

# Series 13x-2



Please read these instructions completely before commencing the installation.

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Please note that no claims can be derived from the information, illustrations and descriptions in this manual.

## 1. Preparatory work/Human resources

This manual explains the assembly of kits 133-2 to 139-2. For this, 1-2 mechanics with training as a vehicle and car body constructor, or equivalent training, are required depending on the size of kit. **It is important that you observe the safety and warning instructions on page 6.**

- The ambient temperature for components, as well as adhesives and sealants must be at least 15 °C. Provide the necessary tools and equipment (page 7).
-  Secure the overall kit against tipping over, as well as its individual assemblies. These are stored on the pallet in the order they are required for construction. Therefore, only cut the red tape securing each component on removing of assembly.



- Assemble on a flat surface. To protect the painted components and to facilitate alignment, place e.g., wooden panels 300 x 300 mm (thickness min. 20 mm) or similar at the corners of the front wall/side wall and side wall/rear frame. The corner posts must not be sealed from below, as they may still need to run cable.
- You can run the installation directly on an insulated floor. To make accessible all-round, it must be elevated, e.g. on double-pallets (e.g. must not project), on jack stands or on an assembly dolly. To ensure the walls lie evenly on the floor, the floor must not sag.
- For „board on board“ kits, first remove the lower 2-3 rows of board on the walls to install the floor well.

## 2. Assembly of the kit

### 2.1 Assembling the front wall and the first side wall

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 Remove the front wall from its transport unit with a crane, place it centred on the shims, and secure it against tipping over.

- On an insulated floor, insert a sealant bead (see 2.9) under the bearing surface of the wall elements. Place on the wall and screw it on using the attached SPAX screws. The rear corner posts must protrude 35 mm above the floor to ensure that the frame cross-members are flush at the bottom.



- Remove the sidewall and slide it onto the front wall at a right angle, then remove it and then place it down. For the crane work, you can also use a vacuum lifting beam instead of the clips and lifting beams shown here.
- 
 The sidewall remains in the crane while a mechanic secures the assemblies outside. The second person turns in 3 - 4 screws MD 100224 (torque 10 Nm ± 1) on the inside up to about three quarters of the height of the trunk, starting at the bottom, until the panels are compressed. Use the cut-throughs as an assembly aid if necessary.

In kits with wall inner linings, we recommend use of a bit extension, length approx. 100 mm, or a flexible bit holder.



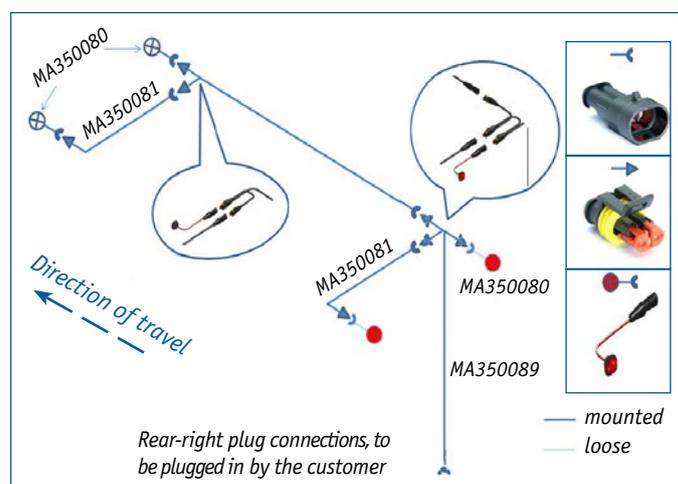
### 2.2 Installation of the second side wall

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 Place on the second sidewall in the same way, and align it at right angles to the front wall. The wall remains in the crane for now.

Once more turn in 3 - 4 screws MD 100224 up to about three quarters of the height of the trunk, starting at the bottom, until the panels are compressed and the required torque is reached (10 Nm ± 1).

