

Assembly Instructions BR 248-2

Box Body Kits



MA2482.ENG

Always read through these instructions, completely and carefully, before you start the assembly work.



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1. Safety Instructions and Warnings



These instructions explain how to assemble the 248-2 kit with aluminum frame. To create a fault-free body, **always follow the work instructions described**, especially the following warnings, **otherwise the warranty is voided**.

If you ordered a steel frame or another custom design, it is possible that individual work steps are not explained here. **Note:** coloured representations are for illustration purposes only. **Get in touch with us immediately in case of uncertainties.**

1.1 Checking the kit contents

Check the delivery against the enclosed packing list for completeness. Notify the delivering carrier immediately of any transport damage. Please understand that we must reserve the right to make changes to the design, features and technology delivered. The general kit contents are listed on page 12.

1.2 Warnings

AluTeam generally does not know the precise intended purpose of the kit. **As the body builder, you must match the order and use of the kit to the requirements of your customer and the body guidelines of the vehicle manufacturers.** This also applies to materials used and surface finishes. Damage due to transport goods such as aggressive chemicals are not a reason for complaint.

- Store the **kit in a dry and clean place** (not outdoors).

- To ensure water cannot penetrate the assembled box body, the **sealing cords** in the profiles must not show any signs of damage.
- Connect the components directly using the screws supplied. The assembly contact surfaces must be free from dirt.
- Use the original screws and bolts, and use them only once (even for repairs). Third party / used screws and bolts endanger operational safety. Screws must not tilt. Never position the screws or bolts at an angle and keep to the specified **torques** (2.3). A torque lower than specified weakens the strength and tightness of the body, a significant exceedance can cause damage to components!
- The body is not designed for docking operations! Set out the underbody so that forces acting through rear bumper guards are transferred **into the auxiliary frames or the chassis**.
- The fastenings between the longitudinal chassis beams and chassis frame must be made as described in the **body guidelines of the respective chassis manufacturer**. The two front fastenings at least must be spring-mounted. Otherwise, forces that occur, e.g. in case of cornering, load changes or non-uniform loading, are transferred onto the body and can cause cracks in the body structure.



suspended loads on the crane



falling objects



toppling parts or assemblies



Risk due to high-pressure cleaners



hazardous materials



Risk of scalding

1.3 Safety instructions

Pay attention to your own safety and to that of your employees. Working with kits involves hazards. Therefore, caution is always necessary, in particular, you should definitely:

... **Wear safety gloves.** Wear **safety footwear**, as heavy parts can fall. Wear **hearing protection** as well as **safety goggles** when working with air screwdrivers, grills, grinding equipment, etc. Wear a **helmet** when working with or near a crane.

... when unloading / transporting the kit in the transport rack using a crane, use a suitable lifting beam. If using a forklift truck, push the transport rack completely onto the fork arms.

... Place transport racks on level surfaces only and secure them against tilting and toppling, secure any assembly dollies against rolling away.

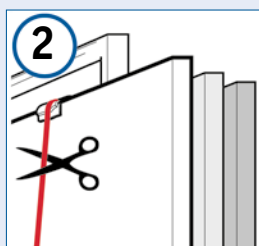
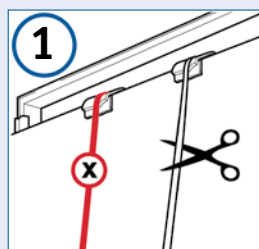
... Always lift assemblies vertically, not at an angle! Never step under raised loads! The suspension point/anchorage in the crane must always be above the assembly's centre of gravity!

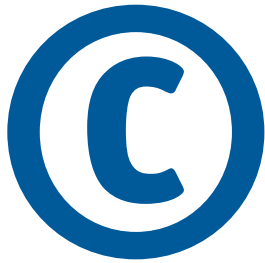
... remove all packing straps in the specified order during assembly, always remove the white packing straps first. The individual components and assemblies are held by a red packing strap. Secure the part to be removed against toppling before cutting the packing strap.

... lift the roof with a lifting beam or vacuum lifter only! The roof mounting strips (airline rails) are used as an assembly aid only. They must not be used to lift assembled box bodies. **Risk of pulling out!**

... comply with all relevant legal requirements in your country, such as laws, regulations, etc. regarding road traffic and goods transport, as well as all relevant occupational health and safety regulations. This is the responsibility of the body builder.

