

## Disclaimer

All language versions of the following PDF document for this vehicle model relate solely to vehicles intended for sale on the German market and which correspond to German regulations.

Please contact your authorised Mercedes-Benz Service Centre to obtain a printed version for other vehicle models and vehicle model years. This PDF document is the latest version. Possible variations to your vehicle may not be taken into account as Mercedes-Benz constantly updates their vehicles to the state of the art and introduces changes in design and equipment. Please therefore note that this PDF document in no way replaces the printed version which was delivered with your vehicle.





# Vario

Operating Instructions



Mercedes-Benz


## Symbols


### **WARNING**

Warning notes make you aware dangers which could pose a threat to your health or life, or to the health and life of others.

### **Environmental note**

Environmental notes provide you with information on environmentally aware actions or disposal.

 Notes on material damage alert you to dangers that could lead to damage to your vehicle.

 Useful instructions or further information that could be helpful to you.

▶ This symbol designates an instruction you must follow.

▶ Several consecutive symbols indicate an instruction with several steps.

(▷ page) This symbol tells you where you can find further information on a topic.

▷▷ This symbol indicates a warning or an instruction that is continued on the next page.

**Display** This text indicates a message on the display.

## Welcome to the world of Mercedes-Benz

Familiarise yourself with your vehicle and read the Operating Instructions before you start driving. This will give you greater driving pleasure and help you to avoid endangering yourself or others.

The standard equipment and product description of your vehicle may vary, depending on:

- model
- order
- country variant
- availability

Some warning and indicator lamps may have no function.

The illustrations in this manual show a left-hand-drive vehicle. In right-hand-drive vehicles, the arrangement and location of vehicle parts and controls differ accordingly.

Mercedes-Benz is constantly updating its vehicles to the state of the art.

Mercedes-Benz reserves the right to make changes to the following:

- design
- equipment
- technical features

Descriptions may therefore differ in individual cases from your vehicle.

The following belong with the vehicle:

- Operating Instructions
- Maintenance Booklet
- Supplements relating to vehicle equipment

Keep these documents in the vehicle at all times. If you sell the vehicle, always pass the documents on to the new owner.

**i** You can get to know the important features of your vehicle in German and in English in the online Operating Instructions on the Internet at:

**[www.mercedes-benz.de/  
betriebsanleitung-transporter](http://www.mercedes-benz.de/betriebsanleitung-transporter)**

The technical documentation team at Daimler AG wishes you safe and pleasant motoring.



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## Protection of the environment

### Environmental note

Daimler's declared policy is one of comprehensive environmental protection.

The objectives are for the natural resources which form the basis of our existence on this planet to be used sparingly and in a manner which takes the requirements of both nature and humanity into account.

You too can help to protect the environment by operating your vehicle in an environmentally-responsible manner.

Fuel consumption and the rate of engine, transmission, brake and tyre wear depend on the following factors:

- operating conditions of your vehicle
- your personal driving style

You can influence both factors. You should bear the following in mind:

Operating conditions:

- avoid short trips as these increase fuel consumption.
- make sure that the tyre pressures are always correct.
- do not carry any unnecessary weight.
- keep an eye on the vehicle's fuel consumption.
- remove roof racks once you no longer need them.
- a regularly serviced vehicle will contribute to environmental protection. You should therefore adhere to the service intervals.
- always have service work carried out at a qualified specialist workshop.

Personal driving style:

- do not depress the accelerator pedal when starting the engine.
- do not warm up the engine with the vehicle stationary.
- drive carefully and maintain a safe distance from the vehicle in front.
- avoid frequent, sudden acceleration.


- change gear in good time and use each gear only up to  $\frac{2}{3}$  of its maximum engine speed.
- switch off the engine in stationary traffic.

## Vehicle equipment

These Operating Instructions describe all models as well as standard and optional equipment of your vehicle that was available at the time of going to print.

Country-specific variations are possible. Note that your vehicle may not be fitted with all of the described functions. This also applies to safety-relevant systems and functions. Therefore, your vehicle's equipment may differ from certain descriptions and illustrations. The original purchase contract documentation for your vehicle contains a list of all of the systems in your vehicle.

Should you have any questions concerning equipment and operation, consult any Mercedes-Benz Service Centre.

-  The arrangement of switches may differ depending on the vehicle equipment.

The Operating Instructions, Maintenance Booklet and the equipment-dependent supplements are important documents and should be kept in the vehicle.

## Operating safety and vehicle approval

### Safety notes

#### WARNING

All work on the vehicle and, in particular, work relevant to safety or on safety-related systems must be carried out at a qualified specialist workshop.

#### WARNING

Some safety systems only function when the engine is running. You should therefore never switch off the engine when driving. Otherwise, the safety systems of your vehicle may not

function correctly and as a result will no longer protect you and other persons as intended. In addition, there is a risk that you may lose control of your vehicle and thus cause an accident.

#### **WARNING**

If you drive over obstacles at high speed or if the vehicle bottoms out in rough terrain, it could cause heavy impacts to the vehicle underbody, tyres or wheels. This could cause your vehicle to be damaged, which in turn might lead to an accident. This also applies to vehicles which are equipped with underbody protection.

You should therefore drive over obstacles slowly. Prevent the vehicle from bottoming out when driving off-road and if necessary, have your vehicle inspected at a qualified specialist workshop.

#### **WARNING**

Work carried out incorrectly, or alterations made to the vehicle, e.g. re-routing of cables under coverings, could cause the safety systems of your vehicle to stop working properly. The safety systems would thus no longer protect you and other persons as intended. In addition, there is a risk that you may lose control of your vehicle and thus cause an accident.

All work and alterations to the vehicle, e.g. installations or modifications, should therefore be carried out at a qualified specialist workshop.

#### **WARNING**

If work on electronic equipment and its software is carried out incorrectly, this equipment could stop working. The electronic systems are networked via interfaces. Tampering with these electronic systems could cause malfunctions in systems which have not been modified. Malfunctions such as these can seriously jeopardise the vehicle's operating safety and therefore your own safety.

You should therefore have all work and modifications to electronic components carried out at a qualified specialist workshop.

### **Electromagnetic compatibility**

The following information applies to all of the vehicle's radio components:

The electromagnetic compatibility of the vehicle components has been checked and certified according to the currently valid version of Directive 72/245/EEC or the equivalent ECE Regulation ECE-R 10.

This means that interference to other electrical/electronic components caused by your components, as well as harmful interference to your components caused by other electrical/electronic components is largely avoided.

Observe the notes on retrofitting electrical/electronic equipment (▷ page 185).

### **Qualified specialist workshops**

A qualified specialist workshop has the necessary specialist knowledge, tools and qualifications to correctly carry out the work required on the vehicle. This is especially the case for work relevant to safety.

Observe the information in the Maintenance Booklet.

The following work should always be carried out at qualified specialist workshop:

- work relevant to safety
- service and maintenance work
- repair work
- modifications as well as installations and alterations
- work on electronic components

Mercedes-Benz recommends that you use a Mercedes-Benz Service Centre.

### Registering your vehicle

Mercedes-Benz may ask its Service Centres to carry out technical inspections on certain vehicles to improve their quality or safety.

Mercedes-Benz can only inform you about vehicle checks if it has your registration data.

Your registration data is not stored if:

- you did not purchase your vehicle at an authorised specialist dealer.
- your vehicle has not been inspected at a Mercedes-Benz Service Centre.

It is advisable to register your vehicle with a Mercedes-Benz Service Centre. Inform Mercedes-Benz as soon as possible about any change of address or vehicle ownership.

### Digital speedometer and total distance recorder

Do not attempt to modify the electronically stored total distance reading for the vehicle by tampering with the electronics.

If you sell your vehicle, inform the buyer about any changes to the total distance reading.

Failure to do so may constitute a punishable offence under national legislation.

### Changing the engine power output

**!** Increased power could:

- change emission levels
- cause malfunctions
- lead to consequential damage

The operating safety of the engine cannot be guaranteed in all situations.

Any tampering with the engine management system in order to increase the engine power output will lead to the loss of warranty entitlements.

If the vehicle's engine power output is increased:

- tyres, suspension, braking and engine cooling systems must be adapted to the increased engine power output.
- have the vehicle recertified.
- report changes in power output to the vehicle insurers.

This will otherwise lead to the invalidation of the vehicle's general operating permit and its insurance cover.

If you sell the vehicle, inform the buyer of any alterations to the vehicle's engine power output. If you do not inform the buyer, this may constitute a punishable offence under national legislation.

### Diagnostic connections

#### WARNING

If you connect equipment to a diagnostics connection, it can affect the operation of the vehicle systems. This could compromise the operating safety of your vehicle while driving. There is a risk of an accident.

Do not connect any equipment to a diagnostics connection.

#### WARNING

Loose equipment or cables hanging from a device which are connected to a diagnostic connection could impede pedal clearance. The equipment or cables could get caught between the pedals when driving and braking suddenly. This could impair the function of the pedals. There is a risk of accident.

Do not attach any equipment or cables in the driver's footwell.

**!** If the engine is switched off and a device is connected to a diagnostic connection, the battery may become discharged.

All the vehicle's diagnostics connections are only suitable for connecting to diagnostic equipment at a qualified specialist workshop.


Connecting equipment to diagnostics connections can lead to emissions monitoring information being reset. This could result in your vehicle no longer adhering to emissions laws and regulations. This may be a criminal offence or breach of road traffic regulations in certain countries.

### BlueTec® exhaust gas aftertreatment

The BlueTec® exhaust gas aftertreatment system must be operated in conjunction with the reducing agent AdBlue® if it is to function correctly. AdBlue® is not topped up during maintenance work. Therefore, top up the AdBlue® tank regularly during vehicle operation.

Topping up and operating the vehicle with AdBlue are necessary in order to comply with emissions laws and regulations, and are therefore a condition of the vehicle's MOT permit. Operating the vehicle without AdBlue® will lead to the invalidation of its operating permit. The legal consequence of this is that the vehicle will no longer be permitted to be operated on public roads.

This may be a criminal offence or a breach of road traffic regulations in certain countries. Special concessions granted either at the time of purchase or to reduce operating costs, e.g. reduced taxes or road charges, may also be rendered invalid retroactively. This may be the case in both the country of registration and in other countries where the vehicle is operated.

If the AdBlue® reservoir is empty or there is a malfunction, the  engine diagnostic indicator lamp in the instrument cluster lights up (> page 152). The engine output may be automatically reduced the first time the vehicle comes to a standstill<sup>1</sup>. Adapt your driving style accordingly and drive with particular care. Top up the AdBlue® supply reservoir immediately. In the event of a malfunction,

have the BlueTec® exhaust gas aftertreatment system checked and repaired at a qualified specialist workshop.

Mercedes-Benz recommends that you use a Mercedes-Benz Service Centre for this.

### Attachments, bodies, equipment and conversions

Mercedes-Benz recommends genuine Mercedes-Benz parts and conversion parts and accessories that have been approved by Mercedes-Benz expressly for the type of vehicle concerned.

These parts have been specially tested to establish their safety, reliability and suitability.

**!** For safety reasons, have bodies manufactured and fitted in accordance with the applicable Mercedes-Benz body/equipment mounting directives. These body/equipment mounting directives ensure that the chassis and the body form one unit and that maximum operating and road safety is achieved.

For safety reasons, Mercedes-Benz recommends that:

- no other modifications should be made to the vehicle.
- approval should be obtained from Mercedes-Benz in the event of deviations from approved body/equipment mounting directives.

Approval from certified inspection agencies or official approvals cannot rule out risks to your safety.

You can obtain further information from any Mercedes-Benz Service Centre.

**The body/equipment mounting directives can be found on the Internet under:**

[https://bb-infoportal.mercedes-benz.com/portal/ar\\_van.0.html](https://bb-infoportal.mercedes-benz.com/portal/ar_van.0.html)

<sup>1</sup> On emergency vehicles, for example fire engines, the engine output is not reduced.

### Implied warranty

**!** Follow the instructions in this manual about the proper operation of your vehicle as well as about possible vehicle damage. Damage to your vehicle that arises from culpable contraventions against these instructions are not covered either by Mercedes-Benz implied warranty or by the New or Used-Vehicle Warranty.

### Correct use

Observe the following information when operating the vehicle:

- the safety notes in this manual
- national road traffic regulations
- national road traffic licensing regulations

### Data stored in the vehicle

#### Fault data

The vehicle is fitted with equipment that can store data from the vehicle systems, for example faults that have been identified.

This information facilitates the diagnosis of vehicle systems, for example, and contributes to the continuous improvement of Mercedes-Benz products.

Mercedes-Benz is allowed to access this information and make it available to third parties:

- with the consent of the owner or the lessee of the vehicle
  - for vehicle diagnosis purposes when the vehicle is serviced at a workshop
  - for the continuous improvement of products
- in the case of an official request for law enforcement purposes
- for use in the settlement or judgement of disputes that involve Mercedes-Benz, its associated companies or marketing/customer service organisations.

**i** Bear in mind that for vehicles with telematics equipment (e.g. FleetBoard) – depending on the configuration – stored data can also be read out via the telematics equipment and transferred to the central fleet office, for example.

### Other devices that store data

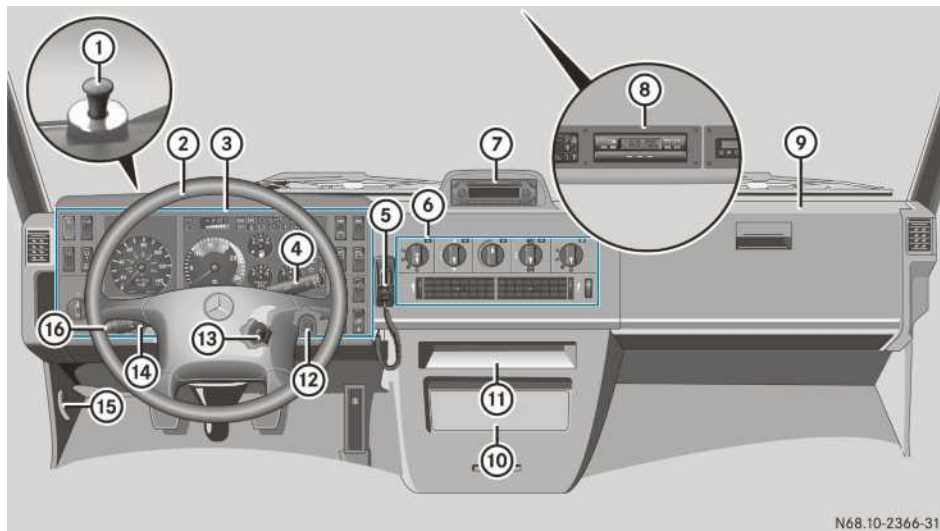
Depending on the equipment level, your vehicle may be fitted with communications and/or entertainment systems, e.g. navigation devices, telephone systems. You can store and edit the data that is required for operation of these devices. Further information on operation (e.g. on deleting data) can be found in the separate operating instructions.



Dashboard .....	20
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Indicator and warning lamps .....	23
Overhead console .....	25
Combination switch .....	25
Multifunction lever .....	26

## Dashboard

At a glance



N68.10-2366-31

	Function	Page
①	B83 brake system pressure relief valve	88
②	Steering wheel	
③	Instrument panel Instruments and switches Warning and indicator lamps	21 23
④	Multifunction lever	26
⑤	Mobile phone fittings	102
⑥	Air-conditioning system controls	67
⑦	Radio <sup>2</sup> ; see the separate operating instructions	













	Function	Page
⑧	Overhead console	25
⑨	Glove compartment with: Fuse box	102 176
⑩	Stowage compartment	
⑪	Ashtray	101
⑫	24 V, 10 A socket	102
⑬	Ignition lock	42
⑭	Combination switch:	25
⑮	Opens the bonnet	134
⑯	Horn	









<sup>2</sup> Radios without a navigation system are installed in the overhead console.


## Instrument panel



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	Function	Page		Function	Page
①	<b>Left-hand switch panel</b>		③	Display in the speedometer	57
	Switches the hazard warning lamps on/off	64	④	Rev counter	56
	Engages/disengages the differential lock	93	⑤	Outside temperature display Oil pressure display AdBlue® display	59 59 57
	Switches the power take-off on/off	94	⑥	Fuel gauge	57
	Raises/lowers the tipper body	114	⑦	Coolant temperature gauge	59
	Deactivates/activates ABS	85	⑧	<b>Right-hand switch panel</b>	
	Sets the working speed	95		Switches the interior lighting on/off	65
	Roof ventilator, ventilates the load compartment	76		Switches the load compartment lighting on/off	65
	Switches battery power to the ignition lock	43		Opens/closes the side window	51
	EMERGENCY OFF switch	62		Switches the ENR rear operating unit connection on/off	115
②	Speedometer				

	Function	Page
	Decouples/couples the engine and service brake	89
	Switches the additional heat exchanger on/off	76
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	Continuous brake, retarder: switches the foot switch on/off	89
 	Switches the seat heating on/off	55
	Switches the beacon on/off	
	Switches the auxiliary heating on/off	71









	Function	Page
	Switches the heater booster function on/off	75
⑨	Supply pressure gauge, brake circuit 2	60
⑩	Reservoir pressure display, brake circuit 1	60
⑪	Instrument lighting brighter/dimmer	61
⑫	Selector/reset button	57
⑬	Headlamp range control	63
⑭	Light switch	63







## Indicator and warning lamps



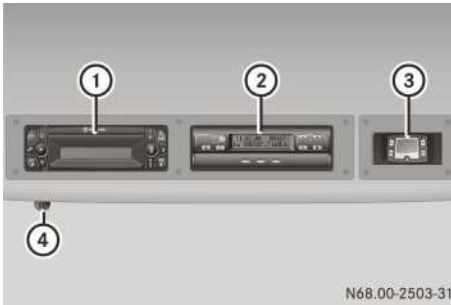
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	Function	Page		Function	Page
①	<b>Upper indicator lamp panel</b>			Oil pressure too low	154
	Turn signals on	64		Battery charging malfunction	154
	Main-beam headlamps on	64		Engine oil level too low	154
<b>EDC</b>	Diesel engine electronics malfunction	152		Power take-off engaged	94
	AdBlue® tank empty	152		Rear-axle lateral lock engaged	92
	BlueTec® exhaust gas after-treatment malfunction	152		Differential lock engaged	92
	Parking brake applied	87		Engine brake engaged	89
	ABS malfunction (vehicle)	85		Continuous brake malfunction	154
	Dirt accumulation in air filter	153		Bulb defective	
	Engine diagnostics		②	<b>Side indicator lamp panel</b>	
	AdBlue® tank empty	57		Retarder engaged	90
	BlueTec® exhaust gas after-treatment malfunction	152	<b>SRS</b>	Restraint systems malfunction	
	Brake fluid level too low	153		Foglamp on	63
	Brake pads/linings worn	153		Passenger door open	

	Function	Page
	Load compartment lighting	65
	Frequent-stop brake in applied position	
	ABS malfunction (trailer)	86
	Level control not in the travel position	116
	Electronic level control faulty	156
	Dropside open	156
	Flame start	96
	Level control not in the travel position	116
	Compressed-air reservoir for auxiliary consumers circuit too low	156

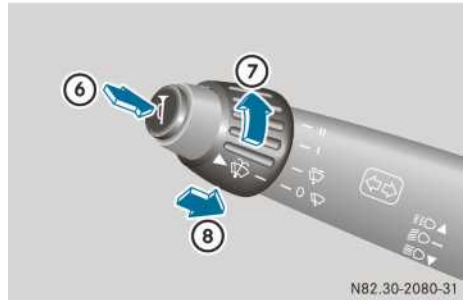
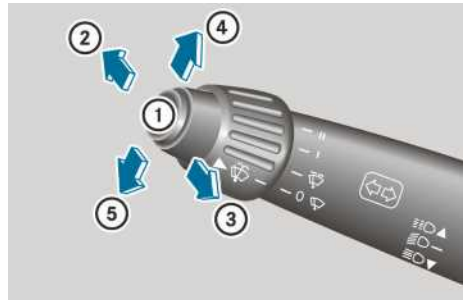
	Function	Page
	Automatic transmission malfunction	157
	Oil temperature in the automatic transmission too high	157
	Inter-axle lock engaged	92
	Beacon on	
	<b>Brake pressure warning lamp</b>	
	Service brake compressed-air supply too low	60

## Overhead console



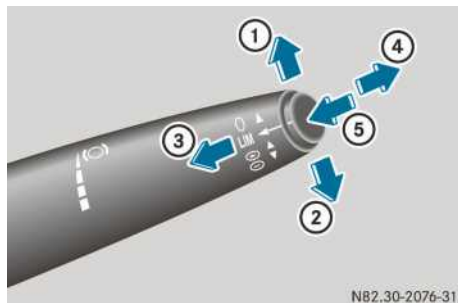
	Function	Page
①	Radio, see the separate operating instructions	
②	Tachograph, see the separate operating instructions Control panel for speedometer	58
③	Timer for auxiliary heating system	72
④	Hands-free microphone for mobile phone	102

## Combination switch



	Function	Page
①	Switches off the main-beam headlamps	64
②	Switches on the main-beam headlamps	64
③	Headlamp flasher	
④	Right-hand turn signal	64
⑤	Left-hand turn signal	64
⑥	Horn	
⑦	Switches on the windscreen wipers	66
⑧	Wipes with washer fluid Cleans the headlamps	67 67

## Multifunction lever



NB2.30-2076-31

	Function	Page
①	Switches off idling speed increase	96
	Switches off the continuous brake (engine brake/retarder)	89
	Deactivates cruise control	97
	Switches off the speed limiter	99
②	Switches on the continuous brake (engine brake/retarder)	89
③	Increases the idling speed	96
	Activates cruise control, stores and increases the speed	97
	Activates the speed limiter and stores a speed	99
④	Reduces the idling speed	96
	Activates cruise control, reactivates a stored speed or reduces speed	97
	Activates the speed limiter, reactivates a stored limit speed or stores a speed	99
⑤	Switches between driving system functions: selects cruise control or the speed limiter	97

Useful information .....	28
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## Useful information

These Operating Instructions describe all models and standard and optional equipment of your vehicle that were available at the time of printing. Country-specific variations are possible. Note that your vehicle cannot be fitted with all of the described functions. This also applies to systems and functions relevant to safety.

Read the information on qualified specialist workshops: (▷ page 14).

## Occupant safety

### Restraint systems

The seat belts, belt tensioners and driver's airbag are restraint systems designed to complement one another. They reduce the risk of injury in specific, pre-defined types of accident situations and thereby increase occupant safety. Neither seat belts nor the driver's airbag generally provide any protection from objects that enter the vehicle from outside.

In order for the restraint systems to offer the intended level of protection, make sure that:

- the seat and head restraint are set correctly (▷ page 52).
- the seat belt is being worn correctly (▷ page 28).
- the driver's airbag can deploy unimpeded if triggered (▷ page 32).
- the restraint systems have not been tampered with.

The driver's airbag increases the degree of protection afforded to the driver wearing a seat belt. It is therefore only an additional restraint system which complements, but does not replace, the seat belt. The driver's airbag by no means replaces the need for all vehicle occupants to wear their seat belt correctly at all times. Not all accidents will trigger the driver's airbag. If, for example, deployment of the driver's airbag would not increase

the protection offered by the correctly worn seat belt, the airbag will not be deployed.

If the driver's airbag is triggered, it can only provide increased protection if the seat belt is worn correctly. Firstly, the seat belt helps to keep the driver in the best position in relation to the airbag. Secondly, in the event of a frontal collision, for example, the seat belt prevents the driver from being thrown towards the point of the impact.

### WARNING

Modifications to or work performed incorrectly on the following parts can result in the restraint systems not functioning as intended:

- restraint system, consisting of seat belts and anchorage points, belt tensioners, driver's airbag
- the wiring
- networked electronic systems

The driver's airbag and/or the belt tensioners could, for example, be triggered unintentionally or could fail to deploy even when the deceleration caused by an accident would normally be sufficient to trigger the systems. For this reason, never make any modifications to the restraint systems.

Therefore, you must not tamper with electronic components or their software.

### Seat belts

## Important safety notes

### WARNING

Airbags provide additional protection, but are not a substitute for the seat belts. To reduce the risk of serious or even fatal injuries, make sure that all occupants – in particular, pregnant women – wear their seat belt correctly at all times and have adopted a normal sitting position, and that their seat backrest is positioned as close to the vertical as possible.

**⚠ WARNING**

A seat belt which is not worn, which is worn incorrectly, or which has not been engaged in the seat belt buckle correctly, cannot perform its intended protective function. Under certain circumstances this could cause severe or even fatal injuries. Make sure that all vehicle occupants – in particular, pregnant women – wear their seat belt correctly at all times.

Make sure that the belt:

- is routed as low as possible across your pelvic area, i.e. across your hip joints and not across your abdomen
- fits closely
- is not twisted
- is routed across the middle of your shoulder
- is not routed across your neck or under your arm
- fits closely across your pelvic area, by pulling upwards on the shoulder section of the belt

Do not secure any objects with a seat belt if the seat belt is being used by one of the vehicle's occupants.

Avoid wearing bulky clothing, e.g. a winter coat.

Do not route the belt strap across sharp-edged or fragile objects, especially if these are on or in your clothing, e.g. spectacles, pens, keys, etc. The seat belt strap could be damaged and you could be injured.

Only one person should use each seat belt at any one time.

On no account should children travel in the vehicle while sitting on the lap of another occupant. It would not be possible to restrain the child, and the child and other vehicle occupants could be injured seriously or even fatally in the event of abrupt braking.

Persons under 1.50 m tall or under twelve years of age cannot wear the seat belts properly. They therefore require additional suitable restraint systems fitted on appropriate seats for protection in an accident. Always

follow the manufacturer's installation instructions when fitting a child seat.

**⚠ WARNING**

A seat belt only offers its intended degree of protection if the backrest is positioned as close to the vertical as possible and if the occupant is sitting upright. Avoid seat positions that prevent the seat belt from being correctly routed. You will find further information under "Seat" in the index. You should therefore position the backrest as close to the vertical as possible. Never drive with the backrest tilted too far back. You could otherwise be seriously or even fatally injured in the event of an accident or sudden braking.

**⚠ WARNING**

The three-point seat belt provides better restraint than the lap belt and therefore provides better protection against injuries. Passengers on the rear seats should therefore use the seats with three-point seat belts when possible.

**⚠ WARNING**

The seat belt cannot function correctly if the belt or buckle is dirty or damaged. Keep the belt and buckle clean, otherwise the belt tongue cannot engage correctly.

Regularly check the seat belts to make sure that they:

- are not damaged
- are not routed over sharp edges
- are not trapped

Otherwise, the belt could tear in the event of an accident. You or others could be seriously or even fatally injured.

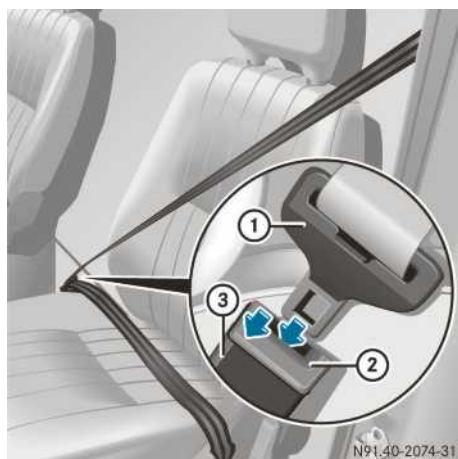
Have seat belts which have been damaged or subjected to heavy loads in an accident replaced and have their anchorages checked.

For safety reasons, Mercedes-Benz recommends that you only use seat belts which have been specially approved for your vehicle by Mercedes-Benz.

Seat belts are the most effective means of reducing the occupants' motions in the event of a collision. This reduces the danger of occupants hitting the vehicle interior.

- i** Many countries have legislation concerning the use of seat belts and child restraint systems.

### Wearing seat belts



- ▶ **To fasten the seat belt:** pull the seat belt smoothly out of the belt reel.
- ▶ Route the belt across your shoulder.
- ▶ Engage belt tongue ① in seat belt buckle ②.
- ▶ Pull upwards on the shoulder section of the seat belt to tighten it across your body.
- ▶ Adjust the seat belt to the appropriate height as necessary.
- ▶ **To release the seat belt:** press release button ③ on seat belt buckle ②.

#### WARNING

When the lap belt is not being used, ensure the belt tongue is always engaged in the seat belt buckle. The belt can otherwise be thrown around during the journey and in case of accidents cause injuries to other passengers.

## SRS (Supplemental Restraint System)

### General notes

SRS reduces the risk of occupants hitting parts of the vehicle interior in the event of an accident. In addition, it can reduce the forces the occupants are subjected to during an accident.

SRS consists of:

- **SRS** warning lamp
- belt tensioners
- airbag system including:
  - control unit
  - driver's airbag

### **SRS** warning lamp

SRS regularly performs self-checks when the ignition is switched on and while the engine is running. This allows faults to be detected in good time.

When you switch on the ignition, the **SRS** warning lamp lights up in the instrument cluster for approximately four seconds.

#### WARNING

A malfunction has occurred if the **SRS** warning lamp:

- does not light up when you switch on the ignition, or
- does not go out within a few seconds of switching on the ignition, or
- lights up again

Individual systems could be triggered inadvertently or might not be triggered at all in the event of an accident with a high rate of vehicle deceleration. If a malfunction does occur, have SRS checked immediately at a qualified specialist workshop.

### Triggering the belt tensioners and the driver's airbag

In the event of a collision, the sensor in the airbag control unit evaluates important physical data such as the duration, direction and

rate of vehicle deceleration or acceleration. Based on the evaluation of this data as well as the deceleration in a longitudinal direction, the belt tensioners are the first to be triggered by the control unit in an accident.

The driver's airbag is not deployed unless the vehicle's rate of longitudinal deceleration reaches a higher value.

In the first stages of a collision, the control unit evaluates physical data such as duration, direction and rate of vehicle deceleration or acceleration. Based on this evaluation, the control unit determines whether it is necessary to trigger the belt tensioners or deploy the airbags.

The triggering thresholds for the belt tensioners and driver's front airbag are variable and are adapted to the rate of the vehicle deceleration. This process is pre-emptive in nature since the airbag must be deployed during, and not at the end of, the collision.

- i** The driver's front airbag is not triggered in all accidents. It is controlled by a complex sensor system and evaluation logic. This process is pre-emptive in nature as airbags are deployed during the impact and are adapted to provide calculated, additional protection for the driver.

Vehicle deceleration or acceleration and the direction of the force are essentially determined by:

- the distribution of the force during the impact
- the collision angle
- the deformation characteristics of the vehicle
- the characteristics of the object with which the vehicle has collided, e.g. the other vehicle

Factors which can only be seen and measured after the collision has occurred are not decisive for airbag deployment. They also do not provide an indication of their deployment.

The vehicle may be considerably deformed without the driver's front airbag being

deployed; for example, if the bonnet or wings are hit. This is the case if only relatively easily deformable parts have been hit and the required rate of deceleration has not been reached. It is also possible that the driver's front airbag may be deployed even though the vehicle is only slightly deformed. This is the case if, for example, very rigid vehicle parts such as the longitudinal body members are hit in an accident and the rate of deceleration is sufficient.

### Belt tensioners

If the vehicle is equipped with a driver's airbag, the seat belt of the driver's seat has a belt tensioner. Whether or not the co-driver's seat has a belt tensioner depends on the vehicle's equipment.

Belt tensioners tighten the seat belts in an accident, pulling them close against the seat occupant's body.

- i** Belt tensioners do not correct an incorrect seat position or incorrectly worn seat belts.

Belt tensioners do not pull occupants back towards the backrest.

While the ignition is switched on, the belt tensioner is triggered only:

- if the restraint systems are operational; see **SRS** warning lamp (▷ page 30)
- in the event of head-on and rear-end impacts if the vehicle decelerates or accelerates rapidly in a longitudinal direction in the initial stages of the impact

If the belt tensioner is triggered, you will hear a bang and powder may also be released. The bang will generally not affect your hearing, except in extremely rare circumstances. The powder emitted is not hazardous to health. The **SRS** warning lamp lights up.

#### **WARNING**

If the seat belt tensioners have been triggered, they provide no additional protection in the event of another accident. Therefore,

have belt tensioners which have been triggered replaced at a qualified specialist workshop.

Comply with safety regulations when disposing of belt tensioners. Any Mercedes-Benz Service Centre can provide details of these regulations.

## Airbag system

### Important safety notes

#### WARNING

To reduce the risk of serious or fatal injuries in the event of an accident with a high rate of deceleration, e.g. injuries caused by an airbag deploying within milliseconds or sudden braking, observe the following points:

- all vehicle occupants must select a seat position which allows them to wear their seat belt correctly and which is as far away from the airbag as possible. The driver's seat position must be such that the vehicle can be driven safely. The distance from the driver's seat to the pedals must be such that the driver is able to depress them fully. The distance between the driver's chest and the centre of the airbag cover must be more than 25 cm. The driver's arms should be slightly bent when holding the steering wheel.
- vehicle occupants should always wear their seat belt correctly and position their backrest as close to the vertical as possible.
- adjust the head restraints in such a way that their upper edge is at the same height as the seat occupant's head.
- move the co-driver's seat as far back as possible, especially if a child is secured in a restraint system on this seat.
- do not lean forwards, e.g. over the padded boss of the steering wheel, particularly when the vehicle is in motion.
- do not put your feet on the dashboard.
- only hold the steering wheel by the rim; this allows the airbag to deploy fully. If you hold

the inner part of the steering wheel, you could be injured when the airbag deploys.

- make sure that there are no people, animals or objects between the vehicle occupants and the area of deployment of the airbag.
- do not hang any hard objects, e.g. coat hangers, on the grab handles or coat hooks.

Due to the high speed of airbag deployment, it is not possible to entirely rule out the risk of injuries caused by the airbag deploying.

#### WARNING

The operation of the driver's front airbag is only guaranteed if you:

- do not cover or affix badges or stickers to the padded boss of the steering wheel
- do not modify the restraint system components, including the wiring.
- do not make any improper or non-professional modifications or installations to other electric components or wiring.

Your vehicle may be equipped with a driver's front airbag in the steering wheel. The airbag cover is marked with "SRS AIRBAG".

### Airbag deployment

A deployed airbag slows and reduces the movement of the vehicle occupants.

If the airbag is deployed, you will hear a bang and powder may also be released. The bang will generally not affect your hearing, except in extremely rare circumstances. The powder emitted is not hazardous to health. An airbag deploys within milliseconds. The **SRS** warning lamp lights up.

When the vehicle occupant makes contact with the airbag, hot gas flows out of the deployed airbag. This feature is designed to reduce the force acting on the occupant's head and chest. The airbag is therefore in a deflated state after an accident.

**⚠ WARNING**

After the driver's airbag has been deployed, the airbag parts are hot. Do not touch them, as you could burn yourself.

Have the driver's airbag replaced in a qualified specialist workshop. Otherwise, in the event of another accident, the driver will not be protected by the airbag.

**⚠ WARNING**

A small amount of powder is released when an airbag is deployed. The powder could cause short-term breathing difficulties in people with asthma or other respiratory problems.

In order to prevent breathing difficulties, you should leave the vehicle as soon as it is safe to do so. You can also open the window to allow fresh air to enter the interior. The powder does not constitute a health hazard and does not indicate that there is a fire in the vehicle.

**Driver's airbag****Driver's airbag**

The driver's airbag increases the degree of protection afforded to the driver against head and chest injuries.

The airbag deploys in front of the steering wheel:

- in the initial stages of an accident with a high rate of vehicle acceleration or deceleration in a longitudinal direction
- if the system determines that airbag deployment can offer additional protection to that provided by the seat belt

**Children in the vehicle****Important safety notes**

If a child is travelling in the vehicle:

- secure the child, preferably on a suitable seat in the rear, using a child restraint system appropriate to the age and size of the child and which has been approved for Mercedes-Benz vehicles.
- fasten the child's seat belt before driving off.

You can obtain child seats and information about the correct child restraint system from any Mercedes-Benz Service Centre.

**⚠ WARNING**

Do not leave children unsupervised in the vehicle, even if they are secured in a child restraint system. Children could otherwise injure themselves on parts of the vehicle. They could be severely or even fatally injured by prolonged exposure to intense heat or cold.

If children open a door, they could:

- cause injury to other persons
- get out of the vehicle and thereby injure themselves or be injured by a passing vehicle
- sustain serious injuries if they were to fall out of the vehicle, due to its height from the ground

Always take the key with you when leaving the vehicle, even if you are only leaving for a short time.

**⚠ WARNING**

Do not expose the child restraint system to direct sunlight.

This can cause parts of the child restraint system to become very hot. Touching these parts can cause burns.

**⚠ WARNING**

Do not carry heavy or hard objects inside the vehicle unless they are secured.

An unsecured or incorrectly positioned load increases the risk of injury to the child in the event of:

- sharp braking
- a sudden change in direction
- an accident

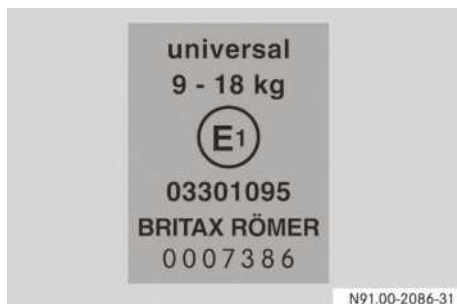
You can find further information under "Loading guidelines" in the index.

### Child restraint systems

Mercedes-Benz recommends that you only use "Universal" category child restraint systems suitable for the age and size of the children on the different seats.

You can obtain child seats and information about the correct child restraint system at any Mercedes-Benz Service Centre.

"Universal" category child restraint systems can be recognised by their orange approval label. This label is affixed to the child restraint system and identifies it.



Example of an approval label on the child restraint system

**⚠ WARNING**

To reduce the risk of serious or even fatal injury to the child in the event of an accident, braking or sudden change in direction:

- always secure children less than 1.50 m tall and under 12 years of age in a special child restraint system installed on a suitable vehicle seat, as the seat belts are not designed for passengers of this size.
- do not secure children under 12 years of age on the co-driver's seat without a suitable forward-facing child restraint system.
- if you fit a forward-facing child restraint system to the co-driver's seat, you must move the co-driver's seat as far back as possible.
- do not allow a child to travel sitting on the lap of a vehicle occupant. The forces exerted in the event of an accident, sharp braking or a sudden change in direction make it impossible for a child to be held securely. The child could be thrown against the vehicle interior and be seriously or even fatally injured.
- all vehicle occupants must always have their seat belt fastened correctly.

**⚠ WARNING**

If the child restraint system is not fitted correctly to a suitable seat, the child may not be secured in the event of an accident or sudden braking and may be seriously or even fatally injured. Therefore, when fitting a child restraint system, you must observe the manufacturer's installation instructions as well as the notes on using the child restraint system. Child restraint systems should preferably be fitted to the rear seats. Children are generally better protected there.

Never place objects, e.g. cushions, under the child restraint system. The entire base of the child restraint system must always rest on the seat cushion.

A child restraint system must not be used without the genuine cover designed for it.

Only replace damaged covers with genuine covers.

On the rear seats, only use child restraint systems that have been recommended for use in Mercedes-Benz vehicles.

#### WARNING

If you no longer require the child restraint system, remove it from the vehicle or secure it with the seat belt.

The child restraint system could otherwise be thrown through the vehicle interior in the event of an accident.

#### WARNING

Bear in mind that child restraint systems and their securing systems which have been damaged or subjected to a load in an accident may no longer be able to fulfil their protective function. For this reason, a child secured in these systems in the event of an accident, sharp braking or a sudden change in direction may be seriously or even fatally injured.

Have child restraint systems and their securing systems which have been damaged or subjected to a load in an accident checked immediately at a qualified specialist workshop.

## General safety notes

### Stickers

There are various warning stickers affixed to your vehicle. They are intended to make you and others aware of various dangers.

#### WARNING

Do not remove any warning stickers.

If you remove warning stickers, it may prevent you or others from recognising dangers. This could result in injury to yourself or others.

## Materials which are hazardous to health

#### WARNING

Do not store or transport any substances in the cab that constitute a health hazard or react aggressively. Gases and liquids can escape even from securely closed containers.

This may affect your health and impair your concentration while you are driving. In addition, electrical components (such as control units and connectors) could be damaged. This can result in malfunctions, system failures or short circuits which could start a fire.

You could cause an accident, thereby endangering yourself and others.

Do not store or transport any substances in the cab that constitute a health hazard or react aggressively.

These include:

- solvents
- fuel
- oils and grease
- cleaning agents
- acids

## Wheels and tyres

### Operating safety and roadworthiness

#### General notes

Tyres are particularly important for the operating safety and roadworthiness of the vehicle. Therefore, you should check the tyre pressure, tyre tread and tyre condition on a regular basis.

You can obtain further information on the following at a specialist tyre store or at any qualified specialist workshop:

- recommended tyre brands
- tyre load-bearing capacity (LI Load Index)
- speed index (maximum permissible tyre speed)
- tyre age

- causes and effects of tyre wear
- measures to be taken in the event of tyre damage
- tyre types for specific regions, areas of operation or conditions of vehicle use
- tyre modification options

Modifications to the brake system or the wheels are not permissible, nor is the use of spacer plates or brake dust shields. Any such modifications that are made will invalidate the vehicle's general operating permit.

#### WARNING

For safety reasons, Mercedes-Benz recommends that you only use tyres and wheels which have been specially approved for your vehicle by Mercedes-Benz. These tyres and wheels are specially adapted for the vehicle's handling characteristics, comfort and wear, as well as for use with the control systems, such as ABS or ESP®. If you use other tyres and wheels, Mercedes-Benz cannot accept any responsibility for damage which may occur as a result. You can obtain information about tyres and wheels from any Mercedes-Benz Service Centre.

If you fit tyres and wheels other than those tested and recommended for Mercedes-Benz, characteristics such as handling, noise levels, fuel consumption and wear, etc. may be adversely affected. In addition, when driving with a load, dimensional variations and different tyre deformation characteristics could cause the tyres to make contact with the bodywork and axle components. This could result in damage to the tyres or the vehicle.

Run in new tyres at moderate speeds for the first 100 km.

You can find further information on winter tyres (▷ page 121) and snow chains (▷ page 122) in the "Operation" section.

The wheel rim sizes and the permissible combinations of tyres and wheels can be found in the tyre pressure table in the "Technical data" section (▷ page 189).

#### WARNING

Loose wheel nuts or bolts could cause you to lose a wheel while the vehicle is in motion. You could lose control of the vehicle as a result, cause an accident and injure yourself or others.

Therefore, you should tighten the wheel nuts or wheel bolts regularly, at least once a year, to the specified tightening torque.

You can find further information about the tightening torque for wheel nuts in the "Technical data" section (▷ page 191).

### Tyre pressure

#### WARNING

Always observe the specified tyre pressures for your vehicle.

The tyre temperature and pressure increase when the vehicle is in motion. Therefore, you should never reduce the pressure of warm tyres. The pressure would then be too low once the tyres have cooled.

The tyre pressure must be adjusted to the load of the vehicle. If the tyre pressure is too low, it may cause the tyre to burst, especially at higher loads and speeds. A tyre pressure that is too high can cause a longer braking distance and a poorer tyre grip.

If the tyre pressure has been incorrectly set, you could lose control of your vehicle, causing an accident and injuring yourself or others.

Check the specified tyre pressure regularly when the tyres are cold. You should do this at least once every two weeks and before long journeys.

Correct the tyre pressure before loading the vehicle. Check tyre pressures after loading the vehicle and correct them as necessary.

- If the tyre pressure is too low, it can cause excessive tyre temperatures, increased

tyre wear, altered directional stability and increased fuel consumption.

- If the tyre pressure is too high, it can cause a longer stopping distance, poorer tyre traction and increased tyre wear.
- Valve caps on the tyre valves protect the valve core from moisture and dirt. You must therefore always screw the valve caps tightly onto the tyre valves.
- Any of the following may cause repeated loss of tyre pressure:
  - external damage
  - foreign objects in the tyre tread
  - foreign objects between the tyres (on vehicles with twin tyres)
  - cracks or bulges
  - a leaky tyre valve

You can find the tyre inflation pressure tables in the "Technical data" section (▷ page 189).

### Tyre tread

A minimum tyre tread depth is specified by law. You should observe the respective country-specific legal requirements.

#### WARNING

You should always make sure that there is sufficient tyre tread. Low tyre tread depth increases the risk of aquaplaning when driving in heavy rain or slush and at high speeds. The tyre tread is no longer able to route the water away. For example, when the tread depth is less than 3 mm, tyre grip is drastically reduced on wet roads.

You could lose control of the vehicle as a result, cause an accident and injure yourself or others.

For safety reasons, you should have the tyres replaced before they reach the minimum tread depth as specified by law.

### Tyre condition

Check the tyre condition regularly, at least once every two weeks and before long journeys, e.g. for:

- external damage
- objects in the tyre tread
- objects between the tyres (on vehicles with twin tyres)
- cracks, bulges
- tyre tread depth and one-sided or uneven tread wear. Turn the front wheels inwards to check the inside of the front wheels better. Always check the insides of the tyre tread on the rear wheels too.

#### WARNING

Note that cracks, bulges and other damage can cause a tyre to burst. This could cause you to lose control of the vehicle, causing an accident and injuring yourself or others. Have damaged tyres replaced immediately.

### Tyre age

Tyres age, even if they are rarely used or not used at all. Operating and driving safety diminishes with tyre age. You should therefore have tyres which are more than six years old replaced. This also applies to the spare wheel.

### Tyre damage

Tyre damage can be caused by:

- the operating conditions of the vehicle
- tyre ageing
- kerbs
- foreign bodies
- insufficient or excessive tyre pressure
- weather or environmental conditions
- contact with oil, grease or fuel

**⚠ WARNING**

Driving over kerbs or sharp-edged objects can cause damage to the tyre substructure which is not visible from the outside.

Damage to the tyre substructure will not be immediately apparent and can cause the tyre to burst.

You could lose control of the vehicle as a result, cause an accident and injure yourself or others.

Avoid tyre impact with kerbs or parking with part of the tyre tread on the kerb.

**Tyre load capacity, speed index and types of tyre****⚠ WARNING**

Exceeding the specified tyre load capacity or the permissible speed index can result in tyre damage or tyre failure. You could lose control of the vehicle as a result, cause an accident and injure yourself or others.

For this reason, use only the tyre types and tyre sizes which have been approved for your vehicle. Observe the required tyre load-bearing capacity and permissible speed index for your vehicle.

Note, in particular, the vehicle approval regulations relating to tyres in the country concerned. These regulations may specify certain tyre types for the vehicle, or may prohibit the use of certain tyre types that are permissible in other countries.

In addition, the use of a certain tyre type may be advisable in certain regions and for certain areas of operation. A specialist tyre store, a qualified specialist workshop or any Mercedes-Benz Service Centre will be able to give you further information about tyres.

**Retreaded tyres**

Mercedes-Benz recommends that you only use tyres and wheels which have been specially tested and approved for your vehicle by Mercedes-Benz.

**Direction of rotation**

Tyres with a specified direction of rotation offer additional benefits, e.g. with regard to aquaplaning. You can only take advantage of these benefits if the direction of rotation is observed. The direction of rotation is indicated by an arrow on the tyre sidewall.

**Replacing tyres and wheels**

- Only fit tyres and wheels of the same type and make.
- Only fit tyres of the correct size onto the wheels.
- Fit new tyres on the front wheels first if tyres of the same size are required on the front and rear wheels.

**⚠ WARNING**

For safety reasons, Mercedes-Benz recommends that you only use tyres and wheels which have been specially approved for your vehicle by Mercedes-Benz. These tyres and wheels are specially adapted for the vehicle's handling characteristics, comfort and wear, as well as for use with the control systems, such as ABS or ESP®. If you use other tyres and wheels, Mercedes-Benz cannot accept any responsibility for damage which may occur as a result. You can obtain information about tyres and wheels from any Mercedes-Benz Service Centre.

