



Actros 930 - 934

Operating Instructions



Mercedes-Benz

Symbols

WARNING

Warning notes make you aware of 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 notes or further information that could be of assistance to you.

- ▶ This symbol notifies you of an instruction that you must follow.
- ▶ Several such symbols in a row indicate an instruction with a number of steps.

(▷ page) This symbol informs you of where you can find more information on a specific topic.

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

Display This text indicates a display message in the display.

Welcome to the world of Mercedes-Benz

Read the Operating Instructions carefully and familiarise yourself with your vehicle before you start driving. For your own safety and to ensure a long operating duration for your vehicle, comply with the instructions and warning notes in these Operating Instructions. Disregarding them may lead to damage to the vehicle or personal injury.

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

- model
- order
- country variant
- availability

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 are part of the vehicle:

- Operating Instructions
- Maintenance Booklet/Service 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 using the online Operating Instructions on the Internet at:

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

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

Index 4

Introduction 20

At a glance 27

Safety 37

Opening and closing 45

Driver's workstation 57

Climate control 95

On-board computer and displays 107

Audio systems 151

Driving mode 161

Working mode 265

Maintenance and care 271

Breakdown assistance 291

Wheels and tyres 327

Technical data 343

- A**
- ABA (Active Brake Assist)** 225
 - Abbreviations in the display** 127
 - ABS (Anti-lock Braking System)**
 - General information 172
 - Acceleration skid control**
 - see ASR (Acceleration skid control)
 - Access steps** 273
 - Accident**
 - see Vehicle tool kit and emergency equipment
 - Active Brake Assist 2**
 - Activating and deactivating 226
 - Collision warning and emergency braking 227
 - Important safety notes 225
 - Particular driving situations 228
 - Adapter**
 - Cable 292
 - Trailer brake connection 292
 - Adapter for front trailer brake connection** 320
 - AdBlue®**
 - Checking the level (on-board computer) 116
 - Consumption 244
 - Gauge 109
 - Refuelling 247
 - Service product 352
 - Additional axle**
 - Auxiliary steering (Telligent® trailing axle) 236
 - Leading axle 235
 - Trailing axle 235
 - Additional axles** 234
 - Adjust**
 - Instrument cluster lighting 29
 - Adjusting the ride height**
 - see NR (Telligent® level control)
 - ADR**
 - see EMERGENCY OFF switch
 - Air conditioning**
 - General notes 96
 - Air drier**
 - Checking 165
 - Air dryer**
 - Display message 132
 - Air filter (white display message)** 131
 - Air horn** 86
 - Air pressure**
 - see Tyre pressure
 - Air pressure checker**
 - see Tyre pressure checker
 - Air-conditioning system**
 - see Climate control
 - Air-recirculation mode** 100
 - Airbag**
 - Activating 40
 - Airbags**
 - Important safety guidelines 41
 - Alarm**
 - Operating (on-board computer) 120
 - Ambient lighting** 72
 - Anti-corrosion protection** 284
 - Anti-entrapment feature (side windows)** 53
 - Anti-lock Braking System**
 - see ABS (Anti-lock Braking System)
 - Anti-skid chains**
 - see Snow chains
 - ART (Telligent® distance control)**
 - Display message 134
 - Ashtray** 86
 - ASR (Acceleration skid control)** 210
 - Assembly lever** 292
 - Assembly lever set for Trilex® rim** ... 292
 - ATA (anti-theft alarm system)**
 - Alarm 49
 - Cancelling the alarm 50
 - General notes 48
 - Priming and deactivating 49
 - Priming and deactivating the panic alarm 50
 - Problems with ATA 52
 - Vehicles for transporting hazardous goods 48
 - Attachments/add-on equipment** 24
 - Audio equipment**
 - CD player 93
 - Operating (on-board computer) 92
 - Radio 92
 - Selecting radio mode (on-board computer) 122

- Audio system**
 General notes 152
 Important safety notes 152
- Automated transmission**
 Driving mode 197
 Telligent® gearshift 186
- Automatic car wash** 276
- Automatic circuit-breaker** 316
- Automatic transmission**
 Mercedes PowerShift 186, 190
 Problems with the transmission 203
 Telligent® automatic gearshift 190
- Auxiliary air-conditioning** 101
- Auxiliary consumers (reservoir pressure)** 165
- Auxiliary heater**
 see Auxiliary heating
- Auxiliary heating** 120
 Air distribution and temperature 104
 Continuous heating mode 105
 Fuels 103
 Immediate heating mode 104
 Important safety notes 102
 Mandatory switch-off 103
 Preselected heating mode 105
- Auxiliary steering**
 see AS (Telligent® trailing axle)
- Auxiliary steering (Telligent® trailing axle)** 236
- Axle load**
 see Maximum permissible axle load
- Axle load measuring device** 233
- Axle loads**
 Checking (on-board computer) 117
- Axle reduction ratio** 344
- B**
- BAS (Brake Assist)** 173
- Battery (vehicle)**
 Care 290
 Charging 289
 Checking the fluid level 290
 Disconnecting and reconnecting ... 286
 EMERGENCY OFF switch 84
 Important safety notes 285
 Jump-starting 316
 Removing and installing (four-axle vehicles) 287
- Battery cutoff switch**
 see EMERGENCY OFF switch
- Beacon** 31
- Bed**
 see Berth
- Belt**
 see Seat belt
- Belt tensioner**
 Activation 40
 Function 41
- Berth**
 Lower 66
 Upper (comfort berth) 65
 Upper (standard berth) 66
- Bio-diesel fuel**
 see FAME fatty acid methyl ester fuel
- Bleeding the fuel system** 300
- Block**
 see Support block
- BlueTec® exhaust gas aftertreatment**
 AdBlue® service product 352
 Notes 23
- Bluetooth®**
 Activating/deactivating 158
 Conditions 158
 Notes 157
 Pairing a mobile phone 158
- Bonnet**
 see Maintenance flap
- Brake Assist**
 see BAS (Brake Assist)
- Brake lamp**
 Replacing bulbs 77
- Brake system**
 Supply pressure 111
 Technical data 354
- Brake temperature**
 Display message 133
- Brake wear**
 Display message 144
- Brakes**
 Checking for leaks in the compressed-air brake system 171
 Checking the supply pressure 111

- Display message 140
 - Frequent-stop brake 176
 - Hill holder 177
 - Important safety notes 169
 - Independent trailer brake 174
 - Releasing the spring-loaded parking brake 323
 - Braking**
 - ABS 172
 - ABS display check 172
 - BAS 173
 - Continuous brake 177
 - Engine brake 178
 - Introduction 169
 - Parking brake 174
 - Retarder 178
 - Braking characteristics**
 - Display message 142
 - Breakdown assistance** 292
 - Flat tyre 304
 - Tilting the cab 295
 - BS (Telligent® brake system)**
 - General information 170
 - Bulb**
 - Interior lighting 80
 - Roof position marker lamps 76
 - Bulbs**
 - Brake lamps 77
 - Dipped-beam headlamps 75
 - Entry lamp 79
 - Foglamps 77
 - Licence plate lamp 77
 - Main-beam headlamps 75
 - Overview 74
 - Perimeter lamps 76
 - Perimeter/side marker lamp 78
 - Reading lamp 80
 - Rear foglamp 77
 - Replacing 73
 - Reversing lamp 77
 - Side lamps 75
 - Side marker lamps 78
 - Spare bulbs 292
 - Turn signals 75
 - Working-area lamps 78
 - Xenon bulbs 73
 - Buttons**
 - Steering wheel buttons 112
 - Buzzer** 245
- C**
- Cab**
 - Electrohydraulic cab tilting system 297
 - Mechanical-hydraulic cab tilting system 296
 - Notes on tilting 295
 - Overview 28
 - Problems in tilting the cab 299
 - Cab access** 52
 - Cab tilt lock** 166
 - Cable lamp** 292
 - Cables and compressed-air lines**
 - Connecting 254
 - Connections 253
 - Disconnecting 255
 - Calling up the memory field menu** .. 126
 - CAN bus (Controller Area Network)**
 - display message 146
 - Cap under the maintenance flap** 279
 - Care products** 272
 - CD radio**
 - Anti-theft protection 152
 - Cell phone**
 - see Mobile phone
 - Central locking**
 - Enhanced central locking system 47
 - Locking/unlocking (switch) 47
 - Problems with the locking system ... 52
 - Unlocking/locking (key) 46
 - Centre seat**
 - see Seats
 - Centre-axle trailer** 248
 - Changing gear**
 - see Transmission shift system
 - Changing the battery (remote control)** 50
 - Charging voltage**
 - Display message 138
 - Checking the steering play** 166
 - Checklist**
 - After driving off-road 242
 - Before driving off-road 241
 - Child seats** 43

- Children**
 - Restraint systems 43
- Children in the vehicle** 42
- Chock**
 - see Wheel chock
- Cigarette lighter** 86
- Cleaning and care**
 - Access steps 273
 - After driving off-road or on construction sites 243
 - Automatic car wash 276
 - Cleaning light-alloy wheels 277
 - cleaning seat covers 272
 - Cleaning the distance sensor 276
 - Cleaning the exterior 273
 - Cleaning the interior 272
 - Cleaning the retarder 277
 - Engine cleaning 277
 - High-pressure cleaning 276
 - Notes on care 272
- Cleaning light-alloy wheels** 277
- Climate control**
 - Air vents 99
 - Auxiliary air-conditioning 101
 - Controlling automatically 101
 - Manual control 99
 - Overview of climate control system functions 96
 - Switching on/off 98
- Climbing aid (upper berth)** 65
- Clock**
 - Setting (on-board computer) 123
 - Setting the mode (on-board computer) 123
- Clutch**
 - TK (hydrodynamic clutch) 209
 - WSK (torque converter clutch) 209
- Clutch (hydraulic)** 281
- Clutch system** 281
- Co-driver's door**
 - see Door
- Co-driver's seat**
 - see Seats
- Cockpit** 28
- Cold start** 261
- Cold-climate package** 261
- Cold-start aid** 215
- Combination switch** 34
- Compressed-air brake system**
 - Checking for leaks 171
 - Checking the reservoir pressure 164
- Compressed-air connection**
 - Cab 91
- Compressed-air drier**
 - Checking 165
- Compressed-air lines**
 - Connecting 254
 - Connections 253
 - Disconnecting 255
- Compressed-air reservoir** 356
- Compressed-air system**
 - Charging 316
 - Supply connection 316
 - Technical data 354
- Compressed-air system supply connection** 316
- Connector cable (trailer)** 292
- Constant engine speed** 268
- Constant headlamp mode**
 - see Daytime driving lights
- Construction-site mode**
 - Mercedes PowerShift 197
 - Telligent® automatic gearshift 197
 - Telligent® gearshift 189
- Consumption**
 - AdBlue® 244
 - Fuel 243
 - Oil (engine) 244
- Continuous brake** 177
- Contour markings**
 - General safety notes 23
- Conversions/equipment** 24
- Coolant**
 - Checking the level 280
 - Display message 133, 139
 - Service product 348
 - Topping up 280
- Coolant pump**
 - see Controlled coolant pump
- Coolant temperature**
 - Checking (on-board computer) 116
- Coolbox** 89
- Coupling jaw** 318
- Cross-axle lock** 212

Cruise control	218
Cup holders	91

D

Daytime driving lights	69
Declarations of conformity	22
Diagnostic data	
Calling up (on-board computer)	125
Diagnostics connection	
Operating safety and vehicle approval	22
Diagnostics menu	125
Diesel	
Fuels	349
Low outside temperatures	350
Refuelling	246
Differential lock	
Display (on-board computer)	122
Differential locks	
Important safety notes	212
Dipped-beam headlamps	
Automatic headlamp mode	69
Replacing bulbs	75
Switching on/off	68
Display	
Abbreviations	127
Brake circuit supply pressure	111
On-board computer	113
Outside temperature	110
Setting the language (on-board computer)	121
Time	110
Total distance recorder	111
Trip meter	111
Display in the rev counter	110
Display message	
With white status indicator	129
Display messages	
Acknowledge	126
Notes	125
With red status indicator	126, 140
With symbol	126
With system abbreviation	125
With yellow status indicator ...	126, 130
Distance control	
see Telligent® distance control	
Distance sensor	276

Door	
Locking/unlocking (from inside)	46
Unlocking/locking (from outside)	46
Door lock	46
Draining the fuel prefilter	302
Drinks holder	
see Cup holder	
Drive program	
EcoRoll mode	199
Manoeuvring mode	200
Power mode	197
Power off-road mode	197
Rocking-free mode	201
Drive shafts	
Removing RL 6 and RL 8 on the rear axle	323
Removing RL 7 and RD 7 on the rear axle	322
Drive-on wedge	
see Vehicle tool kit	
Driver information system	
see On-board computer	
Driver's door	
see Door	
Driver's seat	
see Seats	
Driving	162
Driving off-road	
Adjusting underride guard	238
Checklist after driving off-road	242
Cleaning after driving off-road or on construction sites	243
Driving on inclines	242
Rules for off-road driving	241
see Off-road driving	
Driving systems	
Active Brake Assist 2	225
Cruise control	218
SPA (Telligent® Lane Assistant)	229
Speed limiter	217
Switching between functions	216
Telligent® distance control	221
Driving the vehicle	237
Driving time	
Checking (on-board computer)	118
Driving tips	237
Downhill gradient	169

Limited braking efficiency on salted roads	170
New brake pads/linings	170
Wet road surface	170

E

Ecometer	109
Electromagnetic compatibility	
Declaration of conformity	22
Electronic systems abbreviations ..	127
Electronic trailer brake (EAB)	
Display message	138, 142
Emergency	292
Emergency braking	
Display message	129
Emergency braking system	
Display message	129
Emergency equipment	292
Emergency gear change	
Automated transmission	207
Emergency gearshift	
NMV (engine-driven power take-off)	268
EMERGENCY OFF switch	
Interrupting the power supply	84
Restoring the power supply	85
Engine	
Checking the operating hours (on-board computer)	117
Cleaning	277
Cold start	261
Diagnostics (indicator lamp)	150
Emergency running mode	303
Modifying the power output	22
Oil consumption	244
Rectifying faults	304
Running-in period	237
Starting	163
Starting and stopping with the cab tilted	300
Stopping	168
Technical data	354
Engine brake	178
Engine control code	
Display message	139
Engine data plate	345
Engine idling speed	215

Engine immobiliser

Display message	133
-----------------------	-----

Engine oil

Display message	131
For winter operation	346
Multi-grade engine oils	347
Oil change	347
Oil level too high (display message)	145
Oil pressure (display message)	149
Quality (Sheet no.)	346
Refilling	283
SAE classification	347
Single-grade engine oil	347
Engine oil filler neck	279

Engine oil grade

Setting (on-board computer)	123
-----------------------------------	-----

Engine oil level

Checking	283
Too low (display message)	149

Engine oil viscosity

Setting (on-board computer)	123
-----------------------------------	-----

Engine speed

Enhanced central locking system	47
---------------------------------------	----

Equipment/conversions

.....	24
-------	----

Error messages

 see Display messages

Exterior lighting

Notes on replacing bulbs	73
Switching on/off	68

Exterior mirror heating

.....	68
-------	----

Exterior mirrors

Adjusting	67
Heating	68

F

Fan motor (vehicles with rear-mounted cooling system)

.....	284
-------	-----

Filling the tank

Fuel/AdBlue® tank	246
-------------------------	-----

Fire extinguisher

.....	292
-------	-----

First-aid kit

.....	292
-------	-----

Flame-start system

 see Cold-start aid

Flat tyre

 see Changing a wheel

- Fluid level**
 Battery (vehicle) 290
 Coolant 280
 Hydraulic clutch system 281
- Foglamps**
 Replacing bulbs 77
- Folding ladder** 252
- Folding step** 275
- Folding table** 90
- Frequent-stop brake** 176
- Front bonnet**
 see Maintenance flap
- Front foglamps**
 Switching on/off 69
- Fuel**
 Additives 350
 Consumption 243
 Diesel 349
 FAME fatty acid methyl ester fuel .. 350
 Fuel level (display message) 130
 Gauge 109
 Refuelling 246
 Setting the sulphur content (on-board computer) 123
- Function overview** 157
- Function seat**
 see Seats
- Fuses** 313
 Fuse allocation 313
- G**
- Gauge**
 AdBlue® 109
 Fuel 109
- Gear indicator**
 Mercedes PowerShift 190
 Telligent® automatic gearshift 190
 Telligent® gearshift 186
- Gearshift**
 Emergency mode (automated transmission) 207
 Telligent® gearshift 186
- Gearshift unit**
 Mercedes PowerShift 191
 Telligent® automatic gearshift 191
 Telligent® gearshift 187
- General driving tips** 237
- General safety notes**
 Contour markings 23
- Genuine Mercedes-Benz parts** 24
- Getting into the vehicle** 52
- Getting out of the vehicle** 52
- Grab handle**
 Entering and exiting 52
- Grease gun** 292
- Gross vehicle weight**
 see Maximum permissible gross vehicle weight
- H**
- Hands-free system**
 see Mobile phone
- Head restraint**
 Centre seat 63
 Co-driver's seat 63
- Headlamp cleaning system**
 Topping up 281
- Headlamp flasher** 70
- Headlamp range control** 69
- Headlamps**
 Cleaning system 83
 Masking partially 81
- Headlamps (automatic)** 69
- Heated windscreen** 84
- Heating**
 see Climate control
- Heating the windscreen**
 see Windscreen heating 84
- Hendrickson leading axle** 235
- High-pressure cleaning** 276
- Hill holder** 177
- Horn** 34
- HPS (hydraulic-pneumatic gear-shift)**
 see Manual transmission
- Hydraulic clutch system** 281
- Hydraulic fan motor (vehicles with rear-mounted cooling system)** 284
- Hydraulic fluid** 346
- Hydraulic system**
 Checking the oil level 284
 Topping up the oil 284

Hydrodynamic clutch

see TK (hydrodynamic clutch)

I**Identification number**

see Vehicle identification number

Identification plate

Compressed-air reservoir 357

Idling speed 215

Ignition key

see Key

Ignition lock 163

Immobiliser activated

Display message 133, 139

Implied warranty 20

Independent trailer brake 174

Indicator lamps 30

Indicators

see Turn signals

Insect protection on the radiator 24

Insect screen 55

Instrument cluster 29

Displays and controls 29

Indicator lamps 30

Overview 29

Instrument lighting 29

see Instrument cluster lighting

Inter-axle lock 212

Interior lighting

Adjusting 71

Dimming 71

Notes on replacing bulbs 73

Replacing bulbs 80

Intermittent wipe 82

Intermittent wiping

Switching on (on-board computer) 121

J**Jack**

Positioning 307

Vehicle tool kit 292

Jump-start connection

see Jump-starting

Jump-starting 316

K**Key**

Replacement key 46

Unlocking/locking vehicle 46

L**Ladder**

see Folding ladder

Lane Assistant

see SPA

Language

Setting (on-board computer) 121

Lap-shoulder seat belt 38

Leading axle 235

Level control

see NR (Telligent® level control)

Licence plate lamp

Replacing bulbs 77

Light switch 68

Lighting

Notes on replacing bulbs 73

see Display messages 131

Lighting system

Masking headlamps partially 81

see Interior lighting

see Light switch

Lights

Instrument 29

Limiting the speed

see Speed limiter

Load compartment light 31

Loading platform approach aid 256

Display message 134, 139

Loading tailgate 31

Locking up the controlled coolant

pump 302

Luxury automatic climate control

see Climate control

M**Main-beam headlamps**

Replacing bulbs 75

Switching on/off 70

Maintenance 119, 277

Display message 131, 140

- Maintenance due date**
 Display message 131
- Maintenance flap** 279
- Maintenance points under the maintenance flap** 279
- Maintenance system** 278
- Malfunction display**
 With red status indicator 140
 With white status indicator 129
 With yellow status indicator 130
- Malfunction messages**
 see Display messages
- Manoeuvring/tow-starting and towing away**
 Coupling jaw 318
 Rear trailer tow hitch 319
 Tow-starting the vehicle 320
 Towing the vehicle 320
- Manual transmission**
 Important safety notes 184
 Problems with the transmission 186
- Maximum permissible axle load** 344
- Maximum permissible gross vehicle weight** 344
- Maximum speed**
 see Speed limitation
- Mechanical gearshift**
 see Manual transmission
- Memory field** 126
- Menu**
 ACTROS info 116
 Alarm 120
 Audio 118
 Auxiliary heating system 120
 Diagnostics 125
 Event info 120
 Language 121
 Maintenance 119
 Monitoring info 116
 Navigation 118
 Settings 121
 Telephone 118
 Transmission control backup mode 124
 Trip computer 117
- Menus in detail** 114
- Mercedes PowerShift** 190
- Mercedes star**
 Switching the illumination on/off 73
- Mercedes-Benz Service Centre**
 see Qualified specialist workshop
- Messages**
 see Display messages
- Minimum tyre tread depth** 329
- Mirrors** 67
- Mobile phone** 93
 Displaying 160
 External pairing 159
 Operating (on-board computer) 118
 Pairing 158
- Model series**
 see Vehicle identification plate
- Mosquito protection**
 see Insect screen
- Multi-function lever** 35
- N**
- Navigation** 118
- Nightlight** 72
- NR (Telligent® level control)**
 Control unit 231
 Raised vehicle level (vehicles for large-capacity transport) 233
- O**
- Occupant safety** 38
 Children in the vehicle 42
 Pets in the vehicle 44
- Off-road driving**
 Important safety notes 240
- Oil (engine)**
 For winter operation 346
 Multi-grade engine oils 347
 Oil change 347
 Quality Sheet no. 346
 Refilling 283
 SAE classes 347
 Scope of use 346
 Single-grade engine oils 347
- Oil change** 347
- Oil level (engine)**
 Checking 283
 Checking (on-board computer) 116

On-board computer

Alarm	120
Calling up the diagnostic data	125
Calling up/resetting trip computer	117
Calling up/resetting trip data	117
Checking driving time	118
Checking the AdBlue® level	116
Checking the axle load	117
Checking the coolant temperature	116
Checking the engine operating hours	117
Checking the oil level	116
Checking the range	118
Checking the reservoir pressure	116
Checking the rest period	118
Control from steering wheel	113
Control from the instrument panel	113
Controls	112
Differential lock display	122
Display messages	125
Display service	119
Layout	112
Menus in detail	114
Operating the telephone	118
Permanent display for level control	122
Rain/light sensor (setting the sensitivity)	121
Setting the clock	123
Setting the clock mode	123
Setting the display language	121
Setting the engine oil grade	123
Setting the engine oil viscosity	123
Setting the fuel sulphur content	123
Setting the transmission oil quality	123
Setting the unit of measurement ...	123
Setting the unit of measurement for temperature	123
Setting the units	123
Setting the units for the trip computer	123
Switching on intermittent wiping ...	121
Opening and closing	46

Operating hours

Checking (on-board computer)	117
------------------------------------	-----

Operating Instructions

Before the first journey	20
General notes	20
Implied warranty	20
Vehicle equipment	20

Operating safety and registration

Attachments/add-on equipment	24
BlueTec® exhaust gas aftertreatment	23
Changes in engine performance	22
Installations and conversions	24
Notes on body/equipment mounting directives	24

Operating safety and vehicle approval

Correct use	20
Declaration of conformity	22
Notes on operating the vehicle	21
Qualified specialist workshops	22
Registering your vehicle	23

Operating system

Overview	154
see On-board computer	

Operating temperature

see Technical data

Outside temperature indicator 110**Overview of abbreviations** 127**Overvoltage**

Display message	138
-----------------------	-----

P**Pairing** 158**Panic alarm** 50**Parking brake**

Display message	140
Important safety notes	174

Parking up the vehicle

Notes on the battery	288
Special measures	290

Perimeter/side marker lamp

Replacing bulbs	78
-----------------------	----

Permanent display

Level control	122
---------------------	-----

Pets in the vehicle 44

Pneumatic suspension

see NR (Telligent® level control)

Pop-up roof

Closing in an emergency 56

Opening and closing 56

Power steering (display message) ... 145**Power supply**

see EMERGENCY OFF switch

Power take-off

Engine speed setting 268

General information 266

NMV emergency gearshift

(engine-driven power take-off) 268

PowerShift

see Mercedes PowerShift

Preparing for a journey

Emergency equipment/first-aid
kit 162

Fuel/AdBlue® level 163

Vehicle lighting, turn signals and
brake lamps 162

Visual check of the vehicle exte-
rior 162

Protection of the environment

General notes 21

PSM (programmable special module) 268**Pulling away 166****Pump lever 292, 294****Q****Qualified specialist workshop 22****R****Radiator cover 24****Radio**

see Audio equipment

Radio-based vehicle components

Declaration of conformity 22

Rain/light sensor

Setting the sensitivity (on-board
computer) 121

Switching on (on-board com-
puter) 121

Windscreen wiper 83

Raised vehicle level (vehicles for large-capacity transport) 233**Range**

Checking (on-board computer) 118

Reading lamp

Switching on/off 72

Rear axle

Rear axle ratio 344

Removing drive shafts 322

Rear axle ratio 344**Rear foglamp**

Replacing bulbs 77

Switching on/off 68

Rear lamp cluster

Changing a bulb 77

Rear-mounted cooling system 279**Reclining seat**

see Seats

Reducing agent

see AdBlue®

Reflective safety vest 292**Refuelling**

AdBlue® 247

Fuels 246

Remote control

Changing the battery 50

general notes 47

Unlocking/locking the vehicle
(with enhanced central locking
system) 48

Replacement key 46**Replacing the tyres 330****Reserve level**

AdBlue® 109

Fuel 109

Reservoir pressure

Checking (on-board computer) 116

In the compressed-air brake sys-
tem 164

Reset button 123**Rest period**

Checking (on-board computer) 118

Restraint system

Notes 38

Retarder

Cleaning 277

Display message 144

General information	178
Retreaded tyres	330
Rev counter	108
Reverse gear lock	245
Reverse warning device	244
Reversing lamp	
Replacing bulbs	77
Roller sunblind	31
Roof	
see Pop-up roof	
see Roof hatch	
see Sliding sunroof	
Roof hatch	56
Roof position marker lamps	
Switching on/off	73
Rotating beacon	
see Beacon	31

S

SAE classification (engine oils)	347
Safety	
Child restraint systems	43
Children in the vehicle	42
Safety inspection	
Compressed-air drier	165
Screen messages	
see Display messages	
Screwdriver	
see Vehicle tool kit	
Seat	
Air-conditioned suspension seat	60
Standard suspension seat	60
Static seat	60
Seat belt	
Fastening	40
Seat belts	
Cleaning	272
Important safety guidelines	38
Releasing	40
Warning lamp (function)	40
Seats	
Centre seat	63
Cleaning the cover	272
Function seat	64
General information	58
Luxury suspension seat	61
Reclining seat	63

Semitrailer

Attaching and disconnecting	
compressed-air lines	253
Checking the identification number (on-board computer)	117
Coupling	250
Detaching	252

Semitrailer coupling

see separate operating instructions

Service

Confirming work completed (on-board computer)	278
Display due date (on-board computer)	119
Due date (on-board computer)	278

Service indicator

Display message	131
-----------------------	-----

Service information

On-board computer	119
-------------------------	-----

Service life (tyres)

	330
--	-----

Service products

AdBlue®	352
Diesel fuel	349
Engine oil	346
FAME fatty acid methyl ester fuel ..	350
For drive axles and transmissions ..	348
Fuel additives	350
General notes	345
Hydraulic fluid	346

Setting the speed

see Cruise control

Shift lock

	266
--	-----

Side lamps

Replacing bulbs	75
Switching on/off	68

Side marker lamps

Replacing bulbs	78
-----------------------	----

Side windows

Opening/closing	53
Resetting	54

Single tyres (tyre pressure)

	333
--	-----

Sliding roof

Lock (enhanced central locking system)	48
--	----

Sliding sunroof

Closing in emergency	55
----------------------------	----

Smoke detector

	87
--	----

- Snow chains** 260
 - Sockets** 85
 - SPA (Telligent® Lane Assistant)** 229
 - Spare bulbs** 292
 - Spare key** 46
 - Spare wheel** 306
 - Special tool**
 - see Vehicle tool kit
 - Specialist workshop** 22
 - Speed limiter** 217, 244
 - Speedometer** 29
 - Splitter switch** 185
 - Spring-loaded parking brake**
 - Releasing 323
 - Technical data 355
 - SR (Telligent® stability control)** 211
 - SRS (Supplemental Restraint System)** 40
 - Stability control**
 - see SR
 - Starter switch**
 - see Ignition lock
 - Starting**
 - see Starting (engine)
 - Starting (engine)** 163
 - Starting and stopping the engine with the cab tilted** 300
 - Starting-off aid** 234
 - Status indicator** 126
 - Status indicator, red** 126
 - Status indicator, yellow** 126
 - Steering (display message)** 145
 - Steering lock**
 - see Ignition lock
 - Steering wheel adjustment** 67
 - Step**
 - entering and exiting 52
 - Upper berth 65
 - Stickers**
 - General safety notes 20
 - STOP lamp** 126
 - Stopping and switching off the engine** 168
 - Stowage compartments**
 - Above the windscreen 88
 - Beneath the berth 89
 - In the cab 88
 - With exterior flap 89
 - Stowage spaces**
 - Compartments 88
 - Sun screen** 55
 - Sun visor** 55
 - Supplemental Restraint System**
 - see SRS
 - Supply pressure**
 - Brake circuit display 111
 - Display 111
 - Display message 132, 148
 - In auxiliary consumers circuit 165
 - Support block** 292
 - Switch units**
 - Berth 34
 - Dashboard 31
 - System abbreviations** 127
- T**
- Table**
 - see Folding table
 - Tachograph**
 - see Cruise control
 - Teach-in procedure (automatic transmission)** 203
 - Technical data**
 - Brake system 354
 - Compressed-air reservoir 356
 - Compressed-air system 354
 - Engine 354
 - Engine data plate 345
 - Maximum permissible tyre pressure 355
 - NR (Telligent® level control) 356
 - Operating temperature (coolant temperature) 355
 - Permissible difference in tyre pressure 355
 - Spring-loaded cylinder 355
 - Steering play 356
 - Tightening torques for wheel nuts .. 355
 - Tyre pressure (single tyres) 333
 - Tyre pressure (twin tyres) 338
 - Vehicle identification plate 344
 - Telephone**
 - Operating (on-board computer) 118
 - see Mobile phone

- Telligent®**
 - Automatic gearshift 190
 - Brake system 170
 - Gearshift 186
 - Maintenance system 278
 - Trailing axle 236
- Telligent® distance control**
 - Deactivating 224
 - Decreasing/increasing the specified distance 223
 - Important safety notes 221
 - Particular driving situations 228
- Telligent® Lane Assistant**
 - see SPA 229
- Telligent® level control**
 - Displaying (on-board computer) 122
- Telligent® stability control**
 - see SR 211
- Temperature**
 - Outside temperature display 110
 - Setting the unit (on-board computer) 123
 - Wheel brake (display message) 133
- Tightening torques**
 - Spring-loaded parking brake cylinder release screw 355
 - Wheel nuts 355
- Tilting system**
 - Electrohydraulic cab tilting system 297
 - Mechanical-hydraulic cab tilting system 296
 - Notes on tilting 295
 - Problems in tilting the cab 299
- Time**
 - In the display 110
- Time display** 110
- Tipper operation** 269
- TK (hydraulic clutch)**
 - Display message with red status indicator 144
 - Display message with red status indicator and warning buzzer 147
 - Display message with yellow status indicator 138
- TK (hydrodynamic clutch)**
 - Function 209
- Tool compartment** 292
- Topping up washer fluid** 281
- Torque converter clutch**
 - see WSK (torque converter clutch)
- Total distance recorder** 111
- Tow-starting**
 - see Manoeuvring/tow-starting and towing away
- Towing**
 - see Manoeuvring/tow-starting and towing away
- Towing coupling**
 - see Trailer tow hitch
- Towing mode**
 - see Transmission control backup mode (emergency mode)
- Towing semitrailers** 250
- Tractor/trailer combination** 251
- Trailer**
 - Checking the identification number (on-board computer) 117
 - Connecting and disconnecting compressed-air lines 253
 - Coupling up 250
 - Decoupling 252
 - Driving tips for centre-axle trailer .. 248
- Trailer ABS** 143
- Trailer coupling**
 - see separate operating instructions
- Trailer tow hitch** 319
- Trailing axle** 235
- Transfer case** 214
- Transmission**
 - Display message 135
- Transmission control backup mode (emergency mode)**
 - Mercedes PowerShift 207
 - Telligent® automatic gearshift 207
 - Telligent® gearshift 207
- Transmission control event messages** 206
- Transmission emergency mode**
 - see Transmission control backup mode (emergency mode)
- Transmission oil quality**
 - Setting (on-board computer) 123
- Transmission oils** 348

- Transmission shift system**
 Manual transmission 184
 Mercedes PowerShift 186, 190
 Overview 180
 Telligent® automatic gearshift 190
- Transmission-driven power take-off** 266
- Trilex® rim** 311
- Trilex® wheel** 311
- Trip computer**
 Calling up/resetting (on-board computer) 117
 Setting the units (on-board computer) 123
- Trip data**
 Calling up/resetting (on-board computer) 117
- Trip meter** 111
- Turn signals** 34
 Replacing bulbs 75
 Switching on/off 70
- Twin tyres (tyre pressure)** 338
- Tyre**
 Types 330
- Tyre inflator hose** 292
- Tyre pressure**
 Determining 331
 Maximum permissible air pressure 355
 Notes 328
 Permissible difference in pressure 355
 Table (single tyres) 333
 Table (twin tyres) 338
- Tyre pressure checker** 292
- Tyres**
 Age 330
 Change 304
 Condition 329
 Damage 330
 Important safety notes 328
 Load-bearing capacity 330
 Maximum speed 330
 Pressure 328
 Retreaded 330
 Service life 330
 Tread depth 329
 Wear 328
- Tyres and wheels**
 Operating and road safety 328
 Replacing the tyres 330
- U**
- Underride guard**
 Adjusting 238
 Tipper with air suspension 238
- Undervoltage**
 Display message 138
- Unit of measurement**
 Setting (on-board computer) 123
- Units**
 Setting (on-board computer) 123
- V**
- Vehicle**
 Assemblies 284
 Cleaning 272
 Data acquisition 25
 Equipment 20
 Identification number 344
 Implied warranty 20
 Model designation 345
 Parking up 290
 Registration 23
 Tow-starting and towing away 318
 Unlocking/locking 46
 Vehicle identification plate 344
- Vehicle battery**
 see Battery (vehicle)
- Vehicle identification plate** 344
 Overview 344
 Vehicle 344
- Vehicle key**
 see Key
- Vehicle level**
 see NR (Telligent® level control)
- Vehicle lighting** 68
- Vehicle tool kit** 292
- VIN**
 see Vehicle identification number
- Voltage transformer** 85

W	
Warning buzzer	245
Warning triangle	292
Warnings	
Display messages	129
Stickers	20
Warnings in the display	125
Washer fluid (display message)	130
Weight distribution	237
Wheel brake overloaded	
Display message	133
Wheel chock	294
Wheel nuts	
For light-alloy disc wheels	309
For pressed-steel wheels	309
Retightening	312
Tightening torques	355
Wheel wrench	294
Wheels	
Changing a wheel in the event of a flat tyre	304
Operating and road safety	328
Wind deflector	256
Windows	
Opening and closing the side windows	53
Resetting the side windows	54
Windscreen	
Defrosting	100
Windscreen heating	84
Windscreen washer system	
Combination switch	83
Topping up	281
Windscreen wiper	
Rain/light sensor	83
Windscreen wipers	
Intermittent wipe	82
Switching on/off	82
Winter diesel	350
Winter driving	
see Winter operation	
Winter operation	259
Radiator cover	24
Winter tyres	259
Working-area lamp	31

Working-area lamps

Replacing bulbs	78
-----------------------	----

Wrench for cab tilting pump	294
--	-----

WSK (torque converter clutch)

Display message with red status indicator	144, 147
Display message with yellow status indicator	136
Function	209

Operating Instructions

Before the first journey

These instructions, the Maintenance Booklet and the additional equipment-related instructions are integral parts of the vehicle. Always keep these documents in the vehicle. If you sell the vehicle, always pass on all documents to the new owner.

Before you first drive off, read these documents carefully and familiarise yourself with your vehicle.

Please adhere to the information and warning notes in these Operating Instructions at all times for your own safety and to ensure a longer operating duration of the vehicle. Failure to observe the instructions may lead to damage to the vehicle or personal injury.

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.

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 equipped 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.

Correct use

Observe the following information when operating the vehicle:

- the safety notes in this manual
- the technical data in this manual
- traffic laws and regulations
- laws pertaining to motor vehicles and safety standards

There are various warning stickers affixed to the vehicle. If you remove warning stickers, you and others may fail to recognise the dangers. Leave the warning stickers in their original position.

WARNING

Modifications to electronic components, their software as well as wiring could affect their function and/or the operation of other networked components. This could in particular also be the case for systems relevant to safety. They might not function properly anymore and/or jeopardise the operational safety of the vehicle. There is an increased risk of an accident and injury.

Do not attempt to modify the wiring as well as electronic components or their software.

Always have work on electrical and electronic components carried out at a qualified specialist workshop.

The general operating permit for your vehicle could be rendered invalid if you carry out modifications to electronic components, their software as well as wiring.

Protection of the environment

Economical and environmentally aware driving

Environmental note

Daimler AG has a declared policy of comprehensive environmental protection.

The objective is to use natural resources sparingly and in a manner that 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:

- the operating conditions of your vehicle
- your personal driving style

You can influence both factors. For this reason, observe the following notes:

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.
- a regularly serviced vehicle will contribute to environmental protection. You should therefore adhere to the service intervals.
- all maintenance work should be 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 and heavy acceleration and braking.
- change gear in good time and use each gear only up to $\frac{2}{3}$ of its maximum engine speed.

- switch off the engine when waiting in stationary traffic.
- keep an eye on the vehicle's fuel consumption.

Operating safety and vehicle approval

Information on vehicle operation

There is a risk of damage to the vehicle if:

- the vehicle makes contact with the ground, e.g. on a high kerb or a loose road surface
- you drive too quickly over an obstacle, e.g. a kerb or a pothole
- a heavy object hits the underbody or chassis component

In these or similar situations, the vehicle body/frame, the underbody, chassis components, wheels or tyres could be damaged even if this is not visible from the outside. Components that have been damaged in this way can unexpectedly fail or no longer be able to assimilate the loads occurring in the event of an accident. If the underbody panelling is damaged, flammable material, such as leaves, grass or twigs, could collect between the underbody and underbody panelling. These materials could ignite if they remain in contact with hot components of the exhaust system for an extended period.

WARNING

Flammable material such as leaves, grass or twigs may ignite if they come into contact with hot parts of the exhaust system. There is a risk of fire.

When driving off road or on unpaved roads, check the vehicle's underside regularly. In particular, remove parts of plants or other flammable materials which have become trapped. In the case of damage, contact a qualified specialist workshop.

Have the vehicle checked and repaired immediately at a qualified specialist workshop. If you become aware when continuing the jour-

ney that driving safety has been effected, stop as soon as possible in accordance with the traffic conditions. In such cases, consult a qualified specialist workshop.

Declaration of conformity

Radio-based vehicle components

The following note applies to all radio-based components of the vehicle and the information systems and communication devices integrated in the vehicle:

The components of the vehicle which receive and/or transmit radio waves are compliant with the basic requirements and all other relevant regulations stipulated by Directive 1999/5/EC.

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

Electromagnetic compatibility

The electromagnetic compatibility of the vehicle components has been checked and certified according to the currently valid version of Regulation ECE-R 10.

Diagnostics connection

The diagnostics connection is only intended for the connection of diagnostic equipment at a qualified specialist workshop.

WARNING

If you connect equipment to a diagnostics connection in the vehicle, it can affect the operation of the vehicle systems. This may affect the operating safety of the vehicle. There is a risk of an accident.

Do not connect any equipment to a diagnostics connection in the vehicle.

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.

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.

! Only have work carried out on the engine electronics and its associated parts, such as control units, sensors, actuating components and connector leads, at a qualified specialist workshop. Vehicle components may otherwise wear more quickly and the vehicle's operating permit may be invalidated.

Registering your vehicle

Mercedes-Benz may ask its Service Centres to carry out technical inspections on certain vehicles. This is always the case if the quality or safety of the vehicle is improved as a result of the inspection. 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.

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.

You will find information about AdBlue[®] in the "Service products" section (> page 352).

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 operating permit. Operating the vehicle without AdBlue[®] will lead to the invalidation of its operating permit. The legal consequence of this is that the vehicle may no longer be operated on public roads.

This may be a criminal offence or breach 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 the country where the vehicle is operated.

If the AdBlue[®] reservoir is empty or there is a malfunction, the  indicator lamp in the instrument cluster lights up or flashes. The display also shows a message. The engine output may be automatically reduced the first time the vehicle comes to a standstill. Adapt your style of driving accordingly. Drive with particular care. Top up the AdBlue[®] tank immediately. If there is a malfunction of the BlueTec[®] exhaust gas aftertreatment system, have it checked and repaired at a qualified specialist workshop.

Contour markings

Contour markings are prescribed by law for vehicles with add-on equipment:

As the driver, you are responsible for keeping the contour markings in proper condition.

The contour markings must neither be damaged nor detached. Have damaged contour markings replaced immediately at a qualified specialist workshop.

Attachments, bodies, equipment and conversions

Notes on body/equipment mounting directives

! 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.

Technical modifications to the vehicle can affect the function of the stability control. Observe the information in the body/equipment mounting directives.

Observe the information on genuine Mercedes-Benz parts (▷ page 24).

The Mercedes-Benz body/equipment mounting directives can be found on the Internet at <http://bb-infoportal.mercedes-benz.com>.

There you can also find information on PIN assignment and changing fuses.

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

Notes on the radiator

Even seemingly small changes to the vehicle, such as attaching a radiator trim for winter driving, is not permitted. Do not cover up the radiator. Do not use thermal mats, insect protection covers or anything similar.

Otherwise, the values of the diagnostic system may be affected. In some countries, the recording of engine diagnostic data is a legal requirement, and must always be verifiable and accurate.

Genuine Mercedes-Benz parts

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.

The operating safety of the vehicle could be jeopardised if you use parts, tyres or wheels that have not been approved by Mercedes-Benz. This could lead to malfunctions in safety-relevant systems, e.g. the brake system. Only use genuine Mercedes-Benz parts or parts of equal quality. Only use tyre and wheel sizes approved for your vehicle.

Mercedes-Benz checks genuine Mercedes-Benz parts for

- reliability
- safety
- suitability

Despite ongoing market research, Mercedes-Benz is unable to assess other parts. Even if an independent or official approval has been provided in exceptional cases, Mercedes-Benz accepts no responsibility for the use of such parts in Mercedes-Benz vehicles.

In the Federal Republic of Germany, certain parts are officially approved for installation or modification only if they comply with legal requirements. This is also valid in several other countries. All genuine Mercedes-Benz parts meet the approval requirements. The use of unapproved parts may result in the general operating permit being invalidated.

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.

Always specify the vehicle identification number (VIN) when ordering genuine Mercedes-Benz parts (▷ page 344).

Data stored in the vehicle

A wide range of electronic components in your vehicle contain data memories.

These data memories temporarily or permanently store technical information about:

- the vehicle's operating status
- events
- malfunctions

In general, this technical information documents the state of a component, a module, a system or the surroundings.

This includes, for example:

- operating conditions of system components, e.g. fluid levels
- the vehicle's status messages and those of its individual components, e.g. number of wheel revolutions/speed, deceleration in movement, lateral acceleration, accelerator pedal position
- malfunctions and defects in important system components, e.g. lights, brakes.
- the vehicle's reactions and operating statuses in special driving situations, e.g. air-bag deployment, intervention of stability control systems
- ambient conditions, e.g. outside temperature

This data is exclusively technical in nature and can be used to:

- assist in the detection and rectification of faults and defects
- analyse vehicle functions, e.g. after an accident
- optimise vehicle functions

The data cannot be used to trace the vehicle's movements.

When you use one of the available services, technical information may be read from the event data memory and fault data memory.

Services include, for example:

- repair services
- service processes
- warranty claims
- quality assurance

The information is read out by employees of the service network (including manufacturers) using special diagnostic testers. Further information is available there if required.

After a fault has been rectified, the information is deleted from the fault memory or is continually overwritten.

When operating the vehicle, situations are conceivable in which this technical data, in connection with other information - if necessary, under consultation with an authorised expert - could be traced to a person.

Examples include:

- accident reports
- damage to the vehicle
- witness statements

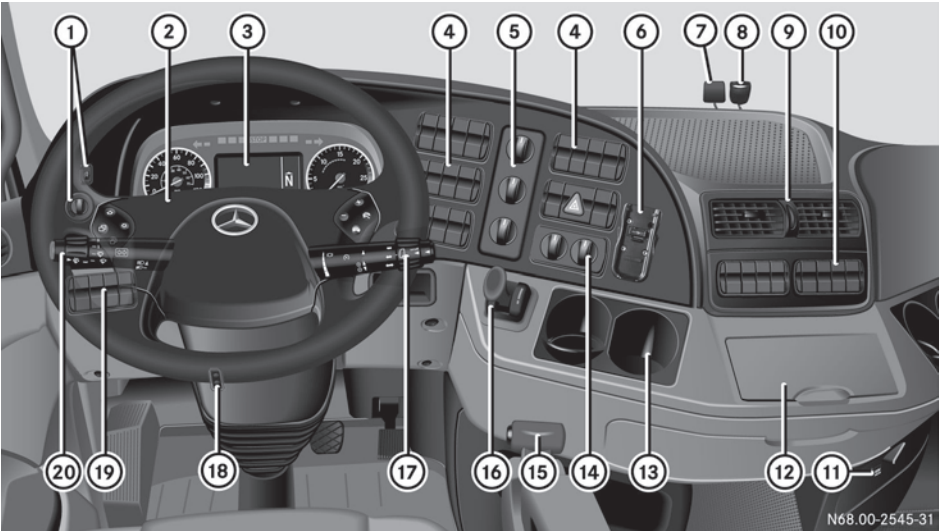
Further additional functions which are contractually agreed with the customer likewise allow specific vehicle data to be obtained from the vehicle. Such additional functions include vehicle locating in an emergency, for example.

Please note that the additional data saved on telematics equipment (e.g. FleetBoard) - depending on their configuration - can also be read via the telematics equipment and can, for example, be transmitted to the central

fleet office, as well as facilitate additional analyses.

Cockpit	28
Instrument cluster	29
Switch units	31
Combination switch	34
Multifunction lever	35

Cockpit

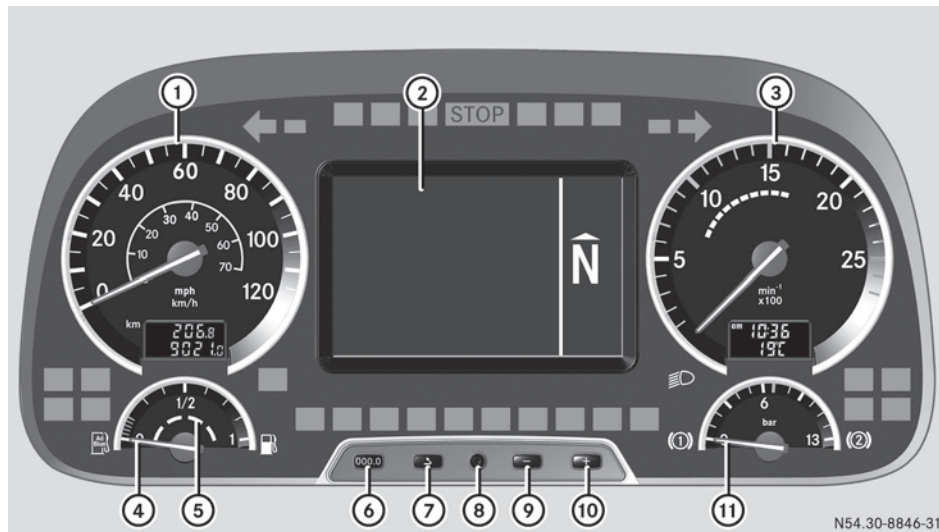


	Function	Page
①	Light switch	68
	Headlamp range control	69
②	Multifunction steering wheel	112
③	Instrument cluster	30
④	Instrument panel switch units	31
⑤	Climate control panel	96
⑥	Mobile phone fitting	93
⑦	SPA camera (Telligent® Lane Assistant)	229
⑧	Rain/light sensor	83
⑨	Air vents	99
⑩	Switch unit on the centre instrument panel	31

	Function	Page
⑪	Sockets (12 V/24 V)	85
⑫	Ashtray	86
⑬	Cup holder	91
⑭	Switch unit: Transfer case	214
	Differential locks	212
⑮	Transmission shift system (gear lever or gearshift unit)	180
⑯	Parking brake	174
⑰	Multifunction lever	35
⑱	Adjusts the steering wheel	67
⑲	Additional lamps switch unit	31
⑳	Combination switch	34

Instrument cluster

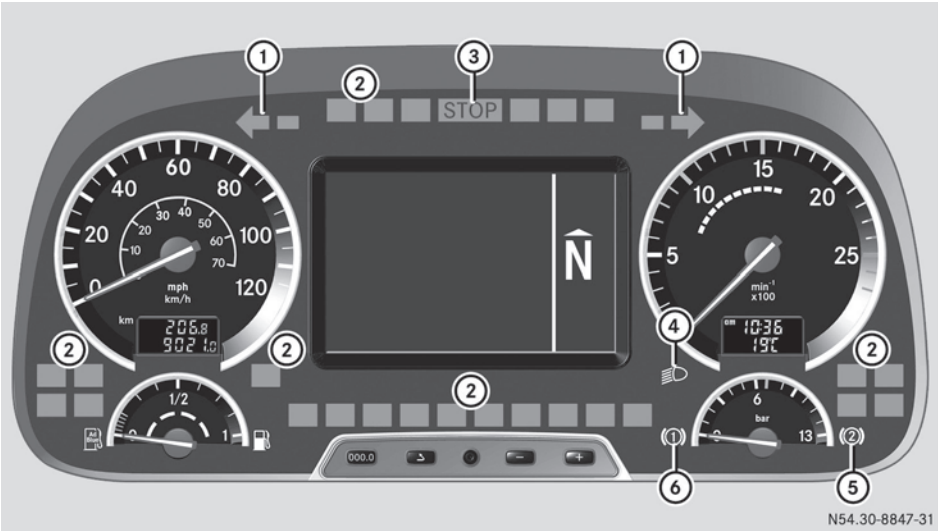
Displays and controls



	Function	Page
①	Speedometer	
②	Display	113
③	Rev counter	108
④	Fuel level	109
⑤	AdBlue® level	109
⑥	Button to reset the trip meter	111
⑦	Button for acknowledging display messages	126

	Function	Page
⑧	Reset button (on-board computer)	123
⑨	Button for dimming the instrument lighting	
⑩	Button for brightening the instrument lighting	
⑪	Supply pressure for brake circuit 1 or 2	111

Indicator lamps



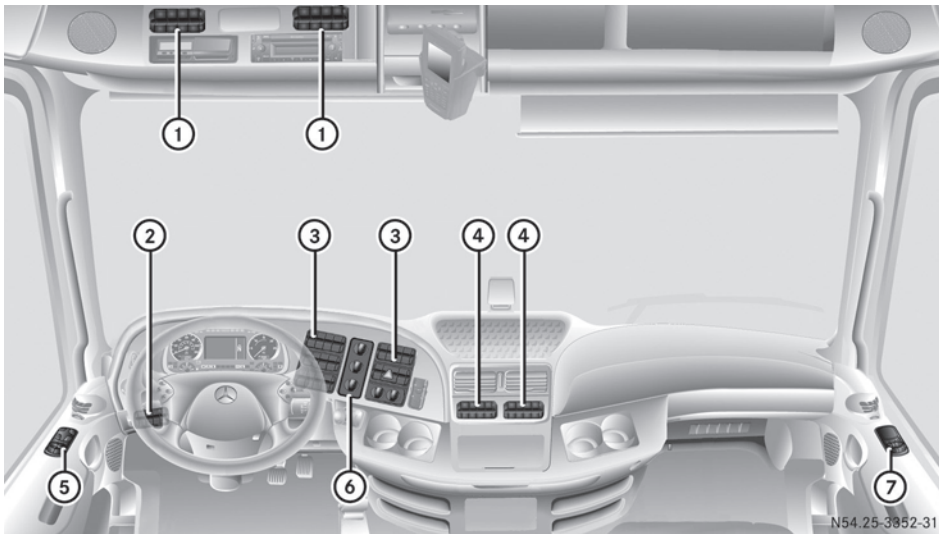
N54.30-8847-31

	Function	Page
①	Turn signals	70
②	Indicator lamps	
	Main-beam headlamps	70
	Continuous brake	177
	Parking brake	174
	Frequent-stop brake	176
	Cab tilt lock	166
	ASR (acceleration skid control)	210
	SR (Telligent® stability control)	211
	Continuous brake	177
	Engine diagnostics	150
	Cold-start aid	215
	SPA (Telligent® Lane Assistant)	229

	Function	Page
	WSK (torque converter clutch)	209
	TK (hydrodynamic clutch)	209
	Hydraulic fluid filter (SLT)	284
	Telligent® trailing axle	235
	Hill holder	177
	Tipper body	299
	Loading tailgate	
	Auxiliary air conditioning	101
③	Stop lamp	126
④	Dipped-beam headlamps	68
⑤	Brake circuit supply pressure	111
⑥	Brake circuit supply pressure	111

Switch units

Cockpit



N54.25-3852-31

Function	Page
① Above the windscreen	
 Opens the left-hand roller sunblind	
 Closes the left-hand roller sunblind	
 Opens the right-hand roller sunblind	
 Closes the right-hand roller sunblind	
 Sliding sunroof lock	48
 Opens the sliding sunroof/pop-up roof	54
 Closes the sliding sunroof/pop-up roof	54
 Interior lighting	71
 Driver's reading lamp	72
 Nightlight	72
 Ambient lighting	72

Function	Page
 No interior lighting when door opened	71
 Auxiliary heating	102
 Quick-start menu Auxil. heating	104
② Additional lamps	
 Working-area lamp (switches off automatically after pulling away)	
 Headlamp cleaning system	83
 Load compartment lighting	
 Rotating beacon	
③ Instrument panel	
 ABS (Anti-lock Braking System)	172
 ASR (acceleration skid control)	210

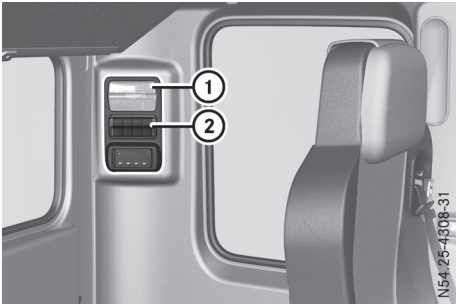
Function	Page
 SR (Telligent® stabil- ity control)	211
 Raised drive position	233
 Starting-off aid	234
 Trailing axle	235
 Leading axle	235
 Auxiliary steering (Telligent® trailing axle)	236
 ABA (Active Brake Assist)	225
 NR (Telligent® level control): STOP	231
 NR (Telligent® level control): drive posi- tion	231
 SPA (Telligent® Lane Assistant)	229
 Constant engine speed	266
 Power take-off	266
 Master switch for the electrohydraulic cab tilt system	297
 Air-conditioning sys- tem	96
 Air-conditioning sys- tem (automatic cli- mate control)	96
 Charges the air-con- ditioning refrigerant accumulator	101
 Coolbox	
 Power mode	197
 Power off-road mode (construction- site vehicles)	197
 EcoRoll mode	199

Function	Page
 Manoeuvring mode	200
 Rocking-free mode	201
 Increases the speed tolerance	218
 Decreases the speed tolerance	218
 12 V socket	85
 Air horn/horn	86
 Hazard warning lamps	
 Hill holder	177
 Shifts the transfer case to on-road posi- tion	214
 Shifts the transfer case to off-road position	214
 Differential locks	212
④ Centre instrument panel	
 ATA	48
 Panic alarm	49
 Windscreen heating	84
 EMERGENCY OFF	84
 Loading tailgate, see the separate operat- ing instructions	
 Frequent-stop brake	176
 Illuminated Mercedes star	73
 Reverse warning device	244
⑤ Driver's door	
Exterior mirror adjustment	67
 Exterior mirror, left	67
 Exterior mirror, right	67
 Exterior mirror heat- ing	68

	Function	Page
	 Opens the right-hand side window	53
	 Closes the right-hand side window	53
	 Opens the left-hand side window	53
	 Closes the left-hand side window	53
	 Unlocks the doors centrally from inside	47
	 Locks the doors centrally from inside	47
⑥	Switch unit for heating/air conditioning	96

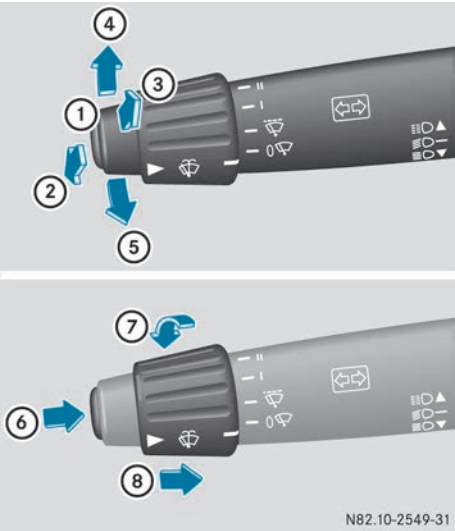
	Function	Page
⑦	Co-driver's door	
	 Opens the right-hand side window	53
	 Closes the right-hand side window	53
	 Unlocks the doors centrally from inside	47
	 Locks the doors centrally from inside	47
	 Interior lighting	71
	 Co-driver reading lamp	72

Berth



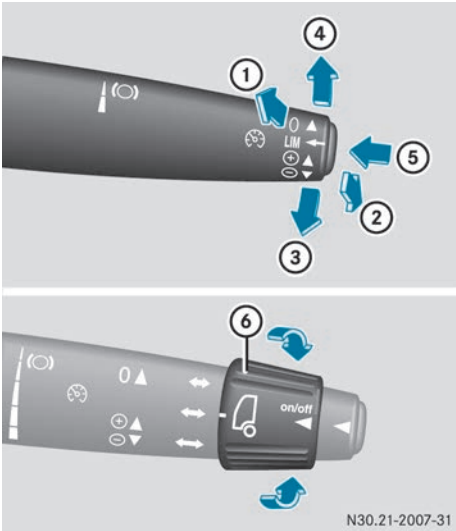
	Function	Page
①	Berth reading lamp	71
②	 Auxiliary heating	102
	 Operates the audio equipment	92
	 Operates the audio equipment	92
	 Opens the sliding sunroof/pop-up roof	54, 56
	 Closes the sliding sunroof/pop-up roof	54, 56
	 Interior lighting	71
	 Switches off the interior lighting	71

Combination switch



	Function	Page
①	Main-beam headlamps off (when dipped-beam headlamps are switched on)	70
②	Main-beam headlamps on (when dipped-beam headlamps are switched on)	70
③	Headlamp flasher	70
④	Turn signal, right	70
⑤	Turn signal, left	70
⑥	Horn	
⑦	Windscreen wipers	82
⑧	Windscreen washer system	83

Multifunction lever



	Function	Page
⑤	Selects the driving system: speed limiter or cruise control	
⑥	Vehicles with Telligent® distance control: changes the specified distance to the vehicle in front	

	Function	Page
	Continuous brake	177
	Idling speed	215
	Speed limiter	217
	Cruise control	218
	Telligent® distance control	221
①	Increases idling speed Increases speed: cruise control, speed limiter, Telligent® distance control	
②	Reduces idling speed Reduces speed: cruise control, speed limiter, Telligent® distance control	
③	Activates the continuous brake	
④	Switches off: cruise control, speed limiter, Telligent® distance control, idling speed increase	

Useful information	38
Occupant safety	38
Pets in the vehicle	44

Useful information

These Operating Instructions describe all the models and standard and optional equipment of your vehicle that were available at the time of going to print. Country-specific differences are possible. Bear in mind that your vehicle may not be equipped with all the functions described. This also applies to safety-relevant systems and functions.

Read the information on qualified specialist workshops (► page 22).

Occupant safety

Restraint systems

WARNING

If the restraint system is modified, it may no longer work as intended. The restraint system may then not perform its intended protective function by failing in an accident or triggering unexpectedly, for example. There is an increased risk of injury.

Never modify parts of the restraint system. Do not attempt to modify the wiring as well as electronic components or their software.

In an accident, your vehicle may be subjected to rapid acceleration or deceleration. During this acceleration or deceleration, the vehicle occupants will be propelled towards the point of impact. There is therefore the risk of vehicle occupants injuring themselves on parts of the vehicle interior or on parts of the vehicle. The purpose of the vehicle's complementary restraint systems is to minimise this risk of injury.

However, seat belts and the driver's airbag are generally unable to prevent injuries caused by objects penetrating the vehicle from the outside.

The most important restraint systems are the seat belts and the child restraint systems.

SRS (Supplemental Restraint System) offers additional protection potential. SRS consists

of a belt tensioner on the driver's side and an airbag system with airbag control unit and driver's airbag.

The driver's airbag increases the degree of protection for the driver and is therefore only an additional restraint system to the seat belt. The driver's airbag does not replace the requirement for the seat belt to be worn correctly at all times. The driver's airbag is not deployed in all types of accidents. The driver's airbag is not deployed if, for example, the protection already provided by a correctly fastened seat belt would not be enhanced by the airbag deploying.

Deployment of the driver's airbag only provides increased protection if the seat belt is worn correctly. The seat belt helps to keep the driver in the best position in relation to the airbag. The seat belt also prevents the driver from being propelled towards the point of impact, e.g. in the event of a frontal collision.

The airbag system can be modified to accommodate a person with disabilities. Consult a Mercedes-Benz Service Centre.

Seat belts

Important safety notes

WARNING

A seat belt which is not worn correctly, or which has not been engaged in the seat belt buckle correctly, cannot provide the intended level of protection. Under certain circumstances, this could cause severe or even fatal injuries in the event of an accident.

Therefore, make sure that all occupants – in particular, pregnant women – wear their seat belts correctly at all times.

- The seat belt must fit snugly on your body and must not be twisted. Therefore, avoid wearing bulky clothing, e.g. a winter coat. The shoulder section of the belt must be routed across the centre of your shoulder – on no account across your neck or under your arm – and 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 – not across your abdomen. If necessary, push the seat belt slightly downwards and adjust it by pulling it in the direction the seat belt retracts.

- Do not route the seat belt strap over sharp or fragile objects. Please make sure that such objects are not on or in your clothing, e.g. spectacles, pens or keys etc. The seat belt strap could become damaged and tear during an accident and you or other vehicle occupants could be injured.
- Only one person should use each seat belt at any one time. Children must never travel sitting on the lap of another occupant. The child will not be secured in the event of an accident, heavy braking or sudden change of direction. This may result in the child or other occupants being seriously or fatally injured.
- Persons under 1.50 m tall cannot wear the seat belts correctly. For this reason secure persons less than 1.50 m tall in specially designed, suitable restraint systems.
- Children under 1.50 m tall and younger than twelve years of age cannot wear the seat belts correctly. For this reason secure them in special suitable child restraint systems installed on a suitable seat. Additional information can be found in the Operating Instructions in the chapter "Safety", "Children in the Vehicle". Observe the installation instructions of the child restraint system manufacturer.
- Do not secure an object with a seat belt if the seat belt is also being used by one of the vehicle's occupants.

WARNING

The seat belt does not offer the intended level of protection if you have not moved the backrest to an almost vertical position. When braking or in the event of an accident, you could slide underneath the seat belt and sustain abdomen or neck injuries, for example. This

poses an increased risk of injury or even fatal injury.

Adjust the seat properly before beginning your journey. Always ensure that the backrest is in an almost vertical position and that the shoulder section of your seatbelt is routed across the centre of your shoulder.

WARNING

Seat belts cannot protect as intended, if:

- they are damaged, have been modified, are extremely dirty, bleached or dyed
- the seat belt buckle is damaged or extremely dirty
- modifications have been made to the belt tensioners, belt anchorages or inertia reels

Seat belts may sustain non-visible damage in an accident, e.g. due to glass splinters. Modified or damaged seat belts can tear or fail, for example in the event of an accident. Modified seat belt tensioners may be deployed unintentionally or fail to be deployed when required. There is an increased risk of injury, possibly even fatal.

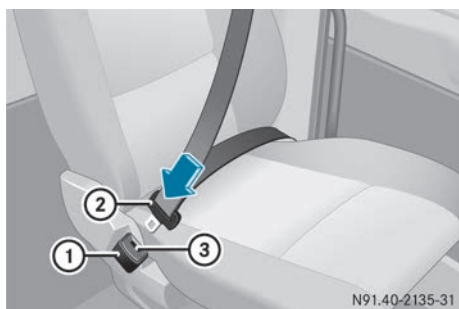
Never modify safety belts, seat belt tensioners, seat belt anchorages and inertia reels. Ensure that seat belts are not damaged or worn and are clean. After an accident, have the seat belts checked immediately at a qualified specialist workshop.

Mercedes-Benz recommends that you use seat belts that have been specifically approved for the relevant seat by Mercedes-Benz.

Please observe the information provided for cleaning the radiator (> page 272).

Seat belts and child restraint systems are the most effective means of restraining the movement of vehicle occupants in the event of an accident. This lowers the risk of vehicle occupants coming into contact with parts of the vehicle interior.

Fastening the seat belt



- ▶ **To fasten a seat belt:** pull the belt smoothly from the inertia reel and guide it over the shoulder.
- ▶ Engage belt tongue ② in buckle ①.
- ▶ Pull the shoulder section upwards to tighten the belt across your body.
- ▶ If necessary, adjust the seat belt to the appropriate height.
- ▶ **To release the seat belt:** press release button ③ on belt buckle ①.

Seat belt warning system

If the driver's seat belt is not fastened and the engine is running, a warning tone sounds for approximately 5 seconds.

SRS (Supplemental Restraint System)

Important safety notes

WARNING

If SRS is malfunctioning, components of the restraint system could be triggered inadvertently or may not be triggered in the event of an accident with a high rate of vehicle deceleration. There is an increased risk of injury. Have the SRS checked and repaired immediately at a qualified specialist workshop.

If the **SRS** warning lamp appears in the display, SRS (Supplemental Restraint System) is malfunctioning.

SRS consists of a belt tensioner on the driver's side and an airbag system with airbag control unit and driver's airbag.

Belt tensioners and airbag systems are items of optional equipment and are therefore not fitted to every vehicle.

Triggering of the belt tensioner and of the driver's airbag

In the event of a collision, the airbag control unit evaluates important physical data relating to the vehicle deceleration or acceleration during the first phase of the collision, such as:

- duration
- direction
- force

Deployment of the driver's airbag depends on various factors. These factors include: the force of the initial deceleration or acceleration, duration and direction of acceleration or deceleration.

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

- the distribution of forces during the collision
- 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 that can only be seen and measured after the impact are not decisive for the deployment of an airbag. They also do not provide an indication of deployment.

The vehicle can be substantially deformed without the driver's airbag being deployed. This is the case if only relatively easily deformable vehicle parts are affected by the collision and the required deceleration threshold is not reached. On the other hand, airbags may be deployed even though the vehicle only displays minor deformation. This is the case if, for example, very rigid vehicle parts such as

the longitudinal members are hit in an accident and the rate of deceleration is sufficient.

- i** The driver's airbag is not deployed in all types of accidents. SRS is controlled through a complex system of sensors and evaluation logic.

Belt tensioners

WARNING

Pyrotechnic seat belt tensioners that have been deployed are no longer operational and are unable to perform their intended protective function. This poses an increased risk of injury or even fatal injury.

Therefore, have pyrotechnic belt tensioners which have been triggered immediately replaced at a qualified specialist workshop.

The belt tensioner is a belt reel tensioner, which is fastened directly to the seat belt retractor in the seat. In an impact, it tightens the belt to pull it close to the body.

- i** The belt tensioner cannot compensate for the seat position being incorrect or for a seat belt being worn incorrectly.

The seat belt tensioner does not pull the driver back to the seat backrest.

The seat belt tensioner can be triggered if:

- the key is turned to the drive position in the ignition lock (▷ page 163)
- the restraint systems are operational
- the driver's safety belt is engaged in its buckle
- in the event of head-on and rear-end impacts, 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 some fine powder may be released. This bang will not damage your hearing and the powder does not constitute a health hazard. The **SRS** warning lamp appears in the display.

Airbag

Introduction

The AIRBAG symbol indicates the installation location of the driver's airbag.

The airbag is a safety device that is supplementary to a correctly fastened seatbelt. It does not act as a substitute for a seatbelt. The airbag serves to provide additional protection in an accident situation.

However, no system available today can completely eliminate injuries and fatalities.

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

Important safety notes

WARNING

If you deviate from the correct seat position, the airbag cannot perform its intended protective function and can even cause additional injuries when deployed. There is an increased risk of serious or even fatal injuries. In order to avoid such risks, always ensure that all vehicle occupants:

- fasten their seatbelts correctly, including pregnant women
- observe the following notes

Always ensure that there are no objects located between the airbag and the vehicle occupant.

- Adjust seats properly before beginning your journey. Always make sure that the seat backrest is in an almost vertical position. The middle of the head restraint must support the head at about eye level.
- Move the driver's seat as far back as possible. The seat position must allow the vehicle to be driven safely.
- Only hold the steering wheel by the rim. This allows the airbag to inflate fully.
- During a journey, always sit with your back leaning against the backrest. Do not lean

forward. You will otherwise be in the deployment area of the airbag.

- Secure persons under 1.50 m tall in suitable restraint systems. The seat belt cannot be correctly fastened on persons below this height.

If children are travelling in the vehicle, also observe the following instructions.

- Always secure children younger than 12 years of age and under 1.50 m tall in suitable child restraint systems.
- Ensure that you observe the instructions and safety notes in the "Children in the vehicle" section (▷ page 42) in addition to the child restraint system manufacturer's instructions.

Objects in the vehicle interior can jeopardise the intended functionality of an airbag. In order to avoid the risks posed by the necessary high-speed deployment of the airbag, before starting your journey, make sure that:

- there are no additional people, animals or objects between the driver and the driver's airbag
- there are no accessories, such as cup holders, in the deployment area of an airbag, e.g. on the steering wheel or against the door
- there are no heavy, sharp or fragile objects in the pockets of your clothing. Stow such objects in a suitable place.

 WARNING

If you modify an airbag cover or affix objects such as stickers to it, the airbag can no longer function correctly. There is an increased risk of injury.

Never modify an airbag cover or affix objects to it.

Driver's airbag

The driver's airbag deploys in front of the steering wheel. When activated, it increases protection for the head and thorax of the driver.

Children in the vehicle

Important safety notes

If you are travelling with a child younger than 12 years of age and under 1.50 m tall in the vehicle:

- always secure the child in a child restraint system suitable for Mercedes-Benz vehicles. The child restraint system must be appropriate to the age, weight and size of the child.
- always observe the instructions and safety notes in this chapter in addition to the child restraint system manufacturer's instructions.

 WARNING

If you leave children unattended in the vehicle, they could set the vehicle in motion by, for example:

- releasing the parking brake
- shifting the transmission into neutral
- starting the engine

They could also operate the vehicle's equipment and become trapped. There is a risk of an accident and injury.

When leaving the vehicle, always take the key with you and lock the vehicle. Never leave children unattended in the vehicle.

 WARNING

If persons (particularly children) are exposed to heat or cold for a prolonged period, there is a risk of serious or even fatal injuries. Never leave persons (particularly children) unattended in the vehicle.

 WARNING

If the child restraint system is placed in direct sunlight, the parts could become very hot. Children could suffer burns by touching these parts, in particular on the metallic parts of the child restraint system. There is a risk of injury.

If you and your child leave the vehicle, always make sure that the child restraint system is not in direct sunlight. Cover it with a blanket, for example. If the child restraint system has been exposed to direct sunlight, leave it to cool down before securing the child in it. Never leave children unattended in the vehicle.

Make sure that all vehicle occupants have fastened their seat belts properly and are seated correctly. This is particularly important for children.

Child restraint systems

WARNING

If the child restraint system is incorrectly fitted on the seat position suitable for this purpose, it cannot perform its intended protective function. In the event of an accident, sharp braking or a sudden change in direction, the child may not be held securely. There is an increased risk of serious or even fatal injuries. Observe the manufacturer's installation instructions and the correct use for the child restraint system. Make sure that the entire surface of the child restraint system is resting on the seat surface. Never place objects under or behind the child restraint system, e.g. cushions. Only use child restraint systems with the original cover designed for them. Only replace damaged covers with genuine covers.

WARNING

If the child restraint system is fitted incorrectly or is not secured, it can come loose in the event of an accident, heavy braking or a sudden change in direction. The child restraint system could be thrown about, striking vehicle occupants. There is an increased risk of injury, possibly even fatal.

Always fit child restraint systems properly, even if they are not being used. Make sure that you observe the child restraint system manufacturer's installation instructions.

You will find further information on securely stowing objects, luggage and loads under "Stowage spaces and compartments" (> page 88).

WARNING

Child restraint systems or their securing systems that have been damaged or subjected to a load in an accident cannot perform their intended protective function. In the event of an accident, sharp braking or a sudden change in direction, the child may not be held securely. There is an increased risk of serious or even fatal injuries.

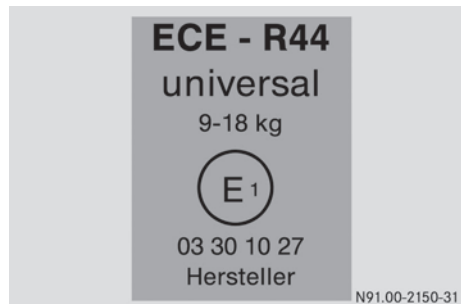
Immediately replace child restraint systems that have been damaged or subjected to a load in an accident. Have the child restraint securing systems checked in a qualified specialist workshop before fitting a child restraint system again.

Observe the warning labels on the child restraint system.

If a child is travelling in the vehicle, always observe the safety notes on "Children in the vehicle".

Only child restraint systems in the "Universal" category which are approved in accordance with the ECE standard ECE R44 are permitted for use in the vehicle.

Universal child restraint systems are identified by their orange approval label.



Example: approval label on the child restraint system

The securing system of the child restraint system is the seat belt (> page 38).

If you secure a child in a forward-facing child restraint system on the co-driver's seat, always move the co-driver's seat as far back as possible. When doing so, always ensure that the shoulder belt strap is correctly routed from the belt sash guide to the shoulder belt sash guide on the child restraint system. The shoulder belt strap must be routed forwards and downwards from the belt sash guide. If necessary, adjust the belt sash guide accordingly. Always comply with the child restraint system manufacturer's installation instructions.

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

Pets in the vehicle



WARNING

If you leave animals unsupervised or unsecured in the vehicle, they may push a button or a switch, for example.

They could:

- activate vehicle equipment and become trapped, for example
- switch vehicle systems on or off, thus endangering other road users

In the event of an accident, sudden braking or abrupt changes of direction, unsecured animals could be flung around the vehicle, injuring the vehicle occupants. There is a risk of an accident and injury.

Never leave animals unattended in the vehicle. Always secure animals correctly during a journey, e.g. in an animal transport box.

Useful information	46
Locking system	46
Doors	52
Opening and closing the side win- dows	53
Resetting the side windows	54
Roof	54

Useful information

These Operating Instructions describe all the models and standard and optional equipment of your vehicle that were available at the time of going to print. Country-specific differences are possible. Bear in mind that your vehicle may not be equipped with all the functions described. This also applies to safety-relevant systems and functions.

Read the information on qualified specialist workshops (► page 22).

Locking system

Keys

WARNING

If you attach heavy or large objects to the key, the key could be unintentionally turned in the ignition lock. This could cause the engine to be switched off. There is a risk of an accident. Do not attach any heavy or large objects to the key. Remove any bulky keyrings before inserting the key into the ignition lock.

Your vehicle is equipped with a special key system. The engine can only be started using the key coded to the vehicle.

-  If a vehicle key is lost, obtaining a replacement is a time-consuming process. This can only be done through a Mercedes-Benz Service Centre.

Mercedes-Benz therefore recommends that you always keep an easily accessible spare key with you for emergencies.

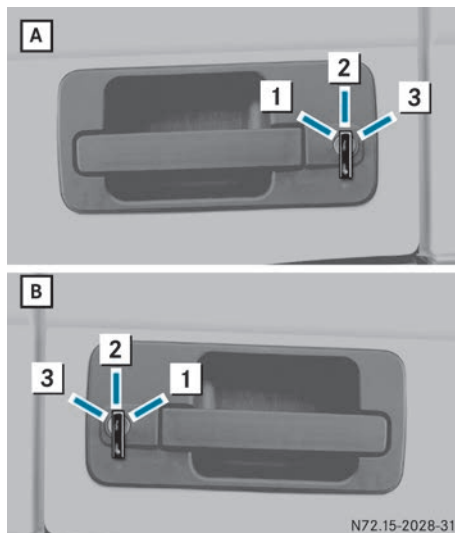
Central locking

Important safety notes

-  Only open the doors when traffic conditions permit. Make sure that there is sufficient clearance when opening the doors. Otherwise, you could damage your vehicle or other vehicles.

Exterior door lock

Unlocking/locking using the key



- Insert the key into the lock of the left-hand door **A** or the right-hand door **B** in position **2**.
- **To unlock:** turn the key to position **1**. The corresponding door is unlocked.
- **To lock:** turn the key to position **3**. Both doors are locked.
- **To open:** remove the key from position **2**.
- Pull the door handle.

Interior door lock

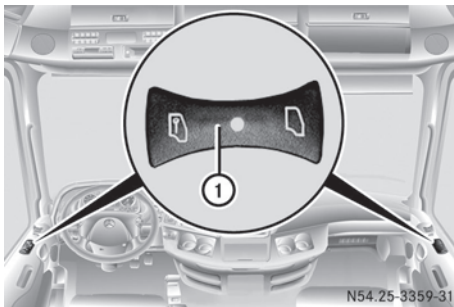
Unlocking using the door handle



Example: release lever on left-hand door

- Pull door handle ①.

Locking/unlocking centrally using the switch



- Close the doors.
- **To lock centrally:** press the left-hand section of the ① button.
The indicator lamp in the switch goes off.
- **To unlock centrally:** press the right-hand section of button ①.
The indicator lamp in the switch flashes.

Enhanced central locking system

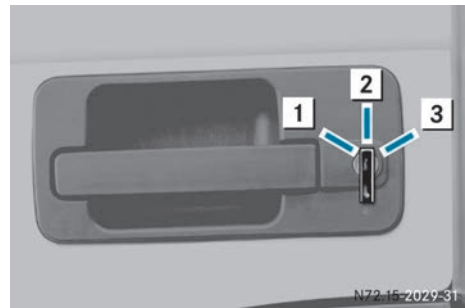
Important safety notes

WARNING

When the convenience closing feature is operating, parts of the body could become trapped in the closing area of the side window and the sliding sunroof. There is a risk of injury.

Observe the complete closing procedure when the convenience closing feature is operating. When closing make sure that no parts of the body are in the closing area.

Convenience closing using the key



Example: door lock on the left-hand door

- Insert the key in position ② in the driver's door lock.
- Turn the key to position ③ and hold it. All turn signals flash three times. The doors are locked. The side windows and the sliding roof close.
- Turn the key to position ② and remove it.

If there is a risk of becoming trapped:

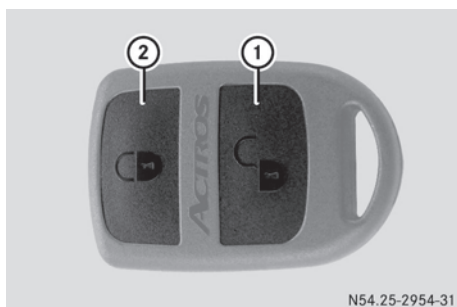
- Turn the key to position ① immediately and hold it there until the side windows and the sliding sunroof open again. The driver's door is unlocked.

Convenience opening using the key

- Insert the key in position ② in the driver's door lock.
- Turn the key to position ① and hold it. The driver's door is unlocked. The side windows and the sliding roof open automatically.
- Turn the key to position ② and remove it.

General notes about the remote control

The remote control works regardless of the direction in which it is pointed. The vehicle can also be unlocked/locked from a distance. Only use the remote control in the immediate vicinity of the vehicle. This helps to prevent theft.



Remote control

When the remote control battery is discharged, replace it (▷ page 50).

If you lose a remote control, have it disabled at a Mercedes-Benz Service Centre. This prevents the lost remote control from being misused. Have the remaining remote controls recoded.

Convenience closing using the remote control

Observe the safety notes on the enhanced central locking system (▷ page 47).

- ▶ Press button ②.

All turn signals flash three times. The doors are locked. The side windows and the sliding roof close.

If there is a risk of becoming trapped:

- ▶ Press button ① immediately.
The side windows and the sliding sunroof stop moving and the driver's door is unlocked.
- ▶ Open the side windows (▷ page 53) and/or the sliding sunroof (▷ page 54).

Unlocking using the remote control

- i** If you unlock the vehicle using the remote control and a door is not opened within 25 seconds, the vehicle automatically locks itself.

- ▶ Press button ①.

All turn signals flash once. The driver's door is unlocked.

or

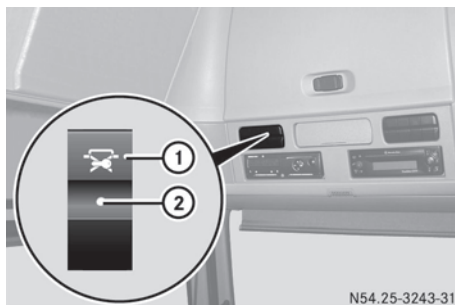
- ▶ Press button ① again.

The co-driver's door is unlocked.

Switching the sliding sunroof lock on/off

The lock prevents the sliding sunroof from closing when you lock the vehicle. The air in the cab can continue to circulate.

- ▶ Turn the key back in the ignition lock as far as it will go, or remove it.



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

Indicator lamp ② in button ① lights up. The next time the vehicle is locked, the sliding sunroof will remain open.

- ▶ **To switch off:** press the upper section of button ① again.

Indicator lamp ② in button ① goes out.

ATA (Anti-Theft Alarm system)

General notes

ATA protects the tractor vehicle and the attached trailer/semitrailer from break-in and theft.

ATA monitors:

- on the tractor vehicle:
 - the doors
 - the exterior flaps
 - the power supply
 - the cab tilt lock
 - the vehicle interior (can be deactivated)
- the box-type body
- the power supply between the tractor vehicle and the trailer/semitrailer

Vehicles for the transport of hazardous goods: if ATA is primed and the power supply is interrupted using the EMERGENCY OFF switch (▷ page 84), the alarm is triggered.

The message: **Emergency off mode triggers alarm!** appears in the display.

Bear the following in mind:

- when ATA is primed, it confirms the locking procedure by flashing all turn signals 3 times. If the turn signals do not flash 3 times, one or more components are not in the rest position. ATA cannot then monitor these components, e.g. open exterior flaps.
- components that are moved to the rest position within 30 seconds of ATA being primed will be monitored.
- prime ATA again if you subsequently close the exterior flaps or if you want to include a coupled trailer in the monitoring.

ATA alarm

If ATA triggers an alarm:

- all turn signals and the dipped-beam headlamps flash for about 5 minutes and
- the alarm siren sounds for approximately 30 seconds

After an alarm:

- Turn the key to the radio position in the ignition lock.
The status indicator lights up yellow.

In addition, the display shows information on the alarm, for example:

- **ATA**
- **Maintenance flap**
- date and time of the alarm

- 1** If more than one alarm has been triggered, only the first alarm is shown in the display.

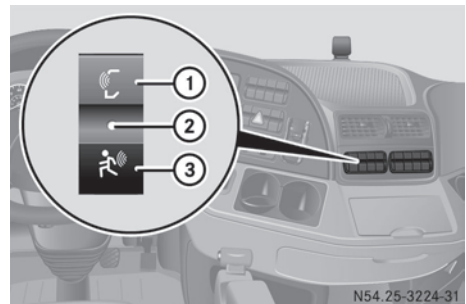
Before ATA is primed

- Close the roof hatch, sliding sunroof or pop-up roof.
- Close the side windows.
- Draw back the curtains.
- Close the exterior flaps.
- Detach/remove any loose objects in the cab, e.g. mascots or coat hangers.

Priming and deactivating ATA

Priming ATA with interior motion sensor

Vehicles with enhanced central locking system: note the safety notes on the enhanced central locking system (▷ page 47).



N54.25-3224-31

- ▶ Turn the key back to the stop in the ignition lock and remove it.
- ▶ Turn the key to the locking position in the door lock of the driver's door and hold it.

or

- ▶ Press the  button on the remote control.

All turn signal lamps flash 3 times and the indicator lamp in button ② flashes. The vehicle is locked.

Vehicles with enhanced central locking system: the side windows and the sliding sunroof/pop-up roof close.

- ▶ Turn the key to the basic setting in the door lock of the driver's door and remove it.

Priming ATA without interior motion sensor

- ❗ If persons or animals are to remain in the cab, prime ATA without the interior motion sensor.

- ▶ Turn the key back to the stop in the ignition lock and remove it.
- ▶ Press the upper section of the ① button. The indicator lamp in button ② flashes.
- ▶ Get out of the vehicle within 60 seconds and close the driver's door. After 60 seconds, all turn signal lamps on the vehicle flash 3 times. The vehicle is locked and ATA is primed.

- ❗ If the engine is started while ATA is primed, ATA is deactivated automatically.

Deactivating ATA/cancelling alarm

- ▶ Turn the key to the unlocking position in the door lock of the driver's door and hold it.

or

- ▶ Press the  button on the remote control and open the driver's door.

or

- ▶ Press the upper section of the ① button. All turn signals flash once.

- ❗ If ATA is deactivated with the remote control and a door is not opened within 25 seconds:

- the vehicle is locked and
- ATA is primed again

- ▶ Turn the key to the basic setting in the door lock of the driver's door and remove it.

Triggering and deactivating the panic alarm

An alarm can be triggered manually with the button if danger threatens, for example.

Vehicles with enhanced central locking system: note the safety notes on the enhanced central locking system (> page 47).

- ▶ **To trigger:** press the lower section of button ③.

The alarm is triggered and the vehicle is locked.

Vehicles with enhanced central locking system: the side windows and the sliding sunroof/pop-up roof close.

- ▶ **To deactivate:** press the lower section of button ③ again.

The alarm ceases and the vehicle is unlocked.

Battery remote control

Important safety notes

WARNING

Batteries contain toxic and corrosive substances. If batteries are swallowed, it can result in severe health problems. There is a risk of fatal injury.

Keep batteries out of the reach of children. If a battery is swallowed, seek medical attention immediately.

Environmental note



Batteries contain pollutants. It is illegal to dispose of them with the household rubbish.



They must be collected separately and disposed of in an environmentally responsible recycling system.

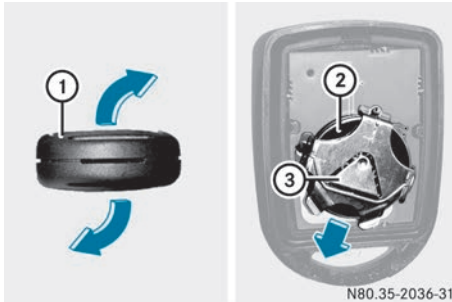
Dispose of batteries in an environmentally responsible manner. Take discharged batteries to a qualified specialist workshop or to a collection point for used batteries.

A remote control with a discharged battery can no longer lock or unlock the vehicle.

If **Rem. ctrl batteries!** appears in the display, the battery in the remote control is discharged.

Replacing the battery

Use a CR 2032 battery.



- Prise open remote control ①, e.g. by inserting a coin in the slot.
- Press out battery ② from under spring contact ③ in the direction of the arrow and remove it.
- Use a lint-free cloth to clean new battery ②.
- Insert new battery ② under contact spring ③ with the positive pole pointing up.
- Press both halves of the housing together until they engage.

Problems with the locking system

Problem	Possible causes/consequences and ► Solutions
The display shows Rem. ctrl batteries! .	The remote control battery is discharged. ► Replace the remote control battery (► page 50).
It is no longer possible to lock/unlock the vehicle using the remote control.	The remote control has been pressed too often outside the range of the vehicle. ► Lock/unlock the doors using the vehicle key (► page 46). ► Press the  button on the remote control twice in succession and start the engine within 60 seconds. The remote control will then function normally again.
When ATA (anti-theft alarm system) is primed, there is no acknowledgement from the turn signal lamps.	One of the monitored components has not been locked correctly. ► Switch off ATA (► page 49). ► Check that the monitored components are locked, e.g.: • doors • cab tilt lock • the exterior flaps on the driver's and co-driver's side ► Prime ATA. ► If there is no visual acknowledgement, have ATA checked at a qualified specialist workshop.

Doors

Entering and exiting

 WARNING

If you leave children unattended in the vehicle, they could set the vehicle in motion by, for example:

- releasing the parking brake
- shifting the transmission into neutral
- starting the engine

They could also operate the vehicle's equipment and become trapped. There is a risk of an accident and injury.

When leaving the vehicle, always take the key with you and lock the vehicle. Never leave children unattended in the vehicle.

