



Nutzfahrzeuge

Body assembly guidelines Volkswagen Nutzfahrzeuge

The Crafter

The following pages contain technical guidelines for custom body manufacturers/ coachwork specialists for construction and assembly of custom body-related parts and conversions.

The body assembly guidelines should be strictly adhered to if modifications are made with the intention of doing so.

Included in the Volkswagen body assembly guidelines are also the body dimension plans for our commercial vehicles Crafter, Transporter T4 and T5, Caddy and LT. These can be installed in 3 formats (TIF, DXF, IGES) for CAD programs and as PDF files.

Advice: If further technical queries about the series production vehicle arise over and beyond these guidelines, please contact your local conversion expert at your importer.

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Note: Subject to errors and technical amendments. The electronic version of the body guidelines is the decisive source of up-to-date data on body guidelines

<http://www.vwn-aufbaurichtlinien.de>

Data status Oktober 2009

4.1 General notes

General

The damping characteristics, braking and steering system should not be modified. Exceptions must be authorised by Volkswagen AG prior to conversion measures.

Note:

Changing the steering and braking forces for vehicle conversions for disabled persons is not possible.

Airbag

In the event of intervention by the custom body manufacturer/coachbuilder in the structure of the vehicle, such as

- Changes to the front end, frame longitudinal members, integral axle carriers and 1st cross member
- Attachment of belt tensioners where there are no B-pillars
- Changes to floor structure in area of airbag triggering device
- Changes to seats and thereby the kinematics of the occupants
- Change to the wiring of the airbag system
- Modification of the system structure
- The gas generator of the curtain airbag can be found in the A-pillar (do not screw on handles or similar).
- Do not carry out any changes to the seat covers where seat airbags are installed
- No changes to the door panel trims (airbag sensors)

the safe function of the airbag and belt tensioner is no longer guaranteed. These components may only be installed if authorisation is given by Volkswagen AG.

Emissions (exhaust emissions/noise)

In the event of changes to the exhaust emission and noise relevant components (e.g. engine/injection pump/control unit, exhaust system/catalyst, air intake system, tyres, etc.), exhaust gas and noise measurements must be carried out. Observe up-to-date country-specific regulations and directives when doing this.

Parts fitted as standard to reduce emissions should not be removed as a consequence or changed in any way as otherwise the operating certificate will become void.

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4.2 Enclosed panel vans

Body and platform form a self-supporting unit on the Kombi/panel van. Structural parts of this selfsupporting unit should not be removed without replacement. Partition walls do not have a structural function. Modifications other than complete removal are permissible. Only weld body parts for installation or conversion if a bonded connection is not possible.

- Sidewall apertures
If sections are cut through for the apertures (windows, doors, flaps, ventilation outlets/inlets, etc.), the apertures must be reinforced with a surrounding frame and welded to the sections that have been cut through.
- Roof height increase (synthetic roof)
see item 3.6 Roof design

Seat securing points

Seat securing points cannot be retrofitted in the panel van, this is because the securing points lie in the longitudinal and/or cross member.

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4.3 Open panel vans

(Chassis with single/crew cab)

If the wheelbase is changed and in the event of overhang extensions, the material of the extension piece must be the same in quality and size as the vehicle chassis frame (St 12.03). Changes to the structure should not impair the function and clearance of assemblies and control equipment, or the strength of supporting structures.

Apertures in the cab partition must be fitted with a surrounding frame. The remaining struts and cross members must be reinforced with plates and welded to the inserted frame.

The distance between cab and body must be at least 50 mm.

Frame modifications

- The permissible axle loads must not be exceeded and changes should not affect the minimum front axle load.
- Attach underbody guard in line with series production vehicle.
- Extend subframe up to end of frame.
- Check the function of the tow hitch.
- Reinforcements must be in place for tow hitches if desired.

4.3.1. Drilling on frame

The longitudinal members are of the hollow type (hat section). If holes need to be drilled in the members, it may only be done in the specified areas.

