

Globetrail Performance

Instruction manual and service logbook



Instruction manual

Dear Customer,

We are pleased that you have chosen a camper van from Dethleffs and would like to thank you for the trust you have shown in our company.

This instruction manual is intended to help you get to know and use your new camper van. **It is essential that you read and comply with the safety instructions in chapter 3.**

Don't hesitate to contact our Dethleffs service centres if you have any questions. Their staffs are fully conversant with your vehicle and will be pleased to help in any way they can. Our list of Dethleffs service centres in Europe is updated regularly. You can obtain a copy of the latest edition from our customer service department or from your Dethleffs dealer.

In addition to this instruction manual, you are also receiving from us

- **the service folder containing all information about the inspection intervals and the water ingress tests,**
- **the separate instruction manuals for the base vehicle and the various appliances.**

We are sure that you will get a lot of enjoyment from your camper van. Have a good trip!

You will also find Dethleffs GmbH & Co. KG on the Internet at <https://www.dethleffs.com>

Yours, Dethleffs GmbH & Co. KG

Please also observe the chassis manufacturer's operating instructions at all times.

The terms used in these operating instructions with regard to weight specifications are explained again in detail at the end of the operating instructions (legal information on weight-related specifications). For further details on weight specifications, please also refer to the "Weight information" section of our homepage at www.dethleffs.com/footer/weights-and-payload/weight-information

Instruction manual

Contents

Checklist before first journey of the vehicle	7	5	During the journey.....	47
1 Guarantee	9	5.1	Driving	47
1.1 Conditions for weatherproof guarantee.....	9	5.2	Driving speed	47
1.2 Water ingress test	10	5.3	Brakes.....	48
1.2.1 Inspection plan	10	5.4	Reversing camera	48
1.2.2 Inspection records	11	5.5	Seat belts	48
1.3 Further inspections	14	5.5.1	General	48
1.3.1 Inspection plan for annual inspection	14	5.5.2	Fastening the seat belts correctly.....	49
1.3.2 Inspection plan for chassis.....	15	5.6	Child restraint systems	49
1.3.3 Inspection plan for gas inspection.....	15	5.6.1	Child seats	49
1.3.4 Inspection records	16	5.6.2	Isofix fastening system for child seat.....	51
1.3.5 Inspection records for electrical inspection.....	18	5.7	Driver's seat and front passenger's seat	52
2 Introduction	19	5.8	Headrests	54
2.1 General.....	20	5.9	Seating arrangement.....	54
2.2 Environmental tips	20	5.10	Roman shades for driver's window and front passenger's window	54
3 Safety.....	23	5.11	External doors	55
3.1 Fire prevention	23	5.12	Refuelling	55
3.1.1 Avoidance of fire risks.....	23	5.13	Towing.....	56
3.1.2 Fire-fighting	23	6	Pitching the Motorcaravan	57
3.1.3 In case of fire	23	6.1	Handbrake	57
3.2 General.....	23	6.2	Entrance step	57
3.3 Road safety	24	6.3	230 V connection	57
3.4 Towing	25	6.4	Refrigerator	57
3.5 Gas system.....	26	7	Living	59
3.5.1 General instructions.....	26	7.1	External doors	59
3.5.2 Gas bottles	27	7.1.1	Insect screen on the living area door, two-piece	59
3.6 Electrical system	28	7.2	External flaps.....	60
3.7 Water system.....	28	7.2.1	External flap of the sewage container	60
4 Before the journey.....	29	7.3	Ventilation	61
4.1 Initial start-up	29	7.4	Windows.....	62
4.2 Vehicle load capacity.....	29	7.4.1	Hinged window.....	62
4.2.1 Terms	30	7.4.2	Roman shade and insect screen	64
4.2.2 Calculating the vehicle load capacity	33	7.4.3	Roman shade for the windscreen.....	64
4.2.3 Load securing and load distribution	35	7.4.4	Roman shades for driver's window and front passenger's window	65
4.3 Bike rack	39	7.5	Skylights.....	66
4.4 Roof loads	40	7.5.1	Hinged skylight	67
4.5 Towing	40	7.6	Rotating seats	69
4.6 Caravan coupling	41	7.7	Storage spaces	70
4.7 Entrance step (Thule Slide-Out Step G2).....	41	7.7.1	Storage compartment in the double floor.....	70
4.8 Kitchen area.....	42	7.8	Tables	71
4.9 Gas regulator	43	7.8.1	Suspension table with separable support leg.....	71
4.10 Snow chains.....	44	7.8.2	Counter extension to pull out.....	72
4.11 Road safety	44			

Contents

7.9	Lighting.....	73	10.3	Truma Aventa air conditioning unit.....	115
7.9.1	Touch spots on the roof storage cabinets.....	73	10.3.1	Operation and display on the unit.....	116
7.9.2	Lamp for rear loading area.....	74	10.4	Cooker.....	118
7.9.3	Light switches.....	74	10.4.1	Gas cooker.....	118
7.10	Sockets.....	75	10.5	Refrigerator.....	120
7.11	Beds.....	76	10.5.1	Compressor refrigerator Thetford.....	120
7.11.1	Rear transverse bed, hinged shelf.....	76	11	Sanitary fittings.....	123
7.11.2	Access assistance.....	78	11.1	Water supply, general.....	123
7.11.3	Additional bed (conversion of the seating group).....	79	11.2	Water system.....	124
7.12	Multifunctional rail.....	80	11.2.1	Water tank.....	124
8	Gas system.....	81	11.2.2	Filling the water system.....	125
8.1	General instructions.....	81	11.2.3	Topping up the water.....	127
8.2	Gas bottles.....	82	11.2.4	Draining water.....	128
8.3	Gas isolator taps.....	83	11.2.5	Reducing the water quantity for mobile operation.....	128
8.4	Gas pressure regulating system MonoControl.....	84	11.2.6	Emptying the water system.....	128
8.5	Gas pressure regulating system DuoControl CS (optional equipment).....	86	11.3	Waste water tank.....	130
9	Electrical system.....	89	11.4	Toilet compartment.....	130
9.1	General safety instructions.....	89	11.4.1	Folding partition.....	131
9.2	Terms.....	89	11.4.2	Shower room.....	132
9.3	7" panel.....	90	11.4.3	Mirror cabinet.....	133
9.4	System Control Unit (SCU).....	91	11.4.4	Wash basin.....	134
9.5	Dethleffs Connect App.....	92	11.5	Toilet.....	135
9.6	12 V power supply.....	93	11.5.1	Swivel toilet.....	135
9.6.1	Starter battery.....	93	11.5.2	Emptying the sewage container.....	136
9.6.2	Living area battery.....	94	11.5.3	Winter operation.....	137
9.6.3	Energy balance of the living area battery.....	95	11.5.4	Temporary lay-up.....	137
9.7	Transformer/rectifier (EBL 402).....	96	12	Care.....	139
9.7.1	Battery cut-off switch.....	99	12.1	General.....	139
9.7.2	Battery monitoring.....	99	12.2	External care.....	139
9.7.3	Charging the battery.....	100	12.2.1	Washing with a high-pressure cleaner ..	139
9.8	230 V power supply.....	100	12.2.2	Washing the vehicle.....	140
9.8.1	230 V connection (CEE socket outlet).....	101	12.2.3	Windows of acrylic glass.....	140
9.8.2	Connecting the 230 V power supply.....	101	12.2.4	Add-on parts made of glass-fibre reinforced plastic (GRP).....	141
9.9	Fuses.....	103	12.2.5	Underbody.....	141
9.9.1	12 V fuses.....	103	12.2.6	Engine compartment.....	142
9.9.2	230 V fuse.....	104	12.2.7	Windscreen washer system and windscreen wipers.....	142
10	Appliances.....	105	12.2.8	Air conditioning unit.....	143
10.1	General.....	105	12.2.9	Entrance step.....	144
10.2	Heater and boiler (diesel operation).....	106	12.3	Interior care.....	144
10.2.1	Heating properly.....	107	12.4	Kitchen installation.....	145
10.2.2	Hot-air heater and boiler Truma Combi D with digital CP plus digital control unit.....	107	12.4.1	General notes on care.....	145
10.2.3	Digital control of Truma devices.....	114	12.4.2	Refrigerator.....	145
10.2.4	Wall flue.....	114	12.5	Stainless steel surfaces.....	146
			12.6	Cushions.....	146
			12.7	Water system.....	148
			12.7.1	Cleaning the water tank.....	148
			12.7.2	Cleaning the water pipes.....	149
			12.7.3	Disinfecting the water system.....	149
			12.7.4	Cleaning the waste water tank.....	150

Contents

12.8	Care for vehicle operation in winter.....	150	15	Troubleshooting.....	167
12.9	Lay-up	150	15.1	Braking system	167
12.9.1	Temporary lay-up	150	15.2	Electrical system	167
12.9.2	Lay-up over winter	152	15.3	Gas system.....	169
12.9.3	Starting up the vehicle after a temporary lay-up or after lay-up over winter	153	15.4	Cooker	169
13	Customer service and maintenance.....	155	15.5	Heater/boiler.....	170
13.1	Official inspections	155	15.5.1	Heater/boiler with CP plus digital control unit.....	170
13.2	Inspection work.....	156	15.6	Air conditioning unit	171
13.3	Maintenance work.....	156	15.7	Refrigerator	172
13.4	Replacing bulbs, external.....	156	15.7.1	General	172
13.5	Lighting for living area	157	15.7.2	Thetford T2000.....	172
13.6	Spare parts.....	157	15.8	Water supply	173
13.7	Vehicle identification plate	158	15.9	Body	174
13.8	Warning and information stickers	158	16	Optional equipment.....	175
13.9	Dealers	158	16.1	Weight details for optional equipment	175
13.10	Replacement keys	159	17	Technical data.....	177
14	Wheels and tyres	161	17.1	Technical data	177
14.1	General.....	161	18	Legal notes on weight-related information....	179
14.2	Tyre selection.....	162	Index	183
14.3	Tyre specifications	163			
14.4	Handling of tyres	163			
14.5	Changing wheels	163			
14.5.1	General instructions.....	163			
14.5.2	Changing a wheel.....	164			
14.5.3	Changing a wheel with alloy wheel rims	165			
14.6	Tyre pressure	165			

Contents

Checklist before first journey of the vehicle

Observe the following instructions before first journey of the vehicle:



- ▶ **Re-tighten the wheel nuts/wheel bolts after 50 km (30 miles).**
- ▶ **Read the instruction manual to avoid personal and material damage.**

Observe the following instructions before each journey of the vehicle:



- ▶ **Check the tyre pressures.**
See Tyre pressure section.
- ▶ **Load the vehicle correctly. Observe the technically permissible maximum laden mass.**
See Payload section.
- ▶ **Fully charge batteries before each journey.**
See Starter battery and Living area battery sections.
- ▶ **In case of external temperatures below 0 °C first heat vehicle, then fill water system.**
See Water supply/Filling the water tank section.
- ▶ **Gas bottles are only to be transported within the designated gas bottle compartment.**
- ▶ **Keep forced ventilations clear.**
See Skylights and Ventilation sections.
- ▶ **Before filling the vehicle with fuel switch off gas-operated appliances.**

If there is any risk of frost, observe the following instructions:



- ▶ **If there is any risk of frost, always heat the vehicle.**
See Heater section.
- ▶ **If the vehicle is not being used when there is risk of frost, empty the entire water system. Make sure that the 12 V power supply on the panel is switched off. Otherwise, the water pump will overheat and may get damaged. Leave the water taps on in central position. Leave all drain cocks open. This will avoid frost damage to appliances and to the vehicle.**
See Emptying the water system section.

Checklist before first journey of the vehicle

1 Guarantee

1.1 Conditions for weatherproof guarantee

1. Dethleffs GmbH & Co. KG grants the purchaser, at his option, in addition to the statutory warranty and product liability claims to which he is entitled, a six-year guarantee that the vehicles it builds are sealed in such a way that no moisture penetrates from the outside to the inside (interior). This applies to Dethleffs conversions and superstructures. Warranty obligations do not apply if the leakage is due to improper handling of windows, doors and skylights or to improperly repaired damage. Damage caused by forces of nature (e.g. flooding) is also excluded from the guarantee. The guarantee extensions only include professional repairs. Claims for conversion and reduction as well as travel costs or other indirect costs are excluded from the guarantee.
2. In the event of a leak, Dethleffs GmbH & Co. KG undertakes to rectify the affected vehicle parts within the scope of these warranty conditions by repairing them free of charge or by replacing the parts, depending on what is necessary to rectify the damage immediately. The defect must be rectified by Dethleffs GmbH & Co. KG or by an authorised specialist workshop in accordance with the guidelines of Dethleffs GmbH & Co. KG guidelines.
3. A prerequisite for this guarantee is that the vehicle is presented annually to an authorised specialist workshop for inspection. The inspection must be carried out annually at the latest \pm 6 months after the anniversary date of the first registration (or handover). If the inspection is not carried out on time, the warranty claim will be cancelled and cannot be reinstated by an inspection carried out at a later date.

Proof of the inspection carried out must be documented on the coupon provided for this purpose in the Dethleffs GmbH & Co. KG guarantee booklet by the respective Dethleffs dealer by means of a stamp, date and signature.

In addition, the completion of the inspection must be confirmed in GA Online.

4. **The guarantee begins on the day of initial registration or acceptance of the vehicle by the end user, at the latest 18 months after delivery to the dealer, and is valid for the period of serviceability of the vehicle, for a maximum of 6 years.** If the initial registration takes place before the vehicle is taken over, the date of initial registration of the vehicle is deemed to be the start of the guarantee (guarantee effective date). **The manufacturer's guarantee obligations are not affected by a change of ownership of the object of purchase.** The guarantee shall lapse if one of the deadlines specified in Clause 3 has not been met. The performance of guarantee work does not extend the guarantee period.
5. The parts installed during a repair shall also be warranted within the scope of these provisions until the guarantee obligation of the vehicle expires.
6. The occurrence of leaks must be reported by the owner to Dethleffs GmbH & Co. KG or a Dethleffs dealer in writing within 14 days. The report must be accompanied by the guarantee certificate, labelled with the corresponding guarantee stamps. If the leak is not reported within the specified period, there is no entitlement to a guarantee claim. The leak will be repaired with the consent of Dethleffs GmbH & Co. KG.

1

Guarantee

7. The costs of the inspection shall be borne by the guarantee holder.
8. To the extent permitted by law, the courts with jurisdiction for Isny/Germany are agreed as the place of jurisdiction.

1.2 Water ingress test

1.2.1 Inspection plan



- ▷ When visually inspecting the exterior, look for damage and inadequate sealing that could result in water ingress from the outside to the inside.
- ▷ When visually inspecting the interior, look for running marks, discolouration and water stains.
- ▷ To avoid falsified measurement results, pay attention to the general humidity in the interior (ventilate beforehand if necessary).

Pos.	Component	Activity	Info
1.1	Underbody	Visual inspection	Check all penetrations and reseal if necessary
1.2	Driver/front passenger/sliding and rear door	Visual inspection	Check rubber seals and adjustment on the doors
1.3	Sealing strips, edges and rubbers	Visual inspection	Rubber seal around the elevating roof (if installed) incl. joint
1.4	* Roof shell	Visual inspection	Check for damage
1.5	* Canvas	Visual inspection	Check for damage
1.6	Skylights/windows/cut-out * Elevating roof	Visual inspection, measurement	Check for damage. Measure around cut-out in the interior. If over 20 %, carry out a reference measurement at another location
1.7	Service openings	Visual inspection, measurement	Check all service openings, measure filling of Thetford flap
1.8	Floor	Visual inspection, measurement	Check for traces of water / pickling: Measure at two points each in the area of the rear doors and the sliding door; reference measurement in the centre of the vehicle

* Depending on equipment

The inspection plan is subject to change.

1

Guarantee

1.2.2 Inspection records

Handover

Date:

Signature and stamp of the dealer:

Year 1

Date:

Signature and stamp of the dealer:

Water ingress test

Workshop stamp

Year 1 water ingress test:

- No defects found
- Defects found: _____

If the inspection reveals the need for more extensive work, this will be carried out subject to the customer placing an order. Please also note the service intervals of the individual equipment manufacturers. Information can be found in the enclosed service documents.

1

Guarantee

Year 2

Signature, date and stamp of the Dethleffs dealer:

Year 2 water ingress test:

- No defects found
- Defects found:

Water ingress test

Workshop stamp

If the inspection reveals the need for more extensive work, this will be carried out subject to the customer placing an order. Please also note the service intervals of the individual equipment manufacturers. Information can be found in the enclosed service documents.

Year 3

Signature, date and stamp of the Dethleffs dealer:

Year 3 water ingress test:

- No defects found
- Defects found:

Water ingress test

Workshop stamp

If the inspection reveals the need for more extensive work, this will be carried out subject to the customer placing an order. Please also note the service intervals of the individual equipment manufacturers. Information can be found in the enclosed service documents.

1

Guarantee

Year 4

Signature, date and stamp of the Dethleffs dealer:

Year 4 water ingress test:

- No defects found
- Defects found:

Water ingress test

Workshop stamp

If the inspection reveals the need for more extensive work, this will be carried out subject to the customer placing an order. Please also note the service intervals of the individual equipment manufacturers. Information can be found in the enclosed service documents.

Year 5

Signature, date and stamp of the Dethleffs dealer:

Year 5 water ingress test:

- No defects found
- Defects found:

Water ingress test

Workshop stamp

If the inspection reveals the need for more extensive work, this will be carried out subject to the customer placing an order. Please also note the service intervals of the individual equipment manufacturers. Information can be found in the enclosed service documents.

1

Guarantee

Year 6

Signature, date and stamp of the Dethleffs dealer:

Water ingress test

Workshop stamp

Year 6 water ingress test:

- No defects found
- Defects found: _____

If the inspection reveals the need for more extensive work, this will be carried out subject to the customer placing an order. Please also note the service intervals of the individual equipment manufacturers. Information can be found in the enclosed service documents.

1.3 Further inspections

1.3.1 Inspection plan for annual inspection



- ▷ The annual inspection is not linked to the 6-year water ingress test, but should still be carried out annually.

Pos.	Component	Activity	Interval
1	Skylights	Remove the inside frame of the skylights and re-tighten the screw connections of the securing clips	Year 1
2	Refrigerator, heater, boiler, cooker, lighting, storage flaps and door closures, toilet, seat belts	Function check	Annually
3	Windows, skylights	Function check, rub talcum powder into seals	Annually
4	Blinds	Visual check	Annually
5	Sealing strips, edges and rubbers	Check for damage	Annually
6	Water supply	Leak check (visual inspection) of the connections on water taps, boiler and manifold	Annually

1

Guarantee

Pos.	Component	Activity	Interval
7	Hot-air system	Function check, clean fan wheel as necessary	Annually
8	Electrical system, outside and inside	Function check	Annually
9	Gas system	Official gas inspection	Every two years
10	Joints, hinges, flaps, doors	Lubrication	Annually

The inspection plan is subject to change.

1.3.2 Inspection plan for chassis



- ▷ The chassis inspection is not linked to the 6-year water ingress test, but should still be carried out annually.

Pos.	Component	Activity	Interval
1	Auxiliary support	Cleaning	Annually
2	Outside lighting	Function check	Annually
3	Wheel mounting	Tighten wheel nuts, check wheel bearings	Annually
4	Castle nut on the wheel	Check fit and blind lock	Annually
5	Tyres and wheel rims	Air pressure check (see section 14.6); visual check for damage, tread depth	Annually

The inspection plan is subject to change.

1.3.3 Inspection plan for gas inspection



- ▷ The gas inspection is required by law in Germany and must be carried out every two years.
- ▷ In other countries, the national regulations shall apply.

Pos.	Component	Activity	Interval
1	Gas system	Official gas inspection	Every two years
2	Gas filter	Replace the gas filter cartridge if there are residues on the filter cartridge. Every 2 years at the latest	Every two years

1

Guarantee

1.3.4 Inspection records

Handover

Date:

Signature and stamp of the dealer:

Year 1

Date:

Signature and stamp of the dealer:

- Chassis inspection
- Year 1 annual inspection:
 - No defects found
 - Defects found:

If the inspection reveals the need for more extensive work, this will be carried out subject to the customer placing an order. Please also note the service intervals of the individual equipment manufacturers. Information can be found in the enclosed service documents.

Year 2

Date:

Signature and stamp of the dealer:

- Chassis inspection
- Year 2 annual inspection:
 - No defects found
 - Defects found:

If the inspection reveals the need for more extensive work, this will be carried out subject to the customer placing an order. Please also note the service intervals of the individual equipment manufacturers. Information can be found in the enclosed service documents.

1

Guarantee

Year 3

Date:

Signature and stamp of the dealer:

- Chassis inspection
- Year 3 annual inspection:
 - No defects found
 - Defects found:

If the inspection reveals the need for more extensive work, this will be carried out subject to the customer placing an order. Please also note the service intervals of the individual equipment manufacturers. Information can be found in the enclosed service documents.

Year 4

Date:

Signature and stamp of the dealer:

- Chassis inspection
- Year 4 annual inspection:
 - No defects found
 - Defects found:

If the inspection reveals the need for more extensive work, this will be carried out subject to the customer placing an order. Please also note the service intervals of the individual equipment manufacturers. Information can be found in the enclosed service documents.

Year 5

Date:

Signature and stamp of the dealer:

- Chassis inspection
- Year 5 annual inspection:
 - No defects found
 - Defects found:

If the inspection reveals the need for more extensive work, this will be carried out subject to the customer placing an order. Please also note the service intervals of the individual equipment manufacturers. Information can be found in the enclosed service documents.

1

Guarantee

Year 6

Date:

Signature and stamp of the dealer:

- Chassis inspection
- Year 6 annual inspection:
 - No defects found
 - Defects found:

If the inspection reveals the need for more extensive work, this will be carried out subject to the customer placing an order. Please also note the service intervals of the individual equipment manufacturers. Information can be found in the enclosed service documents.

1.3.5 Inspection records for electrical inspection



- ▷ The entire 230 V system must be inspected every three years, or every year if used frequently, by a qualified electrician in accordance with VDE 0100.

Year 3

Date:

Signature and stamp of the qualified electrician:

Entire 230 V system checked:

- No defects found
- Defects found:

Year 6

Date:

Signature and stamp of the qualified electrician:

Entire 230 V system checked:

- No defects found
- Defects found:

2 Introduction

Please read this instruction manual completely before using the vehicle for the first time!

Always keep this instruction manual in the vehicle. Also inform all other users of the safety regulations.



- ▶ The non-observance of this symbol can lead to personal injury.



- ▶ The non-observance of this symbol can lead to damage being caused to, or inside the vehicle.



- ▶ This symbol indicates recommendations or special aspects.



- ▶ This symbol indicates actions which lead to environmental awareness.

This instruction manual contains sections which describe model-specific equipment or optional equipment. These sections are not specially marked. It may be that your vehicle has not been fitted with this optional equipment. In some cases, the actual equipment of your vehicle may therefore be different from that shown in some illustrations and descriptions.

However, your vehicle may be fitted with other optional equipment not described in this instruction manual.

Optional equipment is described when an explanation is required.

Adhere to the instruction manuals which are separately enclosed.



- ▶ The details "right", "left", "front" and "rear" always refer to the vehicle in direction of travel.
- ▶ All dimensions and weight details are "approximate".

Should the vehicle be subjected to damage due to a failure to follow the instructions in this instruction manual, then the warranty claim is deemed invalid.

Our vehicles are subjected to continuous development. Please understand that we reserve the right to alter the form, equipment and technology. Therefore, no claims can be made against the manufacturer as a result of the contents of this instruction manual. The equipment which was known and included at the time of going to press is described.

The reprinting, translation and copying, including extracts is not permitted without prior written authorisation from the manufacturer.

2 Introduction

2.1 General

The vehicle is constructed in accordance with the latest technology and the recognised safety regulations. Nevertheless, personal injury may result and the vehicle may be damaged if the safety instructions in this instruction manual are not followed.

Before using the vehicle for the first time, equip it with the legally prescribed equipment (e.g. first aid kit, warning vest, hazard warning triangle etc.). Observe the relevant equipment regulations when travelling abroad.

