



**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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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 October 2009

## 4.1 Cut-outs in the side wall

At the box-type delivery van/station wagon, attachment and base group form a self-supporting unit. **Supporting parts of this self-supporting unit must not be removed without being replaced by another component.**

Baffles have no supporting function. Modifications, even the complete removal, are permitted.

### A. Cut-outs in the side wall

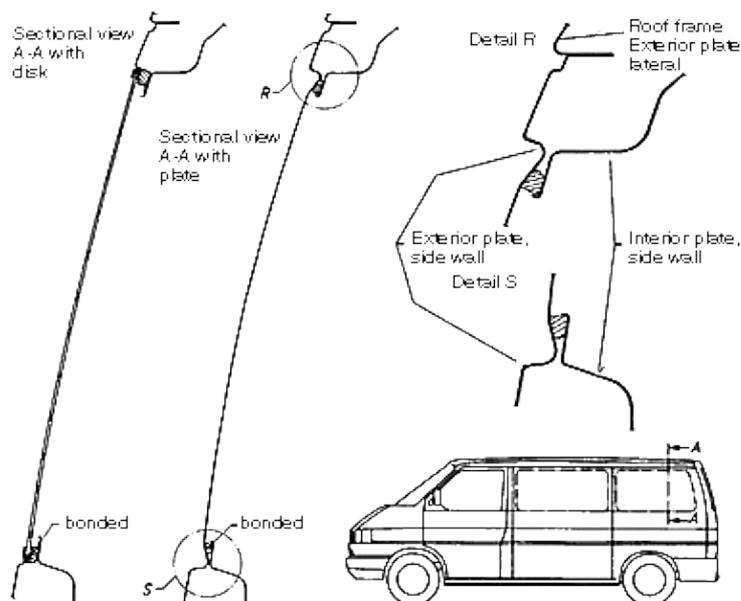
Since the subsequent installation of windows is complicated and expensive, **it is recommended to order the desired windows ex works (see delivery program).**

**Cut-outs** for windows, doors, tailboards, ventilation, etc., may **only be realised between the supporting parts** (pillars, roof chassis and floor). **Supporting parts must not be cut or weakened.** The cut-outs are to be provided with a continuous frame which is to be connected force-locking with the bordering supporting parts.

### Retrofitting of windows

If windows are to be retrofitted, the following operation method can be implemented:

1. Cut out the exterior plate along the window case of the interior plate and insert, for example, a pane with the corresponding rubber seal (accessory parts). The serial differences between box-type delivery van and station wagon in the window area are represented below.
2. Prepare the window cut-out according to the series requirements. Insertion of standard panes. Details on the procedure are available on request.
3. If you desire smaller windows than shown below, the following applies: In general, the cut-out may only be realised between the pillars. **Supporting parts must not be cut or weakened.** The cut-out is to be provided with a frame which is to be connected force-locking with the bordering supporting parts.



# VW Nutzfahrzeuge Aufbaurichtlinien



**Nutzfahrzeuge**

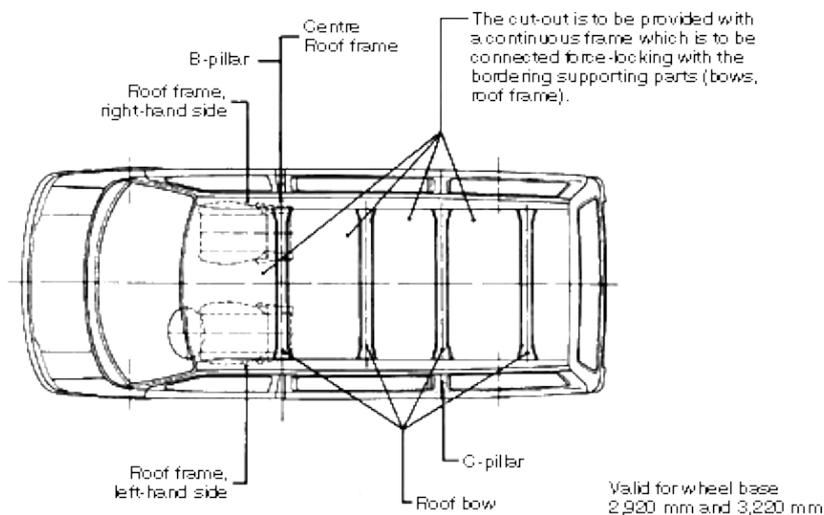
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## 4.2 Roof Cut-Outs