... ensure adequate ventilation when cleaning and sealing and follow the use, safety and disposal instructions of the adhesive / sealant manufacturer. Request the safety sheet and the instructions for use from the manufacturer as printed on the cartridge or contact **+49 (0)521 4173 -1110**.





1.4 Copyright

AluTeam holds the copyright to these instructions. They are intended for the assembly company and its personnel and may not, neither as a whole nor in part, be:

- reproduced
- distributed or
- otherwise disclosed.

Infringements can result in civil and criminal charges!

2. Preparatory work / personnel requirements

AluTeam kits can be assembled in any well-equipped workshop. Carry out the following preparations beforehand.

2.1 Personnel requirements

1-2 fitters with training as a vehicle or vehicle body builder or equivalent training are required.

2.2 Tools and equipment required

Before starting the assembly, make sure the following equipment is to hand:

- Measuring tape
- Precision air or cordless screwdriver with torque setting up to 12 Nm (e.g.B. Fein Accutec or comparable)
- Power screwdriver bit Tx 30 (DIN 3126 / ISO 1173), extra hard type, ¼" drive, min. 70 mm length (AluTeam Article No. MH170107)
An extension for screwdriver pits may be useful
- Ratchet and sockets for hexagon socket size 6 and 8
- Torque wrench up to 200 Nm
- Carrying straps with 4 double-stud fittings (e.g. LoadLok 5018 or allsafe JUNGFALK 7105/75018)
- Assembly dolly or Euro pallets or suitable support trestles
- Pneumatic or manual dispenser gun for 310 ml sealant cartridges
- Rivet gun for rivet diameter 5 mm
- Crane with at least 1 tonne working load limit and vacuum lifting beam or lifting gear
- 4 wooden panels approx. 300 x 300 mm (20 mm stark) or similar
- Hammer (500 g), Punch d = 3 mm and d = 4 mm
- 2 standing ladders or scaffold unit
- HSS drill bit Ø 5.0 mm (shorter than the wall thickness!)
- Painter's putty knife

2.3 Tightening torques for screws and bolts

You only join the components together directly. After setting it, the named power screwdriver type has a uniform, tight tightening torque. The torques apply to a dry thread. The settings for the screws and bolts must be checked using appropriate measuring equipment. **Set the following torque:**

- | | |
|---------------------------------------|---------------|
| ○ Assembly screw M 6 x 21 | 10 Nm ± 1 Nm |
| ○ Pan head screw with flange M 6 x 26 | 5 Nm ± 1 Nm |
| ○ Countersunk screw M 10 x 30 | 60 Nm ± 5 Nm |
| ○ Frame screw M 12 x 45 | 125 Nm ± 5 Nm |



AluTeam kits can be assembled in any well-equipped workshop. Carry out the following preparations beforehand.

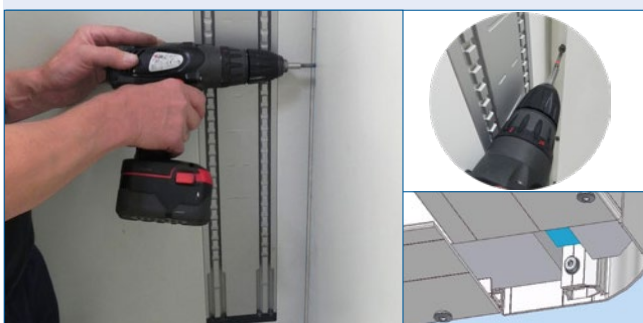


Attention: If you use **adhesives or sealants** other than those supplied by AluTeam, you are responsible for the seals and bonding carried out with these alternative products. **No warranty** is provided for them.