Only use the vehicle in a technically impeccable condition. Follow the instructions in the instruction manual.

Malfunctions which impair the safety of persons or the vehicle should be immediately remedied by qualified personnel. To avoid further damages, observe the duty to avert, minimise or mitigate loss for the user during faults.

Have the vehicle's braking and gas systems inspected and repaired by an authorised specialist workshop only.

Alterations to the body are only to be carried out with the authorisation of the manufacturer.

The vehicle is designed for the exclusive transport of persons. Luggage and accessories may only be transported up to the maximum permissible gross weight.

Observe the test and inspection periods stipulated by the manufacturer.

2.2 Environmental tips



- ▷ Be considerate of the environment.
- ▷ Remember that: All kinds of waste water and household waste are not to be disposed of in drains or in the open countryside.
- ▷ On board, collect waste water only in the waste water tank or – if necessary – in other containers designed for that purpose.
- ▷ Only empty the waste water tank and sewage container at disposal stations, camping sites or caravan sites provided especially for this purpose. When stopping in towns and communities, observe the instructions at caravan sites or ask where there are disposal stations.
- ▷ Empty waste water tank as often as possible, even when it is not completely full (hygiene).
If possible, flush out waste water tank and, if necessary, drainage pipe with fresh water every time it is emptied.
- ▷ Never allow the sewage container to become too full. Empty the sewage container frequently, at the latest as soon as the filling level indicator lights up.
- ▷ Separate household waste according to glass, tin cans, plastic and wet waste also when on a journey. Enquire at the town or community authority about disposal points. Household waste is not to be disposed of in waste paper baskets which are situated at car parks.
- ▷ Empty waste bins as often as possible into the containers provided for this purpose. This helps to avoid unpleasant smells and an accumulation of rubbish on board.

2

Introduction



- ▷ When parked, do not allow the engine to run more than necessary. When running idle, a cold engine releases more contaminants than usual. The running temperature of the engine is achieved more quickly whilst the vehicle is in motion.
- ▷ Use an environmentally-friendly WC chemical agent for the WC which can also be biologically degraded and only use small doses.
- ▷ When staying in towns and communities for long periods, search for parking areas which are specially reserved for motorhomes. Enquire at the town or community authority about parking spaces.
- ▷ Always leave the parking places in a clean condition.

2 Introduction

3 Safety

Chapter overview

This chapter contains important safety instructions. The safety instructions are for the protection of persons and property.

3.1 Fire prevention

3.1.1 Avoidance of fire risks



- ▶ Never leave children in the vehicle unattended.
- ▶ Keep flammable materials clear of heating and cooking appliances.
- ▶ Never use portable heating or cooking appliances.
- ▶ Only authorised qualified personnel may make changes to the electrical system, gas system or appliances.

3.1.2 Fire-fighting



- ▶ Please inform yourself about the country- and location-specific requirements for firefighting in the place where you are staying and keep the required tools on hand.

3.1.3 In case of fire



- ▶ Evacuate all passengers.
- ▶ Cut off the electrical power supply and disconnect from the mains.
- ▶ Close the regulator tap on the gas bottle.
- ▶ Sound the alarm and call the fire brigade.
- ▶ Fight the fire if this is possible without risk.



- ▷ Acquaint yourself with the position and operation of the emergency exits.
- ▷ Keep escape routes clear.
- ▷ Observe the fire extinguisher instructions for use.

3.2 General



- ▶ The oxygen in the vehicle interior is used up by breathing and the use of gas operated appliances. That is why the used air must be replaced permanently. For this purpose, forced ventilation options (e.g. skylights with forced ventilation, mushroom-shaped vents or floor vents) are fitted to the vehicle. Never cover or block forced ventilations from the inside or outside with objects such as e.g. a winter mat. Keep forced ventilations clear of snow and leaves. There is a danger of suffocation due to increased CO₂ levels.
- ▶ Observe the headroom of the doors.

3 Safety



- ▷ As far as the fitted appliances (heater, cooker, refrigerator, etc.) and the base vehicle (engine, brakes, etc.) are concerned, the instruction manuals are authoritative. It is imperative that they be observed.
- ▷ Fitting accessories or optional equipment can alter the dimensions, weight and road behaviour of the vehicle. Some of the add-on parts must be entered in the vehicle documents.
- ▷ Only use wheel rims and tyres which are approved for the vehicle. Information concerning the size of the approved wheel rims and tyres is included in the vehicle documents or can be obtained from authorised dealers and service centres.
- ▷ Firmly apply the handbrake when parking the vehicle.



- ▷ When leaving the vehicle, close all doors and windows. When the vehicle is equipped with external flaps, also close the external flaps.
- ▷ Always carry the legally prescribed equipment (e.g. first aid kit, warning vest, hazard warning triangle etc.) with you. The regulations of the host country apply when travelling abroad.
- ▷ The vehicle may only be driven by drivers who hold a driving licence which is valid for the respective vehicle class.
- ▷ When selling the vehicle, hand over all instruction manuals for the vehicle and the fitted appliances.

3.3 Road safety



- ▶ Before commencing the journey, carry out a functional check of indicating and lighting equipment, the steering and the brakes.
- ▶ If the vehicle has been stationary for a long period (approx. 10 months) have the braking and gas systems checked by an authorised specialist workshop.
- ▶ Before commencing the journey and after short interruptions of the journey, ensure that the entrance step is completely retracted.
- ▶ Before commencing the journey, open, lock and secure the shades situated on the windscreen and on the driver's and front passenger's windows.
- ▶ Before commencing the journey, rotate all swivel seats in the direction of travel and lock in position. During the journey, the swivel seats must remain locked in place in the direction of travel.
- ▶ Carefully store all moving parts and all loose objects before starting your journey.
- ▶ Before commencing the journey, secure the television.
- ▶ During the journey, persons are only to sit on the permitted seats (see chapter 5). The authorised number of seats is stipulated in the vehicle documents.
- ▶ Seat belts must be worn by all passengers.
- ▶ When travelling, secure children under 13 years of age that are smaller than 150 cm, with a suitable and officially approved child restraint system.

3 Safety



- ▶ Only attach the child restraint system to seats that are specified for this purpose.
- ▶ The base vehicle is a commercial vehicle (small truck). Adjust your driving technique accordingly.
- ▶ In the case of subways, tunnels or similar, observe the overall height of the vehicle (including roof loads).
- ▶ In winter, the roof must be free of snow and ice before commencing the journey.
- ▶ Check tyre pressure before a journey or every 2 weeks. Wrong tyre pressure causes excessive wear and can lead to damage or even to tyre burst. You can lose control of the vehicle (see section 14.6).
- ▶ Do not operate the heater at petrol stations. Danger of explosion!
- ▶ Do not operate the heater in closed spaces. Danger of suffocation!



- ▷ Before commencing the journey, distribute the payload evenly within the vehicle (see chapter 4).
- ▷ When loading the vehicle and during breaks in the journey, e.g. when re-loading luggage or food, observe the technically permissible maximum laden mass and the technically permissible maximum laden mass on the axle (see the vehicle documents).
- ▷ Before commencing the journey, close and secure all drawers and flaps.
- ▷ Before commencing the journey, close windows and skylights.
- ▷ Before commencing the journey, close all external flaps and lock them.
- ▷ Before commencing the journey, put the antenna in park position.
- ▷ During the initial journey and each time after changing a wheel, re-tighten the wheel bolts/wheel nuts after 50 km (30 miles). Subsequently inspect them at regular intervals in order to ensure that they are firmly seated.
- ▷ Tyres must not be older than 6 years as the material becomes brittle over time (see chapter 14).
- ▷ When using snow chains, the tyres, wheel suspension and steering are subjected to an additional load. When using snow chains, drive slowly (maximum speed 50 km/h) and only on streets which are completely covered with snow. Otherwise the vehicle could be damaged.

3.4 Towing



- ▶ Care is to be taken when connecting and detaching a trailer. Risk of accident and injury!
- ▶ No persons are to be between the motorhome and the trailer during positioning for connecting and detaching.

3.5 Gas system

3.5.1 General instructions



- ▶ The operator of the gas system is responsible for the performance of recurring inspections and for complying with the maintenance intervals.
- ▶ Before commencing the journey, when leaving the vehicle or when the gas devices are not in use, close all gas isolator taps and the main regulator tap on the gas bottle.
- ▶ All gas-operated devices (heater, cooker, oven, grill, refrigerator - depending on the equipment) must be switched off for refuelling, on ferries or in the garage. Danger of explosion!
- ▶ Do not use gas-operated devices in closed spaces (e.g. garages). Danger of poisoning and suffocation!
- ▶ Only have the gas system maintained, repaired or altered by an authorised specialist workshop.
- ▶ Have the gas system checked by an authorised specialist workshop according to the national regulations before commissioning. This also applies for not registered vehicles. For modifications to the gas system have the gas system immediately checked by an authorised specialist workshop.
- ▶ The gas pressure regulator, the gas tubes, and the exhaust gas pipes must also be inspected. The gas pressure regulator and the gas tubes must be replaced observing the nationally defined deadlines (the latest after 10 years). The vehicle owner is responsible for seeing that this is carried out.
- ▶ In case of a defect of the gas system (gas odour, high gas consumption) there is danger of explosion! Close regulator tap on the gas bottle immediately. Open doors and windows and ventilate well.
- ▶ If the gas system is defective: Do not smoke; do not ignite any open flames, and do not operate electric switches (light switches etc.). Check the tightness of gas-conducting parts and lines with leakage search spray. Do not check with an open flame.
- ▶ Only the stipulated devices may be connected to internal connections. Do not operate any device outside the vehicle if it is connected to an internal connector.
- ▶ Before using the cooker make sure that there is sufficient ventilation. Open a window or the skylight.
- ▶ Cooking is prohibited during the journey.
- ▶ Do not use gas-operated cooking and baking facilities for heating purposes.
- ▶ If there are several gas devices, each gas device must have its own gas isolator tap. If individual gas devices are not in use, close the respective gas isolator tap.
- ▶ Ignition safety valves must close within 1 minute after the gas flame has extinguished. A clicking sound is audible. Check function from time to time.

3

Safety



- ▶ The built-in gas devices are exclusively meant for use with propane or butane gas or a mixture of both. The gas pressure regulator as well as all built-in gas devices are designed for a gas pressure of 30 mbar.
- ▶ Propane gas is capable of gasification up to -42 °C, whereas butane gas gasifies at 0 °C. Below these temperatures no gas pressure is available. Butane gas is unsuitable for use in winter.
- ▶ Due to its function and construction, the gas bottle compartment is a space which is open to the exterior. Never cover or block up the standard forced ventilations. Otherwise gas that is emitted can not be diverted to the outside.
- ▶ The gas bottle compartment must not be used as storage space.
- ▶ Secure the gas bottle compartment against unauthorised access. To do this, lock the compartment.
- ▶ The regulator tap on the gas bottle must be accessible.
- ▶ Only connect gas-operated devices which have been designed for a gas pressure of 30 mbar.
- ▶ The exhaust gas pipe must be fitted tightly to the heating system and to the vent and must be sealed. The exhaust gas pipe must not show any evidence of damage.
- ▶ Exhaust fumes must be able to escape into the atmosphere unhindered and fresh air must be able to enter unhindered. For this reason, keep the exhaust pipe and intake openings clean and unobstructed (e.g. free from snow and ice). For this reason, no snow walls or aprons may lie against the vehicle.

3.5.2 Gas bottles



- ▶ Handle full or emptied gas bottles outside the vehicle only with closed regulator tap and attached protective cap.
- ▶ Gas bottles are only to be transported within the designated gas bottle compartment.
- ▶ Place the gas bottles in vertical position in the gas bottle compartment.
- ▶ Fasten the gas bottles so that they are unable to turn or tilt.
- ▶ Connect the gas tube to the gas bottle without tension.
- ▶ If the gas bottles are not connected to the gas tube, always place the protective cap on top.
- ▶ Close the regulator tap on the gas bottle before the gas pressure regulator or gas tube are removed from the gas bottle.
- ▶ Depending on the connection, unscrew the gas tube from the gas bottle and screw it on the gas bottle again by hand or using a suitable special spanner. The screw connection on the gas bottle generally has a left-hand thread. Do not tighten too firmly.
- ▶ Only use special gas pressure regulators with a safety valve designed for vehicle use. Other gas pressure regulators are not permitted and cannot meet the demanding requirements.
- ▶ Use only 11 kg or 5 kg gas bottles. (The size of the gas bottles may vary depending on the country.)

3

Safety



- ▶ Use the shortest possible tube lengths (150 cm max.) for external gas bottles.
- ▶ Never block the floor ventilation openings below the gas bottles.

3.6 Electrical system



- ▶ Only allow qualified personnel to work on the electrical system.
- ▶ Prior to carrying out work on the electrical system, switch off all devices and lights, disconnect the battery and disconnect the vehicle from the mains.
- ▶ Only use original fuses with the stipulated values.
- ▶ Only replace defective fuses when the cause of the defect is known and has been remedied.
- ▶ Never bridge or repair fuses.

3.7 Water system



- ▶ Water left standing in the water tank or in the water pipes becomes undrinkable after a short period. Therefore, before each use of the vehicle, thoroughly clean the water pipes and the water tank. After each use of the vehicle completely empty the water tank and the water pipes.
- ▶ In the case of lay-ups lasting more than a week, disinfect the water system before using the vehicle (see section 12.7.3).



- ▶ If the vehicle is not used for several days or if it is not heated when there is a risk of frost, empty the entire water system. Make sure that the 12 V power supply on the panel is switched off. Otherwise, the water pump will overheat and may get damaged. Leave the water taps on in central position. Leave all drain cocks open. Frost damage to appliances, frost damage to the vehicle and deposits in water-carrying components can be avoided in this way.

Chapter overview

This chapter contains important information which has to be noted before commencing your journey or carrying out any tasks before the journey.

At the end of the chapter there is a checklist which once again summarises the most important points.

4.1 Initial start-up



- ▶ During the initial journey and each time after changing a wheel, re-tighten the wheel bolts/wheel nuts after 50 km (30 miles). Subsequently inspect them at regular intervals in order to ensure that they are firmly seated.

The motorhome is supplied with a set of keys, consisting of keys for the base vehicle and keys for the body.

Always deposit a replacement key outside the vehicle. Make a note of the key number. Our authorised dealers and workshops can offer assistance in case of loss.

Further information in chapter 13.

4.2 Vehicle load capacity



- ▶ Overloading the vehicle and the axles may result, for example, in a diminished steering response (altered driving behavior), an overloading of the tires, and, as a result, an increased risk of tire blowouts or an extended braking distance. This may cause you to lose control of the vehicle, endangering yourself and other road users.
If you are not sure whether the loaded vehicle complies with the technically permissible maximum laden mass, you can weigh/check the vehicle on public scales or have it weighed by certain dealers.
- ▶ The vehicle documents state the technically permissible maximum laden mass or the mass including optional equipment ex works (actual vehicle mass), but not the weight of the laden vehicle (see section 4.2.1). For your own safety, we recommend that you have your loaded vehicle (with all passengers, luggage and personal objects) weighed on a public weighbridge before you set out on your journey.
- ▶ Uneven loading or overloading has a negative effect on driving behavior. A rear-heavy load in particular results in a reduction of the load on the front axle due to leverage effects and thus, for example, to a loss of traction, a diminished steering response (altered driving behavior), an overloading of the tires and, as a result, an increased risk of tire blowouts. This may cause you to lose control of the vehicle, endangering yourself and other road users. An evenly distributed load over the entire vehicle leads to optimum driving behavior during travel. If you are not sure whether the loaded vehicle complies with the technically permissible maximum laden mass and the technically permissible maximum laden mass on the axle, you can weigh/check the vehicle on public scales or have it weighed by certain dealers.
- ▶ Adapt the speed to the payload. The stopping distance is increased if the payload is high.

4 Before the journey



- ▷ Do not exceed the technically permissible maximum laden mass and the technically permissible maximum laden mass on the axle as stated in the vehicle documents by the payload.
- ▷ Built-in accessories and optional equipment reduce the vehicle load capacity.
- ▷ On loading, make sure that the payload's centre of gravity is as low as possible (directly above the floor of the vehicle). Otherwise this may affect the driving characteristics of the vehicle.



- ▷ If you drive the vehicle even though it exceeds the technically permissible maximum laden mass specified by the manufacturer, you may face legal consequences, such as a fine or loss of insurance.

4.2.1 Terms



- ▷ Technically speaking, the term "mass" has now replaced the term "weight". However, "weight" is still the term more frequent in common use. For better understanding, "mass" is therefore only used in the following sections for fixed formulations.

Technically permissible maximum laden mass

The technically permissible maximum laden mass is a value specified by the manufacturer that, for safety reasons, the vehicle must never exceed, even when loaded (e.g. 3500 kg). Information on the technically permissible maximum laden mass of the model you have chosen can be found in the registration papers and on the body manufacturer's nameplate in the vehicle.

1		2		3	
TYP		Dethleffs	3mbH&Co. KG		
FIN		DET			
		1 -			KG
		2 -			KG
		3 -			KG
9	8	7	6	5	4
EHG01223					

Fig. 1 Nameplate

- 1 Type
- 2 Manufacturer's code and chassis number
- 3 Technically permissible maximum laden mass of the vehicle
- 4 Free
- 5 Technically permissible maximum laden mass on the rear axle
- 6 Technically permissible maximum laden mass on the front axle
- 7 Technically permissible maximum laden mass of the vehicle with trailer
- 8 Base vehicle chassis number
- 9 Serial number

The technically permissible maximum laden mass consists of the **actual vehicle mass** and the **payload**.

In the vehicle documents, the manufacturer has specified the technically permissible maximum laden mass.

Actual vehicle mass

The actual vehicle mass consists of the mass in running order and the weight of the optional equipment fitted at the factory.

4

Before the journey

Mass in running order

The mass in running order is the weight of the ready-to-drive series vehicle (excluding optional equipment fitted at the factory).

The mass in running order is made up as follows:

- Unladen weight (mass of the empty vehicle) with factory-installed standard equipment (excluding optional equipment fitted at the factory)
- Driver's weight
- Basic equipment weight
- Greases, oils and cooling liquids filled in
- Fresh water tank filled up to 100 %
- Aluminium gas bottle filled up to 100 %
- Fuel tank filled to 90 %

75 kg are calculated for the weight of the driver, regardless of how much the driver really weighs.

Basic equipment includes all equipment and fluids required for safe and proper vehicle use. The weight of the basic equipment includes:

- A full fresh water system
- A full heating system
- The power cables for the 230 V power supply
- A full toilet flushing system
- The installation kit for an auxiliary battery if an auxiliary battery can be used

The waste water tank and the sewage container are empty.

Example for calculating the basic equipment

Water tank with 20 l (during the journey)	20 kg
Gas bottle (11 kg _{gas} + 14 kg _{bottle})	+ 25 kg
230 V power cable	+ 4 kg
Installation kit for auxiliary battery	+ 20 kg
Total	= 69 kg

The mass in running order and the actual vehicle mass are specified by the manufacturer in the vehicle documents.

Remaining load capacity

To determine the remaining load capacity, it is important that you know the actual weighed mass of your vehicle. Upon completion of your vehicle, therefore, we determine the actual weight of your vehicle for the first time by weighing it at the end of the line. This includes the mass in running order plus the weight of all ordered and factory-fitted optional equipment.

You can use this actual weighed mass to calculate the remaining load capacity for baggage or other accessories.

Example:

Technically permissible gross weight	- actual weighed mass	- mass of the passengers	= remaining load capacity
3500 kg	- 3000 kg	- 225 kg (3 x 75 kg)	= 275 kg

4

Before the journey



- ▷ Please note that the factory calculation of the remaining load capacity for the mass of the driver (included in the actual weighed mass) and the mass of the passengers is based on a generalized mass of 75 kg per seat. Due to deviating body weights, however, the actual remaining load capacity of your vehicle may vary.
- ▷ The actual factory-weighed mass of your vehicle may vary slightly afterwards due to weather conditions and, for example, the associated absorption or release of moisture. Any further subsequent modification of your vehicle, e.g. through the additional installation of accessories by the dealer or other attachments and/or conversions, will additionally influence the actual weighed mass of the vehicle communicated and consequently also the remaining load capacity. It is the responsibility of the dealer after picking up the vehicle at the factory until delivery, and subsequently your responsibility from the time of handover by the dealer, to ensure that the technically permissible maximum laden mass is not exceeded. If you are not sure whether the loaded vehicle complies with the technically permissible maximum laden mass, you can weigh/check the vehicle on public scales or have it weighed by certain dealers.
- ▷ We will inform your dealer of the actual weighed mass of your vehicle and the remaining load capacity when we issue the invoice. Your dealer is required to pass on the information to you. If you have not received this information, you can contact your dealer and request it. Our scales meet all legal and standard requirements and are regularly maintained, tested and, calibrated. Nevertheless, a slight tolerance is technically unavoidable. Moreover, the weight of the vehicle may vary slightly due to weather conditions and, for example, the associated absorption or release of moisture. The actual weight of the vehicle may therefore deviate from the actual weight communicated by a few kilograms.

The payload is made up as follows:

- Conventional load
- Optional equipment
- Personal equipment



- ▷ The vehicle load capacity can be increased by reducing the actual weight. To do this, it is allowed for example to empty the fluid containers or to remove the gas bottles.

You will find explanations on the individual components of the payload in the following text.

Conventional load

The conventional load is the weight specified by the manufacturer for the passengers.

Conventional load means: 75 kg are calculated for every seat specified by the manufacturer, regardless of how much the passengers actually weigh. The driver's seat is already included in the mass in running order and must not be counted.

In the vehicle documents, the manufacturer specifies the number of seats.

4

Before the journey

Optional equipment Optional equipment includes all equipment not included in the standard equipment which is fitted to the vehicle under the responsibility of the manufacturer.

- Caravan coupling
- Bike or motorcycle rack
- Satellite unit

Information about the weights of the various optional equipment devices can be obtained from the manufacturer.

Personal equipment Personal equipment includes all items carried in the vehicle that are not included in the conventional load and optional equipment. For example, personal equipment can include the following:

- Foodstuffs
- Crockery
- Television
- Radio
- Clothes
- Bedding
- Toys
- Books
- Toiletries
- Water in the boiler

No matter where kept, personal equipment also includes:

- Animals
- Bikes
- Boats
- Surfboards
- Sports equipment

For the personal equipment, according to the applicable regulations, the manufacturer must use a minimum weight that is determined according to the following formula:

Formula Minimum weight M (kg) = $10 \times N + 10 \times L$

Explanation N = maximum number of people including the driver, as stated by the manufacturer

L = total length of the vehicle in metres

4.2.2 Calculating the vehicle load capacity



- ▶ Never exceed the technically permissible maximum laden mass!
- ▶ The technically permissible maximum laden mass and the weight including optional equipment fitted at the factory (actual mass) is shown in the vehicle documents, but not the weight of the laden vehicle (see section 4.2.1). For your own safety, we recommend that you have your loaded vehicle (with all passengers, luggage and personal objects) weighed on a public weighbridge before you set out on your journey.

4

Before the journey

The vehicle load capacity (see section 4.2.1) is the difference in weight between

- the technically permissible maximum laden mass and
- the actual vehicle mass.

Example for calculating the vehicle load capacity

	Mass in kg to be calculated	Calculation
Technically permissible maximum laden mass according to vehicle documents	3500	
Actual vehicle mass including standard equipment according to the vehicle documents	- 3070	
This results in a permissible load capacity of	430	
Flat-rate value of 10 kg per meter vehicle length (in the example: 7.00 m)	- 70	
Conventional load e.g.: 3 persons each weighing 75 kg	- 225	
Optional equipment and accessories	- 40	
For the personal pay-mass this results in	= 95	

The pay-mass is calculated based on the regulation (EC) no. 1230/2012.

The calculation of the vehicle load capacity from the difference between the technically permissible maximum laden mass and the actual vehicle mass specified by the manufacturer is however only a theoretical value.

Only if the vehicle is weighed on a public scale with filled tanks (fuel and water), filled gas bottles and complete optional equipment (and accessories) can the actual vehicle load capacity be determined.

