Installation instructions

Tail Lift

Z/ZU 45/75-90/110

ZL/ZLU 45/75-90/110

ZN/ZNU 45/75-90/110

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54990TL
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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

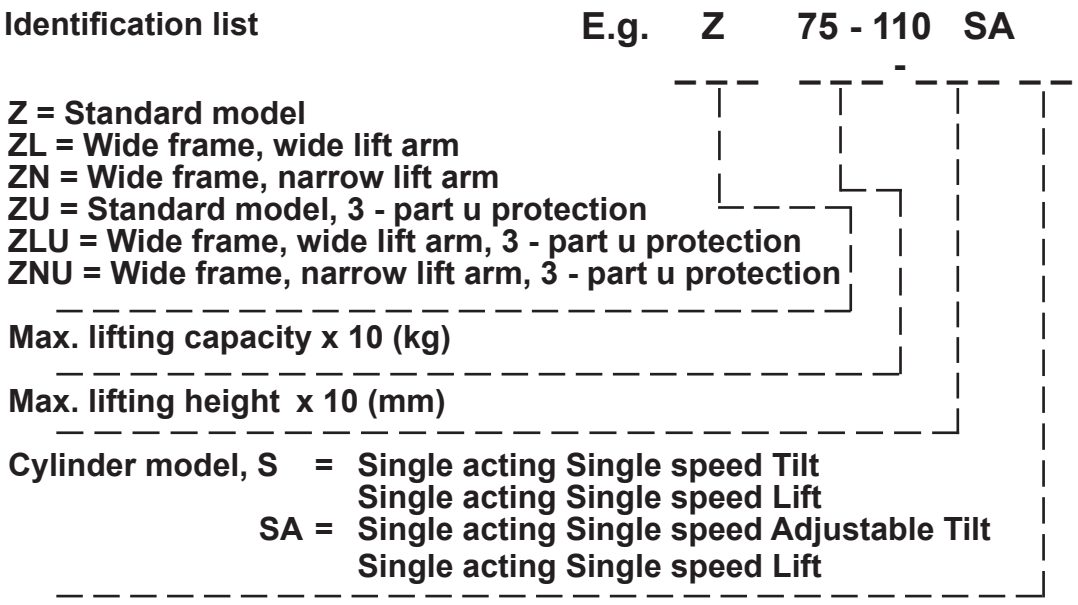
If technical support is needed, please contact ZEPRO. Phone: +46 (0)10-459 05 04, Email: zeprotech@hiab.com.

Always be ready to state the production number of the tail lift 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

After installation, testing and verification, the tail lift's delivery card must be registered for the guarantee to be valid.

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/cables and impair durability.

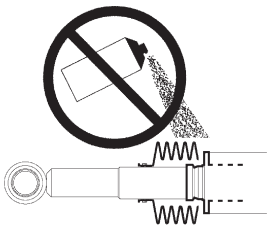


Image 2. Piston rods, cylinder covers and boots

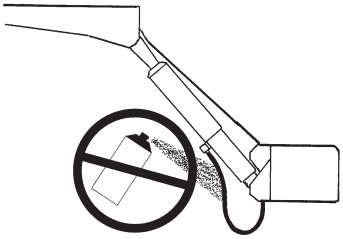


Image 3. Hydraulic hoses

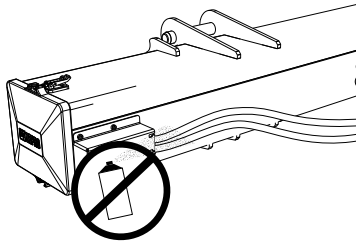


Image 4. Cables

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.

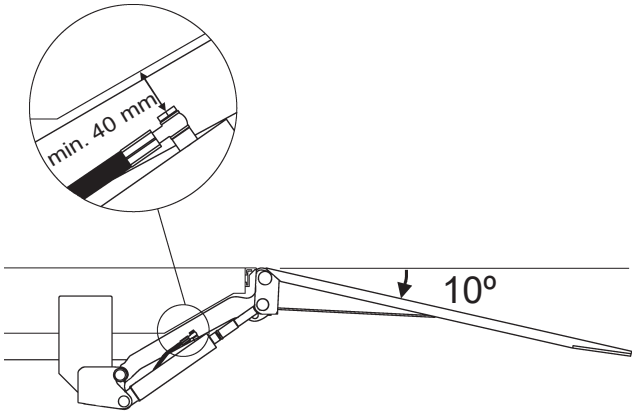


Image 5. Clearance to the closest part of the cylinder must be at least 40 mm

⚠ WARNING!

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

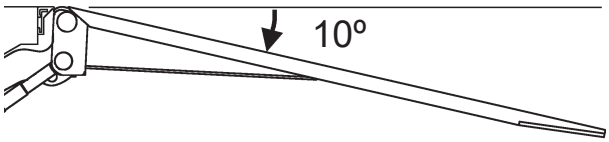


Image 6. The platform may not be tilted down more than 10º from the horizontal

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

To comply with 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 frame beam in question must not be less than 306 cm^4. For this reason, the frame beam cross-section shall have a dimension of at least 140x70x3 mm, corresponding to a minimum surface moment of inertia of 306 cm^4 around the x-axis. See Image 7. If in doubt, contact ZEPRO for support.

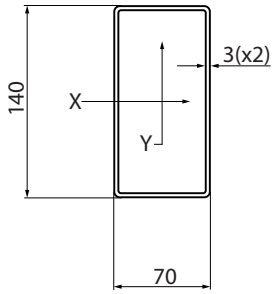


Image 7. Cross section of vehicle chassis frame beam

⚠ WARNING!
The dimensions above 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

- Distance between the beam and the ground when the vehicle is unloaded: Max. 550 mm.
- Horizontal distance from the outermost part of the platform to the underrun protection: Max 328 mm. See Image 8.

NOTE!
The underrun protection may be located further back and lower.

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

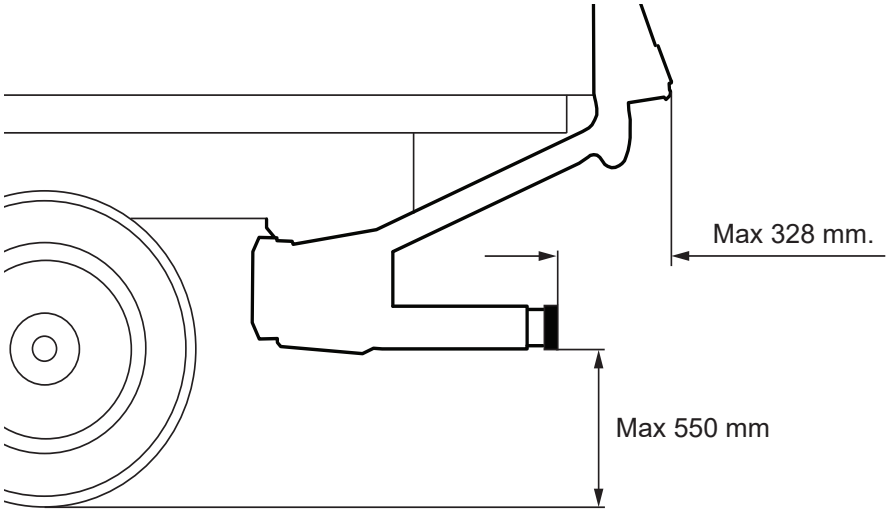
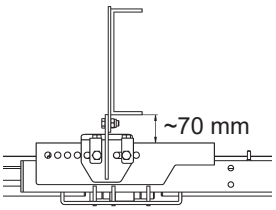


Image 8. Statutory dimensions

3.3 Calculating the installed dimensions

For ease of installation it is best to calculate and specify the necessary dimensions in advance. Determine the C dimension first, then obtain the other dimensions from the relevant table. Try to place the lift as high as possible within the C dimension specified in the table.

NOTE!
The chassis bracket is in 2 parts and must be screwed together above the support frame. This affects the dimension between the lift frame and vehicle chassis. Take this into account when calculating the installed dimension, C dimension.



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 1st booms in the upper position and the vehicle floor level (A dimension).

3.3.2 D dimension

The D dimension is the room required by the lift, 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.

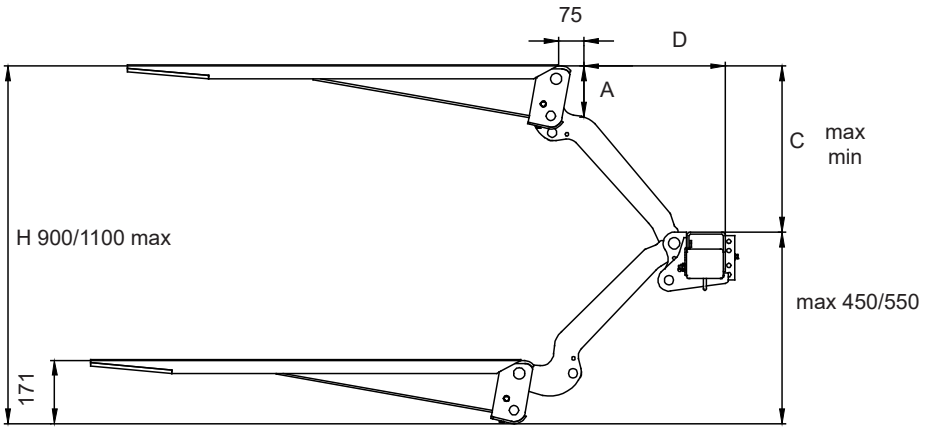
3.3.3 A dimension

The A dimension is the space provided for the rear member, i.e. the space there will be between the lift arm 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 than the maximum lifting height of the lift. The platform must always be able to reach ground level.

Installation dimensions Z/ZL/ZN 45/75 - 90/110



Lifting height 900 mm

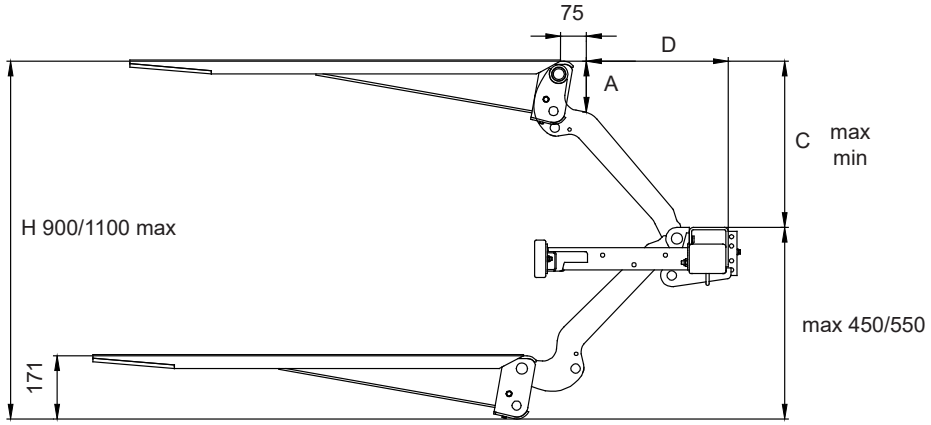
C	A	D
450	170	384
400	154	444
350	143	490
300	134	526
250	127	554

Lifting height 1100 mm

C	A	D
550	186	432
500	168	498
450	155	549
400	145	590
350	137	624
310	131	652
250	124	675

Image 9. Installation dimensions for lift models with lifting height 900/1100 mm

Installation dimensions ZU/ZLU/ZNU 45/75 - 90/110



Lifting height 900 mm

C	A	D	R58:3
450	170	384	Approved
400	154	444	
350	143	490	
310	134	526	
250	127	554	*Approved

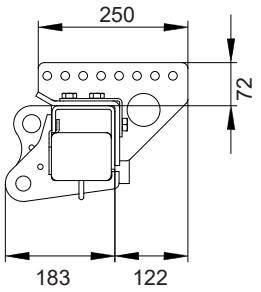
* Approved when installing longer underrun brackets (available as option).

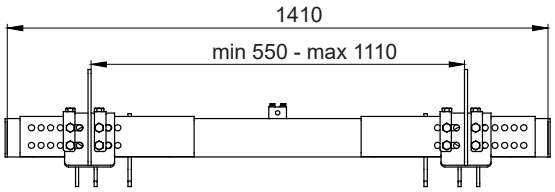
Lifting height 1100 mm

C	A	D	R58:3
550	186	432	Approved
500	168	498	
450	155	549	
400	145	590	
350	137	624	
310	131	652	
250	124	675	

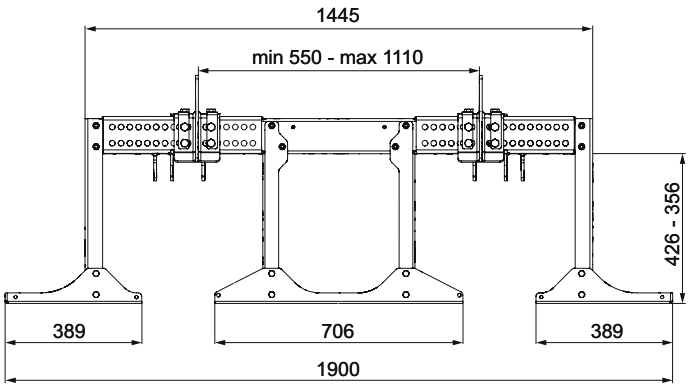
Image 10. Installation dimensions for lift models with lifting height 900/1100 mm

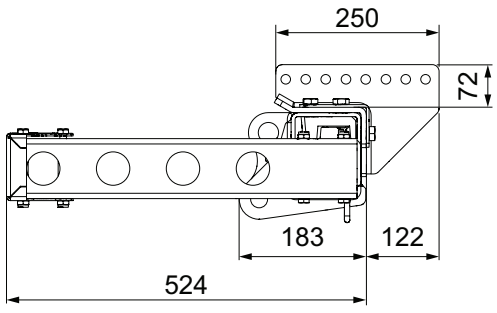
Z-45-90, Z-45-110, Z-75-90, Z-75-110





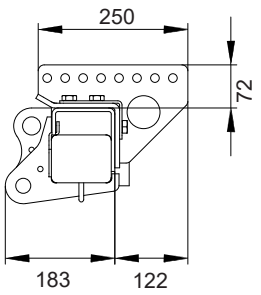
ZU-45-110, ZU-75-110, ZU-45-90, ZU-75-90

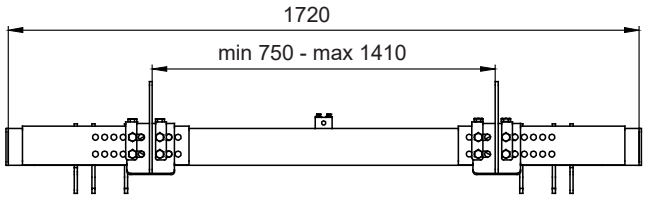




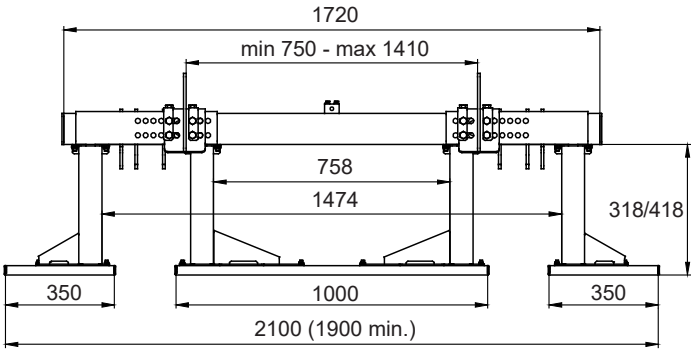
NOTE!
The underrun protection is included in the total length of the vehicle!

ZL-45-90, ZL-45-110, ZL-75-90, ZL-75-110

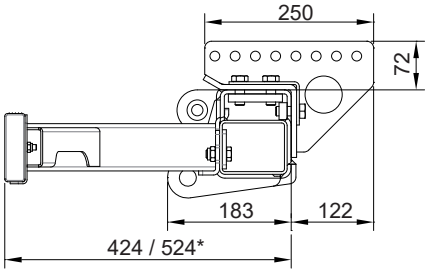




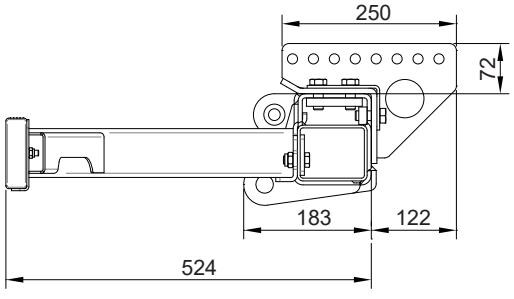
ZLU-45-90, ZLU-75-90, ZLU-45-110, ZLU-75-110



ZLU-45-90, ZLU-75-90



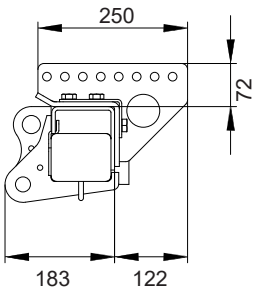
ZLU-45-110, ZLU-75-110

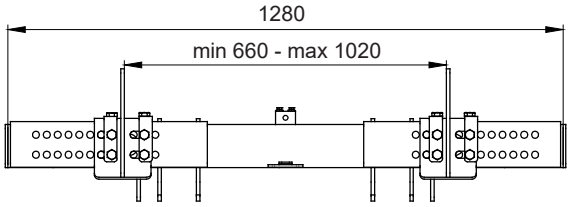


* Longer underrun brackets that give the size 524 mm are available as an option. These are needed to achieve approved dimensions according to R58:3, if the C dimension is < 310 mm.

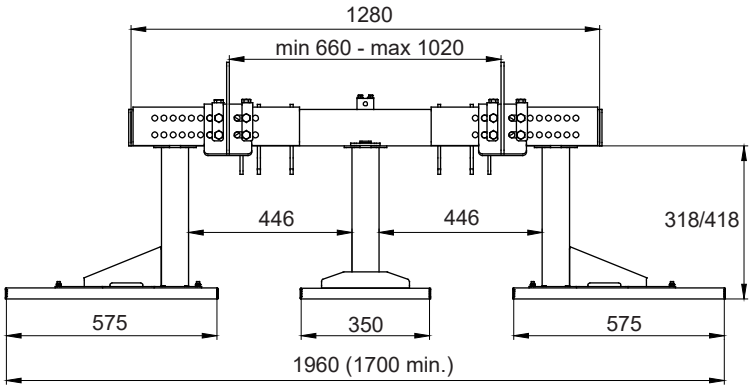
NOTE!
The underrun protection is included in the total length of the vehicle!

ZN-45-90, ZN-45-110, ZN-75-90, ZN-75-110

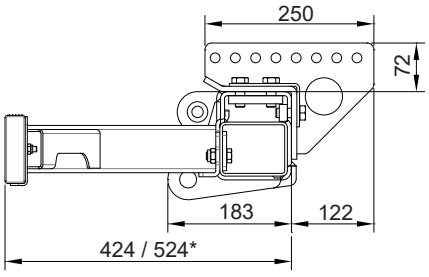




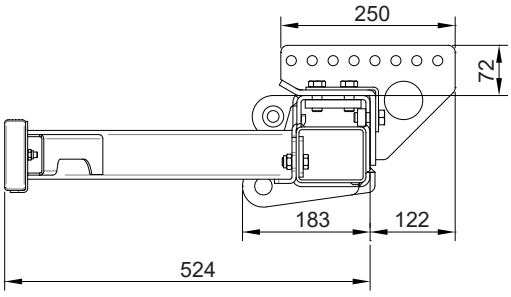
ZNU-45-90, ZNU-75-90, ZNU-45-110, ZNU-75-110



ZNU-45-90, ZNU-75-90



ZNU-45-110, ZNU-75-110



* Longer underrun brackets that give the size 524 mm are available as an option. These will be required to obtain approved dimensions according to R58:3, if the C dimension is < 310 mm.

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 uppermost position. The size of the cut outs depends on the calculated installed dimension “A”, see illustration below.

1. Measure out and mark the location and depth of the cut-outs on the rear beam. Centre the two rear beam cut-outs, i.e. the cut-outs must be equidistant from the centre point of the beam.
2. Cut out along the markings.
3. Remove any burrs and sharp edges.

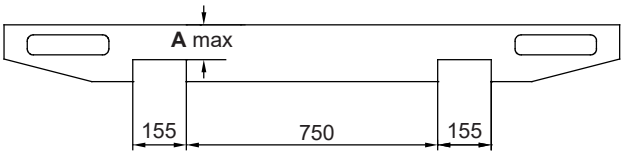


Image 11. Z-45-110, Z-75-110, Z-45-90, Z-75-90
ZU-45-110, ZU-75-110, ZU-45-90, ZU-75-90

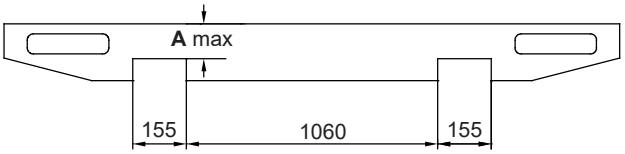


Image 12. ZL-45-90, ZL-75-90, ZL-45-110, ZL-75-110
ZLU-45-90, ZLU-75-90, ZLU-45-110, ZLU-75-110

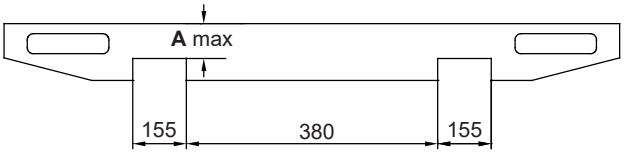


Image 13. ZN-45-90, ZN-75-90, ZN-45-110, ZN-75-110
ZNU-45-90, ZNU-75-90, ZNU-45-110, ZNU-75-110

3.5 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 3.5.2/3.5.3.
2. Connect the tail lift's main power cable to battery +12/24V.
3. 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.