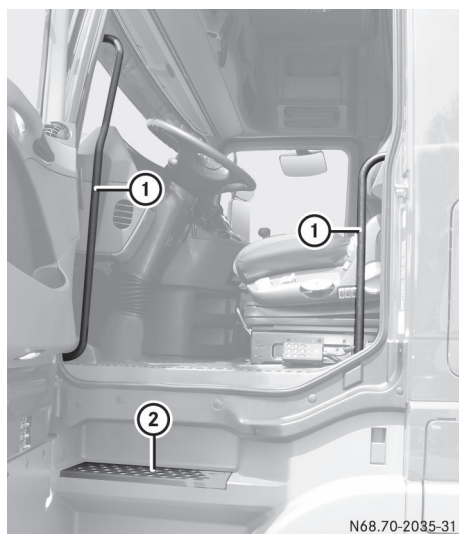
Ensure that you observe the safety notes in the "Children in the vehicle" section (► page 42).

Safe entry and exit from the vehicle can only be guaranteed if you use the grab handles and steps. Only these are designed to withstand the necessary weight. Do not jump down from the cab.

Keep steps, door sills, grab handles and footwear free from dirt, such as:

- mud
- clay
- snow
- ice

This increases the safety of your footing.



Example: getting into and out of the vehicle using the left-hand door

- Use the EASY-ENTRY/EXIT system of the suspension seat (► page 58).
- Use grab handles ① and access step ② provided.

Opening and closing the side windows

⚠ WARNING

When opening a side window, parts of the body can drawn into or trapped between the side window and the window frame. There is a risk of injury.

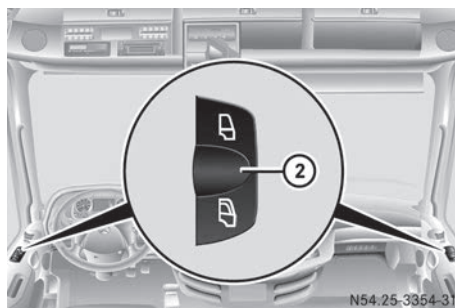
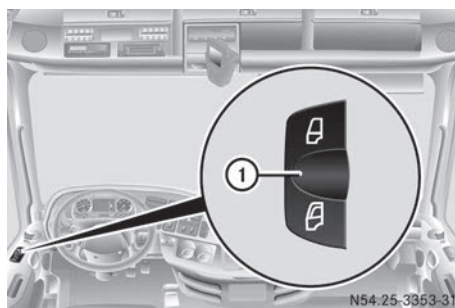
Make sure that nobody is touching the side window before you open it. If someone becomes trapped, release the switch or press the upper section of the switch to close the side window again.

⚠ WARNING

When a side window is closed, body parts may become trapped in the closing range. There is a risk of injury.

Ensure that there are no body parts in the closing range of the window when closing it. If

somebody becomes trapped, release the button immediately or press the lower section of the button to open the side window again.



- ① Left-hand side window button
- ② Right-hand side window button

- Turn the key to the radio position in the ignition lock.
- **To open:** press and hold the lower section of button ① or ② until the corresponding side window reaches the desired position.
- **To close:** press and hold the upper section of button ① or ② until the corresponding side window reaches the desired position.
- **Convenience opening/closing:** press the upper or lower section of button ① or ② for approximately 1 second. The corresponding side window opens or closes completely.

The anti-entrapment feature stops the closing procedure if an obstacle prevents complete closure.

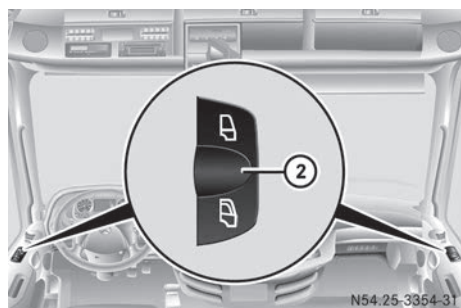
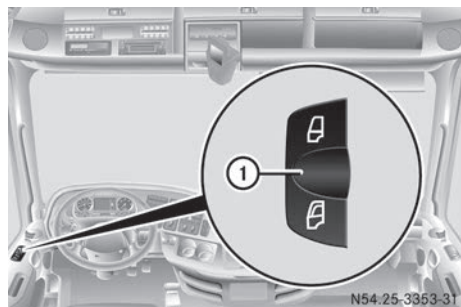
- **To cancel convenience opening/closing:** briefly press the upper or lower section of button ① or ②.

The side window stops in its current position.

- ❗ For vehicles with the enhanced central locking system: you can also use the remote control to close the side windows (► page 48).

Resetting the side windows

For vehicles with the enhanced central locking system: if the convenience opening/closing of the side windows no longer functions correctly, the side windows must be reset.



- ① Left side window switch
- ② Right side window switch

- Turn the key to the drive position in the ignition lock.
- Press the lower section of switch ① or ② of the corresponding side window and hold until the side window has been fully open for approximately 1 second.
- Press the upper section of switch ① or ② of the corresponding side window and hold until the side window has been fully closed for approximately 1 second.

If the convenience opening/closing fails to function again, have the window operation checked at a qualified specialist workshop.

Roof

Sliding sunroof

Important safety notes

WARNING

While opening and closing the sliding sunroof, body parts in close proximity could become trapped. There is a risk of injury.

Make sure that no body parts are in close proximity during the opening and closing procedures.

If somebody becomes trapped:

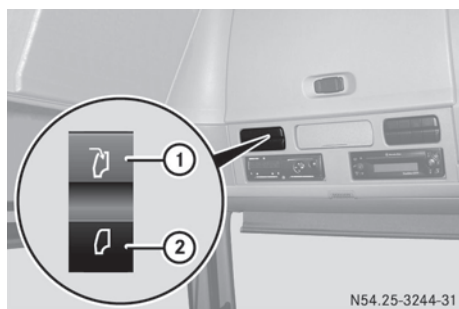
- release the switch immediately, or
- during automatic operation, press the switch briefly in any direction

The opening or closing procedure will be stopped.

Opening sliding sunroof

- ❗ For vehicles with the enhanced central locking system: when locking the vehicle, you can use the lock to keep the sliding sunroof open (► page 48).

You can also open and close the sliding sunroof with the button in the switch unit of the lower berth.



Example: switch unit above the windscreen

- **To open:** press and hold upper section ① of the button until the sliding sunroof reaches the desired position.
- **To open completely:** briefly press upper section ① of the button. Automatic operation starts and the sliding sunroof opens completely.
- **To interrupt automatic operation:** briefly press upper section ① or lower section ② of the button again. The sliding sunroof stops in the current position.

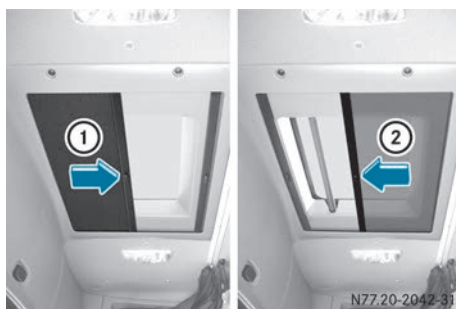
Closing the sliding sunroof

The anti-entrapment feature stops the closing procedure if an obstacle prevents complete closure.

In an emergency, the sliding sunroof can be closed manually (▷ page 55).

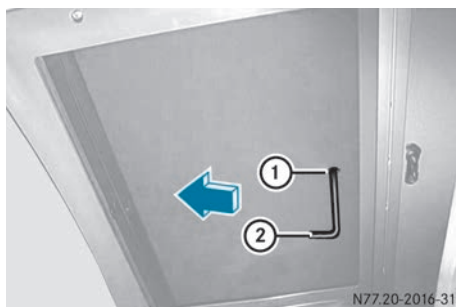
- **To close:** press and hold lower section ② of the button until the sliding sunroof reaches the desired position.
- **To close completely:** briefly press lower section ② of the button. Automatic operation starts and the sliding sunroof closes completely.
- **To interrupt automatic operation:** briefly press upper section ① or lower section ② of the button again. The sliding sunroof stops in the current position.

Sun screen/insect screen



- **To close:** pull sun screen ① or insect screen ② to the other side of the recess and engage in place.
- **To open:** release sun screen ① or insect screen ② from the detent and guide it back.

Closing the sliding sunroof manually



- Take Allen key ② from the vehicle document wallet.
- Pull the insect screen to the opposite end of the recess and engage it in this position (▷ page 55).
- Pull the insect screen further out of the roller mechanism in the direction of the arrow until opening ① is visible.
- Pass Allen key ② through available opening ① and fit it to the actuator.
- Turn Allen key ② clockwise until the sliding sunroof is completely closed.
- Pull out Allen key ②.

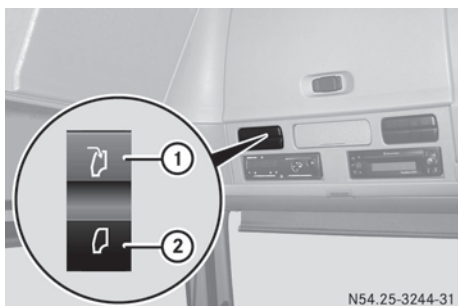
Pop-up roof

Opening and closing the pop-up roof

WARNING

When the pop-up roof is closed, body parts may become trapped. Persons may also be in the closing range or may move into the closing range while the roof is being closed, e.g. children. There is a risk of injury.

Ensure that nobody is in the vicinity of the closing range during the closing process. If somebody becomes trapped, release the switch immediately. Press the other end of the switch to open the pop-up roof again.



Example: switch unit above the windscreen

► **To open:** press and hold upper section ① of the button until the pop-up roof reaches the desired position.

► **To close:** press and hold lower section ② of the button until the pop-up roof reaches the desired position.

i You can also open and close the pop-up roof using the button in the switch unit of the lower berth.

In an emergency, you can also close the pop-up roof manually (► page 56).

Closing the pop-up roof manually

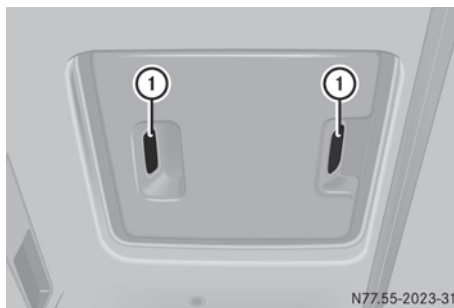


Glass pop-up roof (example)

- Take flat screwdriver (blade width 4 mm) out of the vehicle tool kit.
- Pull the insect screen to the opposite end of the recess and engage it in this position (► page 55).
- Pull the insect screen further out of the roller mechanism in the direction of the arrow until the opening is visible.
- Insert the screwdriver into the actuator through the opening.
- Turn the screwdriver anti-clockwise until the pop-up roof is completely closed.
- Remove the screwdriver.

Roof hatch

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



- Push the roof hatch up or pull it down by handles ①.

Useful information	58
Seats	58
Berths	65
Adjusting the steering wheel	67
Mirrors	67
Lighting system	68
Good visibility	82
Voltage supply	84
Practical tips	86
Communications	92

Useful information

These Operating Instructions describe all the models and standard and optional equipment of your vehicle that were available at the time of going to print. Country-specific differences are possible. Bear in mind that your vehicle may not be equipped with all the functions described. This also applies to safety-relevant systems and functions.

Read the information on qualified specialist workshops (► page 22).

Seats

Important safety notes

WARNING

You could lose control of the vehicle while driving if you:

- adjust the driver's seat, steering wheel or mirrors
- fasten the seat belt

There is a risk of an accident.

Adjust the driver's seat, head restraint, steering wheel and mirrors and fasten your seat belt before starting the engine.

WARNING

When adjusting a seat, you or another vehicle occupant could become trapped by the guide rail of the seat, for instance. There is a risk of injury.

Make sure that no one has any part of their body within the sweep of the seat when adjusting it.

WARNING

The seat belt does not offer the intended level of protection if you have not moved the backrest to an almost vertical position. When braking or in the event of an accident, you could slide underneath the seat belt and sustain abdomen or neck injuries, for example. This

poses an increased risk of injury or even fatal injury.

Adjust the seat properly before beginning your journey. Always ensure that the backrest is in an almost vertical position and that the shoulder section of your seatbelt is routed across the centre of your shoulder.

WARNING

If the driver's seat is not engaged, it can move unexpectedly while the vehicle is in motion. This could cause you to lose control of the vehicle. There is a risk of an accident.

Always make sure that the driver's seat is engaged before starting the engine.

WARNING

The head restraints cannot provide the intended protection unless they are fitted and adjusted correctly. There is an increased risk of injury to the head and neck in the event of an accident or sudden braking, for example.

Always drive with the head restraints fitted. Ensure that the centre of the head restraints support the back of each vehicle occupant's head at eye level before driving off.

WARNING

If there is not enough clearance, the suspension seat could trap body parts between the steering wheel and the suspension seat. There is a risk of injury.

Ensure that there is enough clearance for the movements of the suspension seat. Before getting out, lower the suspension seat completely.

WARNING

If you push the suspension seat bellows inwards, your hand could become trapped. There is a risk of injury.

Do not push the bellows inwards.

! To prevent damage to the seats and the seat heating, observe the following notes:

- Do not pour any fluid on the seats. If fluid is poured on the seats, dry it as quickly as possible.
- If the seat covers are damp or wet, do not switch on the seat heating. Also, do not use the seat heating to dry the seats.
- Clean the seat covers as recommended; see the "Cleaning and care" section.
- Do not transport any heavy loads on the seats. Do not place any pointed objects on the seat cushions, such as e.g. knives, nails or tools. As far as possible, only use the seats for people.
- When operating the seat heating, do not cover the seats with insulating materials, e.g. blankets, coats, bags, protective covers, child seats or booster seats.

! Ensure that no objects in the cab are blocking the seats. The seats could otherwise be damaged.

Your seat must be adjusted in such a way that you can fasten your seat belt correctly.

Keep the seat anchorages on the floor of the cabin free of dirt and objects.

Observe the following points:

- set the seat backrest to a position as near to vertical as possible and sit as upright as possible. Never drive with the seat backrest tilted back too far.
- your arms should be slightly bent when you are holding the steering wheel.
- avoid seat positions which do not allow a seat belt to be routed correctly. The shoulder section of the belt must be routed across the centre of your shoulder and must be pulled tight against your upper body. The lap belt must always be routed across your lap as low down as possible, i.e. across your hips.
- adjust the head restraint so that it supports the rear of your head at eye level. On head

restraints with a detent, the head restraint must be engaged.

- maintain a distance to the pedals that allows you to depress them fully.

If your vehicle is equipped with a suspension seat, always use the EASY-ENTRY/EXIT feature when getting out of the vehicle.

A seat with an integrated seat belt is a safety-relevant component and restraint system.

Ensure that you read the safety guidelines in the "Occupant safety" section (▷ page 38).

Also observe the safety notes on the airbag system (▷ page 41) and on children in the vehicle (▷ page 42).

Information on seat cleaning can be found in the "Cleaning and care" section (▷ page 272).

Always have work on the seats performed at a qualified specialist workshop.

Operating the seats

General notes

Your vehicle may be equipped with different types of seats depending on the cab and the vehicle's equipment:

- static seat without suspension
- standard suspension seat
- air-conditioned suspension seat
- luxury suspension seat
- co-driver's and centre seat
- reclining seat
- function seat

To operate a suspension seat, a supply pressure of at least 7 bar is required in your vehicle's compressed-air system.

Do not use the seat as a step to help you access the upper berth, for example.

Static seat and standard/air-conditioned suspension seat



N91.10-2280-31

Example: air-conditioned suspension seat

- Observe the notes on seats (> page 58).

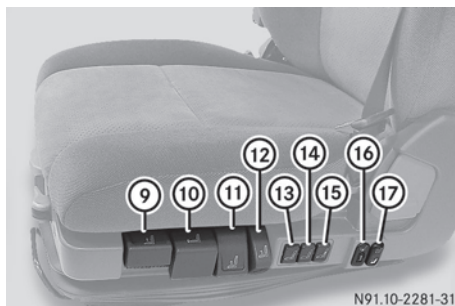
i Depending on the seat design, some setting options may not be available.

- **To adjust the neck cushion:** adjust neck cushion ① to suit your height using the Velcro fasteners on the rear of the backrest.

i The neck cushion cover can be removed and washed. Before washing, read the label on the neck cushion cover.

- **To adjust the belt height:** press and hold button ②.
- Adjust the seat belt accordingly to suit your height.
- Release button ②.

- **To adjust the armrests:** swing armrest with shift unit ⑧ and seat armrests ③ upwards.
- Use the handwheel on the underside to set the angle of seat armrests ③.
- **To adjust the backrest:** relieve the backrest of any weight.
- Pull lever ④ up and hold it.
- Apply weight to or relieve the seat backrest of any weight in order to move it into the desired position.
- Release lever ④.
- **To set the seat fore-and-aft adjustment:** pull lever ⑥ upwards and hold it.
- Push the seat forwards or backwards in order to move it into the desired position.
- Release lever ⑥.
- Slide the seat forwards or backwards until it engages audibly.
- **To release the suspension-lock:** set lever ⑤ to the right.
The seat is able to oscillate freely.
- **To engage suspension-lock:** set lever ⑤ to the left.
The suspension lock engages and the seat suspension is locked in place.
- **To adjust the seat cushion length:** pull lever ⑦ upwards and hold it.
- Push the seat cushion forwards or backwards in order to move it into the desired position.
- Release lever ⑦.



N91.10-2281-31

Example: air-conditioned suspension seat

- ▶ **To adjust the seat cushion angle:** pull lever ⑩ upwards and hold it.
- ▶ Apply weight to or relieve the seat cushion or backrest of any weight in order to move it into the desired position.
- ▶ Release lever ⑩.
- ▶ **To adjust the seat height:** pull lever ⑪ up or push it down one level.
The seat is raised or lowered by one level.
- ▶ **To adjust the oscillation damper:** set the oscillation damper using lever ⑨ to prevent the seat from bottoming out.
- ▶ **To use the EASY-ENTRY/EXIT feature:** press lever ⑫ downwards.
The seat is lowered completely.
- ▶ Pull lever ⑫ upwards.
The seat returns to the previously set height.
- ❗ You can adjust the backrest contour (lumbar support) and the side contours to support your spine.
- ▶ **To adjust the backrest contour:** press the upper or lower section of switch ⑬.
The lower seat backrest contour is increased or decreased.
- ▶ Press the upper or lower section of switch ⑭.
The upper seat backrest contour is increased or decreased.
- ▶ Press the upper or lower section of switch ⑮.
The side contours are increased or decreased.
- ▶ **To activate the seat ventilation:** turn blower control unit ⑯ to position ①-③.
- ▶ **To deactivate the seat ventilation:** turn blower control unit ⑯ to position ④.

- ▶ **To activate the seat heating:** press the upper section of switch ⑰.
The seat heating is active and is set to the first heating level.

or

- ▶ Press the lower section of switch ⑰.
The seat heating is active and is set to the second heating level.
- ▶ **To deactivate the seat heating:** press switch ⑰ into the centre position.

Luxury suspension seat



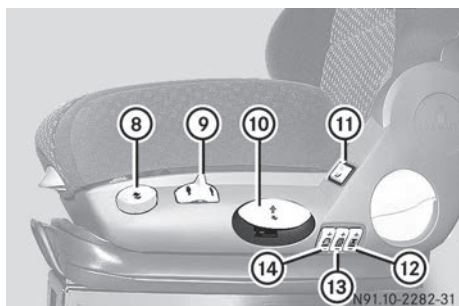
N91.10-2283-31

- ▶ Observe the notes on seats (▷ page 58).
- ▶ **To adjust the armrests:** swing armrest with shift unit ⑦ and seat armrests ① upwards.
- ▶ Use the handwheel on the underside to set the angle of seat armrests ①.

- ▶ **To adjust the backrest:** relieve the backrest of any weight.
- ▶ Pull lever ② up and hold it.
- ▶ Apply weight to or relieve the seat backrest of any weight in order to move it into the desired position.
- ▶ Release lever ②.
- ▶ **To set the seat fore-and-aft adjustment:** pull lever ⑤ upwards and hold it.
- ▶ Push the seat forwards or backwards in order to move it into the desired position.
- ▶ Release lever ⑤.
- ▶ Slide the seat forwards or backwards until it engages audibly.
- ▶ **To engage the suspension-lock:** pull lever ③ upwards.
The suspension lock engages and the seat suspension is locked in place.
- ▶ **To release the suspension-lock:** push lever ③ downwards.
The seat is able to oscillate freely.
- ▶ **To adjust the seat cushion length:** pull lever ⑥ upwards and hold it.
- ▶ Push the seat cushion forwards or backwards in order to move it into the desired position.
- ▶ Release lever ⑥.
- ▶ **To adjust the seat cushion angle:** pull lever ④ upwards and hold it.
- ▶ Apply weight to or relieve the seat cushion or backrest of any weight in order to move it into the desired position.
- ▶ Release lever ④.
- ▶ **To adjust the seat height:** pull lever ⑩ up or push it down one level.
The seat is raised or lowered by one level.
- ▶ **To adjust the oscillation damper:** set the oscillation damper using handle ⑨ to prevent the seat from bottoming out.
- ▶ **To use the EASY-ENTRY/EXIT feature:** press button ⑧ downwards and click it into place.
The seat is lowered completely.
- ▶ Press button ⑧ downwards again.
The seat returns to the previously set height.
- ❗ You can adjust the backrest contour (lumbar support) and the side contours to support your spine.
- ▶ **To adjust the backrest contour:** press the upper or lower section of switch ⑫.
The side contours are increased or decreased.
- ▶ Press the upper or lower section of switch ⑬.
The upper seat backrest contour is increased or decreased.
- ▶ Press the upper or lower section of switch ⑭.
The lower seat backrest contour is increased or decreased.
- ▶ **To activate the seat heating:** press the upper section of switch ⑪.
The seat heating is active and is set to the first heating level.

or

- ▶ Press the lower section of switch ⑪.
The seat heating is active and is set to the second heating level.
- ▶ **To deactivate the seat heating:** press switch ⑪ into the centre position.

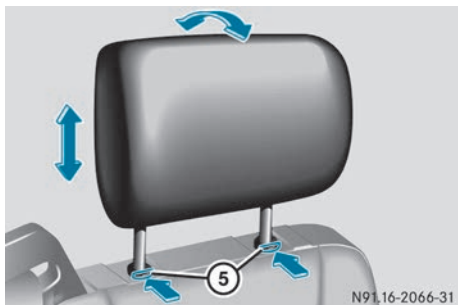


Centre seat



Example: centre seat

- Observe the notes on seats (▷ page 58).



- **To adjust the head restraint:** pull head restraint ① up or push it down to the desired height.
- Push head restraint ① back or pull it forward to the desired angle.
- **To remove the head restraint:** press and hold release catch ⑤.
- Pull head restraint ① up and out with a single movement.
- **To adjust the armrests:** swing armrest ② upwards.
- Use the handwheel on the underside to set the angle of armrests ②.
- **To adjust the backrest:** relieve the backrest of any weight.

- Pull lever ③ up and hold it.
- Apply weight to or relieve the seat backrest of any weight in order to move it into the desired position.
- Release lever ③.
- **To fold the armrests forward/to use the storage function:** pull lever ③ upwards and hold it.
- Fold the backrest forwards completely until it engages.
- Pull lever ③ up and hold it again. The backrest is unlocked and can be adjusted again.
- **To adjust the seat cushion angle:** pull lever ④ upwards and hold it.
- Apply weight to or relieve the seat cushion or backrest of any weight in order to move it into the desired position.
- Release lever ④.

Reclining seat



- Observe the notes on seats (▷ page 58).
- **To adjust the neck cushion:** slide neck cushion ② to suit your height.
- **i** The neck cushion cover can be removed and washed. Before washing, read the label on the neck cushion cover.

- ▶ **To adjust the armrests:** swing armrest ③ upwards.
- ▶ Use the handwheel on the underside to set the angle of armrests ③.
- ▶ **To adjust the backrest:** relieve the backrest of any weight.
- ▶ Pull lever ⑦ up and hold it.
- ▶ Apply weight to or relieve the seat backrest of any weight in order to move it into the desired position.
- ▶ Release lever ⑦.
- ▶ **To set the seat fore-and-aft adjustment:** pull lever ④ upwards and hold it.
- ▶ Push the seat forwards or backwards in order to move it into the desired position.
- ▶ Release lever ④.
- ▶ Slide the seat forwards or backwards until it engages audibly.
- ▶ **To adjust the seat cushion angle:** press switch ⑨ and hold it.
- ▶ Apply weight to or relieve the seat cushion or backrest of any weight in order to move it into the desired position.
- ▶ Release switch ⑨.
- ▶ **i** You can adjust the backrest contour (lumbar support) and the side contours to support your spine.
- ▶ **To adjust the backrest contour:** press the upper or lower section of switch ⑤. The lower seat backrest contour is increased or decreased.
- ▶ Press the upper or lower section of switch ⑥. The upper seat backrest contour is increased or decreased.
- ▶ **To activate the seat heating:** press the upper section of switch ⑧.
- ▶ **To deactivate the seat heating:** press the lower section of switch ⑧.
- ▶ **To switch on the reading lamp:** turn the rotary switch on reading lamp ① to I.
- ▶ **To switch off the reading lamp:** turn the rotary switch on reading lamp ① to O.

Function seat



N91.10-2286-31

- ▶ Observe the notes on seats (▷ page 58).
- ▶ **To adjust the armrests:** swing armrest ① upwards.
- ▶ Use the handwheel on the underside to set the angle of armrests ①.
- ▶ **To adjust the backrest:** relieve the backrest of any weight.
- ▶ Pull lever ③ up and hold it.
- ▶ Apply weight to or relieve the seat backrest of any weight in order to move it into the desired position.
- ▶ Release lever ③.
- ▶ **To fold up the seat cushion:** fold up seat cushion ② until it engages.
- ▶ **To fold down the seat cushion:** press seat cushion ② against the seat backrest to release it.
- ▶ Fold seat cushion ② down.

Berths

Upper berth

Important safety notes

WARNING

If the berth is not folded up as far as it will go, it may strike you while the vehicle is moving. There is a risk of injury.

Always fold the berth up as far as it will go before starting your journey.

WARNING

If objects, luggage or loads are not secured or not secured sufficiently, they could slip, tip over or be flung around and thereby hit vehicle occupants. There is a risk of injury, especially when braking or abruptly changing directions. Always store objects so that they cannot be flung around. Secure objects, luggage or loads against slipping or tipping before the journey.

Always store and secure items and luggage in the stowage spaces and stowage compartments (► page 88).

Climbing aids

Use the climbing aid to access the upper berth.



- **To fold up:** press against climbing aid ① and release. Climbing aid ① swings upwards and engages audibly.
- **To fold down:** push release handle ② downwards and press climbing aid ① gently.
- Let go of release handle ②.
- Swing climbing aid ① down and snap it into place.

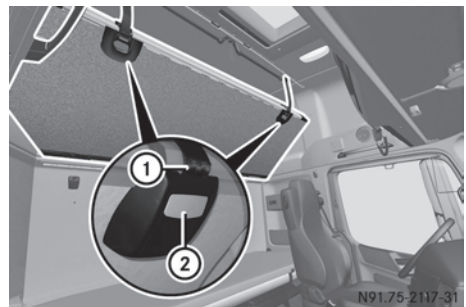
Comfort berth

WARNING

A vehicle occupant on the berth while the vehicle is in motion cannot be restrained. There is a risk of injury, possibly even fatal. Only use the berth when the vehicle is stationary.

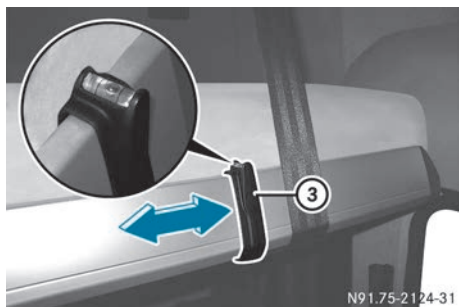
- ❗ Tilt the driver's and co-driver's seat backrests forward before folding down the berth. Otherwise, the berth may come into contact with the seats and cause damage to both components.

If the vehicle is on an uphill or downhill gradient, the comfort berth can be adjusted to be horizontal. For this purpose, adjust the angle of the comfort berth.



Example: comfort berth

- ▶ Adjust or fold the driver's and co-driver's seat backrests forward.
- ▶ If necessary, move the driver's and co-driver's seats sufficiently forward.
- ▶ **To fold down and adjust the angle:** press and hold release button ②.



- ▶ Fold the berth down.
- ▶ Adjust the berth to the horizontal position using the tubular spirit level in bracket ③ and correct the angle. Move bracket ③ along the berth frame to fully align the berth. You can unclip bracket ③ under the berth and re-clip it at the other end of the berth. The air bubble in the spirit level must always be located between the boundary lines.
- ▶ Release release button ②. Retaining straps ① engage automatically and the berth is held in position at that angle.
- ▶ **To fold up:** fold the berth up as far as it will go.

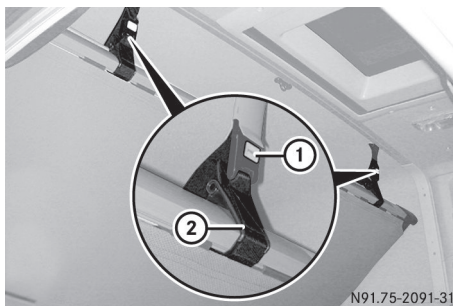
Berth (standard roof)

WARNING

A vehicle occupant on the berth while the vehicle is in motion cannot be restrained. There is a risk of injury, possibly even fatal. Only use the berth when the vehicle is stationary.

- ❗ Tilt the driver's and co-driver's seat backrests forward before folding down the berth. Otherwise, the berth may come into con-

tact with the seats and cause damage to both components.



- ▶ Adjust or fold the driver's and co-driver's seat backrests forward.
- ▶ **To fold down:** lift the berth up slightly, hold it in place and press release buttons ① on both buckles.
- ▶ Pull out the belt tongues of retaining straps ② on both belt buckles.
- ▶ Fold the berth down.
- ▶ **To fold up:** fold the berth up and hold it in place.
- ▶ Push the belt tongues of retaining straps ② into the buckles until they engage audibly.

Lower berth

Important safety notes

WARNING

If objects, luggage or loads are not secured or not secured sufficiently, they could slip, tip over or be flung around and thereby hit vehicle occupants. There is a risk of injury, especially when braking or abruptly changing directions. Always store objects so that they cannot be flung around. Secure objects, luggage or loads against slipping or tipping before the journey.

WARNING

A vehicle occupant cannot be restrained, if the vehicle occupant is on the berth while the vehicle is in motion and the safety net has not

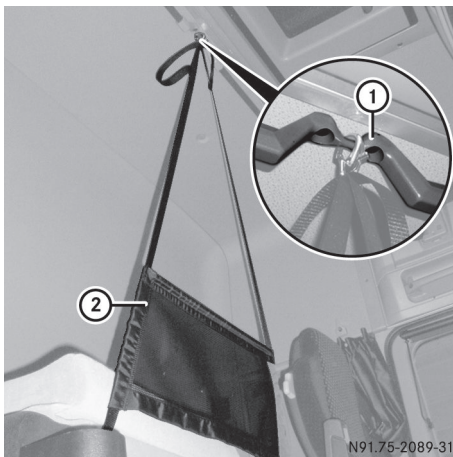
been fitted. There is a risk of serious or even fatal injuries.

Always fit the safety net before a vehicle occupant uses the berth.

When using the berth while the vehicle is moving, observe the appropriate country-specific legal requirements.

Always store and secure items and luggage in the stowage spaces and stowage compartments (► page 88).

Setting up the safety net



- Before starting the journey, hook safety net ② into retainer ① on the cab roof.

Adjusting the steering wheel

WARNING

You could lose control of the vehicle while driving if you:

- adjust the driver's seat, steering wheel or mirrors
- fasten the seat belt

There is a risk of an accident.

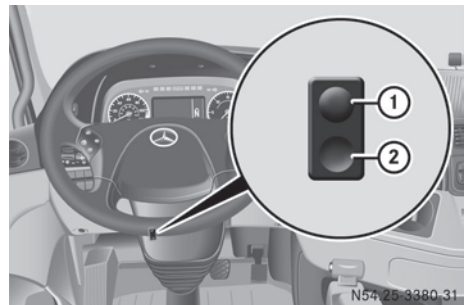
Adjust the driver's seat, head restraint, steering wheel and mirrors and fasten your seat belt before starting the engine.

WARNING

The steering wheel may move unexpectedly if you adjust it while driving. This could cause you to lose control of the vehicle. There is a risk of an accident.

Make sure that the steering wheel is locked before driving off. Never unlock the steering wheel when the vehicle is in motion.

The steering wheel adjustment mechanism is locked/unlocked pneumatically.



- Stop the vehicle.
- Apply the parking brake.
- Press lower section of button ②.
The steering wheel unlocks.
- Adjust the steering wheel height and angle.
- Press upper section of switch ①.
The steering wheel locks.
-  The steering wheel locks automatically approximately 10 seconds after it is unlocked.

Mirrors

Adjusting the external mirrors

WARNING

You could lose control of the vehicle while driving if you:

- adjust the driver's seat, steering wheel or mirrors
- fasten the seat belt

There is a risk of an accident.

Adjust the driver's seat, head restraint, steering wheel and mirrors and fasten your seat belt before starting the engine.

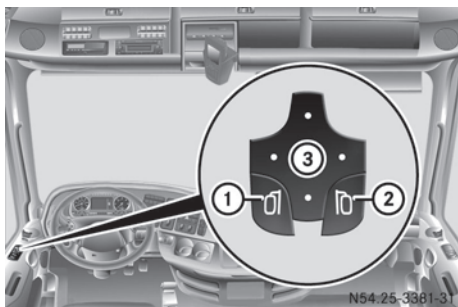
WARNING

The exterior mirrors reduce the size of the image. Objects visible in the mirrors are closer than they appear. You could misjudge the distance from road users driving behind you when changing lanes, for instance. There is a risk of an accident.

You should therefore always look over your shoulder to determine the actual distance from road users driving behind you.

An incorrectly adjusted exterior mirror may impair visibility to the rear. For this reason, always check the position of the exterior mirrors on the vehicle before starting a journey.

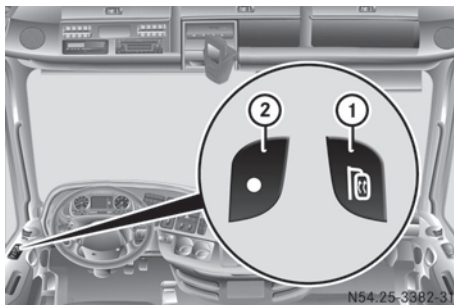
- i** Adjust the starting-off mirror, the kerb mirror and the wide-angle mirror by hand.



- Turn the key to the drive position in the ignition lock.
- Press switch ① for the left-hand exterior mirror or switch ② for the right-hand exterior mirror.
- Press switch ③ at the top or bottom, on the right or on the left until the exterior mirror is correctly set.

Switching the mirror heating on/off

In damp or cold weather, use the mirror heating to keep the exterior mirrors demisted and free of ice. The kerb mirror is not heated.



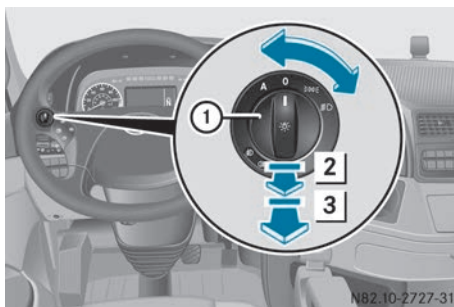
- Turn the key to the drive position in the ignition lock.
- **To activate:** press button ①. Indicator lamp ② lights up.
- **To deactivate:** press button ①. Indicator lamp ② goes out.

Lighting system

Light switch

Overview

The light switch can be used to switch the vehicle lighting on or off.



- i** If you remove the key from the ignition lock and open the driver's door when the vehicle lighting is switched on, a warning buzzer sounds.

Switching on the lights

Side lamps

- ▶ Turn light switch ① to the  position. The side lamp, the licence plate lighting and the perimeter/side marker lamps are switched on.

Dipped-beam headlamps

The dipped-beam headlamps are asymmetrical. For this reason, in countries where vehicles drive on the opposite side of the road as the country where the vehicle is registered, there is a danger of oncoming traffic being dazzled. Mask the headlamps partially when driving in these countries (▷ page 81).

- ▶ Turn the key to the drive position in the ignition lock.
- ▶ Turn light switch ① to the  position. The dipped-beam headlamps and side lamps are switched on. On vehicles with automatic headlamps, the  indicator lamp in the instrument cluster lights up.

Daytime driving lights

- i** In some countries, daytime driving lights are required by law.
- ▶ Start the engine.
- ▶ Turn light switch ① to the  position. The dipped-beam headlamps and side lamps are switched on.
- i** In vehicles with separate daytime driving lamps: only the daytime driving lamps are switched on and not the dipped-beam headlamps and side lamps.

Automatic headlamp mode

WARNING

When the light switch is set to , the dipped-beam headlamps do not switch on automatically if there is fog, snow or other causes of poor visibility such as spray. There is a risk of an accident.

In such situations, turn the light switch to .

The automatic headlamp feature is only an aid. The driver is responsible for the vehicle lighting at all times.

- ▶ Turn the key to the drive position in the ignition lock.
- ▶ Turn light switch ① to the  position. The dipped-beam headlamps and side lamps are switched on/off automatically depending on light conditions. When the dipped-beam headlamps are switched on, the  indicator lamp in the instrument cluster lights up.

If the dipped-beam headlamps do not come on automatically in fog, snow or other poor visibility conditions:

- ▶ Turn light switch ① quickly to . If you do not turn the light switch quickly, the headlamps may be interrupted briefly.

Foglamps and rear foglamps

- ▶ Turn the key to the drive position in the ignition lock.
- ▶ Turn light switch ① quickly to  or . If you do not turn the light switch quickly, the headlamps may be interrupted briefly.
- ▶ **To switch on the foglamps:** pull light switch ① out to position . The foglamps and the  foglamp indicator lamp next to light switch ① light up.
- ▶ **To switch on the front and rear foglamps:** pull light switch ① out to position . The front foglamps, rear foglamps and the  foglamp and  rear foglamp indicator lamps next to light switch ① light up.

- i** If your vehicle only has rear fog lamps, turn light switch ① to  and pull it out one level.

Adjusting the headlamp range

Vehicles with steel-spring suspension:

Adjust the headlamp beam to suit the vehicle load using the headlamp range control.

- i** The headlamp range is controlled automatically in vehicles with xenon headlamps.
- i** Steel sprung 6x4 and 6x6 semitrailer tractor vehicles are also not equipped with headlamp range control.



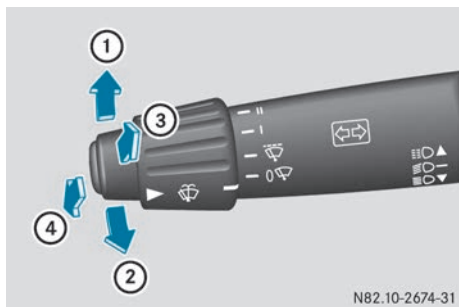
Control settings

- 0 Unladen vehicle (basic setting)
- 1 – 3 Laden vehicle

- Always adjust the headlamp range control so that oncoming traffic is not dazzled.

Combination switch

Overview



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

- Turn the key to the drive position in the ignition lock.

Main-beam headlamps

- Switch on the dipped-beam headlamps.
- Push the combination switch forwards **④** and engage.
The  indicator lamp in the instrument cluster lights up.

Headlamp flasher

- Briefly pull the combination switch back **③**.
The  indicator lamp in the instrument cluster and the main-beam headlamps light up briefly.

Turn signals

- **To indicate:** press the combination switch in the desired direction and engage, indicate right **①** or indicate left **②**.
The corresponding turn signal lamps and the indicator lamp flash.
The combination switch returns to its original position automatically after large steering movements.
- **To indicate briefly:** when overtaking or changing lane, press the combination switch briefly in the desired direction, indicate right **①** or indicate left **②**.
The corresponding turn signal lamps and the indicator lamp flash five times.

Interior lighting

Interior lighting switch



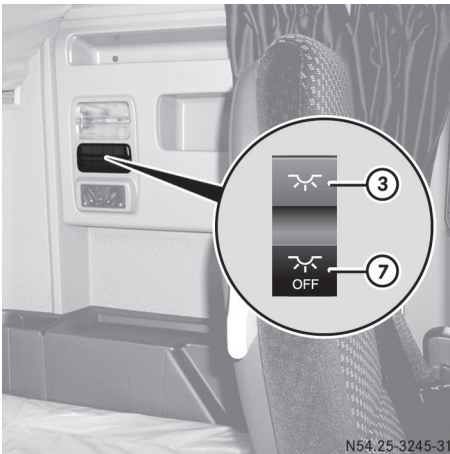
N54.25-3242-31

Switch unit above the windscreen



N54.25-3028-31

Switch unit on the co-driver's door



N54.25-3245-31

Switch unit: berth

Switching the interior lighting on and off

There is a delayed switch-off of the interior lighting when the doors are closed or when the key is turned to the drive position in the ignition. The interior lighting switches off automatically if a door remains open for a long time.

► **To switch on:** briefly press switch ③.

At a speed of around 25 km/h, the brightness of the interior lighting is adjusted automatically.

► **To dim:** press and hold switch ③.

The brightness of the interior lighting decreases. When the interior lighting has been dimmed to the maximum extent, the brightness increases again.

► **To switch off:** briefly press switch ③.

The interior lighting goes out.

or

► Press switch ⑦ in the berth switch unit.

All interior lighting goes out.

When you start the engine, the interior lighting switches off automatically.

Switching the automatic interior lighting on and off

► **To switch off:** press and hold switch ④ until a short tone sounds.

If you open the driver's or co-driver's door, the interior lighting and entry lighting remain switched off.

❶ If you switch on the interior lighting before opening a door, it will remain on.

► **To switch on:** press and hold switch ④ until a short tone sounds.

If you open the driver's or co-driver's door, the interior lighting and entry lighting are switched on automatically.

Switching the driver's/co-driver's reading lamp on and off

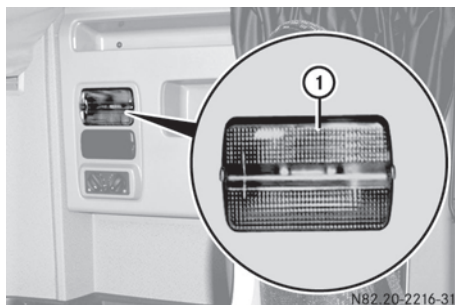
- ▶ **To switch on:** briefly press switch ② for the driver's reading lamp or ⑥ for the co-driver's reading lamp.
The corresponding reading lamp lights up.
- ▶ **To dim:** press and hold switch ② for the driver's reading lamp or ⑥ for the co-driver's reading lamp.
The reading lamp brightness decreases. If the reading lamp has been dimmed to the maximum extent, the brightness increases again.
- ▶ **To switch off:** briefly press switch ② for the driver's reading lamp or ⑥ for the co-driver's reading lamp.
The corresponding reading lamp goes out.

Switching the folding reading lamp on and off



- ▶ **To open up and switch on:** press the upper section of reading lamp ①.
- ▶ **To close and switch off:** press the lower section of reading lamp ①.

Switching the berth reading lamp on and off



- ▶ **To switch on:** press the lower section of reading lamp ①.
- ▶ **To switch off:** press the upper section of reading lamp ①.

Switching the nightlight on and off (green)

The nightlight is used as non-dazzle courtesy lighting while driving.

- ▶ **To switch on:** briefly press switch ⑤.
- ▶ **To switch off:** briefly press switch ⑤.

Switching the ambient lighting on and off (blue)

The ambient lighting provides interior lighting when the vehicle is parked.

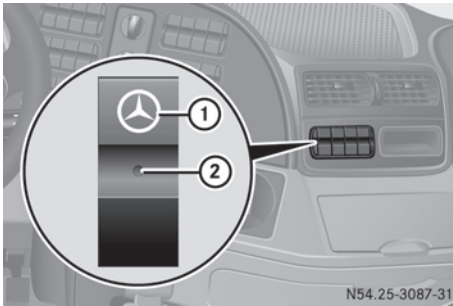
- ▶ **To switch on:** briefly press switch ⑥.
- ▶ **To dim:** press and hold switch .
The ambient lighting brightness decreases. If the ambient lighting has been dimmed to the maximum extent, the brightness increases again.
- ▶ **To switch off:** briefly press switch ⑥.

i At a speed above around 25 km/h, the ambient lighting is switched off automatically. You can have this function deactivated at a Mercedes-Benz Service Centre.

Illuminated Mercedes star

The illumination of the Mercedes star in the maintenance flap is only permitted if the vehicle is off public roads. Use on public roads is forbidden, e.g. in public car parks.

In some countries, there may be deviations in the legal requirements pertaining to use of the illuminated Mercedes star as described here. Observe the legal requirements in all countries concerned.



- **To switch on:** press the upper section of switch ①.
Indicator lamp ② in the switch comes on.
- **To switch off:** press the lower section of switch ①.
Indicator lamp ② in the switch goes out.

Roof position marker lamps



- **To activate:** press the upper section of the  button.

- **To release:** press the upper section of the  button.

Observe the legal requirements for the country you are currently in when operating the vehicle with the position marker lamps.

Notes on replacing bulbs

WARNING

Bulbs, lamps and plug connectors can become very hot during use. When replacing a bulb, you could burn yourself on these components. There is a risk of injury.

Allow these components to cool down before replacing the bulb.

DANGER

Xenon bulbs are under high voltage. You can get an electric shock if you remove the cover of the xenon bulb and touch the electrical contacts. There is a risk of fatal injury.

Never touch the parts or the electrical contacts of the xenon bulb. Always have work on the xenon bulbs carried out at a qualified specialist workshop.

You can ascertain whether your vehicle is equipped with xenon lamps by switching on the engine: the light cone of xenon lamps moves down and then back up again when the engine is switched on. The dipped-beam headlamp must be switched on before the engine is switched on.

Bulbs and lamps are an important aspect of vehicle safety. You must therefore ensure that all bulbs are functioning at all times.

Mercedes-Benz recommends that if a dipped-beam headlamp or main-beam headlamp bulb fails, the corresponding bulb in the other headlamp should be replaced at the same time. Mercedes-Benz recommends that you

use Mercedes-Benz longlife bulbs for this purpose.

- To prevent a short-circuit, switch the lighting system off and the ignition lock to position **0** before replacing a bulb.
- Wear eye protection and gloves when removing the defective bulbs.
- Always replace defective bulbs with the specified new bulbs, i.e. those with the correct wattage and voltage.
- Only hold bulbs with a clean, lint-free cloth or a similar item. Do not work with wet or greasy fingers.
- Test the contacts for corrosion and clean them if necessary.
- Check that all seals are positioned correctly, and replace damaged seals.
- If the new bulb does not light up, consult a qualified specialist workshop.
- Have the xenon lamps and the LED daytime driving lights replaced by a qualified specialist workshop.

Replacing bulbs

Overview of bulbs

Front bulbs

Dipped-beam head-lamps (halogen headlamps)	H7 70 W 24 V
Main-beam head-lamps	H1 70 W 24 V
Side lamps	W 5 W 24 V
Turn signals	PY 21 W 24 V
Side turn signals, side marker lamps	P 21/5 W 24 V
Front perimeter lamps	C 5 W 24 V

Foglamps	H3 70 W 24 V
Roof position marker lamps	R 10 W 24 V

Rear bulbs

Rear turn signals, brake lamp, reversing lamp, rear fog-lamp	P 21 W 24 V
Tail lamp, licence plate lamp	R 10 W 24 V
Perimeter lamp/side marker lamp	R 10 W 24 V

Interior lighting

Roof lighting/interior lighting	P 18 W 24 V
Roof lighting/reading lamp	R 10 W 24 V
Roof lighting/night-light	W 1.2 W 24 V
Reading lamp/berth (festoon lamp)	10 W 24 V

Additional bulbs

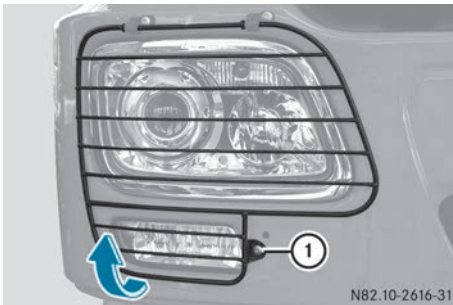
Side marker lamp	LED module
Upper working-area lamp	H11 70 W 24 V
Lower working-area lamp	H3 70 W 24 V
Entry lamps, door trim and steps	W 5 W 24 V
Interior lighting	P 18 W 24 V
Ceiling reading lamp	R 10 W 24 V
Nightlight	W 1.5 W 24 V
Reading lamps on the berth	10 W 24 V

Stowage compartment, reading lamp on reclining seat	5 W 24 V
Rotating beacons	70 WH1 24 V

Front bulbs

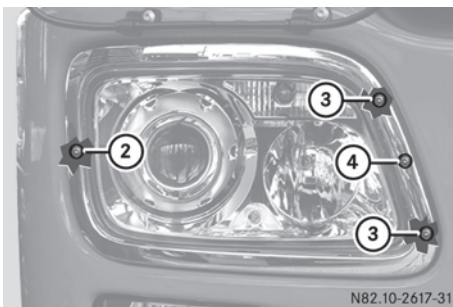
Dipped-beam headlamps, main-beam headlamps, side lamps, turn signals

Bulb replacement is described for the right-hand headlamp.



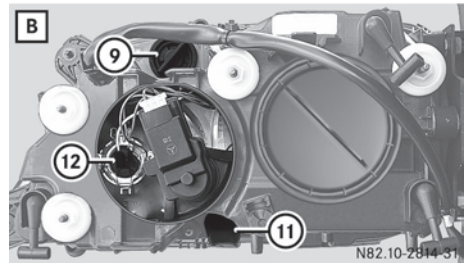
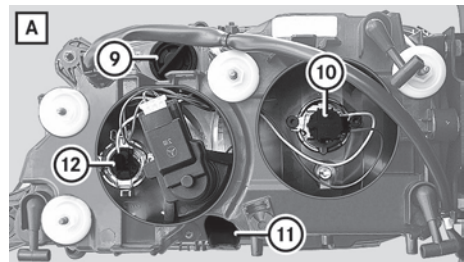
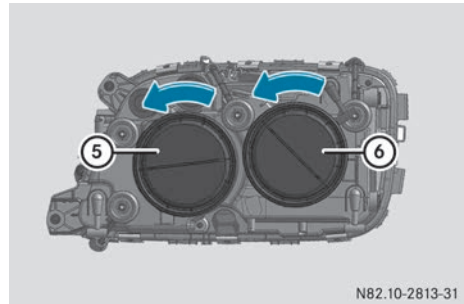
Example: headlamp guard with screw

- Unscrew headlamp guard attachment screw ① and swing the headlamp guard upwards.
- or
- If there is no screw, pull the headlamp guard at the bottom and swing it upwards.



- Unscrew screw ④ from the cover.
- Swing out the cover and remove it.
- On vehicles with halogen headlamps: unscrew headlamp screw ③.

- On vehicles with xenon headlamps: unscrew headlamp screws ② and ③.
- Swing out the headlamp fully.



A Halogen headlamps

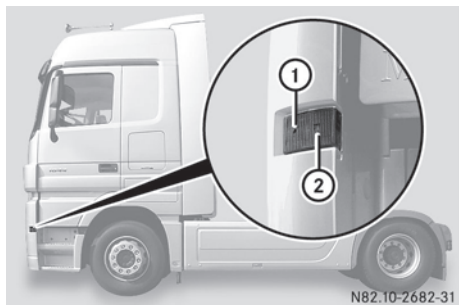
B Xenon headlamps

- **Dipped-beam headlamp (halogen headlamps):** unscrew dipped-beam headlamp cover ⑥ and remove it.
- Turn dipped-beam headlamp bulb holder ⑧ anti-clockwise and remove.
- Remove the bulb.
- Insert the new bulb in such a way that its base fits into the recess of the bulb holder.
- **Main-beam headlamp (halogen headlamps)/headlamp flasher (xenon headlamps):**

lamps): unscrew main-beam headlamp/ headlamp flasher cover ⑤ and remove.

- ▶ Disconnect the cable connector from main-beam headlamp bulb ⑩.
- ▶ Unclip the retaining spring.
- ▶ Remove the bulb.
- ▶ Insert the new bulb in such a way that its base fits into the recess of the bulb holder.
- ▶ **Side lamp:** applying light pressure to side lamp bulb holder ⑨, turn it anti-clockwise and remove.
- ▶ Pull the bulb out.
- ▶ Insert the new bulb into the bulb holder.
- ▶ **Turn signal:** applying light pressure to turn signal lamp bulb holder ⑦, turn it anti-clockwise and remove.
- ▶ Turn the bulb anti-clockwise, applying light pressure, and remove it.
- ▶ Insert a new bulb into the bulb holder and turn it clockwise, applying light pressure.

Side turn signals, side marker lamps



- ▶ Remove screw ①.
- ▶ Remove lamp ②.
- ▶ Turn the bulb holder anti-clockwise, applying light pressure, and remove it.
- ▶ Turn the bulb anti-clockwise, applying light pressure, and remove it.
- ▶ Insert a new bulb into the bulb holder and turn it clockwise, applying light pressure.

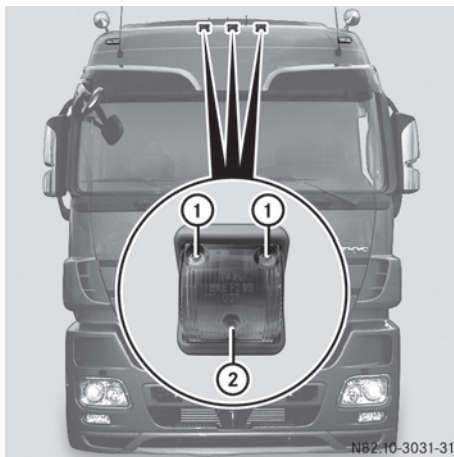
Front perimeter lamp



- ▶ Remove screws ①.
- ▶ Remove lamp lens ②.
- ▶ Remove the bulb.
- ▶ Insert the new bulb.

i If your vehicle has LED perimeter lamps, you must replace the complete perimeter lamp.

Roof position marker lamps



- ▶ Remove screws ①.
- ▶ Remove lamp lens ②.

- Turn the bulb anti-clockwise, applying light pressure, and remove it.
- Insert a new bulb into the bulb holder and turn it clockwise, applying light pressure.

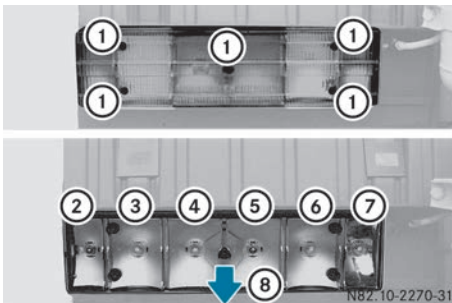
Foglamps



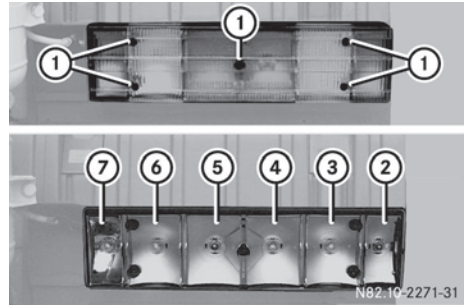
- Remove the plastic cover from the bottom of the front foglamp housing under the bumper.
- Disconnect cable connector ①.
- Unclip the retaining spring.
- Remove bulb ②.
- Insert the new bulb in such a way that its base fits into the recess of the bulb holder.

Rear bulbs

Rear lamp cluster

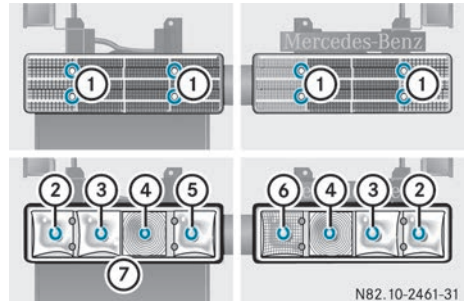


Six-chamber rear lamp cluster, left



Six-chamber rear lamp cluster, right

- ① Screws
- ② Perimeter lamp/side marker lamp
- ③ Turn signal lamp
- ④ Brake lamp
- ⑤ Tail lamp
- ⑥ Reversing lamp
- ⑦ Rear foglamp
- ⑧ Licence plate lamp

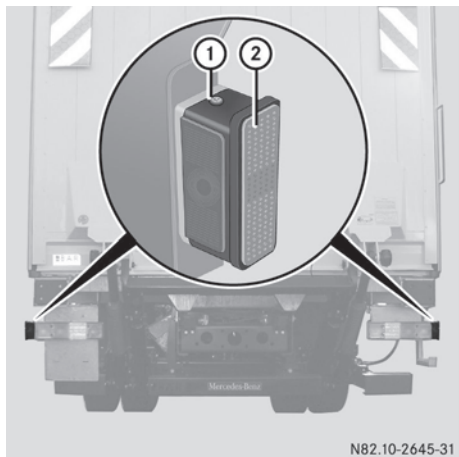


Four-chamber rear lamp cluster

- ① Screws
 - ② Turn signal lamp
 - ③ Brake lamp
 - ④ Tail lamp
 - ⑤ Rear foglamp
 - ⑥ Reversing lamp
 - ⑦ Licence plate lamp
- Lift the protective grid upwards.
 - Remove screws ①.
 - Remove the lamp lens.
 - Turn the bulb anti-clockwise, applying light pressure, and remove it.

- ▶ Insert the new bulb and turn clockwise, applying light pressure.
- ▶ To replace the bulb in licence plate lamp ⑦ (four-chamber rear lamp cluster) or ⑧ (six-chamber rear lamp cluster), remove the reflector unit.

Perimeter lamp/side marker lamp



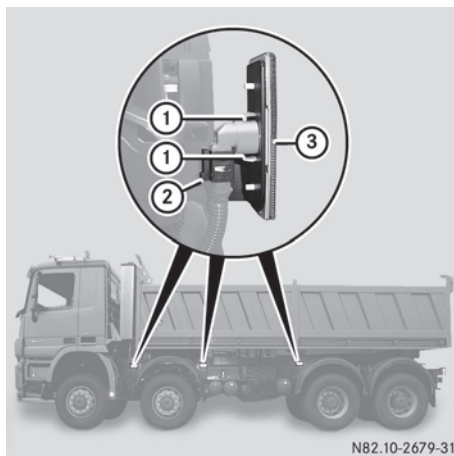
- ▶ Remove screw ①.
- ▶ Remove lens with housing ②.
- ▶ Turn the bulb anti-clockwise, applying light pressure, and remove it.
- ▶ Insert the new bulb and turn clockwise, applying light pressure.

Additional bulbs

Side marker lamps

- i** Semitrailer tractor vehicle:

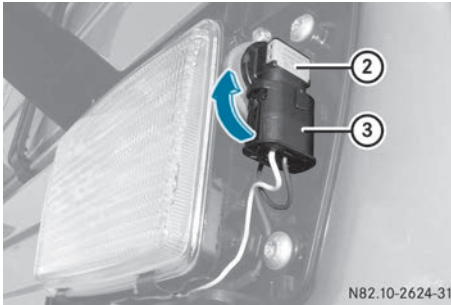
Swing the side panel out before changing the side marker lamp.



- ▶ Press the retainer on cable connector ② and hold it.
- ▶ Disconnect cable connector ②.
- ▶ Press retainers ① on side marker lamp ③ together and hold in this position.
- ▶ Replace side marker lamp ③.

Upper working-area lamp

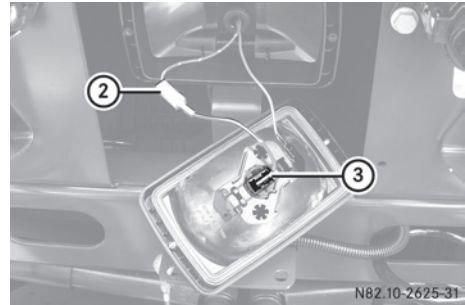
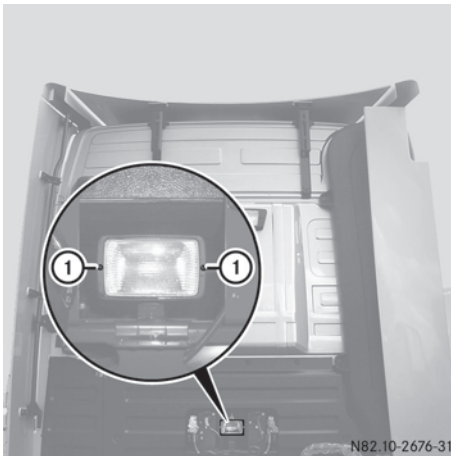




Bulb (example: right-hand side)

- ▶ Press securing knobs ① and swing the housing upwards.
- ▶ Turn bulb ② with cable connector ③ upwards and remove it.
- ▶ Press the retainers on cable connector ③ together and hold in this position.
- ▶ Disconnect cable connector ③.
- ▶ Pull out bulb ②.
- ▶ Insert the new bulb in such a way that its base fits into the recess of the bulb holder.

Lower working-area lamp

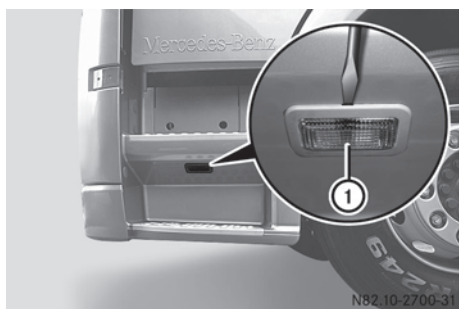


- ▶ Loosen screws ①.
- ▶ Remove the reflector with the frame.
- ▶ Disconnect cable connector ②.
- ▶ Unclip the retaining spring.
- ▶ Remove bulb ③.
- ▶ Insert the new bulb in such a way that its base fits into the recess of the bulb holder.

Entry lamps, door trim and steps



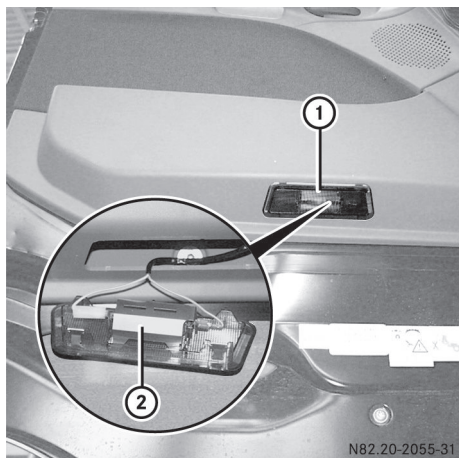
Example: entry lamp, door



Example: entry lamp, steps

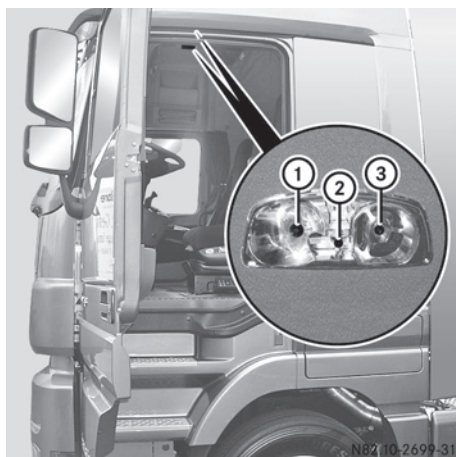
- ▶ Prise off entry lamp ① with a screwdriver.
- ▶ Turn the bulb holder anti-clockwise, applying light pressure, and remove it.
- ▶ Turn the bulb anti-clockwise, applying light pressure, and remove it.
- ▶ Insert the new bulb and turn clockwise, applying light pressure.

Entry lamp, door trim



- ▶ Prise off lens ① with a screwdriver.
- ▶ Remove bulb ②.
- ▶ Insert the new bulb.

Interior lighting

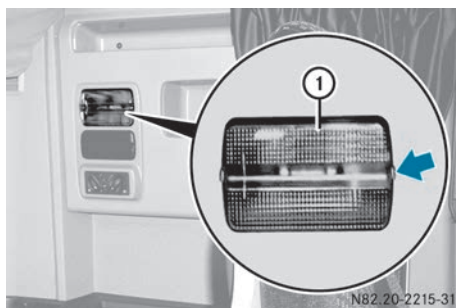


- ▶ Prise off the lamp lens with a screwdriver.
- ▶ Applying light pressure to interior lighting bulb ①/reading lamp ③, turn anti-clockwise and remove.
- ▶ Insert the new bulb and turn clockwise, applying light pressure.

or

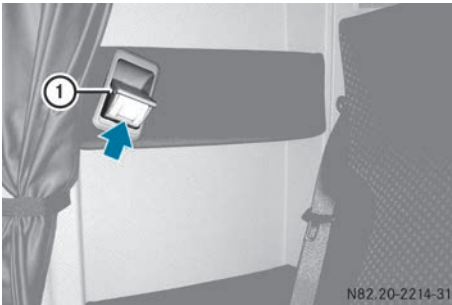
- ▶ Pull the cover off and remove nightlight bulb ②.
- ▶ Insert the new bulb.

Berth reading lamp



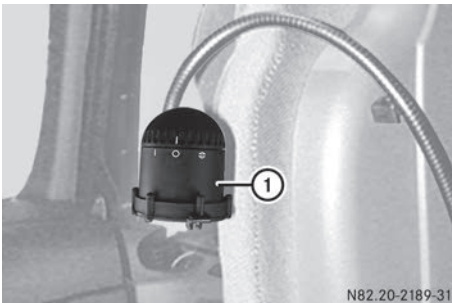
- ▶ Prise lamp lens ① out of the pivot hinge using a screwdriver.
- ▶ Remove the bulb.
- ▶ Insert the new bulb.

Folding reading lamp



- ▶ Fold out the reading lamp.
- ▶ Prise off lens ① with a screwdriver.
- ▶ Turn the bulb anti-clockwise, applying light pressure, and remove it.
- ▶ Insert the new bulb and turn clockwise, applying light pressure.

Reading lamp on reclining seat



- ▶ Turn control knob on reading lamp ① to .
- ▶ Press the bulb to the rear and replace it.

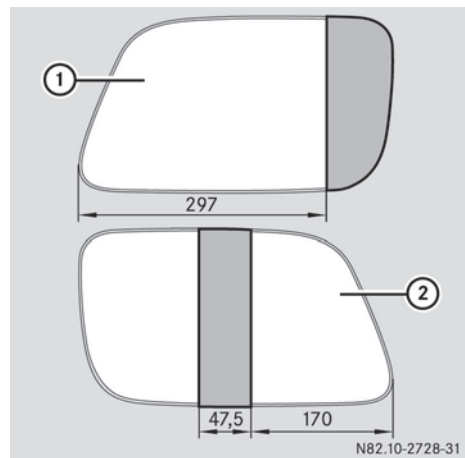
Partially masking headlamps – driving on the left/right

Switch the headlamps to symmetrical dipped beam when driving in countries where vehicles drive on the opposite side of the road as the country where the vehicle is registered. This prevents oncoming traffic from being dazzled. Symmetrical dipped-beam headlamps do not illuminate as large an area of the edge of the carriageway.

When using the vehicle in other countries, observe the relevant national regulations. The driver is responsible for the vehicle lighting at all times.

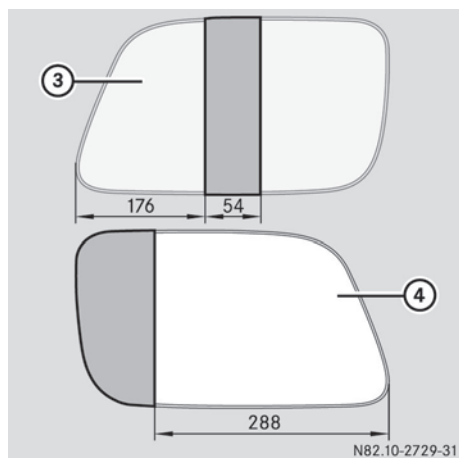
Have xenon headlamps switched over at a qualified specialist workshop as close to the border as possible before crossing into one of these countries. On your return journey, have the xenon headlamps switched back to asymmetrical dipped beam as close to the border as possible.

Halogen headlamps must be masked in accordance with the following Mercedes-Benz specifications as close to the border as possible before crossing into one of these countries. Use a commercially available opaque adhesive tape. On your return journey, remove the adhesive tape as close to the border as possible.



Headlamp masking surface for left-hand-drive vehicles for use in countries where vehicles drive on the left.

- ① Headlamp left
- ② Headlamp right



Headlamp masking surface for right-hand-drive vehicles for use in countries where vehicles drive on the right.

- ③ Headlamp left
- ④ Headlamp right

- **Vehicles with halogen headlamps:** make masking strips from commercially available opaque adhesive tape, cutting to the size and shape shown in the illustrations.
- Apply to the corresponding area of the headlamp.

Good visibility

Windscreen wipers

Important safety notes

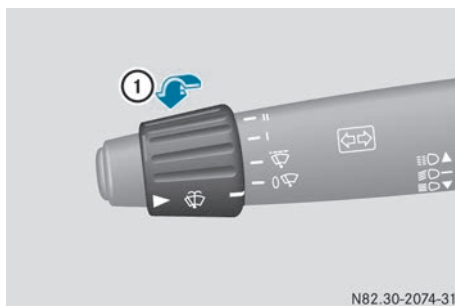
- ❗ Switch off the windscreen wipers before you stop the engine. Otherwise, undesired wiper sweeps could occur when starting the next journey. This may damage the wiper blades or windscreen, especially if the windscreen is dirty or iced up.

Worn or damaged wiper blades result in smearing on the windscreen. This impairs visibility.

This can also cause faults in vehicles with rain/light sensors.

Therefore, check the wiper blades on the driver's and co-driver's side regularly and replace worn or damaged wiper blades immediately.

Switching the windscreen wipers on/off



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

- ☐ Wipers off
- ☐ Intermittent wipe or wiping with rain/light sensor
- ☐ Slow wipe
- ☐ Rapid wipe
- **To switch on:** turn the key in the ignition lock to drive position.
- Turn switch ① to the appropriate setting depending on the intensity of the rain.
- **To switch off:** turn switch ① to the ☐ position.
The windscreen wiper sweeps once more.

Intermittent wipe

The interval between 2 consecutive wipes is 4 seconds. You can set this interval to any value between 2 and 20 seconds.

- Turn switch ① to the ☐ position and wait for the first wipe.
- Turn switch ① back to the ☐ position.

- Wait for the desired interval between wipes to elapse, up to a maximum of 20 seconds.
- Turn switch ① to the  position again. The time which elapses between switching off and switching on again is stored as the new wipe interval.

If the switch is kept in the  position for longer than 20 seconds, the interval between wipes is automatically 4 seconds.

Wiping with the rain/light sensor

! Vehicles with rain/light sensor:

In dry weather conditions, switch the windscreen wipers off. Otherwise, dirt or optical effects may cause undesired windscreen wiper sweeps. This could then damage the windscreen wiper blades or scratch the windscreen.

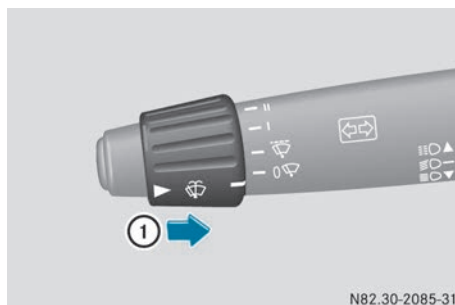
- Turn switch ① to the  position. The rain/light sensor automatically sets the appropriate wiper speed depending on the intensity of the rain.

The sensitivity of the rain/light sensor can be adjusted in the on-board computer. You can also switch between intermittent wipe and wiping with the rain/light sensor (▷ page 121).

In the event of rain/light sensor failure, intermittent wipe is selected automatically. Turn switch ① to the appropriate position depending on how heavy the rain is.

The rain/light sensor is only an aid. The driver is responsible for ensuring a clear field of vision.

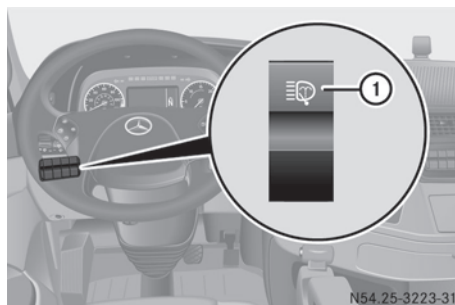
Windscreen washer system



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

- **Activate:** slide switch ① towards the steering column as far as it will go and hold it. Washer fluid will be sprayed onto the windscreen as long as switch ① is in this position.

Headlamp cleaning system



- **To activate:** turn the key to the drive position in the ignition lock.
- Press the upper section of switch ①. The headlamp cleaning system sprays washer fluid onto the headlamps.

Windscreen heating



- **To switch on:** start the engine.
- Press the upper section of windscreen heating switch ①. Indicator lamp ② in the switch lights up.
- **To switch off:** press the lower section of windscreen heating switch ①. Indicator lamp ② in the switch goes out.

i The windscreen heating automatically switches off after 15 minutes or if you switch off the engine.

Voltage supply

EMERGENCY OFF switch

General notes

In the event of an emergency, interrupt the power supply with the EMERGENCY OFF switch. This prevents short circuits, which could create sparks that might in turn cause a fire or an explosion. Only ADR class EX/III and FL vehicles are equipped with EMERGENCY OFF switches.

Interrupting the voltage supply

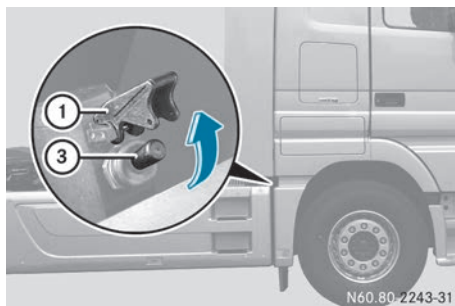
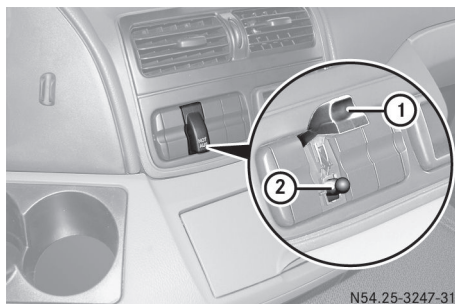
WARNING

If the power supply is interrupted with the EMERGENCY OFF switch, the engine is switched off automatically. Safety-relevant functions may therefore be restricted or unavailable, e.g. power steering, lighting system and ABS. The compressed-air supply

fails. To steer, you will require considerably more force. The wheels could lock during braking. Also, the spring-loaded parking brake can activate if there is a loss of compressed air and the vehicle may then brake uncontrollably. You could lose control of the vehicle. There is a risk of an accident.

Only use the EMERGENCY OFF switch in hazardous situations, and only when the vehicle is stationary.

If the power supply is interrupted by the EMERGENCY OFF switch when the anti-theft alarm system is primed, the anti-theft alarm is triggered.



Example: EMERGENCY OFF switch behind the right-hand wheel arch

- Swing cover ① upwards.
 - Pull out switch pin ② or lift switch pin ③ upwards.
- All consumers other than the tachograph are disconnected from the batteries.

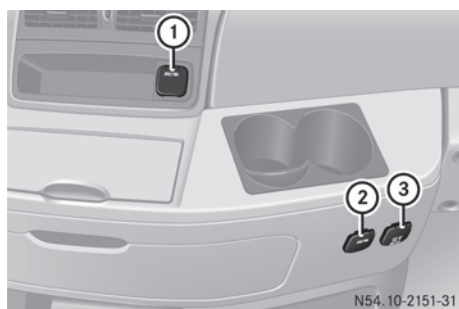
Reconnecting the voltage supply

- ▶ Turn the key back in the ignition lock as far as it will go.
- ▶ Push cover ① down until it engages audibly.
- ▶ Turn the key to the drive position in the ignition lock.
The voltage supply is restored to all consumers.

Sockets

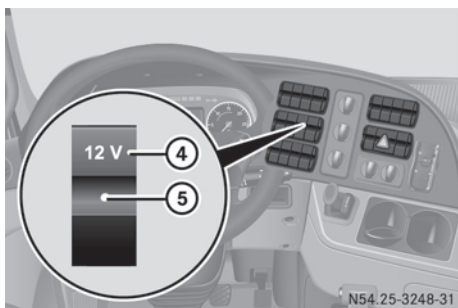
12 V/24 V sockets on the instrument cluster

The vehicle can be equipped with up to 3 sockets.



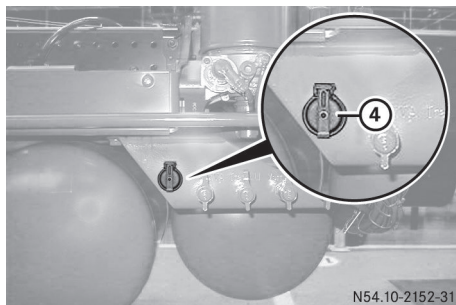
- ① 24 V socket 15 A (max. 360 W)
- ② 24 V socket 15 A (360 W)
- ③ 12 V socket 15 A (180 W)

If sockets ① and ② are operated simultaneously, the maximum load may not exceed 15 A (360 W).



- ▶ **To switch on:** press the upper section of switch ④.
Indicator lamp ⑤ in the switch comes on.
- ▶ **To switch off:** press the lower section of switch ④.
Indicator lamp ⑤ in the switch goes off.

24 V socket in the battery compartment



- ④ 24 V socket 10 A (max. 240 W)

Voltage transformer

Important safety notes

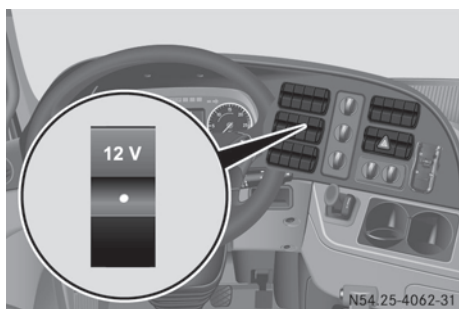
- ❗ The voltage transformer is intended for the operation of the following equipment only. Do not connect any other devices to the 12 V source.

If you wish to connect further devices, consult a qualified specialist workshop

12 V/10 A voltage transformer

The vehicle is equipped with a 12 V/10 A voltage transformer for the CB radio equipment and/or a 12 V audio device (radio).

12 V/15 A voltage transformer



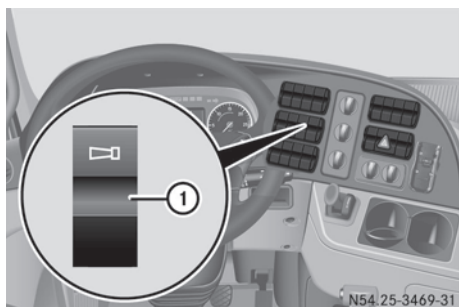
12 V voltage transformer button

The selectable voltage transformer supplies both the 12 V socket and the 12 V auxiliary consumers with a maximum of 15 A.

- **To switch on/off:** press the upper section of the **12 V** switch.
When the indicator lamp in the **12 V** button lights up, the 12 V sockets are supplied with voltage.

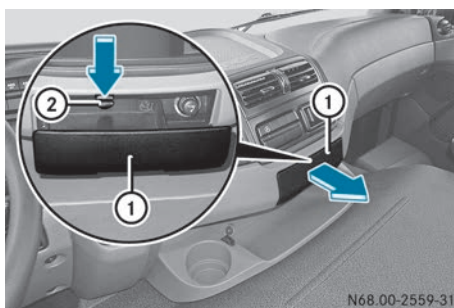
Practical tips

Air horn/horn



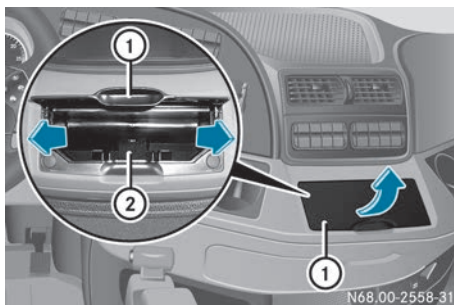
- **To activate the air horn:** press the upper section of switch **①**.
When the horn button on the combination switch is depressed, the air horn sounds.
- **To deactivate the air horn:** press the lower section of switch **①**.
When the horn button on the combination switch is depressed, the horn sounds.

Ashtray



S cab and M cab ashtray

- **To open the ashtray:** grasp ashtray **①** by the handle strip and open it in the direction of the arrow as far as it will go.
- **To remove the ashtray:** press release catch **②** downwards, hold it down and pull out ashtray **①** completely.



L cab and Megaspacer cab ashtray

- **To open the ashtray:** grasp front panel **①** by the grip and pivot it upwards.
- **To remove the ashtray insert:** lift ashtray insert **②** sideways and remove it from the bracket.

Cigarette lighter

⚠ WARNING

You can burn yourself if you touch the hot heating element or the socket of the cigarette lighter.

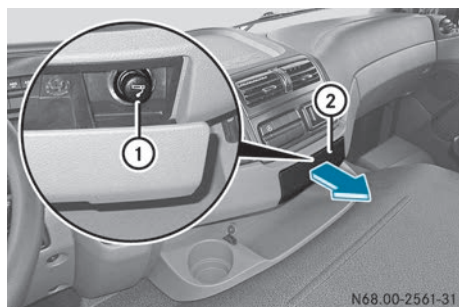
In addition, flammable materials can ignite if:

- the hot cigarette lighter falls
- a child holds the hot cigarette lighter to objects, for example

There is a risk of fire and injury.

Always hold the cigarette lighter by the knob. Always make sure that the cigarette lighter is out of reach of children. Never leave children unattended in the vehicle.

Your attention must always be focused on the traffic conditions. Only use the cigarette lighter when road and traffic conditions permit.



- ▶ Open ashtray (2).
- ▶ Turn the key to the radio position in the ignition lock.
- ▶ Push cigarette lighter (1) in.
When the heating element is glowing, the cigarette lighter moves back automatically.

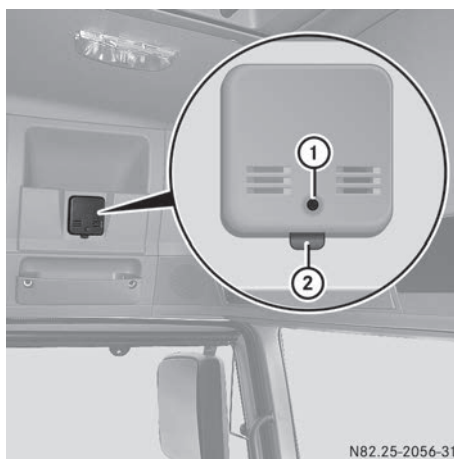
You can also use the 24 V socket with cigarette lighter (1) as a power source for electrical devices up to 100 W.

Smoke detector

General notes

The smoke detector warns you of smoke in the cab. The alarm could also be triggered by particles, for example cigarette smoke, dust or exhaust fumes.

The smoke detector is located either above the driver's door or on the cabin ceiling behind the driver.



Smoke detector above the driver's door (example)

Switching off the alarm/temporarily deactivating the smoke detector

- ▶ Press the (1) button.
The smoke detector is deactivated for approximately 20 minutes and then automatically reactivated.
- i** A brief tone sounds approximately every 40 seconds while the smoke detector is deactivated.

Smoke detector function test

⚠ WARNING

If the battery is discharged or the smoke detector is faulty, it is unable to issue you a warning. There is a risk of fatal injury.

Test the smoke detector regularly. Replace discharged batteries immediately.

Check the smoke detector for functionality once a week.

- Hold down the ① button.

If the smoke detector is working correctly, the alarm sounds. The smoke detector is deactivated for approximately 20 minutes after the button is pressed.

When the battery is empty, a short tone will sound approximately every 40 seconds. You must then replace the battery as soon as possible. Otherwise, the function of the smoke detector is not guaranteed.

Replacing the battery

The smoke detector runs on a 9 V block battery.

- Press release catch ② and remove the smoke detector from the bracket.
- Replace the battery.
- Insert the smoke detector in the bracket.

Stowage spaces and compartments

Important safety notes

⚠ WARNING

If you do not correctly store objects in the vehicle interior, they can slip or be flung around, thus striking vehicle occupants. There is a risk of injury, especially when braking or abruptly changing directions.

- Always store objects so that they cannot be flung around in these or in similar situations.
- Always make sure that objects do not protrude from stowage compartments, luggage nets or stowage nets.
- Close lockable stowage compartments while driving.
- Stow and secure objects that are heavy, hard, pointy, sharp-edged, fragile or too large in the luggage compartment.

⚠ WARNING

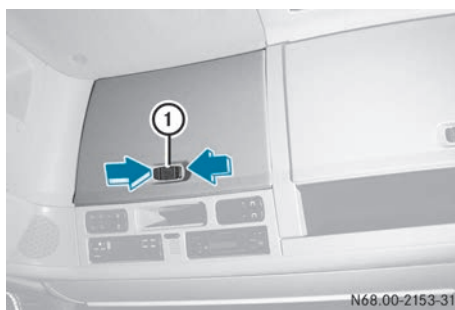
If the maximum permissible load of the stowage compartment is exceeded, the cover cannot restrain the objects. Objects could be flung from the stowage compartment and hit vehicle occupants. There is a risk of injury, especially in the event of sudden braking or a sudden change in direction.

Always comply with the maximum permissible load of the stowage compartment.

The stowage spaces and stowage compartments or drawers may be subjected to the following maximum weights:

- stowage compartments above the windscreen with cover: 8 kg
- stowage compartments above the windscreen without cover: 4 kg
- stowage spaces above the doors: 2 kg
- drawers: 30 kg

Stowage compartments above the windscreen

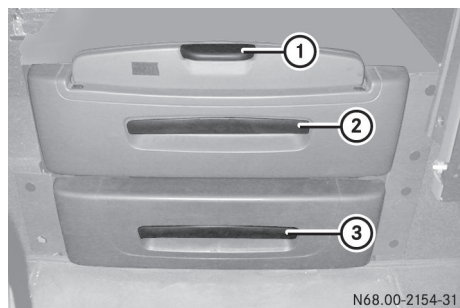


High L cab/Megaspace cab

- **To open:** press catch ① together and swing the stowage compartment cover upwards.
- **To close:** swing the stowage compartment cover downwards and engage it in the lock.

Stowage spaces and table beneath the berth

Overview



N68.00-2154-31

Trays

- **To open:** pull drawer handle ② or ③ upwards and pull out the drawer as far as it will go.
- **To close:** pull drawer handle ② or ③ upwards and push the drawer as far as it will go.

Table

WARNING

If objects, luggage or loads are not secured or not secured sufficiently, they could slip, tip over or be flung around and thereby hit vehicle occupants. There is a risk of injury, especially when braking or abruptly changing directions. Always store objects so that they cannot be flung around. Secure objects, luggage or loads against slipping or tipping before the journey.

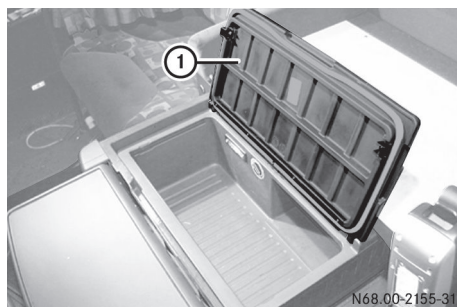
- ! Do not place more than 12 kg on the table. You could otherwise damage the table.

Clear the table before starting a journey and secure any loose objects in the stowage spaces, stowage compartments or drawers.

- **To fold out:** using handle ①, pull the table straight upwards and fold it forward.
- **To fold in:** fold the table up and push it in straight downwards.

Coolbox

Notes on the operation and settings for the coolbox can be found in the separate operating instructions.



N68.00-2155-31

Open coolbox

- ① Lid

Stowage compartment at the head end of the berth



N68.00-2406-31

- **To open:** swing lid ① upwards.

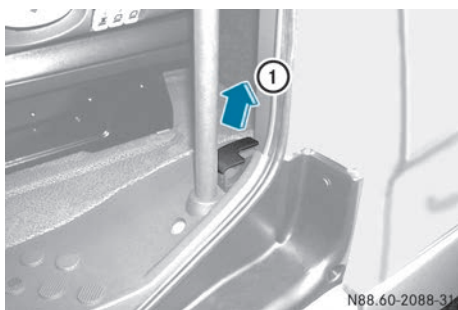
Stowage compartments with exterior flaps

The stowage compartments can be accessed from the outside via the exterior flaps and from the inside via the stowage compartment flaps beneath the berth.

The stowage compartment lighting switches on automatically when you open a stowage compartment.



- ① Exterior stowage compartment, L cab
- ② Exterior stowage compartment, Mega-space cab



- **To open:** pull release handle ① once and release it.
The exterior flap opens until stopped by the retaining hook.
- Pull release handle ① again.
The exterior flap is fully unlocked.
- Swing the exterior flap upwards.
- Press the hinge joint up.
- Swing the exterior flap downwards.
The hinge joint snaps into place.

- **To close:** lift the exterior flap slightly.
The hinge joint will disengage.
- Swing the exterior flap downwards until you hear it engage in the lock.

Folding table

Important safety notes

WARNING

If objects, luggage or loads are not secured or not secured sufficiently, they could slip, tip over or be flung around and thereby hit vehicle occupants. There is a risk of injury, especially when braking or abruptly changing directions. Always store objects so that they cannot be flung around. Secure objects, luggage or loads against slipping or tipping before the journey.

WARNING

If the folding table is folded out while the vehicle is in motion, vehicle occupants may bang into it, particularly in an accident, under sudden braking or during abrupt changes of direction. There is a risk of injury.

Fold up the folding table before every journey.

WARNING

If you exceed the maximum permissible load of the folding table, the table panel folds down abruptly. There is a risk of injury.

