Nutzfahrzeuge

# Body builder guidelines
# The Transporter (from model year 2016)

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*Electronic Stability Control

# 1 General information

## 1.1 Introduction

These body builder guidelines provide body builders with important technical information which must be complied with when planning and manufacturing a body for road safety and operational reliability. The add-on, body, installation or conversion work required for this is referred to below as "body activities".
Due to the vast number of body builders and body types, it is not possible for Volkswagen AG to predict all possible changes, e.g. in driving properties, stability, weight distribution, centre of gravity of the vehicle and its handling characteristics which can occur due to the body activities. Therefore, Volkswagen AG does not accept any liability for accidents or injuries arising from changes of this kind made to its vehicles, especially if the changes have a negative effect on the vehicle as a whole. As a result, Volkswagen AG only accepts liability for its own design, production and instruction services. The body builder itself is obliged to ensure that its body activities are not faulty in themselves, and also that they cannot result in defects or dangers on the vehicle as a whole. The body builder itself bears the product liability in the event that this obligation is violated.
These body builder guidelines are intended for professional body builders. As a result, these body builder guidelines assume corresponding background knowledge. Note that some work (e.g. welding on load-bearing parts) is only allowed to be performed by appropriately qualified personnel. This requirement exists in order to avoid risks of injury and to achieve the quality needed in the body activities.

### 1.1.1 Concept of these guidelines

The following body builder guidelines are divided into nine chapters so that you can find information rapidly:

1. Introduction
2. Technical data for planning
3. Modifications to closed bodies
4. Modifications to open bodies
5. Implementation of special bodies
6. Technical data
7. Calculations
8. Weight tables
9. Listings

**Information**

For more information, see 1.2.1.1 "Contact", 1.2.2 "Body builder guidelines, consulting".

It is essential that the limit values selected in chapter 2 "Technical data for planning" are complied with and are used as the basis for planning.

### 1.1.2 Means of representation

The following means of representation are used in these body builder guidelines:

**Warning note**

A danger note draws your attention to possible accident or injury risks to which you or other persons might be exposed.

**Environmental note**

An environmental note provides you with information about environmental protection.

**Practical note**

This note draws your attention to a possible risk of damage to the vehicle.

**Information**

This note indicates additional information.

### 1.1.3 Vehicle safety

**Warning note**

Before installing external add-ons or mechanical units, it is essential that you read the chapters in these body builder guidelines that are related to installation, as well as corresponding chapters in the instructions and information for the suppliers' mechanical units and in the detailed owner's manual for the base vehicle. Otherwise you will not be able to recognise dangers, and might expose yourself or others to danger.

We recommend that you use parts, mechanical units, conversion parts or accessories that have been tested by Volkswagen AG for the corresponding vehicle type.
Have the vehicle's safety checked immediately if non-recommended parts, mechanical units, conversion parts or accessories are used.

**Practical note**

It is essential to comply with national registration regulations because body activities on the vehicle can alter the vehicle type under registration regulations and the operating permit may be invalidated.

This applies in particular to:

- modifications which change the vehicle type approved in the operating permit
- modifications which might be expected to endanger road users or
- modifications which impair the exhaust or noise emissions characteristics.

### 1.1.4 Operational safety

**Warning note**

Incorrect interventions in electronic components and their software may result in these no longer functioning. Due to the networking of electronics, systems that were not modified can be affected.

Malfunctions to the electronics can significantly impair the operational safety of the vehicle.
Have work on or modifications to electronic components performed by a qualified specialist workshop which has the necessary specialist knowledge and tools for performing the necessary work.

Volkswagen AG recommends a Volkswagen AG customer service workshop for this purpose.

Service by a qualified specialist workshop is essential, in particular for safety-relevant work and work on safety-relevant systems.

Some safety systems only operate when the engine is running. Therefore, do not switch the engine off when driving.

# 1.2 General notes

The following pages contain technical guidelines for custom body builders and equipment fitters relating to the design and mounting of bodies. The body builder guidelines must be strictly adhered to when performing any modifications to the vehicle. The current version of the German edition of the body builder guidelines is the exclusive authority for the most up-to-date information.
This also applies to legal claims. Country-specific features can vary.

### 1.2.1 Product and vehicle information for body builders

#### 1.2.1.1 Contact in Germany

If you have questions concerning vehicle models from Volkswagen Commercial Vehicles, you can contact us via the Internet on the Volkswagen AG Conversion Portal (www.umbauportal.de) using one of the following methods:

| | |
|---|---|
| **Free hotline (from a German landline)** | 00 800 2878 66 4933 (00 800-CUSTOMIZED) |
| **Contact (email):** | umbauportal@volkswagen.de |
| **Personal points of contact:** | https://umbauportal.de/jctumbau/web/guest/ihre-ansprechpartner |

Alternatively, registered users can get in touch with us directly using the contact form. There, you can store vehicle-specific information in advance, which will help us to deal with your request faster.

| | |
|---|---|
| **Contact form:** | https://umbauportal.de/allgemeine-fragen |

#### 1.2.1.2 International contact

Please contact the body builder support personnel at the responsible importer for technical advice relating to Volkswagen Commercial Vehicles models and as a point of contact for conversions.
To find the right contact person, please register on the Bodybuilder Database, the international portal of Volkswagen AG: https://bb-database.com.
Help is available for the registration option using the *Help* menu.

| | |
|---|---|
| **International hotline:** | +800 2878 66 4933 (+800-CUSTOMIZED) |
| **Email** | bb-database@volkswagen.de |
| **Personal points of contact:** | https://bb-database.com/jctumbau/en/web/international/hilfe#faq_7 |

#### 1.2.1.3 Electronic repair and workshop information from Volkswagen AG (erWin*)

Body builders can access repair and workshop information, e.g.

- Current flow diagrams
- Workshop manuals
- Maintenance
- Self-study programmes

via the Electronic Repair and Workshop Information System from Volkswagen AG (erWin*).
http://erwin.volkswagen.de/erwin/showHome.do

Second stage manufacturers with Integrated Partner or Premium Partner status have access to discounted annual licenses, which can be applied for in My Conversion Portal/Requirements/Planning and Development.
Second stage manufacturers in export with the Partner status receive information in this regard from their point of contact at the importer.

*Information system from Volkswagen AG, subject to payment

#### 1.2.1.4 Genuine Parts Online Ordering Portal*

For the purchase of spare parts and for the research of Volkswagen Genuine Parts, our latest parts catalogues are available on the Internet in the "Genuine Parts Online Ordering Portal":
http://www.partslink24.com

*Information system from Volkswagen AG, subject to payment

#### 1.2.1.5 Online owner's manuals

The Volkswagen AG website contains a "Service & Accessories" menu which gives access to the digital owner's manual for your vehicle:
http://www.vwn-bordbuch.de

Once you have entered the vehicle identification number for your Volkswagen, you can see all the manuals associated with your vehicle.

### 1.2.1.6 European Type Approval (ETA) and EC Certificate of Conformity (CoC)

Directive 2007/46/EC of the European Parliament establishes the standard for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles.

Provisions were also adopted in these guidelines for the approval of vehicles produced in several stages: the multi-stage approval process. Accordingly, each manufacturer involved in the construction of a vehicle is itself responsible for the approval of modified or added scopes in its production stage.
The manufacturer may choose one of the four following methods:

- EC type approval (ETA)
- EC type approval for small series
- National small series type approval
- Individual approval

CoC = Certificate of Conformity. A document that verifies the conformity of certain goods – and therefore also of vehicles and bodies – in accordance with the recognised (international) standards. The purpose of this EC Certificate of Conformity is to facilitate the approval of goods on international markets. As a result, the document is needed above all in import and export as part of the customs clearance procedure.

The manufacturer, who is the holder of an EC type approval or EC small series type approval, is required to enclose a Certificate of Conformity with every vehicle conforming to an approved type.

If you are planning to apply multi-stage type approval, an agreement must be concluded in accordance with 2007/46/EC Annex XVII Paragraph 1.1. Please contact us (see 1.2.1.1 "Contact in Germany", or 1.2.1.2 "International contact").

### 1.2.1.7 Worldwide Harmonized Light-Duty Vehicles Test Procedure (WLTP)

New consumption values calculated in accordance with the new WLTP standards apply from September 2017 for new passenger cars entering the market and from September 2018 for new light commercial vehicles entering the market.
As of 1 September 2018, certified WLTP measurements must be available for all newly registered passenger cars. The rule enters into force for larger light commercial vehicles one year later on 1 September 2019.
28+6 markets in Europe are affected by the WLTP.
WLTP stands for Worldwide Harmonized Light-Duty Vehicles Test Procedure. This is a worldwide standardised testing procedure for determining fuel consumption and exhaust emissions.
It is replacing the NEDC (New European Driving Cycle) test procedure that has been in force since 1992.
Unlike the NEDC, the WLTP takes into account individual special equipment and conversion solutions for weight, aerodynamics, electrical system requirements (no-load current) and rolling resistance which have an impact on the fuel consumption and exhaust emissions. This includes in particular changes that result in a larger end face, a higher kerb weight for the vehicle or changes to the tyre size or the rolling resistance.
Special equipment that consumes power, such as the air conditioning system or seat heating, still remains switched off for the duration of the test procedure.

To determine the consumption values of converted new vehicles in compliance with the WLTP procedure and to obtain a WLTP certification, the "WLTP" calculation tool is available to registered users in the conversion portal/BB database.

You can find more information as a registered user in the conversion portal/BB database:
Germany:
https://dealerportal.vw-group.com/jctumbau/de/wltp-berechnung

International:
https://dealerportal.vw-group.com/jctumbau/en/web/international/wltp-berechnung

#### 1.2.1.8 Manufacturer's declaration

We issue a manufacturer's declaration for the base vehicle for the following scopes:

- Load increases and reductions
- Electromagnetic compatibility (EMC)
- Dangerous goods transport ADR 2017 for vehicles EX/II (explosive substances)

Please contact our customer support:
nutzfahrzeuge@volkswagen.de

### 1.2.2 Body builder guidelines, consulting

The body builder guidelines define the technical requirements for custom body builders and equipment fitters relating to the design and mounting of bodies for base vehicles of the Volkswagen Commercial Vehicles brand.
The body builder guidelines must be strictly adhered to when performing any modifications to the vehicle.
Ensure that no modification adversely affects the functional reliability and safety of the running gear, the body or the electric system. Modifications must only be performed by qualified specialists and in accordance with the generally acknowledged rules of the automotive industry.
Prerequisites for modifications to used vehicles:
The vehicle shall be in a good overall condition, i.e. structural parts such as longitudinal and cross members, pillars etc. shall not be corroded to such an extent that structural stability might be adversely affected.
Vehicles whose modifications might affect the validity of the general certificate of roadworthiness must be presented to an authorised testing centre for approval. It is recommended to clarify in advance with the relevant authority whether approval is required. Please contact us in case of inquiries for proposed modifications.

We require precise information from you in order to respond to your inquiry quickly and comprehensively.
When inquiring, please enclose two sets of design drawings of the complete scope of the modifications, showing all weights, centre of gravity specifications and dimensions. The drawings should also clearly show how the body is attached to the chassis. Please also provide information about the intended operating conditions of the vehicle with your inquiry.

If bodies comply with the present body builder guidelines, no additional approval by Volkswagen AG is required for the presentation of the vehicle at the relevant authority examining roadworthiness.
The work safety regulations of the trade association and the EU Machinery Directive apply.
When making modifications to vehicles, all corresponding and applicable legal regulations, rules, laws and directives must be observed.

#### 1.2.2.1 Safety certificate

Volkswagen AG does not issue body approvals for non-Volkswagen bodies. It merely provides body builders with important information and technical specifications for dealing with the product in these guidelines. As a result, Volkswagen AG recommends that all work should be carried out on the base vehicle and the body in accordance with the current Volkswagen body builder guidelines applicable to the vehicle in question.

Volkswagen AG does not recommend body activities which

- are not conducted according to these Volkswagen body builder guidelines
- exceed the gross vehicle weight rating
- exceed the gross axle weight rating.

Volkswagen AG issues safety certificates on a voluntary basis, as follows:
The assessment conducted by Volkswagen AG is exclusively based on the documents submitted by the body builder which is carrying out the modifications. The inspection and safety assessment only relate to the expressly designated scope of work, its basic compatibility with the designated chassis and its interfaces or, in the event of chassis modifications, the fundamental admissibility of the design for the designated chassis.

The safety certificate relates to the presented overall vehicle, and not
- to the design of the overall body,
- its functions or
- the planned use.

Safety is only provided if the design, production and installation are carried out by the body builder performing the modifications in accordance with the state of the art and in accordance with the applicable body builder guidelines of Volkswagen AG – and assuming any deviations from these guidelines have been declared to be technically safe. The safety certificate does not release the body builder who is performing the modifications from its responsibility for the product, or from its obligation to carry out its own calculations, tests and a trial of the entire vehicle in order to ensure that the operational safety, road safety and driving properties of the overall vehicle it has manufactured are acceptable. Accordingly, it is necessary to ensure that the body builder exclusively accepts its responsibility for ensuring that its body activities are compatible with the base vehicle as well as the operational and road safety of the vehicle. It is expressly stated that the safety certificate from Volkswagen AG does not represent a technical approval for the investigated changes.

In the course of assessment of a presented vehicle, an assessment report is written as a means of obtaining a safety certificate (safety certificate report).

The following assessment results are possible:
- Classified as "safe"
  If the overall vehicle is classified as "safe", the Sales department can subsequently issue the safety certificate.
- Classified as "not safe"
  Classification as "not safe" in the individual categories:
  + base vehicle configuration
  + impairment of the base vehicle and possibly
  + sole body item

leads to a corresponding classification of the overall vehicle. This means no safety certificate can be issued initially.

In order for a not-safe classification to be resolved, the safety certificate report states the necessary change for each item in question. In order for the safety certificate to be obtained, these points will have to be addressed by the body builder and documented in a clearly comprehensible manner in a report along the same lines as the safety certificate report. On the basis of this detailed report, it is possible for the desk-review assessment to be completed with a positive result.
Depending on the defective points, it may be necessary not only to provide documentation of the defect resolution but also for the vehicle from the first inspection to be presented again. The first report indicates if it will be necessary for a new assessment to be carried out on the vehicle.

The assessment report may also contain "notes/recommendations".
Notes/recommendations are technical remarks which do not have any effect on the final result of a safety certificate. They should be regarded as advice and suggestions for further consideration to support the continuous improvement of the final product for the customer.

In addition, "notes/recommendations solely relating to the conversion" can also be formulated. The notes and recommendations stated as "solely relating to the body/conversion" must be dealt with and documented before the vehicle can be included in the body builder portal.

**Practical note**

Country-specific laws, directives and approval regulations shall be observed!

#### 1.2.2.2 Application for the safety certificate

Before starting any work on the vehicle, auditable technical documentation and drawings must be submitted to the responsible department as part of the safety certificate evaluation (see 1.2.1 "Product and vehicle information for body builders").
For a swift approval process, the following is required:

- Documentation preferably in current, standard digital formats (e.g. PDF, DXF and STEP)
- Technical data and documentation should be complete

The following details must be included:

- Vehicle type
  - Vehicle equipment (chassis, panel van, window van etc...)
  - Wheelbase
  - Frame overhang
- Vehicle identification number (if already available)
- Any deviations from these body builder guidelines must be indicated on all documentation
- Axle load calculation
- All data about dimensions, weight and centre of gravity (weighing certificate)
- Special operating conditions (e.g. poor road conditions, extreme dust, high altitude, or ambient temperature extremes)
- Certificates (e-registration, seat tensile test)
- Attachment of the body on the vehicle
- Subframe:
  - Material and profiles
  - Dimensions
  - Type of profile
  - Features of the subframe construction (profile modifications, additional reinforcements, offsets etc...)
- Type of fixation for the body or add-ons to the vehicle frame (e.g. bolted connections)
  - Position (in relation to vehicle chassis)
  - Type
  - Size
  - Quantity
  - Property class
  - All fixation brackets on the vehicle frame must be used for bolted connections to the subframe, or body.
- Type of fixation for the body or add-ons to the vehicle frame (bolting, bonding, welding)
- Photographic documentation of the conversion
- All documents must clearly correlate with the conversion (e.g. drawings marked with with allocated numbers).
- General (functional) description of deviations from the series vehicle, or added components.
- Electric wiring diagram
  - Details of the consumption of additional electrical equipment.

Complete documentation avoids the need for clarification queries and accelerates the processing.

#### 1.2.2.3 Legal entitlements

- There is no legal entitlement for a safety certificate to be issued.
- Due to ongoing technical development and the information derived from this, Volkswagen AG is entitled to refuse a safety certificate even if a comparable certificate had been issued formerly.
- The safety certificate can be restricted to individual vehicles.
- The subsequent issue of a safety certificate may be refused for vehicles that have already been completed or delivered.
- The body builder is solely responsible for:
  - the function and compatibility of its body activities with the base vehicle.
  - road safety and operational reliability.
  - all body activities and installed parts.

### 1.2.3 Warranty and product liability of the body builder

The body builder's or fitter's warranty conditions apply to the body builder's or fitter's scope of supply. Therefore, warranty claims associated with complaints to this scope of supply cannot be made under the warranty conditions applicable to Volkswagen Commercial Vehicles.
Defects of bodies, installations and conversions provided by third parties as well as defects of the vehicle caused by the said bodies, installations or conversions are excluded from the Volkswagen warranty and also from the Volkswagen paint and body warranty. This also applies to accessories which were not installed and/or supplied by the vehicle manufacturer.
The body builder or fitter is solely responsible for the design and assembly of bodies and the execution of conversions.
All changes made must be documented by the body builder/outfitter.
Due to the multitude of modifications and diversity of operating conditions, the information provided by Volkswagen AG is subject to the reservation that modified vehicles are not tested by Volkswagen AG. Modifications may affect the properties of the vehicle.
For reasons of liability, the body builders or fitters shall provide the following information in writing to their customers:
"Due to the modifications* to your Volkswagen Commercial Vehicles base vehicle, the properties of your base vehicle may have changed. Please understand that Volkswagen AG does not assume any liability for any negative effects resulting from the modifications* to the vehicle."

In individual cases, Volkswagen AG reserves the right to demand evidence of the information being passed on to the customer.
No general legal entitlement for the approval of a body modification exists, even if such approval was previously granted.
If bodies comply with the present guidelines, no additional approval by Volkswagen AG is required for the presentation of the vehicle at the relevant authority examining roadworthiness.

* At this point, the term "modification" may be substituted by a more precise description of the work performed, e.g. by "camping equipment installation", "wheelbase extension", "box body".

### 1.2.4 Ensuring traceability

Body dangers only detected after delivery can mean that subsequent measures in the market will be necessary (customer information, warning, call-back). To make these measures as efficient as possible, it is necessary to be able to trace the product after delivery. For this purpose, and in order to be able to use the central vehicle register (CVR) operated by the Federal Motor Transport Authority or comparable registers abroad for tracing the affected vehicle keepers, we strongly recommend that body builders should store the serial number/identification number of their body linked to the vehicle identification number of the base vehicle in their databases. For this purpose, it is also recommended that customers' addresses are stored and that subsequent owners are provided with a means of registration.

### 1.2.5 Trademarks

VW badges and VW emblem are trademarks of Volkswagen AG. VW badges and VW emblems are not allowed to be removed without authorisation, or to be attached in a different location.

#### 1.2.5.1 Positions on rear of the vehicle

VW badges and VW emblems which are enclosed in the delivery must be fitted in the location intended by Volkswagen.

#### 1.2.5.2 Appearance of overall vehicle

If the vehicle does not correspond to the appearance and the quality requirements set by Volkswagen AG, then Volkswagen AG reserves the right to request removal of the Volkswagen AG trademarks.

#### 1.2.5.3 Non-Volkswagen trademarks

Non-Volkswagen badges are not allowed to be attached next to Volkswagen badges.

### 1.2.6 Recommendations for vehicle storage

Extended storage times cannot always be avoided. The following measures are recommended to ensure that vehicle quality is not affected by long-term storage:

At vehicle delivery:

- Open all ventilation flaps, set blower to maximum speed.
- Put manual gearbox into 1st gear or lever of automatic gearbox into park position. Do not engage reverse gear. Do not apply the parking brake.

If incomplete vehicles are stored outdoors (e.g. chassis), the fuel tank and its pipes, all components between the longitudinal members up to the rear bumper and the spare wheel must be protected (covered) against direct exposure to sunshine, snow and liquids.

Check the battery open-circuit voltage for the first battery and second battery (depending on vehicle equipment):

| Battery open-circuit voltage | Reading/measure |
|---|---|
| <10% or<br><11.6 V | Battery defective/totally discharged/<br>fully charge battery immediately |
| 10% to 80% or<br>11.6 to <12.5 V | Battery not able to start/<br>fully charge battery immediately |
| ≥80% or<br>≥12.5 V | Battery voltage OK. |

A maximum charging voltage of 14.8 volts must not be exceeded.

After delivery of vehicle:

- Check weekly for aggressive deposits (e.g. bird droppings, industrial deposits) and clean if necessary.
- Brake clean the brake discs every three months.
- Check tyre pressure at least once a month. The tyre pressure sticker states the correct tyre pressure for tyres fitted at the factory. The information applies to summer tyres, all-season tyres and winter tyres. The tyre pressure sticker is located either on the driver seat console or on the inside of the tank flap (see 1.2.1.5 "Online owner's manuals").
- Check the battery open-circuit voltage in accordance with the maintenance cycle (in accordance with the information above):
  - + Every 6 weeks for vehicles without transport mode or
  - + Every3 months for vehicles with transport mode or
  - + Every 6 months if there is a permanently attached solar panel.

Activate and deactivate transport mode:
Transport mode is a function of the vehicle to conserve the battery when the vehicle is delivered to the dealer. The mode is activated at the factory before delivery and is only used to transfer the vehicle from the production site to the dealer. When activated, certain power consumers such as the radio and central locking are switched off to conserve the battery.
Before the vehicle handover to the customer, the transport mode is deactivated again by the customer service workshop with the vehicle diagnostic tester.
Activation and deactivation of transport mode by the body builder is not provided and can only be performed by the customer service workshop. Manual activation or deactivation of transport mode is not possible.
The Transporter can be ordered with PR number 2A7 "Transport mode deactivated" as an option.

**Practical note**

For recharging the battery, use only a current-controlled battery charger with voltage limiter and IU or IUoU characteristic and a minimum charge current of 10 amps. A maximum charging voltage of 14.8 volts must not be exceeded. All batteries must always be charged for at least 24 hours. This does not apply when using a charger with a full-charge indicator.

When connecting the battery charger, the following connection specification must be observed under all circumstances:

- Positive: always connect to jump-start terminal, if fitted, otherwise to battery positive terminal
- Negative: always connect to vehicle body ground terminal intended for battery charging

**Practical note**

Removal of the battery for charging as well as series or parallel charging are unauthorised.

**Practical note**

Directly connecting a battery charger to the starter battery can lead to incorrect battery status recording by the vehicle electronics in some vehicles.

**Information**

You can find further information about vehicle storage in the following documents:

- Vehicle wallet
- Vehicle care programme

### 1.2.7 Compliance with environmental rules and regulations

**Environmental note**

The following principles of environmentally friendly design and material selection should be followed right from the planning stage of fitted components or bodies, and the statutory requirements in the EU Directive on End-of-Life Vehicles 2000/53/EC should also be taken into account.

Second stage manufacturers must ensure that attachments and add-on parts (conversions) comply with all applicable environmental rules and regulations, especially EU directive 2000/53/EC concerning end-of-life vehicles and the REACH regulation (EC) 1907/2006 relating to restrictions on the marketing and use of certain dangerous substances and preparations (*low flammability* and certain flame-retardant agents).
The registered keeper must keep all assembly documentation concerning the modification and hand it over together with the vehicle to the dismantler. This ensures that modified vehicles are processed in compliance with environmental rules and regulations at the end of their life cycle.
Materials which represent a potential risk such as halogen additives, heavy metals, asbestos, CFCs and chlorinated hydrocarbons shall be avoided.

- EU directive 2000/53/EC must be adhered to.
- Preferably, materials which allow valuable substance recycling and closed material cycles shall be used.
- The material and production process shall be selected so that only low amounts of easily recyclable waste are generated.
- Plastics shall only be used where these offer advantages in terms of cost, function or weight.
- In the case of plastics, especially composite materials, only mutually compatible substances from one material family may be used.
- With regard to components that are relevant for recycling, the number of plastic types used shall be kept as low as possible.
- It is necessary to check whether a component can be manufactured from recycled material or with recycled additives.
- Care shall be taken to ensure that recyclable components can be removed easily, e.g. by means of snap-lock connections, predetermined breaking points, good accessibility, use of standard tools.
- Simple, environmentally friendly removal of the fluids shall be ensured by means of drain plugs etc.
- Wherever possible, the components shall not be painted or coated; instead, dyed plastic parts shall be used.
- Components in areas at risk of accident shall be designed to be tolerant of damage, repairable and easy to exchange.
- All plastic parts shall be identified according to the VDA material sheet 260 ("Components of motor vehicles; Identification of materials"), e.g. "PP-GF30R".

### 1.2.8 Recommendations for inspection, maintenance and repair

Maintenance instructions or service schedules outlining inspection and servicing work should be provided for the modifications performed by the body builder or accessories fitter. These instructions or schedules must include the maintenance and inspection intervals as well as the required operating fluids and materials and the spare parts. It is also important to specify parts and components with a limited service life which are to be checked at regular intervals in order to ensure service reliability and timely replacement where required.

This should be supported by a repair manual including tightening torques, settings and tolerances as well as other relevant specifications. Special tools, including their source of supply, must also be stated.

The manual must also state which type of work must be performed only by the body builders and accessories fitters or their authorised workshops.

If the body builder's or accessory fitter's scope of supply includes electric, electronic, mechatronic, hydraulic or pneumatic systems, then current flow diagrams and diagnosis routines or similar documentation facilitating a systematic search for faults should be provided.

Please observe the Volkswagen AG owner's manual for the inspection, maintenance and repair of the base vehicle.

Please only use brake fluids and engine oils approved by Volkswagen for your vehicle.

More information about brake fluids and engine oils can be found in the owner's manual of your vehicle:

http://www.vwn-bordbuch.de

### 1.2.9 Accident prevention

Body builders shall ensure that the bodies comply with applicable legal rules and regulations as well as all regulations regarding work safety and accident prevention. All safety rules and the information material provided by accident insurance providers shall be observed.

All technically feasible measures must be taken to prevent unsafe operation.

Country-specific laws, directives and approval regulations must be observed.

The body builder is responsible for the compliance with these laws, rules and regulations.

For further information about commercial freight traffic in the Federal Republic of Germany please contact:

| | |
|---|---|
| **Postal address:** | Berufsgenossenschaft für Fahrzeughaltungen<br>Fachausschuss "Verkehr"<br>Sachgebiet "Fahrzeuge"<br>Ottenser Hauptstrasse 54<br>D-22765 Hamburg |
| **Telephone** | +49 (0) 40 39 80 - 0 |
| **Fax** | +49 (0) 40 39 80-19 99 |
| **Email:** | info@bgf.de |
| **Homepage** | http://www.bgf.de |

### 1.2.10 Quality system

Worldwide competition, increased quality requirements placed on the overall Transporter product by customers, national and international product liability legislation, new forms of organisation and increasing pressure on costs mean that effective quality assurance systems are demanded in all areas of the automotive industry.
The requirements of a quality management system of this kind are described in DIN EN ISO 9001.

For the reasons stated above, Volkswagen AG strongly recommends that all body builders should set up and maintain a quality management system with the following minimum requirements:
Definition of responsibilities and authorisations including organisational plan.

- Description of the processes and procedures.
- Appointment of a quality management representative.
- Performing contract and build feasibility checks.
- Performing product checks based on specified instructions.
- Regulating the handling of faulty products.
- Documentation and archiving of test results.
- Ensuring the quality records of employees are up to date.
- Systematic monitoring of test equipment.
- Systematic material and parts identification.
- Performing quality assurance measures at the suppliers.
- Ensuring the availability of process, working and test instructions, and that they are up to date, in the departments and in the workplace.

# 1.3 Planning bodies

**Practical note**

In addition to a user and maintenance friendly design (see chapter 2.3.2.10 "Corrosion protection measures"), the right choice of materials and thus the observance of corrosion protection measures are important during the planning of bodies.

### 1.3.1 Selecting the base vehicle

The base vehicle needs to be selected carefully to ensure safe usage in the respective field.

When planning, please consider the following for the use in question:

- Wheelbase
- Engine/gearbox
- Final drive ratio
- Gross vehicle weight rating
- Centre of gravity
- Seating version (number and arrangement)
- Electrics scope (e.g. interior lights, battery, e-interface for special vehicles)
- Power take-off system (e.g. uprated alternator, larger compressor, possible noise insulation for protecting the power take-off system)
- Effect of energy recovery on the current distribution for vehicles with BlueMotion technology

**Practical note**

Before carrying out body building or conversion measures, the supplied base vehicle should be checked with regard to the fulfilment of applicable requirements.

You will find more information on the available chassis and body versions in the sales documentation.
Please contact us (see chapter 1.2.1.1 "Contact in Germany" and 1.2.1.2 "International contact").

**Information**

On the Volkswagen AG homepage, you can put together your vehicle using the configurator and view the special equipment available:
http://www.volkswagen-nutzfahrzeuge.de/de/cc5.html

### 1.3.2 Vehicle modifications

Before starting work on the body, the body builder should check whether

- the vehicle is suitable for the planned body
- the chassis type and the equipment also correspond with the operating conditions after the conversion.

Build dimension drawings, product information and technical data can be obtained from the relevant department or via the communication system for the planning of bodies (see 1.2.1.1 "Contact in Germany", 1.2.1.2 "International contact" and 1.2.2 "Body builder guidelines, consulting").

Furthermore, the special equipment available from the factory should be noted (see chapter 1.4 "Special equipment").

Vehicles delivered from the factory comply with European directives and the national laws (except for some vehicles for countries outside Europe).

The vehicles also need to meet the European directives and the national laws after the modifications have been made.

**Information**

Please note that a majority of the EC directives announced to date have been annulled by Regulation (EC) 661/2009 "General Safety". The EC directives have been replaced by new EU directives or UNECE regulations with the same corresponding content.

**Practical note**

Sufficient space must be provided in order to guarantee the function and operating safety of the components.

**Warning note**

Do not modify the steering or brake system!
Modifications to the steering and brake system can result in these systems no longer working correctly and failing. This may result in the driver losing control of the vehicle and causing an accident.

**Practical note**

Modifications to the noise encapsulation can have effects which are relevant to registration.

**Practical note**

When converting vehicles of registration type N1 to M1, note that within the EU, the refrigerant must be converted to R1234yf for M1 registration.

### 1.3.3 Vehicle acceptance

The officially recognised appraiser or tester from the body builder must be informed about modifications to the chassis.

**Practical note**

Country-specific laws, directives and approval regulations shall be observed!

# 1.4 Special equipment

We recommend using the special equipment from Volkswagen AG that can be obtained with a PR number for optimum adaptation of the body to the vehicle.
You can obtain information on special equipment provided by Volkswagen under PR numbers from your Volkswagen dealership or in your contact options for product and vehicle information for body builders (see chapter 1.2.1 "Product and vehicle information for body builders") Please also note chapter 5 "Implementation of special bodies".

**Information**

You can also put together your vehicle using the configurator on the Volkswagen AG homepage and view the special equipment available:
http://www.volkswagen-nutzfahrzeuge.de/de/cc5.html

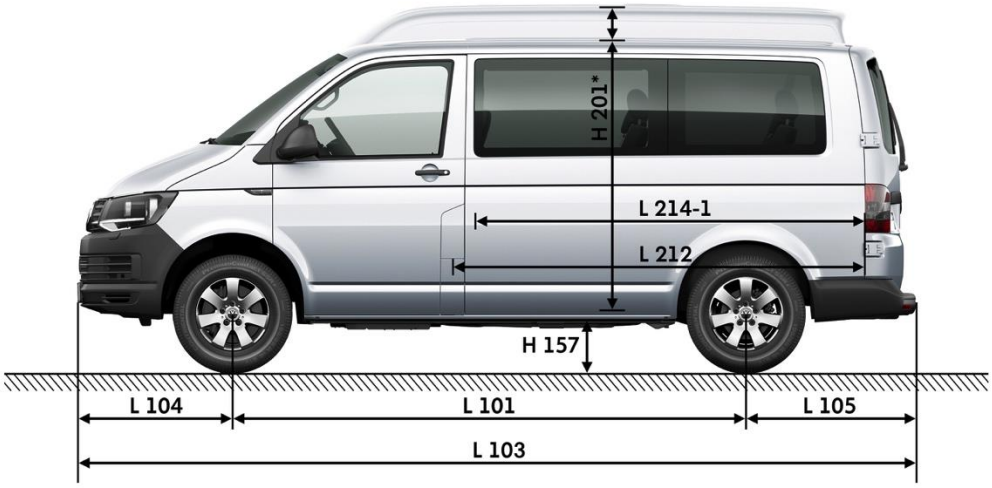
Special equipment (e.g. reinforced springs, frame reinforcements, anti-roll bars etc.) or equipment fitted later increase the kerb weight of the vehicle.
The actual vehicle weight and the axle loads should be determined by weighing before the body is built.
Not all additional equipment can be built into any vehicle without problems. This applies in particular if it is fitted later on.

We recommend using the reinforced springs that are available from the factory for bodies and conversions.

# 2 Technical data for planning

### 2.1.1 Vehicle dimensions

#### 2.1.1.1 Basic data of panel van/window van (short + long wheelbase)



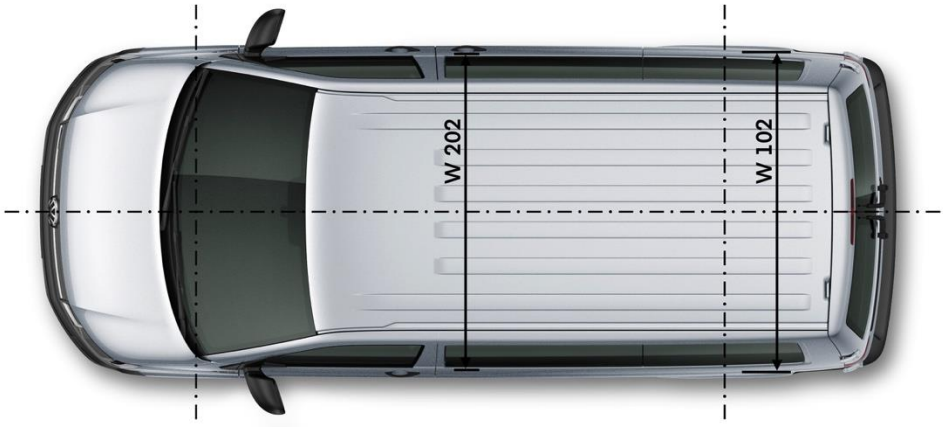




Fig. 1: Vehicle dimensions panel van/window van short wheelbase (acc. to DIN 70020, P1)

* Both roof heights can be found in the basic data table under the term H201

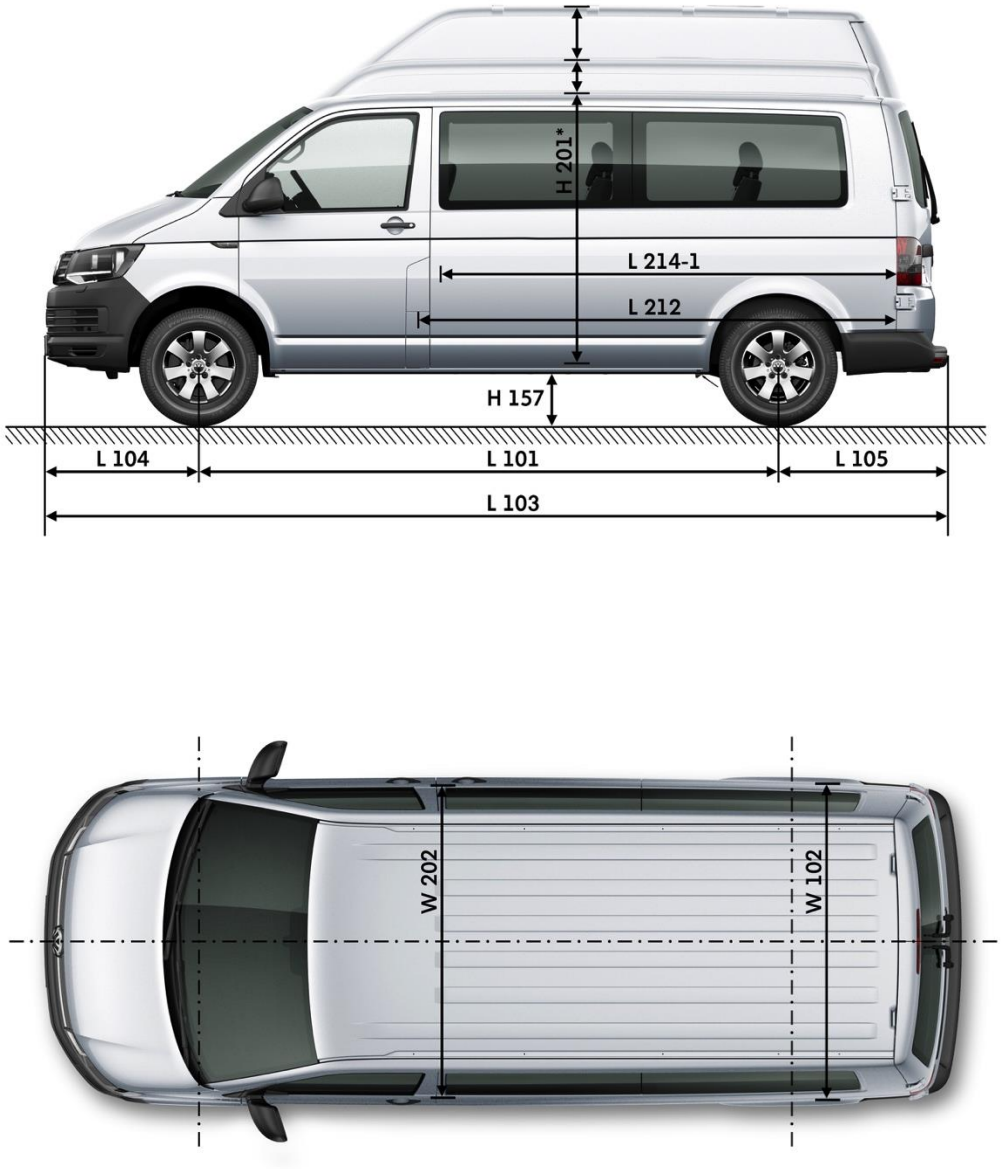



Fig. 2: Vehicle dimensions panel van/window van long wheelbase (acc. to DIN 70020, P1)

* All three roof heights can be found in the basic data table under the term H201

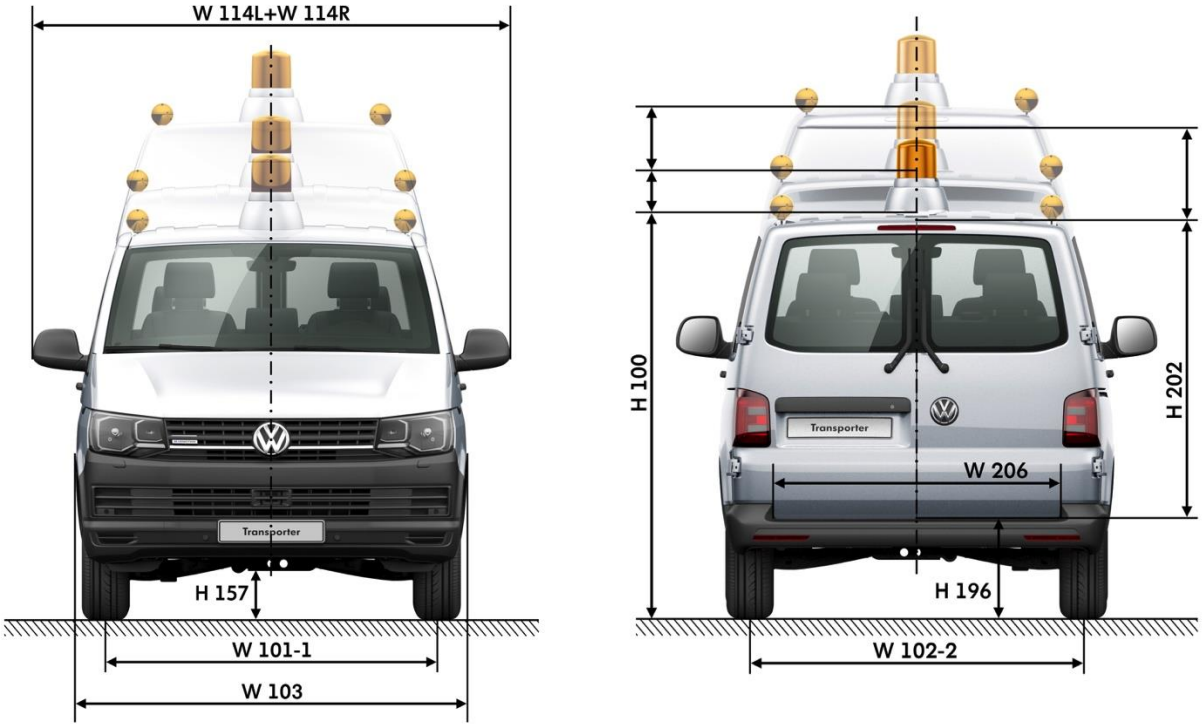



Fig. 3: Vehicle dimensions panel van/window van front and rear, short/long wheelbase (acc. to DIN 70020, P1)

* All three roof heights can be found in the basic data table under the term H100 and H202

| Basic data of panel van/window van (ML3*) (All engines) | | | Panel van/window van short wheelbase [mm] | Panel van/window van long wheelbase [mm] |
|---|---|---|---|---|
| Dimensions | L101 | Wheelbase | 3,000 | 3,400 |
| | L103 | Vehicle length | 4,904 | 5,304 |
| | L102 | Vehicle length with trailer towing coupling | 5,006 | 5,406 |
| | L515 | Centre of gravity position, load compartment, distance from front axle (FA), 3-seater | 2,748/ - - - | 2,948/ - - - |
| | L515.1 | Centre of gravity position, load compartment, distance from front axle (FA), 6-seater | 3,304/ - - - | 3,504/ - - - |
| | W103 | Vehicle width: (measuring point: door handle) | 1,904 | 1,904 |
| | H100 Normal roof | Vehicle height body | 1,990 | 1,990 |
| | | -> with identification light | 2,298 | 2,298 |
| | | -> with GSM/GPS aerial | - - -/- - - | - - - |
| | | -> with high roof mounted turn signals | 2,066 | 2,066 |
| | | -> with priority vehicle light | 2,175 | 2,175 |
| | | -> vehicle height with roof ventilator | 2,103 | 2,103 |
| | | -> vehicle height with taxi roof sign | - - -/2,065 | - - -/2,065 |

| **Basic data of panel van/window van (ML3*) (All engines)** | | | **Panel van/window van short wheelbase [mm]** | **Panel van/window van long wheelbase [mm]** |
|---|---|---|---|---|
| | | | | |
| **Dimensions** | H100 Medium-high roof | Vehicle height body | 2,177 | 2,170 |
| | | -> with identification light | 2,457 | 2,450 |
| | | -> with GSM/GPS aerial | 2,200 | 2,193 |
| | | -> with priority vehicle light | 2,377 | 2,370 |
| | | -> with high roof mounted turn signals | 2,252 | 2,245 |
| | | -> roof ventilator | 2,305 | 2,298 |
| | H100 High roof | Vehicle height body | - - - | 2,477 |
| | | -> with identification light | - - - | 2,779 |
| | | -> with GSM/GPS aerial | - - - | 2,515 |
| | | -> with priority vehicle light | - - - | 2,677 |
| | | -> with high roof mounted turn signals | - - - | 2,565 |
| | | -> with roof ventilator | - - - | 2,605 |
| | L104 | Front overhang length | 908 | 908 |
| | L105 | Rear overhang length | 993 | 993 |
| | L105-1 | Rear overhang with rigid trailer towing coupling | 1,095 | 1,095 |
| | W101-1 | Track width at front | | |
| | | -> with rim offset 50 | 1,634 | 1,634 |
| | | -> with rim offset 51 | 1,632 | 1,632 |
| | | -> with rim offset 52 | 1,630 | 1,630 |
| | | -> with rim offset 55 | 1,624 | 1,624 |
| | | -> with rim offset 56 | 1,622 | 1,622 |
| | W102-2 | Track width at rear | | |
| | | -> with rim offset 50 | 1,640 | 1,640 |
| | | -> with rim offset 51 | 1,638 | 1,638 |
| | | -> with rim offset 52 | 1,636 | 1,636 |
| | | -> with rim offset 55 | 1,630 | 1,630 |
| | | -> with rim offset 56 | 1,628 | 1,628 |
| | WX 1 | Maximum rear axle width | 1,900 | 1,900 |
| | WX 2 | Maximum front axle width | 1,894 | 1,894 |
| | H157* | Ground clearance between axles acc. to 70/156/EEC | 223 | 222 |
| | A117 | Breakover angle | - - - /13.7° | - - - /12.2° |

| Basic data of panel van/window van (ML3*) (All engines) | | | Panel van/window van short wheelbase [mm] | Panel van/window van long wheelbase [mm] |
|---|---|---|---|---|
| | A116-1 | Front overhang angle at full load, limited by spoiler | 21.2° | 21.2° |
| Dimensions | A116-2.1 | Rear overhang angle at full load, limited by bumper | 16.2° | 16.2° |
| | A116-2.2 | Rear overhang angle at full load, limited by spare wheel | 14.5° | 14.5° |
| Turning circle | D102 | Minimum turning circle | 11.9 m | 13.2 m |
| Wheels/tyres | | Basic tyres*** | Smallest tyre<br>205/65R16 C 103/101T<br><br>Largest tyre<br>255/45 R18 xl 103W | Smallest tyre<br>205/65R16 C 103/101T<br><br>Largest tyre<br>255/45 R18 xl 103W |
| Load compartment measurements | L202 | Length of load bed (98/27/EC), 3-seater | 2,498/ | 2,898/ |
| | L202.1 | Length of load bed (98/27/EC), 6-seater | 1,387/ | 1,787/ |
| | L214 | Length of load compartment at height of top edge of driver's backrest | 2,314/2,285 | 2,714/2,686 |
| | L212-1 | Luggage compartment length 1st row of seats | 2,572 | 2,975/2,938 |
| | | Luggage compartment length 2nd row of seats | - - - /1,600 | - - - /1,967 |
| | | Luggage compartment length 3rd row of seats | - - - / 739 | - - - / 1,118 |
| | | Luggage compartment length 4th row of seats | - - - / - - - | - - - / 298 |
| | F201-1 | Load compartment area | 4.3 m² | 5 m² |
| | W200 | Largest luggage compartment width<br>one sliding door<br>two sliding doors | <br>1,700/1,627<br>- - - /1,691 | <br>1,700/1,627<br>- - - /1,691 |
| | W202 | Smallest luggage compartment width | 1,244 | 1,244 |
| | H201** | Maximum loadspace height – panel van<br>-> with normal roof<br>-> with medium-high roof<br>-> with high roof | <br>1,410/- - -<br>1,635/- - -<br>- - - /- - - | <br>1,410/- - -<br>1,635/- - -<br>1,940/- - - |
| | H201*<br>(H505) | Loadspace height – window van<br>-> with normal roof<br>-> with medium-high roof<br>-> with high roof | <br>--- / 1,397<br>--- / 1,622<br>- - - /- - - | <br>--- / 1,394<br>--- / 1,619<br>--- / 1,924 |
| | H196 | Load sill height above ground plane | 568/576 | 566/574 |
| | H508 | Clear opening height of sliding door<br>Clear opening height of tall sliding door | 1,282/1,264<br>- - -/- - - | 1,282/1,264<br>1,734/1,717 |
| | L508 | Clear opening width of sliding door | 1,017 | 1,017 |

| Basic data of panel van/window van (ML3*) (All engines) | | | Panel van/window van short wheelbase [mm] | Panel van/window van long wheelbase [mm] |
|---|---|---|---|---|
| Load compartment measurements | H101-M | Maximum vehicle height<br>->with normal roof<br>->with medium-high roof<br>->with high roof | <br>2,284<br>2,457<br>- - - | <br>2,284<br>2,457/2,450<br>2,779 |
| | H110 | Vehicle height with rear lid open<br>->with normal roof<br>->normal roof with wing door<br>->tall wing door | <br>2,220<br>2,050<br>- - -/- - - | <br>2,203<br>2,050<br>2,474 |
| | H202 | Body opening height with rear lid<br>->wing door normal/medium-high roof<br>->wing door with high roof | 1,299/1,290<br>1,292/1,276<br>- - - / - - - | 1,299/1,290<br>1,292/1,276<br>1,694/1,694 |
| | W206 | Largest width of rear opening | 1,473 | 1,473 |
| Garage dimensions | W120-1 | Vehicle width, front doors open | 3,808 | 3,808 |
| | W114-L | Y-coordinate of exterior mirror on driver side | 1,160 | 1,160 |
| | W114-R | Y-coordinate of exterior mirror on passenger side | 1,137 | 1,137 |
| Vehicle interior dimensions | H61-1 | Effective headroom – 1st seat row | 1,003 | 1,003 |
| | H61-2 | Effective headroom – 2nd seat row | 1,032 | 1,032 |
| | H61-3 | Effective headroom – 3rd seat row | - - - / 1,030 | - - - / 1,030 |

*Measurement load, loaded

**With lowered suspension -20 mm from the height figures in relation to the ground plane

(except H157)

*** The permitted tyre size varies depending on the engine and the gross vehicle weight rating.

### 2.1.1.2 Basic data of chassis/platform van (short + long wheelbase)

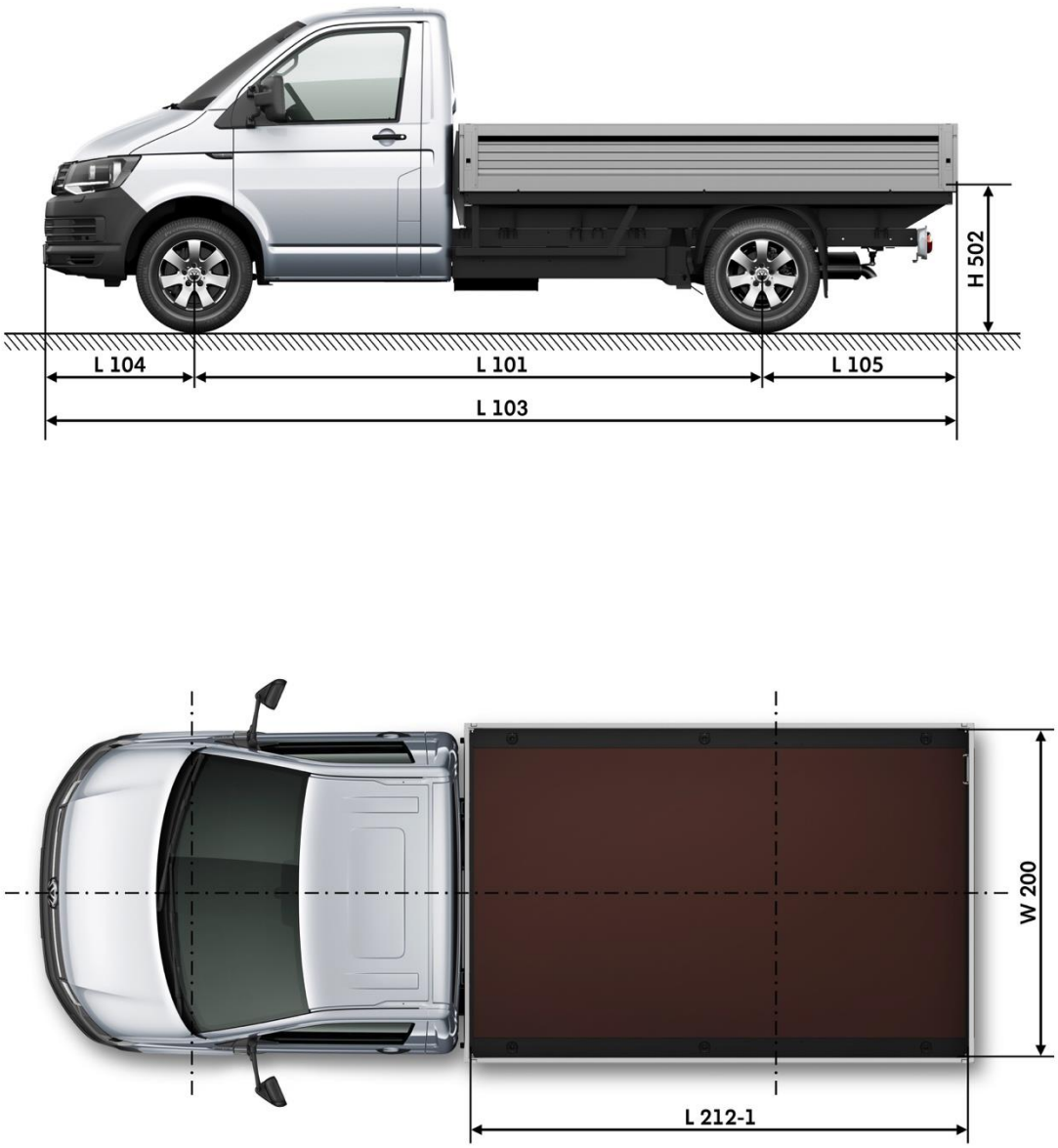



Fig. 4: Vehicle dimensions platform van (acc. to DIN 70020, P1)

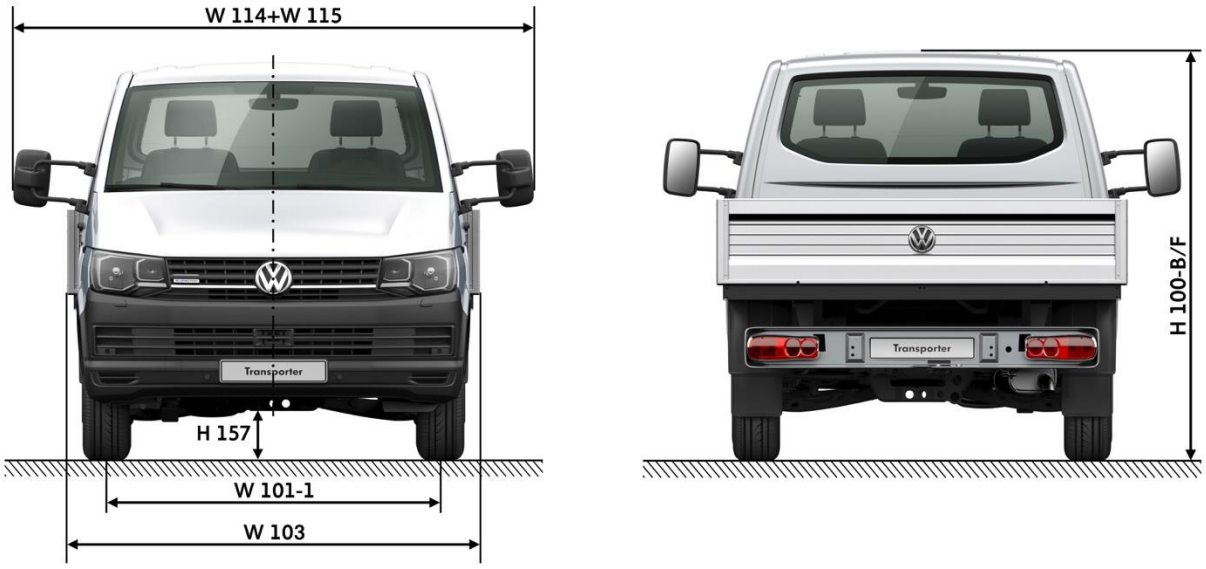



Fig. 5 Vehicle dimensions platform van short and long wheelbase

| Basic data of chassis and platform van (ML3*) (All engines) | | | Chassis/platform Short wheelbase [mm] | Chassis/platform Long wheelbase [mm] |
|---|---|---|---|---|
| Dimensions | L101 | Wheelbase | 3,000 | 3,400 |
| | L102 | Max. vehicle length with trailer towing coupling | 5,032/- - - | 5,481/- - - |
| | L103 | Vehicle length with cab | 4,900/5,100 | 5,300/5,500 |
| | L103.1 | Vehicle length with double cab | - - -/- - - | 5,300/5,500 |
| | L103.7 | Minimum permitted vehicle length | 4,900/- - - | 5,300/- - - |
| | | Maximum permitted vehicle length with cab | 5,198/- - - | 5,770/- - - |
| | | Maximum permitted vehicle length with double cab | - - -/- - - | 5,770/- - - |
| | W103 | Vehicle width | 1,904/1,994 | 1,904/1,994 |
| | | Minimum permitted vehicle width | 1,904 | 1,904 |
| | | Maximum permitted vehicle width *** | | |
| | | - for small bracket-mounted exterior mirror | 2,030 | 2,030 |
| | | - for large bracket-mounted exterior mirror | 2,200 | 2,200 |
| | H 100 | Vehicle height body with cab | 1,948 | 1,948 |
| | | Vehicle height with cab with identification light | 2,192 | 2,192 |
| | | Vehicle height with cab with priority vehicle light | 2,148 | 2,148 |
| | | Vehicle height body with double cab | - - - | 1,960 |

| Basic data of chassis and platform van (ML3*) (All engines) | | | Chassis/platform Short wheelbase [mm] | Chassis/platform Long wheelbase [mm] |
|---|---|---|---|---|
| Dimensions | | Vehicle height with double cab with identification light | - - - | 2,191 |
| | | Vehicle height with double cab with priority vehicle light | - - - | 2,160 |
| | H431 | Vehicle height (cab) with convertible roof frame and cover | - - - /2,590 | - - - /2,575 |
| | | Vehicle height (double cab) with convertible roof frame and cover | - - - / - - - | - - - /2,576 |
| | | Vehicle height (cab low-loader platform) with convertible roof frame and cover | - - - / | - - - /2,440 |
| | | Vehicle height (cab) with ladder transport frame | - - - /2,331 | - - - /2,331 |
| | | Vehicle height (double cab) with ladder transport frame | - - - / - - - | - - - /2,331 |
| | | Vehicle height (cab low-loader platform) with ladder transport frame | - - - / - - - | - - - /2,196 |
| | H101 | Vehicle height maximum (cab) with convertible roof frame and cover | - - - /2,590 | - - - /2,575 |
| | | Vehicle height maximum (double cab) with convertible roof frame and cover | - - - /- - - | - - - /2,576 |
| | L104 | Front overhang length | 908 | 908 |
| | L105 | Rear overhang length | 989/1,189 | 989/1,189 |
| | W101 | Track at front | | |
| | | with rim offset 50 | 1,634 | 1,634 |
| | | 51 | 1,632 | 1,632 |
| | | 52 | 1,630 | 1,630 |
| | | 55 | 1,624 | 1,624 |
| | | 56 | 1,622 | 1,622 |
| | W101-1 | Track width at rear | | |
| | | with rim offset 50 | 1,640 | 1,640 |
| | | 51 | 1,638 | 1,638 |
| | | 52 | 1,636 | 1,636 |
| | | 55 | 1,630 | 1,630 |
| | | 56 | 1,628 | 1,628 |
| | WX1 | Maximum rear axle width | 1,900 | 1,900 |
| | WX 2 | Maximum front axle width | 1,894 | 1,894 |
| | H157 | Ground clearance between axles acc. to 70/156/EEC | 223 | 222 |
| | A116-1 | Front overhang angle at full load, limited by bumper | 21.2° | 21.2° |

| Basic data of chassis and platform van (ML3*) (All engines) | | | Chassis/platform Short wheelbase [mm] | Chassis/platform Long wheelbase [mm] |
|---|---|---|---|---|
| Dimensions | A116-2 | Rear overhang angle at full load, limited by spare wheel bracket | 20.3° | 19.9° |
| | W200 | Largest luggage compartment width | - - - /1,940 | - - - /1,940 |
| | L212-1<br>(L517) | Largest luggage compartment length<br>Single cab<br>Double cab | <br>2,539<br>- - - | <br>2,939<br>2,169 |
| | H502 | Load sill above ground plane<br>Double cab<br>Low-loader platform | - - - /908<br>- - - /- - -<br>- - - /- - - | - - - /904<br>- - - /904<br>- - - /769 |
| | W206 | Minimum turning circle | 11.9 m | 13.2 m |
| | D102 | Basic tyres** | Smallest tyre<br>205/65R16 C 103/101T<br><br>Largest tyre<br>255/45 R18 xl 103W | |
| Garage dimensions | W120 | Vehicle width, front doors open<br>Vehicle width, rear doors open | - - - /3,808<br>- - - /3,808 | - - - /3,808<br>- - - /3,460 |
| | W114<br><br>W114.1 | Y-coordinate of exterior mirror on driver side<br><br>Y-coordinate of exterior mirror on driver side (bracket-mounted mirror, long) | 1,160<br><br>1,256 | 1,160<br><br>1,256 |
| | W115<br><br>W115.1 | Y-coordinate of exterior mirror on passenger side<br><br>Y-coordinate of exterior mirror on passenger side (bracket-mounted mirror, long) | 1,137<br><br>1,238 | 1,137<br><br>1,238 |
| Vehicle interior dimensions | H61-1 | Effective head area – 1st seat row | - - - /1,003 | - - - /1,003 |
| | H61-2 | Effective headroom – 2nd seat row | - - - / - - - | - - - /957 |
| | H61-3 | Effective headroom – 3rd seat row | - - - / - - - | - - - / - - - |

* Measurement load, loaded

** The permitted tyre size varies depending on the engine and the gross vehicle weight rating.

*** Please also observe the permitted vehicle dimensions (vehicle width and length) for the vehicle lighting (see chapter 2.5.1. Lighting).