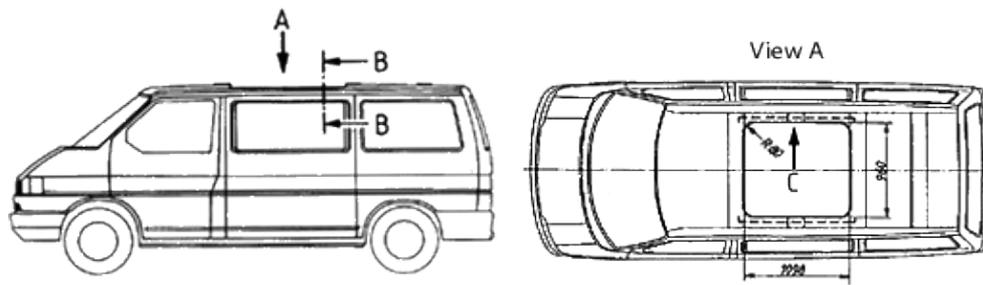
Roof cut-outs to prepare the subsequent attachment of vent roofs, pop-up tops and high roofs are currently not available ex works.

### B. Retrofitting of Roof Cut-Outs

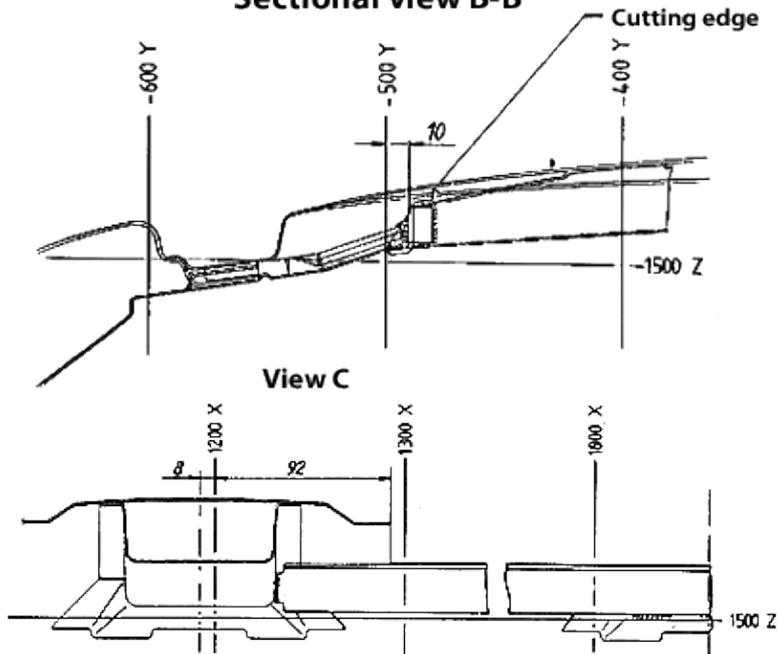
1. It is possible to realise roof cut-outs between the bows and the lateral roof chassis. For details, see below.



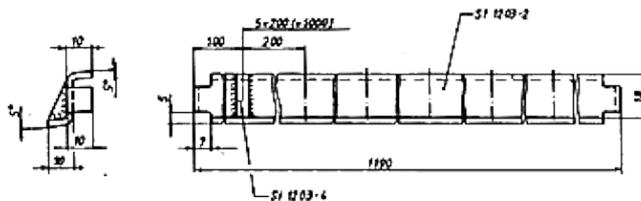
2. Roof cut-outs between bows B and C are only permitted at wheel base 2,920 mm. Details on the max. possible roof cut-out permitted in this situation, see section 3.3 Modification of closed attachments. The cut-out must be provided with the specified reinforcing plate at the left-hand and right-hand side. Both reinforcing plates are to be welded to the roof, the B- and C-bows as well as to the bow stubs of the bow which has been cut out (between B- and C-bow).



