



Nutzfahrzeuge

Body assembly guidelines Volkswagen Nutzfahrzeuge

The Transporter T4

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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Data status October 2009

5.1 Chassis Transfer

If chassis is transported on their own axles on public roads, it is mandatory to use transport equipment (wheel housings at the back and ballast weight, PR-No. 2 A1). The wheel housings are suitable for permanent usage.

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5.2 Cut-out at the Rear Wall of Driver's Cab/Double Cab and Roof Cut-Outs

Chassis Modifications

a) with driver's cab

The maximum permitted cut-out is limited by the C-pillars, the C-bow and the cab floor. **If also the B-bow and parts of the roof are being removed, it is required to install a reinforcing frame according to drawing ENT-156011.** (illustration 5.3)

The connection between boot attachment and cab must be realised form-locking (i. e. elastically). This means that the connection must not be force-locking. Instead, the connection has to be realised in such a way that the occurring torsions between boot and cab are not directly guided into the driver's cab, but are absorbed within the connection. (This possibility is shown in ENT-156011).

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5.3 Drilling at the Chassis Frame

- **Additional fastening points for special attachments**

The side rails are hollow profiles. If it is required to drill there, this may only be performed in the neutral zone (centre of side rail, but with sufficient distance to the flange). In addition, spacer bushings must then be welded in.

- **Boreholes which are applied ex-works** at the upper and lower belt of the side rails **must not be drilled and/or extended**. In addition, these boreholes must not be used for holding any instruments, modules, etc.

- **Boreholes for connecting passages for pipes, electric cables, tackle blocks, etc. and for attaching add-on parts (clamps, etc.). In exceptional cases**, we approve of boreholes to be carried out in the bar of the side rails or in the cross-members. **In this case, however, it is strongly recommended to get in touch with us.**

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5.4 Alternative to the Standard Trailing Link Arms at the Double Cab

b) With double cab

Cut-out at the rear wall

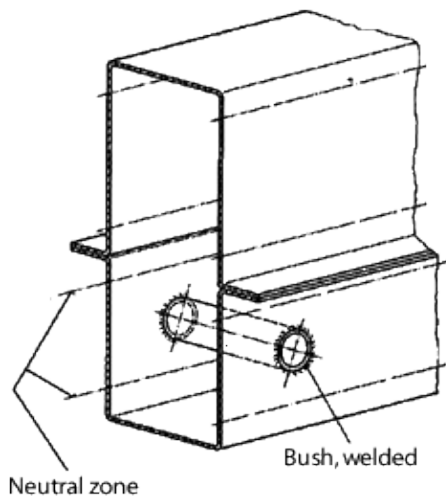
The maximum permitted cut-out is limited by the B-pillars, the B-bow and the floor of the driver's cab.

Roof cut-outs between the bows are to be realised in compliance with the specifications for box-type delivery vans/station wagons (section 3.2 Roof cut-outs).

It is not permitted to remove the B-bow and/or C-bow.

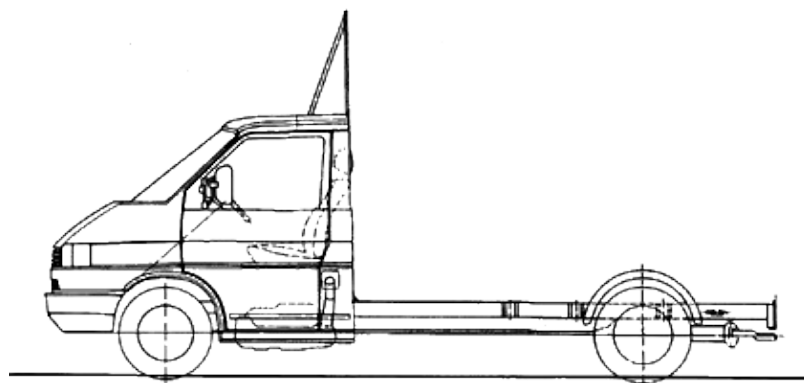
The **trailing link arms** behind the rear wall **must not be removed without being replaced by an adequate component**. A possibility for a transfer according to ENT-149918 is represented below.