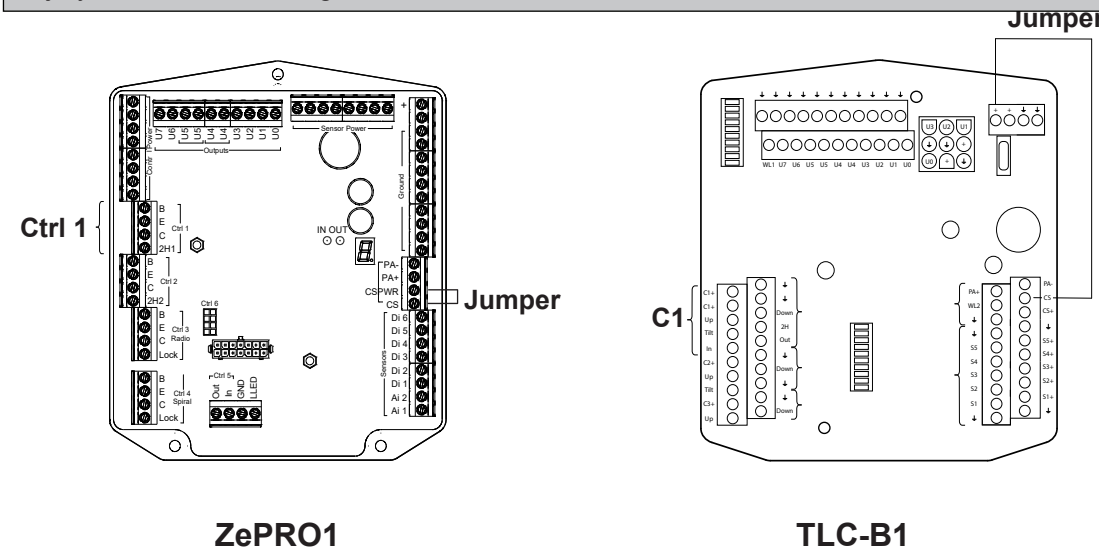


Image 14. Temporary connection

3.5.1 Battery maintenance

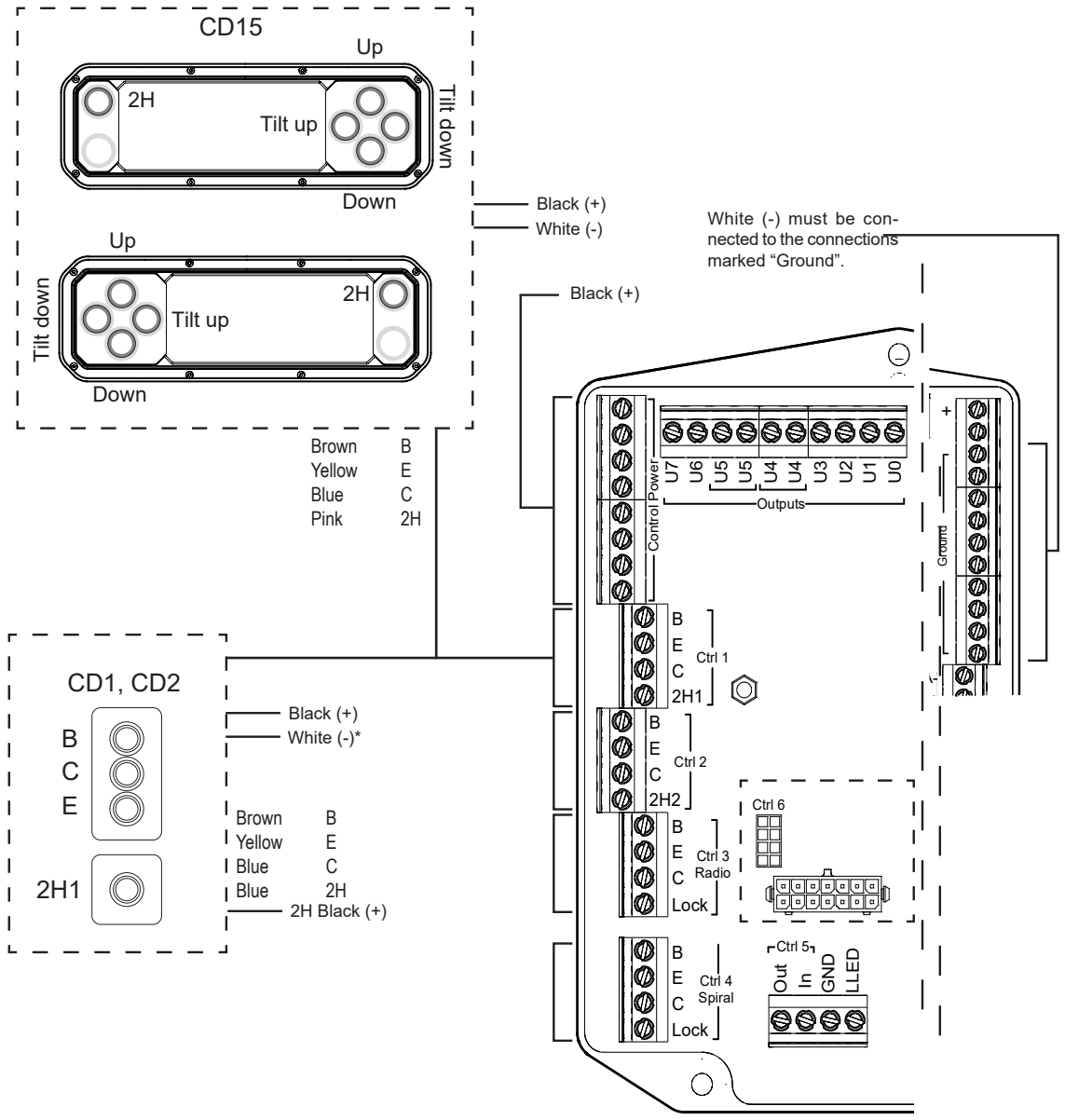
When installing the lift, when the lift is operated repeatedly, the battery charger must be used between operations to maintain the battery charge level.

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

3.5.2 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.

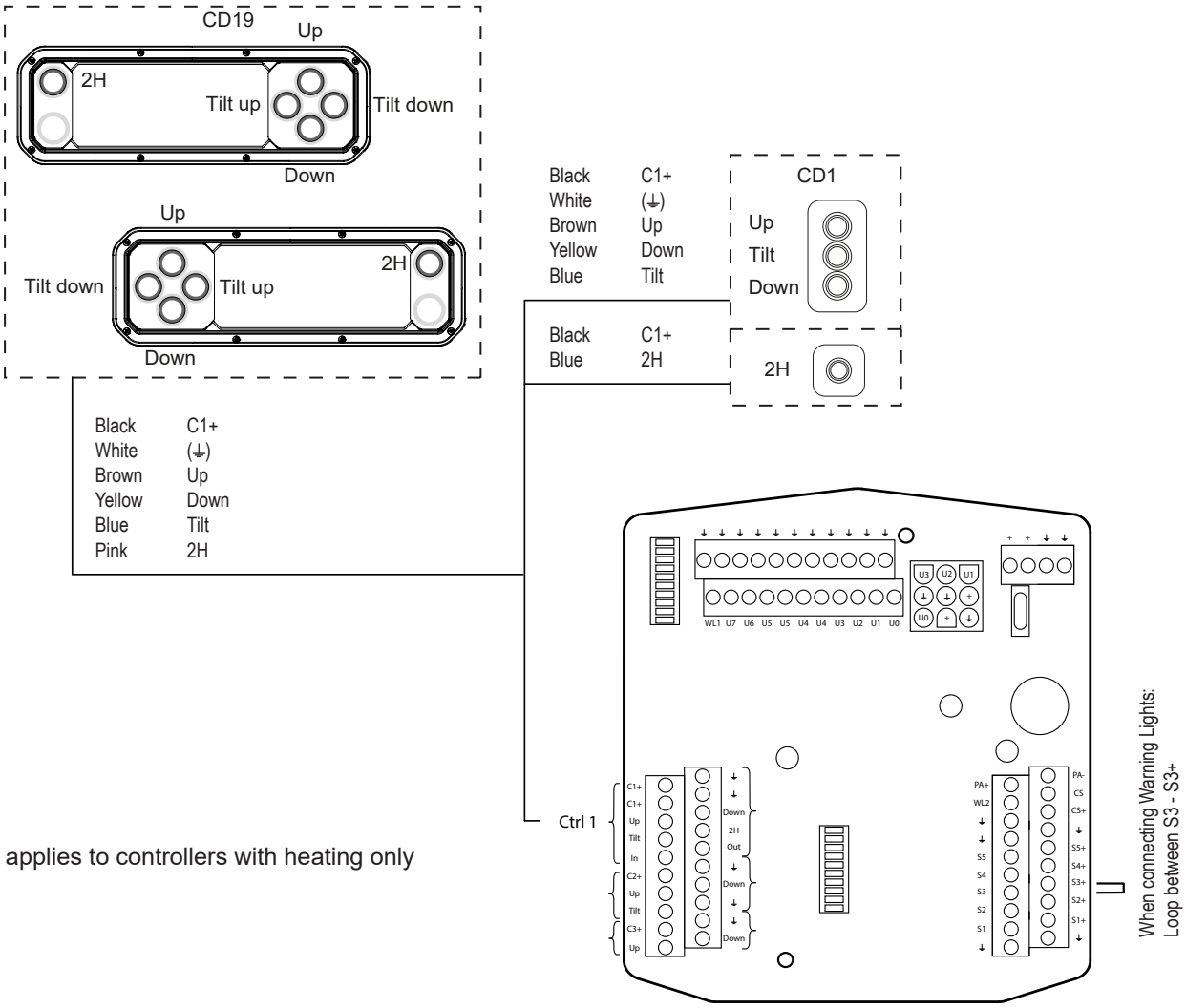


* applies to controllers with heating only

3.5.3 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

4 Installation

NOTE!

Also consult the vehicle manufacturer's body instructions and the Zepro Operator's manual before installation.

> ⚠ **WARNING!**
> Zepro tail lifts are only approved for installation with Zepro assembly kits.

4.1 Hydraulic unit

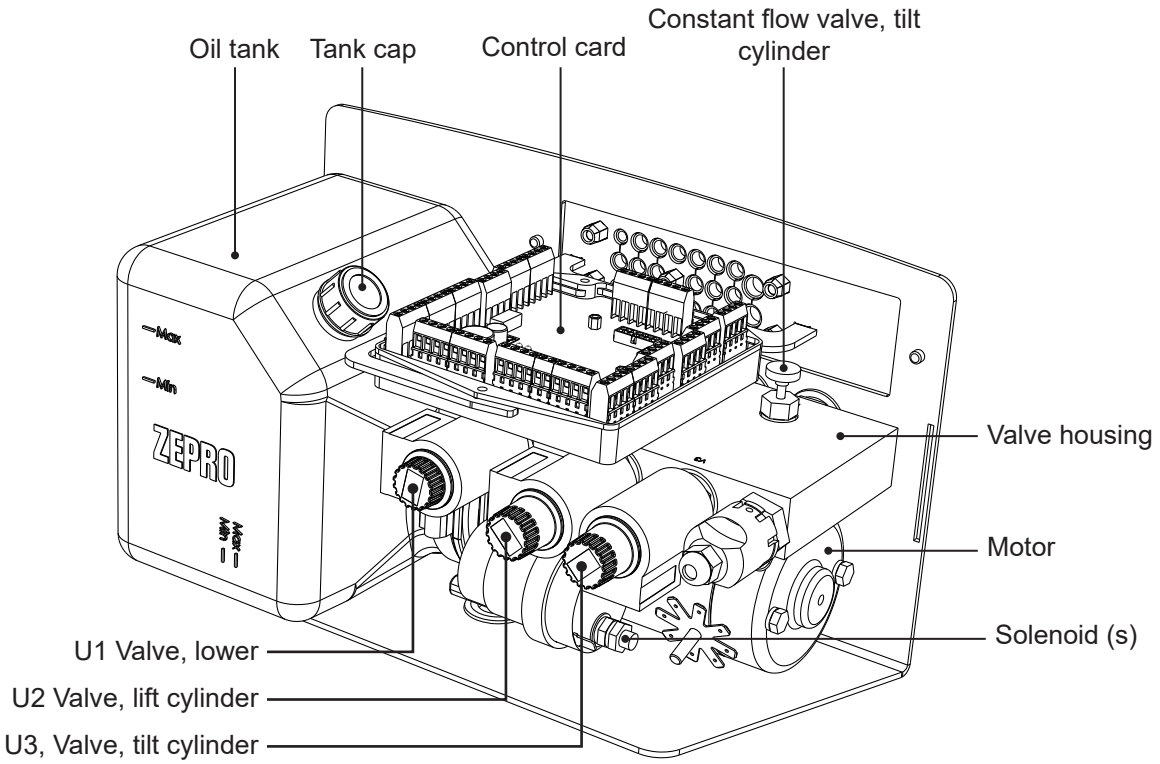


Image 15. Overview hydraulic unit

1. When installing the unit, remove the tie-down strap used during transportation. The tie-down strap may not be used for fastening the plastic hood.
2. Install the hydraulic unit on the support frame. Installation may take place vertically or horizontally; see Image 18 - Image 19.
3. Check whether the hydraulic tank is fitted with a transport plug seal. If so, replace it with the regular tank cap supplied. See Image 17.

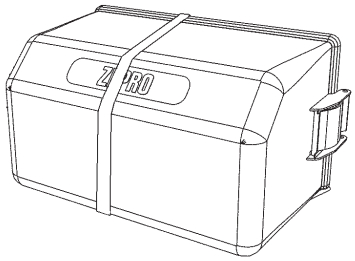


Image 16. Remove the tie-down strap before installation.

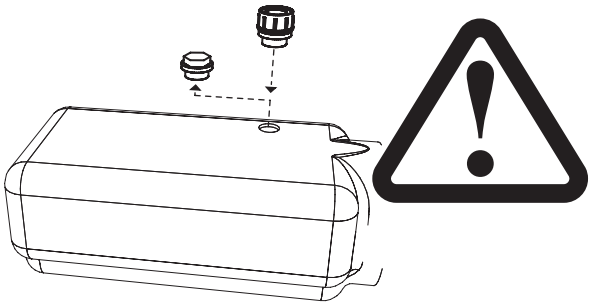


Image 17. Where applicable, replace the transport plug with a regular tank cap

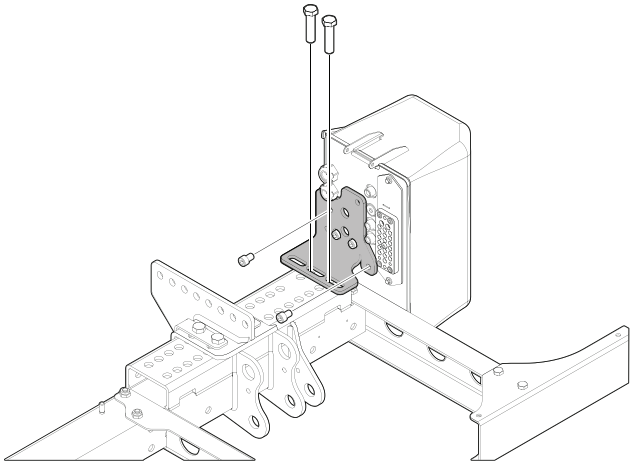


Image 18. Vertical hydraulic unit installation

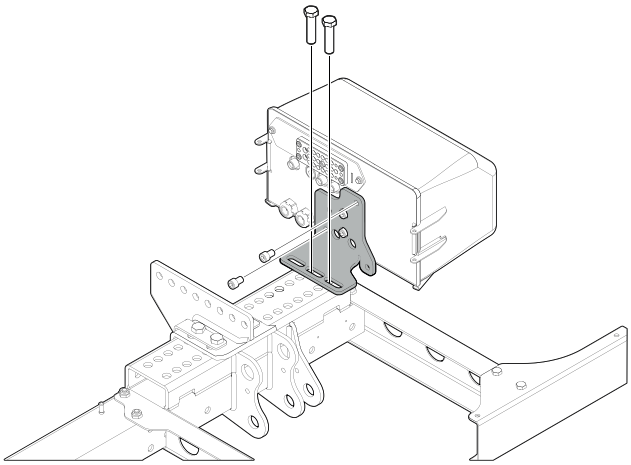


Image 19. Horizontal hydraulic unit installation

4.2 Support frame

1. Measure and mark the midpoint of the vehicle's rear beam. See Image 20.
2. Bolt or spot-weld the mounting jig onto the rear beam, so that both centre-points are aligned.

Mounting jig, part no.	Model
53704TL	Z 45/75
53705TL	ZL 45/75
53706TL	ZN 45/75
56419TL	Z 45/75 without sealing strips
56420TL	ZL 45/75 without sealing strips

3. Position the support frame under the vehicle frame.
4. Raise the lift arms to their highest position.
5. Attach the lift arms to the lugs on the jig. Use the lift platform’s normal pivot 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 22. The frame must be positioned parallel with the floor of the vehicle body and must not be in contact with the vehicle frame; there must be a few millimetres of play. If necessary, adjust the angle of the arms by carefully operating the lift.
7. Fit the lower part of the chassis bracket on the support frame. Adjust its position on the frame according to the width of the vehicle chassis. Fasten with six bolts, two angled washers and a fixing plate placed inside the support frame. Use the M14x35 bolts supplied. Install without tightening.

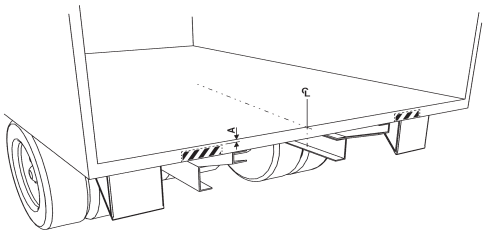


Image 20. Measure and mark the midpoint of the rear beam of the vehicle

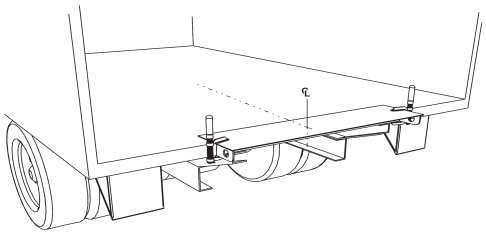


Image 21. Press, bolt or spot-weld the mounting jig to the rear beam

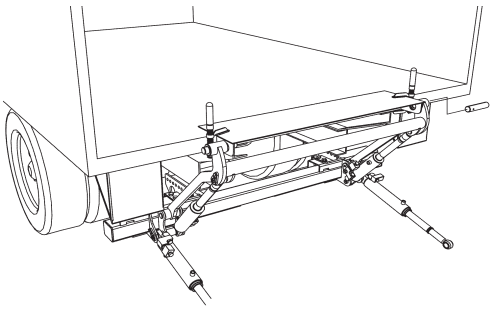


Image 22. Mounting jig

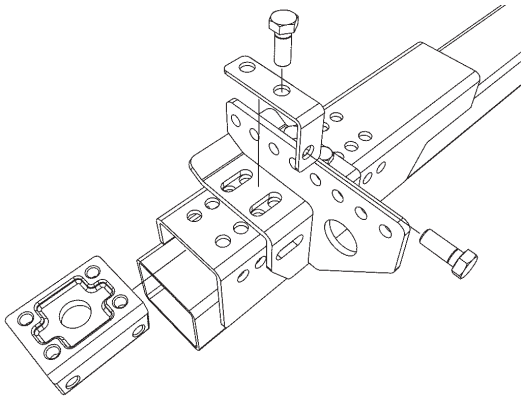


Image 23. Fit the lower part of the chassis bracket on the support frame.

8. Fit the upper part of the bracket onto the lower part. Installation must cover at least 6 of the holes on the row on the lower bracket. Use the four M14x45 bolts supplied. Install without tightening. See Image 24.
9. Check the C and D dimensions.
10. Align the chassis bracket on the vehicle chassis. Adjust these positions along the support frame if needed.
11. Drill 14 mm holes in the vehicle chassis, centred in the holes in the bracket.
12. Fasten the chassis bracket to the vehicle chassis. Use the M14x45 bolts supplied. Use at least 4 bolts in each chassis bracket. See Image 25 for location of bolts. Tightening torque 120 Nm.
13. Tighten the bolts that hold the two parts of the chassis bracket. Tightening torque 120 Nm.
14. Tighten the bolts that hold the chassis bracket to the support frame. Tightening torque 120 Nm.

    NOTE!
    Welding is not permitted on the chassis brackets.

    Do not run the lift all the way to the arm stops or with the platform fitted before all the bolts are fully tightened to the chassis.

    Do not place the lift under load until:
    the correct number of bolt have been installed and torque tightened.
    the body is mounted to strengthen the truck frame.
15. Remove the mounting jig.

For other chassis brackets, see the respective directions.