To do this, proceed as follows:

- First only drive the vehicle on to the weighbridge with the front wheels and have it weighed.
- Then drive the vehicle on to the weighbridge with the back wheels and have it weighed.

The individual values give the current masses on the axles. These are important for the correct loading of the vehicle (see section 4.2.3). The sum of these values is the current weight of the vehicle.

The actual load capacity is the difference between the technically permissible maximum laden mass and the weighed vehicle weight.

This can be used to determine the weight that remains for the personal equipment:

- Determine the weight of the passengers and subtract it from the value for the actual vehicle load capacity.

The result is the weight that is permitted for the actual load of the personal equipment.

4

Before the journey

4.2.3 Load securing and load distribution



- ▶ For safety reasons, never exceed the technically permissible maximum laden mass.
- ▶ Distribute the load evenly on the left and right sides of the vehicle.
- ▶ Distribute the load evenly on both axles. Observe the technically permissible maximum laden mass on the axle specified in the vehicle documents. Observe the permissible load-carrying capacity of the tyres (see chapter 14).
- ▶ Heavy loads behind the rear axle can reduce the load on the front axle due to the leverage effect ($\frac{1}{2} \frac{1}{2}$). This applies especially to long rear extensions, if a motorbike is transported on the rear carrier or if there is a heavy load in the rear storage space. The release of the front axle negatively affects the driving quality, especially for front-driven vehicles.
- ▶ Store all objects in such a way that they cannot slip.
- ▶ Store heavy objects (awning, tin cans, etc.) close to the axles. Low-lying storage spaces whose doors do not open in the direction of travel are particularly suited for storing heavy objects.
- ▶ Stack light objects (laundry) in the roof storage cabinets.
- ▶ Distribute items (loads) evenly in the compartments and cupboards.
- ▶ Load the bike rack with bicycles only.



- ▷ Only load the drawers with a maximum of 15 kg.
- ▷ Do not exceed the maximum loading for roof storage cabinets. The maximum loading per running metre of roof storage cabinet is 8 kg. When loading, consider the respective length of the roof storage cabinet and calculate the maximum load accordingly.
Example of a 0.5 m long roof storage cabinet:
8 kg maximum loading per running metre x 0.5 m length of the storage compartment = 4 kg load is possible.



- ▷ Please observe the maximum permissible load of the rear garage or rear storage compartment at all times. The specified maximum permissible load of the rear garage or rear storage compartment may be influenced by the selection of further optional equipment, such as trailer couplings or frame extensions. However, the technically permissible maximum laden mass and the technically permissible maximum laden mass on the axle must not be exceeded under any circumstances. Especially when stowing or attaching heavy accessories or heavily laden accessories (such as motorcycle carriers or bicycle carriers) at the rear, the mass on the axle must be checked and complied with. For this reason, please note that the maximum load may not be fully utilized if this would result in the exceedance of the technically permissible maximum laden mass or technically permissible maximum laden mass on the axle.
- ▷ Further information on correct loading can be found in the sections "Technically permissible maximum laden mass" (page 30) and "Technically permissible maximum laden mass on the axle (mass on the axle)" (page 37).

4

Before the journey

Large storage compartments also offer room for heavy objects. The mass on the front or rear axle may be exceeded as a result.

However, the individual axles may not be overloaded under any circumstances. That is why it is important, at which distance to the axles the load is stored.

When loading the vehicle, please observe the following instructions to ensure safe driving:

- Baggage and other items carried in the vehicle must be evenly distributed between the left and right sides of the vehicle.
- Heavy or bulky items should be stowed as close to the ground as possible in stowage boxes provided for this purpose and near the axles, and they must be secured against slipping.
- Light and other items can be stowed in lockers and storage compartments.
- Always ensure that the doors and flaps on the cabinets and storage compartments are properly secured.
- Use only suitable clamping systems to secure items against slipping. Please recheck all tie-downs before commencing travel.



▶ Uneven loading has a negative effect on driving behavior. A rear-heavy load in particular results in a reduction of the load on the front axle due to leverage effects and thus, for example, to a loss of traction, a diminished steering response (altered driving behavior), an overloading of the tires and, as a result, an increased risk of tire blowouts. This may cause you to lose control of the vehicle, endangering yourself and other road users. An evenly distributed load over the entire vehicle leads to optimum driving behavior during travel.



- ▷ The technically permissible maximum laden mass and the technically permissible maximum laden mass on the axle must not be exceeded. Especially when stowing or attaching heavy accessories or heavily laden accessories (such as motorcycle carriers or bike carriers) at the rear, the mass on the axle must be checked and complied with. If you are not sure whether the loaded vehicle complies with the technically permissible maximum laden mass and the technically permissible maximum laden mass on the axle, you can weigh/check the vehicle on public scales or have it weighed by certain dealers.
- ▷ For individual models, a maximum load is specified by the body manufacturer for cabinets, drawers, storage compartments, or other storage spaces. This maximum load can be seen on the stickers attached on site and must be observed at all times. However, the technically permissible maximum laden mass and the technically permissible maximum laden mass on the axle must not be exceeded under any circumstances. For this reason, please note that the stated maximum load may not be fully utilized if this would result in the exceedance of the technically permissible maximum laden mass or technically permissible maximum laden mass on the axle.
- ▷ Further information on correct loading can be found in the sections "Technically permissible maximum laden mass" (page 30) and "Technically permissible maximum laden mass on the axle (mass on the axle)" (page 37).

To distribute the load correctly, you will need a scale, a tape measure, a calculator and some time.

4 Before the journey

Two simple formulas are needed to calculate the effect of the weight of the load on the axles:

Formulas $A \times G : R = \text{weight on the rear axle}$
 Weight on the rear axle - $G = \text{weight on the front axle}$

Explanation A = distance between storage space and front axle in cm
 G = weight of the load in the storage space in kg
 R = wheelbase of the vehicle (distance between axles) in cm



▷ Measure the external distances horizontally from the centre of the front wheel to the centre of the storage space or to the centre of the back wheel.

Technically permissible maximum laden mass on the axle (mass on the axle)

The technically permissible maximum laden mass on the axle or group of axles (hereafter referred to as mass on the axle) refers to the vehicle- and axle-specific load that may be transferred from the wheels of an axle or group of axles to the road surface. The mass on the axle is a value specified by the manufacturer that, for safety reasons, the vehicle must never exceed, even when loaded. You will find information on the mass on the axle of your vehicle in the registration papers and on the body manufacturer's nameplate in the vehicle.

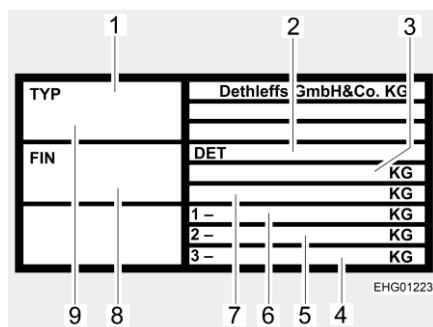


Fig. 2 Nameplate

- 1 Type
- 2 Manufacturer's code and chassis number
- 3 Technically permissible maximum laden mass of the vehicle
- 4 Free
- 5 Technically permissible maximum laden mass on the rear axle
- 6 Technically permissible maximum laden mass on the front axle
- 7 Technically permissible maximum laden mass of the vehicle with trailer
- 8 Base vehicle chassis number
- 9 Serial number



▷ If the technically permissible maximum laden mass on the axle is exceeded, the vehicle may be damaged (e.g. due to a broken axle or tire blowout) and driving performance may be considerably impaired. This may cause you to lose control of the vehicle, endangering yourself and other road users. We therefore recommend weighing the final loaded vehicle including all passengers, before commencing travel in order to ensure compliance with the mass on the axle and the technically permissible maximum laden mass at all times. For this purpose, you can weigh/check the vehicle on public scales or have it weighed by certain dealers.

4

Before the journey



- ▷ Please note that the mass on the respective axles or axle groups may differ. For this reason, please read the information provided in the registration papers carefully.
- ▷ If you drive the vehicle even though it exceeds the technically permissible maximum laden mass on the axle specified by the manufacturer, you may face legal consequences, such as a fine or loss of insurance.
- ▷ It is possible that the chassis manufacturer of your vehicle specifies a minimum load for the front axle in order to achieve optimum driving behavior. Therefore, please also always observe the information regarding this from the operating instructions of the chassis manufacturer.
- ▷ For further information on correct loading, please refer to section "Load securing and load distribution" (page 35).

Calculating masses on the axles:

- Multiply the distance between storage space and front axle (A) with the weight of the load in the storage space (G) and divide the result by the wheelbase (R). The result is the weight of the load in the storage space on the rear axle. Make a note of this weight and of the storage space.
- In a second step, subtract the weight in the storage space (G) from the weight calculated beforehand. If the result is a **positive** value (example 1), this means that the load on the front axle is **reduced** by this value. If the result is a **negative** value (example 2), this means that the load on the front axle is **increased**. Make a note of this value, too.
- Calculate all storage spaces of the vehicle in the same way.
- In a last step, add all weights calculated for the rear axle to the mass on the rear axle and add (or subtract) all weights calculated for the front axle to (or from) the mass on the front axle.
How to determine the mass on the rear axle and the mass on the front axle is described in section 4.2.2.

If the calculated value exceeds the permissible maximum laden mass on the axle, the load must be distributed in a different way.

If the load on the front axle is too low, the grip of the tyres on the road is reduced (traction). This applies in particular to vehicles with front-wheel drive. In this case, the load must be redistributed, too.

Example calculation

		Example 1	Example 2
Distance to the front axle	A	(A1) 450 (cm)	(A2) 250 (cm)
Weight in the storage space	G	x 100 (kg)	x 50 (kg)
Wheelbase of the vehicle	R	÷ 325 (cm)	÷ 325 (cm)
Load on the rear axle (add to the axle load)		138.5 (kg)	38.5 (kg)
Weight in the storage space		- 100 (kg)	- 50 (kg)
Load relief to the front axle (subtract from the axle load)		38.5 (kg)	
Load on the front axle (add to the axle load)			-11.5 (kg)

4

Before the journey

Increase and reduction of load capacity

In the case of an increase of load capacity, a change in the chassis usually increases the technically permissible maximum laden mass of the vehicle, the technically permissible maximum laden mass on the axle and, as a result, the remaining load capacity for luggage, camping equipment, etc.

In contrast to an increase of load capacity, a reduction of load capacity reduces the technically permissible maximum laden mass of the vehicle, the technically permissible maximum laden mass on the axle and, as a result, the remaining load capacity for luggage, camping equipment, etc. As a rule, a technical modification of the chassis is not performed.



- ▷ Due to the change in the technically permissible maximum laden mass, increases or reductions of load capacity may affect the permitted seats, the chassis, and the mass on the axle. If you have any questions, feel free to contact the responsible technical testing center for advice.
- ▷ A reduction or increase of load capacity may result in changes to the legal requirements resulting from the new technically permissible maximum laden mass of the vehicle. This applies in particular to the legal requirements from the German Road Traffic Act (StVO), the German Road Vehicle Registration Regulation (StVZO), and tax and insurance regulations. An increase of technically permissible maximum laden mass to over 3500 kg may, for example, affect the driving license class or result in different speed limits or prohibitions on passing and overtaking. Toll payment requirements may also change due to the new technically permissible maximum laden mass. Therefore, inform yourself about the current legal situation with regard to the new technically permissible maximum laden mass of the vehicle and seek advice on this from the appropriate bodies. Please note that national regulations in the country of your destination and countries visited in transit may differ from those in your home country.
- ▷ For more information on the actual weighed mass of your vehicle and the remaining load capacity, please refer to section "Remaining load capacity" (page 31).

4.3 Bike rack



- ▶ Observe the technically permissible maximum laden mass on the axle and the technically permissible maximum laden mass when loading the bike rack.
- ▶ A total width of 2.55 m must not be exceeded. Adjust the attachments for the bikes accordingly. The overhang to the side and rear must be marked in accordance with the regulations for the country in which you are travelling.
- ▶ Load the bike rack with bicycles only.
- ▶ Do not transport more than the permitted number of bicycles for the bike rack used (max. 50 kg).
- ▶ Check the secure attachment of the bicycles on the bike rack after the first 10 km and then at each break in the journey.
- ▶ Do not use the bike rack as luggage rack or ladder.

4 Before the journey



- ▷ The identification plate and rear lights must not be covered.
- ▷ Driving with a folded out bike rack without bicycles is not permitted.
- ▷ Before every journey, check:
 - Is the bike rack without bicycles folded in correctly?
 - Are the bicycles securely fastened to the bike rack using the bike rack belts?

4.4 Roof loads



- ▶ Do not overload the roof. Road behaviour and brake reaction deteriorate as the roof load increases.



- ▷ The maximum permissible roof load is 50 kg.
- ▷ Secure roof loads with tension belts. Do not use rubber expanders.
- ▷ Observe the overall height of the vehicle when the roof rack is loaded.



- ▷ The driver's cabin should have a clearly visible notice stating the overall height. This eliminates the need for calculations at bridges and thoroughfares.

4.5 Towing



- ▶ Care is to be taken when connecting and detaching a trailer. Risk of accident and injury!
- ▶ No persons are to be between the motorhome and the trailer during positioning for connecting and detaching.
- ▶ Observe the permissible nose weight and rear axle load of the motorhome. The nose weight and rear axle must not be exceeded. The values of the nose weight and rear axle are included in the documents of the vehicle and the caravan coupling.



- ▷ Trailer with an overrun brake: Do not connect or detach trailer with the overrun brake on.
- ▷ Caravan coupling with detachable ball neck: If the ball neck is mounted incorrectly, there is the danger of the trailer breaking away. Observe the operating manual for the caravan coupling.



- ▷ Refer to the vehicle documents of the base vehicle for the maximum permissible nose weight.

4 Before the journey

4.6 Caravan coupling



- ▶ When attaching a caravan coupling, refer to the vehicle documents for the maximum nose weight and the technically permissible maximum towable mass.
- ▶ Retighten the caravan coupling fixing screws after 1000 operating hours.



- ▷ The bike rack and caravan coupling may not be used simultaneously.



- ▷ If the caravan coupling was fitted at the factory, this is entered in the vehicle documents. Always keep the appropriate documents in the vehicle.
- ▷ Also read the manufacturer's instruction manual.

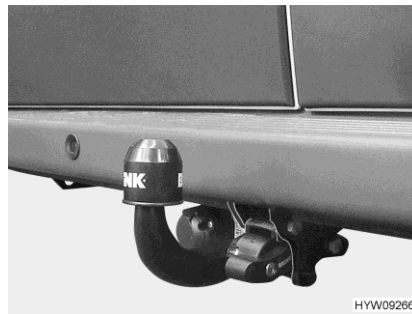


Fig. 3 Caravan coupling (detachable)

Entry in the vehicle documents

Have your dealer or service centre install the add-on parts. They will also take care of all the formalities for you.

4.7 Entrance step (Thule Slide-Out Step G2)



- ▶ Before commencing the journey and after short interruptions of the journey, ensure that the entrance step is completely retracted.
- ▶ Do not stand in the direct exit area of the retracting or extending entrance step.
- ▶ Do not step on the entrance step until it has extended completely. There is a risk of injury!
- ▶ To prevent danger of slipping, clean the entrance step if necessary before entering (snow, ice, mud, etc.).
- ▶ When the vehicle engine is running and the entrance step is extended, a warning tone sounds. In this case, retract the entrance step. The warning tone stops as soon as the entrance step is retracted. After cold starting the vehicle engine, it may take a few seconds, depending on the vehicle, before the warning tone sounds to indicate that the entrance step is still extended.
- ▶ Observe the maximum load for the entrance step according to the manufacturer's instruction manual.

4 Before the journey



- ▷ Do not grease or oil the moving parts of the entrance step (Fig. 4) (see Chapter 12).



- ▷ The rocker button to operate the entrance step is located inside of the vehicle in the area of the living area door.



Fig. 4 Entrance step

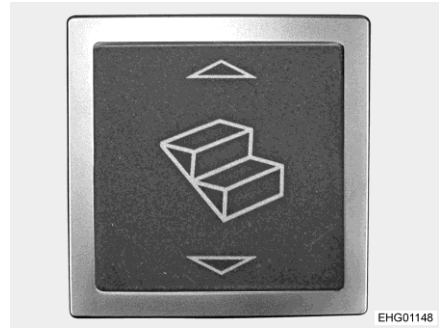


Fig. 5 Rocker button for entrance step (entrance area)

Retracting or extending:

- Press the rocker button (Fig. 5) situated in the entrance area. The entrance step extends horizontally.

4.8 Kitchen area



- ▶ In the event of an accident or heavy braking, flying objects could injure the occupants of the vehicle. Before moving off, secure all moveable objects and remove all loose objects and store them securely.

4 Before the journey

4.9 Gas regulator

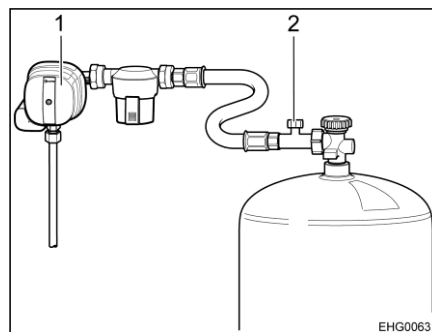


▶ Operating gas-operated appliances during the journey is permitted only if the gas system has the relevant equipment. The hose break guard and crash sensor prevent an escape of gas in the event of an accident.



▶ Observe the gas regulator manufacturer's separate instruction manual.

The MonoControl gas regulator is installed as standard. The DuoControl gas regulator can also be installed as optional equipment.



- 1 Crash sensor
- 2 Hose break guard

Fig. 6 Gas regulator (MonoControl)

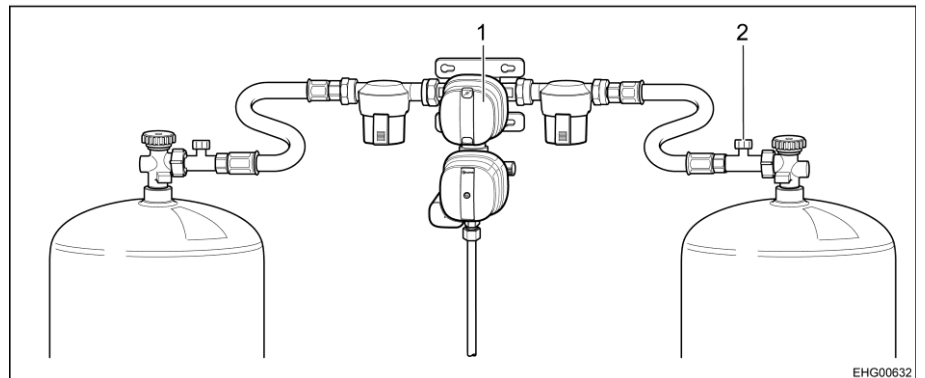


Fig. 7 Gas regulator (DuoControl)

- 1 Crash sensor
- 2 Hose break guard



▶ If necessary, clarify questions with the authorised dealers or service centres.

4

Before the journey

4.10 Snow chains



- ▷ Only mount snow chains if there is a clearance of at least 50 mm between the tyres and the vehicle body.
- ▷ When using snow chains, the tyres, wheel suspension and steering are subjected to an additional load. When using snow chains, drive slowly (maximum speed 50 km/h) and only on streets which are completely covered with snow. Otherwise the vehicle could be damaged.
- ▷ Observe the fitting instructions issued by the manufacturer of the snow chains.
- ▷ Do not fit snow chains on alloy wheel rims.

The use of snow chains is subject to the legal regulations of the individual countries.

- Always mount snow chains to the drive wheels.
- After a few metres, check the tension of the snow chains.

4.11 Road safety



- ▶ Check tyre pressure before a journey or every 2 weeks. Wrong tyre pressure causes excessive wear and can lead to damage or even to tyre burst. You can lose control of the vehicle (see section 14.6).
- ▶ Add-on parts can be exposed to adverse conditions (storms, ice, vibrations, etc.) and require close monitoring despite careful design and manufacturing. Therefore, check the tight fit of the add-on parts at certain intervals and before long journeys.

Before commencing the journey, work through the checklist:

Base vehicle

No.	Checks	Checked
1	All vehicle documents are on board	
2	Tyres in proper condition and tyre pressure correct	
3	Vehicle lighting, brake lights and reversing lights function	
4	Oil levels for engine, gearbox and power steering controlled	
5	Coolant and fluid for windscreen washers filled up	
6	Brakes function	
7	Brakes react evenly	
8	When braking, the vehicle remains in the lane	


4

Before the journey

Housing body, outside

No.	Checks	Checked
9	Roof free of snow and ice (in winter)	
10	External connections and lines disconnected and stored away	
11	Fitted steady legs retracted and fixed in place	
12	Wheel chocks removed and stored away	
13	Entrance step retracted (observe warning tone)	
14	External flaps closed and locked	
15	Rear conversion door closed	
16	Overall height of the vehicle including roof rack when loaded measured and noted. Keep the height information close at hand in the driver's cabin	


Housing body, inside

17	Windows and skylight closed and locked	
18	Loose parts stored away or fixed in position	
19	Open storage spaces empty	
20	Refrigerator door secured	
21	All drawers and flaps closed	
22	Children's seats only mounted on the seats approved for this purpose	
23	Swivel seat locking device for driver's seat and front passenger's seat locked	
24	Shades in the driver's cabin opened and secured	
25	All lights switched off	
26	Wash basin folded	
27	Mirror in the toilet compartment removed  ▷ The mirror is attached magnetically. Pull slightly towards you to remove.	

Gas system

28	Gas bottles firmly fixed in the gas bottle compartment so that they are unable to turn	
29	If the gas bottles are not connected to the gas tube, always place the protective cap on top	

Electrical system

30	Check the battery voltage/battery capacity (in %) of the starter and living area battery (see chapter 9). If the panel indicates that the battery voltage/battery capacity is too low, the respective battery will need to be recharged. Observe the notes and instructions in chapter 9  ▷ Commence journey with fully charged starter and living area batteries.	
----	--	--

5 During the journey

Chapter overview

This chapter contains instructions on how to drive the camper van.

5.1 Driving



- ▶ The base vehicle is a commercial vehicle (panel van). Adjust your driving technique accordingly.
- ▶ Before commencing the journey and after short interruptions of the journey, ensure that the entrance step is completely retracted.
- ▶ When you start the engine, warning signals such as "entrance step extended" can sound. Under certain conditions (a cold start in winter) after the engine is started it can take up to 15 seconds for these warning signals to sound.
- ▶ A seat belt is fitted for each seat which is permitted for travel. Please keep your seat belt fastened during the journey.
- ▶ Never open your seat belts when travelling.
- ▶ Passengers must remain in the seats provided.
- ▶ The doors must remain locked.
- ▶ Avoid braking with a jerk.
- ▶ If a navigation system is used, only change the destination when the vehicle is stationary. Drive to a car park or stop in a safe area when changing the destination.



- ▷ Drive slowly on poor roads.



- ▷ If an accident occurs as a result of these instructions not being observed, the manufacturer will not be responsible for damages caused.
- ▷ The safety measures stipulated in chapter 3 have to be observed.

5.2 Driving speed



- ▶ The vehicle is equipped with a powerful engine. This means there are sufficient reserves in difficult traffic situations. This high power enables a high maximum speed and requires above-average driving ability.
- ▶ The vehicle provides a large contact surface for wind. A sudden crosswind can be especially dangerous.
- ▶ Uneven or one-sided loading affects road performance.
- ▶ Driving on unknown streets, you may encounter hazardous road conditions and unexpected driving situations. Therefore, in the interest of safety, make sure your driving speed is appropriate to any given driving situation and environment.
- ▶ Adhere to the national legal speed limits.

5 During the journey

5.3 Brakes



- ▶ Have defects on the braking system immediately remedied by an authorised specialist workshop.

Before each journey

Before each journey, check by means of a braking test:

- Do the brakes function?
- Do the brakes react evenly?
- Does the vehicle remain in the lane when braking?

5.4 Reversing camera



1 Reversing camera

Fig. 8 Reversing camera

The reversing camera (Fig. 8,1) is installed on top, at the rear of the vehicle.

