

Body builder guidelines Transporter T4





1.1 Body builder guidelines, inquiries

The body builder guidelines define the requirements for custom body builders and equipment fitters designing and mounting bodies or performing conversions to 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 must be in a good overall condition, i.e. structural parts such as longitudinal and cross members, pillars etc. must not be corroded to such an extent that structural stability might be adversely affected.

Vehicles whose modifications might affect the validity of 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.

When **inquiring** about planned modifications, please enclose two sets of design drawings of the complete scope of the modification, including weights, centre of gravity and dimensions, which also clearly show how the body is attached to the chassis. Please use the online contact form:

http://www.vwn-aufbaurichtlinien.de/de/kontaktformular

Please also provide information about the intended operating conditions of the vehicle. If bodies, installations or conversions 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.

The work safety regulations of the trade association and the EU machine directive apply.

When making modifications to vehicles, all corresponding and applicable legal regulations, rules, laws and directives must be observed.



1.2 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.

Volkswagen vehicles delivered after 01. January 2005 are covered by a 2-year warranty without mileage limitation for the flawless condition of the product (Volkswagen warranty).

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 conversions must be documented by the body builder or fitter in the service schedule provided with every Volkswagen vehicle.

Due to the multitude of conversions 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 must 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."

* 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".

In individual cases, Volkswagen AG reserves the right to demand proof 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.

Bodies, installations or conversions complying with the present guidelines do not require additional approval by Volkswagen AG to be presented at the authorised examining body.



1.3 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:

- Fill tank
- Do not park the vehicle under trees, poles; etc.
- Open all ventilation flaps, set blower to maximum speed
- · Disconnect battery(ies)
- Remove dirt, snow and moisture from vehicle (footwell)
- Close windows, doors, front lid, rear lid and sunroof
- Put manual gearbox into 1st gear or lever of automatic gearbox into park position. Do not engange reverse gear. Do not apply the parking brake.
- Remove the windscreen wiper bags and prop up the wiper arm using a foam pad, remove any loose protective film. ("Aero wipers": remove and store in suitable location inside vehicle).
- Check tyre pressures; increase to 4.5 bar for commercial vehicles, if required.

Check vehicles weekly for contamination by aggressive media (e.g. bird droppings, industrial dusts) and clean, if required.

Check battery open-circuit voltage every three months. Open-circuit voltage means the voltage of the disconnected battery after a minimum storage period of 12 hours. Recharge battery in due time before it reaches an open-circuit voltage of 12.4 volt ('magic eye' changes from green to black). Batteries with an open-circuit voltage of less than 11.6 volt are in state of exhaustive discharge and should be disposed of soon.

Batteries must be recharged only with current-controlled and voltage-limited chargers. A maximum charging voltage of 14.4 volt must not be exceeded.

It is recommended to check the tyre inflation pressure every three months and to increase it to 4.5 bars for commercial vehicles, if required.

Reconnect battery negative lead(s) before recommissioning the vehicle.



1.4 Compliance with environmental rules and regulations

Fitters of accessories and body builders must ensure that they comply with all applicable environmental rules and regulations, especially EU directive 2000/53/EC concerning end-of-life vehicles and EU directive 2003/11/EC relating to restrictions on the marketing and use of certain dangerous substances and preparations.

The vehicle owner must keep all assembly documentation concerning the modification and hand them 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 lifecycle.



1.5 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. Parts and components with a limited service life which must be checked in regular intervals to ensure service reliability and timely replacement must be explicitly stated.

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 builders or accessory fitter's scope of supply includes electric, electronic or mechatronic, hydraulic or pneumatic systems, circuit diagrams and diagnosis routines or similar documentation facilitating a systematic search for faults must be provided.



1.6 Accident prevention

Body builders must ensure that the fitted components, conversions, bodies and modifications 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 must 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 or device or equipment manufacturer 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:

Berufsgenossenschaft für Fahrzeughaltung Fachausschuss "Verkehr" Sachgebiet "Fahrzeuge"

Ottenser Hauptstraße 54 22765 Hamburg, Germany

Homepage: www.bg-verkehr.de

E-Mail: info@bg-verkehr.deinfo@bgf.de



1.7 Delivery Program

The conceptual advantages of the Volkswagen transporter

- Wheel bases 2,920 mm and 3,320 mm
- Three net-load classes for front-wheel drive variants. For details see weight table, 2.1 Dimensions and Weight
- Two net-load classes (PR-No. 0J2 and 0J3) for the syncro-variants (see weight table, 2.1 Dimensions and Weight)
- Chassis for sales cars and mobile homes with a permitted total weight of 3,300 kg (details 2.1 Dimensions and Weight).
- · Large proportion of usable floor area
- Hatch clearance width between the wheel housings: 122 cm; pallet dimensions
- Low, plane loading floor with a height of 52 cm
- Stable frame and smooth upper belt for easy attachment mounting
- Independent suspension, at the front and back
- Powerful and economical engine program
- cw peak value of 0.36 for box-type delivery van and station wagon
- · High vehicle safety
- Trailing load up to 2,000 kg
- Syncro offer for all models with standard net-load (PR-No. 0J2) and increased net load (PR-No. 0J3)
- Little maintenance efforts



Net loads	Wheelbase mm	Box-type delivery van	High-space box-type delivery van	Station wagon	High-space station wagon	Caravel
reduced net load	2.920	4				
PR-Nr.031	3.320					
standard	2.920	—		4		
net-load PR-Nr.032	3.320	4	4			
increased	2.920					
net load PR-Nr.033	3.320	4	4	4		
	1					
Net loads	Wheelbase mm	Chassis with driver's cab	Flatbed truck	Deep-loading flatbed truck	Chassis with double cab	Double cab
reduced	2.920					
net load PR-Nr.0J1	3.320					
standard net-load	2.920					
PR-Nr.032	3.320		4	4	4	
increased	2.920	4	4			
PR-Nr.0J3	3.320	4	4	4	4	



2.1 Permitted Weight, Unladen Weight

Dimensions and Weight

Volkswagen AG provides vehicles with front-wheel drive, such as box-type delivery van, station wagon, flatbed truck, chassis with cab, double cab and chassis with double cab, in the following weight classes: reduced net load (PR-No. 0J1). Standard net-load (PR-No. 0J2), increased net load (PR-No. 0J3) and increased net load with a permitted total weight of 2,890 kg (PR-No. 0J5). syncro vehicles are only available with standard net-load (PR-No. 0J2) and increased net load (PR-No. 0J3).

Note:

There are also chassis with increased net load (PR.-No. 0J4) available (only for sales cars and mobile homes). Permitted total weight 3,300 kg - only in front-wheel drive version!

Permitted Weight, Unladen Weight

The weight specifications in the technical data refer to the standard base vehicle equipment. According to DIN 70020, weight tolerances of +5% are permitted in production and are to be considered, where appropriate.

If extras are installed, the permitted unloaded weight increases. The final unladen weight of the entire vehicle is to be determined using a scale.

Petrol/diesel, 4 cylinders
Petrol/diesel, 5 cylinders
5 cylinders, TDI/VR 6 petrol engine

Petrol/diesel, 4 cylinders

Name	PR-No.	Wheelbase	Permitted total weight	Permitted axle load	Permitted axle load	Unladen weight with	of it: on front	of it: on rear	Net load
				front	rear	driver	axle	axle	
		mm	kg	kg	kg	kg	kg	kg	kg
Box-type delivery van	0J1	2.920	2.380	1.250	1.230	1.580	1.030	550	800
Box-type delivery van	0J2	2.920	2.575	1.330	1.410	1.580	1.030	550	995
Box-type delivery van	0J3	2.920	2.785	1.400	1.490	1.580	1.030	550	1.205
Box-type delivery van ¹⁾	0J2	2.920	2.525	1.330	1.230	1.580	1.030	550	945
Box-type delivery van	0J2	3.320	2.625	1.400	1.410	1.630	1.065	565	995
Box-type delivery van	0J3	3.320	2.800	1.480	1.490	1.630	1.065	565	1.170
Box-type delivery van	0J5/1LE	3.320	2.890	1.510	1.490	1.630	1.065	565	1.260
High-space box-type delivery van	0J2	3.320	2.625	1.400	1.410	1.680	1.090	590	945
High-space box-type delivery van	0J3	3.320	2.800	1.480	1.490	1.680	1.090	590	1.120
High-space box-type delivery van	0J5/1LE	3.320	2.890	1.510	1.490	1.630	1.065	565	1.210
Station wagon	0J1	2.920	2.430	1.330	1.230	1.6072)	1.035	572	823