- On an insulated floor, insert a sealant bead (see 2.9) under the bearing surface of the wall, erect the wall and screw it onto the floor using the enclosed SPAX screws.
- For kits with front-end position lamps without a pre-assembled wire harness, guide the lamp cable down through the columns. This workstep is unnecessary if the cable set is pre-assembled. This diagram illustrates how the pre-assembled cable set is laid in the structure:



### 2.3 Installing the frame cross members

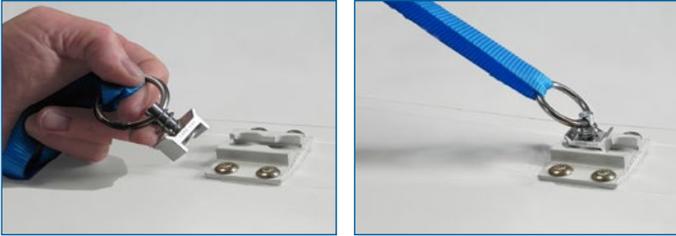
- Now position the supplied lower frame cross member between the frame pillars.
- Secure the cross member from the outside of the columns with 2 screws each, M 10 x 60 mm. Do not tighten the screws yet!



- Check, and correct if necessary, the angularity and lengths of the diagonals of the parts assembled until now. On an insulated floor, tighten the SPAX screws in the floor panels.

## 2.4 Placing on and securing the roof

- For a kit with doors, loosen the door retaining bands before placing the on roof; however, the doors must still remain secure against flapping open.
- Place the roof into the horizontal and hook the single-stud fittings into the roof mounting brackets. **The fittings must be tight!**



- Clean the front roof caps inside with adhesive cleaner and let it dry 5 minutes in the air. Then apply sealing compound on the inside of the sealing surfaces.
- For a kit with top tailgate, remove it from the transport rack and attach it to the cantrail at the holes provided on the hinge using mounting screws 6.3 x 22 mm (included in the material from the top gate).

- Slide the top frame gussets from the side into the frame cross member so that the tip is pointing down. For kits with position lamps, insert these into the cross member.



Fix each of the gussets with 2 countersunk screws M10.

-  Lift the roof with suitable lifting gear and lifting beams onto the single-stud fittings. Or you can use a vacuum lifting beam. Never stand under raised loads, lift the roof only horizontally, never suspended at an angle!



- Centre the roof on the top chord of the front wall. The roof caps grip via the corner posts. Align the roof onto the wall panels. Fix it on the front wall with 3 screws evenly distributed across the width.

**Note:** The screws may not be tilted. At the rear, lower the roof almost entirely, but leave clearance for the wiring of approx. 10 - 15 cm.

- If they are installed in the roof from the inside and/or in brake lights, pull the cable through the frame pillar before attaching the roof. Run the cable through the bottom opening, pointing forward.
- If the cable set is pre-assembled, plug the connections in accordance with the sketch. Now slide one plug connection into the right cantrail, one into the frame cross member and one into the frame pillar. For the BR 139-2, a cable can also be laid above the sidewall.



**Attention:** Cable and connectors must not be crushed.



- Lower the roof slowly, so that the downward-pointing tips of the frame gussets centre themselves in the frame pillars.

- Fix each of the gussets in the frame pillars with 3 M 10 countersunk screws MD 100329, positioned towards the face end (hand tight only!). If the cable set is pre-assembled, slide the cable laid in the edging board up and in when lowering the roof into the pillar section. Otherwise, there is a risk of crushing the cable.



- Turn three to four screws M6 MD 100224) in the connection from the side wall – roof until the required torque is reached (10 Nm +/- 1 Nm).



## 2.5 Assembling the frame, from doors, top gate or sliding door

- Measure the frame diagonals and correct them if necessary until they coincide with each other.

- Tighten the screws of the frame gussets M 10 x 18 (MD 100329) and the frame cross member at the bottom M 10 x 60 (MD 100328) to the correct torque (see 6.2).



The rear surface of the cross member must be on a plane level with the rear surface of the pillars.

- Now turn the remaining M6 screws MD 100224 into the pillar connections from bottom to top the face wall/roof connection crossways, and the side wall/roof connection from front to back, until the torque of 10 Nm +/- 1 Nm is reached.