If you fit tyres and wheels other than those tested and recommended for Mercedes-Benz, characteristics such as handling, noise levels, fuel consumption and wear, etc. may be adversely affected. In addition, when driving with a load, dimensional variations and different tyre deformation characteristics could cause the tyres to make contact with the bodywork and axle components. This could result in damage to the tyres or the vehicle.

Run in new tyres at moderate speeds for the first 100 km.

 **WARNING**

Only interchange the front and rear wheels if they are of the same size. If the interchanged wheels are of a different size, the handling characteristics of the vehicle can change considerably. Operating safety may no longer be guaranteed.

Provided that the vehicle has the same size wheels, they can be interchanged every 5000 to 10,000 km, depending on the degree of tyre wear. Do not reverse the direction of wheel rotation (> page 38).

Interchange the wheels before too definite a wear pattern has formed on the tyres. The front tyres typically wear more on the outer shoulder, and the rear tyres in the centre of the tread.

Clean the inside of the wheels thoroughly whenever the wheels are interchanged.

After interchanging wheels, correct the tyre pressures (> page 189).

You can find information about changing a wheel in the "Practical advice" section (> page 166).

### Storing tyres

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**!** Store tyres in a cool, dry and, if possible, dark place. Protect the tyres from oil, grease and fuel.

Never use a high-pressure device to clean the tyres. Otherwise, you could damage your wheels.



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### Useful information

These Operating Instructions describe all models and standard and optional equipment of your vehicle that were available at the time of printing. Country-specific variations are possible. Note that your vehicle cannot be fitted with all of the described functions. This also applies to systems and functions relevant to safety.

Read the information on qualified specialist workshops: (▷ page 14).

### Opening and closing

#### Getting into and out of the vehicle

##### WARNING

There can be no guarantee that you will get in and out of the vehicle safely if you do not use the grab handles and the steps provided.

These are the only parts of the vehicle designed to take a person's weight. Do not jump out of the vehicle. You could injure yourself by doing this.

There is a risk of slipping or falling if the access steps and entry sills are dirty or icy.

Keep access steps, entry sills and footwear free from dirt (e.g. mud, clay, snow and ice).

##### WARNING

Only remove the key from the ignition lock when the vehicle is stationary. Once the key has been removed you can no longer steer the vehicle.

Remove the key from the ignition lock even if you are only leaving the vehicle for a short time. Otherwise, children or unauthorised persons could endanger themselves and others. They could, e.g. operate electrical systems, release the parking brake, start the engine and/or set the vehicle in motion.

##### WARNING

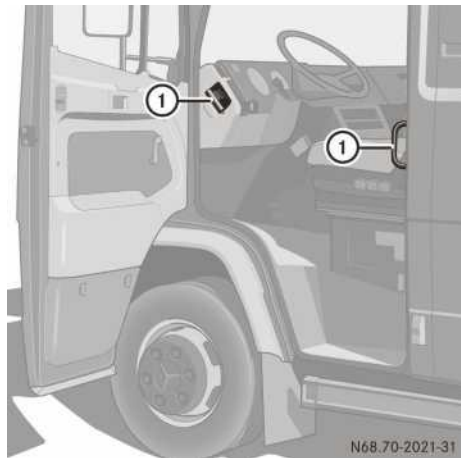
Do not leave children unsupervised in the vehicle even if they are secured in a child restraint system.

The children could:

- injure themselves on parts of the vehicle
- be severely or even fatally injured by prolonged exposure to intense heat or cold
- release the parking brake. The vehicle may then start moving of its own accord.

If the children open a door, they could:

- injure other people
- get out of the vehicle and thereby injure themselves or be injured by a passing vehicle
- sustain serious injuries if they were to fall out of the vehicle, due to its height from the ground

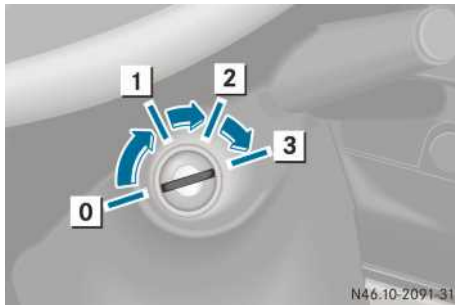


- ▶ When getting into and out of the vehicle, make use of grab handles ① and, if necessary, the access steps provided.

#### Ignition lock

On vehicles with an EMERGENCY OFF switch, before starting the engine for the first time, you must switch on the battery power supply for the ignition lock (▷ page 43).

On vehicles with a battery main switch, you must first switch on the power supply (▷ page 61).




- 0 To insert/remove the key, lock the steering wheel
  - 1 To unlock the steering wheel, power supply for some consumers (e.g. the radio)
  - 2 To switch on the ignition<sup>3</sup>, drive position, power supply for all consumers
  - 3 To start the engine<sup>3</sup>
- i** To unlock the steering wheel, move the steering wheel slightly to the left and right while turning the key to position 1.

### Vehicles with an EMERGENCY OFF switch


Vehicles with an EMERGENCY OFF switch are equipped with an additional switch, which switches on the battery power supply for the ignition lock to start the engine.



► **To switch on the battery power supply:** press upper section ① of the  switch. The engine can be started and the power supply for all consumers can be switched on by means of the ignition lock.

► **To switch off the battery power supply:** park the vehicle.

► Turn the key to position 0 in the ignition lock.

► Press lower section ② of the  switch.

**i** If you switch off the battery power supply for the ignition lock after starting the engine, power is not cut off until the engine is switched off.

### Driver's door and co-driver's door

Your vehicle comes with two master keys.

**i** If a key is lost, obtaining a replacement is a time-consuming process which only a Mercedes-Benz Service Centre can perform for you. Mercedes-Benz recommends that you always keep an easily accessible spare key with you for emergencies.

#### WARNING

Make sure that nobody can become trapped as you close and open the doors. Exercise particular care, especially if children are near the vehicle.

Only open the doors when road and traffic conditions permit. Make sure that there is sufficient clearance when opening the doors. You could otherwise cause injury to yourself and others.

#### WARNING

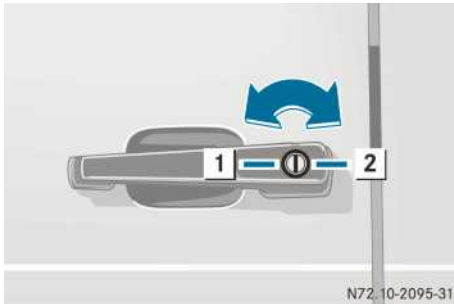
Do not leave the doors open if the vehicle is on a slope. The doors could drop out of the detent position and close. If the doors are not fully closed, they could open unexpectedly. You and other persons could then become trapped.

<sup>3</sup> On vehicles with an EMERGENCY OFF switch, only if the battery power supply for the ignition lock is switched on.

You must make sure that doors are closed when the vehicle is on a slope.

- i** You can open/close the rear door of a crewcab as described in the following for the front hinged doors.

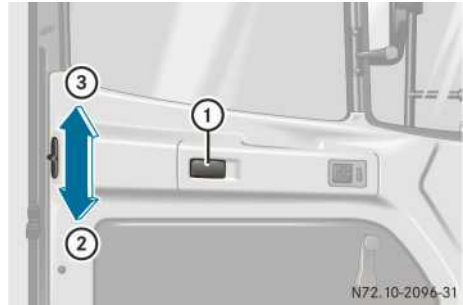
### Opening the hinged door from the outside



Hinged door (example, driver's door)

- 1** Hinged door unlocked
  - 2** Hinged door locked
- ▶ Insert the key into the lock of the driver's door.
  - ▶ Turn the key anti-clockwise to pressure point **1**.  
The driver's door is unlocked.
  - ▶ Remove the key and press the lock cylinder to open the driver's door.

### Opening the hinged door from the inside



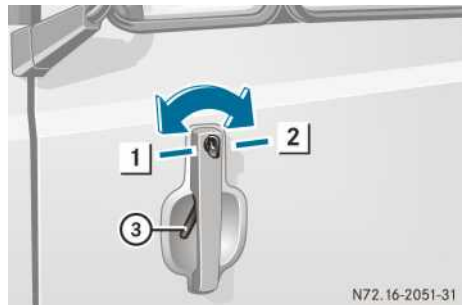
Hinged door (example, driver's door)

- 1** Door handle
- 2** To lock the hinged door
- 3** To unlock the hinged door

- ▶ Slide the locking latch up **3**.  
The hinged door is unlocked.
- ▶ Pull door handle **1**.

- i** As a precaution against being locked out of the vehicle unintentionally, the driver's door will not lock if it is open.

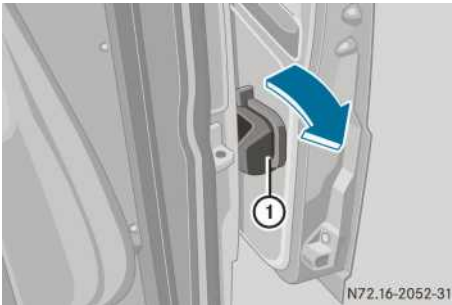
### Opening/closing the sliding door from the outside



- 1** Sliding door unlocked
- 2** Sliding door locked
- 3** Latch

- ▶ Insert the key into the lock of the driver's door.
- ▶ Turn the key anti-clockwise to pressure point **1**.  
The sliding door is unlocked.
- ▶ Remove the key.
- ▶ **To open:** pull latch **3** towards the door handle to open the sliding door.
- ▶ Slide the sliding door by the door handle back to the stop.
- ▶ **To close:** slide the sliding door forwards by its handle until it engages.

### Opening/closing the sliding door from the inside



① Latch

- ▶ Pull latch **1** forwards.  
The sliding door is unlocked.
- ▶ **To open:** slide the sliding door by latch **1** back to the stop.
- ▶ **To close:** slide the sliding door forwards firmly by latch **1** until it engages.

### Sliding doors

#### **⚠ WARNING**

Make sure that nobody can become trapped as you close and open the doors. Exercise particular care, especially if children are near the vehicle.

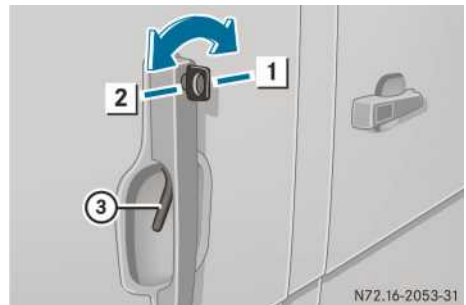
Only open the doors when road and traffic conditions permit. Make sure that there is sufficient clearance when opening the doors. You could otherwise cause injury to yourself and others.

#### **⚠ WARNING**

Do not leave the doors open if the vehicle is on a slope. The doors could drop out of the detent position and close. If the doors are not fully closed, they could open unexpectedly. You and other persons could then become trapped.

You must make sure that doors are closed when the vehicle is on a slope.

### Opening/closing the sliding door from the outside



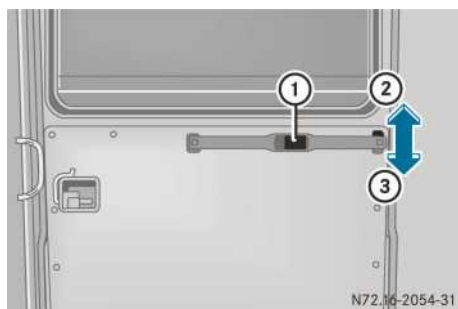
**1** Sliding door unlocked

**2** Sliding door locked

**3** Latch

- ▶ Insert the key into the lock of the sliding door.
- ▶ Turn the key clockwise **1**.  
The sliding door is unlocked.
- ▶ **To open:** pull latch **3** towards the door handle to open the sliding door.
- ▶ Slide the sliding door by the door handle back to the stop.
- ▶ **To close:** slide the sliding door firmly forwards by the door handle until it engages.

## Opening/closing the sliding door from the inside



① Door handle

② To unlock the sliding door

③ To lock the sliding door

- ▶ Pull the locking latch up ②. The sliding door is unlocked.
- ▶ **To open:** pull door handle ① and slide the sliding door back to the stop.



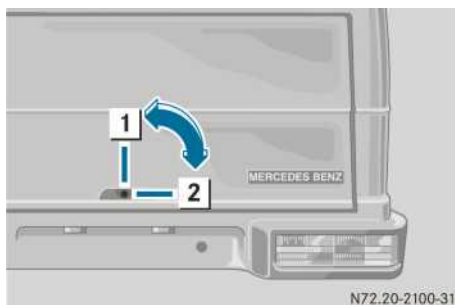
④ Latch

- ▶ **To close:** pull latch ④ forwards. The sliding door is unlocked.
- ▶ Slide the sliding door firmly forwards by latch ④ until it engages.

### Tailgate

#### WARNING

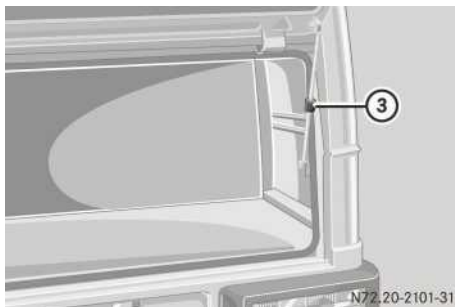
Make sure that nobody can become trapped as you close the tailgate. Pay particular attention if small children are near the vehicle.



① Locked

② Unlocked

- ▶ Insert the key into the lock of the tailgate.
- ▶ Turn the key clockwise to pressure point ②. The tailgate is unlocked.
- ▶ **To open:** remove the key and press the lock cylinder to open the tailgate.
- ▶ Open the tailgate until the support strut (right-hand gas spring) engages.



③ Locking mechanism

- ▶ **To close:** take hold of the tailgate.
- ▶ Press the marked areas of locking mechanism ③ on the right-hand gas spring and swing the tailgate upwards. The support strut is released.
- ▶ Swing the tailgate down and engage it in the lock.

### Rear doors

You can open and secure the rear doors at an angle of 90° and 180° or 90° and 270°

(detent positions), depending on the vehicle's equipment.

### WARNING

Make sure that nobody can become trapped as you close and open the doors. Exercise particular care, especially if children are near the vehicle.

Only open the doors when road and traffic conditions permit. Make sure that there is sufficient clearance when opening the doors. You could otherwise cause injury to yourself and others.

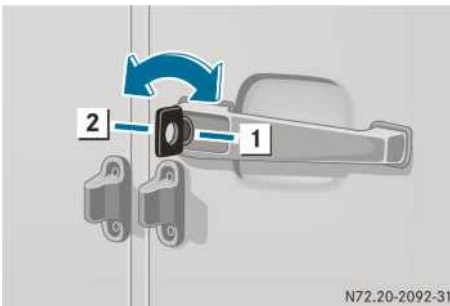
### WARNING

Do not leave the doors open if the vehicle is on a slope. The doors could drop out of the detent position and close. If the doors are not fully closed, they could open unexpectedly.

You and other persons could then become trapped.

You must make sure that doors are closed when the vehicle is on a slope.

## Opening the right-hand rear door from the outside

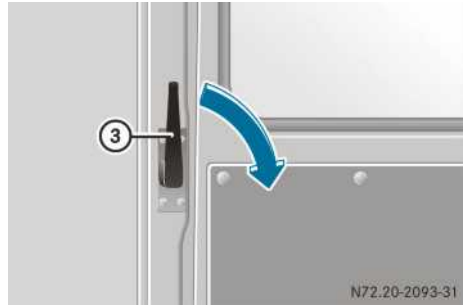


- 1 Rear door unlocked
- 2 Rear door locked

- ▶ Insert the key into the lock of the right-hand rear door.
  - ▶ Turn the key clockwise to pressure point **1**.
- The right-hand rear door unlocks.

- ▶ Remove the key and press the lock cylinder to open the right-hand rear door.
- ▶ Open the right-hand rear door and secure it (▷ page 47).

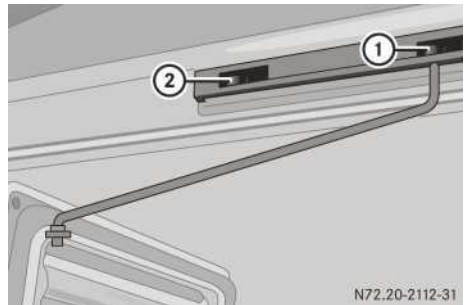
## Opening the left-hand rear door



- 3 Release lever
- ▶ Make sure that the right-hand rear door is open and secured.
- ▶ Swing release lever **3** downwards. The left-hand rear door unlocks.
- ▶ Open the left-hand rear door and secure it (▷ page 47).

## Securing the rear doors at an angle of 90° and 180°

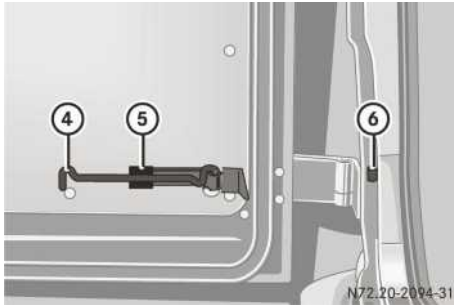
The rear doors engage at the 90° and 180° positions.



Door retainer

- 1 Door opening angle of 90°
- 2 Door opening angle of 180°

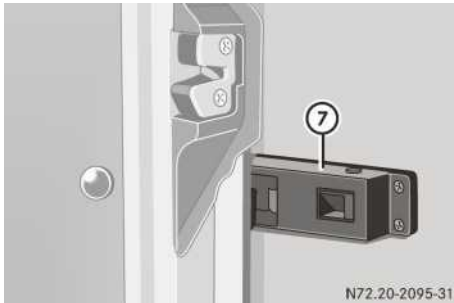
### Securing the rear doors at an opening angle of 90° and 270°



Opening angle 90°

- ④ Door retainer
- ⑤ Bracket
- ⑥ Fixture

- ▶ Pull door retainer ④ out of bracket ⑤.
- ▶ Open the rear door 90° and attach door retainer ④ into fixture ⑥ on the rear wall of the vehicle.



Opening angle 270°

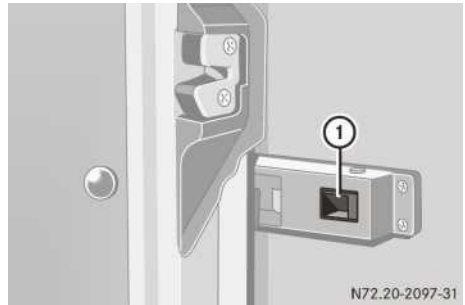
- ⑦ Door retainer on the side wall

- ▶ If necessary, unhook door retainer ④ and press it into bracket ⑤.
- ▶ Make sure that door retainer ④ is securely clamped into bracket ⑤ when doing so.

- ▶ Open the rear door until it is flush with the side wall of the vehicle.  
The catch on the door retainer on the side wall ⑦ engages and holds the door in this position.
- ▶ Make sure that the catch on the door retainer on the side wall ⑦ is engaged and that the rear door is being held against the side wall.

### Closing the rear doors from the outside

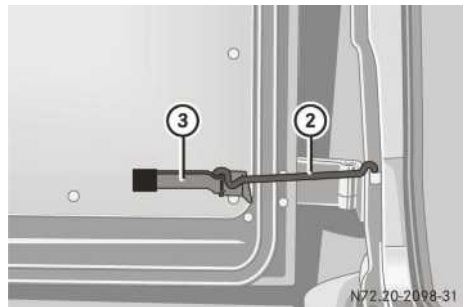
#### Releasing rear doors secured at an opening angle of 90° and 270°



Opening angle 270°

- ① Catch

- ▶ Slide catch ① in the door retainer on the side wall ⑦ forwards.  
The rear door releases.



Opening angle 90°

- ② Door retainer
- ③ Bracket

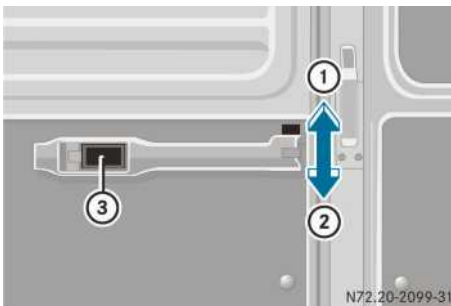
- ▶ Unhook door retainer ② and press it into bracket ③.
- ▶ Make sure that door retainer ② is securely clamped into bracket ③ when doing so.



④ Door handle

- ▶ Release the left-hand rear door if it is secured.
- ▶ Close the left-hand rear door and make sure that the rear door engages.
- ▶ Swing door handle ④ upwards. The left-hand rear door locks.
- ▶ Release the right-hand rear door if it is secured.
- ▶ Close the right-hand rear door firmly.

### Opening/closing and locking/unlocking the rear doors from the inside



- ① To unlock the right-hand rear door
- ② To lock the right-hand rear door
- ③ Door handle

- ▶ Pull the locking latch up ①. The right-hand rear door unlocks.
- ▶ **To open:** pull door handle ③.
- ▶ Open the right-hand rear door and secure it.
- ▶ Open the left-hand rear door (▷ page 47).
- ▶ **To close:** release the left-hand rear door if it is secured (▷ page 48).
- ▶ Close the left-hand rear door and lock it as described in the "Closing the rear doors from the outside" section (▷ page 48).
- ▶ Close the right-hand rear door.
- ▶ Slide the locking latch down ②.

### Loading tailgate

#### ⚠ WARNING

The dropsides could open of their own accord while the vehicle is in motion if they are not properly locked. You could, for example, lose your load, thereby endangering other road users.

For this reason, please make sure that all dropsides are properly locked before pulling away.

Make sure that nobody can become trapped as you close the dropsides. Be especially careful if there are children in the vicinity of the vehicle.

#### ⚠ WARNING

Always open the side panel latches carefully. This allows you to avoid injury.

Depending on the nature and arrangement of the load being carried, the dropside may be under load (e.g. when carrying bulk goods or if the load has slipped).

Be particularly careful if the side panel latches cannot be released using the normal amount of force. The dropside may then open with considerable force. If necessary, alter the distribution of the load to take the weight off the dropside to be opened.

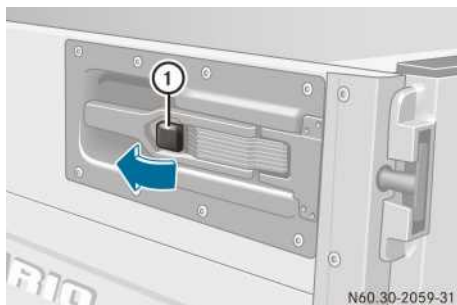
**⚠ WARNING**

The rear lamps are concealed when the tailgate is opened.

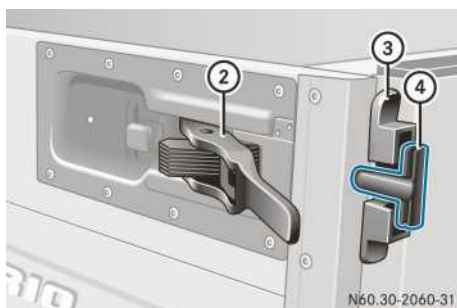
The vehicle is then not sufficiently safeguarded at the rear and may only be seen by other road users when they are close to the vehicle. This could lead to an accident.

In this case, therefore, you should make sure that the vehicle is safeguarded at the rear in accordance with national legal requirements, e.g. with a warning triangle.

- i** Always open or close the dropsides on both sides and always open or close them manually. Operating the dropside latches of a three-way tipper is described in the separate operating instructions.

**Rear dropside**

- ① Catch



- ② Lever
- ③ Retainer
- ④ Hook

- ▶ **To open:** hold the dropside.
- ▶ Press catch ① in the direction of the arrow and fold out lever ②.
- ▶ Detach hook ④ from retainer ③.
- ▶ Repeat the procedure on the other side of the dropside.
- ▶ Fold down the dropside.
- ▶ **To lock:** close the dropside and hold it in this position.
- ▶ Engage hook ④ into bracket ③.
- ▶ Fold lever ② in. Make sure that catch ① engages audibly as you do so.
- i** If the tension of the locking mechanism is insufficient, adjust the dropside lock.
- ▶ Repeat the procedure on the other side of the dropside.

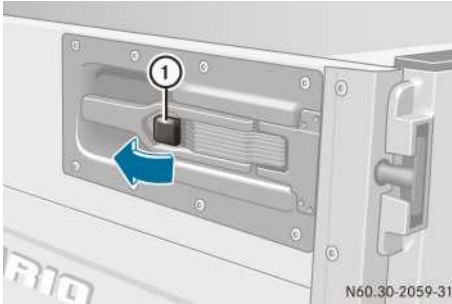
**Dropside**

- ① Catch
- ② Lever

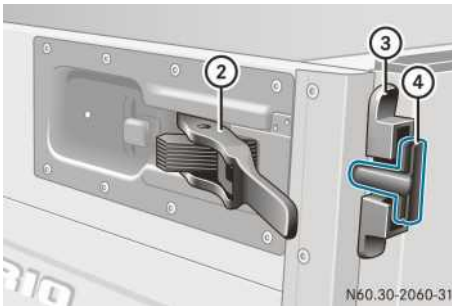
- ▶ **To open:** hold the dropside.
- ▶ Press catch ① in the direction of the arrow and fold out lever ② to the stop.
- ▶ Repeat the procedure on the other side of the dropside.
- ▶ Fold down the dropside.
- ▶ **To lock:** close the dropside and hold it in this position.

- ▶ Push lever ② upwards as far as the stop. Make sure that catch ① engages audibly as you do so.
- ▶ Repeat the procedure on the other side of the dropside.

### Adjusting the dropside lock



① Catch



② Lever

③ Retainer

④ Hook

- ▶ Press catch ① in the direction of the arrow and fold out lever ② to the stop.
- ▶ Turn latch bolt ④ clockwise or anti-clockwise to make the latch length shorter or longer.
- ▶ Close the dropside lock.
- ▶ Check that the dropside lock has enough tension and repeat the procedure if necessary.

### Opening/closing the windows

#### Front side windows

The vehicle is supplied either with hand cranks or with power windows.

#### WARNING

When opening the side windows, make sure that nobody can become trapped between the side window and the door frame. Keep clear of the side window during the opening procedure. Otherwise, you could be drawn in or trapped between the side window and the door frame by the downwards movement of the window. If there is a risk of becoming trapped, release the switch or press the upper section of the switch to close the side window again.

#### WARNING

Make sure that nobody can become trapped as you close a side window. If there is a risk of becoming trapped, release the switch or press the lower section of the switch to open the side window again.

#### WARNING

Do not leave children unsupervised in the vehicle, even if they are secured in a child restraint system. Children could otherwise injure themselves on parts of the vehicle. They could be severely or even fatally injured by prolonged exposure to intense heat or cold.

If children open a door, they could:

- cause injury to other persons
- get out of the vehicle and thereby injure themselves or be injured by a passing vehicle
- sustain serious injuries if they were to fall out of the vehicle, due to its height from the ground

Always take the key with you when leaving the vehicle, even if you are only leaving for a short time.



- ① Power window, left
- ② Power window, right

- ▶ Turn the key to position **2** in the ignition lock.
- ▶ **To open/close:** press and hold the upper or lower section of switch ① or ② until the window has reached the desired position.

### Hinged windows



- ▶ **To open:** swing catch lever ① up or down and push the hinged window outwards.
- ▶ **To close:** pull catch lever ① to close the hinged window and move catch lever ① to the horizontal position to lock the window.

### Roof hatch

The roof hatch can be used for additional ventilation of the of the cab.

You can open the roof hatch at one end (at the front or rear) or at both ends (at the front and rear).

### WARNING

Make sure that nobody can become trapped when closing the roof hatch.



- ① Handles

- ▶ **To open/close:** push the roof hatch up or pull it down by the handles ①.

## Anti-theft systems

### Immobiliser

The immobiliser prevents the vehicle from being started without the correct key.

- ▶ **To activate:** remove the key from the ignition lock.
- ▶ **To deactivate:** insert the key into the ignition lock and turn to position **2**.

## Seats

### Driver's and co-driver's seat

### WARNING

Adjusting the driver's seat while driving can distract you from traffic conditions. Unexpected movements of the seat could cause you to lose control of the vehicle and cause an accident.

Only adjust the driver's seat when the vehicle is stationary and the parking brake is engaged.

**⚠ WARNING**

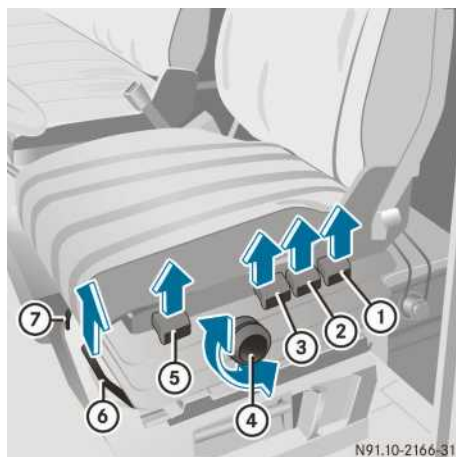
Make sure that nobody can become trapped as you adjust the seat. Never place your hands under the seat or in the vicinity of moving parts.

Your seat must be adjusted in such a way that you can wear the seat belt correctly.

Observe the following points:

- Position the backrest in an almost vertical position so that you are sitting virtually upright.
- Avoid seat positions that prevent the seat belt from being routed correctly. The shoulder section of the belt must be routed over the middle of your shoulder and be pulled tight against your upper body. The lap belt must always pass across your lap as low down as possible, i.e. over your hip joints. Do not drive with the backrest reclined too far back.
- Your arms should be slightly bent when you are holding the steering wheel.
- The distance from the pedals should be such that you can depress them fully.
- Adjust your head restraint so that its upper edge is at the same level as the top of your head.
- Make sure that you hear the seat engage. Otherwise, the seat is not correctly locked in place.

Failing to observe these instructions may lead to injury.



- ① To adjust the backrest<sup>4</sup>
- ② To adjust the seat height: rear section
- ③ To adjust the seat height: front section
- ④ Seat suspension adjustment
- ⑤ Seat cushion fore-and-aft adjustment
- ⑥ Seat fore-and-aft adjustment
- ⑦ Seat suspension lock

**i** Depending on the seat model, some adjustments may not be available.

You can adjust the lumbar support using a hand pump on the inner side of the seat.

► **To adjust the backrest:** pull lever ① up and adjust the backrest to the desired position.

On standard seats, push the lever on the backrest back and adjust the backrest.

► Release lever ①.

► Move the backrest until you hear it engage.

► **To adjust the seat height and seat angle:** pull up lever ② for the rear of the seat or lever ③ for the front of the seat and put pressure on or relieve pressure from the appropriate part of the seat.

► Release lever ② or ③.

► **To adjust the fore-and-aft seat position:** pull lever ⑥ upwards and move the

<sup>4</sup> Standard seats have a lever on the side of the backrest which is used to set the inclination.

seat forwards or back to the desired position.

- ▶ Release lever ⑥.
- ▶ Slide the seat forwards or back until you hear it engage.
- ▶ **To adjust the fore-and-aft seat cushion position:** pull lever ⑤ upwards and move the seat cushion forwards or back to the desired position.
- ▶ Release lever ⑤.
- ▶ Slide the seat cushion forwards or back until you hear it engage.

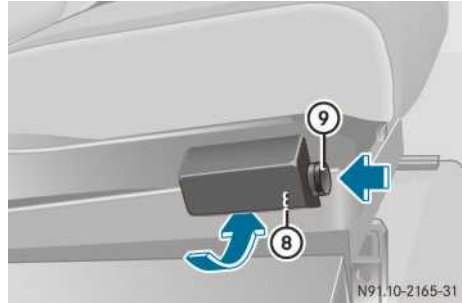
The seat suspension needs to be adjusted to your weight. Only adjust the seat suspension while the seat is unoccupied.

- ▶ **To adjust the seat suspension:** take your weight off the seat.
- ▶ Set your weight (40 kg to 120 kg) on hand-wheel ④.  
The seat suspension becomes harder as the weight setting increases. It will then not move as far.

If the seat moves up and down frequently and to a great extent, you can lock the seat in its lower movement range.

- ▶ **To engage the seat suspension lock:** turn handle ⑦ downwards.  
When it next moves, the seat will lock in position.
  - ❗ The seat suspension lock will only engage if your body weight equals or exceeds the weight selected for the seat suspension.
- ▶ **To release the seat suspension lock:** turn lever ⑦ upwards.  
The seat can now move up and down again.
  - ❗ The lumbar support allows you to increase the support provided by the backrest to the lumbar area.  
When the lumbar support is correctly adjusted, it reduces strain on your back while driving.

The hand pump for the pneumatic lumbar support is located on the inner side of the seat.



- ⑧ Bellows in the housing
- ⑨ Vent valve

- ▶ **To adjust the lumbar support:** press bellows ⑧ to inflate the lumbar support.  
This increases the support provided to the lumbar region.
- ▶ Press vent valve ⑨ to deflate the lumbar support.  
This reduces the support provided to the lumbar region.

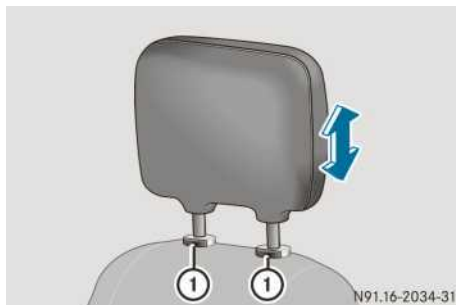
## Head restraints

### ⚠ WARNING

Only drive with the head restraints fitted and adjusted correctly. You could otherwise suffer serious or fatal injuries in the area of the upper spinal column.

Adjust your head restraint so that its upper edge is at the same level as the top of your head. The back of your head should be as close as possible to the head restraint when relaxed, so that your head can be properly supported in the event of an accident.

The head restraint must be engaged in a detent.



### ① Release buttons


- ▶ **To adjust the height:** press release buttons ① and pull the head restraint up or push it down to the desired position.
- ▶ Release buttons ①.
- ▶ Move the head restraint up or down until it engages.
- ▶ **To remove:** pull the head restraint up to the stop.
- ▶ Press release buttons ① and pull out the head restraint.
- ▶ **To fit:** turn the front of the head restraint so that it faces the direction of travel.
- ▶ Push the head restraint down until it engages.

## Seat heating


The driver's seat is equipped with seat heating.



- ▶ Make sure that the key is in position **2** in the ignition lock.

- ▶ **Normal heating:** press upper section ① of the  switch.

The upper indicator lamp in the switch lights up.

- ▶ **Rapid heating:** press lower section ② of the  switch.

The lower indicator lamp in the switch lights up.

- ❗ When the engine is switched off, do not switch on the rapid heating function for any longer than necessary.

Otherwise, the batteries could discharge.

- ❗ When you leave your seat, do not place anything on the seat and make sure that you have switched off the seat heating. Do not switch on the seat heating if the seat is not occupied.

The seat heating may otherwise overheat, causing damage to the seat.

- ⓘ If the seat is heated up rapidly, the seat heating switches off automatically after approximately 15 minutes.

- ▶ **To switch off:** push the switch to the middle position.

The indicator lamp in the switch goes out.

## Mirrors

### Rear-view mirror

- ▶ Before starting off, adjust the rear-view mirror by hand in such a way that you can get a good overview of road and traffic conditions.

## Exterior mirrors

### Important safety notes

#### WARNING

The exterior mirrors reduce the size of the image. The objects are actually closer than they appear. You could cause an accident if you only observe the traffic through the exterior mirrors.

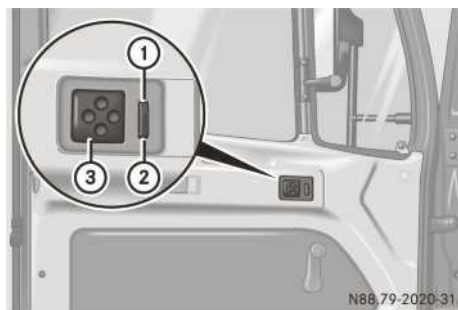
Therefore, observe the traffic behind you using the rear-view mirror as well, especially when manoeuvring or overtaking.

### Adjusting manually

- ▶ Before starting off, manually adjust the exterior mirrors in such a way that you can get a good overview of road and traffic conditions.

### Adjusting electrically

- ❗ The exterior mirrors are automatically heated at low outside temperatures.



Buttons and switches for setting the mirrors

- ▶ Before pulling away, turn the key to position **2** in the ignition lock.
- ▶ Press the switch to position **1** for the left-hand exterior mirror or to position **2** for the right-hand exterior mirror.
- ▶ Press button **3** at the top, bottom, right or left.

Adjust the exterior mirrors in such a way that you can get a good overview of road and traffic conditions.

## Instrument panel

### Rev counter

- ❗ You will find a full overview of the instrument panel in the "At a glance" section (▶ page 21).

The rev counter shows the engine speed. The dial is divided into 5 engine speed ranges.



- ① Economical operating range (shaded green)
- ② Optimum economy range (green)
- ③ Engine brake operating range (yellow)
- ④ Limitation/warning range (shaded red)
- ⑤ Overrevving range, danger of engine damage

- ❗ Do not drive in the cut-off range or overrevving range as this could damage the engine.

#### Environmental note

Avoid excessive engine speeds. This unnecessarily increases the fuel consumption of your vehicle and harms the environment as a result of increased emissions.

Observe the rev counter while driving and stay within the economical operating range.

Operating the vehicle in the economical range results in:

- low fuel consumption
- reduced wear

Operating the vehicle outside the economical range may be beneficial in exceptional circumstances, e.g.:

- on uphill gradients
- when overtaking

### Fuel level

**i** You will find a full overview of the instrument panel in the "At a glance" section (▷ page 21).

The reserve fuel warning lamp comes on in the fuel gauge if the fuel level drops to about 14% of fuel tank capacity.

Observe the information in the sections "Operation" and "Technical Data":

- on fuel grade (▷ page 126)
- on capacities (▷ page 193)

### AdBlue® supply


**i** You will find a full overview of the instrument panel in the "At a glance" section (▷ page 21).

On vehicles with BlueTec® exhaust gas after-treatment, the AdBlue® level is displayed together with the outside temperature in the display above the rev counter.





① Outside temperature display

② AdBlue® display

The AdBlue® level is indicated via bar display ② next to the  symbol. Two full bars represent ¼ of the tank's capacity.

If the last bar of the AdBlue® display flashes, the AdBlue® level in the tank has dropped to the AdBlue® reserve level.

If bar display ② is empty and the  symbol flashes in the display, the AdBlue® tank is empty. You must then refill immediately (▷ page 110).

If the  engine diagnostic indicator lamp in the instrument panel lights up when continuing the journey for a limited distance, the vehicle is being driven without AdBlue® and thus without an operating permit.

Observe the information in the "Operation" and "Technical data" sections on:

- AdBlue® consumption (▷ page 108)
- AdBlue® quality (▷ page 129)
- capacities (▷ page 193)

### Display in the speedometer

**i** You will find a full overview of the instrument panel in the "At a glance" section (▷ page 21).

The two-line display in the speedometer shows the total distance reading and the time or the trip meter.

Turning the vehicle key to position 2 in the ignition lock activates the display in the

speedometer. The total distance covered and the trip meter are then shown in the display. The selector/reset button for the display is under the speedometer on the instrument panel.



- ① Total distance recorder
- ② Clock or trip meter
- ③ Selector/reset button

#### WARNING

Only operate the selector/reset button for the display in speedometer and the  $\oplus/\ominus$  adjustment button for the instrument lighting when traffic conditions permit. You would otherwise be too distracted and could cause an accident.

Do not reach through the steering wheel to operate the adjustment button. The movement of the steering wheel would be significantly impeded. This could cause you to lose control of the vehicle and lead to an accident.

Do not rest your head or chest on the steering wheel when operating the adjustment button. You will find page references for further information in the index under "Airbag".

- ▶ **Changing the display:** briefly press selector/reset button ③.  
Display ② changes from trip meter to time or vice versa.

## Resetting the trip meter

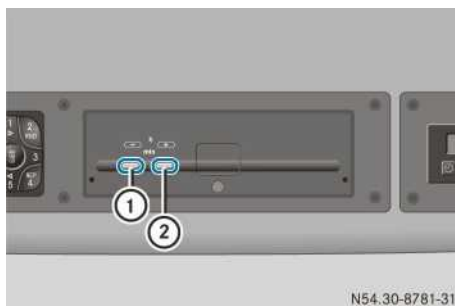


- ▶ Make sure that the display in speedometer ① is showing the trip meter.
- ▶ Press and hold selector/reset button ② until the trip meter is reset to 0.0.

## Setting the time

On vehicles with a tachograph, the time shown in the speedometer display is set via the tachograph; see the separate operating instructions.

On vehicles without a tachograph, the time is set via the control panel in the overhead console.



Speedometer control panel in the overhead console

- ① To set the time back
- ② To set the time forward
- ▶ Make sure that the display in the speedometer is showing the time.
- ▶ **Setting the minutes:** set the minutes using button ① or ②.

► **Setting the hours:** simultaneously press and hold buttons ① and ② for longer than three seconds.

► Release the buttons and within three seconds set the hours using button ① or ②.

**i** If you press and hold button ① or ②, the time values change continuously.

**!** Have the control panel battery changed at least every eight years at a qualified specialist workshop, e.g. a Mercedes-Benz Service Centre. You could otherwise damage the control panel when changing the battery.

If you do not have the battery changed in good time, the set time will be erased each time the ignition is switched off.

### Outside temperature

**i** You will find a full overview of the instrument panel in the "At a glance" section (▷ page 21).

The outside temperature appears in the display above the rev counter:

- on vehicles with BlueTec® exhaust gas aftertreatment, it is displayed together with the AdBlue® level (▷ page 57)
- on vehicles without BlueTec® exhaust gas aftertreatment, it is displayed together with the oil pressure (▷ page 59).

Changes in outside temperature are displayed with a slight delay. This prevents an incorrect temperature display caused by heat from the engine when the vehicle is stationary or moving slowly.

### WARNING

At temperatures just above freezing point, the street may be icy, especially in wooded areas or on bridges. If you do not adapt your driving style to the conditions, the vehicle could skid. For this reason, adapt your driving style and speed to the weather conditions.

### Coolant temperature

**i** You will find a full overview of the instrument panel in the "At a glance" section (▷ page 21).

If corrosion inhibitor and antifreeze are present in the correct concentration in the coolant, the coolant temperature will be between 70 °C and 95 °C .


**!** If the coolant temperature display reaches 100 °C , only drive on for a short time, not more than 10 minutes. If the needle moves into the red area of the display, stop the vehicle as soon as possible, paying attention to road and traffic conditions. Engine damage could result from driving on.

Determine the cause. If necessary, have the fault checked and rectified as soon as possible at a qualified specialist workshop, e.g. a Mercedes-Benz Service Centre.

You will find information about the coolant level in the "Operation" section (▷ page 136).

### Oil pressure

**i** You will find a full overview of the instrument panel in the "At a glance" section (▷ page 21).

**!** If the  indicator lamp lights up in the instrument panel, the oil pressure is too low. Safe operation of the engine is then jeopardised.


Do not pull away, or if the vehicle is already in motion, stop as soon as possible, paying attention to road and traffic conditions. Switch off the engine.

Determine the cause. Have the defects checked and repaired at a qualified specialist workshop.

On vehicles without BlueTec® exhaust gas aftertreatment, the engine oil pressure is displayed together with the outside temperature in the display above the rev counter.



- ① Outside temperature display
- ② Oil pressure display

The engine oil pressure is indicated via bar display ② next to the . One bar on the display corresponds to 1.0 bar in pressure. After reaching the operating temperature of between 70 °C and 95 °C, the engine oil pressure can increase to 2.5 bar at rated engine speed and drop to 0.5 bar at idling speed.

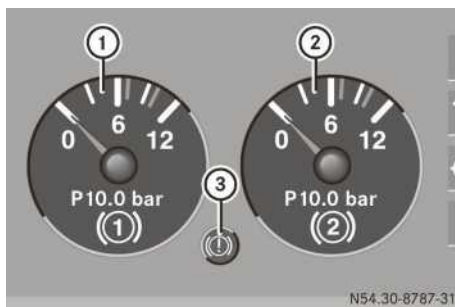
**!** Do not rev up the engine and do not pull away before the engine oil pressure is displayed. If the engine oil pressure reading does not appear after approximately 10 seconds, stop the engine immediately. There is otherwise a risk of engine damage. Determine the cause. Have the defects checked and repaired at a qualified specialist workshop.

You will find information on engine oil level in the "Operation section" (> page 138).


### Brake circuit reservoir pressure

- i** You will find a full overview of the instrument panel in the "At a glance" section (> page 21).

The brake system supply pressure is displayed separately for each brake circuit.



- ① Supply pressure gauge, brake circuit 1
- ② Supply pressure gauge, brake circuit 2
- ③ Brake pressure warning lamp


An adequate supply pressure in the individual pressure circuits of the brake system (at least 10 bar) is required for the safe operation of the vehicle. A supply pressure of at least 8.5 bar is adequate for vehicles without Blue-Tec<sup>®</sup> exhaust gas aftertreatment but with air suspension or a trailer coupling. The auxiliary consumer circuit is only pressurised after brake circuits 1 and 2 have been pressurised. The  brake pressure warning lamp comes on between the two displays if the supply pressure in one brake circuit drops below 6.5 bar.

More information about the pressure in the compressed-air brake system can be found in the "Technical data section" (> page 188).

### WARNING

A leaking compressed-air brake system jeopardises the operating and road safety of the vehicle. If there is insufficient supply pressure in the compressed-air brake system, you will not be able to brake the vehicle. You could thereby cause an accident and endanger yourself and others.

Do not pull away, or if the vehicle is already in motion, stop as soon as possible, paying attention to road and traffic conditions if:

- the supply pressure in brake circuit 1 or 2 is below 6.5 bar and
- the brake pressure warning lamp  between the displays for the supply pressure does not go out.

Have the brake system checked and repaired at a qualified specialist workshop which has the necessary specialist knowledge and tools to carry out the work required.

Mercedes-Benz recommends that you use a Mercedes-Benz Service Centre for this purpose. All work relevant to safety or on safety-related systems must be carried out at a qualified specialist workshop.

### Instrument cluster lighting

**i** You will find a full overview of the instrument panel in the "At a glance" section ([▷ page 21](#)).

The  $\oplus/\ominus$  adjustment knob is below the right-hand display panel in the instrument cluster.



**1** Instrument lighting brighter/dimmer

### WARNING

Only operate the selector/reset button for the display in speedometer and the  $\oplus/\ominus$  adjustment button for the instrument lighting when traffic conditions permit. You would otherwise

be too distracted and could cause an accident.

Do not reach through the steering wheel to operate the adjustment button. The movement of the steering wheel would be significantly impeded. This could cause you to lose control of the vehicle and lead to an accident.

Do not rest your head or chest on the steering wheel when operating the adjustment button. You will find page references for further information in the index under "Airbag".

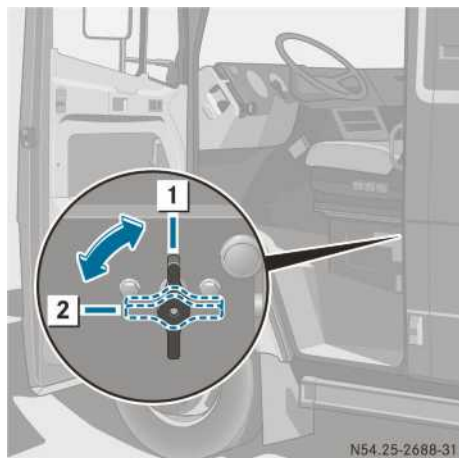
With the lights switched on, you can adjust the brightness of the instrument lighting using the  $\oplus/\ominus$  adjustment knob.

► **To set:** press the  $\oplus/\ominus$  adjustment knob.