	1	1	1	1			1	1	,
Station wagon	0J2	2.920	2.600	1.400	1.330	1.607 ²⁾	1.035	572	993
Station wagon	0J3	2.920	2.700	1.400	1.490	1.6072)	1.035	572	1.093
Station wagon1)	0J2	2.920	2.520	1.330	1.230	1.6072)	1.035	572	913
Station wagon	0J2	3.320	2.600	1.480	1.330	1.649 ²⁾	1.050	599	951
Station wagon	0J3	3.320	2.700	1.480	1.490	1.649 ²⁾	1.050	599	1.051
High-space station wagon	0J2	3.320	2.600	1.480	1.330	1.699 ²⁾	1.075	624	901
High-space station wagon	0J3	3.320	2.700	1.480	1.490	1.699 ²⁾	1.075	624	1.001
Flatbed truck	0J2	2.920	2.525	1.250	1.410	1.530	1.030	500	995
Flatbed truck	0J3	2.920	2.785	1.330	1.490	1.530	1.030	500	1.255
Flatbed truck	0J2	3.320	2.575	1.330	1.410	1.580	1.055	525	995
Flatbed truck	0J3	3.320	2.785	1.400	1.490	1.580	1.055	525	1.205
Flatbed truck	0J5/1LE	3.320	2.890	1.510	1.490	1.580	1.055	525	1.310
Deep-loading flatbed truck	0J2	3.320	2.575	1.330	1.410	1.580	1.060	520	995
Deep-loading flatbed truck	0J3	3.320	2.785	1.400	1.490	1.580	1.060	520	1.205
Deep-loading flatbed truck	0J5/1LE	3.320	2.890	1.510	1.490	1.580	1.060	520	1.310
Chassis with driver™s cab	0J2	2.920	2.525	1.250	1.410	1.375	1.015	360	1.105
Chassis with driver™s cab	0J3	2.920	2.785	1.330	1.490	1.375	1.015	360	1.410
Chassis with driver™s cab	0J2	3.320	2.575	1.330	1.410	1.400	1.030	370	1.175
Chassis with driver™s cab	0J3	3.320	2.785	1.400	1.490	1.400	1.030	370	1.385
Chassis with driver™s cab*	0J4	2.920	3.255	1.480	1.800	1.375	1.015	360	1.880
Chassis with driver™s cab*	0J4	3.320	3.255	1.480	1.800	1.400	1.030	370	1.855
Chassis with driver™s cab	0J5/1LE	3.320	2.890	1.510	1.490	1.400	1.030	370	1.490
Double cab	0J2	3.320	2.575	1.400	1.490	1.650	1.085	565	925
Double cab	0J3	3.320	2.785	1.400	1.490	1.650	1.085	565	1.135
Double cab	0J5/1LE	3.320	2.890	1.510	1.490	1.650	1.085	565	1.240
Chassis with Double cab	0J2	3.320	2.575	1.400	1.490	1.520	1.085	435	1.055
Chassis with Double cab	0J3	3.320	2.785	1.400	1.490	1.520	1.085	435	1.265
Chassis with Double cab	0J5/1LE	3.320	2.890	1.510	1.490	1.520	1.085	435	1.370
1) Changia DD No	404:	- +	20						

¹⁾ Chassis PR-No.1P4 is set deeper by 20 mm

Important notice: For vehicles with automatic gear, the unladen weight is increased by 30 kg (front axle +30 kg, rear axle 0 kg)

²⁾ Unladen weight with trim panel in the passenger compartment/boot space. Trim panel controllable with PR-No. 5DA. **New:** Latest unladen weight including driver™s weight, but without seats in the passenger compartment!

^{*} Only for camper vans and sales vehicles



Petrol/diesel, 5 Name		Wheelbase	Permitted total weight	Permitted axle load front	Permitted axle load rear	Unladen weight with driver	of it: on front axle	of it: on rear axle	Net load
		mm	kg	kg	kg	kg	kg	kg	kg
Box-type delivery van	0J1	2.920	-	-	-	-	-	-	-
Box-type delivery van	0J2	2.920	2.650	1.400	1.410	1.655	1.105	550	995
Box-type delivery van	0J3	2.920	2.800	1.480	1.490	1.655	1.105	550	1.145
Box-type delivery van ¹⁾	0J2	2.920	2.600	1.400	1.230	1.655	1.105	550	945
Box-type delivery van	0J2	3.320	2.700	1.480	1.410	1.705	1.140	565	995
Box-type delivery van	0J3	3.320	2.800	1.480	1.490	1.705	1.140	565	1.095
Box-type delivery van	0J5/1LE	3.320	2.890	1.510	1.490	1.705	1.140	565	1.185
High-space box-type delivery van	0J2	3.320	2.700	1.480	1.410	1.755	1.165	590	945
High-space box-type delivery van	0J3	3.320	2.800	1.480	1.490	1.755	1.165	590	1.045
High-space box-type delivery van	0J5/1LE	3.320	2.890	1.510	1.490	1.755	1.165	590	1.135
Station wagon	0J1	2.920	-	-	-	-	-	-	-
Station wagon	0J2	2.920	2.700	1.480	1.330	1.682	1.110	572	1.018
Station wagon	0J3	2.920	2.800	1.480	1.490	1.682	1.110	572	1.118
	0J2	2.920	2.620	1.400	1.230	1.682		572	938
Station wagon	0J2	3.320	2.700	1.570	1.330	1.724		599	976
Station wagon	0J3	3.320	2.800	1.570	1.490	1.724	1.125	599	1.076
Station wagon High-space station wagon	0J5/1LE 0J2	3.320 3.320	2.890 2.700	1.570 1.570	1.490	1.724	1.125 1.150	599 624	1.166 926
High chaco	0J3	3.320	2.800	1.570	1.490	1.724	1.150	624	1.026
High-space station wagon	0J5/1LE	3.320	2.890	1.570	1.490	1.724	1.150	624	1.116
Flatbed truck	0J2	2.920	2.600	1.330	1.410	1.605	1.105	500	995
-latbed truck	0J3	2.920	2.800	1.400	1.490	1.605		500	1.195
Flatbed truck	0J2	3.320	2.650	1.400	1.410	1.655	1.130	525	995
Flatbed truck	0J3	3.320	2.800	1.480	1.490	1.655	1.130	525	1.145
Flatbed truck	0J5/1LE	3.320	2.890	1.510	1.490	1.655	1.130	525	1.235/1.21
Deep-loading latbed truck	0J2	3.320	2.650	1.400	1.410	1.655	1.135	520	995
Deep-loading flatbed truck	0J3	3.320	2.800	1.480	1.490	1.655	1.135	520	1.145
Deep-loading latbed truck	0J5/1LE		2.890	1.510	1.490	1.655		520	1.235/1.21
	0J2	2.920	2.600	1.330	1.410	1.450	1.090	360	1.150



Chassis with driver™s cab									
Chassis with driver™s cab	0J3	2.920	2.800	1.400	1.490	1.450	1.090	360	1.350
Chassis with driver™s cab	0J2	3.320	2.650	1.400	1.410	1.475	1.105	370	1.175
Chassis with driver™s cab	0J3	3.320	2.800	1.480	1.490	1.475	1.105	370	1.325
Chassis with driver™s cab*	0J4	2.920	3.300	1.570	1.800	1.450	1.090	360	1.850
Chassis with driver™s cab*	0J4	3.320	3.300	1.570	1.800	1.475	1.105	370	1.825
Chassis with driver™s cab	0J5/1LE	3.320	2.890	1.510	1.490	1.475	1.105	370	1.415
Double cab	0J2	3.320	2.650	1.480	1.490	1.725	1.160	565	925
Double cab	0J3	3.320	2.800	1.480	1.490	1.725	1.160	565	1.075
Double cab	0J5/1LE	3.320	2.890	1.510	1.490	1.725	1.160	565	1.165
Chassis with Double cab	0J2	3.320	2.650	1.480	1.490	1.595	1.160	435	1.055
Chassis with Double cab	0J3	3.320	2.800	1.480	1.490	1.595	1.160	435	1.205
Chassis with Double cab	0J5/1LE	3.320	2.890	1.510	1.490	1.595	1.160	435	1.295

