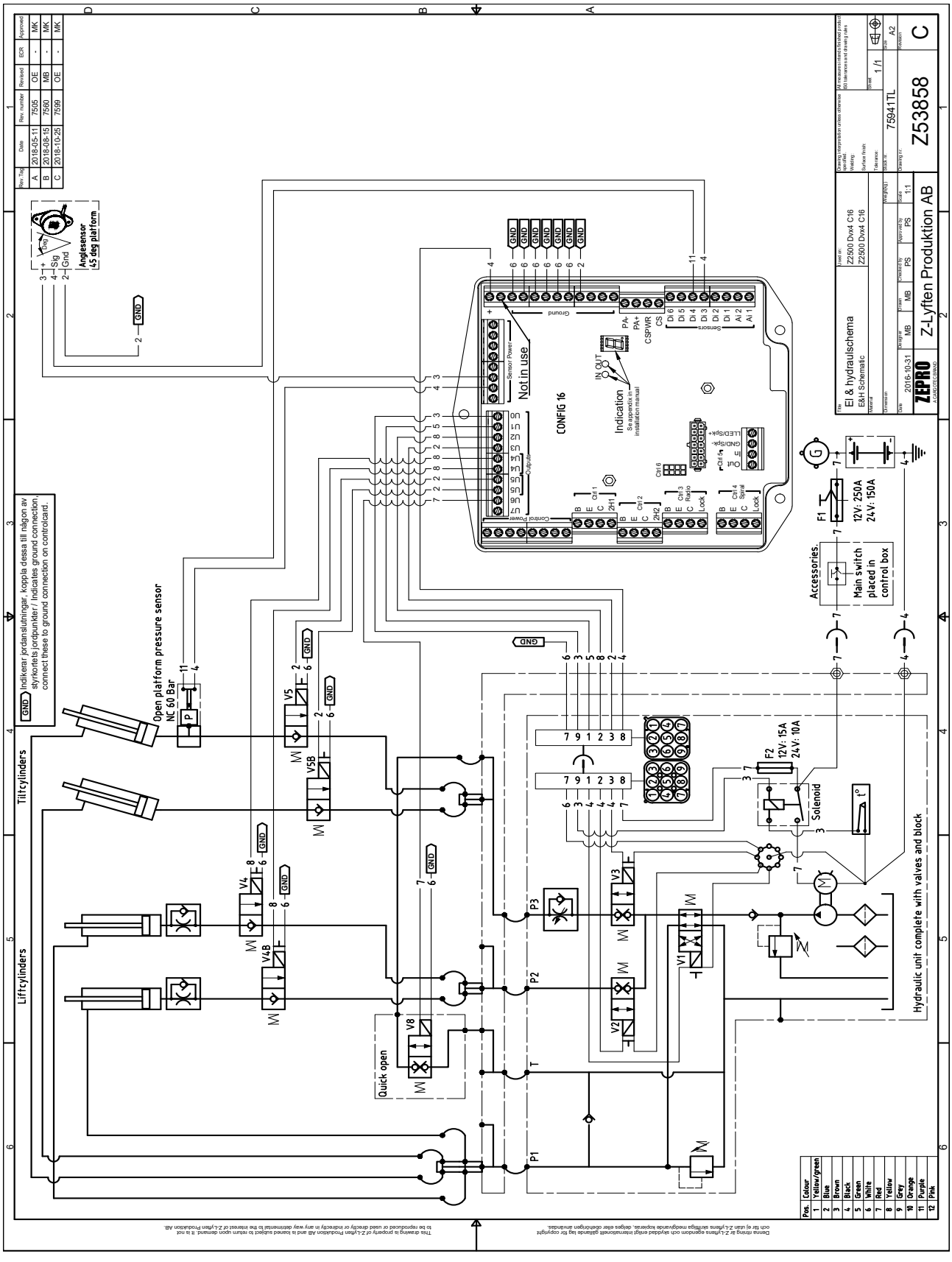


8.4 Z 2500 MA Autotilt IFM (ZePRO1)



8.5 Z2500-130/150 DA

Config 16, Firmvare 9.7 or later



9 Marking

Below, an overview of the location of the different markings is shown. Image of marking and further information can be found under the each subchapter for subsequent pages.