- Remove the single-stud fittings from the roof mounting brackets.
- Close the rear doors to check the correct fit. Insert the doors using the screws in the hinge inserts, or if necessary – depending on door model – also using the counter bracket at the frame cross members.
- For kits with top gate, seal the transitions (as described in 2.7 E). Then snap the gas springs of the flap onto the ball heads.

- If the frame column has a built-in seal, secure the flap against lateral motion during operation using the mounting screws as shown in **A**.



- If the frame column does not have a built-in seal, then the door must be secured against lateral motion during operation by two angle brackets, as shown in **B**.



- For kits with sliding door, this must be installed in accordance with the instructions „Installing DP 25HR-d 2007“. Rivet the guide rails to the pre-assembled horizontal and vertical top hat sections.

## 2.6 Fitting the rear roof corners

- Apply mastic, as shown in the picture, to the contact surfaces of the rear roof corners (inside) at the side and top. Place the corners onto the roof.
- Drill holes from above with a diameter of 5 mm to the centre marks through each corner and the frame cross member.



**Be sure to take into account the routing of cable in the frame cross member; this must not be damaged.**

- Place 2 pop rivets  $d = 5$  mm.
- Remove any mastic escaping from the corners.



## 2.7 Sealing



- Using the kit adhesive cleaner, first clean the sealing surfaces **C**. Leave these 3 minutes to dry in the air.
- Now seal the front roof corners at the bottom **D**, the rear roof corners all around **E**, the connection to the upper edging board and the frame pillar at its top end, as well as the contact surfaces to right and left of the frame pillar and frame cross member; finally, seal the rivets from above to seal the roof corners.

Also, from the sides and the front, also seal the vertical gap between the bottom chord and the front or rear pillar on each side **F**.



- On an insulated floor, seal this from below up to the bottom chord at the sides and front, as well as up to the frame cross member.
- **Attention:** The seals should only be pressed in and smoothed using smoothing agent or water – without soap additives **G**.



## 2.8 Fixing the insulated floor onto the chassis

For the substructure, use the assembly instructions provided with it. We recommend you assemble the substructure directly on the horizontally and torsion-free aligned chassis.

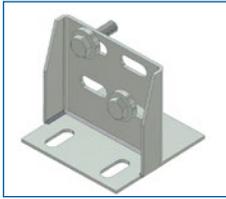
Observe the construction and modification instructions of the respective chassis manufacturer, in particular the positioning and the type of connection of the substructure, flexible or rigid. Possible modifications such as holes must be carried out by the vehicle manufacturer, and are not subject to claims.

- Align the longitudinal chassis beam in such a way on the chassis that the slope of the carrier points forwards and each of the small upper side carriers face outward. Fix the longitudinal chassis beam with screw clamps. The exact longitudinal position of the carrier, and therefore the clearance of the structure to the cab, is specified by the vehicle manufacturer.

- You will receive the following consoles/bracket, depending on the type of vehicle

Fixing bracket on the front mounting points of the chassis for:  
**MB Sprinter / VW Crafter 3,5 t and 5 t**

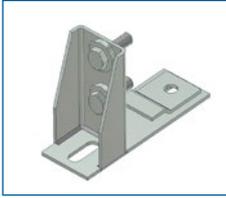
Only 2 screws incl. mounting material are used to connect the longitudinal chassis beam.



Fixing bracket from the 3rd mounting point of the chassis for:  
**MB Sprinter / VW Crafter 3,5 t u. 5 t**

1. Mounting point of the chassis for:  
**Ford Transit / Opel Movano / Fiat Ducato / Renault Master 2010**

Install the clamp plate with a screw, washer and nut not included in the delivery onto the inner face of the longitudinal chassis beam.



Fixing bracket via the rear axle on the inner face of the chassis for:  
**MB Sprinter / VW Crafter 5 t / Fiat Ducato**



Fixing bracket on the front area of the chassis for:

**Iveco Daily / Renault Mascott / Renault Maxity / Nissan Cabster**



Thrust plate in the axle area for:  
**Iveco Daily**



Fixing bracket for:  
**Opel Movano / Renault Master / Citroen Jumper / Fiat Ducato / Fiat Ducato Maxi / Renault Master 2010**



Fixing bracket for:  
**Citroen Jumper**



Fixing bracket for:  
**Renault Master**



- Install the brackets with two or four screws to the longitudinal chassis beam. Any boreholes required in the longitudinal chassis beams must be made according to the body builder instructions of the vehicle manufacturer.
- Clean the underside in the area that later is rests on the longitudinal chassis beams.
- Slightly grind the top of the longitudinal chassis beam, e.g. using an abrasive pad.
- Clean the aluminium longitudinal chassis beam top with the supplied adhesive cleaner and apply one-component mastic.