Always comply with the maximum permissible load of the folding table.

Do not place more than 15 kg on the folding table.

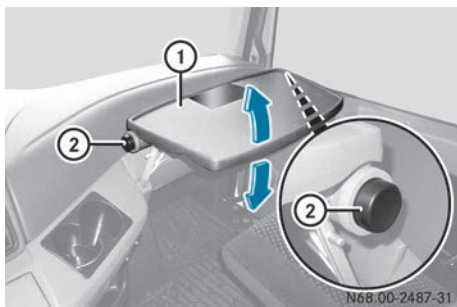
Fitting the folding table

The folding table is located in a stowage compartment under the berth on the co-driver's side or behind the driver's seat.

- Open the stowage compartment (► page 88).
- Remove the bag with the folding table.

- ▶ Open the bag and remove the folding table.
- ▶ Slide the folding table into the guide rails on the co-driver's side of the instrument cluster as far as it will go.

Folding the folding table out/in



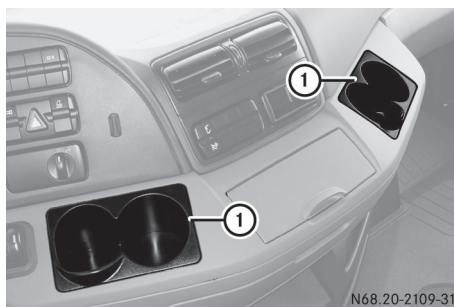
- ① Folding table
- ② Release buttons

- ▶ **To fold out:** unclip folding table ① and fold upwards into a horizontal position. Folding table ① engages in the horizontal position.
- ▶ **To fold in:** press release buttons ②, swing folding table ① downwards and engage.

Dismantling the folding table

- ▶ Fold down folding table ①.
- ▶ Remove folding table ① from the guide rails.
- ▶ Place folding table ① in the bag and close the bag.
- ▶ Place the bag containing folding table ① in the stowage compartment.
- ▶ Close the stowage compartment.

Cup holder



- ① Cup holder

Only place containers that fit into the cup holder. Otherwise, it cannot be guaranteed that they will be held securely while the vehicle is moving; liquids may spill. Close the container, especially if it contains hot liquid.

Compressed-air connection in the cab

⚠ WARNING

If you clean the cab with compressed air, particles are dispersed. These can enter or irritate the eyes, nose, mouth and ears. There is a risk of injury.

While cleaning the cab with compressed air, always wear a dust protection mask, protective eyewear and ear protectors.

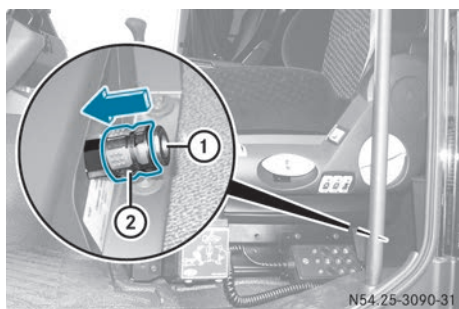
⚠ WARNING

The compressed-air connection in the cab is under high pressure. If you aim the compressed-air pistol towards body parts or other people, eyes, ears or skin could be damaged. There is a risk of injury.

Always hold the compressed-air pistol away from your body. Never aim the compressed-air pistol towards other people.

- ❗ Do not clean the air filter with the compressed-air pistol. Replace soiled air filters.

The compressed-air connection is located on the rear of the driver's seat frame.



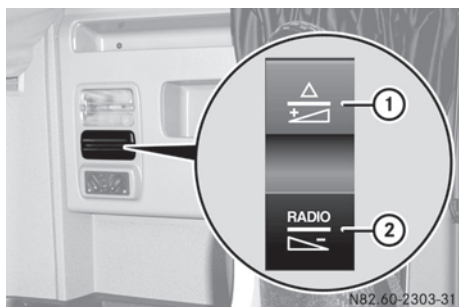
(Example)

- ▶ **To attach:** push the compressed-air hose into compressed-air connection ① until it engages.
- ▶ **To disconnect:** push the compressed-air hose into compressed-air connection ① and hold.
- ▶ Slide circlip ② forwards and hold.
- ▶ Remove the compressed-air hose from compressed-air connection ①.

Communications

Operating the audio system (radio)

Audio equipment switch



Switch unit: berth

- ① To switch audio equipment on/off, increase the volume, tune in stations, select the next track and fast forward or rewind
- ② To switch on audio equipment, lower volume

Switching the audio equipment on/off

You can also switch the audio equipment on or off on the equipment itself (see separate operating instructions).

- ▶ **To switch on:** press the top or bottom of the audio equipment switch.
- ▶ **To switch off:** press the bottom of the audio equipment switch.

Adjusting the volume

Using the buttons on the multifunction steering wheel

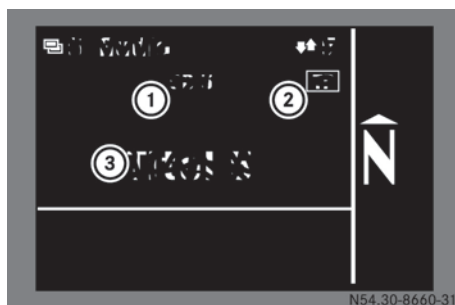
- | | |
|---|-----------------------|
| ▶ | The volume increases. |
| ▶ | The volume decreases. |

If the display shows , you cannot set the volume using the buttons on the multifunction steering wheel.

Using the switch on the berth switch unit

- ▶ Press the top of the audio equipment switch briefly.
The volume increases.
- ▶ Press the bottom of the audio equipment switch briefly.
The volume decreases.

Operating the radio

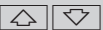


- ① Waveband and preset number
- ② Radio traffic information (only with RDS)
- ③ Frequency or station name (only with RDS)

- Switch on the audio equipment.
- Select the radio; see the separate operating instructions.

i In the **Settings** menu, you can set how the radio changes station (► page 122).
Store new stations using the radio.
You can also operate the radio as normal.

Using the buttons on the multifunction steering wheel

► 	Audio
► 	Station search or memory

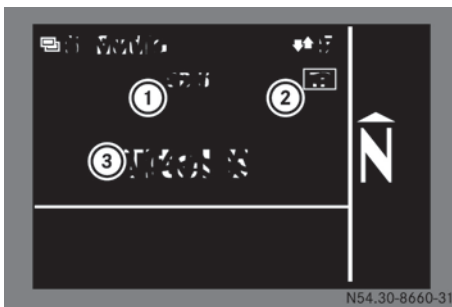
If the **Station search** function is active, the radio will find the next available station on the selected waveband.

If the **Memory** function is active, the radio switches to the previous or next station preset.

Using the switch on the berth switch unit

- Press the top  of the audio equipment switch.
The radio searches for the next station on the waveband.

Operating the CD player



- ① Current CD
- ② Radio traffic information (only with RDS)
- ③ Current track

- Switch on the audio equipment.
- Select the CD player; see the separate operating instructions.

Using the buttons on the multifunction steering wheel

► 	
► 	Changes to the next track
► 	Changes to the preceding track

Using the switch on the berth switch unit

- Press the top  of the audio equipment switch.
The CD player selects the next track.

Telephone

General notes

WARNING

Operating the integrated information systems and communications equipment in the vehicle while driving will distract you from traffic conditions. You could then lose control of the vehicle. There is a risk of an accident.

Only operate these devices if road traffic conditions permit. If you are unsure about the surrounding conditions, pull over to a safe location and make entries only while the vehicle is stationary.

The vehicle can be equipped with a Bluetooth® hands-free system. To operate a Bluetooth® mobile phone with an exterior aerial and charge it in the vehicle, you will require a suitable holder. These are available from retailers of Mercedes-Benz accessories.

You can operate the mobile phone using the  and  buttons on the multifunction steering wheel (► page 118).

The Mercedes-Benz installation specifications must be observed if you subsequently install one of the following communication devices:

- mobile phone
- two-way radio
- fax machine

When using the communications equipment, observe the legal requirements of the country in which you are currently driving.

Connecting the mobile phone to the hands-free system



Example: pre-installation for mobile phone

- Attach the mobile phone bracket to bracket holder ① for the hands-free system.

i For detailed operating instructions, please see the operating instructions for the pre-installation for the mobile phone. This is supplied with the mobile phone bracket.

Useful information	96
General notes	96
Climate control systems	96
Operating the climate control systems	98

Useful information

These Operating Instructions describe all the models and standard and optional equipment of your vehicle that were available at the time of going to print. Country-specific differences are possible. Bear in mind that your vehicle may not be equipped with all the functions described. This also applies to safety-relevant systems and functions.

Read the information on qualified specialist workshops (► page 22).

General notes

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

Observe the settings recommended on the following pages. The windows may otherwise mist up.

The air-conditioning system/automatic climate control adjusts the temperature and humidity in the vehicle interior and filters out undesirable substances from the air.

The heating/air-conditioning system/automatic climate control can only be operated when the engine is running.

In order to ensure optimum functioning, close:

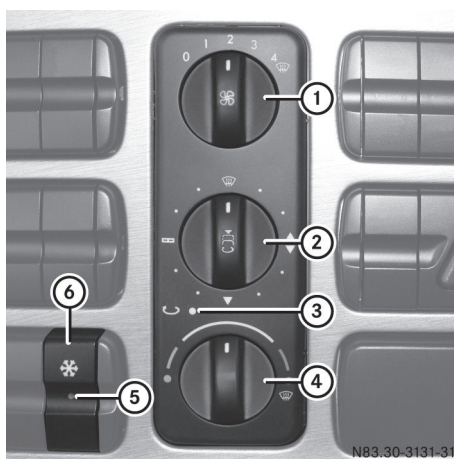
- the side windows
- the sliding sunroof
- the pop-up roof
- the roof hatch

- i Ventilate the vehicle for a brief period during warm weather. Briefly switch to air-recirculation mode to quickly cool down the vehicle if you have an air-conditioning system/automatic climate control. This will speed up the cooling process and the desired interior temperature will be reached more quickly.

- i The integrated filter largely filters out dust particles, pollen and unpleasant odours from the outside air. A blocked filter reduces the amount of air supplied to the vehicle interior. The interval for replacing the filter depends on environmental influences. It may be shorter than indicated in the Service Booklet.

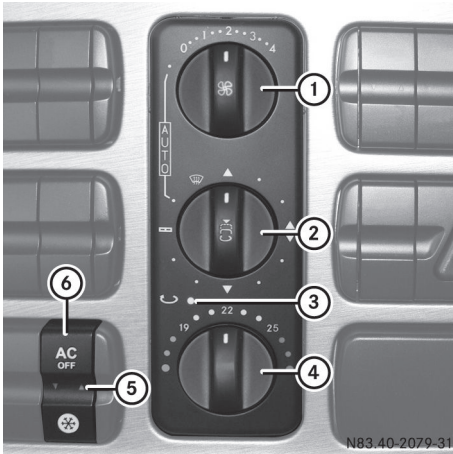
Climate control systems

Climate control panel



Heating and ventilation with/without air-conditioning system

- ① Blower switch
- ② Air-distribution control, fresh air/air recirculation
- ③ Air-recirculation mode indicator lamp
- ④ Temperature control
- ⑤ Air-conditioning system indicator lamp
- ⑥ Air-conditioning system switch



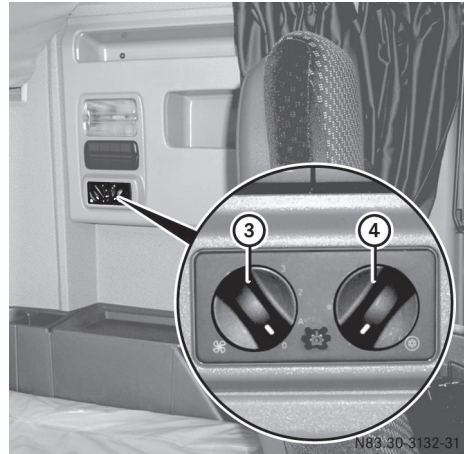
Heating and ventilation with automatic climate control

- ① Blower switch
- ② Air-distribution control, fresh air/air recirculation
- ③ Air-recirculation mode indicator lamp
- ④ Temperature control
- ⑤ Air-conditioning system indicator lamp
- ⑥ Air-conditioning system switch

Auxiliary air conditioning

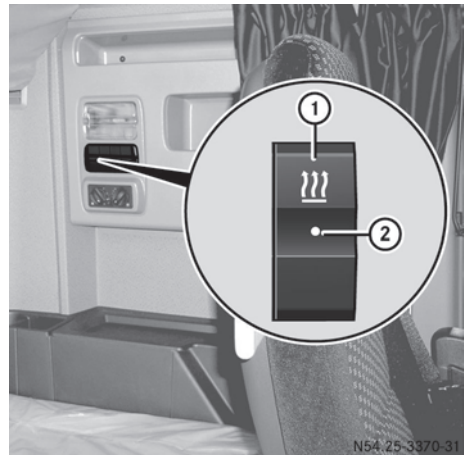


- ① Indicator lamp for refrigerant reservoir charging
- ② Switch for charging the refrigerant reservoir

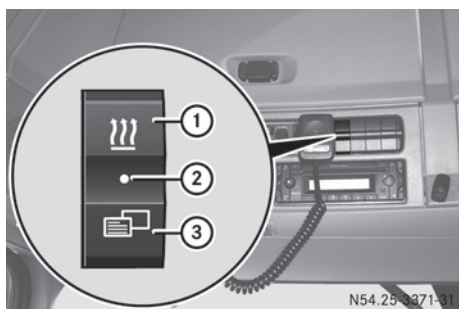


- ③ Blower switch
- ④ Temperature control

Auxiliary heating



- ① Auxiliary heating switch
- ② Auxiliary-heating indicator lamp



Example: switch unit above the windscreen

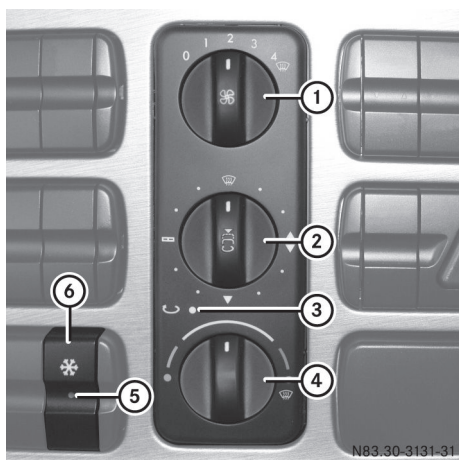
- ① Auxiliary heating switch
- ② Auxiliary-heating indicator lamp
- ③ Switch for the **Auxiliary heating** quick-start menu

i The switch is in the switch unit above the windscreen or on the instrument cluster depending on the vehicle version.

Operating the climate control systems

Switching climate control on/off

General notes



Example: with air-conditioning system

- ① Blower switch
- ② Air-distribution control, fresh air/air recirculation

- ③ Air-recirculation mode indicator lamp
- ④ Temperature control
- ⑤ Air-conditioning system indicator lamp
- ⑥ Air-conditioning system switch

If you deactivate the blower, the air supply and circulation is switched off. Only select this setting briefly. The windscreen and the side windows may otherwise mist up.

Switching the ventilation on/off

► **To switch on:** set blower switch ① to position **1 – 4** or to **AUTO**.

In the **AUTO** position, automatic climate control regulates the blower speed **1 – 4** automatically.

► **To switch off:** turn blower switch ① to position **0**.

Switching the heating on/off

On vehicles without automatic climate control, you can switch the heating off.

► **To switch on:** turn temperature control ④ clockwise to the desired position.

► **To switch off:** turn temperature control ④ anti-clockwise to the stop.

Activating/deactivating the air-conditioning system

► Start the engine.

On vehicles with an air-conditioning system:

► **To activate:** press the upper section of air-conditioning system switch ⑥.

Air-conditioning system indicator lamp ⑤ in the switch lights up.

► **To deactivate:** press the lower section of air-conditioning system switch ⑥.

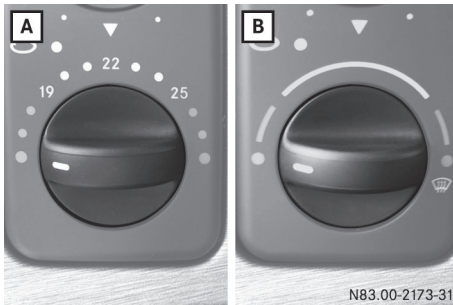
Air-conditioning system indicator lamp ⑤ in the switch goes out.

On vehicles with automatic climate control:

- **To activate:** press air-conditioning system switch ⑥ into the centre position. Air-conditioning system indicator lamp ⑤ in the switch goes out.
- **To deactivate:** press the upper section of air-conditioning system switch ⑥. Air-conditioning system indicator lamp ⑤ in the switch lights up.

Controlling climate control manually

Setting the temperature

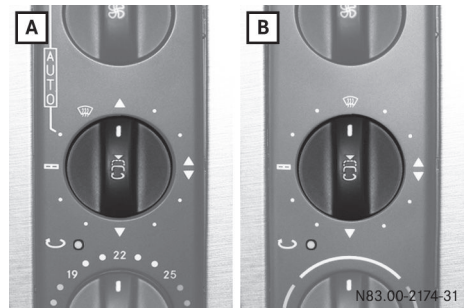


- A** Temperature control with automatic climate control
- B** Temperature control without automatic climate control

Mercedes-Benz recommends a temperature setting between 20 and 23 °C. Set 22 °C as the basic setting, and 25 °C on hot days.

- Set the temperature control as required.

Setting the air distribution

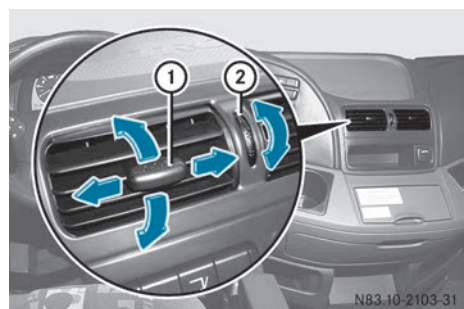


- A** Air-distribution control with automatic climate control
- B** Air-distribution control without automatic climate control

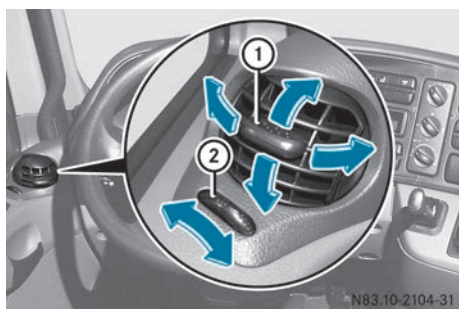
- Directs air to the windscreen and side windows
- Directs air to the windscreen.
- Directs airflow to the windscreen and footwell
- Directs air to the footwell and side windows.
- Directs air to the vehicle interior and side windows.
- AUTO** Automatic mode.

- Turn air-distribution control to the desired position.

Air vents



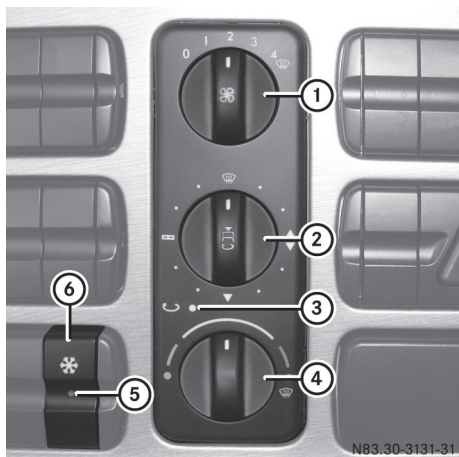
Air vents, centre



Example: air vent, left-hand door

- ▶ Keep air vents free of obstruction so that the air can flow through freely.
- ▶ **To open:** turn thumbwheel ② upwards or to the outside.
- ▶ **To close:** turn thumbwheel ② downwards or to the inside.
- ▶ **To adjust:** move the air vent using handle ① in the desired direction.

Settings



Example: with air-conditioning system

- ① Blower switch
- ② Air-distribution control, fresh air/air recirculation
- ③ Air-recirculation mode indicator lamp
- ④ Temperature control

- ⑤ Air-conditioning system indicator lamp
- ⑥ Air-conditioning system switch

Demisting the windscreen

Only select demisting mode until the windscreen is clear again.

- ▶ Close the centre air vents.
- ▶ Direct the air vents in the door towards the side windows.
- ▶ Vehicles without automatic climate control: set blower switch ①, air-distribution control ② and temperature control ④ to .
- ▶ Vehicles with automatic climate control: set blower switch ① to **AUTO**.
- ▶ Set air-distribution control ② to .
- ▶ Turn temperature control ④ to the right-hand end position (red).

Dehumidifying the air inside the vehicle

If you switch off the air conditioning system, the vehicle will not be cooled (when weather conditions are warm) or dehumidified. Therefore, only switch off the air-conditioning system for short periods of time. The windows may otherwise mist up faster.

- ▶ Set blower switch ① as required.
- ▶ Set air-distribution control ② to .
- ▶ Press the upper section of air-conditioning system switch ⑥.
Air-conditioning system indicator lamp ⑤ in the switch lights up.
- ▶ Set temperature control ④ to .

Air-recirculation mode

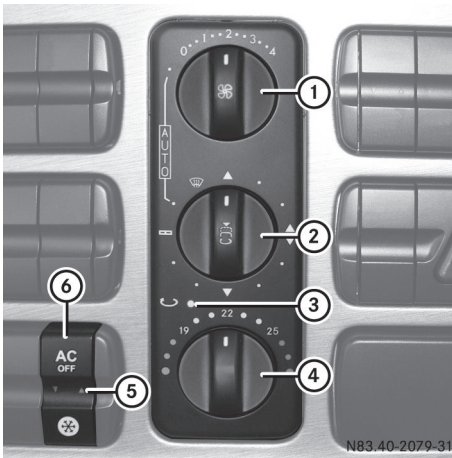
If you switch the air-recirculation mode on, the side windows and windscreen may mist up more quickly, especially at low outside temperatures. Only switch the air-recirculation mode on for a short time.

Switch on air-recirculation mode if unpleasant odours or dust enter the vehicle.

Automatic climate control has an automatic and a manual operating mode. Automatic air-recirculation mode is always active. It detects the carbon monoxide and nitrogen concentration in the outside air and switches on or off automatically.

- Close the roof hatch, pop-up roof or sliding sunroof.
- **To switch on:** press air-distribution control ②.
Air-recirculation mode indicator lamp ③ lights up.
- **To switch off:** press air-distribution control ② again.
Air-recirculation mode indicator lamp ③ goes out.

Setting climate control to automatic



Heating and ventilation with automatic climate control

- ① Blower switch
- ② Air-distribution control, fresh air/air recirculation
- ③ Air-recirculation mode indicator lamp
- ④ Temperature control
- ⑤ Air-conditioning system indicator lamp
- ⑥ Air-conditioning system switch

On vehicles with automatic climate control, you can activate/deactivate automatic mode. Automatic climate control regulates the air distribution and blower speed automatically depending on the selected temperature. Cooling with air dehumidification is activated.

- Turn temperature selector ④ to the desired temperature.
- Turn blower switch ① and air-distribution control ② to the **AUTO** position.
Automatic climate control regulates the air flow and air distribution automatically.

Auxiliary air conditioning

General notes

When the refrigerant reservoir is charged, the auxiliary air conditioning can cool regardless of whether the engine is running or not. The auxiliary air conditioning cools the cab even during breaks or resting periods. If the refrigerant reservoir is fully charged, the operating time of the auxiliary air conditioning is up to eight hours.

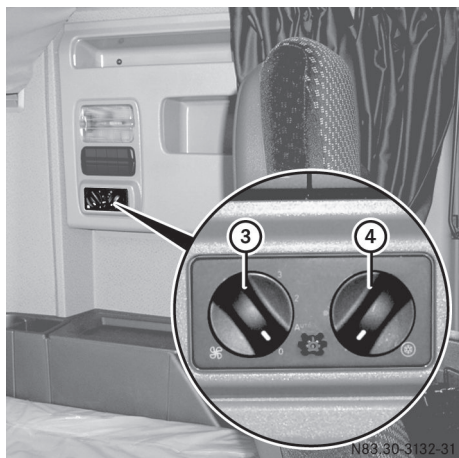
Charging the refrigerant reservoir



- ❗ If you charge the refrigerant reservoir for longer than eight hours, condensation can form. If not dried sufficiently, the damp could cause mould.

- ▶ **To switch on:** start the engine.
- ▶ Press the lower section of refrigerant reservoir charge switch ②.
Indicator lamp ① in refrigerant reservoir charge switch ② lights up.
- ▶ Charge the refrigerant reservoir, depending on the outside temperature, for 4 to 8 hours.
- ▶ **To switch off:** set refrigerant reservoir charging switch ② to the centre position. Indicator lamp ① in refrigerant reservoir charge switch ② goes out.

Switching the auxiliary air conditioning on/off



- ❗ If you close the curtains, less heat will be able to penetrate into the cab and the auxiliary air conditioning will be more effective. When you are using the berth, you can further enhance the effectiveness by closing the curtains in front of the berth. During breaks or rest periods, where possible, only activate blower switch ③ in the **AUTO** position. This will avoid an excessive cooling effect.

- ▶ **Automatic mode:** turn blower switch ③ to position **AUTO**.

The  indicator lamp in the instrument cluster lights up. The blower runs on the lowest level.

- ▶ Set the desired temperature using temperature selector ④.
The cab is cooled to the desired temperature.

❗ The blower may switch off periodically.

- ▶ **Manual mode:** turn blower switch ③ to position **2** or **3**.

The  indicator lamp in the instrument cluster lights up. The blower runs in position **2** on the middle level, and in position **3** on the highest level.

The cab is cooled regardless of the setting of temperature selector ④.

- ▶ **To switch off the auxiliary air conditioning:** turn blower switch ③ to position **0**.
The  indicator lamp in the instrument cluster goes out and the blower switches off.

Auxiliary heating

Important safety notes

DANGER

If the exhaust pipe is blocked or sufficient ventilation is not possible, toxic exhaust fumes may enter the vehicle, especially carbon monoxide. This is the case in enclosed spaces or if the vehicle is stuck in snow, for example. There is a risk of fatal injuries.

Switch off the auxiliary heating in enclosed spaces without extraction systems, e.g. in a garage. If the vehicle is stuck in snow and you have to leave the auxiliary heating running, keep the exhaust pipe and the area around the vehicle clear of snow. To guarantee a sufficient supply of fresh air, open a window on the side of the vehicle away from the wind.

WARNING

When the auxiliary heating is switched on, very hot air can flow from the vent on the rear of the driver's seat base. There is a risk of burns in the immediate proximity of the vent. There is a risk of injury.

Always make sure that vehicle occupants remain a safe distance from the vent.

When transporting hazardous goods, always observe the relevant safety regulations. Keep objects a safe distance away from the vent of the auxiliary heating.

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

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

You can use the auxiliary heating to:

- preheat the vehicle interior and defrost the windows
- better start the engine in cold conditions (hot-water auxiliary heater only)
- heat up the coolant. This reduces the load on the engine and saves fuel (hot-water auxiliary heater only)
- support the vehicle's heating system while the engine is running and outside temperatures are low

Mandatory switch-off

Vehicles transporting hazardous goods: you must switch off the heater before entering a hazardous area (e.g. a refinery).

The heater automatically switches off if you switch off the engine or engage a power take-off.

The combustion air blower then runs on for a maximum of 40 seconds.

- !** When the auxiliary heating is running, only use the EMERGENCY-OFF switch if danger threatens. If the heater is switched off without a run-on period, it may be damaged.

Fuels

- !** If the auxiliary heating has not been used for an extended period, exposure to heat and condensation can lead to deposits forming in the auxiliary heating fuel system. These deposits can cause the auxiliary heating to malfunction. Have the auxiliary heating checked and repaired at a qualified specialist workshop before using it again.

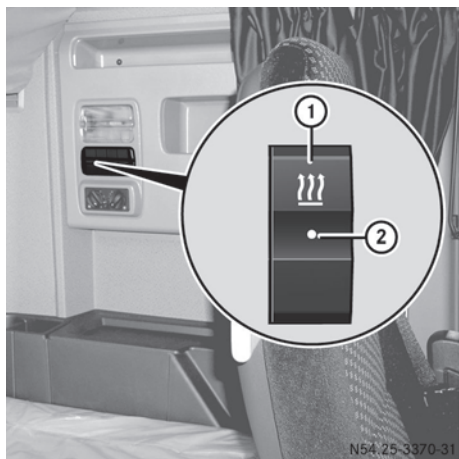
- !** Switch on the auxiliary heating at least once a month for approximately 10 minutes. Otherwise, the auxiliary heating could be damaged.

- !** Operate the auxiliary heating only using conventional diesel fuel. Operation with 100 % fatty acid methyl ester (FAME) fuel or diesel fuel with an added quantity of more than 10 % fatty acid methyl ester (FAME) fuel results in malfunctions and is therefore not permitted.

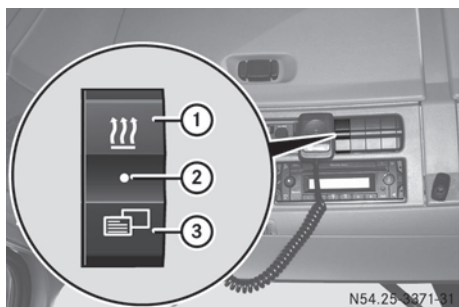
An additional fuel tank for conventional diesel fuel is required for the auxiliary heating system, if you operate the vehicle:

- using fatty acid methyl ester (FAME) fuel
- using conventional diesel fuel with the addition of more than 10 % fatty acid methyl ester (FAME) fuel

Before switching on



Example: switch unit on the sidewall above the berth



Example: switch unit above the windscreen

- ▶ **Air vents:** keep air vents free of obstruction so that the air can flow through freely.
 - ▶ Open air vents in the door and direct towards the inside.
 - ▶ Open the centre air vents fully and direct them slightly downwards.
 - ▶ **Air-distribution control:** deactivate air-recirculation mode.
 - ▶ Set air-distribution control to the  position.
 - ▶ **To set the temperature:** turn the key in the ignition lock to the radio or drive position.
 - ▶ Press lower section of button ③.
 - ▶ Press the  or  button on the multifunction steering wheel until the **Auxil. heating / Set temperature** messages and, for example, **Temperature: 22 °C**, appear in the display.
 - ▶ Use the  or  button on the multifunction steering wheel to set the desired temperature.
- i** If you attempt to select a temperature above 28 °C, the **Max. temperature** message appears in the display.
- The temperature in the driver's cab may differ from the temperature shown in the display.
- If you change the heating time/run-on time, store the changed time for all operating modes.

Immediate heating mode

The heating time can be set to between 0:05 h and 2:00 h.

- ▶ **To switch on:** turn the key back as far as it will go in the ignition lock or remove it.
- ▶ Press the upper section of button ①. Indicator lamp ② in the button lights up. **Auxiliary heating** and, for example, **Temperature: 22 °C/Heating time: 00:50 h** appear briefly in the display.
- ▶ **To set the heating time:** press lower section of switch ③.
- ▶ Press the  or  button on the multifunction steering wheel until the **Set heating time** and, for example, **Heating time: 01:30 h** messages appear in the display.
- ▶ Use the  or  button on the multifunction steering wheel to set the heating time.
- ▶ **To switch off:** press upper section of switch ① again. Indicator lamp ② in the button goes out. The **Auxiliary heating has been switched off** message appears briefly in the display.

Continuous heating

- **To switch on continuous heating:** turn the key in the ignition lock to the radio or drive position.
- Press the upper section of button ①. Indicator lamp ② in the button lights up. The **Cont. heating mode** message appears briefly in the display.

If you turn the key back as far as it will go in the ignition lock or remove it, the auxiliary heating switches to run-on mode. The **Run-on time 02:00 h** message appears briefly in the display.

- **To set the run-on time:** when the run-on time is shown in the display, press lower section ③ on the switch.
- Press the  or  button on the multifunction steering wheel until the messages: **Auxiliary heating** and, for example, **Run-on time: 02:00 h**, appear in the display.
- Use the  or  buttons on the multifunction steering wheel to set the desired run-on time.
- **To deactivate run-on mode:** turn the key in the ignition lock to the radio or drive position again. Continuous heating mode is active again.
- **To switch off continuous heating:** press upper section of switch ① again. Indicator lamp ② in the button goes out. The **Auxiliary heating has been switched off** message appears briefly in the display.

Preselected heating mode

DANGER

If you have preselected a switch-on time, the auxiliary heating system switches on automatically.

- Toxic exhaust fumes may accumulate if there is insufficient ventilation, carbon monoxide in particular. This is the case in

enclosed spaces, for example. There is a risk of fatal injuries.

- There is a risk of fire and explosion if there are highly flammable materials or flammable materials nearby!

If you park the vehicle in these or similar conditions, always deactivate the preselected switch-on times.

- ❗ Preselected heating mode is only available in vehicles not designed for transporting hazardous goods.

You can also program preselected heating mode when the key is removed.

You cannot program a preselection while the auxiliary heating is operating.

A programmed preselection will activate the auxiliary heating only once. If the auxiliary heating is to remain on afterwards, reprogram the preselected heating mode or switch on immediate heating mode.

- **To activate preselection:** press lower section of switch ③.
- Press the  or  button on the multifunction steering wheel until the messages: **Auxiliary heating** and **Set memory** appear in the display.
- Press the  or  button on the multifunction steering wheel until the message: **Timer: Off**, **Timer: 1**, or **Timer: 2** appears in the display.
- If no preselection is programmed, select **Timer: Off**.
You leave the submenu without selecting a timer.

- **To program the timer:** select **Timer: 1** or **Timer: 2**.
- To set the day of the week: press the  button on the multifunction steering wheel.
- Use the  or  button on the multifunction steering wheel to set the desired day of the week.
- To set the hour: press the  button on the multifunction steering wheel.

- ▶ Use the  or  button on the multifunction steering wheel to set the desired hour.
- ▶ To set the minute: press the  button on the multifunction steering wheel.
- ▶ Use the  or  button on the multifunction steering wheel to set the desired minute.
- ▶ Press the  button on the multifunction steering wheel.
The submenu is exited and the memory position is programmed.

Useful information	108
Instrument cluster	108
On-board computer	112

Useful information

These Operating Instructions describe all the models and standard and optional equipment of your vehicle that were available at the time of going to print. Country-specific differences are possible. Bear in mind that your vehicle may not be equipped with all the functions described. This also applies to safety-relevant systems and functions.

Read the information on qualified specialist workshops (▷ page 22).

Instrument cluster

Important safety notes

WARNING

If you are driving and reach through the steering wheel to operate the adjustment knob, you could lose control of the vehicle. There is a risk of an accident and injury.

Only operate the adjustment knobs when the vehicle is stationary. Do not reach through the steering wheel when driving.

WARNING

If the instrument cluster has failed or malfunctioned, you may not recognise function restrictions relevant to safety. The operating safety of your vehicle may be impaired. There is a risk of an accident.

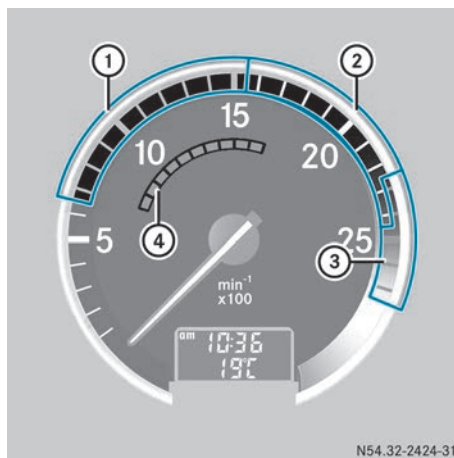
Drive on carefully. Have the vehicle checked at a qualified specialist workshop immediately.

The on-board computer only shows messages or warnings from certain systems in the display. You should therefore make sure your vehicle is operating safely at all times. Otherwise, you could cause an accident by driving an unsafe vehicle. If your vehicle is not operating safely, stop immediately, paying attention to the road and traffic conditions.

Rev counter

Overview

The rev counter shows the engine speed.



Example: rev counter

- ① Economical speed range (green)
- ② Engine brake operating range (yellow)
- ③ Overrevving range, danger of engine damage (red)
- ④ Ecometer (green LED strip)

! If you exceed the maximum permissible engine speed, the warning buzzer sounds. You should not drive and change gear by the sound of the engine, but according to the engine speed shown in the rev counter. Avoid driving in the red overrevving range. This could lead to engine damage.

Observe the rev counter while driving and stay within economical speed range ①.

When driving downhill, make sure that the engine speed does not rise into red overrevving range ③.

Idling speed is set automatically depending on the coolant temperature.

You can set the idling speed (▷ page 215).

When the vehicle is stationary, the engine is running and the transmission is in neutral, the engine will only pick up speed with a delay.

Ecometer

Vehicles with manual transmission or Telligent® gearshift have an ecometer.

The ecometer indicates the engine speed range with low fuel consumption and is active above speeds of 20 km/h.

When driving at a more or less constant road speed, the ecometer lights up if the engine speed range and the selected gear are not economically favourable.

The ecometer does not light up if the engine speed remains in the economic range or the transmission is switched to automatic mode.

The ecometer goes out if you:

- keep the engine speed within the indicated rev range for 2 seconds
- run the engine at high load
- depress the clutch pedal for longer than 5 seconds
- keep the transmission in the neutral position for longer than 5 seconds

Fuel/AdBlue® gauge

Checking the fuel and AdBlue® levels



N54.30-8859-31

- Turn the key to the drive position in the ignition lock.
- Check the fuel level on fuel gauge ①.
- Check the AdBlue® level on AdBlue® gauge ②.

Fuel gauge

If the fuel level drops to about 14 %, the display shows . At the same time, the status indicator will light up in yellow.

- ① In the **Trip computer** menu, you can call up the vehicle range (> page 118).

AdBlue® gauge

The AdBlue® reducing agent is required for reduction of engine emissions.

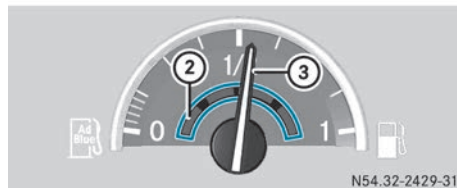
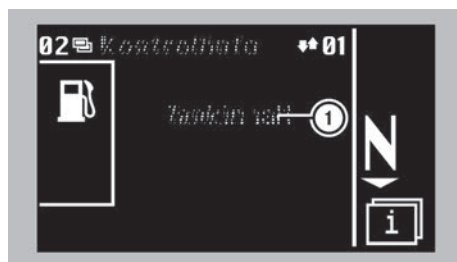
AdBlue gauge ② provides only an approximate indication of the AdBlue level. 4 blue segments in the instrument cluster show the AdBlue® level.

- ① You can check the AdBlue® level in litres in the **Monitoring info** menu (> page 116).



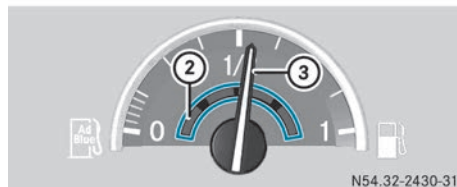
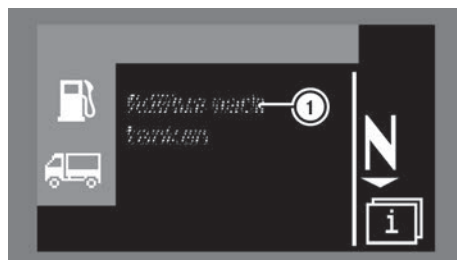
AdBlue® gauge (example)

- ① AdBlue® level in the **Monitoring info** menu
- ② AdBlue® gauge lit up
- ③ Fuel gauge



AdBlue® reserve level (example)

- ① AdBlue® reserve level in the [Monitoring info](#) menu
- ② AdBlue® gauge off
- ③ Fuel gauge



AdBlue® tank empty (example)

- ① Display message, AdBlue® tank is empty
- ② AdBlue® gauge off
- ③ Fuel gauge

Rev counter display

Outside temperature indicator

- Turn the key to the drive position in the ignition lock.
Depending on the country of delivery, the display shows the temperature in Celsius (°C) or Fahrenheit (°F).

The unit of measurement for temperature can be changed in the [Settings](#) menu of the on-board computer (► page 123).



① Outside temperature display

The display shows changes in outside temperature with a time delay.

Please observe that the outside temperature display shows the measured air temperature and does not record the temperature on the street.

You should pay special attention to road conditions when temperatures are around freezing point.

Time display

- Turn the key to the drive position in the ignition lock.
Depending on the country of delivery, the display shows the time in 12-hour or 24-hour format.

The clock mode (12-hour or 24-hour) can be configured in the [Settings](#) menu of the on-board computer (▷ page 123).



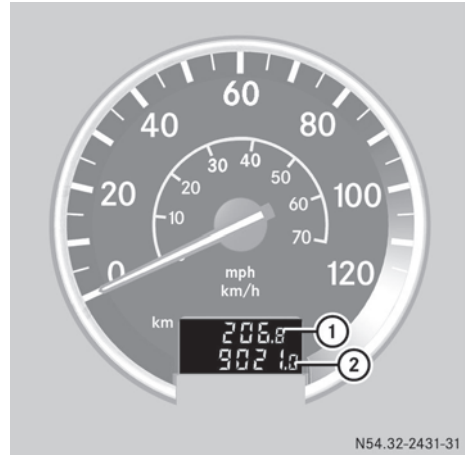
N54.32-2426-31

- ① Time display (in 12-hour mode): **am** or **pm**
- ② Time display

Speedometer display

Trip meter/total distance recorder display

- Turn the key to the drive position in the ignition lock.
Depending on the country of delivery, the display shows the trip/total distance in kilometres (**km**) or miles (**mi**).



N54.32-2431-31

- ① Trip meter display
- ② Total distance recorder display

- ① The unit of measurement used by the trip computer can be changed in the [Settings](#) menu of the on-board computer (▷ page 123).

Resetting the trip meter

- Turn the key to the drive position in the ignition lock.
- Press and hold the **[000.0]** button in the instrument cluster (▷ page 113) until the trip meter is reset.

Brake circuit reservoir pressure

WARNING

It is not possible to brake the vehicle if the compressed-air brake system has a leak or if there is insufficient reservoir pressure. There is a risk of an accident.

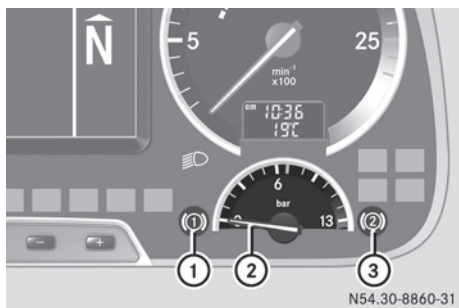
Do not pull away until the required reservoir pressures have been reached.

In the event of loss of pressure while driving, immediately bring the vehicle to a halt in accordance with the traffic conditions. Secure the vehicle using the parking brake.

Have the compressed-air system repaired at a qualified specialist workshop.

A reservoir pressure of at least 11 bar is required in the pressure circuits of the brake system in order to ensure the operational safety of the vehicle. The auxiliary consumer circuit is only filled after brake circuits 1 and 2 have been filled.

- ▶ Turn the key to the drive position in the ignition lock.



The brake circuit with the lower reservoir pressure is automatically shown by indicator lamp ① or ③. The pressure in this brake circuit appears on display ②.

- ❗ The reservoir pressure of both brake circuits can be shown in the [Monitoring info, Supply pressure](#) menu (▷ page 116).

⚠ WARNING

If you are driving and reach through the steering wheel to operate the adjustment knob, you could lose control of the vehicle. There is a risk of an accident and injury.

Only operate the adjustment knobs when the vehicle is stationary. Do not reach through the steering wheel when driving.

⚠ WARNING

If the instrument cluster has failed or malfunctioned, you may not recognise function restrictions relevant to safety. The operating safety of your vehicle may be impaired. There is a risk of an accident.

Drive on carefully. Have the vehicle checked at a qualified specialist workshop immediately.

Observe the legal requirements for the country you are currently in while operating the on-board computer.

The on-board computer only shows messages or warnings from certain systems in the display. You should therefore make sure your vehicle is operating safely at all times. Otherwise, you could cause an accident by driving an unsafe vehicle. If your vehicle is not operating safely, stop immediately, paying attention to the road and traffic conditions.

On-board computer

Important safety notes

⚠ WARNING

Operating the integrated information systems and communications equipment in the vehicle while driving will distract you from traffic conditions. You could then lose control of the vehicle. There is a risk of an accident.

Only operate these devices if road traffic conditions permit. If you are unsure about the surrounding conditions, pull over to a safe location and make entries only while the vehicle is stationary.

Layout and operation

General notes

The on-board computer is activated when you turn the key to the drive position in the ignition lock. You can use the on-board computer to call up information about your vehicle and to make settings.

You can operate the on-board computer using the buttons on the multifunction steering wheel and on the instrument cluster.

Whilst you are driving, the on-board computer provides information about:

- Fuel consumption
- Trip time
- events
- operating conditions
- service due dates
- malfunctions
- causes of malfunctions
- measures to be taken

Operation



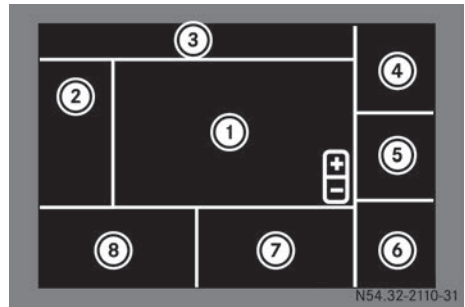
- ① Display
- ② button:
To reset the trip data
To reset the trip meter
- ③ To acknowledge display messages
- ④ Reset button:
To confirm the completion of maintenance work
To change the service product data in the **Service products** submenu of the **Settings** menu
- ⑤
To adjust the volume on the audio equipment (radio and telephone)
To select a submenu, change a setting
- ⑥ To use the telephone:
 To start dialling/accept an incoming call/redial
 To reject an incoming call/end a call/go directly to the telephone menu
- ⑦

- To scroll forwards/back in the main menu
To acknowledge display messages
To return to the main menu

- ⑧
To select a submenu, change a setting

Display fields

The display panels shown depend on the equipment installed and the functions being used. Display messages and malfunctions are displayed one after another according to their significance.



Display fields

- ① Basic display showing speed, text messages (e.g. display messages, instructions, etc.)
- ② Symbols or system abbreviations, e.g. for ABS function check, display messages, service messages, faults and status indicator (white, yellow or red)
- ③ Menu display or status indicator (white, yellow or red)
- ④ Telligent® level control indicator (vehicles with air suspension)
- ⑤ Gear indicator (transmission with Telligent® gearshift, Telligent® automatic gearshift or Mercedes PowerShift)
- ⑥ Reminder field (stored malfunctions or text messages received)
- ⑦ Display for differential locks and power take-offs
- ⑧ Cruise control, speed limiter and Telligent® distance control operating indicator

Display segments can also be linked to one another.

If the display shows , you can use the  and  buttons on the multifunction steering wheel to select or adjust.

Status indicator

To distinguish the different levels of importance of messages, individual segments of the status display light up in white, yellow or red.

Notes on display messages with a yellow or red status indicator can be found in the "Notes on display messages" section (▷ page 125).

Display messages

Display messages are operating information, warnings or faults which are shown automatically in the display (▷ page 129).

System abbreviation, malfunction symbol and fault location

If a display message is shown, the following additional information may be displayed:

- the system abbreviation of the affected control unit
- a malfunction symbol, e.g. for excessive coolant temperature
- the fault location, e.g. the tractor vehicle

Notes on system abbreviations can be found in the "Electronic system abbreviations" section (▷ page 127).

Menus in detail

Operating the menus

Calling up the menu

- ▶ Use  or  on the steering wheel to call up the desired menu.
The display shows the first submenu or a selection.
- ▶ Use  or  to call up the desired submenu or make a selection.
- ▶ Use  or  to call up the desired submenu or make a selection.

The sequence of actions is shown in a table in this section:

▶  	Selects a main menu
▶  	Calls up a submenu/ makes a selection
▶  	Calls up a submenu/ makes a selection

The sequence of actions may differ, depending on the menu.

Exiting the menu

- ▶ Use  or  on the steering wheel to call up a different menu.
The on-board computer stores the last setting selected.

Main menus and submenus

The number and order of the menus depends on the type of vehicle and its equipment.

Functions are arranged thematically in the individual main menus.

You can select the following main menus and submenus:

Main menu	Submenu
ACTROS-Info (▷ page 116)	Speed
	Time

Main menu	Submenu
	Date
Monitoring info (▷ page 116)	AdBlue tank
	AdBlue reserve
	AdBlue empty
	AdBlue
	Coolant temperature
	Supply pressure
	Oil level
	Operating hours
	Axle load Overall
	Trailer ID
Trip computer (trip data) (▷ page 117)	After start
	After reset
	Range
	Driver 1
Maintenance(▷ page 119)	Time-based maintenance
	Brake A1/A2/A3/A4
	Air cleaner
	Air drier
	Engine
	X General
	Transmission
	Rear axle
	Front axle

Main menu	Submenu
	Retarder
	Coolant
	Transfer case
Event info (▷ page 120)	INS
Auxiliary heating(▷ page 120)	Temperature
	Set temperature
	Set heating time
	Set memory
Alarm (▷ page 120)	Alarm mode:
	Alarm time:
Language(▷ page 121)	
Settings (▷ page 121)	Rain sensor
	Configuration
	Time
	Units
	Service products
Transmission control backup mode (emergency transmission mode) (▷ page 124)	
Diagnostics (▷ page 125)	Monitoring info
	Diagnostics

Main menu	Submenu
Navigation (Audio APS 30, Truck Navigation) (▷ page 118)	
Audio (radio) (▷ page 118)	
Telephone (▷ page 118)	

ACTROS info menu

▶  	ACTROS-Info
▶  	• Current speed, e.g. 60 km/h • Current date with day of the week and current time, e.g. Mon, 19.01.09, 10:42

Monitoring info menu

Checking the AdBlue® level

▶  	Monitoring info
▶  	AdBlue tank

The display shows the current AdBlue® level in litres and in bar chart form.

Additionally the display shows a message:

 **AdBlue tank 90 l** (example)
The AdBlue® level is 90 l.

 **AdBlue reserve**
The AdBlue® level has dropped to the reserve level.

 **AdBlue empty**
The AdBlue® tank is empty.

 **AdBlue tank - - - l**
The on-board computer cannot determine the AdBlue® level.

Checking the coolant temperature

▶  	Monitoring info
▶  	Coolant temperature

The display shows the engine coolant temperature in bar chart form.

Checking the reservoir pressure in the brake circuits

▶  	Monitoring info
▶  	Supply pressure

The display shows the reservoir pressure in the brake circuits, e.g.  9.6 bar and  9.3 bar. The display shows the reservoir pressure additionally in bar chart form.

Checking the engine oil level

Check the engine oil level on a regular basis, e.g. every week or each time you refuel.

- ▶ Park the vehicle on a level surface.
- ▶ Apply the parking brake.
- ▶ Switch off the engine.
- ▶ Turn the key to the drive position in the ignition lock.
- ▶ If the engine is at normal operating temperature: wait approximately 1 minute.
- ▶ If the engine is cold: wait approximately 5 to 10 minutes.

If the oil level in the engine is:

- called up too soon, the missing quantity shown may be greater than the actual value.
- called up while the vehicle is in motion, the display will always show the engine oil level measured the last time the engine was not running.

▶  	Monitoring info
▶  	Oil level

The display shows a message regarding the engine oil level:

- **Oil level O.K.**

The oil level in the engine is sufficient.

- **Oil level >max.**

The engine oil level is too high
(▷ page 145).

- **Oil level 3.0 l**

The engine oil level is too low
(▷ page 149).

If it is not possible to display the engine oil level, a display message is shown.

Repeat the engine oil level check. If it is not possible to display the engine oil level gauge after repeated attempts, have the engine oil level gauge checked at a qualified specialist workshop.

- ▶ If a topping-up quantity is displayed, top up engine oil (▷ page 283).

Checking the engine operating hours

▶ 	Monitoring info
▶ 	Operating hours

The display shows the engine operating hours, e.g. **51 h**.

Checking the axle loads

Vehicles with pneumatic suspension:

The axle load measuring device is not calibrated nor is it a system capable of calibration. The measured data only provides an approximate guide. The values are not suitable for official use.

In order to avoid inaccuracies in the measurement, make sure that the vehicle is uniformly laden.

- ▶ Park the vehicle on a level surface.
- ▶ Apply the parking brake.
- ▶ Move the chassis into the driving position (▷ page 231).

▶ 	Monitoring info
▶ 	Axle load Overall

The display shows the overall axle load, e.g. **Axle load Overall 26.0 t**. In addition, the display shows a vehicle symbol with the axle loads of the individual axles.

- ❗ You can adjust the axle load indicator if there is a notable difference between the axle load indicator and the weighbridge results (▷ page 233).

Checking the semitrailer/trailer identification number

▶ 	Monitoring info
▶ 	Trailer ID

The display shows the identification number of the trailer or semitrailer, e.g. **Trailer ID WK0471112MB 654321**.

Trip computer menu

Calling up/resetting trip data after start

▶ 	Trip computer
▶ 	After start, e.g.: 138.6 km 02:16 h 61.1 km/h 27.3 l/100 km

The display shows the following trip data after start:

- distance driven
- trip time
- average speed
- average fuel consumption

- ❗ The average fuel consumption is only a guide value. Further information about fuel

consumption can be found in the "Fuel consumption" section (▷ page 243).

- **To reset the trip data:** press the  button.

The on-board computer resets the trip data automatically, if:

- the key is turned fully back in the ignition lock for longer than 4 hours
- the key has been removed from the ignition lock for longer than 4 hours

Calling up/resetting trip data since the last reset:

►  	Trip computer
►  	After reset, e. g.: 709.4 km 13:05 h 54.2 km/h 40.2 l/100 km

The display shows the following trip data since the last reset:

- distance driven
- trip time
- average speed
- average fuel consumption

- **To reset the trip data:** press the  button.

Checking the range

►  	Trip computer
►  	Range

The display shows the approximate range in km which can be driven with the current amount of fuel.

Checking driving time and rest periods

►  	Trip computer
►  	Driver 1  02:06 (driving time)  00:24 (rest period)

The driving times and rest periods shown in the display cannot be used as official proof. For the rest period, the trip computer adds together all breaks in driving lasting longer than 15 minutes.

The driving and rest periods cannot be reset manually. The trip computer resets the times when the rest period reaches 45 minutes or the tachograph disc/driver card is removed. Vehicles with a digital tachograph: if you stop, the tachograph switches automatically into work mode. This does not count as a break in the journey. In this case, the driver must manually switch to rest mode; see the manufacturer's operating instructions.

Navigation menu

►  	Navigation
---	------------

The [Navigation](#) menu is available on vehicles with Truck Navigation; see the manufacturer's operating instructions.

Audio menu

►  	Audio
---	-------

Information on the [Audio](#) menu can be found in the "Audio equipment (radio) operation" section (▷ page 92).

Telephone menu

 WARNING

Operating mobile communications equipment while driving distracts you from paying attention to traffic conditions. This could also

cause you to lose control of the vehicle. There is a risk of an accident.

Use this device only when the vehicle is stationary.

The menu is available on vehicles with:

- CD radio with Bluetooth®
- CD radio Comfort with Bluetooth®
- Bluetooth® CD radio with permanently installed telephone

If you connect a Bluetooth®-capable mobile phone with the CD radio, you can operate the phone via the **Telephone** menu. If you have a CD radio with Bluetooth® with a permanently installed telephone, you can operate the phone via the **Telephone** menu.

- ▶ To switch on the mobile phone; see the manufacturer's operating instructions.
- ▶ To connect a mobile phone with the CD radio; see the manufacturer's operating instructions.

Dialling a number in the phone book

- ▶ Use ,  or  to select the **Telephone** menu.
- ▶ **To read the phone book:** use  or  to switch to the phone book. The display shows **Please wait**. The on-board computer reads the phone book of the mobile phone. This can take up to 30 seconds. When the display goes out, the reading process is finished.
- ▶ **To select an entry:** use  or  to select the desired name. The display shows the names in alphabetical order.
- ▶ **i** If you press and hold the  or  button, you scroll through alphabetically. If you release the button, the display shows the next available name.
- ▶ **To dial:** press the  button. The on-board computer dials the corresponding phone number.

Redialling

- ▶ **To select an entry:** press the  button. The display shows the numbers last dialled or names last selected.
- ▶ Use  or  to select the desired number or desired name.
- ▶ **To dial:** press the  button. The on-board computer dials the corresponding phone number.

Adjusting the call volume

- ▶ During a call, use the  or  button to increase or reduce the volume.

Ending a call

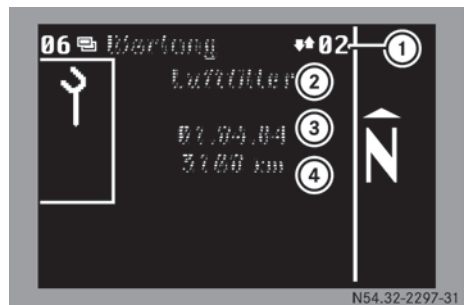
- ▶ Press the  button.

Maintenance menu

The Telligent® maintenance system calculates service due dates for the vehicle and its assemblies based on the vehicle's operating conditions. The service due dates are first displayed automatically 14 days before the respective service is due (▶ page 131). The display shows the **Front-axle inspection** service point once after 1,000 to 5,000 km.

If necessary, you can call up the service due date in the **Maintenance** menu.

▶  	Maintenance
▶  	Scrolls through the service points



The display shows service points ② in the order they are due ①. The display shows service point ②, service due date ③ and remaining distance ④.

If the Telligent® maintenance system cannot calculate service due date ③ or remaining distance ④, the display shows --, --, -- or ---- km.

Depending on the vehicle equipment, you can call up the following service points ②:

- Time-based maintenance
- Brake A1/A2/A3/A4
- Air cleaner
- Air drier
- Engine
- 1. General
- Transmission
- Rear axle
- Front axle
- Front-axle inspection
- Retarder
- Coolant
- Transfer case

Event info menu

Using the Event info menu, you can call up the stored display messages. Unlike the display of new events, only the system abbreviation/symbol and the fault location are highlighted in red or yellow (> page 127).

If the cause of the display message has been rectified, the display no longer shows the message.

▶ 	Event info
▶  	Scrolls through the display messages

The display shows the last confirmed display messages first.

Auxiliary heating menu

▶ 	Auxiliary heating
---	-------------------

Information on the Auxil. heating menu can be found in the "Auxiliary heating" section (> page 102).

Alarm clock menu

Setting alarm clock mode

▶ 	Alarm Current settings, e.g. Alarm mode: Radio, Alarm time: 1 08:00
▶  	Set alarm mode
▶  	• Off • Radio • Buzzer

Setting the alarm time

▶ 	Alarm Current settings, e.g. Alarm mode: Radio, Alarm time: 1 08:00
▶  	Set memory
▶  	Select memory position: • Alarm time: 1 • Alarm time: 2
▶ 	Set hours
▶  	Setting
▶ 	Set minutes
▶  	Setting

i If you press and hold  or , the hours/minutes scroll rapidly.

Switches off the alarm

- ▶ Alarm mode **Buzzer**: press the , , or button on the steering wheel.
- ▶ **Radio** alarm mode: switch off the radio; see the separate operating instructions.
- ▶ The key is in the radio or drive position in the ignition lock: press the or button.

i The alarm switches off automatically after one hour.

Language menu

▶	Language
▶	• DEUTSCH • ENGLISH • ESPAÑOL

The languages available depend on the country in which the vehicle is sold. All text displays are shown in the set language.

You can install more languages. Information on installing more languages can be obtained from any Mercedes-Benz Service Centre.

Settings menu, rain/light sensor

Information on operation of the windscreen wipers can be found in the "Windscreen wipers" section (▶ page 82).

Switching intermittent wipe on and rain/light sensor off

▶	Settings
▶	Rain sensor
▶	Switches to the submenu
▶	Activate interval
▶	Interval mode activated The status indicator lights up briefly in white.

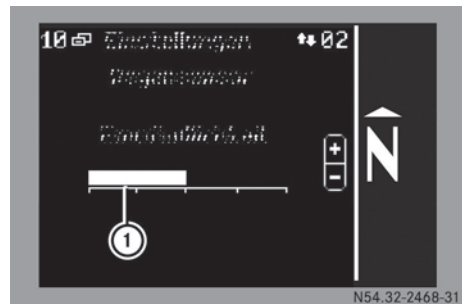
Switching rain/light sensor on and intermittent wipe off

▶	Settings
▶	Rain sensor
▶	Activate
▶	Rain sensor activated The status indicator lights up briefly in white.

Setting the sensitivity of the rain/light sensor

Using the **Sensitivity** menu, you can set the sensitivity of the rain/light sensor to one of 5 levels. If the rain/light sensor is activated, the **Sensitivity** menu is available.

▶	Settings
▶	Rain sensor
▶	Switches to the submenu
▶	Sensitivity
▶	Switches to the submenu



The display shows sensitivity set ① in bar chart form.

- ▶ **To increase the sensitivity**: press the button repeatedly, until the desired sensitivity is reached. The windscreen wiper sweeps once each time.

If the bar is all the way to the right, then the highest sensitivity is set. The windscreen wipers wipe even when it is only raining lightly.

- **To decrease the sensitivity:** press the  button repeatedly, until the desired sensitivity is reached.
- If the bar is all the way to the left, then the lowest sensitivity is set. The windscreen wipers wipe only when it is raining heavily.

Settings menu, configuration

The display can show the [Arrow buttons in cassette mode](#) submenu by using the [Track search](#) menu and [Fast forward and Rew.](#) If you retrofit a cassette radio, you can use this menu.

Switching the differential locks permanent display on/off

►  	Settings
►  	Configuration
►  	Differential lock permanent display
►  	• On • Off



① Differential locks display

Switching the level control permanent display on/off

The display for level control in drive position can be permanently activated or deactivated in the on-board computer.

►  	Settings
►  	Configuration
►  	Level control permanent display
►  	• On • Off



① Level control display

Setting the function of the arrow keys in radio mode

►  	Settings
►  	Configuration
►  	Arrow buttons in radio mode
►  	• Station search • Memory

Information on operation of the audio equipment (radio) can be found in the "Audio equipment (radio) operation" section (► page 92).

Enabling the diagnostics menu/transmission control backup mode

The [Diagnostics](#) and [Transmission control backup mode](#) menus are not enabled

when the vehicle leaves the factory. You can enable the menus.

Information on the [Transmission control backup mode](#) menu can be found in the "Transmission control backup mode (emergency transmission mode)" section (▷ page 207).

Information on the [Diagnostics](#) menu can be found in the "Diagnostics menu" section (▷ page 125).

▶  	Settings
▶  	Configuration
▶  	• Display diagnostics menu • Enable transmission control backup mode
▶  	• On • Off

Settings menu, time

Using the [Time](#) menu, you can set the date and time in the on-board computer and the tachograph. To operate the tachograph, see the manufacturer's operating instructions.

▶  	Settings
▶  	Time
▶  	• Set hours • Set minutes • Set day • Set month • Set year
▶  	Setting

Settings menu, units

Setting the temperature unit

▶  	Settings
▶  	Units

▶  	Temperature unit
▶  	• °C • °F

Changing trip computer units

▶  	Settings
▶  	Units
▶  	Trip computer
▶  	• Metric • Imperial

Changing the clock mode

▶  	Settings
▶  	Units
▶  	Clock mode
▶  	• 12 h • 24 h

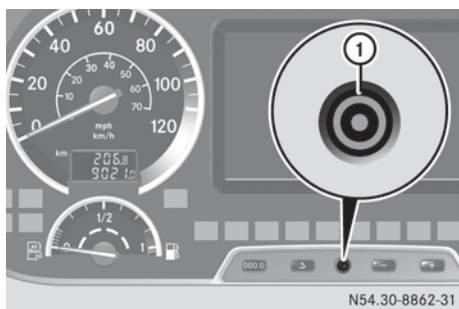
Settings menu, service products

❗ If you change the service product data in the [Service products](#) menu, the Telligent® maintenance system adjusts the service due dates accordingly.

To avoid damage to the vehicle's major assemblies, always set the data of the service products.

See the "Service products" section (▷ page 345).

▶  	Settings
▶  	Service products
▶  	Current settings • Sulphur • Engine oil grade • Engine oil viscosity • Transmission oil grade



- ▶ Press reset button ① with a pen, for example.
- ▶ Repeat this procedure until the settings correspond to the service products which have been added.

Fuel sulphur content

If you are using the vehicle for international transport, set the fuel sulphur content of your home country.

Set the fuel sulphur content for the predominantly used fuel.

Set the adjustment value for the on-board computer under **Sulphur**. The adjustment value indicates the fuel sulphur content as a weight percentage of the diesel fuel used.

Observe the notes on diesel fuel and fuel quality in the "Diesel fuel" section ((> page 349)).

- ❗ Certain countries have diesel fuel with varying sulphur content. Diesel fuel with low sulphur content is sold in certain countries under the name "Euro diesel". If you do not know the sulphur content of the diesel fuel you are using, select the least favourable sulphur content in the on-board computer.

A higher fuel sulphur content accelerates the ageing process of the engine oil. The Telligent® maintenance system calculates the service due date for changing the oil based on the fuel sulphur content specified.

- ❗ If you are running the vehicle on fatty acid methyl ester (FAME), the intervals for

changing the engine oil and replacing the engine oil filter are reduced.

If you are running the vehicle on fatty acid methyl ester (FAME) fuel or add fatty acid methyl ester (FAME) to diesel fuel, set **FAME** under **Sulphur**. You could otherwise damage the engine.

Engine oil grade

Set the engine oil grade of the engine oil used according to the Sheet Numbers of the Mercedes-Benz Specifications for Service Products under **Engine oil grade**. The higher the Sheet Number, the higher the engine oil grade.

- ❗ If you mix engine oils with differing oil grades, the change interval for the engine oil is reduced in comparison to mixtures of engine oil of identical grade.

Therefore, only mix engine oils of differing grade in exceptional circumstances. To prevent damage to the engine, set the sheet number of the engine oil with the lower grade under **Engine oil grade**.

Engine oil viscosity

Set the viscosity classification (SAE class) of the engine oil used under **Engine Oil viscosity**.

Transmission oil grade

Set the transmission oil grade of the transmission oil used according to the Sheet Numbers of the Mercedes-Benz Specifications for Service Products under **Transmission oil grade**. The higher the Sheet Number, the higher the transmission oil grade.

Transmission control backup mode menu

Information on the **Transmission control backup mode** menu can be found in the "Transmission control backup mode (emergency transmission mode)" section ((> page 207)).

The **Transmission control backup mode** menu is not enabled when the vehicle leaves

the factory. Enable the **Transmission control backup mode** menu (> page 122).



Diagnostics menu

Calling up diagnostics data

The **Diagnostics** menu is not enabled when the vehicle leaves the factory. Enable the **Diagnostics** menu (> page 122).

Diagnostics data contains information with which you can assist the service personnel during fault diagnosis, e.g. through remote diagnosis.



The **Diagnostics** menu contains, for example, a list of all control units (systems) that are fitted in the vehicle.

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

Notes on display messages

Display messages introduction

Display messages contain operational information, fault messages or warnings that are automatically shown in the display. The status indicator lights up white, yellow or red, depending on the significance of the event. In addition to the display message, an indicator lamp may light up in the instrument cluster.

If you ignore warning and indicator lamps, display messages and the status indicator, you will not be able to recognise failures and malfunctions in components or systems. Driving/braking characteristics may be affected and the operating and road safety of your vehicle may be limited. Have the affected system checked and repaired at a qualified spe-

cialist workshop. Always observe the warning and indicator lamps, display messages and the status indicator and follow the corresponding measures.

You can hide display messages and call them up again at a later time. If an indicator lamp lights up in addition to the appearance of a display message, it does not go out even when you confirm the display message.

If more than one message is displayed, the display shows the messages in succession. The on-board computer only shows messages or warnings from certain systems in the display. You should therefore make sure your vehicle is operating safely at all times. Otherwise, you could cause an accident by driving an unsafe vehicle. If your vehicle is not operating safely, stop immediately, paying attention to the road and traffic conditions.

Display messages with system abbreviation



- ① Status indicator (white, yellow or red)
- ② System abbreviations
- ③ Fault location: (🚚) tractor vehicle or (🚛) trailer/semitrailer)
- ④ Function restriction
- ⑤ Instructions
- ⑥ Memory field for stored malfunctions

❗ The 📢 symbol indicates that a warning tone also sounds.

Display messages with symbol



- ① Status indicator (white, yellow or red)
- ② Symbol
- ⑥ Memory field for stored malfunctions

Acknowledging display messages

► Press the ,  or  button.
The display message disappears.

- ❗ If an indicator lamp lights up in the instrument cluster in addition to the display message, this will not go out even after the display message has been acknowledged.
- ❗ You can call up previously acknowledged display messages in the menu (> page 129). If the cause of the malfunction has not been rectified, the display message will be shown again the next time that the engine is started.

Memory field

If you have acknowledged the display messages, the display indicates them with a symbol or system abbreviation in the reminder field, for example:

-  Collective symbol for malfunctions
- BS** Malfunction in the Telligent® brake system
-  New text message
- SRS** Malfunction of the Supplemental Restraint System airbag system and seat belt tensioner
- TCO** Tachograph malfunction

If there are several messages that must be displayed due to legal requirements, these are shown one after the other.

Status indicator

To enable the driver to determine the significance of messages, the individual segments of status indicator ① light up in one of the following colours:

- white
- yellow
- red

In the event of a fault, status indicator ① may light up in white, e.g. if Active Brake Assist cannot be activated. Status indicator ① also lights up white for special operating modes, e.g. if you deactivate Active Brake Assist.

Display message with a yellow status indicator

Status indicator ① lights up yellow for low priority faults, e.g. for a faulty bulb. Status indicator ① also lights up yellow for special operating modes, e.g. if the power take-off is activated.

Display message with red status indicator

Status indicator ① lights up red for higher priority faults, e.g. if the generator is faulty.

Stop lamp



- ① Stop lamp

If the stop lamp does not go out, or comes on while you are driving, the vehicle's operational safety and roadworthiness are at risk.

- Stop the vehicle as soon as possible, taking road and traffic conditions into account.
- Apply the parking brake.
- Switch off the engine.
- Consult a qualified specialist workshop.

Electronic system abbreviations

Abbreviation	System
ABA	Active Brake Assist
ABS	Anti-lock braking system
AG	Automatic Gearshift
APU	Air-Processing Unit
ART	Telligent® distance control
BS	Telligent® brake system
BTS	Battery isolator switch
EAB	Electronic trailer brake
ATA	Anti-Theft Alarm system
FLA	Cold-start aid
FM	Front module
FR	Drive control
GM	Base module
Gearshift control	Telligent® transmission control
HM	Rear module
HPS	Manual transmission
HZR	Heating control/air conditioning
Instrument cluster	Instrument cluster
KB	Clutch mechanism

Abbreviation	System
KOM	Communication interface
KS	Clutch control
KSA	Enhanced central locking system
MR	Telligent® engine control
MSF	Modular switch field
NR	Telligent® level control
PSM	Programmable special module
RAD	Radio/navigation system
RS	Retarder control
SCR	BlueTec® exhaust gas aftertreatment
SPA	Telligent® Lane Assistant
SRS	Supplemental Restraint System
TCO	Tachograph
TEL	Telephone, hands-free system
TK	Hydrodynamic clutch
TMB	Door module, co-driver's door
TMF	Door module, driver's door
TP	Telematics platform
WR	Telligent® roll control
WS	Telligent® maintenance system
Torque converter clutch	Torque converter clutch
ZDS	Central data memory

Abbreviation	System
ZHE	Auxiliary heating
ZL	Telligent® trailing axle

Display messages

Display messages with white status indicator

Display messages	Possible causes/consequences and ► Solutions
 ABA Active Brake Assist on	Active Brake Assist (ABA) is switched on.
 ABA Active Brake Assist off	ABA is switched off. ► Switch on ABA (> page 226).
 ABA Active Brake Assist cannot be used	ABS may be switched off, or ABA or the vehicle's brake system may be malfunctioning.  WARNING If ABA cannot be switched on, you will not receive any collision warnings. The vehicle will not brake automatically in critical situations. There is a risk of an accident. ► Pay particular attention to the traffic situation. ► If necessary, use the service brake to brake the vehicle. ► Have the ABA system checked at a qualified specialist workshop.
Emerg braking ended	ABA triggered an emergency braking manoeuvre (full brake application) and the emergency braking manoeuvre has been completed. ► Remove the vehicle as quickly as possible from the danger zone, paying attention to road and traffic conditions as you do so. ► Switch off the engine. ► Apply the parking brake. ► Make sure that the vehicle is in proper operating order and that the load is secured properly.

Display message with a yellow status indicator

Display messages	Possible causes/consequences and ► Solutions
  Top up with AdBlue	The fuel tank is empty. ► Refill the fuel tank (► page 246).
  Fill up with diesel	The AdBlue® level has dropped to the reserve level. ► Refill the AdBlue® tank (► page 247).
  Fill w.diesel/ AdBlue	The fuel has dropped to the reserve level. ► Refill the fuel tank (► page 246).
  Fill w.diesel/ AdBlue	► To avoid an additional refuelling stop, refill the AdBlue® tank (► page 247).
  Fill w.diesel/ AdBlue	The fuel and AdBlue® have dropped to the reserve level. ► Refill the fuel tank (► page 246).
 	► Refill the AdBlue® tank (► page 247).
 	The washer fluid level in the windscreen washer/headlamp cleaning system reservoir has dropped to approximately 1 l. ► Refill the washer fluid reservoir (► page 281).
  Brake lamp, left: failure(example)	The left brake lamp on the trailer/semitrailer is faulty. ► Replace the corresponding bulb; see the operating instructions for the trailer/semitrailer.

Display messages	Possible causes/consequences and ► Solutions
 	• If this display message is shown when you switch on the lights, one of the following bulbs is faulty or one of the following fuses has blown: - Side lamps - Dipped-beam headlamps - Tail lamps - Licence plate lamp - Rear foglamp • If this display message is shown when you brake, a brake lamp is faulty. • If the display message appears after an instrument cluster function check, the brake lamp fuse is faulty. • If this display message is shown when you switch on a turn signal, a turn signal lamp is faulty. ► Check the corresponding fuse (► page 313). ► If the fuse has blown, replace it. ► Check the corresponding bulb (► page 75). ► If the bulb is faulty, replace it. i Monitoring of the lighting system via the on-board computer may be disabled in some cases. Perform a function check and visual inspection of the lighting system before every journey.
  7.5 l (example)	The engine oil level is too low. ► Add the quantity of oil shown in the display immediately (► page 283). If you cannot top up the indicated amount immediately, you can drive on only until the status indicator lights up red. Depending on the operating conditions, the status indicator will light up in red after approximately 2,000 km to 6,000 km.
  Air cleaner 01.04.10 3100 km (example)	A service is due soon. ► Schedule a service appointment at a qualified specialist workshop.
  Air cleaner Service due (example)	A service is due. ► Have maintenance work carried out at a qualified specialist workshop.

Display messages	Possible causes/consequences and ► Solutions
 	The compressed-air dryer is malfunctioning. ► Have the compressed-air dryer checked at a qualified specialist workshop.
 	The reservoir pressure in the auxiliary consumers circuit has dropped below 5.5 bar.  WARNING The gears can no longer be changed properly. There is a risk of an accident. ► Stop the vehicle at once, paying attention to road traffic conditions. ► Apply the parking brake. ► Let the engine run until the display message goes out and the reservoir pressure has reached an adequate level. ► If the malfunction occurs regularly, have the compressed-air system checked at a qualified specialist workshop.
 	Vehicles with Telligent® automatic gearshift: the reservoir pressure in the auxiliary consumers circuit is too low. The Telligent® automatic gearshift is not operational. ► Stop the vehicle at once, paying attention to road traffic conditions. ► Apply the parking brake. ► Switch off and restart the engine.
FR 	The electronic drive control is malfunctioning. The accelerator pedal is not operational. The engine is running in emergency mode. Engine power output is reduced. ► Stop the vehicle at once, paying attention to road traffic conditions. ► Apply the parking brake. ► Switch off the engine and restart it after approximately 10 seconds. ► If the engine continues to run in emergency mode, have the malfunction rectified at a qualified specialist workshop.
FR 	The engine runs at a constant speed of approximately 1,300 rpm. The engine emergency running mode is activated. ► Consult a qualified specialist workshop.

Display messages	Possible causes/consequences and ► Solutions
	The starter batteries are discharged. You cannot start the engine. ► Jump-start your vehicle with the help of another vehicle (► page 316).
 Reduced cooling output Water pump	The coolant temperature has exceeded 105 °C and the engine output is reduced. ► Lock up the clutch of the controlled coolant pump (► page 302). ► Have the clutch of the controlled coolant pump repaired at a qualified specialist workshop.
 Immobiliser activated	You have attempted to start the vehicle 5 times using an invalid key. The immobiliser is now activated. You cannot start the engine. Each additional starting attempt with an invalid key increases the waiting time by one minute. ► Use the valid key/spare key. Mercedes-Benz recommends that you always keep an easily accessible spare key with you for emergencies.
	The temperature of one of the drum brakes/disc brakes on the tractor vehicle is too high. The drum brake/disc brake may over-heat. ► Drive with even greater care. ► Shift to a lower gear. ► Brake the vehicle with the continuous brake. ► Only depress the brake pedal if the continuous brake cannot decelerate the vehicle sufficiently. ► Have the brake system checked at a qualified specialist workshop.
 Wheel brake over-loaded	The temperature of one of the drum brakes/disc brakes on the tractor vehicle is too high. The drum brake/disc brake may over-heat. ► Drive with even greater care. ► Shift to a lower gear. ► Brake the vehicle with the continuous brake. ► Only depress the brake pedal if the continuous brake cannot decelerate the vehicle sufficiently. ► Have the brake system checked at a qualified specialist workshop.

Display messages	Possible causes/consequences and ► Solutions
	The loading platform approach aid is activated. ► Observe the distance shown in the display.
ART  Clean distance sensor	The distance sensor is dirty. ABA and ART are inoperative. ► Clean the distance sensor covers in the front bumper using water. Do not use any dry, rough or hard cloths and do not scrub or scratch.
ART  Distance control: may be restricted	ART (Telligent® distance control) is malfunctioning. ► Have the ART system checked at a qualified specialised workshop.
ABA  Active Brake Assist not available	ABA is inoperative.  WARNING If ABA is unavailable, you will not receive any collision warnings. In critical situations, the vehicle will not brake automatically. There is a risk of an accident. ► Pay particular attention to the traffic situation. ► If necessary, use the service brake to brake the vehicle. ► Have the ABA system checked at a qualified specialist workshop.
ABA  Active Brake Assist limited operation	 WARNING If ABA is unavailable, you will not receive any collision warnings. In critical situations, the vehicle will not brake automatically. There is a risk of an accident. ► Pay particular attention to the traffic situation. ► Brake the vehicle according to the traffic conditions using the service brake. ► Have the ABA system checked at a qualified specialist workshop.

Display messages	Possible causes/consequences and ► Solutions
 Clutch: failedVisit work- shop	Vehicles with Telligent® gearshift, Telligent® automatic gearshift or Mercedes PowerShift: the reservoir pressure in the auxiliary consumers circuit is insufficient.  WARNING The gears can no longer be changed properly. There is a risk of an accident. ► Stop the vehicle at once, paying attention to road traffic conditions. ► Apply the parking brake. ► Run the engine until there is sufficient reservoir pressure in the auxiliary consumers circuit. The auxiliary consumers circuit pressure message disappears. ► Switch off the engine. ► Start the engine again after approximately 10 seconds. ► If the Clutch: failed message is shown in the display again, carry out the teach-in procedure (► page 203). ► If the display message is shown again after the teach-in procedure, activate transmission control backup mode (► page 207).
 Gearshift: failedCarry out teach-in procedure	Vehicles with Telligent® gearshift, Telligent® automatic gearshift or Mercedes PowerShift: the transmission no longer changes gear.  WARNING The gears can no longer be changed properly. There is a risk of an accident. ► Stop the vehicle at once, paying attention to road traffic conditions. ► Apply the parking brake. ► Switch off the engine. ► Carry out a long teach-in procedure (► page 203).

Display messages	Possible causes/consequences and ► Solutions
GS  Gearshift: failedVisit work- shop	Vehicles with Telligent® gearshift, Telligent® automatic gearshift or Mercedes PowerShift: the electronic system of the transmission control is malfunctioning.  WARNING The gears can no longer be changed properly. There is a risk of an accident. ► Activate transmission control back-up mode (► page 207). ► Have the vehicle towed away (► page 318). ► Have the transmission checked at a qualified specialist work-shop.
GS  Parameterisation faultCarry out teach-in procedure	Vehicles with Telligent® gearshift, Telligent® automatic gearshift or Mercedes PowerShift: the transmission no longer changes gear.  WARNING The gears can no longer be changed properly. There is a risk of an accident. ► Stop the vehicle at once, paying attention to road traffic conditions. ► Apply the parking brake. ► Switch off the engine. ► Carry out a long teach-in procedure (► page 203).
  T. con. operation/no accelerator shut- off	The CAN connection to the drive control is faulty. Information on idling and kickdown is missing. ► Have the torque converter clutch checked at a qualified specialist workshop.
  Torque converter activated	The torque converter is activated.
  Converter: perma- nently active	The torque converter clutch's solenoid valve is malfunctioning. ► Have the torque converter clutch checked at a qualified specialist workshop.
  Torque converter: defective	The torque converter clutch's function may be restricted. ► Have the torque converter clutch checked at a qualified specialist workshop.

Display messages	Possible causes/consequences and ► Solutions
 Retarder lever!	• The effect of the retarder is restricted. • The retarder is inoperative. • The retarder is fully functional. ► Have the torque converter clutch checked at a qualified specialist workshop.
 Retarder!	The retarder cannot be switched off. ► Have the torque converter clutch checked at a qualified specialist workshop.
 Valve!	• The retarder is inoperative. • The retarder brake responds with a delay. • The converter is permanently active. • The retarder is fully functional. ► Have the torque converter clutch checked at a qualified specialist workshop.
 Temperature sensor!	The effect of the retarder is restricted. ► Have the torque converter clutch checked at a qualified specialist workshop.
 Electronics system!	The effect of the retarder is restricted. The retarder is fully functional. ► Have the torque converter clutch checked at a qualified specialist workshop.
 Network!	• The retarder is inoperative. • The converter is permanently active. • Torque converter mode/no accelerator shutoff: the CAN connection to the drive control is faulty. Information on idling and kickdown is missing. • The retarder is fully functional. ► Have the torque converter clutch checked at a qualified specialist workshop.
 Retarder: defective	The retarder lever has no function. The temperature sensor is malfunctioning. ► Have the torque converter clutch checked at a qualified specialist workshop.

Display messages	Possible causes/consequences and ► Solutions
  Temp. torque converter clutch too high	The converter has been operated for too long. ► Change to a lower gear to increase the engine revs to over 1,200 rpm. The torque converter clutch engages and the  indicator lamp goes out.
TK 	The hydraulic clutch is malfunctioning. Its function may be restricted. ► Have the hydraulic clutch checked at a qualified specialist workshop.
 	The voltage in the vehicle's electrical circuit has dropped below 22 V. The vehicle's driving and braking characteristics may change. Possible causes are a defective alternator or a torn poly-V-belt. ► Stop the vehicle immediately, paying attention to road and traffic conditions. ► Switch off the engine and apply the parking brake. ► Consult a qualified specialist workshop.
 	The alternator is faulty. The vehicle's driving and braking characteristics may change. ► Stop the vehicle at once, paying attention to road traffic conditions. ► Switch off the engine. ► Apply the parking brake. ► Consult a qualified specialist workshop.
  Braking characteristics may change	The trailer's/semitrailer's brake system is malfunctioning.  WARNING The vehicle's driving and braking characteristics may change. Also observe the information in the separate operating instructions provided by the trailer/semitrailer manufacturer. There is a risk of an accident. ► Have the brake system checked at a qualified specialist workshop.

Display messages with yellow indicator warning and warning buzzer

Display messages	Possible causes/consequences and ► Solutions
	Vehicles with Telligent® automatic gearshift and Mercedes PowerShift: the permissible operating temperature of the clutch has been exceeded. There is a risk of clutch damage. ► Engage a lower gear when manoeuvring or pulling away. ► Complete the pulling away or manoeuvring process as quickly as possible. Otherwise, the clutch will be overloaded.
 Coolant temperature too high	The coolant temperature is too high. Engine power output is automatically reduced. ► Reduce the speed. ► Shift to a lower gear. ► Remove objects that could block the air supply to the engine radiator, e.g. paper which has flown onto the grille.
 CODE	The immobiliser is now activated. You cannot start the engine. ► When the warning tone ceases, turn the key back to the stop in the ignition lock. ► Repeat the starting procedure after approximately 2 seconds. You have been attempting to start the vehicle using an invalid key. The immobiliser has been activated. You cannot start the engine. ► Use the valid key/spare key. i After five unsuccessful starting attempts, Immobiliser activated appears in the display.
	The distance to the loading platform is less than 50 cm. ► Observe the distance shown in the display.

Display message with red status indicator

Display messages	Possible causes/consequences and ► Solutions
 Apply parking brake	The parking brake is not applied. Vehicles with Telligent® automatic gearshift and Mercedes PowerShift: the vehicle was parked with a gear engaged and the parking brake released. After the engine has been switched off, the transmission automatically shifts to neutral.  WARNING The parked vehicle could roll away. You could endanger yourself and others. There is a risk of an accident. ► Apply the parking brake.
 Apply parking brake	Vehicles with a programmable special module: the parking brake is not applied.  WARNING The parked vehicle could roll away. You could endanger yourself and others. There is a risk of an accident. ► Apply the parking brake before engaging the power take-off.
 Air cleaner Service now (example)	A service due date has been significantly exceeded. This could result in damage to the vehicle and its assemblies. It could also result in increased wear. ► Have maintenance work carried out immediately at a qualified specialist workshop.
 Brake A1 Service now (example)	The service work due has not been performed. The wear limit of the brake pads/linings and/or brake discs has been exceeded.  WARNING The vehicle's driving and braking characteristics may change. There is a risk of an accident. ► Have the brake pads/linings replaced immediately at a qualified specialist workshop.
	• The alternator is faulty. • The poly-V-belt has torn. ► Stop the vehicle at once, paying attention to road traffic conditions. ► Consult a qualified specialist workshop.

Display messages	Possible causes/consequences and ► Solutions
 Braking characteristics may change Visit workshop soon	The vehicle's brake system is malfunctioning.  WARNING The vehicle's driving and braking characteristics may change. There is a risk of an accident. ► Have the brake system checked at a qualified specialist workshop.
 Output reducedTop up with AdBlue	• The AdBlue® tank is empty. • The  indicator lamp flashes. • The engine power output is reduced. • Vehicles with Telligent® automatic gearshift or Mercedes PowerShift: the transmission switches to manual operation mode. ► Refill the AdBlue® tank (▷ page 247). ► Shift gears manually (▷ page 190). ► Acknowledge the display messages (▷ page 126). If the AdBlue® tank has been refilled, the next time that the engine is started the display message will not be shown again. The  indicator lamp goes out. Full engine output becomes available again.
 AdBlue empty	The AdBlue® tank is empty. If you do not refill the AdBlue® tank, the  indicator lamp flashes. The engine output will be reduced automatically the next time the vehicle comes to a standstill. ► Refill the AdBlue® tank. If the AdBlue® tank has been refilled, the next time that the engine is started the display message will not be shown again. The  indicator lamp goes out. Full engine output becomes available again.
 Output reduced	• BlueTec® exhaust gas aftertreatment may be malfunctioning. • The  indicator lamp flashes. • The engine power output is reduced. • Vehicles with Telligent® automatic gearshift or Mercedes PowerShift: the transmission switches to manual operation mode. ► Shift gears manually (▷ page 190). ► Acknowledge the display messages (▷ page 126). If this message only appears for a short time, there is no need for action. ► Have the cause of the malfunction rectified at a qualified specialist workshop.

Display messages	Possible causes/consequences and ► Solutions
SCR  Visit workshop	BlueTec® exhaust gas aftertreatment is malfunctioning. Emissions are exceeding the permissible limits. ► Have the cause of the malfunction rectified at a qualified specialist workshop. If the fault is displayed for several consecutive journeys, the  indicator lamp flashes. The engine output will be reduced automatically the next time the vehicle comes to a standstill. If BlueTec® exhaust gas aftertreatment functions correctly for several journeys, the engine output becomes fully available again. The  indicator lamp goes out.
SCR  Visit workshop	The  indicator lamp flashes. The NO_x sensor is faulty. ► Have the fault rectified immediately at a qualified specialist workshop. Have the fault rectified within the next 50 hours of vehicle operation. The engine output will otherwise be reduced automatically the next time the vehicle comes to a standstill.
  Braking characteristics may change Visit workshop soon	The trailer's/semitrailer's brake system is malfunctioning.  WARNING The vehicle's driving and braking characteristics may change. Also observe the information in the separate operating instructions provided by the trailer/semitrailer manufacturer. There is a risk of an accident. ► Have the brake system checked at a qualified specialist workshop.
  Braking characteristics changed	The trailer's/semitrailer's brake system is malfunctioning.  WARNING The vehicle's driving and braking characteristics may change. Also observe the information in the separate operating instructions provided by the trailer/semitrailer manufacturer. There is a risk of an accident. ► Drive on carefully. ► Have the brake system checked at a qualified specialist workshop.