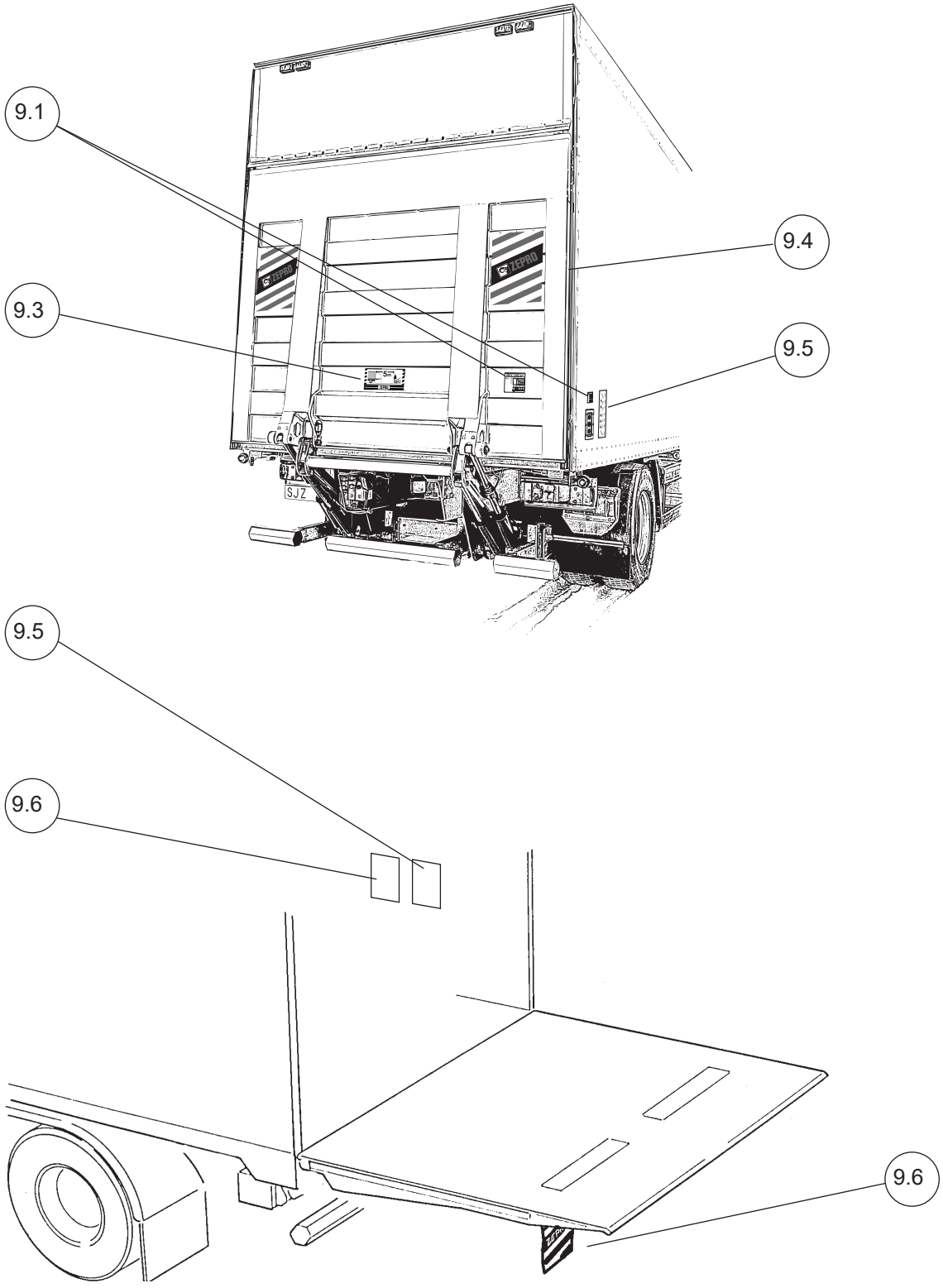


Image 83. Overview of labelling

9.1 Loading diagram

Affix the load diagram in a suitable, conspicuous place on the platform and in the vicinity of the primary controller or in the designated location on the controller (CD19).