- Place the floor onto the longitudinal chassis beams and align it.
- Screw the floor at the required torque onto the longitudinal chassis beams using the supplied clamping claws.



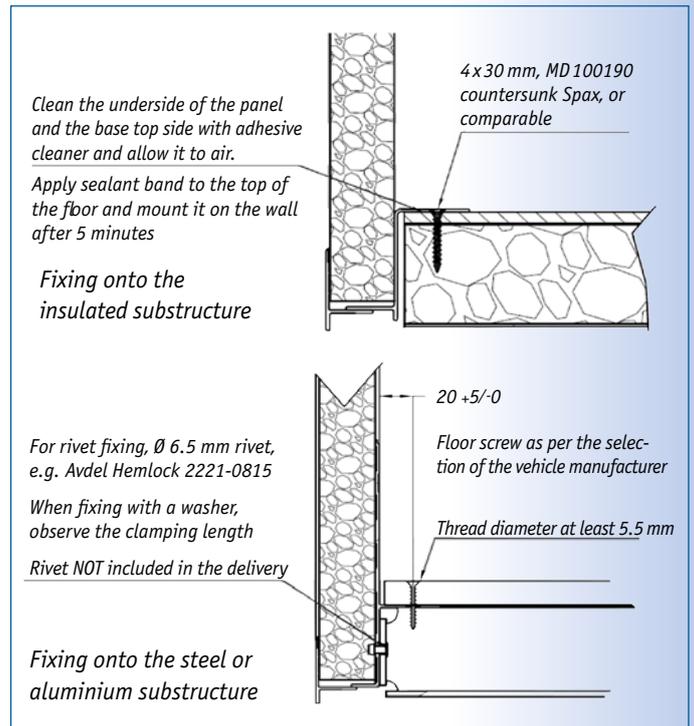
## 2.9 Assembling the trunk onto the substructure

- Place the substructure or the chassis – aligned horizontally and torsion-free – onto a plane level floor.

-  Place the finished trunk with the crane and a lifting assistance onto the supporting frame or chassis. Never lift assembled trunks using roof eyes. **Risk of pulling out!**

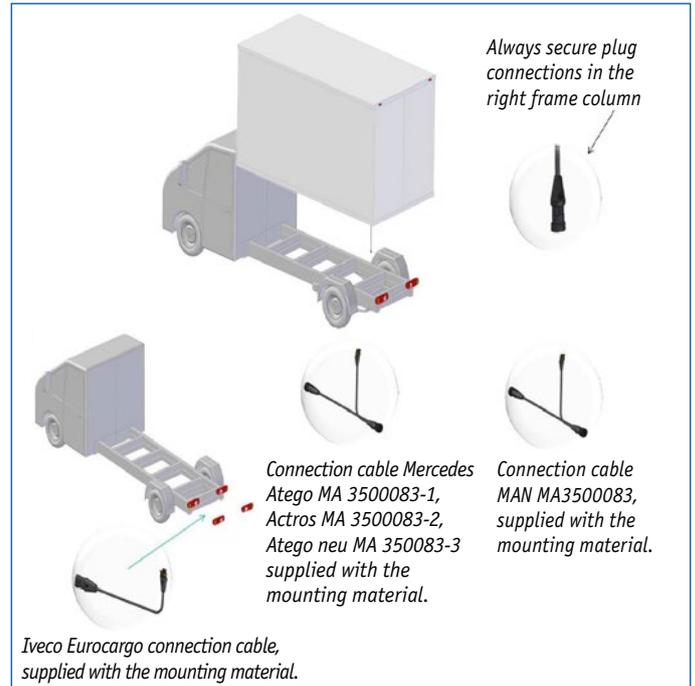


- Fix the trunk onto the substructure in accordance with the drawing (on the insulated floor or aluminium or steel substructure):



- For kits with sliding side door and with a limited space above the door frame, please do not fail to use a torque wrench (torque 10 Nm ± 1) for mounting the side-to-side connection.
- For sliding side doors, you must ensure that the vehicle wheels move freely in the area of sliding door rail. Sliding side doors cannot be delivered for insulated floors.