When engaging reverse, the reversing camera switches on automatically.

The image from the reversing camera is then transmitted to a screen in the centre of the instrument panel.

5.5 Seat belts

5.5.1 General

The vehicle is equipped with seat belts in the living area on the seats for which seat belts are compulsory by law. National regulations apply to fastening of seat belts.



- ▶ Fasten your seat belts before the beginning of the journey and keep them fastened during the journey.
- ▶ Do not damage or trap belts. Have damaged seat belts changed by an authorised specialist workshop.
- ▶ Do not alter the belt fixing devices, automatic seat belt winders and the seatbelt locks.
- ▶ Only use one seat belt for one adult person.
- ▶ Do not belt in objects together with persons.
- ▶ Seat belts are not sufficient for persons who are less than 150 cm tall. In these cases use additional restraining devices. Observe test certificate.

5

During the journey



- ▶ Only attach the child restraint system to seats that are specified for this purpose. We strongly recommend to install child restraint systems preferably in the second row of seats.
- ▶ After an accident, replace the seat belts (have it replaced).
- ▶ During the journey, do not tilt the backrest too far backwards. Otherwise the functionality of the seat belt is no longer guaranteed.

5.5.2 Fastening the seat belts correctly



- ▶ Do not twist the belt. The belt must be positioned smoothly against the body.
- ▶ When fastening the seat belt, adopt the correct sitting position.

The seat belt is correctly fastened when the lap belt passes below your stomach and across the hip bone. The shoulder belt must pass across the chest and shoulder (not across your neck). The belt must always be taut against your body. Any bulky or padded clothing should therefore be removed before you start your journey.

5.6 Child restraint systems

5.6.1 Child seats



- ▶ When travelling, secure children under 13 years of age that are smaller than 150 cm, with a suitable and officially approved child restraint system.
- ▶ Only attach the child restraint system to seats that are specified for this purpose. We strongly recommend to install child restraint systems preferably in the second row of seats.
- ▶ Never use rearward-facing child restraints on a seat with activated front airbag. This may lead to death or to serious injuries in children.
- ▶ Fasten the children's seat belts before commencing the journey and make sure that their seat belts are kept fastened during the journey.
- ▶ If a front passenger airbag is fitted in the vehicle, do not use a child restraint system ("reboard systems") that faces the back of the front passenger's seat. Follow warning notices in the vehicle.
- ▶ If it is necessary to let an infant travel in a cradle in the opposite direction to travel on the front passenger's seat, the airbags on the passenger side must be deactivated via the setup menu of the base vehicle. When the airbags are deactivated, an indicator lamp must be lit on the instrument panel (refer to the operating manual of the base vehicle). Before setting off, verify whether the indicator lamp is lit. Push the front passenger's seat backwards as far as it will go such that the child seat does not touch the dashboard.

5 During the journey

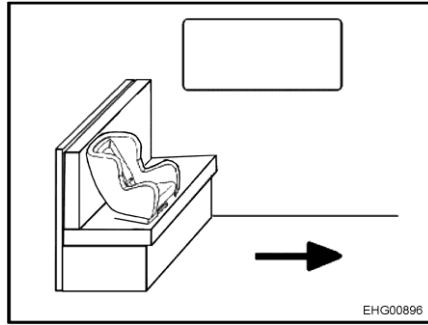


Fig. 9 Child seat on bench

Only one child seat is permitted on the aisle side of the bench (Fig. 9). Detach the suspension table.

Permitted seats



- ▶ If a child seat in the "universal" category (u) is to be used: ensure that the child seat is approved for the seats in the vehicle. Refer to the orange ECE test seal on the child seat for the necessary information.
- ▶ Observe the instructions and information on child seats in the operating manual of the base vehicle.



▶ The following table is taken from the operating manual of the base vehicle.

Group	Weight of the child	Double front passenger bench		Seats on the rear bench
		Front passenger front airbag activated	Front passenger front airbag deactivated	
Group 0	Up to 10 kg	x	u	x
Group 0+	Up to 13 kg	x	u	u
Group 1	Rear facing	x	u	u
	Forward facing	u	x	u
Group 2	15 to 25 kg	u	x	u
Group 3	22 to 36 kg	u	x	u

u: Seat suitable for the installation of a "universal" category child seat
 x: Seat not suitable for the installation of a child seat in this group

5 During the journey

5.6.2 Isofix fastening system for child seat

Position The Isofix fastening system is installed on the bench on the aisle side.

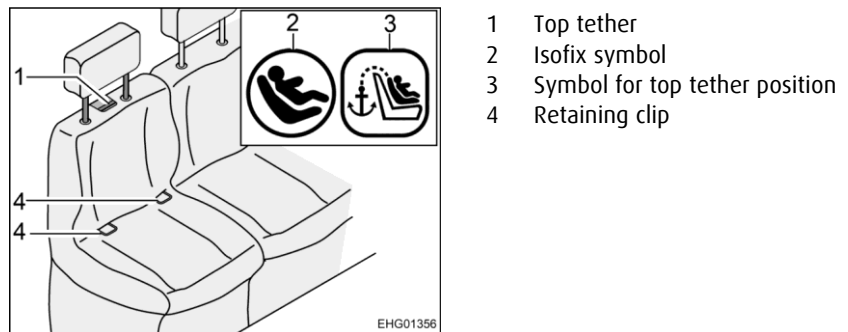


Fig. 10 Seat with Isofix

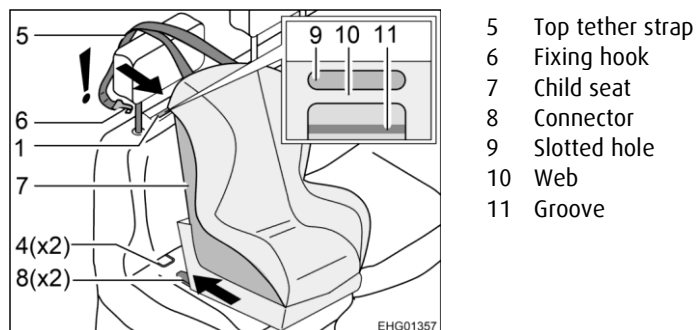


Fig. 11 Fixing with Isofix



- ▶ Only fit child seats that are suitable and classified for the Isofix fastening system with top tether to the Isofix car seat fitting system.
- ▶ Observe the safety instructions and fitting instructions of the child seat manufacturer.

Isofix-suitable vehicle seats are provided with the Isofix symbol (Fig. 10,2). The position of the top tether is marked with a symbol (Fig. 10,3), too.

Child seats with i-Size can be used. The i-Size labelling is attached to the child seat.



The i-Size marking means:

- Child seat classes according to the i-Size standard R 129 are differentiated according to body size.
- Rear-facing child restraint systems must be used for children up to the age of 15 months.
- Higher safety standards apply to the side impact protection of the child seat.
- The child restraint system is always attached with Isofix.
- Unrestricted approval for all vehicle seats with i-Size marking. It is not necessary to look up the vehicle type list.

5 During the journey

- Fitting:
- Push the bench in completely. To do this, lift the adjustment bracket under the seat cushion.
 - Let the connectors (Fig. 11,8) snap into the retaining clips (Fig. 10,4). While doing this, a distinctive click must be heard.
 - With a strong jerk, check if the child seat (Fig. 11,7) is firmly connected.
 - Route the top tether strap (Fig. 11,5) over the headrest of the vehicle seat.
 - Hook the fixing hook (Fig. 11,6) in at the top tether (Fig. 10,1). To do this, thread the fixing hook through the groove (Fig. 11,11) and slotted hole (Fig. 11,9) and attach it to the web (Fig. 11,10).

The removal is carried out analogously in inverted order.

5.7 Driver's seat and front passenger's seat



- ▶ Before commencing the journey, rotate all swivel seats in the direction of travel and lock in position.
- ▶ The seats must remain fixed in position during the journey and are not to be rotated.



- ▶ Observe the instructions and information on driver's seat and front passenger's seat in the operating manual of the base vehicle.

Driving position

During the journey, the driver's and front passenger's seats must be rotated in the direction of travel and locked in position.

- Push both armrests upward.
- Push the seat backwards or into the central position.
- Rotate the seat inwards, into the direction of travel and lock in position.



- ▶ Rotating the seats in the pitched vehicle is described in chapter 7.



- 1 Lever (adjusting in longitudinal direction)
- 2 Knurled knob (adjusting the backrest)
- 3 Knurled wheel (adjusting the armrest)

Fig. 12 Operating controls for backrest and longitudinal direction

5

During the journey

Distance to the pedals

Adjust the driver's seat so that you can depress the pedals comfortably.

- Pull the lever (Fig. 12,1) upwards.
- Push the seat forwards or backwards.
- Release the lever. The seat must audibly lock into place.

Backrest

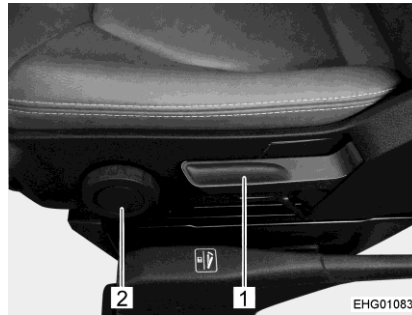
Adjust the angle of the backrest of the driver's seat so that the steering wheel can be held with the arms slightly bent.

- Turn the knurled knob (Fig. 12,2). The backrest inclines forwards or backwards, depending on the rotation direction.

Armrest

The height of the armrests can be continuously adjusted.

- Turn the knurled wheel (Fig. 12,3). The armrest inclines upwards or downwards, depending on the rotation direction.



- 1 Lever (adjusting the seat height)
- 2 Knurled knob (adjusting the seat inclination)

Fig. 13 Operating controls for seat surface

Inclination of the seat surface

Adjust the inclination of the seat surface so that the thighs rest on the seat surface without any pressure.

- Turn the knurled knob (Fig. 13,2) until the desired position is reached.

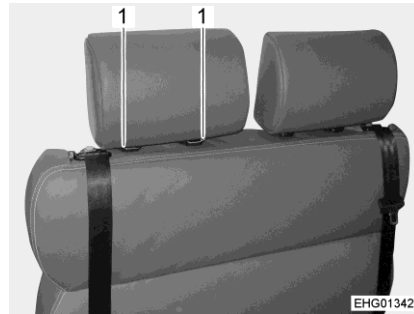
Seat height

Adjust the seat height so that the legs are slightly bent.

- Pull the lever (Fig. 13,1) upward or push it downward until the desired position is reached.

5 During the journey

5.8 Headrests



1 Release button

Fig. 14 Headrest (bench)

Before commencing the journey, adjust the headrest so that the back of the head is supported at approximately ear height.

Adjusting the headrest:

- Push both release buttons (Fig. 14,1) forward on the side of the headrest and pull the headrest up or press it down until it engages in the guide sleeves in the desired locking position.

5.9 Seating arrangement



- ▶ During the journey, persons are only to sit on the permitted seats. The authorised number of seats is stipulated in the vehicle documents.
- ▶ During the journey sitting on the divans is not permitted.
- ▶ Seat belts must be worn by all passengers.

Seats which may be used during travel are equipped with a seat belt.

5.10 Roman shades for driver's window and front passenger's window



- ▶ During the journey, the Roman shades for the driver's window and front passenger's window must be open, in a fixed position and secured.

Securing:

- Carefully push back the Roman shades for the side panes.
- Secure Roman shades.

5 During the journey

5.11 External doors



- ▶ Only drive with locked external doors.



- ▶ The brackets of the rear doors can be unlocked to swing them open fully. Doors that swing open without braking can hit the side of the vehicle and damage the bodywork. Only swing the rear doors fully open slowly and leave sufficient distance to the bodywork.



- ▶ Locking the doors can prevent them from opening of their own accord, e.g. during an accident.
- ▶ Locked doors also prevent forced entry, e.g. when waiting at traffic lights. However, in an emergency, locked doors make it more difficult for helpers to enter the vehicle.
- ▶ When leaving the vehicle, always lock the doors.
- ▶ The doors are part of the base vehicle. The opening and closing of the doors is described in the instruction manual of the base vehicle.

5.12 Refuelling



- ▶ When refuelling, all gas-operated devices must be switched off. Danger of explosion!



- ▶ The fuel filler neck is part of the base vehicle.
- ▶ The fuel filler neck is labelled with the word "Diesel".

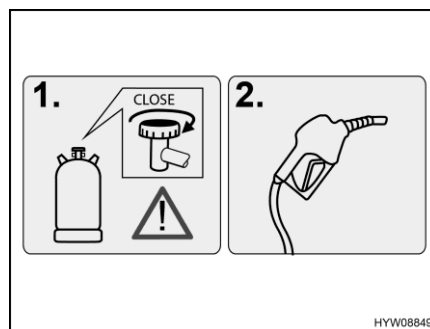


Fig. 15 Warning notice (fuel filler neck)

Refer to the instruction manual for the base vehicle for the position of the fuel filler neck.

5 During the journey

5.13 Towing



- ▶ If the ignition key cannot be turned in the ignition lock, do not tow the vehicle. The steering will be locked.



- ▷ If the engine is not running or the power supply is disrupted, the servo assistance for the steering and brakes will not be operational. A considerable amount of force will be required for steering and braking.



- ▷ In addition observe the notes in the operating manual of the base vehicle.
- ▷ National regulations apply to towing.

If the vehicle has to be towed, it should be done on a transporter or trailer if at all possible. If this is not possible, we recommend always using a towing bar for towing. The towing bar must be approved for the weight of the vehicle.

6 Pitching the Motorcaravan

Chapter overview

This chapter contains instructions on how to pitch the vehicle at the campsite.

6.1 Handbrake

Firmly apply the handbrake when parking the vehicle.

6.2 Entrance step

In order to exit the vehicle, first fully extend the entrance step. If the entrance step is extended while the engine is still running, a warning tone will sound.

6.3 230 V connection

The vehicle can be connected to a 230 V power supply (see chapter 9).

6.4 Refrigerator

Connect the vehicle to a 230 V supply (if possible), so that the living area battery is not discharged.

7 Living

Chapter overview

This chapter contains instructions about living in the vehicle.

7.1 External doors



- ▶ Only drive with locked external doors.



- ▷ Locking the doors can prevent them from opening of their own accord, e.g. during an accident.
- ▷ Locked doors also prevent forced entry, e.g. when waiting at traffic lights. However, in an emergency, locked doors make it more difficult for helpers to enter the vehicle.
- ▷ When leaving the vehicle, always lock the doors.
- ▷ The doors are part of the base vehicle. The opening and closing of the doors is described in the instruction manual of the base vehicle.

7.1.1 Insect screen on the living area door, two-piece



- ▷ Open the insect screen completely before closing the living area door.
- ▷ Hold holding bar with both hands when closing or opening. This reduces the risk of the insect screen getting stuck in the guides.
- ▷ Do not push into the mesh area when opening or closing the insect screen.
- ▷ Keep dogs and cats away from the insect screen.
- ▷ Before leaving the vehicle, always return the insect screen completely into the holders.



- ▷ The body manufacturer excludes any guarantee if the damage of the mesh seems to have been caused through third parties or own fault.

The insect screen consists of two parts: one part covers the door opening, a shorter part covers the opening above the kitchen cupboard.

7

Living



- 1 Holding bar (insect screen above kitchen cupboard)
- 2 Holding bar (insect screen of door opening)

Fig. 16 Insect screen (living area door)

Pulling out the insect screen:

- Pull out the insect screen above the kitchen cupboard with both hands on the holding bar (Fig. 16,1) as far as it will go.
- Pull the insect screen out of the door holder with both hands on the holding bar (Fig. 16,2) until the two holding bars touch.

Pushing in the insect screen:

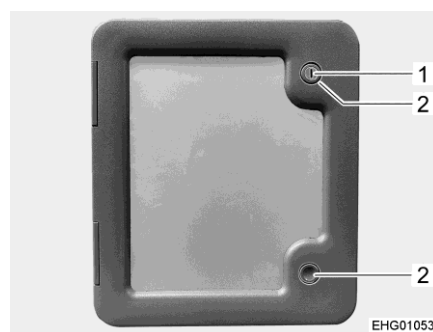
- Pull the two holding bars apart.
- Hold holding bar (Fig. 16,2) with both hands and push the insect screen back into the door holder applying slight pressure.
- Hold holding bar (Fig. 16,1) with both hands and slide the insect screen back into the side holder.

7.2 External flaps



- ▷ Before commencing the journey, close and lock the external flap.

7.2.1 External flap of the sewage container



- 1 Locking cylinder
- 2 Push-button lock

Fig. 17 External flap of the sewage container

Opening:

- Insert key into locking cylinder (Fig. 17,1) of the push-button lock and turn a quarter turn.
- Remove the key.
- Press both push-button locks (Fig. 17,2) simultaneously with your thumb and open the external flap.

7 Living

- Closing:
- Close the external flap and press it shut.
 - Insert key into locking cylinder (Fig. 17,1) and turn a quarter turn.
 - Remove the key.

7.3 Ventilation



- ▶ The oxygen in the vehicle interior is used up by breathing and the use of gas operated appliances. Therefore, the used air must be replaced permanently. For this purpose, forced ventilation options (e.g. skylights with forced ventilation, mushroom-shaped vents or floor vents) are installed in the vehicle. Never cover or block forced ventilations from the inside or outside with objects such as e.g. a winter mat. Keep forced ventilations clear of snow and leaves. There is a danger of suffocation due to increased CO₂ levels.



- ▷ Although sufficient ventilation is provided, in certain weather conditions, condensation can form on metal objects (e.g. screwed connections in the floor).
- ▷ Additional cold spots can occur at thermal "bridges" (e.g. mushroom-shaped vents, skylight edges, sockets, filler necks, flaps, etc.).



- ▷ If the vehicle is not to be used for a prolonged period:
 - Air the interior thoroughly every 3 weeks.
 - Remove the mattress from the vehicle and store in a dry place.
 - Set up the de-humidifier (granulate). Follow the manufacturer's instructions.

If the humidity in the interior is higher for an extended period, mildew and mould can form.

Condensation

Ensure that there is a continuous exchange of air by providing frequent and efficient ventilation. This is the only method for ensuring that condensation and resulting mould is not formed during cool weather. During the colder season, a pleasant living climate is created if heating output, air distribution and ventilation are synchronised. To avoid draft close the air outlet nozzles on the dashboard and set the air distribution of the base vehicle to air circulation.

If the vehicle is laid up for a longer period, occasionally ventilate it well, especially in summer as heat accumulation can occur. Do not only air the interior, but also the storage spaces which are accessible from the outside. Air the parking place as well if the vehicle is parked in a closed space (e.g. garage). The occurrence of condensation could lead to the formation of mould.

7.4 Windows



- ▷ The windows are fitted with a blind or Roman shade and with an insect screen or folding insect screen. The Roman shade and folding insect screen are made of thin woven fabric. In order not to damage the Roman shade or the insect screen, grasp the respective handle and carefully return it to the initial position.
- ▷ Do not keep blinds closed over a longer period of time as that can cause increased material wear.
- ▷ Grab the bottom rod of the blind by the centre when opening and closing. If the bottom rod is not grabbed by the centre, the blind may jam and be damaged.
- ▷ If the blind or the Roman shade is completely closed, exposure to direct sunlight can cause heat to accumulate between the blind/the Roman shade and the window. The window could be damaged. For that reason, close the blind/Roman shade only 2/3 of the way in direct sunlight. Also move the window into the "continuous ventilation" position.
- ▷ Before commencing the journey, close the windows.
- ▷ Depending on the weather, close the windows far enough to prevent moisture from entering.



- ▷ When leaving the vehicle, always close the windows.
- ▷ In extreme weather conditions or if the temperature fluctuates strongly, a light condensation film can form on the double-glazed acrylic glass. The glass is designed in such a way that condensation can evaporate when the external temperature increases. There is no danger of the double-glazed acrylic glass being damaged by condensation.
- ▷ The upholstery will fade over time, if it is exposed to sunlight. If the temperature within the vehicle rises rapidly as well, the colour will change at an accelerated rate. We therefore recommend covering the cushions in strong sunlight.

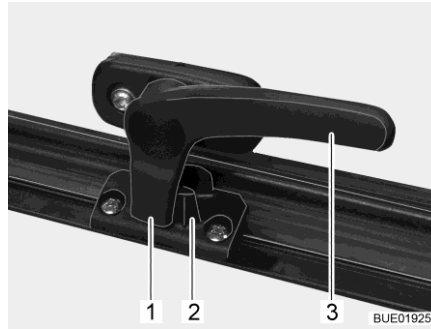
7.4.1 Hinged window



- ▷ When opening the hinged windows, ensure that there are no torsional forces. Open and close the hinged windows evenly.
- ▷ Before opening or closing the sliding door, close and lock the hinged window in the sliding door. The window could otherwise get damaged due to the vibration.



- ▷ The right-hand side of the vehicle is not fitted with a hinged window due to the sliding door.



- 1 Locking catch
- 2 Window lock
- 3 Catch lever

Fig. 18 Catch lever ("closed" position)

The hinged windows have two positions: "locked" and "continuous ventilation".

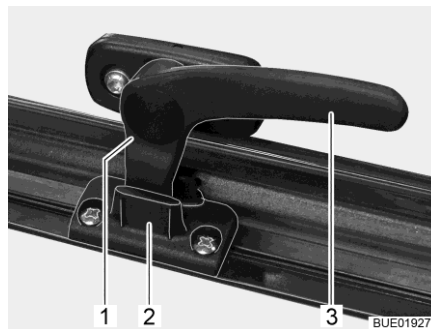
Opening:

- Turn the catch lever (Fig. 18,3) a quarter turn towards the centre of the window.
- Open hinged window half up to the required position.

The hinged window remains locked in the required position.

Closing:

- Open the hinged window as wide as necessary until the latch releases.
- Close the hinged window.
- Turn the catch lever (Fig. 18,3) a quarter turn towards the window frame. The locking catch (Fig. 18,1) is located on the inside of the window catch (Fig. 18,2).



- 1 Locking catch
- 2 Window lock
- 3 Catch lever

Fig. 19 Catch lever ("continuous ventilation" position)

Continuous ventilation

With the catch lever, the hinged window can be placed in two positions:

- "Continuous ventilation" (Fig. 19)
- "Closed" (Fig. 18).

To place the hinged window into the "continuous ventilation" position:

- Turn the catch lever (Fig. 19,3) a quarter turn towards the centre of the window.
- Slightly open the hinged window outwards.
- Turn the catch lever a quarter turn towards the window frame. The locking catch (Fig. 19,1) has to be moved into the recess of window catch (Fig. 19,2).

During the journey, the hinged window may not be in "continuous ventilation" position.

If it rains, the "continuous ventilation" hinged window position could lead to splashing water penetrating the living area. Therefore, close the hinged windows completely.

7.4.2 Roman shade and insect screen

The windows are fitted with a Roman shade and an insect screen. The Roman shade and insect screen can be adjusted separately or together. If adjusted together, the handles are held together magnetically.



- 1 Insect screen handle
- 2 Roman shade handle

Fig. 20 Roman shade and insect screen

Opening/closing the Roman shade:

- Hold the handle (Fig. 20,2) in the centre and pull it up/down carefully. The Roman shade will stay in any desired position.

Opening/closing the insect screen:

- Hold the handle (Fig. 20,1) in the centre and pull it up/down carefully. The insect screen will stay in any desired position.

7.4.3 Roman shade for the windscreen



- 1 Release handle

Fig. 21 Roman shade (windscreen)

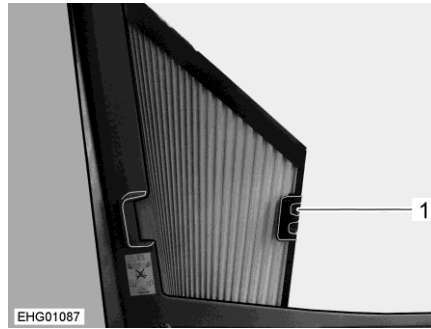
Closing the Roman shade:

- Press the release handles (Fig. 21,1) and hold them down.
- Use the handle to pull the Roman shade for the windscreen towards the centre of the window.
- Close the second Roman shade for the windscreen in the same way. A magnetic catch holds both parts of the Roman shade together in the centre.