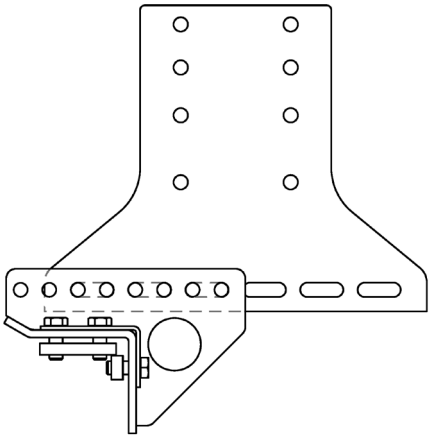


Image 24. Fit the upper part of the bracket onto the lower part. Installation must cover at least 6 of the holes on the row on the lower bracket.

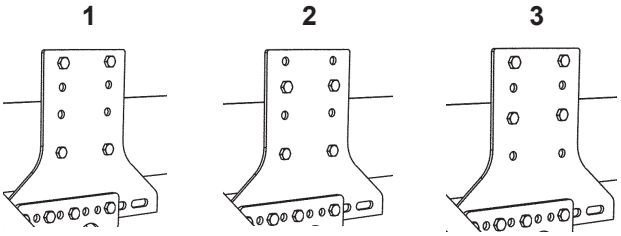


Image 25. Fasten the chassis bracket to the vehicle chassis. Locations 1 and 2 are recommended, location 3 should be avoided if possible.

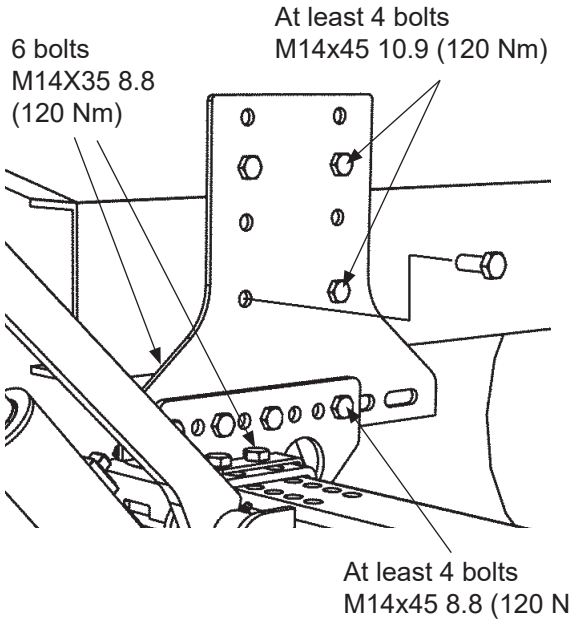


Image 26. Fitting the chassis bracket.

4.3 Lift platform

1. Check that all included components are clean, clean where necessary.
2. Lubricate the metal bushings on the upper bearing of the arms. Make sure the small holes on the inside of the bushings are filled with grease. Use Zepro lubricant or equivalent.

   NOTE!
   Carefully lubricate the metal bushings on the upper bearing of the arms. Make sure the small holes are filled with grease. After installation of the platform, the same bearings are also lubricated through the regular lubrication nipples, see section "14 Lubrication and oil level check" on page 59.

3. Fit the platform to the arms and fasten the tilt cylinders to the platform. Use the supplied shafts and locking nuts. **Tightening torque: 25 Nm.**

   NOTE!
   The tilt cylinders should be adjusted before fixing to the platform.

4. 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 Image 28.

   NOTE!
   The platform underhang (F) varies according to platform type and this should be taken into account when fitting the top edge seal.

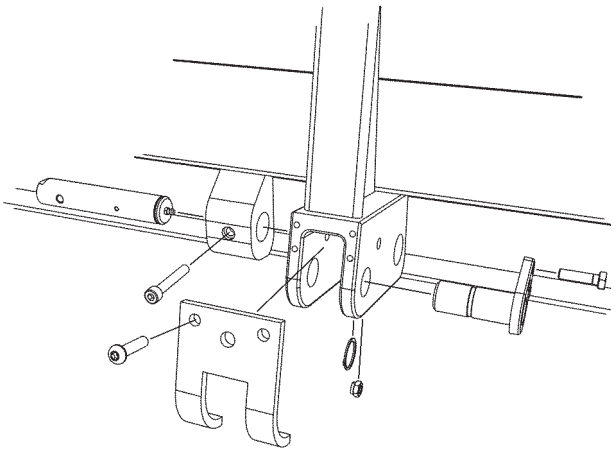
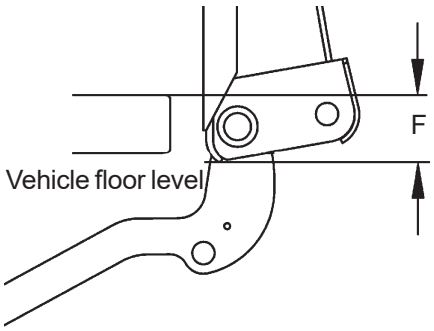


Image 27. Fit the platform with the shafts and locking nuts provided.



Type	Flat head 30 mm
F (mm)	75

Image 28. Fit the platform to the arms

4.4 Purging the cylinders

Purge the lift cylinders by fully lowering the platform a few times. You may have to lift the truck to fully lower the platform.

The tilting cylinders can be purged by raising the platform fully against the vehicle body and then tilting all the way down.

IMPORTANT!
Oil may need to be topped up during purging of the hydraulic system.

4.5 Installing the angle sensor. Applies to lifts with this equipment

1. The round angle sensor should be mounted with the cable facing downwards at 45° towards the platform. See Image 29. Drill Ø5.2 mm holes if there are no pre-drilled holes.

   NOTE!
   Make sure that the sensor is mounted in such a way that its cable connection is facing down, see Image 29.
2. Install the IFM angle sensor and the accompanying bracket over the round angle sensor using the screws supplied. See Image 30.
3. Route the cables of the angle sensors and install together with cable ties as shown below. Check that the cables are not stretched or otherwise at risk of being damaged while the platform is in motion.

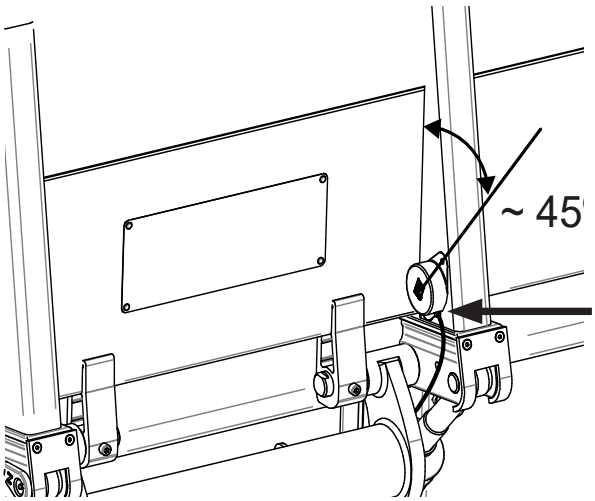


Image 29. Installing the angle sensor at an angle of 45 degrees with cable connection downwards

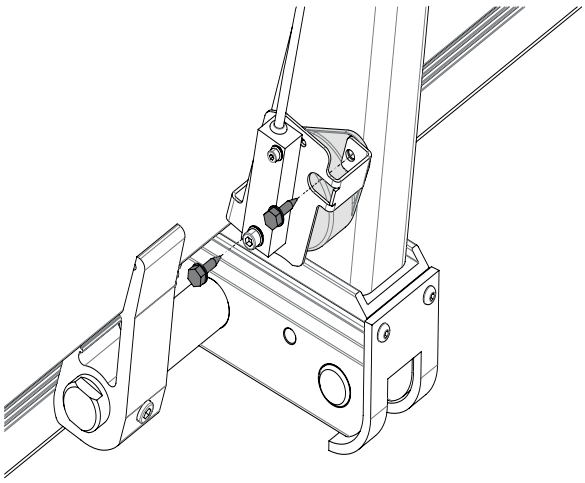


Image 30. Install the IFM angle sensor with the accompanying bracket over the round angle sensor.

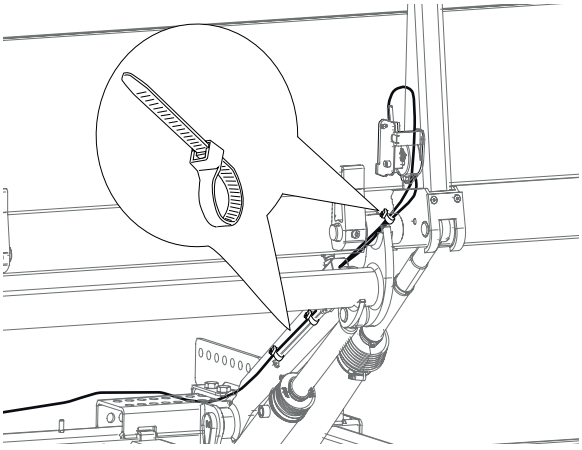


Image 31. Fasten the cable with cable ties.

4.6 Setup

Angle sensor IFM shall be adjusted so that the platform stops when tilting down to -10 degrees.

1. Tilt the platform downwards until it stops and measure the angle.
2. If the angle is not -10 degrees. Undo the two screws holding the IFM angle sensor but do not remove them. See Image 32.
3. Adjust the angle sensor and tighten the screws. See Image Image 32. Repeat steps 1 to 3 until the platform stops at -10 degrees.

NOTE!
When the platform is tilted downwards until it stops, 2-hand operation will be needed to tilt the platform upwards again (at the beginning of the platform's movement).

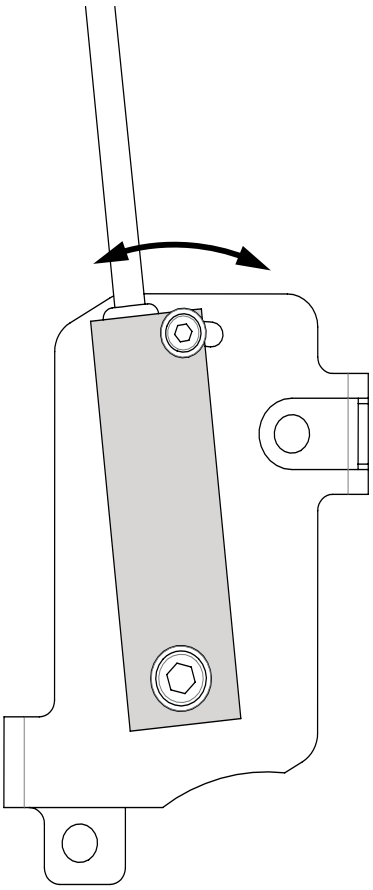


Image 32. Adjusting angle sensor.

4.7 Underrun protection

- Horizontal distance from the outer edge of the beam to the outside of the wheel: Max 100 mm. See Image 33.

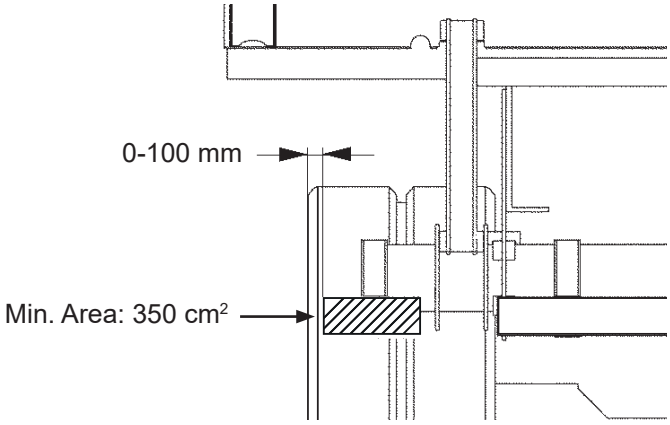


Image 33. Statutory dimensions

- The lateral distance between the underrun protection and the moving parts of the tail lift must not exceed 25 mm. See Image 34.
- Each of the individual parts of the underrun protection must have a surface area of at least 350 cm². See Image 33.

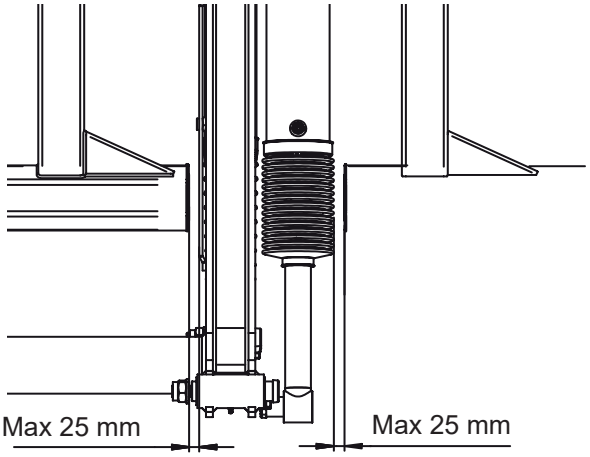


Image 34. Statutory dimensions

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

4.7.1 Installation ZU

1. Install the brackets on the tail lift frame using 2 pcs M10x100 bolts each without tightening them. See Image 36.
2. Install the centre sheet-metal profile using 4 pcs M10x110 bolts on the brackets. See Image 37.

   Tightening torque 40 Nm.
3. Tighten the bolts used to install the inner brackets in step 2.

   Tightening torque 40 Nm.

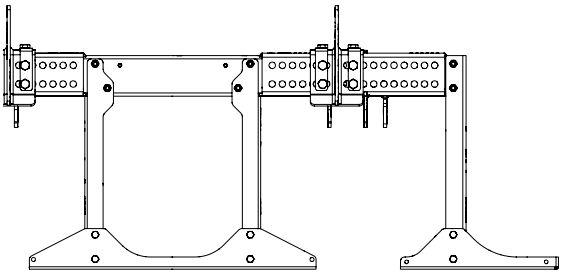


Image 35. Underrun protection ZU

ZU:

Install the outer sheet-metal profile using 2 pcs M10x110 bolts each. Install the spacer tubes (A) in the brackets' U-profile. See Image 38.

Tightening torque 40 Nm.

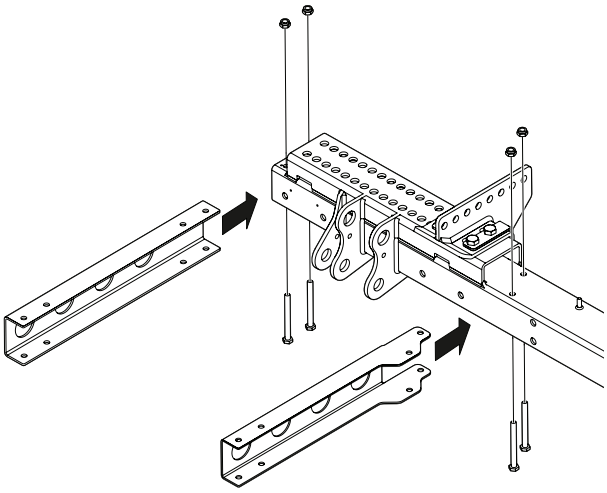


Image 36. Installing brackets on the frame

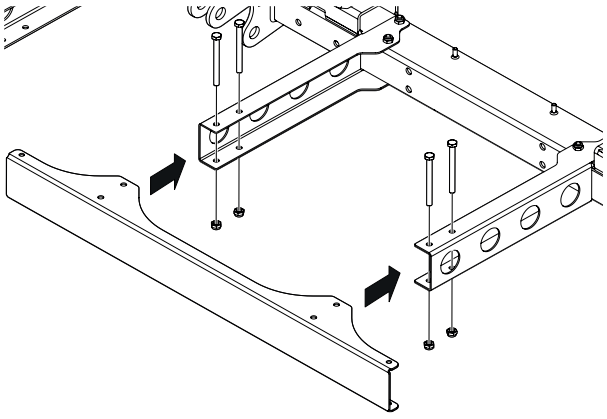


Image 37. Installing the inner sheet-metal profile

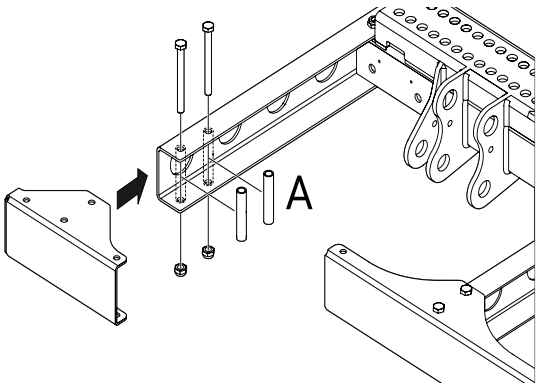


Image 38. Installing the outer sheet-metal profile (ZU)

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

4.7.2 Installation ZLU/ZNU

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. See "3.2 Statutory dimensions" on page 9.

1. Hang the four U protection brackets on the lift frame by inserting the projecting parts into the end of the fixing profiles.
2. Check that the statutory measurements are maintained. See "3.2 Statutory dimensions" on page 9.
3. Fasten the outer brackets with two M12x30 (8.8) bolts each, including support plate. The bolts are inserted from inside the frame and outwards. Remove the frame end plugs so as to reach the fastening points for the outer brackets. Tightening torque 90 Nm.
4. Fasten the inner brackets with two M12x30 (8.8) bolts each. The bolts are inserted from inside the frame and outwards. There are openings on the underside of the frame to allow access to the fastening points, right in front of the inner brackets. Tightening torque 90 Nm.

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

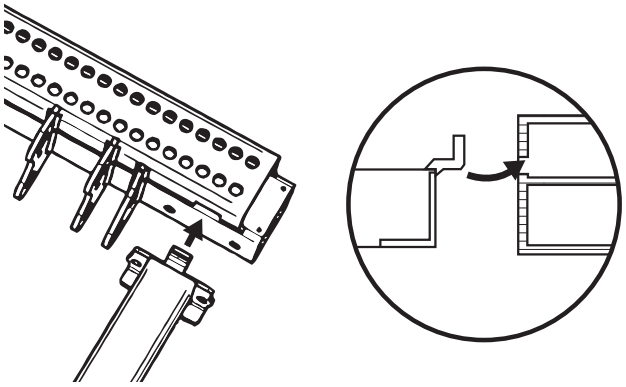


Image 39. Installing underrun protection

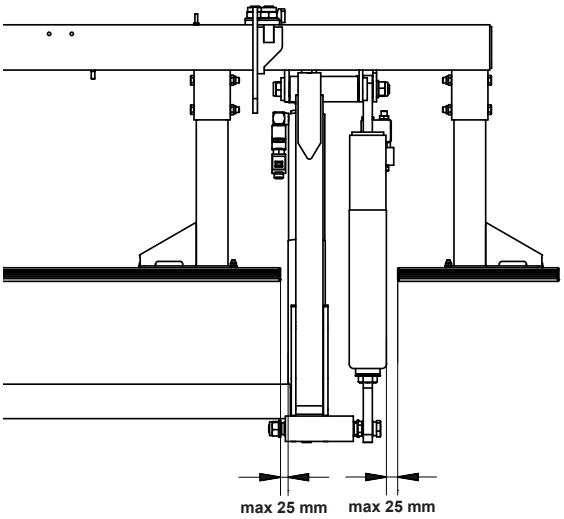


Image 40. Installing underrun protection

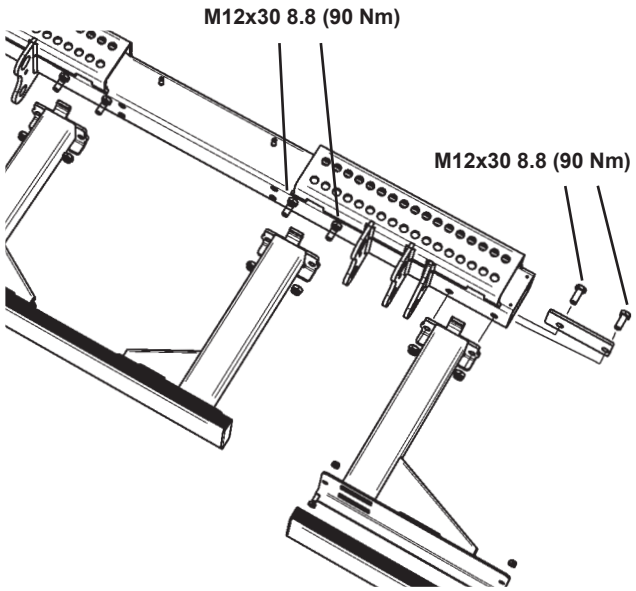


Image 41. Installing brackets onto frame.

5. Fasten the aluminium profiles with two M8x20 (8.8) bolts each. The head of the bolt is threaded in the aluminium rail and the rail is then positioned and screwed into the bracket. Tightening torque 25 Nm.

   NOTE!
   When installing on ZLU 45/75-90/110, more powerful brackets are used for the internal aluminium rail compared to other models.

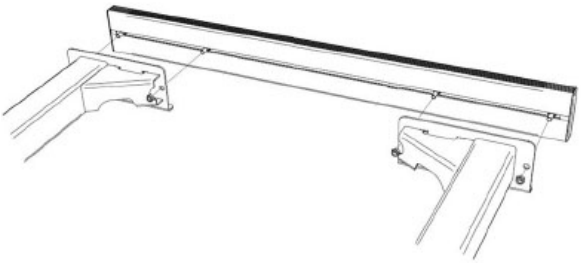


Image 42. Installing aluminium profiles.

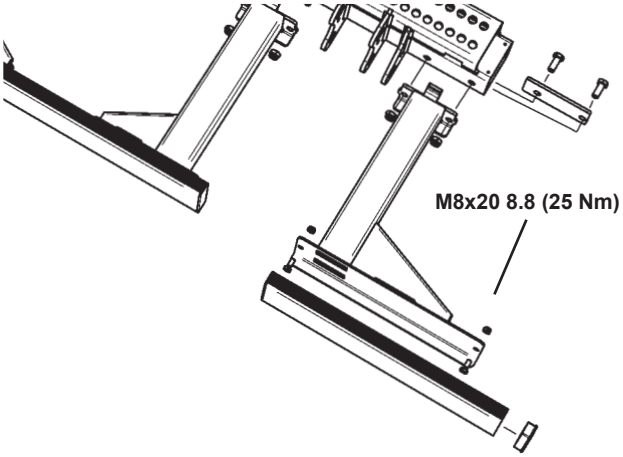


Image 43. Installing aluminium profiles.