### Power supply

#### Battery main switch

You can use the battery isolating switch to disconnect the current to most of your vehicle's consumers. This will prevent uncontrolled battery discharge caused by no-load current consumption when the vehicle is not used for a longer period of time.



- ▶ **To switch off the power supply:** park the vehicle.
- ▶ Turn battery isolating switch anti-clockwise **2**.

All consumers are disconnected from the battery, with the following exceptions:

- immobiliser
- tachograph
- radio memory
- auxiliary heating
- hazard warning lamps

- ▶ **To switch on the power supply:** turn the battery isolating switch clockwise **1**.

### EMERGENCY OFF switch

Buses and vehicles for the transportation of hazardous goods are equipped with an EMERGENCY OFF switch. You can use the switch to interrupt the power supply in an emergency. This prevents short circuits with sparks that may cause a fire or explosion.

- i** Vehicles with an EMERGENCY OFF switch also have an additional switch that switches the battery power supply to the ignition lock so the engine can be started (> page 43).

### WARNING

Never press the EMERGENCY OFF switch while the vehicle is in motion. Even in an emergency, do not press the EMERGENCY OFF switch until the vehicle has come to a standstill. When you press the EMERGENCY OFF switch, the power supply is interrupted and the engine automatically switches off. The compressed air supply and power-steering assistance are unavailable. The power supply for all the important electrical consumers (e.g. the lighting system and anti-lock protection) is interrupted. The vehicle can now only be steered with increased effort or the spring-loaded parking brake can be activated in the event of pressure loss. As a result, you may cause an accident and injure yourself

and others, e.g. should you leave the road when cornering.



- ▶ **To interrupt the power supply:** lift up cover **1**.
- ▶ Pull out switch pin **2**.  
The hazard warning lamps are switched on automatically. All consumers except for the tachograph and the auxiliary heating are disconnected from the batteries.
- ▶ **To switch on the power supply:** fold down cover **1** until it engages audibly. The EMERGENCY OFF switch will then be switched off automatically.

## Lighting

### General notes

For reasons of safety, Mercedes-Benz recommends that you drive with the lights switched on even during the daytime. There may be differences in operation due to legal requirements and voluntary recommendations in some countries.






- i** When driving in countries in which traffic drives on the opposite side of the road to the country where the vehicle is registered, the oncoming traffic may be dazzled. You must have the headlamps partially masked. You will find further information in the Operation section (> page 106).

## Light switch


### Location



The symbols on the light switch have the following meanings:

-  Lights off
-  Side lamps/parking lamps, licence plate illumination and instrument lighting on
-  Dipped-beam/main-beam headlamps (depending on the position of the combination switch)
-  Foglamps on
-  Front foglamps and rear foglamp on




### Dipped-beam headlamps

- ▶ Turn the key to position **1** in the ignition lock.
- ▶ Turn the light switch to .

**i** In some countries, the dipped-beam headlamps are switched on whenever the ignition is switched on.



The dipped-beam headlamps may not come on until the engine is running, depending on your vehicle's equipment.

### Front foglamps/rear foglamp

- ▶ Turn the light switch to  or .
- ▶ **Front foglamps:** pull the light switch out to the first stop.  
The  indicator lamp on the instrument panel lights up.

The front foglamps are switched on.

- ▶ **Rear foglamp:** pull the light switch out to the second stop.

Yellow indicator lamp  in the light switch and the  indicator lamp in the instrument cluster light up.


The front foglamps and the rear foglamp are switched on.


### Headlamp range control

The headlamp range control allows you to adjust the cone of light from the headlamps to suit the vehicle load. The cone of light from the headlamps changes if seats are occupied or if the load compartment is being loaded or unloaded. This could impair visibility and dazzle oncoming traffic.

You can only adjust the headlamp range with the dipped-beam headlamps switched on.



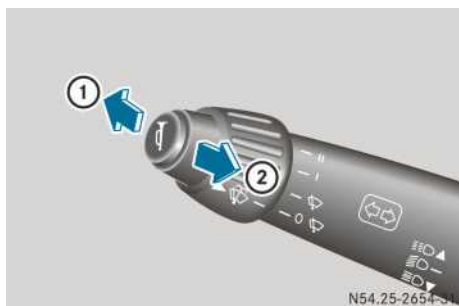
- ▶ **To adjust the headlamp range:** turn headlamp range control  to the corresponding position. The road ahead should be lit up for 40 m to 100 m and the dipped-beam headlamps should not dazzle oncoming traffic.

Select position  if the vehicle is unladen.

- i** The setting depends on the load in the vehicle. The correct setting is described on the inside of the glove compartment cover in the vehicle.

## Combination switch


### Main-beam headlamps and headlamp flasher



Combination switch on the left-hand side of the steering wheel

- ① Main-beam headlamps
- ② Headlamp flasher

► **To switch on the main-beam headlamps:** switch on dipped-beam headlamps (► page 63).

► Press combination switch ① forwards. The  indicator lamp on the instrument panel lights up.

► **To operate the headlamp flasher:** turn the key to position 1 or 2 in the ignition lock.

► Pull the combination switch briefly in direction ②.

### Turn signals



- ① To indicate a right turn
- ② To indicate a left turn

► **To indicate:** press the combination switch in desired direction ① or ②, until it engages.

The combination switch automatically returns to its original position after large steering movements.

► **To indicate briefly:** press the combination switch briefly to the pressure point in desired direction ① or ②.

## Hazard warning lamps


The hazard warning lamps work even when the ignition is switched off.


On vehicles with a battery main switch, the hazard warning lamps are operational even when the power supply is switched off.

On vehicles with an EMERGENCY OFF switch, the hazard warning lamps switch on automatically if you interrupt the power supply with the EMERGENCY OFF switch.



Hazard warning lamp switch

► **To switch on:** press upper section ① of the  hazard warning lamp switch.

► **To switch off:** press lower section ② of the  hazard warning lamp switch.

### WARNING

On vehicles with a platform, the rear lights are covered if you fold down the platform tailgate. The vehicle will then be unsafe as its rear lights will not be visible for approaching traffic. Other road users may not realise until too

late that it is an obstruction. This could lead to an accident.

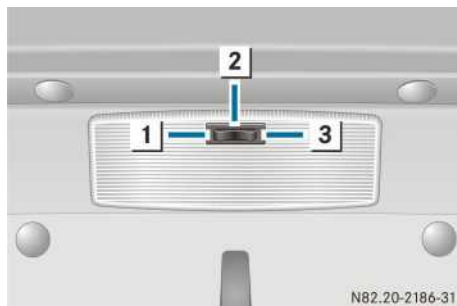
You should ensure that the vehicle is visible from the rear in accordance with the relevant national regulations, using the warning triangle for instance.

### Front interior lighting

The interior lighting in the cab is switched on and off by the door contact switch in the front doors. You can also permanently switch the interior lighting on and off independently of the door contact switch. The controls are either directly on the interior light or are operated by a switch in the instrument panel, depending on the vehicle cab height.

### Low-roof cab interior lighting

The interior lighting can be switched on and off using the interior light switch.





- 1 Interior lighting on continuously
- 2 Interior lighting switched on/off by door contact switch
- 3 Interior lighting off

### High-roof cab interior lighting

The interior lighting can be switched on and off using the switch on the right-hand switch panel in the instrument panel.



1 Interior lighting on/off

- ▶ **Operation via door contact switch:** press lower section  of switch 1.
- ▶ **To switch on:** press lower section  of switch 1.
- ▶ **To switch off:** press switch 1 to the centre position.

### Load compartment lighting

You can switch the load compartment lighting on and off either from the cab or in the load compartment.




### Switching on/off from the cab

The switch/button is located on the right-hand switch panel in the instrument panel.



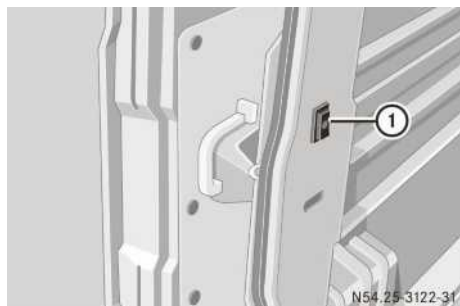
Example showing push-button

- 1 Load compartment lighting on/off


- ▶ **To switch on:** press the lower section of rocker switch ① or push-button ①. If the light is switched on by means of the push-button, indicator lamp  comes on in the instrument panel.
- ▶ **To switch off:** press the upper section of rocker switch ①  or push-button ① again. If the light is switched off via push-button, indicator lamp  goes out in the instrument panel.

### Switching on/off in the load compartment

The button is next to the entrance in the load compartment.



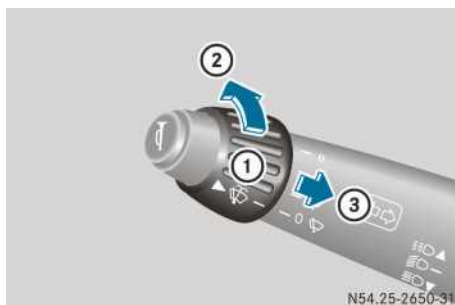
Example showing an electric sliding door  
① Load compartment lighting on/off

- ▶ **To switch on/off:** press button ①. When the load compartment lighting is switched on, indicator lamp  comes on in the instrument panel.

### Good visibility

#### Windscreen wipers

The combination switch is located on the left of the steering wheel.







Combination switch

- ① Wiper switch
- ② To switch on the windscreen wipers
- ③ Single wipe/to wipe with windscreen washer fluid (▷ page 67)

- ▶ Turn the key to position 1 in the ignition lock.
- ▶ **To switch on/off:** turn wiper switch ① to the desired setting depending on the intensity of the rain.

The detent positions of wiper switch ① correspond to the following wiper speeds:

-  Windscreen wipers off
-  Intermittent wipe
-  Normal wipe
-  Rapid wipe

- ▶ **Single wipe:** slide wiper switch ① in the direction of the arrow ③ only as far as the pressure point.

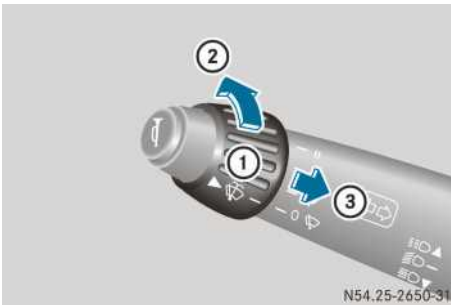
#### Intermittent wipe

Only switch on intermittent wipe in damp weather conditions or when it is raining. You can set the interval between wipes to any value between 2 and 20 seconds. The default setting for the interval between wipes is 5 seconds.

- ▶ **To set the interval between wipes:** switch on intermittent wiping.
- ▶ Wait for the first wipe interval, then switch off the windscreen wipers.
- ▶ Switch intermittent wiping on again within the next 20 seconds. The time between switching off and switching back on is stored as the new interval between wipes.

- i** If intermittent wiping remains switched off for longer than 20 seconds, the interval between wipes is automatically reset to 5 seconds.

### Windscreen washer system



Combination switch on the left, next to the steering wheel

- ① Wiper switch
  - ② To switch on the windscreen wipers
  - ③ To wipe with washer fluid
- ▶ **To switch on:** make sure that the key is in position **2** in the ignition lock.
  - ▶ **To switch on:** press wiper switch **①** beyond the pressure point in the direction of arrow **③**. The windscreen wipers wipe with washer fluid.
- i** Use washer fluid to wipe the rear window even when it is raining. By doing so, you will prevent smears on the windscreen.

### Headlamp cleaning system

The headlamp cleaning system is only operational when the engine is running.

- ▶ **To switch on:** switch on the dipped-beam headlamps.
- ▶ Switch on the windscreen washer system. The headlamps are cleaned with a high-pressure water jet.

### Climate control

#### General notes

The heating system is a heating and ventilation system, without a cooling function. The air-conditioning system combines heating with a cooling function. It cools the air inside the vehicle and controls the humidity. The heating and air-conditioning system function best only when the side windows and roof hatch are closed.

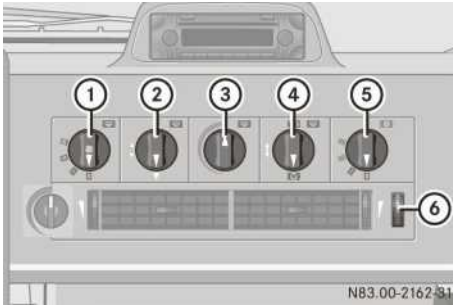
- i** Ventilate the vehicle for a brief period during warm weather. On vehicles with an air-conditioning system, in order to cool the vehicle rapidly, switch on the cooling with dehumidification and air-recirculation mode briefly.



#### **WARNING**

Observe the settings recommended on the following pages. The windows could otherwise mist up. This may prevent you from observing the traffic conditions, thereby causing an accident.

- !** Turn on the air-conditioning system at least once a month for approximately 10 minutes. The refrigerant compressor may otherwise be damaged.

## Overview of air-conditioning functions



	Function
①	Sets the airflow (▷ page 70)
②	Sets the air distribution (▷ page 70)
	 Demists the windscreen (▷ page 70)
③	Heating: sets the temperature (▷ page 69)
	 Demists the windscreen (▷ page 70)
④	Activates air-recirculation mode on/off (▷ page 71)
⑤	Air conditioning: deactivates/activates cooling with air dehumidification (▷ page 68)
⑥	Air conditioning: sets the cooling temperature (▷ page 69)

Recommendations for optimum climate control:

- Set the temperature control to the middle level. Only change the temperature in small increments.
- Vehicles with air conditioning: in warm weather conditions, activate cooling with air dehumidification.

- Only use the demisting function until the windscreen is clear again.
- Only use air-recirculation mode briefly, e.g. in a tunnel. The windows could otherwise mist up, because the flow of fresh air is cut off and the air inside the vehicle is circulated.

## Switching the cooling with air dehumidification function on/off

You can set the cooling temperature incrementally. To cool the air inside the vehicle, if equipped with an air-conditioning system, cooling with air dehumidification must be switched on. The air inside the vehicle is then cooled and dehumidified to the cooling level set. This prevents the windows from misting up.

Condensation may appear on the underside of the vehicle when in cooling mode.

### WARNING

If the "cooling with air dehumidification" function is deactivated, the air inside the vehicle will not be cooled (during warm weather) or dehumidified. The windows could mist up more quickly. This may prevent you from observing the traffic conditions, thereby causing an accident.

- ▶ **To switch on:** turn temperature control ③ of the heating fully anti-clockwise (▷ page 68).
- ▶ Turn air-conditioning system switch ⑤ to setting **I** (▷ page 68).
- ▶ Turn temperature control ⑥ up to increase or down to reduce the temperature (▷ page 68).
- ▶ **To switch off:** turn air-conditioning system switch ⑤ to setting **0** (▷ page 68).

The air-conditioning system switches off automatically. Possible causes:

- the engine is overheating, e.g. on long uphill gradients when towing a trailer.
- the outside temperature is below +5 °C.

### Setting the temperature

► Turn temperature control ③ clockwise to increase or anti-clockwise to reduce the temperature (▷ page 68).

- i** On vehicles with an air-conditioning system, set the cooling temperature separately after activating the cooling (▷ page 68).

### Setting the air vents

#### General notes

#### WARNING

Air flowing out of the air vents may be very hot or very cold. Therefore, there is a risk of frostbite or burns to exposed skin in the immediate proximity of these air vents. Keep exposed parts of the body away from these air vents. If necessary, direct the airflow to a different area of the vehicle interior.

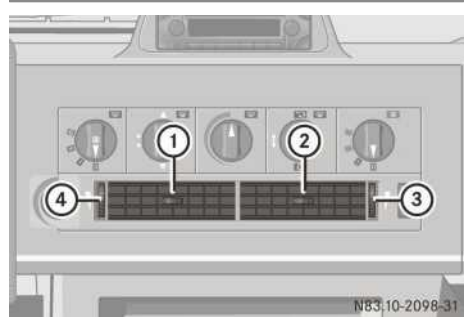
You can set the centre and side air vents.

The entire vehicle interior is ventilated via the air vents.

Observe the following instructions so air can flow freely through the air vents:

- keep the air inlet between the bonnet and the windscreen free from ice and snow.
- never cover the vents or the ventilation grilles in the vehicle interior.
- for virtually draught-free ventilation, move the sliders on the centre air vents to the central position.

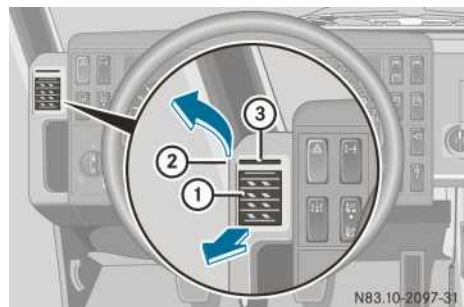
### Centre air vents



- ① Centre air vent, left
- ② Centre air vent, right
- ③ Thumbwheel for centre air vent, right
- ④ Thumbwheel for centre air vent, left

► Turn thumbwheel ③ or ④ up to open and down to close the centre air vent.

### Side air vents






Side air vent (example: right-hand side of the vehicle)

► Turn thumbwheel ③ to the outside to open and to the inside to close side air vent ①.

Turning thumbwheel ③ to the outside as far as possible opens demister vent ②.

### Setting the air distribution

The air distribution symbols have the following meanings:

-  Directs air to the windscreen and the air vents.
-  Directs air to the windscreen, the air vents and into the footwell.
-  Directs air to the air vents and into the footwell.

► Set air-distribution control ② to the corresponding symbol (▷ page 68).

### Setting the airflow

► Set airflow control ① to the desired level (▷ page 68).

If you set airflow control ① to position **0**, the blower is switched off.



### Defrosting the windows

#### General notes

#### **WARNING**

Clear all windows of ice or snow before setting off. Otherwise, impaired visibility could endanger you and others.

Only use the following settings until the windows are clear again.

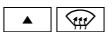
- Turn temperature control ③ to the  position (▷ page 68).
- Turn airflow control ① to blower setting **III** (▷ page 68).
- Turn air-distribution control ② to the  setting (▷ page 68).
- Close the centre air vents (▷ page 69).
- Direct the side air vents to the side windows and open the demister vent (▷ page 69).

### Demisting the windows

#### Windows misted up on the inside

#### General notes

Only use the following settings until the windows are clear again.

- Switch off air-recirculation mode (▷ page 71).
- Turn heating temperature control ③ to a higher temperature setting (▷ page 68).
- Turn airflow control ① to a higher blower speed, however at least to level **II** (▷ page 68).
- Turn air-distribution control ② to the  setting (▷ page 68).
- Close the centre air vents (▷ page 69).
- Open the side air vents and direct them towards the side windows (▷ page 69).
- **Vehicles with air-conditioning system:** switch on the cooling with air dehumidification (▷ page 68).
- **Vehicles with auxiliary heat exchanger:** if the engine is still cold, deactivate the auxiliary heat exchanger (▷ page 76).

If the windows still mist up, set the control as described for demisting (▷ page 70).

#### Windows misted up on the outside

Only use the following settings until the windscreen is clear again.

- Switch on the windscreen wipers (▷ page 66).
- Adjust air distribution to the footwell (▷ page 70).
- Close the centre and side air vents (▷ page 69).

## Switching air-recirculation mode on/off

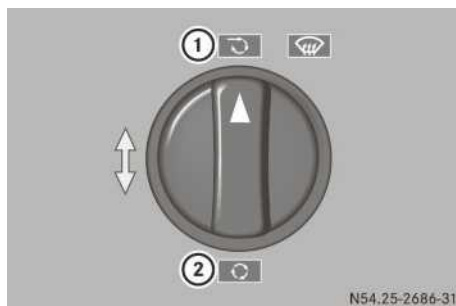
### General notes

You can deactivate the intake of fresh air if unpleasant odours enter the vehicle from outside. Only the air inside the vehicle will then be circulated.

#### WARNING

Only switch over to air-recirculation mode briefly at low outside temperatures. Otherwise, the windows could mist up, thus impairing visibility and endangering yourself and others. This may prevent you from observing the traffic conditions, thereby causing an accident.

- ▶ Close the side windows and roof hatch.



Switch for air-recirculation mode

- ① Normal operation with flow of fresh air
- ② Air-recirculation mode

## Auxiliary heating

### Important safety notes

#### WARNING

Exhaust fumes are produced while the auxiliary heating system is in operation. If you breathe in these exhaust fumes, you could be poisoned. Therefore, always switch off the auxiliary heating in enclosed spaces without an extraction system, e.g. a garage.

#### WARNING

Parts of the vehicle can become very hot during operation of the auxiliary heating. Make sure that the exhaust system does not under any circumstances come into contact with highly flammable material such as dry grass or fuels. Otherwise, the highly flammable material could ignite and set the vehicle alight.

Auxiliary heating operation is prohibited at filling stations or when your vehicle is being refuelled. Therefore, the auxiliary heating must be switched off at filling stations.

The auxiliary heating system operates independently of the engine and complements the vehicle heating.


Your vehicle is equipped with either an auxiliary hot-water heater or an auxiliary warm-air heater.

The hot-water auxiliary heater can be operated and set via the auxiliary heating switch (▶ page 72) or via the timer in the overhead control panel (▶ page 72).

The auxiliary warm-air heater can be operated and set using the timer in the overhead control panel (▶ page 72).

You can use the auxiliary heating to:

- preheat the vehicle interior
- provide the coolant with additional heating, thereby protecting the engine and saving fuel<sup>5</sup>
- support the vehicle's heating system while the engine is running and the outside temperature is low (heater booster function)


 Switch on the auxiliary heating system at regular intervals (at least once a month) for approximately 10 minutes.

Make sure that the flow of hot air is not blocked. Otherwise, the auxiliary heating will overheat and switch off.

<sup>5</sup> Hot-water auxiliary heater only.

### Before switching on

This is only for vehicles with a hot-water auxiliary heater.


- ▶ The fuel tank must be at least a quarter full.
- ▶ Turn the temperature control to the  position (▷ page 68).
- ▶ Turn the airflow control to level I (▷ page 68).
- ▶ Set the air distribution as required (▷ page 70).
- ▶ Open the centre and side air vents and set them to the middle position (▷ page 69).

- i** The auxiliary heating automatically switches to heater booster mode after the engine is started.

### Operation using the switch


This is only for vehicles with a hot-water auxiliary heater.



- ▶ **To switch on the auxiliary heating:** press the upper section of the  switch ①. The auxiliary heating is activated and then switches off automatically after two hours. The indicator lamp in the switch comes on.

- i** If you have activated the auxiliary heating as well as the heater booster function (▷ page 75) the heater booster function is only activated after the 2 hour operating

duration for the auxiliary heating has elapsed.

- ▶ **To switch off the auxiliary heating:** press the lower section of the  switch ②. The auxiliary heating operates for another two minutes and then switches off automatically.

### Operation using the timer

#### WARNING

The auxiliary heating must not be operated if there are highly flammable substances nearby or in enclosed spaces without an extraction system. Make sure that the auxiliary heating is not switched on automatically by the timer in such places. If this possibility exists, deactivate the respective programmed time.









Use the timer to:

- activate/deactivate immediate heating mode
- set up to three switch-on times
- set the operating duration to between 10 and 120 minutes or activate continuous operation<sup>6</sup>
- set the heating level (preselected temperature) to a range between 10 and 30

### Overview




<sup>6</sup> For the hot-water auxiliary heater with heater booster function, continuous operation is limited to 120 minutes.

	Operation
①	<p>Program column</p> <p> Sets preselection memory 1 – 3 (▷ page 74)</p> <p>Mon – Sets the day (▷ page 73)</p> <p>Sun</p>
②	<p>Menu bar</p> <p> Activates/deactivates immediate heating mode (▷ page 74)</p> <p> Sets the programmed times (▷ page 74)</p> <p> Sets the day, time and the operating duration (▷ page 73)</p> <p> Sets the heating level<sup>7</sup> (▷ page 75)</p>
③	<p>Display panel for time, heating level<sup>7</sup>, operating duration and remaining time</p> <p> Continuous operation<sup>6</sup> active</p> <p> Heating level<sup>7</sup> set</p>
④	<ul style="list-style-type: none"> <li>• Selects options in program column ① or menu bar ② (forwards)</li> <li>• Increases values</li> </ul>
⑤	Confirms a selection or setting
⑥	<p>Status bar</p> <p> Heating mode activated</p>

	Operation
⑦	<ul style="list-style-type: none"> <li>• Activates timer (▷ page 73)</li> <li>• Switches between time, remaining operating time and heating level<sup>7</sup> display when heating mode is active</li> <li>• Cancels or ends settings in a menu</li> </ul>
⑧	<ul style="list-style-type: none"> <li>• Selects options in program column ① or menu bar ② (backwards)</li> <li>• Reduces values</li> </ul>

### Activating the timer

The timer switches to standby mode after 10 seconds. The display goes off.








- ▶ Press and hold the  button until the menu bar appears in the display and the time is shown.

### Setting the day, time and operating duration

You must reset the day, time, and default value for the operating duration:

- during initial operation
- after a malfunction
- or if the battery has been disconnected

You can find further information on malfunctions in the "Practical advice" section (▷ page 162).

- ▶ Press the  or  button until the  symbol in the menu bar flashes.
- ▶ Press the  button.  
In the program column, the day selected flashes.
- ▶ Press the  or  button to set the desired day.
- ▶ Press the  button.  
The day selected is stored. The hour setting of the clock flashes.




<sup>7</sup> Only auxiliary warm-air heater.

<sup>6</sup> For the hot-water auxiliary heater with heater booster function, continuous operation is limited to 120 minutes.

- ▶ In the same way, set the hour and subsequently the minutes, then confirm by pressing the **OK** button.

The time is stored. The program column disappears and the operating duration flashes.




- ▶ **i** The operating duration set is the default setting for immediate heating mode. You can set the operating duration from 10 to 120 minutes or activate continuous operation<sup>6</sup>.

- ▶ Using the  or  button, set the minute value or select the  symbol for continuous operation<sup>6</sup>.

- ▶ Press the **OK** button.

The operating duration is stored. The time is shown.




### Activating/deactivating immediate heating mode

- ▶ **To switch on:** press the  or  button until the  symbol in the menu bar flashes.


- ▶ Press the **OK** button.





The operation duration flashes in the display.

- ▶ **i** You can preset the default value that is shown (▷ page 72).

- ▶ Using the  or  button, set the minute value (10 to 120) or select the  symbol for continuous operation<sup>6</sup>.

- ▶ Press the **OK** button.

Immediate heating mode is activated. The time or the heating level<sup>7</sup> and the  symbol appear.

- ▶ **To switch off:** press the  or  button until the  symbol flashes in the menu bar, and then press the **OK** button. Immediate heating mode is deactivated. The  symbol disappears.

The auxiliary heating operates for another two minutes and then switches off automatically.

- ▶ **i** If you switch off the ignition while immediate heating mode (operating duration 10 to 120 minutes) is active, immediate heating mode is also switched off. The auxiliary heating operates for another two minutes and then switches off automatically.

### Setting the preselection time

#### **WARNING**

The auxiliary heating must not be operated if there are highly flammable substances nearby or in enclosed spaces without an extraction system. Make sure that the auxiliary heating is not switched on automatically by the timer in such places. If this possibility exists, deactivate the respective programmed time.

You can set three preselection times using the timer.

Observe that when setting the preselection time, this does not correspond to the switch-on time but to the switch-off or departure time. The auxiliary heating system starts up automatically and runs for the operating duration set prior to departure.

Example:

For a planned departure time of 7:00 a.m. you should also set the programmed time to 7:00 a.m. If the operating duration is preset to 40 minutes, for example, the auxiliary heating starts up at 6:20 a.m.














- ▶ **i** If an identical time (time and day) is set in the preselection memory, only the last time set is saved.

After a malfunction or if the battery has been disconnected, you must set the preselection times again. You can find further information





<sup>6</sup> For the hot-water auxiliary heater with heater booster function, continuous operation is limited to 120 minutes.

<sup>7</sup> Only auxiliary warm-air heater.

on malfunctions in the "Practical advice" section (▷ page 162).

- ▶ Press the  or  button until the  symbol in the menu bar flashes.
  - ▶ Press the  button.  
In the program column, the  preselection memory numbers appear. The selected preselection memory flashes.
  - ▶ Press the  or  button to select the desired preselection memory.
  - ▶ Press the  button.  
The preselection memory is selected. The days are shown.
  - ▶ Set the day and time as described in the "Setting the day, time and operating duration" section (▷ page 73).  
The preselection time is stored. The program column disappears. In the display panel, the **on** message and the  symbol appear.
  - ▶ Press the  button.  
The operating duration flashes.
  - ▶ Press the  or  button to set the minute value (10 to 120).
  - ▶ Press the  button.  
The operating duration for the preselection time is saved. The time and number of the selected preselection memory are shown.
- i** The preselection memory that will be activated next is underlined. Additionally, the day that is set appears.









### Deactivating the preselection time

- ▶ Carry out the steps as described in the "Setting the preselection time" section.
- If the  symbol in the status bar is shown:
- ▶ Press the  or  button until the **off** message in the display panel is shown.
  - ▶ Press the  button.  
The preselection time is deactivated. The time is shown.

### Setting the heating level

This is only for vehicles with a hot-water auxiliary heater.

You can set the heating level to a range between 10 and 30.

- i** The heating level corresponds to a preselection temperature for the vehicle interior. This is a guide value and may, depending on the outside temperature, differ from the actual vehicle interior temperature.
- ▶ Press the  or  button until the  symbol in the menu bar flashes.
- ▶ Press the  button.  
The heating level display flashes.
- ▶ Using the  and  buttons, set the desired heating level to a range between 10 and 30.
- ▶ Press the  button.  
The heating level is set and the  symbol appears.


### Heater booster function

The fuel-fired auxiliary heater heats the vehicle interior as quickly as possible while the engine is running.


The auxiliary heating automatically switches to heater booster mode after the engine is started.



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- ▶ **To switch on:** press the upper section of the  switch ①.

The indicator lamp in the switch comes on.

- ▶ **To switch off:** press lower section of the  switch ②.

The indicator lamp in the switch goes out.

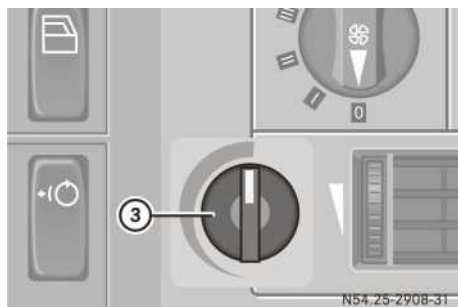
After switching off, the auxiliary heating operates for about another two minutes and then switches off automatically.



If you switch off the engine without switching off the heater booster function, the system will be switched on the next time the engine is started (memory function).

### Auxiliary heat exchanger

Vehicles which have a hot-water auxiliary heater may be equipped with an auxiliary heat exchanger.

- ▶ **i** If you need to defrost or demist the front windows quickly, switch off the auxiliary heat exchanger once the coolant temperature drops below 80 °C.





- ▶ Turn the key to position **2** in the ignition lock.
- ▶ **To switch on:** press the upper section of the  switch ①.  
The indicator lamp in the switch comes on.
- ▶ **To switch off:** press lower section of the  switch ②.  
The indicator lamp in the switch goes out.
- ▶ **To set the temperature:** turn temperature control ③ clockwise to increase the temperature, and anti-clockwise to reduce it.

### Roof ventilator

The roof ventilator can be used to ventilate or extract air from the load compartment.



- ▶ Turn the key to position **2** in the ignition lock.
- ▶ **To extract air:** press the upper section of the  switch ①.  
The roof ventilator removes used air from the load compartment.
- ▶ **To ventilate:** press the lower section of the  switch ②.  
The roof ventilator feeds fresh air into the load compartment.
- ▶ **To deactivate:** set the switch to the centre position.

## Driving and parking

### Preparing for a journey

#### Visual check of the vehicle exterior

- ▶ In particular, check the following components on the vehicle and trailer:
  - licence plates, vehicle lighting, turn signals, brake lamps and wiper blades for dirt and damage
  - tyres and wheels for firm seating, correct tyre pressure and general condition (▷ page 35)
  - that side gates and tailgate are secured properly and that they are not damaged (▷ page 49)
  - that the load compartment is correctly loaded and that the load is secure (▷ page 111)
  - that cables and compressed-air lines are connected correctly (▷ page 120)
  - trailer tow hitch for play and security (▷ page 121)
- ❗ The towing device is one of the most important components on the vehicle with regard to road safety. The separate instructions issued by the manufacturer pertaining to operation, care and maintenance should be observed.  
You will find further information in the Operation section (▷ page 117).
- ▶ Rectify any noticeable defects before commencing the journey.

#### Checks in the vehicle

##### Emergency equipment/first-aid kit

The equipment for first aid and breakdown assistance is located in the stowage compartment in the co-driver's door and behind the driver's seat (▷ page 148).

- ▶ Check the equipment to make sure that it is accessible, complete and ready for use.

#### Vehicle lighting

- ▶ Turn the key to position **2** in the ignition lock.
- ▶ Check with the help of another person that the lights, including the turn signal and brake lamps, are working correctly.
- ▶ Replace defective bulbs (▷ page 169).

#### Fuel and AdBlue® supply

- ▶ Turn the key to position **2** in the ignition lock.
- ▶ Check the fuel gauge (▷ page 57).
- ▶ On vehicles with BlueTec® exhaust gas aftertreatment, check the AdBlue® gauge (▷ page 57).
- ▶ If necessary, refuel the vehicle.

### Before pulling away

#### Important safety notes

##### WARNING

Movement of the pedals should never be restricted. Otherwise, this will jeopardise the operational and road safety of the vehicle.

Objects in the footwell could get caught between the pedals if you accelerate or brake suddenly. You may no longer be able to brake, declutch or accelerate. You could then cause an accident, thereby endangering yourself and others.

- When using floormats or carpets, make sure that they are fitted securely, that they cannot slip and that there is sufficient clearance for the pedals. Do not place several floormats on top of one another.
- Do not place any objects in the driver's footwell.
- Any loose objects must be stowed away securely so that they are prevented from moving into the driver's footwell while driving.

**⚠ WARNING**

If they are not properly closed, the doors could open while the vehicle is in motion. This may, for example, cause you to lose your load and injure passengers or endanger other road users.

For this reason, please make sure that all the doors are properly closed and can be locked before starting your journey.

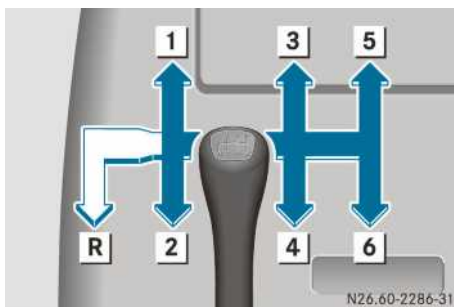
**Starting the engine****Important safety notes****⚠ WARNING**

Never leave the engine running in enclosed spaces. The exhaust gases contain carbon monoxide. Inhaling exhaust fumes constitutes a health hazard and could lead to loss of consciousness or even death.

- ▶ Before starting the engine, make sure that:
  - the power supply is switched on for vehicles with a battery main switch (▷ page 61).
  - all the doors are closed and can be locked.
  - all the vehicle occupants are wearing their seat belts correctly.
  - the parking brake is applied.

**Manual transmission**

The vehicle is equipped with a 6-speed manual transmission.



Manual transmission gearshift pattern

- 1**–**6** Forward gears
- R** Reverse gear

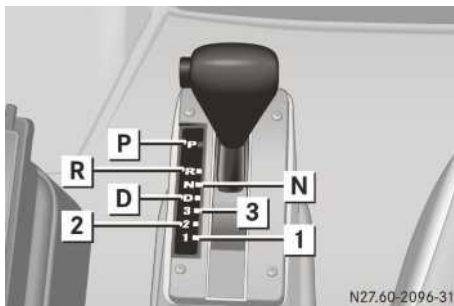
The gearshift pattern is shown on the gear lever.

- ▶ Before starting the engine, make sure that the transmission is in neutral.

**Automatic transmission**

- You must observe the separate operating instructions for the automatic transmission.

Otherwise, there is a risk of damaging the automatic transmission.



Automatic transmission gearshift pattern

- P** Park position
- R** Reverse gear
- N** Neutral
- D** Forward gears 1 – 5/drive position
- 3** Forward gears 1 – 3/shift range 3
- 2** Forward gears 1 – 2/shift range 2
- 1** 1st forward gear/shift range 1

- ▶ Before starting the engine, make sure that the selector lever is in position **P**.

- i** You can also start the engine in neutral **N**.


The automatic transmission has a selector lever lock. You can only shift the selector lever from position **P** to position **N** when you depress the brake pedal.

You can find further information in the separate operating instructions issued for the automatic transmission.


### Starting the engine

- ▶ On vehicles with an EMERGENCY-OFF switch, switch the battery voltage to the ignition lock (> page 43).


- ▶ Turn the key to position **2** in the ignition lock.

The  indicator lamp in the instrument cluster lights up on vehicles with a flame-start system.

- ▶ Make sure that the power take-off is switched off (> page 94).

The  indicator lamp in the instrument panel is not lit.

- !** Do not depress the accelerator pedal when starting the engine.

- ▶ If the  indicator lamp goes out, turn the key to position **3** in the ignition lock and release it as soon as the engine is running.

- i** You can start the engine without the flame-start system cold-start aid if the engine is warm.

The engine idling speed is controlled automatically.

If the engine does not start:

- ▶ Interrupt the starting procedure after no more than 20 seconds and turn the key back to the stop.
- ▶ Repeat the starting procedure after approximately one minute. After three starting attempts, wait approximately three minutes before trying again.

### Safety inspection

#### General notes

Carry out the following checks before starting a journey:

- steering play
- reservoir pressure in the compressed-air brake system
- tachograph

You can find information about the tachograph function check in the separate manufacturer's operating instructions.

#### Steering play

##### **WARNING**

If the steering play is too great, the vehicle may no longer be able to keep to a straight course. You will have to correct the direction of travel more often. This jeopardises the operating and road safety of the vehicle.

Have the steering checked and repaired immediately at a qualified specialist workshop.

- ▶ Turn the front wheels to the straight-ahead position while the engine is running.
- ▶ Turn the steering wheel alternately to the left and to the right.  
The front wheels must move when the steering wheel is turned a maximum of 30 mm (measured at the steering wheel rim). If this is not the case, have the steering and steering linkage checked immediately.

#### Reservoir pressure in the compressed-air brake system




There must be a supply pressure of at least 10 bar in both compressed-air brake circuits. A supply pressure of at least 8.5 bar is sufficient only for vehicles without BlueTec<sup>®</sup> exhaust gas aftertreatment but with air suspension or with a trailer tow hitch (> page 60).

**⚠ WARNING**

A leaking compressed-air brake system jeopardises the operating and road safety of the vehicle. If there is insufficient reservoir pressure in the compressed-air brake system, you will not be able to brake the vehicle. You could thereby cause an accident and endanger yourself and others.

Do not set the vehicle in motion until the reservoir pressures have been reached and the brake pressure warning lamp goes out.

Do not pull away, or if the vehicle is already in motion, stop as soon as possible, paying attention to road and traffic conditions if:

- the reservoir pressure in brake circuits 1 or 2 is below 6.5 bar (the  brake pressure warning lamp between the brake circuit reservoir pressure displays is on)
- the reservoir pressure in the auxiliary consumer circuit (spring-loaded parking brake) is too low (the  indicator lamp on the instrument panel lights up).
- on vehicles with air suspension, the chassis is not in the normal position (travel position) (the **ENR** and  indicator lamps on the instrument panel light up)

Have the brake system checked and repaired at a qualified specialist workshop which has the necessary specialist knowledge and tools to carry out the work required.

Mercedes-Benz recommends that you use a Mercedes-Benz Service Centre for this purpose. All work relevant to safety or on safety-related systems must be carried out at a qualified specialist workshop.

The reservoir pressure in the auxiliary consumer circuit is only pressurised after brake circuits 1 and 2 have been filled.

Check the compressed-air brake system for leaks (▷ page 84).

**Pulling away****⚠ WARNING**

Defects in the brake system could cause an accident, endangering you and others.

Check the brake system before driving on public roads by carrying out a test of brake operating safety. Should the braking performance be impaired, switch off the engine and have the brake system checked and repaired at a qualified specialist workshop which has the necessary specialist knowledge and tools for the work required.

Mercedes-Benz recommends that you use a Mercedes-Benz Service Centre for this purpose. All work relevant to safety or on safety-related systems must be carried out at a qualified specialist workshop.

**⚠ WARNING**

Do not shift down unless the speed is within the permissible range of the gear you wish to change to.

Do not shift down for additional engine braking on a slippery road surface. This could cause the drive wheels to lose their grip and the vehicle could skid. This could cause you to lose control of your vehicle and cause an accident.

**!** When pulling away on a slippery surface, do not allow the drive wheels to spin if possible. You could otherwise damage the drivetrain.

**!** Do not pull away as soon as the engine starts. Let the engine run in neutral for a short time after starting, until there is sufficient engine oil pressure. Do not drive at high engine speeds when the engine is cold.

This will prevent excessive wear and possible engine failure.

**🌿 Environmental note**

Do not warm up the engine when the vehicle is stationary.

- ❗ For vehicles with automatic transmission, you must observe the separate automatic transmission operating instructions. Otherwise, there is a risk of damaging the automatic transmission.

You can find further information in the separate operating instructions issued for the automatic transmission.

- ▶ Engage a gear or select a shift range.
- ⓘ The automatic transmission has a selector lever lock. You can only shift the selector lever to the desired position when you depress the brake pedal.  
You can find further information in the separate operating instructions issued for the automatic transmission.
- ▶ Release the parking brake (▷ page 87) and pull away.
- ❗ Only engage reverse gear with the engine at idling speed and the vehicle stationary. You could otherwise damage the manual transmission.
- ▶ Test the brakes (service and parking brake) on dry, high-grip road surfaces.

Do not change gear based on the sound of the engine. The engine speed should always be within the green area of the rev counter.

Warm up the engine quickly by driving at moderate engine speeds (green zone of the rev counter).

Only after the engine has reached its operating temperature (70 °C to 95 °C) can you, if required, use the full engine power output.

- ❗ On vehicles with manual transmission, change gear in good time. You must make sure that the engine speed does not reach the red area of the rev counter. There is otherwise a risk of engine damage.  
With a 6-speed manual transmission, when shifting between **5th** and **6th** gear, you must press the shift lever to the right. You could otherwise shift unintentionally into **3rd** or **4th** gear and damage the manual transmission.

- ❗ If you shift down at too high a speed (transmission braking), this can cause the engine to overrev, leading to engine damage.

### General driving tips

In the Operation section, you will find additional driving tips (▷ page 106) and information on driving with a trailer (▷ page 117).

### Steering

#### WARNING

Never switch the engine off while the vehicle is in motion.

There is no power assistance for the steering and the service brake when the engine is not running.

You will require considerably more effort to steer and brake, and you could therefore lose control of the vehicle and cause an accident.

- ❗ Do not hold the steering wheel at full steering angle for a long time, e.g. when turning or manoeuvring.  
The hydraulic pump could be damaged if the hydraulic fluid temperature increases.

### Overrun cut-off

When you take your foot off the accelerator pedal completely, the fuel supply is cut off in overrun mode.

### Driving in wet conditions

#### WARNING

There is a danger of aquaplaning occurring, even if you are driving slowly and your tyres have sufficient tread depth, depending on the depth of water on the road.

For this reason, avoid tyre ruts and brake carefully.

## Driving on flooded roads

If you drive on a stretch of road on which water has collected, do not drive any faster than walking pace. Please note that the water level must not reach above the lower edge of the front bumper.

**!** Bear in mind that vehicles travelling in front or in the opposite direction create waves. This may cause the maximum permissible water depth to be exceeded.

These notes must be observed under all circumstances. You could otherwise damage the engine, the electronics or the transmission.

## Driving in winter

Drive particularly carefully on slippery roads in winter. Avoid sudden acceleration, steering and braking manoeuvres.

### WARNING

Do not shift down unless the speed is within the permissible range of the gear you wish to change to.

Do not shift down for additional engine braking on a slippery road surface. This could cause the drive wheels to lose their grip and the vehicle could skid. This could cause you to lose control of your vehicle and cause an accident.

If the vehicle threatens to skid or cannot be stopped when moving at low speed:

- depress the clutch pedal on vehicles with manual transmission
- shift to neutral position **N** on vehicles with automatic transmission
- try to maintain control of the vehicle using corrective steering

**!** Vehicles with automatic transmission may roll only briefly in the neutral position **N**. Prolonged rolling of the wheels, e.g. when being towed, will result in transmission damage.

Road salt may adversely affect braking performance. In order to achieve the normal braking effect, you will need to apply more force to the brake pedal. Apply the brakes repeatedly when driving for longer periods on gritted or salted roads. This will restore the brakes to their normal level of performance. When stopping the vehicle after travelling on roads that have been salted, make sure that the brakes are fully functional before proceeding further.

**i** Fit snow chains to the outside rear wheels (driven axle) in good time before driving over snow, slush or ice. Comply with the manufacturer's fitting instructions.

On vehicles with all-wheel drive, the inter-axle lock should also be engaged (▷ page 92).

You will find information about winter tyres and about driving with snow chains in the Operation section (▷ page 122).

## Tyre traction

### WARNING

Whereas the vehicle can be fully controlled at a certain speed on dry roads, you must reduce your speed on wet or icy roads to achieve the same road safety. You could otherwise cause an accident.

Pay particular attention to the road conditions at temperatures around freezing point.

If ice has formed on the road surface (e.g. from fog), a thin film of water rapidly forms on the ice when you brake, considerably reducing tyre traction. Drive with particular care in such weather conditions.

## Stopping the vehicle and switching off the engine

### WARNING

Always switch off the engine and apply the parking brake before leaving the vehicle. The vehicle could otherwise roll away.

On gradients steeper than 15%:

- secure an unladen vehicle at the front axle using a wheel chock
- additionally secure a laden vehicle at the rear axle, e.g. using a wheel chock

### WARNING

Under no circumstances should the exhaust system come into contact with flammable materials such as dry grass or petrol, for example. Do not park the vehicle on dry grass-land or harvested grain fields. The hot exhaust system could otherwise ignite the flammable material and set the vehicle on fire.

### WARNING

Only remove the key from the ignition lock when the vehicle is stationary, as you cannot steer the vehicle with the key removed.

Never leave children unsupervised in the vehicle. They could release the parking brake. This could lead to a serious or fatal accident.

**!** Always remove the key when you have parked the vehicle. This prevents the battery from being discharged.

On vehicles with a battery isolating switch, also switch off the power supply if the vehicle is to be out of use for a longer period of time.

### WARNING

You must use the parking lamp to enable your vehicle to be recognised on public roads when it is dark. You can also use the reflective night parking signs in built-up areas.

Observe legal requirements.

- ▶ Stop the vehicle.
- ▶ Apply the parking brake.
- ▶ Shift the manual transmission into neutral or the automatic transmission to position **P**.

**i** On steep slopes, turn the front wheels towards the kerb.

**!** If the coolant temperature is very high, e.g. after driving on hilly roads, leave the engine running at idle speed for about two minutes before turning it off.

This allows the coolant temperature to return to normal.



- ▶ **To switch off the engine:** turn the key to position **0** in the ignition lock and remove it.  
The immobiliser is activated.
- ▶ Switch on the side lamps when it is dark.
- ▶ Secure an empty vehicle against rolling away at the front axle and secure a loaded vehicle at the rear axle, e.g. by using a wheel chock (▷ page 149).

**i** When you switch off the engine, BlueTec<sup>®</sup> exhaust gas aftertreatment automatically flushes the exhaust system with fresh air. Residues of AdBlue<sup>®</sup> on the metering unit or on the injection nozzle might otherwise impair the function of BlueTec<sup>®</sup> exhaust gas aftertreatment. Depending on the vehicle's previous operating load, BlueTec<sup>®</sup> exhaust gas aftertreatment may flush the exhaust system several times.