### 2.1.1.3 Basic data back-to-back cab

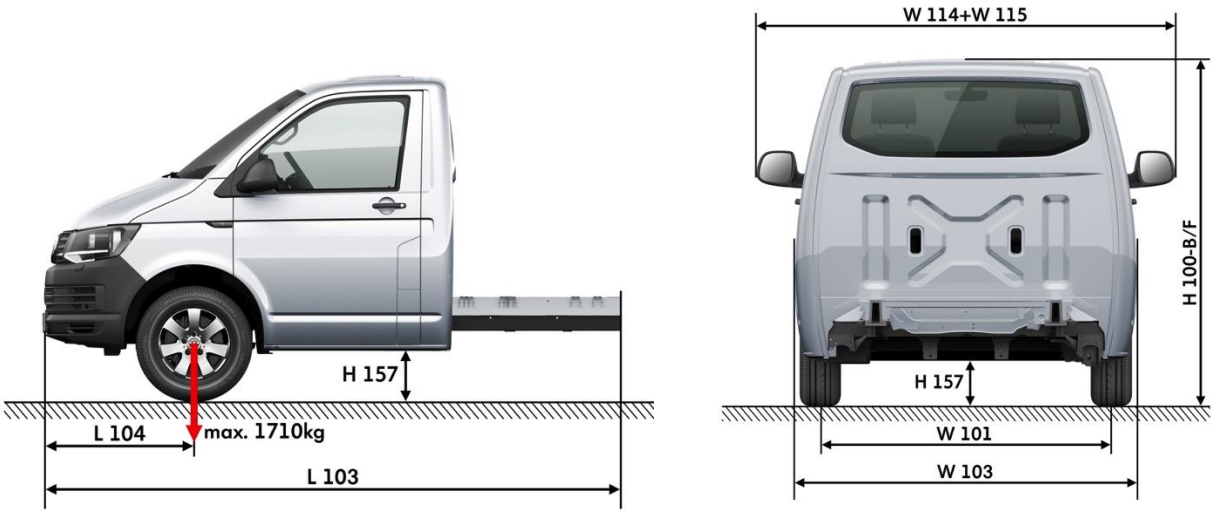



Fig. 6 Vehicle dimensions – back-to-back cab

| Basic data, back-to-back cab | | | Back-to-back cab [mm] | Comments |
|---|---|---|---|---|
| Dimensions | L101 | Wheelbase | - - - | |
| | L103 | Vehicle length with cab | 3,618 | |
| | W103 | Vehicle width | 1,904 | |
| | | Minimum permitted vehicle width | 1,904 | |
| | | Maximum permitted vehicle width***<br>- Mirror housing<br>- for small bracket-mounted exterior mirror<br>- for large bracket-mounted exterior mirror | <br>1,904<br>2,030<br>2,200 | |
| | H100 | Vehicle height body (driver's cab) | 1,948 | |
| | | - Vehicle height (cab) with identification light | 2,192 | |
| | | - Vehicle height (cab) with priority vehicle light | 2,148 | |
| | L104 | Front overhang length | 908 | |
| | W101-1 | Track at front<br>with rim offset 52 (16" 6 1/2Jx16)<br>56 (17" 7J x17) | <br>1,630<br>1,622 | <br>Depending on load<br>index of the tyres used |
| | WX 1 | Maximum rear axle width | - - - | |
| | H157 | Ground clearance between the axles for ML3* | 223 | |
| | A116 | Front overhang angle at full load, limited by bumper | 21.2° | |
| | H502 | Load sill height above ground plane | - - - | |

| Basic data, back-to-back cab | | | Back-to-back cab [mm] | Comments |
|---|---|---|---|---|
| Wheels/tyres | | Basic tyres (front axle)** | Smallest tyre<br>205/65R16 C 103/101T<br><br>Largest tyre<br>255/45 R18 xl 103W | |
| Garage dimensions | W120-1 | Vehicle width, front doors open | 3,808 | |
| | W114 + W115 | Vehicle width with exterior mirrors (left and right)<br>- Exterior mirror (standard equipment)<br>- Bracket-mounted mirror, long (driver's side, special equipment)<br>- Bracket-mounted mirror, long (front passenger side, special equipment) | 2,297<br>1,160<br>1,256<br><br>1,238 | |
| | W115 | Y-coordinate of exterior mirror on passenger side | 1,137 | |
| Vehicle interior dimensions | H61-1 | Effective head area – 1st seat row | 1,003 | |

* Measurement load, loaded

** The permitted tyre size varies depending on the engine and the gross vehicle weight rating.

*** Please also observe the permitted vehicle dimensions (vehicle width and length) for the vehicle lighting (see chapter 2.5.1. "Lighting")

**Information**

You will find additional technical data (dimensional drawings, weight information and emissions figures) on the Transporter, according to the engine and equipment variant, on the Internet at:
http://www.volkswagen-nutzfahrzeuge.de/de/downloads.htx

Please also comply with the following chapters as part of the conversion:

- 2.2.1 "Permitted weights and unladen weights"
- 2.2.6 "Brake system and brake control system ESP"
- 2.3.2 "Modifications to the body-in-white"
- 2.5.2.1 Electric lines/fuses
- 2.5.2.3 "Retrofitting electrical devices"
- 2.6.3 "Fuel system"
- 2.6.4 "Exhaust system"
- 2.7 "Power take-off system, engine/gearbox"
- 3.2.1 "Safety features"

# 2.1 Base vehicle

### 2.1.2 Overhang angle and breakover angle

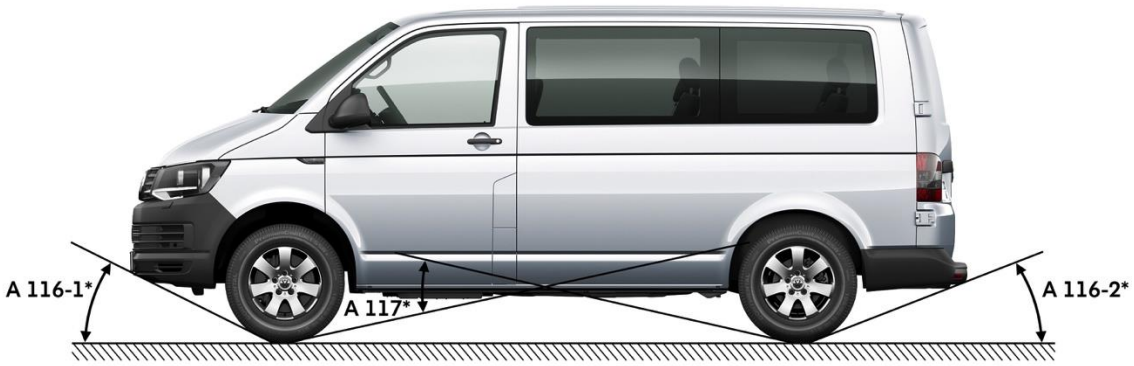



Fig. 1 Overhang and breakover angles, Transporter panel van/window van

The values for the overhang angle (A116) and the breakover angle (A117) can be found in the basic data table in chapter 2.1.1.1.

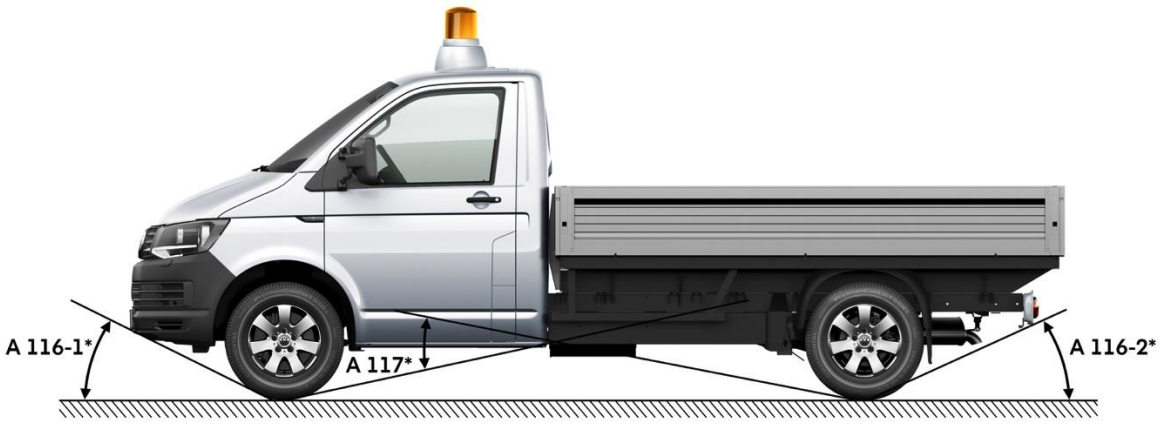



Fig. 2 Overhang and breakover angles, Transporter platform van / chassis

The values for the overhang angle (A116) and the breakover angle (A117) can be found in the basic data table in chapter 2.1.1.2.

### 2.1.3 Vehicle centre of gravity

#### 2.1.3.1 Information about height of centre of gravity acc. to Directive 71/320/EEC

Since 1 Jan 91, all commercial vehicles have had to comply with the "EC Brake Systems Directive 71/320/EEC". When this EC Directive was adopted into national legislation (e.g. the Road Traffic Regulations (StVZO) in Germany), the effect was that these technical regulations also had to be complied with for individual acceptance.

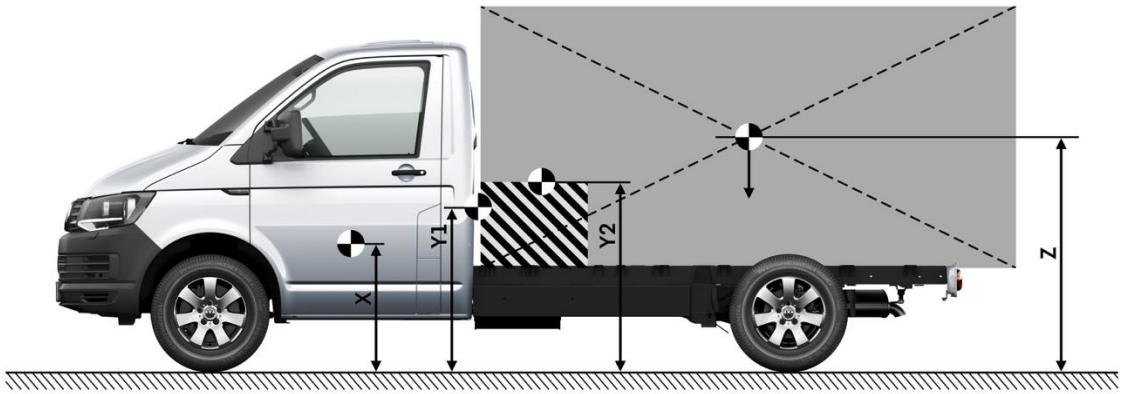



Fig. 1: Wheelbase 3,000 mm

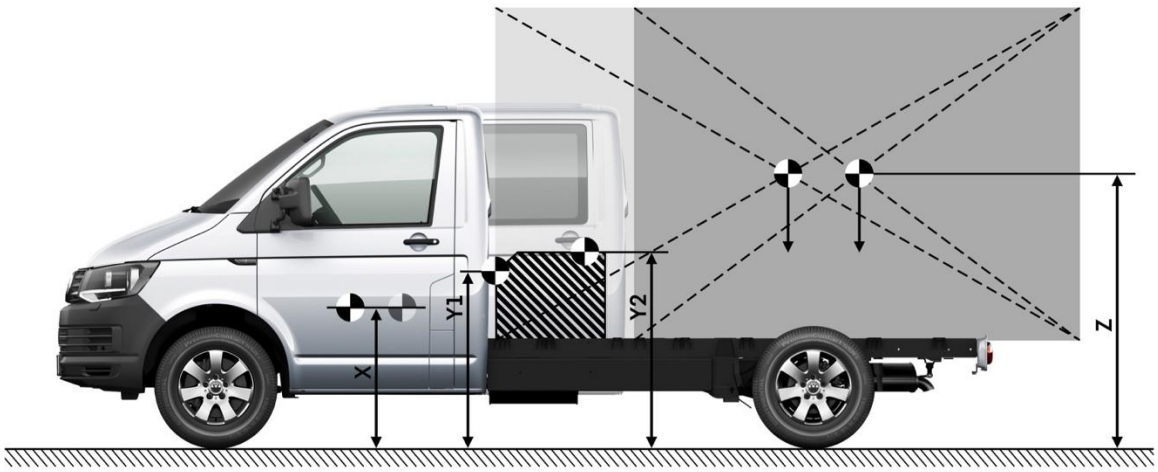



Fig. 2: Wheelbase 3,400 mm

In all permitted weights, the centre of gravity height **Y1 or Y2** must not be exceeded.

The following table shows which **centre of gravity height** is permitted at kerb weight **X** (standard equipment) and in vehicles laden up to the **relevant permitted gross vehicle weight Y**.

| Implementation | GVWR | Anti-roll bars | | Centre of gravity of the basic or unladen vehicle | Max. perm. centre of gravity height of the vehicle | Max. perm. centre of gravity height of the vehicle with reduced FA load | Max. perm. centre of gravity height of body and payload above the carriageway |
|---|---|---|---|---|---|---|---|
| | [t] | Front axle | Rear axle | X [mm] | Y1 [mm] | Y2 [mm] | Z [mm] |
| **Panel/ window van** | 2.6 | Sv | Sh | 730 | | 840 | 1,250 |
| **Panel/ window van** | 2.8 | Sv | Sh | 730 | | 890 | 1,325 |
| **Platform/ double cab** | 2.8 | Sv | Sh | 680 | | 890 | 1,275 |
| **Chassis** | 2.8 | Sv | Sh | 620 | | 890 | 1,300 |
| **Panel/ window van** | 2.85 | Sv | Sh | 730 | | 900 | 1,335 |
| **Platform/ double cab** | 2.85 | Sv | Sh | 680 | | 900 | 1,325 |
| **Chassis** | 2.85 | Sv | Sh | 620 | | 900 | 1,325 |
| **Platform/ double cab** | 3.0 | Sv | Sh | 680 | | 920 | 1,350 |
| **Chassis** | 3.0 | Sv | Sh | 620 | | 920 | 1,350 |
| **Panel/ window van** | 3.0 | Sv | Sh | 730 | 920 | 990 | 1,550 |
| **Panel/ window van** | 3.2 | 2MG | 2MG | 730 | 950 | 990 | 1,550 |
| **Platform** | 3.2 | 2MG | 2MG | 680 | 950 | 990 | 1,500 |
| **Chassis** | 3.2 | 2MG | 2MG | 620 | 950 | 990 | 1,525 |

2MG = 28 mm, rear stabiliser (Sh), front stabiliser (Sv)

The height of the centre of gravity Y2 can be used if the permitted front axle load is reduced by 40 kg

### 2.1.4 Bodies with a high centre of gravity

Restrictions to the driving properties of vehicles with a high body or with an elevated overall centre of gravity (>920 mm) should be anticipated (see also chapter 2.2.6 "Brake system and brake control system ESP").

### 2.1.5 Determining the centre of gravity

Volkswagen recommends having the centre of gravity determined by a recognised test institution with experience in this field (for example, DEKRA, TÜV or others).

For the body builder to determine the centre of gravity, we recommend following the procedures described in chapter 7.1 "Determining the centre of gravity".

### 2.1.6 Maximum dimensions

The dimensions of the chassis can be found in the build dimension drawings. Installation of reinforced springs, comfort springs or fitting tyre sizes other than the series production tyres can significantly alter the clearance dimensions of the vehicle and the frame above ground. Please take account of this equipment in your project planning.

**Important notes:**

- The minimum distance between the cab and body must be 30 mm.
- The minimum distance between the cab roof and superstructure must be 30 mm.
- The front overhang of the body may not affect the view of traffic lights.

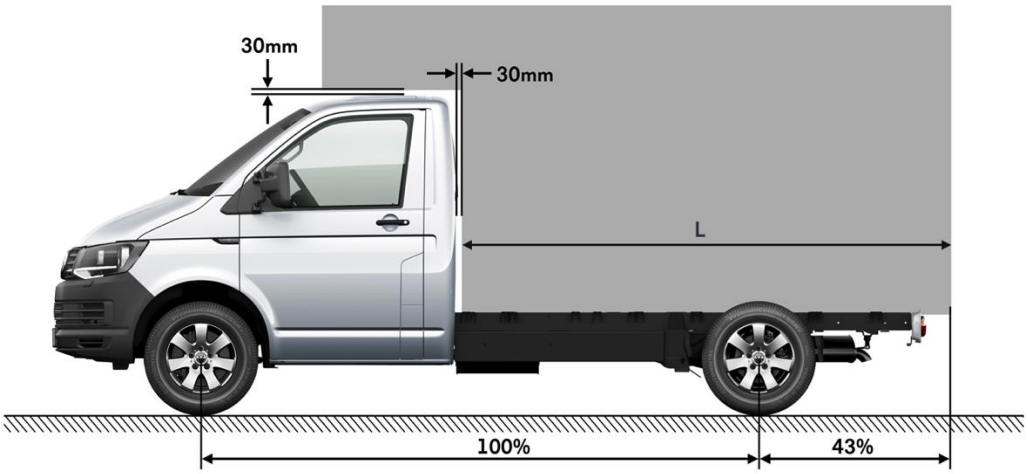



Fig. 1 Max. dimensions

**Maximum permitted vehicle lengths**

The rear overhang of the bodies in not allowed to exceed 43% of the wheelbase.
This length limitation means that the following exterior body lengths must not be exceeded:

| | Wheelbase | Standard body length, internal (max. load compartment length, platform) | Max. superstructure length L at 43% overhang |
|---|---|---|---|
| **Chassis with cab** | 3,000 mm | 2,539 mm | 2,691 mm |
| **Chassis with cab** | 3,400 mm | 2,939 mm | 3,263 mm |
| **Chassis with double cab** | 3,400 mm | 2,169 mm | 2,493 mm |

**Maximum permitted vehicle width**

When choosing your base vehicle, please note the max. permissible superstructure width of the original standard mirrors and headlights:

| PR number | Exterior mirror | Max. vehicle width |
|---|---|---|
| 5SL, 5RQ | Housing mirror | ≤1,904 mm |
| ZB1, 5SM, 5RF | bracket-mounted exterior mirror, short | ≥1,900 mm to ≤2,030 mm |
| ZB2, 5SP, 5RG | bracket-mounted exterior mirror, long | ≥2,022 mm to ≤2,200 mm |

The max. permitted vehicle width with standard headlights in the installation position is:

| Vehicle model | Implementation | Max. permitted vehicle width |
|---|---|---|
| **Panel van, window van, chassis, platform van** | Standard headlights<br>Halogen headlights (H4) | 2,200 mm |
| | Dual halogen headlights (H7) | 2,184 mm |
| | LED headlights | 2,434 mm |

**For vehicle registration in EU, the dimension specifications in EC Directives 97/27/EC or 92/21/EEC must be observed:**

| Vehicle width | |
|---|---|
| General information | 2,550 mm |
| Car | 2,500 mm |

| Vehicle height |
|---|
| 4,000 mm |

| Vehicle length |
|---|
| For details see RREC 97/27/EC, 92/21/EEC |

Please note that in the completed (converted) vehicle, compliance with the add-on regulations and dimensions of all technical lighting equipment acc. to UNECE-R 48 (see chapter 2.5.1 "Lighting") is required.
When installing bodies on chassis, the body builder is responsible, in particular, for attaching the rear and any side technical lighting equipment in accordance with the regulations.

Please also comply with the country-specific registration regulations during the conversion.

### 2.1.7 Steerability - minimum front axle load

In all load situations, the front axle load must correspond to at least 36% of the actual gross vehicle weight.
The permitted axle loads must be observed in all load situations.

**Please also comply with the following chapters:**

- 2.2.1 "Permitted weights and unladen weights"
- 2.2.6 "Brake system and brake control system ESP"
- 2.2.10 "Overhang extension"

# 2.2 Running gear

### 2.2.1 Permitted weights and unladen weights

**Warning note**

CAUTION! The maximum gross axle weight rating specified in this body builder guideline must be adhered to for conversions that lead to an increase to the base vehicle's axle weight rating (e.g. with weight increases). If these values are exceeded, the durability of all components (and in particular the wheel hubs) must be checked and safeguarded using suitable measures.

Volkswagen AG offers vehicles with front-wheel drive and four-wheel drive such as panel vans, window vans, platform bodies with single and double cabs, in the following weight classes: 2,600 kg, 2,800 kg, 3,000 kg, 3,080 kg and 3,200 kg.

In addition, a back-to-back cab (chassis with single cab 3.2 t without rear axle with shortened frame) is available.
With an external chassis and consideration of particular prerequisites, a gross vehicle weight rating of up to 4.6 t can be implemented (see also chapter 4.9 "Back-to-back cab")

The gross axle weight ratings listed in the weight tables (see chapter 8) must be observed.

**Information**

Load ratings depend on the engine. Equipment features can influence the payload or load weight by increasing/reducing the unladen weight. The weight values stated in the technical data refer to the standard, basic vehicle equipment. Weight tolerances of +5% in production are permitted in accordance with DIN 70020 and must be taken into account if necessary.

Installing special equipment reduces the payload.

The actual payload of a vehicle that is calculated from the difference between the gross vehicle weight rating and unladen weight can only be determined by weighing an individual vehicle.

**Practical note**

For permanent installations, the running gear must be adjusted afterwards. Otherwise, it can lead to premature, uneven wear on the front axle tyres.

Once the customer has loaded the vehicle to a normal load level for its purposes, the running gear must be measured again in accordance with the workshop manual, based on the current height of the edge of the wheel housing.

For more information, refer to the Workshop Manuals from Volkswagen AG:
http://erwin.volkswagen.de/erwin/showHome.do

#### 2.2.1.1 One-sided weight distribution

**Warning note**

The following weights shall not be exceeded under any circumstances:

- gross vehicle weight rating
- gross front axle weight rating
- gross rear axle weight rating

(see chapter 2.2.1 "Permitted weights and unladen weights").

When planning bodies/additions, make sure that one-sided weight distribution is avoided – in particular involving permanently secured add-ons.
The difference in actual wheel load between the left and right wheels on an axle is not allowed to exceed 8% of the higher wheel load. The tyre load ratings must be observed.

Example:

| | |
|---|---|
| **Weighed axle load** | 1,680 kg |
| **Wheel load left/right** | 806 kg / 874 kg |
| **Difference in wheel load** | 68 kg |
| **% deviation from higher value** | 7.8% |

The front axle load must not be less than the minimum permitted load in order to ensure adequate steerability of the vehicle and satisfactory driving behaviour under all loading conditions (see chapter 2.1.7 "Steerability – minimum front axle load")


Fig. 1: One-sided weight distribution (rear view)

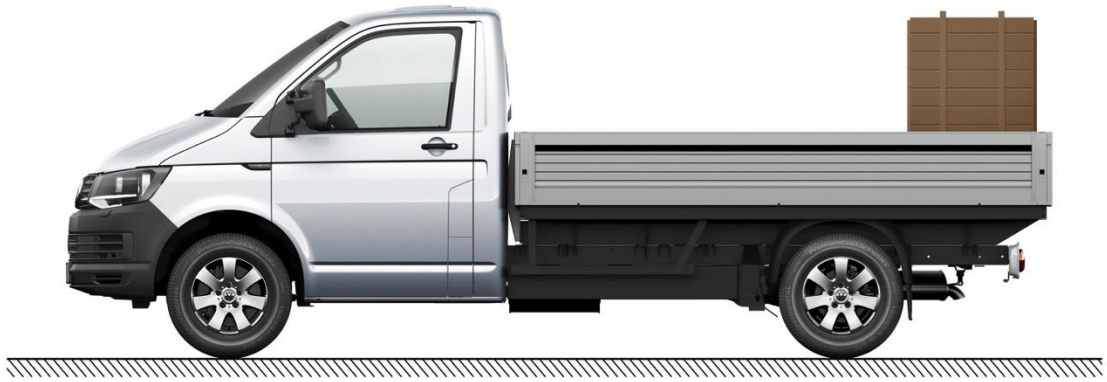


Fig. 2: One-sided weight distribution (side view)

### 2.2.2 Turning circle

See the basic data table in chapter 2.1.1 “Vehicle dimensions”.

### 2.2.3 Authorised tyre sizes

The Volkswagen owner's manual provides information about the wheel/tyre combinations authorised by Volkswagen AG in conjunction with snow chains (see the table of basic data in chapter 2.1.1 “Vehicle dimensions”).

### 2.2.4 Modifications to axles

Modifications to the axles are not permitted, because they can lead to an impairment in the driving properties and unstable driving behaviour.

### 2.2.5 Modifications to the steering system

Modifications to the steering system are not permitted.
Exceptions, e.g. conversions for people with disabilities, shall be approved by Volkswagen AG prior to the conversion.
Please contact us before starting your conversion (see chapter 1.2.1.1 "Contact in Germany", 1.2.1.2 "International contact").

### 2.2.6 Brake system and brake control system ESP*

#### 2.2.6.1 General information

Changes to the brake system are not allowed under any circumstances:
- If the modification to the brake system goes beyond the scope of the operating permit.
- If the air inflow and outflow to and from disc brakes are modified.

Please note that the brake cable of the parking brake (FBA) as well as its cable support bracket are safety-relevant parts, and form part of the type approval for the brake system. Any modification will require a new approval process.

Exceptions shall be approved by Volkswagen AG prior to the conversion, and shall be documented with an independent brake approval report.
Please contact us before starting your conversion (see chapters 1.2.1.1 "Contact in Germany" and 1.2.1.2 "International contact").

**Warning note**

Work performed incorrectly on brake hoses, lines and cables may impair their function.

This can lead to a failure of components or safety-relevant parts. Therefore, work on brake hoses, lines and cables should only be performed by a qualified specialist workshop.

**Information**

Since 1 Jan 91, all commercial vehicles have had to comply with the "EC Brake Systems Directive 71/320/EEC". When this EC Directive was adopted into national legislation (e.g. the Road Traffic Regulations (StVZO) in Germany), the effect was that these technical regulations also had to be complied with for individual acceptance.

*Electronic Stability Control

### 2.2.6.2 Vehicle stability and ESP*

According to UNECE-R 13 (brake system), the acceptance procedure for the vehicle with body must include determination of the centre of gravity height when the vehicle is loaded.
Refer to chapter 2.1.3 "Vehicle centre of gravity" for the permitted centre of gravity heights.
Volkswagen does not make any statement about:

- Driving behaviour
- Braking behaviour
- Steering response and
- ESP control response

in bodies for loads with an unfavourably positioned centre of gravity (e.g. rear, high and side loads), because these aspects are significantly influenced by body activities and consequently can only be assessed by the body builder.

**Warning note**

Whether for conversions and installation, and also in the ready-to-drive condition, the gross wheel and axle weight ratings as well as the gross vehicle weight ratings (see chapter 2.2.1) of the vehicle are not allowed to be exceeded under any circumstances. If the gross axle weight ratings are exceeded, the ESP system in vehicles with ESP will no longer be able to function correctly. This may result in the driver losing control of the vehicle and causing an accident.

**Practical note**

From November 2014, ESP* is mandatory for all new vehicles registered in Europe. Vehicles can be exempted from this obligation in special, exceptional cases. Volkswagen Commercial Vehicles offers you specially adapted ESP data for various special vehicles (e.g. different wheelbases, centre of gravity heights as well as for 2 and 3-axle vehicles) so that the statutory requirement can be met and the safety standard can continue to be fulfilled.

*Electronic Stability Control

### 2.2.6.3 Influence of vehicle conversions on the function of the ESP* brake regulation system

| ESP – sub-systems | Modification on the vehicle | | | | |
|---|---|---|---|---|---|
| | Wheelbase modification | Extreme raising of centre of gravity >920 mm | Modification of running gear (springs, dampers, anti-roll bars, wheels, tyres, track, steering) | Different rolling circumferences for axles | Modification to the brake (callipers, pads, design) |
| **ABS Anti-lock brake system** | + | + | + | ++ [2] | ++ |
| **Offroad ABS** | + | + | + | ++ [2] | ++ |
| **BAS Brake Assist system** | -- | -- | -- | ++ [2] | ++ |
| **EDL Electronic differential lock** | + | + | + | ++ [2] | +++ |
| **Hill Start Assist** | - | - | - | ++ [2] | ++ |
| **TCS Traction Control System** | ++ | + | + | ++ [2] | - |
| **ESP Electronic stabilisation program** | ++ | +++ [1] | +++ [1] | +++ [2] | +++ [1] |
| **Trailer stabilisation** | ++ | ++ | +++ | ++++ [2] | +++ |

1 In particular, a significantly increased risk of tipping over

2 Hardware adaptation of the wheel speed sensors required

-- No effect

- Very little effect

+ Noticeable effect, can be adapted if necessary

++ Significant effect, can be adapted if necessary

+++ Very significant effect, can be adapted if necessary

++++ No technical solution

*Electronic Stability Control

**Warning note**

Vehicles with add-ons, bodies, installed components or conversions in which the limit values of the specific vehicle (position of centre of gravity, axle loads, overhangs etc.) are not complied with are regarded as problematical and can result in an impairment of driving behaviour. Therefore, they should not be operated.

If specific basic conditions are met, overhang extensions and changes to the wheelbase are possible to a limited extent.

### 2.2.6.4 Activating the ESP for special vehicles

Add-ons and conversion can be offered with all functions of the brake control system.
Volkswagen Commercial Vehicles provides special ESP data records for some special conversions in order to comply with the statutory ESP requirement (Europe).
Please note that the tyre pressure gauge is also deactivated when special vehicle ESP data records are displayed.
For vehicles with the "Low-Line" instrument cluster panel version, the disabled reset button of the Tyre Pressure Loss Indicator needs to be replaced with a blank cover (1K0.959.623D). The connector in the vehicle electrical system needs to be secured.

**Information**

You can find more information in the "Electronic Stabilisation Program" document. The document is available in the body builder portal of Volkswagen AG under the "Additional technical information" menu option.

*Registration required.

If necessary, the running gear and ESP shall be modified according to the specifications of Volkswagen AG.
The vehicle needs to be taken to Volkswagen AG for an inspection of the vehicle modifications.
Please contact us before starting your conversion (see chapters 1.2.1.1 "Contact in Germany", 1.2.1.2 "International contact").

### 2.2.6.5 Downgrading ESP

When the ESP is downgraded, the vehicle software needs to be updated to downgrade to the basic functions of the ABS (anti-lock brake system) including offroad ABS, brake assist system and EDS (electronic differential lock).
The Hill Start Assist can still be used.
If it is necessary to downgrade, please contact the relevant customer service consultant at your VW partner or importer.

**Practical note**

The body builder must check whether and for how long vehicles with downgraded ESP* can still be registered in the particular country of registration.

*Electronic Stability Control

### 2.2.6.6 Routing additional lines along the brake hoses/brake lines

No other additional lines are allowed to be fastened to brake hoses and brake lines.
Additional lines must remain at a sufficient distance from brake hoses and brake lines under all operating conditions, and are not allowed to touch or chafe against such brake hoses/lines under any circumstances (see chapter 2.5.2.1 "Electrical wiring/fuses").

### 2.2.7 Modification of springs, suspension mounting, dampers

The spring rates are never allowed to be modified.
We recommend using optimally matching springs from the Volkswagen delivery range for the vehicle with body.
Modifications to the springs must be assessed by a test centre/monitoring organisation/technical service responsible for this function, and may result in invalidation of the operating permit.

**Practical note**

We indicate that when the vehicle is converted to an air-sprung suspension system due to a change in the vibration behaviour of the wheels, this can lead to possible faulty displays of the factory-installed tyre pressure indicator (TPLI).

Please contact us before making changes to the chassis. (see 1.2.1 "Product- and vehicle information for second stage manufacturer")

### 2.2.8 Wheel alignment settings

Changes to wheel alignment parameters are not permitted!

### 2.2.9 Wings and wheel housings

The required clearance for the wheels including snow chains must be complied with.
You will find more detailed information in the build dimension drawings.

In some bodies, it is necessary to ensure there is sufficient clearance for the wheel/tyre combination acc. to 92/23/EEC as well as for adequate wheel arch trim based on EC Directive 78/549/EEC.

Please also comply with the following chapters:
- Drilling on the chassis frame (chapter 4.2.1)
- Welding on the vehicle (chapter 4.2.2)
- Standard attachment points for special bodies (chapter 4.4)

### 2.2.10 Overhang extensions

Overhang extensions shall be approved by Volkswagen AG prior to the conversion.
Please contact us before starting your conversion (see chapter 1.2.1)

Please also comply with the following chapters:
- Maximum dimensions (chapter 2.1.5)
- Vehicle stability and ESP (chapter 2.2.6.2)

# 2.3 Body-in-white

### 2.3.1 Roof loads

#### 2.3.1.1 Dynamic roof loads

| Vehicle type | Max. roof load |
|---|---|
| **Vehicles with normal roof (≥3 base carriers)** | 150 kg |
| **Vehicles with normal roof (with 2 base carriers)** | 100 kg |
| **Vehicles with medium-high roof** | 0 kg |
| **Vehicles with high roof** | 0 kg |
| **Double cab (with 2 base carriers)** | 75 kg |
| **Cab** | 50 kg |
| **Pop-up roof (with 2 base carriers)** | 50 kg |

See chapter 2.8.1 "Roof rack" regarding the fitting of roof racks.

The limit value for the maximum centre of gravity position of the vehicle is not allowed to be exceeded.

**Roof load increase**

In the panel van/window van with normal roof, providing certain preconditions are met (roof rack preparation with higher number of mounting points on the roof and use of special roof racks) then it is possible to have a higher dynamic roof load up to 300 kg (see also chapter 2.8.1 Roof rack).

Please contact us for more information (see chapter 1.2.1.1 Contact in Germany and 1.2.1.2 International contact).

#### 2.3.1.2 Static roof loads

The values in the table (see chapter 2.3.1.1 "Dynamic roof loads") refer to dynamic roof loads.

The static roof loads with the vehicle stationary (e.g. roof tent) must be set higher. The attachments must be configured accordingly.

**Please also comply with chapters:**

- 2.1.4 "Bodies with a high centre of gravity"
- 2.2.6.2 "Vehicle stability and ESP"
- 2.2.6.3 "Influence of vehicle conversions"

### 2.3.2 Modifications to the body-in-white

Changes to the body are not allowed to impair the function and strength of units and operating devices of the vehicle, neither may they reduce the strength of weight-bearing parts.

During vehicle conversions and installation of bodies, it is not permitted to make any modifications which impair the function and freedom of movement of the suspension (e.g. for maintenance and inspection work) or the accessibility to the same.

#### 2.3.2.1 Screw connections

If series-production bolts / nuts have to be renewed, it is only permitted for bolts / nuts to be used which have the:

- same diameter.
- same strength.
- same bolt standard or bolt type.
- same surface coating (corrosion protection, coefficient of friction).
- same thread pitch.

Comply with VDI guideline 2862 during all installations.
Shortening the free clamping length, changing over to waisted shank and use of bolts with a shorter free thread proportion are not permitted.
Furthermore, take the settling behaviour of screw connections into account.

When attaching components to the base vehicle using screws, made sure that no panels or other components of the base vehicle are bent or damaged.

Use of Volkswagen tightening torques assumes that the total coefficient of friction is in the range µtot = 0.08 to 0.14 for the particular items being bolted together.

If bolts are tightened by torque and angle at Volkswagen, no change of design is possible.

**Risk of accident**

No safety-relevant bolted connections, e.g. wheel guidance, steering and brake functions, are allowed to be modified. Otherwise the designated function may be impaired. This may result in the driver losing control of the vehicle and causing an accident. The new installation is to be carried out according to the instructions of VW Customer Service, using suitable standard parts. We recommend the use of Volkswagen genuine parts.

**Information**

Information about Volkswagen customer service instructions can be provided by any Volkswagen Customer Service.

#### 2.3.2.2 Welding work

Incorrectly undertaken welding work can lead to a failure of safety-relevant components, and thus cause accidents. Therefore, the following safety measures must be complied with when welding work is performed:

- Welding work should only be undertaken by people with appropriate qualifications.
- Before starting welding work, it is necessary to remove components which might contain gases representing a fire or explosion hazard, e.g. fuel system, or else to protect them with a fireproof cover against airborne sparks. Gas containers which could be damaged by airborne sparks during welding work must be removed.
- For welding work near seat belts, airbag sensors or the airbag control unit, these components must be removed before work begins and for the duration of the work. See 2.4 "Interior" for important information on handling, transporting and storing airbag units.
- Before starting welding work, cover the springs and spring bellows to protect them against weld spatter. Springs are not allowed to be touched with welding electrodes or welding tongs.
- No welding is allowed on mechanical units such as the engine, gearbox, axles.
- Remove and cover the battery positive and negative terminal clamps.
- Directly connect the earth clamp of the welding machine to the part to be welded. The earth clamp is not allowed to be connected to mechanical units such as the engine, gearbox, axles.
- The housings of electronic components (e.g. control units) and electrical wiring are not allowed to be touched with the welding electrode or earth clamp of the welding machine.
- The electrodes are only allowed to be used with direct current via the positive terminal for welding. Always weld from bottom towards the top.

**Risk of injury**

Welding in the area of the restraint systems (airbag or belts) can lead to these systems ceasing to function properly.

Welding in the area of restraint systems is therefore prohibited.

**Practical note**

Disconnect the battery prior to starting welding work. Airbags, seatbelts, the airbag control unit and airbag sensors shall be protected against weld spatter, and removed if necessary.

#### 2.3.2.3 Welded connections

In order to achieve high-quality welds, the following basic recommendations are given:

- Thoroughly clean the areas to be welded.
- Apply several short weld beads, rather than one long one.
- Make symmetrical beads, in order to limit shrinkage.
- Avoid making more than three welds at any one point.
- Avoid welding in work-hardened areas.
- Spot welds and stitch welding should be offset.

### 2.3.2.4 Selection of welding process

The mechanical properties of welds depend on which welding process is selected, and on the geometry of the parts to be connected. If welding overlapping metal panels, the welding process depends on the accessibility of the sides:

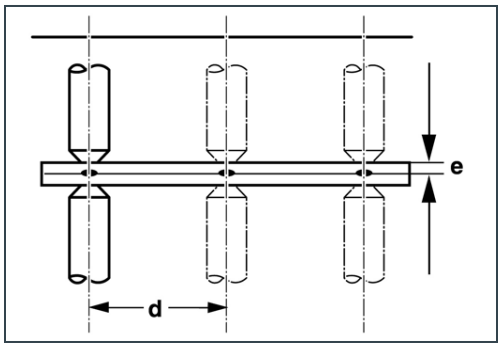
| Accessible sides | Welding process |
|---|---|
| 1 | Shielding gas hole spot welding |
| 2 | Spot welding |

### 2.3.2.5 Spot welding

Spot welding is used for overlapping parts with access on both sides. Avoid spot welding of more than two layers of metal panels.

**Distance between spot welds:**

In order to avoid shunt effects, the specified distances between the spot welds must be maintained (d = 10e + 10 mm).



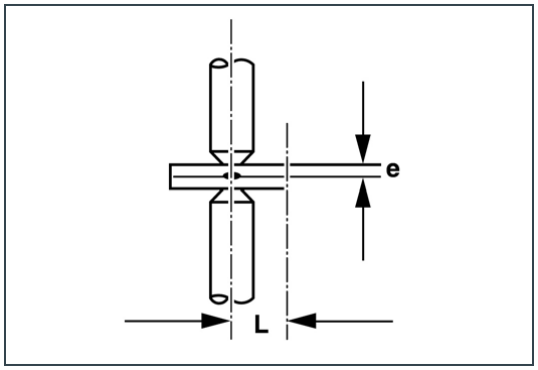

Ratio between panel thickness and distance between welds

d Distance between spot welds

e Panel thickness

**Distance from the edge of the panel:**

In order to avoid damage to the molten core, the specified distances from the edge of the panel must be maintained (L = 3e + 2 mm).



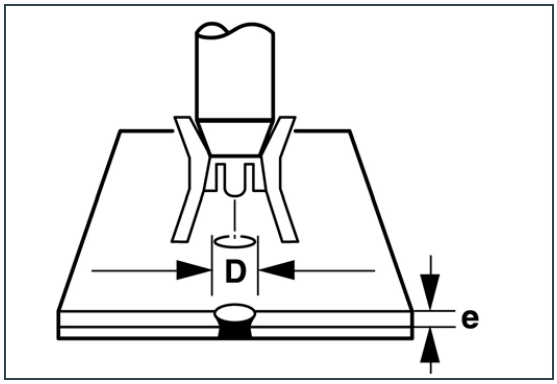

Ratio between panel thickness and distance from edge

e Panel thickness

L Distance from the edge of the panel

### 2.3.2.6 Shielding gas hole spot welding

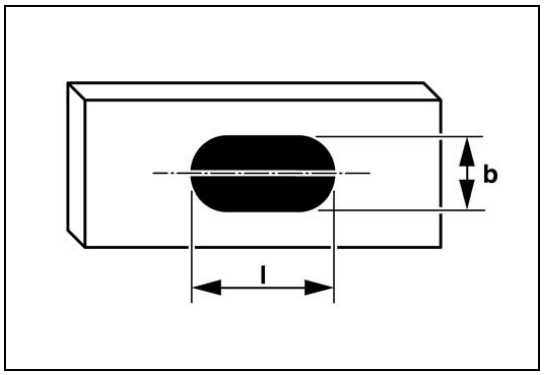
If overlapping panels can only be welded on one side, it is possible to achieve the connection by shielding gas hole spot welding or tacking. If the connection is achieved by punching or drilling and then hole spot welding, the drilling area must be deburred before welding.




Ratio between panel thickness and hole diameter

| **D – hole diameter [mm]** | 4.5 | 5 | 5.5 | 6 | 6.5 | 7 |
|---|---|---|---|---|---|---|
| **e – panel thickness [mm]** | 0.6 | 0.7 | 1 | 1.25 | 1.5 | 2 |

The mechanical quality can additionally be improved by using slots (l = 2 × b).



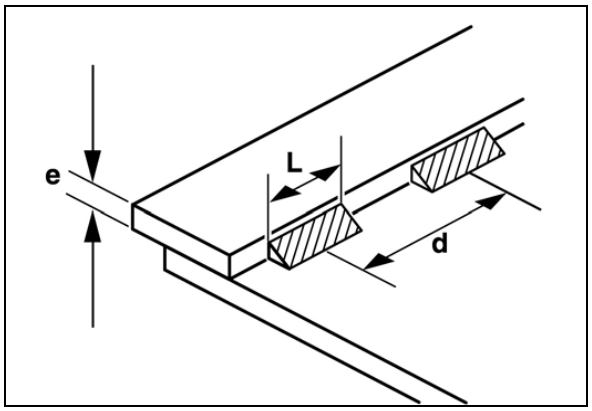

Ratio between width and length of slots

b Width of slot

l Length of slot

### 2.3.2.7 Tacking

If panels are >2 mm thick, overlapping panels can also be connected by tacking (30 mm < L < 40 × e; d > 2 L).




Ratio between panel thickness and distance between welds

d Distance between tack welds

e Panel thickness

L Length of tack weld

### 2.3.2.8 Welding is not allowed

Welding is not allowed:

- On mechanical units such as the engine, gearbox, axles etc.
- On the chassis frame except if there is a frame extension.
- On the A and B-pillars.
- On the upper and lower chords of the frame.
- In bend radii.
- In the area of airbags.
- Hole welding is only permitted in the vertical webs of the frame longitudinal member.

### 2.3.2.9 Corrosion protection after welding

After all welding work on the vehicle, it is necessary to comply with the specified corrosion protection measures (See chapter 2.3.2.10 "Corrosion protection measures".)

### 2.3.2.10 Corrosion protection measures

Following conversion and installation work on the vehicle, surface and corrosion protection shall be applied to the affected points.

**Practical note**

Only the corrosion protection agents tested and approved by Volkswagen are allowed to be used for all corrosion protection measures.

### 2.3.2.11 Planning measures

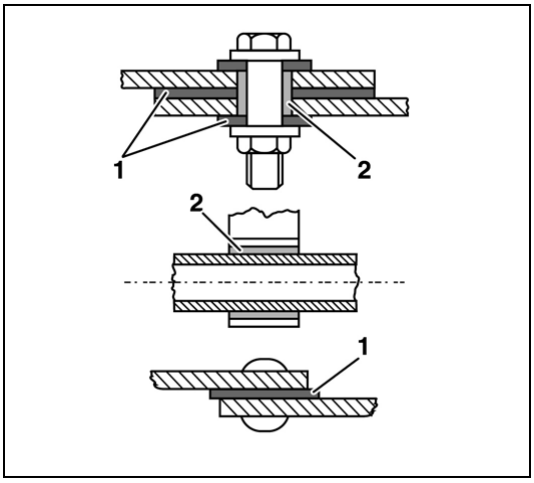
Corrosion protection should be taken into account in the planning and design in the form of a suitable material selection and component design.

**Information**

If two different metallic materials are connected together by an electrolyte (e.g. moisture from the air) then this will give rise to a galvanic connection. The result will be electrochemical corrosion, and the less noble metal will suffer damage. The electrochemical corrosion will be all the greater the further apart the metals in question are in the electrochemical series.

Therefore, the components must have a suitable treatment or insulation applied to them in order to prevent electrochemical corrosion, or the corrosion must be kept at a low level by a suitable choice of materials.

**Avoidance of contact corrosion by electrical insulation**




Avoidance of contact corrosion

1 Insulating washer

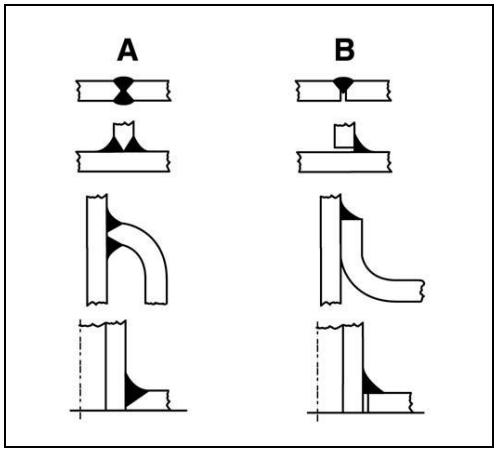
2 Insulating sleeve

Contact corrosion can be avoided by using electrical insulation such as washers, sleeves or tubes. Avoid welding work on inaccessible cavities.

### 2.3.2.12 Component design measures

Design measures, in particular in the design of connections between the same or different materials, can be used for providing corrosion protection:
Corners, edges, beads and folds represent locations where dirt and moisture can collect.
Suitable surfaces, drains and the avoidance of gaps at component connections represent means by which corrosion can be counteracted by design measures.

Gaps at welded connections as a feature of the design, and how to avoid them




Application examples of welded connections

| A = Favourable | B = Unfavourable |
|---|---|
| (through-welded) | (gap) |

### 2.3.2.13 Coating measures

It is possible to protect the vehicle against corrosion by applying protective coatings (e.g. galvanizing, painting or high-temperature zinc application),
(See chapter 2.3.2.10 "Corrosion protection measures".)

### 2.3.2.14 Work on the vehicle

After all work on the vehicle:

- Remove drilling chips.
- Deburr edges.
- Remove scorched paint and thoroughly prepare the surfaces for painting.
- Apply a primer to all bare metal parts, and paint them.
- Apply a wax-based corrosion protection agent to cavities.
- Carry out corrosion protection measures on the underbody and frame components.

# 2.4 Interior

### 2.4.1 Modifications in the area of airbags

Modifications on the airbag system and the belt tensioner system as well as on and in the area of airbag components, the airbag sensors and the airbag control unit are not permitted. Please also refer to chapter 5.1 "Vehicles for conveying persons with restricted mobility".
The interior fittings shall be designed so that the airbag deployment areas are left unobstructed (see also chapter 3.2 "Interior").
For information about the deployment zones of the airbags, refer to the owner's manual of the vehicle.

**Warning note**

Modifications or incorrectly performed work on seatbelts and seatbelt anchor points, belt tensioners or airbags or their cabling could impair the correct function of these components. They might be activated inadvertently or fail in the event of an accident.

### 2.4.2 Modifications in the area of seats

- If the current load compartment does not have standard anchors for seats and seat belts already installed, then retrofitting, and therefore equipping the load compartment with seats or rows of seats is not possible.
- When retrofitting seats, (side) airbags, belt tensioners, seat occupancy detection, and belt fastening detection, must all be re-coded by the customer service workshop.
- The strength data for seats available ex-works is only valid in conjunction with the original attachment elements.
- It is essential not to exceed the height of the centre of gravity (H-point) if retrofitting seats. (See also chapter 3.2.2 "Seat retrofitting/seating")
- When the seat belts and seats (including seat box) are re-fitted, the prescribed bolts shall be used and tightened to the prescribed torque.
- When installing seat belts and belt locks, only Volkswagen original components must be used.

**Warning note**

Only fit seat covers or protective covers that are expressly approved for use in the vehicle.
The use of non-approved covers may prevent the side airbag from deploying.

**Warning note**

The attachment of seats to the wheel housing is not permitted. This also applies to wheel housings that are lowered. Otherwise damage could be caused to the vehicle (e.g. wheel housing and tyres) and accidents could result.

**Information**

You will find detailed information on torques etc. in the workshop manuals.

Volkswagen AG workshop manuals and workshop information can be downloaded from the Internet at **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG):
http://erwin.volkswagen.de/erwin/showHome.do

*Information system from Volkswagen AG, subject to payment

#### 2.4.2.1 Belt anchors

The body builder is solely responsible for fitting additional belt points.
The necessary proof is to be provided by the body builder. The legal specifications and guidelines should be observed, for example, EU Directive 76/115/EEC.

### 2.4.3 Forced ventilation

Replacement measures must be created for vehicle modifications of any kind that can influence the standard forced ventilation.

This is important in several respects:
- Closing comfort of the doors
- Possible flow rate of the heating blower
- Pressure equalisation on airbag deployment

Ventilation slits must be installed in the partition wall in closed bodies with a partition wall.
In this case, make sure that the new forced ventilation cross sections are not smaller than the standard cross sections.
Air inlets and outlets are not allowed to be fitted in the immediate vicinity of sources of noise or exhaust gases.

### 2.4.4 Acoustic insulation

Pay attention to minimising interior noise levels as part of conversions, in order to avoid modifying the noise level of the vehicle.
The converted vehicle shall comply with the values for external noise given in EC Directive 70/157/EEC.
Specialists such as the manufacturer and suppliers of acoustic material should be contacted for advice on achieving the optimum acoustic protection for bodies.

# 2.5 Electrics/electronics

Incorrect interventions in electronic components and their software may result in these no longer functioning as intended. Due to the networking of electronics, systems that were not modified can be affected. Malfunctions to the electronics can significantly impair the operational safety of your vehicle.

Work on or modifications to electronic components, in particular work on safety-relevant systems, is only allowed to be performed by a qualified specialist workshop, and by qualified specialist personnel who have the necessary specialist knowledge and tools for performing the necessary work.

Interventions in the vehicle electrical system/vehicle electronics can result in invalidation of the warranty/operating permit.