2.4 Preparations

- **Check the delivery** (1.1) and check that the bottom rail of the walls as well as the floor section are undamaged. Damage can make the assembly difficult or even impossible!
- **Note and follow the safety instructions and warnings** (1.2 & 1.3). In particular, secure the overall kit against toppling, as well as the individual assemblies. These are stored on the pallet in the order they are required to assemble the body. Therefore, do not cut the red straps securing one component each until the assembly is removed.
- Provide **sufficient free space** (at least 3 m) on both sides, as well as in front of and behind the vehicle or assembly area and the required **Tools and Equipment** (2.2) .
- The **ambient temperature** for components as well as adhesives and sealants must be **at least 15°C**.
- The following describes off-vehicle preassembly. To this end, carry out the assembly on a level floor. To protect the painted components and to make alignment easier, place e.g. wooden panels 300 x 300 mm (at least 20 mm thick) or similar on the floor under the corners of the front wall / side wall and side wall / rear frame.

3. Assembling the kit on the floor



3.1 Assembling the walls

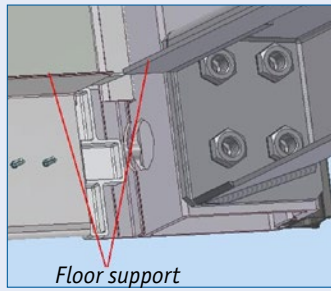
- Use a crane and lifting gear or a vacuum lifting beam to remove the front wall (bulkhead) from the transport unit and carefully place it on the plywood boards.

Danger: *Toppling assemblies are at risk to life and limb. The wall therefore remains secured, e.g. in the crane.*

- Remove the first side wall in the same way and push it onto the front wall at right-angles.

Attention: *The corner pillars must not be closed off at the bottom, as it may be necessary to lay cables through them later.*

- One fitter secures the components on the outside. The 2nd employee MD100224 (torque 10 Nm \pm 1) up to a approx. $\frac{3}{4}$ of the box height, starting at the bottom, until the sections are pressed together. If necessary, use punches as an assembly aid.
- Remove the second wall (as described above) from the transport rack. Position the wall and align it at right-angles with the front wall; the wall remains hanging from the crane initially.
- Now screw in 3 - 4 screws MD100224 again, starting from the bottom up to approx. $\frac{3}{4}$ of the box height, until the sections are pressed together and the required torque (10 Nm \pm 1) is reached.

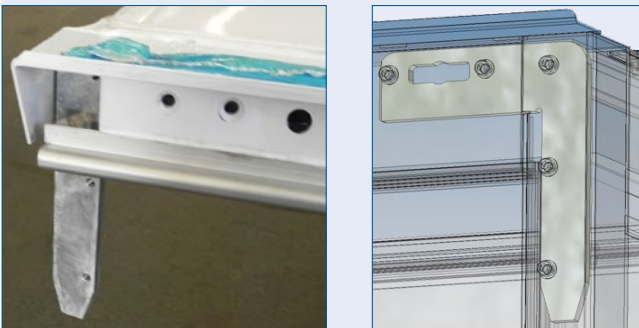


3.2 Installing the frame crossmembers

- Now position the bottom frame crossmember supplied between the frame pillars.
- Fix the crossmember from the outside of the pillars with 4 screws M 12 x 45 mm each. Do not tighten the screws yet!
- You have now stably connected all the walls to each other. Check and if necessary, correct the angularity and diagonal dimensions of the parts assembled until now.

3.3 Attaching the roof

- If a kit includes doors, before attaching the roof, undo the lashing straps of the doors. However, the doors must continue to be secured against turning.
- If a kit includes a top tailgate, use assembly screws (included in the material for the top gate) to fix it onto the roof flange using the holes provided in the hinge.
- Use a crane and lifting gear or vacuum lifting beam to remove the roof from the transport unit. Position the roof horizontally and hook the single-stud fittings into the roof assembly rails (if you are working without a vacuum lifting beam). The fittings must be tight! 4 or more fittings are required, depending on the kit length.
- Push the top frame gusset plates, with the pointed tip facing downwards, sideways into the frame crossmember. If applicable, insert the side lights into the crossmember.
- Screw the gusset plates with 2 screws MD 100227 and plain washers 10.5 mm each by hand so that they are slightly tightened.
- Lift the roof with the single-stud fittings or the vacuum lifting beam. Centre the roof, starting from the front, on the top rail of the front wall (bulkhead). The roof caps grip over the corner pillars. Align the roof with the wall sections.