Opening the Roman shade:

- Press the release handles (Fig. 21,1) and hold them down.
- Use the handle to pull the two halves of the Roman shade for the wind-screen outwards as far as they will go.
- Let go of the release handles (Fig. 21,1) and let them engage.

7.4.4 Roman shades for driver's window and front passenger's window



1 Release handle

Fig. 22 Roman shade (driver's / front passenger's window)

Closing the Roman shade:

- Press the release handles (Fig. 22,1) and hold them down.
- Using the handle, draw the Roman shades for the driver's window and front passenger's window to the other side of the window and secure them to the magnetic strips.

Opening the Roman shade:

- Press the release handles (Fig. 22,1) and hold them down.
- Use handle to push in the Roman shades for the driver's window and front passenger's window as far as they will go.
- Let go of the release handles (Fig. 22,1) and let them engage.

7.5 Skylights



- ▶ The apertures for forced ventilation must always be kept open. Never cover or block forced ventilations with objects such as e.g. a winter mat. Keep forced ventilations clear of snow and leaves.



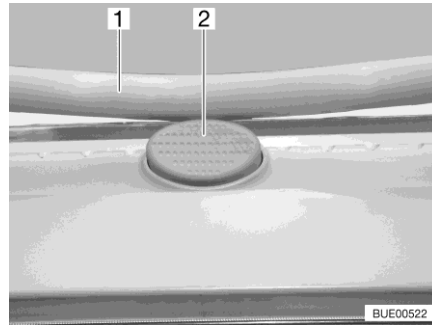
- ▷ The skylights are fitted with a blind or Roman shade and with an insect screen or folding insect screen. After the latch has been released, the blind and insect screen automatically spring back to the initial position by tensile force. In order not to damage the tension mechanics, hold onto the blind or insect screen and allow it to slowly return to the initial position. The Roman shade and folding insect screen are made of thin woven fabric. In order not to damage the Roman shade or the insect screen, grasp the respective handle and carefully return it to the initial position.
- ▷ Do not keep blinds closed over a longer period of time as that can cause increased material wear.
- ▷ If the blind or the Roman shade is completely closed, exposure to direct sunlight can cause heat to accumulate between the blind/the Roman shade and the skylight. The skylight could be damaged. For that reason, close the blind/Roman shade only 2/3 of the way in direct sunlight. Open the skylight slightly or move it to ventilation position.
- ▷ Depending on the weather, close the skylights far enough to prevent moisture from entering.
- ▷ Do not climb on the skylights.
- ▷ Before commencing the journey, close the skylights.
- ▷ Before commencing the journey, check that the skylights are closed and locked.
- ▷ Before commencing the journey, open the blinds or Roman shades.
- ▷ When leaving the vehicle, always close the skylights.
- ▷ The upholstery will fade over time, if it is exposed to sunlight. If the temperature within the vehicle rises rapidly as well, the colour will change at an accelerated rate.
We therefore recommend covering the cushions in strong sunlight.



7.5.1 Hinged skylight

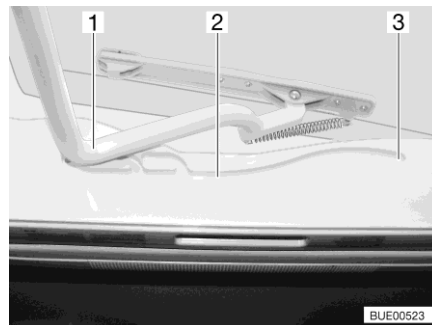


- ▷ If it rains and the hinged skylight is in ventilation position, that could lead to water penetrating the living area. Therefore close hinged skylight completely.



- 1 Bar
- 2 Safety knob

Fig. 23 Safety knob (hinged skylight)

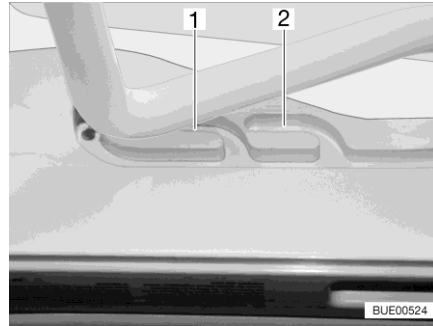


- 1 Bar
- 2 Guide
- 3 "Skylight open" position

Fig. 24 Guide (hinged skylight)

The hinged skylight is opened on one side only.

- Opening:
- Press the safety knob (Fig. 23,2) and pull the bar (Fig. 23,1) down with both hands.
 - Pull the bar (Fig. 24,1) in the guides (Fig. 24,2) to the rearmost position ("skylight open" position, Fig. 24,3).
- Closing:
- Use both hands to push the bar (Fig. 24,1) slightly upwards.
 - Push the bar back in the guides.
 - Push the bar upwards with both hands until it is above the safety knob (Fig. 23,2).



- 1 Bad weather position
- 2 Central position

Fig. 25 Guide (ventilation position)

Ventilation position

The hinged skylight can be put in two ventilation positions: Bad weather position (Fig. 25,1) and central position (Fig. 25,2).

- Press the safety knob (Fig. 23,2) and pull the bar (Fig. 23,1) down with both hands.
- Pull the bar in the guides (Fig. 24,2) to the desired position.
- Push the bar slightly upwards and into the selected guide (Fig. 25,1 or 2).

Roman shade

To close and open the Roman shade:

Closing:

- Pull out Roman shade at the handle and release in the required position. The Roman shade will stay in that position.

Opening:

- Slowly push the Roman shade at the handle to its initial position.

Insect screen

To close and open the insect screen:

Closing:

- Pull the insect screen by the handle to the opposite handle of the Roman shade.

Opening:

- Press the rear part of the handle of the insect screen. The latch is released.
- Use handle to return the insect screen slowly to its initial position.

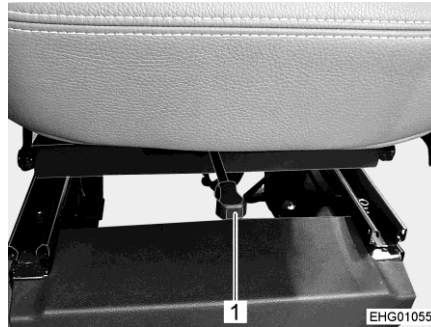
7 Living

7.6 Rotating seats



- ▶ Before commencing the journey, rotate all swivel seats in the direction of travel and lock in position. During the journey, the swivel seats must remain locked in place in the direction of travel.

The lever for rotating the seat is located in the centre at the bottom of the seat.



1 Lever (rotate the seat)

Fig. 26 Driver's seat and front passenger's seat

Rotating:

- Push both armrests at the driver's/front passenger's seat upward.
- Push the driver's seat/front passenger's seat backwards or into the central position.
- Pull the lever (Fig. 26,1) to the side to rotate the seat. The seat is released from the locking device.

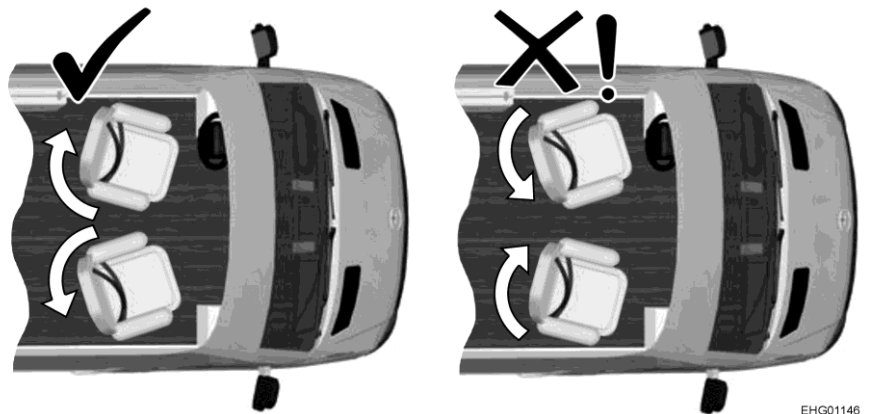


Fig. 27 Observe the direction of rotation of driver's/front passenger's seat

- Rotate seat inwards in the direction of the vehicle interior until reaching the desired position.

7 Living

7.7 Storage spaces



- ▶ Follow the safety instructions (sticker) that indicate when a space may not be used as a storage space (e.g. gas bottle compartment or spaces close to electrical wiring).
- ▶ When loading, observe the technically permissible maximum laden mass on the front and rear axle and the technically permissible maximum laden mass (see section 4.2.3).
- ▶ Do not transport fluids in the living area that emit gases hazardous to health.
- ▶ Close fluid containers tightly, secure them against sliding and against falling over.
- ▶ Always store heavy objects safely and slip-proof in the foot area. Lighter objects can be also stored safely in higher areas.



- ▷ Do not store wet clothes in cabinets or storage spaces.



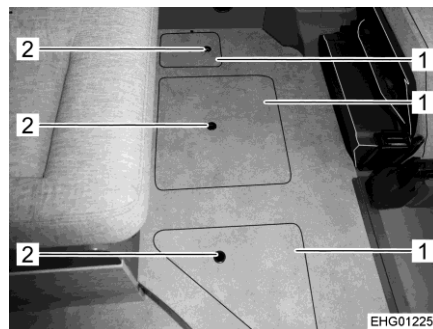
- ▷ While storing the load, take into account how accessible the different objects should be, and how often they are used.

In the vehicle, there are the following possibilities for storage:

- Double floor area
- Wall-mounted cupboards
- Open storage compartments in the upper area

7.7.1 Storage compartment in the double floor

The storage compartments are accessible through lids underneath the table.



- 1 Lid
- 2 Grip opening

Fig. 28 Storage compartments in the double floor

- Opening:
- Insert your finger into the grip opening (Fig. 28,2) and remove the lid (Fig. 28,1) upwards.



- ▶ Close the lid again as soon as possible. Otherwise, there will be danger of tripping due to the open floor storage compartment.

- Closing:
- Insert the lid (Fig. 28,1) in the frame on the floor.

7 Living

7.8 Tables

Depending on the variant, either a suspension table with a fold-out table top extension or a suspension table with a separable support leg is installed in the vehicle.

7.8.1 Suspension table with separable support leg



- ▷ The maximum permissible load on the swung-out table-top extension is 3 kg.

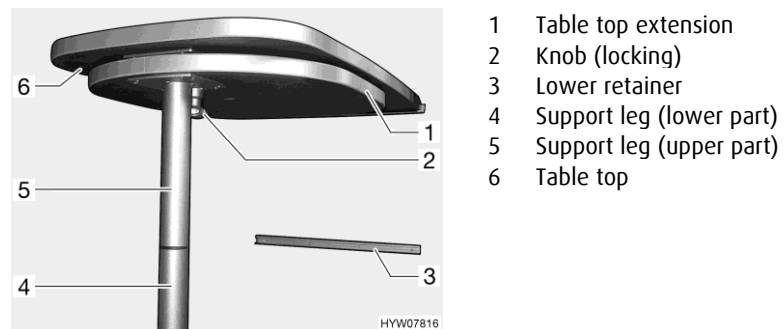


Fig. 29 Suspension table with separable support leg

The suspension table size can be enlarged by swinging out a table top extension.

- Extending: ■ Pull the knob (Fig. 29,2) of the lock down and swing out the table top extension (Fig. 29,1).

- Reducing size: ■ Swing the table top extension (Fig. 29,1) under the table top (Fig. 29,6) until the lock latches in place audibly.

The suspension table's separable support leg enables it to be used as a bed foundation.

- Converting into bed foundation: ■ Lift the front of the table top (Fig. 29,6) by approx. 45°.
■ Pull out the lower part of the support leg (Fig. 29,4) down and lay aside.
■ Remove the table top from the upper retainer.
■ Hook the table top at a 45° angle to the supports into the lower retainer (Fig. 29,3) and place on the floor with the upper part of the support leg (Fig. 29,5).

7

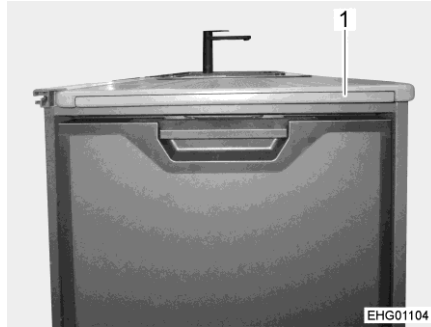
Living

7.8.2 Counter extension to pull out



- ▶ The counter extension has not been designed for high loads. Do not use the counter shelf as a shelf for heavy objects.

The counter can be extended at the short end above the refrigerator with a pull-out plate.

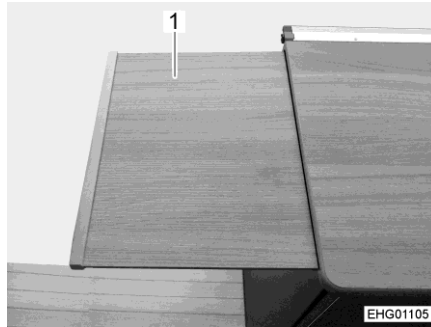


1 Counter extension (pushed in)

Fig. 30 Counter extension, pushed in

Pulling out the counter extension:

- Pull the counter extension (Fig. 30,1) out as far as it will go.



1 Counter extension (pulled out)

Fig. 31 Counter extension, pulled out

Pushing in the counter extension:

- Push the counter extension (Fig. 31,1) in as far as it will go.

7 Living

7.9 Lighting

Different types of lamps are installed in the vehicle:

- LED spots in the roof area
- LED strips as indirect lighting on the top and bottom of the roof storage cabinets (except in the bathroom)
- LED strip as awning tent light
- LED strip as indirect lighting of the entrance pedestal
- LED touch spots on the underside of the kitchen roof storage cabinet

All lighting is LED based.

The lighting can be individually controlled via the Dethleffs Connect app or the 7" panel, and different lighting scenarios can be saved.

It is also possible to control the lighting individually via light switches and, in the case of certain lamps, directly via touch operation.

7.9.1 Touch spots on the roof storage cabinets



Fig. 32 Touch spot

The touch spots are operated individually by hand.

- Switching on the touch spot: ■ Briefly tap the centre of the touch spot.
- Switching off the touch spot: ■ Briefly tap the centre of the touch spot.

7

Living

7.9.2 Lamp for rear loading area



Fig. 33 Lamp for rear loading area

The lamp is installed on the right-hand bedding box.

- Switching on the lamp:
- Tap the lamp on the left.
 - If the rear doors are open: tap the lamp in the centre.
- Switching off the lamp:
- Tap the lamp on the right.

7.9.3 Light switches

In addition to the 7" panel and the Dethleffs Connect app, the lighting can also be switched on and off and dimmed using light switches.

- Switching on the lamp:
- Press the light switch briefly.
- Dimming the lamp:
- Press and hold the light switch until the desired brightness has been reached.
- Switching off the lamp:
- Press the light switch briefly.

Light switch for basic lighting

Light switches for switching the basic lighting on and off are installed on the right in the frame of the living area door and on the kitchen base cabinet.

Multi-light switch

The multi-light switch is installed in the kitchen base cabinet.



- 1 Indirect lighting upwards, rear area
- 2 Indirect lighting downwards, rear area
- 3 Indirect lighting downwards, front area
- 4 Indirect lighting upwards, front area

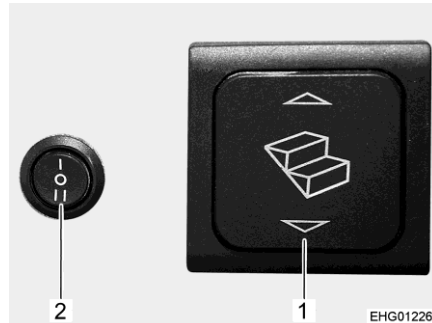
Fig. 34 Multi-light switch

Light switch for awning tent light

The light switch for the awning tent light is installed on the right in the frame of the living area door.

Light switch for entrance pedestal indirect lighting

The light switch for the indirect lighting of the entrance pedestal is installed next to the rocker switch for the entrance step in the area of the living area door.



- 1 Rocker switch for entrance step
- 2 Rocker switch for entrance pedestal indirect lighting

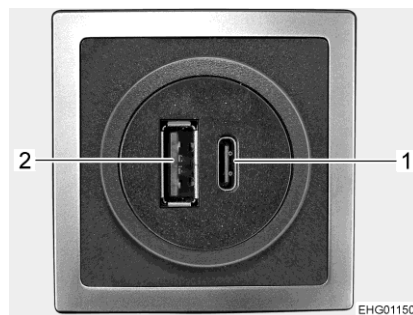
Fig. 35 Light switch and entrance step switch

Light switch for toilet compartment

The light switch is installed on the underside of the mirror cabinet.

7.10 Sockets

Various sockets for operation and charging of electrical appliances are installed in the vehicle. The sockets can be built in individually or as a combination.



- 1 USB C port
- 2 USB A port

Fig. 36 USB socket

USB socket

The USB sockets can be used to charge the batteries of devices with a charging current of up to 2.5 A.

230 V socket

The 230 V socket can be used to connect standard household appliances.

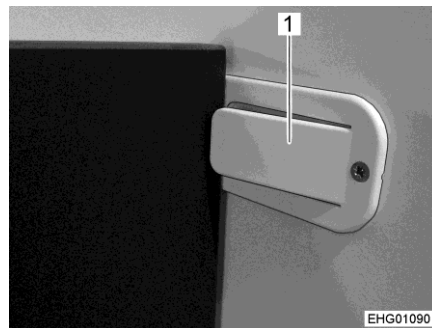
7.11 Beds

7.11.1 Rear transverse bed, hinged shelf



- ▶ Before using the rear transverse bed, ensure that the safety net is installed.
- ▶ Only open the windows and rear doors if the safety net is installed.
- ▶ Do not open the rear doors and windows if the safety net is not installed. In this case, only the intended ventilation position of the windows is permitted. Make sure that the handles are locked correctly in the ventilation position.

The rear transverse bed is equipped with removable mattresses. The centre shelf for the mattresses can be folded up to the side to create a passageway in the rear area. The shelves are fitted with disc springs.



1 Locking device

Fig. 37 Locking device, left shelf

1 Centre shelf
2 Left-hand shelf

Fig. 38 Centre shelf folded up

7

Living



Fig. 39 Support shelf



Fig. 40 Cushions plan for the mattresses

Construction of the bed:

- Release the locking device (Fig. 37,1) on the centre shelf (Fig. 38,1).
- Fold the centre shelf (Fig. 38,1) down 90° and place it on the opposite bottom cupboard.
- Distribute the mattresses on the prepared support shelf (Fig. 39) according to the cushions plan (Fig. 40).

Dismantling the bed:

- Stack the mattresses on the left shelf (Fig. 38,2).
- Fold the centre shelf (Fig. 38,1) up 90° and secure it with the locking device (Fig. 37,1).

Safety net



- ▶ The safety net serves as fall out protection. If rear doors and windows are opened when using the rear transverse bed, the safety net must be installed.
- ▶ Do not open the rear doors and windows if the safety net is not installed. In this case, only the intended ventilation position of the windows is permitted. Make sure that the handles are locked correctly in the ventilation position.

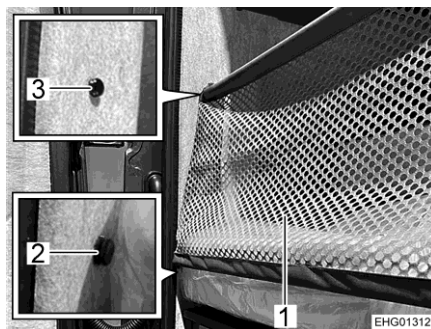


Fig. 41 Safety net

- 1 Safety net
- 2 Locking pin, bottom
- 3 Locking pin, top

Installing the safety net:

- Attach the safety net (Fig. 41,1) to the left-hand and right-hand bottom locking pins (Fig. 41,2), respectively.
- Attach the safety net to the left-hand and right-hand top locking pins (Fig. 41,3), respectively.

Removing the safety net:

- Detach the safety net (Fig. 41,1) from the left-hand and right-hand top locking pins (Fig. 41,3), respectively. To do this, pull on the side of the safety net release brackets.
- Detach the safety net from the left-hand and right-hand bottom locking pins (Fig. 41,2), respectively. To do this, pull the safety net downwards.
- Store the safety net.

7.11.2 Access assistance

The ascent to the rear bed is facilitated by a folding access assistance.

Position

The access assistance is located on the side in a niche on the rear wall of the bathroom (under the side of the bed with the fold-up shelf).

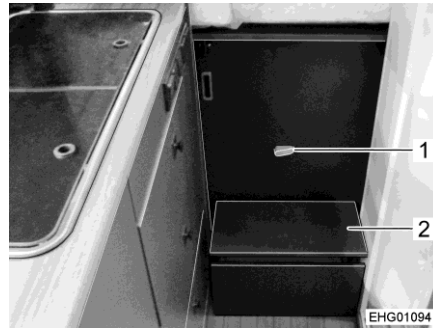


Fig. 42 Access assistance

Setting up the access assistance:

- Release the transport lock (leather strap) on the access assistance.
- Pull the access assistance out of the niche.
- Set the toggle (Fig. 42,1) to the horizontal position.
- Fold out the step (Fig. 42,2).

Dismantling the access assistance:

- Fold in the step (Fig. 42,2).
- Lock the step. To do this, turn toggle (Fig. 42,1) downwards.
- Slide the access assistance into the niche.
- Secure the access assistance with the leather strap.

7.11.3 Additional bed (conversion of the seating group)



- ▷ Depending on the equipment, the seating group can be converted into a further sleeping place.
- ▷ Before converting the table into the bed foundation: Lift seat cushions or fold them upwards such that the table top does not collide with the seat cushions when moving.

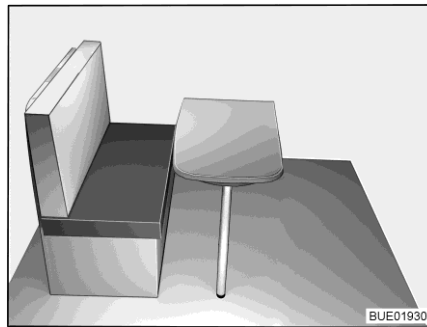


Fig. 43 Prior to conversion

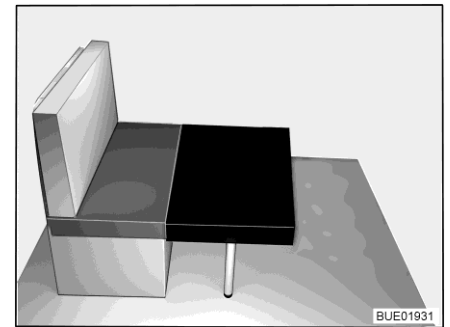


Fig. 44 Conversion (1)

- If present, fold down the folding worktop.
- Convert the suspension table into a bed foundation (see section 7.8.1).
- Place the small additional cushion onto the table in front of the seat cushion of the bench (refer to Fig. 44).

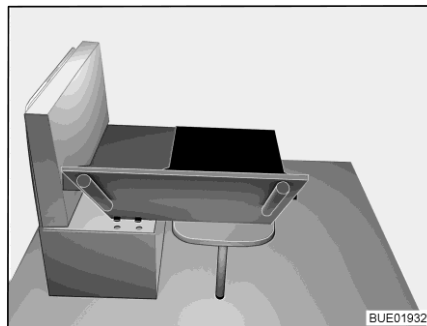


Fig. 45 Conversion (2)

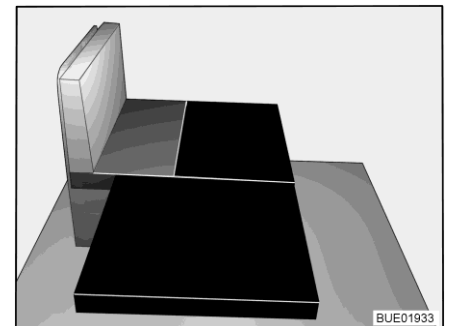


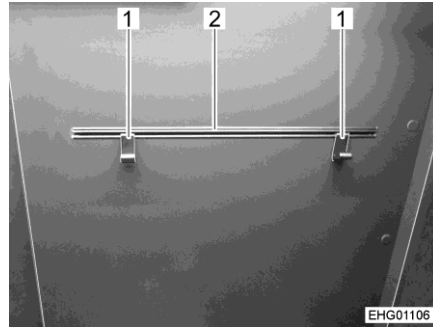
Fig. 46 After conversion

- Insert the journals on the bottom side of the cushion support into the recesses on the bench. In order to do this, lift the seat cushion slightly.
- Fold out the support legs of the cushion support. Put the cushion support down on the support legs.
- Place large additional cushion on the cushion support (refer to Fig. 46).