¹⁾ Chassis PR-No.1P4 is set deeper by 20 mm

5 cylinders, TDI/VR 6 petrol engine

Name	PR-No.	Wheelbase	total weight			weight with	of it: on front axle	of it: on rear axle	Net load
		mm	kg	kg	kg	kg	kg	kg	kg
Box-type delivery van	0J1	2.920	-	-	-	-	-	-	-
Box-type delivery van	0J2	2.920	2.680	1.430	1.410	1.685	1.135	550	995
Box-type delivery van	0J3	2.920	2.800	1.510	1.490	1.685	1.135	550	1.115
Box-type delivery van ¹⁾	0J2	2.920	2.630	1.430	1.230	1.685	1.135	550	945
Box-type delivery van	0J2	3.320	2.730	1.510	1.410	1.735	1.170	565	995
Box-type delivery van	0J3	3.320	2.800	1.510	1.490	1.735	1.170	565	1.065
Box-type delivery van	0J5/1LE	3.320	2.890	1.510	1.490	1.735	1.170	565	1.155
	0J2	3.320	2.730	1.510	1.410	1.785	1.195	590	945

²⁾ Unladen weight with trim panel in the passenger compartment/boot space. Trim panel controllable with PR-No. 5DA. **New:** Latest unladen weight including driver™s weight, but without seats in the passenger compartment! **Important notice:** For vehicles with automatic gear, the unladen weight is increased by 30 kg (front axle +30 kg, rear axle 0 kg)



ı	1	1	1	1	1	1	1	1	
High-space									
box-type									
delivery van									
High-space	0.10	2 220	2.800	1 510	1 100	4 705	4 405	500	4 045
box-type delivery van	0J3	3.320	2.800	1.510	1.490	1.785	1.195	590	1.015
High-space									
box-type	0J5/1LE	3 320	2.890	1.510	1.490	1.785	1.195	590	1.105
delivery van	000/ ILL	0.020	2.000	1.010	1.430	1.700	1.130	000	1.100
Station wagon	0J1	2.920	-	-	-	-	-	-	-
Station wagon		2.920	2.700	1.510	1.330	1.712	1.140	572	988
Station wagon	0J3	2.920	2.800	1.510	1.490	1.712	1.140	572	1.088
Station wagon ¹⁾	0J2	2.920	2.620	1.430	1.230	1.712	1.140	572	908
Station wagon		3.320	2.700	1.600	1.330	1.754	1.155	599	946
Station wagon	0J3	3.320	2.800	1.600	1.490	1.754	1.155	599	1.046
Station wagon	0J5/1LE	3.320	2.890	1.600	1.490	1.754	1.155	599	1.136
High-space	0.10	2 220	0.700	4.600	4 220	1.754	1 100	604	000
station wagon	0J2	3.320	2.700	1.600	1.330	1.754	1.180	624	896
High-space station wagon	0J3	3.320	2.800	1.600	1.490	1.754	1.180	624	996
High-space									
station wagon	0J5/1LE	3.320	2.890	1.600	1.490	1.754	1.180	624	1.086
Flatbed truck	0J2	2.920	2.630	1.360	1.410	1.804	1.135	500	995
Flatbed truck	0J3	2.920	2.800	1.430	1.490	1.804	1.135	500	1.165
Flatbed truck	0J2	3.320	2.680	1.430	1.410	1.635	1.160	525	995
Flatbed truck	0J3	3.320	2.800	1.510	1.490	1.635	1.160	525	1.115
Flatbed truck	0J5/1LE	3.320	2.890	1.510	1.490	1.635	1.160	525	1.205
Deep-loading flatbed truck		3.320	2.680	1.430	1.410	1.685	1.165	520	995
Deep-loading flatbed truck	0J3	3.320	2.800	1.510	1.490	1.685	1.165	520	1.115
Deep-loading flatbed truck	0J5/1LE	3.320	2.890	1.510	1.490	1.685	1.165	520	1.205
Chassis with									
driver™s cab	0J2	2.920	2.630	1.360	1.410	1.685	1.120	360	1.150
Chassis with driver™s cab	0J3	2.920	2.800	1.430	1.490	1.685	1.120	360	1.320
Chassis with driver™s cab	0J2	3.320	2.680	1.430	1.410	1.505	1.135	370	1.175
Chassis with driver™s cab	0J3	3.320	2.800	1.510	1.490	1.505	1.135	370	1.295
Chassis with driver™s cab	0J5/1LE	3.320	2.890	1.510	1.490	1.505	1.135	370	1.385
Chassis with driver™s cab*	0J4	2.920	3.300	1.600	1.800	1.480	1.120	360	1.820
Chassis with driver™s cab*	0J4	3.320	3.300	1.600	1.800	1.505	1.135	370	1.795
Double cab	0J2	3.320	2.680	1.510	1.490	1.755	1.190	565	925
Double cab	1	3.320	2.800	1.510	1.490	1.755	1.190	565	1.045
Double cab	0J5/1LE		2.890	1.510	1.490	1.755	1.190	565	1.135
Chassis with Double cab		3.320	2.680	1.510	1.490	1.625	1.190	435	1.055
Chassis with Double cab	0J3	3.320	2.800	1.510	1.490	1.625	1.190	435	1.175



Chassis with									
	Chassis with								
1 11 15/11 13 320 12 340 11 11 11 11 12 13 14 14 14 14 14 14 14	Chacolo With	0J5/1LE 3.320	2.890	1.510	1.490	1.625	1.190	435	1.265
Double cab 033/12 0.320 1.330 1.330 1.330 1.330	Double cab	033/ TEE 5.320	2.030	1.510	1.430	1.023	1.130	700	1.200

¹⁾ Chassis PR-No.1P4 is set deeper by 20 mm

Neu: Latest unladen weight including driver™s weight, but without seats in the passenger compartment!

Important notice: For vehicles with automatic gear, the unladen weight is increased by 30 kg (front axle +30 kg, rear axle 0 kg)

²⁾ Unladen weight with trim panel in the passenger compartment/boot space. Trim panel controllable with PR-No. 5DA.

^{*} Only for camper vans and sales vehicles



2.2 Single-Sided Weight Distribution

The weights must **never exceed** the

- permissible total weight
- permitted front-axle weight
- permitted rear-axle weight.

When projecting attachments/upgrades, it has to be ensured that a single-sided weight distribution is avoided - in particular if fixed attachments are to be installed. If it is not possible to adhere to this recommendation, the single-sided load may only result in a maximum difference between the wheel loads of 4%.

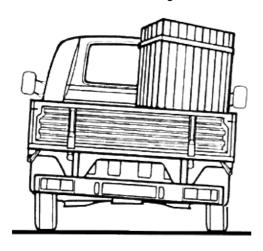
Example:

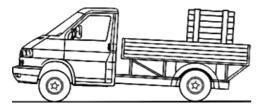
Permitted axle load 1.430 kg
Theoretical wheel load left/right 715 kg/715

kg

4% of this wheel load 29 kg
Permitted wheel load distribution 686 kg/744 kg

To ensure a sufficient manoeuvrability and a satisfying driving behaviour of the vehicle in all loading states, the minimum front-axle load must be 965 kg.







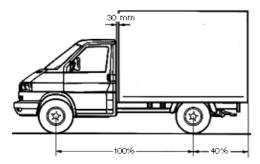
2.3 Maximum Dimensions

The chassis dimensions can be taken from the following drawings (see p. 20-23). Chassis drawings, **on a scale of 1:20** and **1:10**, are available to help you planning the attachment.

If reinforced springs, enhanced springs are installed or if tyre sizes are used that are differing from the standard model, vehicle and frame heights (as measured from ground level) may change considerably. In this case, it is necessary to consider this equipment during projecting.

Important note

- The minimum distance between cab and attachment must be at least 30 mm.
- The rear overhang of the attachments must not exceed 40% of the wheel base.



The **maximum permitted overhang** (rear) of **40%** of the wheel base, results in the following max. external attachment lengths for chassis. These values must not be exceeded:

	Wheelbase	Standard attachment length, interior	max. external attachment length, 40% overhang
Chassis with driver™s cab	2.920 mm	2.505 mm	2.686 mm
Chassis with driver™s cab	3.320 mm	2.905 mm	3.246 mm
Chassis with double cab	3.320 mm	2.140 mm	2.476 mm

Attachment width:

The exterior width of the driver™s cab is 1,840 mm. If the standard exterior mirrors are used, the attachment width must not exceed 2,200 mm.



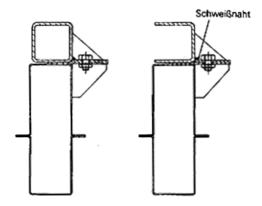
2.4 Serienmäßige Befestigungspunkte für Sonderaufbauten

Der Rahmen ist eine aus Blechpreßteilen bestehende Hohlprofilkonstruktion. Damit allen Gegebenheiten der Befestigung von Sonderaufbauten Rechnung getragen ist, sind konstruktiv folgende Vorkehrungen getroffen worden.