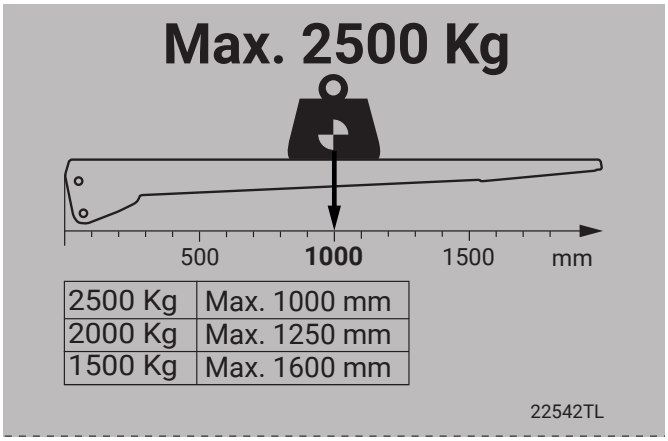


Image 84. Load diagram for load capacity 2500 kg, centre of gravity distance 1000 mm.

9.2 Identification plate

The identification plate is fixed on to the tail lift's frame. Affix the corresponding sticker version of the identification plate, preferably by the cab door post to facilitate identification.

The identification plate contains the following information:

- Type of lift
- Max. permitted load in kg
- Production number
- Year of manufacture
- Address and tel. no. of manufacturer
- Country of manufacture
- Type number for approved underrun protection (RUPD)
- Type number for electromagnetic compatibility (EMC)

Image 85. Identification plate

9.3 Work area

Affix the sticker clearly visible on the rear of the vehicle.

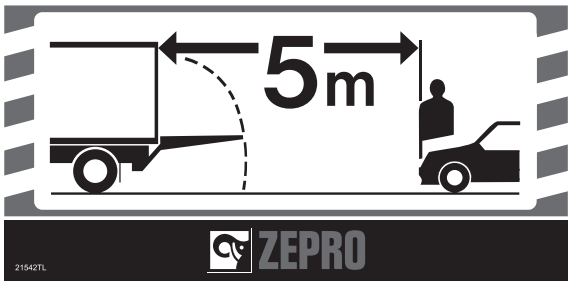


Image 86. Work area

9.4 Warning tape

Affixed along the platform edge strips to mark the platform edges in its lowered position.

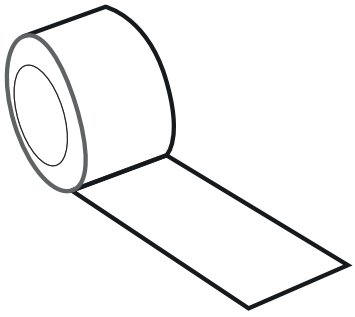


Image 87. Warning tape

9.5 Controller sticker

Affix the controller sticker next to the relevant controller. The stickers are available in standard versions and in reversed version for affixing on the opposite side of the vehicle. Make sure the stickers are affixed so the image of the vehicle/tail lift on the sticker is in the same direction as the vehicle on which it is affixed.

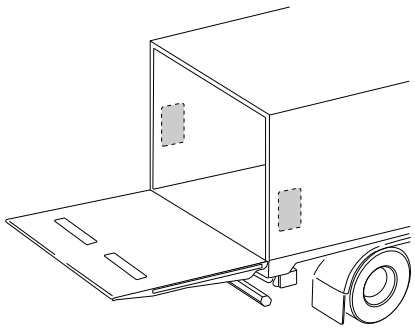


Image 88. Standard mounting

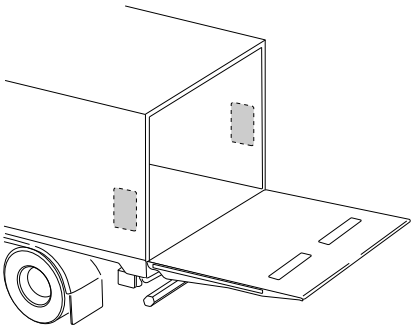


Image 89. Reversed mounting

Control device	Sticker
CD 1, 2, 9	55053TL*
CD 4	55055TL
CD 10	77661TL

* The sticker section for 2-hand operation is delivered on the same backing paper and has to be affixed if the application has 2-hand operation. For applications without 2-hand operation, this part of the sticker is discarded.