Display messages	Possible causes/consequences and ► Solutions
 Braking characteristics changed	The trailer's/semitrailer's brake system is malfunctioning.  WARNING The vehicle's driving and braking characteristics may change. Also observe the information in the separate operating instructions provided by the trailer/semitrailer manufacturer. There is a risk of an accident. ► Drive on carefully. ► Shift to a lower gear. ► Brake the vehicle with the continuous brake. ► Only depress the brake pedal if the continuous brake cannot decelerate the vehicle sufficiently. ► Have the brake system checked at a qualified specialist workshop.
 Driving/braking characteristics may chg	The trailer/semitrailer will be automatically braked.  WARNING The vehicle's driving and braking characteristics may change. Also observe the information in the separate operating instructions provided by the trailer/semitrailer manufacturer. There is a risk of an accident. ► Drive on carefully. ► To prevent the wheels of the trailer/semitrailer from locking, do not apply the brakes with full force, except in emergency situations. ► Have the trailer/semitrailer checked at a qualified specialist workshop.
 ABS malfunction, trailer	The trailer's/semitrailer's ABS is inoperative. There is a danger that the trailer/semitrailer could overbrake.  WARNING The vehicle's driving and braking characteristics may change. Also observe the information in the separate operating instructions provided by the trailer/semitrailer manufacturer. There is a risk of an accident. ► Drive on carefully. ► To prevent the wheels of the trailer/semitrailer from locking, do not apply the brakes with full force, except in emergency situations. ► Have the trailer's/semitrailer's ABS checked at a qualified specialist workshop.

Display messages	Possible causes/consequences and ► Solutions
  Braking characteristics may change Visit workshop soon	The trailer's/semitrailer's brake system is malfunctioning.  WARNING The vehicle's driving and braking characteristics may change. Also observe the information in the separate operating instructions provided by the trailer/semitrailer manufacturer. There is a risk of an accident. ► Have the brake system checked at a qualified specialist workshop.
  Brake pads/linings completely worn	Due service work has not been performed on the trailer/semitrailer. The wear limit of the brake pads/linings and/or brake discs of the trailer/semitrailer has been exceeded.  WARNING The vehicle's driving and braking characteristics may change. There is a risk of an accident. ► Have the brake pads/linings on the trailer/semitrailer replaced immediately at a qualified specialist workshop.
 	The retarder control is malfunctioning. The retarder is not deactivated if: • ABS is intervening. • you depress the accelerator pedal. ► Drive on carefully. ► Have the retarder control checked at a qualified specialist workshop.
  Torque conv. temp.	The converter has been operated for too long. ► Change to a lower gear to increase the engine speed to over 1,200 rpm. The torque converter clutch engages and the  indicator lamp goes out.
 	The hydraulic clutch, the retarder and/or the engine brake are malfunctioning. ► Have the hydraulic clutch checked at a qualified specialist workshop.

Display messages	Possible causes/consequences and ► Solutions
	The oil level in the power-steering reservoir has dropped to the minimum level. ► Have the steering checked immediately at a qualified specialist workshop.
	Four-axle vehicles: steering circuit 2 has failed. You can only steer the vehicle with increased effort. ► Adapt your driving style. Reduce speed, in particular before cornering. ► Have the steering checked at a qualified specialist workshop.
	The engine oil level is too high. This could cause the engine oil pressure to drop. The operating safety of the engine is jeopardised. ► Have at least 2 l of oil siphoned off at a qualified specialist workshop.

Display messages with red status indicator and warning buzzer

Display messages	Possible causes/consequences and ► Solutions
	 WARNING ABA warns you if there is a risk of collision with the vehicle in front. There is a risk of an accident. When an automatic distance warning is being given, you must brake the vehicle using the service brake if: • the  symbol appears in the display with a red status indicator. • a double warning tone sounds. • a continuous warning tone sounds. ► Pay particular attention to the traffic situation. ► Slow down the vehicle using the service brake.
 	The CAN connection to the instrument cluster is interrupted.  WARNING The display can no longer show important information about the operating and road safety of the vehicle. There is a risk of an accident. ► Stop the vehicle at once, paying attention to road traffic conditions. ► Switch off the engine. ► Apply the parking brake. ► Consult a qualified specialist workshop.
 	The coolant level has dropped to 2 l below the normal filling level. The operating safety of the engine is jeopardised. ► Stop the vehicle at once, paying attention to road traffic conditions. ► Switch off the engine. ► Apply the parking brake. ► Top up the coolant (► page 280). ► Have the engine cooling system checked for leaks at a qualified specialist workshop.

Display messages	Possible causes/consequences and ► Solutions
	The oil temperature in the torque converter is too high. ► Shift to a lower gear. ► If the warning display and the warning buzzer persist, stop the vehicle immediately, paying attention to road and traffic conditions. ► Apply the parking brake. ► Shift into neutral. ► Let the engine run for approximately 1 minute at approximately 1,200 rpm. ► If the warning indicator and the warning buzzer persist, have the torque converter clutch checked at a qualified specialist workshop.
 100 °C (example)	The oil temperature in the hydraulic clutch is too high. ► Shift to a lower gear. ► If the warning display and the warning buzzer persist, stop the vehicle immediately, paying attention to road and traffic conditions. ► Apply the parking brake. ► Shift into neutral. ► Let the engine run for approximately 1 minute at approximately 1,200 rpm. ► If the display message and the warning buzzer persist, have the hydraulic clutch checked at a qualified specialist workshop.

Display messages with red status indicator and STOP lamp

Display messages	Possible causes/consequences and ► Solutions
  	The reservoir pressure in brake circuit 1 or 2 has dropped below 6.8 bar. The reservoir pressure in the spring actuator and the trailer's brake circuit is too low. Possible causes: • Too much compressed air was used during manoeuvring. • There is a leak in the compressed-air system.  WARNING The operating and road safety of the vehicle are jeopardised. There is a risk of an accident. ► Stop the vehicle at once, paying attention to road traffic conditions. ► Apply the parking brake. ► Start the engine. The compressed-air system is charged. If the STOP lamp has gone out: ► Continue the journey. If the STOP lamp has not gone out: ► Check the compressed-air brake system for leaks (► page 171). ► If the compressed-air brake system is not leaking, have the compressed-air brake system checked at a qualified specialist workshop. or ► If the compressed-air brake system is leaking, consult a qualified specialist workshop.

Display messages with red status indicator, warning buzzer and STOP lamp

Display messages	Possible causes/consequences and ► Solutions
  Example:	The engine oil pressure is too low. The operating safety of the engine is jeopardised. ► Stop the vehicle immediately, paying attention to road and traffic conditions. ► Switch off the engine. ► Apply the parking brake. ► Check the engine oil level (► page 116) and top up oil (► page 283). ► Consult a qualified specialist workshop.
  Example:	The engine oil level is significantly too low. The operating safety of the engine is jeopardised. ► Stop the vehicle at once, paying attention to road traffic conditions. ► Switch off the engine. ► Apply the parking brake. ► Check the engine for leaks. ► Add the quantity of oil shown in the display immediately (► page 283).

Engine diagnostics indicator lamp

Problem	Possible causes/consequences and ► Solutions
The  indicator lamp lights up briefly and goes out again.	If there are no malfunctions, the  indicator lamp lights up briefly during the instrument cluster's display check and then goes out again.
The  indicator lamp flashes. At the same time, a display message with a red status indicator appears in the display.  	The AdBlue® tank is empty. There is a fault. The engine output may be reduced ¹ . ► Follow the instructions in the display messages.
The  indicator lamp lights up permanently.	The BlueTec® exhaust gas aftertreatment is malfunctioning or has an emissions-related fault. A malfunction or fault could damage the BlueTec® exhaust gas aftertreatment. The engine output may be reduced(► page 126). ► Have the BlueTec® exhaust gas aftertreatment checked immediately at a qualified specialist workshop.

Once the AdBlue® tank has been refilled or the fault rectified, full engine output is restored. If the system check does not detect any other faults, the  indicator lamp goes out. It may take several journeys to complete the system check.

¹ The engine output is not reduced in the case of emergency vehicles, e.g. fire engines.

Important safety notes	152
General notes	152
Anti-theft protection	152
Operating system	154
Bluetooth® settings	157

Important safety notes

WARNING

The CD drive is a Class 1 laser product. If you remove the housing of the CD drive, invisible laser radiation may be emitted. These laser beams may damage your retina. There is a risk of injury.

Do not open the housing. Always have maintenance work and repairs carried out at a qualified specialist workshop.

WARNING

Handling discs while driving will distract you from traffic conditions. You could then lose control of the vehicle. There is a risk of an accident.

Handle discs only when the vehicle is stationary.

WARNING

Operating the integrated information systems and communications equipment in the vehicle while driving will distract you from traffic conditions. You could then lose control of the vehicle. There is a risk of an accident.

Only operate these devices if road traffic conditions permit. If you are unsure about the surrounding conditions, pull over to a safe location and make entries only while the vehicle is stationary.

You must observe the legal requirements for the country in which you are currently driving when operating the system.

WARNING

Operating mobile information systems and communications equipment while driving will distract you from traffic conditions. You could then lose control of the vehicle. There is a risk of an accident.

Only operate these devices when the vehicle is stationary.

WARNING

Operating or handling mobile audio/video sources while driving will distract you from traffic conditions. You could then lose control of the vehicle. There is a risk of an accident.

Operate or handle mobile audio/video sources only when the vehicle is stationary.

Only operate mobile audio/video sources via the communications equipment integrated in the vehicle, and if road traffic conditions permit. If this is not the case, pull over to a safe location and make entries only while the vehicle is stationary.

WARNING

If you operate RF transmitters incorrectly in the vehicle, the electromagnetic radiation could interfere with the vehicle electronics, e.g.:

- if the RF transmitter is not connected to an exterior aerial
- the exterior aerial has been fitted incorrectly or is not a low-reflection type

This could jeopardise the operating safety of the vehicle. There is a risk of an accident.

Have the low-reflection exterior aerial fitted at a qualified specialist workshop. When operating RF transmitters in the vehicle, always connect them to the low-reflection exterior aerial.

General notes

These Brief Instructions only describe the basic operation of your audio system.

All further information on the individual functions can be found on the Internet at www.mercedes-benz.de/betriebsanleitung-lkw.

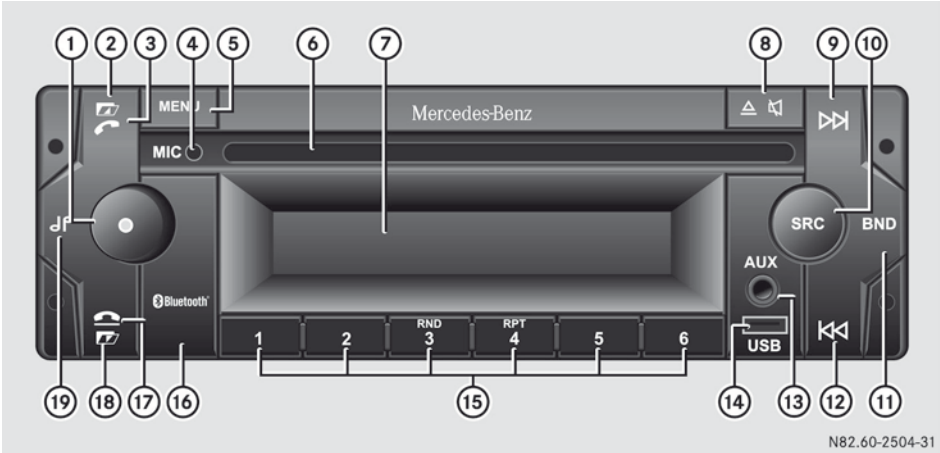
Anti-theft protection

In order to render the CD radio useless for thieves, it is protected by a four-digit code.

The code for your CD radio comes with this Supplement. If the CD radio has been disconnected from the voltage supply, you will need to enter the code after switching the CD radio on.

Operating system

CD radio overview



	Function
①	Control knob • Press: Switches on/off • Turn: Sets the volume Changes settings in menus
②	 Switches folders in MP3 and USB mode
③	 • Press briefly: Accepts a call • Press and hold: Activates Bluetooth® Starts Bluetooth® search Starts Bluetooth® pairing (pairing/external)
④	Microphone for telephoning via Bluetooth®

	Function
⑤	 • Press briefly: - Selects menu: - Activates/deactivates the TP function - Changes the track time display - Activates/deactivates XMUT - Switching RDS on/off - Sets the type of Bluetooth® pairing • Press and hold: - Displays connected mobile phone
⑥	CD drive
⑦	Display
⑧	  • Press briefly: - Mutes the audio source • Press and hold: - Ejects a CD
⑨	 • Radio: - Press briefly: - Station search - Press and hold: - Manual station search • CD and USB audio mode: - Press briefly: - Skips forwards² - Press and hold: - To fast forward • AUX mode - Switches over to a rear AUX port

² Also possible in Bluetooth® audio mode.

	Function
⑩	SRC • Press briefly: Selects an audio source: Radio CD playback USB AUX function BT audio (MP3 playback) Exiting the menu • Press and hold: Ends the current traffic report
⑪	BND • Press briefly: Switches wavebands • Press and hold: Storing stations automatically
⑫	 • Radio: - Press briefly: Station search - Press and hold: Manual station search • CD and USB audio mode: - Press briefly: Skips back - Press and hold: Fast rewind • AUX mode Switches over to a front AUX port
⑬	AUX socket
⑭	Mini USB port

Function	
⑮	1 to 6 • Radio: - Press briefly: Selects stations from the presets - Press and hold: Stores stations manually • CD and USB audio mode:  Activates/deactivates random track  Activates/deactivates track repeat
⑯	Bluetooth® logo
⑰	 • Press briefly: Ends/rejects an incoming call • Press and hold: Deactivates Bluetooth®
⑱	 Switches folders in MP3 and USB mode
⑲	 • Press briefly: Calls up the sound menu • Press and hold: Resets the sound settings

Function overview

You can use the CD radio to operate the following functions:

- receive radio in FM and AM (SW, MW, LW) wavebands
- play CDs in WMA and MP3 formats
- play MP3 files from USB devices
- making a call
- play an MP3 player connected via Bluetooth® (if supported by your device)
- play an external device over an AUX socket

Bluetooth® settings

Notes on Bluetooth® function

Information on suitable mobile phones

Bluetooth® mode via the CD radio is available in conjunction with a Bluetooth®-capable phone.

- i** Further information on suitable mobile phones and connecting Bluetooth®-capable mobile phones with the CD radio can be obtained:

- at your Mercedes-Benz Service Centre or
- on the Internet at www.mercedes-benz.com/connectivity

Requirements

The following requirements must be met for the CD radio to detect the mobile phone:

- the mobile phone must be in the vicinity of the CD radio.
- the Bluetooth® function of the CD radio must be activated (▷ page 158).
- the mobile phone must be ready for pairing.

i The CD radio stores pairing information for up to 5 mobile phones in order to recognise and connect them automatically. If paired with another mobile phone, the CD radio overwrites the pairing data for the mobile phone that has not been connected to it for the longest period of time.

i The CD radio automatically downloads the phone book stored on the mobile phone (maximum 600 entries) and the list of recently dialled phone numbers.

i Notes on pairing mobile phones:

- **Bluetooth® pairing:** the search for the mobile phone is initiated by the CD radio.
- **Bluetooth® external:** the search for the CD radio is initiated by the mobile phone.

Activating/deactivating the Bluetooth® function

Activating the Bluetooth® function

- Press and hold the  button. **BT ON** appears briefly in the display. The  Bluetooth® symbol flashes in the display, the CD radio searches automatically for mobile phones that have already been coupled with the CD radio.



i The Bluetooth® function will remain active until you deactivate it again. When you switch off the CD radio, the Bluetooth® connection is interrupted. When the CD radio is switched on it re-establishes the connection automatically.

Deactivating the Bluetooth® function

- Press and hold the  button. **BT OFF** appears in the display briefly. The connection to the mobile phone has been interrupted.



Pairing a mobile phone

Pairing the mobile phone via Bluetooth®

- Press the  button repeatedly until **BT PAIR** or **BT EXT** appears in the display.
- Turn the control knob anti-clockwise. **BT PAIR** appears in the display.



- **To exit the menu:** press the **SRC** button or wait 10 seconds.

To start a search for mobile phones:

Press and hold the  button. The  Bluetooth® symbol flashes in the display and the CD radio searches for a certain period for mobile phones that are in

range. When the search has been completed, a tone sounds.

If at least one mobile phone is detected, **BT LIST** appears briefly in the display and then the device name of the mobile phone.



i If the CD radio cannot find a mobile phone, **BT LIST EMPTY** appears briefly in the display.

- ▶ Press the or button to select the desired mobile phone.
- ▶ Press and hold the button.



- ▶ Press the to number buttons to enter a number with 1 to 6 digits that can be easily memorised, e.g. 1111.

i The number sequence begins at 0. The digits 0 to 9 appear by repeatedly pressing the number button.

i The number of digits to be entered depends on the respective mobile phone.

- ▶ Press and hold the button.
The CD radio is ready for pairing with a mobile phone.
- ▶ On the mobile phone, select the Bluetooth® device name **MB-Bluetooth**.
- ▶ Enter the previously dialled number on the mobile phone.
The CD radio establishes a connection to the mobile phone. When the connection has been established, **PAIR OK** appears briefly in the display.
- ▶ Confirm any prompts via the mobile phone.
Telephone data is transferred from the mobile phone to the CD radio. When the

transfer has been completed, the current audio source and the Bluetooth® symbol are shown permanently in the display.

Pairing a mobile phone externally via Bluetooth®

- ▶ Press the button repeatedly until **BT PAIR** or **BT EXT** appears in the display.
- ▶ Turn the control knob clockwise.
BT EXT appears in the display.



- ▶ **To exit the menu:** press the **SRC** button or wait 10 seconds.

▶ To prepare the CD radio for a search:

Press and hold the button.
Symbol in the display goes out.



- ▶ Press the to number buttons to enter a number with 1 to 6 digits that can be easily memorised, e.g. 1111.

i The number of digits to be entered depends on the respective mobile phone.

- ▶ Press and hold the button until a tone sounds.
The CD radio is ready for pairing with a mobile phone.

- ▶ On the mobile phone, start the search for Bluetooth® devices. See the manufacturer's operating instructions.

- ▶ On the mobile phone, select the Bluetooth® device name **MB-Bluetooth**.

- ▶ Enter the previously dialled number on the mobile phone.
The CD radio establishes a connection to the mobile phone. When the connection

has been established, **PAIR OK** appears briefly in the display.

- Confirm any prompts via the mobile phone. Telephone data is transferred from the mobile phone to the CD radio. When the transfer has been completed, the current audio source and the  Bluetooth® symbol are shown permanently in the display.

Displaying the currently connected mobile phone

- Press and hold the **MENU** button. The display shows the name of the mobile phone which is currently connected.

Useful information	162
Driving	162
Brakes	169
Overview of the transmission shift system	180
Manual transmission	184
Automated transmission	186
Operation	209
Driving systems	216
Level control	231
Additional axles	234
Driving tips	237
Refuelling	246
Trailers/semitrailers	248
Wind deflector	256
Winter operation	259

Useful information

These Operating Instructions describe all the models and standard and optional equipment of your vehicle that were available at the time of going to print. Country-specific differences are possible. Bear in mind that your vehicle may not be equipped with all the functions described. This also applies to safety-relevant systems and functions.

Read the information on qualified specialist workshops (▷ page 22).

Driving

Preparing for a journey

Visual check of the vehicle exterior

- ▶ Check the following components on the tractor vehicle and trailer/semitrailer:
 - make sure that the licence plate, vehicle lighting, turn signal and brake lamps are not dirty or damaged. (▷ page 75)
 - make sure that the tyres and wheels are firmly seated, have correct tyre pressures and a general good condition. (▷ page 328)
 - make sure that the side gates and exterior flaps are locked securely and not damaged.
 - make sure that the load compartment is loaded correctly.
 - make sure that the cables and compressed-air lines are connected correctly. (▷ page 253)
 - make sure that the semitrailer/trailer coupling is locked and secured correctly. (▷ page 250)
 - make sure that the folding underride guard is correctly locked.
- Choose a position that is suitable for the planned use (▷ page 238)
- Vehicles with a rear-mounted cooling system:

Hydraulic fluid level in the hydraulic oil reservoir (▷ page 284)

- ① Observe the separate instructions issued by the manufacturer for the operation, care and maintenance of the semitrailer coupling/trailer coupling.

Visual and function check in the vehicle

Checking the emergency equipment/first-aid kit

You will find an overview of emergency equipment and first-aid kits in the "Breakdown assistance" section (▷ page 292).

- ▶ Check the emergency equipment to make sure that it is accessible, complete and ready for use, for example:
 - reflective safety vest
 - warning triangle
 - warning beacon
 - first-aid kit
 - fire extinguisher
- ▶ At regular intervals, check that the first-aid kit is usable. Note the use-by dates of the contents.
- ▶ Have the fire extinguisher checked every 1 to 2 years.
- ▶ The fire extinguisher must be refilled after each use.

In some countries, it is a legal requirement to carry additional emergency equipment on board. Observe the legal requirements regarding emergency equipment in all countries concerned. Supplement your emergency equipment accordingly.

Checking the vehicle lighting, turn signal lamps and brake lamps

- ▶ Turn the key to the drive position in the ignition lock.
- If a bulb on the tractor vehicle or trailer/ semitrailer is faulty, a message will appear in the display (▷ page 129).
- ▶ Check the vehicle lighting, turn signal lamps and brake lamps on the tractor vehi-

cle and trailer/semitrailer with the help of a second person.

- Replace faulty bulbs (▷ page 75).

Checking the fuel/AdBlue® supply

- Check the fuel level/AdBlue® level shown on the fuel gauge and the AdBlue® gauge (▷ page 109).
- If necessary, refuel (▷ page 246) and top up the AdBlue® (▷ page 247).

Ignition lock

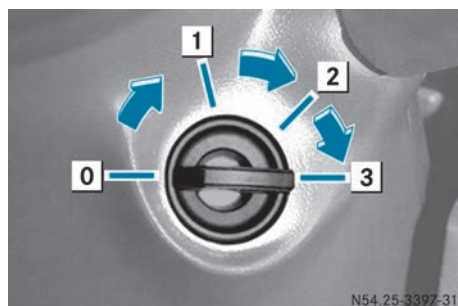
⚠ WARNING

If you attach heavy or large objects to the key, the key could be unintentionally turned in the ignition lock. This could cause the engine to be switched off. There is a risk of an accident. Do not attach any heavy or large objects to the key. Remove any bulky keyrings before inserting the key into the ignition lock.

⚠ WARNING

If you switch off the ignition while the vehicle is in motion, safety-relevant functions are restricted or not available. This can affect, e.g. the power steering. To steer, you will require considerably more force. There is a risk of an accident.

Do not switch off the ignition while the vehicle is in motion.



- 0 To insert/remove the vehicle key
- 1 Steering wheel unlocked/radio position

- 2 Drive position

- 3 Start position

When you remove the key in position 0, the steering is locked.

Before driving off

Important safety notes

⚠ WARNING

Objects in the driver's footwell can impede pedal travel or block a pedal which is depressed. This jeopardises safe operation of the vehicle. There is a risk of an accident.

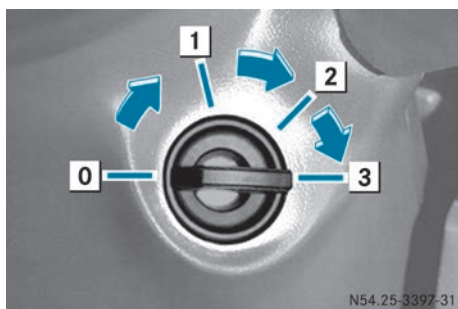
Stow all objects in the vehicle safely, so that they cannot reach the driver's footwell. Make sure the floor mats and carpets are properly secured so that they cannot slip and obstruct the pedals. Do not lay several floor mats or carpets on top of one another.

- Close all doors.
- Make sure that the floor mats and carpets are properly secured so that they cannot slip and obstruct the pedals.

Starting the engine

- ❗ If the engine oil pressure is too low,  appears in the display with a red status indicator. A warning buzzer also sounds and the STOP lamp lights up.

The operating safety of the engine is endangered. Switch off the engine immediately.



- 0 To insert/remove the vehicle key
- 1 Steering wheel unlocked/radio position
- 2 Drive position
- 3 Start position

- ▶ Turn the key to drive position **2** in the ignition lock.
The display lights up briefly (display check). At the same time, the warning buzzer sounds for approximately two seconds.

The transmission position is displayed on vehicles with Telligent® gearshift.

For vehicles with Telligent® automatic gearshift/Mercedes PowerShift, the transmission position and the selected operating mode (**man.** or **auto.**) are displayed.

After approximately 1 second, the immobiliser is deactivated and the engine can be started.

If you do not wait for 1 second or if you use an invalid key, the display will show the **CODE** display message. Use a valid spare key.

- ▶ Vehicles with manual transmission: shift the transmission to the neutral position (▷ page 184).
- ❗ Vehicles with a torque converter clutch: in an emergency, you can start the engine even with a gear engaged and the clutch pedal depressed.
- ▶ Disengage power take-off (▷ page 266).
The display shows **PTO**.
- ▶ Vehicles with a hot-water auxiliary heater: at outside temperatures below -20°C , pre-heat the engine before starting (▷ page 102).

- ▶ Vehicles with cold-start aid: wait until the **000** indicator lamp in the instrument cluster goes out (▷ page 215).
- ▶ Turn the key to start position **3** in the ignition lock. While doing so, do not depress the accelerator or clutch pedal.
- ▶ When the engine has started, release the key.
The idling speed (approximately 550 rpm) is controlled automatically.

Vehicles with a turbo retarder clutch (hydrodynamic clutch): the turbo retarder clutch is on standby when the vehicle is stationary and the engine is running at idling speed.

- ❗ Vehicles with a torque converter clutch or hydrodynamic clutch: if the vehicle is stationary and the transmission is in neutral, the engine has delayed throttle response. The engine speed is limited to 1,700 rpm.
- ▶ If the engine does not start, interrupt the starting procedure after no more than 20 seconds.
- ▶ Turn the key fully back to **0** in the ignition lock.
- ▶ Repeat the starting procedure after approximately 1 minute.
- ▶ After 3 starting attempts, wait approximately 3 minutes before trying again.

Safety inspection

Checking the reservoir pressure in the compressed-air brake system

WARNING

It is not possible to brake the vehicle if the compressed-air brake system has a leak or if there is insufficient reservoir pressure. There is a risk of an accident.

Do not drive the vehicle until the necessary reservoir pressures have been reached and the STOP lamp goes out.

In the event of loss of pressure while driving, immediately bring the vehicle to a halt in

accordance with the traffic conditions.
Secure the vehicle using the parking brake.
Have the compressed-air system repaired at a qualified specialist workshop.

- ▶ Start the engine.
- ▶ Let the engine run until a minimum reservoir pressure of 11 bar for both brake circuits appears in the reservoir pressure display in the instrument cluster (▷ page 111).
- ▶ If this reservoir pressure is not reached, check the compressed-air brake system for leaks (▷ page 171).

Observe the display messages regarding the reservoir pressure and the compressed-air brake system (▷ page 129).

Checking the reservoir pressure in the auxiliary consumer circuit

⚠ WARNING

If there is a loss of pressure or the reservoir pressure in the auxiliary consumers circuit is too low:

- on vehicles with Telligent® automatic gearshift, the automatic gearshift will no longer function
- on vehicles with Telligent® automatic gearshift, you will need to use considerably more force to change gear

There is a risk of an accident.

Do not pull away, or stop the vehicle as soon as possible, paying attention to road and traffic conditions. Secure the vehicle against rolling away, e.g. with the parking brake. Have the compressed-air system repaired at a qualified specialist workshop.

The reservoir pressure in the auxiliary consumer circuit is supplied once brake circuits 1 and 2 are pressurised.

If the reservoir pressure in the auxiliary consumer circuit is too low, the  symbol appears in the display with a yellow status indicator.

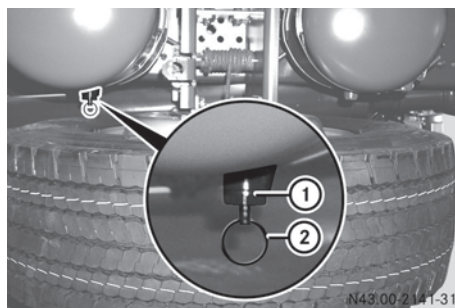
- ▶ Start the engine.
- ▶ Leave the engine running until the  display message and the status indicator go out.
When the  display message and the status indicator go out, the reservoir pressure in the auxiliary consumer circuit is sufficient.

Checking the function of the compressed-air drier

⚠ WARNING

If the condensation level in the compressed-air reservoir is too high, the braking effect may reduce or the brake system may fail. There is a risk of an accident.

Check the compressed-air system for condensation before starting a journey. If the condensation level is high, have the compressed-air brake system checked at a qualified specialist workshop immediately.



Drain plug on the compressed-air reservoir

- ▶ Start the engine.
- ▶ Check the reservoir pressure in the compressed-air brake system.
- ▶ If the on-board computer displays the red **Brake supply pressure in circuit 1 too low** and/or **Brake supply pressure in circuit 2 too low** event window, leave the engine running until the red event window goes out.
The compressed-air system is charged.
- ▶ Switch off the engine.

- ▶ Pull ring ② on drain plug ① and drain off the condensation.
- ▶ If a large amount of condensation runs out, have the compressed-air brake system checked at a qualified specialist workshop.

Checking the vehicle height

Only for vehicles with Telligent® level control.

WARNING

When driving with a lowered or raised chassis frame, the driving and braking characteristics may be seriously affected. A raised chassis frame may also exceed the permissible vehicle height. There is a risk of an accident. Set the driving level before pulling away.

- ▶ Raise or lower the chassis frame to driving level (▷ page 231).
The  or  display message and the status indicator go out.

Checking the steering play

WARNING

If the steering play is too great, the vehicle may no longer be able to keep to a straight course. The operating and road safety of the vehicle are jeopardised. There is a risk of an accident.

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

- ▶ Start the engine.
- ▶ Turn the steering wheel until the front wheels are in the straight-ahead position.
- ▶ Slightly turn the steering wheel alternately to the right and left.
The front wheels should move when the steering wheel is turned by no more than 30 mm, measured at the steering wheel rim. If this is not the case, have the steering and the steering linkage checked at a qualified specialist workshop immediately.

Checking the cab tilt lock

WARNING

If the cab is not locked, it could tip forwards, e.g. when braking. There is a risk of an accident.

Lock the cab before pulling away.

Always observe the warning lamps and display messages and follow the described remedial measures.

If the cab is not correctly locked in position, the  indicator lamp lights up in the instrument cluster.

- ▶ Turn the key to drive position ② in the ignition lock.
- ▶ If the  indicator lamp does not go out in the instrument cluster, tilt the cab to the travelling position (▷ page 296), , (▷ page 297).

Pulling away

General notes

- ! 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.

- ! Vehicles with a torque converter clutch: the overload safety fuse prevents the clutch pedal being overloaded while pulling away. The engine runs at idling speed (max. 900rpm) until the clutch pedal is fully engaged.

- i When the vehicle is stationary and the transmission is in neutral, the engine has delayed throttle response.

- Change gear; see Transmission shift system (► page 180).
- Release the brake pedal or parking brake and slowly depress the accelerator pedal.

Overload protection is active if simultaneously:

- the torque converter clutch is disengaged (converter mode).
- the clutch pedal is depressed.
- a gear is selected.
- If the drive wheels spin when pulling away, switch on the starting-off aid (► page 234).
- When starting a journey, carry out a brake test. Observe the road and traffic conditions when doing so.

If you notice a reduction in braking power when testing the brakes, stop the vehicle as soon as possible while paying attention to traffic conditions. Have the brake system checked and repaired at a qualified specialist workshop.

Do not judge when to change gear by the sound of the engine. The engine speed should always remain within the green zone of the rev counter where possible.

Warm up the engine quickly by driving at moderate engine speeds. Depending on the outside temperature, the engine will reach its operating temperature of between approximately 70 and 95 °C after around 10 to 20 minutes.

You can utilise the full engine power output once the engine has reached its normal operating temperature.

Vehicles with a hydrodynamic clutch (turbo clutch)

General notes

You should primarily use the automatic operating mode when pulling away. The Mercedes PowerShift transmission system automatically determines the optimal gear and shift point. Depending on the driving resistance, the dry clutch opens or closes.

You can pull away at low engine speeds and maximum torque (approximately 1,200 rpm).

- ❗ When driving on steep gradients, use the 70 t mode or the manoeuvring mode. In manoeuvring mode, the hydrodynamic clutch (turbo clutch) is filled before pulling away.

Level ground

- Select a gear.
- Depress the accelerator pedal and release the parking brake.
The  indicator lamp in the instrument cluster lights up.
The hydrodynamic clutch (turbo clutch) is filled and the vehicle pulls away. After pulling away, the  indicator lamp in the instrument cluster goes out and power is transmitted via the dry clutch.

Gradients

How the vehicle pulls away depends on:

- the gradient of the road surface
- the gross combination weight
- how quickly you depress the accelerator pedal
- Apply the parking brake or activate the hill holder.
- Select a gear.
- Depress the accelerator pedal and release the parking brake.
The  indicator lamp in the instrument cluster lights up.
The hydrodynamic clutch (turbo clutch) is filled and the vehicle pulls away slowly. After pulling away, the  indicator lamp in the instrument cluster goes out and power is transmitted via the dry clutch.

Steep gradients

- ▶ Apply the parking brake or activate the hill holder.

- ▶ Activate 70 t mode and/or manoeuvring mode (▷ page 197).
In manoeuvring mode, the hydrodynamic clutch (turbo clutch) is filled before pulling away.

- ▶ Switch on automatic mode. The electronics change the gears quickly and accurately.

- ▶ **For high vehicle weights:** switch to manual operating mode and change gears manually.

This avoids repeated shifting.

Manual downshifts are always possible at engine speeds of up to 2,500 rpm.

- ▶ Select a gear.

- ▶ Depress the accelerator pedal and release the parking brake.

The  indicator lamp in the instrument cluster lights up.

The hydrodynamic clutch (turbo clutch) is filled and the vehicle pulls away slowly.

After pulling away, the  indicator lamp in the instrument cluster goes out and power is transmitted via the dry clutch.

In the test position, check whether the parking brake will hold the loaded vehicle. If the vehicle is not held, secure it using other methods, e.g. wheel chocks.

WARNING

If you switch off the ignition while the vehicle is in motion, safety-relevant functions are restricted or not available. This can affect the power steering function and the brake boosting effect, for example. You will then require considerably more force to steer and brake. There is a risk of an accident.

Do not switch off the ignition while the vehicle is in motion.

WARNING

If you leave children unattended in the vehicle, they could set the vehicle in motion by, for example:

- releasing the parking brake
- shifting the transmission into neutral
- starting the engine

They could also operate the vehicle's equipment and become trapped. There is a risk of an accident and injury.

When leaving the vehicle, always take the key with you and lock the vehicle. Never leave children unattended in the vehicle.

Stopping and switching off the engine

WARNING

Flammable material such as leaves, grass or twigs may ignite if they come into contact with hot parts of the exhaust system or exhaust gas flow. There is a risk of fire.

Park the vehicle so that no flammable material can come into contact with hot vehicle components. In particular, do not park on dry grassland or harvested grain fields.

WARNING

The parking brake may not be sufficient to ensure that the loaded vehicles does not roll away on uphill and downhill gradients. There is a risk of an accident.

Ensure that you observe the safety notes in the "Children in the vehicle" section (▷ page 42).

- ▶ Stop the vehicle.
- ▶ Apply the parking brake.
- ▶ Shift into neutral.

Let the engine idle for approximately 2 minutes before switching it off if:

- the engine has been driven in converter, hydrodynamic clutch or retarder mode for a long time.
 - the coolant temperature is very high (over 90 °C).
 - full engine power has been used, e.g. while driving in mountainous terrain or during combined operation
- **To switch off the engine:** turn the key in the ignition lock back fully.
- Safeguard the vehicle against rolling away, e.g. using chocks.

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

When BlueTec® exhaust gas aftertreatment flushes 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.

Brakes

Important safety notes

WARNING

If you shift down on a slippery road surface in an attempt to increase the engine's braking effect, the drive wheels could lose their grip. This increases the risk of skidding and having an accident.

Do not shift down for additional engine braking on a slippery road surface.

If the display shows a display message and the status indicator lights up red, the braking

characteristics of the vehicle have changed. Do not then pull away or, if the vehicle is already in motion, stop as soon as possible, paying attention to road and traffic conditions. The pedal travel and pedal force required to brake the vehicle or the vehicle combination may increase. Have the brake system checked at a qualified specialist workshop.

Always pay attention to the display messages.

The brake lights do not light up when you brake the vehicle with the parking brake.

Introduction

This section contains important information on the subject of brakes and is structured as follows:

- BS (Telligent® brake system) (▷ page 170)
- Checking the compressed-air brake system for leaks (▷ page 171)
- ABS (anti-lock braking system) (▷ page 172)
- BAS (Brake Assist) (▷ page 173)
- Independent trailer brake (for export only) (▷ page 174)
- Parking brake (▷ page 174)
- Frequent-stop brake (▷ page 176)
- Hill holder (▷ page 177)
- Continuous brake (▷ page 177)

Downhill gradients

Change into a lower gear in good time on long and steep downhill gradients. Take particular note of this when driving a laden vehicle and when towing a trailer.

i This also applies if you have activated cruise control or the speed limiter.

In addition, activate the continuous brake.

This will use the braking effect of the engine, so less braking will be required to maintain vehicle speed. This relieves the load on the brake system and prevents the brakes from overheating and wearing too quickly.

Heavy and light loads

WARNING

The braking system can overheat if you leave your foot on the brake pedal while driving. This increases the braking distance and could even cause the braking system to fail. There is a risk of an accident.

Never use the brake pedal as a footrest. Do not simultaneously depress both the brake pedal and the accelerator pedal while driving.

! Depressing the brake pedal constantly results in excessive and premature wear to the brake pads.

If heavy demands are made on the brakes, do not park the vehicle immediately. Drive on for a short while. This allows the airflow to cool the brakes more quickly.

If the brakes have been used only moderately, you should occasionally test their effectiveness. To do this, brake the vehicle more firmly from a higher speed, paying attention to traffic conditions. This improves the grip of the brakes.

Wet road surfaces

If you have driven for a long time in heavy rain without braking, there may be a delayed reaction from the brakes when braking for the first time. This may also occur after a car wash or after driving through deep water.

You will have to depress the brake pedal more firmly. Maintain a greater distance to the vehicle in front.

After driving on a wet road or having the vehicle washed, brake firmly while paying attention to the traffic conditions. This will warm up

the brake discs, thereby drying them more quickly and protecting them against corrosion.

Limited braking performance on gritted roads

If you drive on salt-treated roads, a layer of salt may form on the brake discs and pads. This can increase the braking distance considerably.

- Apply the brakes occasionally in order to prevent any salt build-up. Ensure that you do not endanger other road users when doing so.
- Carefully depress the brake pedal at the end of the journey and when starting the next journey.
- Maintain a much greater distance to the vehicle in front.

New brake pads/linings

New brake pads/linings and discs that have been replaced only achieve optimum braking effect after several hundred kilometres of driving. Compensate for the reduced braking effect by applying greater force to the brake pedal.

For safety reasons, Mercedes-Benz recommends that you only have brake pads/linings fitted to your vehicle which have been approved for Mercedes-Benz vehicles or which correspond to an equivalent quality standard. Brake pads/linings which have not been approved for Mercedes-Benz vehicles or which are not of an equivalent quality could affect your vehicle's operating safety.

BS (Telligent® brake system)

The basic version of the service brake is a pneumatically controlled brake with ABS (Anti-lock Braking System).

In addition to the basic version, the service brake is also available as BS.

BS has electronic control for regulating and monitoring the service brake. This also incorporates the following systems:

- ABS (Anti-lock Braking System)
- ASR (acceleration skid control)
- ALB (automatic load-dependent brake)
- Hill holder
- BAS (Brake Assist)

BS is able to relieve the load on the service brake by activating the continuous brake (engine brake/retarder), depending on the vehicle load and the weather conditions.

BS harmonises the braking processes of the tractor vehicle and the trailer/semitrailer to ensure braking of the entire tractor/trailer combination, continuously balancing the braking force at individual wheels according to weight distribution. This means the vehicle and trailer combination has improved braking characteristics. On 4 x 2 semitrailer tractor vehicles, BS monitors the temperature of the disc and drum brakes.

If there are malfunctions in BS, a corresponding message appears in the display.

If the status indicator lights up yellow, the vehicle's braking characteristics may change. Drive to a qualified specialist workshop with particular care and attention.

If the status indicator lights up red, the vehicle's braking characteristics have changed. Do not then pull away or, if the vehicle is already in motion, stop as soon as possible, paying attention to road and traffic conditions. The pedal travel and pedal force required to brake the vehicle or the vehicle combination may increase. The anti-lock function may be deactivated. The vehicle can only be decelerated by normal braking. Have the brake system checked at a qualified specialist workshop.

Always pay attention to the display messages.

Checking the compressed-air system for leaks

WARNING

It is not possible to brake the vehicle if the compressed-air brake system has a leak or if there insufficient reservoir pressure. There is a risk of an accident.

Do not drive the vehicle until the necessary reservoir pressures have been reached and the STOP lamp goes out.

In the event of loss of pressure while driving, immediately bring the vehicle to a halt in accordance with the traffic conditions.

Secure the vehicle using the parking brake. Have the compressed-air system repaired at a qualified specialist workshop.

Do not let anyone enter or exit the vehicle during the test. This will help to prevent you from mistaking pressure loss, due to air-sprung seats or the Telligent® level control system, for leakage.

- ▶ Stop the vehicle on a level surface.
- ▶ Apply the parking brake.
- ▶ Use chocks to safeguard the vehicle against rolling away.
- ▶ Release the parking brake.
- ▶ Turn the key to the drive position in the ignition lock.
- ▶ In the **Monitoring info** menu in the on-board computer, call up the **reservoir pressure** submenu (▷ page 116).
- ▶ Leave the engine running until the reservoir pressure is approximately 11 bar.
- ▶ Switch off the engine.
- ▶ Turn the key to the drive position in the ignition lock after approximately 5 minutes. A waiting time of at least 5 minutes is required to eliminate pressure loss due to auxiliary consumers, e.g. BlueTec® exhaust gas aftertreatment.
- ▶ Call up the **Supply pressure** submenu again.

- ▶ Depress the brake pedal to effect a half brake application – half of the pedal travel – and hold it in this position.
- ▶ Read off the reservoir pressure after approximately 1 minute.
- ▶ After approximately 3 minutes, read off the reservoir pressure again.
If after 3 minutes the on-board computer shows a pressure loss of max. 0.4 bar in the **Supply pressure** submenu, the compressed-air brake system is free from leaks.

ABS (Anti-lock Braking System)

General notes

ABS controls the braking pressure so that the wheels do not lock under braking. This means that the vehicle can still be steered while braking.

ABS is operational from walking pace, regardless of road surface conditions. If the road is slippery, ABS intervenes even if you only brake gently.

If you engage a differential lock, ABS is deactivated.

ABS display check

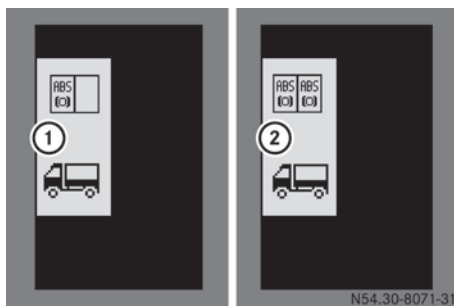
WARNING

If ABS is faulty, the wheels could lock when braking. The steerability and braking characteristics may be severely impaired. Additionally, further driving safety systems are deactivated. There is an increased danger of skidding and accidents.

Drive on carefully. Have ABS checked immediately at a qualified specialist workshop.

The anti-lock protection function is not guaranteed if:

- no display for the Telligent® brake system appears or
- the display does not go out after 3 seconds or
- the display does not go out when the vehicle pulls away



- ▶ Turn the key to the drive position in the ignition lock.
The display lights up for approximately 2 seconds. At the same time, the warning buzzer sounds. The display then shows message ① for ABS on the tractor vehicle or message ② for ABS on the tractor vehicle and ABS on the trailer/semitrailer for approximately 3 seconds.

Braking with anti-lock protection

WARNING

The wheels of the trailer/semitrailer may lock when braking and the vehicle combination may become unstable if:

- the trailer/semitrailer does not have ABS
- the ABS of the trailer/semitrailer has failed
- ABS has failed completely

As a result, you could lose control of the vehicle and cause an accident.

Always adapt your driving style to the prevailing road and weather conditions and maintain a sufficient, safe distance from other road users. Avoid full brake applications; except in emergency situations.

Anti-lock protection improves the directional stability and steerability of the tractor/trailer combination under braking.

If you fail to adapt your driving style or if you are inattentive, the driving safety systems can neither reduce the risk of an accident nor override the laws of physics. Driving safety systems are merely aids designed to assist driving. You are responsible for the distance to the vehicle in front, for vehicle speed and for braking in good time. Always adapt your driving style to the prevailing road and weather conditions and maintain a sufficient, safe distance from other road users. Drive carefully.

- ▶ When ABS is intervening, keep the brake pedal depressed until the braking situation has passed.
- ▶ For full brake application, fully depress the brake pedal.

If ABS is deactivated or if there is a malfunction in the vehicle's brake system, Active Brake Assist (ABA) is automatically deactivated.

When ABS is intervening, the continuous brake is switched off. The  indicator lamp in the instrument cluster does not go out.

If you want to drive the tractor vehicle with a trailer/semitrailer with ABS or an electronic brake system:

- ▶ Connect a control cable to the socket or to the ABS/BS plug (▷ page 253).

If you want to drive the semitrailer tractor vehicle without a trailer or with a trailer without ABS:

- ▶ Insert the control cable into the blank socket.

Deactivating/activating ABS

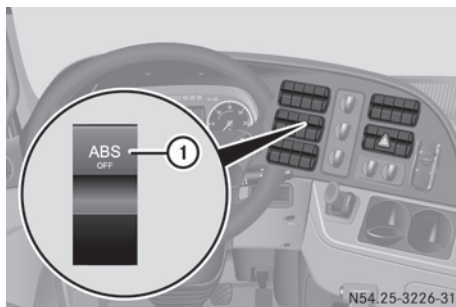
WARNING

If ABS is deactivated, the wheels may lock when braked. As a result, the vehicle can no

longer be steered. There is an increased risk of skidding and an accident.

Always leave ABS on when driving on roads and firm surfaces.

By deactivating ABS, it may be possible to achieve shorter braking distances on rough terrain and on unpaved roads, e.g. on soft ground. You can only deactivate ABS for the tractor vehicle.



- ▶ Start the engine.
ABS is activated.
- ▶ **To deactivate:** press the upper section of button ①.
The display shows   with a yellow status indicator.
If ABS is deactivated and ABS on the trailer/semitrailer is also not operational,   appear in the display with a yellow status indicator.
- ▶ **To activate:** press the upper section of button ①.
The display message disappears.

BAS (Brake Assist)

WARNING

If BAS is malfunctioning, the braking distance in an emergency braking situation is increased. There is a risk of accident.

In an emergency braking situation, depress the brake pedal with full force. ABS prevents the wheels from locking.

BAS operates in emergency braking situations. If you depress the brake pedal quickly, BAS boosts the braking force and thus shortens the braking distance.

If you engage a differential lock, ABS is deactivated.

- Keep the brake pedal firmly depressed until the emergency braking situation has passed.

ABS prevents the wheels from locking when this occurs.

The brakes will function as usual once you release the brake pedal. BAS is deactivated.

Independent trailer brake

WARNING

If the independent trailer brake is used incorrectly, e.g. as a substitute for the continuous brake, the trailer/semitrailer brake may overheat or lock. The vehicle is then no longer safe or roadworthy. There is a risk of an accident.

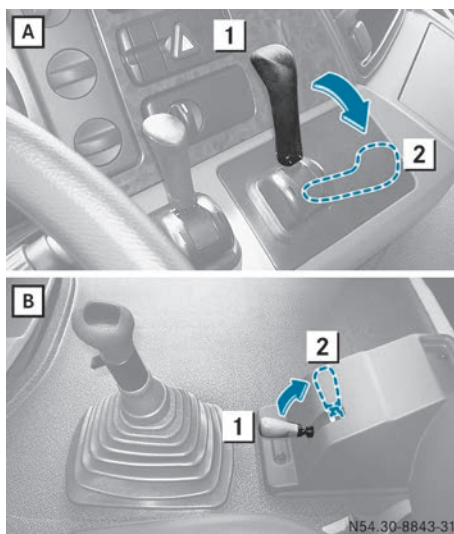
Only use the independent trailer brake for short-term adaptive braking.

The independent trailer brake can be used independently of the towing vehicle's service and parking brakes.

The independent trailer brake lever is located on the engine tunnel or on the instrument panel next to the parking brake lever.

The independent trailer brake only brakes the wheels on the trailer/semitrailer.

The independent trailer brake can be used to perform adaptive braking on downhill gradients. This prevents the tractor/trailer combination from jack-knifing.



A Independent trailer brake lever on the instrument panel

B Independent trailer brake lever on the engine tunnel

- **To brake:** pull the independent trailer brake lever to fully applied position **2** until the required braking effect of the trailer/semitrailer is achieved. Hold the lever in this position.

- **To release the independent trailer brake:** let go of the independent trailer brake lever.

The independent trailer brake lever returns to release position **1**.

Parking brake

Important safety notes

WARNING

If the parking brake lever is not in the fully applied position, it automatically returns to the released position. The vehicle could roll away as a result. There is a risk of an accident. Move the lever into the fully applied position when parking the vehicle.

⚠ WARNING

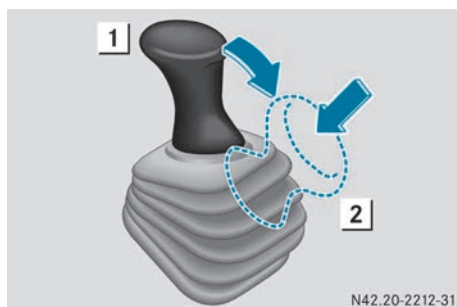
The parking brake may not be sufficient to secure the vehicle against rolling away on uphill or downhill gradients. A vehicle with a trailer/semitrailer or a laden vehicle could roll away. There is a risk of accident.

In the test position, check if the parking brake is sufficient to hold the tractor vehicle. If the tractor vehicle is not held, secure the vehicle and the trailer/semitrailer additionally using wheel chocks. Secure the trailer/semitrailer additionally using its parking brake.

Secure the parked vehicle against rolling away by applying the parking brake. The parking brake actuates the spring-loaded parking brake cylinder.

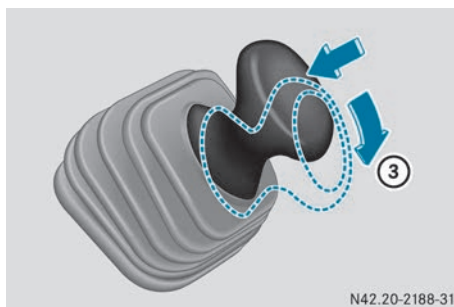
The brake lights do not light up when you brake the vehicle with the parking brake.

The lever for the parking brake is located on the dashboard.

Applying the parking brake

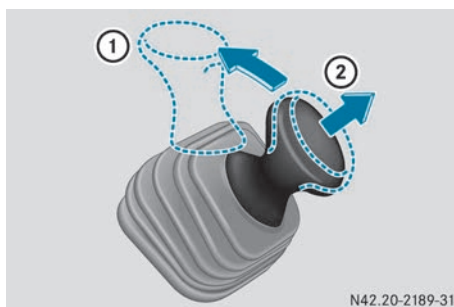
- Move the parking brake lever from release position ① to fully applied position ②, push it downwards and engage it. If you cannot move the parking brake lever further, then it is engaged and the parking brake has been applied. The  indicator lamp in the instrument cluster lights up. Trailer/semitrailer with EC brake system: when the trailer/semitrailer is attached, the parking brake acts on the service brake of the trailer/semitrailer.

You can find further information about the parking brake on the trailer/semitrailer in the manufacturer's operating instructions.

Testing the parking brake

When the parking brake is applied:

- Press down the parking brake lever, move it beyond fully applied position into control position ③ and hold it in place. During the test, the vehicle combination is only held by the force exerted by the spring-loaded brake of the tractor vehicle. The trailer/semitrailer brakes are released. The vehicle must not move.
- If the force exerted by the spring-loaded brake cannot hold the vehicle combination, secure the tractor vehicle and trailer/semitrailer with chocks.
- Move parking brake lever from control position ③ back to fully applied position and engage it.

Releasing the parking brake

- Pull the parking brake lever upwards from fully applied position ② and swing it up into released position ① as far as it will go.

The  indicator lamp in the instrument cluster goes out.

If the reservoir pressure in both brake circuits is above 8 bar, the parking brake releases fully.

If the  indicator lamp in the instrument cluster does not go out, the reservoir pressure in the spring-loaded brake circuit is too low (below 5.5 bar).

To tow the vehicle, you can also manually release the spring-loaded parking brake cylinder on the parking brake (> page 323).

Frequent-stop brake

WARNING

When securing the vehicle against rolling away with the frequent-stop brake, the braking pressure may be too low. The vehicle could roll away even though the frequent-stop brake is engaged. There is a risk of an accident.

Never leave the driver's seat with the frequent-stop brake activated and be prepared to apply the brakes. If the vehicle begins to roll, apply the service brake.

WARNING

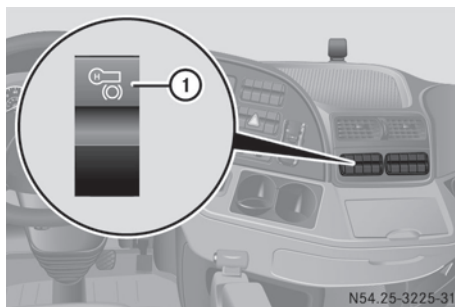
If you brake in wintry road conditions while the frequent-stop brake is activated, the wheels may lock shortly before stopping. Even if you take your foot off the brake pedal, the wheels remain locked. The vehicle may skid or slip away, e.g. on uphill or downhill gradients. There is a risk of an accident.

Never activate the frequent-stop brake in wintry conditions.

The frequent-stop brake requires less compressed air than the service brake and the parking brake. Use the frequent-stop brake if you frequently pull away and stop for short periods of time, e.g. in refuse collection operation. The frequent-stop brake does not

replace the service brake or the parking brake. When you want to park the vehicle, observe the instructions in the "Stopping and parking" section (> page 168).

If you turn the key back to the stop in the ignition lock while the frequent-stop brake is engaged, the frequent-stop brake remains engaged. If you also release the service/parking brake, the warning buzzer sounds and the  indicator lamp flashes in the instrument cluster.



- **To switch on the frequent-stop brake:** press the upper section of switch ①. The  indicator lamp in the instrument cluster lights up.

The frequent-stop brake is primed but not active.

- **To activate the frequent-stop brake:** depress the brake pedal until the vehicle is stationary. The frequent-stop brake is active.

- **To release the frequent-stop brake:** depress the accelerator pedal. The frequent-stop brake is automatically released and primed when the vehicle pulls away.

- **To deactivate the frequent-stop brake:** press the lower section of switch ①. The  indicator lamp in the instrument cluster goes out.

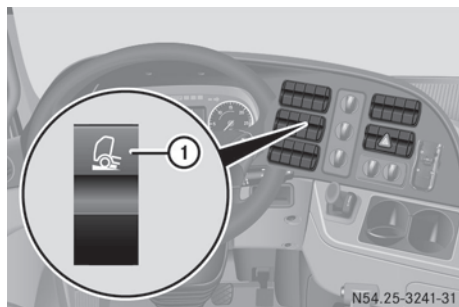
Hill holder

WARNING

If you do not stop the vehicle using the service brake, e.g. when coasting to a stop, the hill holder will not be activated. The vehicle could roll away. There is a risk of an accident.

Always brake the vehicle to a standstill using the service brake in order to activate the hill holder.

The hill holder is part of BS (Telligent® brake system) and provides support when pulling away on uphill gradients or downhill gradients. The hill holder prevents the vehicle from rolling and facilitates smoother pulling away. If the hill holder is activated, it remains primed in forward and reverse gear at all times, even after a brief stop or after the engine is switched off.



- **To switch on the hill holder:** press the upper section of switch ①.
The hill holder is primed but not active.
- **To activate the hill holder:** depress the brake pedal until the vehicle is stationary. The hill holder is activated. The  indicator lamp in the instrument cluster lights up.

The hill holder remains activated when you depress the brake or clutch pedal.

- **To release the hill holder:** depress the accelerator pedal.
When the vehicle pulls away, the hill holder is automatically released. The  indicator lamp in the instrument cluster goes out.

- **To switch off the hill holder:** press the bottom section of switch ①.

The  indicator lamp in the instrument cluster goes out.

If you apply the parking brake, the  indicator lamp in the instrument cluster goes out. The hill holder function is no longer active but remains primed.

Vehicles with Telligent® automatic gearshift:

If the brake pedal is released while the hill holder is activated, a warning buzzer sounds briefly. The hill holder is deactivated and the  indicator lamp in the instrument panel goes out.

Vehicles without Telligent® automatic gearshift:

If you do not depress the accelerator, clutch or brake pedal while the vehicle is stationary and the hill holder is active, a warning buzzer sounds briefly. The hill holder is deactivated and the  indicator lamp in the instrument panel goes out.

Continuous brake

Important safety notes

WARNING

If there is a retarder or retarder control malfunction, braking characteristics can change. The vehicle can brake uncontrollably. The wheels can block and thus lose traction on slippery road surfaces. This can cause the vehicle to skid. There is a risk of an accident. Drive with even greater care or stop the vehicle immediately in accordance with the traffic conditions. Have the retarder checked and repaired immediately at a qualified specialist workshop.

Always observe the warning lamps and display messages and follow the described measures.

⚠ WARNING

If you activate the continuous brake or shift to a lower gear on a slippery road surface in order to increase the engine's braking effect, the drive wheels may lose traction. There is an increased risk of skidding and an accident.

Do not activate the continuous brake and do not shift to a lower gear in order to increase the engine's braking effect on a slippery road surface.

The continuous brake consists of the engine brake and the retarder.

You can utilise the engine's braking effect, particularly on long downhill gradients if you:

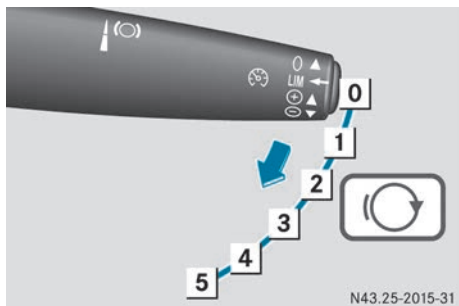
- activate the continuous brake
- shift to a lower gear in good time

The continuous brake is activated automatically if:

- after several brake applications, the vehicle electronics detect that the vehicle is loaded and you then depress the brake pedal.
- ART (Telligent® distance control) is active in overrun mode.
- cruise control is active in overrun mode.

Switching continuous brake on and off

! If the continuous brake is deactivated and the  indicator lamp does not go out, have the continuous brake checked at a qualified specialist workshop.



Example: multifunction lever

► **To switch on:** pull the multifunction lever to set to the desired brake level.

The  indicator lamp in the instrument cluster lights up.

► **To switch off:** push the multifunction lever to position **0**.

The  indicator lamp in the instrument cluster goes out.

Vehicles without a retarder are only equipped with the first two brake levels.

On vehicles with a retarder, the retarder is activated from position **3**.

The braking effect of the continuous brake is lowest in position **1** and highest in position **5**.

If the  indicator lamp flashes in the instrument cluster after the display check, the continuous brake lever is not in position **0**.

When ABS (Anti-lock Braking System) intervenes, the continuous brake is switched off. The  indicator lamp in the instrument cluster remains on.

Engine brake

The effectiveness of the engine brake depends on the engine speed. A high engine speed results in more effective engine braking.

Observe the effective engine braking range marked on the rev counter (> page 108).

Retarder

If the  indicator lamp flashes in the instrument cluster, the retarder's braking power is reduced.

► Change down in good time.

The engine braking effect and the engine cooling effect are increased.

You can find information about the cleaning and care of the retarder in the "Care and maintenance" section (> page 277).

Overrun mode with retarder activated

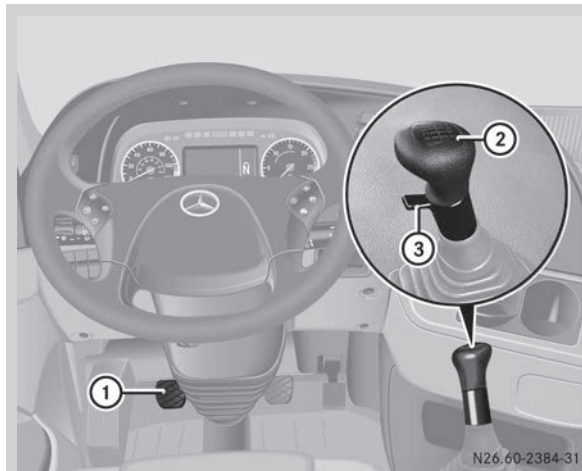
The retarder function of the hydrodynamic clutch (turbo clutch) supports the brakes and engine brake in overrun mode. While the retarder is activated the transmission will not automatically shift into a lower gear.

A downshift only occurs if:

- you brake the vehicle with the brake pedal and
- the engine speed is below 1,900 rpm

Overview of the transmission shift system

16-speed manual transmission



The transmission has 16 forward gears and 2 reverse gears.

The mechanical/hydraulic gearshift is designed as a double-H gearshift.

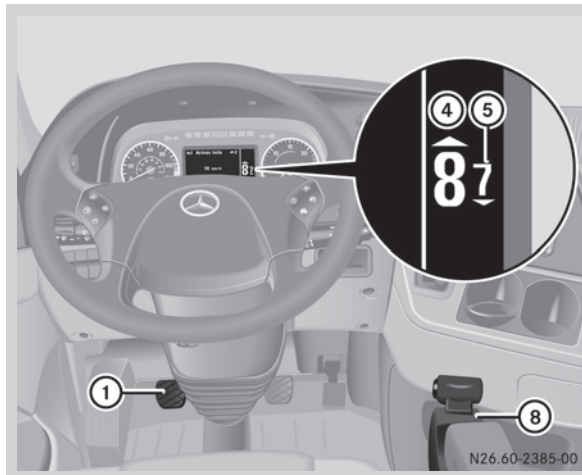
The gears are shifted using:

- gear lever ②
- splitter switch ③
- clutch pedal ①

You can use splitter switch ③ to select a low-range or high-range ratio for the gear selected, without changing the gear itself.

Refer to the "Manual transmission" section (▷ page 184) for further information on the transmission shift system. In particular, observe the notes on shifting gear.

Telligent® gearshift



The transmission has 16 forward gears and 2 reverse gears.

You shift the gears using gearshift unit ⑧ and clutch pedal ①.

Gear selection is performed by the electronic management system or by the driver.

You can use the splitter switch to select a low-range or high-range ratio for the gear selected, without changing the gear itself.

The display shows selected gear and splitter group ④. It also shows the recommended or preselected gear with appropriate splitter group ⑤ (flashing).

Further information on gearshifting can be found in the "Telligent® gearshift" section (▷ page 186). In particular, observe the notes on shifting gear.

Telligent® automatic gearshift



The transmission has 16 forward gears and 2 reverse gears.

You change gear with gearshift unit ⑧. The clutch system engages automatically.

With operating mode selector button ⑨, you can select manual or automatic mode.

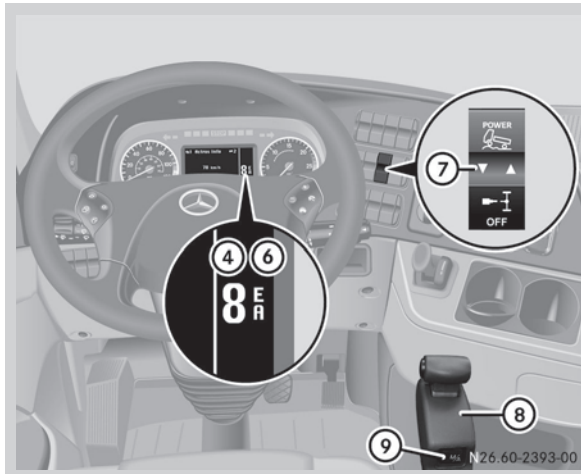
You decide the shift direction using gearshift unit ⑧ in automatic operating mode. Gear selection is performed by the electronic management system or by the driver.

You can use the splitter switch to select a low-range or high-range ratio for the gear selected, without changing the gear itself.

The display shows the selected gear and splitter group ④, drive program ⑤ and active operating mode ⑥.

Further information on the transmission shift system can be found in the "Telligent® automatic gearshift and Mercedes PowerShift" section (▷ page 190) and in the "Drive program" section (▷ page 197). In particular, observe the notes on shifting gear.

Mercedes PowerShift (12-gear transmission)



The transmission has twelve forward gears and four reverse gears.

You change gear with gearshift unit (8). The clutch system engages automatically.

With operating mode selector button (9), you can select manual or automatic mode.

Using drive program switch (7), you can switch between EcoRoll and Power mode.

You decide the shift direction using gearshift unit (8) in automatic operating mode. Gear selection is performed by the electronic management system or by the driver.

The display shows selected gear (4), active operating mode and drive program (6).

Further information on the transmission shift system can be found in the "Telligent® automatic gearshift and Mercedes PowerShift" section (> page 190) and in the "Drive program" section (> page 197). In particular, observe the notes on shifting gear.

Mercedes PowerShift with Fleet mode



The transmission has twelve forward gears and four reverse gears.

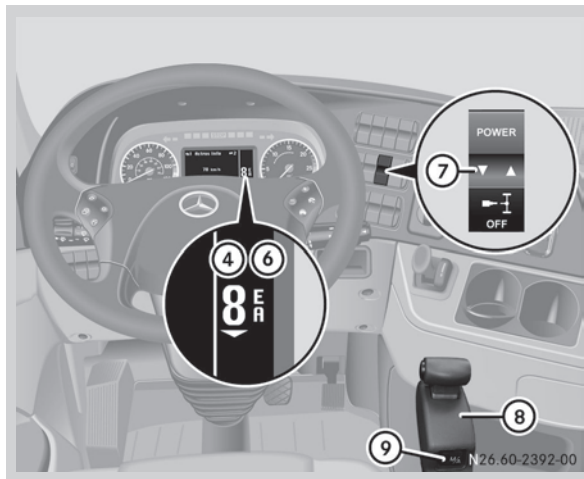
You change gear with gearshift unit (8). The clutch system engages automatically.

The display shows selected gear (4), drive program (5) and operating mode (6).

Vehicles with Fleet mode have no operating mode selector button and no drive program switch. Automatic operating mode and EcoRoll mode are constantly activated and the kick-down function is restricted.

Further information on the transmission shift system can be found in the "Telligent® automatic gearshift and Mercedes PowerShift" section (▷ page 190). In particular, observe the notes on shifting gear.

Mercedes PowerShift (16-gear transmission)



The transmission has 16 forward gears and 4 reverse gears.

You change gear with gearshift unit (8). The clutch system engages automatically.

With operating mode selector button (9), you can select manual or automatic mode.

Using drive program switch (7), you can switch between EcoRoll and Power mode.

You decide the shift direction using gearshift unit (8) in automatic operating mode. Gear selection is performed by the electronic management system or by the driver.

You can use the splitter switch to select a low-range or high-range ratio for the gear selected, without changing the gear itself.

The display shows the selected gear and splitter group (4). It also shows the active operating mode and drive program (6).

Further information on the transmission shift system can be found in the "Telligent® automatic gearshift and Mercedes PowerShift" section (▷ page 190) and in the "Drive program" section (▷ page 197). In particular, observe the notes on shifting gear.

Manual transmission

Manual gearshift

Important safety notes

WARNING

If there is a loss of pressure or the reservoir pressure in the auxiliary consumers circuit is too low:

- on vehicles with Telligent® automatic gearshift, the automatic gearshift will no longer function
- on vehicles with Telligent® automatic gearshift, you will need to use considerably more force to change gear

There is a risk of an accident.

Do not pull away, or stop the vehicle as soon as possible, paying attention to road and traffic conditions. Secure the vehicle against rolling away, e.g. with the parking brake. Have the compressed-air system repaired at a qualified specialist workshop.

! Observe the following information to avoid risking damage to the transmission, the engine or the clutch:

- do not drive with an engine speed that is too high or too low.
- only engage reverse gear with the engine at idling speed and the vehicle stationary.
- when changing gear, make sure that the engine speed does not enter the red overrevving range in the rev counter.
- release the gear lever when you have finished changing gear. Do not rest your hand or arm on the gear lever.
- if the warning buzzer sounds when downshifting, the maximum permissible engine speed has been exceeded. Shift to a higher gear, not a lower gear. The power-assisted gearshift is deactivated to protect the transmission synchronisation. As a result, more force is required when shifting gear.

The engine has delayed throttle response, if:

- the vehicle is stationary
- the engine is running
- the transmission is in neutral

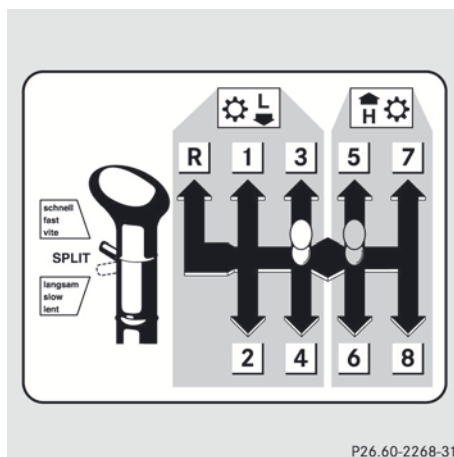
Changing gears

- ▶ Depress the clutch pedal.
- ▶ Shift the gear lever to neutral.
- ▶ If necessary, change the shift range.
- ▶ Use the gear lever to shift to the desired gear. Do not use excessive force.
- ▶ Slowly release the clutch pedal.

16-speed transmission

General notes

The 16-speed transmission is a manually operated gearbox. The gearbox is designed as a double-H gearshift.



Gearshift pattern

The shift ranges of the transmission are divided into:

- the low shift range "L" with gears **1** to **4** and reverse gear **R**
- the high shift range "H" with gears **5** to **8**
- the splitter groups with the switch on the front side of the gear lever

The additional gear reduction means that you can select a total of 16 forward gears and 2 reverse gears.

When in neutral position, the gear lever is in the gate between the 3rd and 4th gear and the 5th and 6th gear.

Gearshift options

You can shift gears:

- in the selected low-range splitter group, e.g. off-road driving
- in the selected high-range splitter group, e.g. on-road driving
- between low-range and high-range splitter groups, e.g. when the vehicle is laden

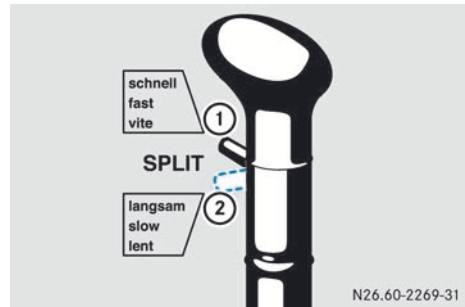
Changing the shift range

! When changing from the high-range group to the low-range group, keep the speed of the vehicle below 25 km/h. If you change from the high-range group to the low-range group at high speed, the transmission may be damaged.

- ▶ Depress the clutch pedal.
- ▶ Shift the gear lever to neutral.
- ▶ Overcome the gear lever pressure point between the shift ranges with a gentle side-ways tap of the hand on the gear lever.
- ▶ After approximately 1 second, select the desired gear without using excessive force.
- ▶ Slowly release the clutch pedal.

Selecting the splitter group

By selecting a splitter group, you select a low-range or high-range ratio for the gear selected without changing the gear itself.



- ▶ Move the splitter switch to the upper position for high-range splitter group ① or to the lower position for low-range splitter group ②.
- ▶ Depress and hold the clutch pedal until the splitter group is engaged.
- ▶ Release the clutch pedal.

Problems with the transmission

Problem	Possible causes/consequences and ► Solutions
There is no power transmission to the drive axles.	The transfer case is in neutral position. ► Switch the transfer case into road or off-road position (► page 214).

Automated transmission

Telligent® gearshift

Important safety notes

 WARNING

If there is a loss of pressure or the reservoir pressure in the auxiliary consumers circuit is too low:

- on vehicles with Telligent® automatic gearshift, the automatic gearshift will no longer function
- on vehicles with Telligent® automatic gearshift, you will need to use considerably more force to change gear

There is a risk of an accident.

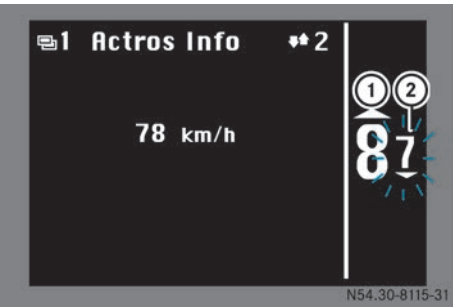
Do not pull away, or stop the vehicle as soon as possible, paying attention to road and traffic conditions. Secure the vehicle against rolling away, e.g. with the parking brake. Have the compressed-air system repaired at a qualified specialist workshop.

The Telligent® gearshift transmission has 16 forward gears and 2 reverse gears.

A gear range can be selected by the electronic management system (electronic gear selection) or by the driver (manual gear selection).

Every time a gearshift is completed, a gearshift noise is emitted by a central loud-speaker.

Gear indicator



Example: gear indicator in the display

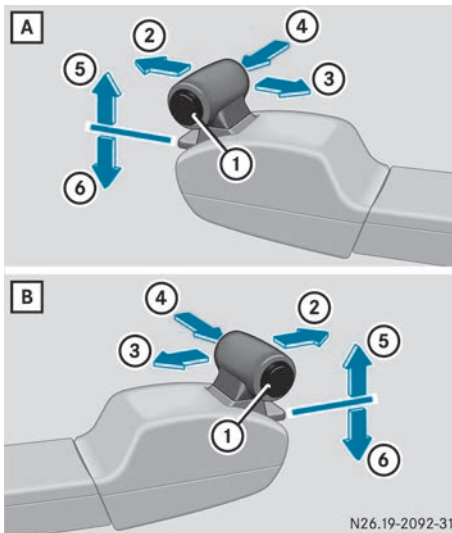
- ① Selected: eighth gear, high-range splitter group
- ② Preselected: 7th gear, low-range splitter group

The display shows the following information:

- the engaged gear and the selected splitter group
- the recommended or preselected gear with appropriate splitter group (flashing)

	High-range splitter group
	Low-range splitter group
1–8	1st to 8th gear
N	Neutral position
R	Reverse gear

Gearshift unit



- A Left-hand-drive vehicle
- B Right-hand-drive vehicle
- ① Button
- ② Gear lever: to shift up
- ③ Gear lever: to shift down/select reverse gear
- ④ Neutral button
- ⑤ Splitter switch, to shift up 1/2 gear
- ⑥ Splitter switch, to shift down 1/2 gear

Gearshift options

Telligent® gearshift offers four ways of changing gear:

- directly with electronic gear selection, for example in urban traffic.
- with electronic gear selection and preselection, for example at traffic lights.
- directly with manual gear selection, for example before an uphill gradient.
- with manual gear selection and preselection, for example when overtaking.

i A gearshift or a shift of the splitter group while the vehicle is moving is only possible at appropriate engine speeds. If these engine speeds have not been reached, a

warning tone sounds. The gear or the splitter group is not selected. The electronic management system only selects permissible gears.

Shifting using electronic gear selection

You determine the shift direction and the electronic management system selects the optimum gear (target gear).

This depends on the operating conditions, e.g. speed, load and accelerator pedal position.

- Press the gear lever forwards ② (to shift up) or pull back ③ (to shift down). The electronic management system selects the most suitable gear range. If the optimal gear range has already been selected, the electronic management system selects the next gear range in the selected direction.

i Reverse gear can only be selected manually.

Shifting with manual gear selection

You determine the shift direction and the gear range.

You can shift up by 1/2, 1, 1 1/2 or 2 gears.

In construction-site mode (differential lock activated) you cannot shift up by more than one gear.

To pull away, you cannot shift higher than 4th gear.

- **To shift 1/2 gear:** pull splitter switch up ⑤ (to shift up) or push down ⑥ (to shift down).

i If you are changing gear with preselection, you can also pull/push the splitter switch multiple times. In this way, you can preselect 1, 1 1/2 or 2 gears.

- **To shift one gear:** press and hold button ①.
- Press the gear lever forwards ② (to shift up) or pull back ③ (to shift down).

- i** If you are changing gear directly, you can also pull/push the splitter switch twice. This enables you to switch 2 gears.

- **To shift 1½ gears directly:** press and hold button ①.
 - Pull the splitter switch up ⑤ and push the gear lever forwards ② (shift up)
- or
- Push the splitter switch down ⑥ and pull the gear lever back ③ (shift down).

Changing gear using preselection

- i** Gear range selection takes place before you depress the clutch pedal. The gear range is not engaged until you depress the clutch pedal.
- Select a gear range with electronic or manual gear selection.
- Release the gear lever or splitter switch. The preselected gear range flashes briefly in the display.

The preselected gear range is stored:

- approx. 10 seconds when driving or while the parking/service brake is released
- approx. 2 minutes if the vehicle is stationary and the parking/service brake is applied
- approx. 30 seconds in construction-site mode (differential lock activated).

During the preselection period:

- you can change the preselected gear range by briefly pressing the gear lever or the splitter switch. The new target gear flashes in the display.
- you can delete the preselected gear range. Briefly press neutral button ④ to do so.
- the preselected gear range will automatically be adapted to a change in driving conditions if electronic gear selection is activated.
- Depress the clutch pedal.
The gearshift is completed when a gearshift sound can be heard from the central loud-

speaker and the selected gear range is shown in the display.

- Slowly release the clutch pedal.

If you release the clutch pedal before the gear has engaged, Telligent® gearshift shifts into neutral. **N** flashes in the display and a warning tone sounds.

- Depress the clutch pedal again within 2 seconds and wait until the gear has applied.

Changing gear directly

- Depress the clutch pedal.
- Select a gear range with electronic or manual gear selection.
The selected gear range flashes briefly in the display.
The gearshift is completed when a gearshift sound can be heard from the central loud-speaker and the selected gear range is shown in the display.
- Release the gear lever or splitter switch.
- Slowly release the clutch pedal.

If you release the clutch pedal before the gear has engaged, Telligent® gearshift shifts into neutral. **N** flashes in the display and a warning tone sounds.

- Depress the clutch pedal again within 2 seconds and wait until the gear has applied.

Shifting into neutral

Shift the transmission to neutral when stopping for a longer time, e.g. at traffic lights or before stopping the engine. The neutral position cannot be preselected.

- Slow down the vehicle and bring it to a halt.
- Depress the brake pedal or apply the parking brake.
- Press and hold neutral button ④.
N flashes in the display.

- ▶ Depress the clutch pedal.
The gear change is complete when **N** is shown in the display.
- ▶ Release the clutch pedal and neutral button ④.
- i** If you pull/push the splitter switch when the transmission is in neutral, only the splitter group is changed.

Engaging reverse gear

Reverse gear cannot be preselected.

With the vehicle stationary and the transmission in neutral:

- ▶ Depress the brake pedal or apply the parking brake.
- ▶ Press and hold button ①.
- ▶ Pull the gear lever back ③ until resistance is felt.
- ▶ Depress the clutch pedal.
The gearshift is completed when a gearshift sound can be heard from the central loudspeaker and **R** is shown in the display.
- ▶ Slowly release the clutch pedal.
- i** When reverse gear is engaged, pulling/pushing the splitter switch only changes the splitter group (high-range or low-range reverse gear).

Changing direction quickly

This procedure may be necessary to rock free a bogged-in vehicle, for example.

You can only make rapid changes of direction by starting in reverse gear.

With the vehicle stationary and the engine running:

- ▶ Engage reverse gear.

From reverse into first gear:

- ▶ Press and hold button ①.
- ▶ Push the gear lever forward ② until resistance is felt.

- ▶ Depress the clutch pedal.
The gearshift is completed when a gearshift sound can be heard from the central loudspeaker and **1** is shown in the display.
- ▶ Release the clutch pedal.

From first gear into reverse:

- ▶ Press and hold button ①.
- ▶ Pull the gear lever back ③ until resistance is felt.
- ▶ Depress the clutch pedal.
The gearshift is completed when a gearshift sound can be heard from the central loudspeaker and **R** is shown in the display.
- ▶ Release the clutch pedal.

Repeat the gear change process until the vehicle is free again.

Construction-site mode

Construction vehicles:

In construction-site mode, the shift strategy changes. The transmission shifts up at a later point and shifts down earlier, making the vehicle more dynamic. When you engage the differential locks (> page 212) construction-site mode is also activated.

If you wish to select a gear using electronic gear selection in construction-site mode, you can only shift up a maximum of one gear or must shift down at least one gear.

Telligent® automatic gearshift and Mercedes PowerShift

Important safety notes

WARNING

If there is a loss of pressure or the reservoir pressure in the auxiliary consumers circuit is too low:

- on vehicles with Telligent® automatic gearshift, the automatic gearshift will no longer function
- on vehicles with Telligent® automatic gearshift, you will need to use considerably more force to change gear

There is a risk of an accident.

Do not pull away, or stop the vehicle as soon as possible, paying attention to road and traffic conditions. Secure the vehicle against rolling away, e.g. with the parking brake. Have the compressed-air system repaired at a qualified specialist workshop.

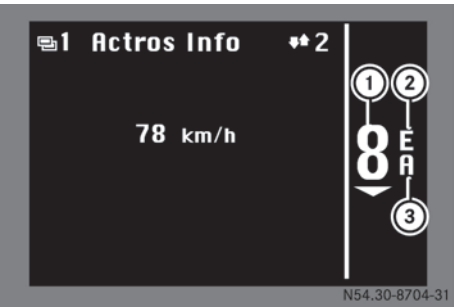
The Telligent® automatic gearshift transmission has 16 forward gears and 2 reverse gears.

Mercedes PowerShift has 12 or 16 forward gears and 4 reverse gears, depending on the transmission type.

The electronic management system controls the clutch when driving, e.g. when:

- pulling away
- manoeuvring
- changing gear
- stopping

Gear indicator



Example: gear indicator in the display

- ① Selected: eighth gear, low-range splitter group
- ② EcoRoll mode
- ③ Operating mode

Depending on the type of transmission, the display shows the following information:

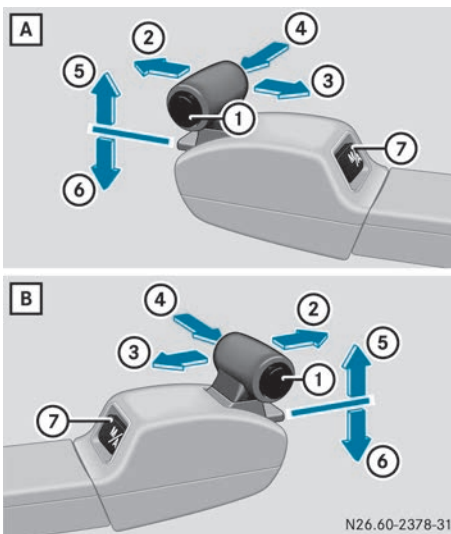
- the engaged gear and selected splitter group ①
- drive program ②
- operating mode activated ③

 Splitter group ① appears in the display for 16-speed transmissions only.

①		High-range splitter group
		Low-range splitter group
	1–8	Gears 1 to 8 (16-speed transmission)
	1–12	Gears 1 to 12 (12-speed transmission)
	N	Neutral position
	R	Reverse gear (Telligent® automatic gearshift)
	R1, R2	Reverse gears 1 and 2 (Mercedes PowerShift, 16-speed transmission)
	R1 – R4	Reverse gears 1 to 4 (Mercedes PowerShift, 12-speed transmission)

②	E	EcoRoll mode
	P	Power mode (16-speed transmission) Power mode/power off-road mode (12-speed transmission)
③	A	Automatic mode
	M	Manual mode

Gearshift unit



- A** Left-hand-drive vehicle
B Right-hand-drive vehicle
 ① Shift button
 ② Gear lever: to shift up
 ③ Gear lever: to shift down/select reverse gear
 ④ Neutral button
 ⑤ Gearshift rocker/splitter switch: to shift up
 ⑥ Gearshift rocker/splitter switch: to shift down
 ⑦ Vehicles without Fleet mode: operating mode selector button

- ❶ If you are operating the transmission using the gear lever, push or pull the gear lever until you feel resistance.

Operating modes

On vehicles without Fleet mode, you have the choice of two operating modes:

- Automatic mode

The electronic management system shifts the gear depending on:

- engine speed
- accelerator pedal position
- status of the continuous brake
- load status of the vehicle
- condition of the road surface

Power mode/power off-road mode (▷ page 197) and EcoRoll mode (▷ page 199) are also available in automatic mode depending on the type of transmission.

- Manual mode

Shift to pulling-away gear; determine the time and direction of the shift yourself.

On vehicles with Fleet mode:

- automatic mode is always active. There is no operating mode selector button ⑦ on the gearshift unit.
- EcoRoll mode is always active. There is no power mode/power off-road mode/EcoRoll mode switch in the switch unit on the instrument cluster.
- the kickdown function is restricted. A sticker on the gearshift unit informs you of this.

When the engine has been started, automatic operation mode is always activated.

- ❶ After a display check of the instrument cluster, **E** and automatic mode **A** appear in the display. Depending on the type of transmission, and **ECO On** as well as and **auto** also appear briefly in the display.

On vehicles without Fleet mode, you can change the operating mode at any time.

► To activate manual mode:

Press operating mode selector button ⑦. Manual mode **M** appears on the right of the display. Depending on the type of transmission, it also briefly displays the  symbol along with  and **man.**

► To activate automatic mode:

Press operating mode selector button ⑦ again. **E** and automatic mode **A** appear on the right of the display. Depending on the type of transmission,  and **ECO On** as well as  and **auto** also appear briefly in the display.

Pulling away

In manual mode, you can shift from neutral into gears 1 to 4 (16-speed transmission) or into gears 1 to 6 (12-speed transmission) to pull away.

- Depress the brake pedal or apply the parking brake.
- Press and hold shift button ①.
- Push gear lever ② forward.

Automatic mode: the electronic management system selects a suitable pulling-away gear, depending on the vehicle load. Manual mode, 16-speed transmission: the electronic management system shifts into second gear, high-range splitter group.

Manual mode, 12-speed transmission: the electronic management system shifts into third gear.

The gear change is complete when the display shows the selected gear.

- Release the brake pedal or parking brake and slowly depress the accelerator pedal. When pulling away, the engine speed may increase to approximately 1,000 rpm.

WARNING

If the engine revs drop below the minimum engine speed, the electronics automatically disengage the clutch. This interrupts the transmission of power. The vehicle may, for

example, roll backwards on gradients. There is a risk of an accident.

Never let the engine revs drop below the minimum engine speed.

- Do not let the engine speed drop below the minimum engine speed of 550 rpm. Otherwise, the electronic management system automatically disengages the clutch and power transmission is interrupted.

i For this reason, always switch to manual operating mode when driving off-road or when driving with the differential lock engaged. This enables you to initiate the gear selection process manually, according to the driving conditions.

On vehicles with a 12-speed transmission, you can change the pulling-away gear in manual mode:

- Push the gear lever forwards ② again. The electronic management system shifts to 6th gear. The gear change is complete when **6** is shown in the display.

or

- Pull the gear lever back ③. The electronic management system shifts to first gear. The gear change is complete when **1** is shown in the display.

or

- Pull gearshift rocker up ⑤ (to shift up) or push down ⑥ (to shift down). The electronic management system shifts up or down one gear. The gear change is complete when the display shows the selected gear.

Automatic mode

Accelerating

You can use the accelerator pedal position to actively influence the shift point:

- light throttle: early upshift
- heavy throttle: late upshift
- kickdown: maximum upshift delay and extremely early downshift

i Vehicles with 16-speed transmission: if you depress the accelerator pedal with the continuous brake activated, the electronic management system shifts up to a suitable gear. On a downhill slope, the maximum upshift is ½ gear.

Vehicles with 12-speed transmission: if you depress the accelerator pedal with the continuous brake activated, the continuous brake is deactivated and the vehicle shifts up by no more than one gear.

Kickdown gear shifting

Use kickdown for maximum acceleration of the vehicle.

- ▶ Depress the accelerator pedal past the pressure point to the stop.
The electronic management system shifts to a lower gear if necessary.

Vehicles with Fleet mode do not shift down.

- ▶ Ease off the accelerator pedal slightly once the desired speed is reached.
The electronic management system shifts up again.

i You can increase performance when pulling away using kickdown if required, e.g. on steep uphill gradients.

Vehicles with 12-speed transmission: depending on the type of transmission, you can switch off manoeuvring mode (▷ page 200) using kickdown.

Decelerating

- ▶ Release the accelerator pedal.
- ▶ Depress the brake pedal.
The electronic management system shifts down automatically according to the driving situation.

or

- ▶ Activate the continuous brake (▷ page 177).
The electronic management system shifts down automatically according to the driving situation.

Shifting with manual gear selection

You can also select a different gear in automatic mode. The automatic mode functions are not affected by doing this.