- For series 137-2 kits, support the frame columns contrary to the direction of travel against the substructure or the substructure cross members to ensure no deformations result if there is contact with the ramp. The support must be made so that the forces are diverted to the substructure or the floor.
- For structures with multi-winged side doors, you may need to reinforce the substructure in the area of the side doors, as well as approximately 1 m to the right and left of it. If necessary, the reinforcement must be made over the entire length. The vehicle manufacturer is responsible for this work.
- For bodies with two-seater doors, you must reinforce the substructure at the doors as well as approx. 1 m to the right and left of them, but in particular in area field of step; for example, by reinforcement with gussets. The vehicle manufacturer is responsible for this.
- Always take into consideration the swelling behaviour when assembling floor sections. Consult your panel supplier. In principle, the floor must be sealed off from the structure. The vehicle manufacturer is responsible for this.
- After assembling the trunk on the substructure, pull the connection cable for the position lamps out of the frame column (depending on the fitted equipment) and connect it to the connection cable of the respective vehicle manufacturer.



### 3. Finishing work, maintenance and service

#### 3.1 Finishing work

- For „board on board“ trunk kits, once more screw on the lower two or three board rows after assembling the floor sections. The correct assembly of the boards is the responsibility of the vehicle manufacturer.
- Screw the handle to the inside-right on the frame column if necessary.
- Close the side screw holes on the rear pillars using with the supplied plugs.



-  Generally, you can re-coat our coil-coating and powder-coated parts with conventional wet paint. For a secure bond, consult with the paint suppliers, in particular with regard to the primer. Untreated and galvanised panels must be treated with a suitable primer before painting. Grind supplied end-coated parts with the abrasive pad and prepare them dust- and grease-free for the paintwork. The temperature in the paintspray cabin must not exceed 60 °C

**Attention:** Paints, solvents and dusts endanger health; protect yourself!

- If a label on structural strength was glued onto your kit, pull off the protective foil no later than after painting the structure. The labels are valid only in conjunction with a structural strength certificate issued by the AluTeam company from an independent testing agency.
- In case of subsequently assembled attachments, or when changes are made to the AluTeam components, make sure you pay particular attention to protection against corrosion. You must exclude contact corrosion by the use of different materials. Not doing so will void the warranty and guarantee on the paint and coating.

- In a pre-assembled cable set with side marker lamps (SML) for Iveco, connect the SML with a lead wire „SML chain“ and connect this to the SM connecting line
- After trunk assembly, check the corners of the roof doors and lighting for leaks.
- You can handle the assembled trunk, but not apply a load to it. The processing temperature should not be less than 15 °C. The final strength of the sealant is reached after 24 hours at 20 °C.

-   **Attention:** You may only clean the structure with a steam cleaner after 6 weeks. Water temperatures of over 60 °C are not allowed. Please note the remarks under „5.1 Warning instructions“.

#### 3.2 Maintenance

- Check the screws of the frame at regular intervals, but at least once a year to make sure they are secure. The specified torque must be checked when doing so.
- Visually inspect the circumferential screws on the structure regularly.
- Locks and lock cylinders are service parts. They must be kept serviceable with lubricants when necessary. Frozen locks due to lack of maintenance are not a reason for complaint.

#### 3.3 Service

If you have any questions, please consult our **Customer Service:** Tel.: +49 (0)521-41 73 11-30, E-Mail: [m.wismueller@aluteam.de](mailto:m.wismueller@aluteam.de)

If you need spare parts, please contact either your local sales representative or call on: +49 (0)521 - 41 73 11 - 10.