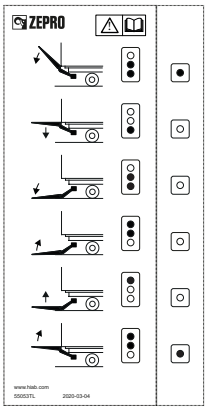


Image 90. Control device sticker for CD 1, 2, 9

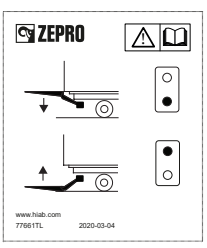


Image 91. Control device sticker for CD 10

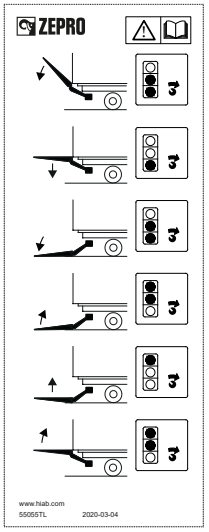


Image 92. Control device sticker for CD 4

9.6 Controller sticker

Affix the controller sticker next to the relevant controller. The stickers are available in standard versions and in reversed version for affixing on the opposite side of the vehicle. Make sure the stickers are affixed so the image of the vehicle/tail lift on the sticker is in the same direction as the vehicle on which it is affixed.

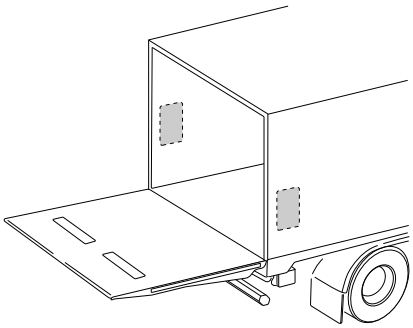


Image 93. Standard mounting

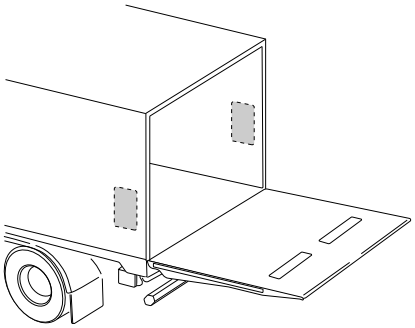


Image 94. Reversed mounting

Control device	Sticker
CD 1, 2, 9	55053TL*
CD 1,2,9 Horizontal	79854TL**
CD 4	55055TL
CD 10	77661TL

* The sticker section for 2-hand operation is delivered on the same backing paper and has to be affixed if the application has 2-hand operation. For applications without 2-hand operation, this part of the sticker is discarded.

*** Ordered separately*

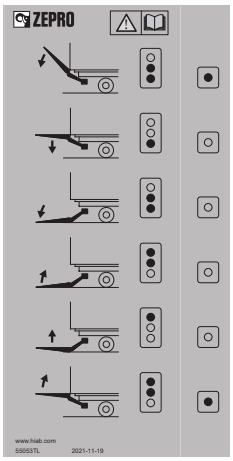


Image 95. Control device sticker for CD 1, 2, 9

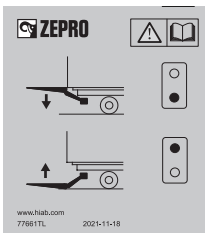


Image 96. Control device sticker for CD 10

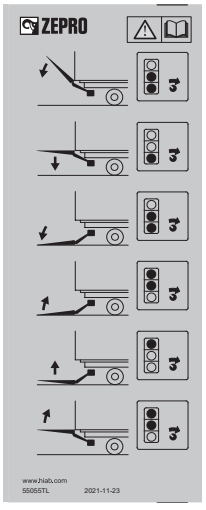


Image 97. Control device sticker for CD 4

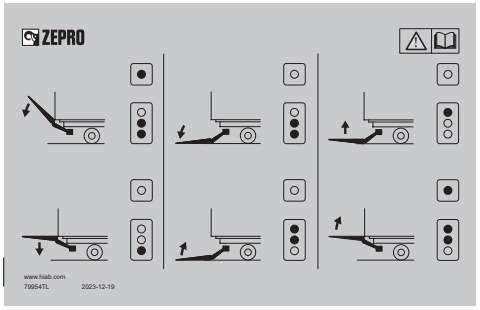


Image 98. Control device decal for CD 1 with the two-hand button mounted above the control device.