- ▶ Press the gear lever forwards ② (to shift up) or pull back ③ (to shift down).
The electronic management system shifts down or up to a suitable gear.

or

- ▶ Press and hold shift button ①.
- ▶ Press the gear lever forwards ② (to shift up) or pull back ③ (to shift down).
Vehicles with 16-speed transmission: the electronic management system shifts one gear up or down.

Vehicles with 12-speed transmission: the electronic management system shifts two gears up or down.

or

- ▶ Pull splitter switch/gearshift rocker up ⑤ (to shift up) or push down ⑥ (to shift down).

Vehicles with a 16-speed transmission: the electronic management system shifts up or down half a gear.

Vehicles with a 12-speed transmission: the electronic management system shifts up or down a gear.

i A gearshift or a shift of the splitter group while the vehicle is moving is only possible at appropriate engine speeds. If these engine speeds have not been reached, a

warning tone sounds. The gear or the splitter group is not selected. The electronic management system only selects permissible gears.

Manual mode

General notes

In manual operating mode, the driver is responsible for selecting gears.

Gears can be selected by the electronic management system or the driver (manual selection).

Mercedes-Benz recommends switching to manual operating mode when driving in difficult terrain. This helps to prevent undesired repeated shifting (changing up or down), for example, or the engine speed falling below the minimum engine speed of 550 rpm. This enables you to initiate the gear selection process manually, according to the driving conditions.

i A gearshift or a shift of the splitter group while the vehicle is moving is only possible at appropriate engine speeds. If these engine speeds have not been reached, a warning tone sounds. The gear or the splitter group is not selected. The electronic management system only selects permissible gears.

Changing gear (16-speed transmission)

► **To shift ½ gear:** pull splitter switch ⑤ (to shift up) or push down ⑥ (to shift down).

The gear change is complete when the display shows the selected gear.

► **To shift one gear:** press and hold shift button ①.

► Press the gear lever forwards ② (to shift up) or pull back ③ (to shift down).

The gear change is complete when the display shows the selected gear.

► **To shift using electronic gear selection:** press the gear lever forwards ② (to shift up) or pull it back ③ (to shift down).

The electronic management system determines the most suitable gear (target gear) for the desired gearshift direction, depending on the vehicle load. The gear change is complete when the display shows the selected gear.

Changing gear (12-speed transmission)

► **To shift one gear:** pull gearshift rocker up ⑤ (to shift up) or push it down ⑥ (to shift down).

The gear change is complete when the display shows the selected gear.

► **To shift two gears:** press and hold shift button ①.

► Press the gear lever forwards ② (to shift up) or pull back ③ (to shift down).

The gear change is complete when the display shows the selected gear.

► **To shift using electronic gear selection:** press the gear lever forwards ② (to shift up) or pull it back ③ (to shift down).

The electronic management system determines the most suitable gear (target gear) for the desired gearshift direction, depending on the vehicle load. The gear change is complete when the display shows the selected gear.

Stopping

► Braking the vehicle.

► If necessary, shift down.

The electronic management system disengages the clutch just before idling speed is reached.

If you stop the vehicle in manual mode, the selected gear remains engaged.

- i** If the vehicle is stationary for 60 seconds with a gear engaged and the engine running, a warning tone sounds. **N** or **E** flashes in the display.

After a further 30 seconds, a warning tone sounds again and the electronic management system shifts to neutral.

This function is not active if the power take-off is engaged.

To stay in the gear selected:

- ▶ Briefly depress the accelerator pedal or press shift button ① within 90 seconds of stopping.

The pulling-away gear remains engaged for another 90 seconds.

- i** Vehicles with 16-speed transmission: if the vehicle is brought to a halt with a gear (fifth to eighth gear) still selected, this gear will remain engaged. To pull away, select a suitable pulling-away gear (first to fourth gear).

Vehicles with 12-speed transmission: if the vehicle is brought to a halt with a gear (seventh to twelfth gear) still selected, this gear will remain engaged. To pull away, select a suitable pulling-away gear (first to sixth gear).

Shifting into neutral

Shift the transmission to neutral when stopping for a longer time, e.g. at traffic lights or before stopping the engine.

- ▶ Slow down the vehicle and bring it to a halt.
- ▶ Depress the brake pedal or apply the parking brake.
- ▶ Press neutral button ④.
The gear change is complete when **N** is shown in the display.

Engaging reverse gear

Vehicles with Telligent® automatic gear-shift

Reverse gear cannot be preselected.

With the vehicle stationary and the transmission in neutral:

- ▶ Depress the brake pedal or apply the parking brake.

- ▶ Press and hold shift button ①.

- ▶ Pull the gear lever back ③.

The gear change is complete when **R** is shown in the display.

Vehicles with a reverse warning device: the reverse warning device sounds.

- ▶ Release the brake pedal or parking brake and slowly depress the accelerator pedal.

- i** When reverse gear is engaged, pulling/pushing the splitter switch only changes the splitter group (high-range or low-range reverse gear).

Vehicles with Mercedes PowerShift (16-speed transmission)

To pull away, you can shift from neutral to first reverse gear only.

With the vehicle stationary and the transmission in neutral:

- ▶ Depress the brake pedal or apply the parking brake.

- ▶ Press and hold shift button ①.

- ▶ Pull the gear lever back ③.

The gear shift is complete when **R1** and the  low-range splitter group are shown in the display.

Vehicles with a reverse warning device: the reverse warning device sounds.

- ▶ **To select the high-range splitter group:** pull the splitter switch up ⑤.

The gear shift is complete when **R1** and the  high-range splitter group are shown in the display.

Vehicles with a reverse warning device: the reverse warning device sounds.

- Release the brake pedal or parking brake and slowly depress the accelerator.

The first reverse gear can be preselected up to a speed of 8 km/h from the first forward gear:

- Press and hold shift button ①.
- Pull the gear lever back ③.

First reverse gear is preselected and then selected when the vehicle comes to a standstill.

The first reverse gear is selected in the same splitter group in which the first forward gear has been selected.

After five seconds, the preselection is erased.

You can shift up or down by ½ gears in succession while reversing:

- Pull the splitter switch up ⑤ or push down ⑥.

The gear change is complete when the next higher or next lower reverse gear appears in the display.

i A gearshift or a shift of the splitter group while the vehicle is moving is only possible at appropriate engine speeds. If these engine speeds have not been reached, a warning tone sounds. The gear or the splitter group is not selected. The electronic management system only selects permissible gears.

i If you stop the vehicle in automatic mode with the second reverse gear selected, the electronic management system selects the first reverse gear (low-range splitter group).

Vehicles with Mercedes PowerShift (12-speed transmission)

To pull away, you can only shift from neutral to the first or second reverse gear.

With the vehicle stationary and the transmission in neutral:

- Depress the brake pedal or apply the parking brake.
- Press and hold shift button ①.
- Pull the gear lever back ③.
The gear change is complete when R1 is shown in the display.

Vehicles with a reverse warning device: the reverse warning device sounds.

- **To select the second reverse gear:** pull the gearshift rocker up ⑤.

The gear change is complete when R2 is shown in the display.

Vehicles with a reverse warning device: the reverse warning device sounds.

- Release the brake pedal or parking brake and slowly depress the accelerator.

The first and second reverse gear can be preselected up to a speed of 8 km/h from the first or second forward gear:

- Press and hold shift button ①.
- Pull the gear lever back ③.
From the first forward gear, the first reverse gear is preselected and then selected when the vehicle is stationary.
From the second forward gear, the second reverse gear is preselected and then selected when the vehicle is stationary.
After five seconds, the preselection is erased.

You can shift up or down by single reverse gears in succession while reversing:

- Pull the gearshift rocker up ⑤ or push down ⑥.

The gear change is complete when the next higher or next lower reverse gear appears in the display.

i Shifting reverse gears while the vehicle is in motion is only possible at suitable engine speeds. If these engine speeds have not been reached, a warning tone sounds. The selected reverse gear is not engaged. The

electronic management system only selects permissible reverse gears.

- i** If you stop the vehicle in automatic mode with the third or fourth reverse gear selected, the electronic management system selects the first reverse gear.

Changing direction quickly

This procedure helps to rock a vehicle free which has become stuck when driving off-road, for example.

Vehicles with Telligent® automatic gearshift: you can only make rapid changes of direction by starting in reverse gear.

Vehicles with Mercedes PowerShift: you can start a quick change of direction in the first forward gear or the first reverse gear.

- Press and hold shift button ①.
- Press the gear lever forwards ② (first gear) or pull back ③ (reverse gear).

Vehicles with Telligent® automatic gearshift: the gear change is complete when **1** or **R** is shown in the display.

Vehicles with Mercedes PowerShift: the gear is preselected and then selected as soon as the vehicle comes to a standstill. The gear change is complete when **1** or **R1** is shown in the display.

Vehicles with Mercedes PowerShift 16-speed transmission: the display also shows the low-range or high-range splitter group ( or ).

Repeat the gear change process until the vehicle is free again.

Construction-site mode

Construction vehicles with 16-speed transmission:

In construction-site mode, the shift strategy changes. The transmission shifts up at a later point and shifts down earlier, making the vehicle more dynamic. When you engage the differential locks (▷ page 212) construction-site mode is also activated.

In construction-site mode, you can only shift up a maximum of one gear or you must shift down at least one gear.

Parking the vehicle

WARNING

When the engine is switched off, the transmission shifts into neutral position. When the parking brake is not applied, the vehicle may roll away. There is a risk of an accident.

Secure the parked vehicle against rolling away by applying the parking brake.

- Stop the vehicle.
- Apply the parking brake.
- Press neutral button ④.
The gear change is complete when **N** is shown in the display.
- Switch off the engine.

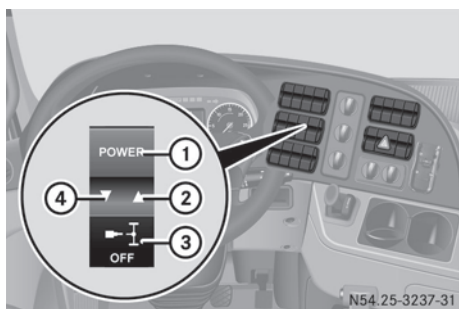
Drive programs

Power mode/power off-road mode/>70 t mode

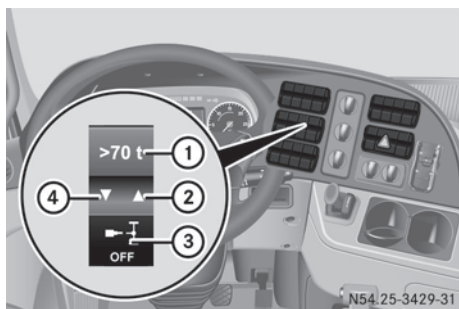
General notes

Power mode/power off-road mode/>70 t mode facilitates a performance-oriented driving mode with higher engine speeds, e.g. when driving on steep uphill gradients under arduous operating conditions. In >70 t mode, the drive program is optimised to a gross vehicle weight of over 70 t.

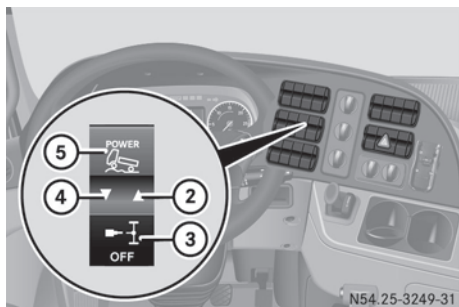
- Turn the key to the drive position in the ignition lock.
- Switch on automatic mode (▷ page 190).



Power mode/EcoRoll mode switch (vehicles without hydrodynamic clutch)



>70 t mode/EcoRoll mode switch, vehicles with hydrodynamic clutch (turbo clutch)



Power off-road mode/EcoRoll mode (construction vehicle)

Vehicles with hydrodynamic clutch (turbo clutch)

You can only switch between the >70 t mode and EcoRoll mode drive programs when the vehicle is stationary.

>70 t mode is automatically active after the engine is started on vehicles with hydrodynamic clutch (turbo clutch). Indicator lamp ②

in the switch lights up. When automatic mode and >70 t mode are activated, the electronic management system always shifts to first gear, low-range splitter group (pulling-away gear).

Activating power mode/power off-road mode

- Press the upper section of switch ① or ⑤. Indicator lamps ② and ④ in the switch light up. The display shows power mode/power off-road mode **P** next to the gear indicator.

Switching on >70 t mode

- Press the upper section of switch ①. Indicator lamps ② and ④ in the switch light up. The display shows >70 t mode **P** next to the gear indicator. The EcoRoll function is deactivated. The >70 t mode is optimised to a gross vehicle weight of 250 t.
- Depending on the gross vehicle weight, select a suitable pulling-away gear using the gearshift unit.

Deactivating power mode/power off-road mode

- Press the upper section of switch ① or ⑤. Indicator lamps ② and ④ in the switch go out.

The **P** indicator in the display goes out.

or

- Press the lower section of switch ③. Indicator lamps ② and ④ in the switch go out.

The **P** indicator in the display goes out.

or

- Activate manual operating mode **M** (► page 190). Indicator lamp ② in the switch goes out. The **P** indicator in the display goes out.

i Vehicles without hydrodynamic clutch (turbo clutch): power mode is deactivated after approximately ten minutes for an economic driving style. If necessary, you can reactivate power mode immediately.

Switching off >70 t mode

- Press the upper section of switch ①.
Indicator lamps ② and ④ in the switch go out.

The P indicator in the display goes out.

or

- Press the lower section of switch ③.
Indicator lamps ② and ④ in the switch go out.

The P indicator in the display goes out.

or

- Activate manual operating mode M (▷ page 190).
Indicator lamps ② and ④ in the switch go out.

The P indicator in the display goes out.

or

- Activate manual operating mode M.
Indicator lamps ② and ④ in the switch go out.

The P indicator in the display goes out.

EcoRoll mode

EcoRoll mode allows an economic driving style.

If you do not depress the accelerator pedal when driving, the electronic management system shifts to neutral position, depending on driving conditions. N or E then appear in the display.

The transmission does not shift to neutral or from neutral to a suitable gear if:

- you depress the brake pedal.
- you depress the service brake pedal.
- you activate the power take-off.
- cruise control or Telligent® distance control are intervening.
- the speed limiter is active and the maximum speed set is exceeded.
- the set speed tolerance is exceeded (vehicles with Mercedes PowerShift) (▷ page 190).

- the speed set for cruise control is exceeded by more than 6 km/h (default setting) or the road speed tolerance that you have set is exceeded (vehicles with Mercedes PowerShift).
- a speed tolerance below 4 km/h is set (vehicles with Mercedes PowerShift).
- you exceed a programmed maximum speed by 4 km/h.
- you leave a certain engine speed or speed range.
- Turn the key to the drive position in the ignition lock.
- Switch on automatic mode (▷ page 190).
- Start the engine.
Vehicles without hydrodynamic clutch (turbo clutch): EcoRoll mode is activated automatically.

Vehicles with Telligent® automatic gearshift: EcoRoll mode is only effective in gear 7 (high-range splitter group) and gear 8.

Vehicles with Mercedes PowerShift: EcoRoll mode is only effective from speeds above 55 km/h. You can influence the speed range by setting the speed tolerance in overrun mode (▷ page 218).

- ❶ If you activate EcoRoll mode, certain driving conditions may result in slightly increased steering forces, e.g. on downhill stretches with slight bends. This does not jeopardise operating or road safety.

Vehicles with Mercedes PowerShift and Fleet mode are always in EcoRoll mode. On these vehicles, you cannot deactivate EcoRoll mode.

Vehicles with hydrodynamic clutch (turbo clutch): the electronics select a suitable pulling-away gear, depending on the gross vehicle weight. ECO mode is optimised to a gross vehicle weight of 70 t.

You can only switch between >70 t mode and EcoRoll mode drive programs when the vehicle is stationary.

- ▶ **Deactivating EcoRoll mode:** press the lower section of switch ③.
Indicator lamp ④ in the switch lights up.
- or
- ▶ Press the upper section of switch ① or ⑤.
Indicator lamps ② and ④ in the switch light up.
- or
- ▶ Activate manual operating mode **M**.
Indicator lamp ④ in the switch lights up.
Depending on the type of transmission fitted,  and the **ECO Off** message are displayed briefly. In addition, EcoRoll mode indicator **E** next to the gear indicator goes out.
- ▶ **Activating EcoRoll mode:** press the lower section of switch ③.
Indicator lamp ④ in the switch goes out.
Depending on the type of transmission fitted,  and the **ECO On** message as well as  and **auto.** appear briefly in the display. In addition, EcoRoll mode indicator **E** lights up next to the gear indicator.

Manoeuvring mode

General notes

Manoeuvring mode allows you to manoeuvre the vehicle more precisely. You can also pull away using manoeuvring mode and then switch off manoeuvring mode to continue driving.

Manoeuvring mode and rocking-free mode cannot be activated simultaneously.

! Vehicles without hydrodynamic clutch (TK): driving in manoeuvring mode results in increased wear on the clutch. Therefore, do not drive in manoeuvring mode any longer than is absolutely necessary.

If  appears in the display with a yellow status indicator and the warning buzzer sounds, end the manoeuvring process as soon as possible. Otherwise, the clutch will be overloaded.

Vehicles with hydrodynamic clutch (turbo clutch)

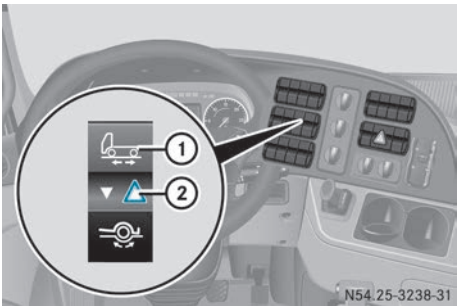
Manoeuvring mode allows you to manoeuvre the vehicle more precisely. You can also pull away using manoeuvring mode and then switch off manoeuvring mode to continue driving. If you switch on manoeuvring mode and >70 t mode, the starting power increases.

i If you do not require an increased starting power, switch >70 t mode off in manoeuvring mode. This avoids excessive air consumption in the compressed-air system.

In manoeuvring mode, the vehicle pulls away as soon as you release the service brake.

Manoeuvring mode does not deactivate automatically.

Activating manoeuvring mode



- ▶ Stop the vehicle, leaving the engine running.
- ▶ Activate manual operating mode (▷ page 190).
- ▶ Engage first or reverse gear.
When first gear is engaged the display shows **1**  or **1** and if reverse gear is engaged **R1**  or **R1**.
- i** When the automatic operating mode is activated, the electronic management system engages the manoeuvring gear in the same direction of travel as the gear engaged.

Vehicles without hydrodynamic clutch (turbo clutch)

- Press the upper section of switch ①. Indicator lamp ② in the switch lights up. Depending on the type of transmission fitted,  and the **Manoeuvring On** message are displayed.

In manoeuvring mode, engine revs are limited to 1,000rpm.

- ❗ In manoeuvring mode, you cannot disengage the manoeuvring gears.

Vehicles with hydrodynamic clutch (turbo clutch)

- Depress the brake pedal.
- Press the upper section of switch ①. Indicator lamp ② in the switch lights up. Depending on the type of transmission fitted,  and the **Manoeuvring On** message are displayed. In manoeuvring mode, engine revs are limited to 1,300 rpm.
- Depending on the gross vehicle weight, select a suitable pulling-away gear. Only the pulling-away gears up to 3rd gear, high-range splitter group, are available.
- Release the brake pedal. The vehicle starts moving.
- ❗ The following gears can be selected while driving, without depressing the brake pedal:
 - from 1st gear, low-range splitter group, in the 1st reverse gear
 - from 1st gear, high-range splitter group, in the 2nd reverse gear

- If you want to change to another gear:
- stop the vehicle and
 - depress the brake pedal before changing gear.

Deactivating manoeuvring mode

- Vehicles without hydrodynamic clutch (turbo clutch): depress the accelerator

pedal beyond the point of resistance to the stop (kickdown).

Indicator lamp ② in the switch goes out.

or

- Vehicles with hydrodynamic clutch (turbo clutch): press the upper section of switch ①.

Rocking-free mode

General notes

You can use rocking-free mode to rock the vehicle out of a depression in the terrain. If you release the accelerator pedal in rocking-free mode, the clutch is immediately disengaged and the vehicle rolls back. If you depress the accelerator pedal again, the clutch engages immediately and the vehicle moves off.

Manoeuvring mode and rocking-free mode cannot be activated simultaneously.

Activate rocking-free mode:

- at a speed below 5 km/h
- for 16-gear transmission, in first to fourth gear or in neutral position
- for 12-gear transmission, in first to sixth gear or in neutral position



Vehicles with hydrodynamic clutch (turbo clutch)

- ❗ If the gross tractor/trailer combination weight is very high, the dry clutch may be overloaded and damaged.

Only the dry clutch is used in rocking-free mode. When you release the accelerator

pedal, the clutch is suddenly disengaged and closes immediately when you depress the accelerator pedal. If  appears in the display with a yellow status indicator and the warning buzzer sounds, deactivate rocking-free mode.

Activating rocking-free mode

- Press the lower section of switch .
Indicator lamp  in the switch lights up.
Depending on the type of transmission fitted,  and the **Rocking On** message are displayed briefly.

Deactivating rocking-free mode

- Press the lower section of switch .
Indicator lamp  in the switch goes out.

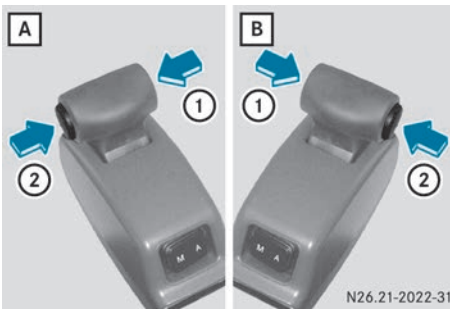
Problems with the transmission

Problem	Possible causes/consequences and ► Solutions
There is no power transmission to the drive axles.	The transfer case is in neutral position. ► Switch the transfer case into road or off-road position (► page 214).

Teach-in procedure

General notes

The teach-in procedure has to be carried out in order for vehicle-specific data from the electronic management system of the automatic gearshift control (GS) to be taken into account.



- A** Left-hand-drive vehicle
- B** Right-hand-drive vehicle
- ① Neutral button
- ② Shift button

The reservoir pressure must be sufficient. If the reservoir pressure is insufficient, the  symbol is shown in the display (► page 165).

During the teach-in procedure, teach-in or operating errors are indicated as fault codes in the display (► page 206). These fault codes are not stored. In such cases, note down the fault codes for the service personnel.

If the teach-in procedure is cancelled, an event message is shown in the display.

- Turn the key back fully in the ignition lock and wait at least five seconds.
- Repeat the teach-in procedure.

The long teach-in procedure is required if:

- the GS control unit has been replaced.
- the engine has been replaced.
- the display shows the [a 2 1011](#) fault code. After this message appears, turn the key fully back in the ignition lock, wait approximately five seconds, and then turn it back to the drive position.
- the display shows the [a 2 8093](#) fault code.

Carrying out a short teach-in procedure

Vehicles with Telligent® gearshift

- Apply the parking brake.
- Turn the key back in the ignition lock as far as it will go.
- Depress and hold down the clutch pedal.
- Press and hold neutral button ①.
- Turn the key to the drive position in the ignition lock.

Over the loudspeaker, you will hear a warning tone and a gearshift noise. The arrows of the splitter group flash alternately in the display.
- Release the clutch pedal within 3 seconds.

Over the loudspeaker, you will hear a warning tone and a gearshift noise.

- ▶ Depress and hold the clutch pedal within 3 seconds.

The teach-in procedure is finished if **N** appears in the display.

- ▶ Release the clutch pedal and neutral button ①.

Vehicles with Telligent® automatic gearshift

- ▶ Apply the parking brake.
- ▶ Turn the key back in the ignition lock as far as it will go.
- ▶ Press and hold neutral button ①.
- ▶ Turn the key to the drive position in the ignition lock.

Over the loudspeaker, you will hear a warning tone and a gearshift noise. The arrows of the splitter group flash alternately in the display.

The teach-in procedure is finished if **N** (large) appears in the display.

- ▶ Release neutral button ①.

Vehicles with Mercedes PowerShift

- ▶ Apply the parking brake.
- ▶ Turn the key back in the ignition lock as far as it will go.
- ▶ Press and hold neutral button ①.
- ▶ Turn the key to the drive position in the ignition lock.

A warning tone sounds in the loudspeaker and the splitter group arrows flash alternately in the display (16-speed transmissions only).

- ▶ Start the engine if **N** (small) appears in the display.

A warning tone sounds over the loudspeaker.

The teach-in procedure is finished if **N** (large) appears in the display.

- ▶ Release neutral button ①.

Carrying out a long teach-in procedure

Vehicles with Telligent® gearshift

- ▶ Apply the parking brake.
- ▶ Turn the key back in the ignition lock as far as it will go.
- ▶ Depress and hold down the clutch pedal.
- ▶ Press and hold neutral button ① and shift button ② simultaneously.
- ▶ Turn the key to the drive position in the ignition lock.
Over the loudspeaker, you will hear a warning tone and a gearshift noise. The arrows of the splitter group flash alternately in the display.
- ▶ Release the clutch pedal within 3 seconds.
Over the loudspeaker, you will hear a warning tone and a gearshift noise.
- ▶ Depress and hold the clutch pedal within 3 seconds.
- ▶ If the display shows **N**, start the engine.
Over the loudspeaker, you will hear a warning tone and a gearshift noise.
- ▶ Release the clutch pedal within 3 seconds.
Over the loudspeaker, you will hear a warning tone and a gearshift noise.
- ▶ Depress and hold the clutch pedal within 3 seconds.
Over the loudspeaker, you will hear a warning tone and a gearshift noise.
- ▶ Release the clutch pedal within 3 seconds.
Over the loudspeaker, you will hear a warning tone and a gearshift noise.
- ▶ Depress and hold the clutch pedal within 3 seconds.
The teach-in procedure is finished if **N** (large) appears in the display.
- ▶ Release the clutch pedal, neutral button ① and shift button ②.

Example: Telligent® automatic gearshift/ Mercedes PowerShift

- ▶ Apply the parking brake.
- ▶ Turn the key back in the ignition lock as far as it will go.

- ▶ Press and hold neutral button ① and shift button ② simultaneously.
- ▶ Turn the key to the drive position in the ignition lock.
A warning tone sounds in the loudspeaker and the splitter group arrows flash alternately in the display (16-speed transmissions only).
- ▶ Start the engine if **N** (small) appears in the display.
A warning tone sounds over the loudspeaker.
The teach-in procedure is finished if **N** (large) appears in the display.
- ▶ Release neutral button ① and shift button ②.

If the fault reappears in the display once the long teach-in procedure is finished:

- ▶ Enable transmission control backup mode in the on-board computer (▷ page 207).
- ▶ Have the transmission shift system checked at a qualified specialist workshop.

Teach-in error

During the teach-in procedure, teach-in or operating errors are indicated as fault codes in the display. These fault codes are not stored.

Fault code	Possible causes and solutions
GS 06 to GS 18, GS 27, GS 29, GS 32	Teach-in error ► Repeat the teach-in procedure ³
GS 19	The vehicle is rolling. ► Apply the parking brake.
GS 20	The display shows U << (undervoltage). ► Recharge or replace the battery.
GS 21	The clutch pedal has been released too early or too late during teach-in. ► Depress the clutch pedal at the correct time (observe the tone).
GS 22	The neutral button has been released prematurely during teach-in. ► Press and hold the neutral button.
GS 23	Teach-in error ► Carry out a long teach-in procedure.
GS 24	The parking brake has not been applied during teach-in. ► Apply the parking brake.
GS 25	The emergency gearshift has been operated during teach-in. ► Do not operate the emergency gearshift.
GS 26	The engine is running. ► Short teach-in procedure: switch off the engine. ► Long teach-in procedure: do not start the engine until the display shows N.
GS 28	The engine has not been started. ► If the display shows N, start the engine.

³ If the fault code reappears after the teach-in procedure, you need to have the malfunction rectified at a qualified specialist workshop.

Fault code	Possible causes and solutions
GS 30	The accelerator pedal has been depressed during teach-in. ► Do not depress the accelerator pedal during teach-in.
GS 31	The clutch pedal was not depressed during teach-in. ► Repeat the teach-in procedure.

Transmission control backup mode (emergency mode)

General notes

If the gearshift is damaged, you can continue to drive in transmission control backup mode (emergency mode).

The following gear change methods are available to you in transmission control backup mode:

- slow or fast gear
- reverse gear
- neutral position
- towing mode

Changing gear is not possible while driving when using transmission control backup mode.

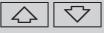
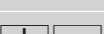
First activate the **Transmission control** backup mode function in the on-board computer before changing gear with the multifunction steering wheel buttons.

- i** Vehicles with Telligent® automatic gearshift or Mercedes PowerShift: the vehicle may react more slowly than usual when pulling away or stopping.

Enabling transmission control backup mode

- Stop the vehicle, paying attention to road and traffic conditions.
- Engage the parking brake.
- Start the engine.

Press the buttons on the multifunction steering wheel:

► 	Settings
► 	Configuration
► 	Enable transmission control backup mode
► 	On

Transmission control backup mode is enabled when the key is in the drive position in the ignition lock. If the key is turned back to the stop in the ignition lock, transmission control backup mode is disabled again.

In transmission control backup mode, the selected gear may not be shown in the display if the transmission is cold. Repeat the gear selection.

If the display still does not show the selected gear after several attempts, switch off the engine. Restart the engine and reactivate transmission control backup mode.

Shifting into a gear/neutral

- Enable transmission control backup mode.
- Telligent® automatic gearshift or Mercedes PowerShift: activate manual mode (▷ page 190).

Press the buttons on the multifunction steering wheel:

- Press the  or  button to call up the **Transmission control backup mode** menu.

The display shows **Before gear selectionApply parking brake**. Transmission control backup mode is now active.

- Press the  or  button to call up the submenu.

The display shows **Please select gear, Low gear/High gear/N/R/Towing**.

- Press the  or  button to select the desired gear:
 - **Gear high** for the seventh gear (12-gear transmission) or the fifth gear (6 or 16-gear transmission)
 - **Gear low** for the first gear (12-gear transmission) or the second gear (6 or 16-gear transmission)
 - **R** for reverse gear
 - **N** for neutral

Telligent® automatic gearshift and Mercedes PowerShift:

- Confirm with  or .
- The transmission shifts to the selected gear.

The display shows **Before gear selectionApply parking brake**. The gear indicator shows the gear selected.

Telligent® gearshift:

- Confirm with  or .
- The display shows **Please apply clutch, Clutch engaged?Yes/No**.
- Depress the clutch pedal.
 - Press the  button to confirm.
 - Press the  or  button to confirm once more.
- The transmission shifts to the selected gear.

The display shows **Before gear selectionApply parking brake**. The gear indicator shows the gear selected.

- Release the clutch pedal.

! If the display shows the **Driving in emergency running mode-Manual gear selection only possible for N** message, stop the vehicle. If the vehicle is in motion and in gear, it is only possible to shift to **N**.

Stopping

- Telligent® gearshift: depress the clutch pedal.
- Stop the vehicle, paying attention to road and traffic conditions.
The display shows **Transmission control backup mode,Before gear selectionApply parking brake**. The gear indicator shows the gear selected.
- Engage the parking brake.

Activating towing mode

Information on towing can be found in the "Manoeuvring, tow-starting and towing" section (► page 318).

- Enable transmission control backup mode.
- Telligent® automatic gearshift and Mercedes PowerShift: activate manual mode (► page 190).

Press the buttons on the multifunction steering wheel:

- ▶ Press the  or  button to call up the **Transmission control backup mode** menu.
The display shows **Before gear selectionApply parking brake**. Transmission control backup mode is now active.
- ▶ Press the  or  button to call up the submenu.
The display shows **Please select gear, Low gear/High gear/N/R/Towing**.
- ▶ Press the  or  button to select **Towing**.

Telligent® automatic gearshift and Mercedes PowerShift:

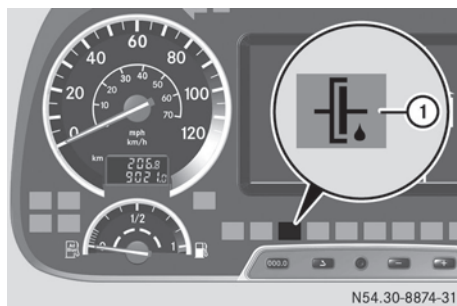
- ▶ Confirm with  or .
- The display shows **Transmission control backup mode, Towing**.

Telligent® gearshift:

- ▶ Confirm with  or .
- The display shows **Please apply clutch, Clutch engaged?Yes/No**.
- ▶ Depress the clutch pedal.
 - ▶ Press the  button to confirm.
 - ▶ Press the  or  button to confirm once more.
- The display shows **Transmission control backup mode, Towing**.
- ▶ Release the clutch pedal.

Operation

Hydrodynamic clutch



- ① Hydrodynamic clutch (turbo clutch) indicator lamp

The hydrodynamic clutch (turbo clutch):

- supports you when pulling away and braking
- minimizes wear when pulling away and braking

When driving in turbo clutch mode, the oil temperature in the hydrodynamic clutch (turbo clutch) increases. If the oil temperature is too high, the status indicator lights up red and the warning buzzer sounds. The  symbol is shown in the display. Shift to a lower gear to decrease the oil temperature.

If the display message does not go out and the warning buzzer does not stop:

- ▶ Brake the vehicle and stop, paying attention to road and traffic conditions.
- ▶ Apply the parking brake.
- ▶ Shift into neutral.
- ▶ Let the engine run at approximately 1,200 rpm for approximately 1 minute.

If the display message does not go out and the warning buzzer does not stop, have the hydrodynamic clutch (turbo clutch) checked at a qualified specialist workshop.

WSK (torque converter clutch)

When the vehicle is stationary and the engine is at idling speed, the torque converter clutch

is opened. In driving mode, the torque converter clutch closes at a certain engine speed.

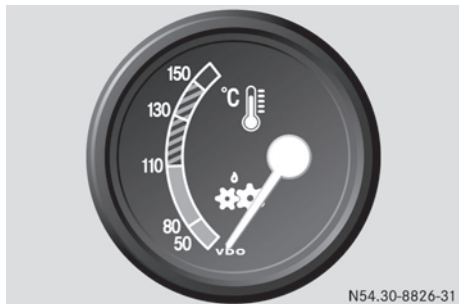
If the engine speed drops to approximately 950 rpm in driving mode, the torque converter clutch opens. If the accelerator pedal is depressed beyond the point of resistance (kickdown), the torque converter clutch opens from approximately 1,100 to 1,150 rpm.

You should only use kickdown if you intend to accelerate the vehicle. If this is not the case, shift down gears.

When the torque converter clutch is open, the  indicator lamp in the instrument cluster lights up.

When the torque converter clutch is closed, the  indicator lamp in the instrument cluster goes out.

The oil temperature rises during torque converter operation.



Oil temperature gauge

The oil temperature gauge is next to the instrument cluster switch unit on the right. If the oil temperature is too high, the status display lights up red and the warning buzzer sounds. The display shows . Change to a lower gear to decrease the oil temperature and to continue driving with the torque converter clutch closed.

If the display message does not go out and the warning buzzer does not stop:

- ▶ Brake the vehicle and stop, pay attention to the traffic conditions when doing so (engine speed above 950 rpm).
- ▶ Apply the parking brake.
- ▶ Shift into neutral.
- ▶ Let the engine run for approximately one minute at approximately 1200 rpm.

If the display message does not go out and the warning buzzer does not stop, have the torque converter clutch checked at a qualified specialist workshop.

! The vehicle can be stopped with any gear engaged. To change to transmission neutral position, depress the clutch pedal.. Engage the parking brake when you have parked the vehicle. On downhill slopes, also engage first gear, on uphill slopes, engage reverse gear.

A parked vehicle must be secured from rolling away with at least one wheel chock as well.

It is a legal requirement to carry a wheel chock with you.

ASR (acceleration skid control)

Important safety notes

WARNING

If deactivated, ASR will not attempt to stabilise the vehicle during pulling away and acceleration. There is an increased risk of skidding and of an accident.

Only deactivate ASR in the situations described in the following.

ASR can neither reduce the risk of an accident nor override the laws of physics if the driver does not pay attention when pulling away or accelerating. ASR is only an aid. You should always adapt your driving style to suit prevailing road and weather conditions.

Driving with ASR

ASR prevents the drive wheels from spinning when pulling away or accelerating, regardless of the road conditions.

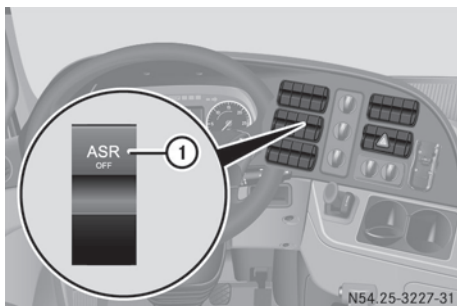
If the drive wheels:

- spin on one or both sides of the vehicle, ASR is activated automatically
- spin on one side, ASR brakes them automatically
- spin on both sides, ASR automatically reduces the engine's power output

If ASR intervenes:

- the  indicator lamp in the instrument cluster flashes.
 - you cannot activate cruise control.
 - and cruise control has already been activated, it will remain active. It is not possible to accelerate or decelerate using cruise control.
- Turn the key to the drive position in the ignition lock.
The  indicator lamp in the instrument cluster lights up and goes out after approximately 2 seconds. ASR is activated.
- If the  indicator lamp does not go out, then ASR has a malfunction. Have the cause of the malfunction rectified at a qualified specialist workshop.

Deactivating and activating ASR



You can temporarily deactivate ASR when pulling away, e.g. on loose surfaces or snow.

- If traction problems occur when driving with snow chains or driving on loose surfaces, e.g. gravel, deactivate ASR.
- **For vehicles with 2 driven rear axles:** if the road surface is slippery, activate the differential lock (► page 212).
- **To deactivate:** press button ①.
If the  indicator lamp lights up, ASR is deactivated.
- **To activate:** press button ① again.
or
- Switch off and restart the engine.
The  indicator lamp in the instrument cluster goes out.

SR (Telligent® stability control)

Driving with SR

SR stabilises the tractor/semitrailer combination in critical driving situations, e.g. sudden swerving or fast cornering.

If you fail to adapt your driving style or if you are inattentive, stability control can neither reduce the risk of an accident nor override the laws of physics. Stability control is only an aid. You are responsible for the speed of the vehicle. You should always adapt your driving style to suit prevailing road and weather conditions.

If the ABS of the trailer/semitrailer is not functioning, the function of the stability control may be limited. Modifications to the vehicle may also lead to limited functioning or malfunctions.

SR stabilises the tractor/semitrailer combination using the following automatic control interventions:

- reducing engine output
- targeted braking of individual wheels on the tractor vehicle
- braking of the semitrailer
- braking of the entire tractor/semitrailer combination

Regardless of the vehicle load or road surface conditions, SR reduces the likelihood that the tractor/semitrailer combination:

- skids
- jack-knifes
- tips

SR operates at speeds of over 10 km/h.

When SR intervenes, the  indicator lamp lights up in the instrument cluster.

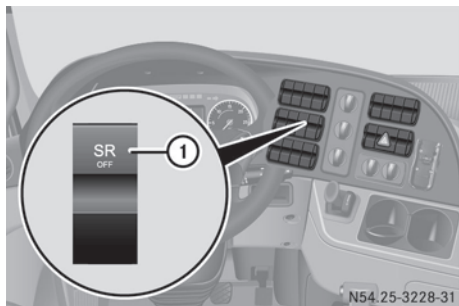
If you engage reverse gear or a differential lock, SR is not operational.

SR operates regardless of the operating condition of the service brake or continuous brake.

If SR intervenes:

- When pulling away only depress the accelerator pedal as far as is necessary.
 - Adapt your driving style to suit the prevailing road and weather conditions.
 - Release the accelerator pedal while the vehicle is in motion.
 - Only deactivate SR under the operating conditions described.
- If traction problems occur when driving with snow chains or driving on loose surfaces, e.g. gravel, deactivate SR.

Deactivating and activating SR



- Turn the key to the drive position in the ignition lock.

The  indicator lamp in the instrument cluster lights up and goes out after approximately 2 seconds.

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

The  indicator lamp in the instrument cluster flashes. SR and ASR are deactivated.

- **To activate:** press the upper section of switch ① again.

The  indicator lamp in the instrument cluster goes out. SR and ASR are activated again.

Differential locks

Important safety notes

WARNING

When driving off-road or driving with an engaged differential lock in the automatic driving program, the electronic management system may perform unwanted gear changes. Due to the interruption in the tractive power, the vehicle may roll backwards on uphill slopes, for instance. There is a risk of an accident.

Always drive carefully and be prepared to brake. In particularly difficult driving conditions, switch to the manual driving program.

WARNING

If you engage the differential lock when driving on a firm, high-traction surface, the steerability of the vehicle is severely impaired. You could lose control of the vehicle, especially when engaging on a bend. There is a risk of an accident.

Disengage the differential lock immediately when driving on a firm, high-traction surface.

⚠ WARNING

If ABS is deactivated, the wheels may lock when braked. As a result, the vehicle can no longer be steered. There is an increased risk of skidding and an accident.

Always leave ABS on when driving on roads and firm surfaces.

! Observe the following points. You could otherwise damage the differential lock.

- Do not engage the differential lock if the drive wheels are spinning.
- Engage the differential lock only when the vehicle is stationary or when traveling at walking pace.
- Do not engage the differential lock while depressing the accelerator or brake pedal.
- Pull away slowly after engaging the differential lock. The differential lock teeth may not be fully engaged.
- Do not drive on high-grip surfaces with the differential lock engaged.
- Do not exceed a maximum speed of 50 km/h with the differential lock engaged.

If you engage a differential lock, ABS, BAS and SR are deactivated.

Engaging/disengaging the differential locks

General notes

The individual differential locks can only be engaged in sequence.

Vehicles with Telligent® gearshift or Telligent® automatic gearshift: when you engage the differential locks, construction-site mode is activated.

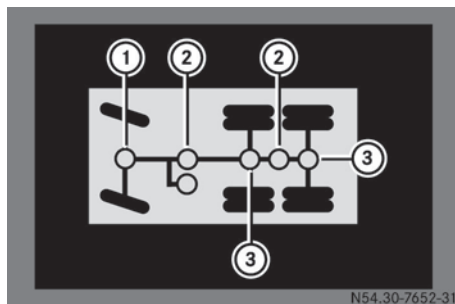
Vehicles with Telligent® automatic gearshift or Mercedes PowerShift: if you switch to manual mode, you can prevent undesired gear changes and interruptions in the tractive power.

► Vehicles with Telligent® automatic gearshift: press the operating mode selector button on the gearshift unit and select manual mode.

Manual mode **M** appears on the right of the display. It also shows the  symbol together with  and **man**.

► Vehicles with Mercedes PowerShift: press the operating mode selector button on the gearshift unit and select manual mode.

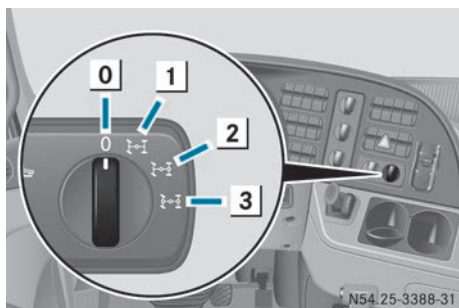
Manual mode **M** appears on the right of the display. Depending on the type of transmission, it also briefly displays the  symbol along with  and **man**.



- ① Display for front axle cross-axle lock
- ② Display for transfer case inter-axle lock/through drive
- ③ Display for rear axle cross-axle lock

The display shows the activation state of the differential locks:

-  Differential lock disengaged
-  Differential lock engaged

Engaging

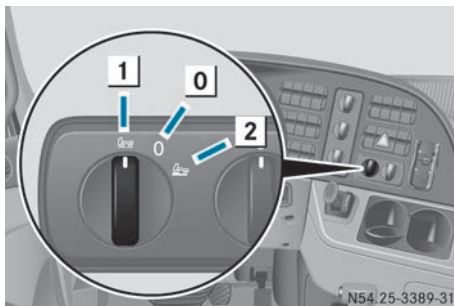
Example: differential lock switch

- ▶ Turn the differential lock switch to position **1**.
The inter-axle lock/through-drive is engaged.
- ▶ Turn the differential lock switch to position **2**.
The rear axle cross-axle lock is also engaged.
- ▶ Turn the differential lock switch to position **3**.
The front axle cross-axle lock is also engaged.

The display shows the activation states of the differential locks once the engagement process is finished, and the status indicator lights up yellow.

Disengaging

- ▶ Turn the differential lock switch to position **0**.
The differential locks are disengaged. The differential lock indicators in the display go out.
- ▶ If the indicator does not go out when the cross-axle lock is disengaged: make slight adjustments to the direction of the vehicle.
- ▶ If the indicator does not go out when the inter-axle lock is disengaged: stop the vehicle and reverse it a short distance.

Transfer case**General notes**

When driving, always set the transfer case to on-road position **1** or off-road position **2**. In neutral position **0**, no power is transmitted from the transfer case to the drive axles.

- i** Neutral position **0** of the transfer case is required only to change gears from switch position **1** to switch position **2**.

Off-road position **2** of the transfer case is for off-road driving and for steep gradients.

After stopping, wait for 3 seconds before shifting the transfer case.

Switching the transfer case

- ▶ Stop the vehicle.
- ▶ Depress the brake pedal or apply the parking brake.
- ▶ Vehicles with Telligent® automatic gearshift or Mercedes PowerShift: press the operating mode selector button on the gearshift unit and select manual mode. Manual mode **M** appears on the right of the display. Depending on the type of transmission, it also briefly displays the symbol along with and **man.**
- ▶ Vehicles with manual transmission or Telligent® gearshift: depress the clutch pedal.

- Vehicles with manual transmission, Telligent® gearshift/automatic gearshift or Mercedes PowerShift: shift gear.
- Turn the transfer case switch to on-road position **1** or off-road position **2**.

Cold-start aid

Environmental note

At outside temperatures below approximately -4°C , the cold-start aid minimises pollutant emissions (after the engine is started). In addition, it reduces the load on the starter motor and batteries and enables the engine to be started more rapidly. For this reason, only start the engine once the **00** indicator lamp in the status area of the on-board computer has gone out.

The cold-start aid makes it easier to start the engine at low outside temperatures (below -15°C); it is already activated at outside temperatures below -4°C .

- **To activate the cold-start aid:** turn the vehicle key to the drive position in the ignition lock.

The **00** indicator lamp in the instrument cluster lights up. The cold-start aid is operating.

- If the **00** indicator lamp goes out in the instrument cluster, start the engine within 30 seconds.

At a coolant temperature above approximately -4°C , the **00** indicator lamp goes out after approximately 2 seconds (display check).

At a coolant temperature below approximately -4°C , the **00** indicator lamp goes out after approximately 20 seconds.

The cold-start aid is deactivated if:

- you do not start the engine within 30 seconds of the **00** indicator lamp going out.
- you start the engine while the **00** indicator lamp is lit.
- the coolant temperature reaches about 0°C while the engine is running.

A malfunction in the cold-start aid is indicated in the display by a display message with a yellow status indicator and the system abbreviation **FLA**. Have the cold-start aid checked and repaired at a qualified specialist workshop.

Idling speed

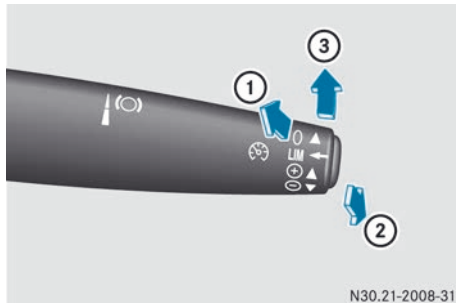
General notes

After the engine has started, the idling speed is controlled automatically according to the coolant temperature.

The idling speed is approximately 550 rpm with the engine at normal operating temperature.

Setting the idling speed

The idling speed can be adjusted using the multifunction lever on the steering column. This makes it possible to drive auxiliary equipment such as pumps at their working speed. The engine runs at the idling speed set as soon as you release the multifunction lever.



- **To increase the idling speed:** push the multifunction lever into position ①. The idling speed increases in increments of approximately 20 rpm up to a maximum of 750 rpm.

or

- Keep the multifunction lever in position ①. The idling speed increases up to approximately 750 rpm.

- **To reduce the idling speed:** push the multifunction lever into position ②. The idling speed is reduced in increments of approximately 20 rpm.

or

- Keep the multifunction lever in position ②. The idling speed is reduced to approximately 550 rpm.

- **To deactivate idling speed adjustment:** push the multifunction lever into position ③.

i The idling speed is reset once the vehicle has pulled away (above approximately 20 km/h).

Driving systems

Introduction to driving systems

The vehicle can be equipped with the following driving systems:

-  Speed limiter (► page 217)
-  Cruise control (► page 218)
-  Telligent® distance control (► page 221)
-  SPA (Telligent® Lane Assistant) (► page 229)
- **ABA** ABA (Active Brake Assist) (► page 225)

The driving systems described here are merely tools to help you drive at a preselected speed.

Switching between driving system functions

Switching between cruise control and the speed limiter



- Press button ① briefly. Cruise control is selected but not active. The display shows the  symbol.
- Briefly press button ① again. The speed limiter is selected but not active. The display shows the  symbol.

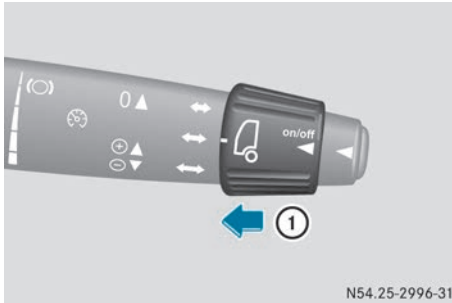
Switching between Telligent® distance control and speed limiter functions



- Press button ① briefly. The speed limiter is selected but not active. The display shows the  symbol.
- Briefly press button ① again. Telligent® distance control is selected. The display shows the  symbol.

Switching between Telligent® distance control and cruise control functions

Switching between functions is only possible while the vehicle is in motion and a driving system is activated.



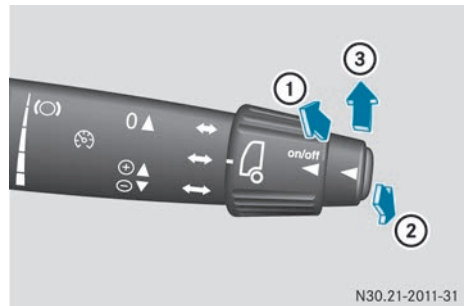
- ▶ Briefly press rotary switch ①.
Cruise control is activated. The display shows the symbol.
- ▶ Briefly press rotary switch ① again.
Telligent® distance control is activated. The display shows the symbol.

Speed limiter

Important safety notes

If you fail to adapt your driving style or if you are inattentive, the speed limiter can neither reduce the risk of accident nor override the laws of physics. The speed limiter cannot take road and weather conditions into account, nor the prevailing traffic situation. The speed limiter is only an aid. You are responsible for the distance to the vehicle in front, for vehicle speed, braking in good time and remaining in lane. You should always adapt your driving style to suit prevailing road and weather conditions.

Multifunction lever overview



- ① Switches on and sets the current limit speed/increases the set limit speed
- ② Switches on and calls up the stored limit speed/decreases the set limit speed
- ③ Deactivates the speed limiter

Activating

Functions and activation conditions

The speed limiter restricts the vehicle speed to the set limit speed. It is possible to accelerate the vehicle up to the set limit speed using the accelerator pedal. In order keep the set limit speed on downhill gradients, the speed limiter automatically brakes the vehicle with the continuous brake.

Activating when driving

- ▶ Select the speed limiter (▷ page 216).
The display shows the symbol.
 - ▶ Drive at the speed you wish to set above 15 km/h.
 - ▶ Briefly push the multifunction lever in the direction of arrow ①.
The speed limiter is activated and the current vehicle speed is stored as the limit speed.
- or
- ▶ Briefly push the multifunction lever in the direction of arrow ②.
The speed limiter is activated and assumes the stored limit speed.

Increasing/decreasing the limit speed

- ▶ Activate the speed limiter.
- ▶ **To adjust in 1 km/h increments:** press the multifunction lever in the direction of arrow ① or ② repeatedly until the desired speed is shown in the display.

or

- ▶ **To adjust in 5 km/h increments:** press and hold the multifunction lever in the direction of arrow ① or ② until the desired speed is shown in the display.

Driving

It is possible to exceed the set limit speed, e.g. when overtaking:

- ▶ Briefly depress the accelerator pedal beyond the point of resistance (kickdown).
- ▶ When overtaking is completed, briefly release the accelerator pedal and depress it again.
The speed limiter again restricts the vehicle speed to the set limit speed.

Deactivating

The limit speed remains stored if you deactivate the speed limiter.

- ▶ Briefly push the multifunction lever in the direction of arrow ③.

or

- ▶ Switch to another driving system.

Take the traffic conditions into account before calling up the stored speed. If you do not know what the stored speed is, store the desired speed again.

- ❗ Do not exceed the maximum speed of the individual gears. Keep an eye on the rev counter.

If you fail to adapt your driving style or if you are inattentive, cruise control can neither reduce the risk of accident nor override the laws of physics. Cruise control cannot take road and weather conditions into account, nor the prevailing traffic situation. Cruise control is only an aid. You are responsible for the distance to the vehicle in front, for vehicle speed, braking in good time and remaining in lane. You should always adapt your driving style to suit prevailing road and weather conditions.

Do not use cruise control:

- in traffic conditions that do not allow you to drive at a constant speed, e.g. heavy traffic, winding roads or off-road.
- on icy or slippery road surfaces. The drive wheels may lose their grip when braking or accelerating and the vehicle may skid.
- when there is low visibility, e.g. due to fog, heavy rain or snow.

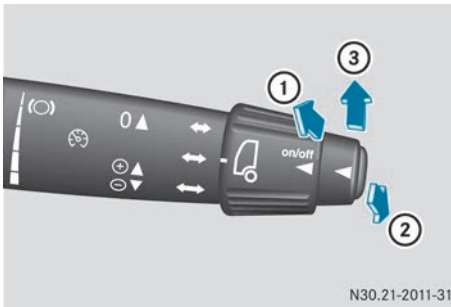
Cruise control

Important safety notes

WARNING

If you call up a stored speed and this is different from the current speed, the vehicle accelerates or brakes. If you do not know what the stored speed is, the vehicle may accelerate or brake unexpectedly. There is a risk of an accident.

Multifunction lever overview



- ① Activates and adjusts current speed/
increases set speed
- ② Activates and calls up stored speed/
reduces set speed
- ③ Deactivates cruise control

Activating

Functions and activation conditions

Cruise control maintains the set speed of the vehicle for you. In order to keep the speed within the specified tolerance range of between 4 and 15 km/h, cruise control brakes on downhill gradients using the continuous brake. When the continuous brake slows the vehicle, the  indicator lamp lights up in the instrument cluster.

Cruise control cannot be activated if:

- you are driving slower than 15 km/h
- you are driving slower than 50 km/h in an all-wheel drive vehicle
- ASR malfunctions and you drive slower than 50 km/h

If cruise control cannot be activated, the on-board computer will display - - .- km/h in grey.

Cruise control is deactivated automatically if:

- you depress the brake pedal
- you are driving slower than 10 km/h
- on all-wheel drive vehicles, you are driving slower than 45 km/h

- on vehicles with a clutch pedal, you depress the clutch pedal for longer than 5 seconds, e.g. during gear selection
- the transmission is shifted into neutral for more than approximately 5 seconds
- you switch to the speed limiter.

If cruise control automatically deactivates, a warning tone sounds.

Activating when driving

- Select cruise control.
- Drive at the desired speed.
- Briefly push the multifunction lever in the direction of arrow ①.
Cruise control is activated and the current speed is stored.

or

- Briefly push the multifunction lever in the direction of arrow ②.
Cruise control is activated and assumes the stored speed.

The display shows the  symbol.

- Release the accelerator pedal.
In order to maintain the set speed, cruise control automatically brakes or accelerates the vehicle.

Setting the speed and speed tolerances

Increasing/reducing the speed

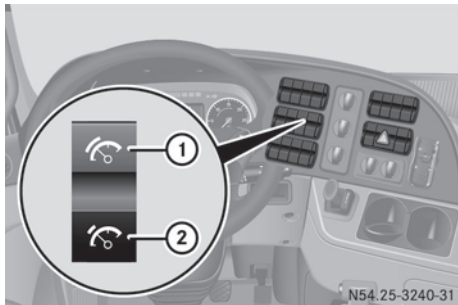
- Activate cruise control.
- Briefly push the multifunction lever in the direction of arrow ① or ② until the required speed is displayed in the on-board computer.
You can increase or decrease the speed in 0.5 km/h increments.

or

- Briefly push and hold the multifunction lever in the direction of arrow ① or ② until the required speed is displayed in the on-board computer.
The speed is increased or reduced continuously.

Setting the speed tolerance in overrun mode

In overrun mode, set the speed tolerance to between 2 km/h and 15 km/h. On mountainous roads, this allows you to make better use of the momentum gained on a downhill gradient and thus increase fuel economy.



- Press the upper section of the ① button. The speed tolerance is increased in 1 km/h increments. **ECO Drive** briefly appears in the display. The display shows the set tolerance alongside the stored speed, e.g. **50 km/h⁺⁶**.

or

- Press the lower section of button ②. The speed tolerance is decreased in 1 km/h increments. **ECO Drive** briefly appears in the display. The display shows the set tolerance alongside the stored speed, e.g. **50 km/h⁺⁶**.

Driving

Driving tips

On downhill gradients, cruise control maintains the stored vehicle speed on vehicles with:

- manual transmission and Telligent® gearshift to within 4 km/h
- Telligent® automatic gearshift to within 6 km/h when EcoRoll mode is activated and 4 km/h when deactivated
- Mercedes PowerShift to within 6 km/h when EcoRoll mode is activated or to the

set tolerance between 2 km/h and 15 km/h

You can decelerate using the continuous brake. Cruise control remains activated.

If you disengage the continuous brake, but do not deactivate it, the vehicle makes use of the downhill gradient to accelerate up to the stored speed.

If the continuous brake is deactivated, the vehicle will accelerate to the last stored speed.

If cruise control is decelerating the vehicle using the continuous brake and you simultaneously depress the brake pedal, cruise control remains activated.

If the braking power from the continuous brake is insufficient:

- Shift down a gear and reduce your speed. If you shift down on a downhill gradient without adjusting the speed, cruise control sets an engine speed of approximately 2,200 rpm. The set speed remains set and is automatically re-established as soon as this is possible in a higher gear.

Overtaking

It is possible to exceed the set speed, e.g. when overtaking:

- Depress the accelerator pedal.
- When the overtaking manoeuvre is finished, release the accelerator pedal again. Cruise control adjusts the vehicle's speed to the set speed.

Deactivating

The speed remains stored if you deactivate cruise control.

- Briefly push the multifunction lever in the direction of arrow ③.

or

- If cruise control accelerates the vehicle, depress the brake pedal.

or

- Switch to another driving system.

ART (Telligent® distance control)**Important safety notes** **WARNING**

Telligent® distance control does not react to:

- people or animals
- stationary obstacles on the road, e.g. stopping or parking vehicles
- oncoming vehicles

As a result, Telligent® distance control may not warn you or intervene in these situations. There is a risk of an accident.

Always pay careful attention to the traffic situation and be ready to brake.

 WARNING

Telligent® distance control cannot always detect other road users and complex traffic conditions.

In such cases, Telligent® distance control may:

- give an unnecessary warning and then brake the vehicle
- neither give a warning nor intervene

There is a risk of an accident.

Continue to drive carefully and be prepared to brake, particularly if Telligent® distance control issues a warning.

 WARNING

Telligent® distance control brakes your vehicle with up to 20% of the maximum possible deceleration. If this deceleration is insufficient, Telligent® distance control issues an audible and visual warning. There is a risk of an accident.

In these cases, apply the brakes yourself and try to take evasive action.

If you fail to adapt your driving style or if you are inattentive, Telligent® distance control can neither reduce the risk of an accident nor override the laws of physics. Telligent® distance control cannot take road and weather

conditions into account, nor the prevailing traffic situation. Telligent® distance control is only an aid. You are responsible for the distance to the vehicle in front, for vehicle speed, braking in good time and remaining in lane. You should always adapt your driving style to suit prevailing road and weather conditions.

In particular, be aware of the following driving situations:

- cornering, entering and exiting bends
- your own vehicle driving on a different line or vehicles in front of you driving on a different line
- narrow vehicles driving in front, e.g. motorcycles
- other vehicles changing lane
- vehicles turning off
- overtaking
- winding stretches of road
- obstacles and stationary vehicles

In particular, the detection of obstacles may be restricted if:

- the sensor is dirty or obscured
- it is snowing or raining heavily
- there is interference from other radar sources
- there are strong radar reflections, e.g. in multi-storey car parks

Do not use Telligent® distance control:

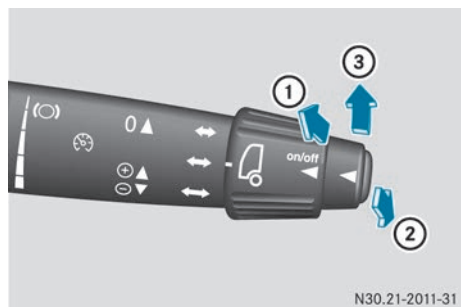
- in traffic conditions that do not allow you to drive at a constant speed, e.g. heavy traffic, winding roads or off-road.
- on icy or slippery road surfaces. The drive wheels may lose their grip when braking or accelerating and the vehicle may skid.
- when there is low visibility, e.g. due to fog, heavy rain or snow.

When Telligent® distance control no longer detects a vehicle driving in front, Telligent® distance control may accelerate to the stored speed. On a filter lane or a slip road, this speed may be too high.

Clean the Telligent® distance control distance sensor regularly (▷ page 276).

Observe the safety warnings detailing situations in which vehicles in front may not be detected correctly (▷ page 227).

Multifunction lever overview



Multifunction lever

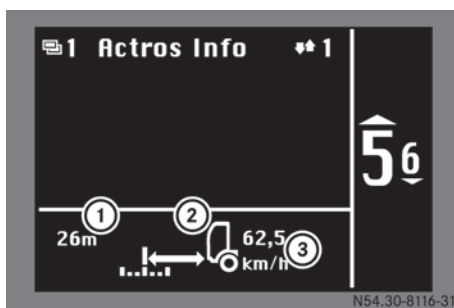
- ① To activate and adjust current speed/
increases set speed
- ② To activate and call up stored speed/
reduces set speed
- ③ To deactivate Telligent® distance control

Telligent® distance control cannot be activated if:

- another driving safety system intervenes, e.g. ABS.
- there is a malfunction in the brake system.
- there is a malfunction in the electronics.

If Telligent® distance control cannot be activated, --, - km/h appears in the display for approximately 3 seconds.

Messages in the display



When Telligent® distance control is activated, the display shows:

- current distance ① from the vehicle in front
- symbol ②
- current speed ③

Activating

Functions and activation conditions

Telligent® distance control regulates the speed and automatically helps you maintain the distance to the vehicle detected in front. If there is no vehicle in front, Telligent® distance control operates in the same way as cruise control in the speed range between 15 and 90 km/h.

If Telligent® distance control detects a vehicle in front driving at a slower speed, it brakes the vehicle and maintains the specified minimum distance selected.

Telligent® distance control brakes the vehicle with the continuous brake if:

- the vehicle exceeds the set speed, including the set speed tolerance, e.g. on a downhill gradient
- a slower vehicle in front is detected

When the continuous brake slows the vehicle, the  indicator lamp lights up in the instrument cluster.

Telligent® distance control cannot be activated or deactivates automatically if:

- you drive slower than 15 km/h
- you depress the brake pedal
- on vehicles with a clutch pedal, you depress the clutch pedal for longer than 5 seconds, e.g. during gear selection
- you shift to neutral or reverse gear
- you deactivate ABS

Telligent® distance control remains active when:

- you decelerate using the continuous brake
- it decelerates the vehicle using the continuous brake/service brake and you simultaneously depress the brake pedal

If your vehicle accelerates and you depress the brake pedal, Telligent® distance control is deactivated automatically.

Activating when driving

- ▶ Vehicles with air suspension: raise or lower the chassis frame to the driving level (▷ page 231).
- ▶ Select Telligent® distance control (▷ page 216).
The display shows the  symbol.
- ▶ Drive at a speed above 15 km/h.
- ▶ Briefly push the multifunction lever in the direction of arrow ①.
Telligent® distance control is activated and set to the current speed.

or

- ▶ Briefly push the multifunction lever in the direction of arrow ②.
Telligent® distance control is activated and the last stored speed is set.
- ▶ Release the accelerator pedal.
The vehicle adapts its speed to that of the vehicle in front, but only up to the desired and set speed.

Setting the speed and speed tolerance/ specified minimum distance

Increasing/reducing the speed

- ▶ **To adjust in 0.5 km/h increments:** press the multifunction lever in the direction of arrow ① or ② repeatedly until the desired speed is shown in the on-board computer.

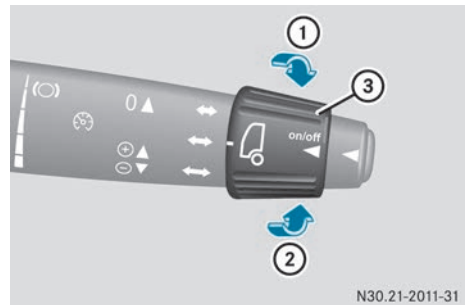
or

- ▶ **To adjust in 5 km/h increments:** press and hold the multifunction lever in the direction of arrow ① or ② until the desired speed is shown in the on-board computer.

Setting the specified distance to the vehicle in front

Make sure that you maintain the minimum distance to the vehicle in front required by law. Adjust the specified minimum distance to the vehicle in front if necessary.

If you restart the engine, the mean specified distance is available for selection.



- ▶ Activate Telligent® distance control.
- ▶ **To decrease the specified distance:** turn rotary switch ③ in the direction of arrow ① and hold it until the desired specified distance is reached.
While the specified distance is being adjusted, the display shows the specified distance and the  symbol.
- ▶ Release rotary switch ③.
The set specified distance is stored.
- ▶ **To increase the specified distance:** turn rotary switch ③ in the direction of

arrow ② and hold it until the desired specified distance is reached.

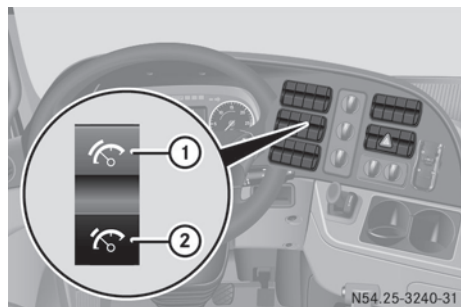
While the specified distance is being adjusted, the display shows the specified distance and the  symbol.

- Release rotary switch ③.

The set specified distance is stored.

Setting the speed tolerance in overrun mode

In overrun mode, set the speed tolerance to between 2 km/h and 15 km/h. On mountainous roads, this allows you to make better use of the momentum gained on a downhill gradient and thus increase fuel economy.



- Press the upper section of the ① button. The speed tolerance is increased in 1 km/h increments. **ECO Drive** briefly appears in the display. The display shows the set tolerance alongside the stored speed, e.g. **50 km/h⁺⁶**.

or

- Press the lower section of button ②. The speed tolerance is decreased in 1 km/h increments. **ECO Drive** briefly appears in the display. The display shows the set tolerance alongside the stored speed, e.g. **50 km/h⁺⁶**.

Driving

Collision warnings

When a collision warning occurs, the  symbol is shown in the display with a red status indicator. A double warning tone also

sounds. The warning is displayed for as long as the hazardous situation persists.

If a collision warning occurs while the vehicle is in motion:

- Pay particular attention to the traffic situation.
- Slow down the vehicle using the service brake.

If you depress the accelerator pedal or indicate a turn, the collision warning tone is suppressed.

Overtaking

It is possible to exceed the stored speed, e.g. when overtaking.

- Maintain a sufficient distance to the vehicle in front.
- Depress the accelerator pedal.
- When the overtaking manoeuvre is finished, release the accelerator pedal again. Telligent® distance control adjusts to the stored speed.

Deactivating

The speed remains stored if you deactivate Telligent® distance control.

- Briefly push the multifunction lever in the direction of arrow ③.

or

- If Telligent® distance control accelerates the vehicle, depress the brake pedal.

or

- Switch to another driving system.

Observe the conditions that lead to automatic deactivation of Telligent® distance control in the "Functions and switch on conditions" section.

Active Brake Assist 2

Important safety notes

WARNING

ABA will initially brake your vehicle with a partial application of the brakes if a danger of collision is detected. A collision can result unless you also apply the brakes yourself. Automatic emergency braking cannot prevent a collision. There is a risk of an accident. Always apply the brakes yourself and try to take evasive action.

WARNING

ABA does not react to:

- people or animals
- stationary obstacles on the road, e.g. stopping or parking vehicles
- oncoming vehicles

As a result, ABA may not warn you or intervene in these situations. There is a risk of an accident.

Always pay careful attention to the traffic situation and be ready to brake.

WARNING

ABA cannot always recognise other road users and complex traffic conditions.

In such cases, ABA may:

- give an unnecessary warning and then brake the vehicle
- neither give a warning nor intervene

There is a risk of an accident.

Continue to drive carefully and be prepared to brake, particularly if ABA warns you.

If you fail to adapt your driving style or if you are inattentive, Active Brake Assist can neither reduce the risk of accident nor override the laws of physics. Active Brake Assist cannot take road and weather conditions into account, nor the prevailing traffic situation. Active Brake Assist is only an aid. You are responsible for the distance to the vehicle in

front, for vehicle speed, braking in good time and remaining in lane. You should always adapt your driving style to suit prevailing road and weather conditions.

Active Brake Assist cannot take weather conditions into account. Deactivate Active Brake Assist or do not activate in slippery, snowy or icy conditions. The wheels may lose their grip when braking. This can cause the vehicle to skid.

Brake the vehicle using the service brake, if:

- a red event window with the  symbol appears in the on-board computer
- an intermittent warning tone sounds
- an intermittent warning tone sounds and automatic partial braking was initiated

Active Brake Assist can help to minimise the risk of a collision with the vehicle in front or a stationary vehicle and can reduce the effects of an accident.

Active Brake Assist can also recognise stationary objects and react to them, e.g. by issuing a warning and braking.

If Active Brake Assist detects the risk of a front-end collision, it issues an audible and visual warning. If the risk persists, Active Brake Assist automatically initiates partial braking of the vehicle. If you do not react to the warnings, Active Brake Assist automatically initiates a full brake application if there is a vehicle in front.

Telligent® distance control may warn you if there is a risk of collision before Active Brake Assist.

Detection of other vehicles may be limited in the following situations:

- cornering, entering and exiting bends
- your own vehicle or vehicles in front are driving on a different line (e.g. filter lanes)
- other vehicles changing lane
- changing into a lane of faster moving vehicles
- complex driving situations or when driving on a diverted lane (e.g. motorway road-works)

- vehicles turning off
- overtaking
- winding stretches of road
- narrow vehicles driving in front, e.g. motor-cycles
- dirty or obscured sensors
- it is snowing or raining heavily
- there is interference from other radar sources
- there are strong radar reflections, for example, in multi-storey car parks

If no warning is issued in a critical situation:

- Active Brake Assist has not recognised the danger of the situation
- Active Brake Assist is deactivated
- Active Brake Assist has failed

Brake the vehicle using the service brake.

If a visual and/or acoustic warning is issued or a partial braking manoeuvre is performed in a non-critical situation:

- suppress Active Brake Assist or
- press the  button to deactivate Active Brake Assist

You can suppress Active Brake Assist by:

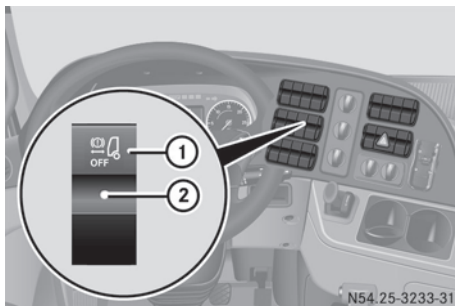
- switching on the turn signals
- depressing the brake pedal
- depressing the accelerator pedal

If Active Brake Assist is already performing an emergency braking manoeuvre, you can cancel the emergency braking.

Press the upper section of the  button or depress the accelerator pedal (kickdown).

- ❗ Clean the Active Brake Assist distance sensor regularly (▷ page 276).

Activating and deactivating Active Brake Assist



When you start the engine, Active Brake Assist is automatically activated.

Active Brake Assist is deactivated automatically when:

- the chassis is not within the driving level (vehicles with Telligent® level control) (▷ page 231)
- there is a malfunction
- ABS is deactivated or there is a malfunction in the vehicle's brake system.

- **To deactivate:** press the upper section of button ①.

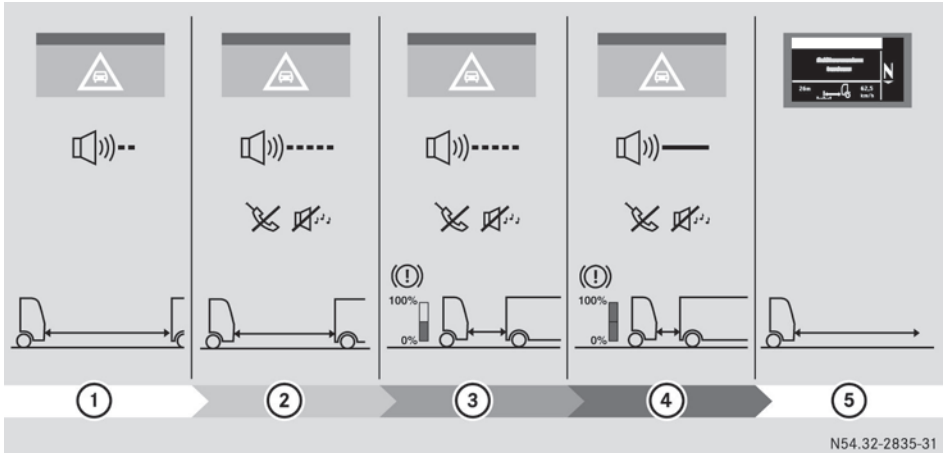
Indicator lamp ② in the switch comes on.

The  symbol appears in the display briefly and the **Active Brake Assist off** message appears with a white status indicator.

- **To activate:** press the upper section of button ① for approximately 1 second. Indicator lamp ② in the switch goes out. The symbol  appears in the display briefly and the message **Active Brake Assist on** appears with a white status indicator.

Collision warning and emergency braking

Collision warning



- ① Telligent® distance control preliminary warning
- ② Active Brake Assist warning
- ③ Active Brake Assist partial braking
- ④ Emergency stop (full brake application)
- ⑤ Emergency stop completed

If the display shows a collision warning when the vehicle is in motion:

- ▶ Pay particular attention to the traffic situation.
- ▶ Depress the brake pedal.

If there is a risk of collision and Active Brake Assist issues a warning, the audio device and/or hands-free system installed at the factory are automatically muted.

Preliminary warning (Telligent® distance control): the  symbol appears in the display with a red status indicator. A double warning tone sounds.

Warning (Active Brake Assist): the  symbol appears in the display with a red status indicator. An intermittent warning tone sounds.

Partial brake application (ABA): the  symbol appears in the display with a red status indicator. An intermittent warning tone sounds. In addition, Active Brake Assist slows the vehicle with automatic partial braking. Active Brake Assist brakes the vehicle with around 50% of the vehicle's maximum braking power.

Emergency stop (full brake application)

If you do not react to the collision warnings, Active Brake Assist automatically initiates an emergency braking manoeuvre (full brake application) if there are vehicles in front. Active Brake Assist brakes the vehicle using the maximum available braking power.

During the emergency stop, the  symbol appears in the display with a red status indicator and a continuous warning tone sounds. After the emergency stop, the **Emerg braking ended** message appears in the display with a white status indicator.

After emergency braking, the vehicle is held by the service brake for another 5 seconds to prevent it from rolling away.

If an emergency braking manoeuvre has been performed:

- ▶ Remove the vehicle from the area of danger as soon as possible while paying attention to the traffic situation.
- ▶ Stop the engine and prevent the vehicle from rolling away by applying the parking brake.
- ▶ Make sure that the vehicle is in proper operating order and that the load is secured properly.

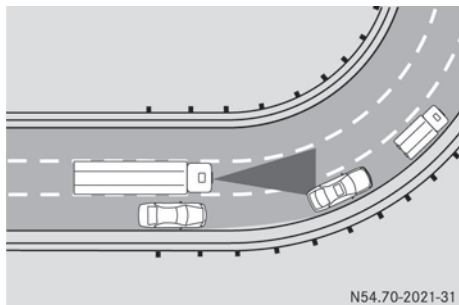
Interrupting an emergency stop

You can interrupt emergency braking as follows:

- ▶ Press the  button.
- or
- ▶ Depress the accelerator pedal beyond the point of resistance (kickdown).

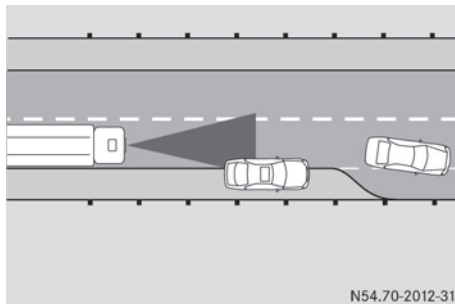
Particular driving situations

Cornering, entering and exiting bends



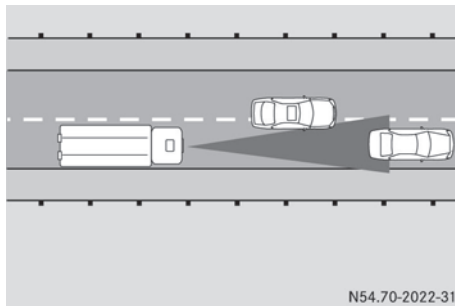
The ability of Active Brake Assist and Telligent® distance control to detect vehicles on bends is limited. Active Brake Assist and Telligent® distance control may unexpectedly issue warnings or brake your vehicle. Telligent® distance control may also accelerate unexpectedly.

Driving on a different line and stationary vehicles



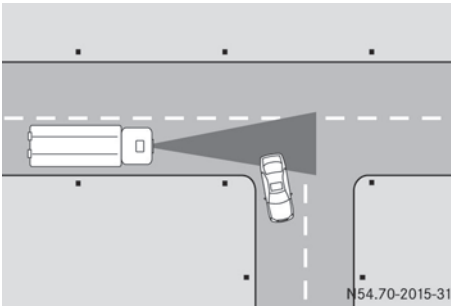
The ability of Active Brake Assist and Telligent® distance control to detect stationary vehicles or vehicles driving on a different line is limited. Active Brake Assist may unexpectedly issue warnings or brake your vehicle. Telligent® distance control may also accelerate unexpectedly.

Other vehicles changing lane



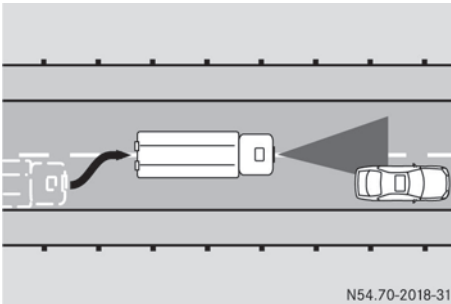
The ability of Active Brake Assist and Telligent® distance control to detect vehicles that are changing lane is limited. The distance to the vehicle in front entering your lane may then be too short. Active Brake Assist and Telligent® distance control may unexpectedly issue warnings or brake your vehicle. Telligent® distance control may also accelerate unexpectedly.

Vehicles turning off



The ability of Active Brake Assist and Telligent® distance control to detect turning vehicles is limited. Active Brake Assist and Telligent® distance control may unexpectedly issue warnings or brake your vehicle.

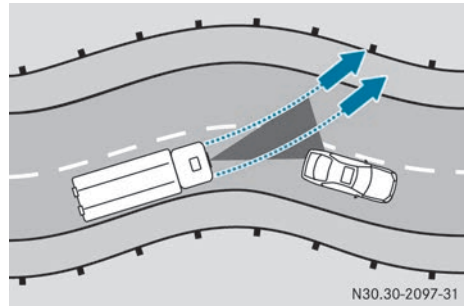
Overtaking



When overtaking, Active Brake Assist and Telligent® distance control may unexpectedly issue warnings or brake your vehicle if you:

- drive too close to the vehicle in front and
- are in the same lane as the vehicle in front

Winding stretches of road



On winding stretches of road, Active Brake Assist and Telligent® distance control cannot detect which lane the vehicle in front is driving in. Active Brake Assist and Telligent® distance control may unexpectedly issue warnings or brake your vehicle. Telligent® distance control may also accelerate unexpectedly.

SPA (Telligent® Lane Assistant)

General safety notes

⚠ WARNING

Telligent® Lane Assistant may not always detect lane markings.

In such cases, Telligent® Lane Assistant may:

- give an unnecessary warning
- not give a warning

There is a risk of an accident.

Always pay particular attention to the traffic situation and stay in lane, especially if Telligent® Lane Assistant issues a warning.

Using a camera behind the windscreen, SPA continuously monitors the position of the vehicle relative to the road lane markings. Make sure that the windscreen is always kept clean in the area of the camera. You can switch on the windscreen wiper to clean the windscreen, for example.

If you fail to adapt your driving style or if you are inattentive, SPA can neither reduce the risk of accident nor override the laws of phys-

ics. SPA cannot take road and weather conditions into account, nor the prevailing traffic situation. SPA is only an aid. You are responsible for keeping a safe distance to the vehicle in front, for the vehicle speed, braking in good time and remaining in lane. You should always adapt your driving style to suit prevailing road and weather conditions.

SPA does not issue warnings:

- at speeds below 60 km/h
- when a turn signal is switched on
- if you change lanes quickly
- when lanes are very narrow, e.g. on narrow secondary roads
- during acceleration or braking
- in a critical driving situation, e.g. when ABS intervenes or a distance warning signal is issued, for example by Telligent® distance control.

SPA's function is restricted, e.g.

- on tight bends
- if the road is very wet or covered by snow
- if there is sand or debris on the road surface
- if shadows are being cast on the road surface
- if there are several road lane markings or they are difficult to distinguish, e.g. on construction sites

SPA cannot take weather conditions into account, e.g.

- snow, slush,
- heavy rain, a wet road surface
- very dirty windscreen

If you drive over roadside markings while SPA is activated, a direction-related "rumble-strip noise" sounds from the left or right loud-speaker.

SPA does not keep the vehicle in lane.

If a warning is not possible or is restricted when SPA is activated, the  indicator lamp in the instrument cluster lights up.

The  indicator lamp in the instrument cluster lights up if, for example:

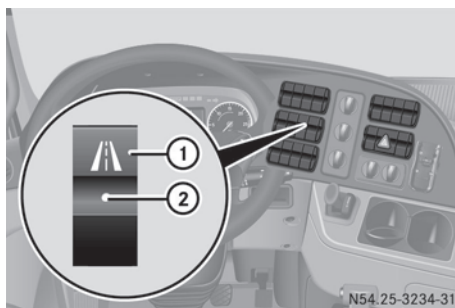
- no roadside markings are detected.
- the vehicle speed drops below 60 km/h.

SPA will warn you when changing lane if a turn signal has been switched on for more than 1 minute.

If SPA issues a warning, the audio device (radio) is muted.

Once SPA has issued a warning, further warnings will only be issued when the vehicle is once again fully within the road lane markings.

Deactivating and activating SPA



- Turn the key to the drive position in the ignition lock. Indicator lamp ② lights up and SPA is activated.

- **To deactivate:** press the upper section of switch ①. The ② indicator lamp goes out.

i The next time the engine is started, SPA is automatically activated again.

- **To activate:** press the upper section of switch ① again. The ② indicator lamp lights up.

Level control

NR (Telligent® level control)

Important safety notes

WARNING

When driving with a lowered or raised chassis frame, the driving and braking characteristics may be seriously affected. A raised chassis frame may also exceed the permissible vehicle height. There is a risk of an accident. Set the driving level before pulling away.

Observe the legal requirements on permissible vehicle heights for the country in which you are driving.

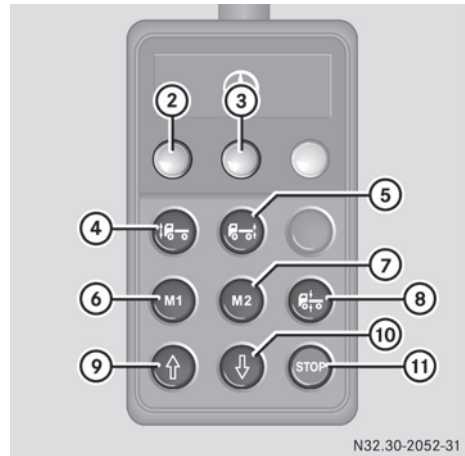
Raise or lower the chassis frame to pick up or set down demountable bodies or semitrailers. If you wish to continue the journey after the chassis height has been modified, raise or lower the chassis to the driving level.

If the  indicator lamp in the instrument cluster lights up, the chassis is not at driving level or Telligent® level control is malfunctioning.

Control unit



- Remove control unit (1) from the bracket on the driver's seat.



Control unit for Telligent® level control

- ② Indicator lamp for the front of chassis: raising/lowering
- ③ Indicator lamp for the rear of chassis: raising/lowering
- ④ Front chassis frame preselection on/off
- ⑤ Rear chassis frame preselection on/off
- ⑥ M1 = memory, chassis level 1
- ⑦ M2 = memory, chassis level 2
- ⑧ Driving level
- ⑨ Raises chassis frame
- ⑩ Lowers chassis frame
- ⑪ STOP (when raising/lowering chassis frame)



- ⑧ Driving level switch
- ⑪ STOP switch (to raise/lower the chassis frame)

- Apply the parking brake.
- Turn the key to the drive position in the ignition lock.
NR automatically adjusts the chassis frame to the previously stored height.
The chassis frame is raised or lowered at the front or rear axle.
Vehicles with an air-sprung rear axle: the chassis frame is raised or lowered at the rear axle.
- If the charge pressure in the compressed-air system is too low, leave the engine running.
The compressed-air system is charged.

Raising/lowering the chassis frame

WARNING

People's limbs may become trapped if they are located underneath the vehicle or between the vehicle body and the tyres when the vehicle is lowering. There is a danger of injury.

When lowering the vehicle, make sure no one is underneath the vehicle or in the immediate vicinity of the wheel arches.

- Press button (4) or (5).
Corresponding indicator lamp (2) or (3) lights up.
- To raise the front and rear of the chassis frame on vehicles with full pneumatic suspension, press buttons (4) and (5) at the same time.
Indicator lamps (2) and (3) light up.
- Press button (9) to raise the chassis frame or button (10) to lower it.
The  or  symbol and the **Level outside of drive position** message are shown in the display. At the same time, the status indicator lights up yellow.
- Once the desired height is reached, press button or switch (11).

Storing/calling up the chassis frame height

Buttons (6) and (7) can each be used to store a chassis frame height.

- **To store:** raise/lower the chassis to the desired height.
- Once the desired height is reached, press and hold button or switch (11) and also press button (6) or (7).
The current chassis frame height is stored under corresponding button (6) or (7).
- **To call up:** press button (4) or (5).
Corresponding indicator lamp (2) or (3) lights up.
- Press button (6) or (7).
The chassis frame is automatically raised or lowered to the stored height.
The  or  symbol and the **Level outside of drive position** message are shown in the display. At the same time, the status indicator lights up yellow.

Activating the driving level

- Press button or switch (8).
Indicator lamp (2) or (3) goes out. The chassis frame is raised or lowered automatically to the driving level. Once the chassis frame is at driving level, the  or  symbol in the display and the status indicator go out.

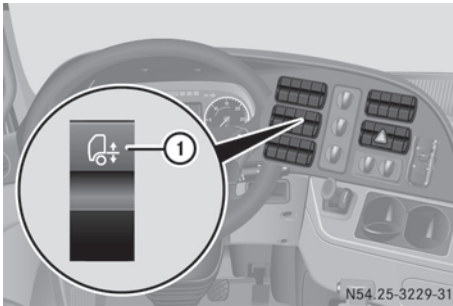
Loading and unloading the vehicle

- ! Before removing the demountable body, lower the chassis frame completely. Otherwise, the chassis frame could spring up suddenly when the special-purpose body is removed. This could damage the shock absorbers.

Store a constant chassis frame height for loading and unloading the vehicle.

- Vehicles with a leading axle/trailing axle: lower the leading axle (► page 235) or trailing axle (► page 235).
- If required, raise/lower the chassis to the desired height.
- Run the engine until the pressure regulator cuts out.
- Press and hold button or switch ⑪.
- Switch off the engine.
- Turn the key back in the ignition lock as far as it will go.
- Release button or switch ⑪.
If there is sufficient supply pressure in the compressed-air system, the height of the chassis frame is kept constant for approximately 4 to 5 hours.

Raised vehicle level (vehicles for large-capacity transport)



To improve ride comfort, raise the chassis frame while the vehicle is in motion.

- **To raise the chassis frame to the raised vehicle level:** press the upper section of switch ①.

The  symbol is shown in the display and the status indicator lights up yellow.

- **To lower the chassis frame to the normal vehicle level:** press the lower section of switch ①.

Once the driving level has been reached, the  symbol in the display and the status indicator go out.

