

ASSEMBLY GUIDELINE

3500PLUS

BOX, TAIL LIFT & REGULATIONS



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09-2023 V1.2 EN

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1 INTRODUCTION

These assembly guidelines describe the assembly of the body box and tail lift on a 3500PLUS system. The guidelines are a general description applicable to all types of vehicles and trailer dimensions supplied by BE-Combi Systems B.V. These guidelines are based on current regulations applicable in the Netherlands. The regulations may locally vary per country and therefore may require a different form of assembly.

Always follow the assembly guidelines and adhere to all general safety and environmental regulations at all times. Please contact BE-Combi Systems B.V. in case you have any questions and/or comments.

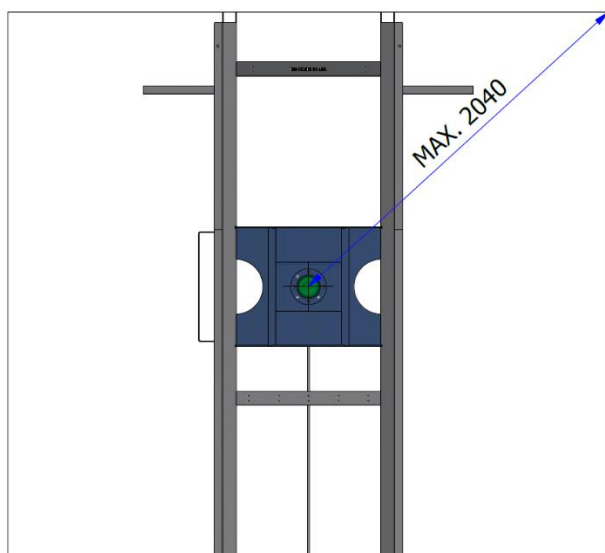
2 GENERAL NOTES



- **CAUTION!** Phase One sticker and chassis number on front of trailer should always be legible



- **CAUTION!** Trailer uncoupling must never be obstructed
- Always avoid attaching boxes and the like in front of the rear axle of the truck as specified



- **CAUTION!** Maximum header radius is 2040mm
- Take into account box structure and cooling engines, for example
- Per type of trailer, the kingpin position and header radius differs. Dimensions available on request at BE-Combi Systems



- **CAUTION!** Never modify trailer axle blocks or longitudinal beams without explicit permission from BE-Combi Systems
- Modifications can negatively affect structural strength



- **CAUTION!** Make sure the connection terminal on the side of the trailer is accessible at all times
- All connections must be fully operatable



- **CAUTION!** Never attach cabling or hoses directly from trailer to truck
- Trailer uncoupling must never be obstructed
- Always place cabling or hoses via a plug or detachable connection to the connection terminal as shown

3 BOXASSEMBLY



- Place Phase Two sticker next to the Phase One sticker and chassis number
- Phase Two sticker must show details of the body-maker and trailer chassis number



- The trailer chassis is coupled to the truck or delivered separately, as shown
- Remove dirt from top of trailer before mounting the box



- The box is delivered in one piece as shown in the picture



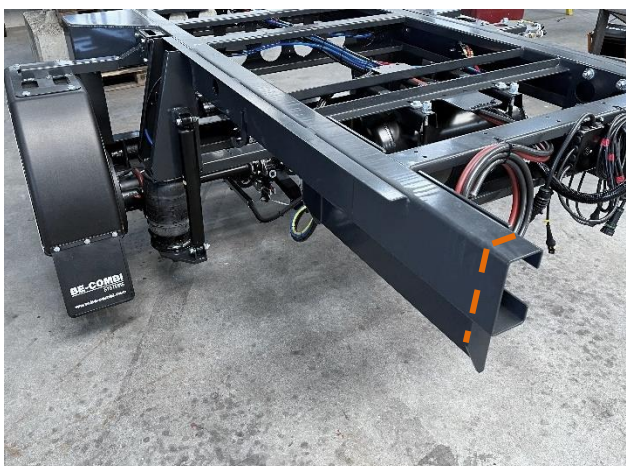
- Depending on the model, assembly parts are stored inside the box