Auf den Längsträgern sind Konsolen angeschweißt, die zur Befestigung der Sonder aufbauten dienen. **Jede Konsole ist** mit einer Bohrung von ø11 mm versehen.

Die Befestigung zwischen Aufbau und Fahrzeugrahmen sollte immer über alle Konsolen erfolgen. Die Schraubverbindung zu den Konsolen muß kraftschlüssig ausgeführt werden.

Der Spalt zwischen den Konsolen über dem Fahrgestellrahmen muß nicht ausgefüttert werden.





3.1 Roof Rack, Rear Luggage Carrier/Rear Ladders, Flatbed w. Tarpaulin Bow

Roof rack

Roof loads raise the centre of mass of the vehicle and lead to a high dynamic axle-load shift and tilting of the vehicle on bumpy lanes and in bends. The road behaviour is considerably impaired. For this reason, roof loads should be avoided, if possible.

Depending on load distribution, at least 2 base carriers are required which are to be mounted in the pillar area, if possible.

Roof loads (only for standard vehicles):

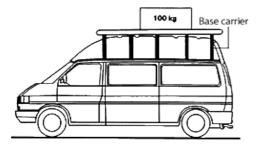
Vehicles with high-space roof 100 kg

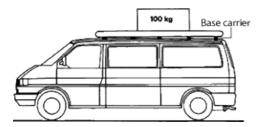
Vehicles with standard roof 100 kg

Double cab 75 kg

Driver™s cab 50 kg

Pop-up top 50 kg





Rear luggage carriers/rear ladders

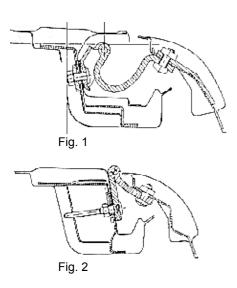
The rear luggage carrier or the rear ladder must be executed in such a way, that, after having been mounted, no vertical static or dynamic loads are working on the tailboard or rear double-wing doors. In combination with the currently available hatchback lid hinges, rear luggage carriers (for max. 4 bicycles, equivalent to a weight of 75 kg) must not be propped up on the rear bumpers. Since the beginning of the great product upgrading (January 1996), rear luggage carriers **may no longer** be propped up on the rear bumpers.

Load of tailboards/rear double-wing doors

Since the beginning of series production of the T4 (1990), the tailboard is provided with the shown hatchback lid hinge (figure 1).



If rear luggage carriers for bicycles (max. 4 bicycles, equivalent to 75 kg) are mounted, it is required to relieve the tailboard. This is achieved by propping up the rear luggage carrier on the rear bumper. Afterwards, the hatchback lid hinges need only to carry the horizontal force component, thus preventing that the rear luggage carrier is tilting to the back. Since the currently available hatchback lid hinges (figure 2) are being used, it is no longer necessary to relieve the tailboard by propping it up on the rear bumper. However, this option is still possible. Since the great product upgrading (January 1996), new bumpers are in use which may no longer be used for supporting the rear luggage carriers, due to their construction, but which is, however, no longer necessary. A fatigue loading of the rear bumpers may lead to permanent bumper distortions!



Note: With the introduction of the currently available hatchback lid-hinge version, the air gap between roof and opened tailboard was considerably reduced. To prevent the top holding clamps of the rear luggage carrier from pressing onto the roof if the tailboard is being opened, it is required that they can be mounted directly next to the hatchback lid hinges!

Depending on the equipment scope of the tailboards (i. e. weight), appropriately strong gas springs are used. Within the scope of a subsequent retrofitting, the tailboard weight may increase, so that the tailboards then no longer can be opened up to the top limit-stop. The following table will help you to select appropriate gas springs.

Drawing No.:	Ejection force in N F ₁	Insertion force in N F ₄ max	Friction in N F _R max	Ejection speed in m/s v _{s8}	Identification (print)
	Statically me	easured force	e at +20°	С	
701 829 331 Q	710±30	960	80	0,150,4	1 bar
701 829 331 R	770±30	1030	80	0,150,4	2 bars
701 829 331 S	830±30	1120	80	0,150,4	3 bars
701 829 331 AB	910±30	1200	80	0,150,4	4 bars

As before, rear double-wing doors may carry no additional loads!

250° hinges for the rear double-wing doors



Since calendar week 2/99, it is possible to supply the rear double-wing doors of box-type delivery vans and station wagons with both wheel bases, as well as with standard roof or standard high roof, with the above mentioned hinges ex works (PR-No. 5V4). The double-wing doors can first be opened up to 90° (as is the case with the 180° standard type). After taking the catch brackets off their hinges, it is possible to open the rear double-wing doors still further (up to approx. 250°). Each of them will then be held by a magnet buffer at the external side walls of the vehicle.

Boundary conditions:

- Short wheel base generally not in combination with a sliding door and/ or seats in the passenger compartment. In this case, the sliding-door opening of the right sliding door is only 680 mm, instead of 1020 mm.
- Long wheel base generally not in combination with seats in the 3rd row of seats.
- Both wheel bases generally not in combination with the swivel-mounted spare-wheel holding device outside at the rear (only concerns the syncro).
- Rear double-wing doors with 180° hinges cannot be retrofitted.

Flatbed with tarpaulin and bow(ex factory)

Apart from the tarpaulin, the bows must not be loaded with supplementary weights, such as ladders, etc...



3.10 Protection of the Car Battery During Longer Waiting Intervals

If a vehicle is not operated for a longer period, the battery is gradually completely discharged by consuming devices (clock, tachograph, cigar lighter or radio), thus being constantly damaged.

To avoid this damage, the line bundle is disconnected ex works using a plug-in connection which is reconnected when the vehicle is to be transferred, respectively by the delivery service.

If the vehicles are parked at attachment manufacturers for a longer time (shutdown period), it is required to disconnect the plug-in connection again.



3.11 Power Take-Offs (Engine)

Power output of the engine via V-belts

At the engine, the output can be decreased by max. 10 kW via V-belts, if the available flange points are being used.

The following power take-offs at the engine can be ordered ex factory if an air-conditioning system is available. However, a combination is not possible:

Engines	Installation Cooling compressor Sanden SD7 H15 (non-controlled)	Preparation Preparation of the installation Hydraulic pump, manufactured by ZF	Installation 2 nd Generator Bosch 14 V 90 A
2,0l 62 kW petrol engine R	-	-	х
2,0l 62 kW petrol engine R 4 with catalytic converter	-	-	х
2,5l 81 kW petrol engine R 5 with catalytic converter	-	х	х
2,8l 103 kW petrol engine VR 6 with catalytic converter	-	-	-
1,9l 50 kW turbo diesel engine R 4 with catalytic converter	-	-	-
2,4l 55 kW diesel engine R 5 with catalytic converter	х	x	х
2.4l 57 kW diesel engine R 5 (for synchro)	х	х	х
2.5l 75 kW TDI engine R 5 with catalytic converter	х	x	х



3.12 Brake System

An operating permit is available for the brake system of the vehicles. This licensing becomes invalid if the brake system is modified.

Load-related brake proportioning valve

(only for front-wheel drive)

The load-related brake proportioning valve is conceived for adjusting the brake pressure at the rear axle to the respective load condition and is controlled according to the spring suspension at the rear axle.

The load-related brake proportioning valve is provided ex-works with a regulation, based on a tension spring, relating to the unladen weight of the vehicle. Usually, it is not required to re-adjust this regulation - not even after mounting an attachment onto the chassis.

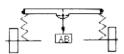
In special cases - for example retrofitting of reinforced springs, mounting of an unusually lightweight attachment - it is required to correct the regulation of the brake proportioning valve. The pressure check and regulation should be carried out at a Volkswagen dealer/workshop for utility vehicles. The regulation has to be performed in such a way that the balance beam is horizontal.

Modifications of the brake system are illegal!

Exceptions are the adaptation of the brake-pressure line and the handbrake cable in the scope of wheel base changes at chassis.

Volkswagen AG

Automatic brake pressure regulator



Check: Inlet pressure on front axle

wheel cylinder bleeder valva

Mean value from left

Test: Outlet pressure on rear axle

wheel cylinder bleeder valva

and right

Rear axle load (kg)	Input pressure (bar)	Output pressure (bar)
500	50	14±2
600	50	14±2
650	50	15±4
700	50	19±5/2
750	50	24±6/4



800	50	29±6/4
900	100	45±6/4
1000	100	53±8
1100	100	62±8
1200	100	69±10
1300	100	75±2
1400	120	82±10
1500	120	87±10
1600	140	97±122
1700	140	103±129
1800	140	108±135

For deviating axle loads, intermediate values are to be applied. For adjustment and function, refer to the operating instructions.