4.8 Arm stops

Arm stops are not included in standard equipment. Can be ordered separately, part. no. 53450 for Z/ZU/ ZL/ZLU and part. no. 53869 for ZN/ZNU models.

1. Fit arm stops as high up as possible on the lift arm. Ensure that the adjustment screws have a good contact area against the rear member of the vehicle floor. If needed, fit a stop on the rear member so as to create a stable contact surface for the arm stop.
2. Adjust with the adjustment screws, so that both arm stops make contact with the rear member/stop at the same time.

NOTE!
When installing arm stops, use Loctite 243 or equivalent on the fixing screws, see Figure 44.

NOTE!
If an assembly kit has been used for assembling the support frame , there may be special instructions for arm stops in the separate assembly directions for the assembly kit.

⚠ WARNING!
Welding on the lift arm is not permitted.

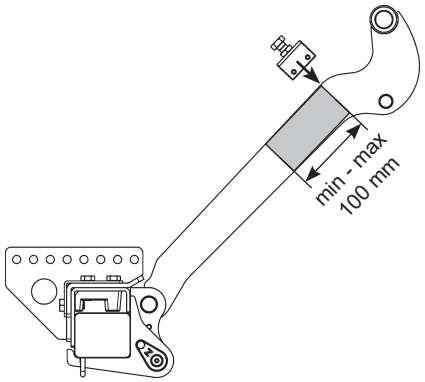


Image 44. Fit end stops between the lift arms and the rear beam of the vehicle floor

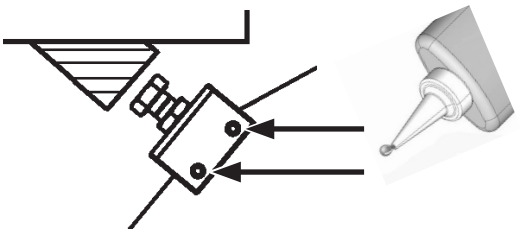


Image 45. Use Loctite 243 or equivalent on the fixing screws

4.9 Sealing strip (horizontal), surface-mounted rubber strip

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

1. Check that the distance between the vehicle floor and the platform is 38 - 40 mm.
2. Mark where to drill holes for the self-tapping screw.
3. Drill holes (Ø 7.2 mm) for the screws.
4. Fit the horizontal stop strip (steel or aluminium).
5. Fit the rubber strip in the track.

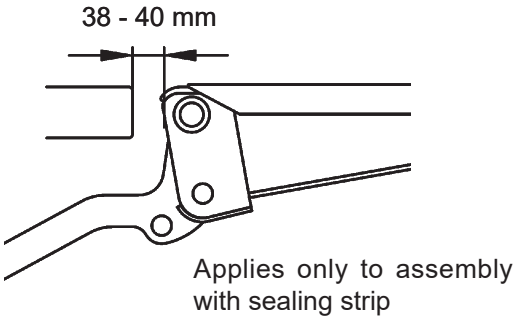


Image 46. Check that the distance between the vehicle floor and the platform is 38 - 40 mm

4.10 Sealing strip (vertical)

1. Check that the distance between the vehicle floor and the platform is 38 - 40 mm.

2 Attach the tracks with countersunk screws, pop rivets or spot welding.

3 Fit the rubber strip in the track.

4 Secure the rubber strips by swaging the tracks together at the bottom.

NOTE!
If an upper edge seal is being fitted, it must be mitred 45° to the vertical strips.

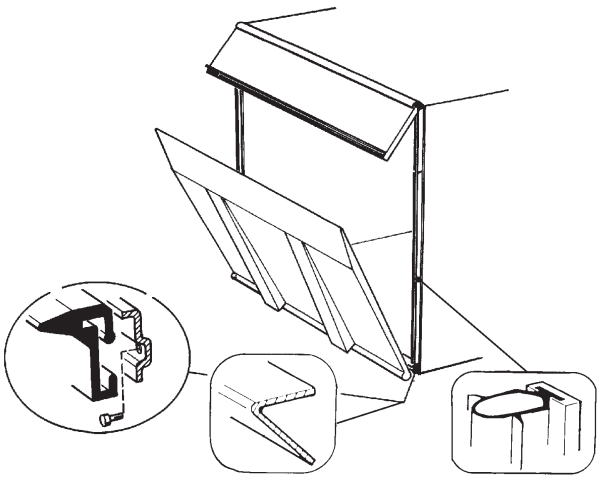
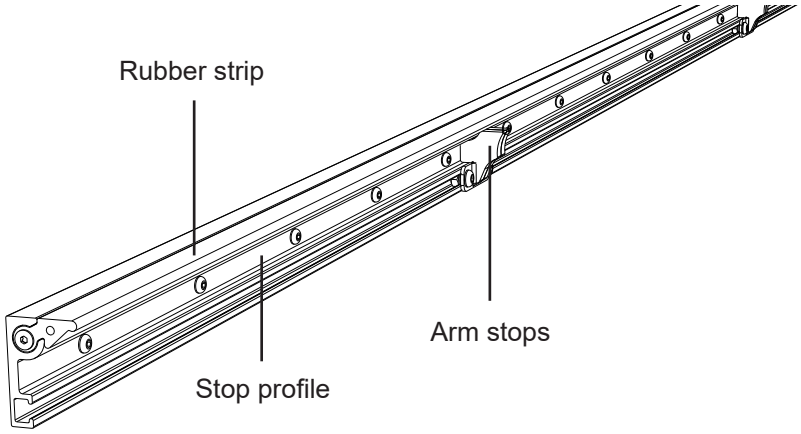


Image 47. Installing a sealing strip

4.11 Sealing strip, integrated rubber strip

1. Check that the distance between the vehicle floor and the platform is 38 - 40 mm, see Image 46.
2. Measure out and cut the impact profile and rubber strip to the desired length.
3. Mark where to drill holes for the self-tapping screw.
4. Drill holes (Ø 7.2 mm) for the screws.
5. Mount screws and nut on the arm stop and mount them on the stop profile, seeImage 48 and Image 49.
6. Place the arm stop according to the position of the lift arms and fix by tightening its screws, see Image 53.
7. Screw the stop profile into the pre-drilled holes, see Image 50
8. Insert and mount the rubber strip in the stop profile, see Image 51.
9. Lock the rubber strip and the associated screw, see Image 52.



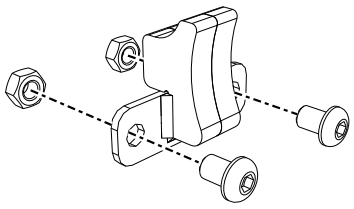


Image 48. Install screw, nut arm stop

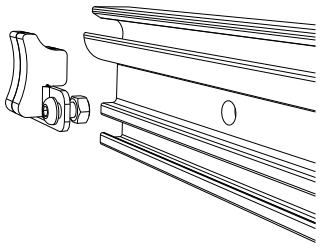


Image 49. Installing the arm stops

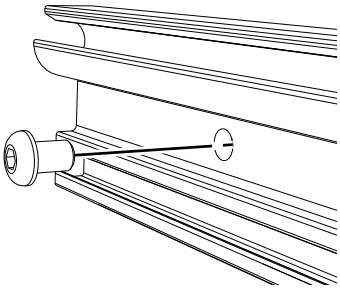


Image 50. Screw on the stop profile

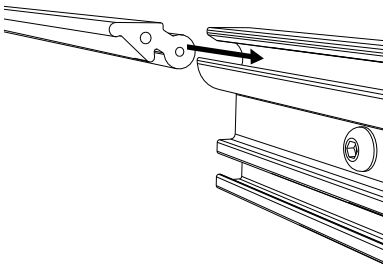


Image 51. Mount the rubber strip

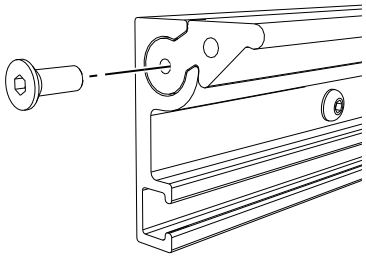


Image 52. Lock the rubber strip

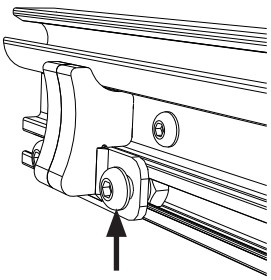


Image 53. Fix the arm stop

4.12 Adjusting the tilt angle

NOTE!
Do not adjust the cylinders before they are fitted to the platform. The tilt cylinders are preset from the factory.

1. Loosen the rubber bellows at the bottom where they are secured with hose clips.
2. Run tilt-up until both tilt cylinders are fully raised.
   NOTE!
   Always make adjustments with full hydraulic pressure in the tilt cylinders.
3. Undo the locking nut.
4. Turn the pushrod so that the platform comes into the desired position. On vehicle bodies without rear doors, the platform is to be adjusted in toward the side sealings. On vehicle bodies with rear doors, the platform is adjusted so that it stops in a vertical position with a sufficient gap between platform and doors.

Body without rear doors. With side seals. **Body with rear doors.**

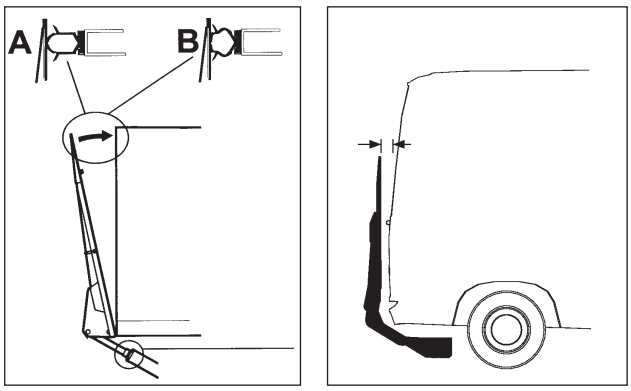


Image 54. Adjusting the fit to the vehicle body

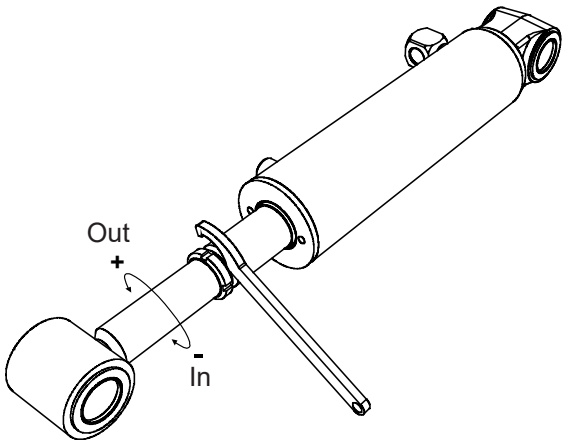


Image 55. Adjusting the fit to the vehicle body

5. After adjustment, tighten the locking nut. To ensure that the locking nut is fixed in the set position, it is recommended it be locked using Loctite 243 or equivalent.**Tightening torque: 120 Nm.**

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

6. Fit the cylinder boots.

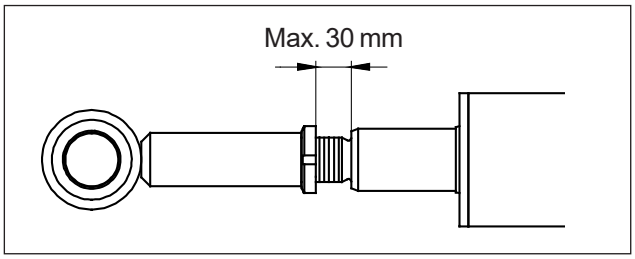


Image 56. After finishing the adjustment, make sure the distance between the adjusting collar and the end of the thread is no more than 30 mm.

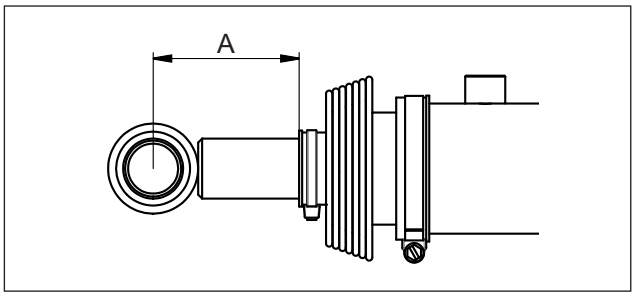


Image 57. Installing boots.

Lift model	A
45/75-90	73 ±5
45/75-110	156 ±5

4.13 Transport lock

For all CE marked lifts with 1000 kg lifting capacity or more, platforms are supplied without mechanical locks. Otherwise, the transport lock for steel platforms is fitted on the right-hand side.

Electric hose rupture valves serve as locks for the platform. The lock opens automatically if the down function is actuated from the controller. The valves are check valves that let fluid into the cylinders but not out before they are actuated by the flow from the lowering valve. The platform is therefore hydraulically locked during transport.

4.14 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.

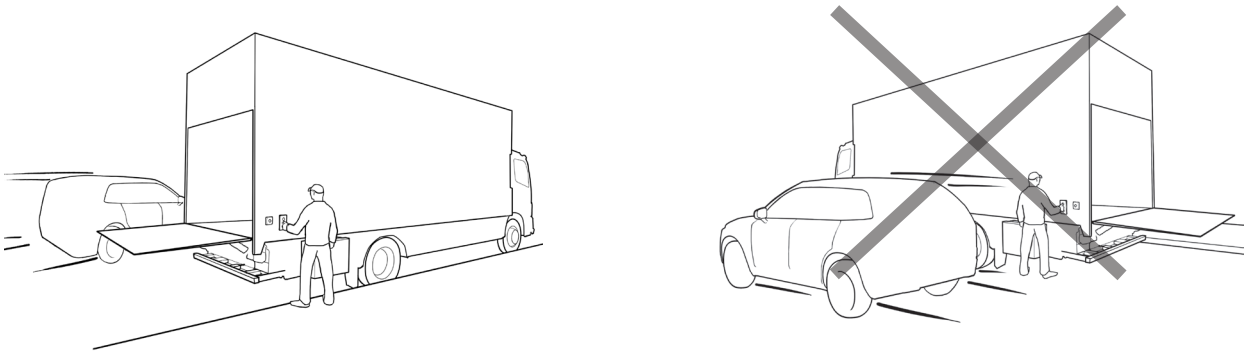


Image 58. Installing controllers

4.14.1 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.
2. 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.
3. Any additional controllers can be installed in an optional location.
4. Run the controller cabling to the tail lift cable grommet. Connection is described later in section 6.

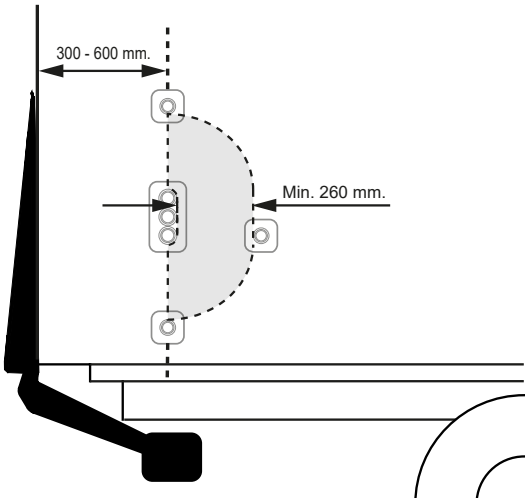


Image 59. Installing controller CD 1 with two-handed grip.

4.14.2 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

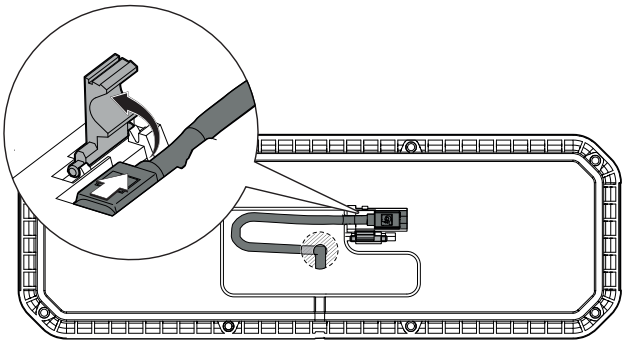
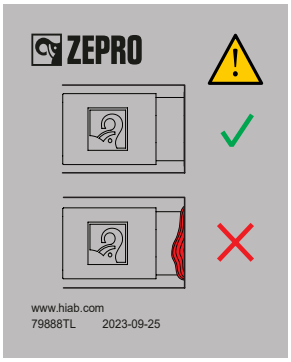


Image 60. Disconnecting the connector



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

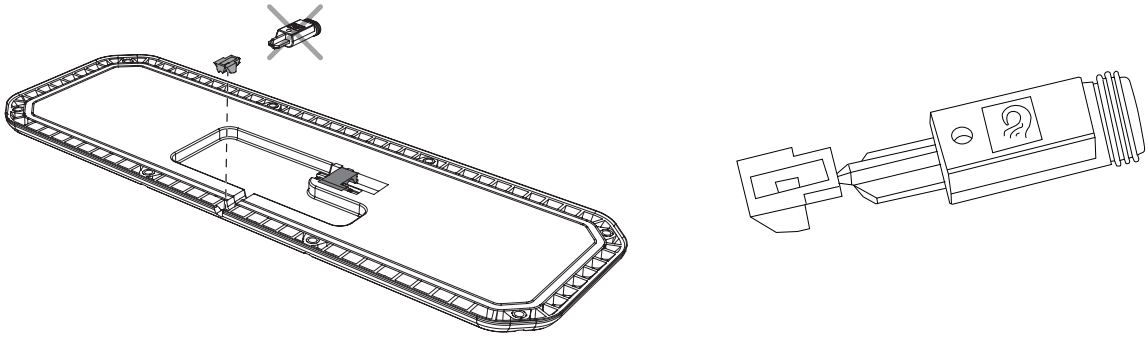


Image 61. Installation of plug for sealing UCU.

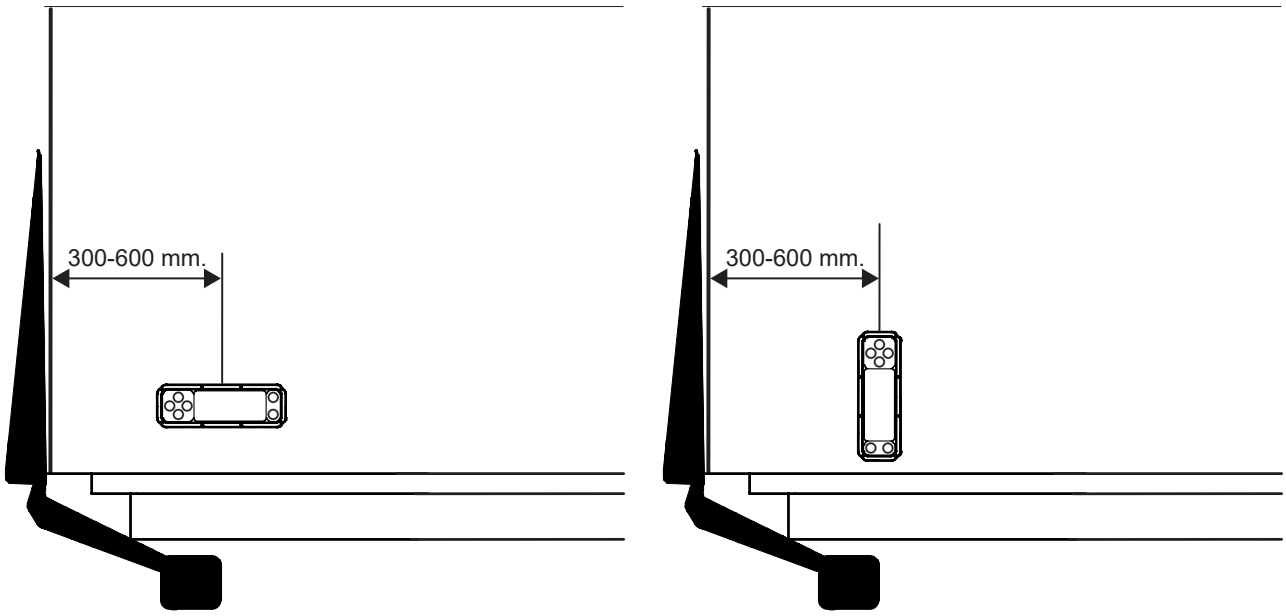


Image 62. Installing controllers

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.

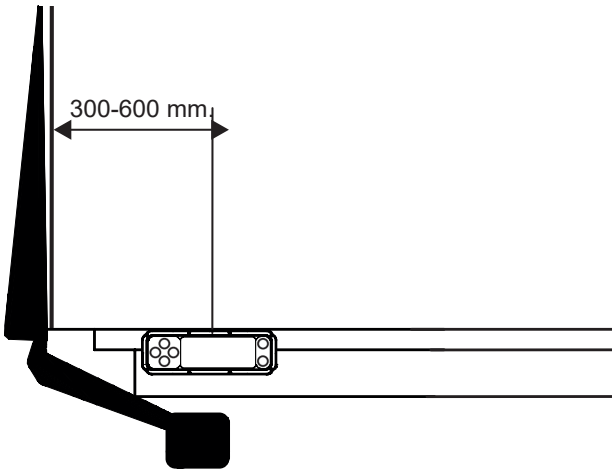


Image 63. Installing controllers

4.14.3 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.