**Sectional view B-B**

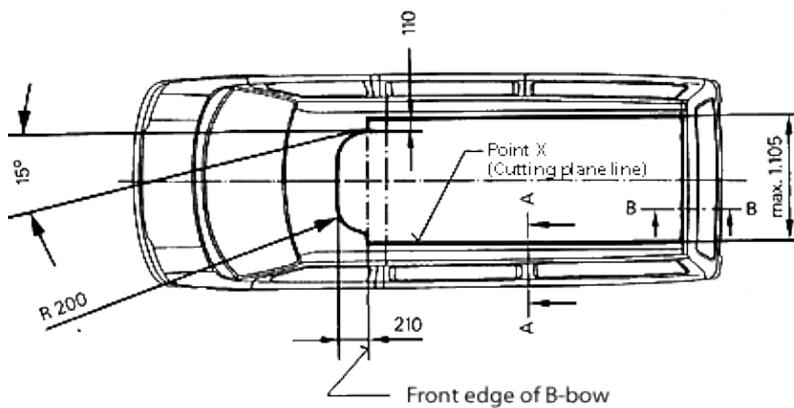


**Reinforcing plate (frame)** to be provided by the attachment manufacturer

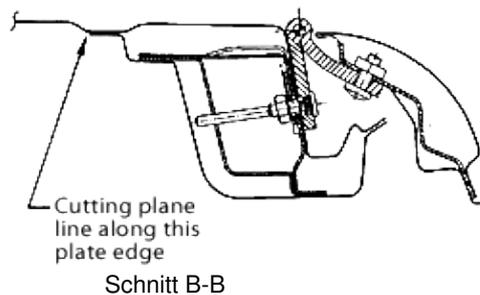
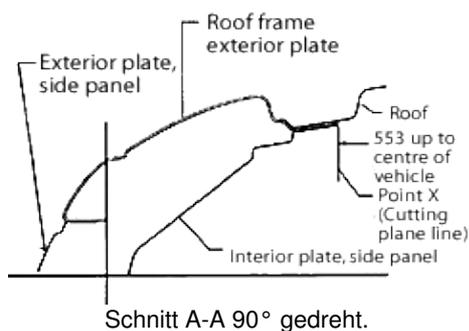


Only for transporter with wheel base 2,920 mm and with max. 1 sliding door

**3. Large roof cut-outs for normal roof versions and both wheel bases to retrofit high roofs and pop-up tops. - Only for vehicles with max. sliding door -**



On the left-hand and right-hand side, the large roof cut-out is limited in the passenger compartment/boot space by the sheet edges of the lateral roof chassis (see sectional view A-A). In the rear area, the cutting edge runs along the edge of the D-cross-beam interior plate (see sectional view B-B).



Cutting plane line in the cab area (starting at front edge of B-bow) according to the above drawing specifications.

The continuously running cutting plane line is to be ground and treated with an anticorrosion agent.

**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 (online body guidelines). Data status August 2007

## 4.3 Subsequent Mounting of a Pop-Up Tops

### C. Pop-Up Tops

Subsequent mounting of a pop-up top with large roof cut-out (wheel base 2,920 mm)

**1. For the above mentioned roof cut-out** (see draft in section B3), a complete assembly set for reinforcing the roof frame (including installation instructions) is available from **Westfalia** company, **Rheda-Wiedenbrück**. A two-part base plate is also included in this supply scope.

**The rear base plate**, built in permanently in the area of the C-/D-pillar, **is a supporting part**. It is used for reinforcing the roof frame!