3.13 Pressure Check and Regulation

Connect the pressure gauge to the wheel cylinder (rear). Unscrew the bleeder valve for this. Operate the brake pedal with enough pressure to achieve the inlet pressure (see signboard of braking force regulator), then adjust the outlet pressure. After the check, bleed the brake system. Tighten the bleeder valve by MA=4,9+1Nm.

With the specified axle loads, every pressure within the tolerance limits is permitted (e. g. 600 - 630 kg = 4-7 bar).

General note:

We recommend that the attachment manufacturers/equipment suppliers add appropriate service instructions and - if required - operating instructions to their supply scope of the vehicle



3.14 Possibility to increase the load

Possibility to increase the load up to a permitted total weight of 2,890 kg for vehicles with short and long front section, with both wheel bases, based on individual acceptance.

1. Preconditions:

- a. At vehicles with increased net load (PR-No. 0J3), it is required to convert the front-axle brake (standard: Ø 54 mm pin sliding calliper brake) to the Ø 54 mm frame calliper brake, including the internally ventilated brake discs. Vehicles that are provided with the Ø 57 mm pin sliding calliper brake (all vehicles with long front section, independent of the module variants and vehicles with TDI engine in short front section) additionally require a conversion of the main brake cylinder (currently used: Ø 25.4 mm; desired: Ø 23.81 mm). The mentioned conversions can be omitted, if the Ø 54 mm frame calliper brake was included in the vehicle order (with PR-No. 1LE).
- b. Vehicles belonging to the net load class of PR-No. 0J2 are to be converted, **in addition** to the requirements of item 1a), to the state of PR-No. 0J3. **The load of vehicles whose load was already reduced (PR-No. 0J1) can no longer be increased!**
- c. No light-alloy wheel rims! (No free movement for the frame calliper brake!).
- d. Centre-of-mass positions of special attachments/upgrades according to the specifications of our attachment guidelines

2. Boundary conditions::

- **2.1.** The maximum permitted axle loads correspond to those of PR-Nr.0J3.
- 2.2. Closed attachments (box-type delivery van, station wagon, etc.)

a. Wheel base 3320 mm

No further boundary conditions apply to the short and long front section of vehicle and to all currently available modules/units- apart from those mentioned under item 2.1.

b. Wheel base 2920 mm

- 1. No further boundary conditions apply to the short front section of vehicle, apart from those mentioned under item 2.1., and provided that no TDI engine is used.
- 2. At the long front section version and at the short front section version with TDI engine, it is generally only possible to increase the load, if a calculation of weights is available for the upgraded special vehicle and if the brake calculation shows a positive result in the individual case.* Observe item 2.1!
- **2.3.** Open attachments (standard chassis with driver's cab or double cab).

a. Wheel base 3320 mm

All currently possible modules/units and front section versions (long front section only for caravans) must have a minimum rear-axle load of 565 kg, to permit that they also can be driven without special attachment (caravan cabins, semi-trailers, etc.). Observe item 2.1.

In this context, it is not necessary to deal with the compliance with other possible regulations on driving



without special attachments.

b. Wheel base 2920 mm

These vehicles must have a minimum rear-axle load of 640 kg, to permit that they can also be driven without special attachment. In this context, it is not necessary to deal with the compliance with other possible regulations on driving.

- 1. No further boundary conditions apply to the short front section of vehicle, apart from those mentioned under item 2.1., and provided that no TDI engine is used.
- 2. At the long front section version (only available for caravans!) and at the short front section version with TDI engine, it is generally only possible to increase the load, if a calculation of weights is available for the upgraded special vehicle and if the brake calculation shows a positive result in the individual case.*

 Observe item 2.1!

Import certificates

can be obtained from: Volkswagen AG, Department NE-GG, Brieffach [pigeonhole] 1745, Postfach [P.O. box], 38436 Wolfsburg, Germany Fax +49-5361-972917

Time required for handling:approx. 20 days.

Preconditions:

- a. It is required to forward a copy of the vehicle registration papers and documents. In addition: Specification of
 - . ♦ axle loads
 - ♦ the currently used tyre type
 - the centre-of-mass position of the base vehicle to be upgraded/modified
 - the remaining net load.
- b. A positive test result from our development department.

If an import certificate is already available for an upgrading/modification variant, please enclose a copy when requesting a further import certificate. (This will help to speed up the handling!).

*) Due to capacity reasons, individual cases cannot be considered. **Alternative:** Please, use long wheel bases! In case of larger quantities, add a note on how many vehicles of this variant are to be constructed per annum. At variants which are not mentioned here, a subsequent load increase is not possible. The same applies to load increases exceeding the above mentioned extent!

Additional information:

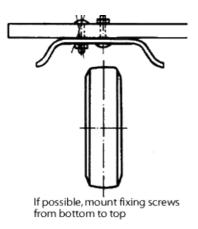
Only for camper vans and sales cars, there is a chassis with driver™s cab available for both wheel bases with a permitted total weight of 3,300 kg. For these vehicles, only the front-wheel drive version is available for right-hand and left-hand drive vehicles. The conversion to a syncro version is not permitted! No further possibility to increase the load! Trailing weights: For all transporter variants, max. 4,500 kg, except for vehicles with a

- 1.9 I diesel engine for which a trailing weight of max. 4,000 kg is permitted.
- 2,5 I TDI engine for which a trailing weight of max. 5,000 kg is permitted.



3.2 Mudguards and Wheel Housings

The free space required for the wheels, including snow chains, must be considered. In the chassis drawings, the minimum distance between the top edge of the side rails and the wheel housings is indicated.





3.3 Attachment of Additional Units/Modules

If additional modules, units, etc. are to be attached to the chassis, it is required to fix them with brackets which are welded to the side rail in the neutral zone. If it cannot be avoided to screw them directly on the frame, it is required that the rails are executed as hollow profiles on which also distance bushes are to be welded.

Note:

- · General instructions on chassis modifications
- Drilling at the chassis frame

If attachments are to be added or to be installed, it is required to adhere to the instructions of the relevant module/unit/equipment manufacturers.



3.4 Attachment of a Loading Crane

Instructions on the attachment of a loading crane

Since a power take-off from the transmission is not available, the crane can only be operated with an electrical pumping unit (reinforced battery and generator required) or a hydraulic pump (hydraulic pump required at the engine).

When projecting the loading crane attachments, the required stability of the loading crane is to be considered. As a result of the load-distribution calculation to be performed, flatbed modifications using baffles or extensions/shortenings may be necessary.



3.5 Attachment of a Loading Tailboard

Instructions on the attachment of a loading tailboard

Before attaching a loading tailboard, it has to be checked (by means of a load-distribution calculation) whether the permitted rear-axle load and the minimum front-axle load are kept.

It is not permitted to attach a loading tailboard to standard box-type delivery vans without the approval of the relevant manufacturer. It is possible to attach a swinging lift with a load-carrying capacity of max. 300 kg.

When ordering a chassis which is to be equipped with an electrohydraulic loading tailboard, we recommend the following options: reinforced generator and reinforced battery.

For the attachment of the loading tailboard, the chassis has to be provided with a mounting frame (see note on mounting frames).



3.6 Trailer Couplings/Free Space according to DIN 74058

Only couplings which are approved by us may be used as trailer couplings. The following trailer couplings can be ordered ex works as special equipment:

Spherical coupler - order code:

1D6: For trailing loads up to max. 2 000 kg during braking, with 12% angle of gradient.

The permitted externally applied load is 100 kg.

The permitted max. total weight indicated in the car documents must not be exceeded. The actual weight of the trailing load must be lower than that of the trailing vehicle.

Adhere to the following instructions when a trailer coupling is to be retrofitted:

- The specific national regulations are to be considered
- It has to be ensured that the required freedom of operation of the trailer behind the tractive unit is maintained (DIN 74058)
- The standard radiator and fan has to be replaced by reinforced variants (according to PR-No. 1D7)
- The vehicle has to be tested by the responsible technical testing authority for motor traffic.

Note:

- 1. Location points are available in the side rails of the vehicle.
- 2. If the attachment is positioned extremely low or if the attachment is extremely overlapping, it may be prohibited to use the coupling mounted ex works.
- 3. The permitted trailing weight (depending on the engine) has to be determined before the retrofitting is carried out.