Please send an e-mail to: [info@aluteam.de](mailto:info@aluteam.de)

## 4. Disposal of disused boxes

- You can remove the metallic top layers from the foam core and give them, as well as the aluminium panels, to the scrap trade for recycling. The same applies to the steel and/or stainless steel components of the frames.
- A PUR foam core can be incinerated in thermal waste treatment facilities without damaging the environment. The energy contained in the insulation material is converted into primary energy.
- Plywoods are also incinerated with energy recovery. Odours due to the ammonium additives in the binding agents are to be avoided. In general, they can be incinerated like particle board in wood-burning stoves with at least 50 kW thermal output. However, they are subject to much more stringent carbon-monoxide thresholds than, e.g. solid wood, which is usually only contained in automatically fired equipment.
- A leaflet from the German Fachvereinigung Polystyrol-Extruderschäumstoff provides information on the disposal of the foam in the floor area, Odenwaldring 68, 64380 Rossdorf - Germany ([www.fpx-daemmstoffe.de](http://www.fpx-daemmstoffe.de)).

## 5. Safety and warning instructions

**These assembly instructions help that you make a fault-free construction with our kits. Therefore please adhere to the work instructions described here, particularly the after-following warning notes, the guarantee otherwise expires.**

### 5.1 Warning information

AluTeam normally does not know how the kit is going to be used. As the vehicle manufacturer, you must adjust your order, as well as the storage and further processing of the kit, to the needs of your customers, as well as to the installation guidelines of the vehicle manufacturer. This also applies to the related materials and surface conditions. Damage caused by transported goods, such as aggressive chemicals, do not represent a reason for complaints/claims.

- The delivered kit must be stored clean and dry (not outside). Secure the kit against tipping over!
- To ensure no water penetrates into the box bodies, the sealing cords in the panels must not show any signs of damage.
- **Always observe the specified torques.** Falling below the prescribed torque impairs structural strength; falling below it significantly can cause damage to components!
- Never insert screws at an angle, as damage and leaks can occur.
- Only connect the components in direct contact with the supplied screws, and only once! Third-party or used screws risk operational safety and the protection against splashing water. Always use new screws for repairs.



*Excessive torque*

- Clean the structure after 6 weeks at the earliest with the steam cleaner. To prevent paint damage, observe a minimum distance of the nozzle of approximately 300 mm. The water temperature must not exceed 60 °C, the maximum working pressure 100 bar, and the ph-value of the cleaners max. 10. Then rinse immediately with plenty of clean water. Remove rust on stainless steel parts (also the frame) using household stainless-steel cleaners. Treat with seals after cleaning with rubber protection.

### 5.2 Safety instructions

Make sure of your own safety and that of your employees, because working with kits includes hazards such as:



• *Suspended loads on the crane*



• *Falling objects*



• *Risk from high-pressure cleaners*



• *Tumbling parts or assemblies*



• *Hazardous substances*



• *Risk of scalding*

We have marked some of the key risks in the assembly procedure with this warning sign. But, in general, caution should be exercised in all types of work; in particular, you should:

- .. Always use a lifting beam when unloading or transporting the kit in the transport frame with a crane. When using a forklift truck, slide the transport frame completely onto the prongs. Only place the transport units onto flat surfaces, and secure them against inclination, tilting and falling over.
- .. Always wear a helmet during crane work and only lift assemblies vertically and not at an angle! Never walk under high loads! The suspension in the crane must always be above the centre of gravity of the assembly!
- .. Only remove all the packing straps at the time of installation, and remove the white packing straps first. The individual components or groups are attached with a red packing strap. Secure the part to be removed against tipping over before cutting the packing strap.
- .. When using an assembly dolly, secure it from rolling away.
- .. Only lift the roof with a lifting beam! The roof mounting brackets (airline-style rails) are used for this purpose only as an assembly aid. Mounted trunks must not be lifted by them. **Risk of pulling out!**
- .. Comply with legal specifications, such as vehicle licensing regulations (StVZO), BGV D 29, BGV A1, BGG 915, BGG 916. This is the responsibility of the vehicle manufacturer.
- .. For cleaning and sealing work, make sure there is sufficient aeration and ventilation, and observe the processing specifications and the safety and disposal regulations of the adhesive/sealant manufacturer. Please request the safety sheet and the processing specifications from the manufacturer printed on the cartouche or on **+49 521 4173 -1110, fax on +49 521 4173 -1190.**

## 5.3 Copyright

The copyright of these instructions belongs to AluTeam. It is only intended for the professional installation company and its staff and contains rules and instructions, which must not be

- reproduced
- disseminated or
- otherwise communicated, in whole or in part.