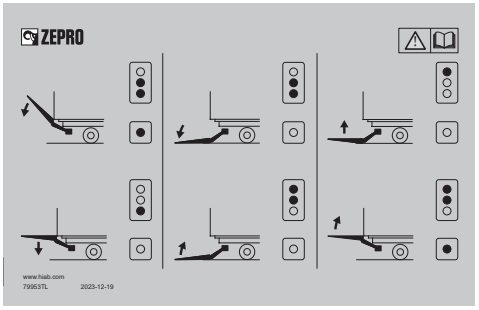


Image 99. Control device decal for CD1 with two-hand button mounted below the control device.

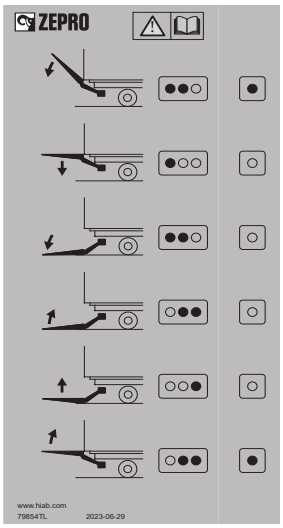
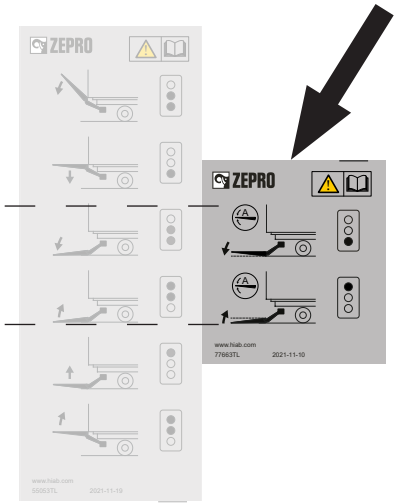


Image 100. Control device decals for CD 1, 2 and 9 for horizontal control device is ordered separately. 79854TL

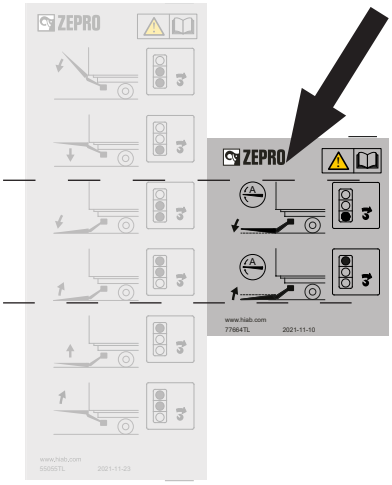
9.6.1 Autotilt additional sticker

There is an additional sticker affixed next to the control device sticker on tail lifts fitted with autotilt.
The stickers are available in standard versions and in a latterally reversed version for affixing on the opposite side of the vehicle.

Affix additional autotilt stickers for CD1, CD4 and CD9 next to their respective controller stickers and align them and with the two middle symbols for the tilt down and tilt up functions.



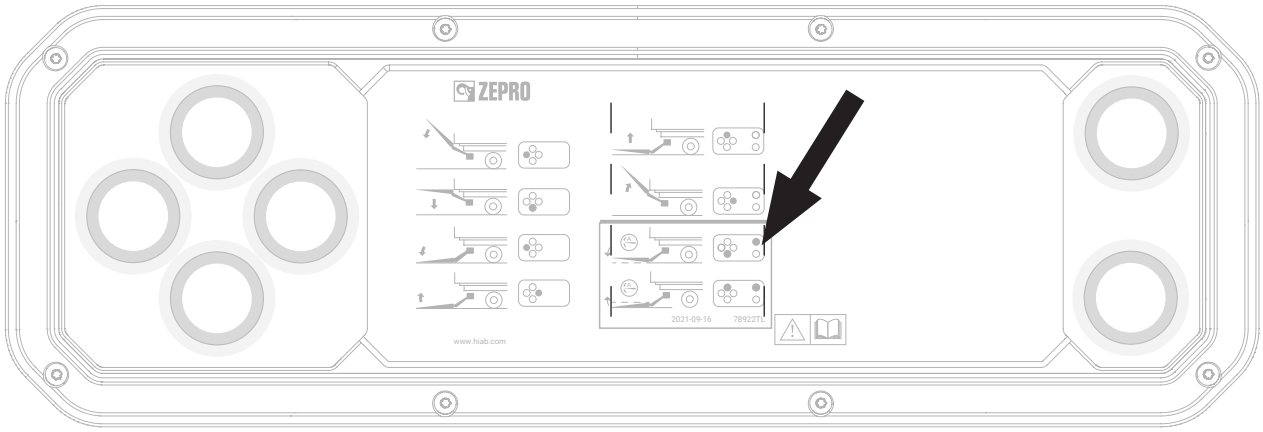
Additional autotilt sticker for CD 1 & CD 9