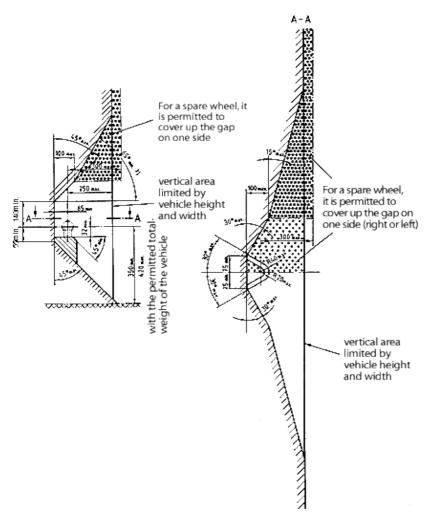
Free space according to (Refer to "Trailer couplings" for continuation)

Details which are not specified are to be suitably selected.

Check

It is required to check dimensions and angles with suitable length measuring devices and protractor gauges.





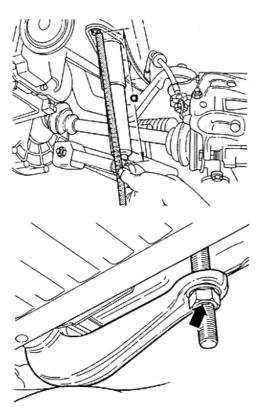


3.7 Standing Height Adjustment (Torsion Bar Spring)

If the unladen weight of the vehicle at which an attachment was installed is considerably increased, compared to the base vehicle, it is required to adjust the standing height at the front axle. This is the only way to avoid an excessively high torque-rod load at the top limit-stop.

Adjustment:

- a) Determination of the axle load in unladen condition, at the front (without driver and with empty tank) on the ready vehicle
- **b)** The vehicle must be perfectly aligned, deflected several times and swung out
- c) Measure and adjust the standing height at the front axle





3.8 Electromagnetic Compatibility (EMC)

In motor vehicle power-supply circuits, the individual consuming devices cause electrical disturbance variables. Volkswagen AG checks whether electronic components (which are installed by the manufacturer) are electromagnetically compatible inside the vehicle.

If electrical or electronic systems are to be upgraded or retrofitted, it is also required to check their electromagnetic compatibility.

Setting values: Dimension a:

up to 1,100 kg front-axle load = 280 mm 1,100 kg to 1,200 kg = 273 mm more than 1,200 kg = 265 mm

Dimension ,a[™] is to be measured between the screw head of the damper reception (above) and the screw centre of the screw damper (below). If required, the prescribed standing height can be adjusted by turning the nut at the tension lever of the torque rod. (Arrow)

The following standards supply relevant information:

- DIN 40839
- DIN 57879, Teil 3
- VDE 0879, Teil 3
- VWTL 965
- VWTL 820 66
- VWTL 821 66
- VWTL 823 66

In addition, it is required to adhere to the EMC Directive 72/245 EC, version 95/54 EC.

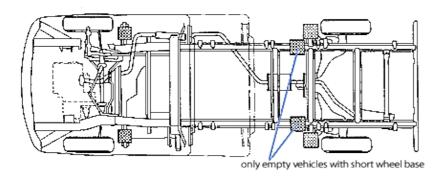


3.9 Jacking the Vehicle

a) With lifting platforms

The vehicle may only be lifted at the location points provided for that purpose (see illustration). Only 2-pillar lifting platforms may be used.

- **b)** With a lifting jack (up to a permitted total weight of 2,800 kg) See operating instructions for procedure and location points for the jack at all vehicle versions.
- c) With a lifting jack provided by the attachment manufacturer (applies to all chassis without serial attachments) The jack provided by the attachment manufacturer must match to the attachment (see separate marketing information). The location points for lifting platforms may be used (with large-surface supports). The standard lifting jack must not be used!



- a) 4 location points are shown in front of the rear axle. The note "Only for empty vehicles with short wheel base" indicated below, only applies to the two location points at the side rails.
- b) 3,3 t-Chassis delivered ex works have no jack! Therefore, attachment manufacturers must include a jack in their supply scope which has to match to the corresponding attachment. The standard jack location-points of the chassis can then no longer be used. However, it is possible to use the relevant platform location points. Notes on the jack selection (manufactured height, max. lift) are to be taken from our separately available marketing information.

Standard lifting jack for standard chassis (permitted max. total weight 2,800 kg)

Since the beginning of model year 2002 (i. e. from KW18/01 onwards), all chassis variants (cab and double cab) without standard attachments (flatbed) are delivered with jack.

Requirement: It must be possible to apply the jack without problems and safely to the positions provided by us, i. e. behind and below the bearing blocks, at the left-hand and right-hand side. If this is not possible, the standard jack must not be used. The jack is then to be provided by the attachment manufacturers (matching to the respective special attachment).

Note:

- 1. The standard jack location points at our base vehicles are not suitable for other jacks! Optionally, in this case the location points for lifting platforms may be used (except for the two location points at the two side rails in front of the rear axle), in combination with large-surface supports. See construction guideline!
- 2. If required, the attachment manufacturer must provide specific jack location points below his special attachment instead of the platform location points at the back provided by us! The platform location points at the front (below the driver™s cab) must still be included!



3. If the loading is increased up to the permitted total weight of 2,890 kg, the permitted axle loads of PR.-No. 0J3 remain unchanged. Under these circumstances, the standard jack (considering the above mentioned boundary conditions) may also be used.

If the operators are procuring the jack themselves, it is required to adhere to the following instructions on jack selection:

- a) The maximum permitted axle load for transporter chassis can be found under the specifications for the variant with a permitted total weight of 3,300 kg (applies **only** to sale cars and mobile homes!). In this case, the maximum permitted rear-axle load is 1,800 kg. The appropriate max. externally applied load at the previously mentioned platform location points (provided by us) and at the jack location points at the special attachments (determined by the attachment manufacturers), is to be determined by the attachment manufacturers.
- b) The maximum permitted axle load for transporter chassis can be found under the specifications for the variant with a permitted total weight of 3,300 kg (applies only to sale cars and mobile homes!). In this case, the maximum permitted rear-axle load is 1,800 kg. The appropriate max. externally applied load at the previously mentioned platform location points (provided by us) and at the jack location points at the special attachments (determined by the attachment manufacturers), is to be determined by the attachment manufacturers.
- c) For changing a wheel, the jack must be extendable up to a supporting height/total height of min. 470 mm, if the above mentioned platform location points are used to mount the spare wheel as a replacement of a damaged vehicle wheel



4.1 Cut-outs in the side wall

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

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

A. Cut-outs in the side wall

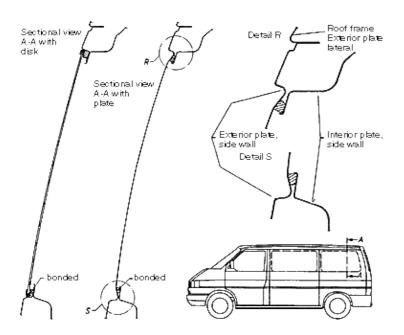
Since the subsequent installation of windows is complicated and expensive, it is recommended to order the desired windows ex works (see delivery program).

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

Retrofitting of windows

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

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





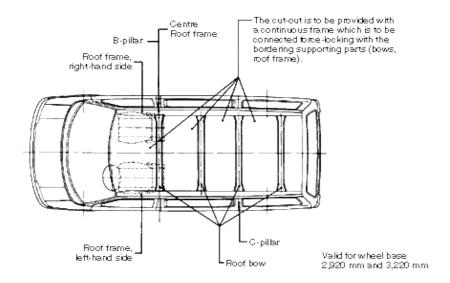


4.2 Roof Cut-Outs

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

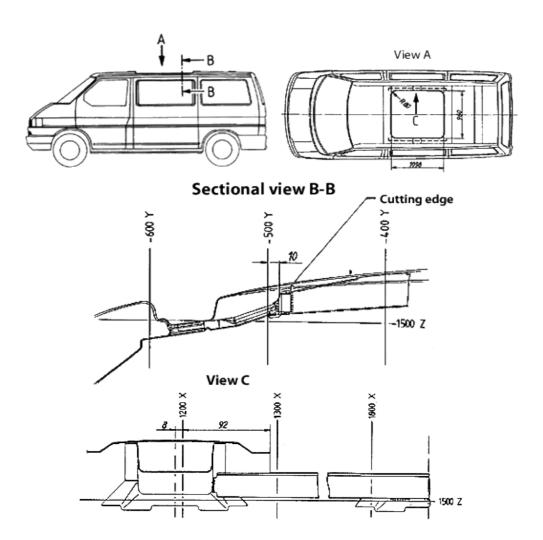
B. Retrofitting of Roof Cut-Outs

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

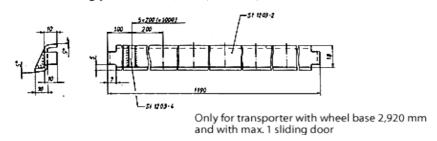


2. Roof cut-outs between bows B and C are only permitted at wheel base 2,920 mm. Details on the max. possible roof cut-out permitted in this situation, see section 3.3 Modification of closed attachments. The cut-out must be provided with the specified reinforcing plate at the left-hand and right-hand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