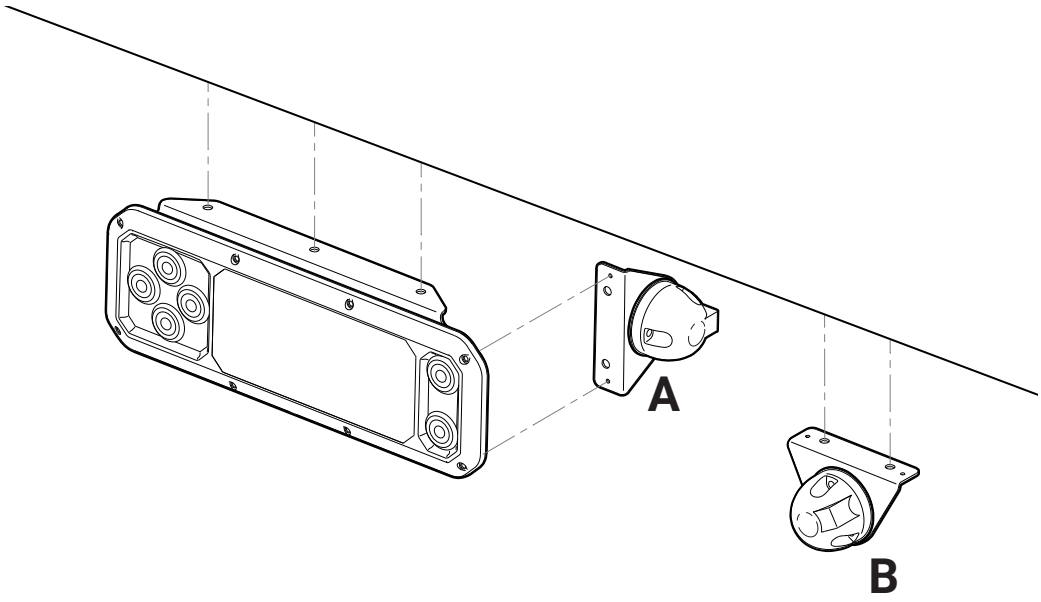


Image 64. Installing controller CD19 and the connector for a hand-held controller

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.

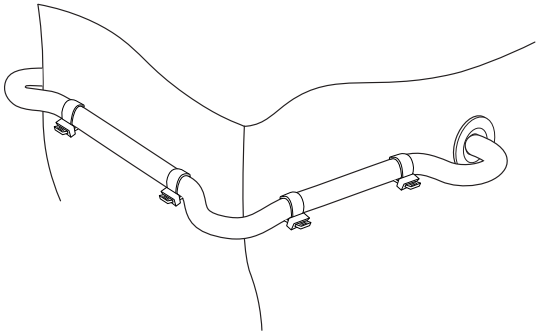


Image 65. Protect the cable against sharp edges and use cable grommets

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

5.2 Sizing electrical systems

Ensure that the battery and charger capacity is sufficient for the product in question and that cable with sufficient cross-sectional area is used.

Z45 (110 bar)

5915	12 volt	24 Volt
Pump - Motor unit	95 A	60 A
Magnet (hydraulic unit)	1.4 A	0.7 A
Magnet (electric hose rupture valve)	1.5 A	0.75 A
Solenoid	1.8 A	0.9 A
Minimum recommended conductor cross-sectional area (copper cables, positive and negative cables)		
Control cable	1.5 mm^2	1.5 mm^2
Supply cable, L < 8,5 m	25 mm^2	25 mm^2
Supply cable, L = 8,5 - 13 m	35 mm^2	35 mm^2
Supply cable, L > 13 m	-	35 mm^2 *
Battery		
Min. capacity, I_{min}	140 Ah	110 Ah
Min. voltage during operation, U_{min} (at lift)	9 Volt	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.

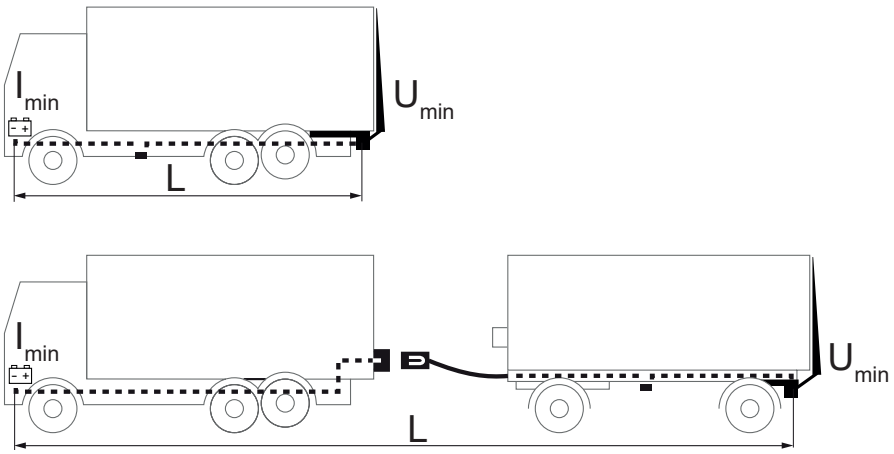


Image 67. Maximum power consumption Z45 - Minimum recommended conductor cross sectional area

Z75 (150 bar)

5915	12 volt	24 Volt
Pump - Motor unit	115 A	75 A
Magnet (hydraulic unit)	1.4 A	0.7 A
Magnet (electric hose rupture valve)	1.5 A	0.75 A
Solenoid	1.8 A	0.9 A
Minimum recommended conductor cross-sectional area (copper cables, positive and negative cables)		
Control cable	1.5 mm^2	1.5 mm^2
Supply cable, L < 8,5 m	25 mm^2	25 mm^2
Supply cable, L = 8,5 - 13 m	35 mm^2	35 mm^2
Supply cable, L > 13 m	-	35 mm^2 *
Battery		
Min. capacity, I_{min}	140 Ah	110 Ah
Min. voltage during operation, U_{min} (at lift)	9 Volt	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.

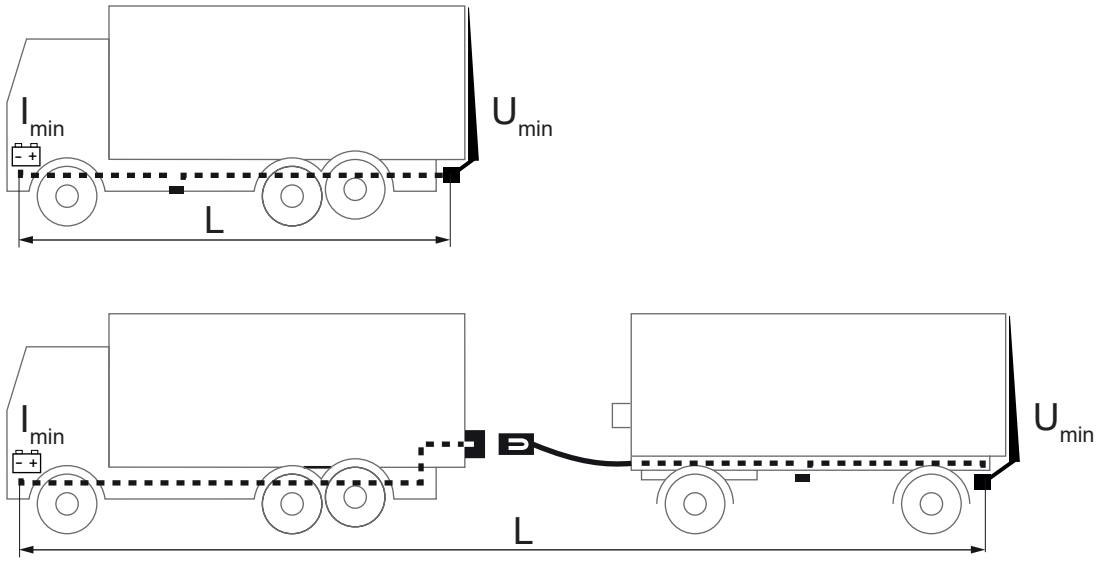


Image 68. Maximum power consumption Z75 - Minimum recommended conductor cross sectional area

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.

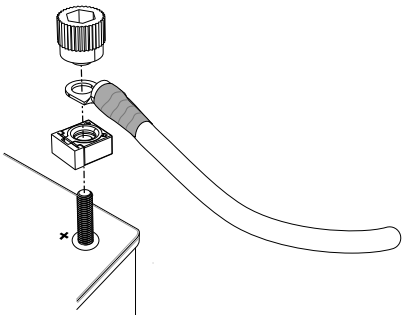


Image 69. Connection to the battery's positive terminal

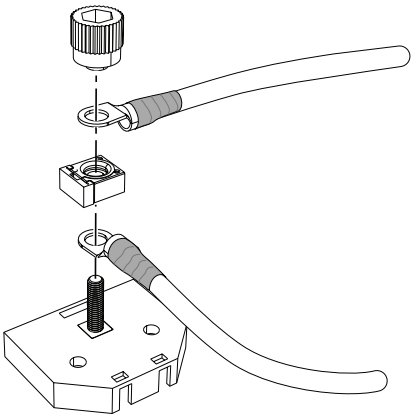


Image 70. Connection to the fuse box

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 8.

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

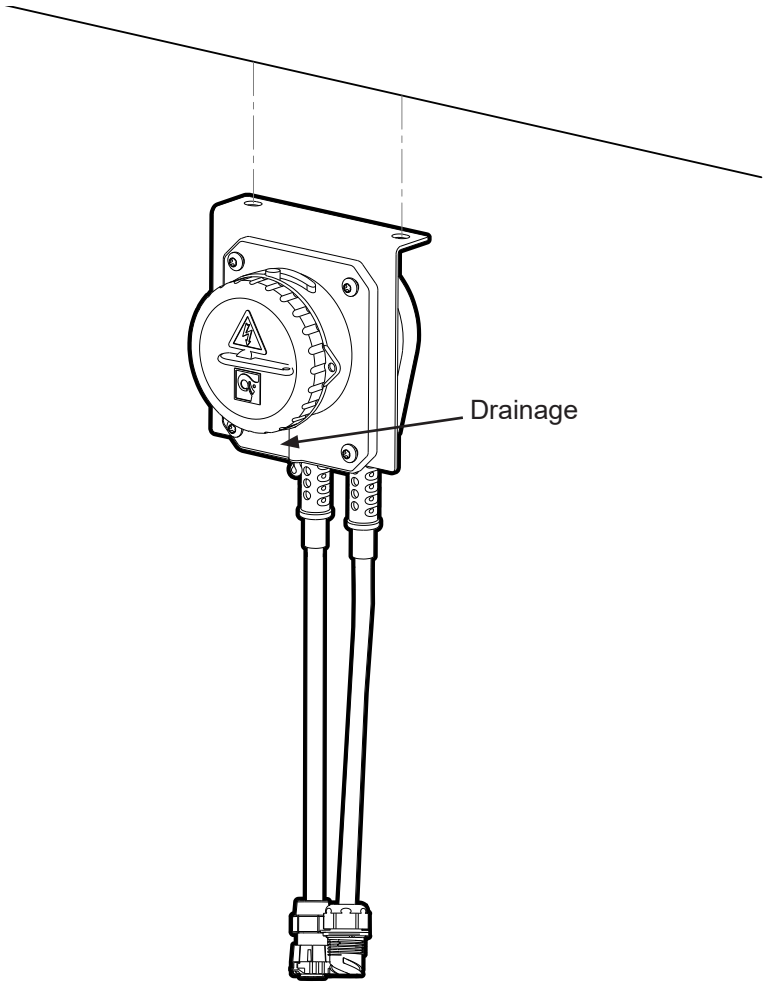


Image 71. Installing the main power switch

5.4 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.

5.5 Control power cable

NOTE!
See also the respective vehicle manufacturer's electrical instructions.

1. If the control power cable is not pre-routed, e.g. VDHH, route the control power cable from the driver's cab to the lift.

> **IMPORTANT!**
> The cable must be protected with rubber grommets when it passes through beams or bulkheads. Position any quick connectors so they are well protected from moisture and dirt.

2. Connect the control power cable to the cab switch (CS) on the vehicle instrument panel. Connect to the on-board electrical system via a 10 A (24 V), 15 A (12 V) fuse according the customer's wishes. See wiring diagram in Sections 6.8 and 6.9.

5.6 Warning lighting/ foot controller

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 cable of the foot control/warning light. Then route the cables and mount with cable ties according to Image 73.

   NOTE!
   Route the cables between the platform and the 1st boom's pipe, so they are well protected when the platform hits the ground.
   Leave enough slack to the first cable tie to avoid the risk of damage to the cable during lift operations.

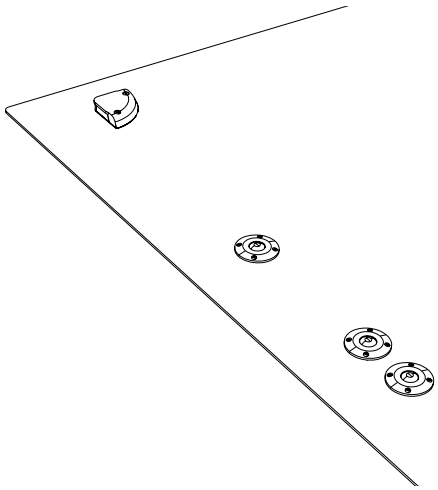


Image 72. Warning lighting and foot controls

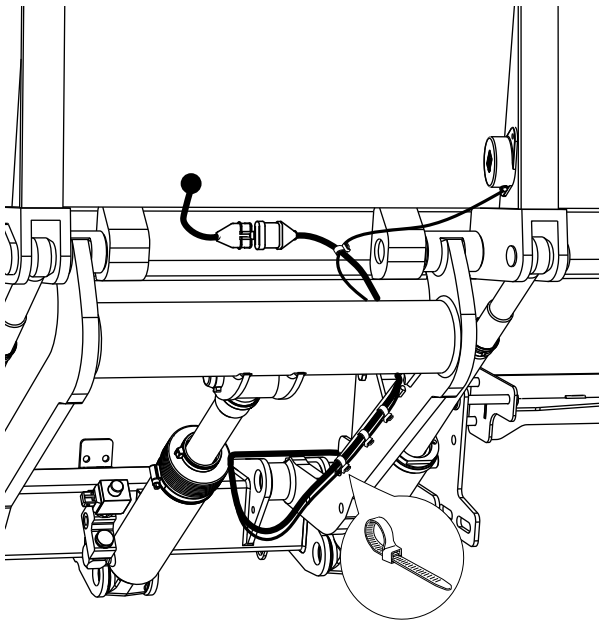


Image 73. Installing cabling

6 Connection

6.1 Cable grommet

6.1.1 Before cable connection

To be able to install/remove/adjust the cables in the cable grommet, the five screws must be loosened.

1. Loosen the five screws on the cable grommet, see Image 74. Cables can now be installed/removed/adjusted in the grommet. The cable should be installed together with existing cabling using cable ties.

Hydraulic unit 5915

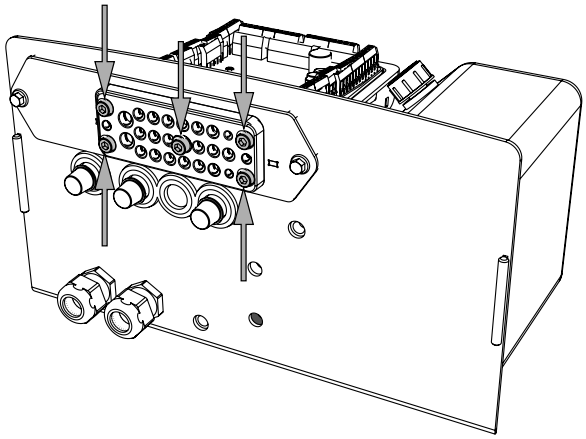


Image 74. The cable grommet's five screws

6.2 Connection

1. Run the cabling through the grommet.
2. Connect the relevant controller. See Section 6.4 - 6.5.
3. Where applicable, connect the warning lights. See Section 6.6 - 6.7.
4. Where appropriate, plug in cab switch (CS) and open platform alarm. See Section 6.8 - 6.9.

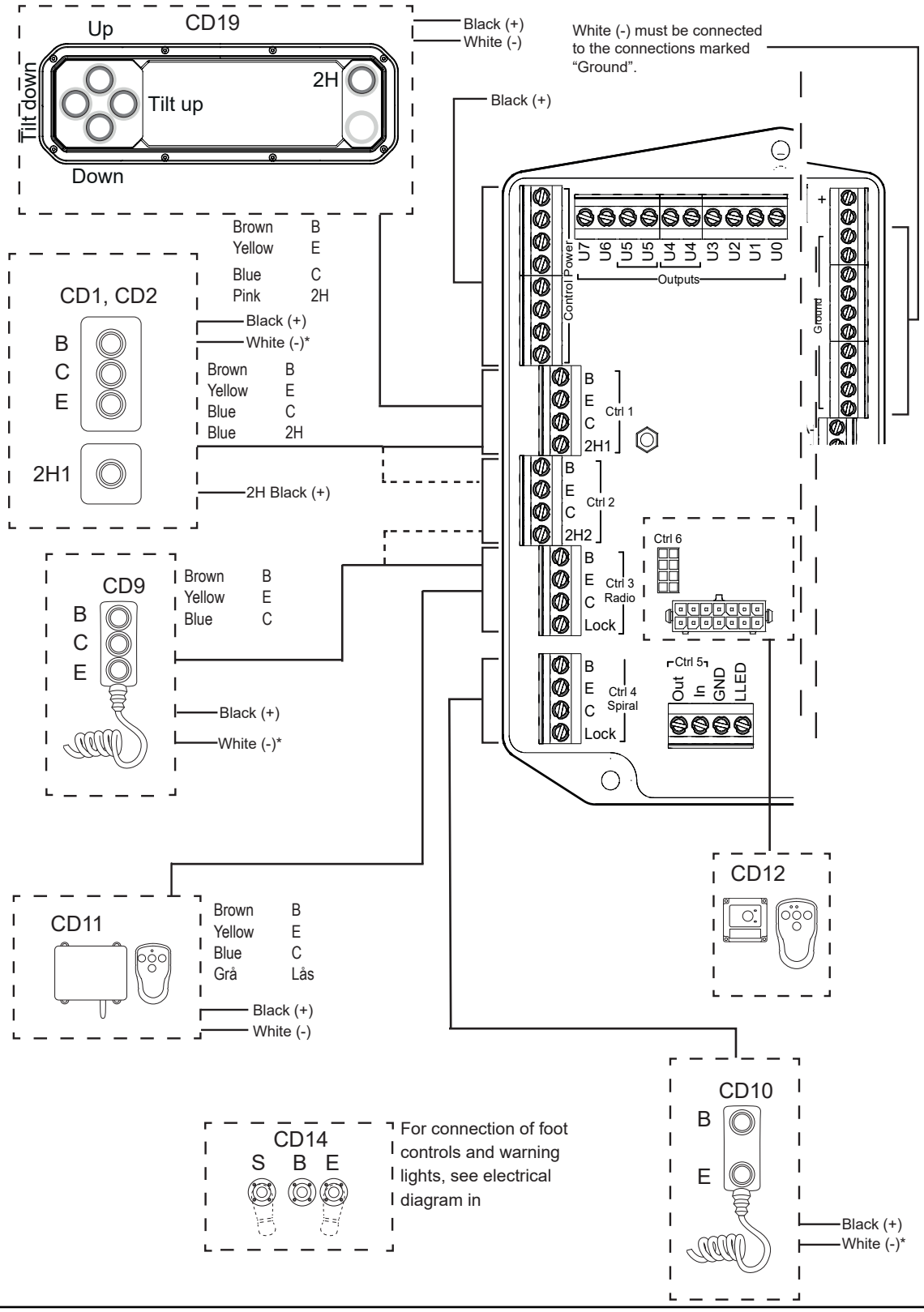
6.3 After connection

1. When all cables are suitably located in the cable grommet, tighten the five screws; see Image 74. Tightening torque: 5 Nm.

6.4 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.