If modifications are made to the electrical system, take the vehicle to a VW workshop in order to delete the entries in the event memory at the completion of work. If a VAS tester is available, the event memory can also be deleted by trained personnel of the body builder.

### 2.5.1 Lighting

#### 2.5.1.1 Vehicle lighting devices

Comply with the country-specific registration provisions with regard to the complete lighting devices (lighting and turn indicator devices). Failing to comply can result in the operating permit being invalidated.
The use of LED lights instead of the original VW lights is not intended by the manufacturer.
Fitting LED lights instead of genuine VW lights can result in the bulb failure monitor being triggered, because the lighting system is a self-contained and harmonised system. The bulb failure monitor cannot be deactivated.
We recommend using Volkswagen Genuine rear lights or a product with E test symbol and conventional bulbs.
Please note that in the completed (converted) vehicle, it is necessary to comply with the add-on regulations and dimensions of all technical lighting equipment acc. to UNECE Regulation UNECE-R 48.

Applicable accordingly to all vehicle types:

| ECE Regulation: | Lighting equipment | Vehicle dimensions | Comments |
|---|---|---|---|
| UNECE R48, 6.12 | Parking lights | Permitted for vehicle dimensions:<br><br>Width*: ≤2,000 mm and<br>length: ≤6,000 mm | The parking light is not prescribed.<br>It is not permitted in longer and wider vehicles, and shall be deactivated if necessary. |
| UNECE R48, 6.13 | End-outline marker lights | 1) Only permitted for vehicles with a width: ≥1,800 mm<br>2) Prescribed for vehicles with a width: ≥2,100 mm | Applies to all Transporter and Crafter models |
| UNECE-R48, 6.18 | Side marker lights | Prescribed for vehicles with a length: ≥6,000 mm | Permitted for other vehicles. |
| UNECE-R48, 6.5 | Side turn signals Category 6 | Prescribed for N1/M2 vehicles with length >6,000 mm and N2 vehicles | Also permitted for other vehicles, any category 5 lights that are present should be taken out of service. |
| UNECE-R 48, Paragraph 6.7 | 3. Brake light | | Since 1 Nov 13, it is mandatory in Germany for M1 and N1 vehicles with a closed body! |

*Vehicle width measured after conversion without mirror

If a vehicle becomes longer than 6 m or wider than 2 m without mirrors due to the body, the parking light is not permitted.
For these vehicles the parking light function must be decoded from the convenient control unit (onboard supply control unit (BCM)).

When installing bodies on chassis, the body builder is in particular responsible for attaching the rear and any side technical lighting equipment in accordance with the regulations.

Category 5 side turn signals are installed on the Transporter (in the front wings).
These lights are only permitted for vehicles in class $M_1$ as well as for vehicles in class $N_1$ or $M_2$, providing they are not more than six metres long.
This means the standard side turn signals are only sufficient for vehicles up to 3.5 t gross vehicle weight rating and up to 6 m in length.

As soon as a body builder modifies a chassis/back-to-back cab into a class $N_1$ or $M_2$ vehicle more than 6 m in length or into a class $N_2$ vehicle (>3.5 t gross vehicle weight rating), these category 5 side turn signals are no longer sufficient. These vehicles require more powerful side turn signals in category 6 (min. 50 cd).

#### 2.5.1.1.2 Adjusting the headlights

The country-specific registration provisions apply.

The basic setting for the headlights must be put into effect and must be included in the configuration of the new construction status (e.g. fixed installations or add-on parts or changes to running gear components) of the vehicle.
It must be ensured that the adjustment range of the headlight range control complies with potential load levels.

For springs that deviate from the base vehicle and for settings for the headlight range control potentiometer (LWR Poti) that deviate from the vehicle wallet, these must be documented with regard to load levels, and must be attached to the vehicle wallet.

#### 2.5.1.1.3 Retrofitting the 3rd brake light

If a closed body is mounted on a chassis, it must have a 3rd brake light pointing backward.
We recommend using a type-tested 3rd brake light with LED technology with a max. power consumption of 1.8 W. This can be connected directly in parallel with the standard brake lights.

#### 2.5.1.2 Special lights

##### 2.5.1.2.1 Priority vehicle light, yellow light

It is possible to order special equipment directly from Volkswagen AG, namely PR number ZF7 priority vehicle light, yellow light.

For subsequent conversion, we recommend ordering the base vehicle with the "priority vehicle light preparation" special equipment, PR number 9LX. This includes the additional console, cable duct to the roof in all roof types as well as the switch in the additional console.

Please remember to comply with country-specific registration regulations when installing special lights.

Please also comply with the following chapters during the conversion:
- Chapter 2.2.1 "Permitted weights and unladen weights"
- Chapter 2.5.4 "Vehicle battery"
- Chapter 2.5.3 "Electrical interface for special vehicles"
- Chapter 3.1 "Body-in-white/bodywork"

##### 2.5.1.2.2 Roof mounted turn signals

Roof mounted turn signals for special conversions can be ordered directly ex-works for all roof heights as special equipment with PR number 9H1 "Roof turn signals, rear left and right".

Please note that it is no longer possible to use the last two roof mounting points for subsequent mounting of roof rack systems in combination with roof turn signals (9H1).

Comply with the country-specific registration provisions when installing special lights.

Please also comply with the following chapters during the conversion:
- Chapter 2.2.1 "Permitted weights and unladen weights"
- Chapter 2.5.4 "Vehicle battery"
- Chapter 2.5.3 "Electrical interface for special vehicles"
- Chapter 3.1 "Body-in-white/bodywork"

#### 2.5.1.3 Turn signals on excess width bodies

If special bodies have larger dimensions than the series production vehicle, it may be that the front and rear turn signals are more than 400 mm away from the sides (see UNECE-R 48). In this case, a new turn signal will be required inside the permitted area.
The series production unit must be rendered inoperable as a result.

#### 2.5.1.4 Additional load compartment light

If an additional load compartment light is required, we recommend installing an additional switch and separate wiring (see chapter 2.5.2.1 "Electrical wiring /fuses"; chapter 2.5.2.2 "Additional electrical circuits" and chapter 2.5.2.3 "Retrofitting electrical devices").
A solution using a relay with the original lighting wiring is not recommended because the interior light is dimmed and switched off by means of PWM (pulse-width modulation signal).
No additional wires may be connected to the existing lighting wiring fitted by Volkswagen AG. See also chapter 2.5.3 "Electrical interface for special vehicles".

### 2.5.2 Vehicle electrical system

Please note:

For bodies and conversions with electromagnetic switching mechanisms (such as relays, magnetic switches, contactors and solenoid valves), these components must be equipped with integrated protective diodes (free-wheel diodes/anti-surge diodes), in order to exclude interference voltage peaks from the vehicle electrical system and the control units. If no protective diodes are integrated, these must be retrofitted antiparallel to the switch coil.

**Information**

Please refer to "Additional technical information"* in the conversion portal for more information on protecting the control units integrated in the vehicle electrical system from interference voltage peaks of electromagnetic add-ons and conversions.

Please contact us (see chapter 1.2.1 "Product and vehicle information for second stage manufacturers").

*Registration required.

#### 2.5.2.1 Electrical wiring/fuses

The following points shall be complied with if routing modifications are required:

- Avoid routing over sharp edges.
- Avoid routing inside excessively narrow cavities and close to moving parts.
- No additional lines are allowed to be fastened to brake hoses and brake lines.
- Additional lines must remain at a sufficient distance from brake hoses and brake lines under all operating conditions, and are not allowed to touch or chafe against such brake hoses/lines under any circumstances.
- Only lead-free PVC jacketed cables with an insulation limit temperature >105°C must be used.
- Connections must be made professionally and must be water-tight.
- The cable shall be dimensioned according to the current drawn and protected by fuses.

| Max. continuous current [A] | Rated current of fuse [A} | Wire cross-section [mm²] |
|---|---|---|
| 0–4 | 5* | 0.35 |
| 4.1–8 | 10* | 0.5 |
| 8.1–12 | 15* | 1 |
| 12.1–16 | 20* | 1.5 |
| 16.1–24 | 30* | 2.5 |
| 24.1–32 | 40** | 4 |
| 32.1–40 | 50** | 6 |
| 40.1–80 | 100 | 10 |
| 80.1–100 | 125 | 16 |
| 100.1–140 | 175 | 25 |
| 140.1–180 | 225 | 35 |
| 180.1–240 | 300 | 50 |

* Shape C; DIN 72581 blade-type connector

** Shape E; DIN 72581 blade-type connector

**Warning note**

No additional electrical cables or other lines are allowed to be secured to existing lines such as brake or fuel lines or cables, because standard holders might otherwise be overloaded. An independent attachment solution must be found.

#### 2.5.2.2 Additional circuits

If additional circuits are required, we always recommend using the electrical interface for external use (terminal strip in driver seat storage compartment, PR number IS1) (see chapter 2.5.3 "Electrical interface for special vehicles").
Additional circuits shall be safeguarded against the main circuit by means of suitable fuses.
Cables shall be dimensioned according to the load, and protected against pulling off and the effects of impacts and heat.
When unprotected cables are routed in the area of the battery, these cables must be protected with special anti-cut hoses in accordance with series production (e.g. Aramid hose/Kevlar).
Information about sources for obtaining anti-cut hoses can be provided if required.
Please contact us (see 1.2.1.1 "Contact in Germany" and chapter 1.2.1.2 "International contact").

#### 2.5.2.3 Retrofitting electrical devices

Note the following for retrofitting additional electrical consumers:

- The no-load current of the basic vehicle is optimised at 20 mA. Additional electrical equipment (e.g. data loggers) which is permanently connected to the permanent positive terminal 30 reduces the time after which the vehicle engine can be reliably started by discharging the starter battery.
  **Even 100 mA of additional no-load current takes 2.4 Ah per day from the battery**. It is advisable to power this additional electrical equipment with permanent no-load current from the second battery, because this is not connected to the starter battery when the vehicle is parked, see chapter 2.5.4.1 "Installation of additional battery".
- If the electrical power requirement is higher, the alternators approved by Volkswagen for the vehicle must be used.
- No further loads are allowed to be connected to assigned fuses.
- No additional cables are allowed to be connected to existing cables (e.g. with insulation-piercing terminals).
- Fuse electrical equipment adequately by means of additional fuses.
- All installed electrical devices shall be checked acc. to UNECE-R 10 and shall bear the "e" mark.

#### 2.5.2.4 Electromagnetic compatibility

Electromagnetic compatibility (EMC) is defined as the property of an electrical system enabling it to behave neutrally with full functionality in the vicinity of other systems.
Active systems in the surrounding area are not disrupted by the system, nor is system itself impaired.
Electrical interference in motor vehicle electrical systems is caused by the individual electrical loads. At Volkswagen AG, the factory-fitted electronic components have been checked for their electromagnetic compatibility in the vehicle.
When electrical or electronic systems are retrofitted, it is also necessary to check and demonstrate their electromagnetic compatibility.
The devices shall possess a type approval in accordance with UNECE-R 10 and shall bear the "e" mark.
Volkswagen does not issue a manufacturer's declaration for electromagnetic compatibility when additional devices are subsequently installed by body builders.
Should you have any questions, please contact Volkswagen AG. Please refer to chapter 1.2.1 "Product and vehicle information for body builders".

#### 2.5.2.5 Mobile communication systems

**1. Mobile phones**

Commercially available mobile phones may be operated in the vehicle interior. Observe the respective national regulations for the transmission powers during use. Information about the radio bands can be found in the current vehicle-related manufacturer's declaration.

An installation set with external aerial is recommended for an optimum transmission and reception quality and to connect to wireless networks outside of the vehicle. The appropriate interface is available for the mobile phone ex-works as special equipment.

**2. Mobile phones for authorities and organisations with security tasks**

Two-way radios complying with the technical guidelines of authorities and organisations with security tasks may be installed and operated in the vehicle with the appropriate installation set (according to the vehicle-specific manufacturer's declaration).

**Information**

You will find more information on the operation of mobile radio units in the "Vehicle-specific manufacturer's declaration" for the Transporter.
It is filed in the body builder portal of Volkswagen AG under the heading: "Additional technical information"*.

*Registration required.

#### 2.5.2.6 CAN bus

Interventions in the CAN bus and connected components are not permitted.

### 2.5.3 Electrical interface for special vehicles

In principle, there are two interfaces for external use in special vehicles and by body builders:

1. Terminal strip: 3 plugs with selected vehicle electrical system potentials
2. Multifunction control unit: control unit with access to the vehicle's CAN network

The interfaces can be ordered using the following equipment numbers (PR numbers):

| PR number | Description of |
|---|---|
| IS1 | Fastening strip<br>"Electrical interface for external use"<br>(terminal strip in driver seat storage compartment) |
| IS6 | Multifunction control unit<br>"Multifunction control unit for external use"<br>(front passenger's underseat box) |
| IS2 | Terminal strip (IS1) and multifunction control unit (IS6)<br>"Electrical interface and multifunction control unit for external use" |

"" – sales designation

Note:

The multifunction control unit (MFG) with part number 7E0.907.427.B has a CANopen interface acc. to the CIA447 specification.

### 2.5.3.1 Location of the interfaces for special vehicles

The multifunction control unit IS6 is installed in the seat box of the front passenger seat.

For vehicles with individual seats the multifunction control unit is installed to the right on the seat box and for vehicles with double seats to the front on the seat box.

The terminal strip IS1 is installed in the seat box of the driver's seat and is located in the coupling point.

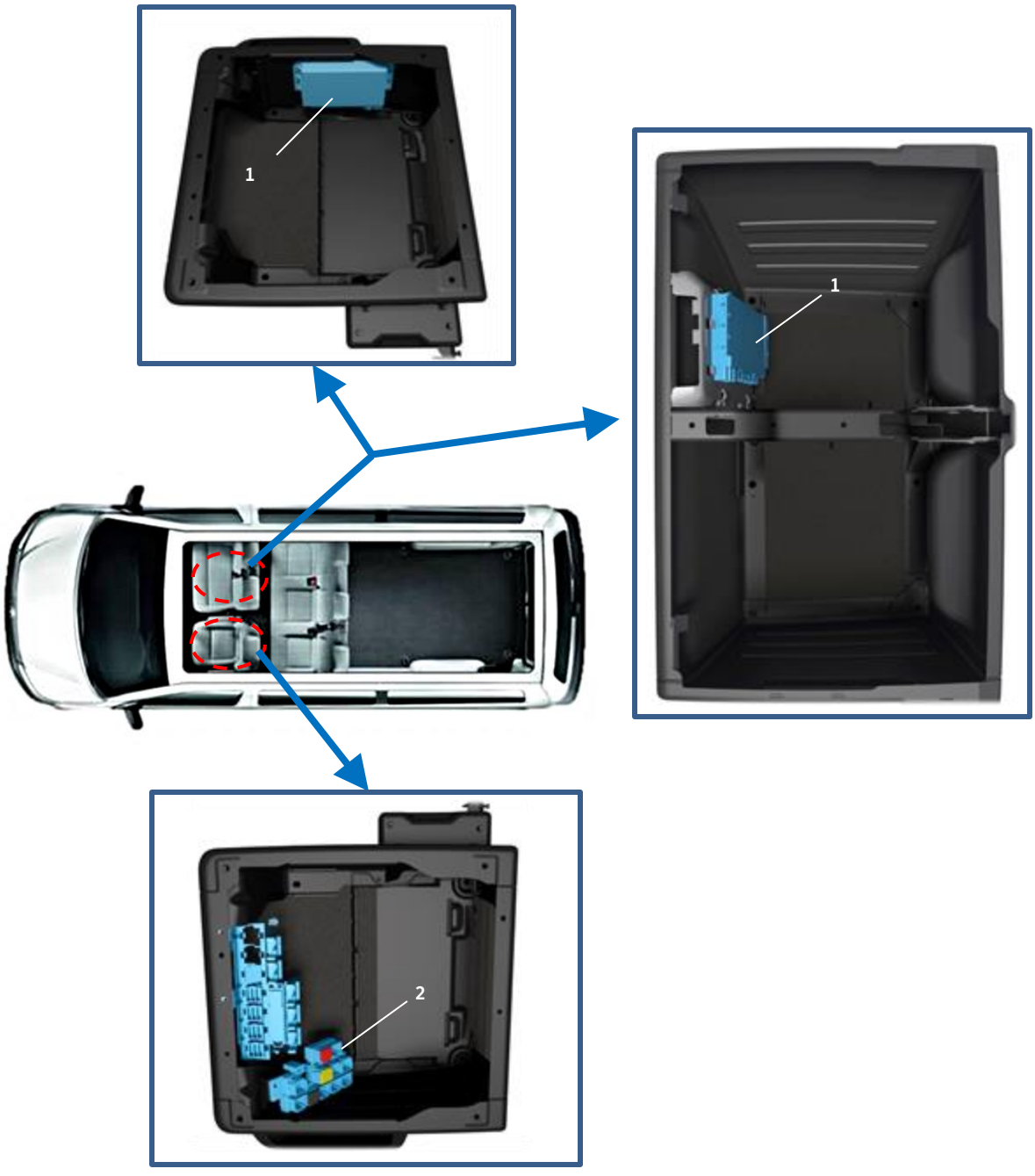



Fig. 1: Electrical interface for special vehicles

1 Multifunction control unit (IS6)

2 Terminal strip (IS1)

### 2.5.3.2 General notes on the interfaces for special vehicles, Transporter (from model year 2010 onwards)

Basic requirements for using the interface:

- These interfaces are only allowed to be used by authorised specialist personnel.
- Inappropriate interventions can result in damage to the vehicle and breakdowns, and may also invalidate the operating permit.
- The parameters of the special vehicle control unit are only allowed to be set in consultation with VW.
- Connections must be made professionally and must be water-tight, in particular in the floor area of the driver seat box (see chapter 2.5.2.1 "Electrical wiring/fuses").

Subject to technical modifications.

The following points must be observed at all times:

- VDE guidelines for configuration and fitting of electrical wiring and components (cable cross sections, fuses etc.)
- Only components approved by Volkswagen are allowed to be used for adapting to the vehicle electrical system. The part numbers of these components can be found in this description.
- Only the potential names normally used in VW are used in this description.
- It is not known what additional units will be connected, and therefore the company fitting out the vehicle with the interface shall ensure a balanced current distribution.
- EMC safety for connections after the interface is the responsibility of the company fitting out the vehicle.
- The cable cross sections of the interfaces shall be maintained throughout the entire circuit, i.e. no cross-section reductions are permitted after the interface.
- Energy must only be supplied to the vehicle electrical system at potentials expressly provided for this purpose (see description) and shall be fused externally in accordance with VDE.
- For additional information, refer to the customer service documents or the technical documentation of the terminal strip (IS1) or the multifunction control unit (IS6).
- All electrical wiring connected to the vehicle electrical system shall be reliably and durably protected against overload to battery "+" and the body earth.
- Earth potential: The specified potentials always refer to the vehicle body earth. Use of the earth point in the left seat box is preferred.
- Connecting additional lighting devices using the terminal strip can lead to malfunctions or failure of the bulb failure monitor in the vehicle (see also chapter 2.5.1 Lighting).

**Information**

The assignment and functions of the electrical interfaces for special vehicles depends on the equipment. The main difference concerns which version of the "on board supply control unit" (BCM for short) is installed. The following differentiation is made:

- BCM standard (part number: 7H0.937.086.x/.087.x)
- BCM max (part number 7H0.937.090.x).

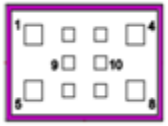
The following PR numbers will result in the fitting of a BCM max:

- 8K3 – "Automatic headlight activation, with daytime running lights, Leaving home function and manual Coming home function"
- 8K8 – "Headlight assist (conditional automatic switch on/off) incl. Coming home/Leaving home function"
- 7L6 – "Stop/start system with brake energy recuperation"

### 2.5.3.3 Assignment of the terminal strip (IS1)

Selected vehicle electrical system potentials are assigned to the 3 plugs. The interface assignment and the possibility of drawing or supplying current depend on the equipment.

Plug 1 (violet)
4F0.937.743.K

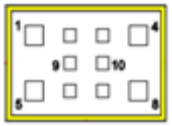



(designation in circuit diagram: T10bh, see erWin)

| Pin | Terminal designation | Colour | Cross section [mm²] | Max. current draw [A] | Max. current supply [A] | Fuse protection | Mating connector contact | Use | Restrictions |
|---|---|---|---|---|---|---|---|---|---|
| **A1** | $X_{RA}$ | Black/yellow | 1.5 | 12.0 | Not permissible | F1 (15 A)<br>Centre console | N.906.845.01 | X contact | |
| **A2** | 55 | White/yellow | 0.35 | BCM std: 4.0<br>BCM max: 0.5 | BCM std: 0.2[1]<br>BCM max: not permitted | C17/2 (5A)<br>Driver's seat box | N.103.358.01 | Fog lights | With BCM max:<br>PWM signal, signal output even when left cornering lighting is activated |
| **A3** | RFS | Green/black | 1.0 | 1.0 | Not permissible | No independent | N.103.358.01 | Reversing light | With automatic gearbox or BCM max:<br>PWM signal |
| **A4** | 56bL | Yellow/black | 0.35 | 1.0 | Not permissible | C44 (5 A) | N.906.843.01 | Dipped beam | A4 and A5 are phys. connected |
| **A5** | 56bR | Yellow | 0.35 | 1.0 | Not permissible | C16/1 (5A)<br>Triple fuse carrier seat box (left-side) | N.906.843.01 | Dipped beam | |
| **A6** | 86S | Brown/red | 0.5 | 0.5 | Not permissible | 5 A | N.103.358.01 | S contact | |
| **A7** | 58d | Grey/blue | 0.35 | 2.0 | - | C16/2 (3A)<br>Triple fuse carrier seat box (left-side) | N.103.357.01 | Instrument/switch lighting | When dimmer installed:<br>PWM signal |
| **A8** | 56aL | White/black | 1 | 1.0 | 12.0[1] | C16/3 (15 A)<br>Triple fuse carrier seat box (left-side) | N.906.845.01 | Main beam | Pin A8 and plug 2 pin A1 are phys. connected |

| Pin | Terminal designation | Colour | Cross section [mm²] | Max. current draw [A] | Max. current supply [A] | Fuse protection | Mating connector contact | Use | Restrictions |
|---|---|---|---|---|---|---|---|---|---|
| **A9** | 15A | Black / blue | 0.5 | 2.0 | Not permissible | F36 (5 A)<br>Fuse box optional equipment | N.103.358.01 | Terminal 15 | |
| **A10** | 58L/ 58 | Grey / black | 0.5 | BCM std: 1.0<br>BCM max: 0.5 | Not permissible | Only BCM std.<br>F11 (5 A)<br>Fuse box interior equipment | N.103.358.01 | Side lights | With BCM max:<br>PWM signal; pick-off at left side light<br>With BCM std.: pick-off from rotary light switch |

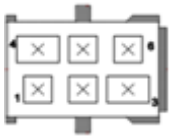
Plug 2 (yellow)
4F0.937.743.C




(designation in circuit diagram: T10bj, see erWin)

| Pin | Terminal designation | Colour | Cross section [mm²] | Max. current draw [A] | Max. current supply [A] | Fuse protection | Mating connector contact | Use | Restrictions |
|---|---|---|---|---|---|---|---|---|---|
| **A1** | 56aR | White | 1.5 | 1.0 | 12.0[1] | C17/1 (15 A)<br>Triple fuse carrier seat box (left-side) | N.906.845.01 | Main beam | Pin A1 and connector 1 Pin A8 are physically connected |
| **A2** | V | White/violet | 0.35 | 0.02[2] | - | No independent | N.103.357.01 | Speed signal | |
| **A3** | L 49a | Black / white | 0.35 | 0.2 | Supply by connection to earth | No independent | N.103.357.01 | Left turn signal | Earth signal<br>Stat. Turn signal status no timing signal |
| **A4** | 50a | Black/blue | 0.5 | 0.2[3] | - | 5 A fuse | N.906.844.01 | Terminal 50 | |
| **A5** | n.c. | - | - | - | - | - | n.c. | - | |
| **A6** | R 49a | Black/green | 0.35 | 0.2 | Supply by connection to earth | No independent | N.103.357.01 | Right turn signal | Earth signal<br>Stat. Turn signal status no timing signal |
| **A7** | Handbrake signal | Blue/black | 0.35 | 0.01[4] | Not permissible | None | N.103.357.01 | Handbrake warning | Earth signal |
| **A8** | 50a | Black/blue | 0.5 | 0.2 | - | 5 A fuse | N.906.844.01 | Terminal 50 | |
| **A9** | n.c. | - | - | - | - | - | n.c. | - | |
| **A10** | 71a | Black/yellow | 1.5 | 0.5 | Not permissible | No independent | N.105.407.01 | Horn momentary contact | Signal pick-off at vehicle horn |

Plug 3 (grey)
4F0.937.731.G



(designation in circuit diagram: T6bn, see erWin)

| Pin | Terminal designation | Colour | Cross section [mm²] | Max. current draw [A] | Max. current supply [A] | Fuse protection | Mating connector contact | Use | Restrictions |
|---|---|---|---|---|---|---|---|---|---|
| **A1** | 54 | Black/red | 1 | 0.2[5] | Not permissible | No independent | N.105.114.01 | Brake light | Pin A1 and pin A2 are phys. connected |
| **A2** | 54 | Black/red | 1 | 0.2 | Not permissible | No independent | N.105.114.01 | Brake light | |
| **A3** | 15 | Black/yellow | 2.5 | - | Max. 25. | C17/3 (25 A)<br>Triple fuse carrier seat box (left-side) | N.105.118.01 | Ignition bypass terminal 15 upholding | |
| **A4** | 30 A | Red/yellow | 4 | 40 | Not permissible | C14 (40 A)<br>Seat box (left-side) | N.105.119.01 | Draw of battery positive potential | Connection to starter battery |
| **A5** | 75 | Black/red | 2.5 | Not permissible | 2.5[7] | F5 (10 A)<br>Fuse box optional equipment | N.105.115.01 | Ignition bypass terminal 75 (X contact) upholding | |
| **A6** | n.c. | - | - | - | - | - | n.c. | - | |

1. An external fuse is required in case of external power supply. It is essential to take account of the effects on the vehicle electrical system

2. Note the specification of the instrument cluster interface

3. If the cable between pin 4 and pin 8 is disconnected (plug 2) then the ends of the cable must be insulated correctly. Note the necessary continuous current for the relay coil of ≥200 mA

4. Note the influence / feedback on the instrument cluster.

5. If the cable between pin 1 and pin 2 is disconnected (plug 3) then the ends of the cable must be insulated correctly.

7. An external fuse is required directly before the interface.

**Information**

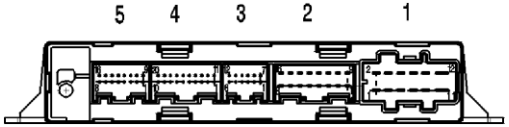
For more information about the interface connections, refer to the "Documentation for electrical interface (IS1) in the Transporter". The document is available in the body builder portal of Volkswagen AG under the "Additional technical information" menu option.

*Registration required.

### 2.5.3.4 Contact assignment on the multifunction control unit (IS6)

Discrete signals with terminal 30 level can be picked off at all highside outputs of the multifunction control unit. Signals with terminal 31 level can be picked off at all lowside outputs. The outputs can be loaded up to the particular prescribed value. The inputs of the control unit must be connected to earth (low active) or to positive (high active), according to specification.

The following connectors and contacts must be used for connecting external devices to the special vehicle control unit:




| | Plug 5 | Plug 4 | Plug 3 | Plug 2 | Plug 1 |
|---|---|---|---|---|---|
| **Part number** | 8E0.972.416.A | 8E0.972.420 | Not assigned | 443.972.807 | 4B0.973.721 |
| **Contacts** | Pin 3–16:<br>0.5 $mm^2$<br>N.907.649.01 | Pin 1–20:<br>0.5 $mm^2$<br>N.907.649.01 | | Pin 1–16:<br>0.5–1 $mm^2$<br>N.101.905.01<br>1.5–2.5 $mm^2$<br>N.101.906.01 | Pin 1–8:<br>0.5–1 $mm^2$ N.906.844.01<br>1.5–2.5 $mm^2$<br>N.906.845.01 |

Plug 1 assignment:

| Pin | Designation | Type | Load capacity [A] | Function |
|---|---|---|---|---|
| **1** | A01 | Output<br>Highside/lowside[1] | 6.5/3.8 | Status of alternator charge check |
| **2** | A02 | Output<br>Highside/lowside[1] | 6.5/3.8 | Horn momentary contact;<br>Status of the veh. horn |
| **3** | A03 | Output<br>Highside | 5.0 | Ignition bypass safety circuit<br>Signals for the external supply of terminal 15 / 75 |
| **4** | A04 | Output<br>Highside | 5.0 | Light signal;<br>Status of the dipped beam / activation for intermittent dipped beam |
| **5** | A05 | Output<br>Highside | 5.0 | Light signal;<br>Status of the left turn signal |
| **6** | A06 | Output<br>Highside | 5.0 | Light signal;<br>Status of the right turn signal |
| **7** | A07 | Output<br>Highside | 5.0 | Light signal;<br>Status of the main beam / activation for intermittent main beam |
| **8** | A08 | Output<br>Highside | 5.0 | Supply output with overload protection;<br>The output is deactivated after expiry of a terminal S post-operation time which can be set in the parameters, or when a battery voltage threshold which can be set in the parameters is reached |
| **9** | Terminal 31 | | | Connections are required for supplying the control unit, and are already available from series production. |
| **10** | Terminal 30 | | | |
| **11** | Terminal 31 | | | |
| **12** | Terminal 30 | | | |

Plug 2 assignment:

| Pin | Designation | Type | Load capacity [A] | Function |
|---|---|---|---|---|
| **1** | A11 | Output<br>Highside | 0.15 | Light signal;<br>Status of the side lights |
| **2** | A12 | Output<br>Highside | 0.15 | Light signal;<br>Status of the brake light |
| **3** | A13 | Output<br>Highside | 0.15 | Status of the central locking<br>OFF = Vehicle locked / safe<br>ON = Vehicle opened |
| **4** | A14 | Output<br>Highside | 0.15 | Door status;<br>Driver door |
| **5** | A15 | Output<br>Highside | 0.15 | Door status<br>Front passenger door |
| **6** | A16 | Output<br>Highside | 0.15 | Door status;<br>Sliding door left |
| **7** | A17 | Output<br>Highside | 0.15 | Door status<br>Sliding door right |
| **8** | A18 | Output<br>Lowside | 0.15 | Ignition bypass safety circuit;<br>Warning lamp |
| **9** | A19 | Output<br>Lowside | 0.15 | Door status;<br>Rear lid / wing doors |
| **10** | A20 | Output<br>Lowside | 0.15 | Door status;<br>Bonnet |
| **11** | A21 | Output<br>Lowside | 0.15 | Crash-signal;<br>If a crash is detected (airbag/belt tensioner triggered), the output is switched ON until the next terminal change. |
| **12** | A22 | Output<br>Lowside | 0.15 | Speed signal /<br>Display when a speed threshold that can be set in parameters is exceeded[1] |
| **13** | A23 | Output<br>Lowside | 0.15 | Light signal;<br>Status of fog lights |
| **14** | Pull-up (terminal 30) | | | |
| **15** | Reserve | | | |
| **16** | Reserve | | | |

Plug 4 assignment:

| Pin | Designation | Type | Function |
|---|---|---|---|
| **1** | E01 | Input/active low | Activation of ignition bypass safety circuit |
| **2** | E02 | Input/active low | n.c. |
| **3** | E03 | Input/active low | Activation of the buzzer (gong) in the instrument cluster;<br>The frequency and duration of the activation can be set in the parameters |
| **4** | E04 | Input/active low | Activation of front left electric window for opening the side window |
| **5** | E05 | Input/active low | Activation of front left electric window for closing the side window |
| **6** | E06 | Input/active low | Deactivation of the daytime running light (only with BCM max)[2] |
| **7** | E07 | Input/active low | Activation of front right electric window for opening the side window |
| **8** | E08 | Input/active low | Activation of front right electric window for closing the side window |
| **9** | E09 | Input/active low | Activation of the hazard warning lights;<br>The function only responds to the button. Press once = switch on, second press = switch off |
| **10** | E10 | Input/active low | Activation of the central locking;<br>Momentary contact input for closing (safe) the central locking |
| **11** | E11 | Input/active low | Activation of the central locking;<br>Momentary contact input for opening the central locking |
| **12** | E12 | Input/active low | n.c. |
| **13** | E13 | Input/active low | n.c. |
| **14** | E14 | Input/active low | Activation of the vehicle horn |
| **15** | E15 | Input/high-active | Activation for the intermittent light / flasher unit (not in conjunction with LED headlights)<br>By setting the parameters of the control unit, it is possible to define which bulbs should be activated[2] |
| **16** | E16 | Input/high-active | |
| **17** | E17 | Input/high-active | Activation of the interior lighting/suppression of the interior lighting[1] |
| **18** | E18 | Input/high-active | n.c. |
| **19** | Reserve | | |
| **20** | Reserve | | |

Plug 5 assignment:

| Pin | Designation | Type | Load capacity [A] | Function |
|---|---|---|---|---|
| **1** | CAN bus High | | | Communication of the control unit with the vehicle;<br>These connections are available from series production |
| **2** | CAN bus Low | | | |
| **3** | Reserve | | | |
| **4** | LIN | | | Via the LIN interface, it is possible to connect a remote control drive assist; the control unit must have its parameters set accordingly for this. |
| **5** | LIN gnd | | | |
| **6** | CANopen<br>High | | | The multifunction control unit with part number 7E0.907.427.B has a CANopen interface acc. to the CIA447 specification – ("CANopen application profile for special-purpose car add-on devices"). The multifunction control unit functions as a gateway for this interface. |
| **7** | CANopen<br>Low | | | |
| **8** | Reserve | | | |
| **9** | A09 C | Relay | 0.5 | n.c. |
| **10** | A09 NO | Relay | 0.5 | n.c. |
| **11** | A09 NC | Relay | 0.5 | n.c. |
| **12** | Reserve | | | |
| **13** | A10 C | Relay<br>Input | 0.5 | Terminal 30 |
| **14** | A10 NO | Relay | 0.5 | n.c. |
| **15** | A10 NC | Relay<br>Output | 0.5 | Light signal;<br>Reversing light status; when the reversing light is activated, the internally installed relay switches the output to the input A10 C (requires the terminal 30 potential on A10 C) |
| **16** | Reserve | | | |

1 The function depends on the parameter settings of the control unit.

2 Statutory regulations must be complied with.

**Information**

For more information about the functions and parameter settings of the multifunction control unit, refer to the "Multifunction control unit in the Transporter" document. The document is available in the body builder portal of Volkswagen AG under the "Additional technical information" menu option.

*Registration required.

**Information**

In addition to the multifunction control unit, the electrical terminal strip (order code IS2) is also required for the following functions:

- Ignition bypass safety circuit
- Intermittent light functions or flasher unit

### 2.5.3.5 Circuit diagrams for interface for special vehicles

Detailed information about the electrical interface for external use (IS1) and about the multifunction control unit for external use (IS6) can be found in the workshop manuals and circuit diagrams of Volkswagen AG.

**Information**

Volkswagen AG workshop manuals and current flow diagrams can be downloaded from the Internet at **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG): http://erwin.volkswagen.de/erwin/showHome.do

*Information system from Volkswagen AG, subject to payment

### 2.5.4 Vehicle battery

If a vehicle is not operated for a long time, its battery gradually discharges due to the electrical loads (clock, tachograph, 12 volt socket) and can suffer permanent damage.
To avoid this damage, the battery no-load voltage must be checked and charged according to the care cycle (see chapter 1.2.6 Recommendations for vehicle storage).

**Practical note**

Avoid totally discharging the battery. Totally discharging the battery may cause permanent damage to the battery.
When under load, there may be a maximum of 80 A at the battery.
When not under load, the battery voltage must exceed 12.25 V.
When loaded with a maximum of 80 A, the battery voltage must not fall below 11.9 V; if necessary, an idle phase (electrical equipment off) must be implemented until the open-circuit voltage increases to 12.25 V.

A heavy duty alternator with heavy duty battery is to be used when the engine is running and there is an increase in power requirements.
If there is an increased power requirement when the motor is at a standstill or if there is a very high demand for power, a stronger battery should be used.

It is possible to obtain an uprated battery and an uprated alternator ex-works as special equipment for the increased current draw of additional loads:

| Order number (PR number) | Designation |
|---|---|
| NY1 | Uprated battery and uprated alternator |
| NY2 | Uprated battery |

#### 2.5.4.1 Installation of additional battery

When installing additional batteries, please note that this may only be done in conjunction with a battery isolation relay.
It must also be ensured here that the second battery that is supplying power is protected against reaching the damage threshold/total discharge (for example by installing a voltage monitor).
The additional battery may only be used for its specific additional electrical equipment. Additional electrical loads can include, for example: cooling units, auxiliary heaters, etc. If an additional battery is accommodated in the passenger compartment, sufficient ventilation must be provided.
We recommend that you order the additional battery ex-works (see also chap. 1.3.1 Selecting the base vehicle).
Please use an AGM battery when retrofitting an additional battery for the new Transporter.

**Practical note**

When installing an additional battery, make sure that batteries of the same battery type as the starter battery are used (AGM or conventional lead accumulators).

**Warning note**

When work is performed on the vehicle electrical system, the earth cables should always be disconnected from the battery and the additional battery. Only then should you disconnect the positive cables. Short-circuits could occur if this is not observed.

#### 2.5.4.2 Second battery (PR number: 8FB)

As special equipment, a cycle-proof second battery with isolation relay is available ex-works with PR number 8FB. This circuit has an 80 A fuse.

**Practical note**

The 2nd battery (PR number 8FB) is not monitored and the energy management (battery charge) is controlled by the available capacity (state of charge) of the starter battery. The second battery is operated at an optimal charge level in Euro 6 vehicles for reasons of efficiency. This is why the full charge capacity is not always available.

### 2.5.5 Subsequent installation of generators

If additional electrical equipment is retrofitted, the increased power requirement can be met by using more powerful alternators. The following special equipment is available from the factory for this purpose:

| Order number (PR number) | Designation |
|---|---|
| NY1 | Uprated battery and uprated alternator |
| NY3 | Uprated alternator |

If ancillaries are used, the factory-fitted power take-off systems should be used (see chapter 2.7 "Ancillary drives").
If other alternators are to be added, the following points should be observed:
Vehicle parts and their function should not be impaired by the installation of a generator.

- The capacity of the battery and power supplied by the alternator must be dimensioned sufficiently.
- The alternator circuit requires additional fusing (see "Electrical wiring / fuses").
- The cable cross-section should be dimensioned according to the current drawn (see chapter 2.5.2.1 "Electrical wiring/fuses").
- The higher power requirement can make it necessary to replace the starter/alternator warning harness. We recommend Volkswagen genuine parts for this.
- Ensure that electrical wiring is routed correctly (see chapter 2.5.2.1 "Electrical wiring /fuses")
- The accessibility of the ancillaries installed and simple maintenance possibilities may not be impaired.
- The necessary air supply and the engine cooling may not be impaired.
- The guidelines of the equipment manufacturer for the compatibility with the base vehicle should be observed.
- The Owner's Manual and the maintenance manual for the ancillaries should be handed over when the vehicle is delivered.

### 2.5.6 Driver assist systems

**Warning note**

Improper interventions in, or installations in, vehicle systems, safety-relevant components or driver assist systems can impair their function. This can result in failure or malfunctions of components or safety-relevant components. Accidents or damage to the vehicle may occur as a result.

**Practical note**

In vehicles with assist systems (such as the Lane Assist), add-ons and conversions may cause falsification of the calibration. Flawless function of the multifunction camera and the ACC* would not be ensured. Once a body has been built or conversion made, a calibration of the driver assist systems installed must therefore be carried out by an authorised specialist workshop.

**Information**

More information on installation and removal of the assist systems, such as ACC* and multi-function camera can be found in the repair guideline (wheels, tyres, vehicle measurement Rep.-Gr.44 and electrical system, Rep.-Gr. 96) on the Internet at: **erWin**** (**E**lectronic **R**epair and **W**orkshop Information from Volkswagen AG): http://erwin.volkswagen.de/erwin/showHome.do

*AdaptiveCruiseControl

**Information system from Volkswagen AG, subject to payment

### 2.5.7 Earth points

Use the earth points provided by Volkswagen for subsequent electrical add-ons or installations to ensure an optimum earth connection to the base vehicle.

**Warning note**

The use of other earth points can lead to malfunctions in safety systems. This can lead to a failure of components or safety-relevant parts and to error messages in the instrument cluster.

A maximum of 4 terminals are allowed to be screwed to an earth point.
The earth points of the safety systems must not be used for bodies.

**Information**

You will find a general overview and more information on earth points in the current circuit diagram sheet no. 801/1.

Volkswagen AG workshop manuals and workshop information can be downloaded from the Internet at **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG):
http://erwin.volkswagen.de/erwin/showHome.do

*Information system from Volkswagen AG, subject to payment

In the case of further requirements, please contact us (see chapter 1.2.1 "Product and vehicle information for body builders".)

# 2.6 Engine peripherals/drive train

In the event of modifications to noise-relevant components such as the engine, exhaust system, tyres, air intake system etc., noise measurements shall be carried out acc. to EC Directives. The permitted values are not allowed to be exceeded.
The national regulations and directives apply.
Components for sound insulation that are installed as standard are not allowed to be modified or removed (see also chapter 2.4.4 "Acoustic insulation").

### 2.6.1 Engine/powertrain components

- No modifications to the engine air intake system are permitted.
- Subsequent solutions regarding engine speed control are not possible.
- Modifications to the cooling system (radiator, radiator grille, air ducts etc.) are not permitted.
- Keep cooling air intake areas clear.

### 2.6.2 Drive shafts

The correct configuration and implementation of a modified powertrain prevents noise and vibration, and should only be performed by a company which is qualified to build drive shafts.

Only genuine Volkswagen parts should be used.

### 2.6.3 Fuel system

No modifications are permitted to the fuel system, and any such modifications may result in invalidation of the vehicle's operating permit.
In the event that the fuel system must be modified, the body builder is solely responsible for the work being carried out correctly, including all the components and materials used.
A new operating permit must be applied for from the registration authority.

Comply with the following points if making any modifications to the fuel system:

- The whole system must be permanently leak-proof in all operating conditions.
- Ensure good quality refuelling if modifications are made to the tank filler pipe, and avoid any siphon effect in the pipe routing.
- All components that come into contact with fuel must be suitable for the particular type of fuel used (e.g. petrol/diesel/ethanol additive etc.) and the ambient conditions in the installation location.
- Hoses must retain their shape and remain adequately stable throughout the service life, in order to ensure that there is no constriction in the cross section (e.g. hoses acc. to DIN 73379-1)
- Multi-ply hoses should be preferred.
- Install reinforcing support sleeves at the connections between hose sections so as to prevent any constriction at the clip connection and to guarantee leak-tightness.
- At the connections, use spring-type clips which automatically compensate for possible settling behaviour of the material and to maintain the preload. Hose clips with worm threads must be avoided.
- All parts of the fuel filler system must be routed at a sufficient distance from moving parts, sharp edges and components at high temperature, in order to avoid damage.
- Vehicles with a petrol engine have their activated charcoal container located at the rear end of the fuel tank. The position and attachment of the activated charcoal container are not allowed to be modified.
- Do not attach heat-conducting components or components that restrict the installation space.
- Modifications to the fuel pump, fuel line length and fuel line routing are not permitted. Modifications to these mutually matched components can impair the function of the engine.
- Modifications to the body in the area of the fuel tank require the fuel tank to be removed first.

– If the body builder replaces the standard tank with a different fuel tank, make certain that the ground clearance with the new tank is not less than that of the standard tank. Exceptions are possible for vehicles for special applications (e.g. vehicles for transporting people with disabilities). Please contact us (see chapter 1.2.1.1 Contact in Germany and 1.2.1.2 International contact).

Comply with the workshop manuals of Volkswagen AG.

**Information**

Volkswagen AG workshop manuals and workshop information can be downloaded from the Internet at **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG):
http://erwin.volkswagen.de/erwin/showHome.do

*Information system from Volkswagen AG, subject to payment

### 2.6.4 Exhaust system

Modifications to the exhaust system up to the main silencer and in the area of the components for exhaust post-treatment (diesel particulate filter, catalytic converter, lambda probe etc.) are never permitted.

If a modification is required to the exhaust system for the add-on/removal/conversion nevertheless, this can have effects which are relevant to registration. Please contact us in advance regarding the scope of your conversion so that we can advise you.

We recommend that you use VW genuine parts and comply with the workshop manuals of Volkswagen AG.

**Information**

You will find further information on installation and removal of the exhaust system on the Internet at **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG):
http://erwin.volkswagen.de/erwin/showHome.do

*Information system from Volkswagen AG, subject to payment

**Information**

Country-related regulations and guidelines shall be complied with

Exceptions require the approval of Volkswagen AG before the conversion, and shall be documented in a registration report detailing the modifications and adjustments made.
Please contact us before starting your conversion (see chapter 1.2.1)

**Warning note**

Attention! Danger of fire!

The lengths and routings of the exhaust system have been configured optimally with regard to their temperature properties. Modifications may result in relatively high to extreme heating of the exhaust system and the surrounding components (drive shafts, fuel tank, floor panel etc.).

### 2.6.4.1 Exhaust system with SCR system

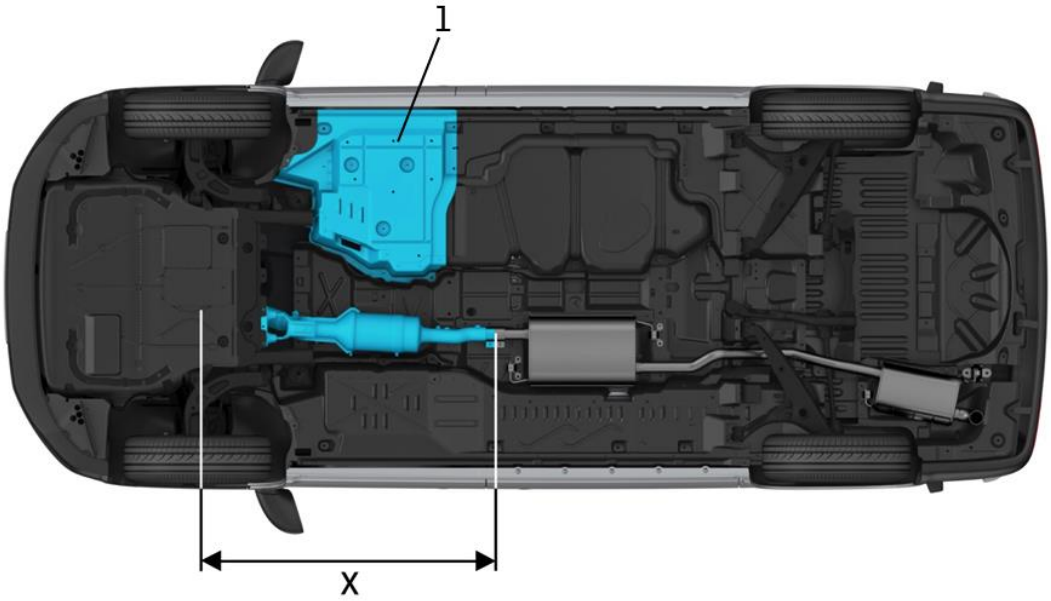



Fig. 1. Long exhaust system with SCR system (illustration: drive type 4×2)

1 AdBlue tank

X Area in which modifications are not permitted

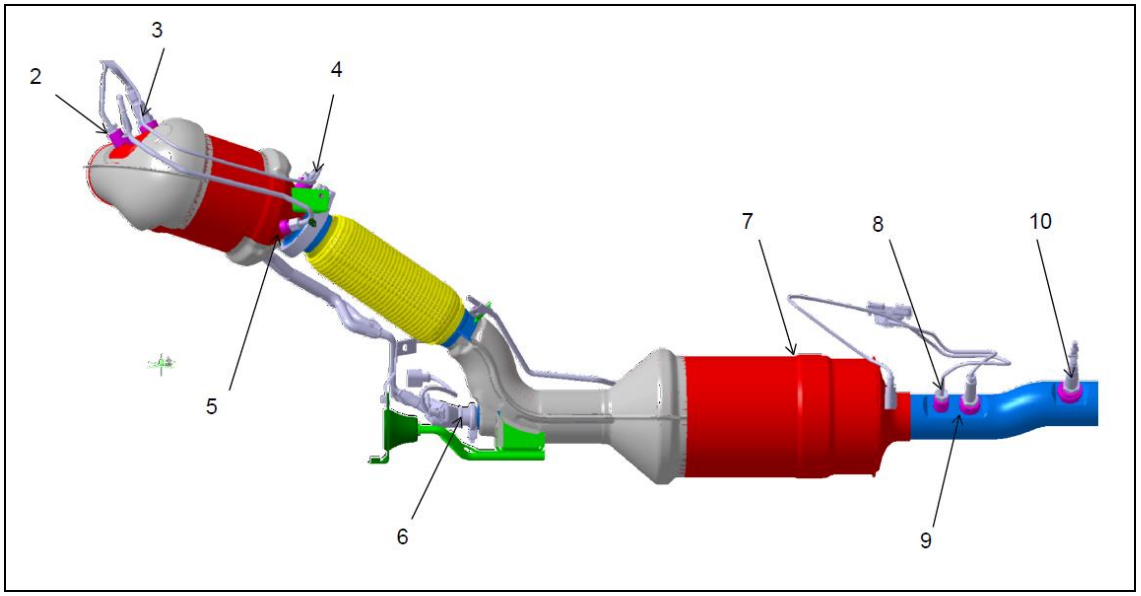



Fig. 2: Details of exhaust system in area X

2 T4 sensor

3 λ sensor

4 T5 sensor

5 Pressure sensor

6 SCR injection

7 Pressure sensor (covered)

8 T6 sensor

9 NOx sender

10 PM sensor

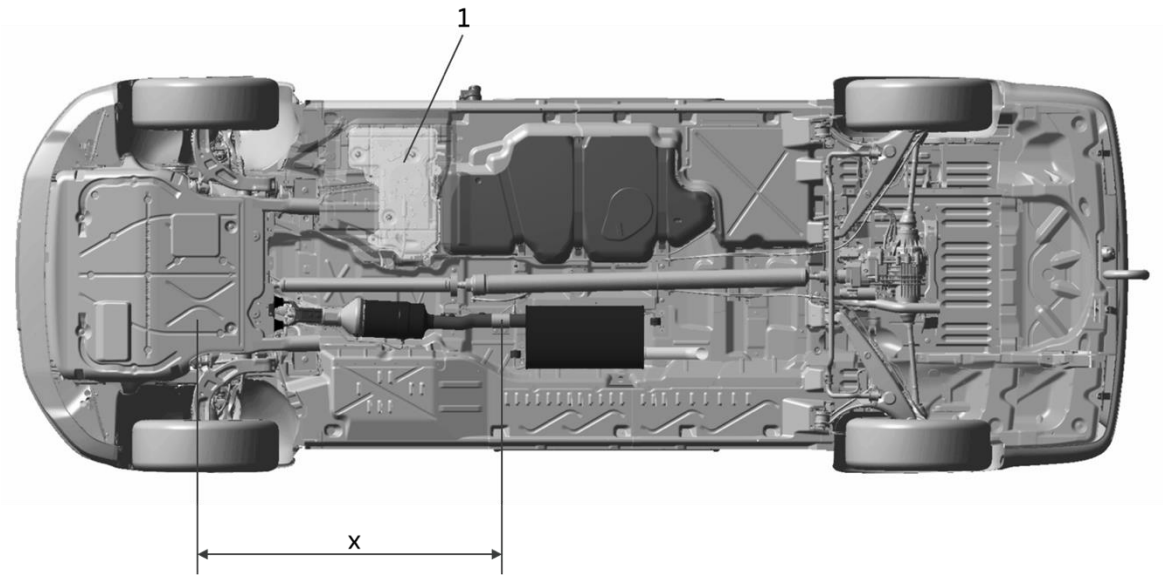



Fig. 3. Short exhaust system with an SCR system for vehicles with MonoTurbo Diesel engines and N1 registration (shown here: 4×4 drive type)

1 AdBlue tank

X Area in which modifications are not permitted

**Practical note**

Vehicles in vehicle class N1 (front-wheel drive, four-wheel drive) with the MonoTurbo Diesel engine variant (62–110 kW) are fitted with the short exhaust system as standard.
Vehicles in vehicle class N1 with the BiTurbo Diesel engine variant and vehicles in vehicle class M1 are fitted with the long exhaust system and a rear silencer as standard.

Modifications to exhaust systems with an SCR system are not permitted under any circumstances. Neither the geometry nor the position of the sensors are allowed to be changed.
If a modification to the exhaust system due to body design, removal or conversion is nevertheless required, this can have consequences relevant to registration. Please contact the body builder support personnel in advance regarding the scope of your conversion so that we can advise you.
Changes as a result of add-ons or conversions are only possible outside of the SCR emission control area indicated by X (see Fig. 1 and Fig. 3).

**Practical note**

When working on lines carrying AdBlue®, comply with the workshop manuals from Volkswagen AG. Otherwise, AdBlue® could crystallise and lead to damage to system components.

### 2.6.5 SCR system (Euro 6)

To meet Euro 6 emissions regulations for diesel engines, engines are available ex-works with different performance levels with the SCR system.

The SCR catalytic converter selectively converts the nitrogen oxide (NOx) exhaust component into nitrogen and water. This conversion is undertaken using AdBlue®, a synthetically manufactured, aqueous reducing agent. AdBlue® comprises 32.5 per cent high-purity urea and demineralised water. The AdBlue® solution is not mixed with the fuel, but carried in a separate tank. From here, the AdBlue® is injected continuously into the exhaust gas line in front of the SCR catalytic converter. The AdBlue® reacts with the nitrogen oxides in the SCR catalytic converter and is split into nitrogen and water. The dosing is determined by the exhaust mass flow. The engine management system is informed by an NOx sender after the SCR catalytic converter and ensures exact dosing. The AdBlue® reducing agent is non-poisonous, odourless and water-soluble.

#### 2.6.5.1 Installation position of the AdBlue® tank in the vehicle

In both open bodies (platform, chassis) and closed bodies (panel/window), and all wheelbases, the AdBlue® tank is fitted uniformly at the front left of the underbody in the direction of travel, under the driver seat.

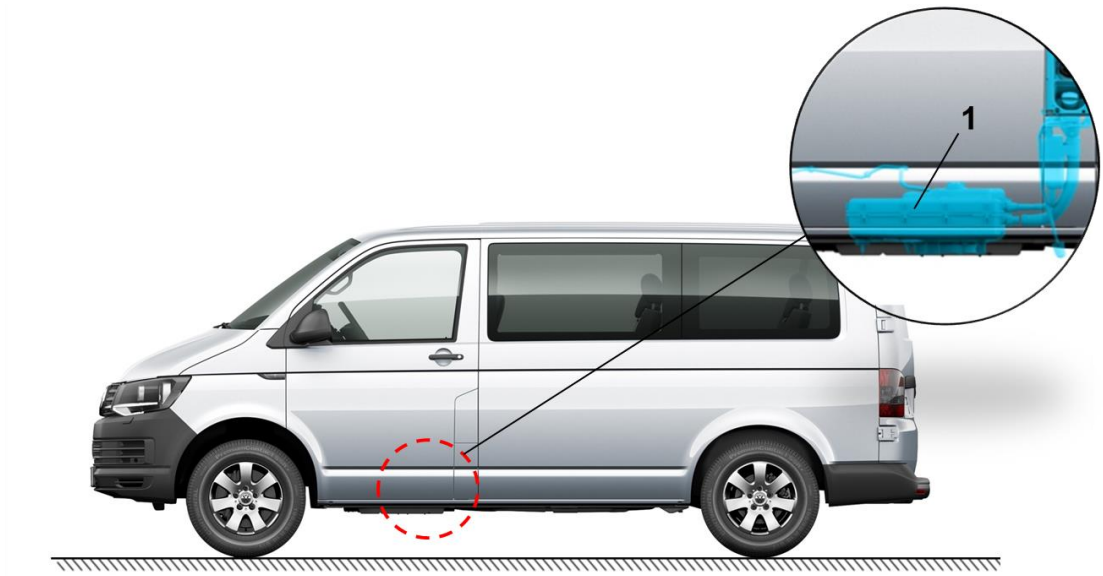



Fig.1 Installation position of the AdBlue® tank in the vehicle

1 AdBlue tank

The SCR system consists of an AdBlue tank, line and a metering valve and forms an optimised electrical-hydraulic unit. The location of the AdBlue® tank, the heated metering line and their relative position to the vehicle shall not be changed (see chapter 2.6.4. Exhaust system).