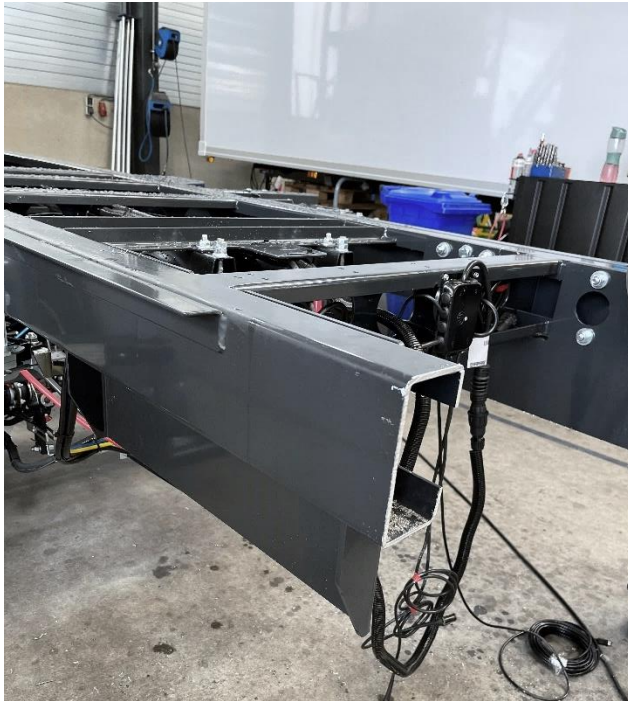
- Measure the box as shown
- Measurement point rear end end of white support frame



- Measurement point front end front side of box



- Apply to the left and right sides
- Mark left and right side chassis end
- **CAUTION!** Measured box length minus 10mm
- Grind, remove and deburr chassis end according to marking (2x)
- Degrease and apply 1 coat of anti-rust primer and RAL7021 topcoat (2x)



- Prepared example of previous step



- Measure hole pattern of front white support
- Mark hole pattern on mounting flange
- **CAUTION!** Centre on the centreline of flange (20 mm from side)
- Drill 2 x Ø11mm holes in mounting flange on the left and right sides in accordance with hole pattern.



- Place yoke with overhead crane on top of box
- Secure slings around the box and to the yoke
- Hoist box above the trailer chassis



- Place the box on the trailer chassis
- **CAUTION!** Place box exactly in centre
- **CAUTION!** Place front side level with front side of trailer



- Align white bracket with hole pattern in flange
- Attach white support frame to flange
- Fasten white support frame

- 4x hex bolt M10x35, DIN931
- 8x washer M10, DIN125A
- 4x locknut M10, DIN985

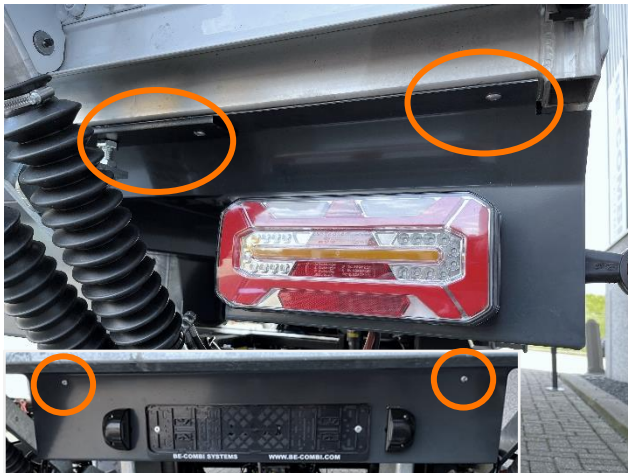


- Attach each box crossbar via beam clip to trailer flange on the left and right sides
- Tightening torque, **54 Nm**, dry, no grease



- Mark the hole pattern of the white support on the longitudinal beam of the trailer
- Drill 2 x $\varnothing 11$ mm holes in mounting flange on the left and right sides in accordance with hole pattern
- Attach rear of box to the rear longitudinal beam as shown

- 6x hex bolt M10x35 DIN931
- 12x washer M10, DIN125A
- 6x lock nut M10, DIN985



- Attach taillight plate with monobolts
 - 4x vertical
 - 2x horizontal



- **CAUTION!** Place 2x stop plate on rear light panel hole pattern with monobolts in case of tail lift assembly