When BlueTec<sup>®</sup> exhaust gas aftertreatment cleans the exhaust system, an air valve is activated. You may then hear a hissing sound. This hissing sound does not indicate a leak in the compressed-air system.

## Braking

### Anti-lock protection function check

- ▶ Make sure that the anti-lock braking system (ABS) is switched on (▷ page 86).
- ▶ Turn the key to position **2** in the ignition lock.  
The  (vehicle) and  (trailer) ABS warning lamps on the instrument panel light up for approximately two seconds.

**⚠ WARNING**

If the ABS warning lamps do not light up during the ABS function check or do not go out again after three seconds, anti-lock protection is not active.



If the ABS warning lamps do not go out when pulling away, anti-lock protection is not active.

The anti-lock function may be deactivated.

The vehicle cannot be steered if the wheels lock while braking. The vehicle could skid due to the wheels being locked while braking. The vehicle can only be decelerated by normal braking. Drive with particular care.

If the anti-lock system is malfunctioning, have the brake system checked and repaired as soon as possible at a qualified specialist workshop which has the necessary specialist knowledge and tools to carry out the work required.

Mercedes-Benz recommends that you use a Mercedes-Benz Service Centre for this purpose. All work relevant to safety or on safety-related systems must be carried out at a qualified specialist workshop.



If the  and/or  ABS warning lamps do not light up when the ignition is switched on, or if they are constantly lit when the engine is running, there is a malfunction (▷ page 152). Despite this, the normal braking functions remain available.

**Checking the air-brake system for leaks****Important safety notes****⚠ WARNING**

A leaking compressed-air brake system jeopardises the operating and road safety of the vehicle. If there is insufficient reservoir pressure in the compressed-air brake system, you will not be able to brake the vehicle. You could thereby cause an accident and endanger yourself and others.

Do not set the vehicle in motion until the reservoir pressures have been reached and the brake pressure warning lamp goes out.

Do not pull away, or if the vehicle is already in motion, stop as soon as possible, paying attention to road and traffic conditions if:

- the reservoir pressure in brake circuits 1 or 2 is below 6.5 bar (the  brake pressure warning lamp between the brake circuit reservoir pressure displays is on)
- the reservoir pressure in the auxiliary consumer circuit (spring-loaded parking brake) is too low (the  indicator lamp on the instrument panel lights up).

Have the brake system checked and repaired at a qualified specialist workshop which has the necessary specialist knowledge and tools to carry out the work required.

Mercedes-Benz recommends that you use a Mercedes-Benz Service Centre for this purpose. All work relevant to safety or on safety-related systems must be carried out at a qualified specialist workshop.

**Brake circuit supply pressure display**

- ① Reservoir pressure display, brake circuit 1
- ② Reservoir pressure display, brake circuit 2
- ③ Brake pressure warning lamp

## Checking with the parking brake applied

Check the compressed-air brake system for leaks when the vehicle is stationary.

- ▶ Apply the parking brake (▷ page 87).
- ▶ Disconnect the compressed-air lines from the trailer (▷ page 120).  
This eliminates the possibility of a leak in the trailer's compressed-air brake system.
- ▶ Leave the engine running until both brake circuits have a supply pressure of 10 bar (8.5 bar for vehicles without BlueTec® exhaust gas aftertreatment but with air suspension or with a trailer tow hitch).
- ▶ Switch off the engine.
- ▶ Wait approximately five minutes until the afterblow in the AdBlue® supply line is finished. Then turn the key to position **2** in the ignition lock.

If you then do not see any visible drop in the supply pressure of the two brake circuits within three minutes, the compressed-air brake system can be considered to be free from leaks.

## Checking with the parking brake released or partially applied

Check the compressed-air reservoir, valves and brake cylinders on the vehicle for leaks when the vehicle is stationary and the parking brake is released.

- ▶ Use chocks to safeguard the vehicle against rolling away.
- ▶ Disconnect the compressed-air lines from the trailer (▷ page 120).  
This eliminates the possibility of a leak in the trailer's compressed-air brake system.
- ▶ Release the parking brake (▷ page 87).
- ▶ Leave the engine running until both brake circuits have a supply pressure of 10 bar (8.5 bar for vehicles without BlueTec® exhaust gas aftertreatment but with air suspension or with a trailer tow hitch).

- ▶ Switch off the engine.
- ▶ Wait approximately five minutes until the afterblow in the AdBlue® supply line is finished. Then turn the key to position **2** in the ignition lock.
- ▶ Depress the brake pedal enough for a partial brake application (half pedal travel). Do not change the pedal position.

If you then do not see any visible drop in the supply pressure of the two brake circuits within three minutes, the compressed-air brake system can be considered to be free from leaks.

## ABS (Anti-lock Braking System)

The anti-lock braking system (ABS) is an electronic control system. ABS controls the braking pressure so that the wheels do not lock when braking. This maintains the steerability of your vehicle while braking.

### WARNING

The risk of an accident increases if you:

- drive too fast, particularly when cornering and on wet or slippery roads
- drive too close to the vehicle in front

ABS can neither reduce this risk nor override the laws of physics.

You should therefore always adapt your driving style to suit the prevailing road and weather conditions and maintain a sufficient distance from other road users and objects on the road.

- i** The maximum effect of ABS will only be achieved if you:
    - always drive with the tyre pressures set at the correct level and corresponding to the load of the vehicle (▷ page 189)
    - use winter tyres (M+S tyres), with snow chains if necessary, when the road conditions are wintery
- ABS will only function correctly if you use wheels with the specified tyre size.

ABS is operational from walking pace, regardless of road surface conditions.

On a slippery road surface, ABS intervenes even if you only brake gently.

- i** When driving vehicles with manual transmission, the clutch pedal should also be depressed on slippery surfaces so that the braking effect of the engine does not affect ABS control.

You will find information about the anti-lock protection function check at the start of the "Brakes" section (▷ page 83).

### Braking with anti-lock protection

#### WARNING

If you are towing a trailer without ABS, this may overbrake when the brakes are applied fully. There is a risk that you will lose control of the tractor/trailer combination.

Observe the response of the trailer in the exterior mirror when applying brakes fully. Except in emergencies, avoid full brake applications to prevent the wheels of the trailer locking and to keep the tractor/trailer combination stable.

#### WARNING

Do not depress the brake pedal several times in quick succession (pumping). Pumping the brake pedal reduces the braking effect. You might otherwise not be able to stop the vehicle in time and could cause an accident. Depress the brake pedal firmly and smoothly.

If ABS intervenes during braking, you will feel the steering wheel vibrate slightly.

If ABS intervenes:

- ▶ keep the brake pedal firmly depressed until the braking situation has passed.

When you fully apply the brakes:

- ▶ press the brake pedal as hard as you can.

During ABS intervention, the following systems are deactivated automatically

- the continuous brake
- the retarder
- the inter-axle lock

### Deactivating ABS

In vehicles with all-wheel drive, you can deactivate ABS in the following situations, for example:

- if snow chains are being used
- in deep snow
- on sand or gravel
- on extremely uneven surfaces

If you deactivate ABS in such circumstances, the wheels can lock and become bogged in and thereby reduce the braking distance.





#### WARNING

If ABS is deactivated, the wheels may lock when braked. It is no longer possible to steer the vehicle when braking with locked wheels, and the vehicle could skid.

To be able to brake as quickly as possible off-road, it must be possible to deactivate ABS. ABS must be activated at all times when driving on public roads.



It is only possible to activate and deactivate ABS when the inter-axle lock is engaged (▷ page 92).

- ▶ **To activate/deactivate:** push the  button up ① or the  button down ②. If ABS is deactivated, the ABS warning lamps  and  light up in the instrument cluster.

ABS is automatically reactivated after the engine is restarted.

## Parking brake

### Important safety notes

#### **WARNING**

You must not leave the vehicle with the engine running and the parking brake released. The vehicle could start moving uncontrollably of its own accord.

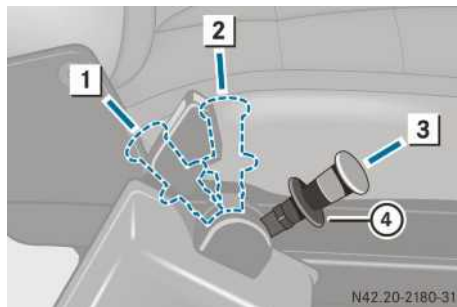
Make sure that the parking brake lever is engaged in the fully applied position. Otherwise, the lever could move back automatically into the released position. The vehicle would then not be braked and could roll away.

The braking force of the spring-loaded parking brake cylinders may not be sufficient on steep uphill or downhill gradients to prevent the laden vehicle from rolling away.

- With the parking brake lever in the test position, check whether the braking force of the spring-loaded parking brake cylinder is sufficient to hold the laden vehicle.
- Secure the tractor and trailer with chocks to prevent them from rolling away.


### Applying the parking brake

- ! You may only apply the parking brake when the vehicle is stationary.




The parking brake lever is located between the driver's seat and the co-driver's seat.

- ① Test position
- ② Fully applied position
- ③ Released position
- ④ Pull ring



- ▶ Move the parking brake lever backwards from released position ③ into fully applied position ②, and let it engage. The  indicator lamp on the instrument panel lights up.


### Checking the parking brake

- ▶ Apply the parking brake. The  indicator lamp on the instrument panel lights up.
- ▶ Push down pull ring ④ and move the parking brake lever backwards into test position ①. The vehicle is only held by the braking force of the spring-loaded parking brake cylinder. The brakes on the trailer are released. The vehicle should not move.
- ▶ If the braking force of the spring-loaded parking brake cylinder is not enough to hold the vehicle and trailer, you will have to further secure the vehicle and the trailer with wheel chocks.
- ▶ Move the parking brake lever forwards from released position ① into fully applied position ②, and let it engage.

- i** On trailers with EC brake systems, the parking brake also actuates the trailer service brake.

### Releasing the parking brake

- ▶ Move the parking brake lever backwards from released position **3** into the fully applied position **2** and let it engage. The  indicator lamp on the instrument panel lights up.
- ▶ Draw pull ring **4** up and move the parking brake lever forward to the stop into the released position **3**. The  indicator lamp on the instrument panel goes out.

- i Vehicles with the standard brake system:** the parking brake can only be released if there is sufficient supply pressure (at least 6.5 bar). The  brake pressure warning lamp between the displays for the reservoir pressure in the brake circuits must not light up (> page 84). In an emergency, you can manually release the spring-loaded parking brake if there is insufficient reservoir pressure in the brake system to tow the vehicle (> page 181).

- i Vehicles with the B83 brake system:** the parking brake can only be released if there is sufficient supply pressure in the auxiliary consumers circuit and the pressure release valve is in the basic position (> page 88).

### Emergency braking

As a rule, you may only apply the parking brake when the vehicle is stationary. Exceptionally, if the service brake fails, the parking brake can be used to brake the vehicle in an emergency.

#### WARNING

If the brake lever is applied abruptly, the rear wheels could lock. The vehicle could then go into a skid.

Make absolutely sure that:

- the brake lever does not engage in the applied position before the vehicle stops.
- the parking brake is only applied once gradually. Operating the parking brake repeatedly results in excessive consumption of compressed air. As a result, it will not be possible to fully release the parking brake.

- ▶ **Emergency braking:** draw up and hold pull ring **4**.
- ▶ Carefully, and only once, swing the parking brake lever to fully applied position **2**.


### B83 brake system

The auxiliary consumer circuit of the parking brake is separated from the brake circuits, which differs from the standard brake system. The parking brake can only be released if there is sufficient supply pressure in the auxiliary consumers circuit (at least 6.1 bar). The pressure release valve on the instrument panel and the emergency release valve under the bonnet are components of the B83 brake system.



The pressure release valve on the instrument panel


- 1** Mushroom button
- 2** Safety position – deployed
- 3** Basic position

If the supply pressure in the auxiliary consumers circuit is too low, the red  supply pressure indicator lamp in the instrument panel goes on.

If the supply pressure in the auxiliary consumers circuit falls below 4 bar, the pressure relief valve completes the circuit. The parking brake remains applied and mushroom button ① rises by approximately 5 mm to safety position ②.

- ❗ In an emergency, you can manually release the spring-loaded parking brake once in order to tow the vehicle (▷ page 181).

### Continuous brake

The use of the  continuous brake prevents excessive wear of the service brake, e.g. when driving on long downhill gradients. The vehicle may be equipped with an engine brake and/or a retarder which can be applied as a continuous brake.

- ❗ When driving on downhill stretches, change down in good time to make use of the braking effect of the engine.

On vehicles with automatic transmission, the transmission shifts down automatically. When the continuous brake (engine brake/retarder) is applied, the engine speed for shifting down is higher than when the continuous brake is deactivated.

You must make sure that the engine speed does not reach the red area of the rev counter. There is otherwise a risk of engine damage.


### WARNING

If your vehicle is not equipped with ABS (Anti-lock Braking System), or if ABS is deactivated, do not apply the continuous brake (engine brake/retarder) when driving on slippery roads. The wheels could lock and the vehicle may skid.

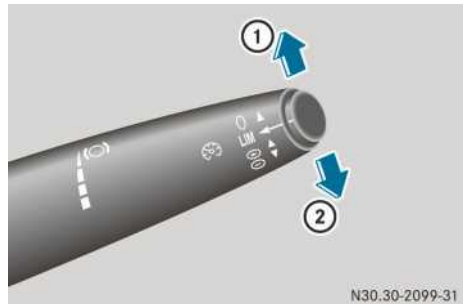
### Engine brake

The braking effect of the engine brake depends on the engine speed. A high engine speed results in a high engine braking effect.

The engine brake is effective from an engine speed of 900 rpm. Its optimum operating range is marked yellow in the rev counter and extends up to 2700 rpm. You must make sure that the engine speed does not reach the red area of the rev counter while the engine brake is applied (▷ page 56).

- ❗ If the  indicator lamp in the instrument panel lights up before the engine brake is applied, there is a malfunction in the continuous brake. Do not apply the engine brake in this case.


If you apply the engine brake, cruise control (▷ page 97) or the speed limiter (▷ page 99) is deactivated for as long as the engine brake remains applied.



Multifunction lever on the right of the steering column


- ① Continuous brake deactivated
- ② Engine brake activated

- **To activate:** press the multifunction lever into first detent position ②.

The  indicator lamp on the instrument panel lights up.

- ❗ If the vehicle is also equipped with a retarder, further lever positions follow.

- **To deactivate:** press the multifunction lever into position ①.

The  indicator lamp on the instrument panel goes out.


### Coupling with the service brake

The coupling between the engine brake and the service brake can be suspended to give better feel on a slippery road surface, for example.




Service brake coupling switch

- ① To couple the engine brake with the service brake
- ② To decouple the engine brake from the service brake

► **To decouple the brakes:** press the lower section of the  switch.

Only the service brake is then operated by the brake pedal.

► **To couple the brakes:** press the upper section of the  switch.

The engine brake and service brake are operated by the brake pedal.

### Retarder

Four stages of retarder braking power can be selected using the multifunction lever (hand control) and/or the brake pedal (foot control):

Level	Braking power
1	25 %
2	50 %
3	75 %
4	100 %

If the vehicle is equipped with hand and foot controls, both ways of engaging the different

braking levels can be operated independently of each other.

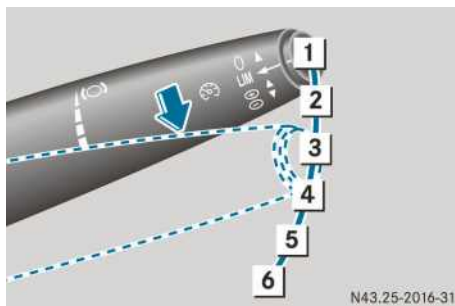
- ❗ **Information:** Cruise control (► page 97) or the speed limiter (► page 99) is automatically deactivated when the retarder is applied. After deactivating the retarder, you will need to reactivate the respective driving system.

### ⚠ WARNING

In order to protect it against overheating, the retarder's braking power is reduced in accordance with the operating temperature. There is then a risk that the expected braking power will not be available.

For this reason, shift down in plenty of time, particularly on long downhill stretches, to make full use of the engine's braking effect. Drive particularly carefully and always adapt your driving style to suit the prevailing road and traffic conditions.

### Hand control



Multifunction lever on the right of the steering column

- ① Continuous brake deactivated
- ② Engine brake activated
- ③ Retarder stage 1 applied
- ④ Retarder stage 2 applied
- ⑤ Retarder stage 3 applied
- ⑥ Retarder stage 4 applied

The lever positions are an example for a vehicle with engine brake and retarder.

- ❗ **Warning:** If the retarder remains applied while the vehicle is stationary and the engine is run-

ning, the battery is discharged and the retarder may overheat. Only apply the retarder while the vehicle is in motion.

This will prevent damage to the retarder and stop the battery from discharging.

- ▶ **To apply:** press the multifunction lever downwards successively to position **3**, **4**, **5** or **6**. Always observe the vehicle's handling characteristics when doing so. The **(B)** indicator lamp on the instrument panel lights up.

**i** If ABS is active and controls brake distribution, the retarder is automatically deactivated for the duration of ABS intervention. The **(B)** indicator lamp only lights up if the retarder is applied, either by hand, or by using the brake pedal during pedal control.

- ▶ **To deactivate:** press the multifunction lever into position **1**. The continuous brake is deactivated. The **(B)** indicator lamp on the instrument panel goes out.

### Pedal control



Retarder pedal control switch

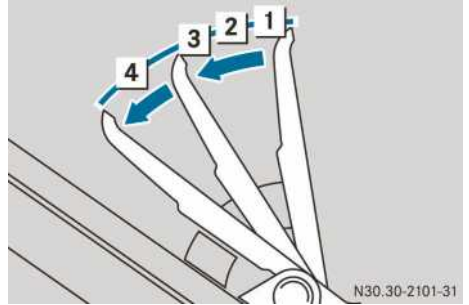
- ① To activate pedal control
- ② To deactivate pedal control

- ▶ **To activate:** press the upper section of the **(B)** switch.

Pedal control is activated.

The retarder levels can now be selected successively using the brake pedal while the driving.

At speeds below 3 km/h, the retarder is automatically deactivated.



Brake pedal positions

- 1** Retarder stage 1 applied
- 2** Retarder stage 2 applied
- 3** Retarder stage 3 applied
- 4** Retarder stage 4 applied

The **1** and **2** retarder stages are applied before the service brake.

- ▶ Depress the brake pedal successively in position **1**, **2**, **3** or **4**. Always observe the vehicle's handling characteristics when doing so.

The **(B)** indicator lamp on the instrument panel lights up.

- i** If ABS is active and controls brake distribution, the retarder is automatically deactivated for the duration of ABS intervention. The **(B)** indicator lamp only lights up if the retarder is applied, either by hand, or by using the brake pedal during pedal control.

- ▶ **To deactivate:** press the lower section of the **(B)** switch.

The continuous brake is deactivated.

## Driving the vehicle

### All-wheel-drive

#### General notes

On vehicles with all-wheel drive, all four wheels are always driven.

All-wheel drive improves vehicle traction.

## Differential locks

Certain road conditions, e.g. when driving on slippery road surfaces or off-road could lead to:

- an unbalanced distribution of drive forces between the front and rear axles
- different wheel rotational speeds on the rear axle

In such circumstances, differential locks improve traction.

Vehicles with all-wheel drive are equipped with:

- Inter-axle lock

Tractive forces are distributed evenly to the front and rear axles.

- Rear-axle cross-axle lock

Tractive forces are distributed evenly to the wheels on the rear axle.

- i** The two differential locks can only be engaged in succession.

You can also deactivate ABS in some situations (> page 86).

### **⚠ WARNING**

When the differential lock is engaged, steerability of the vehicle is impaired. It is no longer possible to steer the vehicle on a bend in a controlled fashion.

For this reason, you should never drive with the differential lock engaged on high-grip surfaces.

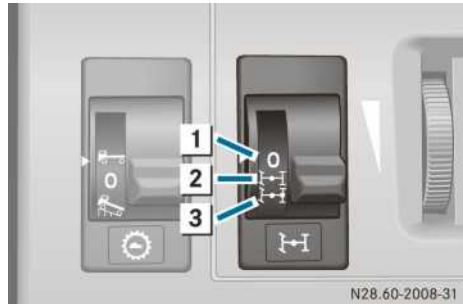
- !** If the drive wheels are spinning, do not engage the differential lock.

Only engage the differential lock when the vehicle is stationary or is moving at walking pace. Pull away with particular care.

- !** The differential locks must be disengaged at speeds of more than 30 km/h and when driving on a firm, high-grip surface.

Otherwise, there is a risk of tyre damage and damage to the transfer case and to the differential.

The preselection switch for the differential locks is between the instrument panel and the control panel for the heating.





Preselection switch

- 1** Differential locks disengaged
- 2** Inter-axle lock engaged
- 3** Inter-axle lock and rear-axle cross-axle lock engaged


- i** The relevant engagement procedure is performed after a delay. Depress the accelerator pedal with moderate force and release it again (load change) to accelerate the engagement procedure. Do not change your direction of travel during the engagement process.

- **To engage:** move the selection switch to position **2**.

The  indicator lamp on the instrument panel lights up as soon as the inter-axle lock is engaged.



- i** If ABS intervenes and regulates brake force distribution, the inter-axle lock is automatically disengaged for the duration of ABS intervention. The  indicator lamp on the instrument panel then goes out.

- ▶ Move the preselection switch to position **3**.

The  indicator lamp in the instrument cluster lights up as soon as the differential on the rear axle is engaged.

- ▶ **To disengage:** move the preselection switch one position back or to position **1**.

As soon as driving conditions allow it, the differential at the rear axle and/or the longitudinal differential are released.

The  and/or  indicator lamps on the instrument panel then go out.

- i** If you switch off the ignition when the differential lock is engaged, the differential remains engaged even after the engine is restarted.

### Transfer case

#### **WARNING**

Neutral position on the transfer case disconnects the power transmission to the wheels. In this position, an engaged gear cannot hold the vehicle when it is parked. The vehicle could start moving of its own accord. Make sure that the transfer case is always in a drive position and not in neutral when parking. Always secure the vehicle against rolling away by using the parking brake.

- !** Only change the transfer case:
  - when the vehicle is stationary
  - when the engine is running
  - when you have shifted the transmission into neutral

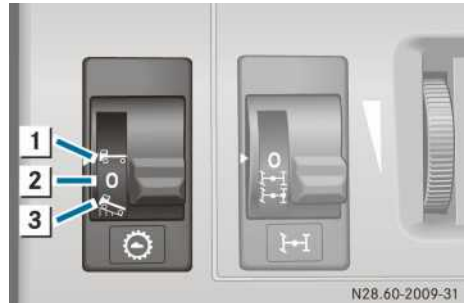
Otherwise, there is a risk of damaging the transfer case and the manual transmission.

The transfer case enables an off-road gear to be engaged.

#### **Environmental note**

Only engage off-road gear when required, e.g. when driving off-road and on particularly steep gradients when fully laden. Engaging

the off-road gear can have an adverse effect on exhaust emissions.



The selector switch is between the instrument panel and the control panel of the heating system.

- 1** On-road position
- 2** Neutral position – no power is transmitted to the wheels
- 3** Off-road position – for driving off-road and on particularly steep gradients

In off-road position **3**, the drive force of the engine is geared down by the transfer case. The speed is lower, and the tractive force accordingly higher, than in the on-road position.

Neutral position **2** is only required for changing the gear.

- ▶ **To select the driving position:** stop the vehicle and shift the manual transmission to neutral.
- ▶ Move the transfer case selector switch to drive position **1** or **3**.

- i** When you switch off the ignition, the drive position selected remains engaged even after the engine is restarted.

### Differential locks

Particular road conditions, e.g. when driving on slippery road surfaces, can lead to different wheel rotational speeds on the rear axle. On vehicles without all-wheel drive, the differential can be engaged at the rear axle. This

makes it possible, for example, to pull away even in poor road conditions.

You will find information about the differential locks on vehicles with all-wheel drive in the "All-wheel drive" section (▷ page 92).

### WARNING

When the differential lock is engaged, steerability of the vehicle is impaired. It is no longer possible to steer the vehicle on a bend in a controlled fashion.

For this reason, you should never drive with the differential lock engaged on high-grip surfaces.

**!** If the drive wheels are spinning, do not engage the differential lock.


Only engage the differential lock when the vehicle is stationary or is moving at walking pace. Pull away with particular care.


**!** The differential lock must be disengaged at speeds of more than 30 km/h and when driving on a firm, high-grip surface.


Otherwise, there is a risk of tyre damage and damage to the differential.




**i** The relevant engagement procedure is performed after a delay. Depress the accelerator pedal with moderate force and release it again (load change) to accelerate the engagement procedure. Do not change your direction of travel during the engagement process.


► **To activate:** press upper section ① of the  switch.

The  indicator lamp on the instrument panel lights up when the differential is engaged.

**i** If ABS intervenes and regulates brake force distribution, the inter-axle lock is automatically disengaged for the duration of ABS intervention. The  indicator lamp on the instrument panel then goes out.

► **To deactivate:** press lower section ② of the  switch.

The differential is released as soon as driving conditions allow.

The  indicator lamp on the instrument panel then goes out.

**i** If you switch off the ignition when the differential lock is engaged, the differential remains engaged even after the engine is restarted.

### Power take-off

Power take-offs are designed to drive auxiliary equipment. Depending on the operating conditions, the engine and the power take-offs must be operated at a specific engine speed (working speed).

**!** Please observe the following notes:


- if a heavy load is placed on the power take-off (e.g. high power draw at high outside temperature), the temperature of the transmission oil may rise to an impermissible level.  
Operate the power take-off for approximately five to ten minutes at regular intervals under partial load.
- only engage the power take-off when the vehicle is stationary and only when you have shifted the transmission into neutral.
- make sure that the engine speed does not exceed the maximum permissible


speed stated in the vehicle documents during operation.

- on vehicles with a transmission lock, the manual transmission is locked when the power take-off is engaged.
- on vehicles without a transmission lock, you can engage first or second gear after engaging the power take-off and then drive the vehicle.

Do not change gear when driving the vehicle with the power take-off engaged. You should therefore only drive in first or second gear, depending on the road speed desired.





- ▶ **To engage:** stop the vehicle and apply the parking brake.
- ▶ Shift the transmission into neutral.
- ▶ Depress the clutch pedal on vehicles with manual transmission.
- ▶ Wait approximately three to six seconds, and then push upper section ① of the  switch while the engine is still running.

The  indicator lamp on the instrument panel lights up.

Depending on the vehicle's equipment, you either change the working engine speed with the accelerator pedal or with the multi-function lever on the steering column (▷ page 96).

On vehicles with constant engine speed control, the engine speed increases automatically to a preset or an adjustable working speed.

- ▶ Release the clutch pedal.
- ▶ **To disengage:** stop the vehicle and apply the parking brake.
- ▶ Shift the transmission into neutral.
- ▶ Depress the clutch pedal on vehicles with manual transmission.
- ▶ Wait approximately three to six seconds, and then push lower section ② of the  switch while the engine is still running.

The  indicator lamp on the instrument panel goes out.

On vehicles with constant engine speed control, the engine speed is decreased to idling speed (600 rpm).

- ▶ Release the clutch pedal.


### Constant engine speed control


Constant engine speed control prevents a reduction in engine speed when a power take-off is engaged.

Depending on the equipment in the vehicle, the engine speed increases automatically to a preset or an adjustable working speed. The working speed preset at the factory is 850 rpm.

### Setting the working speed



- ▶ Engage the power take-off (▷ page 95).
- ▶ Press upper section ① of the  switch briefly to increase the working engine

speed, or press lower section ② of the  switch briefly to reduce it. The working engine speed increases or decreases by increments of 16 rpm.


- ① If you keep the button depressed, the working engine speed changes continuously.

## Flame-start system



### General notes

The flame-start system is a cold-start aid for low outside temperatures (below -15 °C) and is activated at outside temperatures below -4 °C.



#### Environmental note

At outside temperatures below approximately -4 °C, the flame-start system reduces pollutant emissions after the engine has been started. In addition, it minimises the load on the starter motor and batteries, and reduces startup time. For this reason, do not start the engine until the  indicator lamp has gone out.

### Activating the flame-start system

- ▶ Turn the key to position **2** in the ignition lock. The  (flame-start system) indicator lamp on the instrument panel lights up. The flame-start system is operating.
- ▶ Start the engine within 30 seconds of the  indicator lamp going out.

The flame-start system is automatically deactivated if:

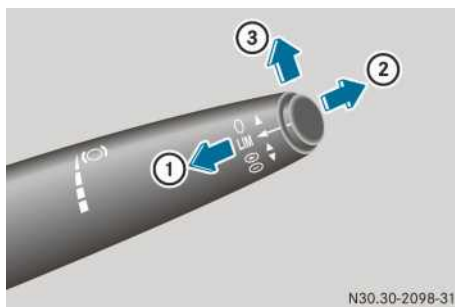
- the engine is not started within 30 seconds of the  indicator lamp on the instrument panel going out.
- the engine is started while the  indicator lamp is lit.
- the coolant temperature reaches about 0 °C when the engine is running.




## Idling speed

After the engine has been started, idling speed is regulated automatically. On vehicles with cruise control, you can set the engine idling speed, e.g. for operating auxiliary equipment when the vehicle is stationary, to between 600 and 750 rpm.

- ① After pulling away the set idling speed is automatically switched off when a speed of approximately 20 km/h is reached.

The multi-function lever is on the right of the steering column.



- ① To increase the idling speed 
- ② To reduce the idling speed 
- ③ To switch off speed increase 

- ▶ **To adjust:** briefly press the multi-function lever in the direction of arrow ① or ②. The idling speed is increased or reduced in increments of 20 rpm.

- ① If you press and hold the multi-function lever in either direction, this will increase or reduce the idling speed continually.

- ▶ **To switch off:** briefly press the multi-function lever in the direction of arrow ③.

## Driving systems

### Overview

The vehicle can be equipped with the following driving systems:

- Cruise control (▷ page 97)
- Speed limiter (▷ page 99)

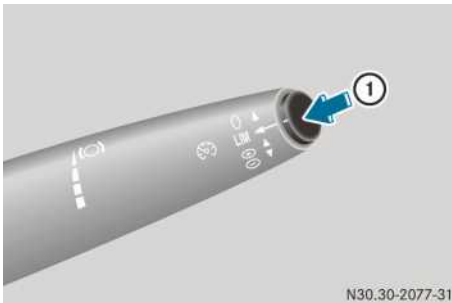
The driving systems listed above are only aids designed to assist you drive at a preselected speed, for example. The driver is always responsible for the vehicle's speed.

The ABS driving safety system is described in the "Brakes" section (▷ page 85).

### Switching function

- ① When you start the engine, cruise control will always be selected.

The multi-function lever is on the right of the steering column.



N30.30-2077-31

- ① Cruise control/speed limiter shift button

- ▶ Press button ①.

The speed limiter is selected and cruise control is deactivated.

Any speeds stored for cruise control or the speed limiter are deleted.

- ▶ Press button ① again.

Cruise control is selected again and the speed limiter is deactivated.


Any speeds stored for cruise control or the speed limiter are deleted.

### CRUISE CONTROL

Cruise control maintains the stored speed provided the available engine output is sufficient.

Use cruise control only if road and traffic conditions make it possible to maintain a steady speed for a prolonged period. Cruise control

can be used to store any road speed above 15 km/h.

- ① If the  warning lamp on the instrument panel lights up, ABS has malfunctioned and cruise control will only store speeds above 50 km/h.

#### WARNING

Cruise control is unable to take account of road and traffic conditions.

Always pay attention to the traffic conditions, even when cruise control is activated.

Cruise control is only an aid designed to assist driving. You are always responsible for the vehicle's speed and for braking in good time.

If there is a change of drivers, make sure that you inform the new driver about the set cruise speed. Otherwise, sudden acceleration or braking could endanger you or others.

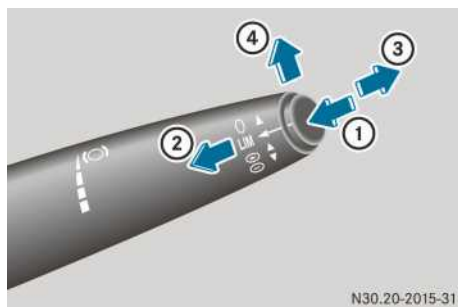
#### WARNING

Do not use cruise control:







- in road and traffic conditions which do not allow you to maintain a constant speed (e.g. heavy traffic or winding roads). You could otherwise cause an accident.
- on slippery roads. Braking or accelerating could cause the drive wheels to lose traction and the vehicle could then skid.
- when there is poor visibility, e.g. due to fog, heavy rain or snow

- ① Cruise control may be unable to maintain the stored speed on uphill or downhill gradients. The stored speed is resumed when the uphill or downhill gradient evens out, if the vehicle's speed has not dropped below 10 km/h.

The multi-function lever is on the right of the steering column.



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- |   |  |
|---|--|
| ① | <p>Press :</p> <ul style="list-style-type: none"> <li>to select speed limiter. The last speed stored is deleted.</li> <li>to select cruise control. The last speed stored is deleted.</li> </ul>  |
| ② | <p>Briefly press :</p> <ul style="list-style-type: none"> <li>to store the current speed</li> <li>to increase the speed in increments of 0.5 km/h</li> </ul>  |
| ② | <p>Press and hold :</p> <ul style="list-style-type: none"> <li>to increase the speed continuously</li> </ul>  |
| ③ | <p>Briefly press :</p> <ul style="list-style-type: none"> <li>to reactivate the stored speed (requirement: cruise control has been selected ① and was previously deactivated without functions having been switched or the engine having been started) or</li> <li>to reduce the speed in increments of 0.5 km/h</li> </ul> |
| ③ | <p>Press and hold :</p> <ul style="list-style-type: none"> <li>to reactivate the stored speed (requirement: cruise control has been selected ① and was previously deactivated without functions having been switched or the engine having been started) and</li> <li>to reduce speed continuously</li> </ul>              |
| ④ | <p>Briefly press :</p> <p>to deactivate cruise control</p>  |

**i** If the continuous brake is engaged, cruise control will be automatically deactivated. Once the engine brake is disengaged, cruise control automatically maintains the speed again. On vehicles with a retarder, you must activate cruise control again once you have disengaged the continuous brake. The last speed set remains stored.

- ▶ **To activate cruise control:** press the button on multi-function lever ① if necessary. The speed limiter is deactivated and cruise control is selected. The last speed stored is deleted.
- ▶ Drive at the desired speed.
- ▶ Briefly press the multi-function lever in the direction of arrow ②. Cruise control is activated and the current speed is stored

or

- ▶ Briefly press the multi-function lever in the direction of arrow ③. Cruise control is activated. After switching between functions or starting the engine, the current speed will be stored. If the functions have not been switched, the vehicle will accelerate or decelerate to the last speed stored.
- ▶ Release the accelerator pedal.

- i** Vehicles with manual transmission:
- Always drive at an adequate, but not excessive engine speed.
  - Change gear in good time, particularly on steep uphill gradients.
  - Do not change down several gears at a time.
  - Cruise control is deactivated if you depress the clutch pedal for longer than 5 seconds or shift into neutral and release the clutch pedal.

#### **WARNING**

The vehicle's speed setting can be raised in increments of 0.5 km/h at a rate much faster than the vehicle's rate of acceleration. The vehicle then continues to accelerate even

after you have released the multi-function lever until the new set speed is reached.

Only increase the speed as the prevailing conditions permit. Sudden acceleration could otherwise endanger you and others.

- ▶ **To set the speed:** briefly press the multi-function lever in the direction of arrow ② or ③.

The set speed is increased or reduced in increments of 0.5 km/h.

or

- ▶ Press and hold the multi-function lever in the direction of arrow ② or ③ until the desired speed has been reached.

- ▶ Release the multi-function lever. The new speed is stored.

- ❗ If a vehicle with automatic transmission is braked using the multi-function lever, the transmission shifts down automatically if the deceleration is insufficient.

Cruise control is not deactivated if you depress the accelerator pedal. If you accelerate briefly, e.g. to overtake, cruise control adjusts the vehicle's speed to the last speed stored after you have finished overtaking.

### Deactivating cruise control

There are various ways to deactivate cruise control:

- ▶ Depress the brake pedal.

or

- ▶ Briefly press the multi-function lever upwards ④.

The last speed stored remains stored until the functions are switched or until the engine is next started.

or

- ▶ Press button ① on the multi-function lever. Cruise control is deactivated and the speed limiter is selected. The last speed stored is deleted.

- ❗ Cruise control is deactivated automatically when:

- you apply the brakes
- you drive slower than 10 km/h
- you depress the clutch pedal for longer than 5 seconds while the vehicle is in motion
- you shift the manual transmission to neutral while the vehicle is in motion and release the clutch pedal
- you shift the automatic transmission to neutral position **N** while the vehicle is in motion
- you engage the continuous brake

### Speed limiter

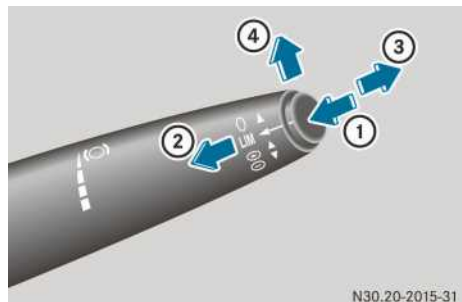
The speed limiter can be used to limit the speed of the vehicle to any speed above 15 km/h. With the accelerator pedal, the vehicle can only accelerate to the stored limit speed.





#### ⚠ WARNING

The speed limiter automatically limits the speed. The speed limiter is not able to detect road and traffic conditions.

The speed limiter is only an aid which is designed to assist you driving. You are responsible for the vehicle's speed and keeping a safe distance.

The multi-function lever is on the right of the steering column.



①	Press  : <ul style="list-style-type: none"> <li>• to select the speed limiter. The last speed stored is deleted.</li> <li>• to select cruise control. The last speed stored is deleted.</li> </ul>
②	Briefly press  : <ul style="list-style-type: none"> <li>• to store the current speed (after switching between functions or starting the engine)</li> </ul>
③	Briefly press  : <ul style="list-style-type: none"> <li>• to activate the stored limit speed (requirement: speed limiter has been selected ① and was previously deactivated, but not by a change of function or switching the engine off and on again) or</li> <li>• to store the current speed (after switching between functions or starting the engine)</li> </ul>
④	Briefly press  : <p>To deactivate the speed limiter</p>

**i** If the continuous brake is engaged, the speed limiter will automatically be deactivated.

The vehicle is limited to the stored speed as soon as the engine brake is disengaged. On vehicles with a retarder, you must activate the speed limiter again once you have disengaged the continuous brake.

▶ **To activate the speed limiter:** press button ① on the multi-function lever, if necessary.

Cruise control is deactivated and the speed limiter is selected. The last limit speed stored is deleted.

▶ Drive at the desired speed.

▶ Briefly press the multi-function lever in the direction of arrow ②.

The speed limiter is activated and the road speed driven is stored as the limit speed. The vehicle is limited to the stored speed

as soon as the multi-function lever is released.

or

▶ Briefly press the multi-function lever in the direction of arrow ③.

The speed limiter is activated. After switching between functions or starting the engine, the current speed will be stored as the limit speed. If the functions have not been switched, the vehicle is limited to the last speed stored.

▶ **To set the speed:** briefly press the multi-function lever in the direction of arrow ④. The speed limiter is deactivated.

▶ Drive at the desired speed.

▶ Briefly press the multi-function lever in the direction of arrow ②.

The speed limiter is activated and the road speed driven is stored as the limit speed.

**i** If you shift down on downhill gradients without adjusting the speed, the speed limiter will set an engine speed of approx. 2,700 rpm.

The set limit speed remains stored. The maximum speed is resumed as soon as this is possible in a higher gear.

### Exceeding the limit speed

The stored speed can be exceeded, e.g. when overtaking.

▶ Depress the accelerator briefly past the full-throttle position to the stop.

▶ Once you have finished overtaking, briefly release the accelerator pedal and depress it again.

The stored limit speed is reactivated.

### Deactivating the speed limiter

**i** If the continuous brake is engaged, the speed limiter will automatically be deactivated.

There are various ways to deactivate the speed limiter:

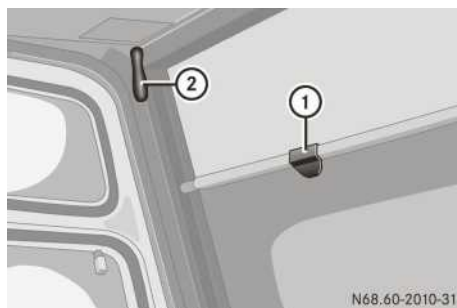
- ▶ Briefly press the multi-function lever upwards ④.  
The limit speed set remains stored until the functions are switched or the engine is next started.

or

- ▶ Press button ① on the multi-function lever.  
The speed limiter is deactivated and cruise control is selected. The last limit speed stored is deleted.

## Features

### Roller sunblind



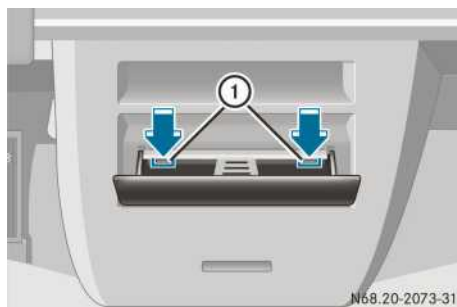
① Handle

② Release catch

- ▶ Pull the roller sunblind by handle ① into the desired position.
- ▶ Press release catch ②.  
The roller sunblind rolls up automatically.

### Ashtray

The ashtray is located in the centre console.



① Catches (latching springs)

- ▶ **To open:** fold out the ashtray.
- ▶ **To remove:** press catches ① down and remove the ashtray to empty it.
- ▶ **To replace:** insert the ashtray at the bottom and push it into the retainer.

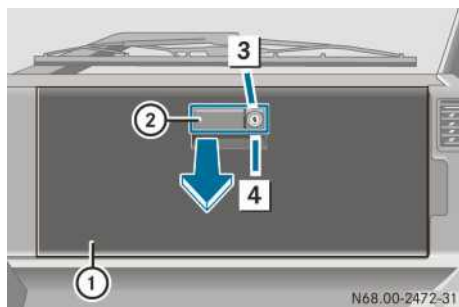
### Stowage spaces and stowage compartments

#### WARNING

You should only load the stowage spaces in such a way that the occupants cannot be injured by objects being thrown around the passenger compartment in the event of an accident, braking or sudden change in direction.

Therefore, do not carry heavy, bulky, pointed or sharp-edged objects in the stowage spaces or stowage compartments.

## Glove compartment



- ① Glove compartment cover
- ② Handle
- ③ Locked (lockable glove compartment)
- ④ Unlocked (lockable glove compartment)

- ▶ **To open:** unlock glove compartment cover ① with vehicle key ④ if necessary.
- ▶ Pull handle ② in the direction of the arrow and fold open glove compartment cover ①.
- ▶ **To close:** push glove compartment cover ① up and press it until it engages.
- ▶ Lock glove compartment cover ① with vehicle key ③ if necessary.

## Socket

The socket for accessories is next to the right-hand switch panel on the instrument panel.

The socket can be used for accessories with a maximum power consumption of 240 watts.

- ❗ The socket is only supplied with power when the ignition is switched on.

## Communications

### Electronic communications equipment

#### ⚠ WARNING

You must observe the legal requirements in the country in which you are driving when

operating mobile communications equipment in the vehicle.

If it is legally permitted to operate mobile communications equipment while the vehicle is in motion, you may only operate it when road and traffic conditions permit. You could otherwise be distracted from the traffic conditions, cause an accident and injure yourself and others.

Mobile communications equipment (e.g. mobile phones, radio or fax equipment) without a low-reflection external aerial can interfere with the vehicle electronics, impairing the operating reliability of the vehicle and putting your own safety at risk. You must therefore only use these devices when they are properly connected to a separate, low-reflection, external aerial.

Failure to observe the Mercedes-Benz installation specifications can result in the invalidation of your vehicle's operating permit.

You will find information on retrofitting electrical or electronic equipment in the "Technical data" section (▷ page 185).

## Telephone

#### ⚠ WARNING

You must observe the legal requirements of the country in which you are currently driving when operating a mobile phone in the vehicle.

If it is permitted to operate a mobile phone while the vehicle is in motion, only operate it when road and traffic conditions permit. You could otherwise be distracted from the traffic conditions, cause an accident and injure yourself and others.

Mobile phones without low-reflection exterior aerials could interfere with the vehicle electronics and thus compromise the operational safety of the vehicle, as well as your own safety. Therefore, only use these devices if they are correctly connected to a separate, low-reflection exterior aerial.

### WARNING

Excessive electromagnetic radiation may constitute a health hazard to yourself and others. The use of an exterior aerial takes into account current scientific discussions relating to the possible health risk posed by electromagnetic fields.

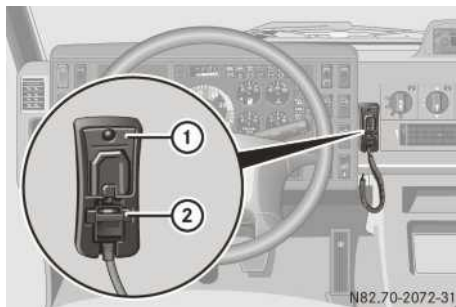
Therefore, only have the exterior aerial fitted at a qualified specialist workshop.

Mercedes-Benz recommends the use of an approved exterior aerial for operating the mobile phone. Only in this way can optimal mobile phone reception quality in the vehicle be ensured and mutual interference between the vehicle electronics and mobile phones minimised.

In Germany, for vehicles without a hands-free system, it is forbidden to use mobile phones while driving or while the engine is running. Observe the legal requirements in the relevant country.

The vehicle can be equipped with a universal hands-free system. The microphone for the hands-free system is fitted on the driver's side below the overhead console.

The mobile phone fitting is on the driver's side. Depending on the vehicle's equipment, it is either next to the heating control panel or next to the ashtray in the centre console.



Example: mobile phone fitting

In order to use the hands-free system, you will need special mobile phone brackets. The Mercedes-Benz range of accessories

includes brackets for various mobile phone models.

- i** Mobile phone brackets available from various manufacturers on the open market are not compatible with the Mercedes-Benz telephone system. You can recognise brackets suitable for your mobile phone by the Mercedes Star and by the spare part number B6 on the back.

Detailed instructions for use can be found in the operating instructions for the mobile phone bracket.

- ▶ If you do not have a mobile phone bracket connected, then engage connector ② in bracket ①.
- i** The mobile phone battery is charged depending on the charge status and the position of the key in the ignition lock. The mobile phone display indicates the charging status.



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<b>Driving tips .....</b>	<b>106</b>
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## Useful information

These Operating Instructions describe all models and standard and optional equipment of your vehicle that were available at the time of printing. Country-specific variations are possible. Note that your vehicle cannot be fitted with all of the described functions. This also applies to systems and functions relevant to safety.

Read the information on qualified specialist workshops: (▷ page 14).

## Driving tips

### Running-in

It is of decisive importance for the operating life, reliability and economy of the vehicle that the engine is not subjected to its full rated load during the running-in period.

#### Up to 1500 km

- Run the vehicle in carefully. Drive at varying road and engine speeds.
- Avoid heavy loads (driving at full throttle) and high engine speeds. Do not exceed  $\frac{3}{4}$  of the maximum speed for each gear.
- Change gear in good time.
- Do not change down a gear manually in order to brake.
- Avoid depressing the accelerator pedal beyond the pressure point on vehicles with an automatic transmission (kickdown), and only engage gear **3**, **2** or **1** while driving slowly.