### 2.6.5.2 Filling opening of the AdBlue® tank

The filling opening of the AdBlue® tank is located behind the tank flap beneath the fuel filling opening.
The capacity of the AdBlue tank is approx. 13 litres.

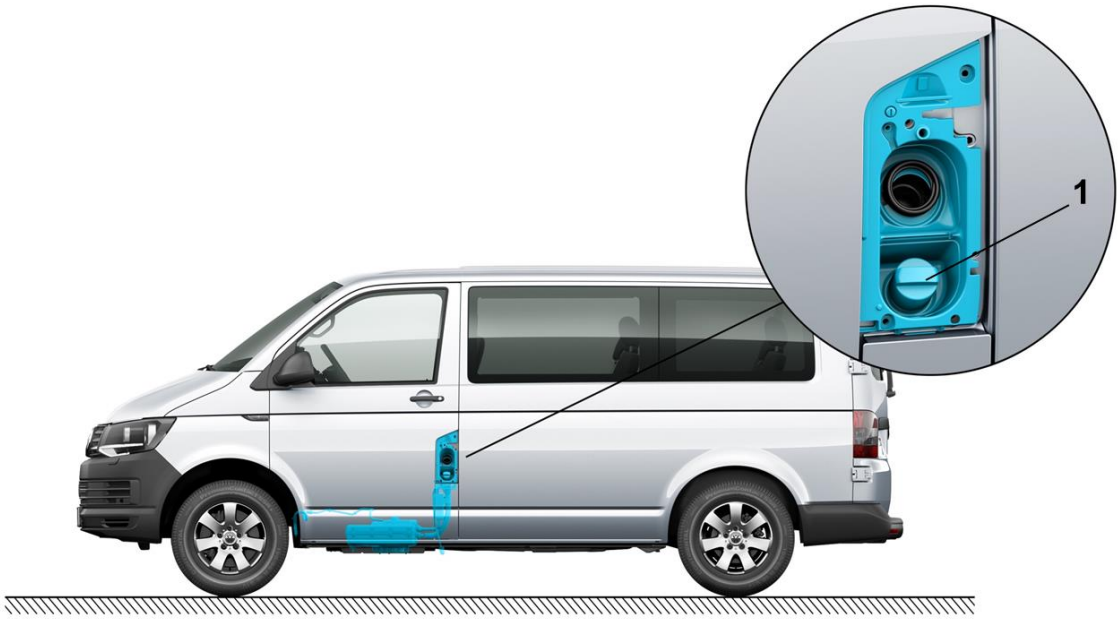



Fig. 2 Filling opening of the AdBlue® tank in the engine compartment

1 Filler neck of the AdBlue tank

**Practical note**

Once a particular residual range is reached, the display on the instrument cluster displays a reminder to top up the AdBlue®. AdBlue® consumption depends on the individual driving style, and can be up to 1% of fuel consumption.

When the AdBlue® tank is empty, the vehicle can only be driven at reduced power and lower engine torque.

If topping up AdBlue® while the residual range display is active, always add the minimum replenishment amount of 6 litres. An adequate amount of AdBlue® shall be replenished when the residual range reaches about 1,000 km, if not sooner.

Never run the AdBlue® tank empty.

**Practical note**

AdBlue® attacks surfaces such as painted surfaces, aluminium, plastics, clothing and carpets. If AdBlue® is spilled, wipe it up as quickly as possible with a damp cloth and plenty of cold water. Remove crystallised AdBlue® with warm water and a sponge.

More information about AdBlue® is available in ISO standards ISO 22241-1 to 4.

**Practical note**

To ensure the purity of AdBlue®, never reuse AdBlue® that has been extracted from the reducing agent tank.

Comply with the country-specific laws and regulations regarding correct storage and disposal.

**Information**

More information and safety instructions for the SCR system can be found in the owner's manual for your vehicle and the Workshop Manuals of Volkswagen AG on the Internet:
http://erwin.volkswagen.de/erwin/showHome.do

### 2.6.6 Engine preheating systems

For subsequent installation, engine preheating systems which operate according to the principle of coolant heating are preferred.

**Practical note**

Installation of an oil preheating system is not permitted. This is because local thermal overload of the oil may occur and damage the vehicle.

Observe the fitting instructions of the heater unit manufacturer and the Volkswagen AG installation recommendations during installation of the engine preheating system.

**Information**

You can find further information in the document "Installation recommendations for engine preheating systems".
The document is available on the body builder portal of Volkswagen AG under the "Additional technical information" menu option.

*Registration required.

# 2.7 Power take-off systems, engine/gearbox

When planning the special vehicle, select the equipment of the base vehicle according to the requirements of the future application (see also chapter 1.3.1 "Selecting the base vehicle").
You can optimise your base vehicle for the conversion in advance by selecting the following special equipment items:

- Uprated alternator (e.g. 180 A instead of 140 A) (see chapter 2.5.5)
- Uprated battery (see chapter 2.5.4.)
- Battery for loads (e.g. cooling units and loads that should be operated with the vehicle stationary).
- Electrical interface for special vehicles (see chapter 2.5.3)
- To protect the engine and power take-off system against contamination and foreign bodies, we recommend installing an underbody cover (noise insulation) and a drive shaft cover, depending on the purpose. The underbody trim and the drive shaft cover are available as genuine parts.
  More information on assembly of the underbody trim can be found in the GP info sheet on the underbody trim.

**Practical note**

A precondition for installing the drive shaft cover is that the vehicle is equipped with halogen headlights or dual halogen headlights. Vehicles equipped with bi-xenon or LED headlights cannot be fitted with drive shaft covers.

**Practical note**

In vehicles with a high proportion of engine running times with the vehicle stationary (working mode), the normal maintenance intervals specified by Volkswagen AG for the belt drive (poly V-belt, tensioning pulley, idler roller etc.) shall be reduced according to the application and customer profile.

Power take-off systems such as power generators, deep cooling compressors and hydraulic pumps may only be fitted instead of the refrigerant compressor in the main belt track. Please comply with the performance categories (see chapter 2.7.2) and the installation space specifications (see 2.7.5).
For correct operation of the power take-off system, we recommend that you use the refrigerant compressor provided ex-works for the base vehicle (see chapter 2.7.2).

### 2.7.1 Compatibility with base vehicle

If retrofitting or renewing ancillaries such as the refrigerant compressor, ensure that these are compatible with the base vehicle.

It is also essential to comply with the following points:

- Vehicle parts and their function should not be impaired by the installation of an air conditioning system.
- The capacity of the battery and power supplied by the alternator must be dimensioned sufficiently.
- Additional fuse protection of the air-conditioning system circuit (see chapter 2.5.2.1 "Electrical wiring/fuses").
- The refrigerant compressors should be mounted on the provided assembly carriers.
- The weight of the ancillary is not allowed to exceed the weight of the series production refrigerant compressor (see chapter 2.7.5.2).
- The diameter and position of the drive pulley for the ancillary must correspond to that of the original refrigerant compressor (see chapter 2.7.5.3).
- There must be adequate space for operating the ancillary.

- The track position of the poly V-belt must be identical to the original and the poly V-belt specifications must be observed (see chapter 2.7.5.4).
- The specifications for the pulleys must match the specifications for the poly V-belt exactly (identical width and number of grooves, e.g. 6PK).
- To ensure the belt is guided properly, "shouldered washers" (with leading edge) must be used.
- Ensure that lines (brake hoses/cables and wires) are routed correctly.
- The accessibility of the ancillaries installed and simple maintenance possibilities may not be impaired.
- The Owner's Manual and the maintenance manual for the ancillaries should be handed over when the vehicle is delivered.
- The necessary air supply and the engine cooling must not be impaired.
- When installing compact systems (evaporator, condenser and blower) on the driver's cab roof, the permissible roof loads must not be exceeded (see chapter 2.3.1 "Roof loads").
- Attachments to the roof require a safety certificate from the responsible department (see chapter 1.2.1).
- If the standard refrigerant system is modified, the fill volumes of refrigerant (R 134a) and refrigerant oil must be redefined and indicated accordingly on a plate in the vehicle.
- In order for a safety certificate to be issued, it is necessary to submit documentation relating to the design of the additional auxiliary drives, specifying the tolerance position, to Volkswagen AG.
- Standard dynamic belt tensioners with spring/shock absorber systems should always be used. Rigid belt tensioning elements are not allowed to be used.
- It is of great importance that the dynamic properties of the belt drive should be investigated in operation, or ideally that a belt dynamics measurement should be performed.
- In the event of a faulty ancillary (increased torque requirement or blocking of the ancillary), the pulley in the belt drive must be able to continue turning freely. Example solution: thermal fuse in the magnetic clutch.

**Practical note**

Please note that subsequent modifications to the factory-fitted air conditioning system by the body builder are solely the responsibility of the body builder. In such cases, Volkswagen is unable to make any statement about the lubrication of the compressor and the effects on its service life.

As a result, Volkswagen AG does not offer any warranty for the compressor in this case.

In order for the warranty to be retained, it would be necessary for an extensive measurement of the oil circulation in the refrigerant circuit to be carried out.

**Practical note**

In vehicles without an air conditioning system, the engine/motor control unit must be recoded when an ancillary is retrofitted.

### 2.7.2 Retrofitting air conditioning system

All installed electrical devices must be checked acc. to EC Directive 72/245/EEC and shall bear the "e" mark.
We recommend using Volkswagen genuine parts for subsequent installation of air conditioning systems.

Information about original refrigerant compressors:

**For refrigerant R134a (PR number KK1)**

| Engine designation | | Air-conditioned area | Refrigerant compressor type | Capacity [cm³] | Component no. |
|---|---|---|---|---|---|
| Diesel (EA288, EU6) | 2.0 l TDI 75 kW<br>2.0 l TDI 110 kW<br>2.0 l TDI 150 kW<br>2.0 l TDI 146 kW | Cab | DENSO-6SEU14 | 140 | 5Q0.820.803.K |
| | | Cab and passenger compartment | DENSO-6SEU14 | 140 | 7E0.820.808* |
| | | | SANDEN 11PXE16 adv | 160 | 7E0.820.808.A** |
| | | | SANDEN 11PXE16 adv | 160 | 7E0.820.808.B*** |
| Diesel (EA189, EU5) | 2.0 l TDI 62 kW<br>2.0 l TDI 75 kW<br>2.0 l TDI 103 kW<br>2.0 l TDI BIT 132 kW | Cab | DENSO-6SEU14 | 140 | 7E0.820.803.P |
| | | Cab and passenger compartment | DENSO-7SEU17 | 170 | 7E0.820.803.N |
| Petrol (EA888) | 2.0 l TSI 110 kW<br>2.0 l TSI 150 kW | Cab | DENSO-6SEU14 | 140 | 7E0.820.803.R |
| | | Cab and passenger compartment | DENSO-7SEU17 | 170 | 7E0.820.803.Q |

* Climate zone: temperate hot climate, climate not hot, cold climate

** Climate zone: hot climate, very hot climate; 2-evaporator system

***Preparation for refrigerated vehicles; closed partition, 1-evaporator system

**For refrigerant R1234yf (PR number KK3)**

| Engine designation | | Air-conditioned area | Refrigerant compressor type | Capacity [cm³] | Component no. |
|---|---|---|---|---|---|
| Diesel (EA288, EU6) | 2.0 l TDI 75 kW<br>2.0 l TDI 110 kW<br>2.0 l TDI 150 kW<br>2.0 l TDI 146 kW | Cab | DENSO-6SEU14 | 140 | 5Q0.816.803.D |
| | | Cab and passenger compartment | SANDEN 11PXE16 adv | 160 | 7E0.816.803.H** |
| | | | SANDEN 11PXE16 adv | 160 | 7E0.816.803.G*** |
| Petrol (EA888) | 2.0 l TSI 110 kW<br>2.0 l TSI 150 kW | Cab | DENSO-7SEU17 | 170 | 7E0.816.803.C |
| | | Cab and passenger compartment | DENSO-7SEU17 | 170 | 7E0.816.803.D |

** Climate zone: hot climate, very hot climate; 2-evaporator system

***Preparation for refrigerated vehicles; closed partition, 1-evaporator system

If other air conditioning systems are to be retrofitted, the guidelines from the equipment manufacturer, and those for the system components, should be observed. The body builder is then solely responsible for operating and road safety.
Retrofitting or renewal of ancillaries such as the refrigerant compressor is only possible instead of the genuine refrigerant compressor in the main belt track. Compatibility with the base vehicle must be observed without fail (see chapter 2.7.1 Compatibility with base vehicle and chapter 2.7.5 Specifications of genuine refrigerant compressor).

### 2.7.3 Preparation for load compartment cooling (fresh produce vehicles)

As preparation for retrofitting load compartment cooling, the special equipment ZX9 "Preparation for load compartment cooling" is available.

It can be ordered for the panel van as an option.

The specification package ZX9 contains the following items:

- S5L Base vehicle for body builder
- 3SJ Passenger double seat bank (right-side) in the first seat row
- 9AP Climatic air conditioning system (9AP) with the large externally controllable refrigerant compressor (DENSO -7SEU17).
- F0H Preparation for load compartment cooling (consisting of large refrigerant compressor, large fan (850 W) and tapped refrigerant lines, to achieve maximum cooling outputs, even at low speed).
- IS1 Electrical interface
- 3CF Tall partition without window
- 5DA Without side trim
- 5YE Door trim 5DA without side trim (as a basis for removal by body builders)
- 6B0 without fastening rings
- It is the ideal preparation for retrofit load compartment cooling systems above zero degrees or load compartment air conditioning by body builders, e.g. for fresh produce vehicles.

**Practical note**

On BlueMotion Technology vehicles you should also note that the load compartment cooling system must be integrated into the BMT function so that shut-down of the engine is prevented during the cooling process (cooling system on and load compartment temperature not reached).

For ease of implementation of this requirement, we recommend also ordering the multifunction control unit (IS6). For further information, see chapter 2.5.3.4

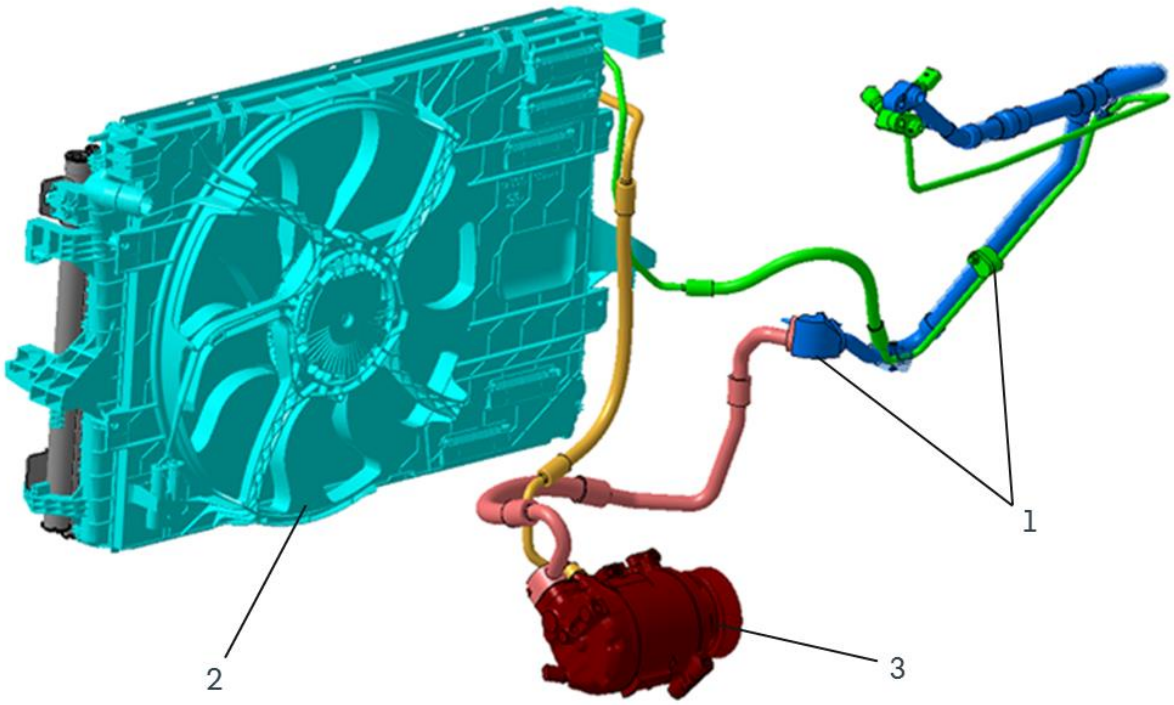



Fig.1: Preparation for load compartment cooling (refrigerated vehicle)

1 – Tapped refrigerant lines (dummy plugs) for connecting load compartment cooling

2 – Large fan, 850 W

3 – Large refrigerant compressor Denso-7SEU17 (170 ccm)

### 2.7.4 Retrofit load compartment cooling system

Retrofitting or replacing ancillaries (for example, refrigerant compressor, pumps etc.) is only possible in place of the original component.

For retrofit load compartment cooling we recommend using the original refrigerant compressor:

**For refrigerant R134a (PR number KK1)**

| Engine designation | | Air-conditioned area | Refrigerant compressor type | Capacity [$cm^3$] | Component no. |
|---|---|---|---|---|---|
| Diesel (EA288,EU6) | 2.0 l TDI 75 kW<br>2.0 l TDI 110 kW<br>2.0 l TDI 150 kW<br>2.0 l TDI 146 kW | Cab | DENSO-6SEU14 | 140 | 5Q0.820.803.K |
| | | Cab and passenger compartment | DENSO-6SEU14 | 140 | 7E0.820.808* |
| | | | SANDEN 11PXE16 adv | 160 | 7E0.820.808.A** |
| | | | SANDEN 11PXE16 adv | 160 | 7E0.820.808.B*** |
| Diesel (EA189, EU5) | 2.0 l TDI 62 kW<br>2.0 l TDI 75 kW<br>2.0 l TDI 103 kW<br>2.0 l TDI BIT 132 kW | Cab | DENSO-6SEU14 | 140 | 7E0.820.803.P |
| | | Cab and passenger compartment | DENSO-7SEU17 | 170 | 7E0.820.803.N |
| Petrol (EA888) | 2.0 l TSI 110 kW<br>2.0 l TSI 150 kW | Cab | DENSO-6SEU14 | 140 | 7E0.820.803.R |
| | | Cab and passenger compartment | DENSO-7SEU17 | 170 | 7E0.820.803.Q |

* for climate zone: temperate hot climate, climate not hot, cold climate

** for climate zone: hot climate, very hot climate; 2-evaporator system

***Preparation for refrigerated vehicles; closed partition; 1-evaporator system

**For refrigerant R1234yf (PR number KK3)**

| Engine designation | | Air-conditioned area | Refrigerant compressor type | Capacity [cm³] | Component no. |
|---|---|---|---|---|---|
| Diesel (EA288, EU6) | 2.0 l TDI 75 kW<br>2.0 l TDI 110 kW<br>2.0 l TDI 150 kW<br>2.0 l TDI 146 kW | Cab | DENSO-6SEU14 | 140 | 5Q0.816.803.D |
| | | Cab and passenger compartment | SANDEN 11PXE16 adv | 160 | 7E0.816.803.H** |
| | | | SANDEN 11PXE16 adv | 160 | 7E0.816.803.G*** |
| Petrol (EA888) | 2.0 l TSI 110 kW<br>2.0 l TSI 150 kW | Cab | DENSO-7SEU17 | 170 | 7E0.816.803.C |
| | | Cab and passenger compartment | DENSO-7SEU17 | 170 | 7E0.816.803.D |

** Climate zone: hot climate, very hot climate; 2-evaporator systems

***Preparation for refrigerated vehicles; closed partition; 1-evaporator system

If other refrigerant compressors are to be fitted, the guidelines from the equipment manufacturer and for the system components should be observed. The body builder is then solely responsible for the operating and road safety of the refrigerant compressor and the air-conditioning system.

Compatibility with the base vehicle must be observed without fail (see chapter 2.7.1 "Compatibility with base vehicle" and chapter 2.7.5 "Specifications of genuine refrigerant compressor").
Please also note the information on the working range of the belt tensioner (see chapter 2.7.6 "Installation and removal of the poly V-belt").

**Practical note**

In vehicles without an air conditioning system, it is necessary to recode the engine/motor control unit when an ancillary is retrofitted.

### 2.7.5 Specifications of genuine refrigerant compressor

#### 2.7.5.1 Maximum cooling output

| Engine designation | | Refrigerant compressor type | Power "L" [kW] | Cooling power Q [kW] |
|---|---|---|---|---|
| Diesel (EA288,EU6) | 2.0 l TDI 75 kW | DENSO-6SEU14 | ≤3.0* | ≥4.6* |
| | 2.0 l TDI 110 kW<br>2.0 l TDI 150 kW<br>2.0 l TDI 146 kW | SANDEN-11PXE16 adv | ≤3.5* | >6.0* |
| Diesel (EA189, EU5) | 2.0 l TDI 62 kW | DENSO-6SEU14 | ≤3.0* | ≥4.6* |
| | 2.0 l TDI 75 kW<br>2.0 l TDI 103 kW<br>2.0 l TDI BIT 132 kW | DENSO-7SEU17 | ≤3.82* | ≥5.94* |
| Petrol (EA888) | 2.0 l TSI 110 kW<br>2.0 l TSI 150 kW | DENSO-7SEU17 | ≤3.82* | ≥5.94* |

* Figures on refrigerant compressor with high pressure Pd=16 bar, suction pressure Ps=2.8 bar and speed N=2,000 rpm, refrigerant R134a

Information regarding the maximum cooling output of the refrigerant compressor should be obtained from the equipment manufacturer.

**2.7.5.2 Weight of the refrigerant compressor**

| Engine designation | | Refrigerant compressor type | Weight [g] |
|---|---|---|---|
| Diesel (EA288,EU6) | 2.0 l TDI 75 kW | DENSO-6SEU14 | 4,450 |
| | 2.0 l TDI 110 kW<br>2.0 l TDI 150 kW<br>2.0 l TDI 146 kW | SANDEN-11PXE16 adv | 4,875 |
| Diesel (EA189, EU5) | 2.0 l TDI 62 kW | DENSO-6SEU14 | 4,630 |
| | 2.0 l TDI 75 kW<br>2.0 l TDI 103 kW<br>2.0 l TDI BIT 132 kW | DENSO-7SEU17 | 5,230 |
| Petrol (EA888) | 2.0 l TSI 110 kW<br>2.0 l TSI 150 kW | DENSO-7SEU17 | 5,230 |

**2.7.5.3 Pulley diameter of the refrigerant compressor**

| Engine designation | | Refrigerant compressor type | Pulley diameter [mm] | Diameter of crankshaft drive wheel [mm] | Transmission ratio "i" (Crankshaft/ air conditioner compressor) |
|---|---|---|---|---|---|
| Diesel (EA288, EU6) | 2.0 l TDI 75 kW | DENSO-6SEU14 | Average: 110 | Average: 138 | 1.25 |
| | 2.0 l TDI 110 kW<br>2.0 l TDI 150 kW<br>2.0 l TDI 146 kW | SANDEN-11PXE16 adv | Average: 110 | Average: 138 | 1.25 |
| Diesel (EA189, EU5) | 2.0 l TDI 62 kW | DENSO-6SEU14 | Average: 100 | Average: 138 | 1.38 |
| | 2.0 l TDI 75 kW<br>2.0 l TDI 103 kW<br>2.0 l TDI BIT 132 kW | DENSO-7SEU17 | Average: 100 | Average: 138 | 1.38 |
| Petrol (EA888) | 2.0 l TSI 110 kW<br>2.0 l TSI 150 kW | DENSO-7SEU17 | Average: 100 | Average: 138 | 1.38 |

**2.7.5.4 Specification of the poly V-belt**

| Engine designation | | Refrigerant compressor type | Belt specification [mm] | Belt specification/part number |
|---|---|---|---|---|
| Diesel (EA288, EU6) | 2.0 l TDI 75 kW | DENSO-6SEU14 | 6PK -1555 | 03L.903.137.H |
| | 2.0 l TDI 110 kW<br>2.0 l TDI 150 kW<br>2.0 l TDI 146 kW | SANDEN-11PXE16 adv | 6PK -1555 | 03L.903.137.H |
| Diesel (EA189, EU5) | 2.0 l TDI 62 kW | DENSO-6SEU14 | 6PK -1555 | 03L.903.137.H |
| | 2.0 l TDI 75 kW<br>2.0 l TDI 103 kW<br>2.0 l TDI BIT 132 kW | DENSO-7SEU17 | 6PK -1555 | 03L.903.137.H |
| Petrol (EA888) | 2.0 l TSI 110 kW<br>2.0 l TSI 150 kW | DENSO-7SEU17 | 6PK -1577 | 06H.903.137.H |

### 2.7.5.5 Connection dimensions of genuine refrigerant compressor

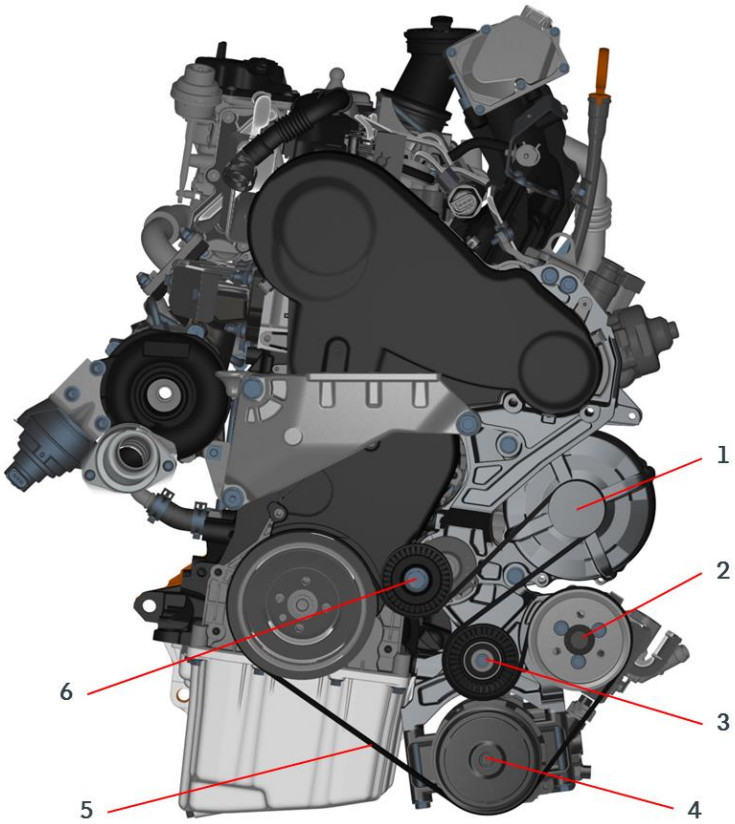



Fig. 2.1 Illustration of principle of ribbed V-belt drive (illustration: TDI engine EA 189, EU5)

1 – Alternator

2 – Poly V-belt pulley for power steering pump

3 – Idler roller

4 – ASSY refrigerant compressor

5 – Poly V-belt

6 – Dynamic belt tensioner

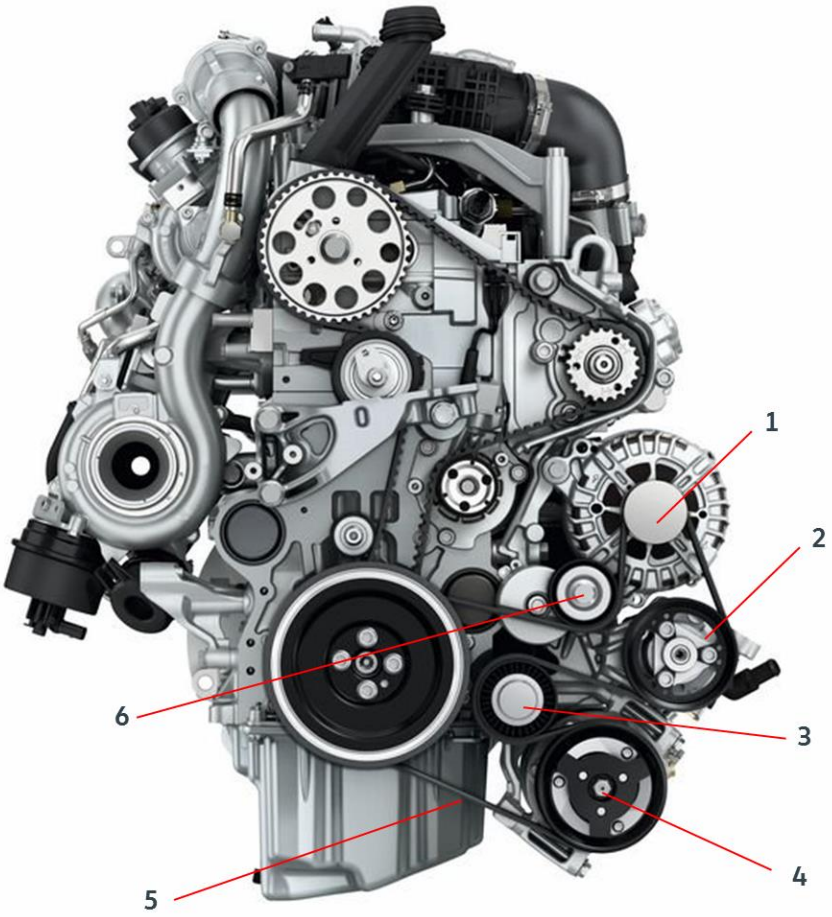



Fig. 2.2: Poly V-belt drive (TDI engine shown, EA 288, EU6)

1 – Alternator

2 – Poly V-belt pulley for power steering pump

3 – Idler roller

4 – ASSY refrigerant compressor

5 – Poly V-belt

6 – Dynamic belt tensioner

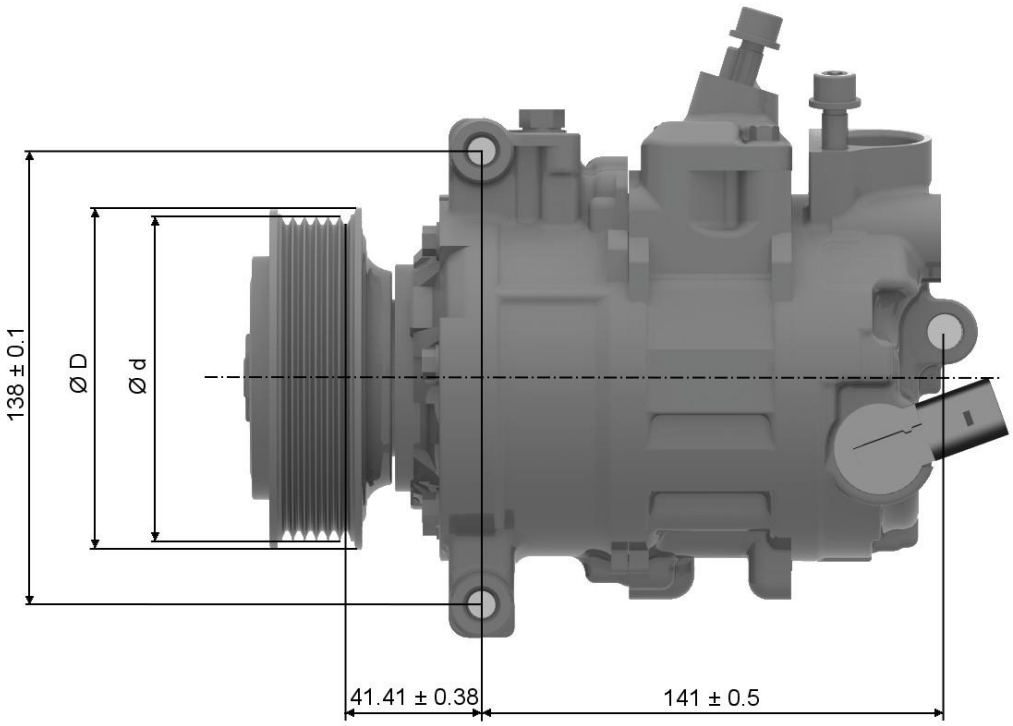



Fig. 3: Dimensions of refrigerant compressor, side view (example DENSO-7SEU17)

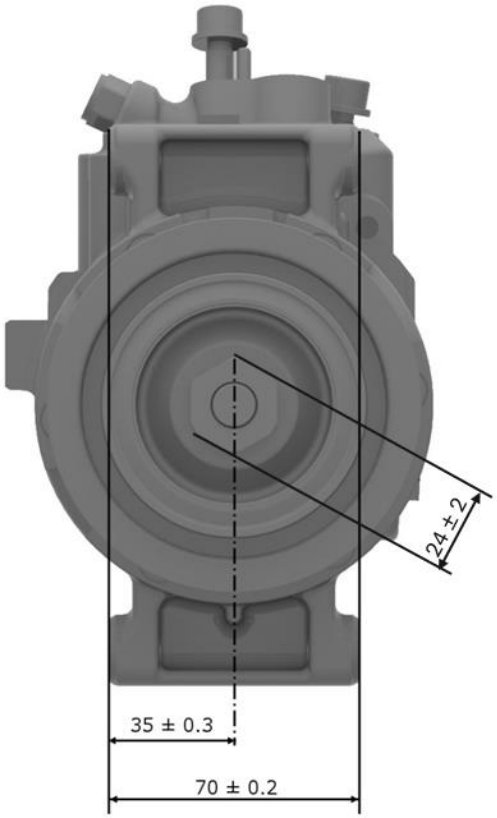



Fig. 4: Dimensions of refrigerant compressor, front view (example DENSO-7SEU17)

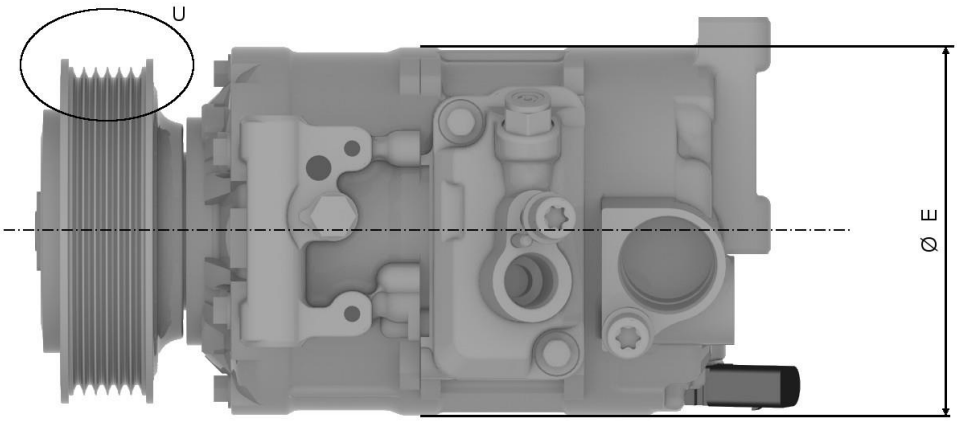



Fig. 5: Dimensions of refrigerant compressor, top view (example DENSO-7SEU17)

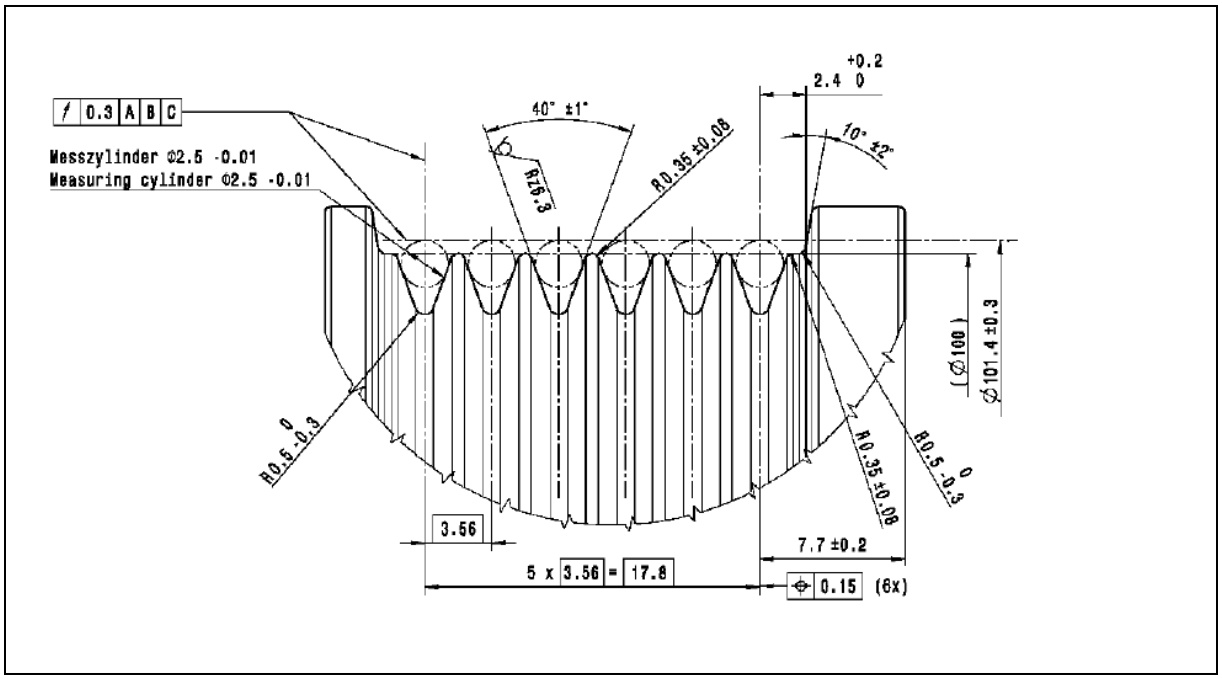



Fig. 6: Detail U – Drive pulley for refrigerant compressor (example DENSO-7SEU17)

| Engine designation | | Refrigerant compressor type | Capacity [cm³] | d [mm] | GER [mm] | E [mm] | Quantity Grooves |
|---|---|---|---|---|---|---|---|
| Diesel (EA288, EU6) | 2.0 l TDI 75 kW<br>2.0 l TDI 110 kW<br>2.0 l TDI 150 kW | DENSO-6SEU14 | 140 | Average: 110 | Average: 116.6 | Average: 114 | 6 |
| | | SANDEN-11PXE16 adv | 160 | Average: 110 | Average: 113 | Average: 124 | 6 |
| Diesel (EA189, EU5) | 2.0 l TDI 62 kW<br>2.0 l TDI 75 kW<br>2.0 l TDI 103 kW<br>2.0 l TDI BIT 132 kW | DENSO-6SEU14 | 140 | Average: 100 | Average: 106.6 | Average: 114 | 6 |
| | | DENSO-7SEU17 | 170 | Average: 100 | Average: 106.6 | Average: 126 | 6 |
| Petrol (EA888) | 2.0 l TSI 110 kW<br>2.0 l TSI 150 kW | DENSO-7SEU17 | 170 | Average: 100 | Average: 106.6 | Average: 126 | 6 |

Please observe the installation and removal regulations of Volkswagen AG when performing conversions.

**Information**

For detailed instructions about the installation and removal, for example, of the poly V-belt, refer to the Workshop Manuals of Volkswagen AG on the Internet under **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG):
http://erwin.volkswagen.de/erwin/showHome.do

*Information system from Volkswagen AG, subject to payment

### 2.7.6 Installation and removal of the poly V-belt

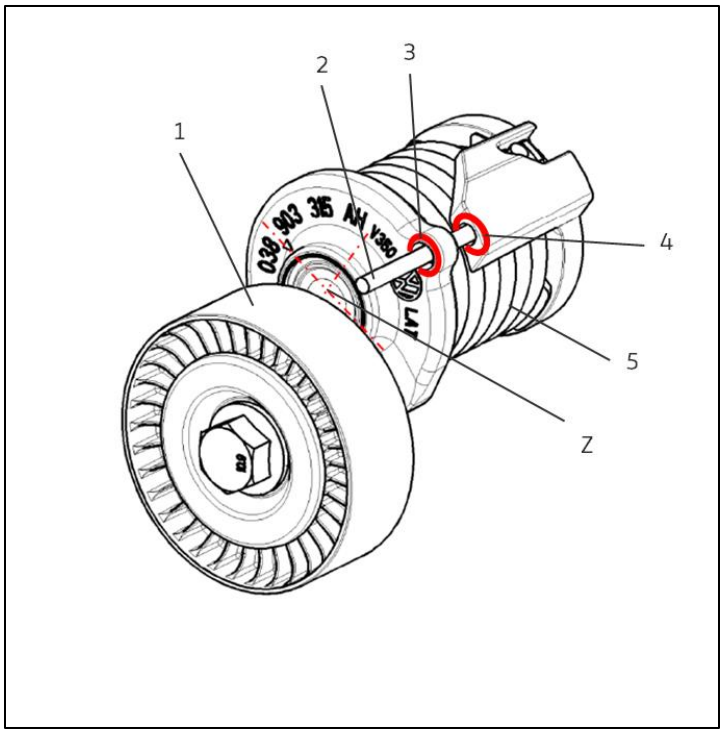



Fig. 7: Belt tensioner

1 – Belt tensioner

2 – Locking pin

3 – Moveable eye

4 – Fixed eye

5 – Spring

Z – Midpoint of the central bolt

#### 2.7.6.1 Removal of the belt

In order to remove the belt, it is necessary to turn the moveable eye "3" clockwise using a suitable tool until it overlaps with the fixed eye "4", and secure it with a locking pin "2" (d = 5 mm). This means the spring pack of the belt tensioner is tensioned, the tension of the belt is removed and the belt can be removed. This position of the tensioner is referred to below as the **locking position**.

#### 2.7.6.2 Installation of the belt

For installation, the belt must be guided over all units and reversing pulleys, and then finally placed over the belt tensioner.
After the locking pin has been removed (which is only permitted in installed condition), the spring is released and turns the pulley anticlockwise and transfers the clamping force to the belt. You must ensure that the belt tensioner can operate within its defined working range by using a suitable **belt length** (in particular if this does not correspond to the initial equipment status).
The position of the tensioner in the installed position at rest (engine off) is referred to below as the **nominal position**.
From this position, the belt tensioner is capable of compensating for tolerances and belt stretching due to temperature etc.
At the lower **limit stop** the spring pack is slackened and cannot exert tension on the belt any longer.

### 2.7.6.3 Working range of the belt tensioner:

The following display (Fig. 8) shows various reference points of the working range and should make it easier to check that the belt tensioner is in the correct position.

This diagram does not provide any statement relating to the safety of a belt drive that is different from the series production status.

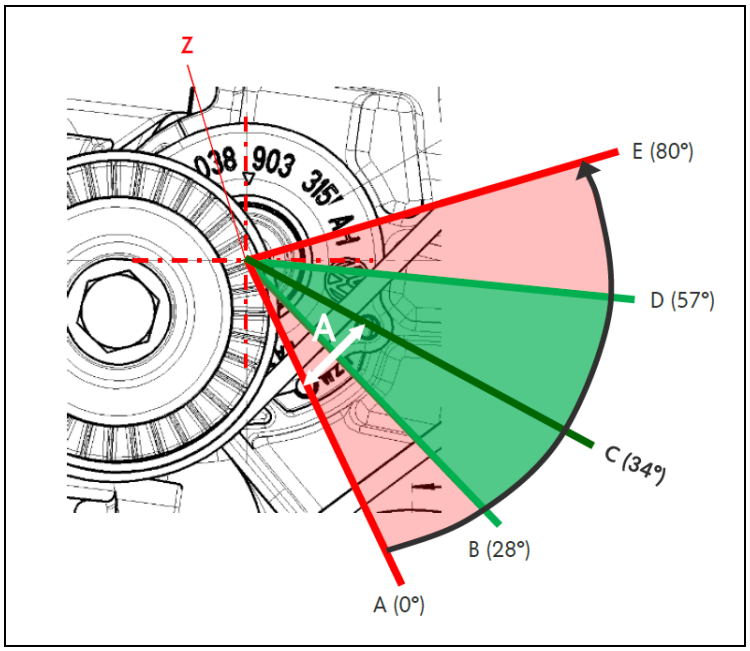



Fig. 8: Working range of the belt tensioner

A – Locking position 0° (overlap)r

B – Start of working range 28°

C – Nominal position 34° (target)

D – End of working range 57°

E – Bottom stop 80°

| Angle [°] | Distance A [mm] | Position of the belt tensioner (abbreviation) |
|---|---|---|
| 0 | 0 | Locking position (A) |
| 28 | 14.5 | Start of working range (B) |
| 34 | 17.5 | Nominal position, TARGET (C) |
| 57 | 50.3 | End of working range (D) |

The angle is measured between the point of overlap (fixed eye) and the movable eye.

In the nominal position, it is 34°. It must not exceed or fall below the working range of 28° –57°. For distance *A*, it is necessary to specify the actual dimension between the fixed eye and the moveable eye provided that the moveable eye is within the working range. The distance in the nominal position is 17.5 mm.

**Information**

You will find further information in the Volkswagen AG Workshop Manuals on the Internet at **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG): http://erwin.volkswagen.de/erwin/showHome.do

### 2.7.6.4 Belt routing

The function of the belt tensioner can be significantly impaired if the belt routing is changed from that of series production and passed over the idler roller of the belt tensioner. The bisector (1) between the arriving and departing sides of the belt should be almost at right angles ($\beta \approx 90°$) to the lever arm of the belt tensioner in the working area. (Fig. 9)

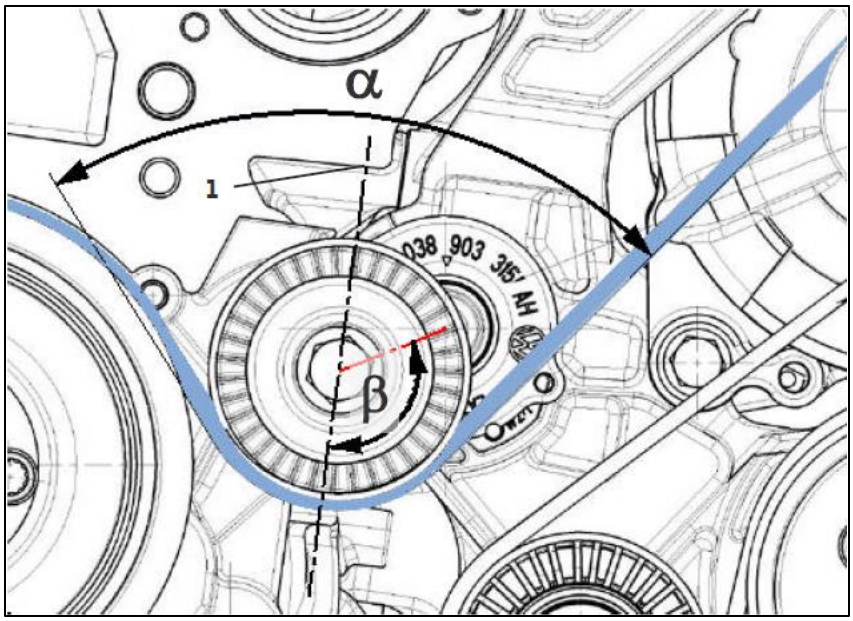



Fig. 9: Belt routing around the belt tensioner

1 – Bisector of the arriving and departing sides of the belt around the belt tensioner

α – Angle of the belt routing around the belt tensioner

ß – Angle between the bisectors of the arriving and departing sides of the belt in relation to the lever arm of the belt tensioner.

**Information**

You will find further information in the Volkswagen AG Workshop Manuals on the Internet at **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG): http://erwin.volkswagen.de/erwin/showHome.do

*Information system from Volkswagen AG, subject to payment

# 2.8 Add-ons/units

### 2.8.1 Roof rack

Roof loads raise the centre of gravity of the vehicle and lead to a high dynamic axle load shift. Also, there is greater body lean when driving on rough roads and when cornering. The driving characteristics are significantly impaired.
For this reason, roof loads should be avoided if at all possible.

Depending on the load distribution, it is necessary to have at least 2 base supports which should be fitted in the areas of the pillars wherever possible.

In the panel van and the window van (short wheelbase), there are 4 mounting points on each side as standard.
In the long wheelbase, there are 5 mounting points as standard.
We recommend the preparation for movable roof load carriers (PR number 3S4) if there will be frequent use with a roof carrier or for flexible positioning of a smaller roof carrier.
This provides additional mounting points on the roof. Please refer to the dimensional drawings for the positions/orientation of the mounting points.
In the panel van with normal roof, providing certain preconditions are met (higher number of mounting points on the roof and use of special roof racks) then it is possible to have a higher dynamic roof load. Please contact us for more information (see chapter 1.2.1.1 "Contact in Germany" and 1.2.1.2 "International contact").

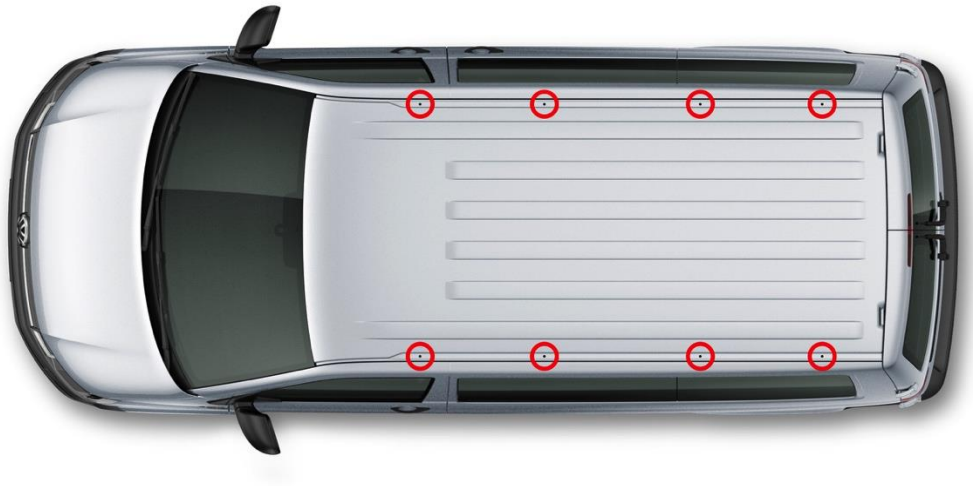


Fig. 1: Standard roof mounting points in panel van and window van (short wheelbase)

There are 2 mounting points in the roof on each side in the double cab.

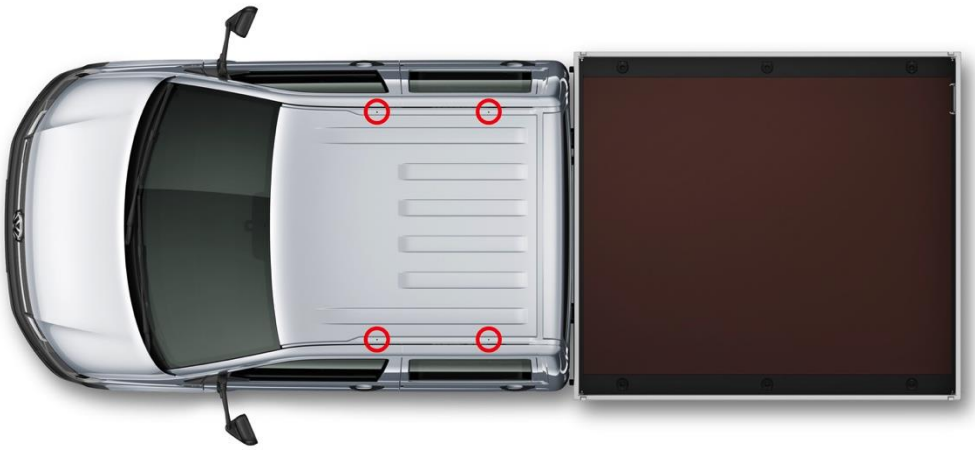


Fig. 2: Standard roof mounting points in double cab

There is one mounting point in the roof on each side in the single cab.

Fig. 3: Standard roof fastening points for single cabin

For further information, see:

– Roof loads (see chapter 2.3.1)

### 2.8.2 Trailer towing couplings

#### 2.8.2.1 Maximum trailer weights*

Only trailer towing couplings approved by the factory are permitted to be used as hitches.

Trailer towing couplings (ball hitches) can be ordered as optional equipment ex-works using the following PR number:

- 1D1 (in combination with ESP including trailer stabilisation)
  Maximum trailer weight 750 kg unbraked and 2,000 to 2,500 kg braked (depending on engine) with 12% hill climbing ability.
- The gross vehicle weight rating may not be exceeded.
- 1D2 (in combination with ESP including trailer stabilisation)
  as above, but removable and lockable.

The permitted drawbar load is 100 kg.

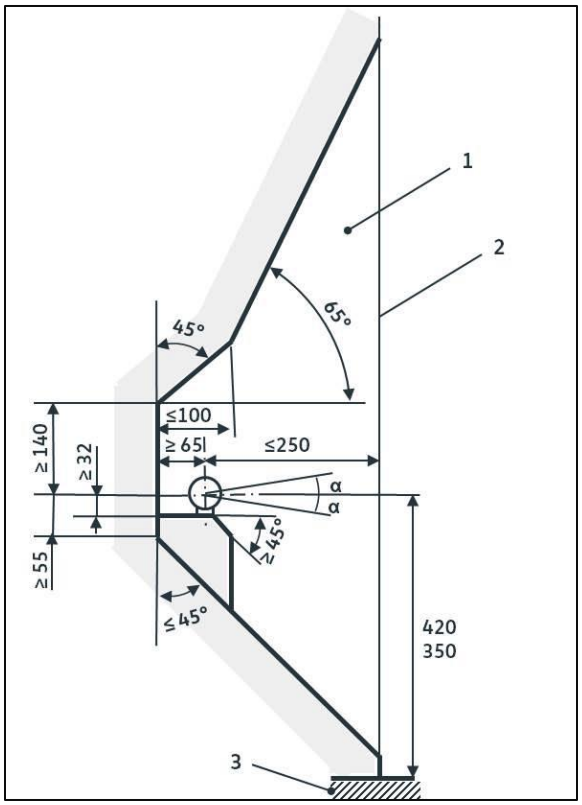
The max. permitted gross combination weight specified in the papers must not be exceeded. The actual weight of the trailer load is not allowed to exceed the permitted gross weight of the towing vehicle.

#### 2.8.2.2 Retrofitting a trailer towing coupling

Comply with the following points when retrofitting a trailer towing coupling:

- When fitting a trailer towing coupling in the EU, the specified installation dimensions and clearances in the current version of UNECE-R 55 must be observed. Any other applicable national regulations must be taken into account.
- The necessary clearance of the trailer behind the towing vehicle must be guaranteed (UNECE-R 55).
- The vehicle shall be presented to a motor vehicle test centre with responsibility for this matter.
- No factory-fitted extension to the trailer towing coupling is available.
- There are attachment points in the vehicle longitudinal members.
- Operation with the factory-fitted hitch may be excluded at a very low ride height or if there is a long body overhang, as well as after an extension of the overhang. No trailer towing coupling extension is available from the manufacturer.
- The permitted gross combination weight (depending on the engine) must be ascertained prior to a retrofit.
- Unspecified details shall be selected in a reasonable manner.
- The test of dimensions and angles shall be undertaken with suitable length and/or angle measuring instruments.