Danger: Never step under raised loads! Wear a helmet. **Lift the horizontal roof at the assembly's centre of gravity, never lift it with an inclined angle (see 1.3)!**

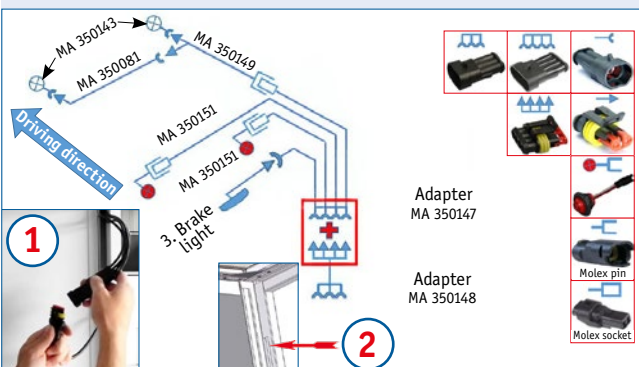
3.4 Wiring the kit and fastening the roof

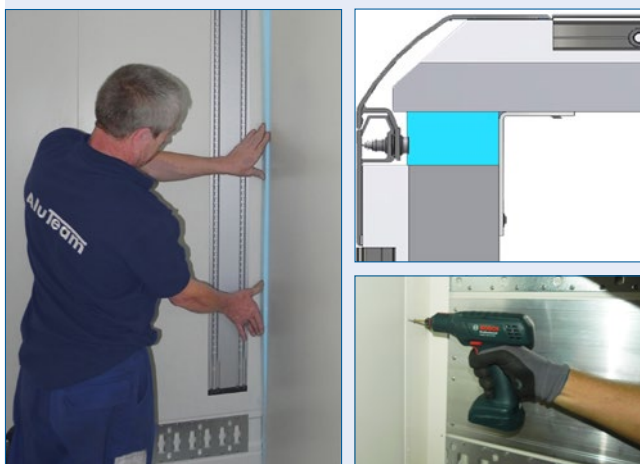
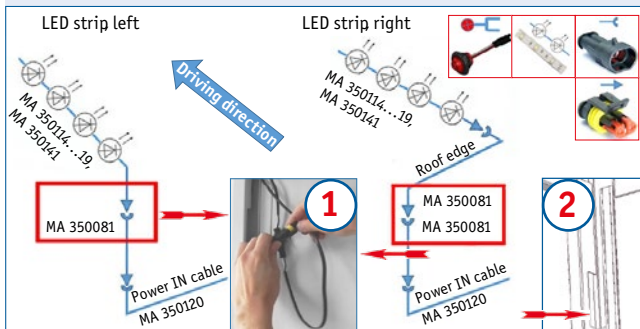
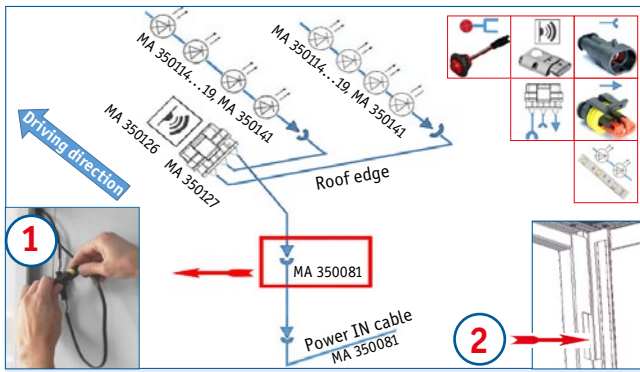
- Lower the roof slowly. If necessary, use a painter's putty knife as an assembly aid. Centre the downward pointing frame gusset plates in the pillars. Fix them on each side with three vertically positioned hexagon head cap screws MD100227 and plain washer 10.5 mm - finger-tight!

Attention: The screws must not tilt, the cables and connectors must not be crushed!

- Install the cable connections of the 248-2 kits as follows:

- To **wire the side lights**, fit together the
 1. plug-in connection on the right and push
 2. the cables into the right-hand frame pillar.





- Now continue to connect the various lights:
- To wire the LED strips **with** motion detectors (infrared sensor), fit together only **1.** the connectors and push **2.** the plug-in connection downwards into the **left-hand frame pillar.**
- To wire the LED strips **without** motion detectors fit together only **1.** the connectors and push **2.** the plug-in connection downwards into the **left-hand frame pillar.**

Note: The figure shows wiring with LED strips on the right and/or on the left-hand side.