**It is not permitted to remove this rear base plate.**

**In the passenger compartment, a base plate - made of a multi-layer adhesive bond wood-plate (minimum thickness 12 mm) - has to be additionally screwed in or bonded in.**

**This construction was put to the test by us and ensures maximum stiffness of the car body.**

**If other roof frame reinforcement sets (i. e. not the one from Westfalia co.) are to be used, it has to be ensured that the moment of resistance corresponds to that of the Westfalia set.**

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**2.** Optionally, it is also possible to limit the roof cut-out only to the passenger compartment (starting at the rear edge of the B-bow; B-bow and cab remain unchanged). It is then possible to omit the trapeze for the cab area can from the Westfalia roof frame reinforcing set. In this case, it is required to realise a force-locking connection of the lateral roof-frame reinforcing parts to the bow foot of the B-bow with the help of junction plates. The base plate mentioned in section C1 to be used in the area of the C-pillars is also part of the roof-frame reinforcement. It is not permitted to remove this base plate.

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## 4.4 Subsequent Mounting of a High Roofs

### C. High Roofs

Subsequent installation of a high roof  
(Wheel bases 2.920 and 3.320 mm)

#### 1. Preconditions

- a) The max. roof cut-outs may correspond only to those mentioned in section B3 of this construction guideline - the same applies to the California. (see draft in section B3)
  - b) The base vehicles may only be provided with max. one sliding door. In addition, it is not permitted to remove or weaken any supporting parts - apart from the max. permitted roof cut-out. This applies also to the additional retrofitting of high rear double-wing doors, a 2<sup>nd</sup> sliding door or changing to high sliding doors, etc.
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#### 2. Deviations of the Preconditions Valid for Pop-Up Tops

- a) The roof frame reinforcing set of Westfalia co. or an appropriate alternative are not required here. If, however, a second base level is desired, these assembly sets can be helpful.
- b) The base vehicles may only be provided with max. one sliding door. In addition, it is not permitted to remove or weaken any supporting parts - apart from the max. permitted roof cut-out. This applies also to the additional retrofitting of high rear double-wing doors, a 2<sup>nd</sup> sliding door or changing to high sliding doors, etc.

If a level passenger compartment/boot space floor is required, it is also permitted to use a water-tight chipboard. This chipboard has then to be screwed in or glued in flatly.

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#### 3. Design of the High Roof

##### a) Wheel base 2.920 mm

The high roof shell must consist of (min. thickness 4 mm) glass-fabric supported polyester.

##### b) Wheel base 3.320 mm

The high roof shell must consist of (min. thickness 4 mm) glass-fabric supported polyester and has to be reinforced with an internally arranged bow in each of the areas of the B-, C- and D-pillars. (cross-section see draft 3.4, High roof structure). The bows can either end directly in front of the car body or can be bonded to the car body. All bows are provided with additional metal plates which are required for the supplementary mechanical connection of the high roof to the car body. (see draft on page 18)

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#### 4. Mounting of a High Roof

##### a) Wheel base 2.920 mm

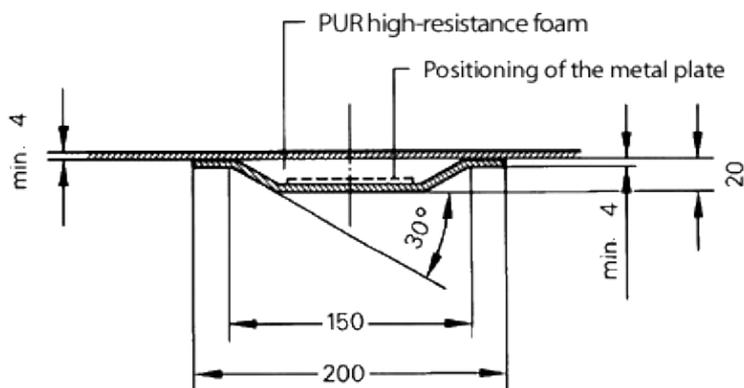
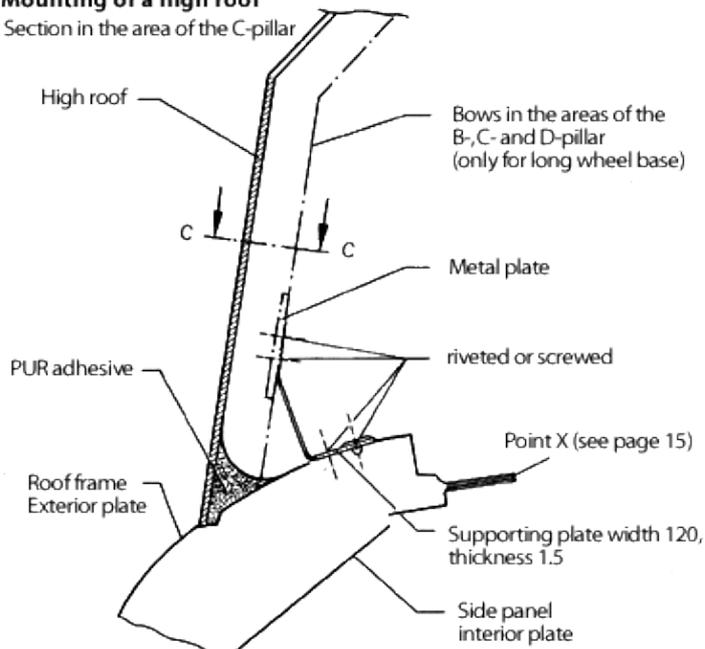
The high roof must be mounted sufficiently safe, i. e. the roof must be continuously bonded to the roof-frame exterior plate. (see draft 3.4, High roof structure).