Connections between boot attachments and double cab must be realised form-locking and elastically (according to boot attachment/driver's cab)

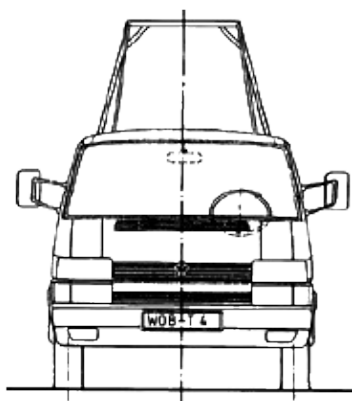
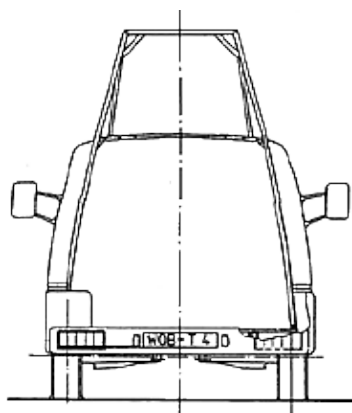
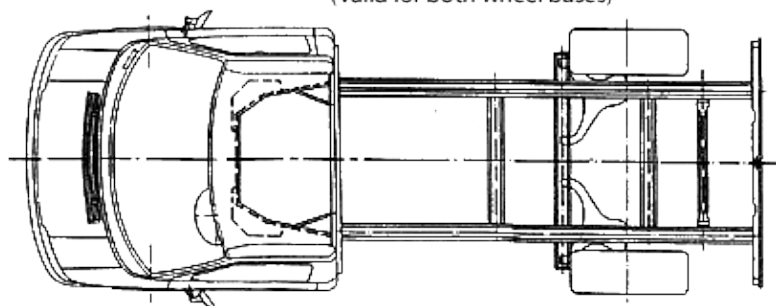


Modification of chassis with driver's cab

Cut-out at the cab rear wall and roof for a connecting passage between driver's compartment and the attachment be realised. Position and size of the cut-out and the layout of the reinforcing frame, which will be required for this situation, can be taken from ENT-156 011.



(Valid for both wheel bases)



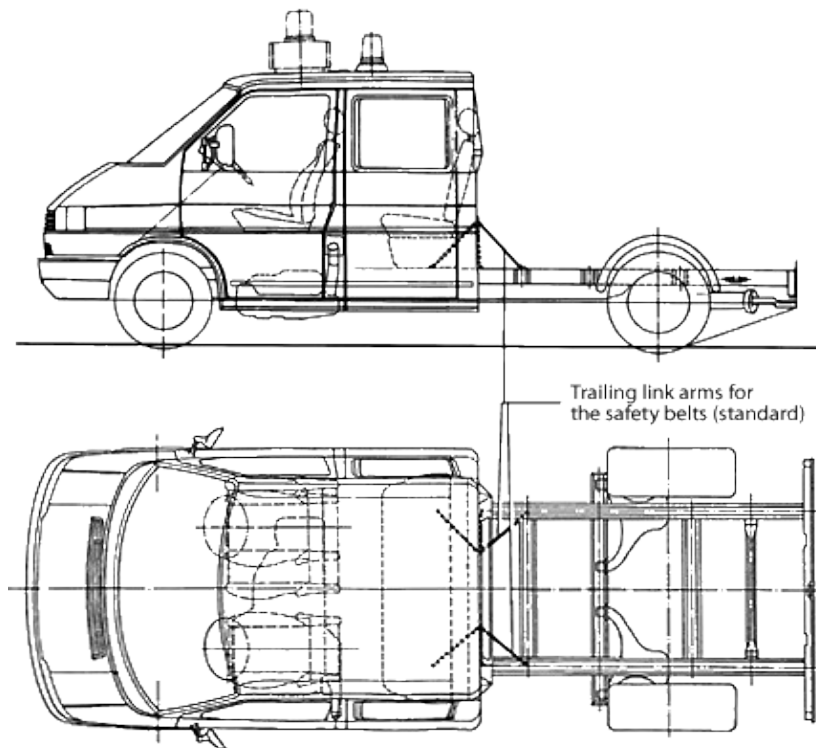
Modification of chassis with double cab

pressure struts for the safety belts according to ENT-149 918. (Required for usage for the standard trailing link arms, if these must be removed for installing special attachment.)

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5.5 Welding at the Vehicle

Weld work at the vehicle frame should remain limited to absolutely necessary exceptions.

Before performing weld works at the vehicle, it is required to disconnect the car battery. If cables are damaged which are routed not openly with the battery being disconnected, short-circuits may lead to severe damages.

When performing electric welding works, the earth terminal of the welding set must be directly connected to the vehicle part to be welded. Otherwise, the high current and the occurring high voltage peaks may damage the mechanical and electronic vehicle parts.

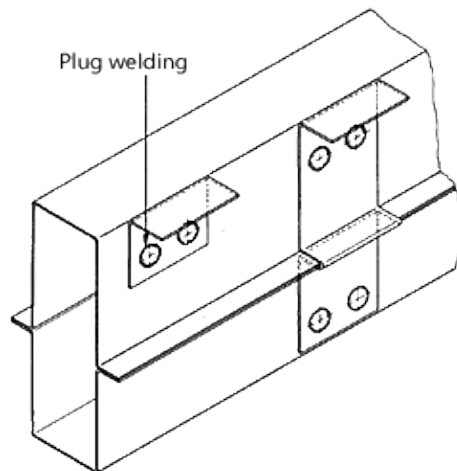
Only **inert gas** should be used for welding.