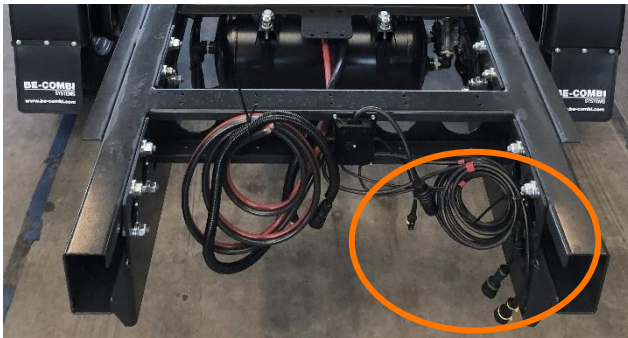


- If necessary, install side shield brackets as shown



- Slide 2x support leg over trailer connection
- Place protection between box and support leg as shown
- **CAUTION!** Support leg capacity only suitable for empty box including cooling motor

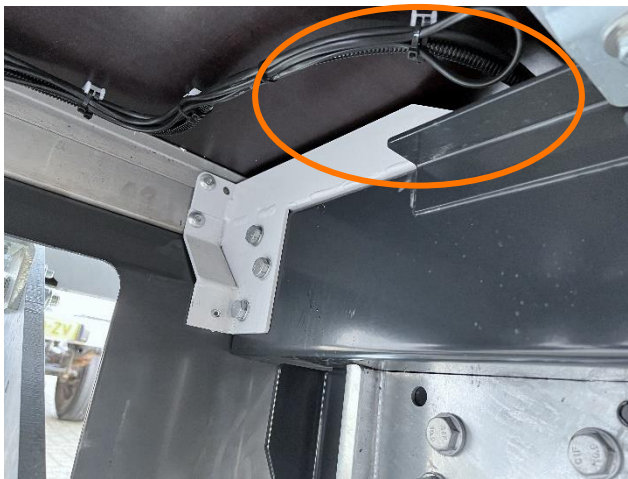
4 LIGHTING



- Roll out light beam at the rear of the trailer

- **CAUTION!**

- Yellow Left (driver's side)
- Green Right (passenger side)

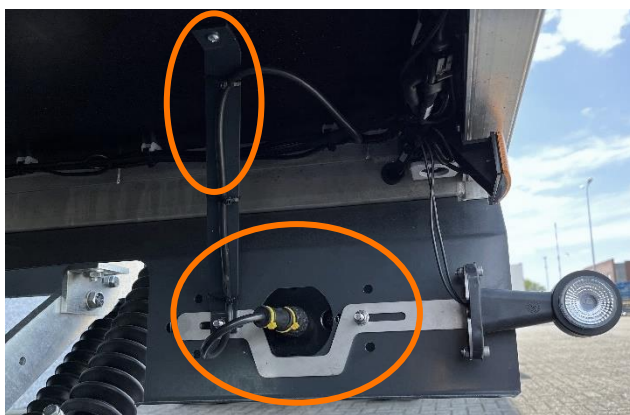


- Route left cable harness on left side over chassis
- Route right side cable harness over chassis
- Attach with tie wraps as shown





- Place left and right taillight unit
- **CAUTION!** Turn the triangle so it is facing upward



- Place and mount width light support
- Place and mount brace
- Connect taillight unit
 - Left Plug, large, yellow
 - Right Plug, large, green
 - 4x lock nut M8, DIN985
 - 8x washer M8, DIN125A
 - 2x Parker 4.2mm x 15mm



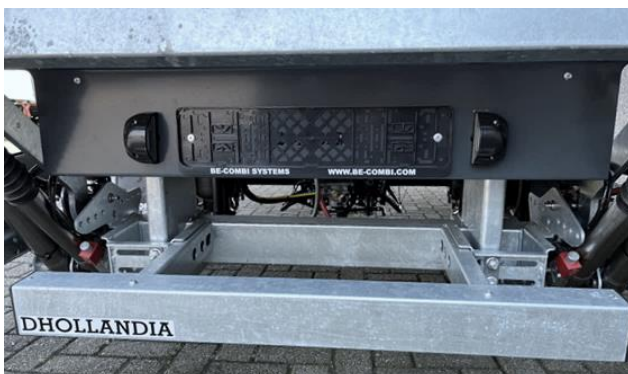
- Place left and right width light
- Do not connect width light
- Place heat shrink tubing around end of cabling width indicator light
- 4x Allen key M6x35, DIN912
- 4x lock nut M6, DIN985
- 8x washer M6, DIN125A