##### b) Wheel base 3.320 mm

In addition to the previously mentioned requirements, in the area of three countersunk bows, the roof must be connected to the roof-frame exterior plate with the help of sheet-steel corner pieces. The sheet-steel corner pieces are to be connected to the high-roof bows in the area (mentioned in section 3b) of the metal plates inside the bows. (see draft 3.4, High roof structure)

## Mounting of a high roof

Section in the area of the C-pillar



Sectional view C-C turned by 90°

High-roof bow (only for long wheel base)

**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 (online body guidelines). Data status August 2007

## 4.5 Retrofitting of Standard Seats

### E. Retrofitting of Standard Seats in the Passenger Compartment/Boot Space

The floor layout of the box-type delivery van and station wagon is identical and is suitable for the subsequent mounting of standard seats (wheel base 2,920 mm: 2 rows of seats/wheel base 3,320 mm: 3 rows of seats)

The retrofitting of standard seats according to the requirements of the appropriate series type is only permitted with the upgrading equipment/accessories.

It is possible to realise deviating seat arrangements and wooden floor plates combinations (to a limited extent).

It is also permitted to install aluminium locking rails on the rubber/carpet or to install a latch for fixing wheelchairs (to be inserted in a wooden floor plate).

Generally, it is not permitted to upgrade our standard rotational seats with lap belts (to be performed by the attachment manufacturer, for example). In this connection, so far no tests have been carried out.

**Detailed information on scope available on request.**

#### Note:

a) Fastening lugs on the boot-space floor of the station wagon/box-type delivery van are not available for PR-No. 6B0! (concerns only the home market; for exports: add option).

b) If seats are missing in the passenger compartment, the heater core will also be missing there (the so-called 2<sup>nd</sup> heater core).

In addition to the 2<sup>nd</sup> heater core, vehicles with TDI engine have another add-on heater (a burner keeping the heating circuit at approx. 85 °C). If the 2<sup>nd</sup> heater core is not available, then also the add-on heater will be missing! Retrofitting the 2<sup>nd</sup> heater core and the add-on heater costs approx. DEM 4,000 per vehicle!

**A maximum of 3 seats/row of seats is possible.** In general, the three-point seat belts of the external seats (left/right) must be linked to the fastening points of the side walls which are provided for that purpose. Integrated three-point seat belts at the seats are generally not permitted. Lap belts on all seats are technically feasible, provided that the appropriate national regulations permit this option.

**\* The side walls of the box-type delivery van are not prepared for the installation of three-point seat belts.**

Retrofitting possibilities are available on request.

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## 4.6 Retrofitting / replacement of standard seats

### 1) In the passenger compartment of the station wagon

All station wagons are prepared in such a way that their standard seat combinations can be easily retrofitted. Caravel, Multivan and California are constructed on basis of the station wagon car-body so that also in these cases the station wagon/Caravel standard seat combinations can be retrofitted according to the series requirements, provided that the necessary open space is available.