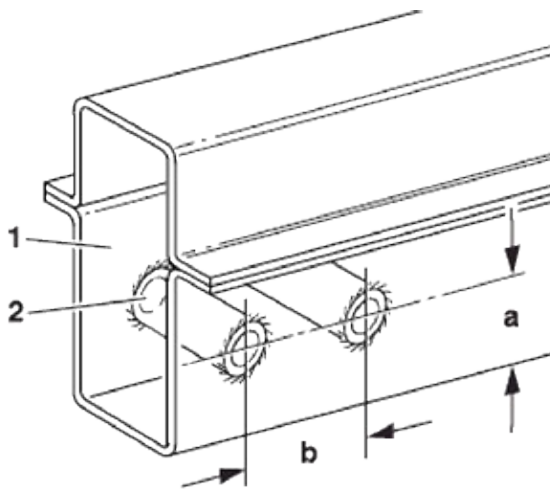
Drilling is not permitted in the following areas:

- In the upper and lower belt of the chassis frame. Exceptions are holes in the rear frame end. However, they must not be in the area of parts that function to support the rear axle and parts attached to the frame.
- In the area of section changes to the frame longitudinal members (frame offset and frame draw-in).
- At load distribution points (e.g. in direct vicinity of spring brackets).

In exceptional cases, holes can be made in the web of the frame longitudinal members.

- Use of spacer sleeves welded on longitudinal member (see diagram below)

After drilling, deburr and ream. Before installation, spacer sleeves must be welded in. Remove swarf from the frame and apply cavity protection.



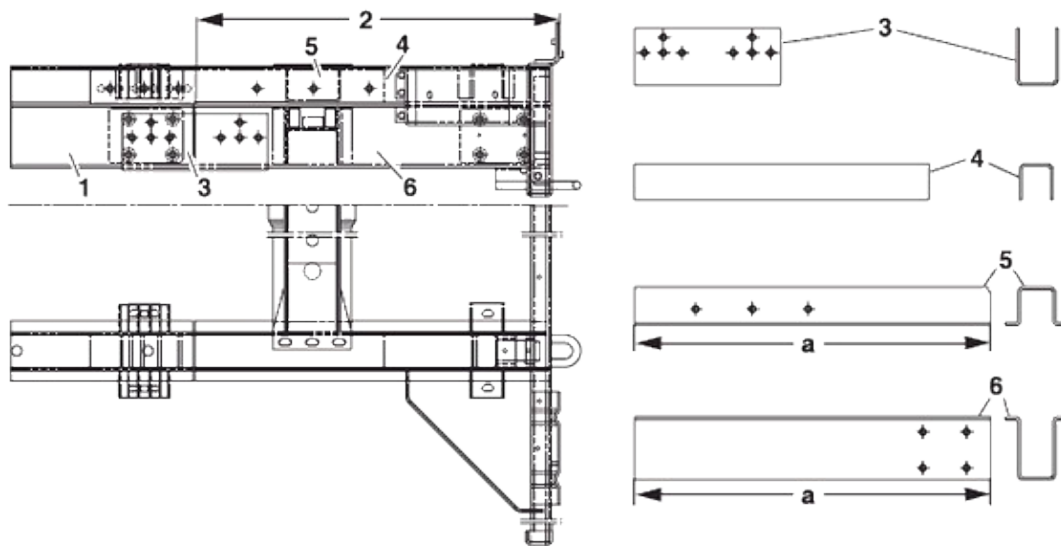
- 1 Chassis cab
2 Spacer sleeves
a) At least 20% of frame height
b) At least 50 mm

4.3.2. Overhang extension

The max. perm. rear overhangs (depending on wheelbase) are to be adhered to in accordance with item 2.3.1.