### 2.8.2.3 Clearance according to UNECE-R 55

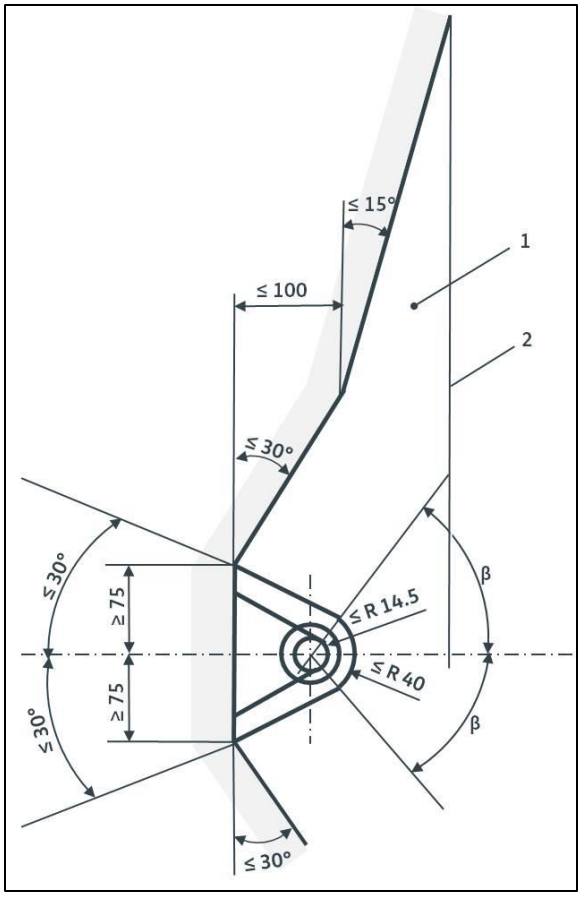



Clearance according to the height of the coupling ball as per UNECE-R 55, Annex 7 (side view)

1 Clearance

2 Vertical plane through end points of the total length of the vehicle

3 Floor




Clearance of the coupling ball as per UNECE-R 55, annex 7 (top view)

1 Clearance

2 Vertical plane through end points of the total length of the vehicle

For more information about the conversion, refer to:

- Maximum dimensions (chapter 2.1.6)
- Permitted weights and unladen weights (chapter 2.2.1)
- Vehicle battery (chapter 2.5.4)
- Electrical interface for special vehicles (chapter 2.5.3)

### 2.8.3 Mounting a tail lift

**Notes for mounting tail lifts:**

- Before fitting a tail lift, perform a load distribution calculation to check for compliance with the permitted rear axle loads and the minimum front axle load (see chapters 2.2.1 and 2.1.6).
- Mounting a tail lift results in a load transfer away from the front axle and places a significant load on the rear axle. The minimum front axle load and the rear axle load shall be observed.
- Avoid overloading the axles.
- Stability must be guaranteed at all times, also during loading.
- If ordering a chassis for equipping with an electrohydraulic tail lift, we recommend using a second battery with isolation relay with the PR number 8FB and an uprated alternator (see chapter 2.5.5).
- The chassis must be equipped with a mounting frame for mounting the tail lift (see note regarding the mounting frame).
- It is not permitted for a tail lift to be mounted on series production panel vans without special approval from the factory.

**Information**

For more information such as calculation examples, refer to chapter 7.2 Axle load calculation and the "Axle load calculation" document. The document is available from us in the body builder portal under the "Additional technical information" menu option.

*Registration required.

Please also comply with the following chapters:

- Vehicle dimensions (chapter 2.1.1)
- Steerability – Minimum front axle load (chapter 2.1.7)
- Permitted weights and unladen weights (chapter 2.2.1)
- Maximum dimensions (chapter 2.1.6)
- Vehicle battery (chapter 2.5.4)
- Electrical interface for special vehicles (chapter 2.5.3)
- Power take-off system engine/gearbox (chapter 2.7)
- Drilling on the chassis frame (chapter 4.2.1)
- Welding on the vehicle (chapter 4.2.2)
- Axle load calculation (chapter 7.2)

### 2.8.4 Accessories

You can purchase a wide range of further accessories for the Transporter through Volkswagen-Zubehör GmbH.

**Information**

For more information about this topic (Configurator, brochures and downloads), refer to the Volkswagen AG website:
http://www.volkswagen-nutzfahrzeuge.de/

# 2.9 Lifting the vehicle

1. With lifting platforms
   The vehicle is only allowed to be raised at the lifting points provided. Refer to the corresponding owner's manual for information about the lifting points.

2. With a jack
   See the owner's manual for the procedure and jacking points on all vehicle variants.

Please note that the body builder must match the jack to the body.
The lifting points for lifting platforms on the ladder frame can be used (with large pads) and shall remain accessible even after the conversion. Alternative hard points must be created if this is not possible.

# 3 Modifications to closed bodies

## 3.1 Body-in-white/bodywork

### 3.1.1 Side wall cut-outs

The body and underbody form a self-supporting unit in the window van/panel van. Weight-bearing parts of this self-supporting unit are not allowed to be removed without replacement.

Partition walls do not have any weight-bearing function. They can be modified as far as removing them entirely.

Cut-outs for windows, doors, flaps, ventilation openings etc. are only allowed to be made between the weight-bearing parts (pillars, roof frame and floor). Weight-bearing parts are not allowed to be cut into or weakened. The cut-outs must be provided with a continuous frame which has a force-locking connection to the adjacent weight-bearing parts.

**Warning note**

It is not permitted for the outer roof frame to be machined on vehicles with side head airbags!

**Information**

You will find further information on body assembly work on the Internet at **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG): http://erwin.volkswagen.de/erwin/showHome.do

*Information system from Volkswagen AG, subject to payment

### 3.1.2 Subsequent installation of windows

Subsequent installation of windows is complicated and costly. Therefore, it is advisable to order the required windows ex-works (see delivery range).

If windows are to be installed subsequently, proceed in accordance with the Transporter workshop manual (body assembly instructions, exterior, section 64 - Glazing/subsection 1.9 Side window, sliding door, panel van, postal and courier vehicles).

**Information**

For detailed instructions about the installation and removal of windows, refer to the Workshop Manuals of Volkswagen AG on the Internet under **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG): http://erwin.volkswagen.de/erwin/showHome.do

*Information system from Volkswagen AG, subject to payment

Comply with the following points if smaller windows are to be installed:

- The cut-out is only allowed to be made between the pillars.
- No weight-bearing parts are allowed to be cut into or weakened.
- The cut-out must be provided with a continuous frame which has a force-locking connection to the adjacent weight-bearing parts.

### 3.1.3 Modifications to the roof of panel van/window van

The following points shall be observed if modifications are made to the roof structure of a panel van/window van:

- The all-round concept shall be retained, and adequate replacement rigidity shall be guaranteed.
- Impairments to the function of the rain/light sensor shall be avoided.
- Attachments similar to the roof rack are possible for subsequent attachment of add-ons.
- The vehicle constraints (strength, overall vehicle dimensions, registration etc.) shall be considered with regard to attachments on the roof panel (with the exception of beacon lights and working lights).
- The replacement rigidity of the new roof structure shall correspond to that of the standard roof.
- Following all conversion and installation work on the vehicle, surface and corrosion protection shall be applied to the affected points.

**Information**

You will find further information on body assembly work on the Internet at **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG): http://erwin.volkswagen.de/erwin/showHome.do

*Information system from Volkswagen AG, subject to payment

### 3.1.4 Roof cut-outs

Roof cut-outs as a preparation for subsequent mounting of tilting, pop-up and high roofs are currently not available ex-works.

**Important note:**

It is not permitted for the outer roof frame to be machined on vehicles with side head airbags!

#### 3.1.4.1 Pop-up roof with large roof cut-out

For additional construction measures to turn it into a camper, the panel van and the window van with a short wheelbase can be ordered with the pop-up roof from the California incl. a roof bed (PR number: 2S3+5DL).

Please note:

The panel van/window van with a pop-up roof is an incomplete vehicle that cannot be registered in its delivery state. Diverse scopes such as the electrical system, trims, water, gas, heater etc. must be retrofitted or require rework. For example, the roof operating unit (interior light) does not function ex-works. The electrical connector must be adapted in this case.

The same applies for the transition from the B-pillar trim to the headliner, where material will need to be filled. The passenger compartment does not feature trims in the area of the windscreen frame, the pillars and the side panels. If a floor in the passenger compartment is requested ex-works, then this must be ordered when configuring the vehicle.

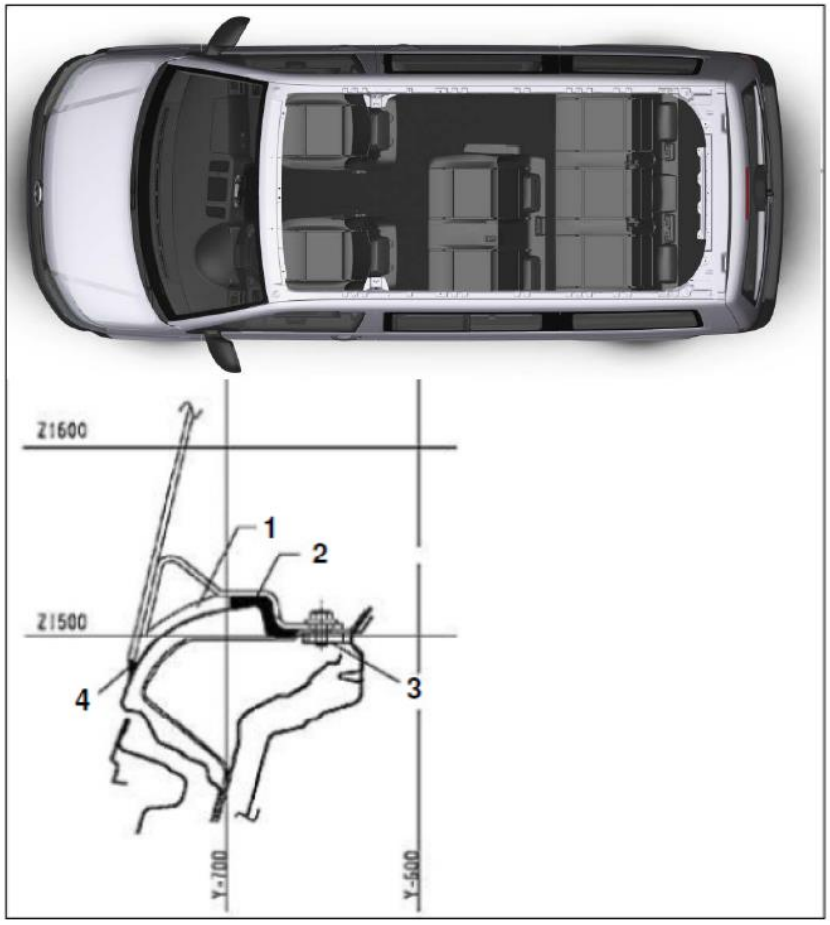



Fig. 1: Pop-up roof with large roof cut-out

1 – Mounting flange laminated all-round

2 – Bonding surface all-round

3 - Use the captive nuts of the roof carrier

4 – Seal

### 3.1.4.2 Subsequent mounting of a high roof

Volkswagen offers vehicles with a high roof ex-works for the 3,400 mm wheelbase.

If a high roof is installed subsequently by the body builder, the following conditions must be complied with:

1. The high roof shell must be made of 4 mm thick fibreglass-reinforced polyester and an attachment flange must be laminated into it all-round; this flange must be glued to the roof frame and screwed on.
2. The high roof must be mounted so it is sufficiently sturdy, and sealed all-round.
   For sealing, we recommend series production adhesive.
3. Roof height increases are only allowed to be made using integrated cross struts and reinforcement frames.
4. Roof cross struts or weight-bearing parts are not allowed to be removed without replacement, and must not be damaged.
5. The replacement rigidity of the new roof structure shall correspond to that of the standard roof.
6. The cross struts must be attached to the side walls in such a way that a force-locking connection is guaranteed (flexurally rigid connection between cross struts and roof frame).
7. Following all conversion and installation work on the vehicle, surface and corrosion protection shall be applied to the affected points.
8. The limit value for the maximum centre of gravity position (see chapters 2.1.5 and 2.1.3) of the vehicle is not allowed to be exceeded.
9. Modifications on the rear gate and in the roof area must be avoided. If a tall sliding door or wing door is planned, an adequately firm replacement frame must be installed.

**Information**

For further information about general interior body repairs and series production adhesives, refer to the workshop manuals of Volkswagen AG on the Internet under **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG):
http://erwin.volkswagen.de/erwin/showHome.do

*Information system from Volkswagen AG, subject to payment

**Information**

In order to assess the operational strength of modified vehicles, we recommend, amongst other references, the VdTÜV code of practice 751:

"Assessment of design modifications to M and N vehicles with particular regard for operational strength; automotive engineering 751".

This can be obtained on the Internet at:
http://www.vdtuev.de/publikationen/merkblaetter **

** Subject to payment to VdTÜV

Please also comply with the following chapters:

- 2.1.3 "Vehicle centre of gravity"
- 2.1.6 "Maximum dimensions"
- 2.2.1 "Permitted weights and unladen weights"
- 2.2.6.3 "Influence of vehicle conversions"
- 2.3.1 "Roof loads"
- 2.3.2 "Modifications to the body-in-white"
- 2.3.2.10 "Corrosion protection measures"
- 2.4.1 "Modifications in the area of airbags"

### 3.1.4.3 Subsequent roof cut-outs

Roof cut-outs are only possible between the cross struts and the side roof frames.

For details see Fig. 2.

No roof loads acc. to chapter 2.3.1 are possible if there is a roof cut-out.

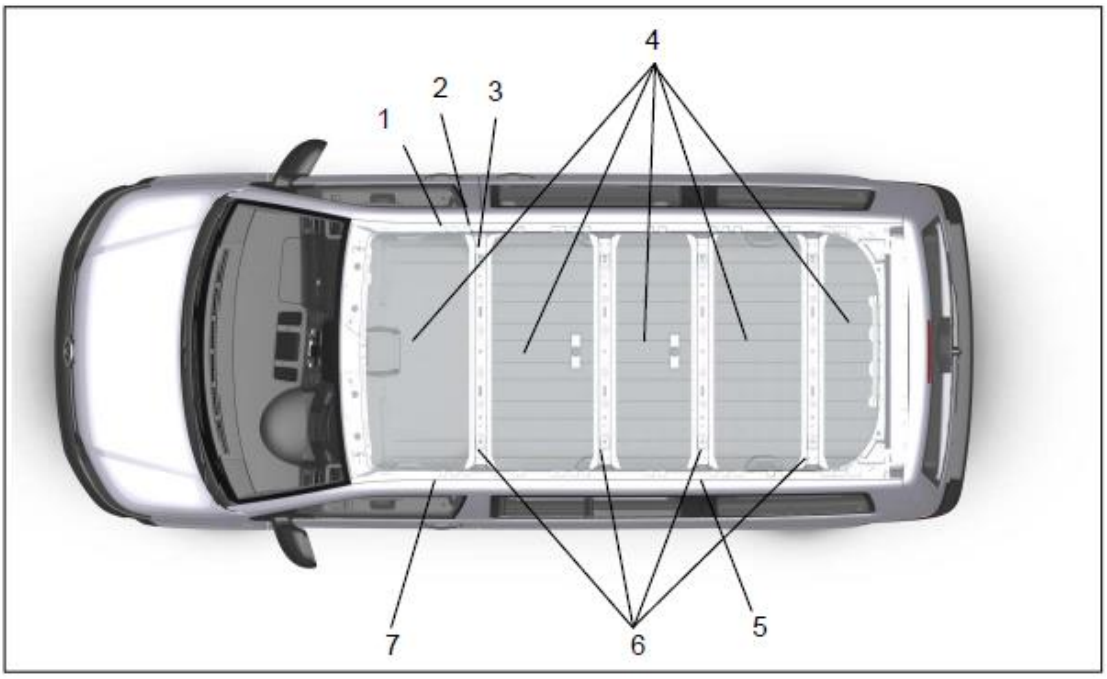



Fig. 2: Subsequent roof cut-outs

1 Roof frame right

2 B-pillar

3 Middle of roof frame

4 The cut-out shall be provided with an all-round frame having a force-locking connection with the adjacent, weight-bearing parts (cross struts and roof frame).

5 C-pillar

6 Roof bow

7 Roof frame left

For more information about the conversion, refer to:

- 2.1.3 "Vehicle centre of gravity"
- 2.1.6 "Maximum dimensions"
- 2.2.1 "Permitted weights and unladen weights"
- 2.9 "Lifting the vehicle"
- 3.1.1 "Side wall cut-outs"
- 3.1.2 "Later installation of windows"
- 3.1.3 "Modifications to the roof of panel van/window van"
- 3.1.5 "Modifying the partition wall/forced ventilation"
- 4.2.1 "Drilling on the chassis frame"
- 4.2.2 "Welding on the vehicle"

**Information**

You will find further information on body assembly work on the Internet at **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG):
http://erwin.volkswagen.de/erwin/showHome.do

*Information system from Volkswagen AG, subject to payment

### 3.1.5 Modifying the partition wall/forced ventilation

Partition walls do not have any weight-bearing function. Partition walls can be removed entirely or in part in the panel van unless this is not allowed by accident prevention regulations or country-specific regulations. Any sharp edges resulting from removing the partition wall must be covered by taking suitable measures, e.g. edge protection sections (see Chapter 1.2.9 "Accident prevention").

The following partitions are available ex works as special equipment for the panel van or window van:

| PR number | Description of |
|---|---|
| ZZ3 | Tall partition with fixed window and eight load securing points (Transporter panel van) |
| ZZ4 | Tall partition with sliding window and eight load securing points (Transporter panel van) |
| ZZ2 | Tall partition without window and eight load securing points (Transporter panel van) |
| 3CD | Partition, half-height (panel van, window van) |
| ZT7 | Tall partition with fixed window (Transporter window van) |
| ZT8 | Tall partition with sliding window (Transporter window van) |
| ZT6 | Tall partition without window (Transporter window van) |
| YLG | Movable partition grille, infinitely variable in floor rails, tubular frame with metal grille (for Rockton Transporter) |
| 3CU* | Preparation for partition |

*Available for the Swedish market

You can obtain more information on special equipment depending on the vehicle model from your Volkswagen customer service and from the Volkswagen Commercial Vehicles website at:
http://www.volkswagen-nutzfahrzeuge.de/de/downloads.htx

If installing non-original partitions, make sure that the selected forced ventilation cross sections correspond to those of the factory-fitted partition.
This is important in several respects:
- Closing comfort of the doors
- Possible flow rate of the heating blower
- Pressure equalisation on airbag deployment

The installed partition should have an type plate for clear identification.
If the partition is located behind the first seat row (driver's compartment), bear the possible seat adjustment range in mind. (Comfort partition with larger bulge for the seat backrest)
If the non-original VW partition is located behind the 1st seat row (driver's compartment) then the standard bolt-on points and bonding surface should be used if possible (see chapter 3.1.6 "Partition connection points").
You will find further information on the standard contact points as well as installing and removing the standard partition in the Volkswagen AG Workshop Manuals.

**Information**

Volkswagen AG workshop manuals and workshop information can be downloaded from the Internet at **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG):
http://erwin.volkswagen.de/erwin/showHome.do

The partition should be adequately stable and acoustically insulated with regard to acoustic comfort.
The strength of the partition shall be validated according to ISO 27956, irrespective of the country in which the vehicle is to be marketed. Although validation according to this standard is not legally binding, it is a requirement of the trade association if the vehicle is used for commercial purposes. This strength validation shall be documented if the objective is to achieve a premium partnership.

### 3.1.6 Partition connection points

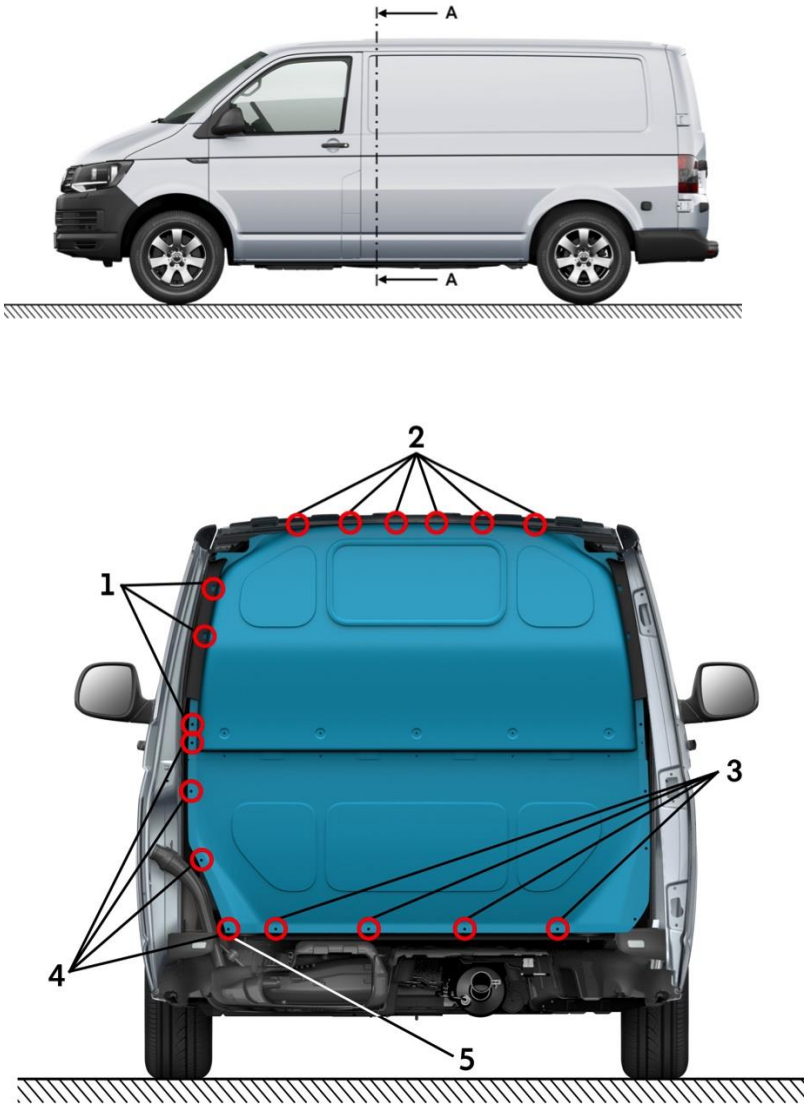



Fig.1: Mounting points of the standard partition (section A-A)

Mounting points on the vehicle for the standard partition:

1. Top mounting brackets, on left and right each: 3x welded bolt M6
2. Roof bow (B-pillar area): 6x hexagonal hole WAF9, 7 mm suitable for pop rivet nut M6
3. Fastening angle to the floor: 4× welding screw M6
4. Bottom mounting brackets, on left and right each: 4× welded bolt M6
5. Floor mounting brackets, only left: 1× through-hole ∅ 10 mm for using the welded bolt M6 of the mounting bracket at bottom left

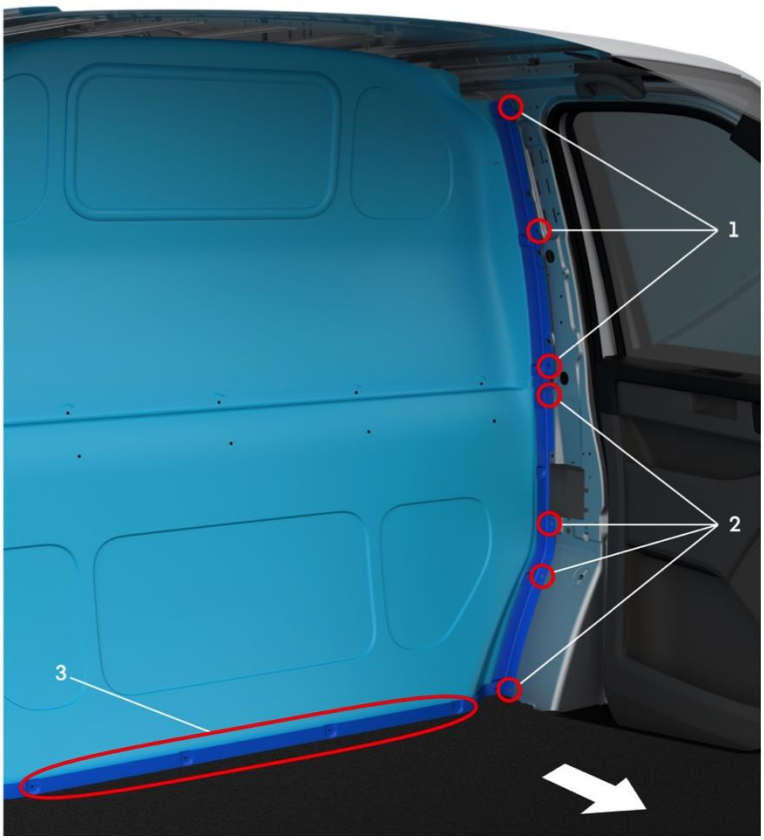



Fig.2: Mounting points of the standard partition – left driver's compartment view (arrow points to direction of travel!)

Mounting points on the vehicle for the standard partition:

1. Side panel, left and right each: 3× hexagonal hole WAF9, 7 mm suitable for pop rivet nut M6
2. Bottom mounting brackets, on left and right each: 4× through-hole ∅ 10 mm for hole welding on side panel
3. Floor mounting bracket welded onto floor panel

**Practical note**

The factory-fitted mounting points on the body for mounting the original partition wall (partition wall preparation PR number 3CU) are only designed for this purpose and are exclusively allowed to be used for installing a fixed partition wall. Different use of the mounting points, e.g. attachment of net partition, installing shelves etc. is not permitted.

# 3.2 Interior

The following points shall be observed without fail for conversions:
The driver and front passenger airbag units, the airbags and belt tensioners are pyrotechnical objects.
Their handling, transport and storage are subject to legislation on potentially explosive substances, and the responsible public authority or government agency shall therefore be notified. Purchase, transport, storage, installation and removal as well as disposal are only allowed to be performed by trained personnel in accordance with the corresponding safety regulations.
Modifications in the cockpit area and above the shoulder line shall be conducted in accordance with the criteria of the head impact tests acc. to UNECE-R 21. This applies in particular to the deployment areas of airbags (wood décor, additional installations, mobile phone holders, bottle holders etc.).
Painting or surface treatment of the dash panel, steering wheel impact absorber and the tear seams of the airbags is not permitted.
The permitted centre of gravity position and axle loads are not allowed to be exceeded.
The interior fitting-out shall be configured with soft edges and surfaces.
Installations shall be manufactured from flame-retardant materials, and be firmly installed.
Unhindered access to the seats shall be guaranteed.
No projecting parts, corners or edges that could cause injuries are allowed to be located in the area of the seats.

### 3.2.1 Safety features

**Warning note**

In case of interventions by the body builder in the structure of the vehicle, such as

- modifications to the seats and consequently altered kinematics of the occupants in case of a crash
- modifications to the front body
- installations of parts in the vicinity of the exit openings and the deployment range of the airbags (see owner's manual of the vehicle)
- installation of third-party seats
- modifications to the doors

the safe function of the front airbag, side airbag and belt tensioners is no longer guaranteed. This could result in personal injuries.

No vehicle components that give rise to vibration are allowed to be attached in the vicinity of the airbag control unit or the sensor installation locations.
Modifications to the floor structure in the area of the airbag control unit or the satellite sensors are also not permitted.

**Important note:**
Please note that deactivation of the side airbag causes the airbag warning light in the dash panel to light up continuously.
For information about the deployment zones of the airbags, refer to the owner's manual of the vehicle.

### 3.2.2 Seat retrofitting/seats

Seat retrofits are exclusively possible in the window van, because this vehicle provides the corresponding seat reinforcements on the floor panel. Please refer to chapter 1.3.1 "Selection of the base vehicle" in this regard.

It is essential not to exceed the height of the centre of gravity (H-point) if retrofitting seats.
(see definition of H-point as per VW DIN 80310)
We recommend ordering equipment PR number 2Q1, "modular seat attachment" from the start.
Refer to the build dimension drawings for more information and current documents about the position of the H-point.

If changes are made to the seat, it is necessary for the fuel tank to be removed if holes are drilled in the floor panel in the area of the fuel tank.
Comply with the workshop manuals of Volkswagen AG (see also chapter 2.6.3 "Fuel system").
The strength data for seats available ex-works is only valid in conjunction with the original attachment elements.

**Warning note**

When the seat belts and seats are re-fitted, the prescribed bolts must be used and tightened to the original torque.
You will find detailed information on torques in the workshop manuals.

When installing seat belts and belt locks, only components from the production supplier may be used:
If other seat belts and belt locks are installed than those available from the factory, ensure that all registration-related regulations (e.g. belt lock position) are observed. (Please also refer to chapter 2.4.2.1 "Belt anchor points".)

**Practical note**

Country-specific laws, directives and approval regulations shall be observed!

**Information**

Volkswagen AG workshop manuals and workshop information can be downloaded from the Internet at **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG):
http://erwin.volkswagen.de/erwin/showHome.do

*Information system from Volkswagen AG, subject to payment

Rear seat system with 2 or 3-point seat belts that differ from the standard seats must fulfil the requirements of UNECE-R 14. Seat systems without belts are not permitted. In addition, the seats and seat belts used must be tested and certified according to UNECE-R 17 and UNECE-R 16.

**Risk of injury**

The attachment of seats to the wheel housing is not permitted. Otherwise the seats could be torn out of the anchoring points in the event of an accident.

**Warning note**

If seats other than those available from the factory are installed with factory seat belts, only belt locks may be used that fit with the buckles on the factory seat belts. Otherwise the seat belt cannot be locked in the belt lock as intended and persons could be injured in the event of an accident.

#### 3.2.2.1 Seat retrofitting/seats cab

Volkswagen AG advises against replacing the individual front passenger seat for a double bench seat as this requires extensive modifications to the base vehicle.
Please contact us before starting your conversion (see chapter 1.2.1).

#### 3.2.2.2 Seat retrofitting/seats passenger compartment

When VW genuine parts and series production anchor points are used for seat retrofitting, this work must be undertaken with regard to STVZO 19/3 and the reference to the type test release of the vehicle manufacturer for the registration.

**Practical note**

Country-specific laws, directives and approval regulations shall be observed!

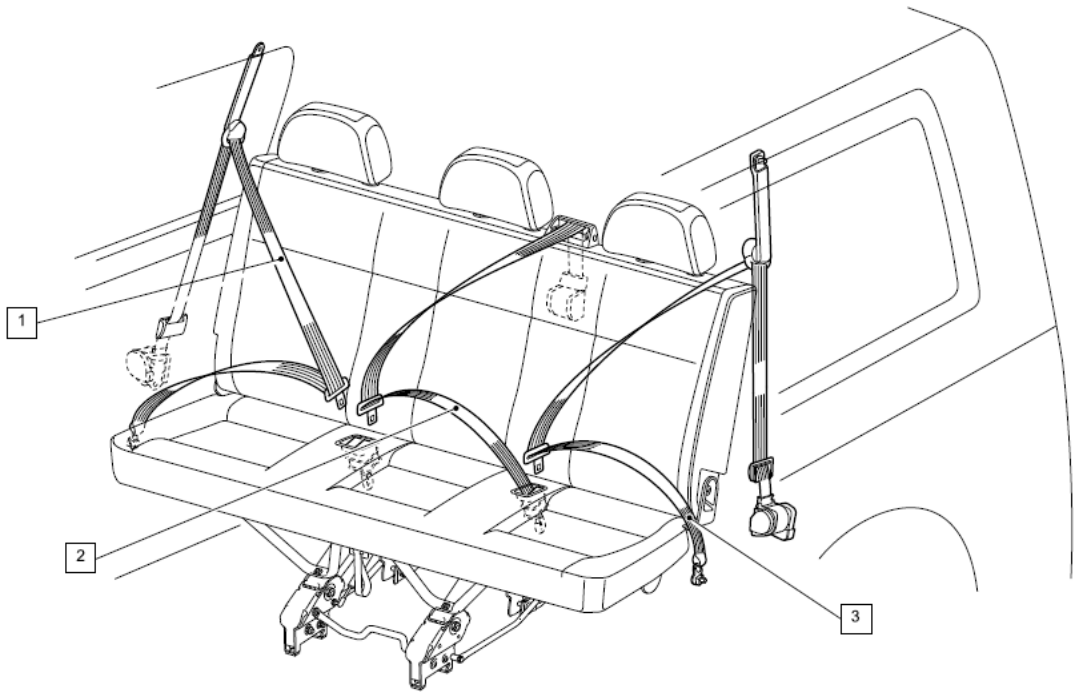



Fig. 1: 3-seat bench, window van long wheelbase, three-point seat belt on body and integrated three-point seat belt (2nd seat row)

1 Seat belt ASSY

2 Seat belt ASSY with clamp

3 Seat belt ASSY

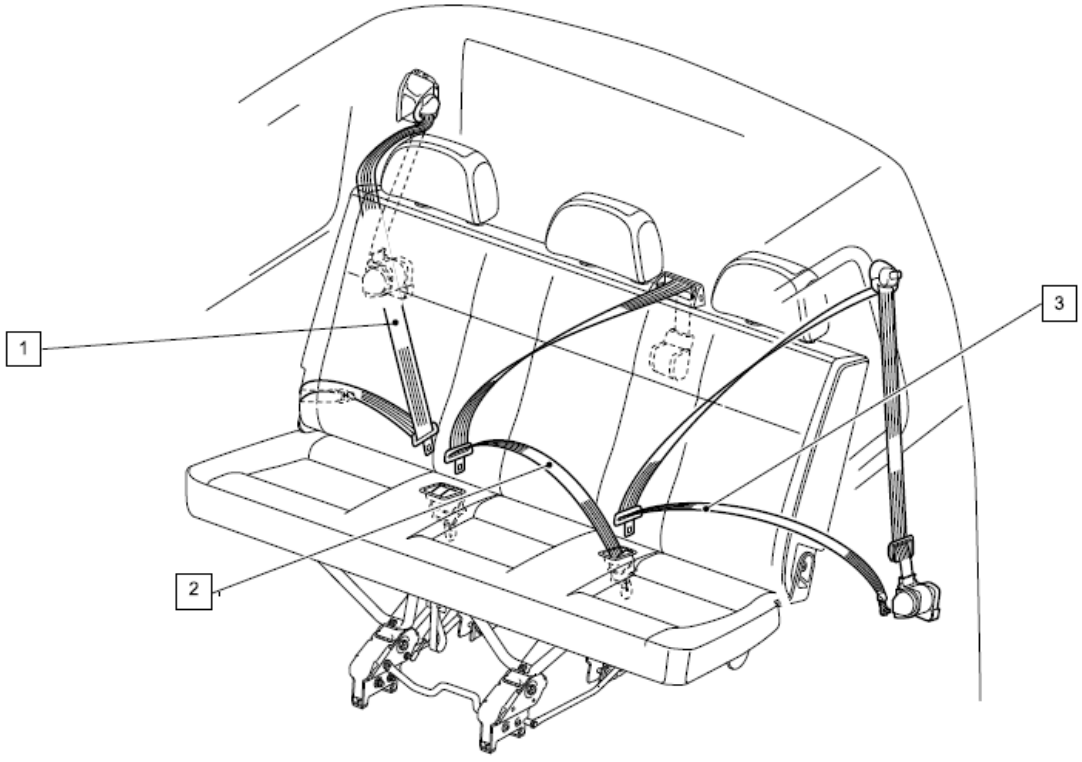



Fig. 2: 3-seat bench, window van long wheelbase, three-point seat belt on body and integrated three-point seat belt (3rd seat row)

1 Seat belt ASSY

2 Seat belt ASSY with clamp

3 Seat belt ASSY

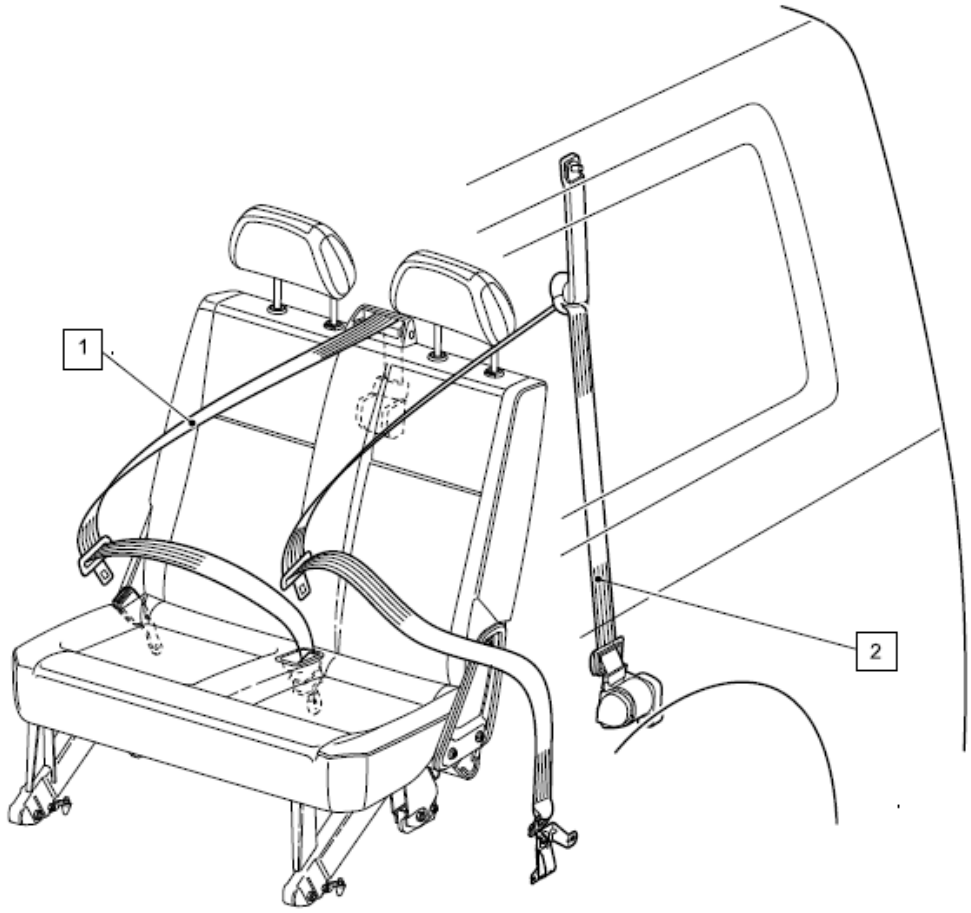



Fig. 3: 2-seat bench, window van with long wheelbase, three-point seat belt on body and integrated three-point seat belt (2nd seat row)

1 Seat belt ASSY with clamp

2 Seat belt ASSY (also Easy Entry L0R and modular seat attachment system)

Procedure for retrofitting the seat bench:

- If fitted, removal of the floor covering
- Removal of the corresponding components on the underbody
- Drilling holes with a diameter of 12 mm in the floor panel through the holes in the flanges of the cross members, in which case the actual dimension of 110 mm must be complied with, in accordance with the distance between the bolts in the fastening rails.
- Corrosion protection then has to be carried out
- Make sure that the hole pairs belonging to a seat or sear bench, and thus the fastening rails, are arranged in parallel to one another
- Insert the fastening rails from above, note the installation direction
- Screw connection of the fastening rails using M10 nut with washer (WHT 003.219)
- Installation of the corresponding components on the underbody acc. to Volkswagen AG workshop manual and the associated reinforcements (assembly parts) acc. to Volkswagen directive. Please also comply with the reference to erWin* in this regard
- Lay the floor covering in the interior if necessary. In advance, if necessary, mark the hole pattern on the floor covering showing the layout of the fastening rails
- Install cover 7H0.883.087 and secure using the bolt N 906.487.02.
- Installation of the seat bench
- Installation of the seat belts

All belt attachment points are present in the vehicle. If the body builder undertakes its own solutions for seat attachment and belt anchoring, then the body builder bears sole responsibility.

Vehicles in the M and N classes must be equipped with seat belts that comply with the requirements of UNECE-R 16.

The seats and seat belts used must be tested and certified according to UNECE-R 17 and UNECE-R 16.
The seat belt anchorages must be tested according to UNECE-R 14.
The following UN regulations must be complied with for vehicle registration acc. to STVZO 19/3:

- Seat belts and anchoring:
  - UNECE-R 16 Safety belts
  - UNECE-R 14 Safety-belt anchorages
- Seats and anchoring:
  - UNECE-R 17 Strength of seats and their anchorages

### 3.2.2.3 Seat retrofit/seat bench opposite to direction of travel

It is not possible subsequently to install a seat bench opposite to the direction of travel, because this requires extensive modifications to the base vehicle.
It is recommended for the equipment PR number 3UK, 2nd seat bench opposite to direction of travel (with steep backrest), or 3UQ 2nd seat bench opposite to the direction of travel to be ordered right from the beginning.

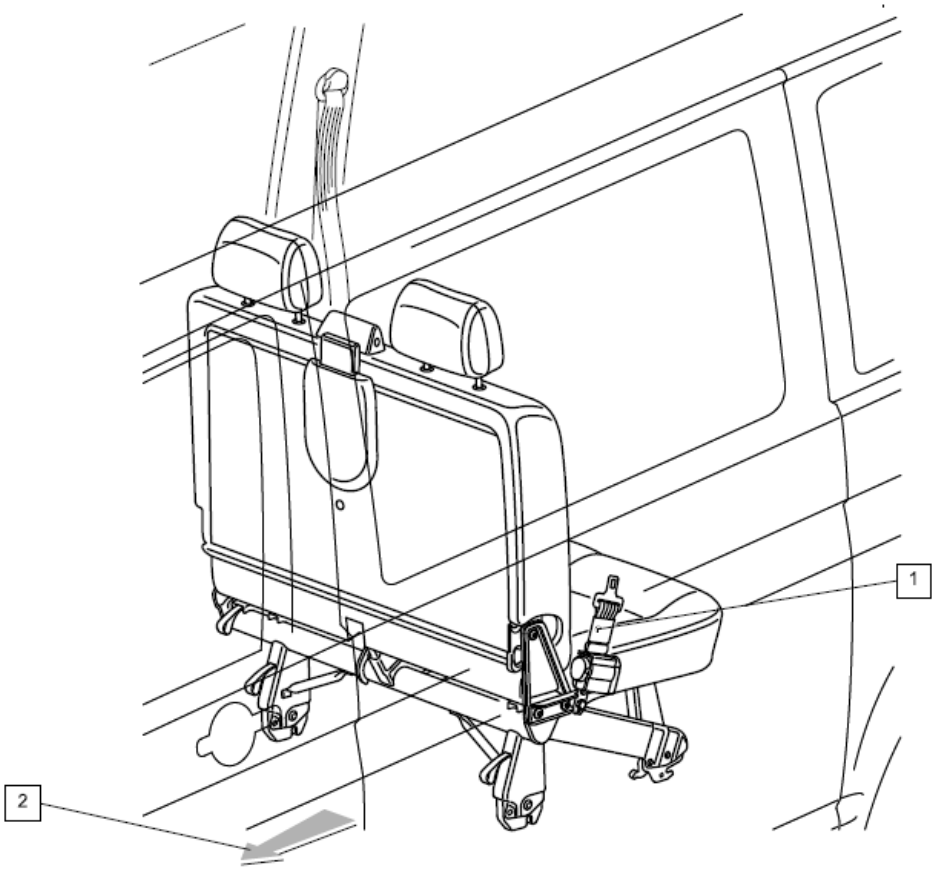



Fig. 4: 2-seat bench window van long wheelbase, opposite to direction of travel, with three-point seat belt on the C-pillar and integrated three-point seat belt. (2nd seat row)

1 Lap belt/retractor (2nd seat row)

2 Seat bench opposite to direction of travel

In order to clarify your technical questions on the base vehicle, we offer you the opportunity to use the contact form on the body builder portal to make direct contact with support for commercial vehicle body builders.
Please contact us before starting your conversion (see chapter 1.2.1)

Please also comply with the following chapters:

- 2.2.1 "Permitted weights and unladen weights"
- 2.3.2 "Modifications to the body-in-white"
- 2.4.1 "Modifications in the area of airbags"
- 2.4.2 "Modifications in the area of seats"
- 3.2.1 "Safety features"

### 3.2.3 Universal floor

A universal floor (PR number 5BM) is available from the factory for the Transporter panel van and window van.

The universal floor has a large variability of connection points for mounting, for example, cabinets from different manufacturers.

In combination with a partition, the universal floor is intended for the transport of goods or for the installation of a workshop and cannot be used for the installation of seating systems.

Depending on the version, the universal floor consists of a single-piece or multi-piece bottom panel made of laminated wood that is laid floating in the vehicle floor. The base plate is fixed by plate-shaped mounting elements in the positions of the original lashing points. The original lashing points are still usable as such.

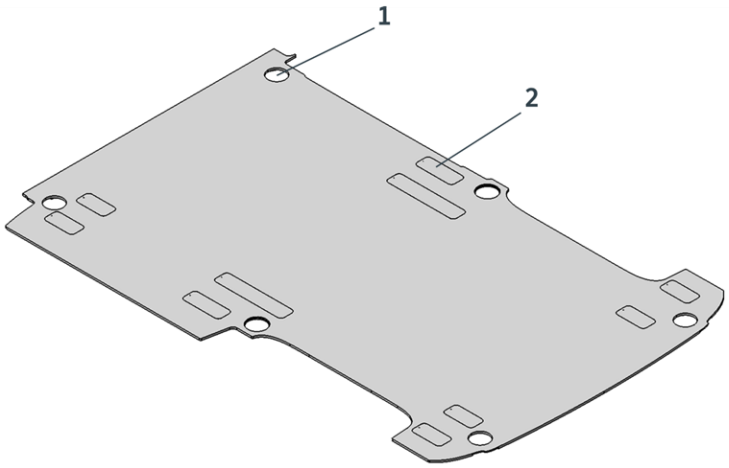



Fig. 1: Universal floor (5BM); shown here: Transporter with a short wheelbase and a right-hand sliding door

1 mounting points at the lashing points (6)

2 mounting points for cabinet and shelf installations (rectangular cut-outs with covers; number depends on the model version)

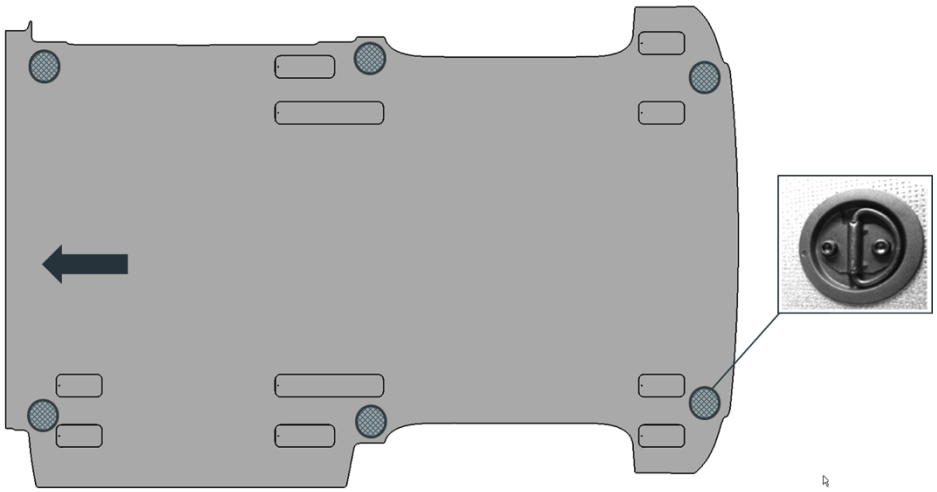


Fig. 2: Universal floor (5BM) – plate-shaped mounting points at the lashing points

Arrow: direction of travel

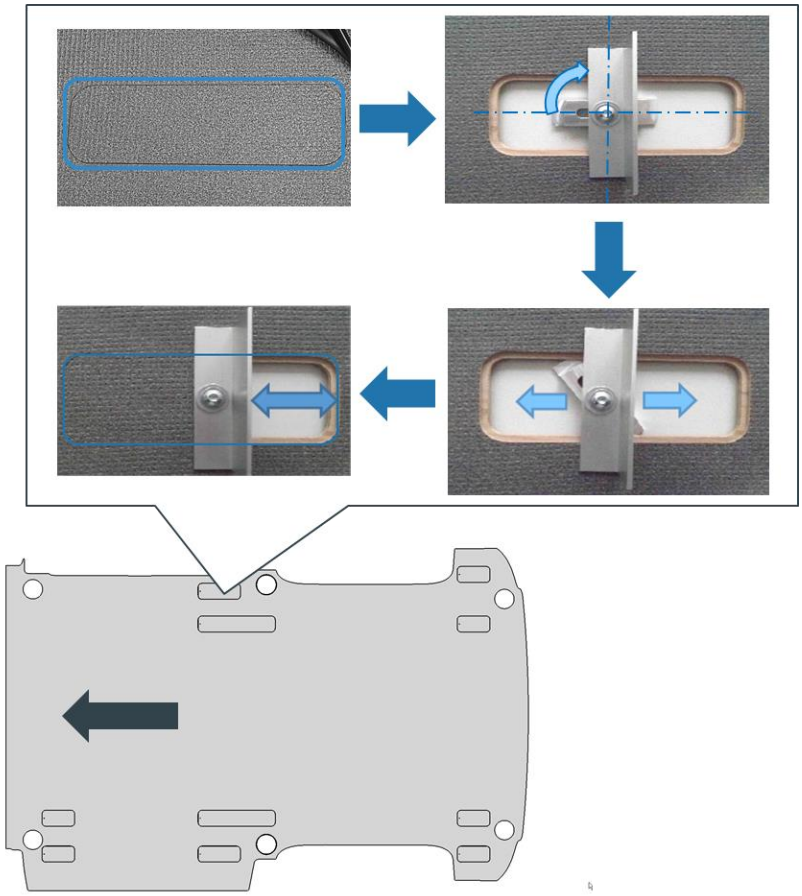


Fig.3: Universal floor (5BM) – mounting points for cabinet and shelf systems (shown is Transporter, short wheelbase, with a sliding door on the right)

Arrow: direction of travel

The mounting points consist of rectangular cut-outs in three different sizes with covers.
The number of mounting points per vehicle side and the geometry of the universal floor heavily depend on the model version.
Adapters can be inserted into the rectangular cut-outs in the wooden floor by 90° rotation (see Fig. 3).
They can also be mounted when the universal floor has been flatly inserted in the vehicle floor and has already been fixed with the plate-shaped mounting elements.

A slot nut with an M 8 thread is inserted in the adapter (see Fig. 4). Due to the moveability of the adapters and the slot nuts, different cabinet systems with different dimensions from different manufacturers can be fixed and screwed onto the universal floor.
Areas of the rectangular cut-out not filled by adapters must be covered. These covers have the same surface look as the floor (see Fig. 3)

In addition, the floor-mounted cabinet systems from the various manufacturers must also be fastened on the sides. The side mounting of the rack and cabinet installations to the body must be carried out in accordance with the requirements of the rack and cabinet manufacturer.

Please note that the crash behaviour of installations depends on the overall cabinet concept:
- connection to the floor,
- connection to the side walls,
- distribution of the load in the cabinets

(see chapter 5.3.1 "Shelf and workshop installations").

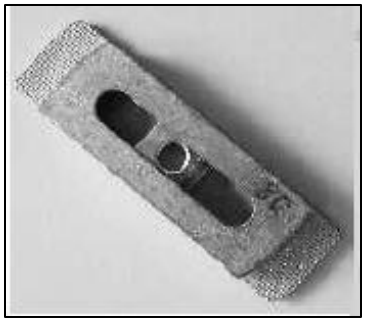


Fig. 4: Adapter set for the universal floor (5BM), M8 thread

The adapter set for the universal floor can be purchased from Volkswagen Customer Service.

**Information**

You'll find more information on the universal floor and the adapters in the body builder portal of Volkswagen AG in the menu option "Additional technical information"*.

Dimensioned drawings for various vehicle versions, 3-D data models and installation instructions are available.

Should you have any more questions, please contact us (see 1.2.1 "Product and vehicle information for body builders".)

*Registration required.

**Practical note**

The colour RAL 7042 can be used for minor reworking on the universal floor.

For the installation of a floor fan, the limits for the trimming of the universal floor specified in Figure 5 must be observed.
All dimensions are specified in the measuring unit "mm".

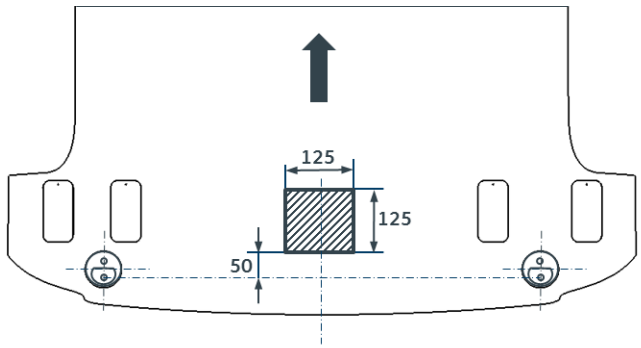



Fig. 5: Location and cut-out for the floor fan in the rear (dimensions in mm)

Arrow: direction of travel

Please also comply with the following chapters:

- 5.3 "Shelf installation / workshop vehicles"
- 2.3.2 "Modifications to the body-in-white"

# 3.3 Add-ons

### 3.3.1 Retrofitting rear luggage carrier/rear ladders

The following points must be complied with if rear luggage carriers or rear ladders are retrofitted:
They must be configured so that no static or dynamic loads are exerted on the bumpers after they have been fitted.
The maximum load on the rear lid is 75 kg and may be dynamic (e.g. bicycle carrier). Please note that the closing procedure changes for additional rear lid load.

# 4 Modifications to open bodies

## 4.1 Delivery of chassis

Numerous regulations must be complied with regarding the delivery of chassis on their own wheels, e.g.:

- Wheel cover
- Ballast weight for braking
- Side impact protection
- Lighting equipment

These parts are not stocked; they would make delivery on the vehicle's own wheels unnecessarily expensive.
For this reason, purchaser-collection of chassis is no longer available. Delivery should be by rail/truck transport.

# 4.2 Chassis frame

### 4.2.1 Drilling on the chassis frame for additional mounting points for special bodies

The longitudinal members are hollow sections. If it is necessary to drill there, this is only permitted in the neutral zone (middle of longitudinal member, but sufficiently far away from the flange). In addition, spacer bushes must then be welded in (see Fig. 1).

**Holes made at the factory in the upper and lower chords of the longitudinal members** are not allowed to be drilled out or increased in size. Equally, these holes are not allowed to be used for attaching any units.

**Holes for the passage of pipes, electric cables, control cables etc. as well as for attaching add-on parts (clamps etc.).**

In exceptional circumstances, we can agree for holes to be made in the web of the longitudinal members or in the cross members. However, it is essential to contact us in this case.

When series production components are removed and subsequently installed, the torques specified in the "Installation guidelines for workshops" must be observed without fail.

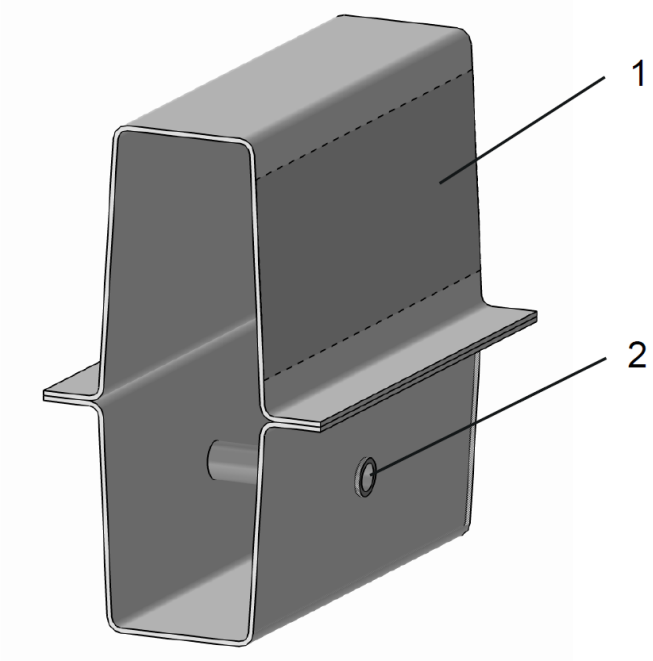



Fig. 1: Longitudinal member with spacer bush

1 Neutral zone

2 Welded bush

For more information about the conversion, refer to:

- 2.2.10 Overhang extension
- 4.2.2 Welding on the vehicle
- 4.3 Subframe for light commercial vehicles
- 4.4 Standard attachment points for special bodies

### 4.2.2 Welding on the vehicle

As little welding work as possible should be carried out on the vehicle frame, and only in exceptional circumstances.
Comply with the following points without fail:

- Disconnect the vehicle battery before conducting welding work on the vehicle.
- If concealed cables are damaged with the battery disconnected, this can result in serious damage due to short circuits.
- During electrical welding work, the earth terminal of the welding machine must be directly connected to component that is to be welded. Otherwise, the powerful current and the high voltage peaks that arise could cause damage to the mechanical and electrical parts of the vehicle.
- Only inert gas welding methods should be used.
- In exceptional circumstances, well dried stick electrodes – 2.5 mm – with a lime-based shroud are also allowed to be used.
- When welding in additional brackets etc., it is only permitted to weld in what is called the neutral zone.
  Plug welding (see Fig. 2) must be preferred in all cases. Avoid making welds at right angles to the frame.
- Brackets for add-ons must be in accordance with the series production.

**Note:**
The anti-corrosion layer applied to the longitudinal members is destroyed by the heat occurring in the welding area during welding. Therefore, this must be restored by suitable measures.