#### After 1500 km

- Gradually bring the vehicle up to full road and engine speeds.
- **i** These instructions must also be observed if you have the engine, the transmission or the rear axle differential of your vehicle replaced.

## Driving abroad

An extensive network of Mercedes-Benz Service Centres is also at your disposal when you are travelling abroad. The workshop directories are available from any Mercedes-Benz Service Centre.

In some countries, only fuels with a higher sulphur content are available.

You will find information about fuel in the "Service products" section (▷ page 126).

Mercedes-Benz recommends fitting a fuel filter with a water separator if the vehicle is mainly operated in countries with high water content in the diesel fuel.

When driving in countries in which traffic drives on the opposite side of the road to the country where the vehicle is registered, the headlamps must be partially masked.

### WARNING

Masking the headlamps incorrectly can impair your vision when driving with the headlamps switched on. You could also impede other road users.

Always have the headlamps masked at a qualified specialist workshop. Otherwise, you could dazzle oncoming traffic and cause an accident.

## Driving off-road

### Important safety notes

### WARNING

If you drive too fast off-road, you may not recognise obstacles in good time or you may fail to assess the condition of the ground. When driving off-road, always drive slowly to avoid damaging the vehicle. Such damage could impair the operating safety of your vehicle. You could lose control of the vehicle and cause an accident.

Always drive along the line of fall when you are on a slope. Never drive across a slope. The vehicle may slip to the side, tip and roll over.

Never turn the vehicle around on a slope. If the vehicle cannot manage an uphill slope, drive back down the slope in reverse gear.

You could lose control of your vehicle if you shift the transmission to neutral or disengage the clutch on an incline and then try to brake the vehicle using only the service brake. Never let the vehicle roll.

Overloading the vehicle will increase the risk of the vehicle tipping over. Never exceed the maximum permissible axle loads under any circumstances. Keep the vehicle's centre of gravity as low as possible when the vehicle is laden.

If the vehicle is frequently or mainly operated in muddy or marshy terrain, substances that impair braking efficiency, such as sand or oil mixed with water, could get into the brake system. This may lead to excessive wear and a reduction in braking performance (up to the point of total failure).

After driving off-road, always carry out a short brake test. If you detect a reduced braking performance or hear scraping noises, have the brake system checked at a qualified specialist workshop.

### WARNING

When driving off-road, your body is subject to acceleration forces from all directions due to the uneven ground. You could, for example, be thrown out of your seat and injured. Always fasten your seat belt, even when driving off-road.

**!** Always observe the ground clearance of the vehicle and avoid obstacles, e.g. deep ruts.

Obstacles could damage the vehicle, for example:

- the axles
- the propeller shafts and the transmission
- the tanks and supply reservoirs

For this reason, you should always drive slowly when driving off-road. If you have to

drive over obstacles, have the co-driver direct you.

When driving the vehicle, particularly on rough terrain, ensure that the driven wheels always have sufficient traction.

Avoid letting the drive wheels spin. Spinning drive wheels can damage the differential. Engage the differential lock.

- i** Construction vehicles are designed to be used off-road.

## Rules for driving off-road

### WARNING

When driving over obstructions or ruts, the steering wheel could kick back and injure both thumbs. Always hold the steering wheel cross firmly with both hands. Be prepared for increased steering forces when driving over obstructions.

- Before driving off-road, stop the vehicle and shift to a low gear.
- Only drive off-road with the engine running and a gear engaged.
- Drive slowly and smoothly. Walking pace is necessary in many situations.
- Make sure that the wheels always remain in contact with the ground. Engage the transfer case and the differential locks.
- Drive with extreme care over unknown terrain where you can only see for a short distance. As a precaution, get out of the vehicle to take a look at the route to be taken first.
- Check the water depth before fording.
- Watch out for obstacles (e.g. rocks, holes, tree stumps and ruts).
- Avoid edges where the surface could crumble or break away.

## Before driving off-road

- ▶ All-wheel-drive vehicles: activate the differential lock (▷ page 92) and shift the transfer

case to the off-road driving position (▷ page 93).

- ▶ Activate the differential lock (▷ page 92).
- ▶ Deactivate the anti-lock braking system (ABS) (▷ page 86).
- ▶ Safely stow or secure any items of luggage or loads (▷ page 111).

**i** Mercedes-Benz recommends that you additionally carry a shovel and a recovery rope with a shackle in the vehicle.

### After driving off-road

#### WARNING

Damage caused by driving off-road may lead to consequential damage, the failure of assemblies or accidents. Clean and check the vehicle after every off-road trip. Repair any damage before using the vehicle again.

- ▶ All-wheel-drive vehicles: disengage the differential lock (▷ page 92) and shift the transfer case to the on-road position (▷ page 93).
- ▶ Disengage the differential lock (▷ page 92).
- ▶ Activate ABS (▷ page 86).
- ▶ Clean the vehicle (▷ page 132).
- ▶ Check the vehicle for damage.

### Transport by rail

Transporting your vehicle by rail may be subject to certain restrictions or require special measures to be taken in some countries due to varying tunnel heights and loading standards.

You can obtain information about this from any Mercedes-Benz Service Centre.

### Fuel consumption

Fuel consumption depends on:

- the vehicle version
- the style of driving
- the operating conditions
- the type or quality of the fuel used

Observe the advice in the "Protection of the environment" section to keep fuel consumption low (▷ page 13).

The following components of the different vehicle versions influence fuel consumption:

- tyre sizes, tyre tread, tyre pressure, tyre condition
- body, wind deflector
- drive unit gear ratios
- additional equipment (e.g. air-conditioning system, auxiliary heating system).

Due to these factors, an exact fuel consumption figure cannot be given for each vehicle.

### AdBlue® consumption

AdBlue® consumption is approximately 4 to 5% of fuel consumption.

### Engine oil consumption

Once the engine has been run in, oil consumption may amount to up to 0.5% of actual fuel consumption. Longer distances covered and more arduous operating conditions could result in certain vehicles exceeding this value.

Regular maintenance is one of the preconditions for moderate rates of consumption.

You can only estimate the oil consumption after you have driven a considerable distance.

Check the oil level on a regular basis, e.g. weekly or each time you refuel

(▷ page 138).

### Speed limiter

On vehicles with a speed limiting feature, the top speed is limited to 90 km/h. Legal requirements may impose variations in certain countries.

Before overtaking, take into account that the engine speed limiter will prevent the vehicle from accelerating when a speed of 90 km/h is reached.

On downhill gradients, the limit speed may be exceeded. Apply the brakes if necessary. The driver is responsible for ensuring that the maximum permitted speed is not exceeded.

## Refuelling

### Fuel

#### WARNING

Fuel is highly flammable. Fire, naked flames and smoking as well as the use of auxiliary heaters (sparks) are therefore prohibited when handling fuel.

Switch off the engine and the auxiliary heating before refueling.

#### WARNING

Avoid contact with fuels.

It is hazardous to your health if your skin comes into direct contact with fuels or you breathe in fuel vapours.

#### Environmental note

If fuels are handled improperly, they pose a danger to persons and the environment. Do not allow fuels to run into the sewage system, the surface waters, the ground water or into the ground.

**!** If you are refuelling the vehicle from drums or canisters, filter the fuel before refuelling.

This prevents malfunctions in the fuel system caused by contaminated fuel.

#### WARNING

Do not use petrol to refuel vehicles with a diesel engine. Do not mix diesel with petrol. This would result in damage to the fuel system and engine, which could lead to a vehicle fire.

- !** Do not use petrol to refuel vehicles with a diesel engine. Even small amounts of petrol result in damage to the fuel system and engine.
- !** Do not switch on the ignition if you accidentally refuel with the wrong fuel. Otherwise, the fuel will enter the fuel lines. Notify a qualified specialist workshop and have the fuel tank and fuel lines drained completely.



Lockable fuel filler cap on the right-hand side of the vehicle

- ▶ Remove the key from the ignition lock.
- ▶ Switch off the auxiliary heating system (▷ page 71).
- ▶ Close all vehicle doors to prevent fuel vapours from entering the vehicle.
- ▶ Lockable fuel filler cap: fold up protective cap ① and unlock fuel filler cap ② with the key.
- ▶ Turn fuel filler cap ② anti-clockwise, remove it and let it hang from strap ③.

- ▶ Only fill the fuel tank until the pump nozzle switches off.
- ▶ Replace tank filler cap ② and turn clockwise.  
You will hear a click when the fuel filler cap is closed fully.
- ▶ Lockable fuel filler cap: lock fuel filler cap ② with the key and fold down protective cap ①.

You will find information about fuel in the "Service products" section (▷ page 126).

- ▶ Remove the key from the ignition lock.
- ▶ Switch off the auxiliary heating system (▷ page 71).
- ▶ Close all vehicle doors to prevent fuel vapours from entering the vehicle.
- ▶ Only fill the fuel tank until the pump nozzle switches off.
- ▶ Replace tank filler cap ② and turn clockwise.  
You will hear a click when the fuel filler cap is closed fully.

### AdBlue®

On vehicles with BlueTec® exhaust gas after-treatment, AdBlue® is the required reducing agent.

#### WARNING

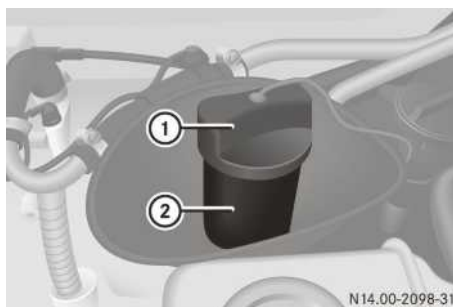
Avoid contact with AdBlue®.

Direct skin contact with AdBlue® is damaging to health.

#### Environmental note

Dispose of AdBlue® in an environmentally responsible manner.

- ❗ If AdBlue® comes into contact with painted surfaces or aluminium surfaces, rinse the affected areas immediately with plenty of water.



Filler neck in the engine compartment behind the coolant expansion tank

- ▶ Do not inhale the ammonia vapours which escape when you unscrew the tank filler cap. Ammonia vapours have a pungent odour. However, they are neither toxic nor hazardous to health in this concentration.
- ▶ Remove the key from the ignition lock.
- ▶ Switch off the auxiliary heating system (▷ page 71).
- ▶ Close all vehicle doors so that no ammonia vapours can enter the vehicle.
- ▶ Open the front flap (▷ page 134).
- ▶ Turn fuel filler cap ① to the left, remove it and let it hang from the strap.
- ▶ Only fill the AdBlue® reservoir via filler neck ② until the fuel pump nozzle switches off.
- ▶ Replace tank filler cap ① and turn clockwise.  
You will hear a click (detent) when the tank filler cap is closed fully.

You will find information about AdBlue® in the "Service products" section (▷ page 126).

You will find information on filling capacities in the "Technical data" section (▷ page 193).

## Transporting loads with the vehicle

### Loading guidelines

#### Important safety information

##### WARNING

Secure and position the load as described in the loading guidelines. You or others could otherwise be injured by the load slipping or being thrown around in the event of sharp braking, sudden changes in direction or on poor road surfaces. This also applies to seats which have been removed if they remain in the vehicle.

Even if you follow all loading guidelines, the load increases the risk of injury in the event of an accident. Observe the tips in the "Securing a load" section.

##### WARNING

Do not allow the load, including passengers, to exceed the permissible gross vehicle weight or the permissible axle loads for your vehicle.

If the permissible axle loads or permissible gross vehicle weight are exceeded during transport, tyre durability and road safety are adversely affected. The vehicle's handling and steering characteristics change noticeably. Braking and stopping distances are significantly longer.

The vehicle's driving, steering and braking characteristics change as the gross vehicle weight increases or when the centre of gravity is raised.

Always make sure that the distribution of the load is correct and adapt your driving style according to the load.

##### WARNING

Always observe the operating instructions of the respective manufacturer when using suitable load securing aids or lashing material and particularly the information on the end of service life contained in these Operating Instructions.

Load securing aids or lashing material must not be used if there is:


- missing or illegible marking
- yarn breaks, damage to load-bearing seams or other traces of cracking
- cutting, deformations, squashed areas or other damage
- damage to clamping elements or fasteners.

These types of load securing aids or lashing material have reached their end of service life, they are unusable and must be replaced.

If you use load securing aids or lashing material which have reached their end of service life, the load may not be sufficiently secured and could cause serious injuries to you and others and cause damage to property.

##### WARNING

After an accident, have a damaged load compartment floor/loading surface, the lashing eyes and lashing material checked by a qualified specialist workshop. The load may otherwise not be sufficiently secured during the next transportation and may lead to serious injuries to you or other people as well as material damage.

-  If you are using a roof carrier, observe the maximum roof load and maximum roof carrier load.

Information about the maximum roof load and roof carriers can be found in the "Technical data" section (▷ page 192).

#### Before loading

- ▶ **Tyre pressure:** check the tyre pressure and correct if necessary (▷ page 189).
- ▶ **Electronic level control (ENR):** lower the vehicle if necessary (▷ page 115).
- ▶ **Load compartment floor:** clean the load compartment floor.

The load compartment floor must be free from oil and dust, dry and clean swept to prevent the load from slipping.

- ▶ Place non-slip mats (anti-slip mats) on the load compartment floor if necessary.

**!** As soon as the non-slip mats show signs of deformation or develop squashed areas, or traces of cracking/cutting, they can no longer be used to secure a load and must be replaced.

### When loading

- ▶ Observe the permissible axle loads and permissible gross vehicle weight for your vehicle.

**!** On minibus versions with maximum seating layout, the permissible rear axle load would be exceeded if the full payload were to be loaded in the load compartment.

**i** Take into account that your vehicle's unladen weight is increased if accessories or optional equipment are fitted.

- ▶ Observe the notes on load distribution (▷ page 112).
- ▶ Secure the load (▷ page 113). Always observe the relevant country-specific legal requirements, laws and regulations.

### On tipper vehicles and platform vehicles

- ▶ Observe the separate operating instructions issued by the tipper manufacturer.
- ▶ Where possible, load the tipper body or platform so that the centre of gravity is at the centre of the platform.
- ▶ Load large rocks or pieces of rubble carefully. Do not drop them into the tipper body or onto the platform from too great a height.
- ▶ Use tensioning chains if necessary. Tensioning chains prevent the loading tailgates from bulging outwards.

### Checking the load

- ▶ **Securing loads:** make sure that the load is secure before every journey and at regular intervals during a long journey, and correct if necessary.

- ▶ **Doors:** close the sliding doors and rear doors.

#### WARNING

Make sure that the sliding doors and rear doors are always closed when the engine is running.

Exhaust fumes could otherwise enter the vehicle interior and poison you.

- ▶ **Loading tailgates:** on tipper and platform vehicles, the loading tailgates must be locked (▷ page 49).
- ▶ **ENR (electronic level control):** select the driving position (▷ page 115).
- ▶ **Headlamps:** adjust the headlamp range if necessary (▷ page 63).
- ▶ **Tyre pressure:** adjust the tyre pressures according to the vehicle load (▷ page 189).
- ▶ **Handling characteristics:** adapt your driving style according to the load being transported.

### Load distribution

The overall centre of gravity of the load should always be as low as possible, centred and between the axles near the rear axle.

**!** Excessive loads on individual points of the load compartment floor or on the load surface impair vehicle handling characteristics and could cause damage to the floor covering.

On bus versions:

On panel vans/crewbuses:

- ▶ Always stow loads in the load compartment.
- ▶ Always place the load against the backrests of the rear bench seat.
- ▶ Move large and heavy loads as far towards the front of the vehicle as possible. Stow the load flush with the rear bench seat.
- ▶ Always additionally secure the load with suitable load-securing aids or lashing material.

**i** Observe the following notes:

- Do not stack loads higher than the upper edge of the backrests.
- Transport loads behind seats that are not occupied.
- If the rear bench seat is not occupied, insert the seat belts crosswise into the buckle of the opposite seat belt.

## Securing loads

### General notes

The driver is responsible for ensuring that the load is secured against slipping, tipping, rolling or falling off. This applies both in normal traffic conditions and if the vehicle must swerve to avoid an obstacle, in the event of full brake application and on poor road surfaces.

The applicable requirements and guidelines relating to load-securing practices must be met. If this is not the case, this may constitute a punishable offence, depending on local legislation and any ensuing consequences.

You should therefore observe the respective legal requirements for the relevant country.

Check that the load is secure before every journey and at regular intervals on long trips. Adjust the load as necessary.

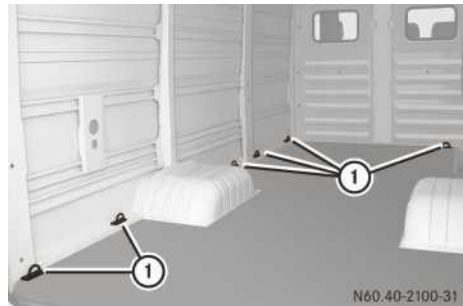
- i** You can find more information on the correct securing of loads, from the manufacturers of load securing aids or lashing material for securing loads, for instance.

- ▶ Fill spaces between the load and the load compartment walls or wheel arches. For this purpose use rigid load securing aids, such as wedges, wooden fixings or padding.

- ▶ Attach secured and stabilised loads in all directions to lashing points and lashing eyelets in the load compartment or on the load surface. Only use lashing material, such as lashing nets and lashing straps, that has been tested in accordance with current standards (e.g. DIN EN).

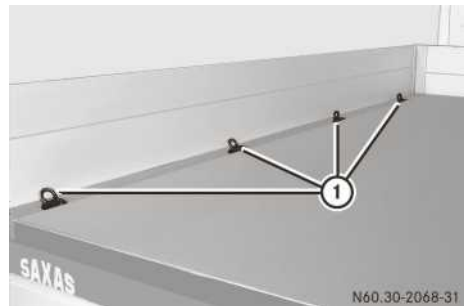
Always use the lashing eyelets closest to the load to secure it and pad sharp edges for protection.

- i** Lashing material tested in accordance with current standards (e.g. DIN EN) can be obtained from any specialist firm or Mercedes-Benz Service Centre.



Lashing points (example: panel van)

- i** Lashing eyelets



Lashing points: (example: platform truck)

- i** Lashing eyelets

**⚠ WARNING**

Do not attempt to modify or repair the lashing points, lashing eyelets or lashing materials. The load or the lashing eyelets could work loose and cause serious injury to you and other people as well as damage to objects in the vehicle.

Spread the load evenly between the lashing points or eyelets.

Observe the loading guidelines.

- ❗ Secure loose loads with a tested lashing net or a tarpaulin, in particular on the load surface of a platform or tipper.
- ▶ Always fasten the lashing net or tarpaulin to all available lashing points. Make sure that the retaining hooks are secured against accidental opening.

- ❗ Observe the information on the maximum loading capacity of the lashing points.

When you brake hard, for example, forces apply that can be far higher than the weight force of the transported load. Always use multiple lashing points to distribute these forces, and distribute the load equally among them.

Notes on the maximum loading capacity of the lashing points can be found in the "Technical data" section (▷ page 191).


**⚠ WARNING**

Before releasing the lashing straps, you must make sure that the load is standing firmly and that it cannot tip over once the straps have been removed. Otherwise, you or others could be injured by the load slipping.

**Tipper operation****⚠ WARNING**

You must observe the safety regulations and the separate operating instructions issued by the tipper manufacturer as well as the loading guidelines.

If the vehicle is not stabilised beforehand, it could overturn during a tipping operation. For this reason, always make sure that the vehicle is standing on a firm and level surface when tipping. The wheels bearing the weight of the tipping operation must be on firm ground.

Do not drive with the tipper body raised. The indicator lamp in the  switch must not be lit when the vehicle is in motion.


The load slides uncontrollably from the tipper body when unloading. To avoid the risk of serious injury, make sure that there is no-one within the slewing range of the gate, within the tipping range or beneath the raised tipper body.






When working underneath the raised tipper, make sure it is secured by the tipper brace. The tipper body could otherwise lower in the event of a fault and thereby cause injury to you or others.

The switch is located in the left-hand switch panel on the instrument panel.



- ① To raise the tipper body
- ② To lower the tipper body

- ▶ **To raise the tipper body:** apply the parking brake.
- ▶ Engage the power take-off (tipper pump) (▷ page 94).  
The  indicator lamp on the instrument panel lights up.
- ▶ Open the appropriate dropside (▷ page 49).

- ▶ Press and hold the upper section of the  switch until the tipper has reached the desired position.  
The indicator lamp in the  switch lights up as soon as the tipper rises.
- ▶ **To lower the tipper body:** press and hold the lower section of the  switch until the tipper has reached the desired position.  
The indicator lamp in the  switch goes out when the tipper body is fully lowered.
- ▶ Disengage the power take-off (tipper pump) (▷ page 94).  
The  indicator lamp on the instrument panel goes out.
- ▶ Switch off the engine.
- ▶ Lock the appropriate dropside (▷ page 49).
- ▶ Any tensioning or retainer chains which are not in use can be stowed in the cab or in the stowage boxes intended for this purpose.

### ENR (electronic level control)

On fully air-sprung vehicles, you can raise or lower the chassis frame to pick up or set down demountable bodies, containers or a semitrailer.



On vehicles with an air-sprung rear axle, you can raise or lower the chassis frame on the rear axle.

**!** Always lower the chassis frame completely before removing demountable bodies or containers. The chassis frame could otherwise spring up suddenly when the special-purpose body is removed. This could damage the shock absorbers.

**i** When the key is in position **2** in the ignition lock, the chassis level is regulated automatically.



If the reservoir pressure in the compressed-air system is too low, keep the engine running and wait until there is sufficient reservoir pressure.

Keep the engine running when coupling or picking up demountable bodies or containers. This ensures that there is sufficient reservoir pressure in the compressed-air system.



The  and  indicator lamps in the instrument panel light up when the key is in position **2** in the ignition lock. The two indicator lamps go out after approximately two seconds when the chassis is in the normal position or driving position.

The  indicator lamp comes on:

- if the chassis is not in the driving position
- if you use the operating unit to raise or lower the chassis frame; the indicator lamp goes out when the "Driving position" button is pushed (▷ page 116).
- if ENR is malfunctioning

The  indicator lamp lights up if the driving level is not in the normal position or if the chassis is not in the driving position. The  indicator lamp flashes if the reservoir pressure in the auxiliary consumers circuit is insufficient.

### WARNING

If the  and  indicator lamps are continuously lit before or while you are driving, ENR has malfunctioned or the chassis is not in the driving position.

Have the malfunction repaired as soon as possible at a qualified specialist workshop which has the necessary specialist knowledge and tools to carry out the work required.

Mercedes-Benz recommends that you use a Mercedes-Benz Service Centre for this purpose. All work relevant to safety or on safety-related systems must be carried out at a qualified specialist workshop.

### WARNING

When driving in the raised driving position, pay attention to the headroom clearance of underpasses, as you could otherwise damage the vehicle.

Make sure that you do not exceed the maximum permissible vehicle height when raising

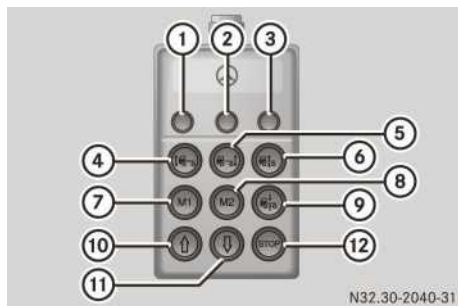
the chassis. In Germany, the maximum permissible vehicle height is 4 m. In other countries (and when using the vehicle for international transport), you should observe the national regulations. In addition, the handling and braking characteristics of your vehicle can change.

Therefore, you should only drive the vehicle in the normal or driving position.

### Control unit

The operating unit is located in the bracket next to the control panel for the heating and air-conditioning system.

- i** It is possible to connect an additional operating unit at the rear on the vehicle frame.



#### Indicator lamps

- ① To raise/lower the chassis frame, front
- ② To raise/lower the chassis frame, rear
- ③ To raise/lower the chassis frame

#### Buttons

- ④ To preselect the chassis frame, front
- ⑤ To preselect the chassis frame, rear
- ⑥ To preselect the chassis frame
- ⑦ M1 memory – to set a stored chassis height
- ⑧ M2 memory – to set a stored chassis height
- ⑨ To set the driving position
- ⑩ To raise the chassis frame

- ⑪ To lower the chassis frame
- ⑫ STOP (raising/lowering)

If you wish to connect an additional operating unit to the rear of the frame, you must activate the rear connection of operating units. The operating unit in the cab is then deactivated.

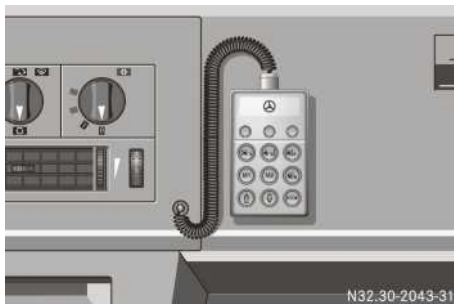


- ① Operating unit connection on the rear of the frame on/operating unit in the cab off
- ② Operating unit connection on the rear of the frame off/operating unit in the cab on

- ▶ Apply the parking brake.
- ▶ Turn the key to position 2 in the ignition lock.
- ▶ Remove the operating unit from the bracket in the cab if necessary.

or

- ▶ Connect the additional operating unit to the connection for operating units at the rear and press the top section of the ① switch.




Operating unit in the cab


### **WARNING**

When leaving the cab, there is a danger of tripping on the connecting cables of the operating unit, unless you place the operating unit properly into the bracket provided. Always place the operating unit into the bracket supplied, so that the connecting cable does not protrude into the footwell.

- ▶ After using the operating unit, make sure that:
  - the operating unit in the cab is securely fitted into the bracket and that the connecting cable does not protrude into the footwell
  - the rear operating unit connection is switched off, and that the additional operating unit is disconnected from the operating unit connection and stored in the vehicle

### **Raising/lowering the chassis frame**

- ▶ Press button (4), (5) or (6) on the operating unit (▶ page 116).  
Indicator lamps (1), (2) or (3) come on. The front and/or rear axle is/are preselected.
- ▶ Press button (10) or (11) on the operating unit.  
The **ENR** and  indicator lamps in the instrument panel light up. The chassis frame is lowered or raised at the preselected axle.
- ▶ Press "STOP" button (12) once the required height has been reached.  
Indicator lamps (1), (2) or (3) go out.

**i** Once the driving position or normal position has been reached, the **ENR** and  indicator lamps in the instrument panel go out.

If the vehicle is to remain at the same chassis height when loading and unloading, you can store this temporarily.

If the compressed-air system has sufficient reservoir pressure, the stored chassis height remains constant for about five hours.


- ▶ **To store the chassis height temporarily:** raise or lower the chassis.
- ▶ Keep the engine running until the pressure regulator switches off.
- ▶ Press and hold "STOP" button (12) on the operating unit.
- ▶ Turn the key in the ignition lock to position **0**.
- ▶ Release "STOP" button (12) on the operating unit.

ENR can store two additional chassis heights permanently.

- ▶ **To store the chassis height permanently:** raise or lower the chassis frame.
- ▶ Press and hold "STOP" button (12) on the operating unit once the required height has been reached.
- ▶ Additionally press "M1" button (7) or "M2" button (8) on the operating unit.

The current chassis height is stored in the corresponding memory position M1 or M2.

- ▶ Release the buttons on the operating unit.
- ▶ **To raise/lower to the stored chassis height:** press "M1" button (7) or "M2" button (8) on the operating unit.

The **ENR** and  indicator lamps in the instrument panel light up. The chassis is raised or lowered automatically to the stored height.

- ▶ **To raise/lower to the driving position:** press button (9) on the operating unit. Indicator lamps (1), (2) or (3) go out. The chassis is raised or lowered automatically to the driving level (normal position).

### **Trailer towing**

#### **Important safety information**

The trailer tow hitch is one of the most important components on the vehicle with regard to road safety. Observe the notes on operation, care and maintenance in the manufacturer's operating instructions.

The turn signals on the trailer are only guaranteed to function when bulbs are used. You can obtain more information about installing the trailer electrics at any qualified specialist workshop.

### WARNING


Follow the manufacturer's operating instructions for the trailer tow hitch when using a detachable trailer tow hitch.

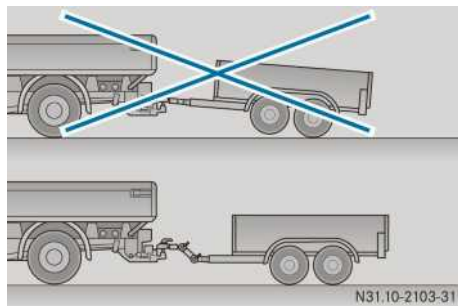
Couple and decouple the trailer carefully. A trailer which is incorrectly coupled to the towing vehicle could break away. A correctly coupled trailer must be positioned horizontally behind the vehicle.

Ensure that the following weights are not exceeded:

- the permissible noseweight
- the permissible trailer load
- the permissible rear axle load of the towing vehicle
- the permissible gross weight for both the towing vehicle and the trailer

The permissible values, which must not be exceeded, can be found in your vehicle documents and on the trailer tow hitch type plates for the trailer and the vehicle. Where the values differ, the lowest is valid.

-  Take into account that the vehicle's permissible payload must be reduced to compensate for the noseweight.




Trailer coupled ready for use

- ▶ Position the trailer horizontally behind the vehicle.
- ▶ Couple the trailer (▷ page 119).


### WARNING

Never uncouple a trailer if the trailer brake is overrun. Your hand could otherwise become trapped between the bumper and drawbar.

-  Do not disconnect a trailer with an engaged overrun brake. Otherwise, your vehicle could be damaged by the rebounding of the overrun brake.

### Driving when towing a trailer

In Germany, the maximum permissible speed for vehicle/trailer combinations is 80 km/h (100 km/h in exceptional cases).

-  Do not exceed the maximum speed of 80 km/h (100km/h) even in countries where higher speeds are permitted for vehicle/trailer combinations.

Note the following differences when driving a vehicle/trailer combination in comparison with driving without a trailer:

- acceleration and gradient climbing capabilities are reduced.
- braking distance is greater.
- vulnerability to side winds is increased.
- directional stability is adversely affected.
- fuel consumption is increased.

### Driving tips:

- maintain a greater distance than you would when driving without towing a trailer.
- avoid sudden braking. Apply the brakes gently at first to allow the trailer brake to overrun. Then, increase the brake force quickly.
- the figures for the gradient climbing capabilities from a standstill refer to sea level. When driving in mountainous areas, note that the power output of the engine, and

with its gradient climbing capability, decrease with increasing altitude.

- on long and steep downhill gradients, you must shift to a lower gear/shift range in good time. You thereby make use of the braking effect of the engine and do not have to brake as often to maintain the speed. This relieves the load on the service brake and prevents the brakes from overheating and wearing too quickly. If you have to apply the brakes additionally, do not depress the brake pedal continuously. Brake intermittently.

#### **WARNING**

Never depress the brake pedal continuously while the vehicle is in motion, e.g. never cause the brakes to rub by applying constant slight pedal pressure. This causes the brake system to overheat, increases the braking distance and can lead to the brakes failing completely.

If the trailer begins to swing from side to side:

- ▶ do not accelerate.
- ▶ do not counter-steer.
- ▶ brake if necessary.

#### **WARNING**

On no account should you attempt to draw the vehicle/trailer combination out by increasing speed.

### Coupling up a trailer

#### **WARNING**


Coupling up a trailer demands maximum care and attention.

There must be nobody standing between the vehicle and the trailer as the vehicle is reversed towards the trailer. There is a risk of the drawbar swinging out due to uncontrolled movements. Exercise caution when guiding the towbar.

Never uncouple a trailer if the trailer brake is overrun. Never let the trailer roll into the vehicle for coupling.

### Trailer tow hitch with ball head

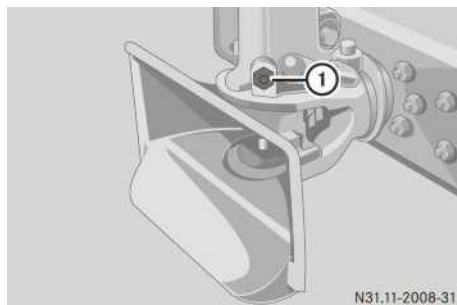
- ▶ Secure the trailer against rolling away.
- ▶ Reverse the vehicle until the towbar can be hooked onto the towing linkage.
- ▶ Secure the towbar.

 For a trailer tow hitch with ball head, observe the manufacturer's operating instructions.

The height of the ball coupling varies with the load on the vehicle.

The height of the centre of the ball coupling from the carriageway must be 350 – 420 mm. If this is not the case, use a trailer with a height-adjustable drawbar.

### Trailer tow hitch with coupling jaw



Example: trailer tow hitch

① Control pin for the coupling pin

- ▶ Apply the parking brake on the trailer.
- ▶ Release the service brake.
- ▶ Chock the trailer's rear wheels to prevent it from rolling away.

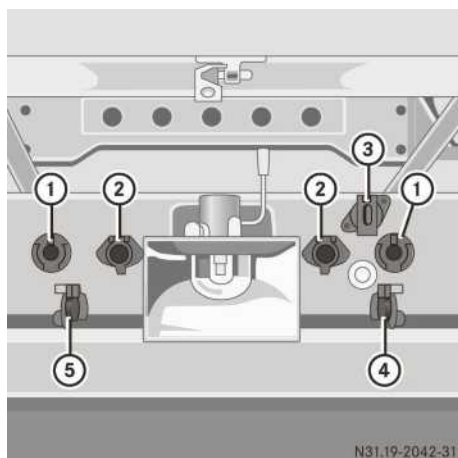
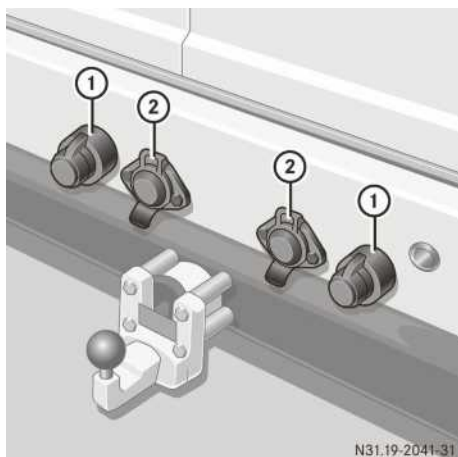
The unbraked front axle of the trailer must be able to turn.

- ▶ Position the towbar at the height of the trailer coupling.
- ▶ Couple the trailer.
- ▶ Verify that the coupling pin on the trailer tow hitch is properly seated using the corresponding catch or indicator (control pin ① or safety knob).
- ▶ Connect the compressed-air lines and cables (> page 120).

## Connecting the compressed-air lines and cables

**I** Arrange the cables and compressed-air lines in such a way that they easily yield to all movements without tension, kinking or friction when cornering, etc. Before connecting the cable, make sure the voltage rating of the consumer equipment on the trailer is correct.

► After hitching up the trailer, make sure that the trailer lighting system is clean and operating correctly.



- ① 12 V socket
- ② 24 V socket

- ③ ABS socket
- ④ Brake line coupling head (yellow)
- ⑤ Reservoir line coupling head (red)

► **To connect compressed-air lines:** connect brake line coupling head ④ (yellow).

► Connect reservoir line coupling head ⑤ (red).

**i** The hose coupling shutoff valves are automatically opened when coupled up.

► **To disconnect compressed-air lines:** disconnect reservoir line coupling head ⑤ (red).

The trailer is automatically braked.

► Detach brake line coupling head ④ (yellow).

### **⚠ WARNING**

Always keep to this order of work when detaching the coupling heads. The trailer brakes will otherwise be released and the unbraked trailer could begin to move.

## Trailers with a 7-pin connector

If your trailer has a 7-pin connector, you can connect it to the 13-pin socket on the ball coupling using an adapter. An adapter plug or adapter cable is available at any qualified specialist workshop.



► **To fit the adapter:** open the socket cover.

► Insert connector with lug ② into the groove of socket ① and turn the connector clockwise to the stop.

- ▶ Close the cover so that it engages.
- ▶ If you are using an adapter cable, secure the cable to the trailer with cable ties.

**!** Make sure that there is sufficient cable play so that the cable cannot become detached when cornering.

### Trailer tow hitch maintenance and checks

#### WARNING

There must be no longitudinal play in the trailer tow hitch. There is otherwise a risk of the trailer breaking away. Check the trailer tow hitch daily for longitudinal play by moving the towbar body firmly backwards and forwards.

Do not hold it by the coupling jaw while doing so. It is not possible to check the longitudinal play of the trailer tow hitch at the coupling jaw. If there is any longitudinal play, have it rectified immediately at a qualified specialist workshop.

- ▶ Clean the trailer tow hitch and apply general-purpose grease.
- ▶ Make sure that the bolts securing the trailer tow hitch to the rear cross member are tight, and retighten if necessary.

### Operation in winter

#### General notes

Have your vehicle winterproofed at a qualified specialist workshop at the onset of winter.

This service includes the following:

- oil change, if the engine oil currently used does not have adequate low temperature characteristics or if these are no longer sufficient due to ageing
- the antifreeze/anti-corrosion concentration in the coolant is checked

- the addition of a concentrated cleaning agent to the water in the windscreen washer/headlamp cleaning system
- battery check
- a tyre change

Prior to the onset of winter, ensure that snow chains are stowed in the vehicle (▷ page 122).

You will find information about diesel fuel for use at low outside temperatures in the "Operation" section (▷ page 126).

Please also observe the information about winter driving (▷ page 82).

#### Winter tyres

Use winter tyres at temperatures below +7 °C and on snow or ice-covered roads. Only this ensures that the ABS driving safety system functions at its best.

Use winter tyres of the same make and tread on all wheels to maintain safe handling characteristics.

#### WARNING

M+S tyres with a tyre tread depth of less than 4 mm are not suitable for use in winter as they do not provide sufficient traction. There is a risk of accident.

M+S tyres with a tread depth of less than 4 mm must be replaced.

Always observe the maximum permitted speed specified for the winter tyres you have fitted. If you fit winter tyres which have a lower maximum permitted speed than that of the vehicle, affix an appropriate warning sign in the driver's field of vision. You can obtain this at a qualified specialist workshop.

#### WARNING

The wheel or tyre size, as well as the tyre type of the emergency spare wheel, spare wheel and the wheel to be changed may differ. Fitting an emergency spare wheel or spare wheel

may severely impair the driving characteristics. There is a risk of accident.

To prevent hazardous situations:

- you should adapt your driving style and drive carefully.
- never fit more than one emergency spare wheel or spare wheel that differs from the wheel to be changed.
- only use an emergency spare wheel or spare wheel that differs from the wheel to be changed for a brief period.
- have the emergency spare wheel or spare wheel of a different size replaced at the nearest qualified specialist workshop. You must make sure the wheel has the correct wheel and tyre dimensions and tyre type.

- i** When wheels and tyres have been removed, store them in a cool, dry and dark place. Protect the tyres against oil, grease and fuels.

### Snow chains

Snow chains offer better traction in wintry road conditions.

If you intend to fit snow chains, please bear the following points in mind:

- Snow chains may not be fitted on all wheel/tyre combinations. Observe the approved tyre and snow chain dimensions when fitting the snow chains.

For safety reasons, Mercedes-Benz recommends that you only use snow chains which have been specially approved for Mercedes-Benz vehicles. Information about snow chains can be obtained from any Mercedes-Benz Service Centre.

- Only fit snow chains in pairs on the outer rear wheels. Observe the manufacturer's installation instructions.

- i** **Vehicles with all-wheel drive:** when driving with snow chains, it may be advantageous to deactivate ABS (▷ page 85). In

this way, you can achieve a cutting action for better tyre traction.

Only drive at the permitted maximum speed with snow chains when you are driving on snow. Observe the legal requirements in each country. As soon as you are back on snow-free roads, remove the snow chains.

### Service products

#### General notes

Service products include the following:

- brake fluid
- fuel
- lubricants (e.g. engine oil, transmission oil, hydraulic fluid, grease)
- antifreeze, coolant
- AdBlue® (reducing agent for BlueTec® exhaust gas aftertreatment)

Approved service products comply with the highest quality standards and are listed in the Mercedes-Benz Specifications for Service Products. Only use service products approved for the vehicle. This is an important condition for the implied warranty.

You can recognise service products approved by Mercedes-Benz by the following labels:

- MB Approval xxx.x (for example, MB Approval 228.5)
- or
- MB-Freigabe xxx.x

Other labels and recommendations indicating the quality or a specification are not necessarily approved by Mercedes-Benz. Information on approved service products can be obtained at any Mercedes-Benz Service Centre and on the Internet at:

**<http://bevo.mercedes-benz.com/>**

No additives are required or permitted for approved service products (apart from approved flow improvers). Additives can cause engine damage and must therefore not be added to the fuel or lubricants.

The use of additives is always the responsibility of the vehicle operator. The use of additives may result in the restriction or loss of your implied warranty entitlements.

### **WARNING**

Service products are hazardous to health. They contain toxic and caustic substances.

Service products are highly flammable.

For this reason, observe the following instructions to prevent injuries to yourself and others:

- Do not inhale the vapours. When indoors, always ensure there is sufficient ventilation to prevent intoxication.
- Do not let service products come into contact with skin, eyes or clothing. Should contact occur, however, clean the affected areas of skin with water to prevent caustic burns and other injuries.

In the event of eye contact, wash eyes thoroughly with plenty of clean water.

- Fire, naked flames and smoking are forbidden when handling service products due to their high flammability.
- Observe the usage and warning notices on the containers.

### **Environmental note**

Dispose of service products in an environmentally-responsible manner.

## Brake fluid

### **WARNING**

Brake fluid is hazardous to health. Do not swallow brake fluid. See a doctor immediately if you swallow brake fluid.

Make sure that brake fluid does not come into contact with skin, clothing or eyes. Rinse affected areas with plenty of clean water and consult a doctor if necessary.

Always wear gloves and eye protection when topping up brake fluid.

Store brake fluid only in the original closed container and keep it out of the reach of children. Comply with safety regulations when handling brake fluid.

- ❗ Brake fluid corrodes paint, plastic and rubber. If brake fluid comes into contact with paint, plastic or rubber, rinse with water immediately.

Over a period of time, the brake fluid absorbs moisture from the air. This reduces its boiling point.

Use only approved brake fluids that comply with the Mercedes-Benz Specifications for Service Products (▷ page 193). Always check for the identification DOT 4 plus.

Information about approved brake fluids can be found in the service booklet or obtained at any qualified specialist workshop.

### **WARNING**

If the boiling point of the brake fluid is too low, vapour pockets may form in the brake system whenever the brakes are subjected to a heavy load (e.g. on long downhill stretches). Vapour pockets in the brake system impair braking performance. As a result, the braking distance may increase. This increases the risk of an accident.

Have the brake fluid replaced every **2 years** with brake fluid approved by Mercedes-Benz and have the replacement confirmed in the Service Booklet.

Every **three years**, in the spring if possible, have the brake fluid in the clutch system renewed.

- ℹ There is usually a notice in the engine compartment to remind you when the next brake fluid change is due.

## Hydraulic fluid

You must observe the separate operating instructions issued by the tipper manufacturer.

## Engine oils

### General notes

Use only approved engine oil that complies with the Mercedes-Benz Specifications for Service Products (▷ page 193). Mercedes-Benz particularly recommends engine oils according to Sheet number 228.5.

Engine oils approved by Mercedes-Benz are indicated as such by featuring the Sheet No. under the "MB-Approval" notice on the oil canister. Information on approved engine oils for your vehicle can be found in the Maintenance Booklet.

These engine oils are of high quality and have a beneficial effect on:

- engine wear
- fuel consumption
- emissions

Multi-grade engine oils of the prescribed SAE class (viscosity) according to Sheet number 228.3/.31/.5/.51 may be used all year round, taking the outside temperatures into account. The oil change intervals may be shortened depending on the sulphur content of the fuel.

Single-grade engine oils according to Sheet number 228.2 only cover one SAE viscosity class for certain temperature ranges. Change the engine oil according to its viscosity class depending on the season and the respective outside temperatures (▷ page 124).

► Observe the data in the Maintenance Booklet.

❗ Using engine oils of another grade quality is not permitted.

### Oil change

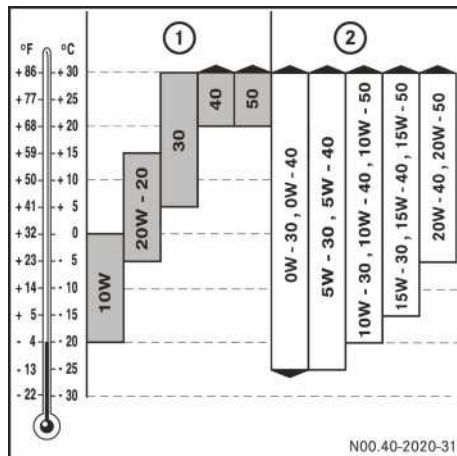
Oil change intervals depend on the vehicle's operating conditions and the quality of the engine oil used.

Select the SAE class (viscosity) of the engine oil in accordance with the outside temperature.

❗ If the SAE viscosity class of the engine oil used does not cover the outside temperature range in which you are operating the vehicle, it must be changed in good time, in particular before the cold season commences. Using an engine oil that does not have adequate temperature characteristics can lead to engine damage.

The temperature range information of the SAE classification always refers to that of fresh oil. The temperature characteristics of the engine oil may deteriorate significantly as a result of ageing during vehicle operation, especially at low outside temperatures.

For this reason, Mercedes-Benz recommends that the engine oil be changed before the cold season commences. Use an approved engine oil of the specified SAE class.



Engine oil SAE classification

- ① Single-grade engine oils
- ② Multi-grade engine oils

❗ Only by using engine oil with a particularly high quality grade, e.g. according to Sheet number 228.51 of the Mercedes-Benz Specifications for Service Products, can the maximum interval for oil change be achieved.

When topping up, Mercedes-Benz recommends that you only use engine oil of the same grade and SAE class as the oil filled at the last oil change.

- !** Do not add too much oil. Topping up with too much engine oil can result in damage to the engine or to the catalytic converter. Have excess engine oil siphoned off.

### Miscibility of engine oils

If, in exceptional cases, oil of the type in the engine is not available, top up using another approved mineral or synthetic engine oil.

Engine oils are differentiated according to:

- engine oil brand
- quality grade (sheet number)
- SAE class (viscosity)

Subsequently, have the engine oil changed at the earliest possible opportunity.

- !** Mixing oils reduces the benefits of using high grade engine oils.
- i** The sheet number (quality grade) and the SAE classification (viscosity) can be found on the designation on the oil container.

## Coolant

### General notes

#### WARNING

Coolant contains glycol and is therefore toxic. Do not swallow the coolant. See a doctor immediately if you swallow coolant.

Make sure that coolant does not come into contact with skin, eyes or clothing. In case of contact with eyes, rinse immediately with plenty of clean water. Clean affected areas of skin and clothing with soap and water immediately. Change any affected clothing immediately.

To prevent damage to the engine cooling system, use only approved anti-corrosion/antifreeze agents that comply with the Mercedes-

Benz Specifications for Service Products (▷ page 193). You will find information about approved anti-corrosion/antifreeze agents for your vehicle in the Maintenance Booklet.

At the factory, the vehicle is filled with coolant that will ensure adequate antifreeze and anti-corrosion protection.

Coolant is a mixture of water and antifreeze/corrosion inhibitor.

In the coolant, the antifreeze/corrosion inhibitor is responsible for:

- corrosion inhibitor protection
- antifreeze protection
- raising the boiling point

Coolant must remain in the engine cooling system all year round to ensure anti-corrosion protection and a higher boiling point – even in countries with high outside temperatures.

Check the antifreeze/corrosion inhibitor concentration in the coolant every six months.

Have the coolant renewed every **3** years.

When renewing the coolant, the coolant may contain 50% by volume corrosion inhibitor/antifreeze. This provides antifreeze protection down to -37 °C.

Do not exceed a proportion of 55% by volume (antifreeze protection down to approximately -45 °C), as otherwise heat dissipation is reduced.