Axle load measuring device

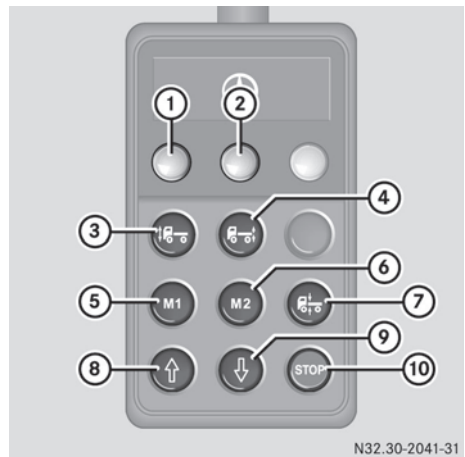
General notes

When the chassis is at driving level, the axle load measuring system determines the axle load from the pressure in the air spring bellows.

- ① The axle load measuring device is not calibrated nor is it a system capable of calibration. The measured data only provides an approximate guide which is not suitable for official use.

In order to avoid inaccuracies when measuring, make sure that the vehicle is uniformly laden.

Setting the axle load indicator



Control unit for Telligent® level control

- ① Operating indicator lamp when raising/lowering front chassis frame
- ② Operating indicator lamp when raising/lowering rear chassis frame
- ③ Front chassis frame preselection on/off
- ④ Rear chassis frame preselection on/off
- ⑤ M1 = memory, chassis level 1
- ⑥ M2 = memory, chassis level 2
- ⑦ Driving level
- ⑧ Raises chassis frame

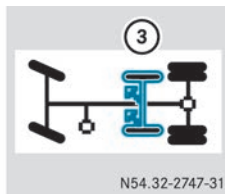
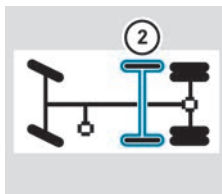
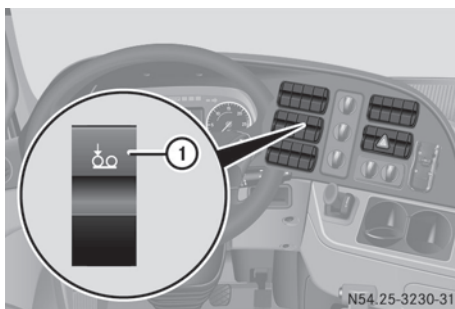
- ⑨ Lowers chassis frame
- ⑩ STOP (when raising/lowering chassis frame)
 - Park the vehicle on a level surface.
 - Engage the parking brake.
 - Raise or lower the chassis to the driving level (▷ page 231).
 - Switch off the starting-off aid (▷ page 234).
 - Drive the vehicle onto the single axle weigh-bridge.
 - Call up the axle load indicator (▷ page 117).
 - To switch off the control unit for Telligent® level control: press button ③ or ④. Indicator lamps ① and ② must not light up.
 - Press and hold down one of the following buttons:
 - button ⑤ for the first axle
 - button ⑥ for the second axle
 - button ⑦ for the third axle
 - To increase the display value: press and hold button ⑧ until the displayed value equals the value indicated by the weigh-bridge.

or

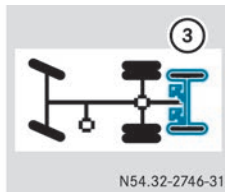
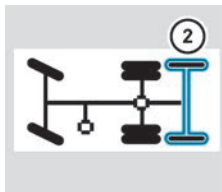
- To decrease the display value: press and hold button ⑨ until the displayed value equals the value indicated by the weigh-bridge.

- The starting-off aid with speed limiter is switched off automatically when the speed exceeds approximately 30 km/h. The starting-off aid can only be activated again when the speed falls below approximately 30 km/h.
- The starting-off aid with switch-on interlock switches off automatically after 90 seconds. After approximately 50 seconds, the starting-off aid with switch-on interlock can be reactivated.
- The starting-off aid without switch-on interlock is deactivated automatically after 120 seconds and can be reactivated immediately thereafter.

Only activate the starting-off aid on snow and ice-covered roads.



Starting-off aid leading axle display



Starting-off aid trailing axle display

Additional axles

Starting-off aid

Activating the starting-off aid

Activate the starting-off aid if the drive wheels spin while pulling away with the vehicle laden. The vehicle's starting-off aid has either a speed limiter or a time limit (switch-on interlock):

- ▶ Press the upper section of switch ①.
The display shows symbols ② or ③ alternately as long as the starting-off aid is activated.

Leading axle

General notes

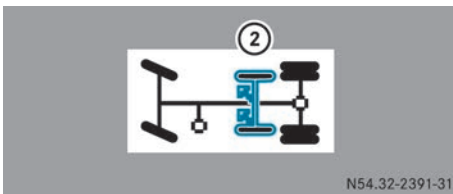
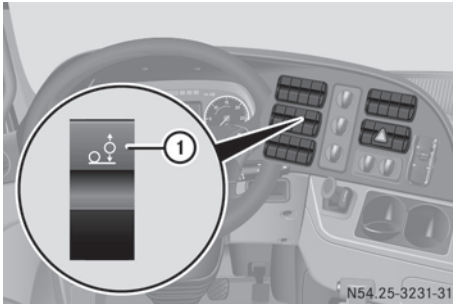


Environmental note

When the leading axle is raised, roll resistance is reduced. This reduces tyre wear and fuel consumption.

- ▶ If the vehicle is empty or only partially laden, raise the leading axle before pulling away.
- ▶ If the reservoir pressure in the compressed-air system is too low, leave the engine running.
- ▶ When loading or unloading the vehicle, lower the leading axle.

The leading axle is automatically lowered shortly before the maximum permissible axle load on the drive axle is reached.



- ❗ On vehicles with 22.5" tyres, the leading axle cannot be raised.

Raising the leading axle

- ▶ Turn the key to the drive position in the ignition lock.
- ▶ Press the upper section of leading axle switch ①.
The display shows raising leading axle indicator ②.

Lowering the leading axle

- ▶ Press the top of leading axle switch ① again.
The display message disappears.

Trailing axle



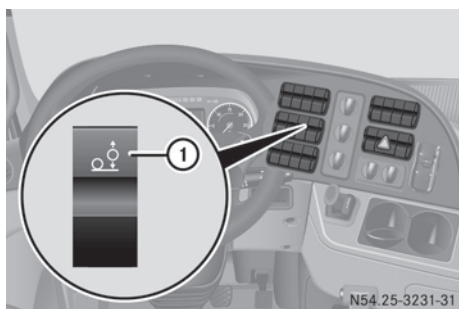
Environmental note

When the trailing axle is raised, roll resistance is reduced. This reduces tyre wear and fuel consumption.

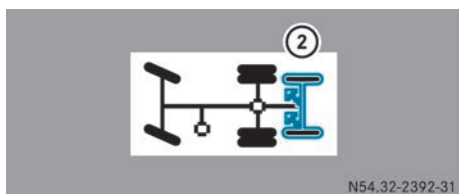
- ▶ If the vehicle is empty or only partially laden, raise the trailing axle before pulling away.
- ▶ If the reservoir pressure in the compressed-air system is too low, run the engine.
- ▶ When loading or unloading the vehicle, lower the trailing axle.
- ▶ Vehicles with a rear loading crane: observe the information in the manufacturer's operating instructions before raising the trailing axle.

On vehicles for transportation of bulk cargo, the trailing axle cannot be raised.

The trailing axle is lowered shortly before the maximum permissible axle load on the drive axle is reached.



N54.25-3231-31



N54.32-2392-31

- **To raise a trailing axle:** turn the key to the drive position in the ignition lock.
- Press the upper section of button ①. The display shows raise trailing axle ②.
- **To lower the trailing axle:** press the upper section of switch ① again. Indicator ② in the display goes out.
- ❗ Vehicles with the Telligent® trailing axle: when the trailing axle is raised, the wheels are put in the straight-ahead position and the steering is locked.

Telligent® trailing axle

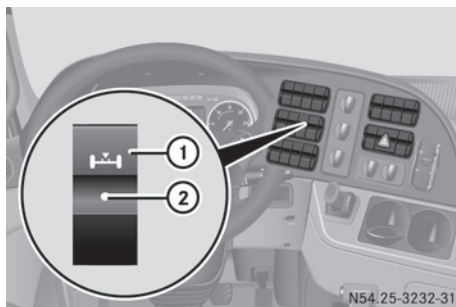
- ❗ When manoeuvring close to kerbstones or when travelling through narrow passages, there is a risk of tyre damage. In such cases, disable the steering for the Telligent® trailing axle.
- ❗ If the  indicator lamp in the instrument cluster does not go out, the Telligent® trailing axle is malfunctioning. Have the malfunction rectified at a qualified specialist workshop.

The Telligent® trailing axle is a hydraulically steered trailing axle, which steers additionally up to a speed of approximately 45 km/h. The

Telligent® trailing axle reduces the turning circle of the vehicle and thereby reduces tyre wear.

If you raise the Telligent® trailing axle or travel at speeds of above 45 km/h, the wheels return to the straight-ahead position. The Telligent® trailing axle will then not steer additionally.

Information on raising and lowering the Telligent® trailing axle can be found in the "Trailing axle" section (► page 235).



N54.25-3232-31

- **To lock steering of the Telligent® trailing axle:** turn the key in the ignition lock to the drive position.
- Press the upper section of Telligent® trailing axle switch ①. Indicator lamp ② in the switch lights up. The wheels return to the straight-ahead position. The Telligent® trailing axle will then not steer additionally.
- **To release the steering of the Telligent® trailing axle:** press the lower section of Telligent® trailing axle switch ①. Indicator lamp ② in the switch goes out. If the front axle wheels pass through the straight-ahead position, the Telligent® trailing axle is also steered.

Driving tips

General notes on driving

WARNING

If you switch off the ignition while the vehicle is in motion, safety-relevant functions are restricted or not available. This can affect, e.g. the power steering. To steer, you will require considerably more force. There is a risk of an accident.

Do not switch off the ignition while the vehicle is in motion.

WARNING

The parking brake may not be sufficient to secure the vehicle against rolling away on uphill or downhill gradients. A vehicle with a trailer/semitrailer or a laden vehicle could roll away. There is a risk of accident.

In the test position, check if the parking brake is sufficient to hold the tractor vehicle. If the tractor vehicle is not held, secure the vehicle and the trailer/semitrailer additionally using wheel chocks. Secure the trailer/semitrailer additionally using its parking brake.

WARNING

If you load the vehicle unevenly, driving characteristics such as steering and braking behaviour may be severely impaired. There is a risk of an accident.

Load the vehicle evenly. Secure the load so that it cannot slip.

The vehicle's driving, braking and steering characteristics vary with the type, weight and centre of gravity of the load.

Running-in

The running-in period of the engine has a significant effect on the vehicle, especially for the:

- service life
- operating reliability
- economy

Observe the following notes during the running-in period (up to 2,000 km):

- avoid subjecting the engine to full load.
- run-in the engine with care using differing speeds and engine revs.
- avoid high engine revs.
- do not drive at more than $\frac{3}{4}$ of the maximum road speed for each gear.
- change gear in good time.
- do not shift down to brake the vehicle.

After 2,000 km, you can gradually bring the vehicle up to full speed and increase engine speeds.

Driving mode

 Do not exceed the permissible axle loads and wheel loads. Do not exceed the permissible gross weight. The difference between wheel loads must not exceed 10 % of the axle load.

The following parts of the vehicle may otherwise be damaged:

- tyres
- chassis frame
- axles

During the trip, observe the following at regular intervals:

- messages in the display
- warning and indicator lamps
- the gauges

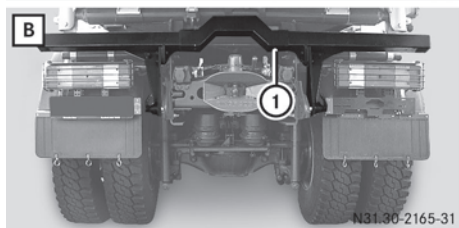
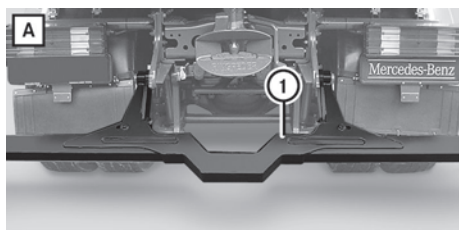
Folding underside guard

You can achieve a higher approach/departure angle when driving off-road if you fold up the underside guard.

WARNING

If the underside guard is folded up, in a collision with the vehicle in front this vehicle could become trapped underneath the frame. There is a risk of fatal injury for the occupants of the vehicle in front.

Fold the underside guard down and lock it in place when driving on public roads.

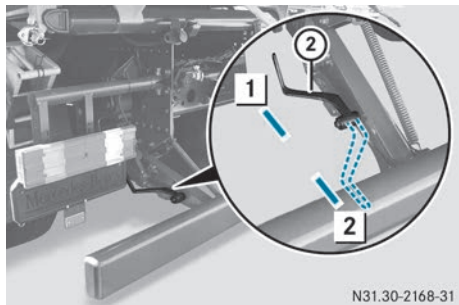


Underride guard (example)

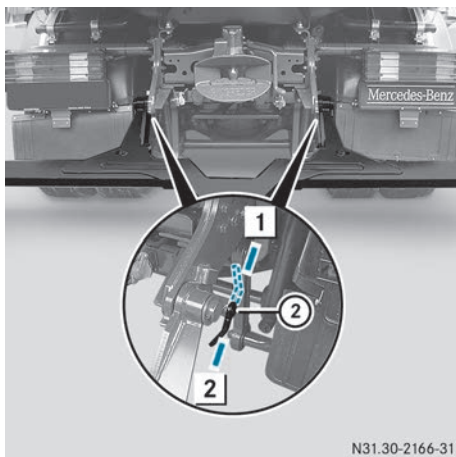
A Road position

B Off-road position

► Hold underside guard (1) in position.



Example: underride guard with a lever



N31.30-2166-31

Example: underride guard with 2 levers

► Swing lever (2) to position [2].

or

► Swing both levers (2) to position [2].

Underride guard (1) is released.

► Swing underride guard (1) into the desired position and hold it in place.

► Swing lever (2) to position [1] and release underride guard (1).

or

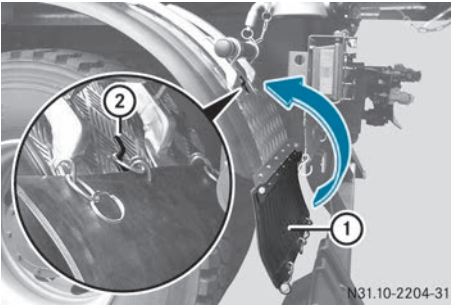
► Swing both levers (2) to position [1] and release underride guard (1).

Underride guard (1) is locked.

Collapsible underride guard – tipper with air suspension

Preparing road finishing machine operation

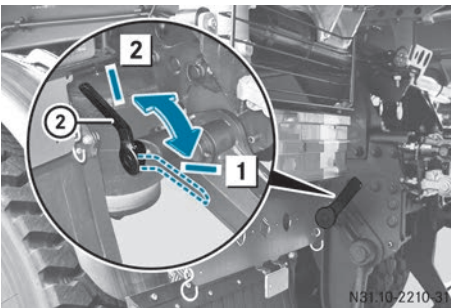
If the underride guard is set to the position for road finishing machine operation, the mud flaps must first be folded up and hooked in.



Example: mud flap, left-hand side of vehicle

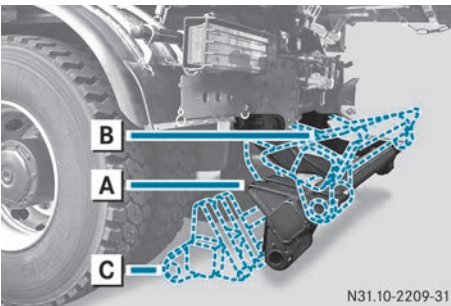
- Guide both mud flaps ① through behind the licence plate holder and the tail lamp.
- Hook the ring on mud flap ① onto hook ②.

Adjusting the underride guard



Lever (example: left-hand side of the vehicle)

- Hold underride guard ① in position.
- Swing both levers ② to position ②. Underride guard ① is released.



- Swing underride guard ① into the desired position and hold it in place.
- Swing underride guard ① into position ③ for road finishing machine operation/centre-axle trailer towing.
- Release underride guard ①.

① When you swing underride guard ① into road position ③ or off-road position ③, secure underride guard ①. Swing lever ② into position ① when doing so.

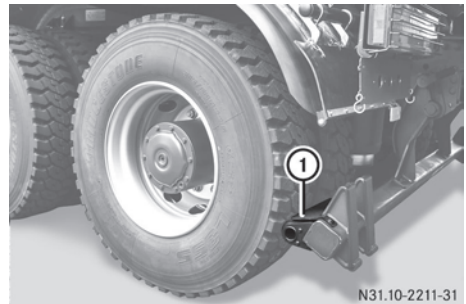
Notes on road paver operation

⚠ WARNING

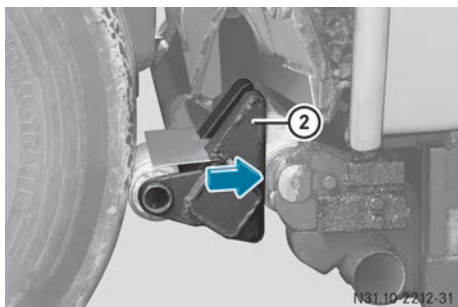
When the underride guard is pressed against the tyres, persons could become trapped between the tyres and the underride guard. There is a risk of injury.

Make sure that there is no-one in the area between the tyres and the underride guard.

❗ Make sure that the underride guard is not engaged in road finishing machine operation. The locking levers must be released and the underride guard must be able to swing freely. The underride guard or the chassis could otherwise be damaged.



In road finishing machine operation, the road paver presses rollers ① on the underride guard against the tyres. This causes the vehicle to be pushed forwards at the speed of the road finishing machine.



Pneumatic tipper in road finishing machine operation (overrun mode)

For most road pavers, the optimal road paver roller position is preset. The road paver rollers must touch approach plate ② roughly in the centre.

- i** Telligent® level control adjusts the vehicle level automatically. If the road paver rollers do not touch the centre of the approach plate, a different driving level can be set before power take-off is activated (> page 231).

Driving off-road

Important safety notes

WARNING

When driving off-road, your body is subject to forces from all directions due to the uneven surface. You could be thrown from your seat, for instance. There is a danger of injury.

Always wear a seat belt, even when driving off-road.

WARNING

Flammable material such as leaves, grass or twigs may ignite if they come into contact with hot parts of the exhaust system. There is a risk of fire.

When driving off road or on unpaved roads, check the vehicle's underside regularly. In particular, remove parts of plants or other flammable materials which have become

trapped. In the case of damage, contact a qualified specialist workshop.

WARNING

If ABS is deactivated, the wheels may lock when braked. As a result, the vehicle can no longer be steered. There is an increased risk of skidding and an accident.

Always leave ABS on when driving on roads and firm surfaces.

- !** If the vehicle is being driven off-road, it can be damaged by obstacles. Obstacles may damage vehicle parts such as:

- axles
- propeller shafts
- fuel tank
- compressed-air reservoir
- engine
- transmission

For this reason, you should always drive slowly when off-road. Ask passengers for guidance when driving over obstacles. Always observe the vehicle's ground clearance. Avoid obstacles if possible.

- !** When driving the vehicle on rough terrain, ensure that the drive wheels always have sufficient traction. Avoid wheelspin of the drive wheels. You could otherwise damage the differential gear system.

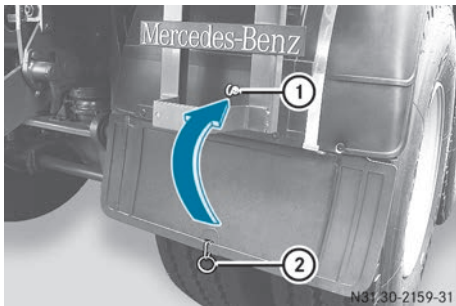
Driving off-road increases the possibility of damage to the vehicle, which may cause assemblies or systems to fail. Adapt your driving style to the conditions of the terrain. Drive carefully. Have vehicle damage rectified immediately at a qualified specialist workshop.

When driving off-road, substances such as dirt, sand, mud and water or water mixed with oil may get into the brakes. This may lead to a reduction in braking performance or total brake failure as a result of increased wear. The braking characteristics will vary depending on the substances that get into the

brakes. Clean the brakes after driving off-road. If you notice grinding noises or a reduction in braking performance, have the brake system checked at a qualified specialist workshop immediately. Adapt your driving style to suit the altered braking characteristics.

Checklist before driving off-road

- ▶ Check the fuel and AdBlue® supplies (▷ page 109) and top up (▷ page 246).
- ▶ **Engine:** check the oil level and top up the oil (▷ page 283).
Before driving up or down steep gradients, fill the oil to the maximum level.
- ▶ **i** If you drive up or down steep gradients, the  symbol may appear in the display. The engine operating safety is not put at risk if you have filled the engine oil to the maximum level before the journey.
- ▶ **Vehicle tool kit:** check that the jack is working (▷ page 292).
- ▶ Make sure that a wheel bolt wrench, wooden underlay for the jack, a robust tow cable and a folding spade are carried in the vehicle.
- ▶ **Tyres:** check tread depth (▷ page 329) and tyre pressure (▷ page 331).
- ▶ **Driver's seat:** block horizontal springing.
- ▶ **Fold underride guard:** fold the underride guard to the off-road position (▷ page 238).



Example: mud flap

- ▶ **Mud flaps:** attach the mud flap to hook ① using ring ② in the direction of the arrow.

Rules for off-road driving

WARNING

If you drive over obstacles or in ruts, the steering wheel may jerk out of your grip, causing injury to your hands.

Always hold the steering wheel firmly with both hands. When driving over obstacles, you must expect steering forces to increase briefly and suddenly.

WARNING

When driving off-road or driving with an engaged differential lock in the automatic driving program, the electronic management system may perform unwanted gear changes. Due to the interruption in the tractive power, the vehicle may roll backwards on uphill slopes, for instance. There is a risk of an accident.

Always drive carefully and be prepared to brake. In particularly difficult driving conditions, switch to the manual driving program.

On gradients and inclines, always follow the line of fall and avoid changing gear. Drive up gradients without stopping until you are at the top of the hill. If your vehicle is unable to cope with the gradient, stop. Shift into reverse gear and allow the vehicle to slowly roll backwards.

- ▶ Securely stow away all loose objects.
- ▶ Securely fasten the load.
- ▶ Secure bulk material (e.g. sand or gravel) with partition walls or covers to prevent it slipping.
- ▶ Secure add-on and attached equipment, such as tipper bodies or loading cranes, against inadvertent activation and movement. Observe the operating instructions given by the body and equipment manufacturer.
- ▶ Close the side windows (▷ page 53).
- ▶ Vehicles with level control: raise the chassis frame (▷ page 231).

- ▶ Vehicles with manual transmission or Telligent® gearshift: stop and engage a low gear before driving off-road.
- ▶ Vehicles with Telligent® automatic gearshift/Mercedes PowerShift: activate manual drive program (▷ page 190).
Do not allow the engine speed to drop below 550 rpm.
- ▶ Deactivate ASR (▷ page 210).
- ▶ Deactivate ABS (▷ page 172).
- ▶ Shift the transfer case to off-road position (▷ page 214).
- ▶ Engage the differential locks if traction is insufficient (▷ page 212).
- ▶ Vehicles with Telligent® gearshift/automatic gearshift: activate rapid change of direction to rock the vehicle free from a rut (▷ page 186), (▷ page 190).
- ▶ Vehicles with Mercedes PowerShift: activate the rocking-free mode function to rock the vehicle free from a terrain depression (▷ page 201).
- ▶ Always keep the engine running and in gear while driving.
- ▶ Drive slowly and smoothly. It may often be necessary to drive at walking pace.
- ▶ Make sure that the wheels remain in contact with the ground.
- ▶ 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.
- ▶ Watch out for obstacles such as rocks, holes, tree stumps and ruts.
- ▶ If possible, always drive over obstacles with the wheels of one side of the vehicle. This means damage to the vehicle is avoided.

Driving on inclines

WARNING

If you drive up a steep incline at an angle or turn on a steep incline, the vehicle could slip

sideways, tip and overturn. There is a risk of an accident.

When driving up an incline, drive into the line of fall (upwards or downwards in a straight line) and do not turn.

Do not shift the transmission into neutral on downhill gradients.

- ▶ If the vehicle is being driven up or down a slope and begins to tilt, steer the vehicle into the line of the fall immediately.
Only drive over embankments and on slopes along the line of fall.
- ▶ Only brake once the vehicle is on the line of fall.
- ▶ Slowly depress the brake pedal if the engine's braking effect is insufficient when driving downhill.

Checklist after driving off-road

- ❗ Parts of plants or branches which have become trapped may damage the following components:
 - fuel lines
 - brake lines
 - axle joints
 - drive shafts
- ▶ Activate ASR (▷ page 210).
- ▶ Activate ABS (▷ page 172).
- ▶ Disengage differential locks (▷ page 212).
- ▶ Shift the transfer case to on-road position (▷ page 214).
- ▶ Test the brakes.
- ▶ Check the headlamps and tail lamps for damage.
- ▶ Inspect the tyres for damage.
- ▶ Replace buckled or damaged wheels.
- ▶ Replace missing valve caps.
- ▶ Check and adjust the tyre pressure (▷ page 331).
- ▶ Check whether parts of plants or branches have become trapped.

- ▶ Check the entire vehicle underside, brakes, steering, chassis and exhaust system for damage.
- ▶ Check the engine oil level (▷ page 283).
- ▶ Fold the folding underride guard to the road position (▷ page 238).
- ▶ Fold down the mud flaps.
- ▶ Observe the notes on cleaning after driving off-road or on construction sites.

Cleaning after driving off-road or on construction sites

! Only direct the compressed-air, steam or water jet towards the radiator surface in a vertical direction. Ensure that the radiator fins are not damaged. Remove any dirt from the radiator fins. Damaged or dirty radiator fins can cause the engine to overheat. If there is a loss of coolant or damage to the cooling and heating system, have it checked at a qualified specialist workshop.

Foreign bodies that have become trapped can be expelled during the journey, e.g. stones in the tyre tread or between the tyres (twin tyres). This could cause other road users to be injured or vehicles – especially the wind-screens – to be damaged.

Check the tyres for foreign bodies that have become trapped after every journey off-road or on a construction site and before journeys on public roads. Remove any trapped foreign bodies.

Dirt and mud on the tyres and on the road surface reduce road grip, particularly if the road surface is wet. This could cause your vehicle to start to skid. Always clean your vehicle carefully after every journey off-road or on a construction site and before journeys on public roads.

Clean the following vehicle parts after driving off-road or on construction sites:

- lighting system
- side windows and windscreen
- exterior mirrors

- steps
- door sills
- grab handles
- wheels and tyres
- wheel housing and mudguard
- steering
- axles
- brakes
- spring elements
- chassis
- licence plate
- engine
- engine radiator
- transmission
- oil cooler (transmission)

After operation in mud, sand, water or after exposure to similar dirty conditions:

- ▶ Clean the brake discs, brake linings, wheels and axle joints and check them for damage.
- ▶ Lubricate the axle joints. Observe the information in the Maintenance Booklet.
- ▶ Test the brakes while paying attention to the road and traffic conditions.

Fuel consumption

General information

Fuel consumption depends on:

- the type of fuel used
- the vehicle's equipment
- the driving style
- the operating conditions

For these reasons, exact figures about any individual vehicle's fuel consumption cannot be provided.

You can call up fuel consumption figures in the on-board computer (▷ page 117).

Vehicle equipment

The following components influence fuel consumption:

- tyres (e.g. tyre pressure, tyre condition)
- body type
- wind deflectors
- drive train (e.g. transmission ratio)
- additional equipment (e.g. air conditioning, auxiliary heating)

Driving style

Your driving style can help to keep the fuel consumption down:

- anticipate road and traffic conditions.
- avoid frequent acceleration and braking.
- stay within the economical engine speed range.

Operating conditions

Fuel consumption can increase due to poor operating conditions.

Observe the following notes:

- avoid driving in mountainous terrain.
- avoid urban traffic and frequent short journeys.
- do not allow the engine to idle when the vehicle is stationary.
- do not drive with unnecessary weight.
- avoid frequent cold starts.

AdBlue® consumption

AdBlue consumption is approximately 4 % of fuel consumption when BlueTec®4 is used, and approximately 6 % with BlueTec®5.

Engine oil consumption

After running in the engine, oil consumption may reach 0.5 % of the vehicle's fuel consumption.

Increased distance covered and more arduous operating conditions could result in vehicles exceeding this value.

Limiting the speed

WARNING

If the vehicle combination swerves, you could lose control of the vehicle combination. The vehicle combination may even overturn. There is a risk of an accident.

On no account should you attempt to straighten up the vehicle combination by increasing the speed. Reduce your speed and do not countersteer. Brake if necessary.

For vehicles with a speed limit, the maximum speed is set to 90 km/h.

This may vary according to legal requirements in certain countries. The engine speed is automatically limited when the restricted top speed is reached. Take this into account when overtaking.

Reverse warning device

Important safety notes

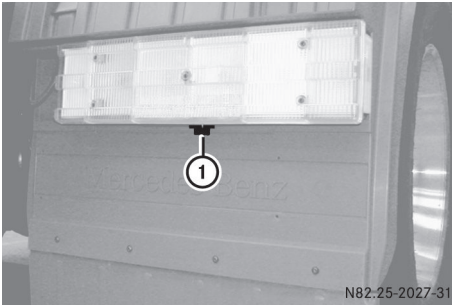
WARNING

Other road users may ignore or fail to hear the warning tone of the reverse warning feature. There is a risk of injury if you fail to ensure that the area in which you are manoeuvring is clear.

Make sure that there are no persons or objects in the area in which you are manoeuvring. It may be necessary to enlist the help of a second person when manoeuvring.

The reverse warning feature is a system designed to assist you in ensuring the safety of other road users.

The reverse warning feature cannot guarantee that there are no people or objects behind your vehicle.



Reverse warning device ① is an acoustic warning system that is integrated into the vehicle's tail lamp. If reverse gear is selected, reverse warning device ① is activated and a warning tone sounds.

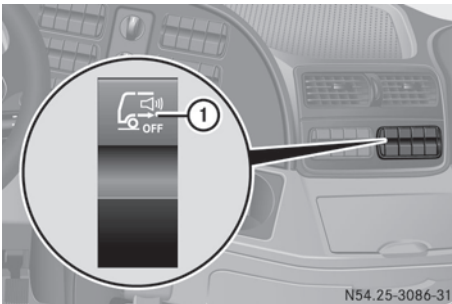
Reducing the volume of the reverse warning device

- ▶ Engage reverse gear twice within 4 seconds.
The volume is reduced.

Switching the reverse warning device on/off

In some countries, deviations from the use of the reverse warning device that is described here are possible as a result of legal requirements.

Always observe the legal requirements in all countries concerned.



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

Reverse gear lock

Refuse-collection vehicle:

If the side running boards are loaded in the rear area, the vehicle speed is restricted to a maximum of 30 km/h and the reverse gear lock is activated.

In the case of vehicles with automated transmission: the reverse gear lock disables the reverse gear.

In the case of vehicles with manual transmission: the warning buzzer sounds if the reverse gear is selected. The reverse gear lock stops the engine and activates the frequent-stop brake.

If the side running boards are loaded when reverse gear is engaged:

- the warning buzzer sounds
- the engine switches off
- the frequent-stop brake is activated.

If the engine is switched off by the reverse gear lock:

- ▶ turn the key back in the ignition lock as far as it will go.
- ▶ Engage the parking brake.
- ▶ Restart the engine.

Warning buzzer

The warning buzzer sounds if:

- you have not fastened the seat belt on the driver's seat
- the immobiliser is activated
- neither the clutch pedal nor the brake pedal is depressed when the hill holder is activated and the vehicle is stationary
- the loading platform approach aid is activated and the distance falls below 50 cm

- you select the reverse gear
- the key in the ignition lock is turned back or removed when the frequent-stop brake is engaged and the parking brake is released
- you exceed the maximum permissible engine speed
- on vehicles with a torque converter clutch, the oil temperature exceeds 150 °C during converter operation
- the oil temperature in retarder mode rises above 150 °C
- you select a gear that is too low when shifting down
- you open the driver's door when the vehicle is stationary and the parking brake is released

The warning buzzer sounds in addition to the warning indicator in the display if:

- Telligent® distance control is activated and there is a danger of colliding with another vehicle.
- Telligent® distance control is deactivated and distance warning signals are shown by ABA.
- the coolant level is too low or the permissible coolant temperature (approximately 105 °C) is exceeded. At the same time, the status indicator lights up in red. The operating safety of the engine is jeopardised by this.
- for vehicles with hydrodynamic clutch, the oil temperature rises above 160 °C or the coolant temperature rises above 100 °C during hydrodynamic clutch operation.
- the operating temperature of the clutch is too high (for vehicles with Telligent® automatic gearshift).
- There is a display failure. Important operating information, warning displays or service indicators can no longer be displayed. The display shows a message and the system abbreviation for electronic systems.

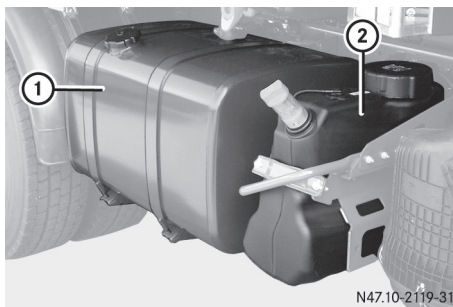
! The operating safety of the engine is compromised if:

- the warning buzzer sounds
- the STOP lamp lights up
- the status indicator lights up red and
- the display shows the  symbol

Do not pull away, or stop the vehicle as soon as possible, paying attention to road and traffic conditions. You could otherwise damage the engine.

Refuelling

Fuel/AdBlue® tank



N47.10-2119-31

Example: fuel/AdBlue® tank

- ① Fuel tank
- ② AdBlue® tank

Fuel

Important safety notes

WARNING

Fuels are poisonous and hazardous to health. There is a danger of injury.

Do not swallow fuel or let it come into contact with skin, eyes or clothing. Do not inhale fuel vapours. Keep fuels out of the reach of children.

If you or others come into contact with fuel, observe the following:

- Wash the fuel off any affected areas of skin with water and soap immediately.
- If you get fuel in your eyes, rinse them thoroughly with clean water immediately. Seek immediate medical attention.
- If fuel is swallowed, seek immediate medical attention. Do not induce vomiting.
- Change any clothing that has come into contact with fuel immediately.

WARNING

Fuel is highly flammable. When fuel is handled improperly, there is a risk of fire and explosion.

Avoid fire, naked flames, smoking and the creation of sparks. Make sure that fuels do not come into contact with a hot exhaust system. Before carrying out work on the fuel system, switch off the ignition and the auxiliary heater. Always wear protective gloves.

WARNING

If you mix diesel fuel with petrol, the flash point of this fuel mixture is lower than that of pure diesel fuel. When the engine is running, components in the exhaust system may over-heat unnoticed. There is a risk of fire.

Never refuel with petrol. Never add petrol to diesel fuel.

! 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.

! Do not add any special fuel additives to the diesel fuel or fatty acid methyl ester FAME fuel.

Special fuel additives can lead to:

- malfunctions
- damage to the catalytic converter
- engine failure

! AdBlue® is not a fuel additive and must not be added to the fuel tank. If AdBlue® is added to the fuel tank, this can lead to engine damage.

You will find further information on fuel in the "Service products" section (▷ page 349).



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.

Before filling the tank

- ▶ Switch off the engine.
- ▶ Apply the parking brake.
- ▶ Switch off the auxiliary heating system (▷ page 102).
- ▶ Turn the key back in the ignition lock as far as it will go.
- ▶ Observe the fuel grade (▷ page 349).

! If you are using drums or canisters to refuel the vehicle, you should filter the fuel before adding it.

This will prevent malfunctions in the fuel system due to contaminated fuel.

i Regularly check the fuel prefilter with heated water separator for condensation.

AdBlue®

Important safety notes

! Do not allow diesel fuel to run into the AdBlue® tank. This could damage the Blue-Tec® exhaust gas aftertreatment.

! Only use AdBlue®/DEF in accordance with DIN 70070/ISO 22241. Do not use any additives.

If AdBlue®/DEF comes into contact with painted or aluminium surfaces when filling the tank, rinse the affected area immediately with plenty of water.

! Do not mix additives to AdBlue®. Do not thin AdBlue® with tap water. This could destroy the BlueTec® exhaust gas after-treatment system.

! Always close the AdBlue® tank properly. Otherwise, impurities could enter the BlueTec® exhaust gas aftertreatment and damage it.

! Make sure that you do not overfill the AdBlue® tank. Otherwise the AdBlue® tank could be damaged at very low temperatures.

When you open the AdBlue® tank cap, small amounts of ammonia vapour may be released.

Ammonia vapours have a pungent smell and are particularly irritating to:

- skin
- mucous membranes
- eyes

The vapours may cause a burning sensation in the eyes, nose and throat as well as irritation of the throat and watering eyes. Avoid inhaling ammonia vapours. Only fill the AdBlue® tank in well-ventilated areas.

AdBlue® should not come into contact with skin, eyes or clothing, and should not be swallowed. Keep AdBlue® out of the reach of children.

If you come into contact with AdBlue®, observe the following:

- Wash AdBlue® from affected areas of skin immediately with water and soap.
- If AdBlue® comes into contact with your eyes, rinse them out thoroughly with clean

water as soon as possible. Consult a doctor without delay.

- If AdBlue® is swallowed, rinse the mouth out with plenty of water immediately and drink plenty of water. Consult a doctor without delay.
- Change clothing soiled with AdBlue® as soon as possible.

You will find further information on AdBlue® in the "Service products" section (▷ page 352).



Environmental note

Dispose of AdBlue® in an environmentally responsible manner.

Before filling the tank

- ▶ Switch off the engine.
- ▶ Apply the parking brake.
- ▶ Switch off the auxiliary heating system (▷ page 102).
- ▶ Turn the key back in the ignition lock as far as it will go.

Trailers/semitrailers

Trailer/semitrailer coupling

The trailer or semitrailer coupling is one of the vehicle components with particular importance for road safety. Please comply precisely with the manufacturer's operating, care and maintenance instructions.

Driving tips for trailers/semitrailers

General notes

! Ensure that you observe the following safety instructions for driving with trailers and semitrailers:

- only attach a trailer/semitrailer at an appropriate trailer/semitrailer coupling.
- ensure there is adequate clearance between the trailer/semitrailer and the tractor vehicle.

- if the vehicle is being driven without a load, only a centre-axle trailer without a load may be coupled up.
- do not exceed the permissible axle loads.
- adhere to a minimum front axle load. This ensures adequate steerability for the tractor vehicle.

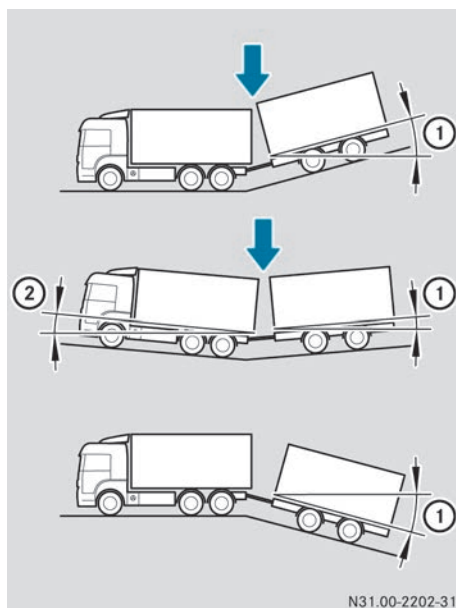
i In the case of air sprung vehicles with axle load measuring systems, the current axle loads can be called up on the on-board computer (▷ page 233).

Articulation angles

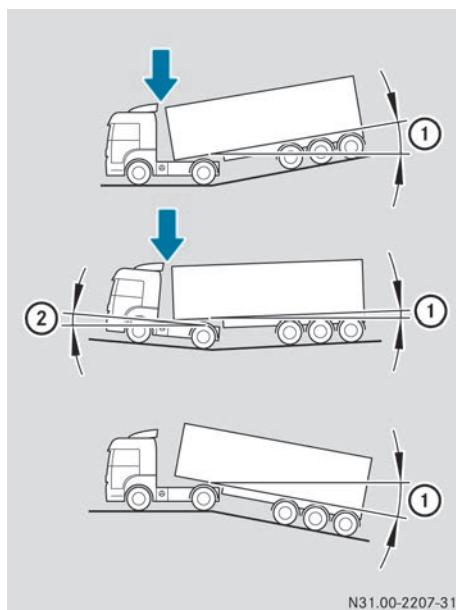
! If the articulation angle is exceeded, the tractor vehicle and the trailer/semitrailer can be damaged.

The articulation angles are dependent on the particular tractor vehicle and trailer/semi-trailer and are influenced by:

- wheelbase
- height of add-on equipment
- overhang
- distance from the tractor vehicle to the trailer/semitrailer



Example: tractor vehicle and centre-axle trailer



Example: tractor vehicle and semitrailer

- If driving over depressions or elevations, please be aware that the articulation angle at the front ② or at the rear ① changes.
- ❗ If the articulation angle between the tractor/trailer combination is reduced, the clearance between the tractor vehicle and the trailer/semitrailer is reduced.

Swivel angle

⚠ WARNING

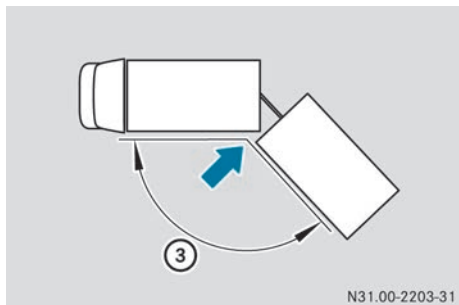
If the swivel angle is exceeded during extreme cornering, the following can happen:

- the cable, compressed-air and hydraulic lines may break away
- the trailer tow hitch and the trailer drawbar may be damaged

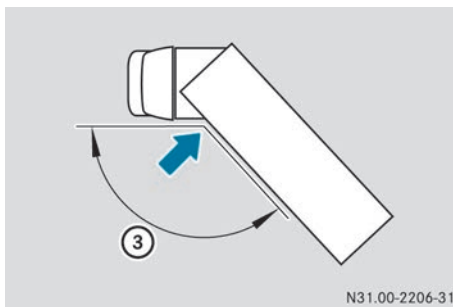
This could cause you to lose control of the vehicle or the trailer. The trailer may even break away. There is a risk of an accident.

Always pay attention to the swivel angle of the vehicle combination when cornering.

The swivel angle is dependent on the coupling system on the tractor vehicle and trailer/semitrailer.



Example: tractor vehicle and centre-axle trailer



Example: tractor vehicle and semitrailer

- Pay attention to swivel angle ③ during extreme cornering.

Coupling up

Information on trailer synchronisation

Only for vehicles without BS (Telligent® brake system).

- ❗ Tractor/trailer synchronisation should be carried out when you couple up/attach a trailer or semitrailer to the tractor vehicle for the first time. Not doing so could lead to increased brake wear. Always have tractor/trailer synchronisation carried out at a qualified specialist workshop.

Semitrailers

⚠ WARNING

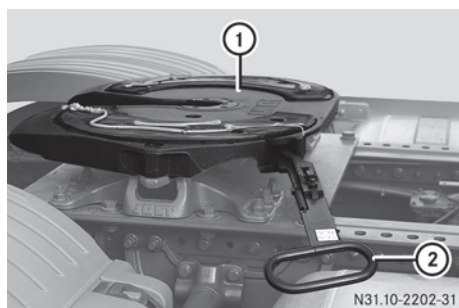
If there is too much play on the tractor/semi-trailer combination between the semitrailer coupling pin and the coupling plate, the semitrailer may break away from the coupling plate. You could lose the semitrailer as a result. There is a risk of an accident.

Follow the coupling manufacturer's instructions.

⚠ WARNING

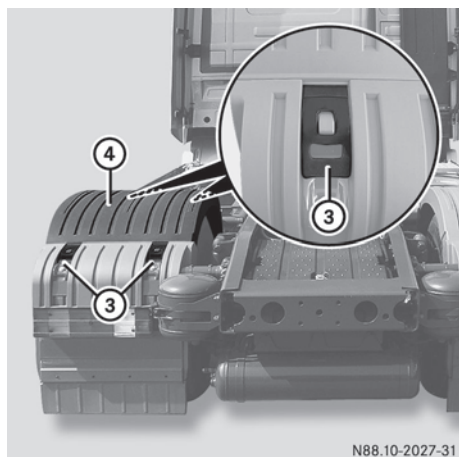
If the semitrailer coupling is damaged or not correctly engaged, you could lose the semitrailer. There is a risk of an accident.

Always check that the semitrailer coupling is free of damage and properly engaged after coupling-up.



Example: semitrailer coupling

- ▶ Chock the semitrailer's wheels to prevent it from rolling away.
- ▶ Open semitrailer coupling (1) with lever (2); see the manufacturer's operating instructions.
- ▶ Vehicles with air suspension: raise or lower the chassis frame (▷ page 231), so that the semitrailer plate is 50 mm lower than semitrailer coupling (1).
- ▶ Vehicles with steel suspension: use the saddle supports to set the height of the semitrailer so that the semitrailer plate is 50 mm lower than semitrailer coupling (1).



Example: left-hand side of the vehicle

Only remove mudguard centre part (4) if:

- the semitrailer makes the use of mudguard centre part (4) impossible and
 - the semitrailer's body covers the wheels
- Observe country-specific laws and regulations for using mudguard centre parts (4).
- ▶ Release rubber retainers (3) of mudguard centre part (4) on the left and the right-hand side of the vehicle.
 - ▶ Remove mudguard centre sections (4).
 - ▶ Back up slowly until semitrailer coupling (1) locks.
 - ▶ Stop the vehicle and apply the parking brake.
 - ▶ After coupling: secure semitrailer coupling (1) to prevent unauthorised operation; see the manufacturer's operating instructions.
 - ▶ Retract the saddle supports fully; see the manufacturer's operating instructions.
 - ▶ Connect the cable and compressed-air lines (▷ page 254).

Tractor/trailer combination

WARNING

There is a risk of the drawbar swinging out when coupling up the trailer. In this case, the trailer drawbar swings uncontrollably from side to side. If a person is in the area of danger, there is a risk of injury.

Make sure that no persons are in the area of danger. Set the trailer drawbar to the correct height before coupling up, e.g. by using the height adjustment device.

WARNING

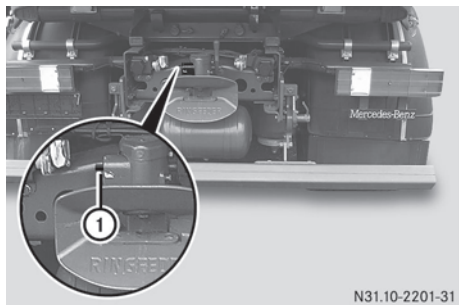
If the trailer coupling has too much longitudinal play, the trailer can tear away. You could lose the semitrailer as a result. There is a risk of an accident.

Check the trailer coupling daily for longitudinal play by moving the towbar body of the trailer coupling forwards and back firmly. Have any longitudinal play eliminated at a

qualified specialist workshop as soon as possible.

Do not check the longitudinal play on the coupling jaw.

Couple up the trailer by reversing the tractor vehicle. Never let the trailer run on.



N31.10-2201-31

Example: securing knob

- ▶ Before coupling on the trailer: apply the parking brake and release the service brake on the trailer; see the manufacturer's operating instructions.
- ▶ Chock the trailer's rear wheels to prevent it from rolling away.
The unbraked front axle of the trailer must remain pivotable.
- ▶ Set the towbar supports to the height of the trailer coupling; see the manufacturer's operating instructions.
- ▶ Back up slowly until the trailer coupling closes.
- ▶ After coupling: check to ensure that the trailer coupling's coupling pin is positioned correctly on securing knob ① or check pin.
- ▶ Connect the cable and compressed-air lines (▷ page 254).

Uncoupling

- ❗ **Semitrailer tractor vehicles with air suspension:** before completely uncoupling, lower the chassis frame until there is a gap between the semitrailer plate and the semitrailer coupling. Otherwise, the chassis

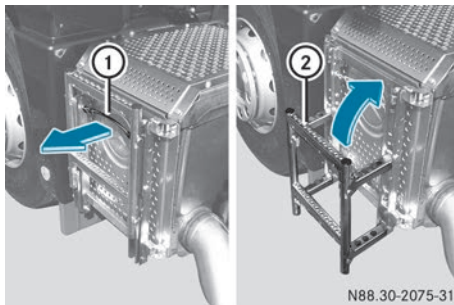
frame will spring up suddenly when uncoupling. This can cause damage to the chassis frame and the semitrailer.

- ▶ Park the vehicle on a firm and level surface.
- ▶ Apply the parking brake.
- ▶ Semitrailer tractor vehicle with air suspension: lower the chassis frame completely (▷ page 231).
- ▶ Chock the trailer/semitrailer's wheels to secure it against rolling away.
- ▶ Extend the saddle supports of the semitrailer; see the manufacturer's operating instructions.
- ▶ Set the trailer's towbar support to the height of the trailer coupling; see the manufacturer's operating instructions.
- ▶ Remove the cable and compressed-air lines (▷ page 255).
- ▶ Open the trailer coupling/semitrailer coupling; see the manufacturer's operating instructions.
- ▶ Drive the tractor vehicle forwards slowly.
- ▶ On semitrailer tractor vehicles: fit the mud-guard centre parts (▷ page 250).

Folding ladder

Folding the ladder up and down (semitrailer tractor vehicle)

Use the folding ladder to connect cables and compressed-air lines from the semitrailer, for example.

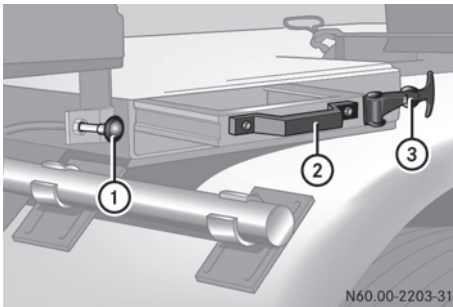


N88.30-2075-31

- **To fold down:** pull out control cable ① in the direction of arrow and fold down folding ladder ②.
- **To fold up and lock:** fold up folding ladder ② in the direction of arrow until you hear it engage.
- Pull folding ladder ② outwards and check whether it is locked in place.

Folding the ladder in/out (vehicle with rear-mounted cooling system)

Use the folding ladder to perform maintenance work on the rear-mounted cooling system or to connect cables and compressed-air lines. This will allow you to climb up and down safely. Do not jump off the vehicle body.



N60.00-2203-31

Folding ladder behind the driver's cab

- **To fold out:** unhook rubber securing strap ③ and pull release lever ①.
- Pull out the folding ladder by grip ② completely and swing it down.
- **To fold in and lock:** tilt folding ladder upwards by grip ② and slide it in as far as it will go.
The folding ladder must engage audibly.
- Hook in rubber securing strap ③.

Cables and compressed-air lines

Important safety notes

WARNING

If you climb onto or down from the vehicle in order to connect/disconnect the cables and compressed-air lines without appropriate climbing aids, you could:

- slip and/or fall
- damage components, e.g. the battery cover, and fall as a result
- burn yourself on hot components

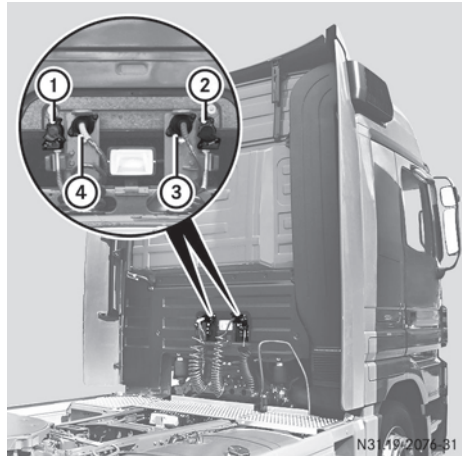
There is a risk of injury.

Always use secure climbing aids, e.g. a suitable ladder.

WARNING

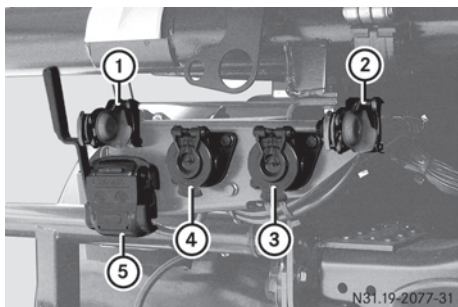
The cover of the silencer can get very hot when driving. You could burn your foot if, for example, you step on this cover in order to connect/disconnect the cables and compressed-air lines. There is a risk of injury. Never step on the cover of the silencer.

Arrangement of connections

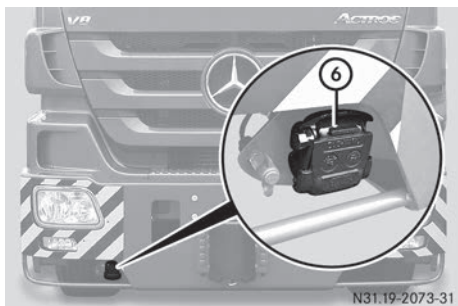


N3119-2076-31

Example: connections for semitrailer



Example: connections for trailers

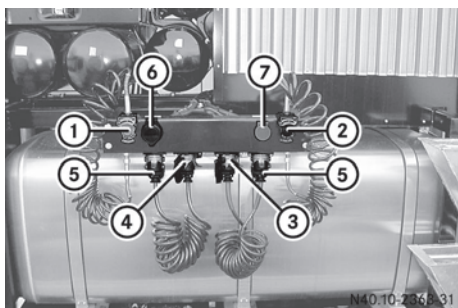


Example: front double coupling head

Connect the compressed-air lines to the front double coupling head if you:

- manoeuvre with a trailer on the front coupling jaw
- tow away your vehicle
- drive in tandem operation

Connections on vehicles with a rear-mounted cooling system



Connections for semitrailer/trailer

- ① Brake line hose coupling (yellow)
- ② Reservoir line hose coupling (red)

- ③ Power socket 24 V / 12 V
- ④ ABS connector, 5-pin
- ⑤ Blank socket
- ⑥ Hydraulic connection for semitrailer/trailer (return line)
- ⑦ Hydraulic connection for semitrailer/trailer (flow line)

Connecting cables and compressed-air lines

! 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.

If you connect a trailer/semitrailer to the vehicle's 12 V electrical system, use an appropriate voltage transformer. You can obtain a voltage transformer from any Mercedes-Benz Service Centre.

Vehicles with a front double coupling head:

- Insert, press down and hold the wrench (located in the vehicle tool kit) on the hexagon nut on double coupling head ⑥.
- Connect the compressed-air lines.
- Swing the wrench upwards and remove it from the hexagon nut on double coupling head ⑥.

Vehicles with a rear double coupling head:

- Press down and hold the lever on double coupling head ⑤.
- Connect the compressed-air lines.
- Swing the lever on double coupling head ⑤ upwards and release it.

Vehicles without a double coupling head:

- ▶ Vehicles with rear-mounted cooling system and semitrailer tractor vehicles: fold the folding ladder out/down (> page 252).
- ▶ Connect brake line coupling head ① (yellow).
- ▶ Connect reservoir line coupling head ② (red).

i The shutoff valves in the coupling heads open automatically when the connection is made.

- ▶ After connecting the compressed-air lines to the trailer, adjust the brake pressure regulator (if installed).
- ▶ Connect the power supply to the socket or to 24 V (15-pin) plug ④.
- ▶ Connect the connecting cable to the socket or to ABS/BS (5/7-pin) plug ③.
- ▶ Semitrailer tractor vehicles with ABS: if the semitrailer tractor vehicle is being driven with a semitrailer without ABS, insert the connection cable into the empty socket.
- ▶ Vehicles with rear-mounted cooling system and semitrailer tractor vehicles: fold the folding ladder in/up.
- ▶ Check lighting systems, turn signals and brake lamps on the vehicle and on the trailer/semitrailer for correct functioning and cleanliness.
- ▶ Check the operation of the indicator lamps for the tractor and trailer/semitrailer turn signals in the instrument cluster.
- ▶ After pulling away, check that the brake circuit on the trailer/semitrailer is functioning correctly, paying attention to the road and traffic conditions.

Disconnecting cables and compressed-air lines

WARNING

If you remove the coupling heads in the wrong order, the trailer/semitrailer brake is

released and the trailer/semitrailer may roll away. There is a risk of an accident.

Always detach the coupling heads in the correct order.

! After disconnecting the compressed-air lines, ensure that the covers of the coupling heads on the vehicle are closed. If the covers are not closed, the coupling heads may become contaminated, causing a malfunction.

- ▶ Apply the parking brake of the tractor vehicle.
- ▶ Apply the parking brake of the trailer/semitrailer. Observe the manufacturer's operating instructions.

Vehicles with a front double coupling head:

- ▶ Insert, press down and hold the wrench (located in the vehicle tool kit) on the hexagon nut on double coupling head ⑥.
- ▶ Disconnect the compressed-air lines.
- ▶ Swing the wrench upwards and remove it from the hexagon nut on double coupling head ⑥.

Vehicles with a rear double coupling head:

- ▶ Press down and hold the lever on double coupling head ⑤.
- ▶ Disconnect the compressed-air lines.
- ▶ Swing the lever on double coupling head ⑤ upwards and release it.

Vehicles without a double coupling head:

- ▶ Vehicles with rear-mounted cooling system and semitrailer tractor vehicles: fold the folding ladder out/down (> page 252).
- ▶ Detach reservoir line coupling head ② (red).
The brakes of the trailer/semitrailer will be applied automatically.
- ▶ Detach brake line coupling head ① (yellow).

- Disconnect the power supply from the socket or from 24 V (15-pin) plug ④.
- Disconnect the connecting cable from ABS (5/7-pin) socket ③.
- Semitrailer tractor vehicles with ABS: if the semitrailer tractor vehicle is being driven without a semitrailer, insert the connection cable into the empty socket.
- Vehicles with rear-mounted cooling system and semitrailer tractor vehicles: fold the folding ladder in/up.
- Check the operation and cleanliness of the lighting system as well as that of the turn signals and brake lamps.

Loading platform approach aid

WARNING

The loading platform approach aid cannot detect persons or moving obstacles. There is therefore a risk of accident even with the loading platform approach aid activated. Make sure that there are no persons or objects behind the vehicle in the area in which you are manoeuvring.

Observe the information on the loading platform approach aid in the trailer manufacturer's operating instructions.

- **To activate:** engage reverse gear. The display shows the  symbol and the distance from the trailer/semitrailer to a solid obstacle in a bar graph and as a numerical value, e.g. **Distance to ramp 150 cm**.
If the loading platform distance is below 100 cm, the status indicator also lights up yellow.
If the loading platform distance is below 50 cm, the warning buzzer also sounds.

Wind deflector

Setting

WARNING

There are no working surfaces fitted on the vehicle for adjusting the wind deflector. If you adjust the wind deflector yourself, there is a danger of falling. There is a risk of injury.

For this reason, use firm, non-slip working surfaces, e.g. a ladder. You must not stand on the roof.

WARNING

If you adjust the wind deflector, you could get trapped between parts of the wind deflector or between the wind deflector and the cab. There is a risk of injury.

When adjusting the wind deflector make sure that there is adequate clearance. Do not place parts of your body between the wind deflector and the cab. Have a second person assist you.

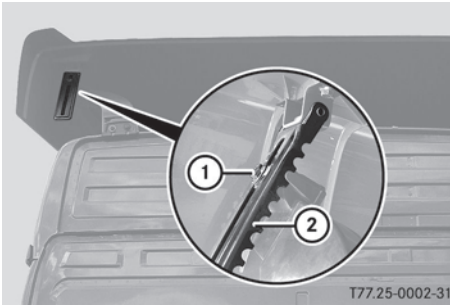
Environmental note

When the wind deflector is adjusted correctly, the air resistance is lowered. This reduces fuel consumption.

Mercedes-Benz recommends that you have the wind deflector adjusted at a qualified specialist workshop.

When adjusting the wind deflector, make sure that the permissible vehicle height is not exceeded. Observe the relevant legal requirements for each country.

- Determine which diagram corresponds to your vehicle.
- Measure height difference **H** between the drip rail and body.
- Measure clearance **S** between the rear wall and body.
- Using height difference **H** and clearance **S** in the diagram, determine adjustment detent **A**.

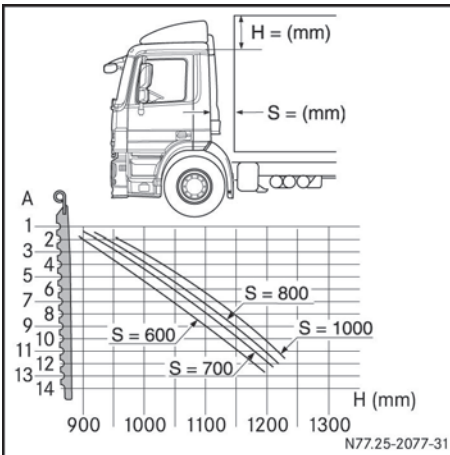


Example: wind deflector adjustment

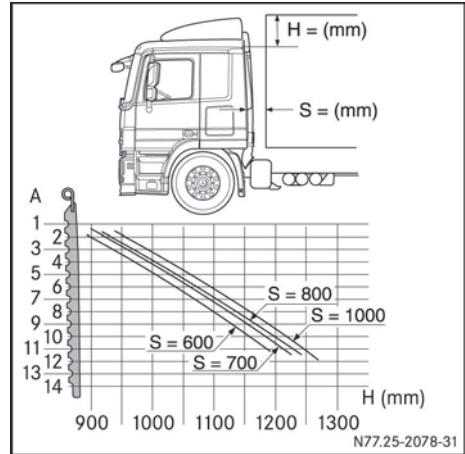
On both sides of the vehicle:

- ▶ Loosen bolts ① on adjustment rails ②.
- ▶ Insert adjustment rails ② on bolts ① to the adjustment detent A that has been determined.
- ▶ Tighten bolts ①.

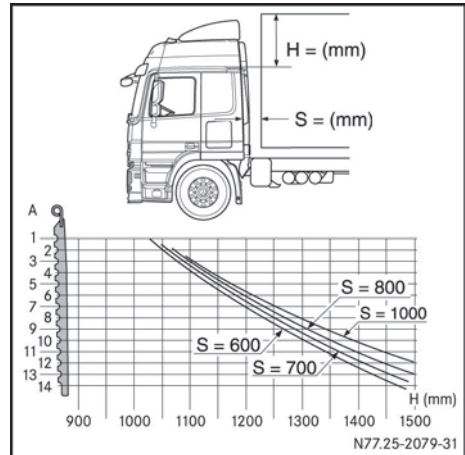
Diagrams



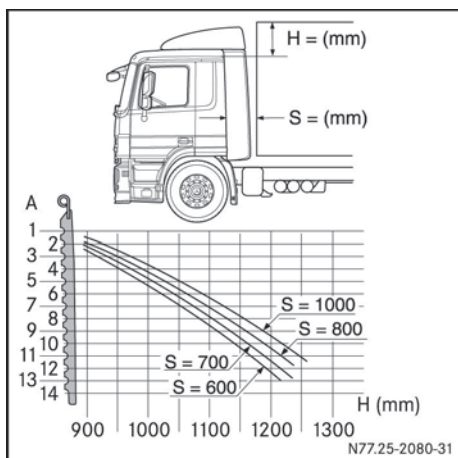
Semitrailer tractor vehicle with S or M cab (example: S cab)



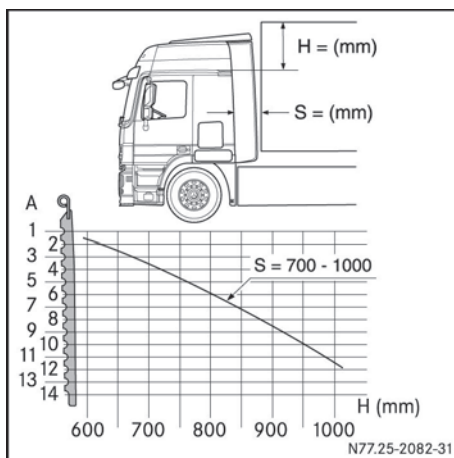
Semitrailer tractor vehicle with L cab



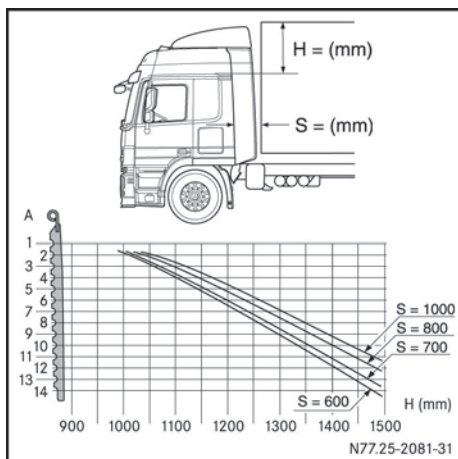
Semitrailer tractor vehicle with LH cab



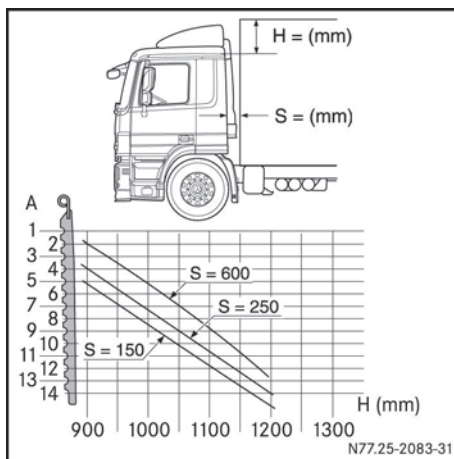
Semitrailer tractor vehicle with M or L cab and long side air deflector (example M cab)



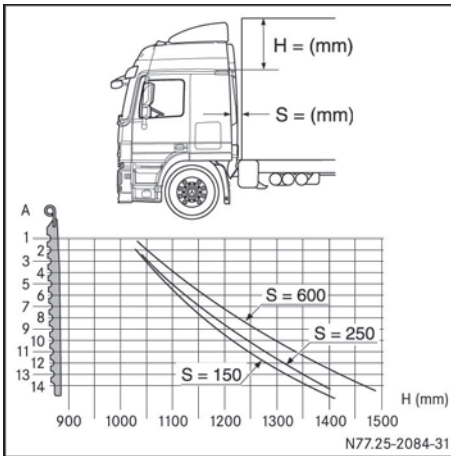
Semitrailer tractor vehicle with Megaspacer cab and long side air deflector



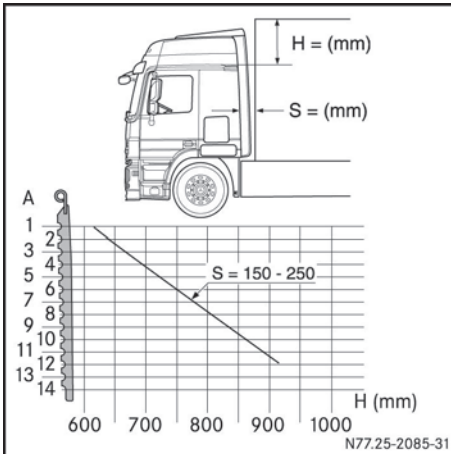
Semitrailer tractor vehicle with LH cab and long side air deflector



Semitrailer tractor vehicle with S, M or L cab (example M cab)



Platform truck with LH cab



Platform truck with Megaspacer cab

Winter operation

Winter driving



DANGER

If the exhaust pipe is blocked or sufficient ventilation is not possible, toxic exhaust fumes may enter the vehicle, especially carbon monoxide. This is the case, for example, if the vehicle gets stuck in snow. There is a risk of fatal injuries.

If you have to leave the engine or the auxiliary heating running, keep the exhaust pipe and the area around the vehicle free of snow. To guarantee a sufficient supply of fresh air, open a window on the side of the vehicle away from the wind.

❗ Vehicles without acceleration skid control (ASR): quick changes from slippery to high grip surfaces whilst the drive wheels are spinning can result in damage to the differential gear system. For this reason, avoid wheelspin of the drive wheels.

❗ At very low outside temperatures, make sure that the engine oil added is of an appropriate SAE classification. Using engine oils that are not suitable for very low outside temperatures may result in engine damage.

More information on engine oils can be found in the "Service products" section (▷ page 346).

Before the onset of winter, make sure that:

- the coolant contains sufficient antifreeze (▷ page 348)
 - the fuel used is suitable for winter use (▷ page 349)
 - the oil is changed in due time if single-grade engine oil is being used (▷ page 346).
 - the windscreen washer system/headlamp cleaning system contains sufficient anti-freeze (▷ page 281)
 - suitable winter tyres are fitted
- In wintry conditions, the law may require that winter tyres be fitted on the wheels of the drive axle. Find out which winter tyres are suitable for your needs. Observe country-specific laws.
- snow chains are carried in the vehicle

- In snow, slush and on icy roads, fit snow chains to the drive wheels in good time.
- Adapt your driving style to suit the road conditions.
- If, when driving, traction problems arise while snow chains are being used, switch off ASR (▷ page 210) and stability control (▷ page 211).

Snow chains

Notes on snow chains

Snow chains increase traction in wintry conditions.

WARNING

If you drive too fast with snow chains fitted, they may snap. As a result, you could injure others and damage the vehicle. There is a risk of an accident.

Observe the maximum permissible speed for operation with snow chains.

- ❗ Only use snow chains that have been approved and recommended for Mercedes-Benz. This will prevent you from causing damage to the vehicle. If you have questions, consult a qualified specialist workshop.

- ❗ Mercedes-Benz recommends that you fit snow chains to all drive wheels. If your vehicle has permanent all-wheel drive and you do not fit snow chains to all drive wheels, activate the inter-axle lock. You could otherwise damage the differential.

Do not exceed the maximum permissible speed of 50 km/h for snow chains.

The law may require that snow chains be removed as soon as possible once the road is clear of snow. The vehicle's driving and braking characteristics will be adversely affected if you drive on roads that are clear of snow with snow chains fitted to the vehicle.

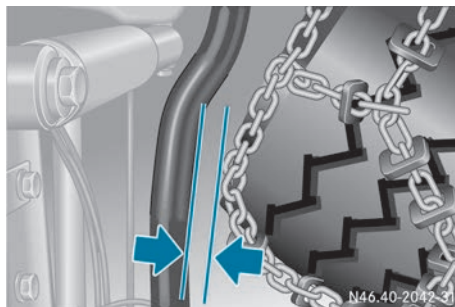
Due to legal requirements in individual countries, there may be slight deviations from the

description in these Operating Instructions regarding the use of snow chains. Observe the legal requirements for the country in which you are driving.

- Vehicles with ASR/SR: if, when driving, traction problems arise while snow chains are being used, deactivate ASR (▷ page 210) or SR (▷ page 211).

Checking the tyre clearance

- ❗ If the clearance between the snow chain and steering linkage is less than 30 mm, the snow chain could damage the steering linkage. In this case, remove the snow chains again. Have the steering geometry checked at a qualified specialist workshop.



Clearance between snow chain and drag link

Observe the following when fitting snow chains to the front axle:

- Apply the parking brake.
- Fit snow chains in accordance with the fitting instructions of the chain manufacturer.
- Start the engine.
- Turn the steering wheel towards the co-driver's side to the stop.
With the steering on full lock, there must be a clearance of at least 30 mm between the snow chain and the drag link.

Cold climate package

Optional equipment

The following optional equipment improves the starting capability of your vehicle at low outside temperatures:

- fuel preheating system with water separator
- socket for jump-starting
- high-output alternator
- coolant preheater
- auxiliary heating
- cold-start aid

Cold-start limits

Without optional equipment your vehicle is capable of starting at temperatures as low as -15°C . When fitted with the optional equipment and filled with cold-resistant service products, your vehicle can be started at temperatures as low as -32°C .

- i** At temperatures lower than the stated cold-start limits, engine starting may be impaired despite taking the appropriate measures.

Cold-resistant service products

Assembly	Service product (Sheet No.) ⁴
Fuel system	Winter diesel fuel
Engine	Engine oil (228.5, 228.51) SAE 5W 30 000 989 69 01
Transmission, transfer case	Transmission oil (235.11) SAE 75W 90 001 989 28 03

Assembly	Service product (Sheet No.)
All-wheel-drive front axle, rear axles, inter-axle	Hypoid gear oil (235.8) SAE 75W 90 001 989 27 03 or 001 989 53 03
Steering	Hydraulic fluid (345.0) 001 989 24 03
Engine cooling system	Coolant (325.0, 325.2, 325.3) Mixing ratio: 55% coolant/ 45% water

Have the vehicle converted to cold-resistant service products at a qualified specialist workshop.

- i** If the vehicle is mainly operated at very low temperatures the maintenance intervals are reduced.

Coolant preheater

The coolant preheater consists of an electrical heating element which is installed in the engine crankcase. The coolant preheater is operated at 230 V independently of the vehicle's electrical system.

- i** You can have a coolant preheater retrofitted at a qualified specialist workshop.

Note, before attempting a cold start

- !** The fluid in discharged batteries may freeze at extremely cold temperatures. Do not rapid-charge cold batteries. Otherwise, you could damage the batteries.

Special measures must be taken before a cold start if the vehicle has been exposed to extremely low temperatures.

- ▶ Charge discharged batteries before starting.
- ❗ The capacity of the batteries is adversely affected by increasingly cold temperatures.
- ▶ Thaw frozen batteries before charging them.

The intake air is automatically preheated on vehicles with a cold-start aid and sufficient battery voltage.

Starting the engine

- ▶ Switch off all electrical consumers (e.g. radio, blower).
- ▶ At outside temperatures below -18°C and on vehicles with a hot-water auxiliary heater: preheat the engine with the auxiliary heater before starting the engine (▷ page 102).
- ▶ At temperatures below -25°C on vehicles with a coolant preheater: preheat the engine using the coolant preheater for at least 90 minutes.

❗ Do not start the engine if you notice a low battery voltage when the ignition is switched on. A starting attempt could damage the batteries if they are cold or not fully charged.

- ▶ Turn the key to the drive position in the ignition lock.
- ▶ Vehicles with a clutch pedal: depress the clutch pedal.
- ▶ Shift into neutral.
- ▶ Disengage power take-off.
The  symbol in the display goes out.
- ▶ Vehicles with cold-start aid: when the  indicator lamp goes out, start the engine.
- ▶ Vehicles without cold-start aid: start the engine.

- ▶ Release the key as soon as the engine is running.

The idling speed is controlled automatically at a speed of approximately 550 rpm.

❗ The lubricity of the engine oil and transmission oil may be reduced at low temperatures. Driving a cold vehicle may result in damage to the drivetrain and assemblies.

❗ The operating safety of the engine is compromised if:

- the warning buzzer sounds
- the STOP lamp lights up
- the status indicator lights up red and
- the display shows the  symbol

Do not pull away, or stop the vehicle as soon as possible, paying attention to road and traffic conditions. You could otherwise damage the engine.

Engine does not start

- ▶ Cancel the starting procedure after approximately 20 seconds.
- ▶ Turn the key back in the ignition lock as far as it will go.
- ▶ Repeat the starting procedure after approximately 1 minute.
- ▶ After three starting attempts, wait approximately 3 minutes before trying again.

Driving in extremely cold conditions

Observe the following at outside temperatures below -20°C :

- ▶ Warm the engine up by letting it run for about 5 to 10 minutes with the vehicle stationary.
- ▶ Before pulling away, check the reservoir pressure in the brake system (▷ page 111) and the coolant temperature (▷ page 116). Do not pull away until the reservoir pressure is adequate.
- ▶ Shift gear early and avoid high engine speeds.

- ▶ Avoid placing heavy loads on the engine when pulling away.
- ▶ Warm the vehicle up for approximately 20 minutes before increasing the load.
- i** Avoid running the engine for brief periods.

Parking in extremely cold conditions

If the vehicle is parked at outside temperatures of below -32°C , it cannot be guaranteed that the engine will start, even with the cold climate package. Mercedes-Benz advises against parking the vehicle outdoors at outside temperatures of below -32°C .

Observe the following if the vehicle has to be parked outdoors at extremely low temperatures:

- ▶ If necessary, ensure adequate vehicle lighting by using external lighting, e.g. warning lamps.
- ▶ Check the fuel level on the fuel gauge (▷ page 109).
- ▶ If the fuel level is down to the reserve level, fill up the fuel tank (▷ page 246).
- i** You may have to bleed the fuel system if the fuel level is too low for longer periods (▷ page 300).

Observe the additional instructions and information on batteries (▷ page 288).

Useful information	266
Power take-offs	266
Tipper operation	269

Useful information

These Operating Instructions describe all the models and standard and optional equipment of your vehicle that were available at the time of going to print. Country-specific differences are possible. Bear in mind that your vehicle may not be equipped with all the functions described. This also applies to safety-relevant systems and functions.

Read the information on qualified specialist workshops (► page 22).

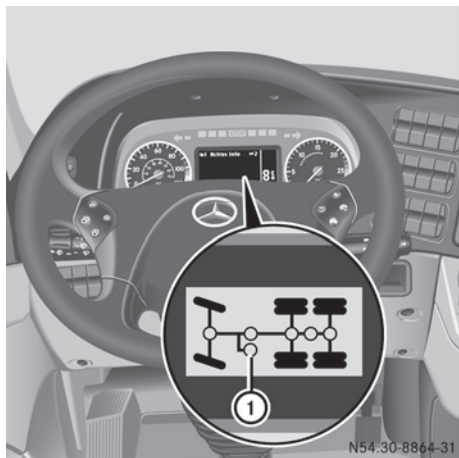
Power take-offs

Power take-offs

General information

! Vehicles with a clutch pedal:

After declutching, you must wait for 10 seconds before engaging or disengaging the power take-off. In this way you will avoid consequential damage.



① Example: power take-off display

The display shows the activation state of the power take-off:

- ☐ Power take-off disengaged
- ☒ Power take-off engaged

You can use the power take-off to drive auxiliary equipment, e.g. hydraulic pumps. The engine and power take-offs must be operated at a certain engine speed (working speed), depending on the conditions of use.

Depending on the design, you can engage and disengage the power take-off:

- transmission-driven power take-off:

You can only engage the power take-off if:

- the vehicle is stationary.
- the parking brake is applied.
- the engine is running (idling speed).
- vehicles with a clutch pedal: the clutch pedal is depressed.
- the transmission is in neutral.

You can only disengage the power take-off when the engine is running at idling speed and, on vehicles with a clutch pedal, when the clutch pedal is depressed.

- Engine-driven power take-off (NMV):

The power take-off can be engaged/disengaged with the engine running (maximum 1700 rpm). This is possible when the vehicle is stationary or in motion and under load.

- Camshaft-driven power take-off:

The power take-off cannot be engaged.

Shift lock

- Transmission with shift lock:

When the power take-off is activated, the manual transmission is locked.

- Transmission without shift lock:

The power take-off can be engaged when the vehicle is stationary or when it is travelling in first, second or third gear. Do not change gear while the vehicle is in motion.

Preselecting the working speed

Use the splitter switch/gearshift rocker on the gear lever or gearshift unit to preselect two different working speeds.

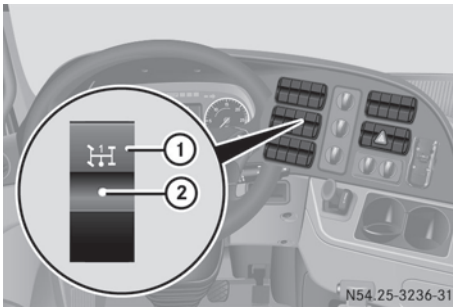
- Pull up the splitter switch or gearshift rocker.
The high working speed is preselected.
Vehicles with Mercedes PowerShift (16-gear transmission): when power take-off is engaged, the display shows the high-range splitter group .

or

- Press down the splitter switch or gearshift rocker.
The low working speed is preselected.
Vehicles with Mercedes PowerShift (16-gear transmission): when you engage power take-off, the display shows the low-range splitter group .
- Adjust the working speed (▷ page 268) and the constant engine speed (▷ page 268).

Engaging/disengaging the power take-off

Engaging transmission-driven power take-off



- Stop the vehicle.
- Apply the parking brake.
- Shift the transmission to neutral position and leave the engine running at idling speed.
- Vehicles with a clutch pedal: depress and hold down the clutch pedal.
- After about ten seconds, press the upper section of switch ①.
Indicator lamp ② lights up.

If the power take-off is engaged, the  symbol appears in the display. At the same time, the status indicator will light up in yellow.

- Vehicles with a clutch pedal: release the clutch pedal.
- ❗ The indicator lamp in the switch flashes for approximately 1.5 seconds after the switch is pressed. Only then is the power take-off engaged. If you press the lower section of switch ① during this period, the power take-off will not be engaged.

Disengaging transmission-driven power take-off

Running at idling speed:

- Vehicles with a clutch pedal: depress and hold down the clutch pedal.
- After about ten seconds, press the lower section of switch ①.
Indicator lamp ② goes out.
When the power take-off is disengaged, the  symbol appears in the display. The status indicator goes out.
- Vehicles with a clutch pedal: release the clutch pedal.

Engaging engine-driven power take-off (NMV)

- With the engine running (maximum 1700 rpm), press the upper section of switch ①.
Indicator lamp ② lights up.
If the power take-off is engaged, the  symbol appears in the display. At the same time, the status indicator will light up in yellow.

Disengaging the engine-driven power take-off (NMV)

- Press the lower section of switch ①.
Indicator lamp ② goes out.
When the power take-off is disengaged, the  symbol appears in the display. The status indicator goes out.

Vehicles with PSM (programmable special module)

You cannot engage the power take-off if the parking brake is released. In this case, the  symbol is shown in the display and the **Apply parking brake** message is shown. At the same time, the status indicator will light up in yellow.

- Engage the parking brake and re-engage the power take-off.

If  flashes in the display, the electronic management system does not recognise the vehicle's current operating state:

- transmission in neutral
- vehicle stationary
- parking brake applied

The power take-off cannot be engaged.

- Check the vehicle's operating state and re-engage the power take-off.

If the  symbol flashes in the display again, visit a qualified specialist workshop.

Engine speed setting

To operate auxiliary equipment, e.g. hydraulic pumps, the engine must be running at a specific speed (working speed).

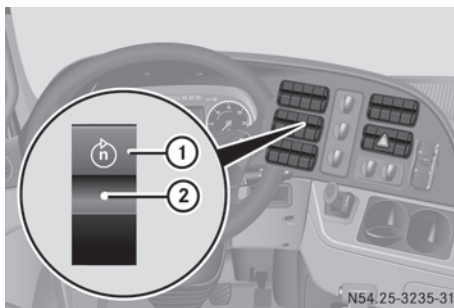
Depending on the vehicle equipment, you can adjust the working speed using:

- the accelerator pedal
- the multifunction lever on the steering column
- the constant engine speed switch

Power take-offs with speed limiter: when the power take-off is engaged, the set working speed cannot be exceeded.

Constant engine speed

When the constant engine speed function is switched on, the set working speed for the power take-off is controlled by the electronic management system, regardless of the load.



The constant engine speed function can only be switched on if:

- the vehicle is stationary.
- the parking brake is applied.
- the transmission is in neutral.
- power take-off is engaged.

- **To activate:** press the upper section of switch ①.
Indicator lamp ② lights up.

- **To disengage:** press the lower section of switch ①.
Indicator lamp ② goes out.

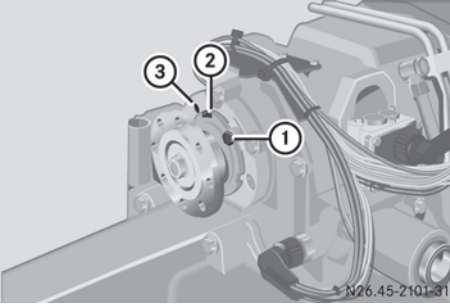
Power take-off (NMV) emergency mode

WARNING

With the engine running, the output shaft for the engine-bound power take-off may turn. There is a risk of injury.

Only operate the emergency gearshift for the engine-driven power take-off when the vehicle is stationary, the parking brake applied and the engine switched off.

If the engine-driven power take-off fails, a rigid power transmission link can be established in the power take-off.



Example of a power take-off (NMV)

- Unscrew catch ①.
- Unscrew slotted nut ② to the stop, by approximately 4½ turns.
- ❗ If slotted nut ② is hard to move, turn the drive shaft slightly.
- Lock slotted nut ② using catch ①, do this by turning catch ① and screw it into the appropriate threaded hole ③.

Tipper operation

Before tipping

⚠ WARNING

Vehicles with Telligent® level control:

If the chassis is not completely lowered before tipping, the vehicle could overturn due to its high centre of gravity. There is a risk of an accident.

Make sure that the chassis is completely lowered before tipping.

⚠ WARNING

When opening the side panel lock, the drop-side may drop downwards. This is particularly the case when it is subjected to a load and is therefore under increased strain. There is a danger of injury.

Before opening, make sure that no persons are in the swinging range of the drop-side. Always open the side panel lock laterally from the drop-side to be opened. Be particularly

careful if the side panel latches cannot be released using the normal amount of force.

⚠ WARNING

If you drive off with the tipper platform raised, it could get caught on buildings, bridges or trees, for example. There is a risk of an accident.

Before driving off, always make sure that you have lowered the tipper platform and that it is correctly secured.

- ❗ When picking up or setting down a container, the wheels on the front axle must not be allowed to lift clear of the ground. Otherwise, the chassis frame can be damaged.

Run the engine when coupling to a semi-trailer or picking up demountable bodies or containers.

Be sure to follow the safety regulations and the tipper manufacturer's separate operating instructions.

A vehicle that is not parked on stable surface could overturn during tipping. Therefore, always make sure that the vehicle is on a firm, level surface when tipping. The loaded wheels must be on firm ground when tipping.

- Park the vehicle on a firm and level surface.
- Apply the parking brake.

- Check and secure the pins on the tipper body; see the separate manufacturer's operating instructions.

The tipper body must always be secured with pins on a side to which the load is to be tipped. The pins have different shapes to prevent confusion or diagonal insertion.

- Start the engine.

- **Vehicles with automatic chassis frame**

lowering: switch on the tipper pump (power take-off) (> page 266).

The chassis frame is lowered automatically.

The display shows the  symbol for chassis frames below driving level.

► **Vehicles without automatic chassis**

frame lowering: lower the chassis frame as far as possible (► page 231).

The display shows the  symbol for chassis frames below driving level.

- Switch on the tipper pump (power take-off) (► page 266).
- Open the dropside and ensure that the dropside unlocks and opens in the case of automatic release/locking mechanisms. See the manufacturer's separate operating instructions.

Tipping

- Make sure that nobody is in the tipping area.
- Observe the operating instructions issued by the tipper manufacturer.

After tipping

- Close the dropside and ensure that the dropside closes and locks in the case of automatic release/locking mechanisms. See the manufacturer's separate operating instructions.
- Switch off the tipper pump (power take-off) (► page 266).
- **Vehicles with automatic chassis frame lowering:** press the STOP button (raise/lower) on the control unit of the Telligent® level control or the STOP switch (raise/lower) on the instrument cluster (► page 231).
- Raise the chassis frame to driving level (► page 231).
The  symbol for chassis frames below driving level goes out in the display.
- **Vehicles without automatic chassis frame lowering:** raise the chassis frame to driving level (► page 231).
The  symbol for chassis frames below driving level goes out in the display.

Useful information	272
Cleaning and care	272
Maintenance	277

Useful information

These Operating Instructions describe all the models and standard and optional equipment of your vehicle that were available at the time of going to print. Country-specific differences are possible. Bear in mind that your vehicle may not be equipped with all the functions described. This also applies to safety-relevant systems and functions.

Read the information on qualified specialist workshops (► page 22).

Cleaning and care

Notes on care

🌀 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.

Regular care helps to maintain the value of the vehicle.

Mercedes-Benz recommends that you only use care products that have been approved for Mercedes-Benz. You can obtain these care products from any Mercedes-Benz Service Centre. Do not use fuel as a cleaning agent.

If you need to wash upper parts of the vehicle, always use suitable ladders or other non-slip climbing aids.

Cleaning the interior

Cleaning the seat covers

! Microfibre cloths should not be used to clean covers made from genuine or artificial leather. The microfibre cloth can damage the cover if used frequently.

! Clean:

- covers made from artificial leather with a 1 % detergent solution, e.g. washing-up liquid, and a moistened cloth
- covers made from fabric with a 1 % detergent solution, e.g. washing-up liquid, and a moistened microfibre cloth. You can avoid visible edges by carefully rubbing clean the entire cover part. Allow the seat to dry subsequently. Cleaning results are dependent on the type and the age of the soiling.
- covers made from genuine leather carefully with a damp cloth and then wipe them with a dry cloth. Make sure that the leather is not soaked. This can cause the leather to become brittle or cracked. To care for the leather, use leather care agents that are recommended by Mercedes-Benz. These may be obtained in any qualified specialist workshop.

i Please note that:

- leather covers are a natural product and are therefore subject to a natural ageing process. Leather can respond differently to certain environmental influences (e.g. high humidity or severe heat), e.g. more strongly defined folds can develop.
- regular care is required if the look of the leather covers and their touch and feel are to be preserved in the long-term.

Cleaning the 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.

Clean the seat belts with a mild washing solution.

Cleaning the vehicle exterior

Important safety notes

WARNING

If the windscreen wipers are set in motion when cleaning the windscreen or wiper blades, you could become trapped. There is a danger of injury.

Always switch off the windscreen wipers and the ignition before cleaning the windscreen or wiper blades.

WARNING

If you use openings in the bodywork or detachable parts as steps, you could:

- slip and/or fall
- damage the vehicle and cause yourself to fall.

There is a danger of injury.

Always use secure climbing aids, e.g. a suitable ladder.