Additional autotilt sticker for CD 4

Control device	Stickers
CD 1, CD 9	77663TL
CD 4	77664TL
CD 20	78922TL

Affix the additional CD20 autotilt sticker on control device CD20 directly below the line in the right column of symbols and in line with the symbols above.



Additional autotilt sticker for CD 20

9.7 Danger area

If one is fitted, affix the sticker on the inside of the vehicle body next to the hand control unit.

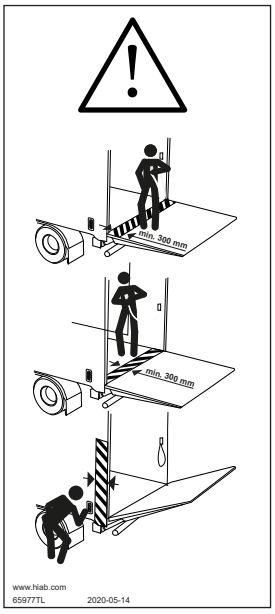


Image 101. Danger area

9.8 Warning flags

Install warning flags as close to the top and as close to the edge of the platform as possible, but without the risk of the flags coming loose when the platform is placed on the ground. Swage the tracks together to secure the warning flags. The flags must be provided with reflective tape.

Image 102. Warning flags

10 Lubrication and fluid level check

The following lubrication points must be greased on installation. They must then be lubricated at least 4 times a year.

10.1 Lubrication

NOTE.

Use LE lubricant 4622 or the equivalent.

Right tilt cylinder, at lower bearing.

Right lift cylinder, at lower bearing.

Lift arm right side, at lower bearing.

Left lift cylinder, at lower bearing.

Left tilt cylinder, at lower bearing.

Lift arm left side, at lower bearing.

Left tilt cylinder, at upper bearing.

Right tilt cylinder, at upper bearing.

Lift arm right side, at upper bearing.

Right lift cylinder, at upper bearing.

Left tilt cylinder, at upper bearing.

Lift arm left side, at upper bearing.

10.2 Fluid level check

Check the fluid level in the tank during service, top up if necessary. The marking on the hydraulic tank indicates the type of hydraulic fluid used. Mineral hydraulic fluid, product no. 21963 (1 litre), or biodegradable synthetic fluid, product no. 22235 (1 litre).