If there is a loss of coolant, do not replenish with water only, but also add an approved corrosion inhibitor/antifreeze agent. The water used as part of the coolant mixture must fulfil certain requirements; these are usually fulfilled by drinking water. If the water quality is not sufficient, you must treat the water.

Observe the Mercedes-Benz Specifications for Service Products, Sheet No. 310.1.

Further information on the operating reliability and road safety of your vehicle can be obtained from any Mercedes-Benz Service Centre.

## Coolant additive without antifreeze protection

**!** As an exception, if antifreeze protection is not required (e.g. in countries with continuously hot climates), it is permissible to add a coolant additive to the water in accordance with Sheet No. 312.0 of the Mercedes-Benz Specifications for Service Products instead of a corrosion inhibitor/antifreeze agent. Improvers (corrosion-inhibiting oils) are not permitted.

In this case, renew the coolant annually. Further information about the necessary water quality and approved coolant additives without antifreeze properties can be obtained from all Mercedes-Benz Service Centres.

## Fuel

### Important safety notes

#### WARNING

Fuel is highly flammable. Fire, naked flames and smoking as well as the use of auxiliary heaters (sparks) are therefore prohibited when handling fuel.

Switch off the engine and the auxiliary heating before refueling.

#### WARNING

Avoid contact with fuels.

It is hazardous to your health if your skin comes into direct contact with fuels or you breathe in fuel vapours.

**!** If you are refuelling the vehicle from drums or canisters, filter the fuel before refuelling. This prevents malfunctions in the fuel system caused by contaminated fuel.

## Fuel for diesel engines

**!** Only refuel using commercially-available automotive diesel fuel that conforms to the European standard EN 590 (or equivalent national fuel standards). Fuels such as alternative fuels (bio-diesel), marine diesel, heating oil etc. are not permitted.

If required, use only approved fuel additives.

There is otherwise a risk of impaired engine performance or engine and catalytic converter damage. The use of fuel additives is always the responsibility of the vehicle operator and may result in the restriction or loss of your implied warranty entitlements.

**i** You can obtain information about modification options for operation with alternative fuels (bio-diesel fuels) from any Mercedes-Benz Service Centre.

### Fuel grade

**i** You will generally find information about the fuel grade on the filling pump. Otherwise, ask the filling station attendant.

Mercedes-Benz recommends having the engine oil changed at more frequent intervals in countries where diesel fuel has a sulphur content exceeding 0.3% by weight.

Observe the data in the Maintenance Booklet. The following table is an overview of the average sulphur content in percentage by weight in fuels in the countries concerned. You can obtain information about current country-specific fuel sulphur contents from any Mercedes-Benz Service Centre.

**i** Diesel fuel with differing fuel sulphur content is available in some countries. Diesel fuel with lower fuel sulphur content is sold in some countries under the name "Euro diesel".

Table of fuel sulphur content (as at March 2008)

Fuel sulphur content		
Continent	Country	Percentage by weight
Europe, CIS	Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia <sup>8, 9</sup> , Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Macedonia <sup>8</sup> , Malta, Moldova <sup>8</sup> , Netherlands, Norway, Poland, Portugal, Romania <sup>8</sup> , Russia, Serbia <sup>8</sup> , Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Turkmenistan, Ukraine, United Kingdom	0 ... 0.1
	Albania, Croatia, Kazakhstan, Kyrgyzstan, Montenegro	0.1 ... 0.3
	Tajikistan, Uzbekistan	0.3 ... 0.8
Australia, Oceania	Australia, Fiji, French Polynesia, New Caledonia, New Zealand	0 ... 0.1
Asia	Brunei, China, Hong Kong, India, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, Vietnam	0 ... 0.1
	Indonesia, Laos, Mongolia, Sri Lanka	0.1 ... 0.3
	Bangladesh, Burma	0.3...0.8
	Afghanistan, Cambodia, Nepal, Pakistan	0.8 ...
Southwest Asia, Middle East	Bahrain, Israel, Jordan <sup>8, 9</sup> , Kuwait, Lebanon, Oman, Qatar, Saudi Arabia <sup>8, 9</sup> , United Arab Emirates, West Bank	0 ... 0.1
	Saudi Arabia, Syria	0.3...0.8
	Iran, Iraq, Jordan	0.8 ...
North America	Canada, Mexico, USA	0 ... 0.1
Central America, South America, Caribbean	Argentina, Bolivia, Chile, Costa Rica, Guyana, Trinidad and Tobago	0 ... 0.1
	Brazil, Colombia, Panama, Peru	0.1 ... 0.3
	Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Paraguay, Suriname, Uruguay, Venezuela	0.3...0.8

<sup>8</sup> Diesel fuels with the sales designation "Euro diesel" only.

<sup>9</sup> Diesel fuels with a higher fuel sulphur content are also available.

## Fuel sulphur content

Continent	Country	Percentage by weight
Africa	Algeria, Libya, Morocco <sup>8</sup> , Reunion, South Africa, Tunisia <sup>8,9</sup>	0 ... 0.1
	Angola, Ivory Coast (Côte d'Ivoire), Madagascar, Malawi, Mauritius, Nigeria, Tunisia	0.1 ... 0.3
	Cameroon, Gabon, Ghana, Kenya, Mozambique, Senegal, Tanzania, Zambia	0.3...0.8
	Congo (Kinshasa), Egypt, Mali, Sudan, Zimbabwe	0.8 ...

## Diesel at low temperatures

At low outside temperatures, paraffin separation may cause the flow properties of the diesel fuel to be insufficient.

To prevent operating problems, diesel with better flow qualities is offered during the winter months.

In Germany, the winter diesel fuels available remain reliable in operation down to about -20 °C. Winter diesel, which can be used without difficulties at the temperatures normally encountered, is available in most countries.

## Fuel additives

Flow improvers are fuel additives that are used to improve the flow characteristics of diesel fuels.

Flow improver is not guaranteed to be effective with every fuel. Observe the manufacturer's recommendations. Information about approved flow improver can be obtained from any Mercedes-Benz Service Centre.

With alternative fuels (bio-diesel fuels), flow improver does not affect stability at cold temperatures.

**!** Do not use fuel additives (with the exception of flow improvers), since this could lead to malfunctions or engine damage. Damage caused by the use of such addi-

tives is not covered by the Mercedes-Benz implied warranty.

**!** Do not add any petrol or kerosene to the diesel fuel to improve flow characteristics. Petrol or kerosene reduces the lubricant properties of the diesel fuel. This can result in damage to the fuel injection system, for example.

If you are using summer-grade diesel or winter-grade diesel with less resistance to low temperatures (for example, in southern Europe), add a quantity of flow improver appropriate for the outside temperature.

Add this additive to the diesel in good time, i.e. before the flow properties of the diesel are affected by paraffin separation. Malfunctions due to paraffin separation can only be rectified by heating the entire fuel system. This is done, for example, by parking the vehicle in a heated area indoors.

 **WARNING**

Heating the fuel system with a hot-air gun, for example, can damage parts of the fuel system. This can cause fuel to escape, ignite and cause a fire.

Never heat the fuel system with a hot-air gun or naked flame.

<sup>8</sup> Diesel fuels with the sales designation "Euro diesel" only.

<sup>9</sup> Diesel fuels with a higher fuel sulphur content are also available.

**AdBlue®****Notes on AdBlue®**

AdBlue® is the reducing agent used in vehicles with BlueTec® exhaust gas aftertreatment.

AdBlue® is a non-flammable, non-toxic, colourless and odourless, water-soluble liquid.

**!** Only use AdBlue® complying with DIN 70 070 and do not mix in special additives.

If AdBlue® comes into contact with painted or aluminium surfaces, rinse the affected areas immediately with plenty of water.

**High ambient temperatures**

If AdBlue® in the reservoir heats up to over 50 °C for a long period of time (e.g. due to direct sunlight) AdBlue® may decompose. This creates ammonia gas vapours.

**⚠ WARNING**

If you open the AdBlue® tank cap, small amounts of ammonia vapour may be released. This depends in particular upon the age of the AdBlue®.

Ammonia vapours have a pungent odour and are particularly irritating to:

- skin
- mucous membranes
- eyes

You may experience a burning sensation in your eyes, nose and throat, as well as coughing and watering of the eyes.

Do not inhale any ammonia vapours that may be released. Fill the AdBlue® tank only in well-ventilated areas.

**Low ambient temperatures**

AdBlue® freezes at a temperature of approximately -11 °C. The vehicle is equipped with an AdBlue® preheating system at the factory. This ensures that the vehicle can be operated

in winter, even at temperatures below -11 °C.

At low temperatures, AdBlue® crystals may form on the hose between the engine and the silencer. This crystallisation does not pose a risk to the correct operation of BlueTec® exhaust gas aftertreatment. The AdBlue® crystals can be removed with clean water if necessary.

**Additives and tap water**

**!** Do not mix additives to AdBlue®. Do not thin AdBlue® with tap water. This could destroy the BlueTec® exhaust gas aftertreatment system.

**Storage**

To store AdBlue®, use only containers made of high-alloy Cr-Ni steel or Mo-Cr-Ni steel in accordance with DIN EN 10 088-1/2/3 or plastic containers made of polypropylene or polyethylene.

**!** Containers made of the following materials are not suitable for the storage of AdBlue®:

- aluminium
- copper
- copper alloys
- unalloyed steel
- galvanised steel

If AdBlue® is stored in these types of container, constituents of these metals may dissolve and damage the BlueTec® exhaust gas aftertreatment beyond repair.

**Disposal**

Observe country-specific laws and regulations when disposing of AdBlue®.

**♻ Environmental note**

Dispose of AdBlue® in an environmentally responsible manner.

## Purity

The purity of AdBlue® is of particular importance for avoiding malfunctions in BlueTec® exhaust gas aftertreatment.

If AdBlue® is pumped out of the tank, e.g. during repair work, the same liquid must not be used to refill the tank. Its purity is no longer guaranteed.

**!** Impurities in AdBlue®, e.g. due to other service products, cleaning products or dust, may lead to:

- increased emission values
- damage to the catalytic converter
- engine damage
- malfunctions in the BlueTec® exhaust gas aftertreatment

## Cleaning and care

### General notes

Regular care helps to retain the vehicle's value.

It is recommended that you use Mercedes-Benz care products. They are designed specifically for Sprinter vehicles and represent the state of the art. Mercedes-Benz care products are available from any Mercedes-Benz Service Centre.

### WARNING

Always keep care products sealed and out of the reach of children.

Always follow the instructions for using the care products.

Do not use fuels as cleaning agents. Fuels are highly flammable and hazardous to health.

### Environmental note

Only wash your vehicle at a wash bay designed for this purpose. Dispose of empty containers and used cleaning products in an environmentally responsible manner.

### WARNING

Never use openings in the bodywork as steps. You may otherwise damage the vehicle or lose your footing and injure yourself or others.

If you have to clean the upper areas of the vehicle, always use suitable ladders or other secure climbing aids.

### WARNING

If steps or entrances are dirty or icy, there is a danger of slipping and falling.

Keep steps, entrances and footwear free from dirt (e.g. mud, clay, snow and ice).

## Cleaning the interior of the vehicle

### Seat belts

**!** Observe the following notes on cleaning the seat belts:

- remove any stains or dirt immediately. This will avoid residue or damage.
- do not bleach or dye the seat belts. This could impair the function of the seat belts.
- do not dry the seat belts in direct sunlight or at temperatures above 80 °C.

### Steering wheel boss and cockpit

### WARNING

When cleaning the steering wheel boss and dashboard, do not use cockpit sprays or cleaning agents containing solvents. Cleaning agents containing solvents cause the surface to become porous, and as a result plastic parts may break away and be thrown around the interior when an airbag is deployed, which may result in severe injuries.

Use a damp, clean and lint-free cloth to clean the plastic components and the cockpit. If particularly dirty, use a mild detergent.

**!** Do not use dry, coarse or hard cloths and do not scrub. Doing so will scratch or damage the surfaces.

## Windows

**!** Do not use dry cloths, abrasive products, solvents or cleaning agents containing solvents to clean the inside of the windows. Clean the inside of the windows with a damp cloth or a commercially available glass cleaner.

## Cleaning the exterior of the vehicle

### General notes

Scratches, corrosive deposits, or areas affected by corrosion and damage caused by neglect or inadequate care cannot always be completely remedied. In this case, visit a qualified specialist workshop.

**!** In order to avoid consequential damage, repair damage caused by loose chippings and remove any dirt immediately, in particular:

- insect remains
- bird droppings
- flash rust
- tree resin
- oils and grease
- fuels
- tar stains
- salt residue

Wash your vehicle more frequently if it gets dirty more often.

**!** Do not park up the vehicle for an extended period straight after cleaning it, particularly after having cleaned the wheels with wheel cleaner. Wheel cleaners could cause increased corrosion of the brake discs and brake pads/linings. For this reason, you should drive for a few minutes after cleaning. Braking heats the brake discs and the

brake pads/linings, thus drying them. The vehicle can then be parked up.

## Aluminium dropsides

Brush aluminium dropsides down with a solution of water and a neutral or slightly alkaline cleaning agent.

**!** Do not use abrasive cleaning agents to clean the dropsides. You could otherwise scratch or damage the surfaces.

## High-pressure cleaners

**!** Maintain the following minimum distances between the high-pressure nozzle and the object being cleaned:

- about 70 cm with round jet nozzles
- about 30 cm when using 25° flat-spray jets and concentrated-power jets

Keep the water jet moving while cleaning. To avoid causing damage, do not point the water jet directly at:

- door joints
- air bellows
- brake hoses
- electrical components
- electrical plug connectors
- seals or
- the drive train, especially not at the intermediate bearing of the propeller shaft

### WARNING

Pulsating round-spray jets can lead to damage to the substructure of tyres or air bellows which is not externally visible. Damage of this type will not be noticed until much later, and can lead to tyres or air bellows bursting. This could cause you to lose control of your vehicle, resulting in an accident and injuries to yourself or others.


Do not use high-pressure cleaners with round-spray jets to clean the tyres or air bellows. Have damaged tyres or air bellows replaced immediately.

### Automatic car wash

If the vehicle is very dirty, prewash it before you put it through an automatic car wash.


#### WARNING

If a wax preservative is applied after the vehicle is washed, you should remove the wax from the windscreen and the wiper blades to prevent smearing. Smears impair the driver's view, and their effect is made worse in conditions where visibility is poor (e.g. glare, mist, darkness, snow). You may therefore fail to recognise dangers, or not recognise them in time, and thereby cause an accident.

-  Make sure that the automatic car wash is suitable for the size of the vehicle.


Before washing the vehicle in an automatic car wash, fold in the exterior mirrors and remove the radio/telephone aerial. Otherwise, the exterior mirror, aerial or the vehicle itself could be damaged.

Make sure that the aerial is fitted and that the exterior mirrors are fully folded out again when you leave the automatic car wash.

-  Make sure that the side windows are closed completely and that the blower for the ventilation/heating is switched off. There is otherwise a risk of damage to the vehicle.

After putting the vehicle through an automatic car wash, wipe off wax from the windscreen and the wiper blades. This prevents smears and reduces wiping noise which can be caused by residue on the windscreen.


### Cleaning the engine

-  Water must not enter intake or ventilation openings. When cleaning with high pressure water or steam cleaners, the spray must not be aimed directly at electrical components or the terminals of electrical lines.

Preserve the engine after the engine has been cleaned. Protect the belt drive system from exposure to the preservative agent.

### Radiator

If the radiator fins have become clogged with dirt, blow out the radiator with compressed-air, first from the fan side, then from the front. In extreme cases of dirt accumulation, use a steam jet.

-  You must avoid damaging the radiator fins. Direct the compressed-air, water or steam jet at right angles to the radiator. On vehicles with an intercooler, oil cooler or air-conditioning compressor, examine the spaces between the coolers for dirt accumulation. If these are dirty, consult a qualified specialist workshop, e.g. a Mercedes-Benz Service Centre.

### After driving off-road or on construction sites

#### WARNING

Contamination and dirt on the vehicle jeopardise the road safety and operational reliability of the vehicle.

**In particular, the following hazards may occur:**

**Stone impact:** stones trapped between the tyres may be thrown up while driving. Other road users may be injured or vehicles (in particular the windscreen) could be damaged.

**Risk of skidding:** dirt and mud on the tyres/on the road surface reduce road grip. This is especially the case on wet road surfaces. This could cause your vehicle to start to skid.

**Risk of injury:** dirt and mud on access steps and entrances lead to a reduction in the safety of the footing. This could cause you to slip from the steps and injure yourself.

For this reason, you should always clean your vehicle carefully after driving on rough terrain or building sites before you use the vehicle on

public roads again. Should you use a high-pressure cleaner or a washing facility for this, make sure you observe the relevant safety advice in this section.

- ▶ Clean the vehicle, paying special attention to the following:
  - lighting system
  - windows, side windows and exterior mirrors
  - access steps and entrances
  - grab handles
  - wheels, tyres and wheel arches
  - licence plates
- ▶ Remove any trapped foreign objects, e.g. stones.
- ▶ Check the wheel suspension for damage.

#### WARNING

Dirt on the brake discs and brake pads/linings can impair braking performance (up to the point of total failure). This could lead to an accident. Before driving the vehicle on public roads, check the operating safety of the service brake by testing the brakes.

In the event of impaired braking performance, stop the vehicle while paying attention to the traffic conditions and contact a qualified specialist workshop.

After driving in mud, sand, water or in similar conditions:

- check the operating safety of the service brake.
- clean the wheels, chassis and brake system.
- check the wheels, chassis and brake system for damage. Have any damage repaired at a qualified specialist workshop.


## Maintenance

### General notes

The scope and regularity of the maintenance work primarily depend on the often diverse operating conditions.

The vehicle Maintenance Booklet describes the scope and frequency of maintenance work and contains additional notes on the warranty and on service products.

Specialist knowledge beyond the scope of these Operating Instructions is required when carrying out testing and maintenance work. This work should only be carried out by trained personnel.

-  Maintenance services must be carried out in accordance with the provisions and recommendations in the Maintenance Booklet.

Not doing so could void any warranty claims and lead to refusal of goodwill gestures after the manufacturer has submitted a damage report.

#### WARNING

Before carrying out maintenance measures and repairs, you must read the following documents relating to maintenance measures and repairs:

- relevant sections of the technical documentation such as the operating instructions and workshop information
- legal stipulations such as work safety regulations and accident prevention regulations

You might otherwise be unaware of certain dangers and thus risk injuring yourself and others.

When carrying out work underneath the vehicle, you must secure the vehicle using stands with sufficient load-bearing capacity.

Under no circumstances should a jack be used instead. The jack could yield and the vehicle drop. This could cause serious injury to you and others.

The vehicle's jack is intended only to raise the vehicle for a short time.

Always have maintenance work carried out at a qualified specialist workshop.

Observe the notes on parts in the "Technical data" section (▷ page 184).

### Ⓢ Environmental note

Observe measures to protect the environment when working on the vehicle. You must observe the legal requirements when disposing of service products, e.g. engine oil. This also includes all components, e.g. filters, which have come into contact with service products. Any qualified specialist workshop can provide information about this.

Dispose of empty containers, cleaning cloths and care products in an environmentally-responsible manner. Comply with the instructions for use of the care products.

Do not run the engine for longer than necessary when the vehicle is stationary.

## Bonnet

### ⚠ WARNING

Do not pull the release lever while the vehicle is in motion. The front flap may otherwise open and block your view.

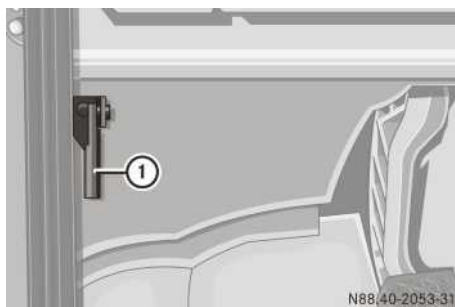
Only open the front flap when the vehicle is parked.

### ⚠ WARNING

There is a risk of injury if the front flap is open, even if the engine is not running.

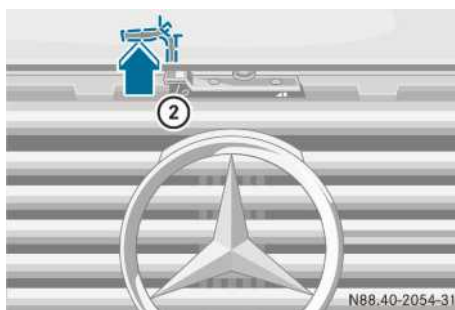
Some engine components can become very hot. To avoid the risk of burns, only touch those components described in the Operating Instructions and observe the relevant safety notes.

The release handle for the front flap is located under the instrument panel.



- ▶ **To open:** pull release handle ①. The front flap is released.

⚠ Make sure that the windscreen wipers are not folded out from the windscreen. You could otherwise damage the windscreen wipers or the front flap.



- ▶ Press securing hooks ② upwards.
- ▶ Swing the front flap upwards until the locking mechanism engages, holding the front flap in place.

### ⚠ WARNING

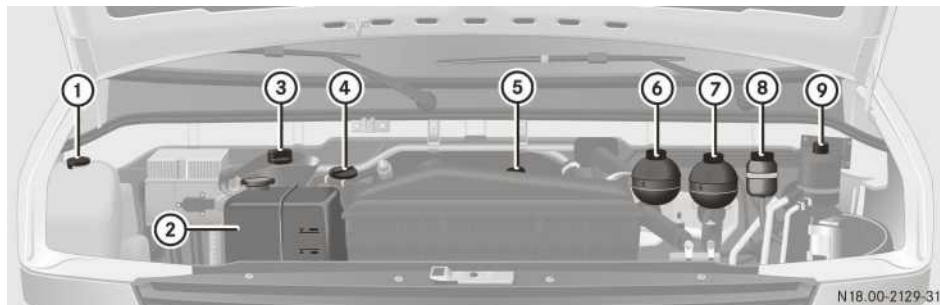
Make sure that nobody can become trapped as you close the front-flap.

- ▶ **To close:** raise the front flap lightly.



- ▶ Pull locking lever ③ upwards.
  - ▶ Lower the front flap until it is horizontal and then allow it to drop.  
The front flap engages audibly.
  - ▶ Check that the front flap has engaged properly.  
If the front flap can be raised slightly, it is not properly engaged. Open the front flap again and allow it to drop from a slightly greater height.
- !** Do not use your hands to push the front flap down. You could damage it otherwise.

## Maintenance points under the bonnet

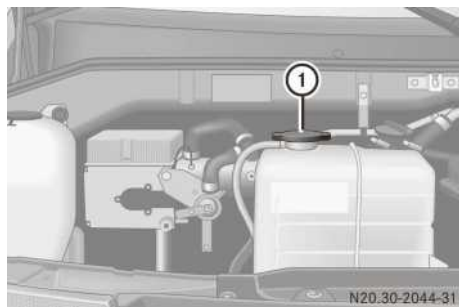


N 18.00-2129-31

- ① Topping up the washer fluid (▷ page 138)
- ② Checking the coolant level and topping up the coolant (▷ page 136)
- ③ Refilling AdBlue® (▷ page 110)
- ④ Topping up the engine oil (▷ page 138)
- ⑤ Checking the engine oil level (▷ page 139)
- ⑥ Checking brake circuit 2, checking the brake fluid level and topping up the brake fluid (▷ page 137)
- ⑦ Checking brake circuit 1, checking the brake fluid level and topping up the brake fluid (▷ page 137)
- ⑧ Clutch mechanism, checking the brake fluid level and topping up the brake fluid (▷ page 137)
- ⑨ Power steering, checking and topping up the oil level (▷ page 139)

### Coolant level

Only top up the coolant with the vehicle standing on a level surface and with the engine switched off. The coolant temperature must be below 50 °C.



N20.30-2044-31

### WARNING

When opening the coolant expansion tank, there is a risk of scalding from hot coolant spraying out. The engine cooling system and the coolant expansion tank are pressurised when the engine is at normal operating temperature. Wear gloves and eye protection. Only open the coolant expansion tank when the coolant temperature is below 50 °C.

### WARNING

Coolant contains glycol and is therefore toxic. Do not swallow the coolant. See a doctor immediately if you swallow coolant.

Make sure that coolant does not come into contact with skin, eyes or clothing. In case of contact with eyes, rinse immediately with plenty of clean water. Clean affected areas of skin and clothing with soap and water imme-

diately. Change any affected clothing immediately.

- ▶ Slowly turn cap ① anti-clockwise to the first detent and allow excess pressure to escape.
- ▶ Turn cap ① further and remove it.
- ▶ Top up the coolant until it is at the **MAX** mark. Observe the correct coolant mixture ratio and the required water quality (▷ page 125).
- ▶ Replace cap ① and tighten it until the stop.

**!** Check the engine cooling and heating system regularly for leaks.

If a large quantity of coolant is lost, have the cause traced and rectified at a qualified specialist workshop.

### Clutch system and brake system

#### **⚠ WARNING**

Brake fluid is hazardous to health. Do not swallow brake fluid. See a doctor immediately if you swallow brake fluid.

Make sure that brake fluid does not come into contact with skin, clothing or eyes. Rinse affected areas with plenty of clean water and consult a doctor if necessary.

Always wear gloves and eye protection when topping up brake fluid.

Store brake fluid only in the original closed container and keep it out of the reach of children. Comply with safety regulations when handling brake fluid.

#### **⚠ WARNING**

If the boiling point of the brake fluid is too low, vapour pockets may form in the brake system whenever the brakes are subjected to a heavy load (e.g. on long downhill stretches). Vapour pockets in the brake system impair braking performance. As a result, the braking distance may increase. This increases the risk of an accident.

Have the brake fluid replaced every **2 years** with brake fluid approved by Mercedes-Benz and have the replacement confirmed in the Service Booklet.

Check the brake fluid level regularly, e.g. weekly or when refuelling.

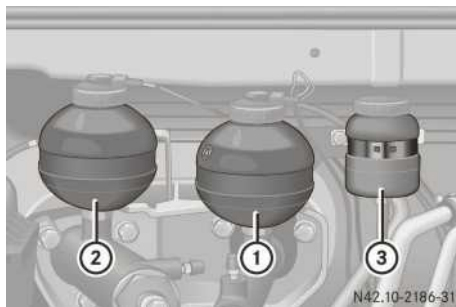
When the brake fluid level is being checked:

- the vehicle must be standing level
- the engine must be switched off

Depending on the vehicle equipment, you can use the brake fluid supply reservoir to check the fluid level of the following systems:

- hydraulic brake system
- hydraulic clutch system
- hydraulic differential lock mechanism

Have the brake fluid in the hydraulic clutch system replaced every **three years**, if possible in spring.



Brake fluid supply reservoir in the engine compartment

- ① Brake fluid reservoir for brake circuit 1 – front axle
- ② Brake fluid reservoir for brake circuit 2 – rear axle
- ③ Brake fluid reservoir for the hydraulic clutch

The brake fluid must be between the **MIN** and **MAX** marks in each brake fluid supply reservoir.

- i** There is usually a notice in the engine compartment to remind you when the next brake fluid change is due.

- !** Brake fluid corrodes paint, plastic and rubber. If brake fluid comes into contact with paint, plastic or rubber, rinse with water immediately.
- !** If the brake fluid does not reach the **MIN** mark, the vehicle's hydraulic system could be faulty. Do not top up the brake fluid under any circumstances. This will not rectify the malfunction.
- Do not drive any further. Have the system checked immediately at a qualified specialist workshop.
- !** Check brake lines and hoses at regular intervals for signs of leakage or damage. Strict standards should be applied for this examination.
- If you notice signs of corrosion, areas of abrasion, squashed areas, porous areas etc., have the brake lines and brake hoses replaced at a qualified specialist workshop.

### Windscreen washer system

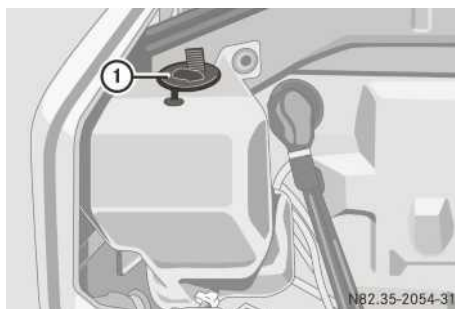
#### **WARNING**

Windscreen washer concentrate is highly flammable.

Fire, naked flames and smoking are therefore prohibited when you are handling windscreen washer concentrate.

Add windscreen washer concentrate to the washer fluid all year round.

Adapt the mixing ratio to the outside temperatures. If the temperature is above freezing, use Summerwash to prevent smearing. If there is a risk of frost, use Winterwash to prevent the water from freezing on the windscreen.



The washer fluid reservoir in the engine compartment has a capacity of approximately 10 litres.

- ▶ Mix the washer fluid to the appropriate mixing ratio in a container beforehand.
- ▶ Remove washer fluid reservoir cap ①.
- ▶ Top up with washer fluid.
- ▶ Replace cap ①.

### Engine oil level

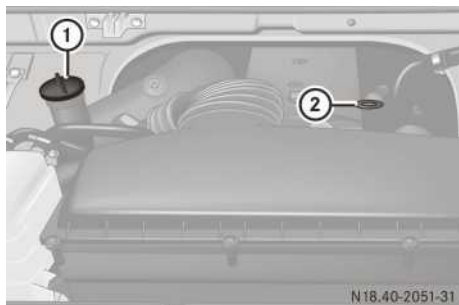
You will find information about engine oil consumption in the "Driving tips" section (> page 108).

Check the engine oil level on a regular basis, e.g. weekly or each time you refuel.

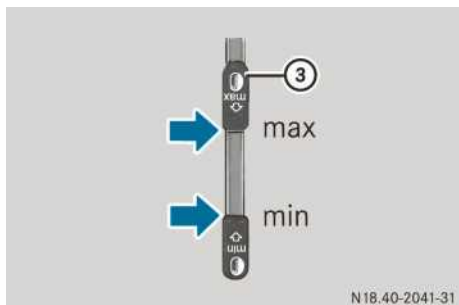
To check the oil level, the vehicle must:

- be at normal operating temperature
  - be standing on a level surface
  - have been standing with the engine switched off for at least five minutes
- i** The engine must have reached the operating temperature for an extended period of time. The vehicle should have been driven for at least 10 km before performing the check.

The dipstick and the filler neck are underneath the front flap.



- ▶ Pull out oil dipstick ②.
- ▶ Wipe oil dipstick ② using a lint-free cloth.
- ▶ Insert dipstick ② back into the dipstick tube to the stop and remove it again.



- ▶ Check the oil level on oil dipstick ③. The oil level must be between the **MIN** mark and **MAX** mark.
  - ▶ Top up the engine oil if necessary.
- i** The difference in the quantity of oil between the upper and lower marks on the dipstick is approximately 2 l.

You will find information about approved engine oils in the "Service products" section (▶ page 124) and in the Service Booklet.

- ▶ **To top up the engine oil:** unscrew the cap on filler neck ①.
- ▶ Top up with the amount of oil required.

**!** Do not add too much oil. If the oil level is above the **MAX** mark on the dipstick, too much oil has been added. This can lead to engine damage or catalytic converter damage. Have excess oil siphoned off.

- ▶ Screw cap ① onto the filler neck.

#### ⊕ Environmental note

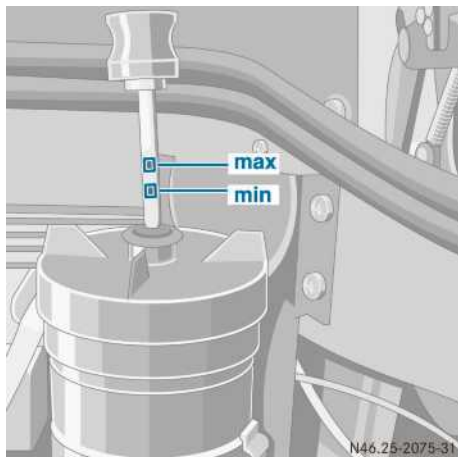
When topping up the oil, take care not to spill any. If oil enters the soil or waterways, it is harmful to the environment.

#### Oil level in the power steering

When performing the oil level check:

- the vehicle must be standing level
- the engine must be running

The reservoir for the power-steering oil is located in the engine compartment.



- ▶ Pull out the engine oil dipstick. The power-steering oil level is correct if the oil level is between the lower and upper marks on the dipstick.

**!** If the oil does not reach the MIN mark, the vehicle's hydraulic system may be malfunctioning.

Have the system checked immediately at a qualified specialist workshop, e.g. at a Mercedes-Benz Service Centre.

#### Vehicle assemblies

Check the assemblies regularly for leaks. If fluid is being lost (e.g. there are oil stains

where the vehicle is parked), have the cause diagnosed and rectified immediately at a qualified specialist workshop.

### Auxiliary heating

If you sell your vehicle, you are obliged to make the buyer aware of the following points. To this end, make sure that the new owner receives these Operating Instructions.

#### WARNING

Vehicles with an air heater:

The heat exchanger must be replaced after ten years in accordance with the national road traffic licensing regulations.

For safety reasons, Mercedes-Benz urgently recommends having the heat exchanger replaced after ten years in a qualified specialist workshop, which has the necessary specialist knowledge and tools to carry out the work required.

Mercedes-Benz recommends that you use a Mercedes-Benz Service Centre for this purpose. In particular, work relevant to safety or on safety-related systems must be carried out at a qualified specialist workshop.

### Lubrication

Lubricate the kingpin more frequently according to the operating conditions.

**!** Only use high-pressure grease guns with a lubricating pressure not exceeding 40,000 kPa (400 bar/5,802 psi). If the grease gun has no safety device, it may damage bearing points, seals, etc. when in use.

Observe the instructions issued by the manufacturer when lubricating special-purpose bodies or other special equipment.

► Clean the pressure grease fittings carefully before lubricating.

### Checking the anti-corrosion protection

Body cavity protection and underbody protection are standard on the cab.

**!** Note that road salt is corrosive. In winter, wash the vehicle more frequently in order to remove salt residue.

- Check the vehicle frequently for signs of corrosion damage. Pay special attention to possible damage of compressed-air lines and hydraulic lines.
- As a precautionary measure, spray the underside of the vehicle with a wax-based protective agent.
- Repair any damage to the anti-corrosion protection applied at the factory.

### Replacing the wiper blades

#### General safety notes

#### WARNING

Remove the key from the ignition lock before replacing the wiper blades. The windscreen wipers could otherwise be set in motion and injure you.

#### WARNING

Wiper blades are wear parts. Change the wiper blades every six months, ideally in the spring and autumn. Otherwise, the windscreen and rear window will not be wiped properly. This may prevent you from observing the traffic conditions, thereby causing an accident.

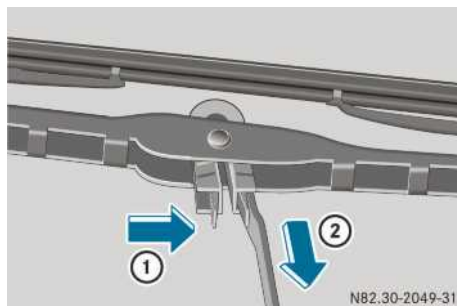
**!** Do not open the bonnet when a wiper arm is folded away from the windscreen. Otherwise, you could damage the bonnet.

Do not fold the wiper arms back onto the windscreen without wiper blades fitted. Otherwise, you could damage the windscreen.

- ❗ Only touch the wiper blade on the wiper arm. Otherwise, you could damage the wiper blade.

### Removing

- ▶ Remove the key from the ignition lock.
- ▶ Fold the wiper arm away from the windscreen.
- ▶ Set the wiper blade at right angles to the wiper arm.



- ▶ Press spring catches together ① and push the wiper blade out of the curvature of wiper arm ②.
- ▶ Remove the wiper blade.

### Fitting



- ▶ Press the hinge piece of the wiper blade into the curvature on the wiper arm until you hear the spring catch engage.
- ▶ Turn the wiper blade parallel to the wiper arm.
- ▶ Fold the wiper arm onto the windscreen again.

### Batteries

#### Important safety notes

##### ⚠ WARNING



Risk of explosion. Explosive oxyhydrogen is produced when batteries are being charged. Only charge the batteries in a well-ventilated area.



Risk of explosion. Avoid creating sparks. Avoid fire, naked flames and do not smoke when handling the battery.



Battery acid is caustic. Wear acid-resistant protective gloves. Any splashes of acid on skin or clothing must be neutralised immediately using soapy water or acid neutraliser and then cleaned with water.



Wear eye protection. When mixing water and acid, the liquid may splash into your eyes. Rinse acid splashes to the eyes immediately with clean water and contact a doctor immediately.



Keep away from children. Children are not able to evaluate the risk involved



in handling batteries and acid.

Always observe the safety instructions, protective measures and procedures specified in these Operating Instructions when handling the battery.

#### Environmental note



Batteries contain pollutants. It is against the law to dispose of them along with household waste. They must be collected separately and recycled in an environmentally responsible manner.



Dispose of batteries appropriately. Hand over discharged batteries to a qualified specialist workshop.

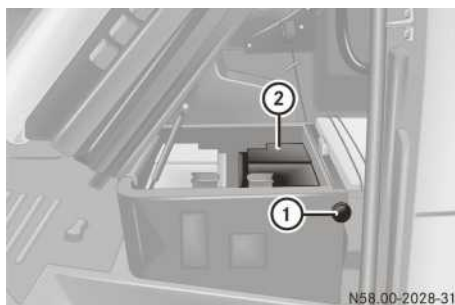
Transport and store full batteries in an upright position. When transporting batteries, secure them so that they do not tip over. Note that battery acid could escape into the environment through the ventilation openings in the stoppers.

In order for the batteries to achieve their maximum possible service life, they must always be sufficiently charged.

Have the battery charge checked more frequently if you use the vehicle mainly for short trips or if you leave it parked up for a lengthy period.

Consult a Mercedes-Benz Service Centre if you are going to leave your vehicle parked up for a long period of time. Before putting the vehicle out of use, switch off the power supply using the battery main switch (► page 61).

Your vehicle is equipped with two batteries. The batteries are located in the seat base underneath the driver's seat.



Driver's seat folded forward


- ① Release knob
- ② Battery

## Disconnecting and connecting the battery

### WARNING

There is a risk of a short circuit if the positive terminal of the connected battery comes into contact with any part of the vehicle. This could cause the flammable gas mix to ignite. You and others could be seriously injured.

- Do not place any metal objects or tools on the batteries.
- When disconnecting the batteries, always disconnect the negative terminal clamp before the positive terminal clamp.
- When connecting the batteries, always connect the positive terminal clamp before the negative terminal clamp.
- Do not disconnect or connect the batteries when the engine is running.

 Switch off the engine and remove the key before you loosen or disconnect the terminal clamps. You may otherwise destroy electronic components such as the alternator.

- ▶ Remove the key from the ignition lock.
- ▶ Switch off all electrical consumers.
- ▶ Pull out release knob ① and fold the driver's seat forwards.

**!** On vehicles with BlueTec® exhaust gas aftertreatment, do not disconnect the battery until approximately five minutes after switching the engine off. This is the only way to ensure that the BlueTec® exhaust gas aftertreatment will function properly when you restart operation.

- ▶ **To disconnect:** detach and remove the negative terminal clamps so that the clamps are no longer touching the corresponding terminal.
- ▶ Remove the cover of the positive terminal clamps.
- ▶ Loosen and remove the positive terminal clamps.

**!** If you remove only the negative terminal clamps from the battery, the centre tap of the battery causes a residual voltage. This could damage the vehicle's electrical systems.

For this reason, you should also remove the positive terminal clamps when disconnecting the battery.

- ▶ **To reconnect:** connect the positive terminal clamps and fasten the caps. Make sure that the battery terminals are not switched around.
- ▶ Connect the negative terminal clamps.

#### **!** WARNING

Make sure that nobody can become trapped as you fold down the driver's seat. Be especially careful if there are children near the vehicle.

Make sure that the driver's seat engages audibly when it is folded back.

If the driver's seat is not properly engaged, it could tip forward and injure you.

- ▶ Pull out release knob ① and fold down the driver's seat. Make sure that the driver's seat engages audibly.

## Checking the battery fluid level

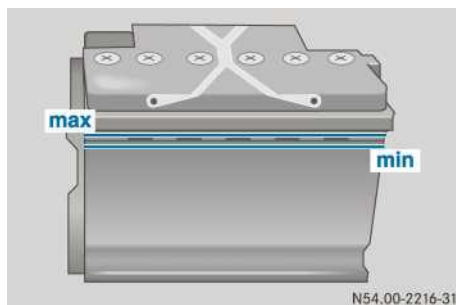
Check the battery fluid level once a week in summer and hot climatic regions.

- ▶ Remove the key from the ignition lock.
- ▶ Switch off all electrical consumers.
- ▶ Fold forward the driver's seat as described in the section on disconnecting the batteries.

#### **!** WARNING

Battery acid is caustic. Avoid contact with the skin, eyes or clothing.

- ▶ Unscrew the caps on all battery cells.



- ▶ Check the battery fluid level. The liquid in each battery cell must be between the **min** and **max** marks (on the side of the battery casing).

**!** Tap water reduces the performance of the batteries. Only top up with distilled or de-ionised water.

Do not use a metal funnel when adding water. There is a risk of a short circuit.

- ▶ Top up with distilled or de-ionised water if necessary.
- ▶ Screw the caps onto all battery cells.
- ▶ Fold down the driver's seat until it engages, as described in the section on reconnecting the batteries.

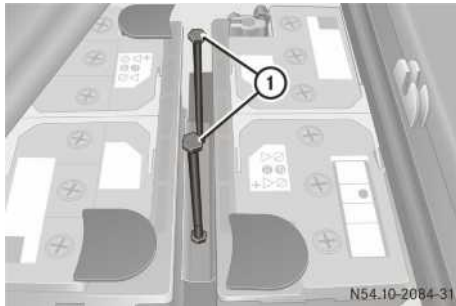
## Removing and installing the battery

Have the batteries removed at a qualified specialist workshop.

### WARNING

Use only impact-resistant batteries with a central ventilation cap to prevent corrosion damage and to protect occupants from caustic burns in the event of an accident.

- ▶ **To remove:** disconnect the batteries (▷ page 142).



- ▶ Unscrew bolts ① which hold the battery in place in the seat base.
- ▶ Remove bolts ① with the rail and remove the battery.
- ▶ **To install:** follow the steps described above in reverse order to install and secure the batteries.
- ▶ Connecting the batteries (▷ page 142).

## Charging the battery

### WARNING

Never charge the battery while it is installed. The vehicle's electronics system may otherwise be damaged. Only charge the battery in a well-ventilated area. As the battery is being charged, gases can escape and generate minor explosions, which can injure you and others or may cause damage to the paintwork or acid corrosion on the vehicle.

### WARNING

Avoid creating sparks. Avoid naked flames and do not smoke in the vicinity of the batteries. Do not remove the battery charger connecting clamps until the battery charger is switched off and gas is no longer escaping from the batteries. When charging a battery, make sure that the room is well ventilated. Do not lean over the battery during the charging process and do not breathe in any gases; otherwise, you could be injured.

- ▶ Remove the battery (▷ page 144).
- ▶ Recharge the removed battery. Observe the operating instructions for the battery charger.
- ▶ Follow the above steps in the reverse order to install the battery again.
- Make sure that the charging voltage is correct when charging.  
Use a commercially available battery charger.  
Do not rapid-charge new batteries.

## Battery care

- Please always observe the following notes:
  - Dirty battery clamps and battery surfaces cause leak currents, which lead to the batteries discharging. Always keep the battery terminals and battery surfaces clean and dry. Grease the battery terminals, particularly the terminal undersides, with a light coating of acid-resistant grease.
  - Cleaning agents containing fuel corrode the battery housing. Only clean the battery housing with commercially available cleaning agents.
  - Only clean the batteries when the caps are screwed on. Dirt may otherwise enter the battery cells and damage the battery.
  - The breathers in the caps and the cell ventilation tubes must be open. Other-

wise, gas cannot escape. Unscrew blocked breathers and clean them with a suitable tool such as a piece of wire. If you do not unscrew the caps for cleaning, there is a risk of short circuit.

- Regularly check the battery terminals and the fastening of the negative cable to the chassis to ensure that they are firmly seated.
- If batteries are not being used, you should charge them once a month.



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## Useful information

These Operating Instructions describe all models and standard and optional equipment of your vehicle that were available at the time of printing. Country-specific variations are possible. Note that your vehicle cannot be fitted with all of the described functions. This also applies to systems and functions relevant to safety.

Read the information on qualified specialist workshops: (▷ page 14).

## Where will I find...?

### Vehicle tool kit and emergency equipment

The jack and the vehicle tool kit are located in the stowage space behind the driver's seat. In vehicles with a large seat base, the jack and the vehicle tool kit are stored and secured in a different location, as determined by the driver.

#### WARNING

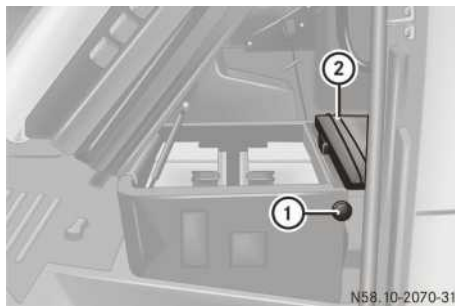
To reduce the risk of serious or fatal injuries and to avoid damage to the vehicle, observe the following:

- the jack is designed only to raise the vehicle for a short time, e.g. while a wheel is being changed.

It is not designed to enable work to be carried out underneath the vehicle.

- the jack must be placed on a firm, level surface.
- never change a wheel on uphill or downhill gradients.
- never lie under the raised vehicle.
- make sure that no persons are present in the vehicle when the vehicle is raised.
- never start the engine when the vehicle is raised.

- make sure that the distance between the underside of the tyres and the ground does not exceed 30 mm.
- if you intend to work under the vehicle, place the vehicle on stands.



- ▶ Pull out release knob ① and tilt the driver's seat forward.
- ▶ Remove warning triangle ②, the warning lamp and the reflective safety vest from the stowage space behind the driver's seat.
- ▶ Remove the jack and vehicle tool kit from the stowage space.
- ▶ Pull out release knob ① and tilt the driver's seat down until it engages audibly.

#### WARNING

Make sure that nobody can become trapped as you fold down the driver's seat. Be especially careful if there are children near the vehicle.

Make sure that the driver's seat engages audibly when it is folded back.

If the driver's seat is not properly engaged, it could tip forward and injure you.

### Warning triangle

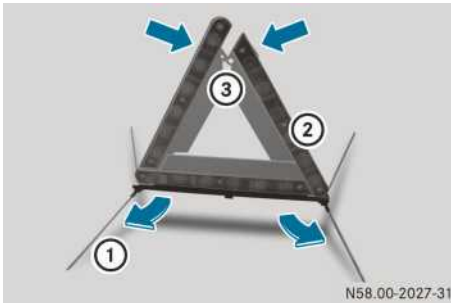
The warning triangle, the warning lamp and the reflective safety vest are located in the stowage space behind the driver's seat.

- i** On vehicles with a large seat base, the warning triangle, the warning lamp and the reflective safety vest are stowed and

secured in another suitable location chosen by the driver of the vehicle.

- ▶ Take the warning triangle, warning lamp and reflective safety vest from the stowage space behind the driver's seat (▷ page 148).

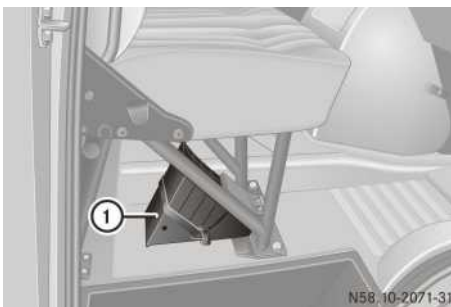
### Warning triangle



- ▶ **To set up:** fold stand ① out sideways from the bottom.
- ▶ Pull side reflectors ② upwards to form a triangle and lock them at the top using press-stud ③.