*Infringements may result in civil and criminal penalties!*

## 6. Required equipment, tightening torques

### 6.1 Required tools and equipment

AluTeam kits can be assembled in any well-equipped workshop. Gather the following equipment and tools before assembly:

- Tape measure
- Precision cordless screwdriver with torque adjustment up to 12 Nm (e.g. FEIN Accutec ASM12-12)
- Screwdriver bit Tx 30 according to DIN 3126/ISO 1173, hard and tough version, 3/4" drive, min. 70 mm long (AluTeam Article No. MH 170107)
- An extension for screwdriver bits may be useful
- Torque wrench up to 200 Nm
- Hexagon nuts, size 6 and 8
- Air or manual mastic gun for 310 ml sealant cartouches
- 2 single-stud fittings (LoadLok 5018 or allsafe JUNGFALK 7105/75018)
- Rivet gun for rivet diameter 5 mm
- 4 wooden panels 300 x 300 mm (min. 20 mm thick) or similar
- Crane and vacuum lifting beam with at least 1 ton are recommended
- Punch d = 3 mm and d = 4 mm
- 2 straight ladders or erection scaffolding
- HSS - drill Ø 5.0 mm
- A commercial painter's spatula (blade approx. 50 mm wide)

### 6.2 Tightening torques of the screws

The settings on the screwdrivers for the assembly screws must be checked by appropriate measuring equipment. The screwdriver type mentioned by us has a consistent and precise tightening torque after the torque is set.

#### Please set the following torques:

- |   |              |
|---|--------------|
| • for assembly screw M 6 x 21 (MD 100224)     | 10 Nm ± 1 Nm |
| • for countersunk screw M 10 x 18 (MD 100329) | 52 Nm ± 5 Nm |
| • for frame screw M 10 x 60 (MD 100328)       | 72 Nm ± 5 Nm |
| • for substructure screw M 12 x 45            | 80 Nm ± 5 Nm |
| • for fine-threaded screw M 12 x 45           | 85 Nm ± 5 Nm |

## 7. Scope of delivery

Please understand that we must reserve the right to make changes in the scope of delivery with regard to form, equipment and technology at any time.

#### Included in the scope of delivery of the 13x-2 kit:

- front wall assembly
- side wall assembly right and left, including rear doors and with mounted doors, when applicable
- roof assembly with integrated frame cross member
- frame gusset KS 320180 
- for kits for LBW: Tail top gate with gas pressure spring and mounting screws MD100058, as well as material to fix the flaps on the sides (depending on the type of flap) 
- bottom frame cross member, depending on the fittings
- assembly screw M 6 x 21 Tx30 self-locking, AluTeam article no. : MD 100224 
- rear roof corners MA 100060 
- pop rivet MD150051 for riveting the roof corners 
- SPAX screws MD 100190 for models with insulated floor 
- countersunk screws M 10 x 18 zinc-plated, MD 100329 
- frame screws M 10 x 60, MD 100328 
- plug MA150001 for screw-connection bores in the frame columns 
- Handle MA 200152 with self-drilling mounting screws MD 100202 
- single-component sealing and adhesive, adhesive cleaner
- rear position lamps, depending on the fittings (see wiring diagram)
- side marker lamps when applicable, with a connection set
- a connecting cable, when applicable, for truck chassis such as in the purchase order (see wiring diagram)
- If a side door (as a part of the side wall) is supplied: optional drip moulding incl. mounting material above the door
- **Optional:** Substructure incl. material for the assembly of complete aluminium or steel substructures, see „Assembly Instructions for Aluminium Substructure“ (delivered with the substructure)
- paper towels
- sticker with design number
- assembly Instructions



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