- Connect yellow side marker
- Bundle cabling with tie wraps
 - Left Plug, small, yellow
 - Right Plug, small, green



- Bundle cabling with tie wraps as shown



- Attach 2x license plate indicator lights
- Attach license plate holder
 - 4x cylinder screw M5x25, DIN7985
 - 12x flat washer M5, DIN9021
 - 8x lock nut M5, DIN985



- Connect license plate indicator lights
 - Center Plug, small, yellow
- Secure cabling with tie wraps
- **CAUTION!** Small black plug is an optional connection for an extra reverse indicator light

5 RUNNING BOARD ASSEMBLY



- Apply to the left and right sides
- Place running board bracket against front white bracket
- Place 20mm below top of the longitudinal beam of the trailer
- Drill 4x \varnothing 12.5mm hole in longitudinal beam
- Fasten with bolt and lock nut

- 8x hex bolt M10x35, DIN931
- 8x lock nut M10, DIN985
- 16x washer M10, DIN125A



6 TAIL LIFT ASSEMBLY



- If not already done, mount 2x tail lift mounting plates in existing hole pattern
- Tightening torque: **336 Nm**, dry, no grease

- 16x hex bolt M12x40 10.9, DIN931
- 16x lock nut M12 10, DIN985
- 32x washer weighted M12, DIN7349



- Apply protective tape as shown



- Slide fit frame against rear of box
- Place the fitting frame exactly in the centre of the box
- Lock vertically by means of 2x glue clamp as shown



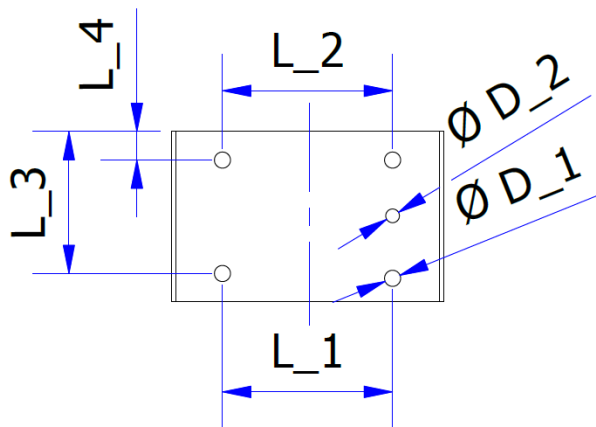
- Lock horizontally by means of 2x glue clamp as shown



- Place tail lift on trolley
- Slide tail lift under trailer
- Align suspension points with fitting frame
- Insert 2x mounting pin as shown

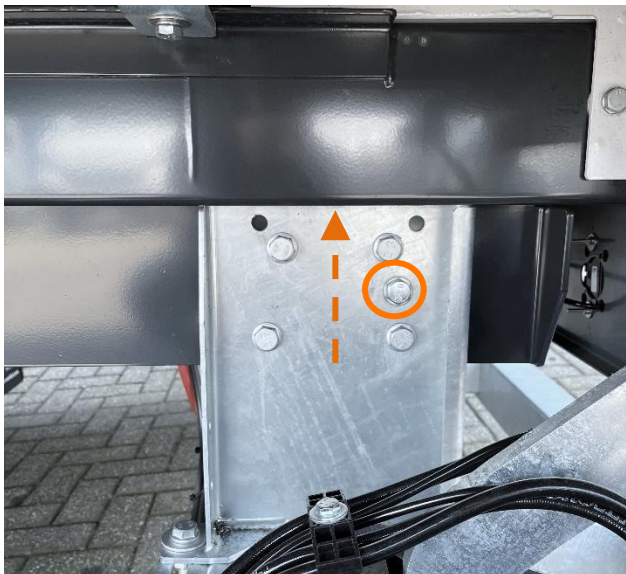


- Draw left and right tail lift support as shown in image below



• Drawing of sizes

- L_1 150 mm
- L_2 150 mm
- L_3 125 mm
- L_4 25 mm



- Apply to the left and right sides
- Mount tail lift supports to tail lift
- Press tail lift supports with hydraulic press against underside of trailer chassis
- Drill hole in $\varnothing 12\text{mm } D_2$ through tail lift and trailer plate
- Tap thread M14 through tail lift and trailer plate
- Insert bolt and nut
 - 2x hex bolt M14x40 10.9, DIN931
 - 2x lock nut M14 10, DIN985
 - 4x washer M14, DIN125A