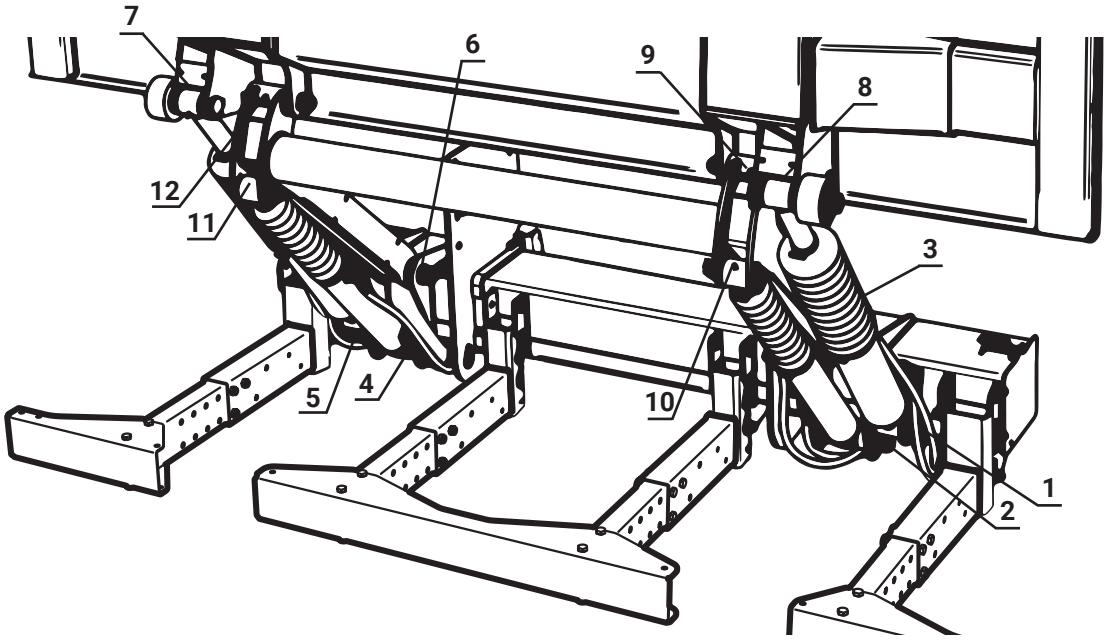


Image 103. Lubrication points

11 Testing and verification

Testing and verification of the tail lift takes place in accordance with the installation/delivery inspection. Verify that the tail lift is suitable for the vehicle in question and for the intended use.

11.1 Static load test

11.1.1 Deformation

Position the tail lift half way up to the vehicle floor level and with the platform in the horizontal position. Measure dimensions A-B-C-D for comparison as illustrated.

Place a test load on the platform according to the table for the respective tail lift model and lifting capacity.

Remove the test load from the platform.

Repeat the measurement of A-B-C-D and verify that there has been no deformation of the lift or its fixing.

11.1.2 Drift

Place a test load on the platform according to the table. The tail lift must be at the same level and angle as the vehicle floor. Leave the test load for 15 minutes.

Verify that the platform drift is no more than 15 mm on the vertical (points A and D) and 2º in terms of the angle.

11.1.3 Static load (Test load 1.25 x tail lift loading capacity). For tail lifts with load centre of 1000 mm

Capacity	Load 1500 kg	Load 2000 kg
	Distance out in platform (L)	
2500 kg	2120 mm	1560 mm