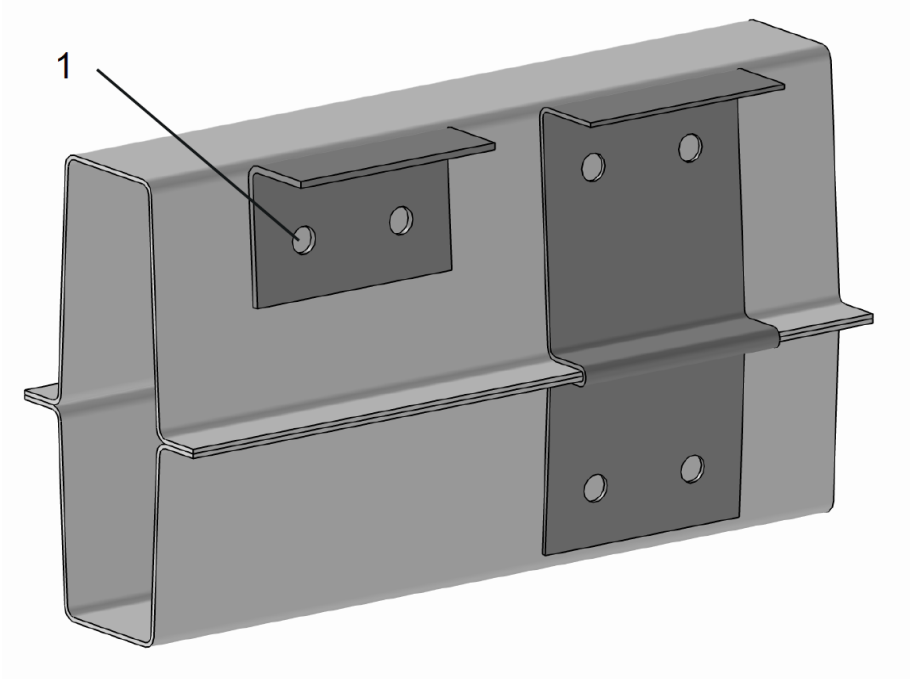



Fig. 2: Example of longitudinal member with additional brackets

Plug weld

For more information about the conversion, refer to:

- 2.2.10 Overhang extension
- 4.3 Subframe for light commercial vehicles
- 4.2.1 Drilling on the chassis frame
- 4.4 Standard attachment points for special bodies

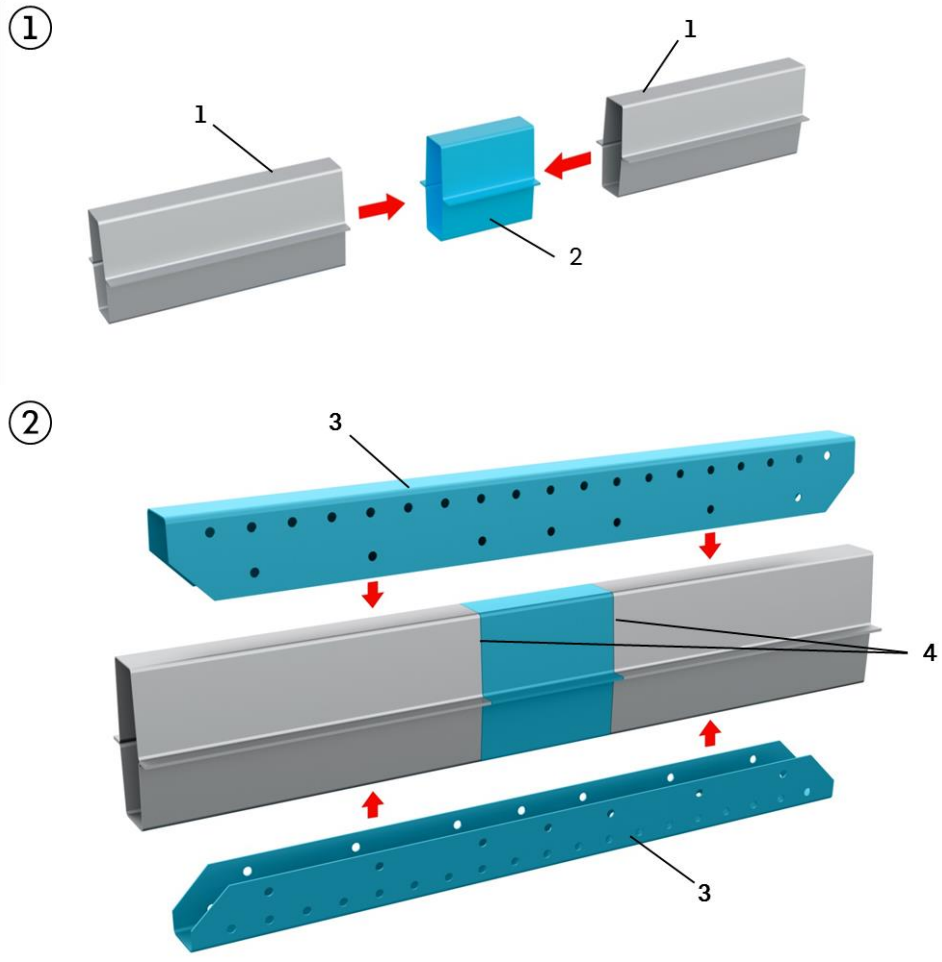
### 4.2.3 Extensions to the wheelbase and overhang

Please note that wheelbase changes can only be carried out smoothly for vehicles without ESP (see chapter 2.2.6).
To fulfil the ESP legal obligation (Europe), for some special installations Volkswagen Commercial Vehicles offers specially matched ESP data (e.g. several wheelbases, heights of the centre of gravity, and for 2 and 3-axle vehicles).
The vehicle needs to be taken to Volkswagen AG for an inspection of the vehicle modifications.
Please contact us before starting your conversion (see chapter 1.2.1).

If a wheelbase extension is required, the **long wheelbase** should be used as the starting point.
The max. permitted gross weights, axle loads, rear overhangs (the latter depending on the wheelbase), etc. shall be complied with (see chapter 2.2.1 "Permitted weights and unladen weights").

Example for frame extension of the chassis (see Fig. 3):

- Step 1: Insert extension piece (2) into the main frame (1) and weld all around (4)
- Step 2: Place U-shaped connection pieces (3) onto the extension piece from above and below
- Step 3: Weld connection pieces (3) with the extended frame in the hole welding process (5).
  (Distances and dimensions of the welding holes are depicted in Fig. 4).



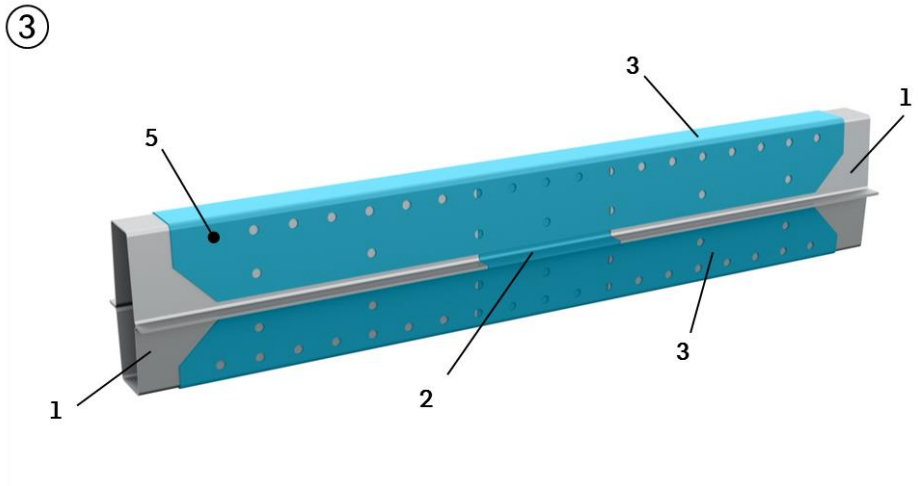



Fig. 3: Example for the frame extension of the chassis

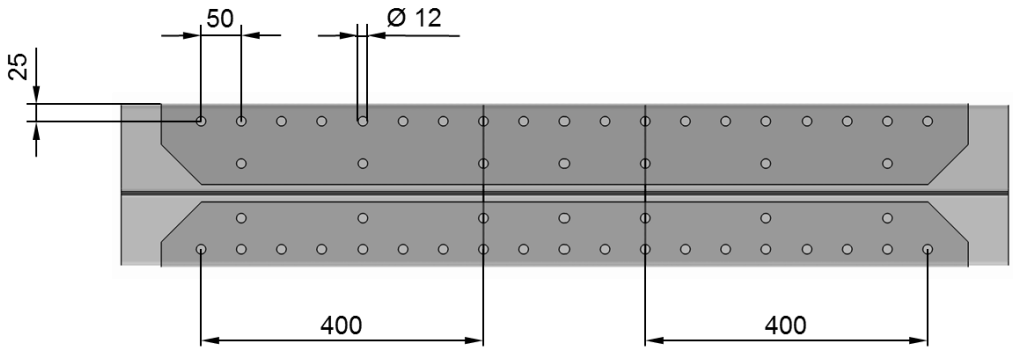



Fig. 4 Dimensions of the welding holes in the connection pieces

For more information about the conversion, refer to:

- 2.1.6 Maximum dimensions
- 2.2.1 Permitted weights and unladen weights
- 2.2.6 Brake system and brake control systems ESP
- 2.9 Lifting the vehicle
- 4.2.1 Drilling on the chassis frame
- 4.2.2 Welding on the vehicle
- 4.3 Subframe for light-duty vehicle
- 4.4 Standard attachment points for special bodies

### 4.2.4 Sections of the chassis frame

Sections of the chassis frame can be seen in the build dimension drawings (see chap. 6.1 Build dimension drawings).

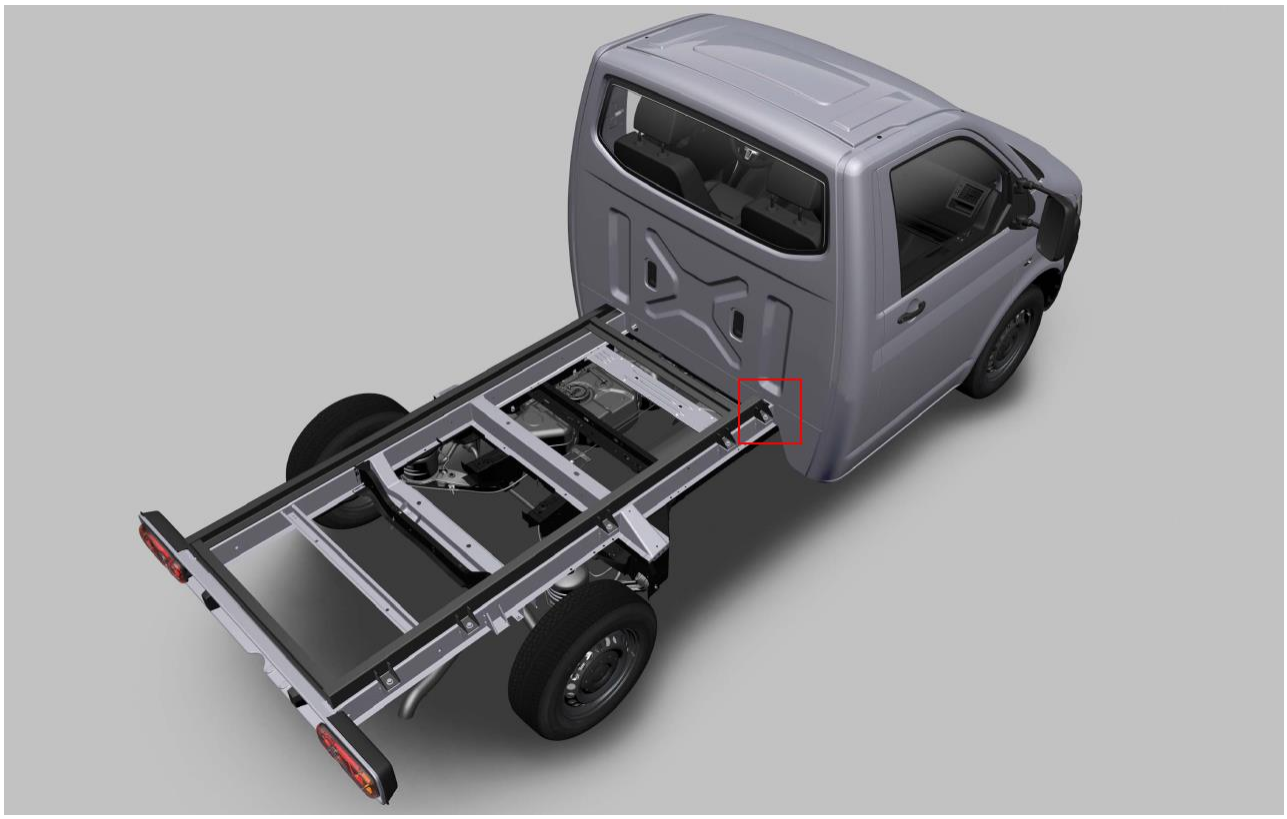
# 4.3 Subframe for light commercial vehicles

### 4.3.1 Configuration of the subframe

The purpose of the subframe or mounting frame is to distribute the applied point loads evenly over the vehicle frame.

Recommendation for configuring a flat subframe:

- Profile taper ≤45°
- Rounded under the profile edge at the end with radius R = 0.5 t
- Distance from cab wall ≥10 mm
- Wall thickness t subframe < t main frame



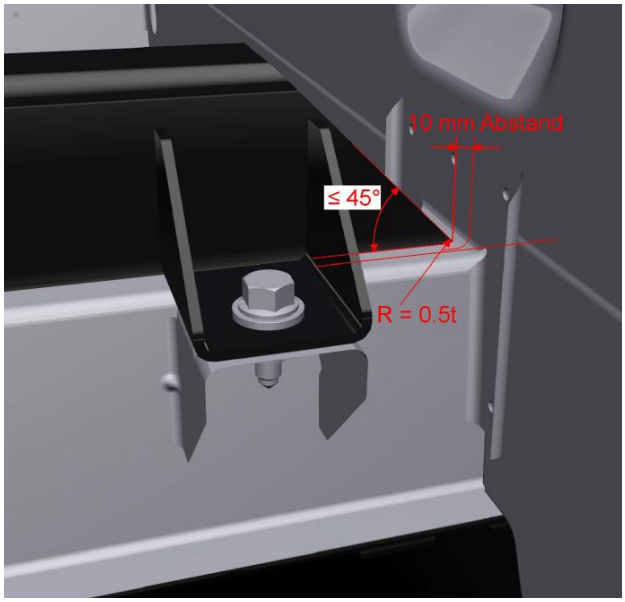



Fig. 1: Sample configuration of a mounting frame

t – wall thickness

R – radius

### 4.3.2 Material

The subframe shall be designed according to the load and the body requirement.
If alternative materials such as aluminium are used, the strength of the subframe shall at least correspond to that of a steel frame.

### 4.3.3 Longitudinal member

The subframe shall be configured as a ladder frame throughout (see Fig. 1) and extend from the rear end of the frame as far as the cab if at all possible.
In order to achieve a gradual transition in the profile strength, the front end of the subframe longitudinal member must be tapered at an angle ≤45° or notched (see Fig. 2), in which case the front end of the subframe lower chord must be rounded with a radius (R = 0.5 t) towards the frame.

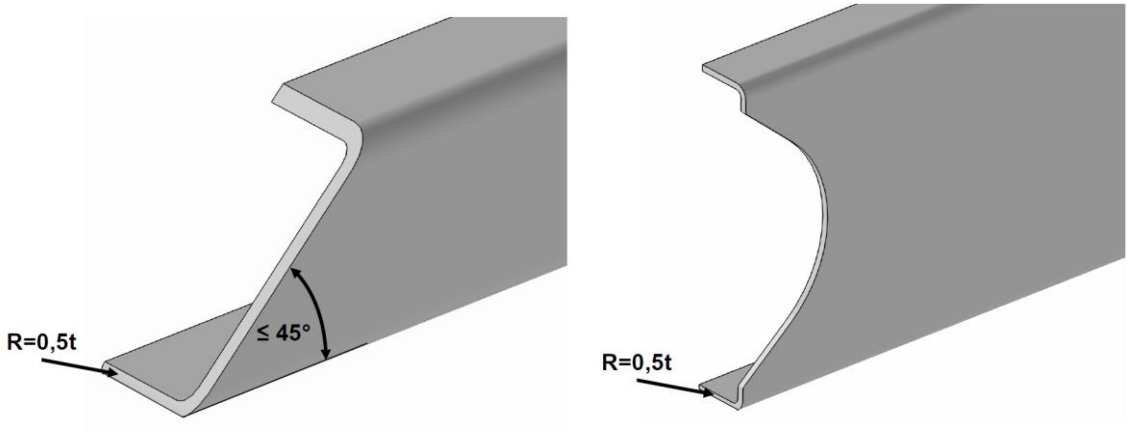



Fig. 2: Sample configuration of the subframe longitudinal member (front end)

### 4.3.4 Cross member

Cross members shall be provided at least in the front and rear areas to ensure the structure is torsionally rigid (see Fig. 1).
In general, the subframe is not allowed to be closed against the box section in the front area.
Cross members must be provided in order to stiffen the subframe; it is advantageous for these to be arranged at the mounting points on the subframe.
As a rule, the cross members are made from open (e.g. U-section) or closed sections for higher strength.

### 4.3.5 Attachment of the subframe

The subframe and self-supporting bodies shall be attached to the chassis using all available brackets.
For attachment, use bolts with property class 10.9 in conjunction with the size M10 square nuts that are welded into the brackets as standard.
If you do not wish to use the nuts welded in as standard, it is possible to drill out the internal threads of the nuts. In this case, the body builder must use suitable washers or sleeves to ensure that the counterpart of the screw connection makes good, flat contact. Responsibility for a screw connection differing in this manner lies fully with the body builder.

The position of the mounting points on the vehicle frame is shown in the build dimension drawing (see chapter 6.1 Build dimension drawings).
The subframe must make contact with the brackets (see Figs. 3 and 4). Direct contact between the subframe and frame does not have to be made, except at the bracket contact points.
Self-supporting bodies with adequate floor stiffness can be attached directly to the standard brackets on the frame by means of a base frame.

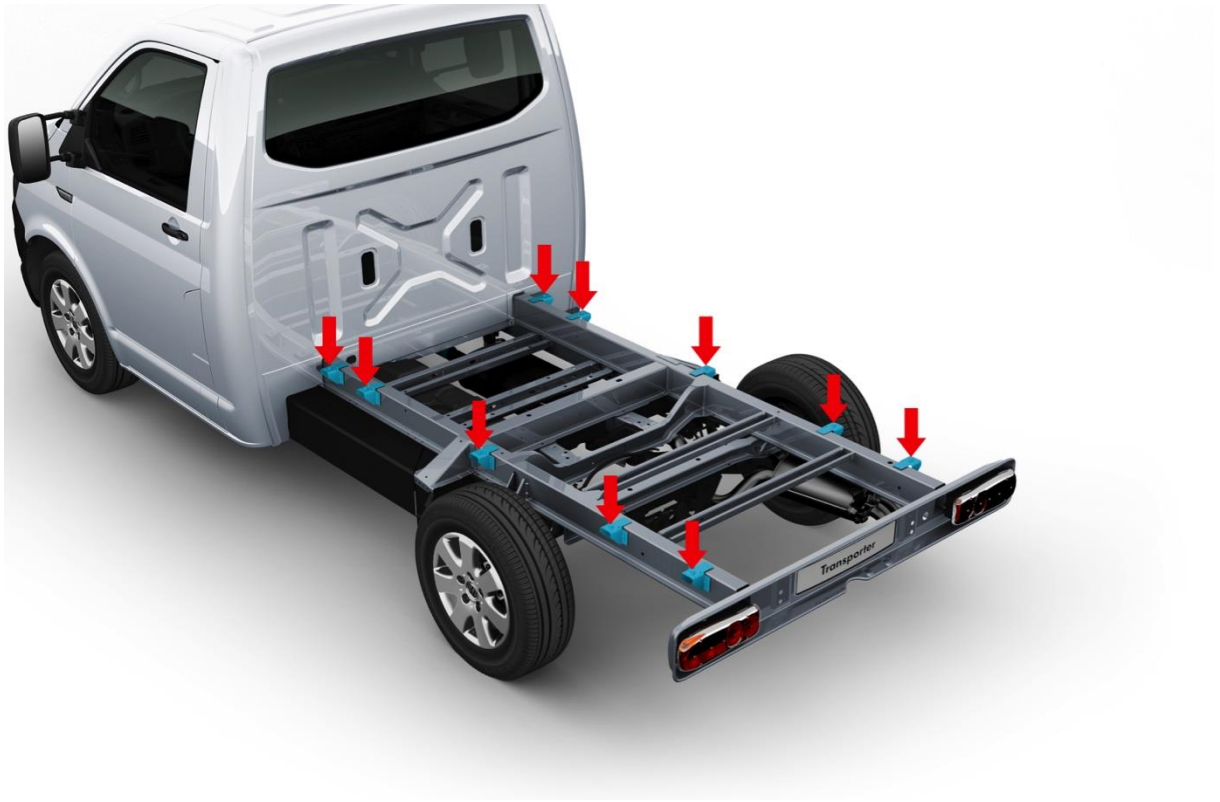



Fig. 3.1: Brackets on the vehicle frame (short wheelbase)

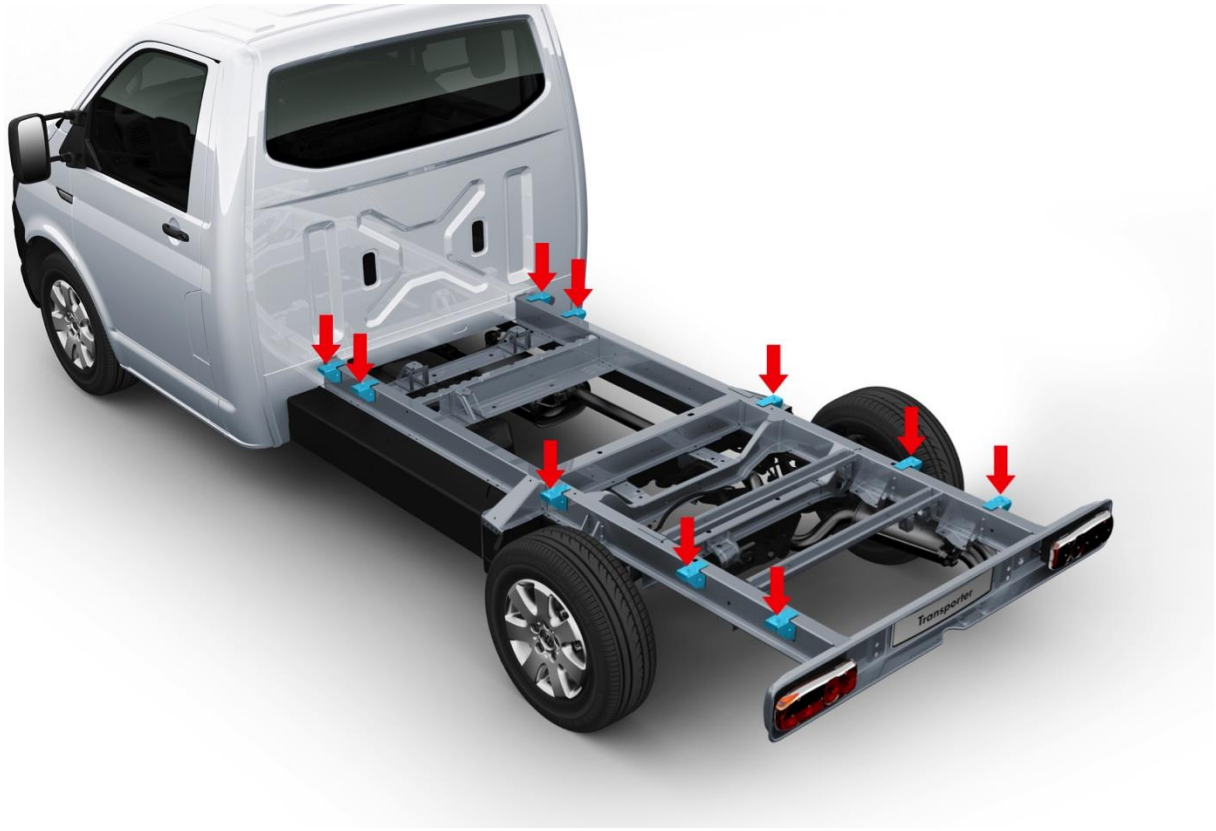



Fig. 3.2: Brackets on the vehicle frame (long wheelbase)

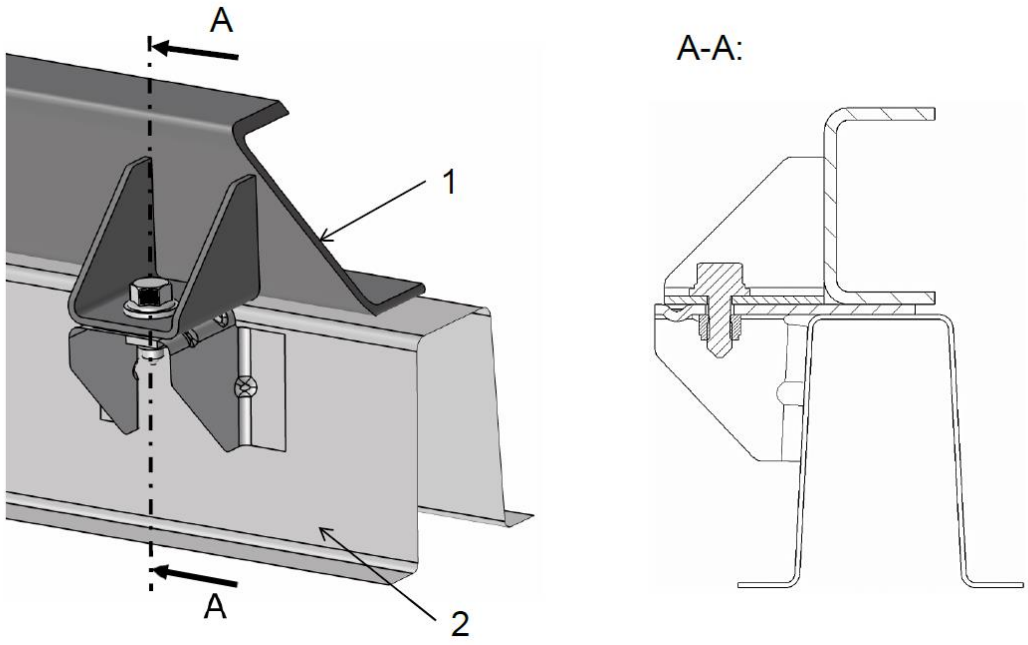



Fig. 4: Attachment of the subframe to the vehicle frame

1 – Subframe

2 – Chassis frame of the Transporter

### 4.3.6 Torsionally rigid superstructures

For particularly torsionally rigid superstructures such as bodies with cooler compartments, we recommend using elastic damping elements (e.g. *elastic blue®*, see Fig. 5 Vibration dampers) to connect to the body brackets in the foremost position behind the driver's cab, to prevent damage to the frame and the body.

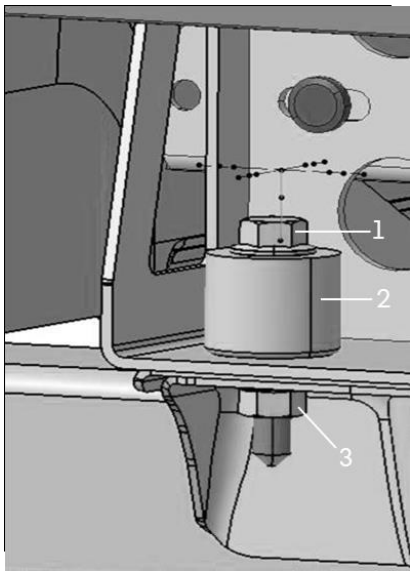



Fig. 5 Construction example: bolted connection with damping element (schematic diagram)

1. Hexagonal bolt with flange M10, property class 10.9
2. Vibration damper — elastic blue® — for M10 size bolts
3. Welded nut (with M10 standard thread, strength 10.9)

For more information about the conversion, refer to:

- 1.3 Planning bodies
- 1.4 Special equipment
- 2.1.6 Maximum dimensions
- 2.2.1 Permitted weights and unladen weights
- 2.2.10 Overhang extension
- 2.8 Add-ons/units
- 2.9 Lifting the vehicle
- 4.2.1 Drilling on the chassis frame
- 4.2.2 Welding on the vehicle
- 4.4 Standard attachment points for special bodies

# 4.4 Standard attachment points for special bodies

The vehicle frame is a hollow section construction consisting of pressed sheet metal parts.
The precautions have been taken in the design to ensure that all the circumstances of attaching special installations are tak en into account. Brackets are welded onto the longitudinal members for attachment of the special installations.
Each bracket is provided with an M10 square nut. For the mounting of special bodies, use bolts with property class 10.9 (see chapter 4.3.5 "Attachment of the subframe")

Comply with the following points when mounting a body:

- The attachment between the body and vehicle frame should always use all brackets.
- The screw connection onto the brackets shall be force-locking.
- The gap between the brackets above the vehicle frame does not need to be filled in.

# 4.5 Cut-out on the cab

The maximum cut-out is restricted by the B-pillars, the B-pillar cross struts and the floor of the cab.

### 4.5.1 Cut-outs on the back-wall of the cab

Important notes:

- Roof cross struts or weight-bearing parts are not allowed to be removed without replacement, and must not be damaged.
- The strength and rigidity of the cab structure are not allowed to be changed.
- It is necessary to comply with UNECE-R 14, EC Directive 76/115/EEC, 74/60/EEC and the "kerb test"
- The connection between the cross strut and the side wall must be flexurally rigid.
- If it becomes necessary to make a cut in the back wall of the cab in order to perform a conversion or to effect an installation then this is possible in conjunction with a frame around the outline of the cut. The replacement rigidity provided by the frame must be at least that of the original rigidity.
- Changes to the cab are not allowed to impair the function of any safety-relevant components (such as airbag units, sensors, pedals, selector lever, cables, lines and the like). This can lead to a failure of components and safety-relevant parts.
- The connection between the box body and the cab must be shape-locking and elastic. The connection is not allowed to be force-locking, but must be configured so that the torsional forces which occur between the box body and the cab are not directly transferred to the cab, but are absorbed within the connection instead.

### 4.5.2 Cut-outs on the back-wall of the cab and on the roof

Important notes:

- The upper belt anchoring points are secured to the B-pillars.
  Removing the roof end strip carrier on the B-pillar reduces the rigidity of the B-pillars.
  A replacement structure must therefore be created and its strength must be verified by a belt tensile test.

For more information about the conversion, refer to:

- 2.2.1 Permitted weights and unladen weights
- 3.1.4 Roof cut-outs
- 4.2.1 Drilling on the chassis frame
- 4.2.2 Welding on the vehicle
- 4.4 Standard attachment points for special bodies
- 4.5.1 Cut-outs on the back-wall of the cab

# 4.6 Bodies with a high centre of gravity

The information specified in chapter 2.1.3 about max. height of centre of gravity must be complied with.

Please also comply with the following chapters:

- 2.1.3. Vehicle centres of gravity
- 2.1.6 Maximum dimensions
- 2.2.1 Permitted weights and unladen weights
- 2.2.6.3 Influence of vehicle conversions on the function of the brake control system ESP
- 2.3.2 Modifications to the body-in-white

# 4.7 Platform with tarpaulin and cross strut (ex-works)

The cross struts are not allowed to be loaded with additional weights, such as ladders etc., adjacent to the tarpaulin.

For more information about the conversion, refer to:

- 2.1.1 Vehicle dimensions
- 2.1.6 Maximum dimensions
- 2.2.1 Permitted weights and unladen weights
- 2.2.6 Brake system and brake control system ESP
- 2.5.1.3 Turn signals on excess width bodies
- 3.1.4 Roof cut-outs
- 4.4 Standard attachment points for special bodies

# 4.8 Information about mounting a loading crane

Due to the rarity of use, the conversion is not described further here.
We recommend contacting Volkswagen during the planning phase.
Please contact us before starting your conversion (see chapter 1.2.1).

**Important notes:**
No power take-off systems from the gearbox is available; therefore the crane can only be operated with an electric pump unit or hydraulic pump.

Before fitting a loading crane, perform a load distribution calculation to check for compliance with the permitted axle loads and the minimum front axle load. (see chapter 7.2 Axle load calculation).

**Information**

For more information such as calculation examples, refer to chapter 7.2 Axle load calculation and the "Axle load calculation" document. The document is available from us in the portal under the "Additional technical information"* menu option

*Registration required.

When ordering a vehicle that should be equipped with a loading crane, we recommend that you order the second battery with isolation relay that is available ex-works as special equipment with the PR number 8FB.

The chassis must be equipped with a mounting frame for mounting the loading crane (see notes in chapter 4.3.1 "Configuration of the subframe").

Provide means of support for operation of the loading crane.

Please also comply with the following chapters:
- 2.1.6 "Maximum dimensions"
- 2.2.1 "Permitted weights and unladen weights"
- 2.5.4 "Vehicle battery"
- 2.5.3 "Electrical interface for special vehicles"
- 2.7 "Power take-off system, engine/gearbox"
- 4.2.1 "Drilling on the chassis frame"
- 4.2.2 "Welding on the vehicle"
- 4.4 "Standard mounting points for special bodies"
- 7.2 "Axle load calculation"

# 4.9 Back-to-back cab

In addition, a back-to-back cab (chassis with single cab 3.2 t without rear axle with shortened frame) is available.
With an external chassis and consideration of particular prerequisites, a gross vehicle weight rating of up to 4.6 t can be implemented.
Body builders who wish to build the complete vehicles on the base of back-to-back cabs are advised to contact the technical body builder support personnel.
Observe the following for the conversion:

- The type of connection between the frame and the back-to-back cab
- The rear axle and rear brakes used (displacement volume, response pressure, electronic brake pressure distribution)
- Connection of brake lines (see Fig. 1!)
- Interfaces with the back-to-back cab
- Technical lighting equipment depending on the actual dimensions and the permitted total mass of the completed vehicle etc.

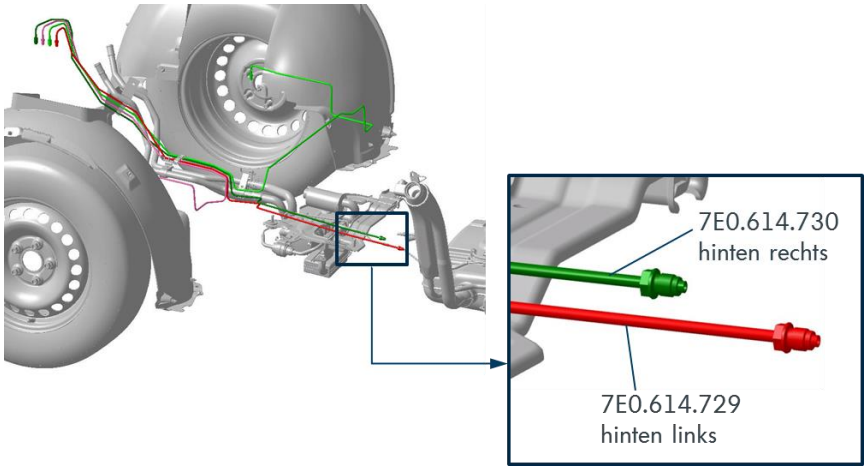



Fig. 1: Route of brake line back-to-back cab (schematic diagram)

**Information**

Please note: according to ordinance VO (EU) 661/2019, from 1 November 2015 vehicles in classes M2, M3, N2 and N3 must be fitted with a lane departure warning system. Exceptions:

- tractor units N2, 3.5 t <MAM ≤ 8 t MAM
- Certain classes of buses
- Off-road vehicles according to Directive 2007/46/EC, Annex 4.2 and 4.3
- Special purpose vehicles according to 2007/46/EC Annex II, Part A, Section 5 (e.g. mobile homes, wheelchair accessible vehicles, ambulances, hearses, armoured vehicles code "SA")
- Vehicles with more than three axles

Please also comply with the following chapters:

- 4.5 Cut-out on the cab
- 2.2.1 "Permitted weights and unladen weights"
- 2.2.6.3 "Influence of vehicle conversions"
- 2.3.2 "Modifications to the body-in-white"
- 2.3.2.10 "Corrosion protection measures"

# 5 Implementations of special bodies

## 5.1 Vehicles for conveying persons with restricted mobility

Depending of the type of disabilities, a large number of driving aids are available as special equipment from Volkswagen AG. For more information, please contact your Volkswagen dealership.

**Information**

For more information, refer to the Volkswagen AG website at:
http://www.volkswagen-nutzfahrzeuge.de/de/kundenloesungen/menschen-mit-behinderung.html

### 5.1.1 Base vehicle equipment

When planning the special vehicle, select the equipment of the base vehicle according to the requirements of the future application (see also chapter 1.3.1 Selecting the base vehicle).
Please note that certain conversions are only allowed to be used by people with corresponding entries in their driving licence.

You can optimise your base vehicle for the conversion in advance by selecting the following special equipment items:
- Uprated battery and alternator.
- Sector-specific preparations.

**Practical note**

For easy implementation, we recommend ordering the multifunction control unit (IS6).
For further information, see chapter 2.5.3.4

### 5.1.2 Selection of steering rack for conversions for people with disabilities

Please note that there is a choice of two different steering racks in the Transporter. In addition to the standard power assisted steering (PR number 1N1), there is Servotronic steering (PR number 1N3) with speed-dependent steering support.
At higher speeds, Servotronic steering produces higher steering forces than the standard power assisted steering.
Servotronic steering can be replaced by standard power assisted steering subsequently if required.

### 5.1.3 Notes on conversion solutions for the wheelchair transporter

- If the routing of the exhaust system is modified or if sections of the pipe are cut out, it is necessary to ensure that there are adequate clearances to other components even when the exhaust system expands at operating temperature, and that touching is avoided.
- The general certificate of roadworthiness of the whole vehicle will be invalidated if the exhaust system is modified. The wheelchair transporter is classified as a "special purpose" vehicle, which means the approval for the whole vehicle is retained. If a modified rear silencer is used, it is only necessary to provide verification of the noise level during "driving past at accelerated speed" for the vehicle.
- If modifications are made to the exhaust system and the fuel system, it is necessary to ensure adequate protection against fire by fitting heat shields.
- If the rear end is converted in order to create a flat loading ramp for driving the wheelchair in easily, it is necessary to ensure adequate floor clearance in the rear area so that an adequate exit angle can be achieved (e.g. ferry, multi-storey car park) with the permitted rear axle load.
- Any PDC sensors must remain in the original position; the function must be the same as in the standard vehicle.

### 5.1.4 Notes on installing manual operating devices for the service brake:

- Do not modify the brake pedal when installing manual operating devices. Select a clamped solution for connecting the manual operating device.
- The operating travel of the manual operating device must also be sufficient for a blocking braking, with reserve travel for a circuit failure.
- If a manual operating device is used for the accelerator and brake, the standard pedals must be covered by suitable means.

### 5.1.5 Deactivating airbags/belt tensioner systems

The customer service workshop can also deactivate/reprogram the driver airbag/belt tensioner in exceptional cases, e.g. for drivers with a disability (with entry in the driving licence), if there is insufficient distance to the steering wheel or if smaller steering wheel for wheelchair users is fitted (self-drive) and no airbag can be installed. For more information, please contact Volkswagen customer service.

The following points should be observed when deactivating airbag/belt tensioner systems:

1. The registration document for airbag/belt tensioner systems issued by Volkswagen Dealership must be stored in the vehicle wallet and handed over to the next owner on sale of the vehicle.
2. A warning sticker indicating this deactivation must be attached to the dash panel in clear view and must not be removed before the airbag is reactivated.
3. Alterations to/deactivations of functions (airbag, belt tensioner, seat-occupied sensor etc.) must be entered immediately in the vehicle documents (TÜV, DEKRA, responsible technical service).
4. Other users/purchasers of the vehicle must be informed that the specified safety systems have been deactivated and of the increased safety risk this entails.
5. We strongly recommend that deactivated airbags/belt tensioner systems are reactivated by a Volkswagen dealership before the vehicle is sold. This applies in particular if the vehicle is sold or permanently transferred to persons who do not fulfil the requirements for airbag deactivation.

**Warning note**

Deactivation means that the additional safety function of the airbag/belt tensioner is no longer ensured. Accidents may result in more severe injuries than those in which the airbag/belt tensioner is activated. Vehicle occupants have a greater risk of injury.

**Practical note**

Please note that permanently deactivating or removing the driver airbag also invalidates the belt unit type approval (belt tensioner, belt retractor). If an airbag is deactivated, the corresponding belt unit (for systems without airbags) must always also be adapted.
Follow the procedure for deactivating airbags specified in the workshop manual (see General body repairs, interior, repair group 1.8 Airbag deactivation and repair group 69 Passenger protection).
The workshop manual can be found online at erWin* (Electronic Repair and Workshop Information from Volkswagen AG):
https://erwin.volkswagen.de/erwin/showHome.do

Special information for deactivating side airbags (replacing driver seat with disability seat):

1. In Germany, the second regulation (2.SprengV) of the Explosives Act (SprengG) applies to the storage and preservation of seats with side airbags. Customers who wish to store removed seats at their homes must first clarify the requirements for private storage with the responsible trade supervisory board.
2. To store a removed seat, a safety plug must be fitted on the detached cables.

Please also comply with the following chapters during your conversion:

- 1.3.1 Selecting the base vehicle
- 2.2.1 Permitted weights and unladen weights
- 2.3.2 Modifications to the body-in-white
- 2.5.2.1 Electrical wiring and fuses
- 2.5.2.3 Retrofitting electrical devices
- 2.5.3 Electrical interface for special vehicles
- 2.5.4 Vehicle battery
- 2.5.4.1 Installation of additional battery
- 2.5.5 Subsequent installation of generators
- 2.6.3 Fuel system
- 2.6.4 Exhaust system
- 3.2.1 Safety features

# 5.2 Refrigerated vehicles

When planning the special vehicle, select the equipment of the base vehicle according to the requirements of the future application (cf. chapters 1.3.1 "Selecting the base vehicle" and 2.7 "Power take-off system, engine/gearbox").
You can optimise your base vehicle for the conversion in advance by selecting the following special equipment items:

- Uprated alternator (e.g. 180 A instead of 140 A)
- Uprated battery
- Battery for loads (e.g. cooling units and loads that should be operated with the vehicle stationary).
- Noise insulation for protecting the engine and power take-off system against contamination and foreign bodies
- For correct operation of the power take-off system, we recommend that you use the additional units (e.g. refrigerant compressor) provided ex-works for the base vehicle.

To facilitate repair of the panel van, accessibility to the components of the door mechanism must be ensured (e.g. guide rails and hinges).
Please note that the insulation in the panel van increases the weight of the doors, and therefore also the load on the hinges, carriage and lock systems.

For further information, see:

- 1.3.1 Selecting the base vehicle
- 2.2.1 Permitted weights and unladen weights
- 2.3.2 Modifications to the body-in-white
- 2.5.2.1 Electrical wiring/fuses
- 2.5.2.3 Retrofitting electrical devices
- 2.5.3 Electrical interface for special vehicles
- 2.5.4 Vehicle battery
- 2.5.4.1 Installation of additional battery
- 2.5.5 Subsequent installation of generators
- 2.7 Power take-off system, engine/gearbox
- 2.7.3 Preparation for load compartment cooling
- 3.1 Body-in-white/bodywork
- 3.1.3 Modifications to the roof of panel van/window van

**Practical note**

On BlueMotion vehicles you should also note that the load compartment cooling system must be integrated into the BMT function so that shut-down of the engine is prevented during the cooling process (cooling system on and load compartment temperature not reached). For ease of implementation of this requirement, we recommend also ordering the multifunction control unit (IS6). For further information, see chapter 2.5.3.4

# 5.3 Shelf installation/workshop vehicles

### 5.3.1 Shelf and workshop installations

For shelf and workshop installations, the following points must be observed:

1. Selection of a suitable base vehicle (gross vehicle weight rating, running gear, equipment)
2. Driver's compartment and load compartment should be separated by means of a retaining device (partition, load guard) according to DIN ISO 27956.
3. The maximum permitted weights and axle loads of the base vehicle must be observed (see chapters 2.2.1 and-7.2.)
4. The installation should take place in a way that ensures that the forces induced are evenly distributed.
5. The suitability of the available fastening rings should be checked before they are used to secure items.
6. Assembly, maintenance and owner's manuals specifying the load limits should accompany the modified vehicle.
7. The maximum load of drawers and shelves (taking dynamic forces into account) must be marked or indicated in the owner's manual. The owner's manual must be provided with the vehicle.
8. The vehicle structure must not be weakened by the installed components in the event of an accident.
9. The regulations and standards for load securing must be observed:
   - DIN ISO 27956 (securing of cargo in delivery vans),
   - VDI 2700 ff
   - StVO or country-specific laws and regulations.
10. The installation should be performed so as to be safe in the event of a crash (e.g. UNECE-R 44-3 City Crash):
    - all items in the vehicle should be secured, installed or stowed in such a way that they do not become projectiles in the event of acceleration/deceleration in a forwards, backwards, left, right or vertical direction.
    - All tested compartments, rails, installations not intended for storage or storage equipment must be marked with the highest permitted weights.
11. Exposed edges that may come into contact with the hands, legs, head etc. of a vehicle occupant during normal operation must not have a radius of less than 2.5 mm.
12. Following all work to the body, drilling chips should be removed and corrosion protection measures should be performed. (see chapter 2.3.2 Modifications to the body-in-white).
13. The requirements of the body builder guidelines for electrical wiring and fuses must be observed:
    - Chapter 2.5.2.1 Electrical wiring/fuses
    - Chapter 2.5.2.2 Additional circuits
    - Chapter 2.5.3 Electrical interface for special vehicles
14. During installation and conversion no electric wires or other components of the base vehicle (e.g. fuel tank, brake lines) may be damaged.
15. Conversion should only be performed by trained specialist personnel.
16. Ensure "sufficient ventilation" in vehicles intended for the transportation of gas cylinders. The so-called diagonal ventilation is deemed "sufficient". It usually runs from top front (roof) to rear bottom (floor, bottom side wall).

**Warning note**

All relevant safety regulations for handling gas cylinders must be complied with.

### 5.3.2 Universal floor ex works

A universal floor (PR number 5BM) is available ex works for the Transporter panel van and window van.
The universal floor has a large variability of connection points for the fastening of cabinet and rack installations.
In combination with the floor adapters designed for the universal floor, you can fix rack and cabinet components from different manufacturers to the floor (see chapter 3.2.3 "Universal floor").
The side mounting of the rack and cabinet installations to the body must be carried out in accordance with the requirements of the rack and cabinet manufacturer.

Please note that the crash behaviour of installations depends on the overall cabinet concept, the connection to the floor, connection to the side walls and the distribution of the load in the cabinets (see chapter 5.3.1 "Shelf and workshop installations").

**Information**

Further information on the universal floor and the floor adapters in available in the body builder portal of Volkswagen AG in the menu option "Additional technical Information"*.
Dimensioned drawings for various vehicle versions, 3-D data models and installation instructions are available.

Should you have any more questions, please contact us (see 1.2.1 "Product and vehicle information for body builders".)

*Registration required.

**Practical note**

Permanently installed components increase the kerb weight of the vehicle, as a result of which the suspension compression height on the rear axle is reduced accordingly. For permanently installed components, we recommend installing the spring pack PR number 2MK specially matched for this.

Please also comply with the following chapters as part of the conversion:

- 1.3.1 Selecting the base vehicle
- 2.2.1 Permitted weights and unladen weights
- 2.3.2 Modifications to the body-in-white
- 2.5.2.1 Electrical wiring/fuses
- 2.5.2.3 Retrofitting electrical devices
- 2.5.3 Electrical interface for special vehicles
- 2.5.4 Vehicle battery
- 3.2.1 Safety features
- 3.2.3 Universal floor

# 5.4 Emergency vehicles

Please note that during more demanding operating conditions, some maintenance work will be necessary before the next vehicle service is due.
In particular for emergency vehicles with TDI engines with the 132 kW power level, an oil change should be carried out, as a deviation from the service handbook, for all engine oil variants every 15,000 km.
The service interval display should be adjusted accordingly by the Volkswagen service partner.
For special conversions, such as on ambulances or workshop vehicles, special work packets for the rear axle matched at the factory are available.

- Comfort suspension for ambulances (PR number 1BW)
  The comfort suspension is a suspension designed specially for ambulances for particular driving comfort. It can only be ordered for the "basic model KTW" (German market) and is only available for vehicles with 3.2 t MAM. The vehicles must be provided with at least 350 kg of additional permanent equipment. The correct suspension height is only achieved with this additional permanent load.
- Suspension, reinforced at rear (PR number 2MK)
  The suspension packet represents a "harder" suspension tuning and is intended for vehicles with permanent shelf installations and workshop vehicles, for example. This reinforced rear axle suspension 2MK is not available for vehicles with 3.2 t MAM.

Please also comply with the following chapters as part of the conversion:

- 1.3.1 Selecting the base vehicle
- 2.2.1 Permitted weights and unladen weights
- 2.3.2 Modifications to the body-in-white
- 2.5.2.1 Electrical wiring/fuses
- 2.5.2.3 Retrofitting electrical devices
- 2.5.3 Electrical interface for special vehicles
- 2.5.4 Vehicle battery
- 3.2.1 Safety features

**Warning note**

Please bear in mind that if the permanently installed components are removed then the spring pack PR number 1BW must be replaced by standard equipment. Otherwise, the driving properties might be negatively impaired.

**Information**

For more information about this topic, refer to the body builder portal of Volkswagen AG.

**Practical note**

For easy implementation, we recommend ordering the multifunction control unit (IS6). For further information, see chapter 2.5.3.4

**Practical note**

The flasher unit function is not permitted in combination with LED headlights.

This combination could damage the starter units for the LED headlights. Country specific laws, directives and approval regulations must be observed.

**Information**

For more information about this topic, refer to the Volkswagen AG website at:
http://www.volkswagen-nutzfahrzeuge.de/de/kundenloesungen/blaulichtfahrzeuge.html

# 5.5 Taxi/private hire car

### 5.5.1 Available provisions for taxi conversions

The following specification packages for taxi upgrade are available ex works:

- Taxi basic package with provision for cowl taxi meter (PR number ZY0)

  Includes the following scopes:

  + Taxi version identifier (F4E)
  + Body console (cowling) on the dash panel
  + Provision for taximeter including taxi cable harness (wiring ends in the body console of the dash panel)
  + Multifunction control unit
  + Electrical interface
  + Without front socket

  The coupling point for the taximeter is located in the area of the dash panel below the dashboard cowl.

  Suitable for the Microtax MTC 06 (HALE) cowl taxi meter, for instance

- Taxi basic package with provision for mirror taximeters (PR number ZY1)

  Includes the following scopes:

  + Taxi version identification
  + Provision for mirror taximeter (without body console), including wiring harness of taxi
  + Multifunction control unit
  + Electrical interface

  The coupling point (distance signal) for the mirror taximeter is located underneath the trim of the roof lining in the area of the rear view mirror.

  Suitable for the mirror taximeter SPT-02 (HALE), for instance

- Provision for taxi roof sign (PR number ZY4)

  Includes the following scopes:

  + Holder and wiring of the roof sign (without the roof sign itself), suitable for roof signs, e.g. from Kienzle ARGO
  + The switch of the roof sign is located in the body console (cowling) with provision for the cowl taxi meter, or in the dash panel, with provision for the mirror taximeter (without cowl)
  + The switch of the interior lighting in the body console (cowling) with provision for the cowl taxi meter, or in the dash panel, with provision for the mirror taximeter (without cowl)

- Provision for radio for taxi (PR number IP1 [ZY5/YUD])

  Includes the following scopes:

  + Provision for radio for taxi with aerial (UMTS, GPS, GSM, 70 cm and 2 m band) for data and radio-telephone devices (including microphone, loudspeaker, and hands-free button)

- Provision for alarm system for taxi (PR number YTE)

  Active/passive alarm (the passive alarm works only by means of the installation of the taxi roof sign of Kienzle Argo).

  Includes the following scopes:

  + Button in the dash panel to the left (underneath the dipped beam light switch)
  + Button in driver's footwell, left (activates passive alarm)
  + Button in engine compartment (deactivation of alarms) active/passive alarm

In addition, the following are available as special equipment:

- Microtax-06 cowl taxi meter from HALE in the body console of the dash panel (PR number YZH)
- Mirror taximeter SPT-02 from HALE (PR number YZG)
- Taxi roof sign (LED) with optional feature for "quiet alarm" from Kienzle (PR number YXS)
- Electrical provision for mirror taximeter, including multifunction control unit (PR number YZI)

### 5.5.2 Available provisions for private hire car

The following specification packages for upgrading the private hire car are available ex works:

- Private hire car basic package with provision for trip counter (PR number ZY2)

  Includes the following scopes:

  + Private hire car identifier (PR number F5P)
  + Body console (cowling) on the dash panel (only with commercial vehicle dash panel)
  + Provision for trip counter, including wiring harness of taxi (wiring ends in the body console of the dash panel)
  + Multifunction control unit
  + Electrical interface

  The coupling point for the trip counter is in the area of the dash panel below the control panel cowl.

  Suitable for WSZ-06 trip counter (Hale), for instance

- Private hire car basic package with provision for mirror odometer (PR number ZY3)

  Includes the following scopes:

  + Private hire car identifier
  + Provision for mirror odometer, including wiring harness of taxi without body console (cowling)
  + Multifunction control unit
  + Electrical interface

  The coupling point (odometer signal) for the mirror odometer is located underneath the trim of the roof lining in the area of the rear view mirror.

  Suitable for mirror odometer SPW-02 (HALE), for instance.

- Provision for taxi roof sign (PR number ZY4)

  Consisting of the following scopes:

  + Holder and wiring of roof sign (without the roof sign itself), suitable for roof signs e.g. from Kienzle ARGO
  + The switch of the roof sign is located in the body console (cowling) with provision for cowl trip counter, or in the dash panel, with provision for mirror trip counter (without cowling)
  + Central switch of interior lighting in the body console (cowling) with provision for cowling trip counter, or in the dash panel, with provision for mirror trip counter (without cowling)

- Provision for radio for a private hire car (PR number IP1[ZY5/YUD])

  Includes the following scopes:

  + Provision for radio with aerial (UMTS, GPS, GSM, 70 cm and 2 m band) for data and radio-telephone devices (including microphone, speaker, and hands-free button)

- Provision for alarm system for private hire cars (PR number YUE)

  Active/passive alarm (the passive alarm works only by means of the installation of the taxi roof sign from Kienzle Argo)

  Includes the following scopes:

  + Button in the instrument panel to the left, underneath the dipped beam light switch (activates active alarm)
  + Button in driver's footwell, left (activates passive alarm)
  + Button in engine compartment (deactivation of alarms) active/passive alarm

In addition, the following are available as special equipment:

- Trip counter (for air intake cowling) WSZ-06 from HALE (PR number YZF)
- Mirror odometer SPW-02 from Hale (PR number YZC)
- Taxi roof sign (LED) with optional feature for "quiet alarm" from Kienzle (PR number YXS)

**Information**

You'll find more information on the coupling points and available signals for taxi conversions in the "Vehicle Manufacturer Information on conformity evaluation for Volkswagen panel van/Caravelle/multivan taxi and rental car".

They are filed in the body builder portal of Volkswagen AG under the heading "Additional technical information".

*Registration required.

Please also comply with the following chapters for your conversion:

- 1.3.1 Selecting the base vehicle
- 2.2.1 Permitted weights and unladen weights
- 2.3.2 Modifications to the body-in-white
- 2.5.2.1 Electrical wiring/fuses
- 2.5.2.3 Retrofitting electrical devices
- 2.5.3 Electrical interface for special vehicles
- 2.5.4 Vehicle battery
- 3.2.1 Safety features

**Information**

For more information about this topic, refer to the Volkswagen AG website at:
http://www.volkswagen-nutzfahrzeuge.de/de/kundenloesungen/gewerbekunden.html

# 5.6 Leisure vehicles

Please also comply with the following chapters as part of the conversion:

- 1.3.1 Selecting the base vehicle
- 2.2.1 Permitted weights and unladen weights
- 2.3.2 Modifications to the body-in-white
- 2.5.2.1 Electrical wiring/fuses
- 2.5.2.3 Retrofitting electrical devices
- 2.5.3 Electrical interface for special vehicles
- 2.5.4 Vehicle battery
- 2.6.3 Fuel system
- 2.6.4 Exhaust system
- 3.2.1 Safety features

**Practical note**

For easy implementation, we recommend ordering the multifunction control unit (IS6). For further information, see chapter 2.5.3.4

**Practical note**

Permanently installed components increase the kerb weight of the vehicle, as a result of which the suspension compression height on the rear axle is reduced accordingly. For permanently installed components, we recommend installing the spring pack PR number 2MK specially matched for this.