#### Note:

- a) As standard floor covering, rubber floor covering (station wagon) or carpeted floor (Caravel) is used.
- b) If a multi-layer adhesive bond wood-plate with an anti-slip covering or a carpet (total thickness: max. 12 mm) is to be flatly bonded or screwed onto the passenger compartment floor (standard for the Multivan and California), it is possible to raise the single and the double seats appropriately with long mushroom-head screws and fitting distance bushes. (The previously mentioned floor coverings must not be connected to the floor mounting points of the seats!). The triple seat variants must not be raised. In this case, it is required to cut out the seat mounting area appropriately. Procedure with illustration, part numbers, etc. available on request.

### 2) In the driver's cab

The standard driver's and passenger seats (each on a "seat box") can be replaced by the swivel seats (special equipment) if no dividers are available. Optionally, also a double seat for co-driver can be used, however, not in combination with the high divider at the left-hand and right-hand side (with connecting passage to boot space). The vehicle floor of the driver's cab is prepared in such a way, that every vehicle can be converted to the corresponding other seat variants of the driver's cab.

Since the general operating permit for our standard vehicles has been submitted to

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Am TÜV 1  
30519 Hannover, Germany  
Tel. 49-511-9861332,  
Fax. 49-511-9861998

import certificates on the part of VW AG are not required for the extent affected here.

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## 4.7 Possibility to increase the load - only for money and valuables transporters

- a) **Base vehicle:** Box-type delivery van, wheel base 2,920 mm, short front section, however **not for TDI engines**.  
b) **Base vehicle:** Box-type delivery van, wheel base 3,320 mm, short front section, **also for TDI engines**.

Within the scope of usage as money and valuables transporters, it is possible to increase the load of vehicles with the above mentioned scope up to 2,890 kg, **if the vehicle is provided ex works with**

- 1) reinforced springs (Pr-No. 0J3 for the increased net load) and/or is appropriately retrofitted. In case of retrofitting, it is required:
  - the torque rods, front left and right of 701 411 103 J/104 J
  - the suspension springs (rear) 701 511 105 B of the chassis. (This is reasonable because the vehicle is then raised above the rear axle by approx. 20 mm to 25 mm).
- 2) The vehicle is provided with tyres of the type 205/65 R15 and/or appropriately retrofitted. (PR-No. s. H6W, H6Y, or H6X). The tyre type 195/70 R15 C104/102 R (PR-No. H5T) is also permitted.
- 3) The vehicle is provided with the  $\varnothing 54$  mm - frame calliper brake, front, (PR-No. 1LE) and/or appropriately retrofitted. In case of retrofitting, the following is required:
  - The frame calliper brake, front left/right 701 615 105 F/106 F.
  - The internally ventilated brake disks 701 615 301 J.

### Note:

- a) The load of vehicles whose load was already reduced (net load class PR-No. 0J1) cannot be increased anymore!
- b) The vibration shock absorbers, front/rear, are identical for all three net load classes (Pr-No's 0J1, 0J2 and 0J3)!
- c) The usage of light alloy wheels is not permitted!

**Founded on this, the permitted front axle-load is increased up to 1,560 kg. The permitted rear-axle load remains unchanged!**

For this vehicle application, additionally reinforced vibration shock absorbers are recommended (PR-No. 1BJ). In case of retrofitting, it is required:

- Vibration dampers, front 701 413 031 E.
- Vibration dampers, rear 701 513 031 C.

It is only permitted to equip the front axle with reinforced shock absorbers.

### c) **Base vehicle:** Chassis with driver's cab

The load of money and valuables transporters, which are based on chassis with boot attachments, can also be appropriately increased, if the aforementioned requirements are met. However, in this case it is required that our Development department (Abt. NE-GG; fax 49-5361-972917) approves of this measure within the scope of an individual inspection (specification of the centre-of-mass position for the permitted total weight; axle loads of the armoured vehicle - laden/unladen condition).

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