- Fix the gusset plate in the corner pillars with 3 M 10 x 30 countersunk screws MD100268 positioned on each side (tightening torque 60 Nm \pm 5 Nm).
- Screw the roof from the top using 3 - 4 screws on each side MD100318 together with ring seals MD110044 uniformly distributed, each from the front to the back. Set the screwdriver tightening torque to 5 Nm \pm 1 Nm.

Attention: To maintain the sealing function, the sealing washer must not be pressed out from under the screw head by more than approx. 0.5 - 1 mm!

- Measure the diagonals of the frame and correct them if necessary, until they match each other.
- Screwing the remaining screws MD100224, M 6 x 21 mm Tx 30 to a tightening torque of 10 Nm \pm 1 Nm vertically into the side walls-front wall connection, until the sections are pressed together.
- Fill the remaining cavity between the front wall and side wall panel with the piece of cut foam supplied.
- Then close off the vertical front inside body corners with the corner covers using the rivets MD150023.
- Screw the remaining screws MD100318 with the ring seal MD110044 into the connection of the roof and walls. Again, pay attention to deformation of the sealing washer (see above).
- Tighten the screws MD100268 of the frame gusset plates at the top as well as the screws M 12 x 45 mm, MD100307 of the frame cross member to the required torque of 125 Nm \pm 5 Nm.

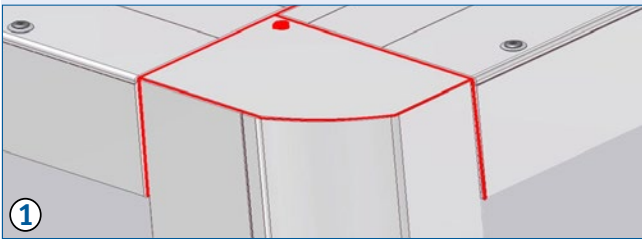
Attention: The rear surface of the two crossmembers must form a flush plane with the rear surface of the pillars.

- Now seal the component crossovers of the frame.
- Remove the single-stud fittings from the roof assembly rails.
- If necessary, screw the inside right handle onto the frame pillar.
- Close off the side screw holes in the rear pillars using the plugs supplied.



3.5 Assembling the frame, doors, etc.

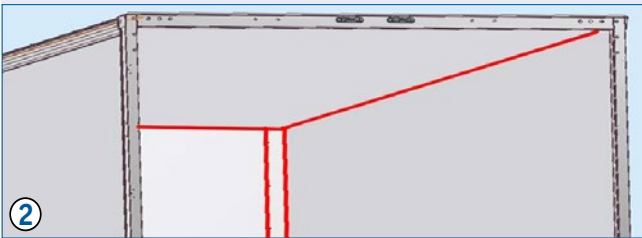
- If the kits have a top gate, latch the gas springs of the gate onto the ball heads. If the frame pillar does not have an integrated seal, the gate must be secured against lateral movement during operation using two brackets as shown in the sketch.
- If a kit includes rear doors, they must be closed to check the fit. If necessary, adjust the rotary bar locks by adjusting the position of the hitches. Always re-check the screws for tight fit.
- In the case of kits with supplied roller shutter, the roller shutter must be installed as described in the instructions supplied, "Installation of DP 25HR-d 2007". Rivet the guide rails onto the preassembled horizontal top-hat sections.



3.6 Sealing

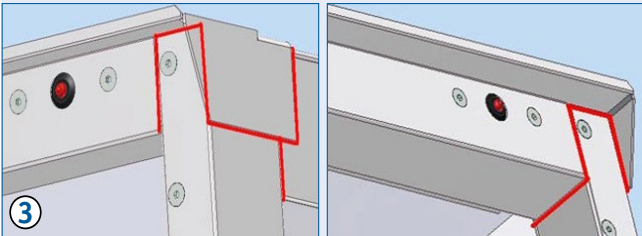
- Use the bond-activating cleaner of the kit to clean the sealing surfaces and after approx. 10 sec. flash-off time, treat with Sika Activator 205.

- **After approx. 10 min. flash-off, seal with the sealing compound:**



- ① Front right and left roof corner, all round from above and the rivet head.