7.12 Multifunctional rail



- ▷ The multifunctional rail has not been designed for high loads. Do not hang any heavy objects on the multifunctional rail.
- ▷ Before commencing the journey, remove all suspension elements (including coat hooks) and store them safely.



- 1 Coat hook
- 2 Multifunctional rail

Fig. 47 Multifunctional rail

A multifunctional rail (Fig. 47,2) is fitted above the cooker in the kitchen area.

The multifunctional rail has an aluminium profile into which various hanging elements can be hooked.

Examples of hanging elements (selection):

- Reading lamp
- Herb pot
- Coat hangers (Fig. 47,1)
- Shelf



- ▷ The hanging elements are available as accessories in the After Sales service.

Chapter overview

This chapter contains instructions regarding the gas system of the vehicle. The operation of the gas operation appliances of the vehicle is described in chapter 10.

8.1 General instructions

- ▶ The operator of the gas system is responsible for the performance of recurring inspections and for complying with the maintenance intervals.
- ▶ Before commencing the journey, when leaving the vehicle or when the gas devices are not in use, close all gas isolator taps and the main regulator tap on the gas bottle.
- ▶ All gas-operated devices (heater, cooker, oven, grill, refrigerator - depending on the equipment) must be switched off for refuelling, on ferries or in the garage. Danger of explosion!
- ▶ Do not use gas-operated devices in closed spaces (e.g. garages). Danger of poisoning and suffocation!
- ▶ Only have the gas system maintained, repaired or altered by an authorised specialist workshop.
- ▶ Have the gas system checked by an authorised specialist workshop according to the national regulations before commissioning. This also applies for not registered vehicles. For modifications to the gas system have the gas system immediately checked by an authorised specialist workshop.
- ▶ The gas pressure regulator, the gas tubes, and the exhaust gas pipes must also be inspected. The gas pressure regulator and the gas tubes must be replaced observing the nationally defined deadlines (the latest after 10 years). The vehicle owner is responsible for seeing that this is carried out.
- ▶ In case of a defect of the gas system (gas odour, high gas consumption) there is danger of explosion! Close regulator tap on the gas bottle immediately. Open doors and windows and ventilate well.
- ▶ If the gas system is defective: Do not smoke; do not ignite any open flames, and do not operate electric switches (light switches etc.). Check the tightness of gas-conducting parts and lines with leakage search spray. Do not check with an open flame.
- ▶ Only the stipulated devices may be connected to internal connections. Do not operate any device outside the vehicle if it is connected to an internal connector.
- ▶ Before using the cooker make sure that there is sufficient ventilation. Open a window or the skylight.
- ▶ Cooking is prohibited during the journey.
- ▶ Do not use gas-operated cooking and baking facilities for heating purposes.
- ▶ If there are several gas devices, each gas device must have its own gas isolator tap. If individual gas devices are not in use, close the respective gas isolator tap.



- ▶ Ignition safety valves must close within 1 minute after the gas flame has extinguished. A clicking sound is audible. Check function from time to time.
- ▶ The built-in gas devices are exclusively meant for use with propane or butane gas or a mixture of both. The gas pressure regulator as well as all built-in gas devices are designed for a gas pressure of 30 mbar.
- ▶ Propane gas is capable of gasification up to -42 °C, whereas butane gas gasifies at 0 °C. Below these temperatures no gas pressure is available. Butane gas is unsuitable for use in winter.
- ▶ Due to its function and construction, the gas bottle compartment is a space which is open to the exterior. Never cover or block up the standard forced ventilations. Otherwise gas that is emitted can not be diverted to the outside.
- ▶ The gas bottle compartment must not be used as storage space.
- ▶ Secure the gas bottle compartment against unauthorised access. To do this, lock the compartment.
- ▶ The regulator tap on the gas bottle must be accessible.
- ▶ Only connect gas-operated devices which have been designed for a gas pressure of 30 mbar.
- ▶ The exhaust gas pipe must be fitted tightly to the heating system and to the vent and must be sealed. The exhaust gas pipe must not show any evidence of damage.
- ▶ Exhaust fumes must be able to escape into the atmosphere unhindered and fresh air must be able to enter unhindered. For this reason, keep the exhaust pipe and intake openings clean and unobstructed (e.g. free from snow and ice). For this reason, no snow walls or aprons may lie against the vehicle.

8.2 Gas bottles



- ▶ Handle full or emptied gas bottles outside the vehicle only with closed regulator tap and attached protective cap.
- ▶ Gas bottles are only to be transported within the designated gas bottle compartment.
- ▶ Place the gas bottles in vertical position in the gas bottle compartment.
- ▶ Fasten the gas bottles so that they are unable to turn or tilt.
- ▶ Connect the gas tube to the gas bottle without tension.
- ▶ If the gas bottles are not connected to the gas tube, always place the protective cap on top.
- ▶ Close the regulator tap on the gas bottle before the gas pressure regulator or gas tube are removed from the gas bottle.
- ▶ Depending on the connection, unscrew the gas tube from the gas bottle and screw it on the gas bottle again by hand or using a suitable special spanner. The screw connection on the gas bottle generally has a left-hand thread. Do not tighten too firmly.

8 Gas system



- ▶ Only use special gas pressure regulators with a safety valve designed for vehicle use. Other gas pressure regulators are not permitted and cannot meet the demanding requirements.
- ▶ Use only 11 kg or 5 kg gas bottles. (The size of the gas bottles may vary depending on the country.)
- ▶ Use the shortest possible tube lengths (150 cm max.) for external gas bottles.
- ▶ Never block the floor ventilation openings below the gas bottles.



- ▷ The screw connections on the gas bottles generally have a left-hand thread.
- ▷ For gas-operated units the gas pressure must be reduced to 30 mbar.
- ▷ Connect gas pressure regulator complete with safety valve directly to bottle valve.

The gas pressure regulator reduces the gas pressure in the gas bottle down to the operating pressure of the gas devices.

- ▷ For filling and connecting the gas bottles in Europe the accessories shops have corresponding Euro filling sets and Euro bottle sets.
- ▷ Information available at the dealers or service centre.

8.3 Gas isolator taps

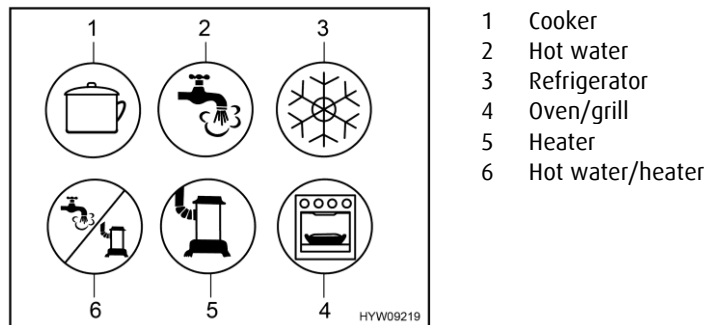
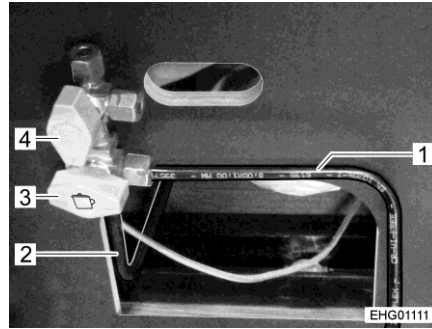


Fig. 48 Possible symbols for the gas isolator taps

A gas isolator tap (Fig. 48) for every gas device is built into the vehicle. The gas isolator taps are located behind a flap underneath the bench.

8

Gas system



- 1 Pipe to the gas device
- 2 Gas pipe
- 3 Gas isolator tap (gas cooker), open
- 4 Gas isolator tap (spare), closed

Fig. 49 Gas isolator taps position (example)

Opening the gas isolator tap:

- Position the gas isolator tap of the corresponding gas device parallel (Fig. 49,3) to the pipe (Fig. 49,1) leading to the gas device.

Closing the gas isolator tap:

- Position the gas isolator tap of the corresponding gas device transverse (Fig. 49,4) to the pipe leading to the gas device.

8.4 Gas pressure regulating system MonoControl



- ▷ The regulating system and the hose lines shall be changed at the latest 10 years after manufacturing date. The operator is responsible for this.
- ▷ Also read the manufacturer's instruction manual.

The MonoControl regulating system is suitable for all commercial gas bottles with liquefied gas (propane/butane) and a pressure of 0.7 bar to 16 bar.

The MonoControl regulating system ensures a constant gas pressure for the gas-operated devices.

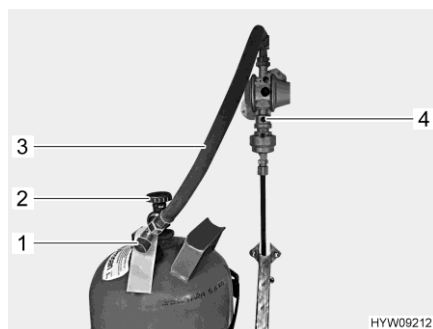
In vehicles with a MonoControl regulating system, the operation of gas-operated devices during the journey is permitted throughout Europe.

In the event of an accident, the crash sensor in the MonoControl regulating system will interrupt the gas flow.

The gas bottles are connected via high pressure hoses. A hose break guard prevents gas leakage in the event of a damaged hose.

The operation of gas-operated devices during the journey is permitted in all of Europe if the vehicle is equipped with a gas pressure regulating system with crash sensor and high-pressure hoses with hose break guard.

8 Gas system



- 1 Button for hose break guard
- 2 Regulator tap
- 3 Hose
- 4 Reset button

Fig. 50 Gas bottle with MonoControl

Construction of the unit

The MonoControl regulating system consists of a pressure regulator and a crash sensor.

Crash sensor

The crash sensor blocks the gas supply in the event of a significant impact (e.g. accident). The crash sensor is put into operation with the green reset button (Fig. 50,4).

Hose break guard

The hose break guard blocks the gas flow if the connected hose (Fig. 50,3) breaks. The hose break guard must be activated by pressing the green button (Fig. 50,1).

Changing gas bottles



- ▶ When changing the gas bottle, do not smoke or create any open fire.
- ▶ After changing the gas bottle, check whether gas is leaking at the connection points. To do this, spray the connection point with leakage search spray. These agents are available at the accessories shop.

Changing the gas bottle:

- Close the regulator tap (Fig. 50,2) on the empty gas bottle. Pay attention to the direction of the arrow.
- Unscrew the gas tube from the empty gas bottle (normally a left-hand thread).
- Release the fixing belts and remove the empty gas bottle.
- Place a filled gas bottle in the gas bottle compartment and retain with the fixing belts.
- Connect gas tube to the filled gas bottle (normally a left-hand thread).
- Open the regulator tap on the gas bottle.
- Press the green button of the hose break guard (Fig. 50,1).

8.5 Gas pressure regulating system DuoControl CS (optional equipment)



- ▷ The regulating system and the hose lines shall be changed at the latest 10 years after manufacturing date. The operator is responsible for this.
- ▷ Also read the manufacturer's instruction manual.

DuoControl CS is a safety gas pressure regulating system with automatic switching for a two-bottle gas system and with crash sensor. The DuoControl regulating system automatically switches the gas supply from the primary bottle to the reserve bottle as soon as the primary bottle is either empty or no longer ready for operation. The gas appliances may still continue operation. The DuoControl regulating system is suitable for all commercial gas bottles with liquefied gas (propane/butane) and a pressure of 0.7 bar to 16 bar.

The DuoControl regulating system ensures a constant gas pressure for the gas-operated devices, no matter which gas bottle is supplying the gas.

In the event of an accident, the crash sensor in the DuoControl regulating system will interrupt the gas flow.

The gas bottles are connected via high pressure hoses. A hose break guard prevents gas leakage in the event of a damaged hose.

The operation of gas-operated devices during the journey is permitted in all of Europe if the vehicle is equipped with a gas pressure regulating system with crash sensor and high-pressure hoses with hose break guard.

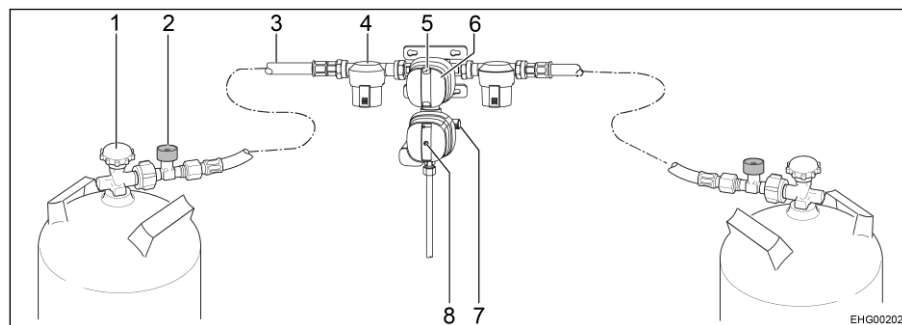


Fig. 51 Safety gas pressure regulating system DuoControl CS

- 1 Regulator tap
- 2 Hose break guard
- 3 High-pressure hose
- 4 Gas filter
- 5 Status indicator - primary bottle / reserve bottle (green/red)
- 6 Knob for primary bottle / reserve bottle change-over
- 7 Screw cap (test connection)
- 8 Reset button of the crash sensor (yellow)

Construction of the unit

The DuoControl regulating system consists of a reversing valve and a crash sensor. The DuoControl regulating system is installed between the high-pressure hoses (Fig. 51,3) with hose break guard (Fig. 51,2). The knob (Fig. 51,6) on the reversing valve is used to select which of the gas bottles is to be used as primary bottle and which is to be used as reserve bottle.

8 Gas system

The status of the gas supply is indicated in the inspection window (Fig. 51,5):

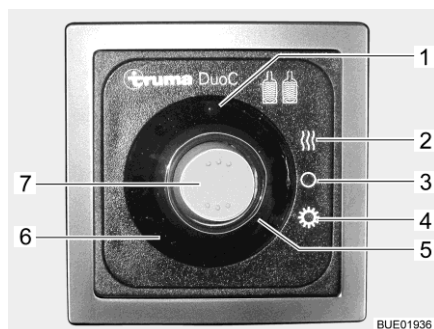
- Green: Primary bottle
- Red: Reserve bottle

The operation with only one gas bottle is allowed but in this case the open connection must be closed with a blind cover.

Crash sensor The crash sensor blocks the gas supply in the event of a significant impact (e.g. accident). The situation of the yellow reset button (Fig. 51,8) indicates the operating status of the crash sensor:

- If the yellow reset button (Fig. 51,8) is in the pressed-in position, the crash sensor is ready to operate.
- If the yellow reset button (Fig. 51,8) is protruding, the crash sensor is not ready to operate. Putting into operation, see below.

Hose break guard The hose break guard (Fig. 51,2) blocks the gas flow if the connected hose breaks. The hose break guard must be activated by pressing the green button.



- 1 Yellow indicator lamp Defroster (if present)
- 2 Winter operation position
- 3 OFF position
- 4 Summer operation position
- 5 Red indicator lamp Primary bottle empty
- 6 Green indicator lamp Supply from primary bottle
- 7 Rocker switch

Fig. 52 Control unit (DuoControl)

Control unit The control unit shows the status of the primary bottle. When the green indicator lamp (Fig. 52,6) is lit, the primary bottle is full. When the red indicator lamp (Fig. 52,5) is lit, the primary bottle is empty. In this case, the reserve bottle is used for the gas supply.

If the DuoControl regulating unit is equipped with a heater (defroster) and this heater is active, the yellow defroster indicator light (Fig. 52,1) is lit.

In addition, the control unit (Fig. 52) is also used to set summer operation or winter operation.

- Setting summer operation: ■ Press lower part of the rocker switch (Fig. 52,7) (summer operation position (Fig. 52,4)).
- Setting winter operation: ■ Press upper part of the rocker switch (Fig. 52,7) (winter operation position (Fig. 52,2)).
- Putting into operation the regulating system: ■ Connect the gas bottles.
 ■ Use the knob (Fig. 51,6) on the reversing valve to select the gas bottle which is to be the primary source of gas (primary bottle). Always turn the knob as far as it will go.
 ■ Open the regulator taps (Fig. 51,1) on the gas bottles.

Switching off the regulating system:

- Press and hold the green button of the hose break guard (Fig. 51,2) for about 5 seconds. The green marking is shown in the inspection window (Fig. 51,5).
- If the crash sensor has triggered (the yellow reset button (Fig. 51,8) is protruding):
Press the yellow reset button (Fig. 51,8) in forcefully, turn it slightly in a clockwise direction and hold it for about 5 seconds. Make sure that the reset button remains in the pressed-in position ("ready for operation").
If it is not possible, reset the system as described: Use the Torx insert T20 on the included screwing aid to strengthen the rotary movement.
- Set the rocker switch (Fig. 52,7) to the position OFF (Fig. 52,3). The indicator lamps go out.
- Close the regulator taps (Fig. 51,1) on the gas bottle.

Changing gas bottles



- ▶ When changing gas bottles, do not smoke or create any open fire.
- ▶ After changing the gas bottles, check whether gas is leaking at the connection points. To do this, spray the connection point with leakage search spray. These agents are available at the accessories shop.



- ▷ Use the included screwing aid to screw the high-pressure hoses on and off. The screwing aid makes the required tightening torque possible and prevents any damage caused by using the wrong tool.
- ▷ If there is a gas filter present, also change the filter pad with every change.

If the green indicator lamp (Fig. 52,6) goes out during operation and the red indicator lamp (Fig. 52,5) lights up, the primary bottle is empty and must be changed. The red marking is shown in the inspection window (Fig. 51,5) of the associated gas bottle. The reserve bottle continues supplying the gas appliances with gas.

You may also change an empty gas bottle while gas-operated devices are in operation.

Changing the gas bottle:

- Turn the knob (Fig. 51,6) as far as it will go in the direction of the gas bottle currently used. In this way, this gas bottle is the primary bottle now, and the empty gas bottle becomes the reserve bottle. The marking in the inspection window (Fig. 51,5) changes from red to green.
- Close the regulator tap (Fig. 51,1) on the empty gas bottle. Pay attention to the direction of the arrow.
- Unscrew the high-pressure hose from the empty gas bottle (normally a left-hand thread).
- Release the fixing belts and remove the empty gas bottle.
- Place a filled gas bottle in the gas bottle compartment and retain with the fixing belts.
- Connect the high-pressure hose to the filled gas bottle (normally a left-hand thread).
- Open the regulator tap on the gas bottle.
- Press the green button of the hose break guard (Fig. 51,2).

Chapter overview

This chapter contains instructions regarding the electrical system of the vehicle. The operation of the electrical appliances of the housing body is described in chapter 10.

9.1 General safety instructions



- ▶ Only allow qualified personnel to work on the electrical system.
- ▶ All electrical devices (e.g. mobile phones, radios, televisions or DVD players) that are retrofitted into the vehicle and operated during the journey must have a CE marking and be verifiably tested according to ECE-R10. Please contact an authorised specialist workshop.

This is the only way to ensure the functional safety of the vehicle during the journey. Otherwise the airbag may be triggered or interference to the on-board electronics may result.



- ▷ After the vehicle is started, delays to the output or forwarding of electrical impulses are possible.

The control unit of the basic vehicle does not release the D+ signal until the engine has reached full performance. In the event of a cold start in winter, this can take up to 15 seconds.

For this reason, output of warning signals (such as "entrance step extended") may sometimes be delayed.

The automatic retraction of a SAT antenna can also be delayed.

- ▷ During a storm, to protect the electrical devices disconnect the 230 V connection and retract the antennae.

9.2 Terms

Off-load voltage

The off-load voltage is the voltage of the battery in idle condition, i. e. no current is consumed and the battery is not being charged.



- ▷ The battery must remain idle for a while before measuring. After charging the last time, or after the last current has been drained by appliances, wait approximately 2 hours before measuring the off-load voltage.

Closed circuit current

Some electrical appliances, such as the clock and the indicator lamps, require continuous electric current, for this reason they are referred to as inactive appliances. This closed circuit current flows even if the device has been switched off.

Total discharge

Total discharge of the battery is imminent, if a battery is completely discharged by an active appliance and by closed circuit current and the off-load voltage falls below 12 V.



- ▷ Total discharge damages the battery.

9

Electrical system

Capacity

Capacity refers to the amount of electricity which can be stored in a battery. The capacity of a battery is given in ampere hours (Ah). The so-called K20 value is normally used.

The K20 value indicates how much current a battery is able to dispense over a time period of 20 hours without causing damage, or how much current is required to charge a flat battery within 20 hours.

For example, if a battery can dispense 4 amps for 20 hours, then it has a capacity of $4 \text{ A} \times 20 \text{ h} = 80 \text{ Ah}$.

If more current flows, the discharging time of the battery will decrease proportionately.

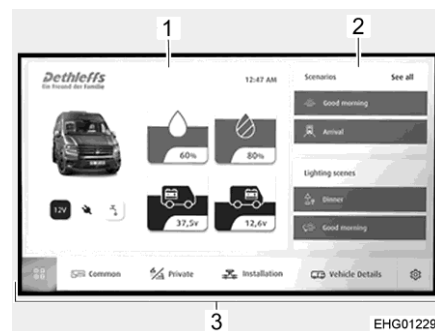
External influences, such as temperature and age may alter the storage capacity of the battery. Capacity details refer to new batteries operating at room temperature.



▷ Depending on battery technology, capacity details have a conversion factor of 1.3 to 1.7, which lowers the real capacity by this value.

9.3 7" panel

The 7" panel is a component of the BUS system with which the vehicle is equipped. (Other components of the BUS system are the transformer/rectifier EBL 402, the system control SCU and the Dethleffs Connect app). Various functions can be displayed, monitored and controlled on the 7" panel. The 7" panel can be connected to the Dethleffs Connect app.



- 1 Display field for battery charging condition and water tanks fill level
- 2 Display field for Dethleffs Connect App
- 3 Main menu

Fig. 53 7" panel, start screen (example)

Position

The 7" panel is installed above the front passenger's seat.

Start screen

The start screen (Fig. 53) shows the following information:

- Charging condition of the batteries
- Filling level of fresh water and waste water tanks
- Information of the Dethleffs Connect App
- Main menu

Further sub menus can be called up via the buttons in the main menu line.

9

Electrical system

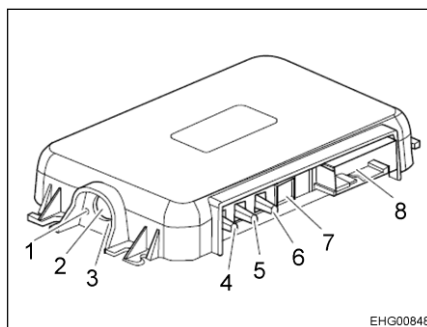
9.4 System Control Unit (SCU)



- ▷ FAQs on the operation of the SCU and the Dethleffs Connect app can be found under the following link:
<https://www.dethleffs.com>
The FAQs are constantly being expanded.

- ▷ When the SCU fails / is faulty, contact an authorised specialist workshop.

The SCU takes over central control and monitoring functions in the vehicle. The control and monitoring functions are operated on the 7" panel or using the Dethleffs Connect app. Operation on the SCU is limited to starting the connection process (pairing).