**Information**

For more information about this topic, refer to the Volkswagen Commercial Vehicles website at: http://www.volkswagen-nutzfahrzeuge.de/de/models/california.html

# 5.7 Vehicles for local and public authorities

Please also comply with the following chapters for your conversion:

- 1.3.1 Selecting the base vehicle
- 2.2.1 Permissible weights / kerb weights
- 2.3.2 Modifications to the body-in-white
- 2.5.2.1 Electrical wiring and fuses
- 2.5.2.3 Retrofitting electrical devices
- 2.5.3 Electrical interface for special vehicles
- 2.5.4 Vehicle battery
- 2.6.3 Fuel system
- 2.6.4 Exhaust system
- 3.2.1 Safety features

**Practical note**

For easy implementation, we recommend ordering the multifunction control unit (IS6). For further information, see chapter 2.5.3.4

**Practical note**

Permanently installed components increase the kerb weight of the vehicle, as a result of which the suspension compression height on the rear axle is reduced accordingly. For permanently installed components, we recommend installing the spring pack PR number 2MK specially matched for this.

**Information**

For more information about this topic, refer to the Volkswagen Commercial Vehicles website at: http://www.volkswagen-nutzfahrzeuge.de/de/models/california.html

# 5.8 Box bodies (dry freight boxes)

For the construction of dry freight boxes, the following points should be observed:

1. Selection of a suitable base vehicle (gross vehicle weight rating, equipment) (see chapter 1.3.1).
2. The maximum permitted weights and axle loads of the base vehicle must be observed (see chapters 2.2.1, 2.2.1.1 and 8.5.)
3. The body should be constructed so that the forces introduced are evenly distributed.
4. Assembly, maintenance and owner's manuals specifying the load limits should accompany the modified vehicle.
5. The regulations and standards for load securing must be observed:
   a. VDI 2700 ff
   b. StVO or country-specific laws and regulations.
   c. After all work to the vehicle is complete, remove the drilling chips and implement corrosion protection measures. (see chapters 2.3.2.10, 2.3.2.13 and 2.3.2.14)
6. The requirements of the body builder guidelines for electrical wiring and fuses must be observed:
   a. Chapter 2.5.2.1 Electric lines / fuses
   b. Chapter 2.5.2.3 Retrofitting electrical devices
   c. Chapter 2.5.3 Electrical interface for special vehicles
7. During installation and conversion, no electric wires or other components of the base vehicle (e.g. fuel tank, brake lines) must be damaged.
8. Conversion should only be performed by trained specialist personnel.
9. All of the body brackets provided as factory fittings are to be used for securing box bodies to the vehicle frame.
10. For an even load on the chassis frame, the body shall be attached using an assembly frame (subframe) (see 4.3.1 "Configuration of the subframe").
11. On box bodies, bolted connections with spacer sleeves that are secured against loosening shall be used on the first and second body brackets in the area behind the cab. The spacer sleeves shall be dimensioned so that they cannot be deformed (see 2.3.2.1 "Screw connections").
12. For the material properties of the subframe, see chapter 4.3 "Subframe for light commercial vehicles".
13. The minimum distance of 30 mm between the rear cab wall and the box body is to be maintained. (see chapter 2.1.6)
14. The wheel clearance on the rear axle must be maintained. (see chapter 2.2.9 "Wings and wheel housings")
15. Depending on body width, appropriate exterior mirrors and end-outline marker lamps are to be selected (on top of the box). (see 2.1.6 and 2.5.1.1). It may be necessary to reposition the rear lights (see chapter 2.5.1.1 and chapter 2.5.1).
16. Depending on the vehicle length, side marking lights must be provided (see chapter 2.5.1.1).
17. Roof loads must be observed. (see chapter 2.3.1)
18. Compliance is required with current statutory provisions and legislation, regulations on health and safety and accident prevention, safety rules, and accident insurance providers' data sheets. Country specific laws, guidelines and registration conditions are to be observed (see chapter 1.2.9).

# 5.9 Platform bodies (open boxes)

For the construction of platform bodies, the following points should be observed:

1. Selection of a suitable base vehicle (gross vehicle weight rating, equipment) (see chapter 1.3.1).
2. The maximum permitted weights and axle loads of the base vehicle must be observed (see chapters 2.2.2, 2.1.1.1 and 8.5.)
3. The body should be constructed so that the forces introduced are evenly distributed.
4. Assembly, maintenance and owner's manuals specifying the load limits should accompany the modified vehicle.
5. The regulations and standards for load securing must be observed:
   a. VDI 2700 ff
   b. StVO or country-specific laws and regulations.
6. After all work to the vehicle is complete, remove the drilling chips and implement corrosion protection measures, (see chapters 2.3.2.10, 2.3.2.13 and 2.3.2.14).
7. The requirements of the body builder guidelines for electrical wiring and fuses must be observed:
   d. Chapter 2.5.2.1 Electric lines / fuses
   e. Chapter 2.5.2.3 Retrofitting electrical devices
   f. Chapter 2.5.3 Electrical interface for special vehicles
8. During body assembly and conversion no electric wires or other components of the base vehicle (e.g. electrical wiring, fuel tank, brake lines) must be damaged.
9. Conversion should only be performed by trained specialist personnel.
10. All of the body brackets provided as factory fittings are to be used for securing platform bodies to the vehicle frame.
11. For an even load on the chassis frame, the body shall be attached using an assembly frame (subframe) (see 4.3.1 "Configuration of the subframe").
12. For platform bodies, bolted connections protected against loosening with spacer sleeves shall be used on the first and second body brackets in the area behind the cab. The spacer sleeves shall be dimensioned so that they cannot be deformed (see 2.3.2.1 "Screw connections").
13. For the material properties of the subframe, see chapter 4.3 "Subframe for light commercial vehicles".
14. The minimum distance of 30 mm between the rear cab wall and the box body is to be maintained. (see chapter 2.1.6)
15. The wheel clearance on the rear axle must be maintained (see chapter 2.2.9 "Wings and wheel housings").
16. Appropriate exterior mirrors are to be chosen, depending on the width of the body (see 2.1.6 and 2.5.1.1).
17. It may be necessary to reposition the rear lights (see chapter 2.5).
18. Depending on the vehicle length, side marking lights must be provided (see chapter 2.5.1.1).
19. Roof loads must be observed. (see chapter 2.3.1)
20. Compliance is required with current statutory provisions and legislation, regulations on health and safety and accident prevention, safety rules, and accident insurance providers' data sheets. Country specific laws, guidelines and registration conditions are to be observed (see chapter 1.2.9).
21. If the standard platform is subjected to point or point-like loading (e.g. transportation of cable drums, coils etc.), the substructure and platform floor shall be reinforced suitably for the load.

**Practical note**

If a superstructure has moving attachments, make sure that there is sufficient clearance from the base vehicle, otherwise attachments could collide with the base vehicle causing damage.

# 5.10 Tipper bodies

For the construction of tipper bodies, the following points should be observed:

1. Selection of a suitable base vehicle (gross vehicle weight rating, equipment), see chapter 1.3.1
2. The maximum permitted weights and axle loads of the base vehicle must be observed (see chapters 2.2.1, 2.2.1.1 and 8.5).
3. The body should be constructed so that the forces introduced are evenly distributed.
4. Assembly, maintenance and owner's manuals specifying the load limits should accompany the modified vehicle.
5. The regulations and standards for load securing must be observed:
   a. VDI 2700 ff
   b. StVO or country-specific laws and regulations.
6. After all work to the vehicle is complete, remove the drilling chips and implement corrosion protection measures, (see chapters 2.3.2.10, 2.3.2.13 and 2.3.2.14).
7. The requirements of the body builder guidelines for electrical wiring and fuses must be observed:
   a. Chapter 2.5.3 "Electrical interface for special vehicles"
   b. Chapter 2.5.2.1 "Electric wiring/fuses"
   c. Chapter 2.5.2.2 "Additional circuits" (for electro-hydraulic tipper drives)
   d. Chapter 2.5.2.3 "Retrofitting electrical devices"
8. During body assembly and conversion no electric wires or other components of the base vehicle (e.g. electrical wiring, fuel tank, brake lines) must be damaged.
9. Conversion should only be performed by trained specialist personnel.
10. The minimum distance of 30 mm between the rear cab wall and the box body is to be maintained (see chapter 2.1.6).
11. The wheel clearance on the rear axle must be maintained (see chapter 2.2.9 "Wings and wheel housings").
12. Appropriate exterior mirrors are to be chosen, depending on the width of the body (see chapters 2.1.6 and 2.5.1.1). It may be necessary to reposition the rear lights (see chapter 2.5).
13. Depending on the vehicle length, side marking lights must be provided (see chapter 2.5.1.1).
14. Compliance is required with current statutory provisions and legislation, regulations on health and safety and accident prevention, safety rules, and accident insurance providers' data sheets. Country specific laws, guidelines and registration conditions are to be observed (see chapter 1.2.9).
15. Tipper bearings
    a. The rear tipper bearings on three-sided and rear tipper bodies shall be placed as close to the rear as possible.
    b. The folded down tail lift shall not knock against the frame end, the lighting systems or the trailer towing coupling.
    c. For the front tipper bearings, guide brackets are required to guide the tipper bearings when the tipper is lowered.
16. Safety devices
    a. A prop (tipper stay) must be incorporated to prevent accidental lowering of the tipper on someone beneath it.
    b. Secure controls against accidental use.
    c. A warning device must be incorporated that shows when the tipper is not in rest position (drive position).
17. Tilting press
    a. The press carrier is secured on cross members in the assembly frame.
    b. The cross member of the assembly frame and the cross member of the chassis shall be arranged on top of each other if possible.
    c. On three-sided tipper bodies, the working point of the tilting press should be in front of the centre of gravity of the body and payload.
18. Assembly frame
    If chassis are fitted with tipper bodies, sufficient dimensioning of the assembly frame is necessary due to high vehicle loads. The following points shall be observed:
    a. For an even load on the chassis frame, the body shall be attached using an assembly frame (subframe) (see 4.3.1 "Configuration of the subframe").
    b. The rear area of the assembly frame is to be closed as a box and, if necessary, stiffened with an inserted diagonal cross or other suitable measures.

c. At least all of the body brackets provided at the factory are to be used for securing tipper bodies to the vehicle frame.
d. The use of vehicles with tipper bodies is only possible for normal usage conditions. In difficult usage conditions, we recommend consulting the responsible department (see chapter 1.2.2 "Body builder guidelines, consulting").
e. For the material properties of the subframe, see chapter 4.3 "Subframe for light commercial vehicles".

**Practical note**

If a superstructure has moving attachments, make sure that there is sufficient clearance from the base vehicle, otherwise attachments could collide with the base vehicle causing damage.

# 5.11 Tractor unit

Vehicles with ESP* are not suitable for use as tractor units.

*Electronic Stability Control

# 5.12 Dangerous goods transport in accordance with ADR

Certain vehicles used to transport dangerous goods in accordance with ADR require a separate ADR registration certificate. Transporters/Crafters/Amaroks are usually used in the dangerous goods transport sector as an EX/II vehicle (vehicle for the transport of explosive substances or objects).

Volkswagen Transporters/Crafters/Amarok do not comply with all requirements in the ADR 2017 for EX/II vehicles by default. An additional construction stage by a second stage manufacturer will be necessary in any case.

To provide the second stage manufacturer with support with obtaining an ADR registration certificate, Volkswagen Commercial Vehicles offers a manufacturer's declaration for base vehicles that are to be fitted out as EX/II vehicles. This declaration specifies the construction regulations from the ADR 2017 which the base vehicle either already satisfied ex-works, or which must be completed by a second stage manufacturer in a second construction stage.

A manufacturer's declaration for chassis and platforms, and a declaration for panel vans, are available.
Please direct your request to the following email address:
nutzfahrzeuge@volkswagen.de

For conversion into an EX/III, FL or AT dangerous goods vehicle, please contact us (see chapter 1.2.1. Product and vehicle information for body builders).

# 6 Technical data

## 6.1 Build dimension drawings

Please refer to our dimensional drawings for the dimensions of the Transporter.
They are available for download in DXF, TIFF and PDF format at the body builder portal of Volkswagen AG. All files (except PDFs) are packed as Zip archives. The files can be unpacked using Winzip (PC) or ZipIt (MAC).

**Information**

Current build dimension drawings are available for downloading from the body builder portal of Volkswagen AG under the "Technical drawings" menu item.

# 6.2 Diagrams (foil templates)

Vehicle views of the Transporter in 1:20 scale are available for download in TIF, DXF and EPS format to help you create diagrams. All files are packed as Zip archives. The files can be unpacked using Winzip (PC) or ZipIt (MAC).

**Information**

Current diagrams are available for downloading from the body builder portal of Volkswagen AG under the "Foil templates" menu item.

# 6.3 Circuit diagrams

For detailed information about this topic, refer to the workshop manuals and circuit diagrams of Volkswagen AG.

**Information**

Volkswagen AG workshop manuals and current flow diagrams can be downloaded from the Internet at **erWin*** (**E**lectronic **R**epair and **W**orkshop **In**formation from Volkswagen AG):
http://erwin.volkswagen.de/erwin/showHome.do

*Information system from Volkswagen AG, subject to payment

# 6.4 CAD models

As a registered body builder, you can receive 3-D data models in the formats CATIA V.5/STEP/JT for design purposes.

**Information**

The available 3-D data can be found on the body builder portal of Volkswagen AG under the "CAD data" menu item.

# 7 Calculations

## 7.1 Determining the centre of gravity

The overall centre of gravity height (vehicle with add-ons or complete body without load) should be kept as low as possible. The centre of gravity in the vehicle longitudinal direction is given in relation to a vehicle axle. The centre of gravity height is related to the wheel hub or related to the road.
Volkswagen recommends having the centre of gravity determined by a recognised test institution with experience in this field (e.g., DEKRA, TÜV or others).

For the body builder to determine the centre of gravity, we recommend following the procedure described under 7.1.1 "Determining the centre of gravity in x-direction" and 7.1.2 "Determining the centre of gravity in z-direction" and using personnel with the corresponding qualifications to obtain usable results.

### 7.1.1 Determining the centre of gravity in x-direction

Procedure:

- The vehicle must be weighed without load and with the add-ons or complete body.
- Inflate the tyres up to the tyre pressure that is specified for the respective gross axle weight rating.
- Completely fill all fluid containers (fuel tank, washer fluid reservoir, if applicable, hydraulic tank, water tank etc.).
- Drive the vehicle onto the scales, switch off the engine, shift the gearbox to neutral and release the brakes.
- The vehicle must be standing horizontal and level for weighing.
- First weigh the individual axle loads (front and rear axle load) and then the gross weight of the vehicle.
- The measured values can be used to calculate the position of the centre of gravity in the vehicle longitudinal direction with the equations (3) and (4). The equation (2) should be used to check the results of (3) and (4).

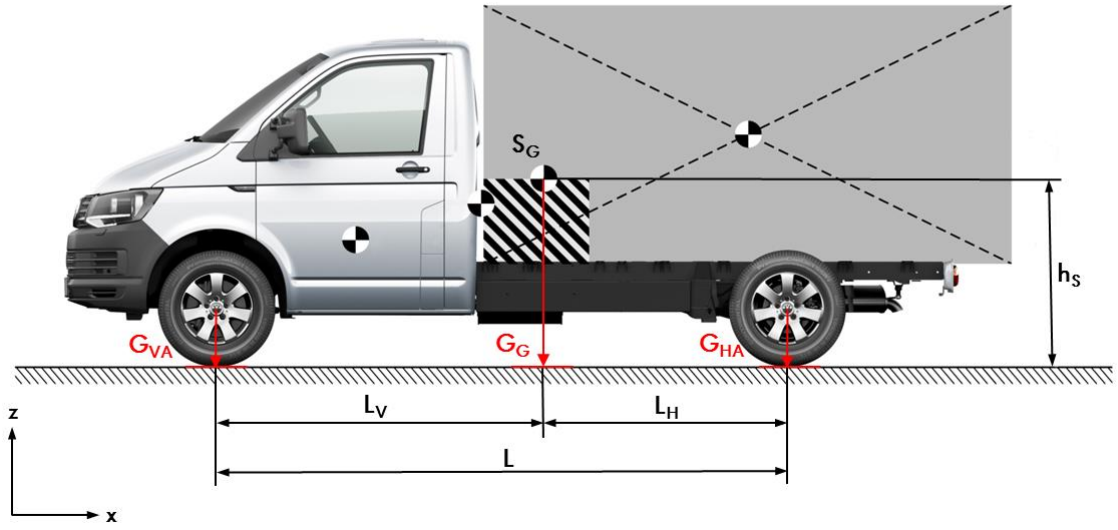



Fig. 1: Determining the position of the vehicle centre of gravity in x-direction

Determining the total weight of the unladen vehicle with add-ons and body.

$$G_G = G_{HA} + G_{VA} \quad (1)$$

Calculating the position of the overall centre of gravity $S_G$ in x-direction:

$$L = L_V + L_H \quad (2)$$

$$L_V = \frac{G_{HA}}{G_G} L \quad (3)$$

$$L_H = \frac{G_{VA}}{G_G} L \quad (4)$$

Abbreviations and parameters used:

| | | |
|---|---|---|
| $G_G$ | - | Total weight of unladen vehicle |
| $G_{VA}$ | - | Front axle load of unladen vehicle (specification or weighing of respective chassis) |
| $G_{HA}$ | - | Rear axle load of unladen vehicle (specification or weighing of respective chassis) |
| $S_G$ | - | Overall centre of gravity |
| $L$ | - | Wheelbase |
| $L_V$ | - | Distance from the overall centre of gravity of the empty vehicle to the front axle |
| $L_H$ | - | Distance from the overall centre of gravity of the empty vehicle to the rear axle. |

**Practical note**

The practical determination of the centre of gravity height may only be performed by appropriately qualified personnel with the help of suitable and calibrated scales.

To reduce measuring errors, each measured value should be calculated at least three times and an average value calculated from the three results. This value is then used for calculating in accordance with the equations (3) and (4).

**Information**

The wheelbase "L" is defined by the vehicle prototype (see order) or should be defined by measuring the length in accordance with DIN 70020, part 1.

### 7.1.2 Determining the centre of gravity in z-direction

So that the body builder can determine the vehicle total centre of gravity height $h_S$ (see Fig. 1), Volkswagen AG recommends the following procedure after completion of the whole vehicle:

- After conversion, the vehicle should be weighed on board scales or on suitable wheel load scales in two subsequent driving positions.
- Here, the measured axle loads should be determined with the vehicle in a level state $\mathbf{G_{FA}}$ and $\mathbf{G_{RA}}$ (see 7.1.1 "Determining the centre of gravity in x-direction") and the axle loads on an axle $\mathbf{Q_{RA}}$ or $\mathbf{Q_{FA}}$ raised by the quantity $h'$.
  The raising height $h'$ should be as large as possible in accordance with the front and rear overhang angles of the vehicle (also known as entry or exit ramp angles). The target value is >600 mm.
- To reduce measuring errors, at least six individual measurements should be made in the axle load calculation for each axle: three per axle with vehicle level and three each with raised axle. The average value for each axle should be calculated from the three measurements for a state.
- The average value should be calculated from these three values and used in the calculations with the equations (5) to (9).
  To improve the accuracy of the final result, the axle load modification should be determined with raised rear axle and raised front axle.

**Practical note**

Observe the following to avoid incorrect measurements:

- The vehicle must be standing perfectly horizontal for weighing in level vehicle state. Height differences between the axles caused by scales should be compensated accordingly.
- When raising to the required lifting height, the axle being weighed should be locked to prevent suspension compression or extension.
- When raising to the required lifting height, no part of the vehicle may touch the ground.
- All vehicle wheels must be able to rotate freely: select neutral, release all brakes including handbrake and place chocks at sufficient distance from the wheels, if necessary.
- Move vehicle with own power (to weigh the respective other vehicle axle) to relieve any tension in the vehicle.
- Ensure that no objects inside the vehicle can move during the measurements.

If the vehicle suspension cannot be locked due to the body design or available space, further axle load measurements must be carried out at different levels (for example, 600 mm, 700 mm and 800 mm). This also allows errors to be limited by averaging. The centre of gravity height results from the arithmetic average of the individual centre of gravity heights for each raising height.

Example of procedure

1. The vehicle must be weighed without load and with the add-ons or complete body.
2. Inflate the tyres up to the tyre pressure that is specified for the respective gross axle weight rating.
3. Completely fill all fluid containers (fuel tank, washer fluid reservoir, if applicable, hydraulic tank, water tank etc.).
4. On the scales, switch off the engine, set gearbox to neutral and release the brakes.
5. Position the vehicle with the rear axle (RA) horizontal and level on the scales and measure the axle load.
6. Raise the front axle by the value h', at least 600 mm. A greater height h' taking the other vehicle-related conditions into consideration is more favourable for the final result. The value h' must be measured for all individual measurements with raised axle and should be as identical as possible. As an alternative to the raised height h', the angle α between the wheel hubs can be defined.
7. Determine the axle load displacement $Q_{RA}$ that occurs at the rear axle on the scales.
8. Lower and turn the vehicle around and perform the corresponding measurements on the front axle (first $G_{FA}$ with level and then $Q_{FA}$ with the rear axle raised by h').
9. Perform steps 4–7 a total of three times (with locked suspension).
10. The measured values can be used to calculate the height of the centre of gravity with the equations (5) to (9).
11. In the calculations using the equations (3) to (9), all length measurements shall be in millimetres (mm) and all weight figures in decanewton (1 daN = 10 N).
12. Raise the raised axle further (by e.g. 100 mm) and measure the height of the centre of gravity again to confirm the measuring result.

**Practical note**

The practical determination of the centre of gravity height may only be performed by appropriately qualified personnel with the help of suitable and calibrated measuring systems and measuring tools.

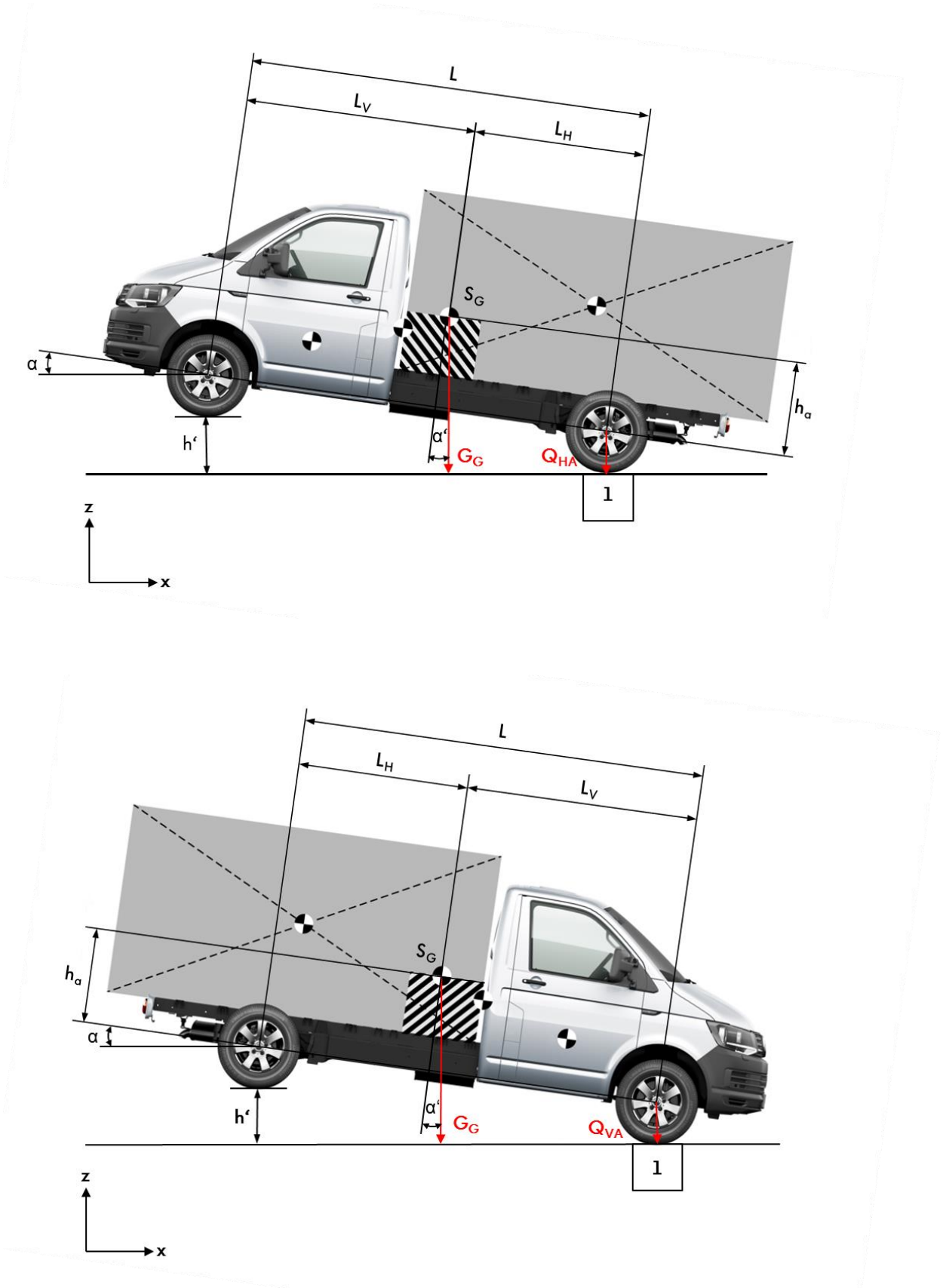



Fig. 2: Determining the position of the vehicle centre of gravity in z-direction

Determining the overall centre of gravity $S_G$ in z-direction:

$$h_S = h_a + r_{stat} \quad (5)$$

Determining the overall centre of gravity $S_G$ in z-direction for the raised front axle:

$$h_S = \left(\frac{Q_{HA} - G_{HA}}{G_G} \times L \times \frac{1}{\tan\alpha}\right) + r_{stat} \quad (6)$$

$$\sin\alpha = \frac{h'}{L} \quad (6a)$$

$$\alpha = arc\sin\left(\frac{h'}{L}\right) \quad (6b)$$

$$h_S = \left(\frac{L}{h'} \times \frac{Q_{HA} - G_{HA}}{G_G} \times \sqrt{L^2 - h'^2}\right) + r_{stat} \quad (7)$$

Determining the overall centre of gravity $S_G$ in z-direction for the raised rear axle:

$$h_S = \left(\frac{Q_{VA} - G_{VA}}{G_G} \times L \times \frac{1}{\tan\alpha}\right) + r_{stat} \quad (8)$$

$$\sin\alpha = \frac{h'}{L} \quad (8a)$$

$$\alpha = arc\sin\left(\frac{h'}{L}\right) \quad (8b)$$

$$h_S = \left(\frac{L}{h'} \times \frac{Q_{VA} - G_{VA}}{G_G} \times \sqrt{L^2 - h'^2}\right) + r_{stat} \quad (9)$$

Abbreviations and parameters used:

| | | |
|---|---|---|
| $r_{stat}$ | - | Static tyre radius |
| $Q_{VA}$ | - | Front axle load when vehicle raised at rear |
| $Q_{HA}$ | - | Rear axle load when vehicle raised at front |
| $G_G$ | - | Total weight of unladen vehicle |
| $G_{VA}$ | - | Front axle load of unladen vehicle (specification or weighing of respective chassis) |
| $G_{HA}$ | - | Rear axle load of unladen vehicle (specification or weighing of respective chassis) |
| $L$ | - | Wheelbase |
| $L_V$ | - | Distance from the overall centre of gravity of the empty vehicle to the front axle |
| $L_H$ | - | Distance from the overall centre of gravity of the empty vehicle to the rear axle. |
| $h_S$ | - | Centre of gravity height over road |
| $h_a$ | - | Centre of gravity height over centre of wheel |
| $h'$ | - | Height by which the vehicle has been raised |

**Practical note**

The determined centre of gravity may not exceed the limits for the vehicle's centre of gravity specified under 2.1.3 "Vehicle centre of gravity".

**Information**

The wheelbase "L" is defined by the vehicle prototype (see order) or should be defined by measuring the length in accordance with DIN 70020, part 1.

# 7.2 Axle load calculation

An axle load calculation must be performed when a chassis is provided with a body, or if heavy add-on parts have been added or removed. The purpose is to establish whether the gross axle weight ratings will be exceeded when the vehicle is loaded evenly up to the permitted total mass.

Even loading means that the centre of gravity of the payload is in the geometrical midpoint of the load bed. This corresponds to even loading of the load bed, e.g. with sand (water load). The height of the centre of gravity above the carriageway (Z-direction) is not considered in the axle load calculation.

Furthermore, an axle load calculation can be carried out in advance of planning for bodies and heavy add-on parts (e.g. a tail lift) in order to define the optimum mounting position of these parts and to guarantee that the gross axle weight ratings are not exceeded. This is particularly important for add-on parts mounted ahead of the front axle (e.g. snowplough) or behind the rear axle (e.g. tail lift, rear luggage carrier).

The axle load calculation forms part of the acceptance of the converted or completed vehicle by the technical inspection centre or the technical service.

Abbreviations and parameters used:

| | | |
|---|---|---|
| $G_{zul}$ | - | Gross vehicle weight rating of vehicle (kg, from type plate or vehicle registration documents) |
| $G_{zulVA}$ | - | Gross front axle rating (kg, from type plate or vehicle registration documents) |
| $G_{zulHA}$ | - | Gross rear axle rating (kg, from type plate or vehicle registration documents) |
| $G_G$ | - | Total weight of the unloaded vehicle (kerb weight including 75 kg driver) |
| $G_{VA}$ | - | Front axle load of unladen vehicle (kg) |
| $G_{HA}$ | - | Rear axle load of unladen vehicle (kg) |
| $G_{MinVA}$ | - | Minimum front axle load (kg) (see body builder guidelines) |
| $G_{NutzVA}$ | - | Payload component of front axle (kg) |
| $G_{NutzHA}$ | - | Payload component of rear axle (kg) |
| $S_G$ | - | Overall centre of gravity |
| $L$ | - | Wheelbase (mm) |
| $L_V$ | - | Distance from overall centre of gravity of empty vehicle to front axle (mm) |
| $L_H$ | - | Distance from overall centre of gravity of the empty vehicle to the rear axle (mm) |
| $L_{Ladefl}$ | - | Length of load bed (mm) |
| $L_{ü}$ | - | Overhang, distance from middle of rear axle – rear edge of body (mm) |
| $Nutzlast$ | - | Payload (kg) |

### 7.2.1 Determining the axle load distribution in the complete vehicle

Procedure:

- The vehicle must be weighed with the complete add-ons and body, without load (payload).
- It is weighed without the driver. Later, 75 kg is added to take account of the driver.
- Inflate the tyres up to the tyre pressure that is specified for the respective axle load.
- All fluid containers (fuel tank, washer fluid reservoir, if applicable, hydraulic tank, water tank etc.)
- must be completely filled. The fuel tank is only filled 90% full. (If this is not possible, include the corresponding weights of the missing quantities of liquid in the subsequent calculation, distributed between the axles.)
- Switch off the engine when weighing, set the gearbox to neutral and release the brakes.
- The vehicle must be standing horizontal and level for weighing.
- First weigh the individual axle loads $G_{VA}$ and $G_{HA}$ then the gross weight $G_G$ of the vehicle as a check.
- Measure the following linear dimensions on the vehicle:
  + Length of load bed $L_{Ladefl}$
  + Wheelbase L (3,000 mm Transporter SWB, 3,400 mm Transporter LWB)
  + Overhang $L_{Ü}$ (distance from middle of rear axle – rear edge of body)
- With the measured values, it is possible to check the distribution of the remaining payload between the axles and compliance with the gross axle weight ratings with full load.

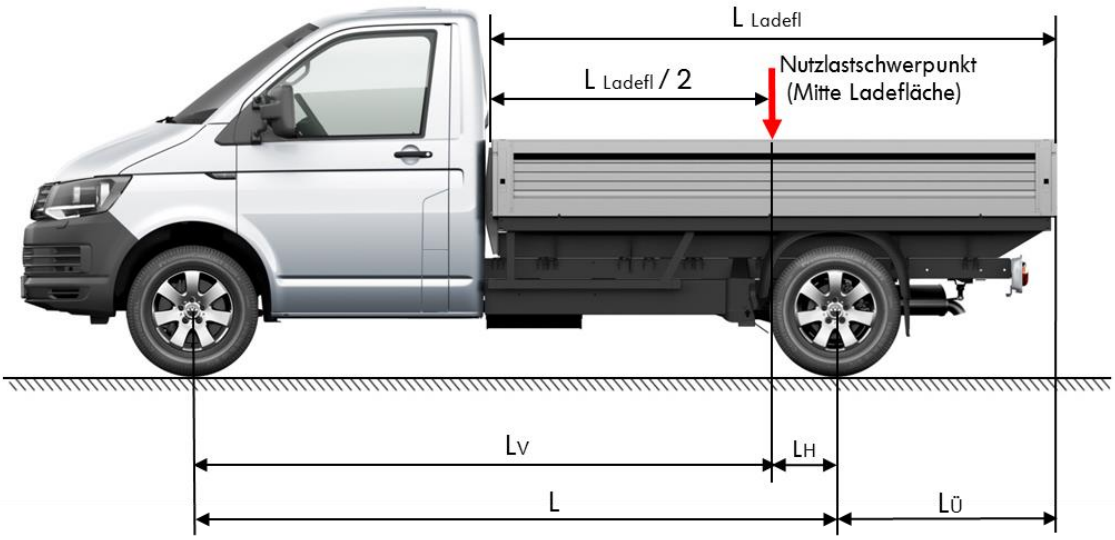



Fig. 1: Axle load calculation in the complete vehicle

Calculation procedure:

First, calculate the theoretical payload:

The payload is the gross vehicle weight rating of the vehicle less the kerb weight. Refer to the vehicle registration documents or the type plate for the gross vehicle weight rating.

The kerb weight was obtained by weighing. The kerb mass must always also have the driver at 75 kg and a 90% filled fuel tank. Furthermore, all parts supplied ex-works (e.g. spare wheel if provided) and all parts that are permanently connected to the vehicle such as bodies, tail lifts, loading cranes etc.)

$$Nutzlast = G_{zul} - G_G$$

Then calculate the distance from the centre of gravity of the payload to the rear axle $L_H$ and to the front axle $L_V$ with the load evenly distributed (middle of the load bed).

$$L_H = \frac{L_{Ladefl}}{2} - L_{Ü}$$

$$L_V = L - L_H$$

The centre of gravity of the evenly distributed load is thus behind the front axle by the amount $L_V$ and in front of the rear axle by the amount $L_H$. The centre of gravity of the payload may also be behind the rear axle under certain circumstances ($L_V > L$). In this case, $L_H$ is negative.

The payload must be distributed proportionately between the front and rear axles:

$$G_{NutzVA} = \frac{Nutzlast}{L} L_H$$

$$G_{NutzHA} = \frac{Nutzlast}{L} L_V$$

These payload proportions for the front and rear axles must be added to the weighed kerb weights of the front and rear axles. The total amount in each case must not exceed the gross axle weight rating.

$$G_{VA} + G_{NutzVA} \leq G_{zulVA}$$

$$G_{HA} + G_{NutzHA} \leq G_{zulHA}$$

The payload must be reduced if the gross axle weight ratings are exceeded, with this even load distribution, before the vehicle has been loaded to the gross vehicle weight rating. Some registration countries accept compliance with the gross vehicle weight rating with an uneven load distribution. Other registration countries demand a reduction in the gross vehicle weight rating to the maximum possible value with even weight distribution.

### 7.2.2 Calculating the axle load when additional add-on parts are planned

It may also be necessary to calculate the axle load if heavy additional add-on parts are planned for a vehicle and it is required for their influence on the axle loads, the remaining payload and the steering properties of the vehicle (minimum front axle) to be checked in advance. Practical examples are tail lifts, rear luggage carriers and add-on devices of all kinds at the front and rear.

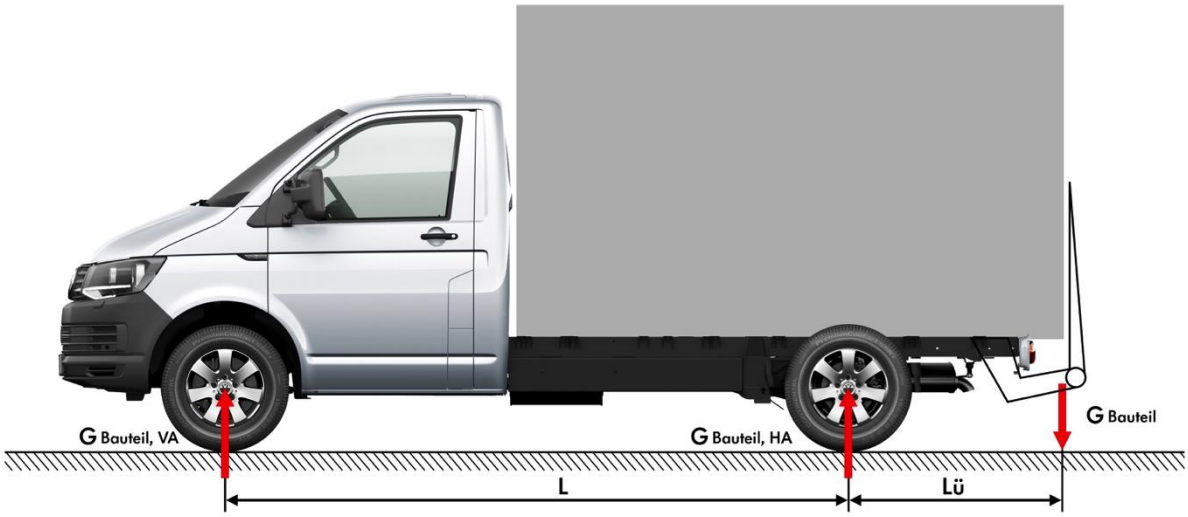



Fig. 2: Calculating the axle load when additional add-on parts are planned

Sample calculation for tail lift:

Formulae for calculating the additional load on the axles due to the new component (tail lift):

$$G_{Bauteil} = G_{BauteilVA} + G_{BauteilHA}$$

Calculation example:

Weight of tail lift $G_{Bauteil}$ : = 150 kg
Wheelbase $L$: = 3,000 mm
Overhang to centre of gravity of tail lift $L_{Ü}$: = 1,095 mm

Calculating the additional load on the rear axle due to the weight of the tail lift:

$$G_{BauteilHA} = \frac{(L + L_{Ü})}{L}\ G_{Bauteil} = \frac{(3000\ mm + 1095\ mm)}{3000\ mm}\ 150\ kg = 204.75\ \text{kg}$$

Calculating the change of load on the front axle due to the weight of the tail lift:

$$G_{BauteilVA} = G_{Bauteil} - G_{BauteilHA} = 150\ kg - 204{,}75\ kg = -54{,}75\ kg$$

(Negative result = reduction in load on the front axle)

The additional add-on part must not cause the load on the front axle of the vehicle to drop below its minimum value; neither is it permitted for the maximum gross axle weight ratings on the front and rear axles to be exceeded.

$$G_{MinVA} \geq G_{VA} + G_{NutzVA} + G_{BauteilVA} \leq G_{zulVA}$$

$$G_{HA} + G_{NutzHA} + G_{BauteilHA} \leq G_{zulHA}$$

Please note:

- Heavy add-on parts ahead of the front axle reduce the load on the rear axle and increase the front axle load to an increased extent.
- Heavy add-on parts behind the rear axle reduce the load on the front axle and increase the rear axle load to an increased extent.

# 8 Weight tables

To guarantee adequate steerability of the vehicle, please observe chapter 2.1.7 "Steerability – minimum front axle load".

The kerb weight figures refer to the standard vehicle equipment on the base vehicle, including driver, ready to drive, 90% full fuel tank and tools.

When ordering your vehicle, please note that the kerb weight increases when additional equipment is selected and the available payload capacity is therefore reduced.
We recommend determining the definitive kerb weight of the entire vehicle by weighing before the conversion.

Abbreviations indicated by an * have the following meanings:
*BM = BlueMotion
Also available as a BlueMotion.
*** EU5 EOP (End of Production) CW22/16 / ROW (Rest of World) EU5+EU3 + EU4 EOP CW04/19

MG – Manual gearbox
DSG – Dual-clutch gearbox (automatic gearbox)

Back-to-back cab, see chapter 8.4

*) Total drawn weight M5 = 4,900 kg

**) Total drawn weight M6 = 5,200 kg

***) Total drawn weight AG7 = 5,300 kg

****) Weights may vary depending on equipment, (tolerance [EG] of +/- 5% permitted)

If you have any questions, please contact your customer service workshop or get in touch with us (see also chapter 1.2.1.1 "Contact").

# 8.1 Weight tables panel van EU6

### 8.1.1 Panel van 2.6 t – 3.2 t (wheelbase: 3,000 mm)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Panel SWB | 2.0 l 110 kW TFSI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,821 | 1,188 | 633 | 979 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,821 | 1,188 | 633 | 1,179 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,821 | 1,188 | 633 | 1,379 |
| | 2.0 l 150 kW TFSI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,868 | 1,227 | 641 | 932 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,868 | 1,227 | 641 | 1,132 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,868 | 1,227 | 632 | 1,331 |
| | 2.0 l 150 kW TFSI AD7 (4MOTION DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,978 | 1,263 | 715 | 822 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,978 | 1,263 | 715 | 1,022 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,978 | 1,263 | 715 | 1,222 |
| | 2.0 l 62 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WL | 3,000 | 2,600 | 1,500 | 1,400 | 1,797 | 1,165 | 632 | 803 |
| | | 0WM | 3,000 | 2,800 | 1,550 | 1,550 | 1,797 | 1,165 | 632 | 1,003 |
| | | 0WP | 3,000 | 2,900 | 1,550 | 1,450 | 1,797 | 1,165 | 632 | 1,103 |
| | | 0WQ | 3,000 | 3,000 | 1,550 | 1,625 | 1,797 | 1,165 | 632 | 1,203 |
| | 2.0 l 62 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WL | 3,000 | 2,600 | 1,500 | 1,400 | 1,827 | 1,195 | 632 | 773 |
| | | 0WM | 3,000 | 2,800 | 1,550 | 1,550 | 1,827 | 1,195 | 632 | 973 |
| | | 0WQ | 3,000 | 3,000 | 1,550 | 1,550 | 1,827 | 1,195 | 632 | 1,173 |
| | 2.0 l 75 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WL | 3,000 | 2,600 | 1,500 | 1,400 | 1,797 | 1,165 | 632 | 803 |
| | | 0WZ* | 3,000 | 2,700 | 1,550 | 1,450 | 1,797 | 1,165 | 632 | 903 |
| | | 0WM | 3,000 | 2,800 | 1,550 | 1,450 | 1,797 | 1,165 | 632 | 1,003 |
| | | 0WP | 3,000 | 2,900 | 1,550 | 1,450 | 1,797 | 1,165 | 632 | 1,103 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| | | 0WQ | 3,000 | 3,000 | 1,550 | 1,625 | 1,797 | 1,165 | 632 | 1,203 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,797 | 1,165 | 632 | 1,403 |
| | 2.0 l 84 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WL | 3,000 | 2,600 | 1,500 | 1,400 | 1,797 | 1,165 | 632 | 803 |
| | | 0WM | 3,000 | 2,800 | 1,550 | 1,450 | 1,797 | 1,165 | 632 | 1,003 |
| | | 0WP | 3,000 | 2,900 | 1,550 | 1,450 | 1,797 | 1,165 | 632 | 1,103 |
| | | 0WQ | 3,000 | 3,000 | 1,550 | 1,625 | 1,797 | 1,165 | 632 | 1,203 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,797 | 1,165 | 632 | 1,403 |
| | 2.0 l 110 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,827 | 1,195 | 632 | 973 |
| | | 0WP** | 3,000 | 2,900 | 1,600 | 1,450 | 1,827 | 1,195 | 632 | 1,073 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,827 | 1,195 | 632 | 1,173 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,827 | 1,195 | 632 | 1,373 |
| | 2.0 l 110 kW TDI AM6 (4MOTION manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,949 | 1,243 | 706 | 851 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,949 | 1,243 | 706 | 1,051 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,949 | 1,243 | 706 | 1,251 |
| | 2.0 l 110 kW TDI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,847 | 1,215 | 632 | 953 |
| | | 0WP | 3,000 | 2,900 | 1,600 | 1,450 | 1,847 | 1,215 | 632 | 1,053 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,847 | 1,215 | 632 | 1,153 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,847 | 1,215 | 632 | 1,353 |
| | 2.0 l 110 kW TDI AD7 (4MOTION DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,961 | 1,254 | 707 | 839 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,961 | 1,254 | 707 | 1,039 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,961 | 1,254 | 707 | 1,239 |
| | 2.0 l 150 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,881 | 1,237 | 644 | 919 |
| | | 0WP | 3,000 | 2,900 | 1,600 | 1,450 | 1,881 | 1,237 | 644 | 1,019 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,881 | 1,237 | 644 | 1,119 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,881 | 1,237 | 644 | 1,319 |
| | 2.0 l 150 kW TDI AM6 (4MOTION manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,990 | 1,272 | 718 | 810 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,990 | 1,272 | 718 | 1,010 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,990 | 1,272 | 718 | 1,210 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| | 2.0 l 150 kW TDI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,869 | 1,237 | 632 | 931 |
| | | 0WP | 3,000 | 2,900 | 1,600 | 1,450 | 1,869 | 1,237 | 632 | 1,031 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,869 | 1,237 | 632 | 1,131 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,869 | 1,237 | 632 | 1,331 |
| | 2.0 l 150 kW TDI AD7 (4MOTION DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,979 | 1,273 | 706 | 821 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,979 | 1,273 | 706 | 1,021 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,979 | 1,273 | 706 | 1,221 |

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### 8.1.2 Panel van 2.8 t – 3.2 t (wheelbase: 3,400 mm)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Panel LWB | 2.0 l 62 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,550 | 1,550 | 1,854 | 1,205 | 649 | 946 |
| | | 0WQ | 3,400 | 3,000 | 1,550 | 1,625 | 1,854 | 1,205 | 649 | 1,146 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 1,997 | 1,256 | 741 | 1,083 |
| | 2.0 l 62 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,550 | 1,550 | 1,884 | 1,235 | 649 | 916 |
| | | 0WQ | 3,400 | 3,000 | 1,550 | 1,625 | 1,884 | 1,235 | 649 | 1,116 |
| | 2.0 l 75 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,550 | 1,550 | 1,854 | 1,205 | 649 | 946 |
| | | 0WQ | 3,400 | 3,000 | 1,550 | 1,625 | 1,854 | 1,205 | 649 | 1,146 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,854 | 1,205 | 649 | 1,346 |
| | 2.0 l 84 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,550 | 1,550 | 1,854 | 1,205 | 649 | 946 |
| | | 0WQ | 3,400 | 3,000 | 1,550 | 1,625 | 1,854 | 1,205 | 649 | 1,146 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,854 | 1,205 | 649 | 1,346 |
| | 2.0 l 110 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,884 | 1,235 | 649 | 916 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 1,884 | 1,235 | 649 | 1,116 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,884 | 1,235 | 649 | 1,316 |
| | 2.0 l 110 kW TDI AM6 (4MOTION manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 2,006 | 1,283 | 723 | 794 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 2,006 | 1,283 | 723 | 994 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,006 | 1,283 | 723 | 1,194 |
| | 2.0 l 110 kW TDI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,904 | 1,255 | 649 | 896 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 1,904 | 1,255 | 649 | 1,096 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,904 | 1,255 | 649 | 1,296 |
| | 2.0 l 110 kW TDI AD7 (4MOTION DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 2,017 | 1,294 | 723 | 783 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 2,017 | 1,294 | 723 | 983 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,017 | 1,294 | 723 | 1,183 |
| | 2.0 l 150 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,938 | 1,277 | 661 | 862 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 1,938 | 1,277 | 661 | 1,062 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,938 | 1,277 | 661 | 1,262 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| | 2.0 l 150 kW TDI AM6 (4MOTION manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 2,050 | 1,312 | 738 | 750 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 2,050 | 1,312 | 738 | 950 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,050 | 1,312 | 738 | 1,150 |
| | 2.0 l 150 kW TDI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,926 | 1,277 | 649 | 874 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 1,926 | 1,277 | 649 | 1,074 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,926 | 1,277 | 649 | 1,274 |
| | 2.0 l 150 kW TDI AD7 (4MOTION DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 2,036 | 1,313 | 723 | 764 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 2,036 | 1,313 | 723 | 964 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,036 | 1,313 | 723 | 1,164 |

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# 8.2 Weight tables single cab platform/chassis (EU6)

### 8.2.1 Single cab platform/chassis 2.8 t – 3.2 t (wheelbase: 3,000 mm)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Platform SWB | 2.0 l 110 kW TFSI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,778 | 1,216 | 562 | 1,022 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,778 | 1,216 | 562 | 1,222 |
| | 2.0 l 62 kW TDI | 0WM | 3,000 | 2,800 | 1,550 | 1,550 | 1,757 | 1,194 | 563 | 1,043 |
| | FM5 (Front-wheel drive manual 5-gear) | 0WQ | 3,000 | 3,000 | 1,550 | 1,680 | 1,757 | 1,194 | 563 | 1,243 |
| | 2.0 l 75 kW TDI | 0WM | 3,000 | 2,800 | 1,550 | 1,550 | 1,757 | 1,194 | 563 | 1,043 |
| | FM5 (Front-wheel drive manual 5-gear) | 0WQ | 3,000 | 3,000 | 1,550 | 1,680 | 1,757 | 1,194 | 563 | 1,243 |
| | 2.0 l 84 kW TDI | 0WM | 3,000 | 2,800 | 1,550 | 1,550 | 1,757 | 1,194 | 563 | 1,043 |
| | FM5 (Front-wheel drive manual 5-gear) | 0WQ | 3,000 | 3,000 | 1,550 | 1,680 | 1,757 | 1,194 | 563 | 1,243 |
| | 2.0 l 110 kW TDI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,787 | 1,224 | 563 | 1,013 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,787 | 1,224 | 563 | 1,213 |
| | 2.0 l 110 kW TDI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,912 | 1,273 | 639 | 888 |
| | AM6 (4MOTION manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,912 | 1,273 | 639 | 1,088 |
| | 2.0 l 110 kW TDI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,804 | 1,241 | 563 | 996 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,804 | 1,241 | 563 | 1,196 |
| | 2.0 l 110 kW TDI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,930 | 1,291 | 639 | 870 |
| | AD7 (4MOTION DSG 7-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,930 | 1,291 | 639 | 1,070 |
| | 2.0 l 150 kW TDI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,818 | 1,246 | 572 | 982 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,818 | 1,246 | 572 | 1,182 |
| | 2.0 l 150 kW TDI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,818 | 1,246 | 572 | 982 |
| | AM6 (4MOTION manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,818 | 1,246 | 572 | 1,182 |
| | 2.0 l 150 kW TDI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,943 | 1,295 | 648 | 857 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,943 | 1,295 | 648 | 1,057 |
| | 2.0 l 150 kW TDI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,961 | 1,313 | 648 | 839 |
| | AD7 (4MOTION DSG 7-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,961 | 1,313 | 648 | 1,039 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Chassis SWB | 2.0 l 110 kW TFSI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,613 | 1,209 | 404 | 1,187 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,613 | 1,209 | 404 | 1,387 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,613 | 1,209 | 404 | 1,587 |
| | 2.0 l 62 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,000 | 2,800 | 1,550 | 1,550 | 1,592 | 1,187 | 405 | 1,208 |
| | | 0WQ | 3,000 | 3,000 | 1,550 | 1,680 | 1,592 | 1,187 | 405 | 1,408 |
| | 2.0 l 75 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,000 | 2,800 | 1,550 | 1,550 | 1,592 | 1,187 | 405 | 1,208 |
| | | 0WQ | 3,000 | 3,000 | 1,550 | 1,680 | 1,592 | 1,187 | 405 | 1,408 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,592 | 1,187 | 405 | 1,608 |
| | 2.0 l 84 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,000 | 2,800 | 1,550 | 1,550 | 1,592 | 1,187 | 405 | 1,208 |
| | | 0WQ | 3,000 | 3,000 | 1,550 | 1,680 | 1,592 | 1,187 | 405 | 1,408 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,592 | 1,187 | 405 | 1,608 |
| | 2.0 l 110 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,622 | 1,217 | 405 | 1,178 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,622 | 1,217 | 405 | 1,378 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,622 | 1,217 | 405 | 1,578 |
| | 2.0 l 110 kW TDI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,639 | 1,234 | 405 | 1,161 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,639 | 1,234 | 405 | 1,361 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,639 | 1,234 | 405 | 1,561 |
| | 2.0 l 110 kW TDI AM6 (4MOTION manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,747 | 1,266 | 481 | 1,053 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,747 | 1,266 | 481 | 1,253 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,747 | 1,266 | 481 | 1,453 |
| | 2.0 l 110 kW TDI AD7 (4MOTION DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,765 | 1,284 | 481 | 1,035 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,765 | 1,284 | 481 | 1,235 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,765 | 1,284 | 481 | 1,435 |
| | 2.0 l 150 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,653 | 1,239 | 414 | 1,147 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,653 | 1,239 | 414 | 1,347 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,653 | 1,239 | 414 | 1,547 |
| | 2.0 l 150 kW TDI AM6 (4MOTION manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,778 | 1,288 | 490 | 1,022 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,778 | 1,288 | 490 | 1,222 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,778 | 1,288 | 490 | 1,422 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| | 2.0 l 150 kW TDI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,670 | 1,256 | 414 | 1,130 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,670 | 1,256 | 414 | 1,330 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,670 | 1,256 | 414 | 1,530 |
| | 2.0 l 150 kW TDI AD7 (4MOTION DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,796 | 1,306 | 490 | 1,004 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,796 | 1,306 | 490 | 1,204 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,796 | 1,306 | 490 | 1,404 |