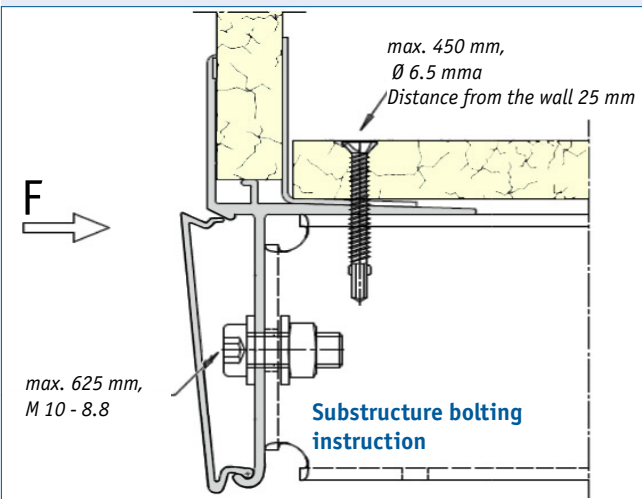
- ② The connection of the walls to the roof and the corner cover.



- ③ The connections of the top frame crossmember to the pillars.

- **The seals should only be pressed in and smoothed with smoothing agent or water —without soap additives.**

- If necessary, the joint between the side door and the floor must also be sealed.



3.7 Positioning on the underbody or chassis

- Fasten the box body onto the substructure as shown in the sketch on the left.

Attention: *Failing to follow the bolting instruction will cause the warranty to be voided.*

- The design of the substructure is the responsibility of the vehicle builder, and must follow the body and conversion guidelines of the respective chassis manufacturer. In particular, take into consideration the positioning, the intended use of the body as well as the type of connection, flexible or stiff under shear.

Forces acting on the rear bumper guard must be reliably and safely transferred into the auxiliary frame or chassis. The frame and body are not designed to absorb forces caused by docking operations (see 1.2)!

- Position the underbody or the chassis, aligned horizontally and torsion-free, on a level surface.

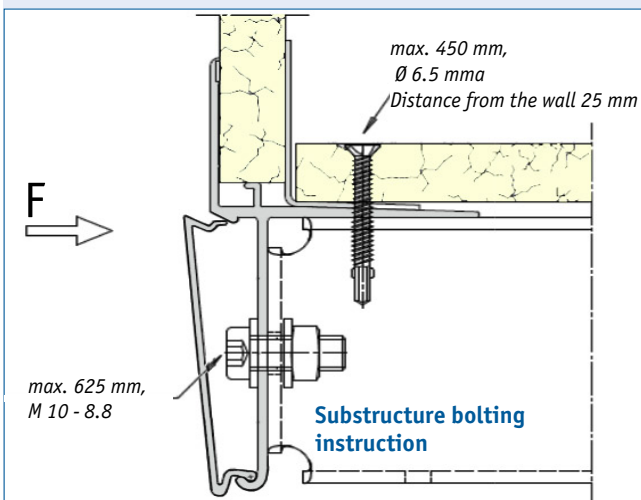


Keep the water drain holes clear

- In case of side doors, the drain holes for the water must remain clear even after installation on the external subframe!
- Use the crane and a lighting gear to position the finished box body onto the subframe or the chassis (Fig. 3.7.1). Never lift the assembled box body by the roof eyebolts. **Risk of pulling out!**
- In case of bodies with multi-leaf side doors, if necessary, stiffen the subframe in the area of the side doors and approx. 1 m to the right and left of it. If necessary, the stiffening must be extended over the fulllength of the body. The body builder is responsible for the design and its execution.
- In case of bodies with coupé doors, you must stiffen the subframe at the coupé doors as well as approx. 1 m to the right of them, especially in the area of the step; e.g. by reinforcing with gusset plates. The body builder is responsible for this.
- When installing floorboards/panels, always take into consideration their swelling behaviour. Ask your board/panel supplier. Basically, the joint between the floor and the body must be sealed. The body builder is solely responsible for this.