- Apply to the left and right sides
- Drill 4x hole in $\varnothing 14.1$ mm D_1 through tail lift and trailer plate
- Tap thread M14 through tail lift and trailer plate
- Insert 4x flange bolt and flange nut
- Tightening torque: **234 Nm**, dry, no grease

- 8x hexagonal flange bolt M14x1.5x40 10.9, DIN6921
- 8x flange nut M14 10, DIN6923



- Screw 2x support bolt against bottom stop and fasten it



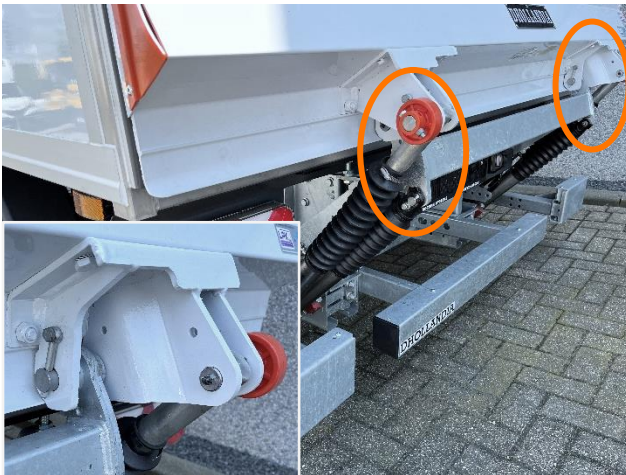
- Route duo cable from trailer to tail lift
- Split cable
 - Power cable red right (passenger side)
 - Ground wire black left (driver's side)
- Secure with tie wraps



- Place cable lug M10 on cable end
- Mount to left connection
- Apply heat shrink tubing



- Lead ground cable to left side
- Route ground cable into box
- Place cable lug M10 on cable end
- Connect in box
- Secure cable with tie wraps



- Mount valve at 4x pivot point and fasten with corresponding bolt



- Mount rain gutter above tail lift rubber
- Fasten with 5x monobolt
- **CAUTION!** Avoid touching gutter with tail lift rubber