In exceptional cases, also well drained stick electrodes - 2.5 mm - with lime-basic coating may be used.

If additional brackets, etc. are welded, it is only permitted to weld in the so-called neutral zone. Plug welding is always the preferred method. **Avoid weld joints running diagonally to the frame.**

Note: The corrosion-inhibiting coating on the side rails is damaged in the welding area as a result of the thermal stress developing during welding. For this reason, this coating has to be suitably repaired.

Example of a plug weld



Brackets for attachments according to the series requirements.

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5.6 Wheel Base Extensions and Overhang Extension

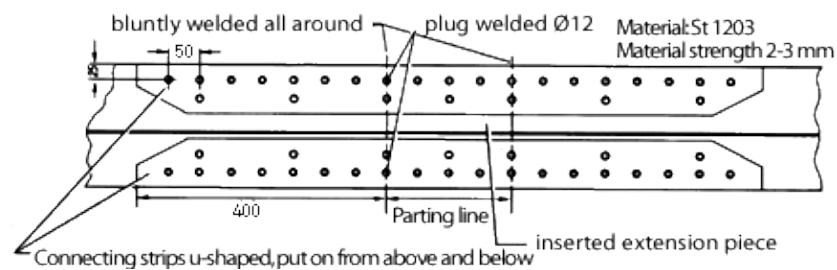
If a wheel-base extension is to be performed

- work should start with the long wheel base.
- the frame should be disconnected approx. 480 mm behind the driver's cab.

The max. permitted total weights, axle loads, rear overhangs (depending on the wheel base), etc. are to be observed. For this purpose, adhere to the sections "Dimensions and Weight".

Frame of the chassis (extended)

-Side view-



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5.7 Subframe, Mounting Frame

Subframe

The subframe must consist of steel. It is required for attachments whose lumped loads are guided into the chassis, e. g. for dump trucks and tractive units.

The subframe is used to distribute the forces, which are induced punctiformly, uniformly over the entire chassis frame. For this purpose, it should lie above the side rails and be guided to the driver's cab. In addition, it should be tapered in the front section.

The various air gaps between chassis and subframes need not to be filled. With a floor frame it is possible to fix self-supporting attachments directly at the standard brackets.

Subframes and self-supporting attachments are to be fixed at the chassis using all available brackets.

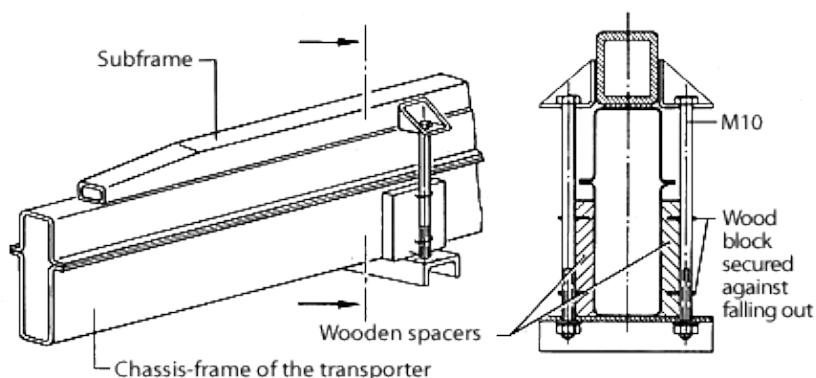
Mounting Frame

The mounting frame is **exclusively** used for directly receiving auxiliary units, etc. Only screws are permitted for attaching the mounting frame at the chassis frame. **The mounting frame needs not to cover the entire chassis frame - as is the case with the subframe.**

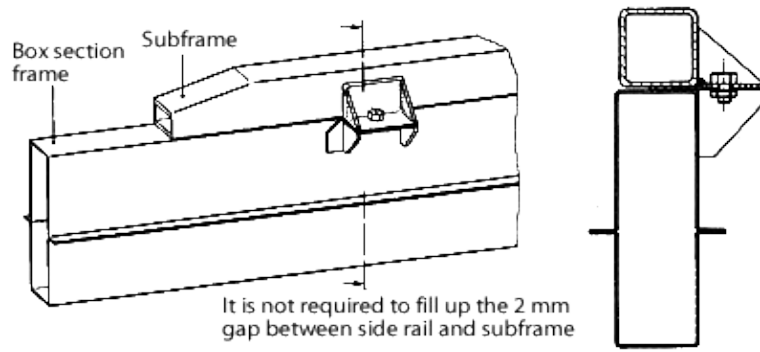
The mounting frames does not meet any strength requirements to protect the chassis frame.