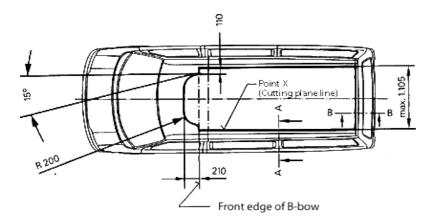


Reinforcing plate (frame) to be provided by the attachment manufacturer

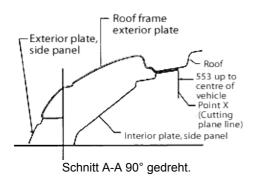


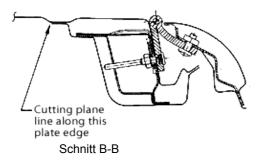
3. Large roof cut-outs for normal roof versions and both wheel bases to retrofit high roofs and pop-up tops. - Only for vehicles with max. sliding door -





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





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

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



4.3 Subsequent Mounting of a Pop-Up Tops

C. Pop-Up Tops

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

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

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

It is not permitted to remove this rear base plate.

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

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

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

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



4.4 Subsequent Mounting of a High Roofs

C. High Roofs

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

1. Preconditions

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

2. Deviations of the Preconditions Valid for Pop-Up Tops

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

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

3. Design of the High Roof

a) Wheel base 2.920 mm

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

b) Wheel base 3.320 mm

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

4. Mounting of a High Roof

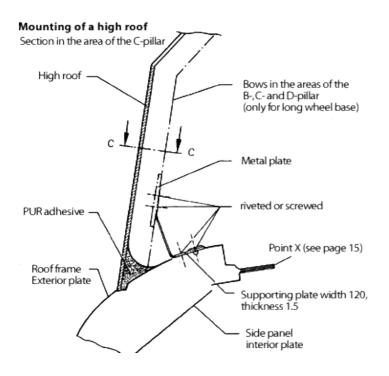
a) Wheel base 2.920 mm

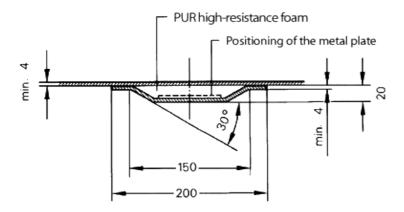
The high roof must be mounted sufficiently safe, i. e. the roof must be continuously bonded to the roof-frame exterior plate. (see draft 3.4, High roof structure).

b) Wheel base 3.320 mm

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







Sectional view C-C turned by 90° High-roof bow (only for long wheel base)



4.5 Retrofitting of Standard Seats

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

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

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

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

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

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

Detailed information on scope available on request.

Note:

- a) Fastening lugs on the boot-space floor of the station wagon/box-type delivery van are not available for PR-No. 6B0! (concerns only the home market; for exports: add option).
- b) If seats are missing in the passenger compartment, the heater core will also be missing there (the so-called 2nd heater core).

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

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

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

Retrofitting possibilities are available on request.



4.6 Retrofitting / replacement of standard seats

1) In the passenger compartment of the station wagon

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

Note:

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

2) In the driver s cab

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

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

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

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



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

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

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

- 1) reinforced springs (Pr-No. 0J3 for the increased net load) and/or is appropriately retrofitted. In case of retrofitting, it is required:
 - the torque rods, front left and right of 701 411 103 J/104 J
 - the suspension springs (rear) 701 511 105 B of the chassis. (This is reasonable because the vehicle is then raised above the rear axle by approx. 20 mm to 25 mm).
- 2) The vehicle is provided with tyres of the type 205/65 R15 and/or appropriately retrofitted. (PR-No™s. H6W, H6Y, or H6X). The tyre type 195/70 R15 C104/102 R (PR-No. H5T) is also permitted.
- 3) The vehicle is provided with the ø54 mm frame calliper brake, front, (PR-No. 1LE) and/or appropriately retrofitted. In case of retrofitting, the following is required:
 - The frame calliper brake, front left/right 701 615 105 F/106 F.
 - The internally ventilated brake disks 701 615 301 J.

Note:

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

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

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

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

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

c) Base vehicle: Chassis with driver™s cab

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



5.1 Chassis Transfer

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



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

Chassis Modifications

a) with driver s cab

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

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



5.3 Drilling at the Chassis Frame

Additional fastening points for special attachments

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

- Boreholes which are applied ex-works at the upper and lower belt of the side rails must not be drilled and/or extended. In addition, these boreholes must not be used for holding any instruments, modules, etc.
- Boreholes for connecting passages for pipes, electric cables, tackle blocks, etc. and for attaching add-on parts (clamps, etc.). In exceptional cases, we approve of boreholes to be carried out in the bar of the side rails or in the cross-members. In this case, however, it is strongly recommended to get in touch with us.



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

b) With double cab

Cut-out at the rear wall

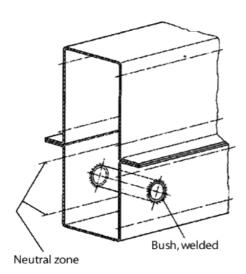
The maximum permitted cut-out is limited by the B-pillars, the B-bow and the floor of the driver™s cab.

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

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

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

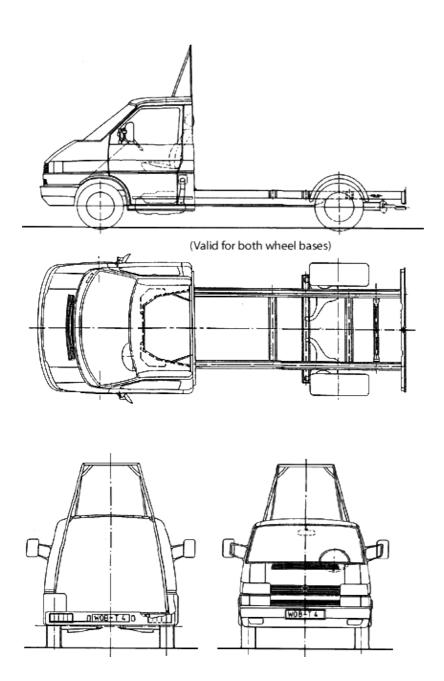
Connections between boot attachments and double cab must be realised form-locking and elastically (according to boot attachment/driver™s cab)



Modification of chassis with driver s cab

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

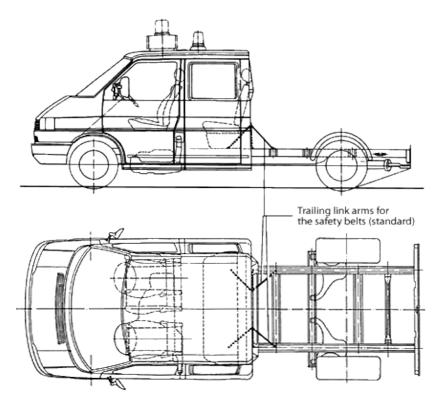




Modification of chassis with double cab

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







5.5 Welding at the Vehicle

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

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

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

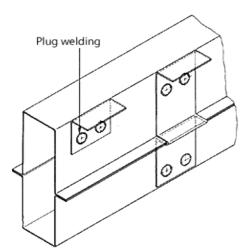
Only inert gas should be used for welding.

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

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

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

Example of a plug weld



Brackets for attachments according to the series requirements.



5.6 Wheel Base Extensions and Overhang Extension

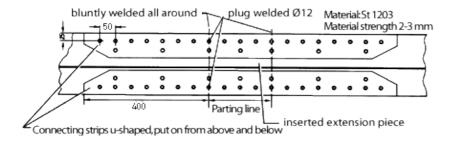
If a wheel-base extension is to be performed

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

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

Frame of the chassis (extended)

-Side view-





5.7 Subframe, Mounting Frame

Subframe

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

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

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

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

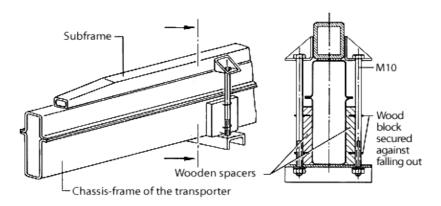
Mounting Frame

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

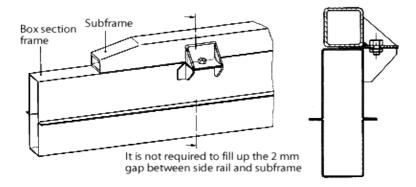
The mounting frames does not meet any strength requirements to protect the chassis frame.