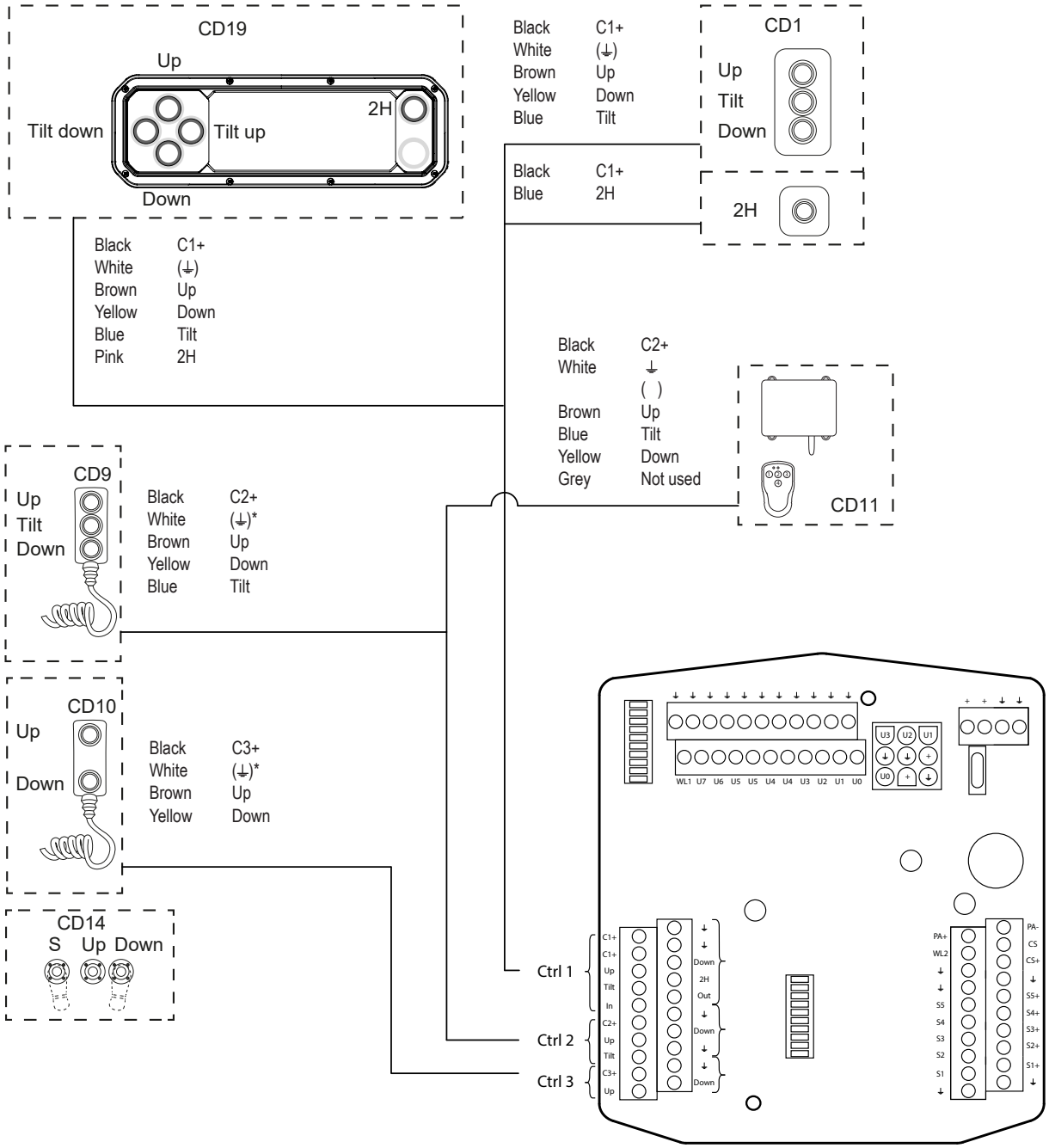
⚠ WARNING!
Make sure that the control card is disconnected from the power before connecting. Connecting more than one controller to each connection is not permitted. Risk of material damage.



6.5 Connecting the controller to the TLC-B1 relay card

The 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 card is disconnected from the power before connecting. Connecting more than one controller to each connection is not permitted. Risk of physical damage.

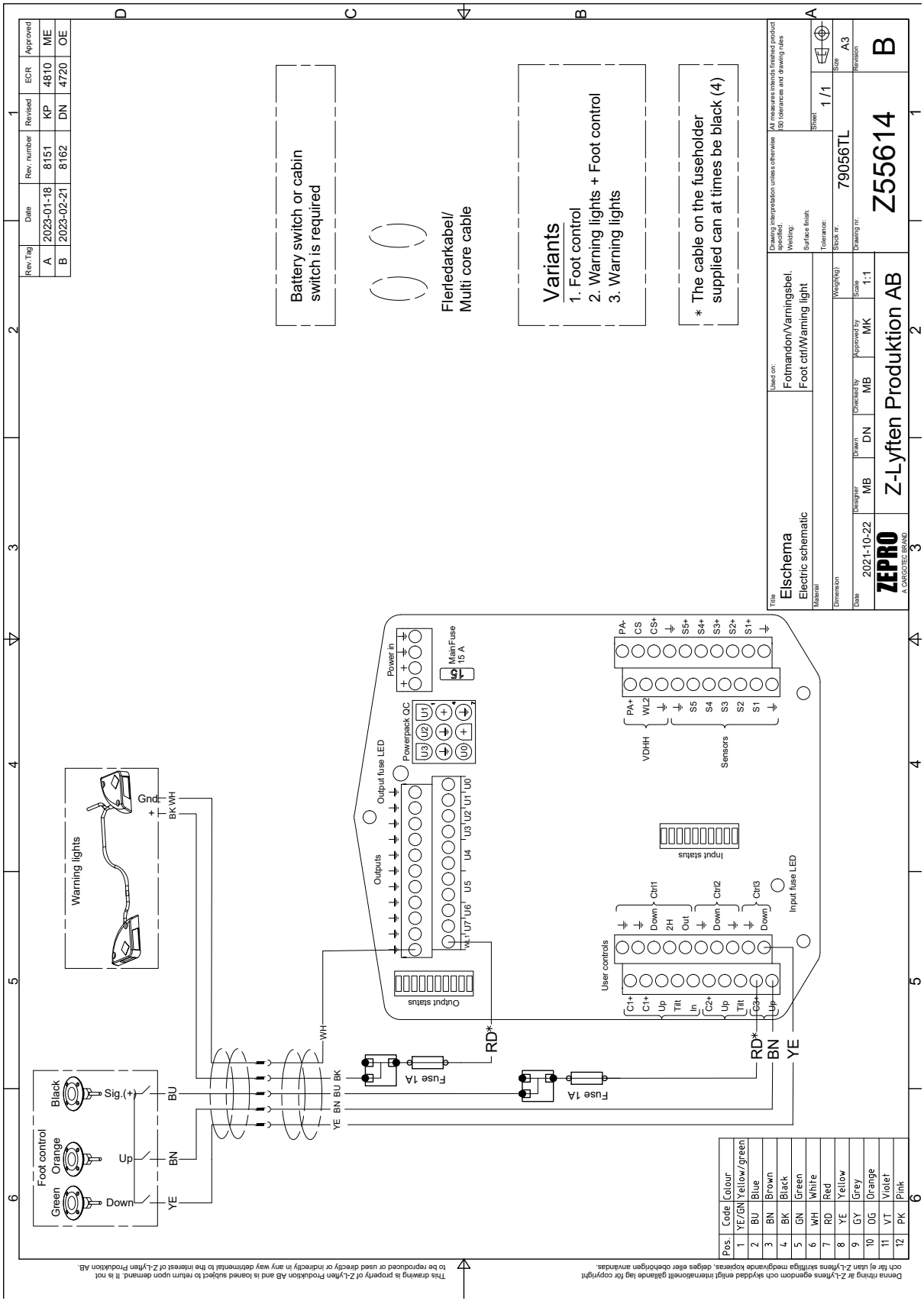


For connection of foot controls and warning lights, see electrical diagram in Section 6.6.

* applies to controllers with heating only

6.6 Warning lighting and foot controls (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



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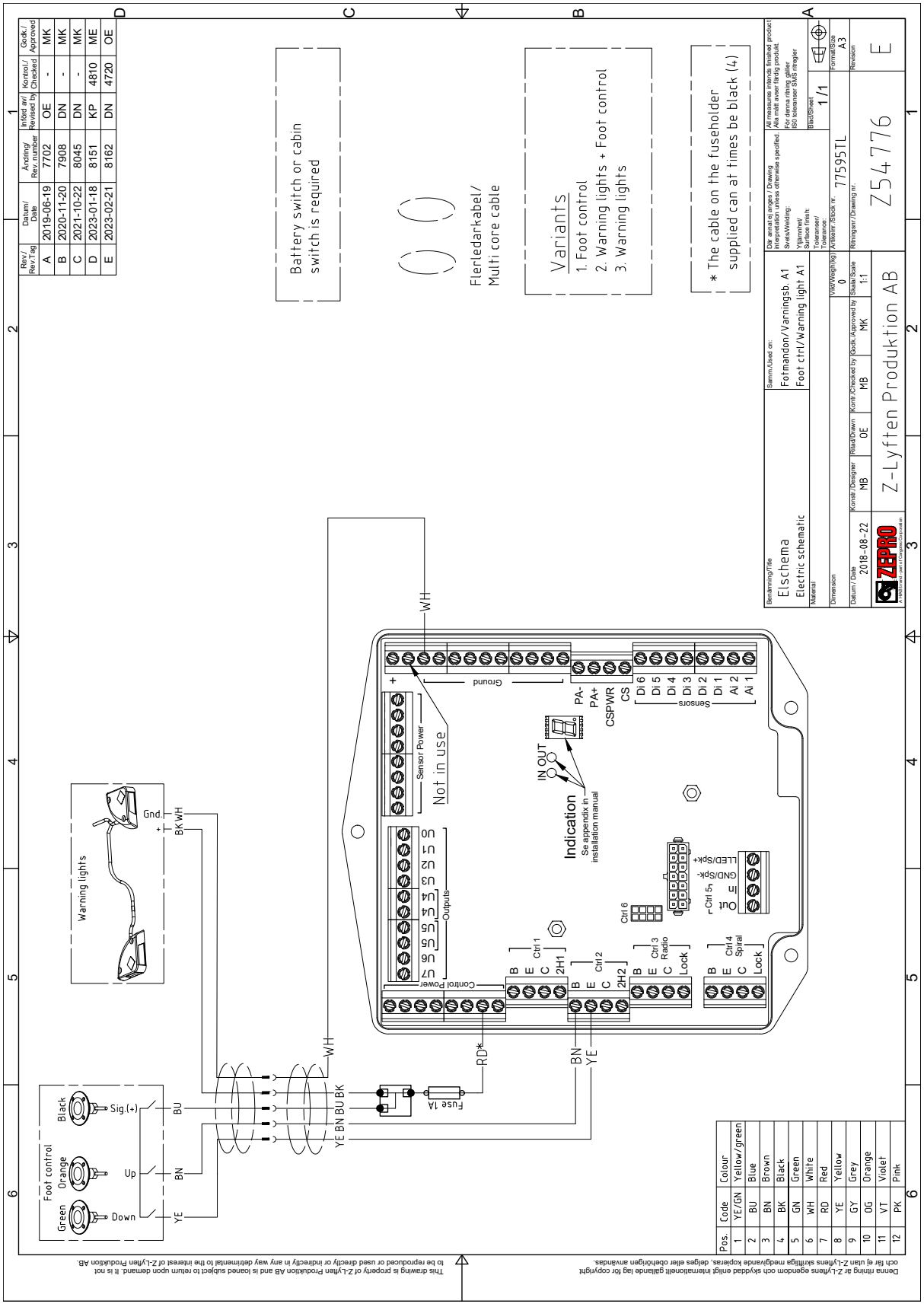
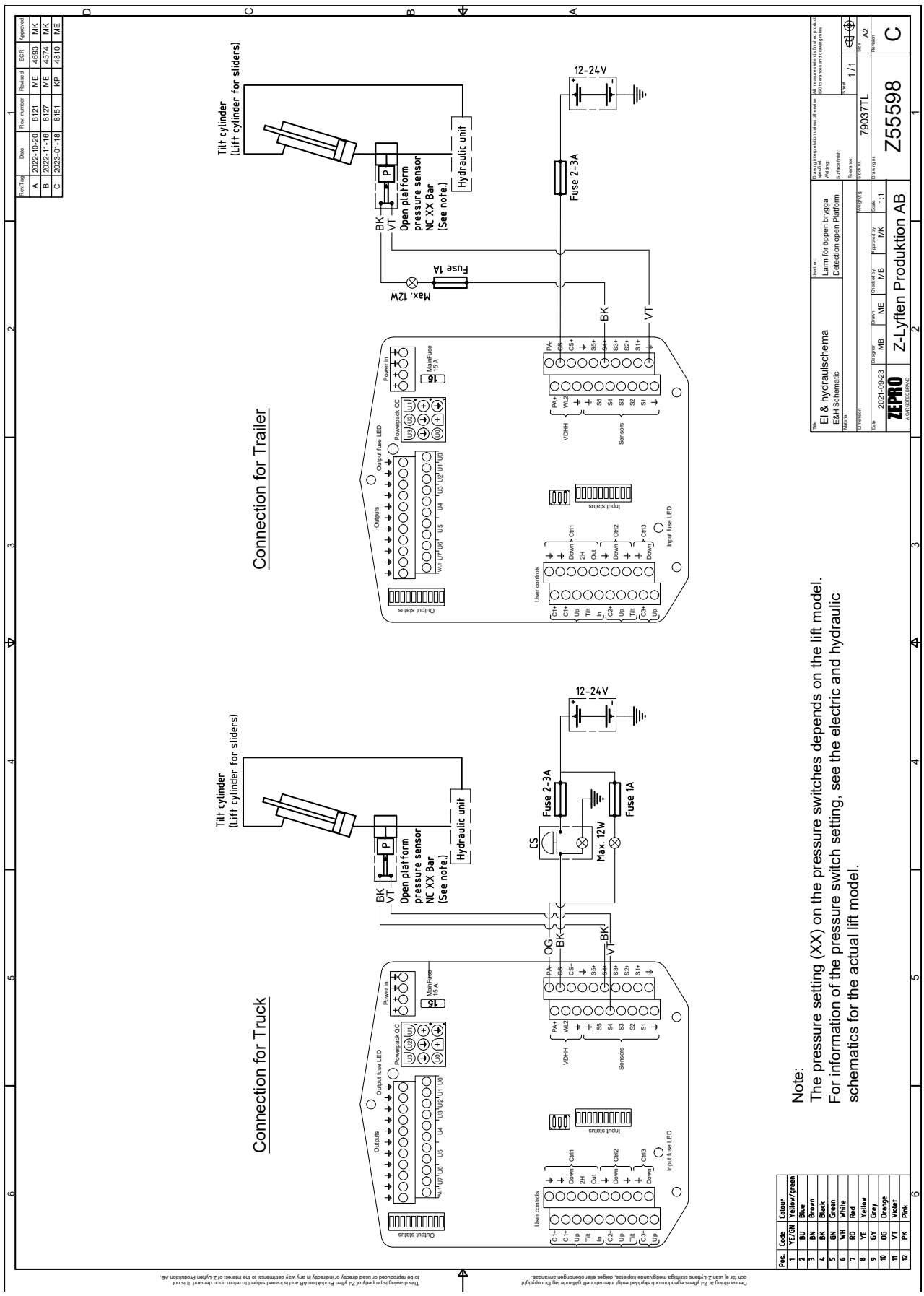
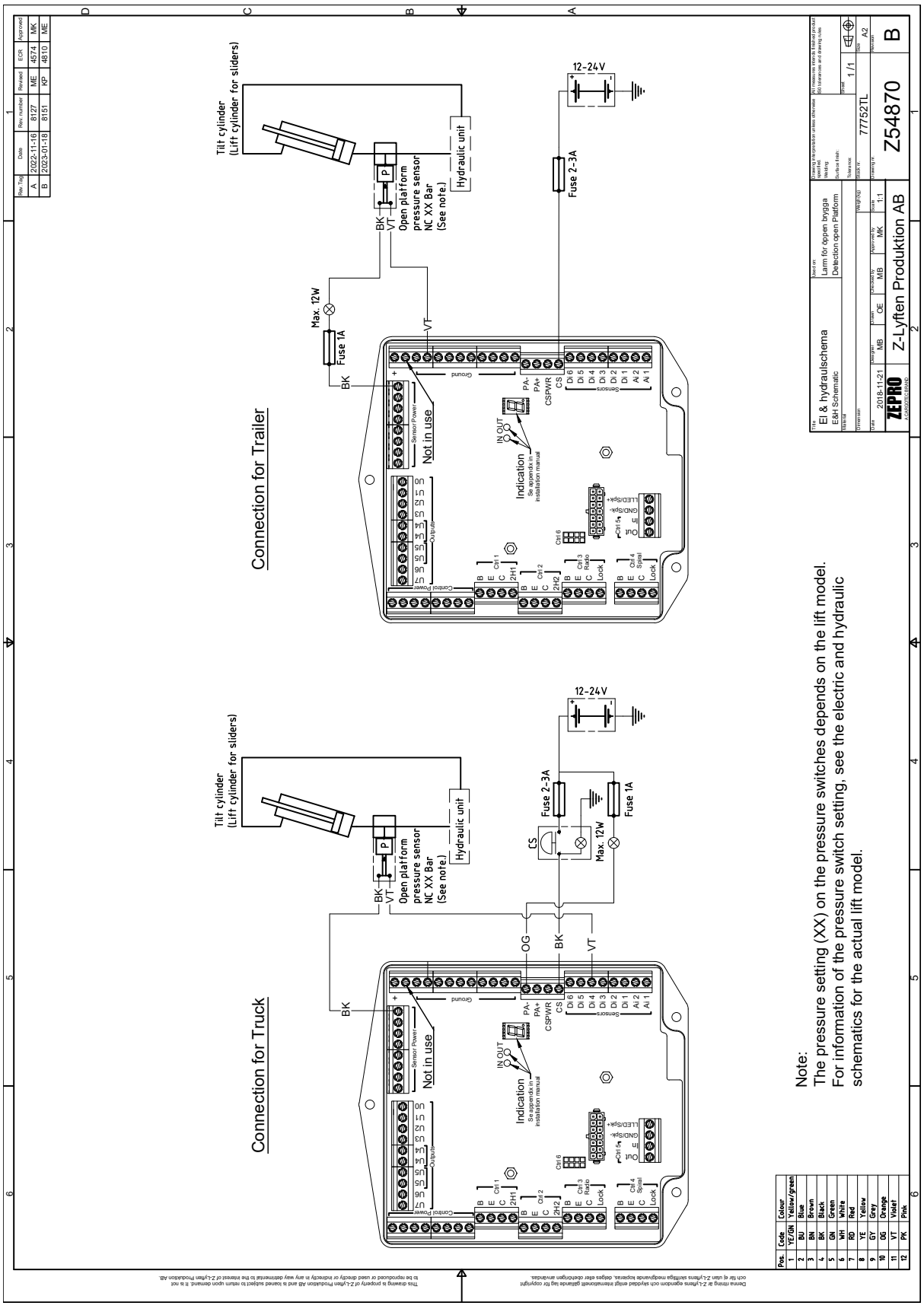
6.7 Warning lighting and foot controls (ZePRO1)



6.8 Cabin switch and open platform alarm (TLC-B1)

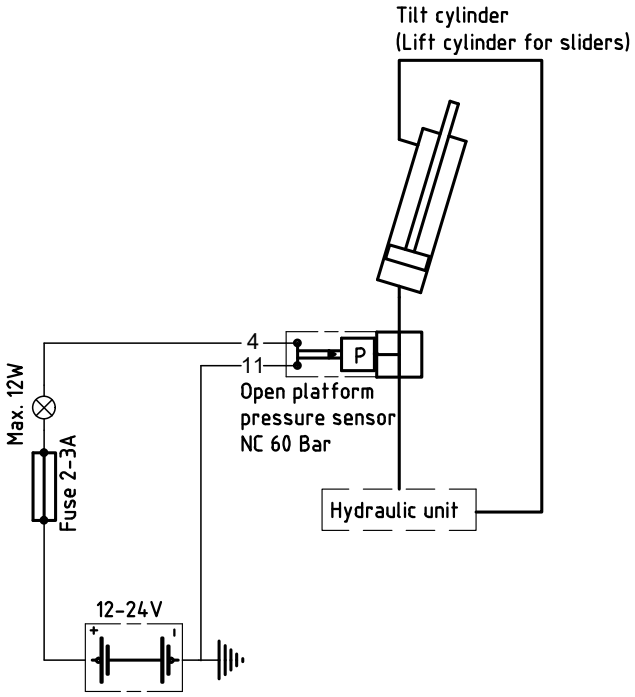


6.9 Cabin switch and open platform alarm (ZePRO)



6.9.1 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 75.
4. When connecting directly to the positive battery terminal, place the fuse (2) on the positive terminal, see Image 75.
5. Connect the main power cable (3) to the fuse box / positive terminal, see Image 75 - Image 76.
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 75 - Image 76.

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.