### Wheel chock

The chock is located in a retainer under the co-driver's seat.



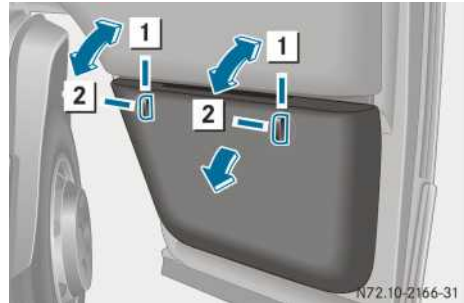
① Chock

- ▶ Release the securing strap ① and remove the chock from the retainer.

- ① When stowing it away, make sure that the chock is secured in the retainer by the securing strap.

### First-aid kit

The first-aid kit is located in the stowage compartment in the co-driver's door.



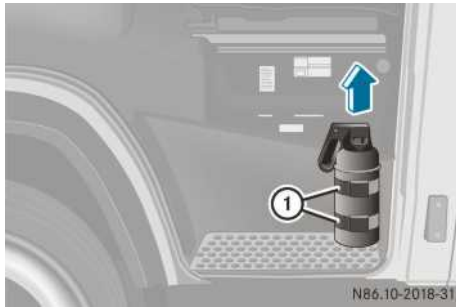
- ① Locked
- ② Unlocked



③ First-aid kit

- ▶ Unlock quick-release fasteners ② and fold out the cover.
- ① Check the expiry date of the first-aid kit annually, and replace the contents when necessary.

### Fire extinguisher



- ▶ Open the fasteners on securing straps ①.
  - ▶ Pull the fire extinguisher up and out of the holder.
- i** Please read the instructions on the fire extinguisher carefully and familiarise yourself with its operation.

### Spare wheel

If you are replacing the tyres on the vehicle, you may use the spare wheel as a road wheel provided that:

- it is no more than six years old
- the wheel and tyre are of the same design as the road wheels

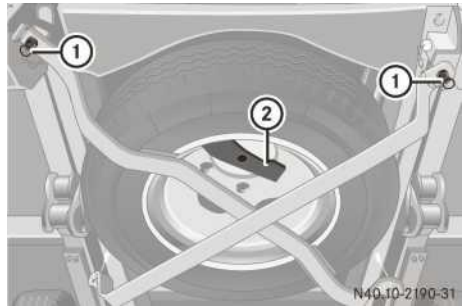
**!** Check the spare wheel regularly to see that it is secure and has the prescribed tyre pressure.

You will find the table of tyre pressures in the "Technical data" section (▷ page 189).

The mounting location of the spare wheel depends on the vehicle model.

#### Panel van/platform truck/tipper

The spare wheel is under the end of the frame.



- ① Securing nuts with locks
- ② Retainer plate

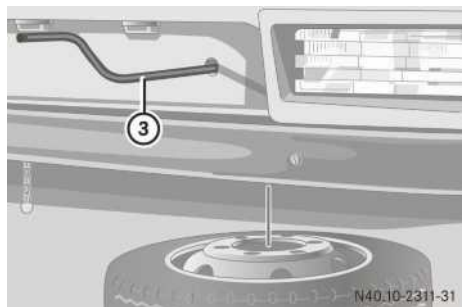


Illustration showing panel van

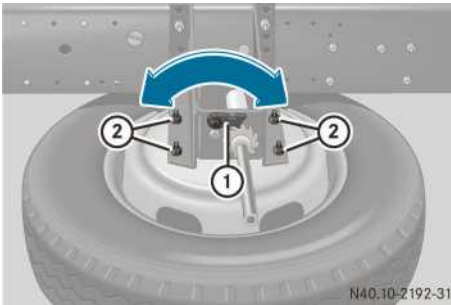
- ③ Hand crank for winch

You will find the hand crank for the winch in the vehicle tool kit (▷ page 148).

- ▶ Turn the winch with hand crank ③ until the cable is taut.
- ▶ Release securing bolts ① on the retaining bar and unscrew them.
- ▶ Swing the retaining bar to one side.
- ▶ Lower the spare wheel using the winch.
- ▶ Unwind the cable fully.
- ▶ Pull the spare wheel out to the side or to the rear.
- ▶ Remove retaining plate ② through the centre hole of the wheel rim.

#### Platform trucks/box-type bodies

The spare wheel is on the side of the frame.



Example

① Catch

② Securing nuts

- ▶ Unscrew securing nuts ②.
- ▶ Release the winch.

You will find the hand crank for the winch in the vehicle tool kit (> page 148).

- ▶ Lower the spare wheel as far as possible using the hand crank for the winch until the cable is no longer under tension.
- ▶ Pull the retainer bracket through the wheel.

## Troubleshooting






### Warning and indicator lamps on the instrument panel

The warning and indicator lamps are listed according to their allocation in the upper and side indicator lamp panel.










#### **WARNING**








The operating safety of your vehicle could be affected if maintenance work is carried out incorrectly. You could lose control of the vehicle and cause an accident. The safety systems may also no longer be able to protect you or others as they are designed to do.







Always have maintenance work carried out at a qualified specialist workshop.

Problem	Possible causes/consequences and ► Solutions
 The yellow diesel engine electronics warning lamp lights up while the engine is running.	There is a malfunction in the diesel engine electronics. <ul style="list-style-type: none"> <li>► Drive on with care. Adapt your driving style to suit the road and traffic conditions.</li> <li>► Visit a qualified specialist workshop immediately.</li> </ul>
  The diesel engine electronics indicator lamp and the engine diagnostics indicator lamp light up while the engine is running.	If the AdBlue® gauge indicates an empty tank, the AdBlue® tank reserve is empty. Engine output may be reduced <sup>10</sup> . <ul style="list-style-type: none"> <li>► Refill AdBlue® immediately (► page 110).</li> </ul> Full engine output is available again once the AdBlue® supply is refilled. The diesel engine electronics indicator lamp goes out if no malfunction is detected during the system check. It may take several journeys to complete the system check.
  The diesel engine electronics indicator lamp and the engine diagnostics indicator lamp light up while the engine is running.	The BlueTec® exhaust gas aftertreatment system is defective or an emissions-relevant malfunction has occurred. This malfunction or fault could lead to damage to the BlueTec® exhaust gas aftertreatment system. The engine output may be reduced <sup>10</sup> . <ul style="list-style-type: none"> <li>► Have the BlueTec® exhaust gas aftertreatment system checked as soon as possible at a qualified specialist workshop.</li> </ul> Full engine output is available again once the defect is repaired. The diesel engine electronics indicator lamp goes out if no malfunction is detected during the system check. It may take several journeys to complete the system check.










<sup>10</sup> On emergency vehicles, e.g. fire engines, the engine output is not reduced.



Problem	Possible causes/consequences and ► Solutions
 The yellow ABS indicator lamp flashes while the vehicle is in motion.	<p> <b>Risk of accident</b></p> <p>ABS has been deactivated due to a malfunction. The service brake continues to function normally, but without electronic support. The wheels could therefore lock if you brake hard, for example.</p> <ul style="list-style-type: none"> <li>► Drive on carefully and avoid full brake application. Adapt your driving style to suit the road and traffic conditions.</li> <li>► Visit a qualified specialist workshop immediately.</li> </ul>
 The yellow air-filter contamination indicator lamp lights up while the engine is running.	<p>The service due date for the air filter has been reached. The air filter is dirty.</p> <ul style="list-style-type: none"> <li>► Have the air filter replaced as soon as possible at a qualified specialist workshop.</li> </ul>
 The red brake system indicator lamp in the upper indicator lamp panel lights up for the first time when you apply the brakes.	<p> <b>Risk of accident</b></p> <p>The brake pads/linings have reached their wear limit. Braking characteristics may be affected.</p> <ul style="list-style-type: none"> <li>► Have the brake pads/linings replaced as soon as possible at a qualified specialist workshop.</li> </ul>
 The red brake system indicator lamp in the upper indicator lamp panel lights up.	<p> <b>Risk of accident</b></p> <p>The brake fluid level is too low. The brake system is leaking or the brake pads/linings are worn. Braking characteristics may be affected.</p> <ul style="list-style-type: none"> <li>► Have the brake pads/linings checked immediately at a qualified specialist workshop.</li> </ul>
 The red brake pressure warning lamp between the supply pressure displays lights up.	<p> <b>Risk of accident</b></p> <p>The pressure in one or both of the compressed-air brake circuits is too low. The brake system is leaking or is malfunctioning. The vehicle's braking characteristics change and the braking performance is impaired. This jeopardises the operating and road safety of the vehicle.</p> <ul style="list-style-type: none"> <li>► Stop the vehicle as soon as possible, paying attention to road and traffic conditions.</li> <li>► Consult a qualified specialist workshop.</li> </ul>

Problem	Possible causes/consequences and ► Solutions
 The red engine oil pressure warning lamp lights up while the engine is running.	<p>The engine oil pressure is too low.</p> <ul style="list-style-type: none"> <li>► Check the engine oil level and top up at the nearest filling station (▷ page 138).</li> <li>► If there is visible oil loss from the engine, have the fault rectified immediately at a qualified specialist workshop.</li> </ul>
 The yellow engine oil level warning lamp flashes after the engine is started or while the vehicle is in motion.	<p>The engine oil level has dropped to a minimum value. If the engine oil level falls any further, the indicator lamp will light up.</p> <ul style="list-style-type: none"> <li>► Check the engine oil level and top up at the nearest filling station (▷ page 138).</li> <li>► If there is visible oil loss from the engine, have the fault rectified immediately at a qualified specialist workshop.</li> </ul>
 The red battery indicator lamp lights up while the engine is running.	<p> <b>Risk of accident</b></p> <p>The battery is not being charged. Possible causes are a defective alternator or a torn poly-V-belt.</p> <ul style="list-style-type: none"> <li>► Pull over immediately, paying attention to road and traffic conditions, and check the poly-V-belt.</li> <li>► <b>If it is torn:</b> do not drive on. Consult the nearest qualified specialist workshop.</li> <li>► <b>If it is not damaged:</b> have the vehicle checked at a qualified specialist workshop.</li> </ul>
 The red battery indicator lamp lights up while the engine is running.	<p> <b>Risk of accident</b></p> <p>The battery is faulty.</p> <ul style="list-style-type: none"> <li>► Pull over immediately, paying attention to road and traffic conditions.</li> <li>► Do not continue driving under any circumstances.</li> <li>► Contact a breakdown service, e.g. a Mercedes-Benz Service Centre.</li> </ul>
 The yellow continuous brake indicator lamp lights up before the engine brake is engaged.	<p>The engine brake is malfunctioning.</p> <ul style="list-style-type: none"> <li>► Do not engage the engine brake.</li> <li>► Have the engine brake checked at a qualified specialist workshop.</li> </ul>

Problem	Possible causes/consequences and ► Solutions
 The yellow bulb indicator lamp lights up when the key is turned to position <b>2</b> in the ignition lock.	<p>One of the bulbs of the exterior lighting<sup>11</sup> is faulty.</p> <ul style="list-style-type: none"> <li>► Replace the faulty bulb as soon as possible (► page 169).</li> </ul>
 The red SRS indicator lamp goes out when the key is turned to position <b>1</b> in the ignition lock. Or the red SRS indicator lamp lights up or flickers while the engine is running.	<p> <b>Risk of injury</b></p> <p>SRS is malfunctioning. The airbags or belt tensioners could be triggered unintentionally or might not be triggered at all in the event of an accident.</p> <ul style="list-style-type: none"> <li>► Drive on with care.</li> <li>► Visit a qualified specialist workshop immediately.</li> </ul>
 The yellow flame-start system indicator lamp does not light up when the ignition is switched on. The engine cannot be started.	<p>The flame-start system is malfunctioning.</p> <ul style="list-style-type: none"> <li>► Have the flame-start system checked at a qualified specialist workshop.</li> </ul>
 The yellow ABS indicator lamp for the trailer flashes while the vehicle is in motion.	<p> <b>Risk of accident</b></p> <p>There is a malfunction in the trailer ABS.</p> <p>The vehicle's handling and braking characteristics could change. There is a risk that the trailer could overbrake.</p> <ul style="list-style-type: none"> <li>► Drive on carefully and avoid full brake application. Adapt your driving style to suit the road and traffic conditions.</li> <li>► Visit a qualified specialist workshop immediately.</li> </ul>

<sup>11</sup> The bulbs of the reversing lamps, perimeter lamps and side marker lamps are not monitored.


Problem	Possible causes/consequences and ► Solutions
 The red ENR indicator lamp lights up.	<p>The ENR is malfunctioning and can only be monitored to a limited extent.</p> <p>The chassis may not be in the travel position.</p> <ul style="list-style-type: none"> <li>► Drive on carefully and avoid full brake application. Adapt your driving style to suit the road and traffic conditions.</li> <li>► Visit a qualified specialist workshop immediately.</li> </ul>
 The red ENR indicator lamp is flashing.	<p> <b>Risk of accident</b></p> <p>The ENR is malfunctioning and can no longer be monitored.</p> <p>The chassis may not be in the travel position.</p> <ul style="list-style-type: none"> <li>► Check the level of the chassis frame and, if possible, drive on carefully. Adapt your driving style to suit the road and traffic conditions.</li> <li>► Visit a qualified specialist workshop immediately.</li> </ul>
 The yellow ENR indicator lamp is flashing.	<p>The pressure in the auxiliary consumers circuit is too low.</p> <ul style="list-style-type: none"> <li>► Start the engine.</li> <li>► Run the engine until sufficient supply pressure has built up.</li> </ul>
 The yellow ENR indicator lamp lights up.	<p>The chassis is not in the travel position.</p> <ul style="list-style-type: none"> <li>► Raise or lower the chassis after loading (► page 116).</li> <li>► If it is not possible to raise or lower the chassis, switch the ignition off and on once again before operation.</li> </ul>
 The red dropside indicator lamp lights up while you are driving.	<p> <b>Risk of accident</b></p> <p>The dropside is open.</p> <ul style="list-style-type: none"> <li>► Close the dropside.</li> </ul>
 The red supply pressure indicator lamp for the auxiliary consumers circuit (spring-loaded parking brake) lights up while the vehicle is in motion.	<p> <b>Risk of accident</b></p> <p>The pressure in the auxiliary consumers circuit (spring-loaded parking brake) is too low. The brake system is leaking or is malfunctioning. The spring-loaded parking brake cylinder could close inadvertently. This could cause the wheels on the rear axle to lock.</p> <p>There is a risk of skidding.</p> <ul style="list-style-type: none"> <li>► Stop the vehicle as soon as possible, paying attention to road and traffic conditions.</li> <li>► Have the brake system checked at a qualified specialist workshop.</li> </ul>

Problem	Possible causes/consequences and ► Solutions
 <p>The red automatic transmission warning lamp lights up while the engine is running.</p>	<p>There are problems with the shifting in the automatic transmission. It is no longer possible to reverse the vehicle. In extreme cases, the vehicle can no longer be driven.</p> <ul style="list-style-type: none"> <li>► If the vehicle can still be driven, carefully continue driving.</li> <li>► If the vehicle can no longer be driven, pull over immediately, paying attention to road and traffic conditions.</li> <li>► Have the fault rectified at a qualified specialist workshop.</li> </ul>
 <p>The yellow fluid temperature warning lamp lights up while the engine is running.</p>	<p>The temperature of the oil in the automatic transmission is too high.</p> <ul style="list-style-type: none"> <li>► Stop the vehicle as soon as possible, paying attention to road and traffic conditions.</li> <li>► Run the engine for two to three minutes at idling speed, then switch off the engine.</li> <li>► Observe the notes in the separate operating instructions for the automatic transmission.</li> <li>► If there is visible oil loss from the automatic transmission, have the fault rectified immediately at a qualified specialist workshop.</li> </ul>

**Warning tones**

 **WARNING**

If service work is not carried out correctly, the operating safety of your vehicle may be affected. This could cause you to lose control of your vehicle and cause an accident. Moreover, the safety systems may no longer be able to protect you or others as they are designed to do. Always have service work carried out at a qualified specialist workshop.

Problem	Possible causes/consequences and ► Solutions
<p>A warning tone sounds.</p>	<p> <b>Risk of injury</b></p> <p>The driver has not fastened his/her seat belt.</p> <ul style="list-style-type: none"> <li>► Fasten seat belt (► page 28).</li> </ul>
<p>A warning tone sounds.</p>	<p>The engine speed is too high. You are driving in the overrevving range.</p> <ul style="list-style-type: none"> <li>► Shift up a gear.</li> <li>► Select a higher shift range for vehicles with automatic transmission.</li> <li>► Brake the vehicle.</li> </ul>

Problem	Possible causes/consequences and ► Solutions
A warning tone sounds.	<p>The coolant temperature is too high.</p> <ul style="list-style-type: none"> <li>► Pull over as soon as it is safe to do so and let the engine cool down.</li> <li>► Check the coolant level and top up the coolant as necessary (▷ page 136).</li> <li>► Have the engine cooling system checked at a qualified specialist workshop if the coolant needs topping up more often than usual.</li> <li>► Make sure that the air supply to the engine radiator is not obstructed.</li> <li>► If the coolant level is correct, consult a qualified specialist workshop.</li> </ul>
A warning tone sounds.	<p>Vehicles without BlueTec<sup>®</sup> exhaust gas aftertreatment: the oil pressure is too low.</p> <ul style="list-style-type: none"> <li>► Stop the vehicle as soon as possible, paying attention to road and traffic conditions.</li> <li>► Check the oil level and top up the engine oil at the next filling station if necessary (▷ page 138).</li> </ul> <p>The engine could otherwise be damaged.</p> <ul style="list-style-type: none"> <li>► If the engine shows signs of oil loss, have the fault rectified immediately at a qualified specialist workshop.</li> </ul>

## Engine

### WARNING

If service work is not carried out correctly, the operating safety of your vehicle may be affected. This could cause you to lose control of your vehicle and cause an accident. Moreover, the safety systems may no longer be able to protect you or others as they are designed to do.

Always have service work carried out at a qualified specialist workshop.

Problem	Possible causes/consequences and ► Solutions
<p>The engine does not start. The starter motor can be heard.</p>	<p>There is air in the fuel system.</p> <ul style="list-style-type: none"> <li>► Turn the key back to position <b>0</b> in the ignition lock before attempting to start the engine again.</li> <li>► Start the engine again. Please bear in mind that lengthy and frequent starting attempts will drain the battery.</li> </ul> <p>If the engine does not start after several attempts:</p> <ul style="list-style-type: none"> <li>► Consult a qualified specialist workshop.</li> </ul>
<p>The engine does not start. The starter motor can be heard. The reserve fuel warning lamp is lit and the fuel gauge is at <b>0</b>.</p>	<p>The fuel tank has run dry.</p> <ul style="list-style-type: none"> <li>► Refuel the vehicle.</li> <li>► Bleed the fuel system (▷ page 165).</li> </ul>
<p>The engine does not start. The starter motor cannot be heard.</p>	<p>Vehicles with EMERGENCY OFF switch: The battery voltage is not connected to the ignition lock.</p> <ul style="list-style-type: none"> <li>► Connect the battery voltage to the ignition lock (▷ page 43).</li> </ul>
<p>The engine does not start. The starter motor cannot be heard.</p>	<p>The battery main switch is switched off.</p> <ul style="list-style-type: none"> <li>► Switch on the power supply (▷ page 61).</li> </ul>
<p>The engine does not start. The starter motor cannot be heard.</p>	<p>The on-board voltage is too low (the battery is too weak or discharged).</p> <ul style="list-style-type: none"> <li>► Jump-start the vehicle (▷ page 177).</li> </ul> <p>If the engine does not start despite attempts to jump-start it:</p> <ul style="list-style-type: none"> <li>► Consult a qualified specialist workshop.</li> </ul>
<p>The engine does not start. The starter motor cannot be heard.</p>	<p>The battery is discharged or faulty.</p> <ul style="list-style-type: none"> <li>► Check the battery for damage.</li> <li>► Charge the battery (▷ page 141).</li> </ul>
<p>The engine does not start. The starter motor cannot be heard.</p>	<p>The starter is faulty.</p> <ul style="list-style-type: none"> <li>► Have the starter checked at a qualified specialist workshop.</li> </ul>

Problem	Possible causes/consequences and ► Solutions
The oil pressure display is not showing any pressure.	<p>The oil pressure is too low.</p> <ul style="list-style-type: none"> <li>► Stop the vehicle as soon as possible, paying attention to road and traffic conditions.</li> <li>► Check the engine oil level and top up the engine oil at the next filling station if necessary (▷ page 138). The engine could otherwise be damaged.</li> <li>► If you can see that the engine is losing oil, have the fault repaired as soon as possible at a qualified specialist workshop.</li> </ul>
A coolant temperature of over +100 °C is displayed.	<p>The coolant temperature is too high.</p> <ul style="list-style-type: none"> <li>► Stop the vehicle as soon as possible, paying attention to road and traffic conditions.</li> <li>► Once the engine has cooled down, check the coolant level and top up the coolant if necessary (▷ page 136).</li> <li>► If the coolant level is correct, consult a qualified specialist workshop.</li> <li>► Make sure that the air supply to the radiator is not obstructed.</li> <li>► If you have to top up the coolant more frequently, have the cooling system checked at a qualified specialist workshop.</li> </ul>

### Clutch system

#### WARNING

The operating safety of your vehicle could be affected if maintenance work is carried out incorrectly. You could lose control of the vehicle and cause an accident. The safety systems may also no longer be able to protect you or others as they are designed to do.

Always have maintenance work carried out at a qualified specialist workshop.





Problem	Possible causes/consequences and ► Solutions
The hydraulic clutch does not engage or disengage correctly.	<p>There is air in the hydraulic clutch system. The hydraulic system has a leak.</p> <ul style="list-style-type: none"> <li>► Check the fluid level (▷ page 137).</li> <li>► Have the hydraulic system checked at a qualified specialist workshop immediately.</li> </ul>

## Brake system

### WARNING

The operating safety of your vehicle could be affected if maintenance work is carried out incorrectly. You could lose control of the vehicle and cause an accident. The safety systems may also no longer be able to protect you or others as they are designed to do.

Always have maintenance work carried out at a qualified specialist workshop.





Problem	Possible causes/consequences and ► Solutions
<p>The brakes have insufficient or no braking power.</p>	<p> <b>Risk of accident</b></p> <p>There is insufficient brake fluid in the hydraulic system. The hydraulic system is leaking.</p> <ul style="list-style-type: none"> <li>► Stop the vehicle as soon as possible, paying attention to road and traffic conditions.</li> <li>► Have the hydraulic system checked at a qualified specialist workshop.</li> </ul>
<p>The braking effect is uneven.</p>	<p> <b>Risk of accident</b></p> <p>The condition of the tyres is inadequate.</p> <ul style="list-style-type: none"> <li>► Check the tyre condition (► page 37).</li> </ul>
<p>The braking effect is uneven.</p>	<p> <b>Risk of accident</b></p> <p>The tyre pressure in the individual tyres varies or is insufficient.</p> <ul style="list-style-type: none"> <li>► Check and correct the tyre pressure (► page 189).</li> </ul>
<p>The brake circuits are not reaching the reservoir pressure, or are not reaching it quickly enough.</p>	<p> <b>Risk of accident</b></p> <p>The compressor is not supplying enough air or there is a leak in the compressed-air brake system.</p> <ul style="list-style-type: none"> <li>► Have the compressed-air brake system checked at a qualified specialist workshop as soon as possible.</li> </ul>
<p>It is not possible to release the parking brake.</p>	<p>The reservoir pressure in the auxiliary consumer circuit (spring-loaded parking brake) is too low.</p> <ul style="list-style-type: none"> <li>► Have the compressed-air brake system checked at a qualified specialist workshop as soon as possible.</li> </ul>

## Steering

### WARNING

The operating safety of your vehicle could be affected if maintenance work is carried out incorrectly. You could lose control of the vehicle and cause an accident. The safety systems may also no longer be able to protect you or others as they are designed to do.

Always have maintenance work carried out at a qualified specialist workshop.

Problem	Possible causes/consequences and ► Solutions
The vehicle is hard to steer. Steering is difficult while driving straight ahead.	<p> <b>Risk of accident</b></p> <p>There is not enough oil in the hydraulic system. The hydraulic system is leaking.</p> <p>► Have the hydraulic system checked immediately at a qualified specialist workshop.</p>
The vehicle is hard to steer. Steering is difficult while driving straight ahead.	<p> <b>Risk of accident</b></p> <p>The power steering pump is not working. The belt drive is loose or has torn.</p> <p>► Have the hydraulic system checked immediately at a qualified specialist workshop.</p>
The vehicle is hard to steer. Steering is difficult while driving straight ahead.	<p> <b>Risk of accident</b></p> <p>The tyre pressure in the individual tyres is different or insufficient.</p> <p>► Check and correct the tyre pressure (► page 189).</p>
Steering is difficult while driving straight ahead. The direction of travel needs to be continually corrected.	<p> <b>Risk of accident</b></p> <p>The steering play is too great.</p> <p>► Check the steering play (► page 79).</p> <p>► Have the steering checked immediately at a qualified specialist workshop.</p>

## Auxiliary heating

### WARNING

If service work is not carried out correctly, the operating safety of your vehicle may be affected. This could cause you to lose control of your vehicle and cause an accident. Moreover, the safety systems may no longer be able to protect you or others as they are designed to do.

Always have service work carried out at a qualified specialist workshop.

Problem	Possible causes/consequences and ► Solutions
<p>The <b>Err</b> message appears in the timer display panel.</p>	<p>Lack of fuel.                      The fuel tank is less than ¼ full. The auxiliary heating switches off automatically.</p> <ul style="list-style-type: none"> <li>► Refuel at the nearest filling station.</li> <li>► Then, start the auxiliary heating several times until the fuel lines are full.</li> </ul>
<p>The <b>Err</b> message appears in the timer display panel.</p>	<p>A malfunction has occurred.</p> <ul style="list-style-type: none"> <li>► Have the auxiliary heating checked at a qualified specialist workshop.</li> </ul>
<p>The <b>ini</b> message appears in the timer display panel.</p>	<p>The power supply has been interrupted. All stored settings are deleted.                      Automatic hardware recognition is currently active.</p> <ul style="list-style-type: none"> <li>► Once automatic hardware recognition is complete, set the week day, time and operating duration (► page 73).</li> <li>► Set the switch-on time (► page 74).</li> </ul>
<p>The auxiliary heating switches off automatically and/or cannot be switched on.</p>	<p>Lack of fuel                      The fuel tank is less than ¼ full. The auxiliary heating switches off automatically.</p> <ul style="list-style-type: none"> <li>► Refuel at the nearest filling station.</li> <li>► Then, start the auxiliary heating several times until the fuel lines are full.</li> </ul>
<p>The auxiliary heating switches off automatically and/or cannot be switched on.</p>	<p>The low-voltage protection system integrated in the control unit switches off the auxiliary heating because the on-board voltage is less than 20 V.</p> <ul style="list-style-type: none"> <li>► Have the alternator and battery checked.</li> </ul>
<p>The auxiliary heating switches off automatically and/or cannot be switched on.</p>	<p>The fuse is blown.</p> <ul style="list-style-type: none"> <li>► Replace the fuse (► page 176).</li> <li>► Have the cause of the blown fuse determined at a qualified specialist workshop.</li> </ul>
<p>The hot-water auxiliary heater has overheated.</p>	<p>The coolant level is too low.</p> <ul style="list-style-type: none"> <li>► Check the coolant level and top up if necessary (► page 136).</li> </ul>
<p>The hot-water auxiliary heater has overheated.</p>	<p>The air ducts are blocked.</p> <ul style="list-style-type: none"> <li>► Make sure that the flow of hot air is not blocked.</li> <li>► Have the auxiliary heating checked at a qualified specialist workshop.</li> </ul>

## Headlamps

### WARNING

If service work is not carried out correctly, the operating safety of your vehicle may be affected. This could cause you to lose control of your vehicle and cause an accident. Moreover, the safety systems may no longer be able to protect you or others as they are designed to do.

Always have service work carried out at a qualified specialist workshop.

Problem	Possible causes/consequences and ► Solutions
The headlamps or turn signals are misted up on the inside.	Air humidity is very high. ► Drive with the headlamps switched on. The headlamps are demisted after a short distance.
The headlamps or turn signals are misted up on the inside.	The headlamp housing or turn signal housing is not sealed and moisture has been able to enter. ► Have the headlamps checked at a qualified specialist workshop.

## Windscreen wipers

### WARNING

If service work is not carried out correctly, the operating safety of your vehicle may be affected. This could cause you to lose control of your vehicle and cause an accident. Moreover, the safety systems may no longer be able to protect you or others as they are designed to do.

Always have service work carried out at a qualified specialist workshop.


Problem	Possible causes/consequences and ► Solutions
The windscreen wipers are jammed.	The wiper movement is obstructed, e.g. by leaves or snow. The wiper motor has been deactivated. ► Stop the vehicle as soon as possible. For safety reasons, remove the key from the ignition lock. ► Remove the cause of the obstruction. ► Switch on the windscreen wipers again.
The windscreen wipers have stopped working completely.	There is a malfunction in the windscreen wiper drive. ► Select another wiper speed on the combination switch. ► Have the windscreen wipers checked at a qualified specialist workshop.

## Fuel and fuel tank

### WARNING

If service work is not carried out correctly, the operating safety of your vehicle may be affected. This could cause you to lose control of your vehicle and cause an accident. Moreover, the safety systems may no longer be able to protect you or others as they are designed to do.


Always have service work carried out at a qualified specialist workshop.

Problem	Possible causes/consequences and ► Solutions
The fuel tank has run completely dry.	There is air in the fuel system. ► Bleed the fuel system (► page 165).
Fuel is leaking from the vehicle.	 <b>Risk of explosion</b> The fuel line or the fuel tank is faulty. Leaking fuel creates a risk of fire or explosion. ► Switch off the ignition immediately. ► Remove the key from the ignition lock. ► Do not restart the engine under any circumstances. ► Consult a qualified specialist workshop.

## Engine

### Bleeding the fuel system

If the fuel tank has been run dry, there is a possibility that the engine may not start immediately after refuelling because air may remain in the fuel system.

 Too many attempts to start the engine could drain the battery.

- **After refuelling:** turn the key to position **2** in the ignition lock for approximately 10 seconds.
- Turn the starter motor for up to 60 seconds without interruption until the engine is running smoothly.

If the engine does not start:

- Wait approximately two minutes.
- Turn the starter motor for up to 60 seconds again without interruption until the engine is running smoothly.

If this attempt is also unsuccessful, do not attempt to start the engine again. Consult a qualified specialist workshop.

## Flat tyre

### General notes

You will find safety-relevant information on tyres and wheels in the "Safety" section .

### Vehicle preparation

- Stop the vehicle as far away as possible from traffic and on a level, firm and non-slip surface.
- Switch on the hazard warning lamps.
- Engage the steering wheel lock in the straight-ahead position.
- Apply the parking brake.
- Vehicles with manual transmission: engage first gear or reverse gear.

- ▶ Vehicles with automatic transmission: move the selector lever to position **P**.
- ▶ Any passengers should leave the vehicle, ensuring that they are not endangered as they do so.
- ▶ Place the warning triangle or hazard warning lights at a suitable distance. Observe legal requirements.

## Changing a wheel in the event of a flat tyre

### Important safety notes

#### WARNING

To avoid the risk of serious or even fatal injury and to avoid damage to the vehicle, observe the following:

- the vehicle's jack is intended only to raise the vehicle for a short time when changing a wheel.
- position the jack on the appropriate jacking point only. Make sure that the jack is correctly positioned under the jacking point before raising the vehicle.
- the jack must be placed on a firm, flat surface.
- before raising the vehicle, you should also secure it against rolling away, e.g. by placing chocks under the wheels. never release the parking brake while the vehicle is raised.
- make sure that the distance between the underside of the tyres and the ground does not exceed 30 mm. The vehicle could otherwise slip off the jack or tip over.
- never place your hands or feet under the raised vehicle.
- never start the engine, and prevent other jolts or vibrations while the vehicle is raised. The vehicle could otherwise slip off the jack.

### Preparing to change a wheel

- ▶ Prepare the vehicle as described (▷ page 165).
- ▶ Secure the vehicle against rolling away using chocks or similar items. Use the wheel chock (▷ page 149) to do so.

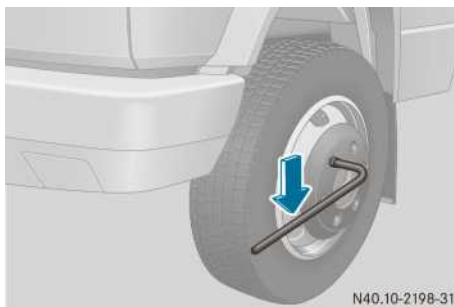
#### WARNING

The vehicle could slip off the jack on uphill and downhill gradients.

To avoid the risk of causing serious or even fatal injury or damage to the vehicle, do not change wheels on uphill and downhill gradients.

On a level road:

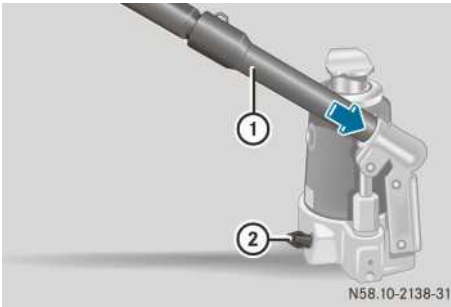
- ▶ Place chocks in front of and behind the wheel which is diagonally opposite the wheel you wish to change.
- ▶ Take the vehicle tool kit from the stowage space behind the driver's seat (▷ page 148).
- ▶ Remove the spare wheel from the spare wheel bracket (▷ page 150).



- ▶ Loosen the wheel nuts on the wheel to be changed by about one turn. Do not remove the wheel nuts.

### Hydraulic jack

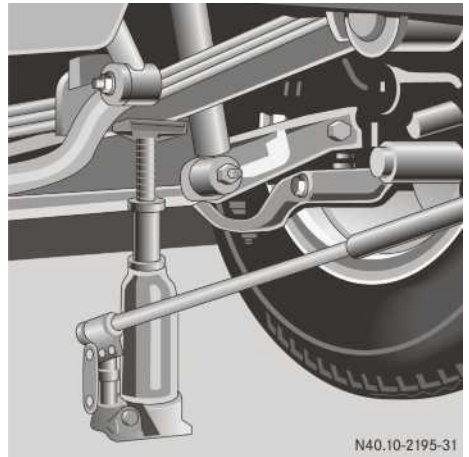
- ▶ Assemble the two-part pump lever for the jack.



- ▶ Close pressure release screw ②.
  - ▶ To do this, use the flattened section on pump lever ① to turn pressure release screw ② clockwise to the stop.
- i** Never turn pressure release screw ② more than 1 or 2 full turns. Hydraulic fluid could otherwise escape.
- ▶ Insert pump lever ① into the recess on the jack and secure by turning it clockwise.
  - ▶ Make sure that the jack is positioned directly under the jacking points described below.
  - ▶ Raise the vehicle by pumping the lever until the wheel is raised clear of the ground. Make sure that the distance between the underside of the tyres and the ground does not exceed 30 mm.

### Jacking point

The jacking point for all axles except the driven front axle is located directly in front of the respective axle under the leaf spring.



Jacking point (example: front axle)

On a vehicle with a driven front axle, the vehicle jacking point is located under the axle carrier tube.



Jacking point (example: driven front axle)

- !** Do not place the jack on the differential case.

### Removing a wheel

- ▶ Unscrew the wheel nuts securing the wheel nut cover.
- ▶ Loosen all the wheel nuts.
- ▶ Remove all but three evenly spaced wheel nuts.

**!** Do not place the wheel nuts or spherical spring washers in sand or dirt. The threads of the wheel nuts and wheel hubs could otherwise be damaged when being fitted.

#### **WARNING**

Remove the last three wheel nuts when it is clear that the wheel is being held tension-free on the wheel bolts. Otherwise, the wheel could fall off or tip over when the wheel nuts are removed and cause injury to you or others.

- ▶ When the wheel is being held tension-free on the wheel bolts, remove the wheel nuts.
- ▶ Remove the wheel.

### Fitting a new wheel

#### **WARNING**

To reduce the risk of serious or fatal injuries and to avoid damage to the vehicle, observe the following:

- replace the wheel nuts and spherical spring washers if they are damaged or have become rusty.
- never oil or grease wheel nuts.
- if a wheel hub thread is damaged, you must not drive the vehicle.  
Consult a qualified specialist workshop.
- for safety reasons, Mercedes-Benz recommends that you only use wheel nuts that have been specially approved for Mercedes-Benz vehicles. Other wheel nuts could work loose.
- Do not tighten the wheel nuts completely while the vehicle is still jacked up. The vehicle could otherwise tip.

- ▶ Clean the wheel and wheel hub contact surfaces.
- ▶ Replace the wheel and screw on three spherical spring washers with wheel nuts.

#### **Twin tyres:**

Before replacing the inner wheel, make sure that all spring washers are sitting correctly.

- ▶ Check wheel centring.  
The wheel bolts must be aligned with the holes of the disc wheel.
- ▶ Screw on the remaining spherical spring washers with wheel nuts and tighten all wheel nuts slightly.

### Lowering the vehicle

- ▶ Open the pressure release screw on the jack with pump lever slowly by one turn (▷ page 166).
- ▶ Carefully lower the vehicle.
- ▶ Put the jack aside.
- ▶ Tighten the wheel nuts in a crosswise pattern.  
Observe the tightening torque.

**!** The tightening torque is:

- 180 Nm for M14 x 1.5
- 250 Nm for M18 x 1.5
- ▶ Push the piston on the hydraulic jack in again and close the pressure release screw.
- ▶ Secure the faulty wheel in the spare wheel bracket (▷ page 150).
- ▶ Stow the jack and the vehicle tool kit.
- ▶ Check and correct the tyre pressure (▷ page 189).
- ▶ Retighten the wheel nuts to the specified tightening torque after driving 50 km.

### Retightening wheel nuts/wheel bolts

#### **WARNING**

The wheels could work loose if the wheel nuts and bolts are not tightened to the specified tightening torque. There is a risk of accident. Have the tightening torque immediately checked at a qualified specialist workshop after a wheel is changed.

Retighten the tightening torque to the specified tightening torque again after approx-

imately 1000 to 5000 km if new or repainted rims have been fitted.

Tightening torque (► page 168)

## Electrical system

### Notes on replacing bulbs

Bulbs and lamps are an important aspect of vehicle safety. You must therefore make sure that all bulbs are in working order at all times.

#### WARNING

Bulbs and lamps can be very hot. You should therefore allow them to cool down before you change them. Otherwise, you could be burned if you touch them.

Keep bulbs out of the reach of children. Otherwise, they could damage the bulbs, for example, and injure themselves.

Never use a bulb which has been dropped. Such a bulb may break or even explode and injure you.

Halogen bulbs are pressurised and can explode when you change them, particularly if they are very hot. You should therefore wear eye protection and gloves when you are changing them.

- To avoid a short-circuit, switch off the lighting system before replacing a bulb.
- Only touch new bulbs with a clean lint-free cloth or similar item. Do not work with wet or greasy fingers.
- Only fit 24 V bulbs of the same type and of the correct wattage.

Vehicles with halogen load compartment lighting:

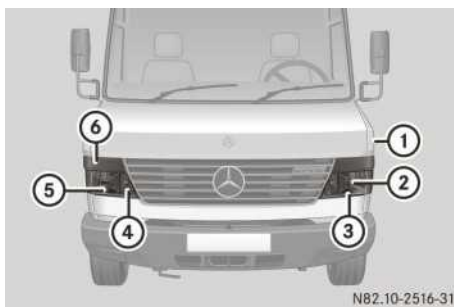
For the load compartment lighting, only fit 12 V bulbs of the same type as before and of the correct wattage.

- Have the headlamp setting checked regularly.
- If the new bulb still does not light up, consult a qualified specialist workshop.

- ❗ Make sure the bulbs are always securely fitted.

### Replacing bulbs

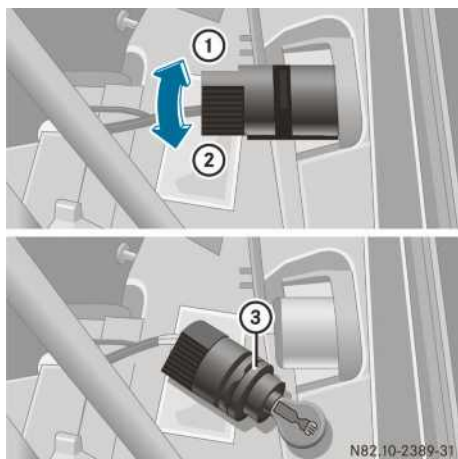
#### Front bulbs



	Bulb	Model
①	Additional indicator	21 W
②	Dipped-beam headlamps	H1 70 W
③	Side lamps/ parking lamps	5 W
④	Main-beam headlamps	H1 70 W
⑤	Front foglamps	H1 70 W
⑥	Turn signal lamp	21 W

#### Turn signal lamp

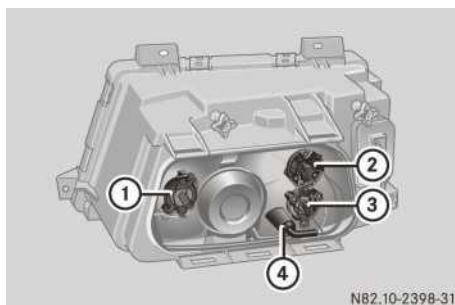
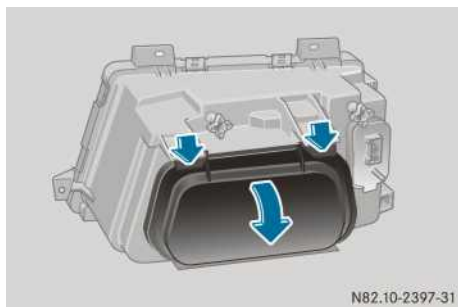
- Open the front flap.



- ▶ Turn bulb holder (3) anti-clockwise (1) and remove it.
- ▶ Applying light pressure to the bulb, turn it anti-clockwise and remove from bulb holder (3).
- ▶ Press the new bulb into the bulb holder and screw it in clockwise.
- ▶ Insert bulb holder (3) into the turn signal lamp and tighten it clockwise (2).

### Headlamps

- ▶ Switch off the lights.
- ▶ Open the front flap.



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- ① Main-beam headlamps
  - ② Dipped-beam headlamps
  - ③ Front foglamps
  - ④ Side lamps and parking lamps
- ▶ Unclip the housing cover, lift in the direction of the arrow and remove it.

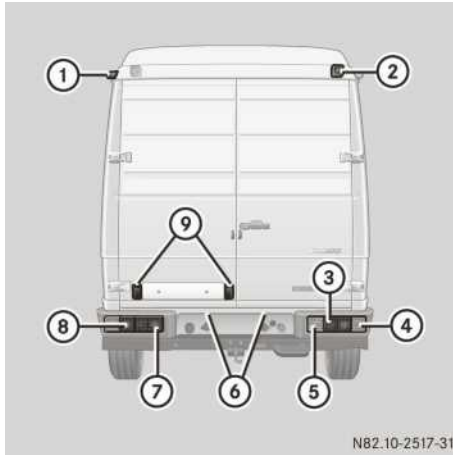
### Dipped-beam headlamps, main-beam headlamps, front foglamps

- ▶ Pull the connector off the bulb.
- ▶ Release the retainer spring and remove the bulb.
- ▶ Insert the new bulb such that the base locates in the recess of the bulb holder.
- ▶ Attach the retainer spring and plug the connector onto the bulb.
- ▶ Align the bottom of the housing cover and fold it up until it engages.

### Side lamps and parking lamps

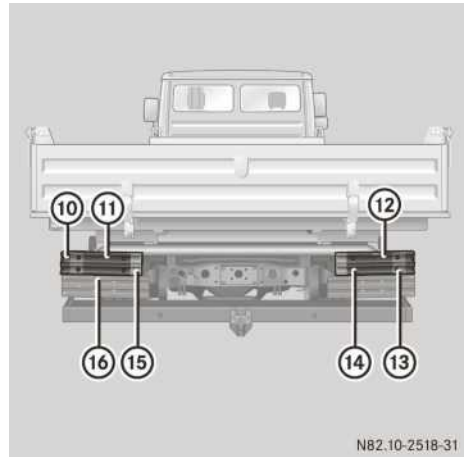
- ▶ Pull out bulb holder (4) together with the bulb and change the bulb.
- ▶ Remove the bulb from the bulb holder.
- ▶ Press the new bulb into the bulb holder.
- ▶ Insert the bulb holder into the reflector.
- ▶ Align the bottom of the housing cover and fold it up until it engages.

## Rear bulbs



Panel van

	<b>Bulb</b>	<b>Model</b>
①	Perimeter lamp	5 W
②	Additional indicator	21 W
③	Tail lamps/parking lamps	10 W
④	Turn signal lamp	21 W
⑤	Reversing lamp (co-driver's side)	21 W
⑥	Licence plate lamp on vehicles without trailer coupling	5 W
⑦	Rear foglamp (driver's side)	21 W
⑧	Brake lamps	21 W
⑨	Licence plate lamp on vehicles with trailer coupling	10 W

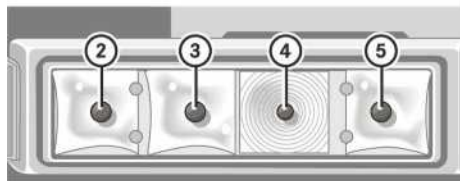


Platform/tipper

	<b>Bulb</b>	<b>Model</b>
⑩	Outline lamp	5 W
⑪	Tail lamps/parking lamps	5 W
⑫	Brake lamps	21 W
⑬	Turn signal lamp	21 W
⑭	Rear foglamp (driver's side)	21 W
⑮	Reversing light	21 W
⑯	Licence plate lamp (driver's side)	5 W

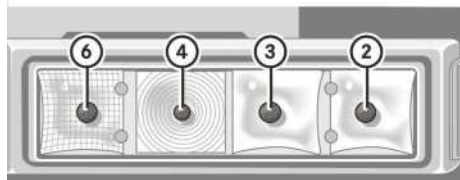
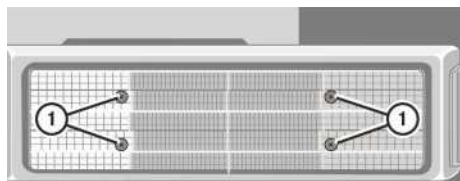
## Changing the rear bulbs (panel van)

### Rear light cluster



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Tail lamp on driver's side



N82.10-2520-31

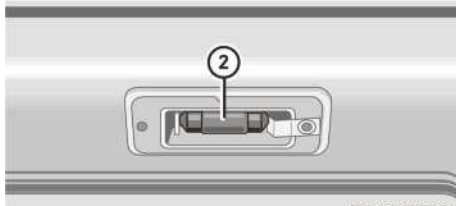
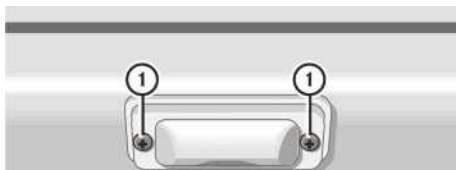
Tail lamp on co-driver's side

- ① Screws
  - ② Turn signal lamp
  - ③ Brake lamps
  - ④ Tail lamps/parking lamps
  - ⑤ Rear foglamp (driver's side)
  - ⑥ Reversing lamp (co-driver's side)
- ▶ Switch off the lights.
  - ▶ Undo screws ① and remove the lamp lens.

- ▶ Applying light pressure to the bulb, turn it anti-clockwise and remove from the bulb holder.
- ▶ Press the new bulb into the bulb holder and screw it in clockwise.
- ▶ Position the lamp lens and tighten screws ①.