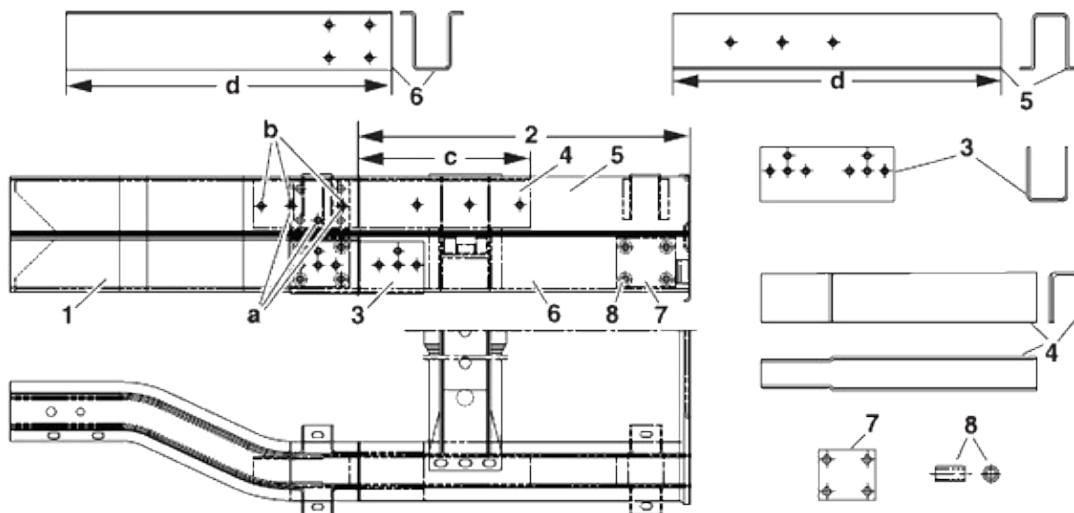
Observe the following to do this:

- On frame extensions longer than 350 mm, an additional cross member must be installed.
- Overhang extensions are to be performed as per diagram shown below.
- Additional frame cross members must have the function of a series cross member.
- If the frame cross member is extended, the permissible axle load given in the vehicle documents must be checked and reduced if necessary until omission.
- The permissible axle loads, the permissible centre of gravity positions and the minimum front axle load are to be adhered to in all load conditions (see 2.1).
- As a preparatory measure in the factory, the tail light cluster wire (PR no. 8SE) can be installed.
- Standard body consoles must be used at the end of the frame.



Crafter 30 3,0t / Crafter 35 3,5t

- 1 Chassis frame longitudinal member
- 2 Frame extension
- 3 Reinforcement outer
- 4 Reinforcement inner
- 5 Body carrier extension
- 6 Chassis frame longitudinal member extension
- a dimension determined by custom body manufacturer



Crafter 50 4,6t / 5,0t

- 1 Chassis frame longitudinal member
- 2 Frame extension
- 3 Reinforcement outer
- 4 Reinforcement inner
- 5 Body carrier extension
- 6 Chassis frame longitudinal member extension
- 7 Reinforcement plate at least 2mm

- 8 Spacer sleeve Rohr 24x4 M-steel or ST 35 NBK
- a Holes wheelbase 3,550mm
- b Holes wheelbase 4,025mm
- c 350mm (wheelbase 3,550mm), 300mm (wheelbase 4,025mm)
- d Dimension determined by custom body manufacturer

4.3.3 Wheelbase modifications

Wheelbase modifications on vehicles with electronic stabilisation programme (ESP) are not permitted.

Extend the wheelbase from the longest standard version. Shorten the wheelbase from the longest standard version. Reinforce the cutting point with panel blocks.

Wheelbase modifications by offsetting the rear axle are not permissible.

Cutting points must not be made in the areas of:

- Load distribution points
- Axle guide and axle suspension
- Profile section changes (frame offset, frame retraction)