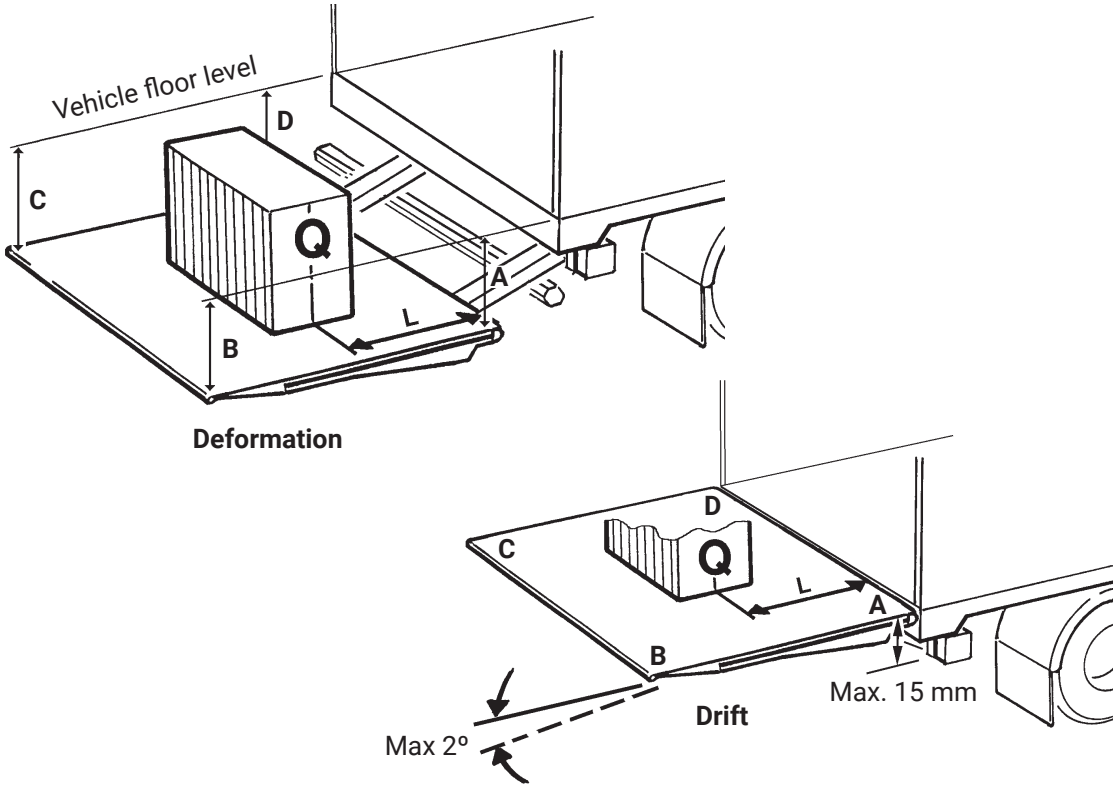


Image 104. Testing and verification

11.2 Dynamic load test.

11.2.1 Test with max. load

Place a test load on the platform according to the table for the respective tail lift model and lifting capacity.

Check that the lift operates correctly in the normal range of movement allowed, i.e. up, down, tilting at ground level and tilting at the vehicle floor level.

11.2.2 Test with overload

Place a test load on the platform according to the table for the respective tail lift model and lifting capacity.

The test load should be 1.25 x the lift model's max. load. Check that the tail lift cannot lift the load when the up function is switched on (it may however by possible to tilt up the load).

11.2.3 Dynamic load (Test load 1.0 x tail lift loading capacity). For tail lifts with load centre of 1000 mm

Capacity	Load 1500 kg	Load 2000 kg
	Distance out in platform (L)	
2500 kg	1700 mm	1250 mm

11.3 Test of safety functions

The tail lift functions must be tested.

Check:

- That the red light in the vehicle cabin turns off when the platform is completely closed against the body and that it turns on when the platform is opened (where applicable).
- that the platform cannot be opened or closed without the use of two-hand operation.
- that the platform cannot be tilted more than -10 degrees when using spiral cable controller or radio controller when the platform is flush with the vehicle floor.
- That the tail lift will not operate if the cabin switch is in the off position.
- That the tail lift cannot be operated with the main switch fuse near the battery blown.
- That the overflow valve is activated when the lift is operated up to the vehicle floor level or end stops.
- That the tail lift cannot be lowered or tilted down if the electrical connector from the electric hose breakage valves is removed from the lift and tilt cylinders respectively.
- That there is a "max. load" marking on the platform and it is correctly positioned according to the loading diagram for the tail lift model concerned.
- That warning flags and reflectors are fitted and fulfil their function correctly.
- That all safety and operating decals are installed in their respective position.
- That the mechanical lock of the platform functions correctly (where applicable).
- That the instructions for using the tail lift have been left in the driver's cabin.
- That the CE declaration of conformity has been completed.

12 Specifications

12.1 Weights

Many of the lift components are heavy, requiring the use of lifting equipment. Make sure the weight of the components does not exceed the maximum permitted load of the lifting equipment. The following is a list of selected components with their weight.

Complete lift chassis (without platform)		**Steel platforms**	
Z 2500-130	329 kg	Steel platform 1700x2560 mm	313 kg
Z 2500-150	338 kg	Steel platform 2000x2560 mm	365 kg

Lift components (included in complete lift chassis)	
Support frame Z 2500	116 kg
Lift arm Z 2500-130	57 kg
Lift arm Z 2500-150	63.5 kg
3-part underrun protection complete (adjustable)	54 kg
3-part underrun protection complete (-135)	36 kg
3-part underrun protection complete (-155)	40 kg
3-part underrun protection complete (-175)	42.5 kg
Chassis bracket complete par Z	39 kg
Lift cylinder Z 2500-130	12.5 kg each
Lift cylinder Z 2500-150	15.5 kg each
Tilt cylinder Z 2500-130	26 kg each
Tilt cylinder Z 2500-150	27.5 kg each

HIAB

BUILT TO PERFORM

Zepro, Del and Waltco are Hiab brands for tail lifts. Hiab is a world-leading supplier of equipment, intelligent services and digital solutions for on-road load handling. As an industry pioneer our company commitment is to increase the efficiency of our customers' operations and to shape the future of intelligent load handling.