### Licence plate illumination

On vehicles without trailer coupling:



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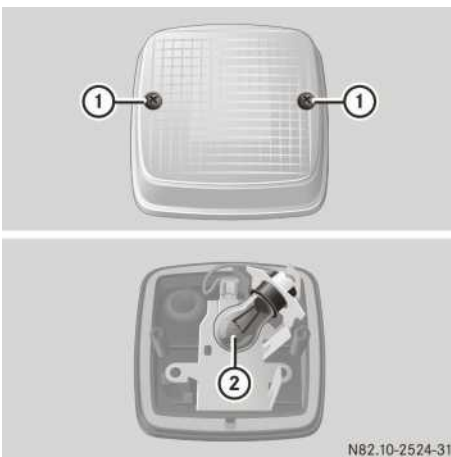
- ▶ Switch off the lights.
- ▶ Unscrew screws ① and remove the cover with the lamp lens.
- ▶ Remove bulb ② from the bulb holder.
- ▶ Insert new bulb ②.
- ▶ Position the lamp lens and tighten screws ①.

On vehicles with trailer coupling:



- ▶ Switch off the lights.
- ▶ Unscrew screw ① and remove the cover with the lamp lens.
- ▶ Applying light pressure to bulb ②, turn it anti-clockwise and remove from the bulb holder.
- ▶ Press new bulb ② into the bulb holder and screw it in clockwise.
- ▶ Position the cover with the lamp lens and tighten screw ①.

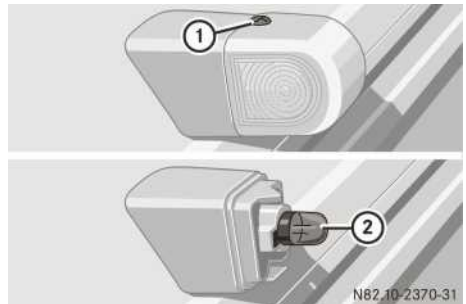
#### Additional indicator on the roof



- ▶ Undo screws ① and remove the lamp lens.
- ▶ Applying light pressure to bulb ②, turn it anti-clockwise and remove from the bulb holder.
- ▶ Press new bulb ② into the bulb holder and screw it in clockwise.
- ▶ Position the lamp lens and tighten screws ①.

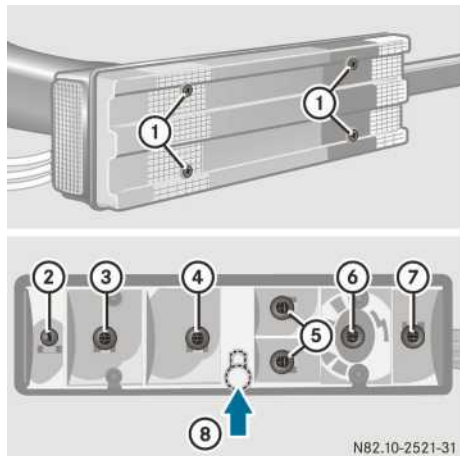
**i** When attaching the lamp lens, make sure that it is installed in the correct position. The label "TOP" points upwards.

#### Perimeter lamp

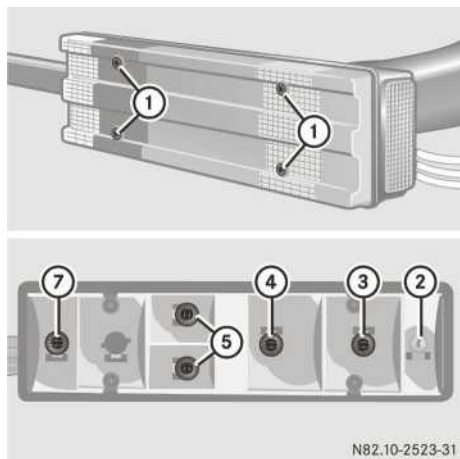


- ▶ Undo screw ① and remove the lamp lens.
- ▶ Applying light pressure to bulb ②, turn it anti-clockwise and remove from the bulb holder.
- ▶ Press new bulb ② into the bulb holder and screw it in clockwise.
- ▶ Position the lamp lens and tighten screw ①.

### Changing the rear bulbs (platform/tipper)



Tail lamp on driver's side



Tail lamp on co driver's side

- ① Screws
  - ② Outline lamp
  - ③ Turn signal lamp
  - ④ Brake lamps
  - ⑤ Tail lamps/parking lamps
  - ⑥ Rear foglamp (driver's side)
  - ⑦ Reversing light
  - ⑧ Licence plate lamp (driver's side)
- Switch off the lights.  
 ► Undo screws ① and remove the lamp lens.

- To change the bulb for the licence plate lamp, remove the reflector unit.
- Applying light pressure to the bulb, turn it anti-clockwise and remove from the bulb holder.
- Press the new bulb into the bulb holder and screw it in clockwise.
- Insert the reflector unit.
- Position the lamp lens and tighten screws ①.

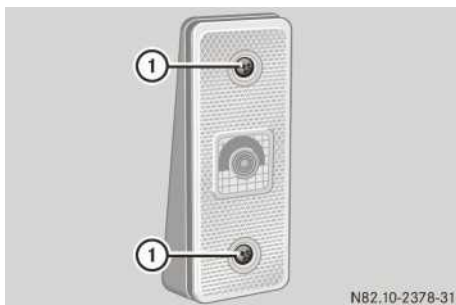
### Changing additional bulbs

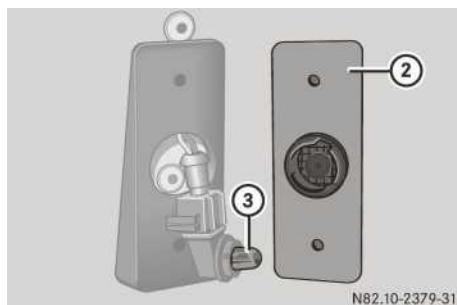
#### Additional indicator 21 W



- Undo screws ① and remove the lamp lens.
- Applying light pressure to bulb ②, turn it anti-clockwise and remove from the bulb holder.
- Press the new bulb into the bulb holder and screw it in clockwise.
- Position the lamp lens and tighten screws ①.

#### Side marker lamp 3 W





- ▶ Switch off the lights.
- ▶ Unscrew screws ① and remove the lamp lens with the bulb holder. To do this, carefully remove the bulb holder from the lamp housing.
- ▶ Turn light lens ② anti-clockwise and remove it from the bulb holder.
- ▶ Remove bulb ③ from the bulb holder.
- ▶ Press new bulb ③ into the bulb holder.
- ▶ Screw lamp lens ② onto the bulb holder.
- ▶ Position lamp lens ② together with the bulb holder onto the lamp housing and tighten screws ①.

### Interior light, high-roof cab, 10 W



- ▶ Switch off the interior lighting.
- ▶ Carefully prise off the lamp lens using a screwdriver, for example.

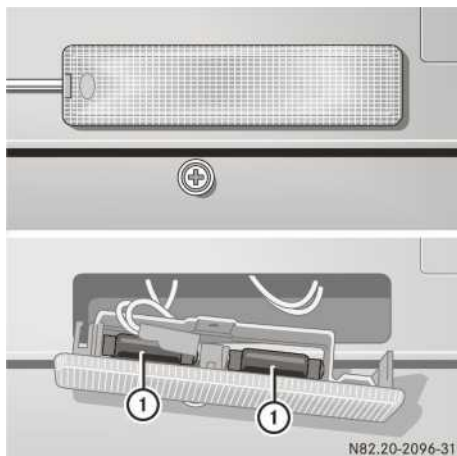
- ▶ Applying light pressure to bulb ①, turn it anti-clockwise and remove from the bulb holder.
- ▶ Press new bulb ① into the bulb holder and screw it in clockwise.
- ▶ Align the lamp lens with the covering and clip it in so that it engages.

### Interior light, low-roof cab, 10 W



- ▶ Switch off the interior lighting.
- ▶ Carefully prise off lamp lens ① using a screwdriver, for example.
- ▶ Change the bulbs as shown for the interior light in the high-roof cab.

### Luggage compartment lamp, K 10 W



- ▶ Switch the load compartment lighting off.
- ▶ Carefully prise off the lamp lens using a screwdriver, for example.

- ▶ Press the contact spring of the bulb holder outwards and remove bulb ①.
- ▶ Insert new bulb ①.
- ▶ Align the lamp lens with the covering and clip it in so that it engages.

### Halogen load compartment light, YL 12 V, 20 W



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- ▶ Switch the load compartment lighting off.
- ▶ Carefully prise off the lamp lens from the lamp housing using a screwdriver, for example.
- ▶ Turn 12 V halogen bulb ① with gentle pressure until the two pins on the base of the bulb fit through the recesses on the holder.
- ▶ Pull the 12 V halogen bulb out of the holder.
- ▶ Insert new 12 V halogen bulb ① into the holder until the two pins on the base of the bulb fit through the recesses on the holder.
- ▶ Press new 12 V halogen lamp ① into the holder and screw it in.
- ▶ Align the lamp lens with the lamp housing and clip it in so that it engages.

## Fuses

### Important safety notes

Blown fuses must be replaced with fuses of the same rating and which have the amperage specified in the fuse allocation chart. Fuses of the same rating can be recognised by the colour and amperage. A Mercedes-Benz Service Centre will be happy to advise you.

### WARNING

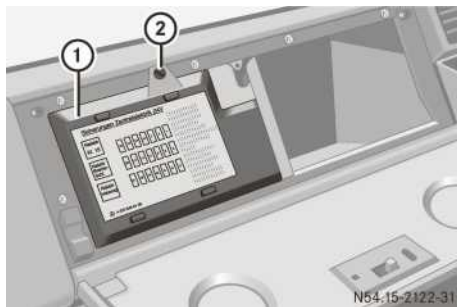
Only use fuses that have been approved for Mercedes-Benz vehicles and that have the required fuse rating for the systems concerned. Do not attempt to repair or bridge faulty fuses. A circuit overload could otherwise cause a fire. Have the cause traced and rectified at a qualified specialist workshop.

- i** Always carry spare fuses in the vehicle for emergencies.
- ▶ Switch off the ignition and the electrical consumers before changing a fuse.

### Fuse box

The fuses, relays and spare fuses (24 V) are located in the fuse box in the glove compartment.

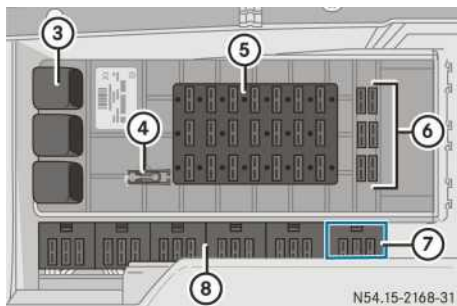
- i** The following fuses are located in the seat base:
  - F56 – F58 (12 V) for the ABS hydraulic assembly and the charge indicator
  - F60 (24 V) for the battery main switch and emergency shutdown
  - F61 (24 V) for the auxiliary heating system



Glove compartment open

- ▶ **To open:** open the glove compartment (▷ page 102).
- ▶ Turn quick release fastener ② about 90° using a suitable object, e.g. a coin, and remove cover ①.
- ▶ **To close:** make sure that quick release fastener ② is turned so that it is horizontal. Fit the bottom of cover ① and fold up.
- ▶ Turn quick release fastener ② about 90° and lock cover ①.

The fuse allocation chart for standard equipment fuses and relays is on the front of cover ① of the fuse allocation chart. The fuse allocation chart for optional equipment fuses is on the reverse side of the cover. Both charts show all numbered fuses and relays.



Example: fuse box

- ③ Relays
- ④ Fuse extractor
- ⑤ Central electrics fuses, 24 V (standard equipment) F1 – F21
- ⑥ Spare fuses

- ⑦ Diodes
- ⑧ Fuses for items of optional equipment (installation and numbering depend on the equipment fitted)

### Power supply for additional auxiliary consumers

⚠ Observe the following points when retrofitting additional electrical consumers:

- Do not connect additional consumers to fuses which are already allocated.
- Do not connect additional cables to existing ones (e.g. using an insulation piercing connecting device).
- Use additional fuses to ensure that retrofitted electrical consumers have adequate fuse protection.

## Jump-starting, tow-starting and towing away

### Jump-starting

#### Jump-starting using the battery of another vehicle

**⚠ WARNING**

Explosive oxyhydrogen is produced when batteries are being charged. Therefore provide sufficient ventilation for any work on batteries.

Avoid naked flames and do not smoke in the vicinity of batteries.

Avoid the creation of sparks (e.g. when disconnecting the batteries). Sparks could ignite the oxyhydrogen, causing the batteries to explode. This could result in serious injury to yourself or others.

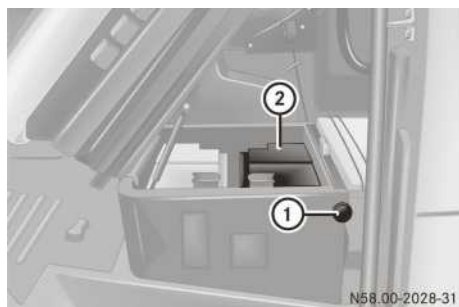
**⚠ WARNING**

When jump-starting, there is a risk of acid burns due to gases escaping from the batteries. Do not lean over the batteries when jump-starting.

- ❗ Avoid repeated and lengthy starting attempts.  
Do not use a rapid-charging device to start the engine.

Observe the following points:

- Discharged batteries can freeze at temperatures of -10 °C. Do not start the engine if the battery is frozen. Let the battery thaw first.
- Only use batteries with the same nominal voltage and a similar capacity.
- Only use jump leads which are protected against polarity reversal and which have a sufficient cross-section (approximately 70 mm<sup>2</sup>) and insulated terminal clamps.
- ▶ Before jump starting, disconnect any mobile communications systems, e.g. telephone, two-way radio, fax machine, from the electrical system.
- ▶ Make sure that the two vehicles do not touch.
- ▶ Apply the parking brake.
- ▶ Switch off all electrical consumers.
- ▶ Turn the key back to position **0** in the ignition lock.
- ▶ Switch on the power supply on vehicles with a battery main switch (▷ page 61).



Driver's seat folded forward

- ① Release knob
- ② Battery

- ▶ Pull out release knob ① and tilt the driver's seat forward.
- ▶ Remove the cover of the positive terminal.

- ▶ Connect first the positive terminals, then the negative terminals with the jump leads. Always start with the battery of the donor vehicle.
- ▶ Run the donor vehicle's engine at a higher engine speed.
- ▶ Switch on an electrical consumer, e.g. the blower. Do not switch on the lights.
- ▶ Turn the key to position **2** in the ignition lock.
- ▶ Start the engine and let it idle.
- ▶ Disconnect the jump leads, first from the negative terminals and then from the positive terminals.

- ❗ When you remove the jump leads, let the engine of the vehicle being jump-started idle. This avoids damage being caused to the vehicle electronics.

#### ⚠ WARNING

Make sure that nobody can become trapped as you fold down the driver's seat. Be especially careful if there are children near the vehicle.

Make sure that the driver's seat engages audibly when it is folded back.

If the driver's seat is not properly engaged, it could tip forward and injure you.

- ▶ Pull out release knob ① and tilt the driver's seat down until it engages audibly.
- ▶ Have the batteries inspected at a qualified specialist workshop.

#### Tow-starting

#### ⚠ WARNING

There is no power assistance for the steering and the service brake when the engine is not running.


You must then use significantly greater force to steer the vehicle and brake.

When tow-starting another vehicle, its weight should not be greater than the permissible gross weight of your vehicle.

 **WARNING**

If you are tow-starting a vehicle with a retarder, the retarder of the vehicle may brake in an uncontrolled manner.

Switch off the retarder before tow-starting.

The  indicator lamp on the instrument panel must be off. You could otherwise lose control of the vehicle and cause an accident.

- Do not tow-start vehicles with automatic transmission.
- Before tow-starting the vehicle, make sure that the battery is connected and charged. The ignition cannot be switched on otherwise and there will be no steering and braking assistance.
- On vehicles with a retarder, switch off the retarder (▷ page 90).
- If the engine does not start after a few seconds, try a jump-starting procedure using the battery of another vehicle (▷ page 177).
- Use a rigid towing bar and fasten it only to the front coupling jaw, as described in the section on towing (▷ page 179).
- If the compressed-air brake system has insufficient reservoir pressure, release the spring-loaded parking brake manually (▷ page 181).

**Vehicles with manual transmission:**

- ▶ Turn the key to position **2** in the ignition lock.
- ▶ Shift the transmission to the **2nd** or **3rd** gear and disengage the clutch.
- ▶ Have the vehicle tow-started.
- ▶ Engage the clutch slowly when the vehicle is rolling and depress the accelerator pedal.  
The engine starts after a few seconds.

**Towing****General notes** **WARNING**

Do not tow the vehicle if the key cannot be turned in the ignition lock. The steering is then locked and it will not be possible to steer the vehicle.

If you are having the vehicle towed and the engine is not running:

- there is no power assistance for the steering and braking
- the compressed air supply is unavailable

For this reason, the vehicle can only be steered and braked with increased effort. The spring-loaded parking brake may be activated in the event of pressure loss. This could cause you to come off the road when cornering or to crash into the towing vehicle.

Always use a towing bar for the towing procedure.

If the compressed-air brake system has insufficient reservoir pressure, release the spring-loaded parking brake manually.

Before towing, agree on hand signals with the driver of the towing vehicle.

You and the driver of the towing vehicle should adapt your driving style to the more difficult conditions.

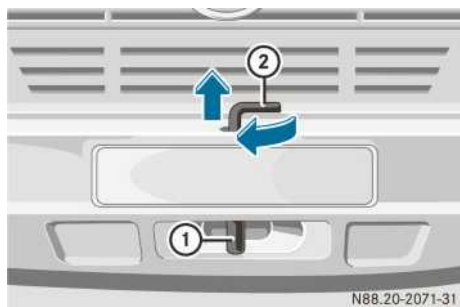
Comply with national regulations when towing.

When towing another vehicle, its weight should not be greater than the permissible gross weight of your vehicle.

It is preferable to have the vehicle transported on a transporter or trailer instead of towing it.

If you are towing the vehicle, you should use a rigid towing bar and secure it to the front coupling jaw only.

The front coupling jaw is designed for manoeuvring, towing and tow-starting.



① Coupling jaw

② Coupling pin

- ▶ Release coupling pin ②, swing it forwards approximately 90° and pull it out upwards.
- ▶ Use a rigid towing bar for towing and tow-starting, and allow the coupling pin to engage in the lock.

#### **WARNING**

A propeller shaft could fall off as it is being removed and injure you. Secure the propeller shaft before removal to prevent it from falling down, e.g. with the aid of another person or by tying the propeller shaft up.

**!** New bolts must always be used when the propeller shafts are refitted. The specified tightening torques must be observed.

**!** If you are towing the vehicle and the engine is not running, the compressed air supply is unavailable.

The spring-loaded parking brake may be activated in the event of pressure loss and when the parking brake is released. This may cause the brake to overheat. If the charge pressure in the compressed-air brake system drops, release the spring-loaded parking brake manually in order to tow the vehicle.

You will find information about releasing the spring-loaded parking brake in the "Releasing the spring-loaded parking brake" section (▷ page 181).

### **Towing out a bogged down vehicle**

- If the drive wheels are dug into loose or muddy ground, only tow the vehicle with extreme care. This especially applies to laden vehicles.
- Pull the vehicle smoothly and straight ahead. There is otherwise a risk of damage to the chassis.
- Do not tow the vehicle out with a trailer attached.
- Tow the vehicle out backwards in the tracks already made, if possible.

### **Towing vehicles with engine damage**

- i** For vehicles with automatic transmission, observe the separate manufacturer's operating instructions.
- ▶ Observe the general notes on towing (▷ page 179).
- ▶ On vehicles with manual transmission, turn the key to position **0** in the ignition lock.

#### **For towing distances up to 100 km**

- ▶ Shift the transmission to neutral.
- ▶ On all-wheel-drive vehicles, engage the transfer case in the on-road position .

**!** Do not exceed the maximum towing speed of 60 km/h. You could otherwise damage the transmission.

#### **For towing distances above 100 km**

- ▶ Remove the propeller shaft to the driven axle or, on all-wheel-drive vehicles, both propeller shafts.

### **Towing vehicles with transmission damage**

- ▶ Observe the general notes on towing (▷ page 179).
- ▶ Always remove the propeller shafts leading to the driven axles.

### Towing vehicles with front axle damage

- ▶ Observe the general notes on towing (▷ page 179).
- ▶ Turn the key in the ignition lock to position **0**.
- ▶ Raise the front axle.
- ▶ Observe the national regulations and rules for towing vehicles.
- ▶ On all-wheel-drive vehicles, remove the propeller shaft between the rear axle and the transfer case.

### Towing vehicles with rear axle damage

- ▶ Observe the general notes on towing (▷ page 179).
- ▶ On vehicles with a differential lock, engage the differential lock before removing the drive shaft.
- ▶ Remove both drive shafts.
- ▶ Collect escaping oil.
- ▶ Cover the openings to protect the bearings from dirt.
- ▶ On all-wheel-drive vehicles, also remove the propeller shaft between the front axle and the transfer case.

### Transporting the vehicle

The towing eye can be used to pull the vehicle onto a special transporter or trailer for transportation.

- ▶ **!** Only lash the vehicle down by the wheels or wheel rims, not by parts of the vehicle such as axle or steering components. Otherwise, the vehicle could be damaged.
- ▶ Shift the transmission to neutral.

### Releasing the spring-loaded parking brake

#### Important safety notes

##### WARNING

If you release the spring-loaded brake cylinders in an emergency, the vehicle parking brake will become inoperative. The vehicle could start moving of its own accord.

Before releasing the spring-loaded parking brake in an emergency:

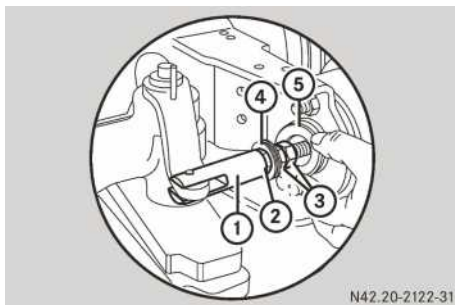
- secure the vehicle against rolling away using a chock
- engage first gear
- display a notice reading "Parking brake not working" in the cab within the driver's field of vision

Before using the vehicle again, go to a qualified specialist workshop and have:

- the brake system inspected
- the spring-loaded parking brake cylinder returned to an operational condition.

#### Standard brake system

If the reservoir pressure is not sufficient to release the parking brake, release the spring-loaded parking brake cylinder mechanically in an emergency. The spring-loaded brake cylinders are located on the left-hand and right-hand sides of the rear axle.



Release mechanism for the spring-loaded parking brake cylinder

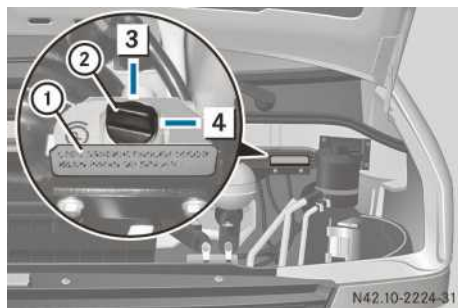
- ▶ **To release the spring-loaded parking brake:** secure the vehicle from rolling away with a wheel chock.
- ▶ Pull protective sleeve (5) out of metal clamp (4) and slide it inwards.
- ▶ Screw release screw (2) with lock nut (3) and the tensioning nut out of the fork in a tensioned condition. It must be possible for fork head (1) to move free of tension.
- ▶ Raise the vehicle (▷ page 166).
- ▶ Check that the wheel spins freely.
- ▶ If you cannot turn the wheel freely, turn back release screw (2) further and check again.

the service brake and the parking brake is released.

- ▶ **After repair:** if there is sufficient reservoir pressure, push the mushroom button of the pressure relief valve into the rest position (▷ page 87). The emergency release valve automatically closes and switch (2) turns to position (4). The vehicle is ready for driving.

### Brake system B83

In an emergency and if there is enough reservoir pressure in the service brake (at least 6.1 bar), you can release the spring-loaded parking brake once using the emergency release valve.



Emergency release valve under the bonnet

- ① Instruction label for securing the vehicle against rolling away
- ② Switch
- ③ Emergency release valve open – emergency position
- ④ Emergency release valve closed

- ▶ **To release the spring-loaded parking brake:** turn switch (2) to position (3). The auxiliary consumers circuit is supplied with compressed air via the brake circuit of

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### Useful information

These Operating Instructions describe all models and standard and optional equipment of your vehicle that were available at the time of printing. Country-specific variations are possible. Note that your vehicle cannot be fitted with all of the described functions. This also applies to systems and functions relevant to safety.

Read the information on qualified specialist workshops: (▷ page 14).

### Genuine Mercedes-Benz parts

Mercedes-Benz tests genuine Mercedes-Benz parts, conversion parts and accessories that have been specifically approved for the type of vehicle for:

- reliability
- safety
- suitability

Despite ongoing market research, Mercedes-Benz is unable to assess other parts.

Mercedes-Benz therefore accepts no responsibility for the use of such parts in Mercedes-Benz vehicles, even if they have been independently or officially approved.

In Germany and some other countries, certain parts are only officially approved for installation or modification if they comply with legal requirements. All genuine Mercedes-Benz parts satisfy these requirements.

Make sure that any replacement parts are suitable for your vehicle. In many countries, parts which result in a modification to the vehicle could invalidate the vehicle's general operating permit.

This is the case if:

- they cause a change to the vehicle type from that for which the vehicle's general operating permit was granted.
- other road users could be endangered.
- the emissions or noise levels are adversely affected.

The use of non-approved parts could affect your vehicle's operating safety. Mercedes-Benz therefore recommends that you use genuine Mercedes-Benz parts, conversion parts and accessories that have been approved for the type of vehicle.

### ⓘ Environmental note

Daimler AG also supplies reconditioned assemblies and parts which are of the same quality as new parts. For these, the same warranty applies as for new parts.

Genuine Mercedes-Benz parts, approved conversion parts and accessories are available from a Mercedes-Benz Service Centre. Here you will receive advice about permissible technical modifications, and the parts will be professionally fitted.

Always specify the vehicle identification number and engine number when ordering genuine Mercedes-Benz parts. The numbers can be found on the vehicle identification plates of your vehicle (▷ page 186) and on the vehicle data card in some vehicles.

### Vehicle electronics

#### Tampering with the engine electronics

#### ⚠ WARNING

For safety reasons and to maintain the operating permit, only allow a qualified specialist workshop to carry out work on the engine electronics and the corresponding parts. The vehicle's operating safety may otherwise be jeopardised.

**!** Only have engine electronics and the corresponding parts, such as control units, sensors or connector leads, serviced in a qualified specialist workshop. Otherwise, the vehicle parts may wear out more quickly. This can invalidate the general operating permit and the insurance cover, and lead to the loss of the implied warranty.

### Retrofitting electrical or electronic equipment

**!** If electrical or electronic equipment which does not fulfil the conditions mentioned below is used in the vehicle, the vehicle's general operating permit may be invalidated.

Electrical and electronic devices may not only reduce comfort but also the operating safety of the vehicle. If you retrofit such devices, their electromagnetic compatibility must be checked and verified.

If these devices are linked to functions associated with resistance to interference, they must have type approval. This applies to the device or its interfaces to the vehicle electronics, e.g. charging brackets.

The type approval document must adhere to either Directive 72/245/EEC or Regulation ECE-R 10, each according to the currently applicable version. The type-approved device must bear the **e/E** mark. The **e/E** mark can be obtained from the equipment manufacturer or an authorised testing centre.

Devices not linked to functions associated with resistance to interference do not require type approval. However, these devices must have a declaration of compliance for the maintenance of certain limiting values, according to Directive 89/336/EEC or Regulation 1995/5/EC. These limiting values are defined in Appendix I of the currently valid version of the Directive 72/245/EEC.

Telephones or two-way radios to be installed in the vehicle must be approved. You may

obtain further information from any Mercedes-Benz Service Centre.

**!** Damage or consequential damage arising from fitting equipment that is not approved for Mercedes-Benz is not covered by the Mercedes-Benz warranty.

When using mobile phones and two-way radios, Mercedes-Benz recommends connection to an approved exterior aerial. This is the only way to ensure optimal reception quality in the vehicle, and to minimise potential interference between the vehicle electronics and mobile phones or two-way radios.

#### WARNING

Excessive electromagnetic radiation may constitute a health hazard to yourself and others. The use of an exterior aerial takes into account current scientific discussions relating to the possible health risk posed by electromagnetic fields.

Therefore, only have the exterior aerial fitted at a qualified specialist workshop.

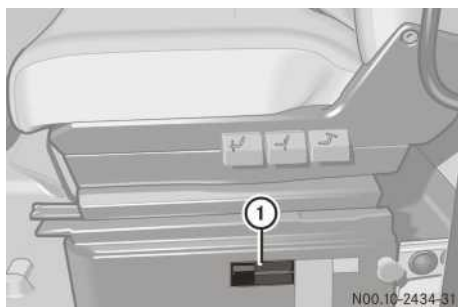
The transmission output of the mobile phone or two-way radio must not exceed the maximum transmission outputs listed.

Frequency range	Maximum transmission output (PEAK)
Short wave (f < 50 MHz)	100 W
4 m waveband	30 W
2 m waveband	50 W
Channel group communication/Tetra	35 W
70 cm waveband	35 W
GSM 900/AMPS	10 W
GSM 1800	10 W
UMTS	10 W

Telephones or two-way radios to be installed in the vehicle must be approved. You may

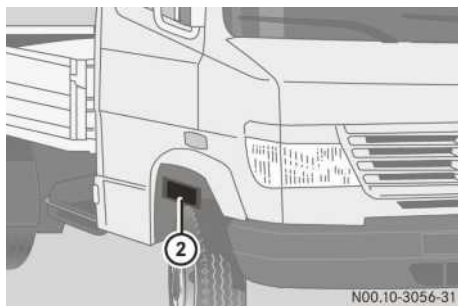
## Identification plates

### Vehicle identification plate



Vehicle identification plate on the base of the driver's seat

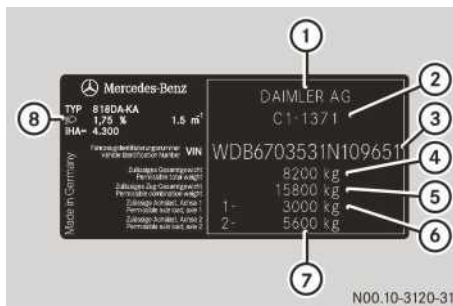
- ① Vehicle identification plate




The vehicle identification number (VIN) is on the vehicle identification plate and is also stamped on the chassis frame in the wheel housing on the right-hand side.

- ② Vehicle identification number (VIN)

### Data on the vehicle identification plate



Vehicle identification plate (example)

- ① Vehicle manufacturer (Daimler AG)  
 ② National type approval number<sup>12</sup>  
 ③ Vehicle identification number (VIN)  
 ④ Maximum permissible gross vehicle weight (kg)  
 ⑤ Maximum permissible gross trailer weight  
 ⑥ 1 - maximum permissible front axle load (kg)  
 ⑦ 2 - maximum permissible rear axle load (kg)  
 ⑧ TYP – vehicle model designation /   
 – Basic headlamp setting / Flue gas coefficient / iHA – Rear axle ratio

<sup>12</sup> Only given if required in the country of operation.

### Vehicle identification number (VIN)

<b>WDB</b>	<b>670353</b>	<b>1</b>	<b>N</b>	<b>109651</b>	
WDB					Vehicle manufacturer
	670353				Vehicle model
		1			Steering 1 Left-hand-drive vehicle 2 Right-hand-drive vehicle
			N		Code letter or number for manufacturing plant
				109651	Vehicle identification end number

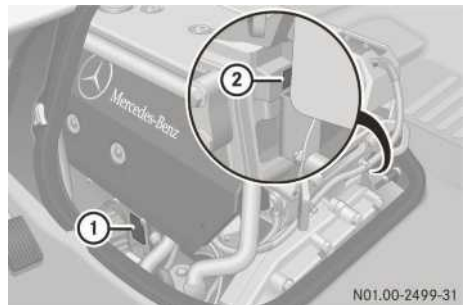
### Vehicle model designation

<b>8</b>	<b>18</b>	<b>DA-</b>	<b>KA</b>	
8				Maximum permissible gross vehicle weight in tonnes
	18			Engine power output in bhp (x10)
		DA-		Engine and drivetrain D Diesel engine and rear-wheel drive DA Diesel engine and all-wheel drive
			KA	Vehicle equipment (abbreviated designation) K Tipper KA Panel van O Bus RTW Recovery transporter T Tractor

### Engine data plate

The engine data plate is located on the engine block.

The engine number is also stamped on the opposite side on the crankcase.



- ① Engine data plate
- ② Engine number

N01.00-2499-31

## Operating data

## Compressed-air system (reservoir pressure)

	Vehicles	
	with BlueTec® exhaust gas aftertreatment	without BlueTec® exhaust gas aftertreatment
Service brake	12.0 bar 10 bar <sup>13</sup>	10 bar 8.5 bar <sup>13, 14</sup>
Brake circuit 1	min. 6.8 bar	min. 6.8 bar
Brake circuit 2	min. 6.8 bar	min. 6.8 bar
Brake circuit, trailer	min. 5.5 bar	min. 5.5 bar
Pressure regulator (cut-off pressure)	approx. 12.3 bar approx. 10.5 bar <sup>13</sup>	approx. 10.5 bar approx. 8.5 bar <sup>13, 14</sup>
Spring actuator/auxiliary consumers circuit	min. 6.5 bar	min. 6.5 bar
External compressed-air source (charging the compressed-air system)	max. 10 bar	max. 10 bar

## Engine

Speed limitation (emergency running mode)	approx. 1300 rpm
Idling speed	approx. 600 rpm
Minimum engine speed, driving	approx. 550 rpm
Engine brake (operating range)	2100 – 2700 rpm
Oil pressure (at idling speed)	min. 0.5 bar
Oil pressure (at engine rated speed)	min. 2.5 bar
Engine rated speed	approx. 2200 rpm
Operating/coolant temperature	approx. 70 – 95 °C
Maximum permissible coolant temperature	110 °C

<sup>13</sup> Vehicles with air suspension only<sup>14</sup> Tractor units (with trailer coupling) only

## Tyre pressure

### General notes

Observe the information on tyre pressure in the "Safety" section (▷ page 36).

#### WARNING

If the tyre pressure is too low, this:

- has a detrimental effect on road safety
- damages or destroys the tyres
- may cause tyre overheating or even spontaneous combustion

You could lose control of the vehicle and cause injury to yourself and others.

You should therefore check the tyre pressures regularly before commencing a journey and correct them if necessary.

- i** Only use tyre and wheel sizes approved for your vehicle. Also note the vehicle approval regulations relating to tyres in the country concerned.

These regulations may determine a specific type of tyre for your vehicle. These regulations may prohibit the use of certain types of tyre that are permitted in other countries.

Observe the required tyre load-bearing capacity and the speed index for your vehicle.

Set the correct tyre pressure before loading the vehicle. Once the vehicle is laden, check the tyre pressures and correct them if necessary.

When the vehicle is driven, the temperature of the tyre and, with it, the tyre pressure will increase according to speed and load.

You should therefore only correct tyre pressures when the tyres are cold. When the tyres are warm, you may only correct the tyre pressure if the values shown in the tyre pressure table are not reached even when the respective tyre temperature is taken into account.

- i** The tyre pressure changes by about 10 kPa (0.1 bar/1.5 psi) for each 10 °C

change in the air temperature. Remember to allow for this when checking tyre pressures inside, particularly in winter.

Example:

Inside temperature = approximately 20 °C

Outside temperature = approximately 0 °C

Tyre pressure to be set: prescribed tyre pressure +20 kPa (0.2 bar/3 psi)

- !** The pressure difference between tyres on any one axle must be no greater than 10 kPa (0.1 bar/1.5 psi).

Tyre pressures below 300 kPa (3 bar/44 psi) are not permitted.

The tyre pressure values are based on the permissible axle loads, which are listed on the vehicle identification plate located on the base of the driver's seat (▷ page 186).

The data is valid for a laden vehicle.

## Tyre pressures for permissible axle loads

## Front axle

Tyre/steel wheel	2100 kg	2300 kg	2500 kg	2900 kg	3000 kg
205/75 R 17.5 122/120 M 6.00 x 17.5			550 kPa (5.5 bar/ 78 psi)	600 kPa (6.0 bar/ 87 psi)	575 kPa (5.75 bar/ 83 psi)
215/75 R 16 C 113/111 N 6J x 16 H2	425 kPa (4.25 bar/ 62 psi)	450 kPa (4.5 bar/ 65 psi)			
215/75 R 17.5 124/123 M 6.00 x 17.5			450 kPa (4.5 bar/ 65 psi)	550 kPa (5.5 bar/ 78 psi)	550 kPa (5.5 bar/ 78 psi)
225/75 R 16 C 118/116 N 6J x 16 H2	425 kPa (4.25 bar/ 62 psi)	425 kPa (4.25 bar/ 62 psi)		525 kPa (5.25 bar/ 76 psi) <sup>15</sup>	
8.5 R 17.5 121/120 L 5.25 x 17.5			525 kPa (5.25 bar/ 76 psi)	600 kPa (6.0 bar/ 87 psi)	
9.5 R 17.5 129/127 L 6.75 x 17.5			500 kPa (5.0 bar/ 73 psi)	525 kPa (5.25 bar/ 76 psi)	550 kPa (5.5 bar/ 78 psi)

## Rear axle

Tyre/steel wheel	2700 kg	3000 kg	3200 kg	3900 kg
215/75 R 16 C 113/111 N 6J x 16 H2	300 kPa (3.0 bar/ 44 psi)	300 kPa (3.0 bar/ 44 psi)	325 kPa (3.25 bar/ 47 psi)	425 kPa (4.25 bar/ 62 psi)
225/75 R 16 C 118/116 N 6J x 16 H2			300 kPa (3.0 bar/ 44 psi)	400 kPa (4.0 bar/ 58 psi)

<sup>15</sup> Only vehicles with a permissible axle load of 2600 kg.

Tyre/steel wheel	4300 kg	4700 kg	5200 kg	5600 kg
205/75 R 17.5 122/120 M 6.00 x 17.5	475 kPa (4.75 bar/ 69 psi)	525 kPa (5.25 bar/ 76 psi)	550 kPa (5.5 bar/ 78 psi)	650 kPa (6.5 bar/ 94 psi)  575 kPa (5.75 bar/ 83 psi) <sup>16</sup>
215/75 R 16 C 113/111 N 6J x 16 H2	450 kPa (4.5 bar/ 65 psi)			
215/75 R 17.5 124/123 M 6.00 x 17.5	450 kPa (4.5 bar/ 65 psi)	475 kPa (4.75 bar/ 69 psi)	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)
225/75 R 16 C 118/116 N 6J x 16 H2	425 kPa (4.25 bar/ 62 psi)	450 kPa (4.5 bar/ 65 psi)		
8.5 R 17.5 121/120 L 5.25 x 17.5		525 kPa (5.25 bar/ 76 psi)		625 kPa (6.25 bar/ 91 psi)
9.5 R 17.5 129/127 L 6.75 x 17.5				575 kPa (5.75 bar/ 83 psi)

### Wheel nut tightening torques

Steel wheels M14 x 1.5	180 Nm
Steel wheels M18 x 1.5	250 Nm

### Spring-loaded parking brake cylinder

Release torque of the spring-loaded parking brake cylinder release screw	max. 70 Nm
Tightening torque of the spring-loaded parking brake cylinder release screw	15 Nm

Release pressure (supply pressure in compressed air-brake system)	min. 650 kPa (6.5 bar/ 94 psi)
Release pressure (by means of external compressed-air source)	min. 700 kPa (7.0 bar/ 102 psi)

### Lashing points and carrier systems

#### Lashing points

**!** Observe the information on the maximum loading capacity of the lashing points.

When you brake hard, for example, forces apply that can be far higher than the weight

<sup>16</sup> Only vehicles with a permissible front axle load of 3000 kg.

force of the transported load. Always use multiple lashing points to distribute these forces, and distribute the load equally among them.

You will find further information about lashing eyelets in the "Operation" section (▷ page 113).

Permissible nominal tensile load for lashing eyelets	max. 800 daN <sup>17, 18</sup>
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## Roof carrier

### WARNING

If you have fitted roof carrier systems, the vehicle's handling, steering and braking characteristics may change due to the higher centre of gravity. This is the case particularly if the roof carrier system is laden. Adapt your driving style according to the vehicle load.

Always follow the manufacturer's installation instructions. An incorrectly secured roof carrier system and/or load could come loose and fall off, endangering you and others.

Observe the maximum roof load and maximum roof carrier system load. Loads transported on the roof must always be secured with particular care.


Do not allow the load, including passengers, to exceed the permissible gross vehicle weight or the permissible axle loads for your vehicle.

The following data applies for a load distributed evenly over the entire roof area.


Permissible roof load/number of pairs of roof rack supports for standard roof	max. 300 kg / min. 6
Permissible roof load/number of pairs of roof rack supports for high roof	max. 150 kg / min. 3

Permissible roof load/number of pairs of roof rack supports for cab	max. 100 kg / min. 2
Permissible roof load/number of pairs of roof rack supports for crewcab	max. 100 kg / min. 2
Maximum load/number per pair of roof rack supports	max. 50 kg

Reduce the load on shorter roof carriers proportionately.

 The weight of any load carried on the roof, including the roof carrier, must not exceed the maximum permissible roof load.

The roof carrier supports must be arranged at equal distances. The vehicle must also have an anti-roll bar fitted on the rear axle.

 For safety reasons, Mercedes-Benz recommends that you only use roof carrier systems which have been tested and approved for Mercedes-Benz. This will help to avoid damage.

Loading directions and other information concerning load distribution and load securing can be found in the "Operation" section (▷ page 111).

<sup>17</sup> Deviating country-specific requirements are met.

<sup>18</sup> Observe the data provided on the instruction labels on the dropsides of platform vehicles.

Capacities			
	Filling capacity (approx.)	Service product	Sheet no. <sup>19</sup>
Engine OM 904 (904.90) with oil filter	Max. 16.0 l	Engine oil (▷ page 124)	228.2 228.3/.31 228.5/.51
Manual transmission G 60-6 + power take-off	9.0 l + 0.5 l	Transmission oil SAE 80, 80W MB No. 000 989 35 03 or 80W/85W <sup>20</sup>	235.1 235.11
Manual transmission G 56-6 + power take-off	6.4 l + 0.3 l <sup>21</sup> /0.4 l <sup>22</sup>	Transmission oil SAE 80, 80W MB No. 000 989 35 03	235.1 235.11
Automatic transmission Allison 1000 (723.332)	15.0 l	Automatic transmission fluid (ATF)	236.91
Transfer case (814 DA) VG 550-3W (750.5)	5.0 l	Transmission oil SAE 90, 80W MB No. 001 989 14 03	235.4/.11
Redirected transmission (tractor)	1.0 l	Hypoid gear oil MB No. 001 989 28 03 SAE 80W/85	235.27
Driven front axle AL 1/8	2.5 l	Hypoid gear oil SAE 90, 85W/90	235.0/.20 235.6/.8
Rear axle HL 2/30C (742.505)	6.0 l	Hypoid gear oil SAE 90, 85W/90	235.0/.20 235.6/.8
Power-steering assistance LS 4 (765.841)	1.8 l	Steering gear oil MB No. 000 989 88 03 or Automatic transmission fluid (ATF)	236.3 235.6
Brake system	1.0 l + 0.5 l	Brake fluid DOT 4 plus (▷ page 123)	

<sup>19</sup> MB Specifications for Service Products.

<sup>20</sup> Hot zones SAE 90, 85W/90.

<sup>21</sup> Power take-off on counter shaft.

<sup>22</sup> Power take-off next to counter shaft.

	Filling capacity (approx.)	Service product	Sheet no. <sup>19</sup>
Tipper system	11.0 l <sup>23</sup> / 13.0 l <sup>24</sup>	Tipper/hydraulic fluid	236.2/.3 236.6 341.0
Nipple lubrication points on chassis and body		Multipurpose grease NLGI class 2	267.0
Trailer coupling		Multipurpose grease NLGI class 2	267.0
Ring gear - flywheel		Long-life grease	
Battery cable terminals		Acid-resistant grease	350
Fuel tank	55.0 l - 140.0 l	Diesel fuel (> page 126)	130
AdBlue® supply reservoir	18.0 l	AdBlue® (> page 129)	130
Cooling system	13.0 l	Coolant (> page 125)	310
Windscreen/headlamp cleaning system	10.0 l	Water with concentrated washer fluid, S for summer use and W for winter use. Observe mixing ratio.	371.0

## Compressed-air reservoir

### Compressed-air reservoir information

For first buyers, users  
Documentation supplied in accordance with Council Directive 87/404/EEC and EN 286-2

The reservoir is:

- a - only intended for use in compressed-air systems and auxiliary equipment on motor vehicles as well as their trailers, and is only to be used to hold compressed air.
- b - marked for identification purposes with a factory number, the reservoir manufac-

turer, all relevant operating data and the EC symbol; see the vehicle identification plate or side of reservoir.

- c - produced with a "Declaration of conformity" in accordance with Article 12 of Directive 87/404/EEC.
- d - to be attached to the vehicle by securing straps.

For reservoirs made of aluminium, all contact surfaces must be designed in such a manner as to eliminate any corrosion or mechanical damage. The securing straps should be fitted in such a way that they do not come into contact with the connection seams on the base and that

<sup>19</sup> MB Specifications for Service Products.

<sup>23</sup> Vehicles with 3150 mm wheelbase and vehicles with crewcab.

<sup>24</sup> Vehicles with 3700 mm wheelbase without crewcab.

the reservoir is not subjected to stresses that could jeopardise its operational safety and reliability.

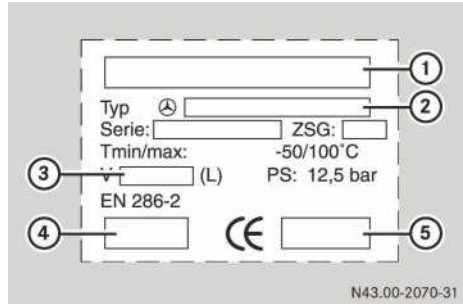
Aluminium reservoirs: no coatings applied may contain lead and the top coat must be applied to a suitably primed surface. Steel connections must be coated with a corrosion-proof finish for use with aluminium reservoirs.

- only to be treated with non-alkaline cleaning agents (aluminium reservoirs).
- to be inspected on the inside through the threaded connections.
- to be emptied at sufficiently frequent intervals in order to prevent the accumulation of condensation (the threaded drain-plug connection at the lowest point of the reservoir).
- e– maintenance-free, provided point d is complied with.
- f - not to undergo welding, heat treatment or other operation relevant to safety on the pressure-bearing walls or components of the reservoir (casing, base, ring nuts).
- g– not to have an internal pressure exceeding the maximum permissible operating pressure  $P_s$  by more than 10% for only a limited period.

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### Identification plate

The identification plate is on the compressed-air reservoir.



Compressed-air reservoir identification plate (example)

- ① Manufacturer, e.g. L&S, Germany or Elesfr., France or LMP, Portugal or Silverton, South Africa
- ② MB part number
- ③ Volume (litres)
- ④ Year
- ⑤ Testing establishment code number



## **Publication details**

### **Internet**

Further information about Mercedes-Benz vehicles and about Daimler AG can be found on the following websites:

[www.mercedes-benz.com](http://www.mercedes-benz.com)

[www.daimler.com](http://www.daimler.com)

### **Editorial office**

You are welcome to forward any queries or suggestions you may have regarding these Operating Instructions to the technical documentation team at the following address:

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