- 1 LED indicator (green)
- 2 Pairing button to connect with Bluetooth-enabled device
- 3 LED indicator (blue)
- 4 Bluetooth antenna connection (curry)
- 5 GPS antenna connection (blue)
- 6 LTE antenna connection (bordeaux)
- 7 Diagnostics connection
- 8 Vehicle communication connection

Fig. 54 System Control Unit

Active operation

The 7" panel displays the following data:

- 12 V On/Off
- 230 V indicator
- Water pump on/off indicator (only when 12 V on)
- Starter battery indicator
- Living area battery indicator with lithium bat. (optional) in %
- Settings
- Menu bar



- ▷ After a longer absence, it can take up to 2 minutes until the 7" panel displays current data (see energy-saving mode).

Emergency operation

When it is no longer possible to control the vehicle functions using the 7" panel or the Dethleffs Connect app, emergency mode can be activated manually. The following functions are active in emergency mode:

- 12 V power supply
- Lamps via light switches
- Water pump



- ▷ During emergency operation of the vehicle, the display of the SCU is without function. Battery and water levels cannot be retrieved.

Requirements for emergency operation:

- No external power supply connected
- Engine switched off
- All water taps closed



- ▷ Before activating the emergency operation, make sure that all water taps in the vehicle are closed.

If not all water taps are closed, the pump can run dry and water can escape uncontrollably. Property damage may occur.

Activating the emergency operation:

- Gain access to the transformer/rectifier.
- Switch the battery cut-off switch ("Batterie Ein/Aus" ("Battery On/Off")) off and on again four times in succession.
- Leave the battery cut-off switch in the "Ein" ("On") position.

Energy-saving mode

The SCU will automatically enter energy-saving mode after 48 hours if no user is connected to the SCU and the vehicle is not connected to an external power supply.

The energy-saving mode is ended by the following actions, for example, and the SCU then returns to "Active operation":

- Connecting the vehicle to an external power supply
- Unlocking/locking the vehicle (depending on the vehicle type)
- Activating the ignition of the vehicle
- Touching the display
- Starting the Dethleffs Connect app on a mobile device connected to the SCU



- ▷ After a longer absence, it can take up to 2 minutes until the display displays current data.

Position

The SCU is installed in the left-hand bedding box.

9.5 Dethleffs Connect App

Mobile devices can be connected to the vehicle via the Dethleffs Connect app.

Requirements for connecting the mobile device to the SCU:

- Completed installation of the Dethleffs Connect app on a mobile device
- Vehicle QR code
- Compatible vehicle equipped with a SCU

For each vehicle equipped with a SCU, a main user can connect to the SCU via their mobile device (using the Dethleffs Connect app and the vehicle QR code).

This main user can create guest accesses for other mobile devices via the Dethleffs Connect app and also manage them there.



- ▷ The Dethleffs Connect app is available free of charge in the Apple App Store (iOS) and the Google Play Store (Android).
- ▷ The vehicle QR code can be found in the vehicle's document pocket. Keep the vehicle QR code in a safe place. If the vehicle QR code has been lost, contact the manufacturer's customer service or an authorised dealer.

To connect the mobile device to the vehicle, follow the instructions in the Dethleffs Connect app.

9.6 12 V power supply



- ▷ Only connect devices with a maximum of 10 A to the sockets of the 12 V power supply.
- ▷ Connect only devices with a maximum of 2.5 A to the USB sockets.

9.6.1 Starter battery

The starter battery serves for starting the engine and supplies the electrical appliances of the base vehicle as well as optional devices such as the radio, navigation system or central locking system with voltage.

Position In the driver's cabin under the floor mat in front of the driver's seat.

Discharging This section contains information regarding the discharge of the starter battery.



- ▷ Total discharge damages the battery.
- ▷ Recharge battery in good time.

The starter battery will be totally discharged via a closed circuit current (inactive appliances). Inactive appliances are optional devices such as a radio, alarm system, navigation system or a central locking system. Inactive appliances discharge the starter battery when the vehicle engine is switched off.

Low temperatures outside reduce the capacity available.

Charging This section contains information regarding the charging of the starter battery.



- ▶ The acid in the battery is poisonous and corrosive. Any contact with the skin or the eyes is to be avoided. In the event of contact, rinse immediately with plenty of water (skin, eyes, clothes, objects) and seek medical attention if necessary.



- ▷ Never disconnect the batteries when the engine is running or the 230 V supply is connected.
- ▷ Before a temporary lay-up, charge the battery fully.
- ▷ Do not connect the battery cables to the wrong poles (red cable -> positive pole, black cable -> negative pole).
- ▷ When the starter battery or the living area battery is disconnected, do not operate the ignition or connect the 230 V supply. There is a danger of short circuit from exposed cable ends.
- ▷ Observe the instruction manuals for the base vehicle and the charger.

When the vehicle is connected to the 230 V supply, a separately installed charger charges the starter battery with up to 18 A. The charger is installed under the passenger seat console. The transformer/rectifier also delivers a small charging current, which can be made up of its charging output stage or the solar regulator (optional equipment).

Storage This section contains instructions on the storage of the starter battery.

- Store the disconnected battery in a cool and dry place.
- Connect the disconnected battery to a charger for 24 to 48 hours every 4 to 6 weeks.



- ▷ If the battery remains connected during a lay-up, it may become necessary to recharge already after 14 day or in even shorter intervals.
- ▷ If there is an "intelligent" charger with float charge functionality, have the charger connected to the battery and switched on over the entire lay-up time.

9.6.2 Living area battery

An AGM battery with 96 Ah is installed in the vehicle. An HY-Tec lithium battery (LiFePo4) with either 50 Ah or 150 Ah can be connected as an optional extra.



- ▷ Do not make any changes to the installation of the lithium battery carried out at the factory.
- ▷ Do not open the lithium battery.
- ▷ Observe the recommended operating temperature between 15 and 25 °C. Take any further details on the operating temperature from the manufacturer's instruction manual.
- ▷ Fully charge the battery system every 6 months.
- ▷ Switch the transformer/rectifier of for installation and maintenance.
- ▷ If the battery capacity indicator does not reach 100 % any more after a longer charging time, contact the customer service.
- ▷ Use only the built-in charging system to charge the living area battery. In order to do this, connect the 230 V connection (CEE connector) of the vehicle to an external 230 V power supply.
- ▷ Prior to commencing a journey ensure the living area battery is completely charged. Therefore, fully charge the living area battery before starting the trip.
- ▷ During the trip, use every opportunity to charge the living area battery.
- ▷ After the trip, charge the living area battery completely.
- ▷ Charge the battery fully before a temporary lay-up.
- ▷ Care and maintenance of the living area battery should only be carried out by an authorised specialist workshop.

When the vehicle is not connected to the 230 V power supply or the 230 V power supply is switched off, the living area battery supplies the living area with 12 V DC. The living area battery has a limited power supply only. Therefore, do not operate electrical appliances such as lamps for a prolonged period without 230 V supply.

Position The living area battery is installed in the left-hand bedding box and is accessible via a sliding door.

Discharging The living area battery is discharged by the closed circuit current which some electrical appliances continuously require.



- ▷ Total discharge damages the battery. The consequence may be deformation, heat development, and damage due to scorching.
- ▷ Recharge battery in good time.

Note that even a fully charged living area battery can be fully discharged by closed circuit currents (inactive appliances).

Low temperatures outside reduce the capacity available.

The self-discharge rate of the battery is also dependant on temperature. At 20 to 25 °C the self-discharge rate is approx. 3 % of the capacity per month. The self-discharge rate will increase with rising temperatures: At 35 °C the self-discharge rate is approx. 20 % of the capacity per month.

An older battery no longer has the complete capacity available.

The higher the number of active electrical appliances, the faster the energy of the living area battery is consumed.

Charging Only use the transformer/rectifier to charge the living area battery. Therefore, connect the vehicle to a 230 V power supply system as often as possible. As a principle, only use the 230 V connection on the vehicle (CEE socket outlet) for connecting.



- ▷ Simultaneous use of local power and charging by the engine running is not permitted as this may result in increased charging currents. The battery system switches off for self-protection. Allow only authorised specialist workshops to switch on a battery that has been switched off.
- ▷ Charge the battery for at least 48 hours after a total discharge.
- ▷ At temperatures below 0 °C, a living area battery consumes less power. At approx. -20 °C, there will be no more power. The living area battery can no longer be charged.

Display The voltage and charge data of the battery system are displayed on the 7" panel.

9.6.3 Energy balance of the living area battery

The living area battery has a limited power supply only. For this reason, do not operate electrical appliances without using the 230 V connection.

9.7 Transformer/rectifier (EBL 402)

- ▶ The unit contains parts that carry 230 V mains voltage. Potentially fatal electric shock or fire hazard!
Do not carry out any maintenance or repair work on the unit. If the cable or housing is damaged, do not put the unit into operation and disconnect it from the mains supply. Do not allow liquid to enter the unit.
- ▶ Replace defective fuses only when the unit is de-energised.
- ▶ Only replace defective fuses when the cause of the defect is known and has been remedied.
- ▶ Never bypass or repair fuses.
- ▶ The transformer/rectifier is a universal device designed for a specific maximum current output depending on the current path. The actual fuse value is determined by the appliances and the wiring harness design. Adopt these values from the following table "Fuses on the transformer/rectifier" and do not replace them with other values.
- ▶ Device components can get hot during operation. Do not touch.
- ▶ Do not cover the ventilation slots. Danger of overheating!
- ▶ Do not store any heat-sensitive objects close to the unit (e.g. temperature-sensitive clothes if the unit is installed in the wardrobe).
- ▶ Observe the safety instructions and information in the separate the device manufacturer's instruction manual.



- ▷ An extended period of total discharge may cause irreparable damage to the living area battery. Therefore, fully charge the living area battery before and after a lay-up.
- ▷ The transformer/rectifier, 12 V appliances or connected devices can be damaged if the limit values of the 230 V mains voltage are exceeded. Therefore, remember that it is essential for a generator to remain within the mains power ratings.
- ▷ Do not connect the vehicle to a generator until the generator is in stable operation.
- ▷ Do not connect the transformer/rectifier to the line voltage on board of car ferries. A faultless mains voltage is not always guaranteed on car ferries.

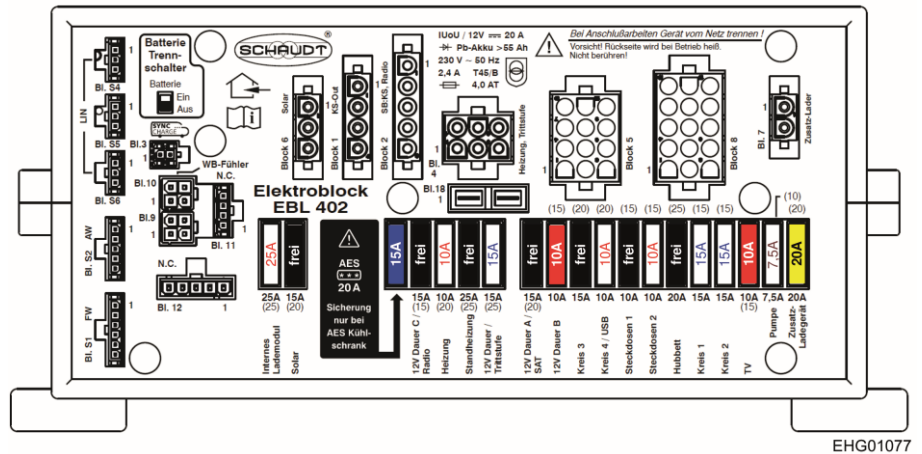


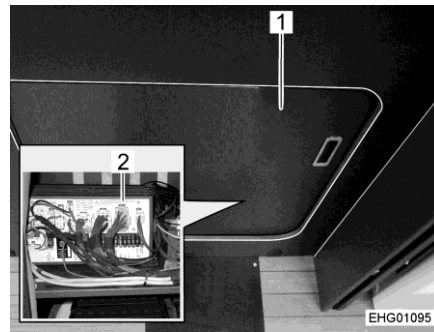
Fig. 55 Transformer/rectifier (EBL 402)

Fuses on the transformer/rectifier

Number	Function	Value	Position
1	EBL	50 A/red	EBL, rear side
1	Internal charger module EBL	25 A/transparent	EBL, front side
1	Compressor refrigerator	15 A/blue	EBL, front side
1	Heater	10 A/red	EBL, front side
1	12 V permanent/step	15 A/blue	EBL, front side
1	Icebox (optional equipment)	10 A/red	EBL, front side
1	Circuit 4 / USB	10 A/red	EBL, front side
1	Socket 2	10 A/red	EBL, front side
1	Circuit 1	15 A/blue	EBL, front side
1	Circuit 2	15 A/blue	EBL, front side
1	TV connection (optional equipment)	10 A/red	EBL, front side
1	Water pump	7.5 A/brown	EBL, front side
1	Auxiliary charging unit	20 A/yellow	EBL, front side

9

Electrical system



- 1 Sliding door
- 2 Transformer/rectifier

Fig. 56 Transformer/rectifier position (example)

- Position** The transformer/rectifier (Fig. 56,2) is installed underneath the left-hand bedding box and accessible via a sliding door (Fig. 56,1).
- Operation** The transformer/rectifier is operated with the connected 7" panel (exception: battery cut-off for lay-up, see below).
In normal operation, no operating steps are required on the transformer/rectifier.
In following cases, adjustments are required:
- During initial startup and after activation of emergency mode.
 - When an authorised specialist workshop retrofits accessories.
- Purpose** Together with the control unit SCU and the BUS modules, the transformer/rectifier EBL 402 forms the central control and power supply system for all 12 V appliances in the electrical system on board of the vehicle.
- Functions**
- The transformer/rectifier charges the living area battery.
 - The transformer/rectifier monitors the voltage in the living area battery.
 - The transformer/rectifier supplies all BUS modules and the connected sensors and appliances with current.
 - Via BUS lines, the transformer/rectifier provides the communication with the BUS modules, the panel will and the control unit SCU.
- The transformer/rectifier only works in conjunction with a BUS-capable panel (except in emergency mode, see section 9.4).
The power in the transformer/rectifier is divided into charging current and current to the appliances. The charging current is always just the portion that is not being used by any appliances. If the current to the appliances exceeds the current available, then the living area battery is discharged.
- Lay-up** Some circuits are still supplied with current even when the 12 V power supply is switched off on the panel. These are all appliances connected to the 12 V constant positive, for example:
- Entrance step
 - Heater
 - Refrigerator
 - 12 V socket
 - USB socket
 - Reading lamp

When the vehicle is laid up, these appliances are also disconnected from the battery.

- Lay-up:
- Switch off the 12 V power supply on the panel.
 - Slide the battery cut-off switch on the EBL 402 transformer/rectifier to the "Aus" (Off) position.

- Coming out of lay-up:
- Slide the battery cut-off switch on the EBL 402 transformer/rectifier to the "Ein" (On) position.
 - Switch on the 12 V power supply on the panel.



- ▷ Further information can be obtained in the manufacturer's instruction manual.

9.7.1 Battery cut-off switch

The battery cut-off switch switches off all the appliances in the living area, even inactive ones. In the process, all appliances supplied by the transformer/rectifier are disconnected from the living area battery. Even appliances such as the entrance step, basic lighting or the refrigerator will stop working. This prevents the living area battery from slowly discharging if the vehicle is not used for a longer period of time (e.g. temporary lay-up).



- ▷ When the battery cut-off switch is in the Off position, it is still possible to operate the System Control Unit (SCU). For more information on the SCU, see section 9.4.

Position The battery cut-off switch is located on the transformer/rectifier.

If the vehicle is connected to the 230 V power supply via the CEE socket outlet, the batteries are charged, even if the battery cut-off switch is switched off.

9.7.2 Battery monitoring



- ▷ You must fully recharge a discharged living area battery as soon as possible.

The battery monitor in the transformer/rectifier measures the voltage in the living area battery. All 12 V appliances are switched off when the battery voltage falls below 11.0 V for longer than 10 s or 10.5 V for longer than 1 s. Only the appliances not switched using the 12 V main switch on the 7" panel are still supplied with power.

When the voltage drops so low due to overload or an insufficiently charged living area battery that the automatic shutoff is triggered, appliances that are not absolutely necessary must be switched off. It may now be possible to put the 12 V power supply back into operation for a short time. To do this, first turn the battery cut-off switch on the EBL off and then on again. Then turn on the 12 V main switch on the 7" panel.

However, when the battery voltage remains below 12.0 V, it is not possible to turn the 12 V power supply back on. To increase the battery voltage, start the vehicle engine and let it run for a while or connect the vehicle to local power.

9.7.3 Charging the battery

When the vehicle engine is running, the living area batteries are charged by a smart charging booster. The booster regulates the current for the living area batteries depending on the charging condition of the starter battery to reduce the load on the alternator and starter battery during cold starts, for example in winter.

When the vehicle is connected to the 230 V supply over the CEE socket outlet, the living area batteries and the starter battery are charged by two separate systems. This means that it is possible to use the radio for a prolonged period. In the basic version, the charging output stage in the transformer/rectifier charges the living area battery. From the additional HY-Tec lithium battery (optional equipment), an auxiliary charging unit with up to 18 A is installed. Depending on the active appliances, the maximum charging current is 36 A.

9.8 230 V power supply



- ▶ Only allow qualified personnel to work on the electrical system.
- ▶ Have the vehicle's electrical system checked by a qualified electrician at least once every 3 years. If the vehicle is used frequently, an annual check is recommended.

The 230 V power supply provides electricity for the following devices (if present):

- Sockets with earth contact for appliances with maximum 10 A
- Transformer/rectifier
- Auxiliary charging unit

The electrical appliances connected to the 12 V power supply of the living area are supplied with voltage by the living area battery.

Connect the vehicle to an external 230 V power supply system as often as possible. The charger module in the transformer/rectifier and the auxiliary charging unit (optional equipment) charge the living area battery automatically. The starter battery is also buffered with a float charge.

Depending on the variant, optional devices (such as electric heaters with heating elements) are protected by their two-pole automatic circuit breaker.

9

Electrical system

9.8.1 230 V connection (CEE socket outlet)



- ▶ Overvoltage can damage connected devices. Overvoltage can be caused by lightning, irregular voltage sources (e.g. petrol-operated generators) or power connections on ferries for example.

Requirements concerning the 230 V connection

- The connecting cable, the plug connectors at the point of supply and the plug connector to the vehicle must comply with IEC 60309. The standard designation for the plug connectors is "CEE blue".
- Use H07RN-F rubber sheathed cable with a minimum cable cross-section of 2.5 mm² and a maximum length of 25 m.
- Earth contact connectors (safety) are not permitted. The interconnection of CEE/safety adapters is also prohibited.

9.8.2 Connecting the 230 V power supply



- ▶ The external 230 V power supply must be protected by fuse with a fault current protection switch (FI-switch, 30 mA).
- ▶ To prevent overheating, the cable must be fully uncoiled from the cable reel.
- ▶ In case of doubt or if the 230 V supply is not available or is faulty, contact the operator of the power supply device.

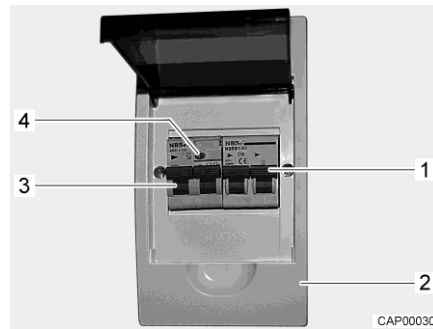


- ▶ The 230 V connection in the vehicle is equipped with a FI switch.
- ▶ For the connection points on camp sites (camping distributors) FI switches (30 mA) are obligatory.

The vehicle can be connected to an external 230 V power supply. As a principle, only use the 230 V connection on the vehicle (CEE socket) for connecting.

9

Electrical system



- 1 Safety cut-out
- 2 Fuse box
- 3 Fault current protection switch
- 4 Test button

Fig. 57 Safety cut-out and FI-switch (230 V fuse box)



Fig. 58 230 V connection on the vehicle (CEE socket outlet)

Connecting the vehicle:

- Check whether the power supply device is suitable regarding connection, voltage, frequency and current.
- Check whether the cables and connections are suitable.
- Check the plug connectors and cables for visible damage.
- Switch off the safety cut-out (Fig. 57,1) in the fuse box (Fig. 57,2).
- Open the cover of the 230 V connection on the vehicle (Fig. 58) and insert the plug connector. Ensure that the detent of the spring-mounted pivoting cover is engaged in position.
- Plug the connector of the connecting cable into the socket of the camping distributor. Ensure that the detent of the spring-mounted flap is also engaged here.
- Switch on the safety cut-out in the fuse box.

Checking the fault current protection switch:

- When the vehicle is connected to the 230 V supply, press the test button (Fig. 57,4) of the FI switch (Fig. 57,3) in the fuse box (Fig. 57,2). The FI switch must trip.
- Switch the FI switch (Fig. 57,3) back on again.

Unplugging the connection:

- Switch off the safety cut-out (Fig. 57,1) in the fuse box (Fig. 57,2).
- Loosen the detent on the camping distributor and unplug the connecting cable from the socket.
- Loosen the detent on the vehicle unplug the plug connector and close the cover of the 230 V connection.

9

Electrical system

9.9 Fuses



- ▶ Only replace defective fuses when the cause of the defect is known and has been remedied.
- ▶ Replace defective fuses only after the power supply has been turned off.
- ▶ Do not replace screwed fuses yourself. Contact an authorised specialist workshop to have these replaced.
- ▶ Never bridge or repair fuses.
- ▶ Only replace faulty fuses with a new fuse with the same rating.

9.9.1 12 V fuses

The appliances connected to the 12 V power supply in the living area are fused individually. The fuses are accessible at different positions in the vehicle.

Before changing fuses, take the function, value and colour of the relevant fuses from the following specifications. When changing fuses, only use flat fuses with the values shown below.

Some signals are protected by "Polyswitch" fuses. Polyswitch is an internal self-resetting fuse. After the overcurrent or short circuit has been remedied, the operating current is enabled again automatically. This can take a few seconds (cooling-down phase).

Fuses with the starter battery

The fuses are installed underneath the driver's seat with the starter battery. To obtain access to the fuses, the driver's seat must be pushed back.

Number	Function	Value
1	Booster voltage sensor	2 A
1	EBL connection	15 A
1	Booster connection	50 A
1	Waste water tank drainage	1 A

Fuses with the living area battery

The fuses are installed in the left-hand bedding box and are accessible via a sliding door.

Number	Function	Value
1	Compressor refrigerator	20 A
1	Voltage sensor	2 A
1	Second voltage sensor (only for two batteries)	2 A
1	HY-Tec lithium battery (optional equipment)	30 A
1	HY-Tec lithium battery (optional equipment)	30 A
1	HY-Tec lithium battery (optional equipment)	30 A
1	EBL to living area battery	50 A

9

Electrical system

Fuses underneath seating group

The fuses are installed under the seating group and accessible through an inspection flap (underneath the seating group).

Number	Function	Value
1	Control unit CP plus for Truma Combi D	2 A
1	DuoControl (optional equipment)	2 A

Fuses underneath the A-pillar panelling

Number	Function	Value
1	D+ Switch-off of the components	2 A Cl. 30
1	D+ Switch-off of the components	2 A Cl. 15
1	Step buzzer	2 A

Fuses on the transformer/rectifier

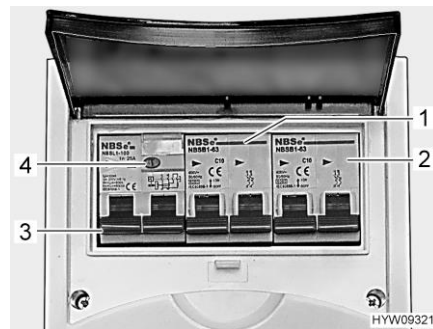
There are several fuses installed on the transformer/rectifier. The fuses are clearly identified by their colour and by the indications about function and value.

The fuses are installed in the left-hand bedding box and are accessible via a sliding door.

9.9.2 230 V fuse



- ▶ Check the fault current protection switch each time a connection to the 230 V power supply is established but at least once every 6 months.



- 1 Safety cut-out
- 2 Additional safety cut-out
- 3 FI-switch
- 4 Test button

Fig. 59 Safety cut-out and fault current protection switch (230 V fuse box)

A fault current protection switch (FI-switch) (Fig. 59,3) in the fuse box protects the complete vehicle from fault current (30 mA).