- Mount 2x reflector flap in predetermined rail

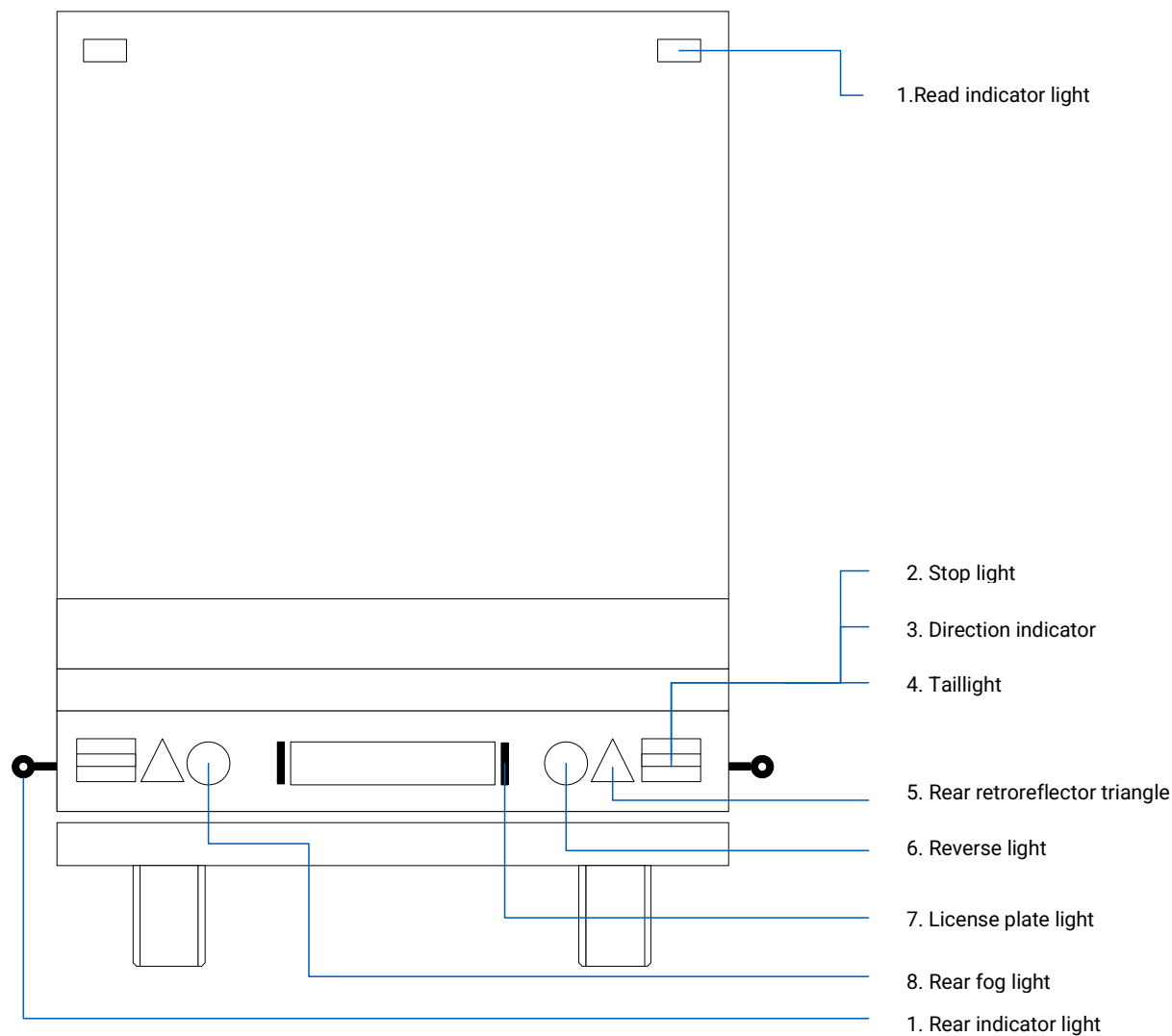
7 GENERAL LIGHTING REQUIREMENTS

Explanatory notes:

- The specified instructions in this manual, are valid at the time of issue hereof.
- Follow the local applicable vehicle authority laws and regulations at all times.
- All mounted lights, must have an E-Label.
- The fitting of retroreflectors, which is not mandatory, should be done in accordance with applicable laws and regulations and have an E-Label.

7.1 Rear of trailer

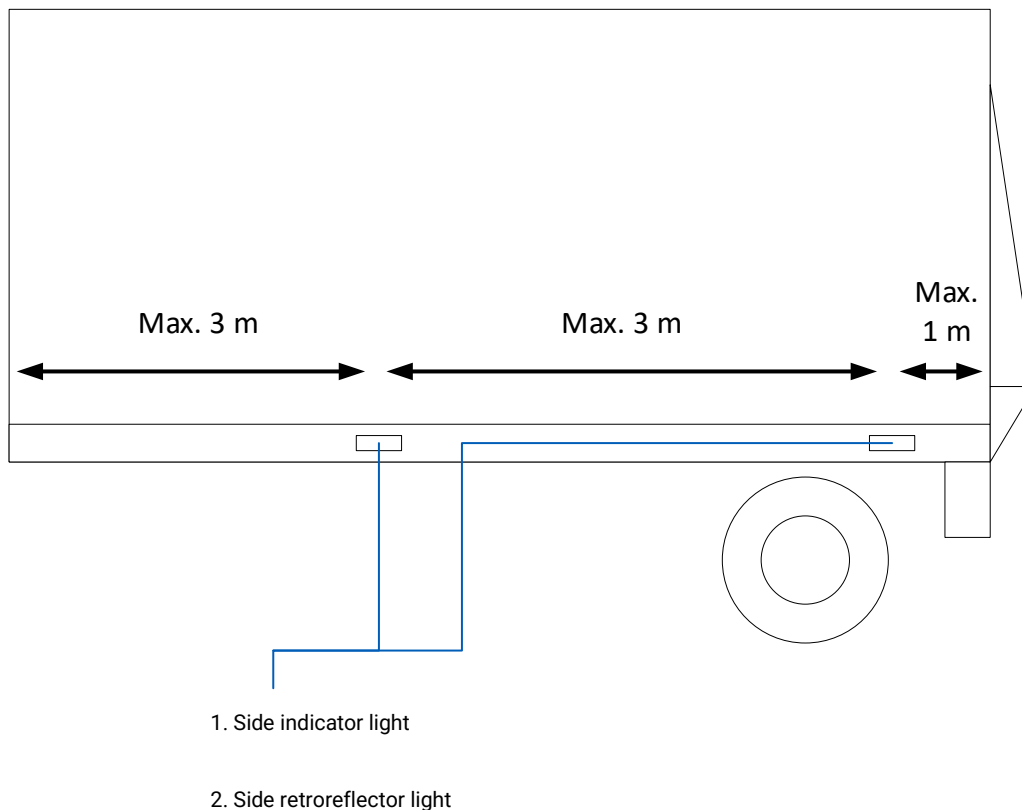
Rear of the trailer must have lighting with the corresponding dimensions as shown below.