General instructions on the modification of standard vehicles It is not permitted to modify spring characteristics, brake system and steering unit. Exceptions must be approved by Volkswagen AG before the modification is carried out. If noise-emitting parts (e. g. engine, tyres, exhaust system, etc.) are modified, it is required to perform noise measurements according to EC directives. The permitted values must not be exceeded. If the car body is to be modified in the area of the petrol tank, it is required to dismantle the tank beforehand.

Shackle attachment for the first two fastening points, left/right, behind the driver's cab (if required).



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5.8 General Instructions on the Modification of Standard Vehicles

Attachments with high centre of mass

At vehicles with high attachments or with a raised overall centre of mass, the driving conditions are limited.

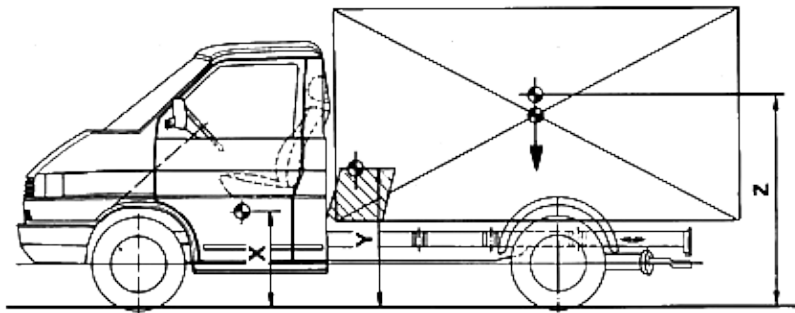
Stabilizer bars are used to prevent excessive heeling of the vehicles.

The following **table** shows which centre-of-mass height is permitted for vehicles with standard equipment. These heights must **not be exceeded**. In addition, the table shows for which vehicle variants **stabilizer bars or reinforced stabilizer bars are recommended**.

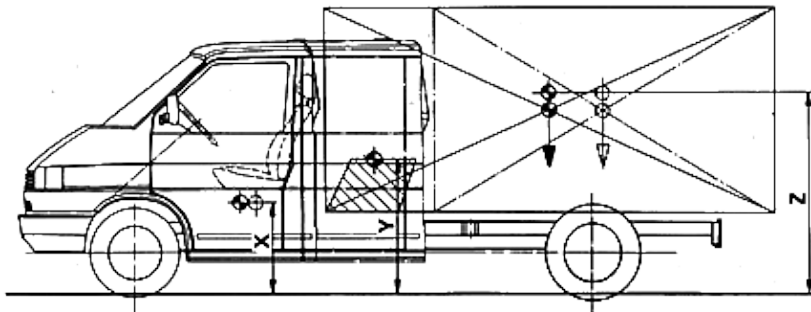
The maximum permitted centre-of-mass heights indicated in the table **may under no circumstances be exceeded**.

Type	PR-No.	Stabilizers		Centre of mass of the chassis Dimensions mm X	Overall centre of mass of the vehicle Dimensions mm Y	Max. permitted centre-of-mass height of attachment and net load above lane in mm	
		Front axle	Rear axle			Dimension Z Standard equipment	Stabilizers OAB & OBB
Box-type/station	OJ1 OJ2	S	-	757	858	1140	
Flatbed/double cab	OJ2	S	-	688	850	1180	
Chassis	OJ2	S	-	654	850	1160	
Box-type/station	OJ3	S	-	757	850	1185	
Flatbed/double cab	OJ3	S	-	688	850	1120	
Chassis	OJ3	S	-	654	850	1120	
Box-type/station	OJ2	A	B	757	980		1480
Flatbed/double cab	OJ2	A	B	688	980		1510
Chassis	OJ2	A	B	654	980		1460
Flatbed/double cab	OJ3	A	B	757	980		1405
Pritsche/Doka	OJ3	A	B	688	980		1430
Chassis	OJ3 OJ4	A	B	654	980		1390
<p>s - 23 mm stabilizer bar, front, available as standard A - 27 mm stabilizer bar, front, available as extra equipment (OAB) B - 26 mm stabilizer bar, rear, available as extra equipment (OBB) Note: The PR-No. OJ2 and OJ3 include also the synco variants.</p>							

Centre-of-mass height specifications according to directive 71/320 EEC Since 01/01/1991, all utility vehicles must comply with the requirements of the "**EC Directive on Brake Systems, 71/320/EEC**". The adoption of this EC directive into German traffic registration regulations (**StVZO**) results in a situation in which these technical directives must also be fulfilled at single acceptances (trial runs).



Wheel base 2,920 mm



Wheel base 3,220 mm

For all permitted weights, the centre-of-mass height, **Y**, must not be exceeded.

All centre-of-mass heights indicated in the adjacent table always refer to the vehicle being loaded up to its respective permitted total weight.

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