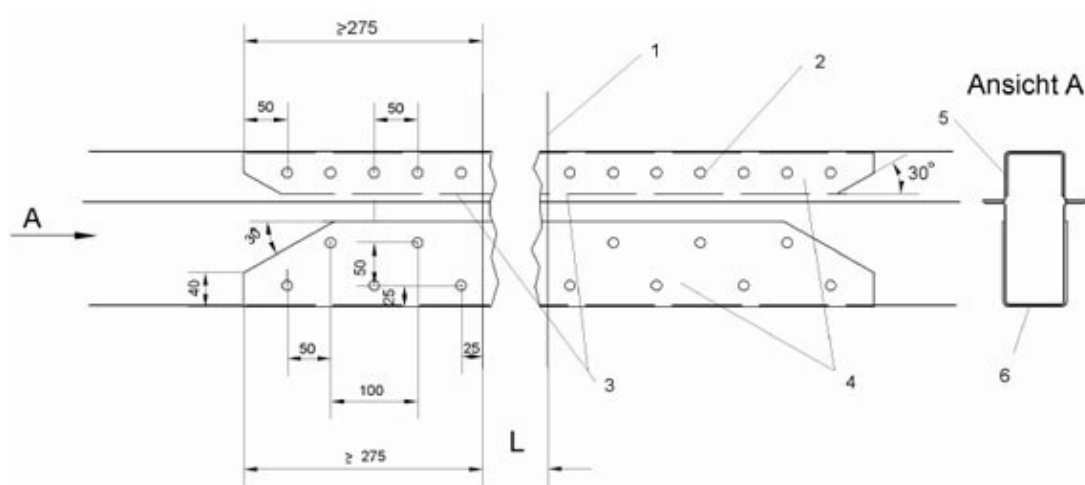
Following wheelbase modifications, the chassis must be reinforced with a subframe throughout the structure.

Resistance moment figures necessary for the subframe:

- Up to max. series production wheelbase 30 cm³.
- Increase above max. series production wheelbase by at least 15%.

The wheelbase modification results in alterations to the turning circle and weight specifications.

Wheelbase modifications that lie in the frame of the smallest or largest series production wheelbase need not be submitted for approval.



Inserting inlays in frame

1. Separation points welded all round
2. Plug weld, hole diameter 12 mm
3. Material quality of hat profile used
4. Inlay material at least St 12.03, Material thickness 2 - 3 mm
5. Upper belt inlay (inner)
6. Lower belt inlay (outer)

If the overhang extension also involves extension of the assembly frame, the weld seams must be offset by at least 100 mm in line with series production.

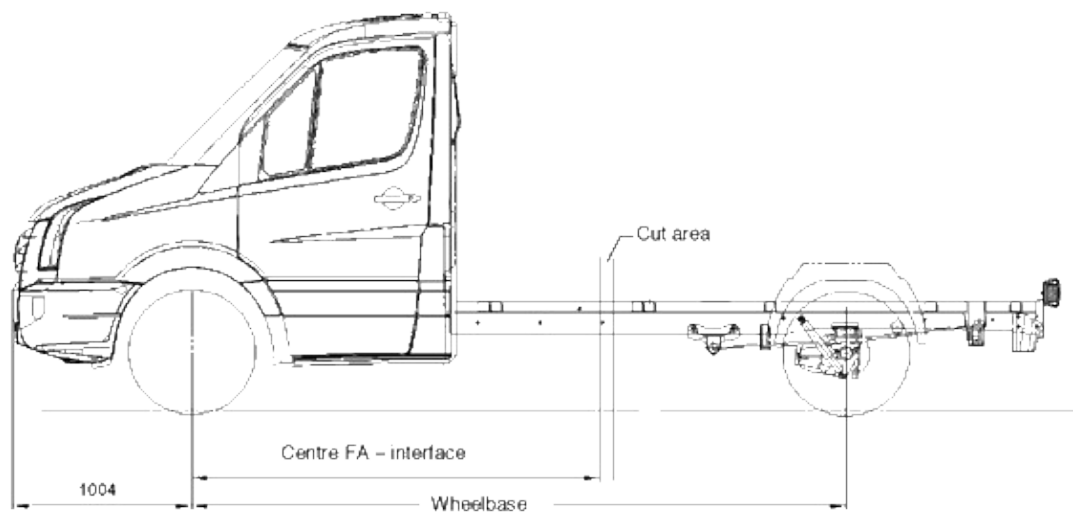
On change to wheelbase, ensure that end of tail pipe is not aimed towards a tyre.

Following wheelbase modifications, the chassis must be reinforced with a full assembly frame.

Cut area of frame

Figures refer to chassis with cab Distance from centre of front axle

Wheelbase (mm)	Perm. overall weight (kg)	Dimensions (mm)
3665	3500	2285 - 2360
4325	3500	2285 - 2360
3665	4600 / 5000	2205 2905
4325	4600 / 5000	2205 2905



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