Type, rear	Number min./max.	Colour	Height min./max.	Distance mutual	Max. distance relative to outer side
1. Indicator lights	2 / 4	Red	- / see note.	Max.	400mm, see note
Note	<ul style="list-style-type: none"> ○ Place 2x mandatory indicator lights on upper extreme corners of box ○ Non-mandatory indicator lights have no height requirement, but min. 200 mm above taillight and are allowed to project max. 50mm 				
2. Stop lights	2 / 4	Red	350 mm / 1500 mm	-	600 mm
Note	<ul style="list-style-type: none"> ○ 2x additional stop lights not allowed if mandatory stop lights are categorized as S3 or S4 				
3. Direction indicators	2 / 4	Yellow	350 mm / 1500 mm	600 mm	400 mm
Note	<ul style="list-style-type: none"> ○ - 				
4. Rear lights	2 / 4	Red	350 mm / 1500 mm	600 mm	400 mm
Note	<ul style="list-style-type: none"> ○ No restriction on distance from outer additional rear lights 				
5. Retroreflector triangle	2 / see note	Red	250 mm / 900 mm	600 mm	400 mm
Note	<ul style="list-style-type: none"> ○ Additional retroreflectors are allowed if mandatory lighting is not interfered with 				
6. Reverse lights	1 / 2	White	250 mm / 1200 mm	-	-
Note	<ul style="list-style-type: none"> ○ - 				
7. License plate lights	See note	White	- / -	-	-
Note	<ul style="list-style-type: none"> ○ Entire license plate should be lit by 1x or 2x light(s) 				
8. Rear fog light	1 / 2	Red	250 mm / 1000 mm	-	See note
Note	<ul style="list-style-type: none"> ○ Distance to the stop light must be more than 100 mm 				

7.2 Left and right side of trailer

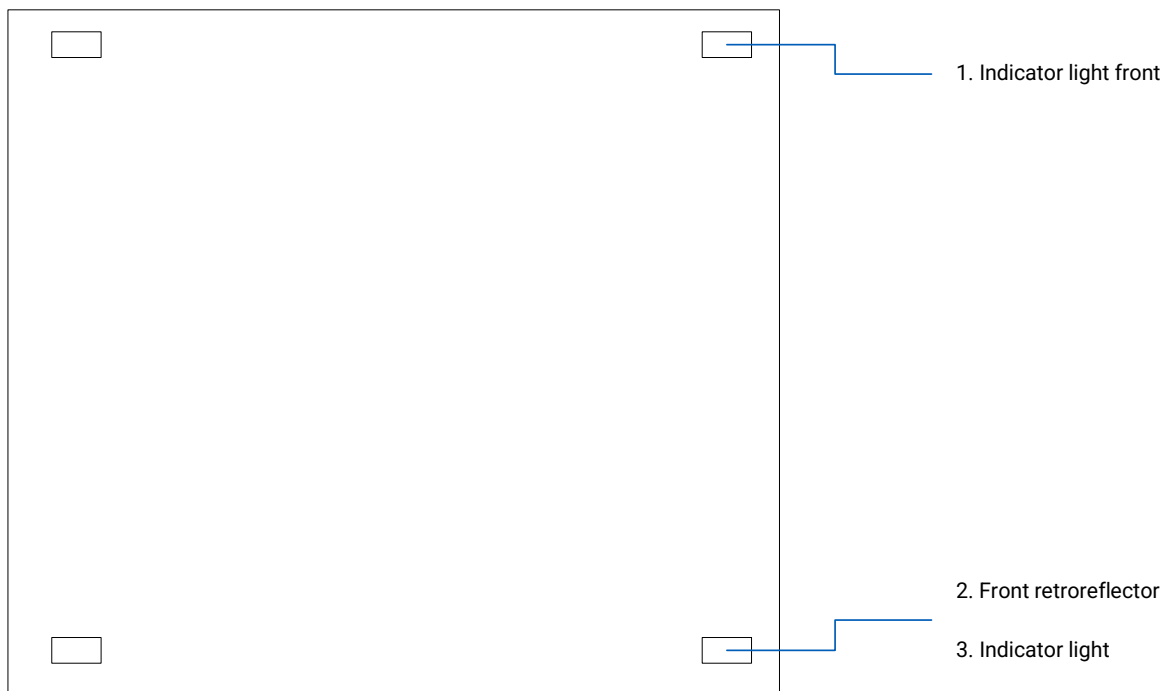
Left and right sides of the trailer should have lighting with the corresponding dimensions as shown below.