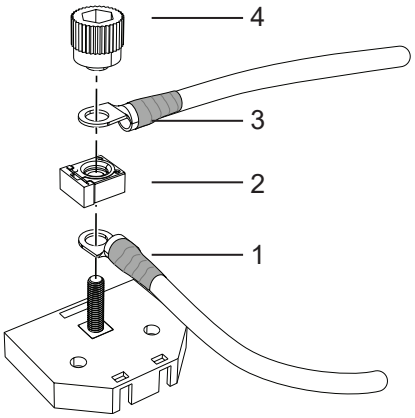


Image 75. Connection to the fuse box

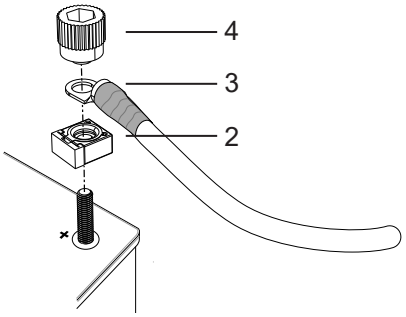


Image 76. Connection to the battery's positive terminal

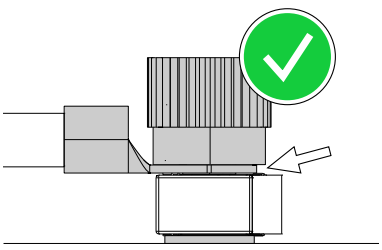


Image 77. Correct installation

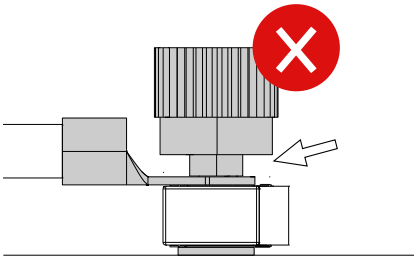


Image 78. Incorrect installation

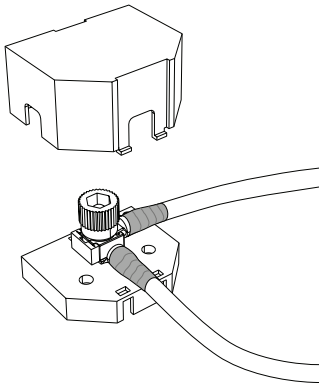
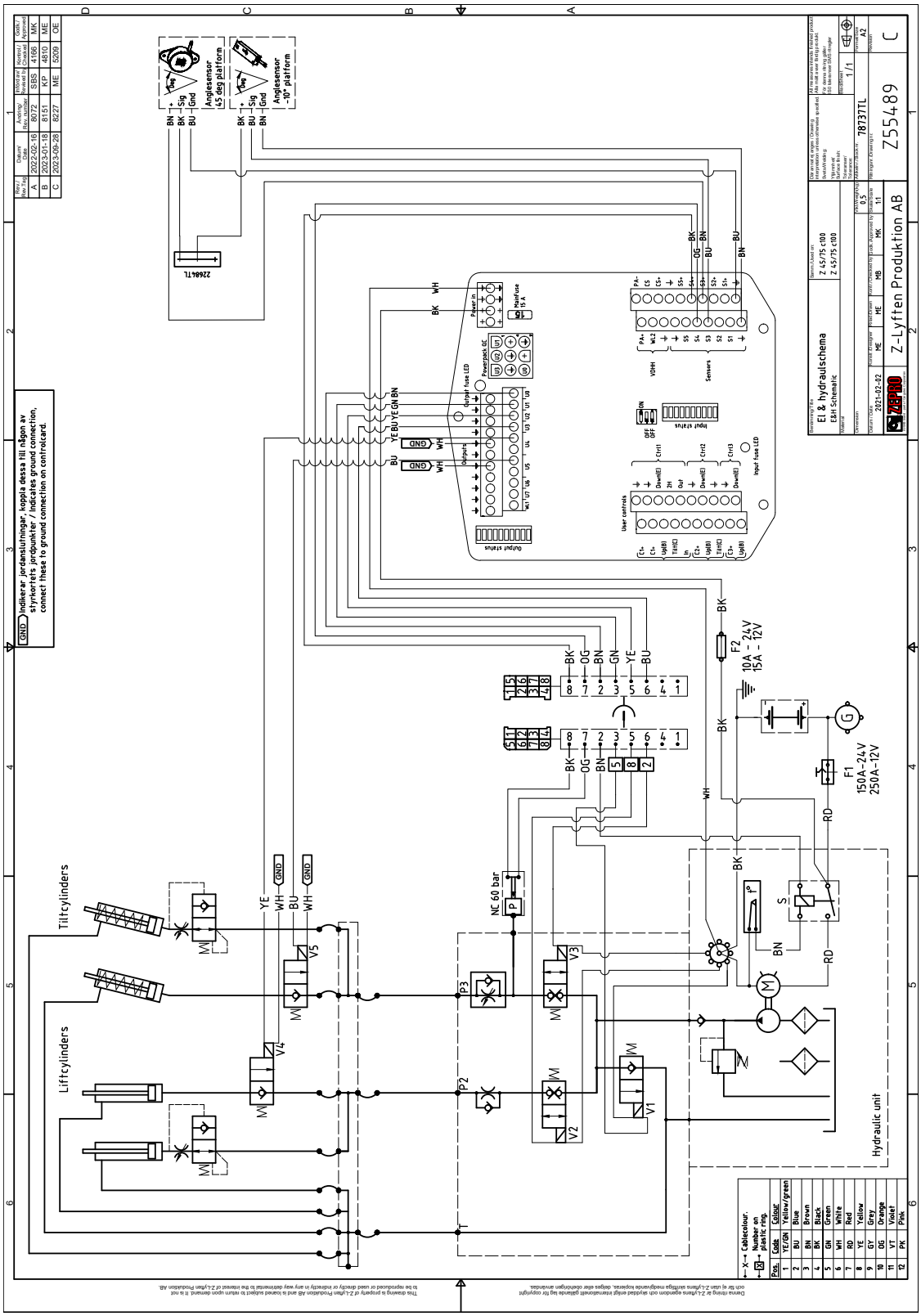


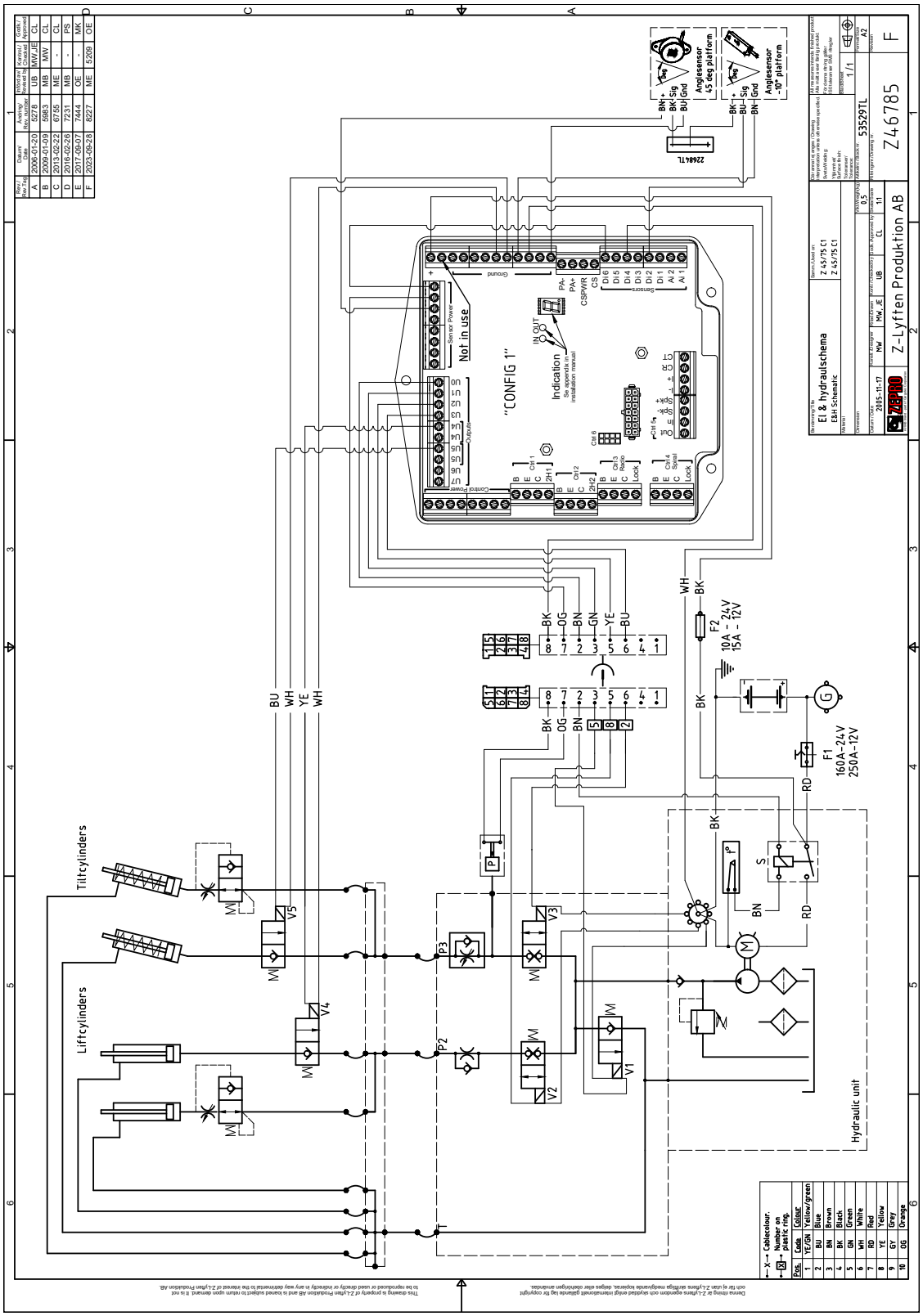
Image 79. Cover, fuse box

8 Electrical and hydraulic diagrams

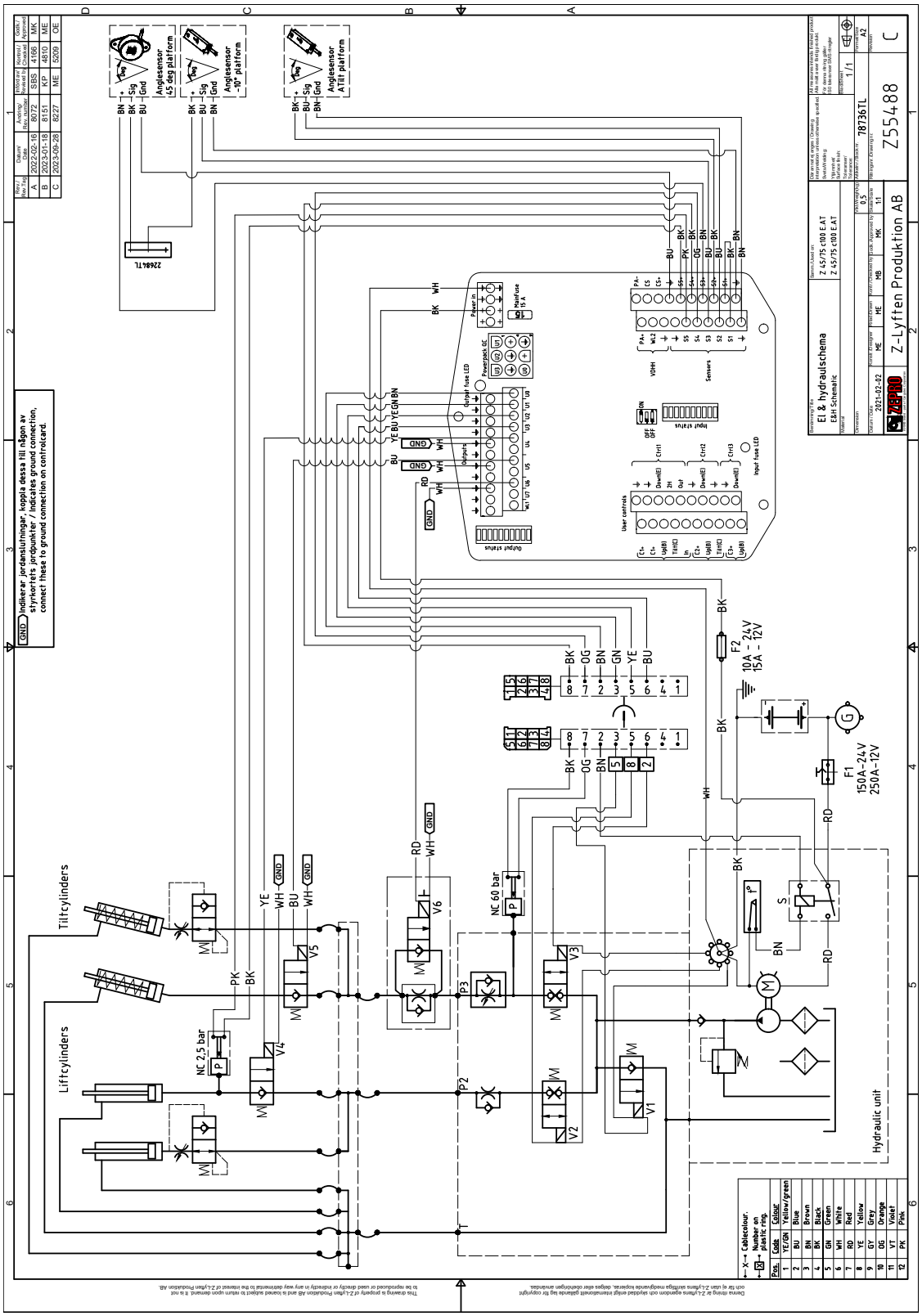
8.1 Z 45/75 (TLC-B1)



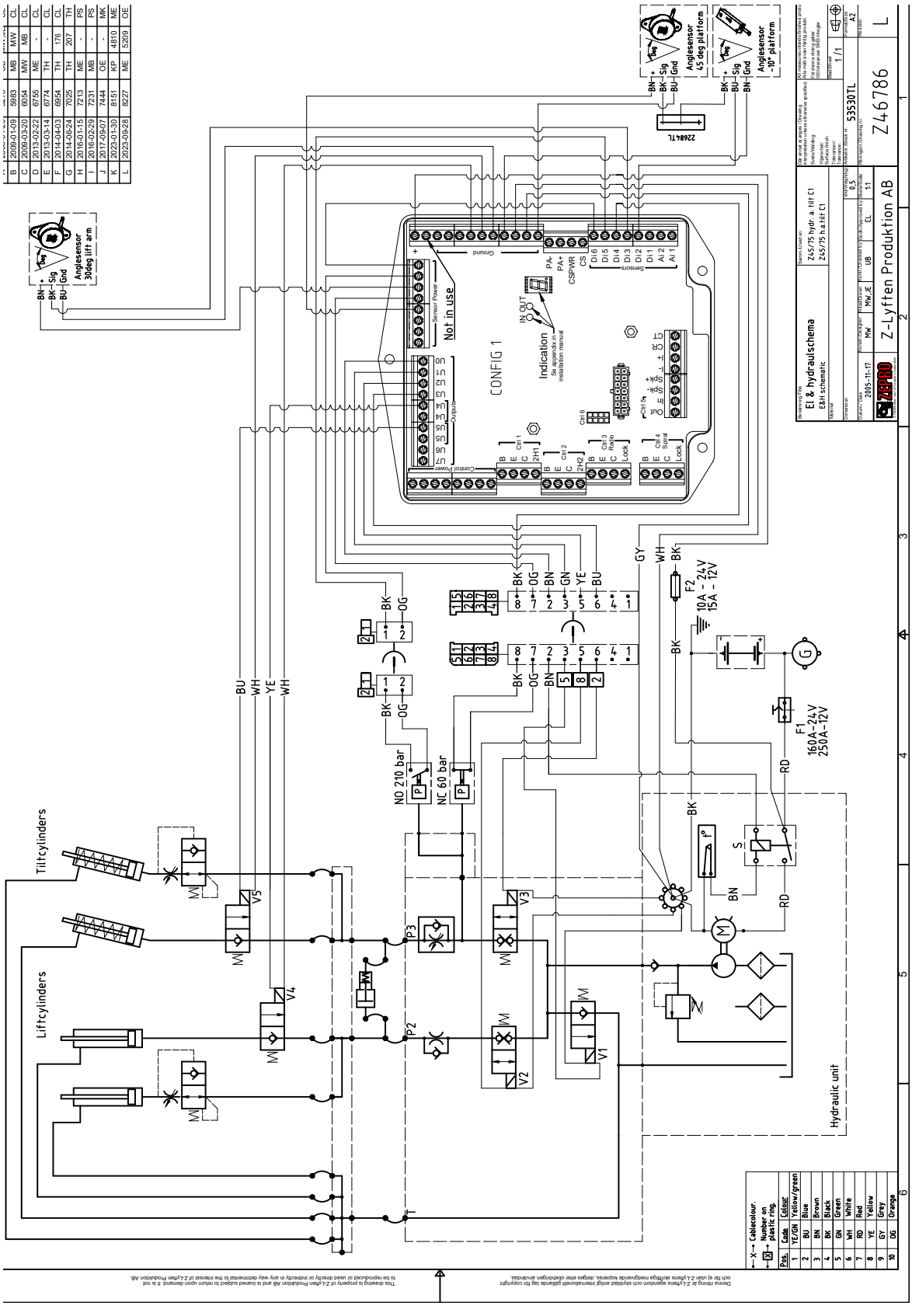
8.2 Z 45/75 (ZePRO1)



8.3 Z 45/75 with electric Autotilt (TLC-B1)



8.4 Z 45/75, with hydraulic autotilt (ZePRO1)



9 Lubrication and oil level check

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

9.1 Lubrication

NOTE!
Use LE lubricant 4622 or the equivalent.

1. Right tilt cylinder, at lower bearing.
2. Right lift cylinder, at lower bearing.
3. Lift arm right side, at lower bearing.
4. Left lift cylinder, at lower bearing.
5. Left tilt cylinder, at lower bearing.
6. Lift arm left side, at lower bearing.
7. Left tilt cylinder, at upper bearing.
8. Right tilt cylinder, at upper bearing.
9. Lift arm right side, at upper bearing
10. Right lift cylinder, at upper bearing.
11. Left lift cylinder, at upper bearing.
12. Lift arm left side, at upper bearing.

9.2 Oil level check

Check the fluid level in the tank during maintenance, 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).

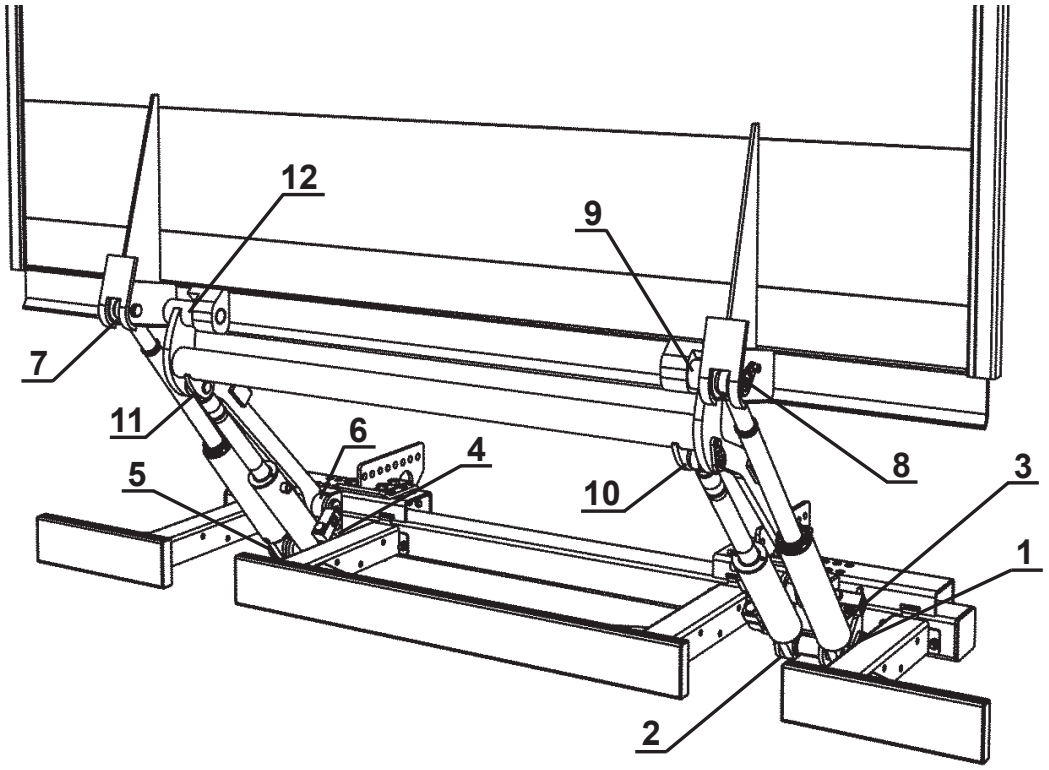


Image 80. Lubrication points

10 Marking

Below, an overview of the location of the different markings is shown. Image of markings and additional information can be found under the relevant subchapter for the following pages.