- !** Do not use parts of the vehicle or openings in the bodywork, such as battery compartment covers or fuel/AdBlue® tanks, as steps. Parts of the vehicle or openings in the bodywork can otherwise be damaged.

When cleaning the vehicle, always use the vehicle's steps and grab-handles or secure climbing aids, e.g. a suitable ladder.

- !** 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.

Scratches, corrosive deposits, corrosion and damage caused by neglect or incorrect care cannot always be completely rectified. In such cases, contact a qualified specialist workshop.

- !** If the vehicle has Mercedes-Benz protective chassis sealing:

- do not use high-pressure cleaners or pulsating circular-jet nozzles.
- only clean with a water pressure up to a maximum of 3 bar.
- clean the vehicle with a water temperature up to a maximum of 40 °C.
- keep a distance of at least 30 cm between the nozzle and the vehicle.
- only use neutral cleaning agents in the mixing ratio prescribed by the manufacturer and do not use alkaline or acidic products.
- do not use any petrol-based substances, rape seed oil, diesel, petrol or other solvents.
- whenever the vehicle is used, remove corrosive substances with water afterwards.
- before and after each use during winter, check the anti-corrosion protection, and touch it up if necessary.

Access steps

General notes

Observe the safety notes on cleaning the exterior (▷ page 273).

Keep steps and grab handles free from dirt, such as:

- mud
- clay
- snow
- ice

This increases the safety of your footing.

Access steps, front

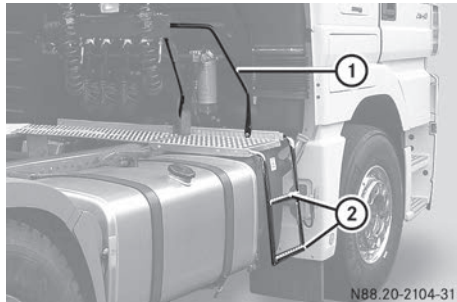


Example: steps and grab handles on the Mega-space cab



Example: SLT steps and grab handles

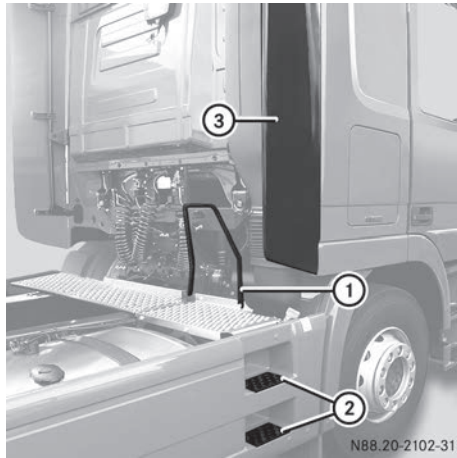
Access steps for semitrailer tractor vehicles



Example: steps and grab handle on the semitrailer tractor vehicle

- ① Grab handle
- ② Access steps

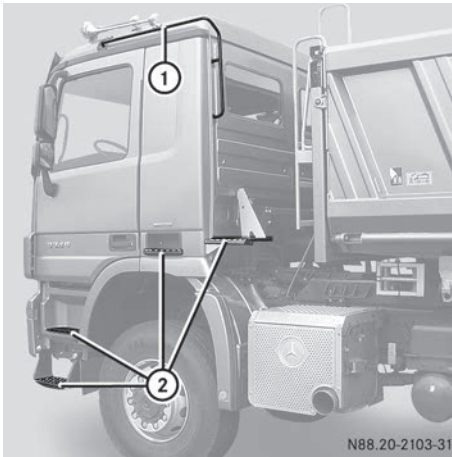
Access steps for semitrailer tractor vehicle with side air deflectors



Example: steps and grab handle on the semitrailer tractor vehicle with side air deflectors

Before using grab handle ① and access steps ②, you have to fold in side air deflector ③.

Steps on the construction vehicle



Example: steps and grab handles on the tipper

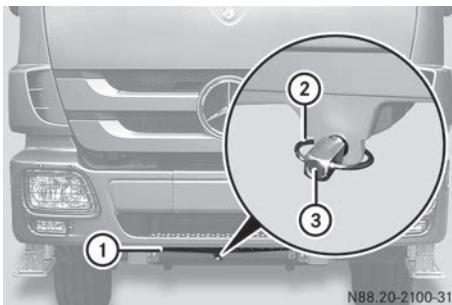
- ① Grab handle
- ② Access steps

Folding steps, front

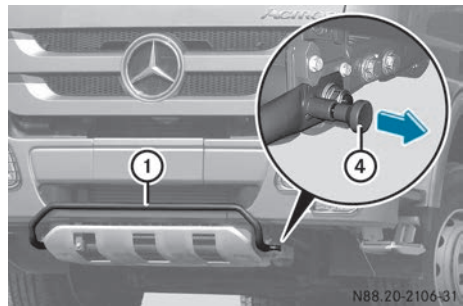
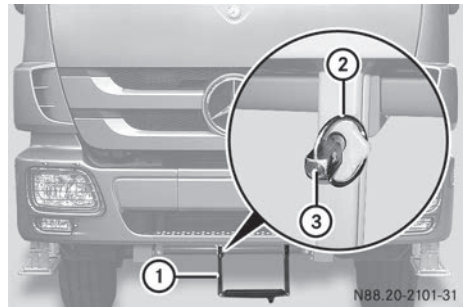
! If you drive the vehicle with the step folded down, the step can come into contact with the road surface and be damaged, e.g. when driving off-road.

Therefore, fold up the step before driving off. Do not drive with the step folded down.

When you clean the windscreen, fold the step down beforehand.



Steps on vehicles without an engine guard



Steps on vehicles with an engine guard

Vehicles with an engine guard:

- **To fold down:** pull catch ④ and swing step ① downwards, until catch ④ engages.
- **To fold up:** pull catch ④ and swing step ① upwards, until catch ④ engages.

Cleaning the distance sensor



Clean the cover of distance sensor ① regularly.

If the distance sensor is dirty, the display shows the **[ART]** symbol and the **Clean distance sensor** message with a yellow status indicator.

High-pressure cleaning

WARNING

The water jet of circular-jet nozzles (dirt grinders) can cause damage not visible from the outside to tyres or chassis components. Components damaged in this way can unexpectedly fail. There is a risk of an accident.

Do not use high-pressure cleaners with circular-jet nozzles to clean the vehicle. Have damaged tyres or chassis components replaced immediately.

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.

! The BlueTec[®] exhaust gas aftertreatment system may only be cleaned when it is cool. The sensors can otherwise be damaged.

When cleaning, never point the water jet at the exhaust pipe. The exhaust gas after-treatment may otherwise be damaged.

! When using a high-pressure cleaner, keep a minimum distance of approximately 30 cm between the high pressure nozzle and the vehicle parts. Do not use a high-pressure cleaner with a round jet nozzle. Parts of the vehicle or engine can otherwise be damaged.

! Keep the water jet moving constantly while cleaning. In this way, you will avoid causing damage.

Do not point the water jet at:

- door joints
- air bellows
- brake hoses
- wheel balance weights
- electrical components
- electrical connectors
- seals

! If your vehicle has Mercedes-Benz protective chassis sealing, do not use a high-pressure cleaner. You could otherwise damage the protective sealing.

Observe the notes on cleaning the exterior (> page 273).

Automatic car wash

! Fold in the exterior mirrors before driving through an automatic car wash. Set the windscreen wiper switch to the  position. The exterior mirrors and windscreen wipers could otherwise be damaged.

Make sure that the exterior mirrors are fully folded out again when you leave the automatic car wash.

If the vehicle is very dirty, pre-wash it before you put it through an automatic car wash.

After using an automatic car wash, wipe off wax from the windscreen and the wiper

blades. This will prevent smears caused by residue on the windscreen.

Cleaning the engine

! Observe the following notes when cleaning the engine. This avoids malfunctions and damage to the engine.

- When using high-pressure or steam cleaners, do not point the spray directly at electrical components and electric cables.
- Make sure that no water enters the air intake and ventilation openings.
- Treat the engine with preservative agents after it has been cleaned. When doing so, protect the belt drive system from the preservative agent.
- Use only wax preservative for engines according to sheet number 385.4 of the Mercedes-Benz Specifications for Service Products.

Retarder

Observe the following notes:

- clean the retarder regularly with a high-pressure cleaner but without any cleaning agent.
- make sure that the retarder is cold.
- pay particular attention when cleaning electrical components and electrical connections.

Light-alloy disc wheels

Clean the light-alloy wheels regularly.

! When cleaning the light-alloy wheels, do not use any acidic or alkaline cleaning agent. They may corrode the wheel nuts or the locking springs of the wheel balance weight.

Maintenance

Important safety notes

Environmental note

If circumstances demand that you have to do some maintenance work yourself, environmental protection requirements must be observed. When disposing of service products, e.g. engine oil, you must comply with the legal requirements. This also applies to all parts, e.g. filters, that have been in contact with service products. For vehicles running on FAME (fatty acid methyl ester) fuel, the special instructions on disposing of engine oil must be observed. For more information, visit a qualified specialist workshop, e.g. a Mercedes-Benz or MTU Service Centre. Dispose of empty containers, cleaning cloths and care products in an environmentally responsible manner. Observe the instructions for care products. Do not let the engine run longer than necessary when stationary.

Before carrying out maintenance work and repairs, read the following relating to maintenance and repair measures:

- the relevant sections of the technical documentation, e.g. the Operating Instructions and workshop information.
- legal regulations, e.g. work safety regulations and accident prevention regulations

You must secure the vehicle on axle stands of sufficient load-bearing capacity if work is being carried out underneath the vehicle.

Never use the jack instead of stands. The jack is only intended to raise the vehicle for a short time. It is not suitable for performing maintenance work under the vehicle.

Please also refer to the notes about the qualified specialist workshop (> page 22).

Like all technical equipment, the vehicle requires care and maintenance. The scope and frequency of maintenance work mainly depends on the operating conditions, which can differ widely.

The enclosed Maintenance Booklet contains information on the scope and frequency of maintenance work and notes on warranty, service products and maintenance work.

A qualified specialist workshop will confirm the work that has been carried out in the Maintenance Booklet.

Inspection and maintenance work requires special skills that cannot be acquired by reading these Operating Instructions. Have this work carried out by trained and skilled personnel.

Always have maintenance work carried out at a qualified specialist workshop.

Expert technicians, the latest technical information supplied by the factory along with state-of-the-art tools and facilities ensure that the vehicle is serviced to the highest professional standards.

WS (Telligent® maintenance system)

Introduction

The Telligent® maintenance system calculates service due dates for the vehicle and its assemblies based on the vehicle's operating conditions.

You can call up the service due dates calculated for the vehicle and its assemblies in the on-board computer (▷ page 119).

The service due dates are first displayed automatically 14 days before the respective service is due. When the service due date has been reached or exceeded, the display shows additional messages (▷ page 278).

- i** A qualified specialist workshop can program the first service message to appear between 0 and 30 days before the service due date.

All maintenance work carried out should be confirmed using the on-board computer (▷ page 278).

Automatic service messages

- !** Not observing service messages and not having service work performed on time can lead to damage to the vehicle or its assemblies. It could also result in increased wear. Always have maintenance work carried out on time and at a qualified specialist workshop.

The Telligent® maintenance system automatically notifies you of service due dates, for example:

-  

Air cleaner, 12.03.09, 6000 km

The service due dates are first displayed automatically 14 days before the respective service is due.

-  

Air cleaner, Service due

The service is due.

-  

Air cleaner, Service now

The service due date has been exceeded.

-  

Brake A1, Service now

The service due date for the brake system has been significantly exceeded.

Confirming service messages:

- Press the  button on the instrument cluster.

- i** When you turn the key to the driving position in the ignition lock, the display shows upcoming and due service dates.

If you do not acknowledge a service message, it is shown for approximately 20 seconds. The previously shown display then reappears.

Confirming service work carried out

- i** If the work is carried out at a Mercedes-Benz Service Centre, the fact that the work has been carried out professionally will be

confirmed in the on-board computer and the Maintenance Booklet.

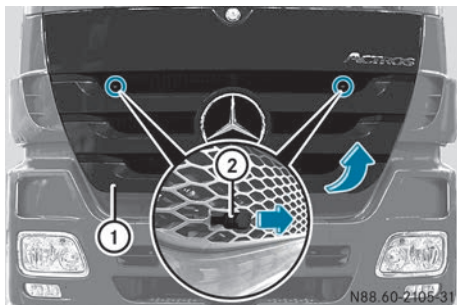
- !** Confirming service work that has not been performed on time can lead to increased wear and damage to the vehicle or its assemblies. It could also result in increased wear.

If you confirm service work accidentally or before it has been performed, the Telligent® maintenance system will calculate a new service due date. To prevent damage to the vehicle and its assemblies, have the corresponding service work carried out immediately.

Only confirm service work if the service work has actually been completed.

Maintenance flap

Opening

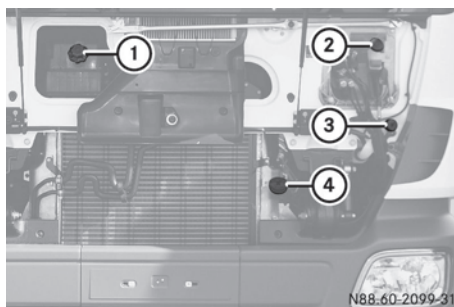


- Press both release levers (2) inwards in the direction of the arrow.
- Swing maintenance flap (1) upwards.

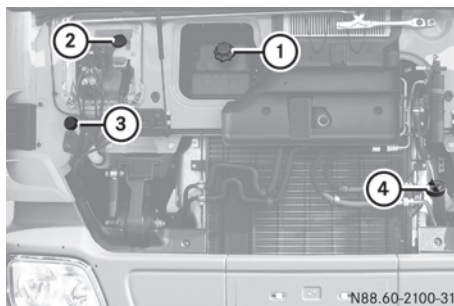
Closing

- Swing maintenance flap (1) down and engage it audibly.

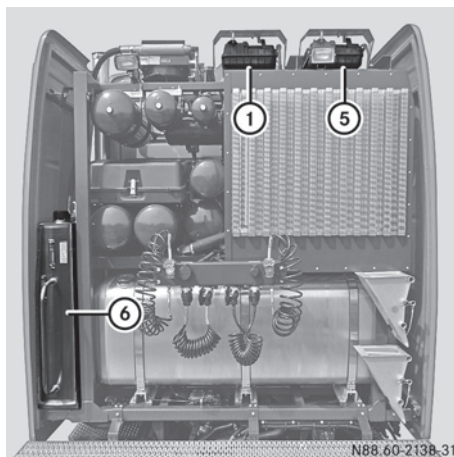
Maintenance points



Example: left-hand-drive vehicle



Example: right-hand-drive vehicle



Example: rear-mounted cooling system

- ① To check the engine coolant level and top up the coolant (> page 280)
- ② To check the hydraulic clutch system fluid level (> page 281)

- ③ To top up washer fluid for the windscreen washer system/headlamp cleaning system (▷ page 281)
- ④ To top up the engine oil (▷ page 283)
- ⑤ To check the hydrodynamic clutch coolant level and top up the coolant (▷ page 280)
- ⑥ To check and top up the hydraulic fluid level (▷ page 284)

Coolant level

WARNING

The engine cooling system is under pressure, particularly if the engine is warm. You could be scalded by hot coolant spraying out when opening the cap. There is a danger of injury. Allow the engine to cool before opening the cap. Wear gloves and protective eyewear when opening. Slowly turn the cap half a turn to allow pressure to escape.

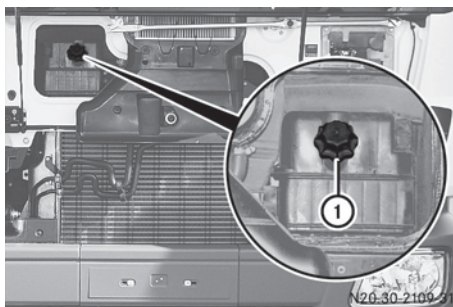
WARNING

Coolant contains glycol and is therefore toxic. Do not swallow the coolant. See a doctor immediately if you swallow coolant.

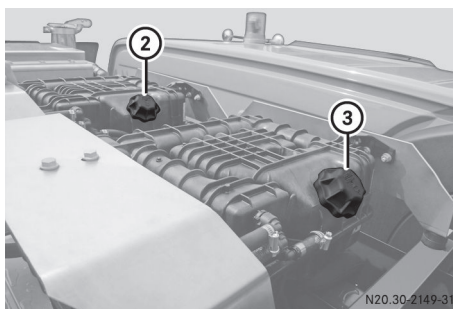
Make sure that coolant does not come into contact with skin, eyes or clothing. In case of contact with eyes, rinse immediately with plenty of clean water. Clean affected areas of skin and clothing with soap and water immediately. Change any affected clothing immediately.

Only open the coolant expansion tank when the coolant has cooled down.

If the coolant level in the coolant expansion tank is too low, the  symbol appears in the display and the status indicator lights up red.



Coolant expansion tank (example: under the maintenance flap on a left-hand-drive vehicle)



Coolant expansion tank (example: vehicles with rear-mounted cooling system)

Vehicles with a rear-mounted cooling system: only check the coolant level at the coolant expansion tank behind the cab. Do not open cap ① of the coolant expansion tank under the maintenance flap. Otherwise, coolant leaks out.

- Park the vehicle on a level surface.
- Apply the parking brake.
- Switch off the engine.
- Check the coolant temperature in the on-board computer (▷ page 116).
- Wait until the coolant temperature drops below 50 °C.
- Vehicles with automatic climate control: turn the key fully back in the ignition lock.
- Vehicles without a rear-mounted cooling system: open the maintenance flap (▷ page 279).

- ▶ Vehicles with a rear-mounted cooling system: use secure climbing aids, e.g. a suitable ladder.
- ▶ Vehicles without a rear-mounted cooling system: turn engine coolant cap ① slowly anti-clockwise and release the pressure.
- ▶ Vehicles with a rear-mounted cooling system: turn engine coolant cap ② or hydrodynamic clutch coolant cap ③ slowly anti-clockwise and release the pressure.
- ▶ Vehicles without a rear-mounted cooling system: unscrew and remove engine coolant cap ①.
- ▶ Vehicles with a rear-mounted cooling system: unscrew and remove engine coolant cap ② or hydrodynamic clutch coolant cap ③.
- ▶ Check coolant level.
The coolant in the expansion tank must reach up to the edge of the filler neck.
- ▶ Top coolant up to the edge of the filler neck. Pay attention to the coolant mixture ratio and the water quality (▷ page 348).
- ▶ Vehicles without a rear-mounted cooling system: attach engine coolant cap ① and tighten it up to the stop.
- ▶ Vehicles with a rear-mounted cooling system: attach engine coolant cap ② or hydraulic clutch coolant cap ③ and tighten it up to the stop.
- ▶ Run the engine briefly at varying engine speeds.
- ▶ Switch off the engine and recheck the coolant level.
- ▶ Vehicles without a rear-mounted cooling system: close the maintenance flap (▷ page 279).

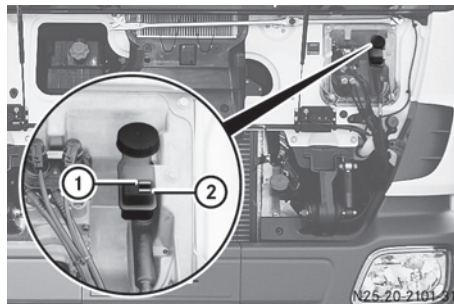
Clutch system

Checking the fluid level

- ❗ Never top up with a brake fluid or hydraulic fluid of a different quality grade. You

could otherwise damage the hydraulic clutch system.

- ❗ The hydraulic system may be leaking if the fluid level in the hydraulic clutch system reservoir is below the minimum mark. Have the hydraulic system checked at a qualified specialist workshop.



Clutch system fluid reservoir (example: left-hand-drive vehicle)

The hydraulic fluid for the hydraulic clutch system is specified on Sheet No. 345.0 of the Mercedes-Benz Specifications for Service Products and no deviation is permitted.

It is not necessary to renew the hydraulic fluid in the hydraulic clutch system.

- ▶ Open the maintenance flap (▷ page 279).
- ▶ Check the fluid level in the reservoir.
The fluid level must be between maximum mark ① and minimum mark ②.
- ▶ Close the maintenance flap.

Windscreen washer system/headlamp cleaning system

Topping up the washer fluid

⚠ WARNING

Windscreen washer concentrate is highly flammable. If it comes into contact with hot engine components or the exhaust system it could ignite. There is a risk of fire and injury. Make sure that no windscreen washer concentrate is spilled next to the filler neck.

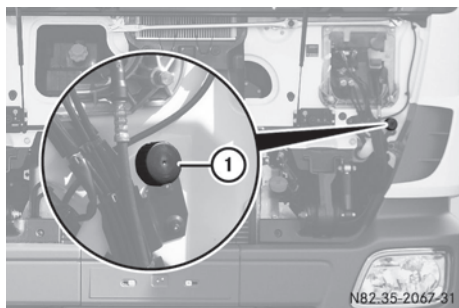
Add a washer fluid concentrate according to Mercedes-Benz Specifications for Service Products Sheet No. 37 1.0 throughout the entire year. Adjust the mixing ratio to suit the outside temperature.

At temperatures above freezing, use a washer concentrate for the summer to prevent smearing. If there is a risk of frost, use a washer fluid concentrate for winter to prevent the water from freezing on the windscreen.

The washer fluid reservoir for the windscreen washer system and the headlamp cleaning system has a capacity of approximately 16 litres.

i If the washer fluid level in the washer fluid reservoir is too low, the  symbol appears in the display and the status indicator lights up yellow.

- Mix the washer fluid to the appropriate mixing ratio in a container beforehand.
- Open the maintenance flap (► page 279).



Example: left-hand-drive vehicle

- Unscrew and remove cap ① of the washer fluid reservoir.
- Refill the washer fluid reservoir.
- Replace cap ① and screw it on.
- Close the maintenance flap.

Replacing the wiper blades

WARNING

If you use the steps and grab handles at the front of the cab when replacing the wiper

blades, you could slip and/or fall. There is a risk of injury.

When replacing the wiper blades, always use secure climbing aids, e.g. a suitable ladder.

WARNING

If the windscreen wipers begin to move while you are changing the wiper blades, you can be trapped by the wiper arm. There is a risk of injury.

Always switch off the windscreen wipers and ignition before changing the wiper blades.

! Only touch the wiper blade on the wiper arm. Otherwise, you could damage the wiper blade.

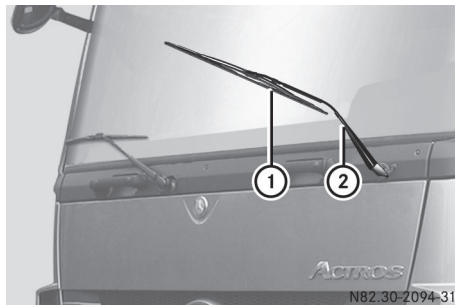
! Do not open the bonnet when a wiper arm is folded away from the windscreen. Otherwise, you could damage the bonnet.

Do not fold the wiper arms back onto the windscreen without wiper blades fitted. Otherwise, you could damage the windscreen.

Worn or damaged wiper blades result in smearing on the windscreen. This impairs visibility.

This can also cause faults in vehicles with rain/light sensors.

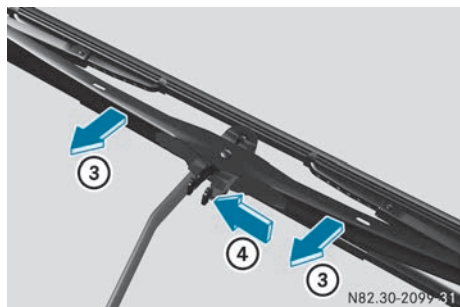
Therefore, check the wiper blades on the driver's and co-driver's side regularly and replace worn or damaged wiper blades immediately.



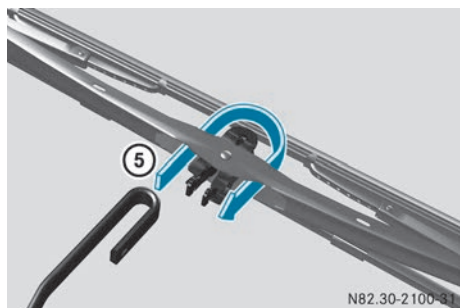
► Apply the parking brake.

► Shift the transmission to neutral position **N**.

- Switch off the engine.
- Remove the key from the ignition lock.
- **To remove the wiper blade:** fold wiper arm ② away from the windscreen.
- Set wiper blade ① at right angles to the wiper arm.



- Press locking springs ④ together and push wiper blade ① out of the curvature of wiper arm ② in the direction of arrow ③.
- Remove wiper blade ①.



- **To fit the wiper blade:** push the hinge piece of the wiper blade into the curvature of wiper arm ② in the direction of arrow ⑤ until you hear the locking springs engage.
- Press the wiper blade fully into the curvature on wiper arm ② until you hear the locking springs engage.
- Turn wiper blade ① parallel to wiper arm ②.
- Fold wiper arm ② onto the windscreen again.

Engine oil level

Checking the oil level in the display

Check the engine oil level on a regular basis, e.g. every week or each time you refuel.

- Check the engine oil level via the on-board computer (> page 116).
- Top up the engine oil as required.

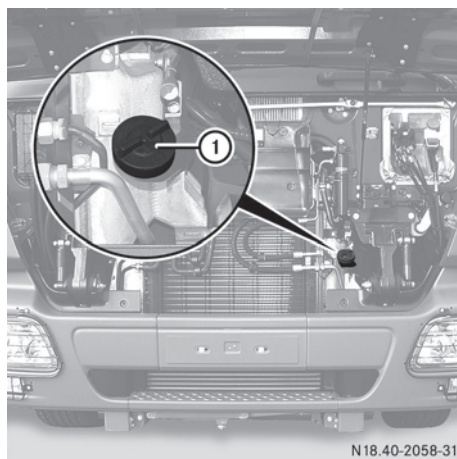
Topping up the engine oil

You will find information about engine oils in the "Service products" section (> page 346).

Mercedes-Benz recommends that you add the amount of oil displayed in the on-board computer before starting a long journey.

Do not add the topping-up quantity shown in the on-board computer until the display shows the  symbol.

- Park the vehicle on a level surface.
- Apply the parking brake.
- Switch off the engine.
- Open the maintenance flap (> page 279).



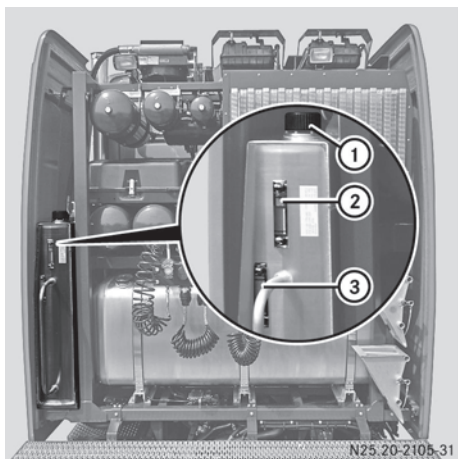
- Unscrew and remove cap ①.

! Only use oils which have been approved for the vehicle and with the prescribed SAE classification.

Do not add too much oil. If you add too much oil, the engine or the exhaust system could be damaged. Have excess oil siphoned off.

- ▶ Top up the oil fill level shown in the display.
- ▶ Replace and screw on cap ①.
- ▶ Close the maintenance flap.

Hydraulic fluid level



Example: hydraulic oil reservoir

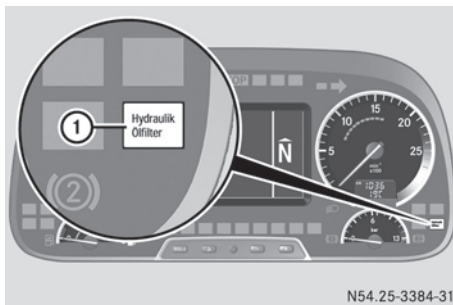
The hydraulic fluid controls the function of the trailer/semitrailer. You should always be able to see the hydraulic fluid level in one of the two inspection windows ② and ③. If the vehicle has dispensed hydraulic fluid to the trailer/semitrailer, the level is shown in lower inspection window ③.

The hydraulic fluid for the hydraulic system is specified on Sheet No. 345.0 of the Mercedes-Benz Specifications for Service Products.

- ▶ Check the hydraulic fluid level in inspection windows ② and ③.
- ▶ If the hydraulic fluid level is too low, open cover ① and top up with hydraulic fluid.

Hydrostatic fan drive - rear-mounted cooling system

Replacing the filter element



When hydraulic fluid filter indicator lamp ① in the instrument cluster lights up, have the filter element replaced at a specialist qualified workshop.

Vehicle assemblies

Checking the vehicle assemblies for leaks

🌿 Environmental note

Improper handling of service products is hazardous to the environment.

Do not allow service products to enter the sewage system, surface waters, ground water or soil.

Check the vehicle assemblies for leaks regularly. If fluid loss is identified, e.g. through oil drops on the parking area, have the cause of the fluid loss rectified at a qualified specialist workshop.

Checking the anti-corrosion protection

- ❗ Road salt has a corrosive effect. In winter, wash the vehicle more frequently in order to remove salt residue. Salt residues can otherwise damage the anti-corrosion protection.

The vehicle can be provided with Mercedes-Benz protective chassis sealing. The Mercedes-Benz protective chassis sealing is a transparent anti-corrosion wax with outstanding protective qualities.

All Mercedes-Benz cabs have body cavity protection.

- ▶ Check the vehicle regularly for corrosion damage, particularly the compressed-air lines, hydraulic lines and electrical contact points (earth contacts).
- ▶ Have any damage to the factory-fitted anti-corrosion protection rectified at a qualified specialist workshop.
- ▶ Vehicles without Mercedes-Benz protective chassis sealing: as a precautionary measure, spray the underside of the vehicle with a wax-based underbody protective agent according to Sheet No. 385.1 of the Mercedes-Benz Specification for Service Products.

Batteries

Important safety notes



Risk of explosion. Explosive oxy-hydrogen is produced when batteries are being charged. Only charge the batteries in a well-ventilated area.



Risk of explosion. Avoid creating sparks! Avoid fire, open flames and do not smoke when handling the battery.



Battery acid is caustic. Wear acid-resistant protective gloves! Splashes of acid on skin or clothing should be neutralised immediately using soapy water or acid neutraliser and then rinsed with water.



Wear eye protection. When mixing water and acid, the liquid may splash into your eyes. Rinse out any acid that splashes into eyes

immediately using clean water and seek medical attention at once!



Keep out of the reach of 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.

WARNING

Battery acid is caustic. There is a risk of injury. Avoid contact with the skin, eyes or clothing. Do not inhale battery vapours. When carrying out maintenance work on the battery, wear acid-resistant protective clothing, in particular eye protection, protective gloves and an apron. Do not lean over the battery. Keep batteries out of the reach of children.

If you come into contact with battery acid, observe the following:

- Rinse battery acid off the affected areas of skin immediately and seek medical attention without delay.
- If battery acid comes into contact with your eyes, rinse them out thoroughly with clean water immediately. Seek medical attention without delay.



Environmental note



Batteries contain pollutants. It is illegal to dispose of them with the household rubbish. They must be collected separately and disposed of in an environmentally responsible recycling system.



Dispose of batteries in an environmentally responsible manner. Take discharged batteries to a qualified specialist workshop or to a col-

lection point for used batteries.

Battery compartment

Removing the cap



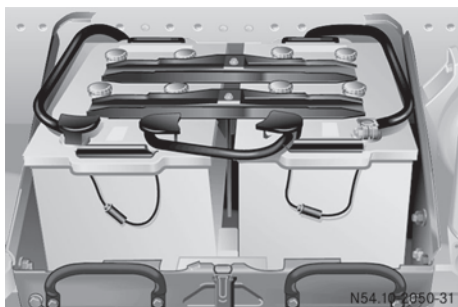
Example: battery cover

- Open catch ②.
- Remove battery cover ① upwards.

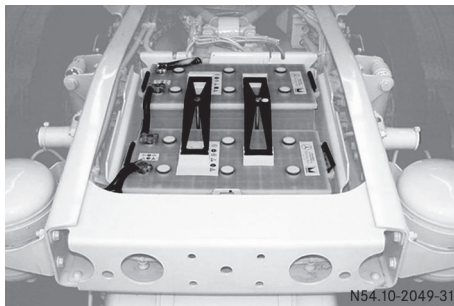
Arrangement of the batteries

The batteries are located on the side of the chassis or, on semitrailer tractor vehicles (depending on the vehicle version), in the rear area between the longitudinal frame members.

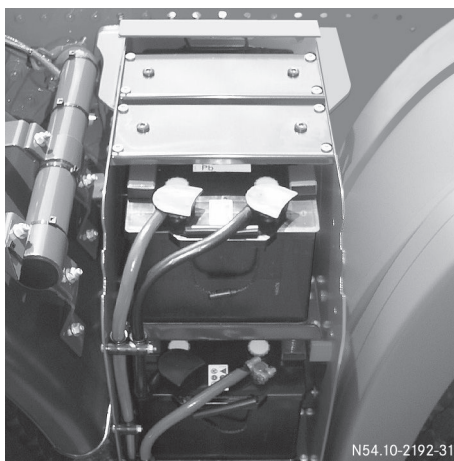
On vehicles with a rear-mounted cooling system, the batteries are located in the battery compartment behind the driver's cab.



Example: battery carrier on the side of the chassis



Example: batteries between the longitudinal frame members



Example: battery support frame on the side of the chassis – batteries arranged one above the other

Disconnecting and connecting the batteries

Important safety notes

⚠ WARNING

During the charging process, a battery produces hydrogen gas. If a short circuit occurs or sparks are created, the hydrogen gas can ignite. There is a risk of an explosion.

- Make sure that the positive terminal of a connected battery does not come into contact with vehicle parts.
- Never place metal objects or tools on a battery.

- It is important that you observe the described order of the battery terminals when connecting and disconnecting a battery.
- When jump-starting, make sure that the battery poles with identical polarity are connected.
- It is particularly important to observe the described order when connecting and disconnecting the jump leads.
- Never connect or disconnect the battery terminals while the engine is running.

! Vehicles with BlueTec® exhaust gas after-treatment: do not disconnect the battery until the engine has been switched off for at least 5 minutes. This ensures that the exhaust gas aftertreatment functions after restarting.

Disconnecting

- ▶ Semitrailer tractor vehicle with batteries at the rear area: detach the semitrailer (▷ page 252).
- ▶ Remove the key from the ignition lock.
- ▶ Switch off all electrical consumers.
- ▶ Remove the battery cover.
- ▶ Disconnect the negative terminals.
- ▶ Disconnect the positive terminals.

Connecting

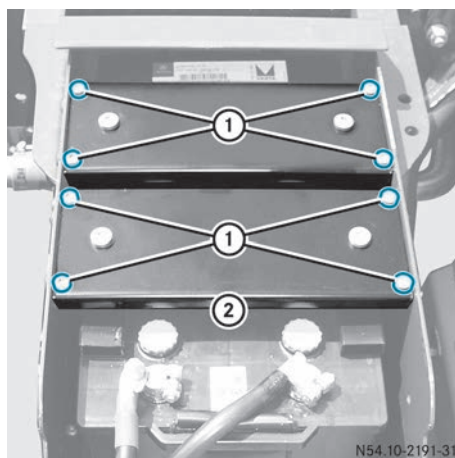
- ▶ Remove the key from the ignition lock.
- ▶ Switch off all electrical consumers.
- ▶ Connect the positive terminals.
Do not interchange the battery terminals.
- ▶ Connect the negative terminals.
- ▶ Refit the battery cover.

Carry out the following tasks after an interruption of the power supply or after reconnecting the batteries:

- ▶ Deactivate anti-theft protection on the audio equipment (radio). See the manufacturer's operating instructions.
- ▶ Set the clock (▷ page 123).
- ▶ Reprogram the preselected heating mode for the auxiliary heating system (▷ page 105).

Removing and installing batteries (4-axle vehicles)

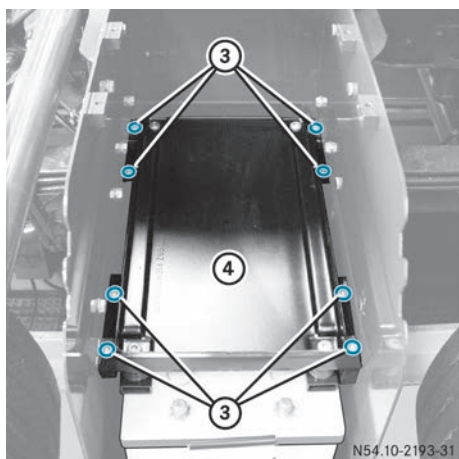
Removing



Upper battery

If you remove the batteries, remove the outer bolts of the support frame. Do not loosen the inner bolts of the support frame. The inner bolts connect the components of the support frame.

- ▶ Observe the safety instructions.
- ▶ Remove the battery cover.
- ▶ Disconnect the negative terminals.
- ▶ Disconnect the positive terminals.
- ▶ Remove screws ①.
- ▶ Remove support frame ②.
- ▶ Remove the upper battery.



Lower battery

- ▶ Remove screws ③.
- ▶ Remove support frame ④.
- ▶ Remove the lower battery.

Fitting

! Tighten the bolts of the battery support frame to a tightening torque of 20 Nm. Do not use an impact wrench. You could otherwise damage the threads.

- ▶ Observe the safety instructions.
- ▶ Insert the lower battery.
- ▶ Replace support frame ④ and tighten bolts ③.
- ▶ Insert the upper battery.
- ▶ Replace support frame ② and tighten bolts ①.
- ▶ Connect the positive terminals.
- ▶ Connect the negative terminals.
- ▶ Refit the battery cover.

Maintenance and care

General notes

In this section you will find notes and information about the batteries. This means you can ensure that the batteries are charged and ready for use.

Battery capacity and power

- Battery capacity is limited and operating time depends on the number of electrical consumers that are switched on and the duration used.
- The given nominal capacity of the battery may be higher than the actual battery capacity. Battery capacity depends on:
 - the age of the battery
 - the outside temperature
 - the engine speed
- Regardless of the power of the alternator, the battery can only be charged a certain amount per hour. The rate of charge is significantly reduced by low outside temperatures. As a result, the battery may take much longer to charge in winter.
- Please note, the alternator cannot fully charge the batteries.
- If the battery is used intensively when the vehicle is stationary, e.g. remaining in the vehicle overnight, recharging the battery may be required after several days.

Example:

If the coolbox consumes approximately 1 A in one hour and remains switched on over a weekend, this results in an overall consumption of approximately 60 Ah.

Parking up the vehicle for an extended time period and storage

! Disconnect the negative terminal of the battery when the vehicle is to be idle for longer than 1 week. This prevents the battery from being discharged or damaged.

! For idle times of longer than 1 month, remove the battery and store it in a dry place at temperatures between 0 °C and 30 °C. Maintain a constant battery voltage of 12.6 V. If the battery voltage falls below 12.1 V, the battery is damaged and must be replaced.

Charge the battery when the no-load voltage is under 12.6 V. This ensures that the vehicle can always be started.

If you park up your vehicle for longer than 3 weeks, observe the notes on parking up your vehicle (▷ page 290).

When storing the battery, comply with all safety regulations, such as operating instructions, regulations concerning hazardous materials, environmental protection measures, work safety and accident prevention regulations.

Replacing the battery and operating life

! Do not connect any electrical consumers directly to the battery terminals. This leads to uncontrolled discharge of the battery. Current drain in one battery results in damage being caused to both batteries.

Avoid the battery becoming fully discharged. This can significantly reduce the operating life of the battery.

Long battery service life can be achieved by keeping the batteries adequately charged.

Mercedes-Benz recommends the following when replacing the batteries:

- always replace both batteries.
 - use the same type of battery.
 - use batteries of the same age.
- Do not combine old and new batteries.

Checking the battery charge level

If the vehicle is used often or predominantly over short distances or is parked for a long period, check the battery charge level more often.

- ▶ Disconnect the batteries.
- ▶ Wait for approximately 8 seconds.
- ▶ Measure the no-load voltage of the battery.
- ▶ If the no-load voltage of the battery is over 12.6 V, reconnect the battery.
- ▶ If the no-load voltage of the battery is under 12.6 V, charge the battery separately.

Charging the batteries

WARNING

During charging and jump-starting, explosive gases can escape from the battery. There is a risk of an explosion.

Particularly avoid fire, naked flames, creating sparks and smoking. Ensure there is sufficient ventilation while charging and jump-starting. Do not lean over a battery.

WARNING

A discharged battery can freeze at temperatures below freezing point. When jump-starting the vehicle or charging the battery, gases can escape from the battery. There is a risk of an explosion.

Allow the frozen battery to thaw out before charging it or jump-starting.

! Use a commercially-available battery charger to charge the batteries. Make sure that the charging voltage is correct. Do not charge new batteries with rapid charging. The charge current of used batteries should be maximum 75% of the battery capacity for rapid charging. Otherwise, you could damage the batteries.

! The charge current should not exceed 10% of the battery capacity. A higher charge current can damage the batteries.

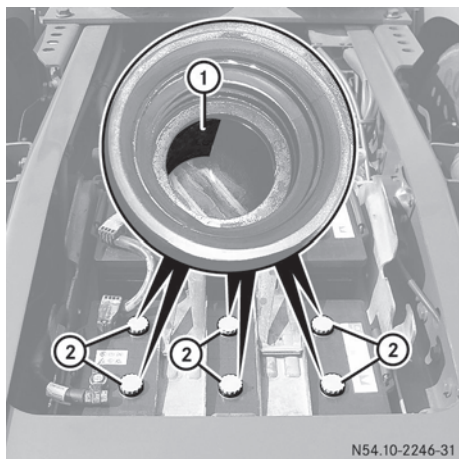
Charge the batteries when the outside temperature is above 0 °C. The optimal outside temperature is between 10 °C and 25 °C.

- ▶ Remove the batteries.
- ▶ Unscrew the battery cell caps.
- ▶ Check the battery fluid level.
- ▶ Charge the batteries separately.
- ▶ Connect and switch on the battery charger. See the battery charger's operating instructions.
- ▶ If the batteries are charged, deactivate the battery charger and screw the plugs into the batteries.
- ▶ Fit the batteries.

Checking the battery fluid level

❗ Tap water reduces the electrical power output of the batteries. Add only distilled or de-ionised water.

Do not use a metal funnel when adding distilled water. The metal funnel may cause a short circuit and the batteries may be damaged.



Example: batteries between the longitudinal frame members

- ▶ Check the battery fluid level every six months or, at the latest, after 50,000 km.
- ▶ Observe the safety instructions.
- ▶ Remove the battery compartment cover.
- ▶ Vehicles with batteries fitted one above the other: remove the batteries.
- ▶ Unscrew cell caps ②.
- ▶ Check the battery fluid level.
The battery fluid must reach marker bar ① in each battery cell.
- ▶ Top up with distilled/de-ionised water.
- ▶ Screw on cell caps ②.
- ▶ Vehicles with batteries fitted one above the other: fit the batteries.
- ▶ Replace the battery compartment cover.

Battery care

❗ Dirty battery terminals and battery surfaces cause creepage current. This can cause the batteries to discharge.

❗ Do not use any cleaning agents containing fuel. Cleaning agents containing fuel corrode the battery housing.

❗ If dirt enters the battery cell, self-discharging of the battery is increased and the battery may be damaged.

Observe the following on battery care:

- ▶ Always keep the terminal clamps and battery surfaces clean and dry.
- ▶ Lightly grease the undersides of the battery terminal clamps with acid-resistant grease.
- ▶ Only clean the battery housing with commercially available cleaning agents.
- ▶ Only clean the batteries with the cell caps screwed in.
Otherwise, dirt can enter the battery cells.
- ▶ Unscrew the plugs whose vent holes are blocked.
- ▶ Clean blocked vent holes with a suitable tool, e.g. a piece of wire.
If the vent holes are blocked, gases cannot escape.
- ▶ Recharge batteries that are not in use with a no-load voltage of less than 12.6 V.

Parking up the vehicle

When parking up the vehicle, special measures according to Mercedes-Benz Specifications for Service Products Sheet No. 382.0 need to be taken.

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

Useful information	292
Where will I find...?	292
Cab	295
Engine	300
Flat tyre	304
Electrical fuses	313
Charging the compressed-air system	316
Jump-starting, tow-starting and towing away	316

Useful information

These Operating Instructions describe all the models and standard and optional equipment of your vehicle that were available at the time of going to print. Country-specific differences are possible. Bear in mind that your vehicle may not be equipped with all the functions described. This also applies to safety-relevant systems and functions.

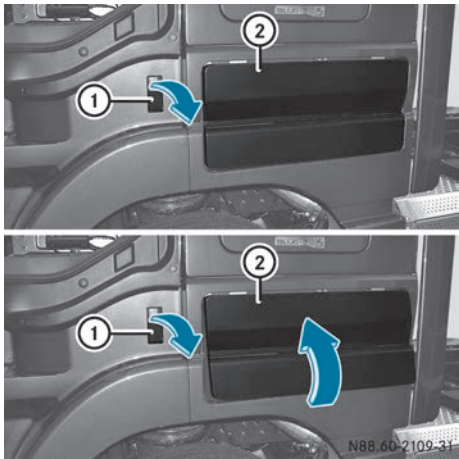
Read the information on qualified specialist workshops (▷ page 22).

Where will I find...?

Tool kit compartments

The tool kit compartments are located on the sides of the cab above the wheel arches and are only accessible from the outside.

The tool kit compartment lighting switches on automatically when you open a tool kit compartment.



Example: Megaspaces cab tool kit compartment

- ▶ **To open the tool kit compartment:** pull release handle ① once and release it. The exterior flap opens until stopped by the retaining hook.
- ▶ Pull release lever ① again. Exterior flap ② is fully unlocked.

- ▶ Swing exterior flap ② upwards.
- ▶ Press the hinge joint up.
- ▶ Swing exterior flap ② downwards. The hinge joint snaps into place.
- ▶ **To close the tool kit compartment:** lift exterior flap ② slightly. The hinge joint will disengage.
- ▶ Swing exterior flap ② downwards until you hear it engage in the lock.

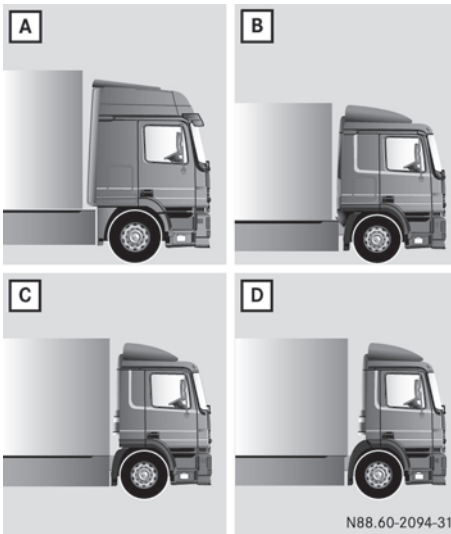
Vehicle tool kit and emergency equipment

Important safety notes

When working on the vehicle, comply with all safety regulations, such as the operating instructions, regulations concerning hazardous materials, environmental protection measures, work safety and accident prevention regulations.

Also observe the notes in the "Changing a wheel in the event of a flat tyre" section (▷ page 304).

Overview



Cab versions

- A** Megaspacer cab
- B** L cab
- C** M cab
- D** S cab

First-aid kit, reflective safety vest, warning triangle, warning lamp and tyre inflator hose

- A** in the tool compartment on the left
- B** in the left-hand stowage compartment under the berth
- C** in the stowage compartment behind the co-driver's seat
- D** in the stowage compartment on the rear wall

Jack, support block, vehicle tool kit, pump lever and assembly lever

- A** in the tool compartment on the right
- B** in the right-hand stowage compartment under the berth

Jack, support block, vehicle tool kit, pump lever and assembly lever

- C** in the stowage compartment behind the co-driver's seat
- D** in the stowage box on the chassis and in the stowage compartment on the rear wall

Fire extinguisher: 6 kg

- A** in the tool compartment on the left
- B** in the right-hand stowage compartment under the berth
- C** in the stowage compartment on the rear wall
- D** in the stowage compartment on the rear wall

Fire extinguisher: 2 kg

- C** in the stowage compartment behind the co-driver's seat

Spare bulbs, various adapters, tyre pressure checker and lamp with 10 m cable

- A** in the tool compartment on the left
- B** in the right-hand stowage compartment under the berth
- C** in the stowage compartment behind the co-driver's seat
- D** in the stowage compartment on the rear wall

Grease gun, spare wheel spacer

- A** in the tool compartment on the right
- B** in the right-hand stowage compartment under the berth

Grease gun, spare wheel spacer

- C** in the stowage compartment behind the co-driver's seat
- D** in the stowage compartment on the rear wall

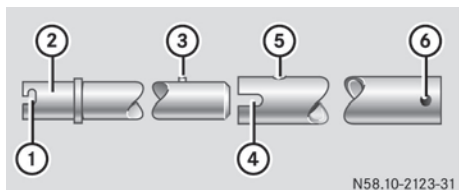
Pump lever (2-part)**⚠ WARNING**

If you do not assemble the pump lever as described, the handle can slip out of the guide while pumping. There is a risk of injury.

Make sure that the locking pin of the pump lever is engaged in the hole intended for the purpose.

Use the pump lever to operate:

- the jack
- the wheel wrench
- the spare wheel winch
- the cab tilt pump



- ① Recess (jack)
- ② Jacking point (wheel wrench/cab tilt pump)
- ③ Retaining pin
- ④ Recess (operating the winch)
- ⑤ Hole for retaining pin
- ⑥ Retaining sleeve for inserting the hand crank (spare wheel hoist)

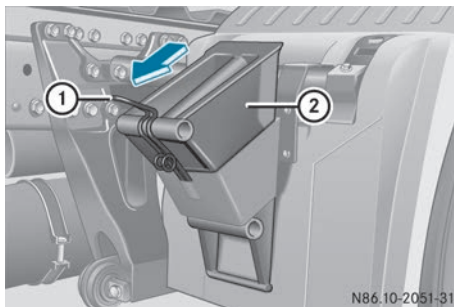
- ▶ **To assemble the pump lever:** align and insert retaining pin ③ into hole ⑤ of both pump lever parts.
- ▶ Press retaining pin ③ into hole ⑤ until it engages.
- ▶ **To disassemble the pump lever:** press locking pin ③ and pull apart the pump lever.

Wheel chock**Storage location of the wheel chock**

Depending on the vehicle version and equipment, the storage location of the wheel chock may vary.

The wheel chock may be found at the following locations in the vehicle:

- on the wheel arch
- on the rear cross member
- on the exhaust system silencer

Wheel chock on the wheel arch**Removing the wheel chock**

Example: wheel chock in front of the left wheel arch

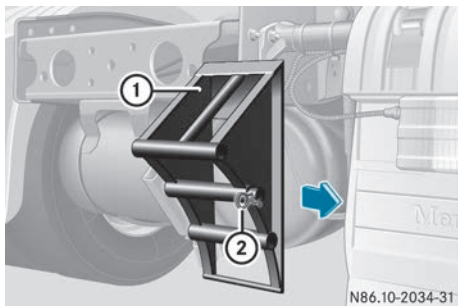
- ▶ Press and hold retainer ① in the direction of the arrow.
- ▶ Pull chock ② out upwards.

Inserting the wheel chock

- ▶ Press and hold retainer ① in the direction of the arrow.
- ▶ Insert wheel chock ② into the bracket.
- ▶ Release retainer ①.

Chocks on the rear cross member

Removing the wheel chock



- ▶ Pull plug retainer ② out of the eyelet.
- ▶ Remove chock ① from its mounting side-ways.
- ▶ Push plug retainer ② back into the eyelet.

Inserting the wheel chock

- ▶ Pull plug retainer ② out of the eyelet.
- ▶ Insert wheel chock ① on the bracket side-ways.
- ▶ Push plug retainer ② back into the eyelet.

Cab

Before tilting the cab

Before tilting the cab, carry out the following steps:

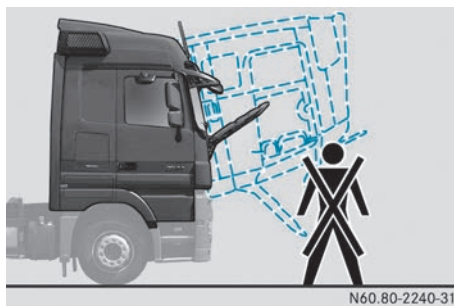
- ▶ Apply the parking brake.
- ▶ Shift into neutral.
- ▶ Switch off the engine.
- ▶ To start the engine after tilting the cab, turn the key in the ignition to the drive position.
- ▶ Switch off the auxiliary heating system (▷ page 102).

- ▶ Switch off the auxiliary air conditioning (▷ page 101).
- ▶ Remove all loose objects from the cab, for example:
 - cans
 - bottles
 - tools
 - bags
- ▶ Close the stowage compartments on the inside (▷ page 88) and the tool kit compartment on the outside (▷ page 292).
- ▶ For safety reasons, keep the area in front of the gear lever unobstructed.
- ▶ Close the doors.
- ▶ Use chocks to safeguard the vehicle against rolling away.
- ▶ Check for correct seating of the front coupling pin (▷ page 318).

⚠ WARNING

When the cab is being tilted, it could suddenly fall forwards to its end position or out-of-use position. There is a risk of injury for persons in the tipping range of the cab.

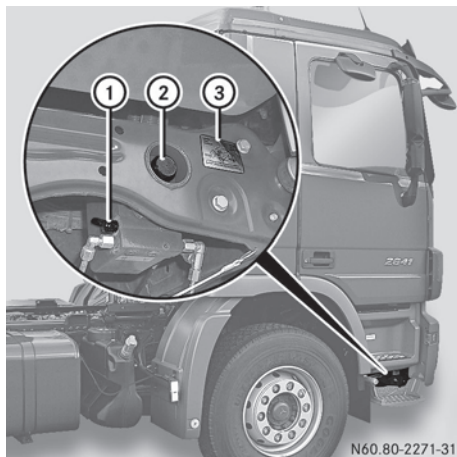
Only tilt the cab when there are no persons within the tilting range. Do not approach the area underneath the cab unless it has been tilted fully forwards.



- ▶ For safety reasons, keep the area in front of the cab unobstructed.

Mechanical-hydraulic cab tilting unit

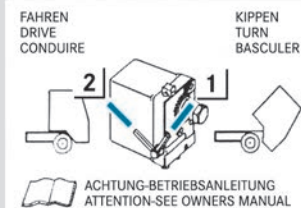
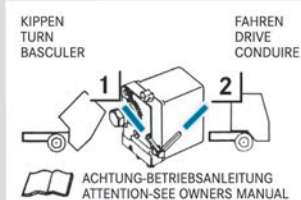
Overview



Example: tilting pump, in doorway on the right-hand side



Example: tilting pump, in doorway on the right-hand side, behind the flap



N60.80-2273-31

Example: instruction sticker

- Check the direction of rotation of valve lever ① on sticker ③ on the tilting pump. Depending on the installation position of the tilting pump, the direction of rotation of valve lever ① varies for tilting position ①.

Tilting the cab forwards

- Before tilting the cab, observe the notes (▷ page 295).
- Open the maintenance flap (▷ page 279).
- Swing up the flap on the right-hand side of the doorway.
- Swing valve lever ① on the tilting pump to position ①.
- Fit the pump lever to hexagon nut ② on the tilting pump using the wheel wrench (vehicle tool kit).
- Move the pump lever up and down on the tilting pump until the cab tilts into the front end position.
The cab is released automatically.
- If there is noticeable resistance when you operate the pump lever, check that tilting

position **1** has been set correctly on valve lever **1** on the tilting pump.

- If there is no noticeable resistance when you operate the pump lever, have the tilting hydraulics checked at a qualified specialist workshop.

Tilting back to the driving position

WARNING

If the cab is not locked, the following dangerous situations could arise when the vehicle decelerates:

- it could tilt forwards
- you could lose control of the vehicle
- persons in the cab could be thrown forwards
- persons or objects in the swinging range could be hit

There is a risk of an accident and injury.

Before every journey, make sure that:

- the cab is locked
- the cab is engaged in driving position and the valve lever is in driving position
- the indicator lamp goes out when the engine is started

- Swing valve lever **1** on the tilting pump to driving position **2**.
- Fit the pump lever with the wheel wrench to hexagon nut **2** on the tilting pump.
- Move the pump lever up and down on the tilting pump until the cab is tipped into the rear end position.
The locking mechanism engages audibly.
The cab locks automatically.
Do not continue to operate the pump lever on the tilting pump once the cab is locked in position.

- Close the maintenance flap.
- Swing the flap in the right-hand entry area down until you hear it engage.
- Make sure that the  indicator lamp in the instrument cluster goes out after you start the engine.

When the  indicator lamp goes out, the cab is locked. If the  indicator lamp does not go out, repeat the process and tip the cab back again.

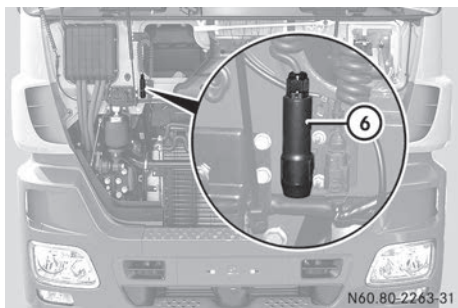
Electrohydraulic cab tilting unit

Tilting the cab forwards



Example: tilting pump on the right behind the cab on car transporters and lowliners

For road and construction-site vehicles, the tilting pump is in the door frame on the right-hand side.



- ▶ Check the direction of rotation of valve lever ④ on sticker ⑤ on tilting pump ③.
- ▶ Before tilting the cab, observe the notes (▷ page 295).
- ▶ Turn the key to the drive position in the ignition lock.
- ▶ Press the upper section of switch ①. Indicator lamp ② in switch ① lights up.
- ▶ On road vehicles: fold the flap in the right-hand entry area upwards.
- ▶ Swing valve lever ④ on tilting pump ③ to the tilting position.
- ▶ Open the maintenance flap (▷ page 279).
- ▶ Remove switch ⑥ from the bracket.
- ▶ Press and hold switch ⑥ until the cab has tilted into the front end position.
The cab has reached its end position when the pump sound becomes louder.

Before every journey, make sure that:

- the cab is locked
- the cab is engaged in driving position and the valve lever is in driving position
- the indicator lamp goes out when the engine is started

- ▶ Swing valve lever ④ on tilting pump ③ to driving position.
- ▶ On road and construction vehicles: swing the flap in the right-hand entry area downwards until you hear it engage.
- ▶ Press and hold switch ⑥ until the cab has tilted back to the rear end position.
The cab locks automatically.
If the noise of the pump is loud when you press switch ⑥, the valve lever is not in desired tilting direction.
- ▶ Insert switch ⑥ into bracket.
- ▶ Close the maintenance flap.
- ▶ Press the lower section of switch ①. Indicator lamp ② in switch ① goes out.
- ▶ Make sure that the  indicator lamp in the instrument cluster goes out after you start the engine.

Tilting back to the driving position

WARNING

If the cab is not locked, the following dangerous situations could arise when the vehicle decelerates:

- it could tilt forwards
- you could lose control of the vehicle
- persons in the cab could be thrown forwards
- persons or objects in the swinging range could be hit

There is a risk of an accident and injury.

Problems when tilting the cab

Mechanical hydraulic cab tilting unit

Problem	Possible causes/consequences and ► Solutions
The cab cannot be tilted.	The valve lever of the mechanical-hydraulic cab tilting pump is in the "Tilt back in driving position". ► Turn the valve lever of the mechanical-hydraulic cab tilting pump so that it points towards the "Tilt forward" position (► page 296).
The cab cannot be tilted.	The tilting hydraulics are leaking or have failed. ► Have the tilting hydraulics repaired at a qualified specialist workshop.

Electrohydraulic cab tilting unit

Problem	Possible causes/consequences and ► Solutions
The cab cannot be tilted.	The main switch for the electrohydraulic cab tilting system is not switched on. ► Press the upper section of the main switch for the electrohydraulic cab tilting system (► page 297).
	The valve lever of the electrohydraulic cab tilting pump is in the driving position. ► Turn the valve lever of the electrohydraulic cab tilting pump to the tilting position (► page 297).
	The fuse for the electrohydraulic cab tilting pump is faulty. ► Replace the fuse for the electrohydraulic tilting pump in the fuse box (► page 313).
	The tilting hydraulics are leaking or have failed. ► Have the tilting hydraulics repaired at a qualified specialist workshop.

Engine

Starting and stopping the engine with the cab tilted

Before starting and stopping the engine

WARNING

Certain engine components can become very hot. There is a risk of injury when carrying out work at the engine.

Where possible, allow the engine to cool down and only touch the components described below.

WARNING

There are moving components in the engine compartment. Certain components may continue to move or suddenly move again even after the ignition has been switched off, e.g. the radiator fan. There is a risk of injury.

If you have to carry out work in the engine compartment:

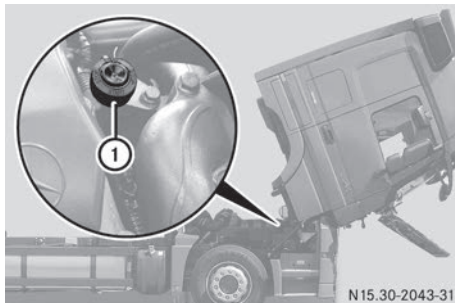
- switch off the ignition
- never touch the dangerous areas surrounding moving components, e.g. the rotation area of the fan
- remove jewellery and watches
- keep items of clothing and hair, for example, away from moving parts.

Be aware of the road and traffic situation when working on public roads and secure your position accordingly.

- Turn the key to the drive position in the ignition lock.
- Shift into neutral.
- Tilt the cab forwards (> page 296), (> page 297).

External engine start/engine stop

Starting the engine



Example: external engine start/engine stop on the engine

- Press external engine start/engine stop ① until the engine starts.

Starting the engine and increasing the engine speed

- Press and hold external engine start/engine stop ①. After about 3 seconds, the engine speed increases.
- Hold down external engine start/engine stop ① until the desired engine speed is achieved. After external engine start/engine stop ① has been released, the engine continues to run at the speed currently set. The engine speed can be increased up to the limiting speed.

Stopping the engine

- Press external engine start/engine stop ① again.
- Tilt the cab back to the driving position.

Bleeding the fuel system

Important safety notes

WARNING

Fuel is highly flammable. Improper handling of fuel creates a risk of fire and explosion.

Avoid fire, naked flames, smoking and creating sparks under all circumstances. Switch off the ignition and auxiliary heating before carrying out work to the fuel system. Always wear protective gloves.

Be aware of the road and traffic situation when working on public roads and secure your position accordingly.

Automatic bleeding (fuel system without fuel prefilter)

- ❗ Do not bleed the fuel system by operating the starter motor for an extended period of time. You could otherwise damage the starter motor.
- ▶ Start the engine for up to 1 minute without interruption until the engine is running smoothly.
The fuel system is automatically bled when the tank is empty.
- ▶ If the engine does not start after approximately 1 minute, or if it switches off again, bleed the fuel system using the hand pump.

Bleeding with the hand pump (fuel system without fuel prefilter)



Example: hand pump on the rear wall

In inspection window ② of hand pump ①, check whether the filter is extremely dirty. Have the contaminated filter cleaned at a qualified specialist workshop.

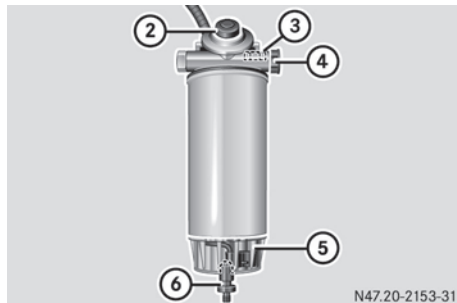
- ▶ Unscrew the fuel tank filler cap.
- ▶ Turn hand pump lever ① anti-clockwise.
- ▶ Push hand pump lever ① downwards repeatedly (approximately 100 times) until you feel significant resistance.
- ▶ Push hand pump lever ① downwards as far as possible and turn it clockwise until it is tightened.
- ▶ Tighten the fuel tank filler cap.

Fuel system with fuel prefilter

Fuel prefilter overview



Example: fuel prefilter on the rear wall



Example: fuel prefilter

If water has collected in inspection window ⑤, drain fuel prefilter ① before bleeding.

Draining the fuel prefilter

Drain the fuel prefilter regularly.

- ▶ Place a collector under drain plug ⑥.
- ▶ Turn drain plug ⑥ to open it.
- ▶ Vehicles with fuel prefilter at tank level: turn shutoff valve ④ closed.
- ▶ Operate hand pump ② and collect the fuel/water mixture.
- ▶ Turn drain plug ⑥ to close it.
- ▶ Vehicles with fuel prefilter at tank level: turn shutoff valve ④ open.
- ▶ Start the engine and allow it to run for approximately 1 minute.
The fuel system is bled automatically.
- ▶ Check the fuel system for leaks.

Environmental note

Dispose of the water-fuel mixture in an environmentally responsible manner.

Bleeding the fuel prefilter with the hand pump

- ▶ Unscrew the fuel tank filler cap.
- ▶ Place the collector underneath fuel prefilter ①.
- ▶ Unscrew bleed screw ③.
- ▶ Push hand pump ② repeatedly until the fuel escaping at bleed screw ③ is free of bubbles.
- ▶ Tighten bleed screw ③.
- ▶ Tighten the fuel tank filler cap.
- ▶ Start the engine.

Locking the controlled coolant pump

WARNING

Certain engine components can become very hot. There is a risk of injury when carrying out work at the engine.

Where possible, allow the engine to cool down and only touch the components described below.

WARNING

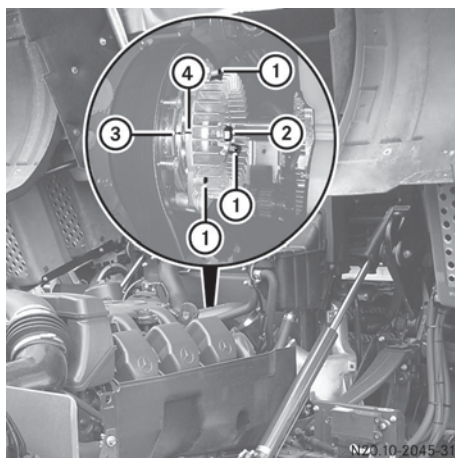
There are moving components in the engine compartment. Certain components may continue to move or suddenly move again even after the ignition has been switched off, e.g. the radiator fan. There is a risk of injury.

If you have to carry out work in the engine compartment:

- switch off the ignition
- never touch the dangerous areas surrounding moving components, e.g. the rotation area of the fan
- remove jewellery and watches
- keep items of clothing and hair, for example, away from moving parts.

Be aware of the road and traffic situation when working on public roads and secure your position accordingly.

When the coolant temperature exceeds 105 °C and the engine output is reduced, lock the clutch of the controlled coolant pump.



Example: controlled coolant pump at front of engine

- ▶ Switch off the engine.
- ▶ Tilt the cab forwards (▷ page 296), (▷ page 297).
- ▶ If the marker on cooling ring ④ cannot be seen, briefly start the engine (▷ page 300).
- ▶ Turn the magnetic carrier of the coolant pump by screw ② using the open-ended wrench (vehicle tool kit).
Markers on cooling ring ④ and on magnetic carrier ③ are positioned opposite one another.
- ▶ Tighten screws ① on the cooling ring to the stop using a 3 mm Allen key (vehicle tool kit).
- ▶ Tilt the cab back into the driving position.

Engine emergency running mode

Activating engine emergency running mode

If the display shows the **MR** message, activate engine emergency running mode. In engine emergency running mode, the accelerator pedal is not operational and the engine speed is limited.

- ▶ Stop the vehicle, taking road and traffic conditions into account.
- ▶ Engage the parking brake.
- ▶ Switch off the engine.
- ▶ Restart the engine after approximately 10 seconds.

The engine is in emergency running mode and the engine speed is limited to approximately 1300 rpm.

Engine does not start

Problem	Possible causes/consequences and ► Solutions
Engine fails to start when the outside temperature is low.	The flow properties of the diesel fuel are inadequate due to paraffin separation. ► Malfunctions resulting from paraffin separation can be corrected by warming the entire fuel system, e.g. by parking the vehicle in a heated area. ► If the engine does not start after several attempts, have the cause traced and rectified at a qualified specialist workshop.
The engine will not start.	The engine electronics are malfunctioning. ► Turn the vehicle key fully back in the ignition lock before the next starting attempt.

Flat tyre

Changing a wheel in the event of a flat tyre

Important safety notes



WARNING

On uphill and downhill slopes, the jack could tip over with the vehicle raised. There is a danger of injury.

Do not change wheels on uphill or downhill gradients. Contact a qualified specialist workshop.



WARNING

If you do not position the jack correctly at the appropriate jacking point of the vehicle, the jack could tip over with the vehicle raised. There is a risk of injury.

Only position the jack at the appropriate jacking point of the vehicle. The base of the jack must be positioned vertically, directly under the jacking point of the vehicle.



WARNING

If you park a vehicle with pneumatic suspension and leave the ignition switched on, the pneumatic suspension remains active. If you then raise the vehicle using the jack, the pneu-

matic suspension attempts to compensate the vehicle level. The jack could tip over. There is a danger of injury.

Remove the key from the ignition lock before raising the vehicle. This prevents automatic readjustment of the vehicle level.



WARNING

Oiled, greased or damaged wheel nuts, wheel bolt threads or spherical spring washers can cause the wheel nuts to loosen. As a result, you could lose a wheel while driving. There is a risk of an accident.

Never oil or grease the threads or spherical spring washers. In the event of damage to the threads or the spherical spring washers, contact a qualified specialist workshop immediately. Have the damaged wheel nuts, wheel bolts or spherical spring washers replaced. Do not drive on.



WARNING

If you remove a wheel that is resting on the wheel bolts under load, it may fall off or tip. There is a risk of injury.

Remove the last three wheel nuts when it is clear that the wheel is being held tension-free on the wheel bolts.

⚠ WARNING

Wheel and tyre dimensions as well as the type of tyre can vary between the spare wheel and the wheel to be replaced. When the spare wheel is fitted, driving characteristics may be severely affected. There is a risk of an accident.

To prevent risks:

- you should therefore adapt your driving style and drive carefully.
- never fit more than one spare wheel that differs from the wheel to be replaced.
- only use a spare wheel that differs from the wheel to be replaced for a short time.
- have a spare wheel that differs from the wheel that has been changed replaced at the nearest qualified specialist workshop. You must observe the correct wheel and tyre dimensions as well as the wheel type.

! Do not raise vehicles equipped with a loading crane or loading tailgate by using the hydraulic supports. This would cause damage to the chassis frame.

! For safety reasons, Mercedes-Benz recommends that you only use tyres and wheels which have been approved by Mercedes-Benz specifically for your vehicle.

These tyres have been specially adapted for use with the control systems, such as ABS or ESP®.

Only use tyres, wheels or accessories tested and approved by Mercedes-Benz. Certain characteristics, e.g. handling, vehicle noise emissions or fuel consumption, may otherwise be adversely affected. In addition, when driving with a load, tyre dimension variations could cause the tyres to come into contact with the bodywork and axle components. This could result in damage to the tyres or the vehicle.

Mercedes-Benz accepts no liability for damage resulting from the use of tyres,

wheels or accessories other than those tested and approved.

Further information on wheels, tyres and approved combinations can be obtained from any qualified specialist workshop.

The vehicle wheels are heavy. Have a second person assist you when carrying out work on them.

When changing a wheel:

- only use wheel nuts that are approved for your vehicle.
- note that the wheel nuts for steel and light-alloy wheels differ.
- note that the wheel nuts for light-alloy wheels on the front and rear axles differ.

Observe the following when raising the vehicle:

- the jack is designed only to raise the vehicle for a short time, e.g. while a wheel is being changed. It is not suitable for raising and holding the vehicle so that work can be carried out underneath it.
- only position the jack at the appropriate jacking point of the vehicle. Make sure that the jack is correctly positioned on the jacking point before raising the vehicle.
- secure the vehicle before raising it to prevent it from rolling away, e.g. by applying the parking brake and/or using chocks. Do not release the parking brake while the vehicle is raised.
- the surface on which the jack is standing must be firm and level. Place the jack on an underlay if the surface is not firm.
- make sure that the gap between the underside of the raised tyre and the ground does not exceed 30 mm. The vehicle could otherwise slip off the jack or tip over.
- do not change a wheel on a slope. The vehicle could otherwise slip off the jack.
- do not place your hands or feet under the raised vehicle.
- do not lie under the raised vehicle.

- make sure that nobody is in the vehicle when it is raised.
- do not raise vehicles equipped with a loading crane or loading tailgate by using the hydraulic supports. This would cause damage to the chassis.
- do not start the engine and avoid other jolts while the vehicle is raised. The vehicle could otherwise slip off the jack.

Accessories which have not been approved by Mercedes-Benz or which are used incorrectly, could compromise the driving safety of the vehicle.

Before purchasing and using non-approved accessories, contact a qualified specialist workshop to obtain information about:

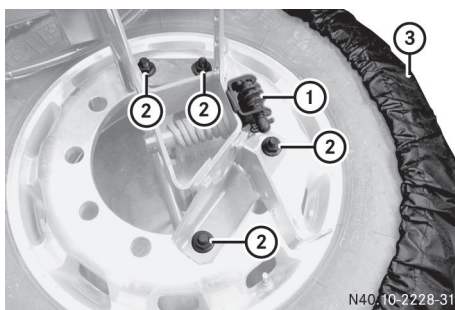
- suitability
- legal requirements
- factory recommendations

In particular, observe the country-specific permissible tyre specifications. These requirements may stipulate a specific tyre type for your vehicle. In addition, the use of specific tyre types may be advisable for certain regions and areas of operation. You can find further information regarding tyres at specialist tyre retailers, at qualified specialist workshops or at any Mercedes-Benz Service Centre.

For further information on tyre pressure; see the "Tyre pressure" section (▷ page 331).

- ▶ Park the vehicle on a firm and level surface.
- ▶ Apply the parking brake.
- ▶ Use chocks to safeguard the vehicle against rolling away.

Removing the spare wheel



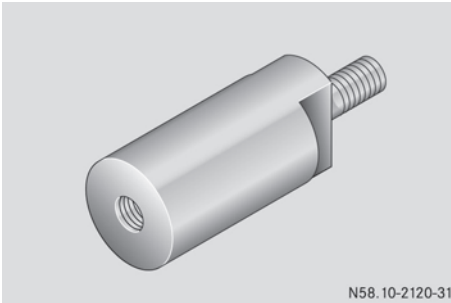
Spare wheel on the side of the chassis (example: platform vehicles)

For tipper vehicles, the spare wheel is either upright behind the cab or underneath the tipper body.

The ratchet for operating spare wheel hoist ① is in the wheel brace of the spare wheel in tipper vehicles.

- ▶ Tipper vehicles: observe the manufacturer's operating instructions.
- ▶ If necessary, remove the side panel or side underride guard.
- ▶ Remove tyre's protective covering ③.
- ▶ Assemble the hand crank and the pump lever (from the vehicle tool kit) (▷ page 292).
- ▶ Fit the pump lever and the hand crank on spare wheel hoist ①. Make sure that the retaining sleeve on spare wheel hoist ① engages in the recesses on the pump lever.
- ▶ Turn spare wheel hoist ① until the cable is taut.
- ▶ Unscrew nuts ②.
- ▶ Lower the spare wheel using spare wheel winch ①, completely unwinding the cable.
- ▶ Pull the spare wheel out to the side or to the rear.
- ▶ Unscrew the spare wheel from the spare wheel bracket.
- ▶ Remove the retaining plate through the centre hole of the wheel rim.

Regularly remove rust and dirt from nuts ② and bolts. Spray securing nuts ② and bolts regularly with rust-penetrating oil.



Spacer

! Always secure wheels of the following sizes to the spare wheel bracket using spacers:

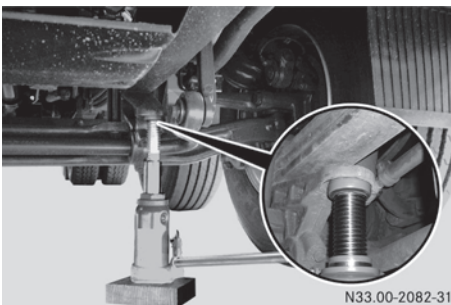
- 355/50 R 22.5
- 375/50 R 22.5
- 385/55 R 22.5
- 385/65 R 22.5
- 425/65 R 22.5

You could otherwise damage the wheel or the spare wheel bracket.

Before fitting the wheel to the spare wheel bracket, guide the retaining plate with the fastening bolts through the centre of the wheel rim. From the other side of the wheel, screw the spacer (from the vehicle tool kit) to the fastening bolts.

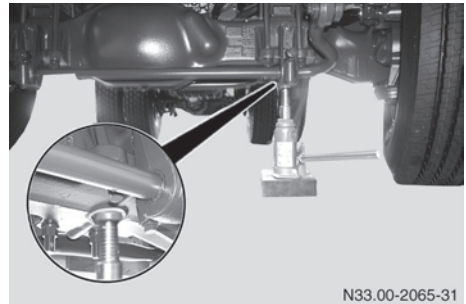
Positioning the jack

Steel-sprung front axle



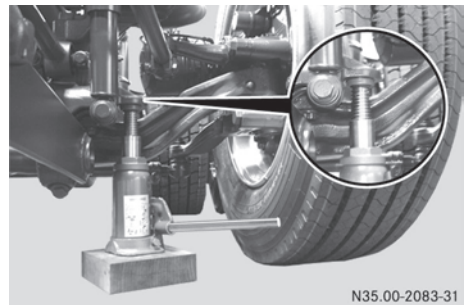
- ▶ Tilt the cab forwards (▷ page 296) or (▷ page 297).
- ▶ Position the jack under the jack mounting point beneath the spring mounting directly in front of the front axle.

All-wheel-drive front axle



- ▶ Position the jack under the jack mounting point on the axle tube.

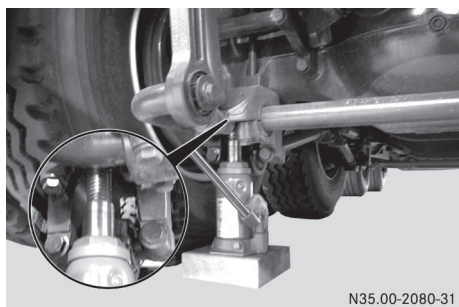
Air-sprung front/leading axle



Example: air-sprung leading axle

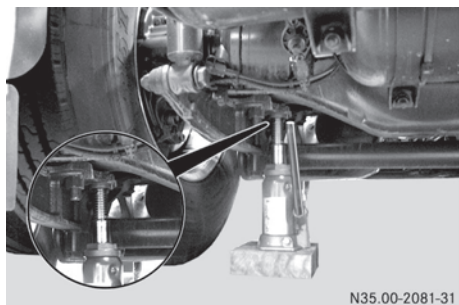
- ▶ Tilt the cab forwards (▷ page 296) or (▷ page 297).
- ▶ Position the jack under the jacking point of the air spring carrier, just in front of the front axle.

Steel-sprung rear axle



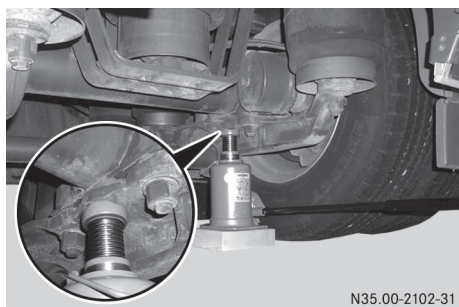
- Position the jack under the jack mounting point on the axle tube.

Air-sprung rear axle



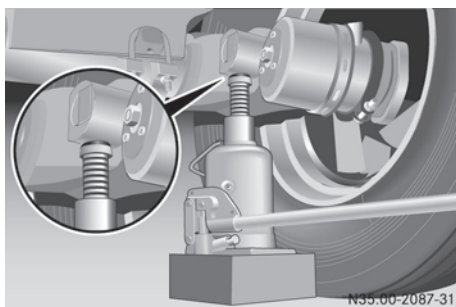
- Position the jack under the jack mounting point on the air spring carrier.

Air-sprung trailing axle



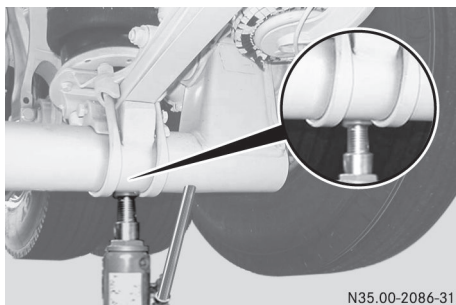
- Position the jack under the jack mounting point on the air spring carrier.

Nummek trailing axle



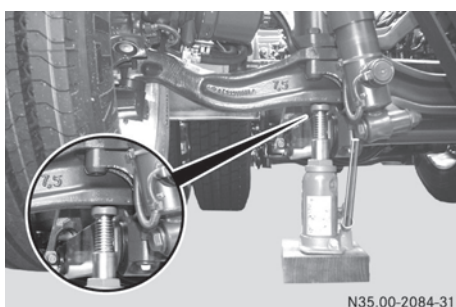
- Position the jack in such a way that the axle arm fits in the recess of the jack plunger.

Hendrickson leading axle (6x2/2)



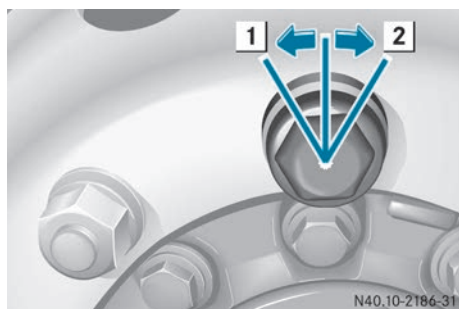
- Position the jack to the right or left of the spring mounting.

Telligent® trailing axle



- Position the jack so that the jack plunger is centrally located under the axle carrier.

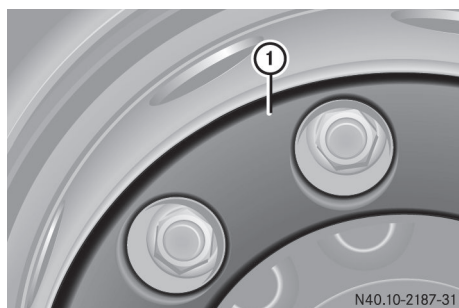
Removing a wheel



Wheel nut caps

- 1 To loosen
- 2 To tighten

- Using the wheel nut wrench, loosen 1 the wheel nut caps and remove them.

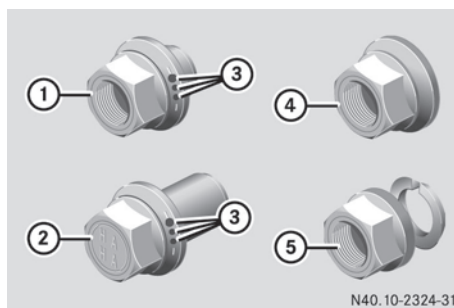


- Unscrew the wheel nuts that secure wheel nut cover 1.
- Remove wheel nut cover 1.
- Unscrew the remaining wheel nuts.
- Vehicles with 14.00 R 20 twin tyres: remove the wheel nuts for the inner wheel from the connecting flange and then remove the connecting flange.
- Vehicles with 14.00 R 20 twin tyres: remove the inner wheel.
- Remove the wheel.

Fitting a wheel

General safety notes

- ! After changing a wheel, check the tyre pressure immediately.
Observe the notes on operating and road safety.
- ! Do not tighten the wheel nuts with an impact wrench. This could damage the wheel nuts or wheel bolts.



Wheel nuts

- 1 For single tyres with light-alloy wheels
- 2 For twin tyres with light-alloy wheels
- 3 Wheel nut identification for light-alloy wheels
- 4 With pressure plate (hub centring)
- 5 With spherical spring washer

- **Before fitting the wheel:** remove any corrosion and dirt from the contact areas of the wheel hub, rim and wheel nuts.
- **For wheel nuts with a pressure plate:** lightly oil the friction contact surfaces between the pressure plate and the wheel nut.

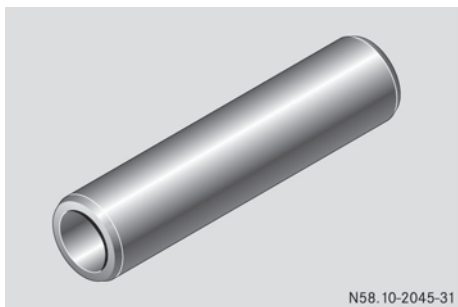
Steel wheel with hub centring

- Single tyres: fit the wheel in place and screw on 2 to 3 wheel nuts.
- Single tyres: screw on the remaining wheel nuts together with the wheel nut cover.
- Twin tyres: fit both the wheels and screw on all remaining wheel nuts.

- ▶ Tighten the wheel nuts in a crosswise pattern, observing the tightening torque while doing so (▷ page 355).
- ▶ Fit the wheel nut caps, observing the tightening torque while doing so (▷ page 355).
- ▶ Check the tyre pressure (▷ page 331).
- ▶ The wheel nuts must be retightened after 50 km (▷ page 312).

Light-alloy wheels

- ▶ Single tyres: fit the wheel in place and screw on 2 to 3 wheel nuts.
- ▶ Single tyres: screw on the remaining wheel nuts together with the wheel nut cover.



Assembly sleeve for twin tyres (vehicles with light-alloy wheels)

- ▶ Twin tyres: slide the assembly sleeve (from the vehicle tool kit) onto the wheel bolts before fitting the inner wheel.
- ▶ Twin tyres: fit both the wheels and screw on 2 to 3 wheel nuts.
- ▶ Twin tyres: remove the assembly sleeve.
- ▶ Twin tyres: screw on the remaining wheel nuts.
- ▶ Tighten the wheel nuts in a crosswise pattern, observing the tightening torque while doing so (▷ page 355).
- ▶ Fit the wheel nut caps, observing the tightening torque while doing so (▷ page 355).
- ▶ Check the tyre pressure (▷ page 331).
- ▶ The wheel nuts must be retightened after 50 km (▷ page 312).

- ❗ On light-alloy wheels, the wheel nuts are not flush with the wheel bolts when tightened.

Disc wheel with centring by means of wheel bolts and spherical spring washers

- ▶ Single tyres: fit the wheel in place and screw on 2 to 3 wheel nuts with spherical spring washers.
- ▶ Twin tyres: fit both the wheels and screw on 2 to 3 wheel nuts with spherical spring washers.
- ▶ Check wheel centring. The wheel bolts must be located in the centres of the holes in the rims.
- ▶ Single tyres: fit the remaining spherical spring washers and screw on the wheel nut cover with the wheel nuts.
- ▶ Twin tyres: screw on the remaining wheel nuts with spherical spring washers.
- ▶ Tighten the wheel nuts in a crosswise pattern, observing the tightening torque while doing so (▷ page 355).
- ▶ Check the tyre pressure (▷ page 331).
- ▶ The wheel nuts must be retightened after 50 km (▷ page 312).

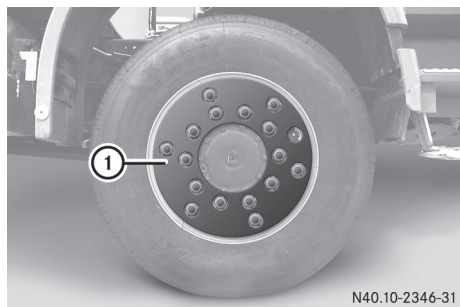
Twin tyres 14.00 R 20

- ▶ Before fitting the inner tyre, check that all of the spherical spring washers are seated properly on the wheel bolts. The round side of the spherical spring washers must face the outside.
- ▶ Fit the inner wheel.
- ▶ Check wheel centring. The wheel bolts must be located in the centres of the holes in the rims.
- ▶ Fit the connecting flange in place and screw on two to three wheel nuts with spherical spring washers.
- ▶ Check that the flange is properly centred. The wheel bolts must be in the centre of the holes in the connecting flange.
- ▶ Screw on the remaining wheel nuts with spherical spring washers.

- ▶ Tighten the wheel nuts in a crosswise pattern, observing the tightening torque while doing so (▷ page 355).
 - ▶ Fit the outside wheel in place and screw on 2 to 3 wheel nuts with spherical spring washers.
 - ▶ Check wheel centring. The wheel bolts must be located in the centres of the holes in the rims.
 - ▶ Screw on the remaining wheel nuts with spherical spring washers.
 - ▶ Tighten the wheel nuts in a crosswise pattern, observing the tightening torque while doing so.
 - ▶ Check the tyre pressure (▷ page 331).
 - ▶ Retighten the wheel nuts on the inner wheel after 50 km, as well as the wheel nuts of the outer wheel after a further 50 km (▷ page 312).
- wheel hub
 - wheel rim
 - Wheel nuts
- ▶ Place the wheel in position.
 - ▶ Screw on two wheel nuts in diametrically opposite positions.
 - ▶ Screw wheel nut cover ① onto the remaining wheel nuts.
 - ▶ Tighten wheel nuts in a clockwise pattern and in several stages, observing the tightening torque while doing so (▷ page 355).
 - ▶ Retighten the wheel nuts after 10 km and again after a further 50 km (▷ page 312).

Trilex® wheels

Removing the Trilex® wheel



- ▶ Unscrew the wheel nuts securing wheel nut cover ① in place.
- ▶ Remove wheel nut cover ①.
- ▶ Unscrew the remaining wheel nuts.
- ▶ Remove the wheel.