Type, side	Number min./max.	Colour	Height min./max.	Distance mutual	Max. distance relative to outer side
Indicator lights	See note	Yellow	250 mm / 1200 mm	Max. 3 m	3 m / 1 m, see note
Note	<ul style="list-style-type: none"> ○ Integrated indicator light and retroreflector is permitted ○ Number depending on trailer length ○ Max. 3 m from front, max. 1m from rear 				
Retroreflector	See note	Yellow	250 mm / 1200 mm	Max. 3 m	3m / 1 m, see note
Note	<ul style="list-style-type: none"> ○ Integrated indicator light and retroreflector is permitted ○ Number depending on trailer length ○ Max. 3m from front, max. 1m from rear 				

7.3 Front of trailer

The front of the trailer must have lighting with the corresponding dimensions as shown



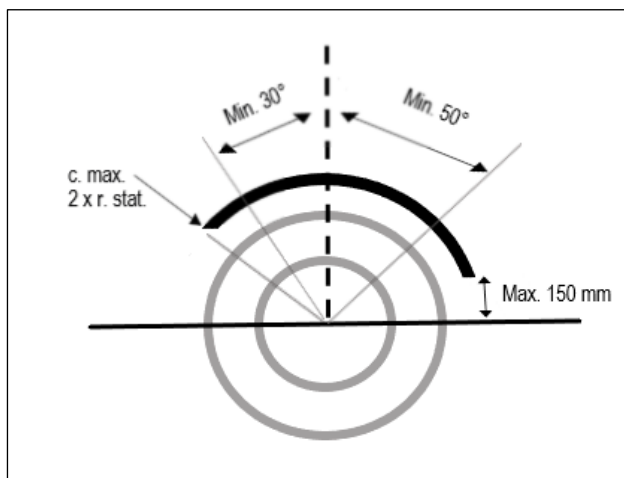
Type, front side	Number min./max.	Colour	Height min./max.	Distance mutual	Max. distance relative to outer side
Indicator lights	2 / 4	White	See note	-	400 mm, see note
Note	<ul style="list-style-type: none"> ○ Always place indicator lights preferably on the upper extreme corners of box 				
Retroreflector	2 / 4	Wit	250 mm / 900 mm	600 mm	150 mm
Note	<ul style="list-style-type: none"> ○ 2x additional retroreflectors are not allowed to interfere with 2x basic retroreflector ○ If a height of 900 mm is not possible, a max. 1500 mm is allowed 				
Front light	2 / -	Wit	250 mm / 1500 mm	600mm	150 mm
Note	<ul style="list-style-type: none"> ○ Width light may protrude max. 50mm outside of the box ○ If a height of 1500 mm is not possible, max 2100mm is allowed 				

8 GENERAL SHIELDING REQUIREMENTS

Explanation:

- The specified instructions in this manual are valid at the time of issue hereof.
- Follow the local applicable vehicle authority laws and regulations at all times.
- 3500PLUS trailer comes standard with the correct wheel shielding.

8.1 Wheel guard



- Wheel guard must cover minimum area as show

8.2 Side guard

Depending on the country and applicable legislation, the trailer should be provided with side guides within the dimensions as shown below.