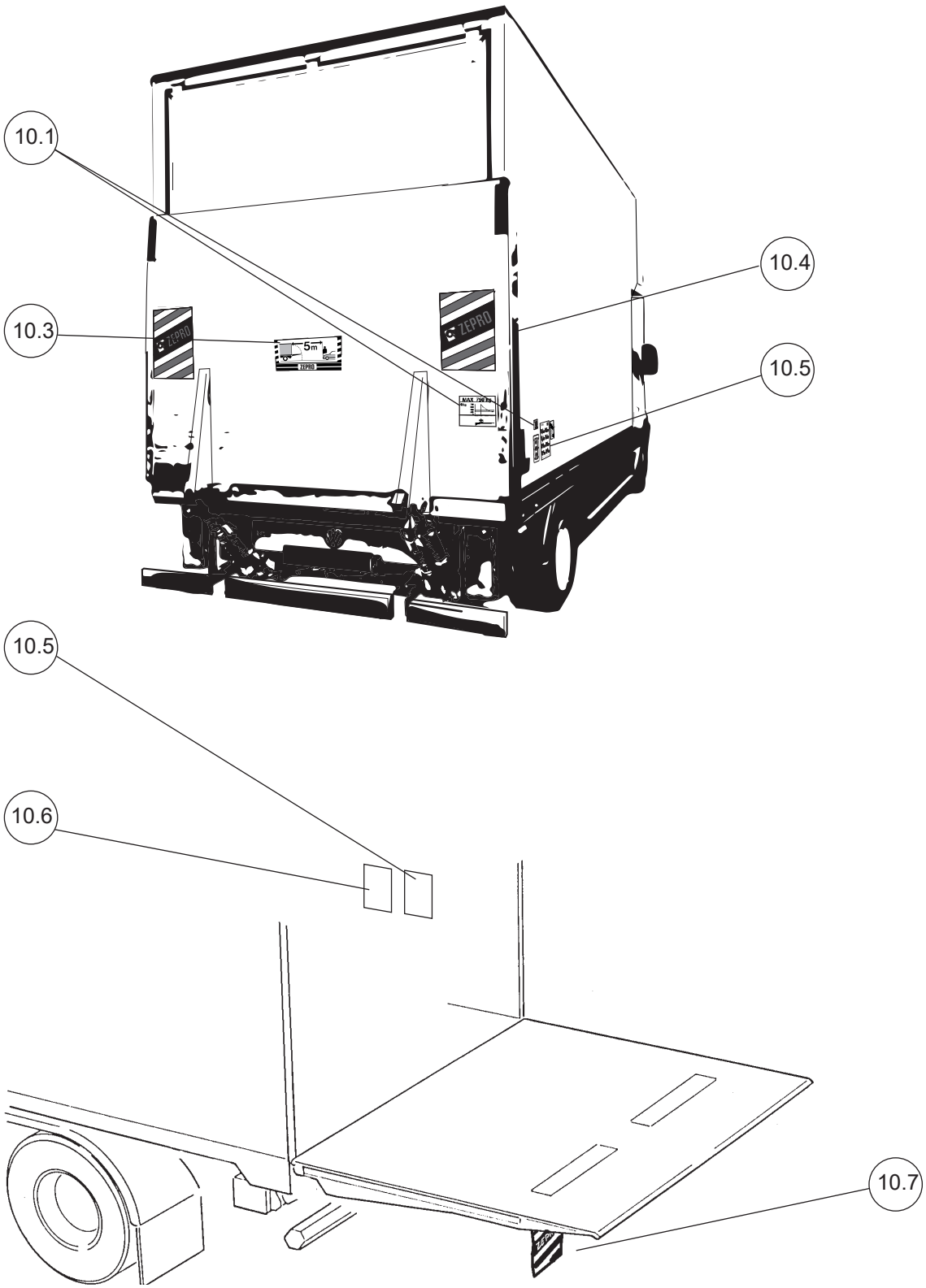


Image 81. Overview of labelling

10.1 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).

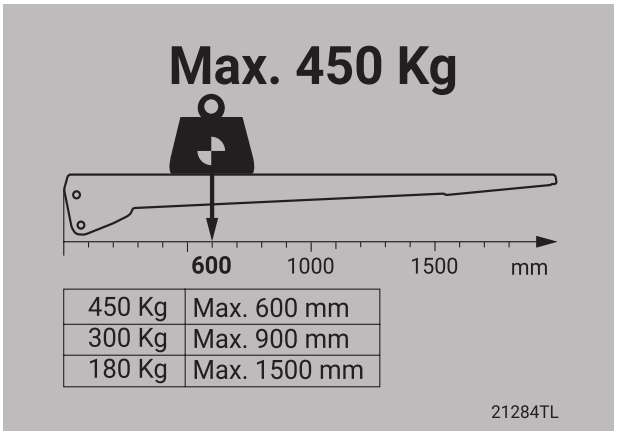


Image 82. Load diagram for load capacity 450 kg, load centre distance 600 mm.

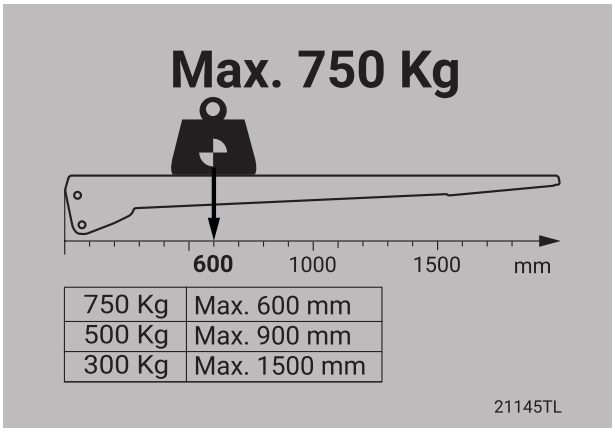


Image 83. Load diagram for load capacity 750 Kg, load centre distance 600 mm.

10.2 Identification plate

Affix the identification plate to the tail lift 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 (URPD)
- Type number for electromagnetic compatibility (EMC)

Image 84. Identification plate

10.3 Work area

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

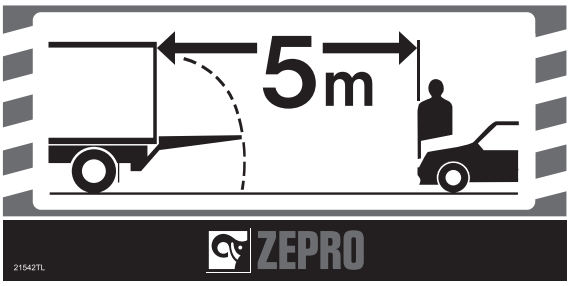


Image 85. Work area

10.4 Warning tape

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

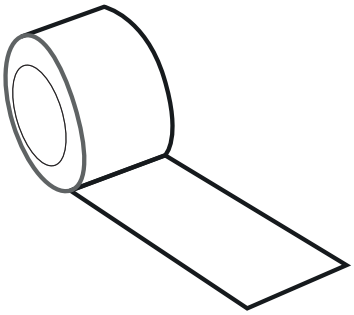


Image 86. Warning tape

10.5 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.

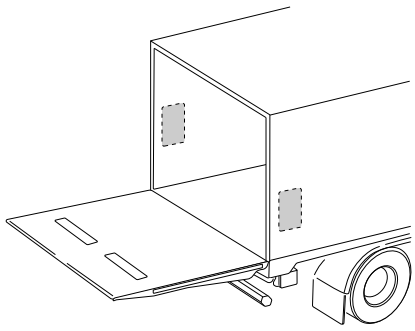


Image 87. Standard mounting

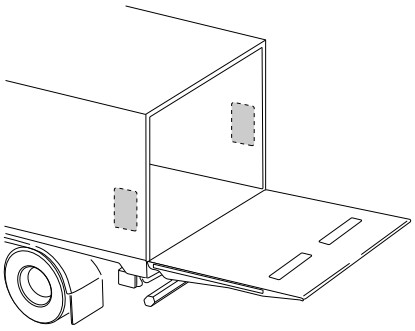


Image 88. Reversed mounting

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*

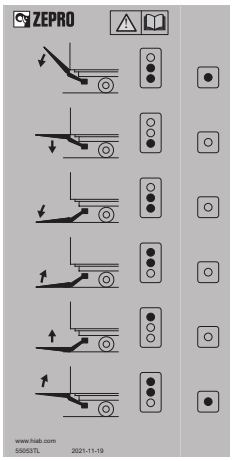


Image 89. Control device sticker for CD 1, 2, 9

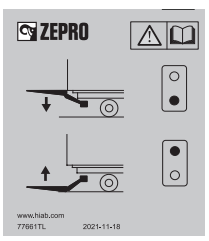


Image 90. Control device sticker for CD 10

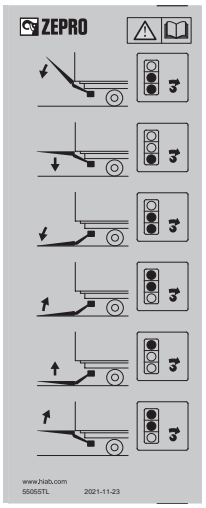


Image 91. Control device sticker for CD 4

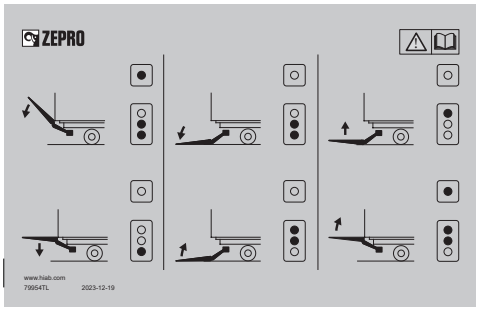


Image 92. Control device decal for CD 1 with the two-hand button mounted above the control device.

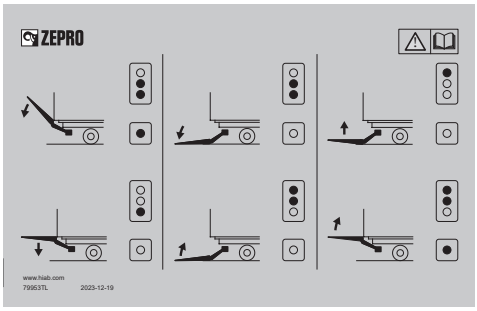


Image 93. Control device decal for CD1 with two-hand button mounted below the control device.

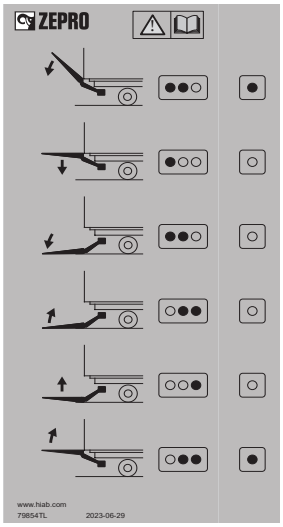


Image 94. Control device decals for CD 1, 2 and 9 for horizontal control device is ordered separately. 79854TL

10.6 Danger area

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

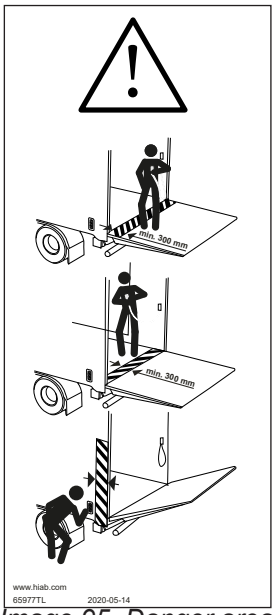


Image 95. Danger area

10.7 Warning flags

Attach warning flags as close as possible to the top and edge of the platform, where there is no risk of them coming loose when the platform is lowered to the ground. Swage the fixing tracks together to secure the warning flags. The flags must be provided with reflective tape.

Image 96. Warning flags

10.8 2-hand operation marking:

Affix decal 79854TL next to fixed controller.

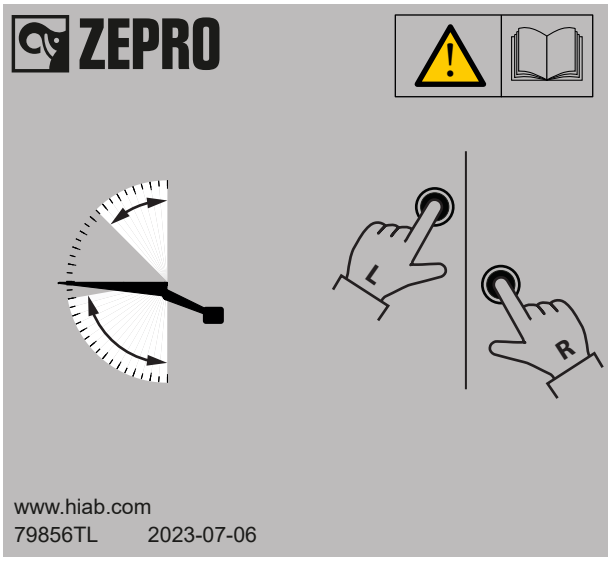


Image 97. 2-hand operation may be required depending on the angle of the platform

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/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 angular direction (points B and C) in relation to the vehicle floor level.

11.1.3 Static load (Test load 1.25 x respective lift load capacity). For lifts with load centre distance of 600 mm.

Capacity	Load 500 kg	Load 1000 kg
	Distance on platform (L)	
450 kg	(450 kg) 675 mm	-
500 kg	750 mm	-
700 kg	1050 mm	-
750 kg	1125 mm	-
1000 kg	1450 mm	750 mm
1500 kg	2250 mm	1125 mm
2000 kg	-	1550 mm
2500 kg	-	1875 mm

11.1.4 Static load (Test load 1.25 x respective lift load capacity). For lifts with load centre distance of 750 mm.

Capacity	Load 1000 kg	Load 1500 kg
	Distance on platform (L)	
1000 kg	940 mm	-
1500 kg	1410 mm	940 mm
2000 kg	1875 mm	1250 mm
2500 kg	2340 mm	1560 mm

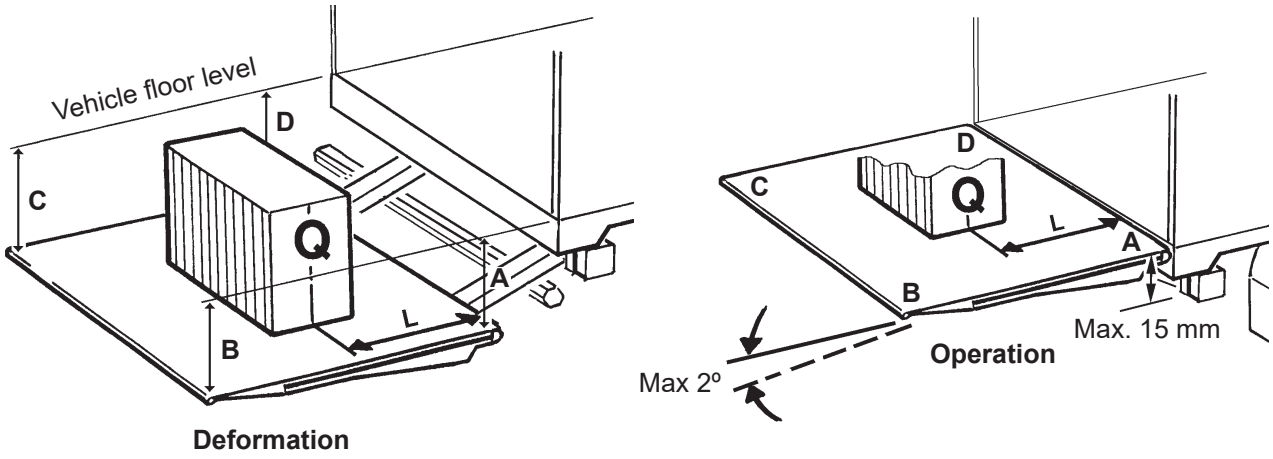


Image 98. Testing and verification

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/lifting capacity).

Check that the lift operates correctly in the normal range of movement, i.e. up, down, tilting at ground level and tilting at 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/lifting capacity).

The test load should be 1.25 x the lift model's max. load. Verify that the tail lift cannot lift the load when the up function is switched on (it may however be 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 cen tre of 600 mm

Capacity	Load 500 kg	Load 1000 kg
	Distance on platform (L)	
450 kg	600 mm	-
500 kg	600 mm	-
700 kg	800 mm	-
750 kg	900 mm	-
1000 kg	1200 mm	600 mm
1500 kg	1800 mm	900 mm
2000 kg	-	1200 mm
2500 kg	-	1500 mm

11.2.4 Dynamic load (Test load 1.0 x respective lift load capacity). For lifts with load centre distance of 750 mm.

Capacity	Load 1000 kg	Load 1500 kg
	Distance on platform (L)	
1000 kg	750 mm	-
1500 kg	1125 mm	750 mm
2000 kg	1500 mm	1000 mm
2500 kg	1875 mm	1250 mm

11.3 Test of safety functions

The tail lift functions must be tested.

Check:

- That the red light in the driver's cab turns off when the platform is completely closed against the body and that it turns on when the platform is opened.
- 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 cannot be activated if the cabin switch is in the off position.
- That the tail lift cannot be activated when the main switch fuse is removed.
- 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 rupture valves is disconnected from the lift and tilting 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 stickers are affixed in their respective positions.
- That the platform's mechanical lock is functioning correctly (where applicable).
- That the instructions for using the tail lift have been left in the driver's cab.
- That the CE declaration of conformity has been completed.

12 Registration

For the tail lift’s guarantee to be valid, the delivery card must be registered in C-care (www.c-office.com). The bodybuilder is responsible for registration in C-care and must certify in the intended location in tail lift's instruction manual that it has been registered.

13 Specifications

13.1 Weights

Many of the lift components are heavy, requiring the use of lifting equipment to get them in place. 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)	
Z-45/75-90	130 kg
Z-45/75-110	136.5 kg
ZL-45/75-90	141 kg
ZL-45/75-110	146.5 kg
ZN-45/75-90	125 kg
ZN-45/75-110	131 kg
ZU-45/75-90	148 kg
ZU-45/75-110	154.5 kg
ZLU-45/75-90	159 kg
ZLU-45/75-110	164.5 kg
ZNU-45/75-90	139 kg
ZNU-45/75-110	145 kg

Aluminium platforms	
Alu. platform 1200x2160 mm	51 kg
Alu. platform 1450x2160 mm	60 kg
Alu. platform 1200x2200 mm	52 kg
Alu. platform 1600x2260 mm	68 kg
Alu. platform 1600x2350 mm	70 kg
Alu. platform 1600x2310 mm	69 kg
Alu. platform 1600x2240 mm	67 kg
Alu. platform 1600x2210 mm	66 kg
Alu. platform 1600x2060 mm	62 kg
Alu. platform 1600x1980 mm	60 kg

Lift components (included in complete lift chassis)	
Support frame Z/ZU 45/75	25.5 kg
Support frame ZL/ZLU 45/75	32.5 kg
Support frame ZN/ZNU 45/75	25.5 kg
Lift arm Z/ZU 45/75-90	20.0 kg
Lift arm Z/ZU 45/75-110	22.5 kg
Lift arm ZL/ZLU 45/75-90	23.5 kg
Lift arm ZL/ZLU 45/75-110	26.0 kg
Lift arm ZN/ZNU 45/75-90	17.0 kg
Lift arm ZN/ZNU 45/75-110	19.0 kg
Complete frame bracket	4.2 kg
Hydraulic unit	13.0 kg
Lift cylinder -90	5.0 kg/pc.
Lift cylinder -110 5.9 kg each	12.2 kg each
Tilt cylinder S -90	7.3 kg/pc.
Tilt cylinder S -110	8.2 kg/pc.
Tilt cylinder SA -90	7.2 kg/pc.
Tilt cylinder SA -110	8.2 kg/pc.
U-protection cpl. ZU	20 kg
U-protection cpl. ZLU	20 kg
U-protection cpl. ZNU	16 kg

Other lift components	
Towing hitch kit Z/ZU	22.0 kg
Towing hitch kit ZN/ZNU	23.9 kg
Towing hitch kit ZL/ZLU	25.5 kg

13.2 Tightening torque

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

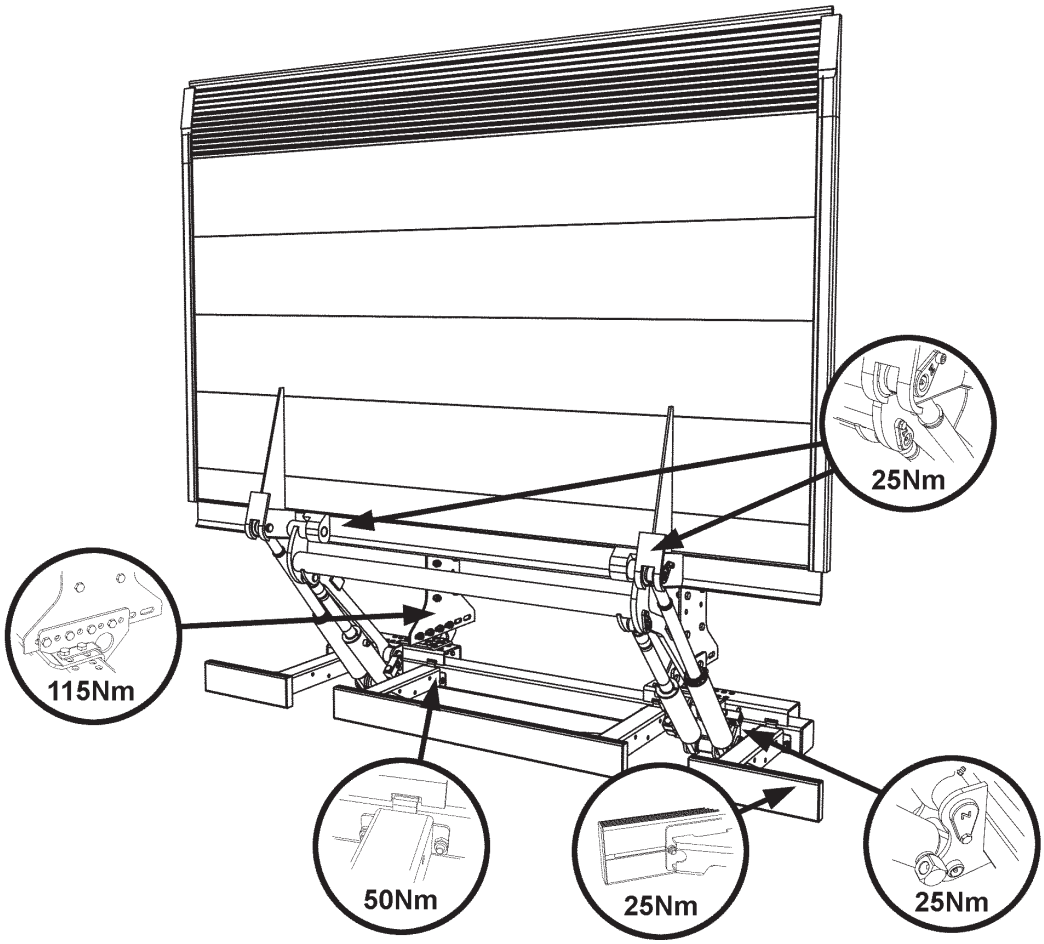


Image 99. Tightening torque

HIAB

BUILT TO PERFORM

Zepro, Del and Waltco are Hiab trade marks 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.