Fitting a Trilex® wheel

- ▶ Before fitting the wheel, remove any rust and dirt from contact areas on the following parts:

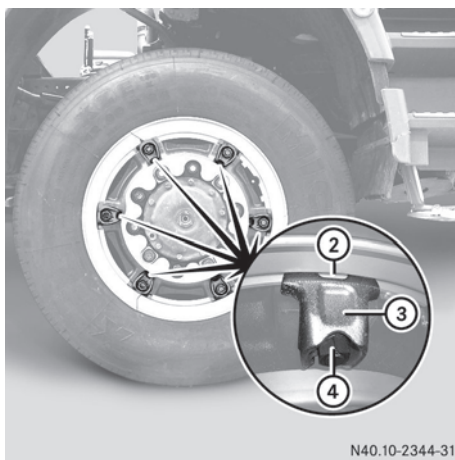
Removing a Trilex® rim with tyre

⚠ WARNING

The clamping plates on the Trilex® rim are under tension. If you completely unscrew the nuts from the clamping plate, it may be released suddenly from the rim. There is a risk of an injury.

Only unscrew the nuts from the clamping plate once all clamping plates have been loosened and are no longer under tension.

- ▶ Unscrew the wheel nuts securing wheel nut cover ① in place.
- ▶ Remove wheel nut cover ①.



Example: single tyre



N40.10-2345-31

Example: twin tyres

- ▶ Undo nuts ④ on clamping plate ③.
- ▶ Position the assembly lever (from the vehicle tool kit) on recess ② and release clamping plates ③ by pulling once.
- ▶ Once all the clamping plates have been loosened, unscrew nuts ④ on clamping plates ③.
- ▶ Remove clamping plates ③.
- ▶ Remove the Trilex® rim with its tyre.

Fitting the Trilex® rim with tyres

 WARNING

Tyre valves in contact with the wheel spider can be abraded, resulting in a loss of tyre pressure.

Tyre pressure loss:

- jeopardises road and traffic safety
- damages or destroys tyres
- may cause tyres to overheat and catch fire

There is a risk of fire and an accident.

Guide the tyre valve or valve extension through the centre of the valve cut-out.

- ❗ Tightening the clamping plate nuts in a clockwise pattern puts the rim under stress and the wheel becomes imbalanced. Tighten the nuts in a clockwise sequence.

Tighten the nuts to the specified tightening torque in several stages.

- ▶ Before fitting the wheel, remove any rust and dirt from contact areas on the following parts:
 - spoke heads
 - contact surfaces of the rims
 - nuts
 - clamping plates
- ▶ Single tyres: position the Trilex® rim with tyre on the wheel spider.
- ▶ Twin tyres: position the inner Trilex® rim with tyre on the wheel spider.
- ▶ Twin tyres: position the spacer ring so that the valve on the inner Trilex® rim fits in the recess.
- ▶ Twin tyres: position the outer Trilex® rim so that the valve is opposite the valve on the inner Trilex® rim.
- ▶ Position clamping plates ③ on the bolts.
- ▶ Tighten nuts ④ slightly and make sure that the rim is not under tension.
- ▶ Tighten nuts ④ on clamping plate ③ in a clockwise direction in several stages, observing the tightening torque whilst doing so (▶ page 355).
- ▶ Single tyres: screw wheel nut cover ① to the wheel using the appropriate wheel nuts.
- ▶ Single tyres: tighten wheel nuts in a clockwise direction and in several stages, observing the tightening torque while doing so (▶ page 355).
- ▶ Retighten wheel nuts and nuts ④ on clamping plates ③ after 10 km and again after a further 100 km (▶ page 312).

Retightening the wheel nuts

 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.

Always observe the instructions and safety notes on "Changing a wheel in the event of a flat tyre" (▷ page 304).

Observe the wheel nut tightening torques (▷ page 355).

Retighten the wheel nuts after 50 km.

When using new or newly-painted wheel rims, check the tightening torque of the wheel nuts again after travelling approximately 1,000 to 5,000 km.

! Check wheel nuts regularly for tightness. Retighten if necessary. Replace damaged wheel nut cover caps and wheel nut covers. Observe the wheel nut tightening torque.

On light-alloy wheels, the wheel nuts are not flush with the wheel bolts when tightened.

► **Disc wheel with hub centring:** retighten the wheel nuts in a crosswise pattern.

Electrical fuses

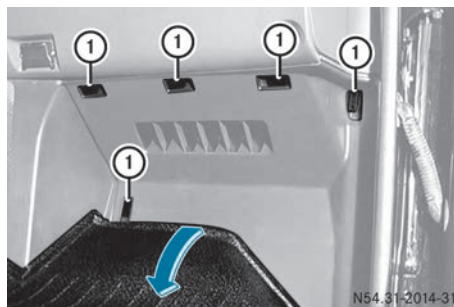
Fuse box

WARNING

If you manipulate, bridge or replace a faulty fuse with a fuse of a higher amperage, the electric cables could be overloaded. This may result in a fire. There is a risk of an accident and injury.

Always replace faulty fuses with specified new fuses of the correct amperage.

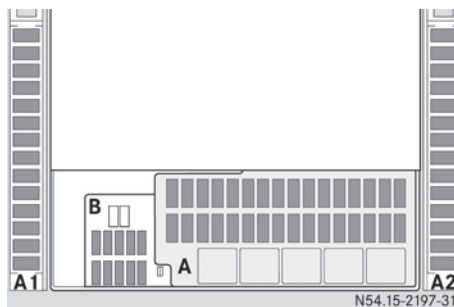
The fuse box is in the footwell on the co-driver's side.



- **To open the fuse box:** fold back the floor mat.
- Release fuse box fasteners ①.
- Remove the fuse box cover.
- **To close the fuse box:** insert the fuse box cover in the guide slot and close it.
- Clip fuse box fasteners ① into place.
- Fold the floormat forwards.

Fuse layout

Vehicles fitted with a torque converter clutch/rear-mounted cooling system or hydrodynamic clutch/rear-mounted cooling system: the fuse allocation chart is located on the left-hand side next to the fuse box.



A	Consumer	
F1	Driver's door (terminal 30)	20 A
F2	Heating, auxiliary heating	20 A
F3	Co-driver's door (terminal 30)	20 A

A	Consumer	
F4	Transmission control (terminal 30.1)	15 A
F5	Trailer (terminal 30)	20 A
F6	Modular switch unit	10 A
F7	Distribution (terminal 30.2), alarm siren (ATA)	30 A
F8	Distribution (terminal 30.1), body manufacturer (terminal 30)	30 A
F9	Trailer ABS (terminal 30)	20 A
F10	Distribution (terminal 15.2), body manufacturer (terminal 15)	30 A
F11	Telligent® braking system (terminal 30.1)	15 A
F12	Transmission control (terminal 30.2)	15 A
F13	Hands-free system, radio 24 V, FleetBoard®, Toll Collect (terminal 30)	10 A
F14	Stolen vehicle tracking (Brazil), drive control system, ignition lock (terminal 30)	10 A
F15	Blower (terminal 30)	20 A
F16	Interior lighting (terminal 30)	5 A
F17	Digital tachograph, diagnostics connection, instrument cluster, LSVA (Swiss performance related heavy goods vehicle fee), (terminal 30)	10 A
F18	Sliding sunroof/pop-up roof (terminal 30)	10 A
F19	Telligent® braking system (terminal 30.2)	15 A

A	Consumer	
F20	Transmission control (terminal 15.2)	10 A
F21	Engine management (terminal 15.2), alternator (terminal 15)	10 A
F22	Trailer ABS (terminal 15)	10 A
F23	Brake lamp: trailer, add-on equipment, LSVA	15 A
F24	Distribution (terminal D+), fuel filter	15 A
F25	Diagnostics connection, LSVA (Swiss heavy goods vehicle fee), exhaust gas aftertreatment unit (terminal 15)	10 A
F26	Distribution (terminal 15.1)	30 A
F27	Auxiliary heating, air-conditioning system, Toll Collect, fleet management system (terminal 15.1)	5 A
F28	Drive control system (terminal 15)	10 A
F29	Telligent® braking system (terminal 15)	5 A
F30	Instrument cluster, airbag (terminal 15)	10 A
F31	Sliding/tilting sunroof, navigation, 12 V radio, interior temperature sensor, CB radio, telephone, fax (terminal 15R)	5 A
F32	Cigarette lighter (terminal 15R)	10 A

A1	Consumer	
F1	Exhaust gas aftertreatment unit (terminal 30)	15 A
F2	Windscreen heating	25 A
F3	Windscreen heating	25 A
F4	Coolbox, mobile phone/telephone/navigation control panel (terminal 30)	10 A
F5	Loading tailgate, sunblind (terminal 15)	10 A
F6	Trailer coupling, torch socket (terminal 15)	5 A
F7	12 V power socket	15 A
F8	Electrohydraulic auxiliary steering (terminal 30)	15 A
F9	Electrohydraulic auxiliary steering (terminal 15)	10 A
F10	Seat belt monitor, seat heating (terminal 15)	10 A
F11	Auxiliary air-conditioning system, reclining seat (terminal 30)	10 A
F12	Auxiliary air-conditioning system, mobile phone (terminal 15)	10 A
F13	Voltage transformer 24 V/12 V/8 A	10 A
	Voltage transformer 24 V/12 V/15 A	15 A
F14	Telligent® Lane Assistant (SPA)	5 A

A2	Consumer	
F1	Cold-start aid	20 A
F2	Electrohydraulic tilting pump	20 A

A2	Consumer	
F3	Telligent® distance control (ART), Active Brake Assist (ABA) (terminal 15)	5 A
F4	Retarder/hydraulic clutch	5 A
F5	Anti-theft alarm system (ATA), Telligent® level control, second control panel	5 A
F6	Rotating beacon, Mercedes star illumination	10 A
F7	Transfer case, transmission oil cooling	5 A
F8	Transfer case, transmission oil cooling	20 A
F9	24 V power sockets	15 A
F10	Working-area lamp	10 A
F11	Electronic Air-Processing Unit (terminal 15)	10 A
F12	Electronic Air-Processing Unit (terminal 30)	10 A
F13	Toll Collect with a low roof	5 A
F14	Non-MB body electrical system	15 A

B

Spare fuses and fuse extractor

Checking and replacing

General notes

The individual electrical circuits are protected by safety fuses or automatic circuit-breakers.

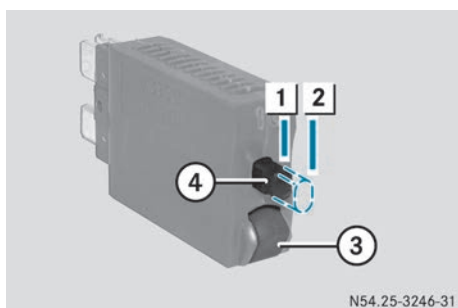
► If a circuit fails, switch off the consumer.

Fuses

- ▶ Remove the fuse using fuse extractor and visually inspect it.
- ▶ If the fuse wire has melted, replace the blown fuse with a spare fuse.
- ▶ Switch on consumers and check that they function correctly.

If the safety fuse blows again, have the electrical system checked at a qualified specialist workshop.

Automatic circuit-breaker



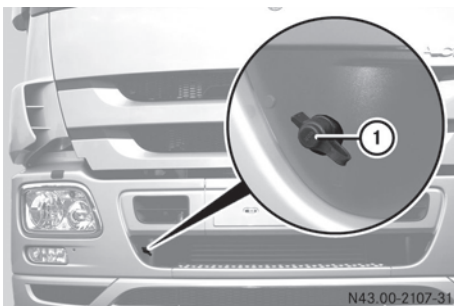
If an automatic circuit-breaker is tripped, pin ④ moves to OFF position ②.

- ▶ Pull the automatic circuit-breaker out of the module.
- ▶ Press pin ④ into ON position ①.
- ▶ Press trip switch ③.
If pin ④ moves to OFF position ②, the automatic circuit-breaker is functioning correctly.
If pin ④ does not move to OFF position ②, replace the automatic circuit-breaker.
- ▶ Press pin ④ into ON position ① and refit the circuit-breaker.
- ▶ Switch on consumers and check that they function correctly.

If the automatic circuit-breaker is tripped again, have the electrical system checked at a qualified specialist workshop.

Charging the compressed-air system

- ❗ If the supply pressure of the external compressed-air source is under 11 bar it cannot be guaranteed that you will be able to fill all the pressure circuits.



While the engine is not running, you can charge the compressed-air system via front supply connection ①.

To ensure full charging, the pressure regulator of the vehicle to be charged needs to be activated. Reduce the pressure to below 9 bar if necessary.

- ❗ You can release compressed air by depressing the brake pedal several times, for example.

Before towing, check that the spring-loaded cylinders of the parking brake are released. If the compressed-air supply is insufficient, release the spring-loaded cylinders manually (> page 323).

Jump-starting, tow-starting and towing away

Jump-starting

Important safety notes

⚠ WARNING

Battery acid is caustic. There is a risk of injury. Avoid contact with the skin, eyes or clothing. Do not inhale battery vapours. When carrying out maintenance work on the battery, wear acid-resistant protective clothing, in particu-

lar eye protection, protective gloves and an apron. Do not lean over the battery. Keep batteries out of the reach of children.

If you come into contact with battery acid, observe the following:

- Rinse battery acid off the affected areas of skin immediately and seek medical attention without delay.
- If battery acid comes into contact with your eyes, rinse them out thoroughly with clean water immediately. Seek medical attention without delay.

WARNING

During charging and jump-starting, explosive gases can escape from the battery. There is a risk of an explosion.

Particularly avoid fire, naked flames, creating sparks and smoking. Ensure there is sufficient ventilation while charging and jump-starting. Do not lean over a battery.

! Observe the following notes. You could otherwise damage the battery or electronic components in the vehicle:

- do not use a battery quick-charge unit for jump-starting.
- if you use a mobile battery charger (battery device with mains power stage), remove the mains plug before jump-starting.
- only have jump-starting provided by vehicles with a 24 V system.
- use jump leads which are protected against polarity reversal and with a wire cross section of approximately 35–50 mm² and insulated terminal clamps.
- if the outside temperature drops below -10 °C, a discharged battery could freeze. Do not start the engine under these circumstances. Let the battery thaw out first.

! 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.

! Do not connect the negative terminal clamp of the jump lead to the chassis frame. Otherwise, engine or transmission components can be damaged.

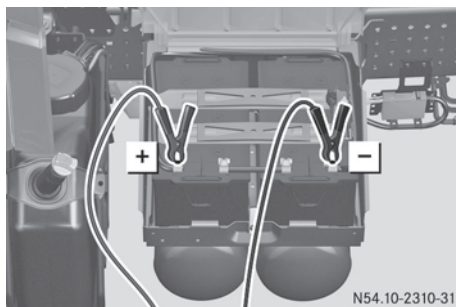
General notes

Observe the safety notes and protective measures when handling the battery (> page 285).

After jump-starting, have the batteries checked at a qualified specialist workshop. If the batteries are discharged, jump-start the vehicle by connecting to another vehicle.

- Make sure that the vehicles are not touching.
- Apply the parking brake.
- Switch off all electrical consumers.
- Turn the key to position **0** in the ignition lock.

Vehicles without a jump-starting connection point

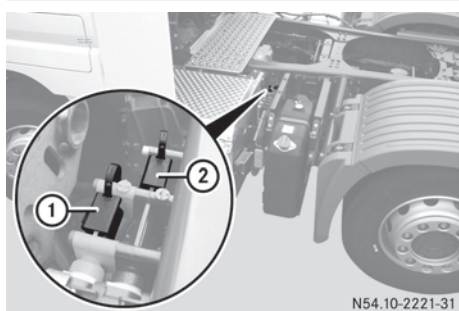


- **To connect the jump leads:** remove the battery compartment cover (> page 285).
- First, connect the positive terminal clamp of the jump lead to the positive terminal of the other vehicle's battery and then to the  positive terminal of the starter battery.
- First, connect the negative terminal clamp of the jump lead to the negative terminal of

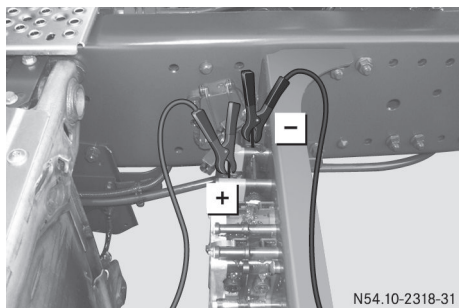
the other vehicle's battery and then to the  negative terminal of the starter battery.

- ▶ Assisting vehicle: run the engine at a high speed.
- ▶ Vehicles with cold-start aid: observe the "Cold-start aid" section before starting the engine (▷ page 215).
- ▶ Start the engine and allow it to idle.
- ▶ **To disconnect the jump lead:** first, disconnect the negative terminal clamps of the jump lead from the negative terminals.
- ▶ Remove the positive terminal clamps of the jump lead from the positive terminals.

Vehicles with a jump-starting connection point



N54.10-2221-31



N54.10-2318-31

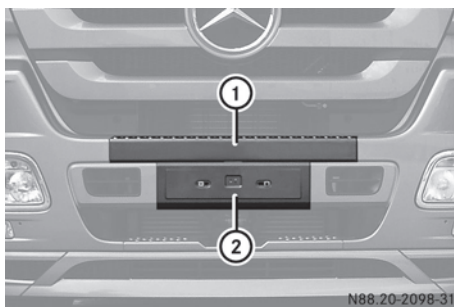
- ▶ **To connect the jump lead:** remove positive terminal cover ① and negative terminal cover ②.
- ▶ First, connect the positive terminal clamp of the jump lead to the positive terminal of the other vehicle's battery.

- ▶ Connect the other positive terminal clamp of the jump lead to the  positive terminal.
- ▶ First, connect the negative terminal clamp of the jump lead to the negative terminal of the other vehicle's battery.
- ▶ Connect the other negative terminal clamp of the jump lead to the  negative terminal.
- ▶ Assisting vehicle: run the engine at a high speed.
- ▶ Vehicles with cold-start aid: observe the "Cold-start aid" section before starting the engine (▷ page 215).
- ▶ Start the engine and allow it to idle.
- ▶ **To disconnect the jump lead:** first, disconnect the negative terminal clamps of the jump lead from the negative terminals.
- ▶ Remove the positive terminal clamps of the jump lead from the positive terminals.
- ▶ Replace positive terminal cover ① and negative terminal cover ②.

Manoeuvring/tow-starting and towing away

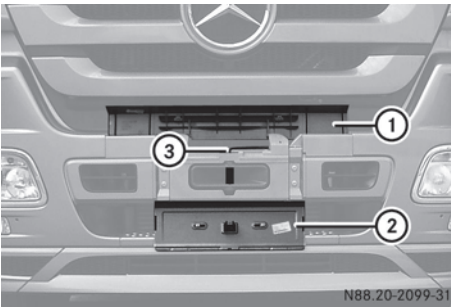
Front trailer tow hitch

Use the front coupling jaw for manoeuvring, tow-starting and towing away.



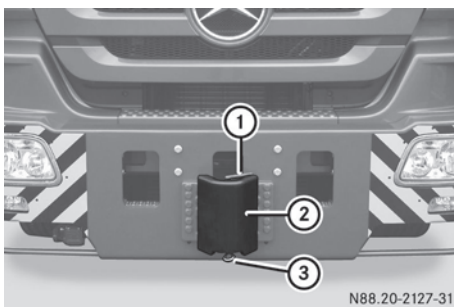
N88.20-2098-31

Example: vehicle front end



- Swing up coupling pin cover ①.
- Flip coupling jaw cover ② downwards.
- Swing coupling pin ③ approximately 90° forwards and pull it up and out.
- Attach the towbar.
- Push coupling pin ③ down through the eyelet of the towing bar.
- Swing coupling pin ③ approximately 90° backwards and engage it in the locking mechanism.

Front trailer tow hitch (SLT)



- Remove coupling pin cover ②.
- Pull out R-clip ③ forwards.
- Pull out coupling pin upwards.
- Attach the towbar.
- Push coupling pin ① down through the eyelet of the towing bar.
- Push R-clip ③ through coupling pin ①.
- Stow coupling pin cover ②.

Trailer tow hitch at the rear

Use the rear trailer tow hitch for manoeuvring, tow-starting and towing away.

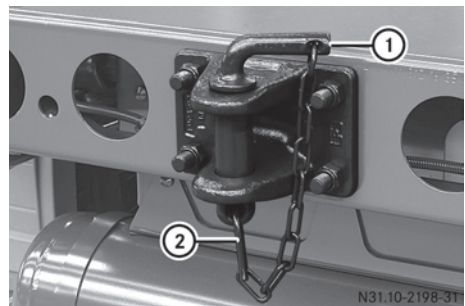
WARNING

The trailer tow hitch can only be loaded to a limited degree. If you use the trailer tow hitch for towing a trailer, the trailer may be torn off. You could lose the semitrailer as a result. There is a risk of an accident.

Observe the maximum permitted load of the trailer tow hitch. Use the trailer tow hitch for manoeuvring, towing or for steering actuation of semitrailers with positive steering.

! Observe the following notes on the rear trailer tow hitch. You could otherwise damage vehicle parts:

- the trailer tow hitch should not be used for trailer towing or vehicle recovery.
- avoid towing at an angle.
- never exceed a maximum towing angle of 15° in relation to the vehicle's longitudinal axis.
- the load on the trailer tow hitch should not exceed approximately 6 t for semi-trailer tractor vehicles or 12 t for other vehicles. Otherwise, you could damage the cross member.
- observe the details on the trailer tow hitch type plate.



Example: cross member with trailer tow hitch

- Unhook catch ② on coupling pin ①.
- Remove coupling pin ①.

- ▶ Attach the towbar.
- ▶ Push coupling pin ① down through the eyelet of the towing bar.
- ▶ Hook catch ② onto coupling pin ① again.

Manoeuvring

The adapter is not suitable for the operation of trailers. It may only be used for manoeuvring.

- ▶ Vehicles with a dual coupling head: use the adapter (vehicle tool kit).
The adapter ensures compressed-air supply to trailers which have conventional coupling heads (red and yellow coupling heads).
- ▶ Tighten the coupling head using the double-ring wrench (vehicle tool kit).

Tow-starting the vehicle

Important safety notes

Vehicles with a retarder:

WARNING

While the vehicle is being tow-started, the active retarder (eddy current brake) could brake the vehicle in an uncontrolled manner. You could therefore lose control of the vehicle. There is a risk of an accident.
Switch off the retarder before tow-starting.

- ▶ Turn the key to the drive position in the ignition lock.
- ▶ Deactivate ASR (▷ page 210).
- ▶ Deactivate SR (▷ page 211).
- ▶ Deactivate ABA (▷ page 225).

Vehicles with manual gearshift or Telligent® gearshift

- ▶ Depress and hold down the clutch pedal.
- ▶ Manual transmission: shift to 5th or 6th gear.
- ▶ Telligent® gearshift: shift to 4th gear.
The display shows the engaged gear.
- ▶ Tow-start the vehicle.

Do not exceed a towing speed of 20 km/h.

- ▶ Release the clutch pedal and depress the accelerator pedal.

! If the permitted engine speed is exceeded, the warning buzzer sounds. Shift to a higher pulling-away gear or reduce the tow-starting speed. Do not exceed the permitted engine speed. Otherwise, you could damage the engine.

- ▶ When the engine starts, shift the transmission into neutral.

Example: Telligent® automatic gearshift/ Mercedes PowerShift

- ▶ Shift to 4th gear (16-speed transmission) or 6th gear (12-speed transmission).
The display shows the engaged gear.
- ▶ Tow-start the vehicle.
- ▶ Depress the accelerator pedal at approximately 20 km/h.
The electronics automatically engage the clutch.

i Depending on whether you depress the accelerator pedal rapidly or slowly, the electronics disengage the clutch accordingly.

- ▶ When the engine starts, shift the transmission into neutral.

Towing the vehicle

Important safety notes

Specialist knowledge beyond the scope of these Operating Instructions is required for towing. Have the vehicle towed by trained personnel.

WARNING

If the engine is not running, the power steering and the compressed-air supply are inoperative. To steer, you will require considerably more force. The spring-loaded parking brake can activate if there is a loss of compressed air and the vehicle may then brake uncontrol-

lably. You could therefore lose control of the vehicle. There is a risk of an accident.

Always use a tow bar. Always ensure the compressed-air supply using an external compressed-air source.

WARNING

The spring-loaded parking brake can activate if there is a loss of compressed air and the vehicle may then brake uncontrollably. You could therefore lose control of the vehicle. There is a risk of an accident.

Always use a tow bar. Release the spring-loaded parking brake cylinder manually. Have the spring-loaded parking brake cylinder restored to its operational state at a qualified specialist workshop immediately after towing.

Observe the following when towing/tow-starting:

- If the engine is not running, have the propeller shaft or drive shaft removed. The transmission may otherwise be damaged.
- If the engine is not running and the spring-loaded parking brake is activated in the event of compressed-air pressure loss, the brakes may overheat and be damaged. Charge the compressed-air system, or release the spring-loaded parking brake mechanically.
- Check the driving level and correct it if necessary during towing/tow-starting on vehicles with air suspension. Otherwise, the air suspension or parts of the vehicle could be damaged.
- Switch off Active Brake Assist 2 before towing. Otherwise, Active Brake Assist 2 may brake the vehicle while it is being towed. This could cause the brakes to overheat and be damaged.

Attachments and bodies can affect the vehicle height and width. Do not exceed the maximum permissible vehicle height and

observe the applicable national regulations.

If the rear of the vehicle is raised for towing away, fold back the wind deflectors.

Drive carefully and anticipate road and traffic conditions. Observe the maximum clearance of underpasses.

Information on charging the compressed-air system using an external compressed-air source can be found in the "Charging the compressed-air system" section (> page 316).

Information on releasing the spring-loaded parking brake can be found in the "Releasing the spring-loaded parking brake" section (> page 323).

General advice on towing

WARNING

If the ignition is switched on when towing with the front axle raised, ASR could brake the wheels of the rear axle in an uncontrolled manner. The vehicle could then lose directional stability and skid. There is a risk of an accident.

Switch off the ignition before the vehicle is towed with the front axle raised.

WARNING

If Active Brake Assist 2 is activated while you are towing your vehicle or using it, e.g. as working machinery, the vehicle may brake automatically. The wheels could lose grip. There is a risk of an accident.

Always deactivate Active Brake Assist 2 in this or similar situations.

Before towing, agree on a clear signal with the towing vehicle driver. Both you and the towing vehicle driver must adapt your driving styles to the more difficult conditions.

- Remove the propeller shafts leading to the driven axles.
- If it is not possible to remove the propeller shaft, remove the drive shafts.

- ▶ Deactivate ASR (▷ page 210).
- ▶ Deactivate SR (▷ page 211).
- ▶ Deactivate ABA (▷ page 225).
- ▶ All-wheel-drive vehicles: switch the transfer case to the on-road position (▷ page 214).
- ▶ Vehicles with a front double coupling head: connect the compressed-air lines (▷ page 253).
- ▶ Charge the compressed-air system (▷ page 316).

Towing away a vehicle with engine damage and the propeller shaft fitted

Only in exceptional cases, e.g. when leaving areas of danger, should the vehicle be towed with the propeller shaft installed.

- ❗ When the engine is not running, the transmission oil pump is not operational. If the vehicle is towed away with the propeller shaft installed, the transmission could be damaged.
- ▶ Observe the general notes on towing away, except the information on removal of the propeller shaft.
- ▶ Vehicles with Telligent® gearshift, Telligent® automatic gearshift or Mercedes PowerShift: enable the **Transmission control** menu and activate tow-away mode (▷ page 207).

Towing a vehicle with front-axle damage

- ❗ Only raise the front axle of four-axle vehicles when the vehicle is unladen. Only tow away the vehicle when it is unladen.
- If when raised, the wheels on the second front axle touch the ground:
 - remove the wheels and
 - secure the brake drums with wheel nuts.
- ▶ Observe the general information on towing.
- ▶ Lift the vehicle by the front axle.

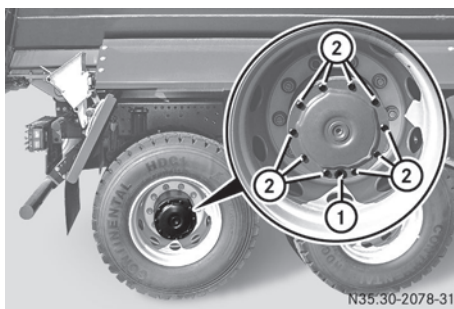
- ▶ Vehicles with all-wheel drive: remove the propeller shaft between the rear axle and the transfer case.
- ▶ Vehicles with air suspension: set the required chassis height using the control panel (▷ page 231).

Towing a vehicle with rear-axle damage

- ▶ Observe the general information on towing.
- ▶ Engage the cross-axle lock (▷ page 212).
- ▶ Remove both drive shafts.
- ▶ Vehicles with two driven rear axles: remove the drive shafts on both rear axles.
- ▶ All-wheel-drive vehicles: remove the propeller shaft between the front axle and the transfer case.

Removing the drive shafts from the rear axle RL 7 and RD 7

- ❗ Complete the vehicle tool kit with an M8 x 120 mm hexagon bolt from a specialist store. You need the hexagon bolt in order to remove the drive shaft on rear axle (RL 7, RD 7).



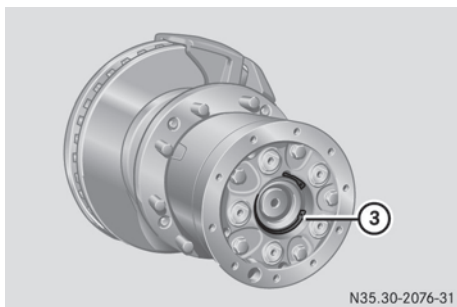
Remove the drive shaft on the right and left-hand sides of the vehicle.

- ▶ Park the vehicle with drain plug ① at the bottom.
- ▶ Unscrew drain plug ① on the planetary hub.
- ▶ Collect the oil that runs out in an oil-collecting tray.

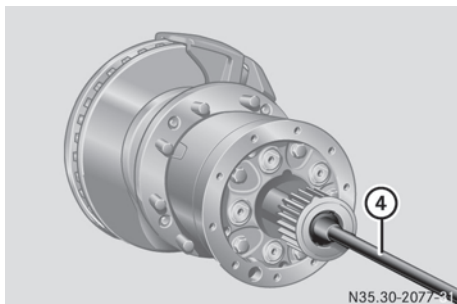
**Environmental note**

Dispose of service products in an environmentally-responsible manner.

- Unscrew bolts ② from the end cover.
- Remove the end cover.



- Remove circlip ③ using a set of pliers.

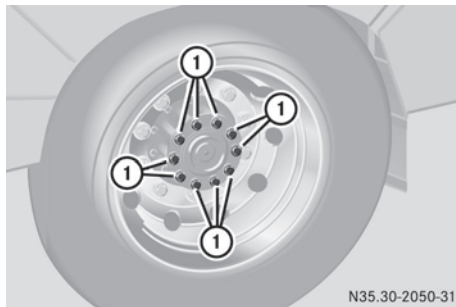


- Remove the drive shaft together with the sun gear.
For this purpose, use special tool ④ or a 120 mm long M8 bolt.
- Remove the sun gear from the drive shaft and refit the drive shaft in the rear axle.
- Replace the end cover.
- Screw in bolts ②.
- Screw in drain plug ①.
- Unscrew the oil filler opening bolts in the centre of the end cover.
- Add clean transmission oil (3.25 l per wheel end) to the planetary hub.
- Screw in the oil filler opening bolts.

⁵ Optional extra.

Removing drive shafts RL 6 and RL 8 on the rear axle

- Turn the key to the drive position in the ignition lock.
- Engage the cross-axis lock (> page 212).



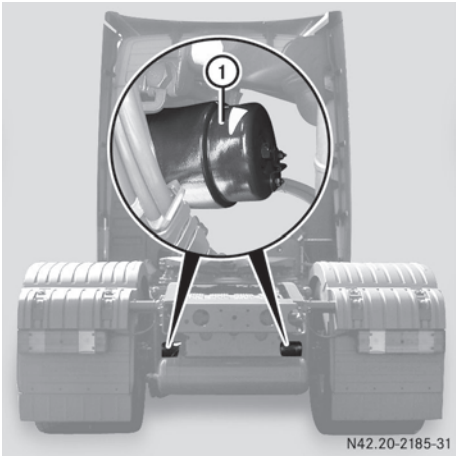
- Loosen bolts ① on the wheel hub.
- Remove both drive shafts.
- Cover up the wheel hub so that the bearing does not become dirty.

Releasing the spring-loaded parking brake**Arrangement of the spring-loaded parking brake cylinders**

The location of the spring-loaded parking brake cylinders depends on the axle equipment.

	Front axle		Rear axle	
	1	2	1	2
4x2, 4x4	x ⁵	–	x	–
6x2	–	–	x	x
6x2 / 2	x	–	–	x
6x2 / 4	–	–	x	x

	Front axle		Rear axle	
	1	2	1	2
6x4, 6x6	–	–	x	x
8x4/4, 8x6/4, 8x8/4	–	x	x	x

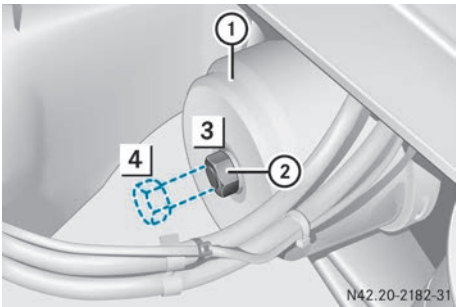


Spring-loaded parking brake cylinder (example: semitrailer tractor vehicle)

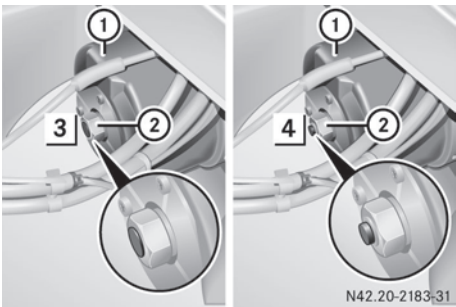
Manually releasing the spring-loaded parking brake cylinder

If there is insufficient reservoir pressure to release the parking brake, release the spring-loaded parking brake cylinders mechanically in the event of an emergency.

The vehicles may be fitted with different types of spring-loaded parking brake cylinders depending on the axle, e.g. spring-loaded parking brake cylinders with a release screw or with a release indicator.



Spring-loaded parking brake cylinder with release screw



Spring-loaded parking brake cylinder with release screw and release indicator

- Use chocks to safeguard the vehicle against rolling away.
 - ! Undo the release bolt with a maximum torque of 70 Nm. Do not use an impact wrench. You could otherwise damage the spring-loaded parking brake cylinder.
- Release all spring-loaded parking brake cylinders ① on the vehicle.
- Turn release screw ② of spring-loaded parking brake cylinder ① anti-clockwise until the stop in release position ④.

Moving the spring-loaded parking brake cylinder to the driving position

- ! Tighten the release bolt up to a torque of 35 Nm. Do not use an impact wrench. You could otherwise damage the spring-loaded parking brake cylinder.

Reset all spring-loaded parking brake cylinders ① to driving position ③.

- ▶ Charge the brake circuit until the cut-off pressure is reached.
- ▶ Swing the parking brake lever as far as it will go to the released position.
- ▶ Turn release screw ② of spring-loaded parking brake cylinder ① clockwise to driving position ③.
- ▶ Tighten release screw ②.

Useful information	328
Important safety notes	328
Tyre pressures	331

Useful information

These Operating Instructions describe all the models and standard and optional equipment of your vehicle that were available at the time of going to print. Country-specific differences are possible. Bear in mind that your vehicle may not be equipped with all the functions described. This also applies to safety-relevant systems and functions.

Read the information on qualified specialist workshops (► page 22).

Important safety notes

Operating and road safety

Regular checking of wheels and tyres

Tyres are of particular importance to the operating and road safety of the vehicle.

Regularly check the following:

- tyre pressure
- tyre tread
- tyre condition

A tyre dealer, a qualified specialist workshop or any Mercedes-Benz Service Centre will be able to provide further information about the:

- tyre load-bearing capacity (LI, Load Index)
- speed rating (maximum permissible speed of the tyre)
- tyre age
- causes and consequences of tyre wear
- measures to be taken in the event of tyre damage
- types of tyre for specific regions, areas of operation or conditions of vehicle use
- interchangeability of tyres, etc.

Tyre pressure

WARNING

Underinflated or overinflated tyres pose the following risks:

- the tyres may burst, especially as the load and vehicle speed increase.
- the tyres may wear excessively and/or unevenly, which may greatly impair tyre traction.
- the driving characteristics, as well as steering and braking, may be greatly impaired.

There is a risk of an accident.

Observe the recommended tyre pressure and check the tyre pressure of all the tyres including the spare wheel:

- at least once a month
- when the load changes
- before embarking on a longer journey
- for changed operating conditions, e.g. off-road driving.

If necessary, correct the tyre pressure.

WARNING

The tyre temperature and pressure increase when the vehicle is in motion. Reducing the pressure of warm tyres leads to a tyre pressure that is too low when the tyres have cooled. If the tyre pressure is too low, it may cause the tyre to burst, especially when the load or speed increases. There is a risk of an accident.

You should never reduce the pressure of warm tyres. Observe the specified tyre pressure.

Before starting your journey, check the specified tyre pressures while the tyres are cold.

If the tyre pressure is too low, it leads to:

- excessive heating of the tyres
- increased tyre wear
- a deterioration in driving stability
- increased fuel consumption

Excessive tyre pressure leads to:

- an increased braking distance
- a deterioration in tyre traction
- increased tyre wear

The valve caps on the tyre valves protect the valve cores from moisture and dirt. Always screw the valve caps tightly onto the tyre valves.

In the event of repeated pressure loss in the tyres, exterior damage or leaking tyre valves may be the cause. Check the condition of the tyres regularly.

For further information on tyre pressure; see the "Tyre pressure" section (▷ page 331).

Tyre tread

WARNING

Insufficient tyre tread will reduce tyre traction. The tyre is no longer able to dissipate water. This means that on wet road surfaces, the risk of aquaplaning increases, in particular where speed is not adapted to suit the driving conditions. There is a risk of accident.

If the tyre pressure is too high or too low, tyres may exhibit different levels of wear at different locations on the tyre tread. Thus, you should regularly check the tread depth and the condition of the tread across the entire width of all tyres.

Minimum tyre tread depth for:

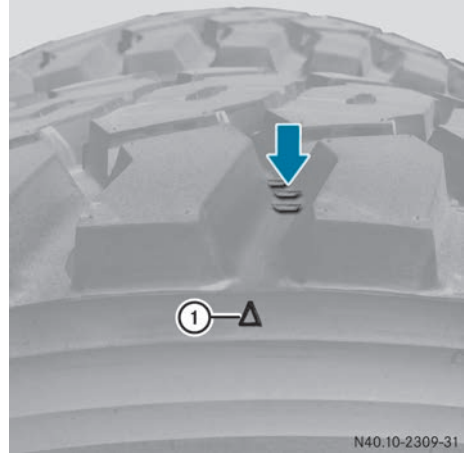
- summer tyres: 3 mm
- M+S tyres: 4 mm

For safety reasons, replace the tyres before the legally prescribed limit for the minimum tyre tread depth is reached.

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. There is a risk of an accident.

For this reason, avoid tyre ruts and brake carefully.



① Example: tyre tread wear indicator

A specified minimum tread depth is a legal requirement for all tyres. Observe the relevant legal requirements for each country.

The less tyre tread depth remaining, the poorer the road grip and handling characteristics of the vehicle, particularly if the road surface is wet or snow-covered.

A tyre has reached the minimum tread depth when the tread wear indicator (arrow) is flush with the tyre tread.

For safety reasons, have the tyres replaced before the legally specified minimum tread depth is reached.

Tyre condition

Important safety notes

WARNING

Damaged tyres can cause tyre inflation pressure loss. As a result, you could lose control of your vehicle. There is a risk of accident.

Check the tyres regularly for signs of damage and replace any damaged tyres immediately.

Before starting your journey, check the tyre condition for:

- external damage
- foreign objects in the tyre tread

- foreign objects between the tyres (on vehicles with twin tyres)
- cracks or bulges
- uneven tread wear or excessive wear on one side

Tyre damage

Tyre damage can, for example, be caused by:

- the operating conditions of the vehicle
- tyre ageing
- kerbs
- foreign objects
- insufficient or excessive tyre pressure
- weather conditions and environmental factors
- contact with oil, grease, fuel, etc.

Tyre age

Tyres age, even if they are used infrequently or not at all. Operating and road safety diminish with age. For this reason have tyres more than 6 years old checked and, if necessary, replaced at a qualified specialist workshop. This also applies to the spare wheel.



Date of manufacture ① tells you the age of a tyre. The first and second digits refer to the week of manufacture, starting with "01" for the first calendar week of the year. The third and fourth digits refer to the year of manufacture. A tyre that is marked "3808", for example, was thus manufactured in the 38th calendar week of 2008.

Tyre load-bearing capacity, tyre speed rating and tyre types

WARNING

Exceeding the stated tyre load-bearing capacity and the approved maximum speed could lead to tyre damage or the tyre bursting. There is a risk of accident.

Therefore, only use tyre types and sizes approved for your vehicle model. Observe the tyre load rating and speed rating required for your vehicle.

In particular, observe the country-specific permissible tyre specifications. These requirements may stipulate a specific tyre type for your vehicle. In addition, the use of specific tyre types may be advisable for certain regions and areas of operation.

A tyre dealer, a qualified specialist workshop or any Mercedes-Benz Service Centre will be able to provide further information about the tyres.

Replacing the tyres and retreaded tyres

Replacing tyres

If replacing the standard tyres of your vehicle, use only the tyre and wheel rim sizes approved for your vehicle type.

A tyre dealer, a qualified specialist workshop or any Mercedes-Benz Service Centre will be able to provide further information.

After replacing your tyres, carry with you the vehicle's type approval for the new tyre and wheel rim size as well as the manufacturer's certification showing that the tyres may be used on the vehicle. Observe the relevant legal requirements for each country.

Any Mercedes-Benz Service Centre can provide information on obtaining a manufacturer's certificate.

Retreaded tyres

Mercedes-Benz recommends that you only use tyres and wheels which have been tested

and approved by Mercedes-Benz specifically for your vehicle.

Tyre pressures

Important safety notes

WARNING

Underinflated or overinflated tyres pose the following risks:

- the tyres may burst, especially as the load and vehicle speed increase.
- the tyres may wear excessively and/or unevenly, which may greatly impair tyre traction.
- the driving characteristics, as well as steering and braking, may be greatly impaired.

There is a risk of an accident.

Observe the recommended tyre pressure and check the tyre pressure of all the tyres including the spare wheel:

- at least once a month
- when the load changes
- before embarking on a longer journey
- for changed operating conditions, e.g. off-road driving.

If necessary, correct the tyre pressure.

WARNING

The tyre temperature and pressure increase when the vehicle is in motion. Reducing the pressure of warm tyres leads to a tyre pressure that is too low when the tyres have cooled. If the tyre pressure is too low, it may cause the tyre to burst, especially when the load or speed increases. There is a risk of an accident.

You should never reduce the pressure of warm tyres. Observe the specified tyre pressure.

For every 10 °C change in air temperature, the tyre pressure changes by around 30 to 40 kPa (0.3 to 0.4 bar/4.4 to 5.8 psi). Bear this temperature-related change in tyre pressure in

mind when checking tyre pressures indoors, where the temperature may be higher than the outside temperature.

Example:

- the room temperature is approximately 20 °C
- the outside temperature is approximately 0 °C
- set the tyre pressure to around 60 to 80 kPa (0.6 to 0.8 bar/8.7 to 11.6 psi) higher than that prescribed in the tyre pressure table.

The tyre pressures are specified according to E.T.R.T.O. standards and may deviate from the manufacturer's specifications.

Also observe the general notes in the "Operating and road safety" section (► page 328).

Determining tyre pressures

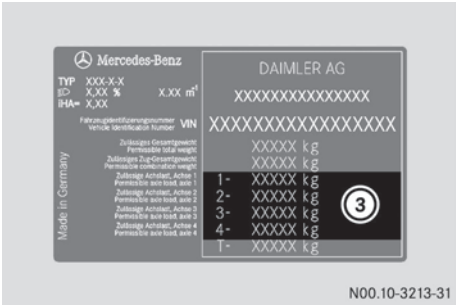
-  Correct the tyre pressures for each axle on the vehicle.



Example: tyre size and load bearing index

- Read tyre size ① and load bearing index ② on the tyre.

If load bearing index ② is comprised of two numbers, the first number before the "/" is for single tyres and the second number, after the "/", is for twin tyres.



Example: vehicle identification plate

- Determine permissible axle load ③ by checking the vehicle identification plate.
- Select the tyre pressure table which corresponds to the tyre type.
 - Single tyres (▷ page 333)
 - Twin tyres (▷ page 338)
- Look for tyre size ① in the tyre pressure table.
- Search for load bearing index ② which corresponds to the tyre type next to the tyre size in the tyre pressure table.
- Find maximum permissible axle load ③ in the tyre pressure table and read off the tyre pressure.

Single tyres

The figures given for axle load values are in kg.

Tyres	Load index	4300	6000	6300	6700	7100
215/75 R 17.5	135	850 kPa (8.5 bar/ 123 psi)	–	–	–	–
12.00 R 20	154	–	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)
14.00 R 20	160	–	–	–	500 kPa (5.0 bar/ 72 psi)	525 kPa (5.25 bar/ 76 psi)
14.00 R 20	164	–	–	–	–	500 kPa (5.0 bar/ 72 psi)
365/85 R 20	164	–	–	–	–	525 kPa (5.25 bar/ 76 psi)
11 R 22.5	148	–	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)	–	–
12 R 22.5	152	–	700 kPa (7.0 bar/ 102 psi)	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)
13 R 22.5	154	–	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)
13 R 22.5	156	–	625 kPa (6.25 bar/ 91 psi)	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	775 kPa (7.75 bar/ 112 psi)
275/70 R 22.5	148	–	850 kPa (8.5 bar/ 123 psi)	900 kPa (9.0 bar/ 131 psi)	–	–
275/70 R 22.5	150	–	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)	900 kPa (9.0 bar/ 131 psi)	–

Tyres	Load index	4300	6000	6300	6700	7100
275/80 R 22.5	149	–	775 kPa (7.75 bar/ 112 psi)	825 kPa (8.25 bar/ 120 psi)	–	–
295/60 R 22.5	150	–	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)	900 kPa (9.0 bar/ 131 psi)	–
295/80 R 22.5	152	–	700 kPa (7.0 bar/ 102 psi)	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)
295/80 R 22.5	154	–	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)
305/70 R 22.5	150	–	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)	–
305/70 R 22.5	152	–	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)	900 kPa (9.0 bar/ 131 psi)
315/60 R 22.5	152	–	725 kPa (7.25 bar/ 105 psi)	775 kPa (7.75 bar/ 112 psi)	825 kPa (8.25 bar/ 120 psi)	900 kPa (9.0 bar/ 131 psi)
315/60 R 22.5	154	–	700 kPa (7.0 bar/ 102 psi)	725 kPa (7.25 bar/ 105 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)
315/70 R 22.5	154	–	700 kPa (7.0 bar/ 102 psi)	725 kPa (7.25 bar/ 105 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)
315/70 R 22.5	156	–	625 kPa (6.25 bar/ 91 psi)	675 kPa (6.75 bar/ 98 psi)	725 kPa (7.25 bar/ 105 psi)	775 kPa (7.75 bar/ 112 psi)
315/80 R 22.5	154	–	625 kPa (6.25 bar/ 91 psi)	675 kPa (6.75 bar/ 98 psi)	725 kPa (7.25 bar/ 105 psi)	775 kPa (7.75 bar/ 112 psi)
315/80 R 22.5	156	–	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	750 kPa (7.5 bar/ 109 psi)

Tyres	Load index	4300	6000	6300	6700	7100
355/50 R 22.5	154	–	675 kPa (6.75 bar/ 98 psi)	725 kPa (7.25 bar/ 105 psi)	775 kPa (7.75 bar/ 112 psi)	850 kPa (8.5 bar/ 123 psi)
355/50 R 22.5	156	–	625 kPa (6.25 bar/ 91 psi)	675 kPa (6.75 bar/ 98 psi)	725 kPa (7.25 bar/ 105 psi)	775 kPa (7.75 bar/ 112 psi)
365/70 R 22.5	156	–	500 kPa (5.0 bar/ 72 psi)	550 kPa (5.5 bar/ 80 psi)	600 kPa (6.0 bar/ 87 psi)	625 kPa (6.25 bar/ 91 psi)
375/50 R 22.5	160	–	625 kPa (6.25 bar/ 91 psi)	675 kPa (6.75 bar/ 98 psi)	725 kPa (7.25 bar/ 105 psi)	775 kPa (7.75 bar/ 112 psi)
385/55 R 22.5	156	–	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)
385/55 R 22.5	158	–	550 kPa (5.5 bar/ 80 psi)	575 kPa (5.75 bar/ 83 psi)	625 kPa (6.25 bar/ 91 psi)	675 kPa (6.75 bar/ 98 psi)
385/65 R 22.5	158	–	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)
385/65 R 22.5	160	–	550 kPa (5.5 bar/ 80 psi)	575 kPa (5.75 bar/ 83 psi)	625 kPa (6.25 bar/ 91 psi)	675 kPa (6.75 bar/ 98 psi)
385/65 R 22.5	164	–	500 kPa (5.0 bar/ 72 psi)	525 kPa (5.25 bar/ 76 psi)	550 kPa (5.5 bar/ 80 psi)	600 kPa (6.0 bar/ 87 psi)
425/65 R 22.5	165	–	–	–	500 kPa (5.0 bar/ 72 psi)	525 kPa (5.25 bar/ 76 psi)
12.00 R 24	156	–	550 kPa (5.5 bar/ 80 psi)	575 kPa (5.75 bar/ 83 psi)	625 kPa (6.25 bar/ 91 psi)	675 kPa (6.75 bar/ 98 psi)

Tyres	Load index	4300	6000	6300	6700	7100
12.00 R 24	160	–	500 kPa (5.0 bar/ 72 psi)	575 kPa (5.75 bar/ 83 psi)	575 kPa (5.75 bar/ 83 psi)	625 kPa (6.25 bar/ 91 psi)
325/95 R 24	162	–	500 kPa (5.0 bar/ 72 psi)	525 kPa (5.25 bar/ 76 psi)	550 kPa (5.5 bar/ 80 psi)	600 kPa (6.0 bar/ 87 psi)

The figures given for axle load values are in kg.

Tyres	Load index	7500	8000	9000	9500	10000
12.00 R 20	154	850 kPa (8.5 bar/ 123 psi)	–	–	–	–
14.00 R 20	160	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	700 kPa (7.0 bar/ 102 psi)	–	–
14.00 R 20	164	525 kPa (5.25 bar/ 76 psi)	575 kPa (5.75 bar/ 83 psi)	675 kPa (6.75 bar/ 98 psi)	700 kPa (7.0 bar/ 102 psi)	750 kPa (7.5 bar/ 109 psi)
365/85 R 20	164	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	700 kPa (7.0 bar/ 102 psi)	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)
13 R 22.5	154	850 kPa (8.5 bar/ 123 psi)	–	–	–	–
13 R 22.5	156	825 kPa (8.25 bar/ 120 psi)	875 kPa (8.75 bar/ 127 psi)	–	–	–
295/80 R 22.5	154	850 kPa (8.5 bar/ 123 psi)	–	–	–	–
315/60 R 22.5	154	900 kPa (9.0 bar/ 131 psi)	–	–	–	–
315/70 R 22.5	154	900 kPa (9.0 bar/ 131 psi)	–	–	–	–

Tyres	Load index	7500	8000	9000	9500	10000
315/70 R 22.5	156	850 kPa (8.5 bar/ 123 psi)	900 kPa (9.0 bar/ 131 psi)	–	–	–
315/80 R 22.5	154	825 kPa (8.25 bar/ 120 psi)	–	–	–	–
315/80 R 22.5	156	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)	–	–	–
355/50 R 22.5	154	900 kPa (9.0 bar/ 131 psi)	–	–	–	–
355/50 R 22.5	156	850 kPa (8.5 bar/ 123 psi)	900 kPa (9.0 bar/ 131 psi)	–	–	–
365/70 R 22.5	156	675 kPa (6.75 bar/ 98 psi)	725 kPa (7.25 bar/ 105 psi)	850 kPa (8.5 bar/ 123 psi)	900 kPa (9.0 bar/ 131 psi)	–
375/50 R 22.5	160	825 kPa (8.25 bar/ 120 psi)	900 kPa (9.0 bar/ 131 psi)	–	–	–
385/55 R 22.5	156	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)	–	–	–
385/55 R 22.5	158	725 kPa (7.25 bar/ 105 psi)	775 kPa (7.75 bar/ 112 psi)	900 kPa (9.0 bar/ 131 psi)	–	–
385/65 R 22.5	158	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)	–	–	–
385/65 R 22.5	160	725 kPa (7.25 bar/ 105 psi)	775 kPa (7.75 bar/ 112 psi)	900 kPa (9.0 bar/ 131 psi)	–	–
385/65 R 22.5	164	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)	900 kPa (9.0 bar/ 131 psi)

Tyres	Load index	7500	8000	9000	9500	10000
425/65 R 22.5	165	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	700 kPa (7.0 bar/ 102 psi)	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)
12.00 R 24	156	725 kPa (7.25 bar/ 105 psi)	775 kPa (7.75 bar/ 112 psi)	–	–	–
12.00 R 24	160	675 kPa (6.75 bar/ 98 psi)	750 kPa (7.5 bar/ 109 psi)	850 kPa (8.5 bar/ 123 psi)	–	–
325/95 R 24	162	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)	–

Twin tyres

The figures given for axle load values are in kg.

Tyres	Load index	9000	9500	10000	10500	11000
12.00 R 20	150	525 kPa (5.25 bar/ 76 psi)	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	675 kPa (6.75 bar/ 98 psi)
14.00 R 20	157	–	–	–	–	500 kPa (5.0 bar/ 72 psi)
11 R 22.5	145	625 kPa (6.25 bar/ 91 psi)	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)
12 R 22.5	148	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	725 kPa (7.25 bar/ 105 psi)
13 R 22.5	150	550 kPa (5.5 bar/ 80 psi)	575 kPa (5.75 bar/ 83 psi)	625 kPa (6.25 bar/ 91 psi)	675 kPa (6.75 bar/ 98 psi)	700 kPa (7.0 bar/ 102 psi)
13 R 22.5	151	525 kPa (5.25 bar/ 76 psi)	550 kPa (5.5 bar/ 80 psi)	600 kPa (6.0 bar/ 87 psi)	625 kPa (6.25 bar/ 91 psi)	650 kPa (6.5 bar/ 94 psi)

Tyres	Load index	9000	9500	10000	10500	11000
275/70 R 22.5	145	675 kPa (6.75 bar/ 98 psi)	725 kPa (7.25 bar/ 105 psi)	775 kPa (7.75 bar/ 112 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)
275/80 R 22.5	143	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	725 kPa (7.25 bar/ 105 psi)	–
275/80 R 22.5	146	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	725 kPa (7.25 bar/ 105 psi)	750 kPa (7.5 bar/ 109 psi)
295/55 R 22.5	145	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)
295/60 R 22.5	147	625 kPa (6.25 bar/ 91 psi)	675 kPa (6.75 bar/ 98 psi)	700 kPa (7.0 bar/ 102 psi)	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)
295/80 R 22.5	146	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	725 kPa (7.25 bar/ 105 psi)
295/80 R 22.5	148	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	725 kPa (7.25 bar/ 105 psi)
295/80 R 22.5	149	550 kPa (5.5 bar/ 80 psi)	575 kPa (5.75 bar/ 83 psi)	625 kPa (6.25 bar/ 91 psi)	675 kPa (6.75 bar/ 98 psi)	700 kPa (7.0 bar/ 102 psi)
305/70 R 22.5	148	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	725 kPa (7.25 bar/ 105 psi)
305/70 R 22.5	150	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	675 kPa (6.75 bar/ 98 psi)	725 kPa (7.25 bar/ 105 psi)
315/45 R 22.5	145	675 kPa (6.75 bar/ 98 psi)	725 kPa (7.25 bar/ 105 psi)	775 kPa (7.75 bar/ 112 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)

Tyres	Load index	9000	9500	10000	10500	11000
315/60 R 22.5	148	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	675 kPa (6.75 bar/ 98 psi)	725 kPa (7.25 bar/ 105 psi)	775 kPa (7.75 bar/ 112 psi)
315/70 R 22.5	148	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	700 kPa (7.0 bar/ 102 psi)	725 kPa (7.25 bar/ 105 psi)
315/70 R 22.5	150	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	675 kPa (6.75 bar/ 98 psi)	725 kPa (7.25 bar/ 105 psi)
315/80 R 22.5	150	525 kPa (5.25 bar/ 76 psi)	675 kPa (6.75 bar/ 98 psi)	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	675 kPa (6.75 bar/ 98 psi)
12.00 R 24	153	–	–	500 kPa (5.0 bar/ 72 psi)	525 kPa (5.25 bar/ 76 psi)	550 kPa (5.5 bar/ 80 psi)
12.00 R 24	160	–	–	500 kPa (5.0 bar/ 72 psi)	525 kPa (5.25 bar/ 76 psi)	550 kPa (5.5 bar/ 80 psi)

The figures given for axle load values are in kg.

Tyres	Load index	11500	12000	12600	13000	16000
12.00 R 20	150	725 kPa (7.25 bar/ 105 psi)	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)	825 kPa (8.25 bar/ 120 psi)	–
14.00 R 20	157	525 kPa (5.25 bar/ 76 psi)	550 kPa (5.5 bar/ 80 psi)	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	775 kPa (7.75 bar/ 112 psi)
14.00 R 20	160	–	–	500 kPa (5.0 bar/ 72 psi)	525 kPa (5.25 bar/ 76 psi)	650 kPa (6.5 bar/ 94 psi)
11 R 22.5	145	850 kPa (8.5 bar/ 123 psi)	–	–	–	–

Tyres	Load index	11500	12000	12600	13000	16000
12 R 22.5	148	775 kPa (7.75 bar/ 112 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)	–	–
13 R 22.5	150	750 kPa (7.5 bar/ 109 psi)	775 kPa (7.75 bar/ 112 psi)	825 kPa (8.25 bar/ 120 psi)	850 kPa (8.5 bar/ 123 psi)	–
13 R 22.5	151	700 kPa (7.0 bar/ 102 psi)	725 kPa (7.25 bar/ 105 psi)	775 kPa (7.75 bar/ 112 psi)	800 kPa (8.0 bar/ 116 psi)	–
275/70 R 22.5	145	900 kPa (9.0 bar/ 131 psi)	–	–	–	–
275/80 R 22.5	146	825 kPa (8.25 bar/ 120 psi)	850 kPa (8.5 bar/ 123 psi)	–	–	–
295/55 R 22.5	145	900 kPa (9.0 bar/ 131 psi)	–	–	–	–
295/60 R 22.5	147	850 kPa (8.5 bar/ 123 psi)	875 kPa (8.75 bar/ 127 psi)	–	–	–
295/80 R 22.5	146	775 kPa (7.75 bar/ 112 psi)	800 kPa (8.0 bar/ 116 psi)	–	–	–
295/80 R 22.5	148	775 kPa (7.75 bar/ 112 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)	–	–
295/80 R 22.5	149	750 kPa (7.5 bar/ 109 psi)	775 kPa (7.75 bar/ 112 psi)	825 kPa (8.25 bar/ 120 psi)	850 kPa (8.5 bar/ 123 psi)	–
305/70 R 22.5	148	775 kPa (7.75 bar/ 112 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)	–	–

Tyres	Load index	11500	12000	12600	13000	16000
305/70 R 22.5	150	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)	875 kPa (8.75 bar/ 127 psi)	–
315/45 R 22.5	145	900 kPa (9.0 bar/ 131 psi)	–	–	–	–
315/60 R 22.5	148	825 kPa (8.25 bar/ 120 psi)	850 kPa (8.5 bar/ 123 psi)	900 kPa (9.0 bar/ 131 psi)	–	–
315/70 R 22.5	148	775 kPa (7.75 bar/ 112 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)	–	–
315/70 R 22.5	150	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)	850 kPa (8.5 bar/ 123 psi)	875 kPa (8.75 bar/ 127 psi)	–
315/80 R 22.5	150	725 kPa (7.25 bar/ 105 psi)	750 kPa (7.5 bar/ 109 psi)	800 kPa (8.0 bar/ 116 psi)	825 kPa (8.25 bar/ 120 psi)	–
12.00 R 24	153	600 kPa (6.0 bar/ 87 psi)	625 kPa (6.25 bar/ 91 psi)	650 kPa (6.5 bar/ 94 psi)	675 kPa (6.75 bar/ 98 psi)	–
12.00 R 24	156	575 kPa (5.75 bar/ 83 psi)	600 kPa (6.0 bar/ 87 psi)	650 kPa (6.5 bar/ 94 psi)	675 kPa (6.75 bar/ 98 psi)	850 kPa (8.5 bar/ 123 psi)
325/95 R 24	160	500 kPa (5.0 bar/ 72 psi)	525 kPa (5.25 bar/ 76 psi)	550 kPa (5.5 bar/ 80 psi)	575 kPa (5.75 bar/ 83 psi)	725 kPa (7.25 bar/ 105 psi)

Useful information	344
Vehicle identification plate/axle loads	344
Engine data plate	345
Service products	345
Operating data	354
Compressed-air reservoir	356

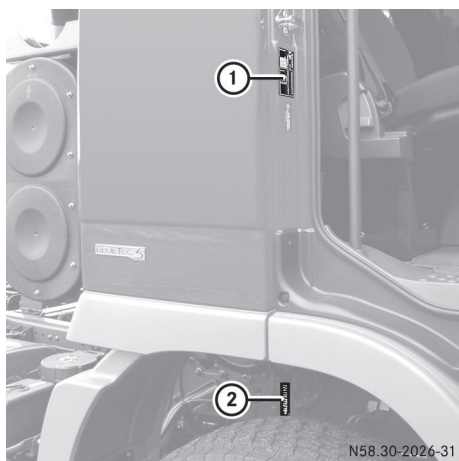
Useful information

These Operating Instructions describe all the models and standard and optional equipment of your vehicle that were available at the time of going to print. Country-specific differences are possible. Bear in mind that your vehicle may not be equipped with all the functions described. This also applies to safety-relevant systems and functions.

Read the information on qualified specialist workshops (► page 22).

Vehicle identification plate/axle loads

Vehicle identification plate and vehicle identification number (VIN)



Example: left-hand-drive vehicle

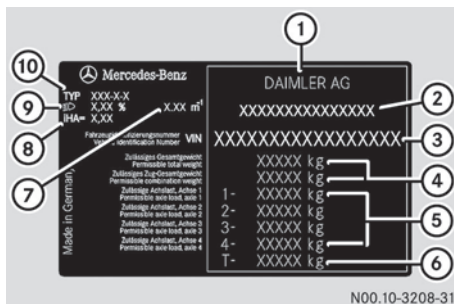


Example: right-hand-drive vehicle

Vehicle identification plate ① is located in the door frame on the co-driver's side.

Vehicle identification number (VIN) ② is stamped on the longitudinal frame member in the right wheel housing.

Information on the vehicle identification plate



Example: vehicle identification plate

- ① Vehicle manufacturer (Daimler AG)
- ② EU general operating permit number (only in certain countries)
- ③ Vehicle identification number (VIN)
- ④ Maximum permissible gross vehicle weight (kg)
Maximum permissible vehicle combination gross weight (kg)
- ⑤ Maximum permissible axle loads (kg)
- ⑥ Permissible load of axle group T (kg)
- ⑦ Flue gas coefficient
- ⑧ Axle reduction ratio

- ⑨ Basic headlamp setting
- ⑩ Type of vehicle (model series)

Vehicle model designation

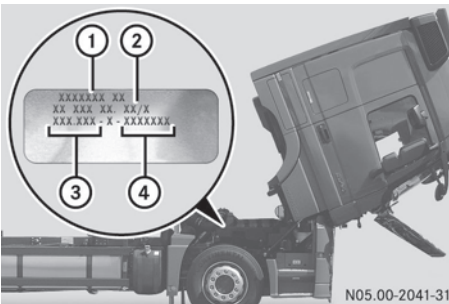


N00.10-3131-31

Example: vehicle model designation

26	46	
26		Maximum gross vehicle weight in metric tonnes
	46	Engine power output in bhp (= x 10)

Engine data plate



N05.00-2041-31

- ① Manufacturer
- ② Engine type
- ③ Engine model series
- ④ Engine number

The engine data plate is located in the rear on the engine, on the right-hand side when viewed in the direction of travel.

Service products

Important safety notes

⚠ WARNING

Service product can be poisonous and hazardous to health. There is a risk of injury. Observe the instructions on the respective original container when using, storing and disposing of service products. Always store service products in the sealed original container. Always keep service products out of the reach of children.

- ❗ Special additives (except approved fuel additives) are neither required nor approved for use with approved service products. Additives may cause damage to major assemblies. Therefore, do not mix any additives with service products. You are responsible for the results of using fuel additives.

♻ Environmental note

Dispose of service products in an environmentally-responsible manner.

Service products are:

- windscreen washer concentrate
- fuels (e.g. diesel)
- lubricants (e.g. engine oil, transmission oil, hydraulic fluid, grease)
- antifreeze, coolant
- AdBlue® (BlueTec® exhaust gas aftertreatment reduction agent)

Approved service products fulfil the highest quality standards and are documented in the Mercedes-Benz Specifications for Service Products. For this reason, only use approved service products for your vehicle. Information about approved service products is available from any Mercedes-Benz Service Centre.

You can recognise service products approved by Mercedes-Benz by the following inscription on the container:

- MB-Freigabe (e.g. Freigabe 228.5)

or

- MB Approval 228.5

Other labels and recommendations relating to the quality or indicating that the product meets a certain specification are not necessarily approved by Mercedes-Benz.

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

- i** You can obtain information about service products that have been tested by Mercedes-Benz and approved for your vehicle on the Internet at <http://bevo.mercedes-benz.com/>

- i** The specification and availability of lubricants may vary. Some lubricants are no longer available, especially for older vehicles. Information is available from any Mercedes-Benz Service Centre.

Hydraulic fluids

- !** Hydraulic fluids for the hydraulic clutch mechanism and the transmission shift system are specified on Sheet number 345.0 of the Mercedes-Benz Specifications for Service Products and no deviation is permitted.

Do not top up with hydraulic fluids of a different quality grade or brake fluid. Doing so could cause damage to the hydraulic clutch mechanism or to the gearshift.

Observe the safety notes on service products (▷ page 345).

You do not need to renew the hydraulic fluid for the hydraulic clutch mechanism and gearshift.

Engine oils

Notes on engine oils

- !** Engine oils of a different quality grade are not permissible and may damage the engine.

Observe the safety notes on service products (▷ page 345).

Only use engine oils that comply with the Mercedes-Benz Specifications for Service Products:

- with vehicles without BlueTec® exhaust gas aftertreatment, only use multi-grade engine oils compliant with Sheet No. 228.1/.3/.31/.5/.51 or single-grade engine oil compliant with Sheet No. 228.0/.2.
- with vehicles with BlueTec® exhaust gas aftertreatment, only use multi-grade engine oils compliant with Sheet No. 228.3/.31/.5/.51 or single-grade engine oil compliant with Sheet No. 228.2.
- with vehicles with FAME fatty acid methyl ester fuel (bio-diesel fuel), only use engine oils compliant with Sheet No. 228.3/.5. This is also required for a mixture of conventional diesel fuels and FAME fatty acid methyl ester fuels.

Mercedes-Benz particularly recommends engine oils that comply with Sheet No. 228.5 of the Mercedes-Benz Specifications for Service Products.

These engine oils are of a high standard of quality and have a beneficial effect on:

- engine wear
- fuel consumption
- exhaust emissions

- i** You can get information on the quality grade, e.g. Sheet No. 228.5, and the viscosity, e.g. SAE class 5W-30 from the designation on the oil container.

Scope of use

- multi-grade oils which comply with Sheet No. 228.1/.3/.31/.5/.51 can be used all year round. Oil change intervals may be reduced depending on the fuel grade (fuel

sulphur content or FAME fatty acid methyl ester fuel).

- single-grade oils which comply with Sheet No. 228.0/.2 are only designed for one SAE viscosity class for specific temperature ranges. Change the engine oil to an SAE class suitable for the time of year and the respective outside temperatures.
- Set the sulphur content of the fuel in the on-board computer (► page 123).

Oil change

! If you do not use oil for all-year-round operation in your engine, change the engine oil right at the beginning of the cold season. Use only an approved engine oil in the specified SAE classification.

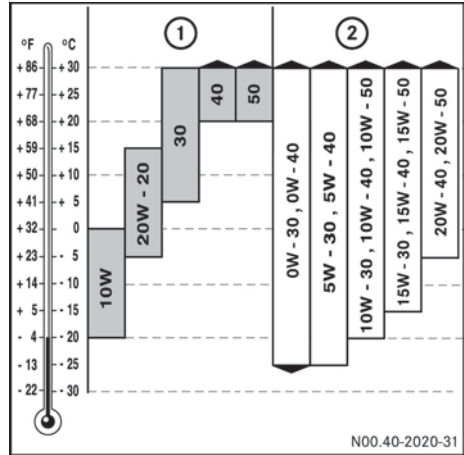
If the SAE class (viscosity) of the engine oil used is not suitable for continually low outside temperatures below -20°C , this could cause engine damage.

The specified temperatures of the SAE class always refer to freshly added oil. Engine oil ages during driving due to soot and fuel residue. This impairs the characteristics of the engine oil, particularly at low outside temperatures.

Mercedes-Benz strongly recommends that, at outside temperatures below -20°C , you use engine oils of SAE class 5W-30.

Environmental note

If you operate your vehicle using FAME fatty acid methyl ester fuel (bio-diesel), special precautions must be taken and national specifications complied with when disposing of engine oils. Information is available from any Mercedes-Benz Service Centre.



Engine oil SAE classes (viscosity)

- ① Single-grade engine oils
- ② Multi-grade engine oils

Oil change intervals are dependent on the following:

- the operating conditions of the vehicle
- the grade of the engine oil used
- the fuel type, e.g. FAME fatty acid methyl ester fuel

The display automatically shows the date of the next oil change.

- Select the SAE class of engine oil in accordance with outside temperatures.
- Set the SAE classification (viscosity) and Sheet No. (quality grade) of the engine oil in the on-board computer (► page 123).

i You can only achieve the maximum oil change intervals by using engine oils of particularly high quality (e.g. in accordance with Sheet No. 228.5 of the Mercedes-Benz Specifications for Service Products).

Adding/topping up the engine oil

! There is a risk of damage to the catalytic converter or to the engine if too much oil is added. Have excess oil drained off.

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.

Check the oil level in the on-board computer (▷ page 116) before you top up the oil.

You will find more information on topping up the engine oil in the "Maintenance" section (▷ page 283).

Miscibility of engine oils

The benefits of high-quality engine oils are diminished if you mix them.

Engine oils are differentiated according to:

- engine oil brand
- quality grade (Sheet No.)
- SAE viscosity class

If, in exceptional circumstances, the type of engine oil currently used in the engine is not available, another engine oil approved for Mercedes-Benz may be used.

Setting the oil quality

! If the on-board computer shows the  symbol and you top up with the quantity of oil displayed in the on-board computer, note the following:

- If you top up with an engine oil of a lower quality, set the lower quality (Sheet no.) in the on-board computer.
 - If you top up with an engine oil of a higher quality, do not set the higher quality (Sheet no.) in the on-board computer.
- Set the Sheet No. (quality grade) of the engine oil in the on-board computer (▷ page 123).

Transmission oils

General notes

Observe the safety notes on service products (▷ page 345).

Depending on the vehicle version, the following assemblies may be filled with a high quality synthetic oil at the factory:

- drive axles
- transmission
- transfer case

! If you replace the synthetic oil in these assemblies with a mineral transmission oil, you may damage the assemblies. Before the oil change, check whether the use of a mineral transmission oil is permitted. Information is available from any Mercedes-Benz Service Centre.

Transmission oil grade

The quality grade (Sheet No.) of the transmission oil used can be checked and changed in the on-board computer (▷ page 123).

Coolant

Coolant additive with antifreeze properties

WARNING

If antifreeze comes into contact with hot components in the engine compartment, it may ignite. There is a risk of fire and injury.

Let the engine cool down before you top up the antifreeze. Make sure that antifreeze is not spilled next to the filler neck. Thoroughly clean the antifreeze from components before starting the engine.

Observe the safety notes on service products (▷ page 345).

Coolant ensuring anti-corrosion/antifreeze protection and other important protective effects is filled at the factory.

Use only coolants specified in Sheet No. 325.5, e.g. Glysantin® G40®.

The coolant is a mixture of water and corrosion inhibitor/antifreeze.

The corrosion inhibitor/antifreeze in the coolant has the following properties:

- heat transfer
- anti-corrosion protection
- cavitation protection (protection against pitting)
- antifreeze protection
- raising the boiling point

Leave the coolant in the engine cooling system all year round – even in countries with high outside temperatures.

Check the corrosion inhibitor/antifreeze concentration in the coolant every six months.

Renew the coolant every 3 years.

Use only approved antifreeze/corrosion inhibitor according to Sheet No. 325.5. This prevents damage to the engine cooling system and engine.

When renewing the coolant, ensure that it contains 50 % antifreeze/corrosion inhibitor by volume. This corresponds to antifreeze protection down to -37 °C.

Do not exceed 55 % by volume (antifreeze up to approximately -45 °C). The heat dissipation and antifreeze may otherwise be negatively affected.

If there is a loss of coolant, do not top it up by using only water, but also add an approved corrosion inhibitor/antifreeze agent.

The water in the coolant must meet certain requirements which are often met by drinking water. The water must be treated if its quality does not meet the required standards.

Please note the Mercedes-Benz Specifications for Service Products, Sheet No. 325.5.

Further information about operational and road safety can be obtained from any Mercedes-Benz Service Centre.

Coolant additive without antifreeze properties

If your vehicle does not need antifreeze protection, e.g. in countries with consistently

high outside temperatures, you can, as an exception, use a coolant additive.

Instead of corrosion inhibitor/antifreeze additive, add a coolant additive compliant with Sheet Number 312.0 of the Mercedes-Benz Specifications for Service Products to the water.

Improvers (corrosion-inhibiting oils) are not permitted.

Renew the coolant annually.

Further information concerning the requisite water quality and approved coolant additives without antifreeze properties is available at every Mercedes-Benz Service Centre.

Diesel fuels

Important safety notes

WARNING

Fuel is highly flammable. Improper handling of fuel creates a risk of fire and explosion.

Avoid fire, naked flames, smoking and creating sparks under all circumstances. Switch off the engine and, if applicable, the auxiliary heating before refuelling.

! A higher fuel sulphur content accelerates the ageing process of the engine oil and can damage the engine and exhaust system.

! Vehicles without BlueTec® exhaust gas aftertreatment:

Only commercially available fuels which conform to the European standard EN 590 or equivalent national fuel standards are permitted. Mercedes Benz recommends fuels with a low fuel sulphur content. The use of fuels with a high fuel sulphur content reduces the life expectancy of the engine and exhaust system.

! Vehicles with BlueTec® exhaust gas aftertreatment:

Only standardised fuels with a maximum sulphur content of 0.05% (500 ppm) by weight are permissible. However,

Mercedes-Benz only recommends fuel that complies with the European standard EN 590 as of 2005, et seq. (max. 0.005% (50 ppm) sulphur by weight). The use of fuels with a sulphur content higher than 0.005% (50 ppm) by weight reduces the life expectancy of the engine and exhaust system.

When handling fuel, observe the "Important safety notes" section (▷ page 345).

Fuel grade

Before delivery, the fuel sulphur content is set to the standards of the country in which the vehicle is to be sold. If you fill the vehicle using a fuel with a different fuel sulphur content, adjust the fuel sulphur content using the on-board computer (▷ page 114).

Information regarding the current country-specific sulphur content of fuel can be obtained from any Mercedes-Benz Service Centre or found on Sheet No. 136.1/2.

Certain countries have diesel fuel with varying sulphur content. Diesel fuel with low sulphur content is sold in certain countries under the name "Euro diesel".

- ❗ If you do not know the sulphur content of the diesel fuel you are using, select the least favourable sulphur content in the on-board computer.

Diesel fuels at low temperatures

WARNING

If you heat fuel system components, e.g. with a hot-air gun or naked flame, these components could be damaged. This can cause fuel to escape and ignite. Depending on the type of damage, fuel may also not escape until the engine is running. There is a risk of fire and explosion.

Never heat fuel system components. Contact a qualified specialist workshop to rectify the malfunction.

- ❗ Do not add any petrol or kerosene to diesel fuel to improve its flow characteristics. Petrol or kerosene impairs the lubricity of the diesel fuel. This can cause damage to the injection system, for example.

At low outside temperatures, paraffin separation may cause the flow properties of the diesel fuel to be insufficient.

To prevent operating problems, diesel fuel with improved flow properties is available in the winter months.

Winter diesel fuels are reliable down to outside temperatures of -22 °C in Germany and other Central European countries. You can normally use winter diesel fuel without problems at the outside temperatures expected in the country where it is on sale.

The vehicle may be equipped with a fuel preheating system. The fuel preheating system can warm up the fuel by approximately 8 °C. This improves the flow characteristics of the fuel.

Fatty acid methyl ester (FAME) fuel (bio-diesel)

General notes

Observe the safety notes on service products (▷ page 345).

Operate your vehicle using pure FAME fatty acid methyl ester fuel in compliance with DIN EN 14214. You can also operate your vehicle using a mixture of conventional diesel fuel and FAME fatty acid methyl ester fuel. This also applies to vehicles with BlueTec® exhaust gas aftertreatment.

Observe the specifications in accordance with Sheet no. 135 of the Mercedes-Benz Specifications for Service Products for operation with FAME fatty acid methyl ester fuel.

Operating the vehicle with FAME fatty acid methyl ester fuel results in:

- a slightly higher fuel consumption
- a slightly reduced engine power output
- more white smoke than usual after a cold start

! To avoid damage to the assemblies and components, observe the following points when using FAME fatty acid methyl ester fuel:

- Have the fuel filter and the oil filter replaced approximately 1,000 km after switching to FAME fatty acid methyl ester fuel.
- Have the oil filter and the fuel filter replaced at every oil change.
- The oil will have to be changed and the oil filter replaced much more frequently.
- FAME fatty acid methyl ester fuel shortens the service life of conventional fuel filters. Mercedes-Benz recommends fitting a special fuel prefilter. Information about this is available at any qualified specialist workshop.
- If you operate your vehicle using FAME fatty acid methyl ester fuel, adjust the fuel grade in the on-board computer. If you operate your vehicle using a mixture of conventional diesel fuel and FAME fatty acid methyl ester, adjust the fuel grade in the on-board computer. Otherwise, there is a danger of engine damage.
- Only add FAME fatty acid methyl ester fuel in compliance with DIN EN 14214. Fuel additives or fuels that do not comply with DIN EN 14214 may cause malfunctions or engine damage.
- FAME fatty acid methyl ester fuel corrodes painted surfaces. Do not allow FAME fatty acid methyl ester fuel to come into contact with the paintwork. Rinse off FAME fatty acid methyl ester fuel with water immediately.
- Only use engine oils which comply with Sheet no. 228.5 or 228.3 of the

Mercedes-Benz Specifications for Service Products.

- If the vehicle is not used for long periods of time, FAME fatty acid methyl ester fuel can clog fuel system components. For this reason, use up all of the FAME fatty acid methyl ester fuel before the vehicle is parked up for an extended period. Fill up the fuel tank with conventional diesel fuel. Before parking up the vehicle, allow the engine to idle for at least 1 hour.
- Mercedes-Benz recommends that you do not use FAME fatty acid methyl ester fuel in vehicles which are out of use for long periods, e.g. fire engines.
- The auxiliary heating may only be operated with conventional diesel fuel. Malfunctions may otherwise occur. Do not add more than 7% FAME fatty acid methyl ester fuel to the conventional diesel fuel. An additional fuel tank for conventional diesel fuel is required for the auxiliary heating system, if you operate the vehicle:
 - using FAME fatty acid methyl ester fuel
 - using a mixture of conventional diesel fuel and more than 7% FAME fatty acid methyl ester fuel.

- Set the fuel grade in the on-board computer (► page 123).

Environmental note

If the vehicle runs on FAME fatty acid methyl ester fuel, ask your disposal plant whether you have to collect the engine oil separately. Not all manufacturers of refined products (lubricant manufactured from used engine oil) can process engine oil which has been enriched with FAME fatty acid methyl ester fuel.

Observe the special notes and national regulations when disposing of engine oils. Information about this is available at any qualified specialist workshop, e.g. any Mercedes-Benz or MTU Service Centre.

Low outside temperatures

FAME fatty acid methyl ester fuel compliant with DIN EN 14214 can be used reliably at outside temperatures down to -20 °C.

The vehicle is equipped with a fuel preheating system. This improves the flow of the FAME fatty acid methyl ester fuel by an additional 8 °C.

AdBlue®

AdBlue® notes

! Only use AdBlue®/DEF in accordance with DIN 70070/ISO 22241. Do not use any additives.

If AdBlue®/DEF comes into contact with painted or aluminium surfaces when filling the tank, rinse the affected area immediately with plenty of water.

! AdBlue® is not a fuel additive and must not be added to the fuel tank. If AdBlue® is added to the fuel tank, this can lead to engine damage.

Observe the safety notes on service products (▷ page 345).

AdBlue® is a non-flammable, non-toxic, colourless, odourless and water-soluble liquid.

High outside temperatures

If you open the AdBlue® tank cap, small amounts of ammonia vapour may be released.

Ammonia vapours have a pungent smell and are particularly irritating to:

- skin
- mucous membranes
- eyes

The vapours may cause a burning sensation in the eyes, nose and throat as well as irritation of the throat and watering eyes. Avoid inhaling ammonia vapours. Only fill the AdBlue® tank in well-ventilated areas.

The chemical composition of AdBlue® can break down if it heats up to 50 °C over a long period of time (e.g. as a result of direct sunlight on the tank). This creates ammonia vapour.

Low outside temperatures

AdBlue® freezes at temperatures of approximately -11 °C. Depending on equipment and country, the vehicle may be equipped with an AdBlue® preheating system. Winter operation is also ensured for temperatures below -11 °C.

At low temperatures, AdBlue® crystals may form on the coiled 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 a sponge and clean water if necessary.

Additives, 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

! Containers made of the following materials are not suitable for the storage of AdBlue®/DEF:

- 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.

Only use containers made of the following materials to store AdBlue®:

- Cr-Ni steels in accordance with DIN EN 10 088-1/2/3
- Mo-Cr-Ni steels in accordance with DIN EN 10 088-1/2/3
- Polypropylene
- Polyethylene

Disposal



Environmental note

Dispose of AdBlue® in an environmentally responsible manner.

Observe the relevant national laws and regulations when disposing of AdBlue®.

Purity

! 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

Ensure that AdBlue® is always pure to avoid malfunctions in BlueTec® exhaust gas aftertreatment.

If AdBlue® is pumped from the AdBlue® tank, e.g. during repairs, do not use this fluid to refill the tank. Otherwise the purity of the fluid would no longer be guaranteed.

Operating data

Compressed-air system

Service brake	11.0-12.5 bar
Brake circuit 1	Minimum 6.8 bar
Brake circuit 2	Minimum 6.8 bar
Brake circuit on trailer/semitrailer	Minimum 5.5 bar
Pressure regulator (activation/deactivation pressure)	Approximately 11.0/12.5 bar
Spring-loaded brake release circuit	Minimum 5.5 bar
External compressed-air source (charging the compressed-air system)	Minimum 10.0 bar
Gearshift	Minimum 7.0 bar
Auxiliary consumers	Minimum 5.5 bar

Engine

Engine speed limiter (transmission in neutral)	Approximately 1700 rpm
Engine speed limiter (emergency running mode)	Approximately 1300 rpm
Idling speed	Approximately 550 rpm
Minimum engine operating speed	Approximately 550 rpm
Engine brake (operating range)	900-2300 rpm
Oil pressure (at idling speed)	Minimum 0.5 bar
Oil pressure (at rated engine speed)	Minimum 2.5 bar
Rated engine speed	Approximately 1800 rpm

Operating temperature

Normal operation	Approximately 80 – 95 °C
Arduous operation (automatically reduced engine power output)	From approximately 105 °C
Maximum permissible coolant temperature	110 °C

Tyre pressures

Tyre pressure table for single tyres	(▷ page 333)
Tyre pressure table for twin tyres	(▷ page 338)
Permissible difference in pressure between tyres on an axle	20 kPa (0.2 bar, 3 psi)
Maximum permissible air pressure for inflating tyres	1000 kPa (10.0 bar/ 145 psi)

Wheel nut tightening torques

Alloy wheels	600 Nm
Steel wheels, hub centring by wheel hub	600 Nm
Steel wheels, centring by spherical spring washers and wheel bolts	450 Nm
Intermediate flange – 14.00 R 20 twin tyres	450 Nm
Wheel nut caps	60 Nm
Trilex [®] rim to wheel rim or wheel spider (clamping plate connection)	350 Nm
Trilex [®] wheels, hub centring	600 Nm
Wheel rim to wheel hub	450 Nm

Spring-loaded cylinder

Release torque of the spring-loaded parking brake cylinder release screw	Maximum 70 Nm
Tightening torque of the spring-loaded parking brake cylinder release screw	Maximum 35 Nm

Release pressure (supply pressure in compressed-air system)	Minimum 8.0 bar
Release pressure (with external source of compressed air)	Minimum 6.5 bar

NR (Telligent® level control)

Filling the pneumatic suspension via the tyre inflator connection or front coupling head	Minimum 10.3 bar
--	------------------

Steering play

Maximum permissible steering play (measured at the rim of the steering wheel with the engine running)	30 mm
---	-------

Compressed-air reservoir

Information on the compressed-air reservoir

For the initial purchaser and other users
Accompanying documentation in accordance with Directives 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 and their trailers, and is only to be used to hold compressed air.
- b – to be marked for identification with a works number and the reservoir manufacturer's name, together with the principal operating data and the EC mark; see the identification plate or engravings directly on the reservoir wall.
- c – to be manufactured with a "Declaration of conformity" in accordance with Article 12 of Directive 87/404/EEC.
- d – to be secured to the vehicle by retaining straps (clamps).
In the case of aluminium reservoirs, contact surfaces must be designed to inhibit corrosion or mechanical damage. Securing straps are to be positioned in such a way that they do not come in contact with the base connecting seams; the reservoir

is not to be subjected to any stress that would jeopardise operating safety.

Coatings applied to aluminium reservoirs must not contain lead, and the top coat of paint must only be applied over a suitable primer coat. Steel threaded connections for aluminium reservoirs must have a corrosion-proof coating.

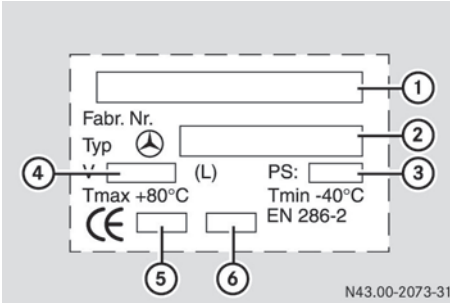
- only to be cleaned using non-alkaline cleaning agents (aluminium reservoirs).
- to have the interior visible through the threaded connections.
- to be emptied at regular intervals to prevent the accumulation of condensation (pull ring on drain plug at the lowest point of the reservoir).
- e – to require no maintenance if Item d is complied with.
- f – no welding, heat treatment or other operation relevant to safety is to be performed on the pressure-bearing walls of the reservoir (casing, base, ring nuts).
- g – the internal supply pressure may exceed maximum operating pressure P_s by not more than 10 % for a brief period.

Daimler AG

Compressed-air reservoir identification plates

- ⑤ Year of construction
- ⑥ Testing establishment code number

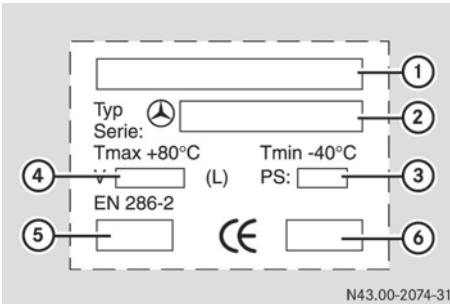
Aluminium reservoir



Example: identification plate on the aluminium reservoir

- ① Manufacturer: SAG (Austria)
- ② MB part number
- ③ Maximum operating pressure (bar)
- ④ Volume (litres)
- ⑤ Testing establishment code number
- ⑥ Year of construction

Steel reservoir



Example: identification plate on the steel reservoir

- ① Manufacturer:
 - L&S (Germany)
 - Elesfr. (France)
 - Orsan (Turkey)
- ② MB part number
- ③ Maximum operating pressure (bar)
- ④ Volume (litres)

Publication details

Internet

Further information about Mercedes-Benz vehicles and about Daimler AG can be found on the following websites:

<http://www.mercedes-benz.com>

<http://www.daimler.com>

Documentation team

You are welcome to forward any queries or suggestions you may have regarding these Operating Instructions to:

Daimler AG, HPC: CAC, Customer Service,
70546 Stuttgart, Germany

©Daimler AG: not to be reprinted, translated or otherwise reproduced, in whole or in part, without written permission from Daimler AG.

Vehicle manufacturer

Daimler AG
Mercedesstrasse 137
70327 Stuttgart
Germany



9345844671

Order no. 6462 8642 02 Part no. 934 584 46 71 Edition 10-14