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

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









5.8 General Instructions on the Modification of Standard Vehicles

Attachments with high centre of mass

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

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

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

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

		Stabilizers		Centre of mass of the	Overall centre of mass of the	Max. permitted centre-of-mass height of attachment and net load above lane in mm	
Туре	PR- No.	Front axle	Rear axle	chassis Dimensions mm X	vehicle Dimensions mm Y	Dimension Z Standard equipment	Stabilizers OAB & OBB
Box-type/station	OJ1 OJ2	s	-	757	858	1140	
Flatbed/double cab	OJ2	s	-	688	850	1180	
Chassis	OJ2	S	-	654	850	1160	
Box-type/station	OJ3	S	-	757	850	1185	
Flatbed/double cab	OJ3	s	-	688	850	1120	
Chassis	OJ3	S	-	654	850	1120	
Box-type/station	OJ2	Α	В	757	980		1480
Flatbed/double cab	OJ2	A	В	688	980		1510
Chassis	OJ2	Α	В	654	980		1460
Flatbed/double cab	OJ3	A	В	757	980		1405
Pritsche/Doka	OJ3	Α	В	688	980		1430
Chassis	OJ3 OJ4	A	В	654	980		1390

s - 23 mm stabilizer bar, front, available as standard

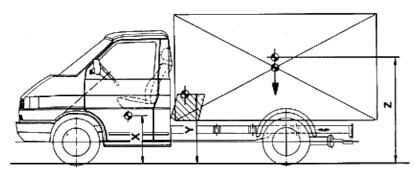
Note: The PR-No. OJ2 and OJ3 include also the syncro variants.

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

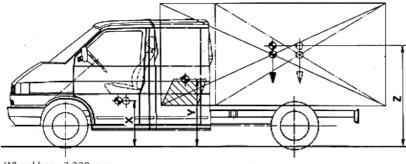
A - 27 mm stabilizer bar, front, available as extra equipment (OAB)

B - 26 mm stabilizer bar, rear, available as extra equipment (OBB)





Wheel base 2,920 mm



Wheel base 3,220 mm

For all permitted weights, the centre-of-mass height, \mathbf{Y} , must not be exceeded.

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



6.1 Internal dimensions drawing / Construction dimensional drawing



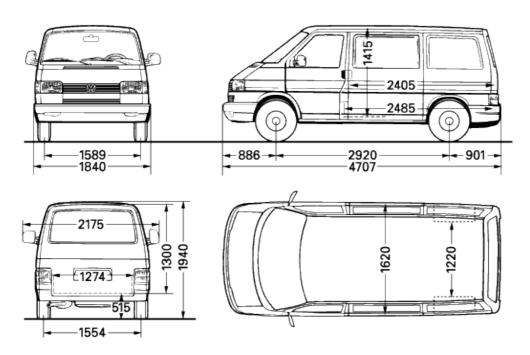
The individual dimensional drawings are in formats JPG, DXF, IGES and DWG. All files are packed in a zip archive. The files can be unpacked using Winzip (PC) or ZipIt (MAC).

Click on the link in question to save the selected file directly to your computer. You can then view and print out the dimension drawing using appropriate software (e.g. CAD system).

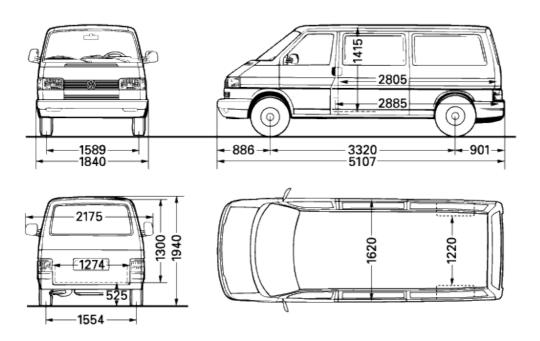
Designation	Internal dimensions drawing	Chassis with driver s cab Structural dimension drawing for special attachments	Chassis with driver s cab / double cab Structural dimension drawing for special attachments
Wheelbase	2.920 mm	2.920 mm	3.320 mm
JPG	ZNr. V03 773 010,	ZNr. 707 000 011,	ZNr. 727 000 011,
	372 kB	527 kB	527 kB
DWG	ZNr. V03 773 010,	ZNr. 707 000 011,	ZNr. 727 000 011,
	124 kB	98 kB	98 kB
DXF	ZNr. V03 773 010,	ZNr. 707 000 011,	ZNr. 727 000 011,
	93 kB	93 kB	93 kB
IGES	ZNr. V03 773 010,	ZNr. 707 000 011,	ZNr. 727 000 011,
	124 kB	124 kB	124 kB



6.2 Vignettes

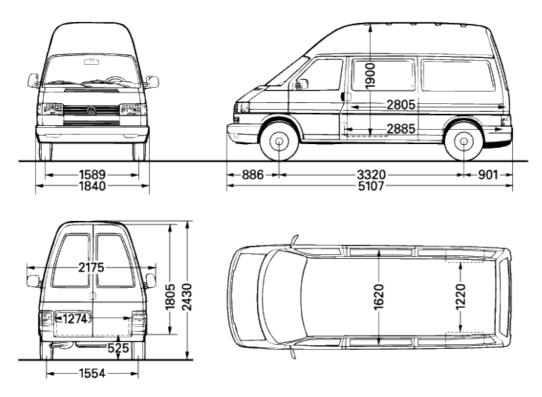


Box-type delivery van, short wheelbase (A1m)

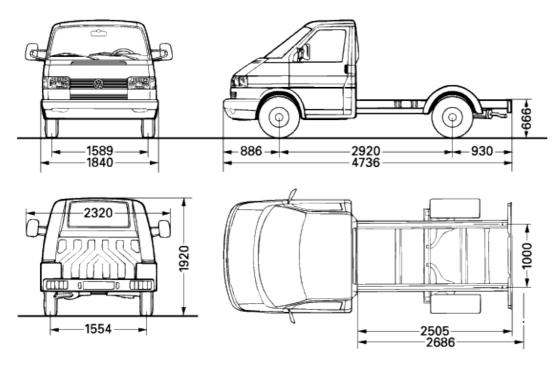


Box-type delivery van, long wheelbase (H1m)



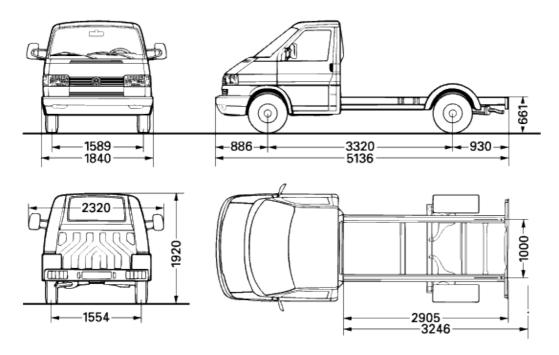


High-space box-type delivery van, long wheelbase (H1HDm)

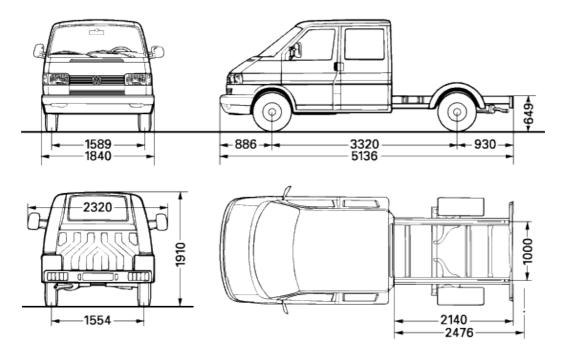


Chassis with driver™s cab, short wheelbase (E1m)





Chassis with driver™s cab, long wheelbase (L1m)



Chassis with double cab, long wheelbase (M1m)

Body builder guidlines Transporter T4

Body builder guidelines Subject to modifications Edition November 2007

Internet: www.volkswagen-nutzfahrzeuge.de

Consulting for body builders in Germany is available from the listed address.

Volkswagen Commercial Vehicles

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