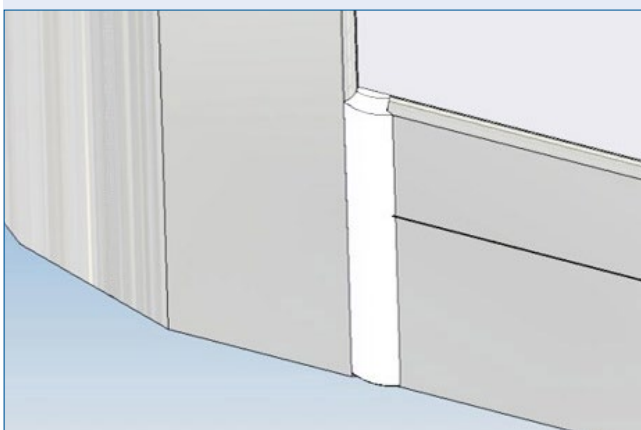


4. Finishing Work



- After mounting the box body on the substructure, latch the cover into the bottom rail section (drawing on the left). Insert the cover into the clean (cleaned) bottom groove and knock or press it in from one end, starting from the top. Depending on the kit length, this is a task for 2 employees.

Attention: If box bodies are unpainted, do not attach the cover until after painting, to prevent corrosion damage.



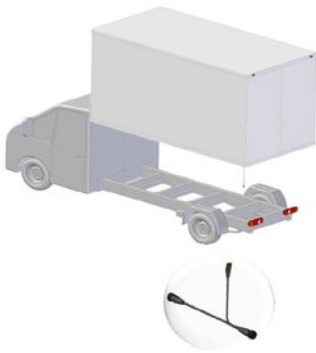
- After mounting the covers, use bond-activating cleaner to clean the remaining vertical gap between the bottom rail or rather the cover and the respective front and rear pillar and seal it with 1C sealant.
- The assembled box body can be handled, but not loaded. Note that the final strength of the sealant is not reached until after 24 hours at 20 °C. The operating temperature should not be below 15 ° Celsius.
- In case of subsequently mounted parts or changes to AluTeam components, pay attention to corrosion protection and **above all, prevent contact corrosion caused by different materials!** Otherwise the guarantee and warranty for the painting and coating will be voided.



Attention: Paints, solvents and dust are harmful to health. Protect yourself!

- Unless ordered otherwise, the kit is finish coated. If necessary, paint coilcoating and powder-coated parts with conventional wet paints. For secure, reliable adhesion, consult the paint supplier, especially regarding the primer. Untreated and galvanised sections must be treated with a suitable primer before painting. Grind the finish-coated parts supplied with the abrasive pad and remove dust and grease to prepare them for painting. The temperature in the paint booth must not exceed 60°C.
- Do not clean the body with a steam jet cleaner for at least 6 weeks. To prevent paint damage, maintain a minimum nozzle distance of approx. 300 mm. The water temperature must not exceed 60 °C, The maximum allowable water temperature of the cleaner is 60°C, the maximum working pressure is 100 bar, and the pH-value is 4 - 10.

Then rinse immediately with plenty of clean water. Remove flash rust on stainless steel parts (including the frame) using common household stainless-steel cleaners. After cleaning, treat all seals with rubbing care product.



Plug-in connection in the right-hand frame pillar

Supplied connection cable

*Mercedes: Atego , Antos, Actros - MA350155 & MA350083
MAN TGM, TGL, TGE, as well as VW Crafter and Scania: MA350158
DAF: MA350157 & MA350156
Iveco Eurocargo: MA350190 / Iveco Daily: MA350159
MB Sprinter, Opel Movano Citroen Jumper Peugeot Boxer: MA350158
Mitsubishi Fuso Canter, Fiat Ducato, , Renault Master: MA350158
Ford Transit: MA350168*

- After mounting the box body on the underbody, depending on the supplied features, pull the connection cable for the side lights out of the frame pillar and use the adapter cable supplied to connect it to the connection cable of the respective vehicle manufacturer.

- Connecting the interior lighting to the chassis is the sole responsibility of the body builder. Always follow the body guidelines of the chassis manufacturer.

- After assembling the box body, please only check the roof corners, doors and the lighting for leaks.

- To perform a water test on bodies, based on EN 283, use a water jet from a 1/2" nozzle (Ø 12.5 mm inside) to test the external seal welds, at a pressure of roughly 1 bar. The nozzle must be held at a distance of at least 1.5 m from the body to be tested. After testing, there must be no penetrated water in the body.