### 8.2.2 Single cab platform/chassis 2.8 t – 3.2 t (wheelbase: 3,400 mm) (EU6)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Platform LWB | 2.0 l 62 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,550 | 1,550 | 1,792 | 1,225 | 567 | 1,008 |
| | | 0WQ | 3,400 | 3,000 | 1,550 | 1,680 | 1,792 | 1,225 | 567 | 1,208 |
| | 2.0 l 75 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,550 | 1,550 | 1,792 | 1,225 | 567 | 1,008 |
| | | 0WQ | 3,400 | 3,000 | 1,550 | 1,680 | 1,792 | 1,225 | 567 | 1,208 |
| | 2.0 l 84 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,550 | 1,550 | 1,792 | 1,225 | 567 | 1,008 |
| | | 0WQ | 3,400 | 3,000 | 1,550 | 1,680 | 1,792 | 1,225 | 567 | 1,208 |
| | 2.0 l 110 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,822 | 1,255 | 567 | 978 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,822 | 1,255 | 567 | 1,178 |
| | 2.0 l 110 kW TDI AM6 (4MOTION manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,947 | 1,304 | 643 | 853 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,947 | 1,304 | 643 | 1,053 |
| | 2.0 l 110 kW TDI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,965 | 1,322 | 643 | 835 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,965 | 1,322 | 643 | 1,035 |
| | 2.0 l 110 kW TDI AD7 (4MOTION DSG 7-gear) | OWM | 3,400 | 2,800 | 1,600 | 1,550 | 1,839 | 1,272 | 567 | 961 |
| | | OWQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,839 | 1,272 | 567 | 1,161 |
| | 2.0 l 150 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,853 | 1,277 | 576 | 947 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,853 | 1,277 | 576 | 1,147 |
| | 2.0 l 150 kW TDI AM6 (4MOTION manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,978 | 1,326 | 652 | 822 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,978 | 1,326 | 652 | 1,022 |
| | 2.0 l 150 kW TDI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,870 | 1,294 | 576 | 930 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,870 | 1,294 | 576 | 1,130 |
| | 2.0 l 150 kW TDI AD7 (4MOTION DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,996 | 1,344 | 652 | 804 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,996 | 1,344 | 652 | 1,004 |
| Chassis LWB | 2.0 l 62 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,550 | 1,550 | 1,607 | 1,207 | 400 | 1,193 |
| | | 0WQ | 3,400 | 3,000 | 1,550 | 1,680 | 1,607 | 1,207 | 400 | 1,393 |
| | 2.0 l 75 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,550 | 1,550 | 1,607 | 1,207 | 400 | 1,193 |
| | | 0WQ | 3,400 | 3,000 | 1,550 | 1,680 | 1,607 | 1,207 | 400 | 1,393 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,607 | 1,207 | 400 | 1,593 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| | 2.0 l 84 kW TDI | 0WM | 3,400 | 2,800 | 1,550 | 1,550 | 1,607 | 1,207 | 400 | 1,193 |
| | FM5 (Front-wheel drive manual 5-gear) | 0WQ | 3,400 | 3,000 | 1,550 | 1,680 | 1,607 | 1,207 | 400 | 1,393 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,607 | 1,207 | 400 | 1,593 |
| | 2.0 l 110 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,637 | 1,237 | 400 | 1,163 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,637 | 1,237 | 400 | 1,363 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,637 | 1,237 | 400 | 1,563 |
| | 2.0 l 110 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,780 | 1,304 | 476 | 1,020 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,780 | 1,304 | 476 | 1,220 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,780 | 1,304 | 476 | 1,420 |
| | 2.0 l 110 kW TDI | OWM | 3,400 | 2,800 | 1,600 | 1,550 | 1,762 | 1,286 | 476 | 1,038 |
| | AM6 (4MOTION manual 6-gear) | OWQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,762 | 1,286 | 476 | 1,238 |
| | | OWR | 3,400 | 3,200 | 1,710 | 1,720 | 1,762 | 1,286 | 476 | 1,438 |
| | 2.0 l 110 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,654 | 1,254 | 400 | 1,146 |
| | AD7 (4MOTION DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,654 | 1,254 | 400 | 1,346 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,654 | 1,254 | 400 | 1,546 |
| | 2.0 l 150 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,668 | 1,259 | 409 | 1,132 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,668 | 1,259 | 409 | 1,332 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,668 | 1,259 | 409 | 1,532 |
| | 2.0 l 150 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,685 | 1,276 | 409 | 1,115 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,685 | 1,276 | 409 | 1,315 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,685 | 1,276 | 409 | 1,515 |
| | 2.0 l 150 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,793 | 1,308 | 485 | 1,007 |
| | AM6 (4MOTION manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,793 | 1,308 | 485 | 1,207 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,793 | 1,308 | 485 | 1,407 |
| | 2.0 l 150 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,811 | 1,326 | 485 | 989 |
| | AD7 (4MOTION DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,811 | 1,326 | 485 | 1,189 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,811 | 1,326 | 485 | 1,389 |

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### 8.2.3 Double cab platform/chassis 2.8 t–3.2 t (wheelbase: 3,400 mm) (EU6)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Double cab platform LWB | 2.0 l 62 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,847 | 1,241 | 606 | 953 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,847 | 1,241 | 606 | 1,153 |
| | 2.0 l 75 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,847 | 1,241 | 767 | 953 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,847 | 1,241 | 767 | 1,153 |
| | 2.0 l 84 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,847 | 1,241 | 767 | 953 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,847 | 1,241 | 767 | 1,153 |
| | 2.0 l 110 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,877 | 1,271 | 606 | 923 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,877 | 1,271 | 606 | 1,123 |
| | 2.0 l 110 kW TDI AM6 (4MOTION manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 2,002 | 1,320 | 682 | 798 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 2,002 | 1,320 | 682 | 998 |
| | 2.0 l 110 kW TDI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,894 | 1,288 | 606 | 906 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,894 | 1,288 | 606 | 1,106 |
| | 2.0 l 110 kW TDI AD7 (4MOTION DSG 7-gear) | OWM | 3,400 | 2,800 | 1,600 | 1,550 | 2,020 | 1,338 | 682 | 780 |
| | | OWQ | 3,400 | 3,000 | 1,600 | 1,680 | 2,020 | 1,338 | 682 | 980 |
| Double cab chassis LWB | 2.0 l 62 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,697 | 1,248 | 449 | 1,103 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,697 | 1,248 | 449 | 1,303 |
| | 2.0 l 75 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,697 | 1,248 | 610 | 1,103 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,697 | 1,248 | 449 | 1,303 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,697 | 1,248 | 449 | 1,503 |
| | 2.0 l 84 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,697 | 1,248 | 449 | 1,103 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,697 | 1,248 | 449 | 1,303 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,697 | 1,248 | 449 | 1,503 |
| | 2.0 l 110 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,727 | 1,278 | 449 | 1,073 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,727 | 1,278 | 449 | 1,273 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,727 | 1,278 | 449 | 1,473 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| | 2.0 l 110 kW TDI AM6 (4MOTION manual 6-gear) | OWM | 3,400 | 2,800 | 1,600 | 1,550 | 1,852 | 1,327 | 525 | 948 |
| | | OWQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,852 | 1,327 | 525 | 1,148 |
| | | OWR | 3,400 | 3,200 | 1,710 | 1,720 | 1,852 | 1,327 | 525 | 1,348 |
| | 2.0 l 110 kW TDI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,744 | 1,295 | 449 | 1,056 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,744 | 1,295 | 449 | 1,256 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,744 | 1,295 | 449 | 1,456 |
| | 2.0 l 110 kW TDI AD7 (4MOTION DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,870 | 1,345 | 525 | 930 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,870 | 1,345 | 525 | 1,130 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,870 | 1,345 | 525 | 1,330 |

Version dated May 2016

# 8.3 Weight tables for window van/Caravelle (EU6)

### 8.3.1 Window van/Caravelle 2.6 t–3.2 t (wheelbase: 3,000 mm) (EU6)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Window van/Caravelle SWB | 2.0 l 110 kW TFSI* FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,862 | 1,196 | 666 | 938 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 1,862 | 1,196 | 666 | 1,138 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,892 | 1,228 | 664 | 1,308 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 1,950 | 1,235 | 715 | 1,130 |
| | 2.0 l 150 kW TFSI* FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,908 | 1,235 | 673 | 892 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 1,908 | 1,235 | 673 | 1,092 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,908 | 1,235 | 673 | 1,292 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 1,973 | 1,257 | 716 | 1,107 |
| | 2.0 l 150 kW TFSI* AD7 (4MOTION DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 2,018 | 1,271 | 747 | 782 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 2,018 | 1,271 | 747 | 982 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 2,018 | 1,271 | 747 | 1,182 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,600 | 2,006 | 1,267 | 739 | 1,074 |
| | 2.0 l 62 kW TDI* FM5 (Front-wheel drive manual 5-gear) | 0WL | 3,000 | 2,600 | 1,550 | 1,400 | 1,838 | 1,173 | 665 | 762 |
| | | 0WM | 3,000 | 2,800 | 1,550 | 1,500 | 1,838 | 1,173 | 665 | 962 |
| | | 0WP | 3,000 | 2,900 | 1,550 | 1,475 | 1,838 | 1,173 | 665 | 1,062 |
| | | 0WQ | 3,000 | 3,000 | 1,550 | 1,575 | 1,838 | 1,173 | 665 | 1,162 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 1,953 | 1,231 | 722 | 1,127 |
| | 2.0 l 75 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WL | 3,000 | 2,600 | 1,550 | 1,400 | 1,838 | 1,173 | 665 | 762 |
| | | 0WM | 3,000 | 2,800 | 1,550 | 1,500 | 1,838 | 1,173 | 665 | 962 |
| | | 0WP | 3,000 | 2,900 | 1,550 | 1,475 | 1,838 | 1,173 | 665 | 1,026 |
| | | 0WQ | 3,000 | 3,000 | 1,550 | 1,575 | 1,838 | 1,173 | 665 | 1,162 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,797 | 1,138 | 659 | 1,403 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 1,913 | 1,203 | 710 | 1,167 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| | 2.0 l 84 kW TDI<br>FM5 (Front-wheel drive manual 5-gear) | 0WL | 3,000 | 2,600 | 1,550 | 1,400 | 1,838 | 1,173 | 665 | 762 |
| | | 0WM | 3,000 | 2,800 | 1,550 | 1,500 | 1,838 | 1,173 | 665 | 962 |
| | | 0WP | 3,000 | 2,900 | 1,550 | 1,475 | 1,838 | 1,173 | 665 | 1,062 |
| | | 0WQ | 3,000 | 3,000 | 1,550 | 1,575 | 1,838 | 1,173 | 665 | 1,162 |
| | | 0WR* | 3,000 | 3,200 | 1,710 | 1,720 | 1,797 | 1,138 | 659 | 1,403 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 1,913 | 1,203 | 710 | 1,167 |
| | 2.0 l 110 kW TDI<br>FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,868 | 1,203 | 665 | 932 |
| | | 0WP | 3,000 | 2,900 | 1,610 | 1,475 | 1,868 | 1,203 | 665 | 1,032 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,575 | 1,868 | 1,203 | 665 | 1,132 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,868 | 1,203 | 665 | 1,332 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 1,943 | 1,233 | 710 | 1,137 |
| | 2.0 l 110 kW TDI<br>AM6 (4MOTION manual 6-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,990 | 1,251 | 739 | 810 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,575 | 1,990 | 1,251 | 739 | 1,010 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,990 | 1,251 | 739 | 1,210 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 1,990 | 1,251 | 739 | 1,090 |
| | 2.0 l 110 kW TDI<br>AG7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,892 | 1,228 | 664 | 908 |
| | | 0WP | 3,000 | 2,900 | 1,610 | 1,475 | 1,892 | 1,228 | 664 | 1,008 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,575 | 1,892 | 1,228 | 664 | 1,108 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,892 | 1,228 | 664 | 1,308 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 1,967 | 1,257 | 710 | 1,113 |
| | 2.0 l 110 kW TDI<br>AG7 (4MOTION DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 2,001 | 1,262 | 739 | 799 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,575 | 2,001 | 1,262 | 739 | 999 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 2,001 | 1,262 | 739 | 1,199 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 2,001 | 1,262 | 739 | 1,028 |
| | 2.0 l 146 kW TDI<br>AG7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,984 | 1,289 | 695 | 816 |
| | | 0WP | 3,000 | 2,900 | 1,610 | 1,475 | 1,940 | 1,269 | 671 | 960 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,575 | 1,940 | 1,269 | 671 | 1,060 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,940 | 1,269 | 671 | 1,260 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 2,013 | 1,297 | 716 | 1,067 |
| | 2.0 l 146 kW TDI AG7 (4MOTION DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 2,043 | 1,296 | 747 | 757 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,575 | 2,043 | 1,296 | 747 | 957 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 2,043 | 1,296 | 747 | 1,283 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 2,043 | 1,296 | 747 | 1,037 |
| | 2.0 l 150 kW TDI* FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,917 | 1,250 | 667 | 883 |
| | | 0WP | 3,000 | 2,900 | 1,610 | 1,500 | 1,917 | 1,250 | 667 | 983 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 1,917 | 1,250 | 667 | 1,083 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,917 | 1,250 | 667 | 1,283 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 1,990 | 1,279 | 711 | 1,090 |
| | 2.0 l 150 kW TDI* AM6 (4MOTION manual 6-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 2,030 | 1,287 | 743 | 770 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 2,030 | 1,287 | 743 | 970 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 2,030 | 1,287 | 743 | 1,170 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,600 | 2,072 | 1,325 | 747 | 1,008 |
| | 2.0 l 150 kW TDI* FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,940 | 1,269 | 671 | 860 |
| | | 0WP | 3,000 | 2,900 | 1,610 | 1,500 | 1,940 | 1,269 | 671 | 960 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 1,940 | 1,269 | 671 | 1,060 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,940 | 1,269 | 671 | 1,260 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 2,033 | 1,317 | 716 | 1,047 |
| | 2.0 l 150 kW TDI* AD7 (4MOTION DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 2,043 | 1,296 | 747 | 757 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 2,043 | 1,296 | 747 | 957 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 2,043 | 1,296 | 747 | 1,157 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,600 | 2,073 | 1,326 | 747 | 1,007 |

Version dated October 2018

*Engine version no longer available to order

SWB – Short wheelbase

### 8.3 Window van/Caravelle 2.8 t–3.2 t (wheelbase: 3,400 mm) (EU6)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Window van/Caravelle LWB* | 2.0 l 62 kW TDI* FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,610 | 1,500 | 1,900 | 1,214 | 686 | 900 |
| | | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 1,900 | 1,214 | 686 | 1,083 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 1,997 | 1,256 | 741 | 1,083 |
| | 2.0 l 75 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,610 | 1,500 | 1,984 | 1,284 | 700 | 816 |
| | | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 1,859 | 1,179 | 680 | 1,141 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 1,859 | 1,179 | 680 | 1,221 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,859 | 1,179 | 680 | 1,341 |
| | 2.0 l 84 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM | 3,400 | 2,800 | 1,610 | 1,500 | 1,984 | 1,284 | 700 | 816 |
| | | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 1,859 | 1,179 | 680 | 1,141 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 1,859 | 1,179 | 680 | 1,221 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,859 | 1,179 | 680 | 1,221 |
| | 2.0 l 110 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,610 | 1,500 | 1,984 | 1,284 | 700 | 816 |
| | | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 1,930 | 1,244 | 686 | 1,070 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 1,930 | 1,244 | 686 | 1,070 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,930 | 1,244 | 686 | 1,270 |
| | 2.0 l 110 kW TDI AM6 (4MOTION manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 2,052 | 1,292 | 760 | 948 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 2,052 | 1,292 | 760 | 1,028 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,052 | 1,292 | 760 | 1,028 |
| | 2.0 l 110 kW TDI AG7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,610 | 1,500 | 1,984 | 1,284 | 700 | 816 |
| | | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 1,954 | 1,269 | 685 | 1,046 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 1,954 | 1,269 | 685 | 1,046 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,954 | 1,269 | 685 | 1,246 |
| | 2.0 l 110 kW TDI AG7 (4MOTION DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 2,063 | 1,303 | 760 | 937 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 2,063 | 1,303 | 760 | 937 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,063 | 1,303 | 760 | 1,137 |
| | 2.0 l 146 kW TDI AG7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,610 | 1,500 | 2,002 | 1,310 | 692 | 798 |
| | | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 2,002 | 1,310 | 692 | 798 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,002 | 1,310 | 692 | 798 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 2,002 | 1,310 | 692 | 798 |
| | 2.0 l 146 kW TDI AG7 (4MOTION DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 2,105 | 1,338 | 767 | 895 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,105 | 1,338 | 767 | 895 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 2,105 | 1,338 | 767 | 895 |
| | | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 2,105 | 1,338 | 767 | 895 |
| | 2.0 l 150 kW TDI* FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,610 | 1,500 | 1,979 | 1,291 | 688 | 821 |
| | | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 1,979 | 1,291 | 688 | 1,021 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 2,055 | 1,322 | 733 | 1,025 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,979 | 1,291 | 688 | 1,221 |
| | 2.0 l 150 kW TDI* AM6 (4MOTION manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 2,092 | 1,328 | 764 | 908 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 2,168 | 1,359 | 809 | 912 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,092 | 1,328 | 764 | 1,108 |
| | 2.0 l 150 kW TDI* FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,610 | 1,500 | 2,002 | 1,310 | 692 | 798 |
| | | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 2,002 | 1,310 | 692 | 998 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 2,078 | 1,340 | 738 | 1,002 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,002 | 1,310 | 692 | 1,198 |
| | 2.0 l 150 kW TDI* AD7 (4MOTION DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 2,105 | 1,338 | 767 | 895 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 2,181 | 1,368 | 813 | 899 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,105 | 1,338 | 767 | 1,095 |

Version dated October 2018

*Engine version no longer available to order

LWB – Long wheelbase

### 8.3.3 "Rockton" window van/Caravelle 3.2 t (wheelbase: 3,000 mm) (EU6)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Window van/Caravelle SWB | 2.0 l 150 kW TFSI*<br>AD7 (4MOTION manual 7-gear) | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 2,018 | 1,271 | 747 | 1,182 |
| | 2.0 l 110 kW TDI*<br>AM6 (4MOTION manual 6-gear) | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,990 | 1,251 | 739 | 1,210 |
| | 2.0 l 110 kW TDI*<br>AD7 (4MOTION DSG 7-gear) | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 2,001 | 1,262 | 739 | 1,199 |

Version dated May 2016

*Engine version no longer available to order

SWB – Short wheelbase

# 8.4 Back-to-back cab 3.2t (EU6)

| Models | Engine & gearbox | PR number (GVWR) | Perm. weights | | | Unl. weight incl. driver, tank 90% | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Back-to-back cab | 2.0 l 75 kW TDI M5*<br>FM5 (Front-wheel drive manual 5-gear) | 0WR | 3,200 | 1,710 | -- | 1,397**** | 1,397 | -- | 1,803 |
| | 2.0 l 84 kW TDI M5*<br>FM5 (Front-wheel drive manual 5-gear) | 0WR | 3,200 | 1,710 | -- | 1,397**** | 1,397 | -- | 1,803 |
| | 2.0 l 110KW TDI M6**<br>FM6 (Front-wheel drive manual 6-gear) | 0WR | 3,200 | 1,710 | -- | 1,422**** | 1,422 | -- | 1,778 |
| | 2.0 l 110 kW TDI DSG**<br>FM7 (Front-wheel drive automatic 7-gear) | 0WR | 3,200 | 1,710 | -- | 1,439**** | 1,439 | -- | 1,761 |
| | 2.0 l 150KW TDI M6**<br>FM6 (Front-wheel drive manual 6-gear) | 0WR | 3,200 | 1,710 | -- | 1,453**** | 1,453 | -- | 1,747 |
| | 2.0 l 150 kW TDI DSG**<br>FM7 (Front-wheel drive automatic 7-gear) | 0WR | 3,200 | 1,710 | -- | 1,470**** | 1,470 | -- | 1,730 |

Version dated August 2017

# 8.5 Weight tables panel van EU5

### 8.5.1 Panel van 2.6 t–3.2 t (wheelbase: 3,000 mm) (EU5)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Panel SWB | 2.0 l 110 kW TFSI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,821 | 1,188 | 633 | 979 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,821 | 1,188 | 633 | 1,179 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,821 | 1,188 | 633 | 1,379 |
| | 2.0 l 150 kW TFSI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,868 | 1,227 | 641 | 932 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,868 | 1,227 | 641 | 1,132 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,868 | 1,227 | 641 | 1,332 |
| | 2.0 l 75 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WL | 3,000 | 2,600 | 1,500 | 1,400 | 1,755 | 1,129 | 626 | 845 |
| | | 0WM | 3,000 | 2,800 | 1,550 | 1,550 | 1,755 | 1,129 | 626 | 1,045 |
| | | 0WQ | 3,000 | 3,000 | 1,550 | 1,625 | 1,755 | 1,129 | 626 | 1,245 |
| | | 0WR* | 3,000 | 3,200 | 1,710 | 1,720 | 1,755 | 1,129 | 626 | 1,445 |
| | 2.0 l 103 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,785 | 1,159 | 626 | 1,015 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,785 | 1,159 | 626 | 1,115 |
| | | 0WR* | 3,000 | 3,200 | 1,710 | 1,720 | 1,785 | 1,159 | 626 | 1,415 |
| | 2.0 l 110 kW TDI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,811 | 1,185 | 626 | 989 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,811 | 1,185 | 626 | 1,189 |
| | | 0WS | 3,000 | 3,200 | 1,710 | 1,710 | 1,811 | 1,185 | 626 | 1,389 |
| | 2.0 l 110 kW TDI AM6 (4MOTION manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,907 | 1,207 | 880 | 893 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,907 | 1,207 | 880 | 1,093 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,710 | 1,907 | 1,207 | 880 | 1,293 |
| | 2.0 l 110 kW TDI AD7 (4MOTION DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,950 | 1,244 | 706 | 850 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,950 | 1,244 | 706 | 1,050 |
| | | 0WS | 3,000 | 3,200 | 1,710 | 1,710 | 1,950 | 1,244 | 706 | 1,250 |
| | 2.0 l 132 kW TDI BIT FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,821 | 1,189 | 632 | 979 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,821 | 1,189 | 632 | 1,179 |
| | | 0WR* | 3,000 | 3,200 | 1,710 | 1,720 | 1,821 | 1,189 | 632 | 1,379 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Panel SWB | 2.0 l 132 kW TDI BIT AM6 (4MOTION manual 6-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,930 | 1,224 | 706 | 870 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,930 | 1,224 | 706 | 1,070 |
| | | 0WR* | 3,000 | 3,200 | 1,710 | 1,720 | 1,930 | 1,224 | 706 | 1,270 |
| | 2.0 l 132 kW TDI BIT FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,846 | 1,214 | 632 | 954 |
| | | 0WQ | 3,000 | 3,000 | 1,600 | 1,625 | 1,846 | 1,214 | 632 | 1,154 |
| | | 0WS | 3,000 | 3,200 | 1,710 | 1,710 | 1,846 | 1,214 | 632 | 1,354 |
| | | 0WR* | 3,000 | 3,200 | 1,710 | 1,720 | 1,846 | 1,214 | 632 | 1,354 |

Version dated May 2015

### 8.5.2 Panel van 2.6 t–3.2 t (wheelbase: 3,400 mm) (EU5)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Panel LWB | 2.0 l 110 kW TFSI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,878 | 1,228 | 650 | 922 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 1,821 | 1,188 | 633 | 1,122 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,821 | 1,188 | 633 | 1,322 |
| | 2.0 l 150 kW TFSI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,924 | 1,267 | 657 | 876 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 1,924 | 1,267 | 657 | 1,076 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,924 | 1,267 | 657 | 1,276 |
| | 2.0 l 75 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM*** | 3,400 | 2,800 | 1,550 | 1,550 | 1,812 | 1,169 | 643 | 988 |
| | | 0WQ | 3,400 | 3,000 | 1,550 | 1,625 | 1,812 | 1,169 | 643 | 1,188 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,812 | 1,169 | 643 | 1,388 |
| | 2.0 l 103 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,842 | 1,199 | 643 | 958 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 1,842 | 1,199 | 643 | 1,158 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,842 | 1,199 | 643 | 1,358 |
| Panel LWB | 2.0 l 103 kW TDI AM6 (4MOTION manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,964 | 1,247 | 717 | 836 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 1,964 | 1,247 | 717 | 1,036 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,964 | 1,247 | 717 | 1,236 |
| | 2.0 l 103 kW TDI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,867 | 1,225 | 642 | 933 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 1,867 | 1,225 | 642 | 1,133 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,867 | 1,225 | 642 | 1,333 |
| | 2.0 l 132 kW TDI BIT FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,878 | 1,229 | 649 | 922 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 1,878 | 1,229 | 649 | 1,122 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,878 | 1,229 | 649 | 1,322 |
| | 2.0 l 132 kW TDI BIT AM6 (4MOTION manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,987 | 1,264 | 723 | 813 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 1,987 | 1,264 | 723 | 1,013 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,987 | 1,264 | 723 | 1,213 |
| | 2.0 l 132 kW TDI BIT FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,903 | 1,254 | 649 | 897 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 1,903 | 1,254 | 649 | 1,097 |
| | | 0WS | 3,400 | 3,200 | 1,710 | 1,720 | 1,903 | 1,254 | 649 | 1,297 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| | 2.0 l 110 kW TDI AD7 (4MOTION DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 2,007 | 1,284 | 723 | 793 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,625 | 2,007 | 1,284 | 723 | 993 |
| | | 0WS | 3,400 | 3,200 | 1,710 | 1,720 | 2,007 | 1,284 | 723 | 1,193 |

Version dated May 2015

# 8.6 Weight charts Single cabin platform/chassis (EU5)

### 8.6.1 Single cab platform/chassis 2.8 t – 3.2 t (wheelbase: 3,000 mm) (EU5)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Platform SWB | 2.0 l 110 kW TFSI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,778 | 1,216 | 562 | 1,022 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,778 | 1,216 | 562 | 1,222 |
| | 2.0 l 75 kW TDI | 0WM | 3,000 | 2,800 | 1,550 | 1,550 | 1,736 | 1,157 | 579 | 1,064 |
| | FM5 (Front-wheel drive manual 5-gear) | 0WQ | 3,000 | 3,000 | 1,550 | 1,680 | 1,736 | 1,157 | 579 | 1,264 |
| | 2.0 l 103 kW TDI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,742 | 1,187 | 555 | 1,058 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,742 | 1,187 | 555 | 1,258 |
| | 2.0 l 103 kW TDI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,864 | 1,235 | 629 | 936 |
| | AM6 (4MOTION manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,864 | 1,235 | 629 | 1,136 |
| | 2.0 l 103 kW TDI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,768 | 1,213 | 555 | 1,032 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,768 | 1,213 | 555 | 1,232 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,779 | 1,217 | 562 | 1,021 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,779 | 1,217 | 562 | 1,221 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,888 | 1,252 | 636 | 912 |
| | AM6 (4MOTION manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,888 | 1,252 | 636 | 1,112 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,804 | 1,242 | 562 | 996 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,804 | 1,242 | 562 | 1,196 |
| Chassis SWB | 2.0 l 110 kW TFSI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,613 | 1,209 | 404 | 1,187 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,613 | 1,209 | 404 | 1,387 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,613 | 1,209 | 404 | 1,587 |
| | 2.0 l 75 kW TDI | 0WM*** | 3,000 | 2,800 | 1,550 | 1,550 | 1,547 | 1,150 | 397 | 1,253 |
| | FM5 (Front-wheel drive manual 5-gear) | 0WQ | 3,000 | 3,000 | 1,550 | 1,680 | 1,547 | 1,150 | 397 | 1,453 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,547 | 1,150 | 397 | 1,653 |
| | 2.0 l 103 kW TDI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,577 | 1,180 | 397 | 1,223 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,577 | 1,180 | 397 | 1,423 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,577 | 1,180 | 397 | 1,623 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| | 2.0 l 103 kW TDI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,699 | 1,228 | 471 | 1,101 |
| | AM6 (4MOTION manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,699 | 1,228 | 471 | 1,301 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,699 | 1,228 | 471 | 1,501 |
| | 2.0 l 103 kW TDI | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,603 | 1,206 | 495 | 1,197 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,603 | 1,206 | 495 | 1,397 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,603 | 1,206 | 495 | 1,597 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,614 | 1,210 | 404 | 1,186 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,614 | 1,210 | 404 | 1,386 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,614 | 1,210 | 404 | 1,586 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,639 | 1,242 | 562 | 1,161 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,723 | 1,245 | 478 | 1,361 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,723 | 1,245 | 478 | 1,561 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,000 | 2,800 | 1,600 | 1,550 | 1,723 | 1,245 | 478 | 1,077 |
| | AM6 (4MOTION manual 6-gear) | 0WQ | 3,000 | 3,000 | 1,600 | 1,680 | 1,723 | 1,245 | 478 | 1,277 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,723 | 1,245 | 478 | 1,477 |

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### 8.6.2 Single cab platform/chassis 2.8 t – 3.2 t (wheelbase: 3,400 mm) (EU5)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Platform LWB | 2.0 l 110 kW TFSI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,833 | 1,267 | 566 | 967 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,833 | 1,267 | 566 | 1,222 |
| | 2.0 l 75 kW TDI | 0WM*** | 3,400 | 2,800 | 1,550 | 1,550 | 1,747 | 1,188 | 559 | 1,053 |
| | FM5 (Front-wheel drive manual 5-gear) | 0WQ | 3,400 | 3,000 | 1,550 | 1,680 | 1,747 | 1,188 | 559 | 1,253 |
| | 2.0 l 103 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,777 | 1,218 | 559 | 1,023 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,777 | 1,218 | 559 | 1,223 |
| | 2.0 l 103 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,901 | 1,267 | 634 | 899 |
| | AM6 (4MOTION manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,901 | 1,267 | 634 | 1,099 |
| | 2.0 l 103 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,804 | 1,245 | 559 | 996 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,804 | 1,245 | 559 | 1,196 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,814 | 1,248 | 566 | 986 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,814 | 1,248 | 566 | 1,186 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,923 | 1,283 | 640 | 877 |
| | AM6 (4MOTION manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,923 | 1,283 | 640 | 1,077 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,839 | 1,273 | 566 | 961 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,839 | 1,273 | 566 | 1,161 |
| Chassis LWB | 2.0 l 110 kW TFSI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,648 | 1,249 | 399 | 1,152 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,648 | 1,249 | 399 | 1,352 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,648 | 1,249 | 399 | 1,552 |
| | 2.0 l 75 kW TDI | 0WM | 3,400 | 2,800 | 1,550 | 1,550 | 1,562 | 1,170 | 392 | 1,238 |
| | FM5 (Front-wheel drive manual 5-gear) | 0WQ | 3,400 | 3,000 | 1,550 | 1,680 | 1,562 | 1,170 | 392 | 1,438 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,562 | 1,170 | 392 | 1,638 |

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| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Chassis LWB | 2.0 l 103 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,592 | 1,200 | 392 | 1,208 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,592 | 1,200 | 392 | 1,408 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,592 | 1,200 | 392 | 1,608 |
| | 2.0 l 103 kW TDI AM6 (4MOTION manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,716 | 1,249 | 467 | 1,084 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,716 | 1,249 | 467 | 1,284 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,716 | 1,249 | 467 | 1,484 |
| | 2.0 l 103 kW TDI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,619 | 1,227 | 392 | 1,181 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,619 | 1,227 | 392 | 1,381 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,619 | 1,227 | 392 | 1,581 |
| | 2.0 l 132 kW TDI BIT FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,629 | 1,230 | 399 | 1,171 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,629 | 1,230 | 399 | 1,371 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,629 | 1,230 | 399 | 1,571 |
| | 2.0 l 132 kW TDI BIT FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,654 | 1,255 | 399 | 1,146 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,654 | 1,255 | 399 | 1,346 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,654 | 1,255 | 399 | 1,546 |
| | 2.0 l 132 kW TDI BIT AM6 (4MOTION manual 6-gear) | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,738 | 1,265 | 473 | 1,062 |
| | | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,738 | 1,265 | 473 | 1,262 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,738 | 1,265 | 473 | 1,462 |

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### 8.6.3 Double cab platform/chassis 2.8 t–3.2 t (wheelbase: 3,400 mm) (EU5)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Double cab platform LWB | 2.0 l 110 kW TFSI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,869 | 1,263 | 606 | 931 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,869 | 1,263 | 606 | 1,131 |
| | 2.0 l 75 kW TDI | 0WM*** | 3,400 | 2,800 | 1,600 | 1,550 | 1,802 | 1,203 | 760 | 998 |
| | FM5 (Front-wheel drive manual 5-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,802 | 1,203 | 760 | 1,198 |
| | 2.0 l 103 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,832 | 1,233 | 599 | 968 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,832 | 1,233 | 599 | 1,169 |
| | 2.0 l 103 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,954 | 1,281 | 673 | 846 |
| | AM6 (4MOTION manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,954 | 1,281 | 673 | 1,046 |
| | 2.0 l 103 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,859 | 1,260 | 599 | 941 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,859 | 1,260 | 599 | 1,141 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,869 | 1,263 | 606 | 931 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,869 | 1,263 | 606 | 1,131 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,978 | 1,298 | 680 | 822 |
| | AM6 (4MOTION manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,978 | 1,298 | 680 | 1,022 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,894 | 1,288 | 606 | 906 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,894 | 1,288 | 606 | 1,106 |
| Double cab chassis LWB | 2.0 l 110 kW TFSI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,719 | 1,270 | 449 | 1,081 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,719 | 1,270 | 449 | 1,281 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,719 | 1,270 | 449 | 1,481 |
| | 2.0 l 75 kW TDI | 0WM*** | 3,400 | 2,800 | 1,600 | 1,550 | 1,652 | 1,210 | 603 | 1,148 |
| | FM5 (Front-wheel drive manual 5-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,652 | 1,210 | 603 | 1,348 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,652 | 1,210 | 603 | 1,548 |
| | 2.0 l 103 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,682 | 1,240 | 442 | 1,118 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,682 | 1,240 | 442 | 1,318 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,682 | 1,240 | 442 | 1,518 |
| | 2.0 l 103 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,804 | 1,288 | 516 | 996 |
| | AM6 (4MOTION manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,804 | 1,288 | 516 | 1,196 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,804 | 1,288 | 516 | 1,396 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| | 2.0 l 103 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,709 | 1,267 | 442 | 1,091 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,709 | 1,267 | 442 | 1,291 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,709 | 1,267 | 442 | 1,491 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,719 | 1,270 | 449 | 1,081 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,719 | 1,270 | 449 | 1,281 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,719 | 1,270 | 449 | 1,481 |
| | 2.0 l 132 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,828 | 1,305 | 523 | 972 |
| | AM6 (4MOTION manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,828 | 1,305 | 523 | 1,172 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,828 | 1,305 | 523 | 1,372 |
| | 2.0 l 132 kW TDI | 0WM | 3,400 | 2,800 | 1,600 | 1,550 | 1,744 | 1,295 | 449 | 1,056 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,600 | 1,680 | 1,828 | 1,305 | 523 | 1,256 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,828 | 1,305 | 523 | 1,456 |

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# 8.7 Caravelle panel/window van 2.6 t–3.2 t (wheelbase: 3,000 mm) (EU5)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Panel van/window van/Caravelle SWB | 2.0 l 110 kW TFSI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,862 | 1,196 | 666 | 938 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 1,862 | 1,196 | 666 | 1,138 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 1,950 | 1,235 | 715 | 1,130 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,862 | 1,196 | 666 | 1,338 |
| | 2.0 l 150 kW TFSI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,908 | 1,235 | 673 | 892 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 1,908 | 1,235 | 673 | 1,092 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 1,973 | 1,257 | 716 | 1,107 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,908 | 1,235 | 673 | 1,292 |
| | 2.0 l 150 kW TFSI AD7 (4MOTION DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 2,018 | 1,271 | 747 | 782 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 2,018 | 1,271 | 747 | 982 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,600 | 2,006 | 1,267 | 739 | 1,074 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 2,018 | 1,271 | 747 | 1,182 |
| | 2.0 l 75 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WL*** | 3,000 | 2,600 | 1,550 | 1,400 | 1,797 | 1,138 | 659 | 803 |
| | | 0WM*** | 3,000 | 2,800 | 1,550 | 1,500 | 1,797 | 1,138 | 659 | 1,003 |
| | | 0WQ | 3,000 | 3,000 | 1,550 | 1,600 | 1,797 | 1,230 | 711 | 1,203 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 1,941 | 1,230 | 711 | 1,139 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,837 | 1,178 | 659 | 1,363 |
| | 2.0 l 103 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,827 | 1,168 | 659 | 973 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 1,827 | 1,168 | 659 | 1,173 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 1,936 | 1,232 | 704 | 1,144 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,837 | 1,178 | 659 | 1,363 |

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Panel van/window van/Caravelle SWB | 2.0 l 103 kW TDI AM6 (4MOTION manual 6-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,949 | 1,216 | 733 | 851 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 1,949 | 1,216 | 733 | 1,051 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,600 | 1,949 | 1,216 | 733 | 1,131 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,949 | 1,216 | 733 | 1,251 |
| | 2.0 l 103 kW TDI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,853 | 1,194 | 659 | 947 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 1,853 | 1,194 | 659 | 1,147 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,575 | 1,936 | 1,232 | 704 | 1,144 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,853 | 1,194 | 659 | 1,347 |
| | 2.0 l 132 kW TDI BIT FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,600 | 1,863 | 1,198 | 665 | 937 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 1,863 | 1,198 | 665 | 1,137 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,863 | 1,198 | 665 | 1,337 |
| | 2.0 l 132 kW TDI BIT FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,888 | 1,223 | 665 | 912 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 1,888 | 1,223 | 665 | 1,112 |
| | | 0WS | 3,000 | 3,080 | 1,710 | 1,720 | 1,974 | 1,264 | 710 | 1,106 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,888 | 1,223 | 665 | 1,312 |
| | 2.0 l 132 kW TDI BIT AM6 (4MOTION manual 6-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,972 | 1,233 | 739 | 828 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 1,972 | 1,233 | 739 | 1,028 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,600 | 1,972 | 1,233 | 739 | 1,108 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,972 | 1,233 | 739 | 1,228 |
| | 2.0 l 132 kW TDI BIT AD7 (4MOTION DSG 7-gear) | 0WM | 3,000 | 2,800 | 1,610 | 1,500 | 1,992 | 1,253 | 439 | 808 |
| | | 0WQ | 3,000 | 3,000 | 1,610 | 1,600 | 1,992 | 1,253 | 988 | 1,008 |
| | | 0WS | 3,000 | 3,080 | 1,610 | 1,600 | 2,006 | 1,267 | 739 | 1,074 |
| | | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,992 | 1,253 | 739 | 1,208 |

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### 8.7.1 Caravelle panel/window van 2.6 t–3.2 t (wheelbase: 3,400 mm) (EU5)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Panel van/window van/Caravelle SWB | 2.0 l 110 kW TFSI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,610 | 1,500 | 1,924 | 1,237 | 687 | 876 |
| | | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 1,924 | 1,237 | 687 | 1,076 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 1,992 | 1,261 | 731 | 1,088 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,924 | 1,237 | 687 | 1,276 |
| | 2.0 l 150 kW TFSI FD7 (Front-wheel drive DSG 7-gear) | 0WM | 3,400 | 2,800 | 1,610 | 1,500 | 1,970 | 1,276 | 694 | 830 |
| | | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 1,970 | 1,276 | 694 | 1,030 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 2,047 | 1,309 | 738 | 1,033 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,970 | 1,276 | 694 | 1,230 |
| | 2.0 l 150 kW TFSI AD7 (4MOTION DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 2,080 | 1,312 | 768 | 920 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 2,147 | 1,335 | 812 | 933 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,080 | 1,312 | 768 | 1,120 |
| | 2.0 l 75 kW TDI FM5 (Front-wheel drive manual 5-gear) | 0WM*** | 3,400 | 2,800 | 1,610 | 1,500 | 1,859 | 1,179 | 680 | 941 |
| | | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 1,859 | 1,179 | 680 | 1,141 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 1,934 | 1,208 | 726 | 1,146 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,859 | 1,179 | 680 | 1,341 |
| | 2.0 l 103 kW TDI FM6 (Front-wheel drive manual 6-gear) | 0WM | 3,400 | 2,800 | 1,610 | 1,500 | 1,889 | 1,209 | 680 | 911 |
| | | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 1,889 | 1,209 | 680 | 1,111 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 1,965 | 1,239 | 726 | 1,115 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,889 | 1,209 | 680 | 1,311 |
| | 2.0 l 103 kW TDI AM6 (4MOTION manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 2,011 | 1,257 | 754 | 989 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 2,102 | 1,302 | 800 | 978 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,011 | 1,257 | 754 | 1,189 |

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| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| | 2.0 l 103 kW TDI | 0WM | 3,400 | 2,800 | 1,610 | 1,500 | 1,915 | 1,236 | 679 | 885 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 1,915 | 1,236 | 679 | 1,085 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 1,991 | 1,265 | 726 | 1,089 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,915 | 1,236 | 679 | 1,285 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,400 | 2,800 | 1,610 | 1,500 | 1,925 | 1,239 | 686 | 875 |
| | FM6 (Front-wheel drive manual 6-gear) | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 1,925 | 1,239 | 686 | 1,075 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,925 | 1,239 | 686 | 1,275 |
| | 2.0 l 132 kW TDI BIT | 0WM | 3,400 | 2,800 | 1,610 | 1,500 | 1,950 | 1,264 | 686 | 850 |
| | FD7 (Front-wheel drive DSG 7-gear) | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 1,950 | 1,264 | 686 | 1,050 |
| | | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 2,039 | 1,306 | 733 | 1,041 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 1,950 | 1,264 | 686 | 1,250 |
| | 2.0 l 132 kW TDI BIT | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 2,034 | 1,274 | 760 | 966 |
| | AM6 (4MOTION manual 6-gear) | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 2,034 | 1,274 | 760 | 1,046 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,034 | 1,274 | 760 | 1,166 |
| | 2.0 l 132 kW TDI BIT | 0WQ | 3,400 | 3,000 | 1,610 | 1,600 | 2,054 | 1,294 | 760 | 946 |
| | AD7 (4MOTION DSG 7-gear) | 0WS | 3,400 | 3,080 | 1,610 | 1,600 | 2,143 | 1,336 | 807 | 937 |
| | | 0WR | 3,400 | 3,200 | 1,710 | 1,720 | 2,054 | 1,294 | 760 | 1,146 |

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### 8.7.2 "Rockton" Caravelle panel/window van 3.2 t (wheelbase: 3,000 mm) (EU5)

| Model | Engine & gearbox | PR number (GVWR) | Wheelbase | Perm. weights | | | Unl. weight incl. driver | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| **Panel van/ window van/ Caravelle SWB** | 2.0 l 132 kW TDI BIT * AD7 (4MOTION DSG 7-gear) | 0WR | 3,000 | 3,200 | 1,710 | 1,720 | 1,992 | 1,253 | 739 | 1,208 |

* Transporter Rockton Expedition PR number +A8B+FM3

# 8.8 Back-to-back cab 3.2 t (EU5)

| Models | Engine & gearbox | PR number (GVWR) | Perm. weights | | | Unl. weight incl. driver, tank 90% | | | Load rating max. [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total weight [kg] | Front axle load (FA) | Rear axle load (RA) | Total weight (min.) | FA [kg] | RA [kg] | |
| Back-to-back cab | 2.0 l 75 kW TDI M5*<br>FM5 (Front-wheel drive manual 5-gear) | 0WR | 3,200 | 1,710 | -- | 1,361**** | 1,361 | -- | 1,839 |
| | 2.0 l 103KW TDI M6**<br>FM6 (Front-wheel drive manual 6-gear) | 0WR | 3,200 | 1,710 | -- | 1,386**** | 1,386 | -- | 1,814 |
| | 2.0 l 103 kW TDI M6***<br>AG7 (DSG 7-gear) | 0WR | 3,200 | 1,710 | -- | 1,386**** | 1,386 | -- | 1,814 |
| | 2.0 l 132KW TDI M6**<br>FM6 (Front-wheel drive manual 6-gear) | 0WR | 3,200 | 1,710 | -- | 1,421**** | 1,421 | -- | 1,779 |
| | 2.0 l 132 kW TDI***<br>AG7 (DSG 7-gear) | 0WR | 3,200 | 1,710 | -- | 1,438**** | 1,438 | -- | 1,762 |

Version dated May 2016

# 9 Listings

## 9.1 List of changes

Modifications to the body builder guidelines compared to the data status of July 2018

| Chapter no. | Section heading | Scope of modification |
|---|---|---|
| 1 | General information | |
| 1.1 | Introduction | |
| 1.1.1 | Concept of these guidelines | |
| 1.1.2 | Means of representation | |
| 1.1.3 | Vehicle safety | |
| 1.1.4 | Operational safety | |
| 1.2 | General information | |
| 1.2.1 | Product and vehicle information for body builders | |
| 1.2.1.1 | Contact in Germany | |
| 1.2.1.2 | International contact | |
| 1.2.1.3 | Electronic Repair and Workshop Information from Volkswagen AG (erWin) | |
| 1.2.1.4 | Genuine parts online ordering portal | |
| 1.2.1.5 | Online owner's manual | |
| 1.2.1.6 | European Type Approval (ETA) and EC Certificate of Conformity (CoC) | |
| 1.2.1.7 | Worldwide Harmonized Light-Duty Vehicles Test Procedure (WLTP) | Chapter updated |
| 1.2.1.8 | Manufacturer's declaration | New sub-chapter |
| 1.2.2 | Body builder guidelines, consulting | |
| 1.2.2.1 | Safety certificate | |
| 1.2.2.2 | Application for the safety certificate | |
| 1.2.2.3 | Legal entitlements | |
| 1.2.3 | Warranty and product liability of the body builder | |
| 1.2.4 | Ensuring traceability | |
| 1.2.5 | Trademarks | |
| 1.2.5.1 | Positions on rear of vehicle | |
| 1.2.5.2 | Appearance of overall vehicle | |
| 1.2.5.3 | Non-Volkswagen trademarks | |
| 1.2.5.4 | Type plates | |
| 1.2.6 | Recommendations for vehicle storage | |
| 1.2.7 | Compliance with environmental rules and regulations | |
| 1.2.8 | Recommendations for inspection, maintenance and repair | |
| 1.2.9 | Accident prevention | |
| 1.2.10 | Quality system | |
| 1.3 | Planning bodies | |
| 1.3.1 | Selection of base vehicle | |
| 1.3.2 | Vehicle modifications | |
| 1.3.3 | Vehicle acceptance | |
| 1.4 | Special equipment | |
| 2 | Technical data for planning | |
| 2.1 | Base vehicle | |
| 2.1.1 | Vehicle dimensions | |

| Chapter no. | Section heading | Scope of modification |
|---|---|---|
| 2.1.1.1 | Basic data of Caddy panel van/window van | |
| 2.1.1.2 | Basic data of chassis/platform van | |
| 2.1.1.3 | Basic data, back-to-back cab | |
| 2.1.2 | Overhang angle and breakover angle | |
| 2.1.3 | Vehicle centre of gravity | |
| 2.1.4 | Bodies with a high centre of gravity | |
| 2.1.5 | Centre of gravity calculation | |
| 2.1.6 | Maximum dimensions | |
| 2.1.7 | Steerability – Minimum front-axle load | |
| 2.2 | Running gear | |
| 2.2.1 | Permitted weights and unladen weights | |
| 2.2.1.1 | One-sided weight distribution | |
| 2.2.2 | Turning circle | |
| 2.2.3 | Authorised tyre sizes | |
| 2.2.4 | Modifications to axles | |
| 2.2.5 | Modifications to the steering system | |
| 2.2.6 | Brake system and brake control system ESP | |
| 2.2.6.1 | General information | |
| 2.2.6.2 | Vehicle stability and ESP | |
| 2.2.6.3 | Influence of vehicle conversions | |
| 2.2.6.4 | Activating ESP for special vehicles | |
| 2.2.6.5 | Downgrading ESP | |
| 2.2.6.6 | Routing of additional cables... | |
| 2.2.7 | Modification of springs, suspension mounting, dampers | |
| 2.2.8 | Wheel alignment settings | |
| 2.2.9 | Wings and wheel housings | |
| 2.2.10 | Overhang extensions | |
| 2.3 | Body-in-white | |
| 2.3.1 | Roof loads/vehicle roof | |
| 2.3.2 | Modifications to the body-in-white | |
| 2.3.2.1 | Screw connections | |
| 2.3.2.2 | Welding work | |
| 2.3.2.3 | Welded connections | |
| 2.3.2.4 | Selection of welding process | |
| 2.3.2.5 | Spot welding | |
| 2.3.2.6 | Shielding gas hole spot welding | |
| 2.3.2.7 | Tacking | |
| 2.3.2.8 | Welding is not allowed | |
| 2.3.2.9 | Corrosion protection after welding | |
| 2.3.2.10 | Corrosion protection measures | |
| 2.3.2.11 | Planning measures | |
| 2.3.2.12 | Component design measures | |
| 2.3.2.13 | Coating measures | |
| 2.3.2.14 | Work on the vehicle | |
| 2.4 | Interior | |
| 2.4.1 | Modifications in the area of airbags | |
| 2.4.2 | Modifications in the area of seats | |

| Chapter no. | Section heading | Scope of modification |
|---|---|---|
| 2.4.2.1 | Belt anchors | |
| 2.4.3 | Forced ventilation | |
| 2.4.4 | Acoustic insulation | |
| 2.5 | Electrics/Electronics | |
| 2.5.1 | Lighting | |
| 2.5.1.1 | Vehicle lighting devices | |
| 2.5.1.1.2 | Adjusting headlights | |
| 2.5.1.2 | Special lights | |
| 2.5.1.3 | Turn signal.... | |
| 2.5.2 | Vehicle electrical system | |
| 2.5.2.1 | Electrical wiring/fuses | |
| 2.5.2.2 | Additional electrical circuits | |
| 2.5.2.3 | Retrofitting electrical devices | |
| 2.5.2.4 | Electromagnetic compatibility | |
| 2.5.2.5 | Mobile communication systems | |
| 2.5.2.6 | CAN bus | |
| 2.5.3 | Electrical interface for special vehicles | |
| 2.5.3.1 | Position of interface for special vehicles | |
| 2.5.3.2 | General information on the interfaces for special vehicles | |
| 2.5.3.3 | Assignment of the terminal strip | |
| 2.5.3.4 | Contact assignment on MFG | |
| 2.5.3.5 | Circuit diagrams for interface for special vehicles | |
| 2.5.4 | Vehicle battery | |
| 2.5.4.1 | Installation of additional battery | Chapter revised |
| 2.5.4.2 | Second battery (PR number: 8FB) | New sub-chapter added. |
| 2.5.5 | Subsequent installation of alternators | |
| 2.5.6 | Driver assist systems | |
| 2.5.7 | Earth points | |
| 2.6 | Engine peripherals/powertrain | |
| 2.6.1 | Engine/powertrain components | |
| 2.6.2 | Drive shafts | |
| 2.6.3 | Fuel system | |
| 2.6.4 | Exhaust system | |
| 2.6.5 | SCR system | |
| 2.7 | Power take-off system, engine/gearbox | |
| 2.7.1 | Compatibility with base vehicle | |
| 2.7.2 | Retrofitting air conditioning system | Chapter revised |
| 2.7.3 | Preparation for load compartment cooling (fresh produce vehicles) | |
| 2.7.4. | Retrofit load compartment cooling | Chapter revised |
| 2.7.5 | Specifications for the genuine refrigerant compressor | Chapter revised |
| 2.7.6 | Assembly and removal of the poly V-belt | |
| 2.8 | Add-ons/units | |
| 2.8.1 | Roof rack | |
| 2.8.2 | Trailer towing coupling | |
| 2.8.2.1 | Maximum trailer weights | |
| 2.8.2.2 | Retrofitting a trailer towing coupling | |
| 2.8.2.3 | Clearance according to UNECE-R 55 | |

| Chapter no. | Section heading | Scope of modification |
|---|---|---|
| 2.8.3 | Mounting a tail lift | |
| 2.8.4 | Accessories | |
| 2.9 | Raising the vehicle | |
| 3 | Modifications to closed bodies | |
| 3.1 | Body-in-white/bodywork | |
| 3.1.1 | Side wall cut-outs | |
| 3.1.2 | Subsequent installation of windows | |
| 3.1.3 | Modifications to the roof of panel van/window van | |
| 3.1.4 | Roof cut-outs | |
| 3.1.4.2 | Subsequent mounting of a high roof | |
| 3.1.4.3 | Subsequent roof cut-outs | |
| 3.1.4.1 | Pop-up roof with large roof cut-out | Chapter supplemented. |
| 3.1.5 | Modifying the partition wall / forced ventilation | |
| 3.1.6 | Partition connection points | |
| 3.2 | Interior | |
| 3.2.1 | Safety features | |
| 3.2.2 | Seat retrofitting and seats | |
| 3.2.3 | Universal floor | |
| 3.3 | Add-ons | |
| 3.3.1 | Retrofitting rear luggage carrier/rear ladders | |
| 4. | Modifications to open bodies | |
| 4.1 | Delivery of chassis | |
| 4.2 | Chassis frame | |
| 4.2.1 | Drilling on the chassis frame | |
| 4.2.2 | Welding on the vehicle | |
| 4.2.3 | Wheelbase and overhang extensions | |
| 4.2.4 | Sections of the chassis frame | |
| 4.3 | Subframe for light commercial vehicles | |
| 4.3.1 | Configuration of the subframe | |
| 4.3.2 | Material | |
| 4.3.3 | Longitudinal member | |
| 4.3.4 | Cross member | |
| 4.3.5 | Attachment of the subframe | |
| 4.3.6 | Torsionally rigid superstructures | |
| 4.4 | Standard mounting points for special bodies | |
| 4.5 | Cut-outs on cab | |
| 4.5.1. | Cut-outs on the rear cab wall | |
| 4.5.2. | Cut-outs on the rear cab wall and roof | |
| 4.6 | Bodies with a high centre of gravity | |
| 4.7 | Platform with tarpaulin and cross strut (ex works) | |
| 4.8 | Information about mounting a loading crane | |
| 4.9 | Back-to-back cab | |
| 5 | Implementation of special bodies | |
| 5.1 | Vehicles for conveying mobility-challenged persons | |
| 5.1.1 | Base vehicle equipment | |
| 5.1.2 | Selection of steering rack | |
| 5.1.3 | Notes on conversion solutions for the wheelchair transporter | |

| Chapter no. | Section heading | Scope of modification |
|---|---|---|
| 5.1.4 | Information about installation of manual operating devices | |
| 5.1.5 | Deactivation of airbags | |
| 5.2 | Refrigerated vehicles | |
| 5.3 | Shelf installation/workshop vehicles | |
| 5.3.1 | Shelf and workshop installations | |
| 5.3.2 | Universal floor ex-works | |
| 5.4 | Emergency service vehicles | |
| 5.5 | Taxi | |
| 5.5.2 | Available preparations for private hire cars | |
| 5.6 | Recreational vehicles | |
| 5.7 | Vehicles for local and public authorities | |
| 5.8 | Box bodies | |
| 5.9 | Platform bodies (open boxes) | |
| 5.10 | Tipper bodies | |
| 5.11 | Tractor unit | |
| 5.12 | Dangerous goods transport in accordance with ADR | New sub-chapter added. |
| 6 | Technical data | |
| 6.1 | Build dimension drawings | |
| 6.2 | Diagrams (foil templates) | |
| 6.3 | Current flow diagrams | |
| 6.4 | CAD models | |
| 7 | Calculations | |
| 7.1 | Determining centre of gravity | |
| 7.1.2 | Determining the centre of gravity in z-direction | References to chapter updated |
| 7.2 | Axle load calculation | |
| 8 | Weight tables | |
| 8.1 | Weight tables panel van | |
| 8.1.1 | Panel van 2.6 t–3.2 t (wheelbase: 3,000 mm) | |
| 8.1.2 | Panel van 2.8 t–3.2 t (wheelbase: 3,400 mm) | |
| 8.2.1 | Single cabin platform/chassis 2.8 t–3.2 t (wheelbase: 3,000 mm) (EU6) | |
| 8.2.2 | Single cabin platform/chassis 2.8 t–3.2 t (wheelbase: 3,400 mm) (EU6) | |
| 8.2.3 | Double cab platform/chassis 2.8 t–3.2 t (wheelbase: 3,400 mm) (EU6) | |
| 8.3.1 | Caravelle panel/window van 2.6 t–3.2 t (wheelbase: 3,000 mm) (EU6) | Weights corrected in accordance with WLTP |
| 8.3.2 | Caravelle panel/window van 2.8 t–3.2 t (wheelbase: 3,400 mm) (EU6) | Weights corrected in accordance with WLTP |
| 8.3.3 | "Rockton" Caravelle panel/window van 3.2 t (wheelbase: 3,000 mm) (EU6) | |
| 8.4 | Back-to-back cab 3.2 t (EU6) | Chapter updated |
| 8.5.1 | Panel van 2.6 t–3.2 t (wheelbase: 3,000 mm) (EU5) | |
| 8.5.2 | Panel van 2.6 t–3.2 t (wheelbase: 3,400 mm) (EU5) | |
| 8.6.1 | Single cab platform/chassis 2.8 t–3.2 t (wheelbase: 3,000 mm) (EU5) | |
| 8.6.2 | Single cab platform/chassis 2.8 t–3.2 t (wheelbase: 3,400 mm) (EU5) | |

| Chapter no. | Section heading | Scope of modification |
|---|---|---|
| 8.6.3 | Double cab platform/chassis 2.8 t–3.2 t (wheelbase: 3,400 mm) (EU5) | |
| 8.7 | Caravelle panel/window van 2.6 t–3.2 t (wheelbase: 3,000 mm) (EU5) | |
| 8.7.1 | Caravelle panel/window van 2.6 t–3.2 t (wheelbase: 3,400 mm) (EU5) | |
| 8.8 | Back-to-back cab 3.2 t (EU5) | |
| 9 | Listings | |
| 9.1 | List of modifications | Updated |
| Last page | Address, mailroom slot | Edition changed |

# Body builder guidelines
# The Transporter

**Body builder guidelines**
**Subject to change without notice**
**Edition November 2018**
**Internet:**
**https://www.volkswagen-nutzfahrzeuge.de**
**https://umbauportal.de**
**https://bb-database.com**

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