- Body strength stickers are only valid in conjunction with a body strength certificate of an independent test organisation issued through AluTeam.



5. Maintenance, Service



5.1 Maintenance

Visually inspect body screws with sealing washer regularly. If necessary, replace seals (e.g. which swell out) and screws. At the same time, check the specified torque.

- Locks and lock cylinders are maintenance parts. Lubricate them to keep them in working order if necessary. Frozen locks due to lack of maintenance are not a reason for complaint.
- To clean the body with the steam jet cleaner, follow the corresponding instructions in 4. *Finishing work*.
- Check all seals regularly and always treat with a rubber care product after cleaning.

5.2 Service

If you have any questions regarding the assembly, please contact our **customer service**:

Tel.: +49 (0)521-41 73 11-30, Email: m.wismueller@aluteam.de

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

Please send emails to: info@aluteam.de

6. Disposal of Old Box Bodies and Components








- You **can remove the metallic outer layers** from the foam core and, like the aluminium sections, hand them over 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 plants without polluting the environment. **Plywood**, like particleboards, can be burned in wood-fired furnaces with at least 50 kW nominal heat output. They are subject to stricter carbon monoxide limits than solid wood. These values are mostly only achieved by automatically loaded plants. Odour nuisance due to the ammonium additives in the binders must be avoided.
- **GRP** must be processed by a recycling/recovery company, and is used as a substitute fuel. For energy recovery in a cement works, the EWC code is 070213 (waste plastic).
- For information on disposing of the **foam in the area of the floor**, contact the trade association for extruded polystyrene foam (in Germany: Fachvereinigung Polystyrol-Extruderschäumstoff (FPX), Odewaldring 68, 64380 Rossdorf (<https://xps-spezialdaemmstoff.de/wpcontent/uploads/XPS-mit-halogenfreien-Treibmitteln-1.pdf>)).
- **Hardened adhesives and sealants** are disposed of as residual waste (black bin). **Residual quantities of solvents**, as hazardous waste, must be handed into the respective disposal company or collection point. The technical data sheets can be requested from the individual manufacturers.

7. Kit Contents



Please understand that we must reserve the right to make changes to the design, features and technology delivered.

A BR248-2 kit includes:

- Front wall assembly
 - 2 x side wall assemblies (rh/lh) with mounted rear pillars and, depending on features, with attached doors
 - Roof assembly with integrated frame crossmember incl. frame gusset plate as well as preassembled roof corners
 - Optional rear steel frame, e.g. in kits with roller shutters
 - In case of liftgate kits: Top tailgate with pneumatic spring and Mounting screws MD100058 
 - Bottom frame crossmember, depending on the features
 - Assembly screw M 6 x 21 Tx30 self-locking, AluTeam Article No.: MD100224 
 - Pan head screws with flange for connecting the wall elements to the roof from above, M 6 x 26, AluTeam No.: MD100318  as well as suitable ring seals
 - Ring seal MD 110044 for the assembly screw MD 100318
 - Screws M 12 x 45, MD100307 for connecting the aluminium pillars to the bottom frame crossmember
 - 2 x corner covers for the vertical front body inside corners
 - Depending on features, 2 x galvanised frame gusset plates, bolted type, as corner connector for the integrated frame
 - If necessary, 2 pieces of cut foam for the cavity between the front wall and the side wall
 - Plugs for bolting holes in the frame pillars
 - Avinox blind rivet Ø 4.8 x 11.3 VA Article No.: MD150023 
 - Countersunk screw M 10 x 30 galv., MD 100268 Connection of aluminium pillars to top frame crossmember 
 - If necessary, cover for the bottom rails, side and front
 - If necessary, handle
 - Depending on the features, rear side lights (*see circuit diagram*)
 - If necessary, side marking lights with a connection kit
 - If applicable, a connection cable for truck chassis as stated in the purchase order (*see circuit diagram*)
 - Sealants, white and grey (stainless steel frame)
 - Pretreatment agent, cleaner, activator
 - Paper towels
 - Sticker with body number
 - *Optional* sticker "Tested load security"
- Attention:** *The sticker is only valid with a certificate issued by AluTeam*
- Assembly Instructions