The downstream safety cut-out (10 A) (Fig. 59,1) secures the 230 V sockets, the transformer/rectifier and the auxiliary charging unit.

For vehicles with optional equipment (E.g. electric heater with heating element), an additional safety cut-out (16 A) (Fig. 59,2) protects the device.

Checking the fault current protection switch:

- When the vehicle is connected to the 230 V power supply, press the test button (Fig. 59,4). The fault current protection switch must trip.

Position

The 230 V fuse box is installed underneath the left-hand bedding box and accessible via a sliding door.

10 Appliances

Chapter overview

This chapter contains instructions regarding the appliances of the vehicle.

The instructions refer exclusively to the operation of the appliances.

Further information about the appliances can be found in the instruction manuals for the appliances, included separately with the vehicle.

10.1 General



▷ For safety reasons, spare parts for pieces of heating appliances must correspond with manufacturer's instructions and be permitted by the manufacturer as a spare part. These spare parts may only be fitted by the manufacturer or an authorised specialist workshop.



▷ Further information can be obtained in the instruction manual for the respective appliance.

The heater, boiler, cooker and refrigerator are fitted depending on the model of the vehicle.

In this instruction manual a description is given only for the operation of the appliances and their particular features.

To operate gas appliances, first open the regulator tap on the gas bottle and the gas isolator tap corresponding to the appliance.

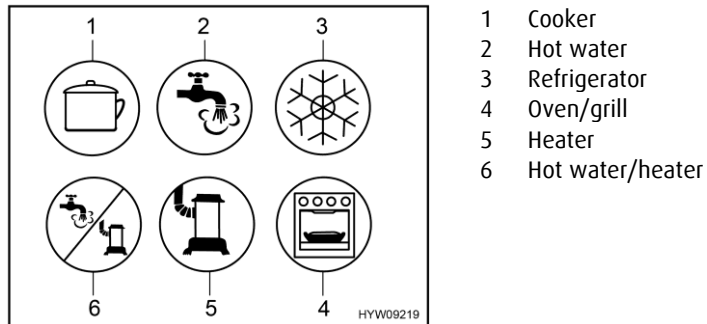


Fig. 60 Possible symbols for the gas isolator taps

10 Appliances

10.2 Heater and boiler (diesel operation)

The heater can both heat up the vehicle interior (heating the room air) and heat up the domestic water (boiler function). The following instructions are also valid if the heater is only used as boiler.

Diesel operation requires diesel fuel according to DIN EN 590. Biodiesel may not be used.



- ▶ Never operate the heater in diesel operation when refuelling, on ferries or in the garage. Danger of explosion!
- ▶ Never operate the heater in diesel operation in closed spaces (e.g. garages). Danger of poisoning and suffocation!
- ▶ The waste gas vent may neither be closed nor blocked.
- ▶ Do not use the space behind the heater as a storage space.
- ▶ The water in the boiler can be heated up to 40 °C or 60 °C. Risk of scalding!



- ▷ Never use boiler when empty.
- ▷ If the boiler is not being used, empty it if there is any risk of frost.
- ▷ Only operate the boiler with the maximum temperature setting if you require a large quantity of warm water. This protects the boiler against the build-up of limescale.
- ▷ The weight of the water in the boiler does not count towards the actual weighed mass. When the boiler is not emptied before departure, the weight of the water must be added to the passenger load.



- ▷ Do not use the water from the boiler as drinking water.
- ▷ If the power supply to the heater was interrupted, the time must be reset.

Initial start-up

When lighting the heater for the first time a small amount of smoke and odour will occur. Immediately set the operating switch of the heater to its highest position. Open doors and windows and ventilate well. Smoke and odour will disappear by themselves after a while.

10 Appliances

10.2.1 Heating properly



- ▷ The air outlet nozzles must always remain unobstructed and must not be blocked or obstructed in order to allow a free air current and to avoid heat build-up.
- ▷ Objects placed in front of the air outlet nozzles can be damaged by the heat build-up.
- ▷ If the air current is persistently blocked, the heat build-up can cause damage to the vehicle.



Fig. 61 Air outlet nozzle (hot-air heater)

Hot air distribution

Several air outlet nozzles (Fig. 61) are installed in the vehicle directing warm air from the heater into the living area. Turn the air outlet nozzle in a suitable position so the air can escape as required.

When the vehicle's air outlet nozzles on the dashboard are in the open position during heating, the heating air circulates and escapes. To prevent this, close the air outlet nozzles on the dashboard and set the base vehicle's air distribution to air circulation.

Adjusting the air outlet nozzle

- Fully open: full hot air stream
- Half or partially open: reduced hot air stream

When all air outlet nozzles are fully open, less warm air comes out of each nozzle. However, when only some of the air outlet nozzles are open, more warm air will flow out of each nozzle.

10.2.2 Hot-air heater and boiler Truma Combi D with digital CP plus digital control unit



- ▶ If leakage occurs at the heater or at the exhaust gas routing, there is a risk of poisoning! If leakage is detected: switch off the diesel hot-air heater. Open windows and doors. Have the system checked by an authorised service centre.
- ▶ Observe the safety regulations and safety instructions of the manufacturer; see separate instruction manual of the manufacturer.

10 Appliances



- ▷ If there is a risk of frost and the heater is not in operation, empty the boiler.
- ▷ The circulation fan is automatically switched on when the hot-air heater is activated, and it stays on. This puts an immense strain on the living area battery, if the vehicle is not connected to an external 230 V power supply. Take into consideration that the living area battery only has limited reserves of energy.



- ▷ The hot-air heater can even run on an empty boiler.
- ▷ If the power supply to the heater was interrupted, the time must be reset.

Maximum heat output

Diesel operation	Electrical operation *	Mixed operation (diesel and electrical operation)*
6000 W	1800 W	6900 W

* (optional for Truma DE)

Control unit

The control unit is divided into two sections:

- Display
- Operating buttons



- 1 Display
- 2 Rotary push button
- 3 Back button

Fig. 62 Control unit (hot-air heater and boiler)

Position

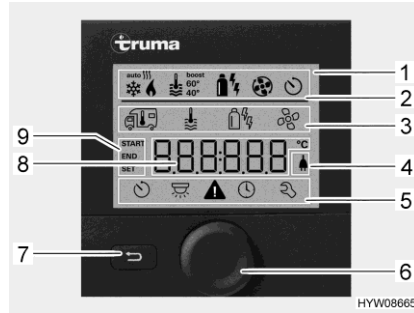
The control unit is installed in the box underneath the seating group.

Operating buttons

The operating buttons have the following functions:

Button	Button operation	Function
Rotary push button (Fig. 62,2)	Turn to the right	Menu is run through from left to right Values are increased
	Turn to the left	Menu is run through from right to left Values are decreased
	Press briefly	Selected value is saved Menu item is selected for changing values (selected menu item flashes)
	Press (3 seconds)	Switch on or switch off
Back button (Fig. 62,3)	Press	Return from a menu item without saving values

10 Appliances



- 1 Display
- 2 Status line
- 3 Upper menu line
- 4 Display of the line voltage 230 V (optional)
- 5 Lower menu line
- 6 Rotary push button
- 7 Back button
- 8 Settings and values display area
- 9 Timer display

Fig. 63 Control unit with display

Display The display is divided into four sections:

- Status line (Fig. 63,2)
- Upper menu line (Fig. 63,3)
- Display area (Fig. 63,8)
- Lower menu line (Fig. 63,5)



- ▷ To prevent a malfunction, do not operate the heater on the 7" panel or in the Dethleffs Connect app and on the control unit (Fig. 62 and Fig. 63) at the same time.
- ▷ Before operating the heater using the control unit, exit the corresponding menu on the 7" panel or switch off the 7" panel.

Switching the control unit on-/off

After being switched on, the most recently set values/operating parameters are activated.

If no button is pressed, the control unit switches to stand-by mode after a few minutes.

If the time is set, the display in stand-by mode alternates between the time and the room temperature set.

After being switched off, the display in the control unit may remain active for several minutes since the heater is still running.

- Press and hold the rotary push button (Fig. 63,6) for approx. 3 seconds. Both menu lines (Fig. 63,3 and Fig. 63,5) are displayed. The first symbol flashes.



- ▷ Switching the control unit on/off means switching between stand-by and setting mode. In stand-by mode, the display alternates between the room temperature and the time that have been set.

Carrying out settings:

- Turn the rotary push button (Fig. 63,6) until the required menu symbol flashes.
- Press the rotary push button.
- Turn the rotary push button until the required value is displayed.
- Press the rotary push button to save the value set. If you do not wish to change the value originally set: Press the back button (Fig. 63,7).

10 Appliances

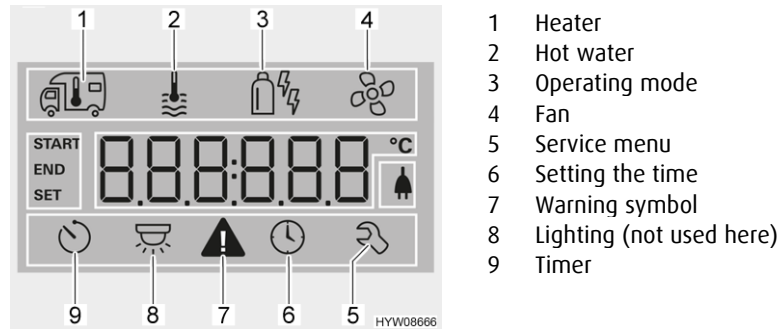


Fig. 64 Display (control unit)

Switching on the heater:

- Turn the rotary push button (Fig. 63,6) until the heater menu symbol (Fig. 64,1) flashes.
- Press the rotary push button.
- Turn the rotary push button until required value is displayed.
- Press the rotary push button to save the value set. The symbol in the status line (Fig. 63,2) flashes until the room temperature set is reached. If you do not wish to change the value originally set: Press the back button (Fig. 63,7).

Switching off the heater:

- Turn the temperature value back until OFF is displayed. Press the rotary push button to save.



- ▷ The required room temperature can also be changed in stand-by mode by turning the rotary push button.

Switching on production of hot water:

- Turn the rotary push button (Fig. 63,6) until the hot water menu symbol (Fig. 64,2) flashes.
- Press the rotary push button.
- Turn the rotary push button until the required value is displayed:
 - OFF: Production of hot water is switched off.
 - 40°: Hot water is heated to 40 °C.
 - 60°: Hot water is heated to 60 °C.
 - BOOST: Fast heating of hot water (boiler priority) for max. 40 minutes. The water temperature is then held at a higher level for two reheating cycles (approximately 62 °C).
- Press the rotary push button to save the value set. The symbol in the status line (Fig. 63,2) flashes until the hot water temperature set is reached. If you do not wish to change the value originally set: Press the back button (Fig. 63,7).

Switching off production of hot water:

- Turn the rotary push button until OFF is displayed. Press the rotary push button to save.

10 Appliances

Safety/drainage valve

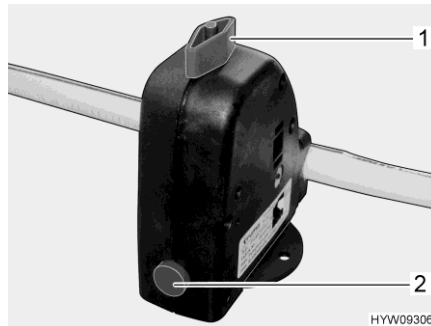
The boiler is equipped with a safety/drainage valve (Fig. 65). The safety/drainage valve prevents water in the boiler from freezing, when there is frost and the heater is not switched on.



- ▷ When the vehicle is not used for a long period of time, open the safety/drainage valve and empty the boiler.
- ▷ At temperatures below 3 °C the safety/drainage valve opens automatically. Only if the temperature of the safety/drainage valve lies above 7 °C can it be shut again.
- ▷ The water pump and the water fittings are not protected against freezing by the safety-/drainage valve.



- ▷ The drainage neck of the safety/drainage valve has to be free of dirt (e.g. leaves, ice) at all times.



- 1 Knob
- 2 Push button

Fig. 65 Safety/drainage valve (boiler)

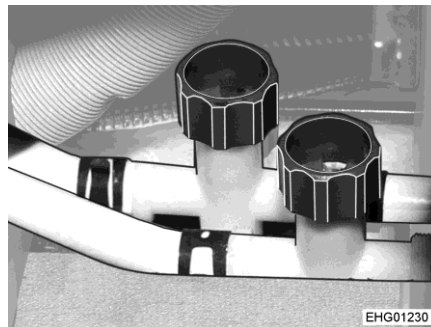


Fig. 66 Drain cocks (water pipe for hot water and cold water)

Position

The safety/drainage valve (Fig. 65) is installed in the small floor compartment in front of the bench. The drain cocks (water pipe for hot water and cold water) (Fig. 66) are installed in a small compartment at the bottom right next to the kitchen base cabinet and are accessible via a removable flap.

Filling/emptying the boiler

The boiler can be supplied with water from the water tank.

When the vehicle is connected to a central water supply, a pressure reducer must be used. The maximum allowed pressure in the boiler is 2.8 bar.

10 Appliances

Filling the boiler with water:

- Switch on the 12 V power supply on the panel.
- Close the safety/drainage valve. Turn the knob (Fig. 65,1) perpendicular to the safety/drainage valve and push the push button (Fig. 65,2) in.
- Set all the water taps to "Hot" and open them. The water pump is turned on. The warm water pipes are filled with water.
- Keep the water taps open until the water flowing out of the water taps has no bubbles in it. This is the only way to ensure that the boiler is full of water.
- Close all water taps.






Emptying the boiler:

- Switch off hot water production.
- Open the safety/drainage valve. To do this turn the knob (Fig. 65,1) parallel to the safety/drainage valve. The push button Fig. 65,2) jumps out. The boiler is drained to the outside by the safety/drainage valve.
- Check whether the water has been drained completely from the boiler (approx. 10 litres).
- Close the drain cocks. In order to do this, turn the cap of the drain cock (Fig. 66) in a clockwise direction.

Operating modes

Depending on the equipment, the hot-water heater with the boiler can be operated by means of various energy sources.

Selecting operating mode:

- Turn the rotary push button (Fig. 63,6) until the menu symbol operating mode (Fig. 64,3) flashes.
- Press the rotary push button.
- Turn the rotary push button until the desired operating mode is displayed:
 -  Diesel operation
 -  Electrical operation, output level 1 (900 W) *
 -  Electrical operation, output level 2 (1800 W) *
 -  Diesel operation and electrical operation, output level 1 (900 W) *
 -  Diesel operation and electrical operation, output level 2 (1800 W) *

* (optional for Truma DE)

- Press the rotary push button to save the set operating mode. To revert to the original setting: Press the back button (Fig. 63,7).



- ▷ 230 V electrical operation is only possible when the vehicle is connected to the 230 V power supply.
- ▷ At output level 1 (900 W), current consumption is 3.9 A. At output level 2 (1800 W), current consumption is 7.8 A.

Setting the fan:

- Turn the rotary push button (Fig. 63,6) until the fan menu symbol (Fig. 64,4) flashes.
- Press the rotary push button.

10 Appliances

- Turn the rotary push button until the required value is displayed:
 - OFF: Fan is switched off.
 - VENT: Air circulation
 - ECO: Low fan setting
 - HIGH: High fan setting
 - BOOST: Fast room heating. Boost is available if the current room temperature is at least 10 °C below the selected room temperature.
- Press the rotary push button to save the value set. If you do not wish to change the value originally set: Press the back button (Fig. 63,7).

Setting the timer:

- Turn the rotary push button (Fig. 63,6) until the timer menu symbol (Fig. 64,9) flashes.
- Press the rotary push button. The start time is displayed and the hour display flashes.
- Turn the rotary push button until the hour of the selected start time is displayed.
- Press the rotary push button. The minute display flashes.
- Turn the rotary push button until the minute of the selected start time is displayed.
- Press the rotary push button.
- Proceed in the same way to set the switch-off time, the required room temperature, the hot water setting and the fan setting.
- Press the rotary push button. The timer is activated. The timer symbol (Fig. 64,9) flashes when the timer is programmed and active.



- ▷ The service menu contains items that generally only need to be set once (language, background brightness, calibration), as well as information for service centres (version numbers).

Fault display

The warning symbol (Fig. 64,7) flashes in the event of a warning. The heater continues to operate. In the event of only a temporary fault, the warning symbol goes out automatically.

In the event of a warning, the control unit displays the error code for the fault. The heater is switched off. Press the rotary push button to restart the heater.



- ▷ Further information can be obtained in the manufacturer's instruction manual.

10 Appliances

10.2.3 Digital control of Truma devices

Truma devices can be controlled via the 7" panel or via the Dethleffs Connect App.



- ▷ To prevent a malfunction, do not operate devices on the 7" panel or in the Dethleffs Connect app and on the control unit at the same time.
- ▷ Before operating a device using the control unit, exit the corresponding menu on the 7" panel or switch off the 7" panel.

Further information:

- Section 9.3
- Section 9.4
- Section 9.5

10.2.4 Wall flue

Fresh air and exhaust gases of the heater system are conducted in a two-chamber wall flue.



- ▷ Park the vehicle such that the wall flue gets enough fresh air.
- ▷ The wall flue must be free at all times. Do not cover the wall flue.
- ▷ When camping in winter, maintain wall flue free of snow and ice.
- ▷ Check the wall flue periodically depending on the weather (snow, leaf fall, dirt, etc.). If necessary, clean the wall flue.
- ▷ When washing the vehicle do not aim the water jet directly at the wall flue.
- ▷ When disregarding this, the flawless operation of the heater can not be guaranteed.



Fig. 67 Wall flue (hot-air heater) (example)

The wall flue is mounted on the left side wall.

10 Appliances

10.3 Truma Aventa air conditioning unit



- ▷ The cooling circuit may only be opened by the manufacturer or an authorised specialist workshop.
- ▷ Do not block the air inlets and air outlets.
- ▷ Do not drive on any gradients or inclines greater than 8 % when the air conditioning unit is in operation. Otherwise the compressor could be damaged.
- ▷ Do not operate the unit in cooling mode for extended periods when the vehicle is on an incline. Condensation can enter the interior.



- ▷ The air conditioning unit only runs if the vehicle is connected to a 230 V power supply.
- ▷ The external 230 V power supply must be protected with fuses of at least 4 A (Aventa compact) or 6 A (Aventa compact plus). It is otherwise not possible to operate the air conditioning unit properly.
- ▷ Always point the remote control at the infrared receiver when using it.
- ▷ Also read the manufacturer's instruction manual.

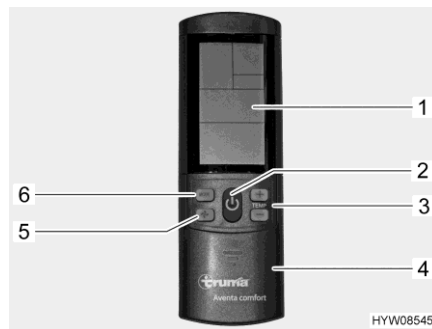
Operating modes

The air conditioning unit can be operated in the following modes:

- Automatic
- Cooling
- Air circulation

Remote control

All functions of the air conditioning unit can be operated via the remote control.



- 1 Display
- 2 On/Off button
- 3 Buttons "+" and "-" for temperature selection
- 4 Sliding door for field with setting buttons
- 5 Fan setting selection button (three levels)
- 6 Mode selection button

Fig. 68 Remote control (air conditioning unit)

Automatic mode

In automatic mode the desired temperature merely has to be set.

Depending on the room temperature, the air conditioning unit automatically selects the fan setting.

Switching on:

- Press the On/Off button (Fig. 68,2). The last settings selected are accepted.

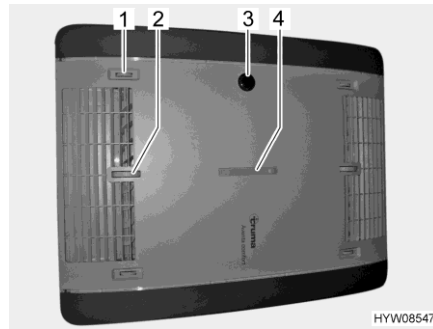


- ▷ The circulation fan runs after switching on. The compressor switches on after 3 minutes at the latest, the blue LED is flashing.

- Use the "+" and "-" buttons (Fig. 68,3) to set the desired temperature.

10 Appliances

- Switching off: ■ Press the On/Off button (Fig. 68,2). The lighting can continue to be operated.



- 1 Air distribution right/left
- 2 Air distribution ceiling/floor
- 3 IR receiver, function display, manual on/off
- 4 Air distribution front/rear

Fig. 69 Function display and air distribution (air conditioning unit)

10.3.1 Operation and display on the unit

Certain functions can be operated directly on the unit.

- Air distribution adjustment: ■ Set the small adjustment wheel and sliding regulator for stepless air distribution as desired.
- Switching on/off manually: ■ Press the micro button (e.g. with a ballpoint pen if the remote control is not in reach).

Function display

Status LED	Meaning
Blue LED flashes	Compressor starts up (cooling mode)
Blue LED lights up	Cooling operation
Red LED flashes	Data is transferred
Red LED lights up	Fault
Both LEDs light up	Insufficient power supply, compressor switches off

Manual mode

In the manual mode, the cooling and air circulation can be set separately on the remote control.

- Switching on the cooling: ■ Press the On/Off button (Fig. 68,2).
- Press the mode selection button (Fig. 68,6) until the cooling symbol appears in the display (Fig. 68,1).
- Use the "+" and "-" buttons (Fig. 68,3) to set the desired temperature.
- Use the "🌀" selection button (Fig. 68,5) to set the desired fan level.

When the room temperature set on the remote control is reached, the compressor switches itself off and the blue LED in the IR receiver goes out. The circulation fan continues to run.

When the room temperature rises above the set temperature, the unit automatically switches itself back to cooling mode.

10 Appliances

Switching on air circulation:

- Press the On/Off button (Fig. 68,2).
- Press the mode selection button (Fig. 68,6) until the air circulation symbol appears in the display (Fig. 68,1).
- Use the "+" and "-" buttons (Fig. 68,3) to set the desired temperature.
- Use the "🌀" selection button (Fig. 68,5) to set the desired fan level.

In air circulation mode, the indoor air is circulated and cleaned by the filters/panels. No LEDs light up in the IR receiver.

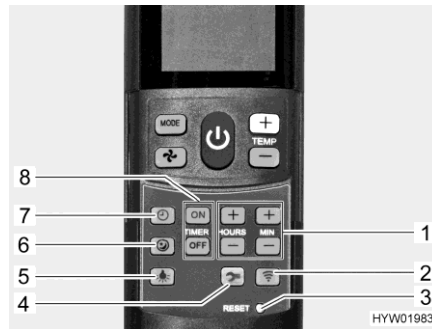


Fig. 70 Remote control with setting buttons (air conditioning unit)

- 1 Buttons for setting the time and the timer
- 2 Send button (repeat data transfer)
- 3 Micro button "RESET" (resetting to the factory setting)
- 4 Setup button for start-up
- 5 Light button (for operating the lighting)
- 6 Soft-start button (for quiet cooling operation)
- 7 Time button (for setting the time)
- 8 "TIMER" buttons for switching time preselection on/off

Activating soft-start:

- Press the soft-start button (Fig. 70,6). The fan then runs at low speed in cooling mode, which makes it especially quiet.

Setting the time:

- Press the time button (Fig. 70,7).
- Set the hours and minutes with the buttons (Fig. 70,1).

Switching on the timer:

- Press the On/Off button (Fig. 68,2).
- Set the desired mode and temperature.

Programming the switching on time:

- Press "ON" button (Fig. 70,8).
- Press the buttons for setting the time (Fig. 70,1) until the desired time span until switch-on is reached.
- Press "ON" button (Fig. 70,8).

Programming the switch-off time:

- Press "OFF" button (Fig. 70,8).
- Press the buttons for setting the time (Fig. 70,1) until the desired time span until switch-off is reached.
- Press "OFF" button (Fig. 70,8).

Deactivating the timer:

- Press the "ON" or "OFF" button (Fig. 70,8) again.

The integrated timer enables the switch-on/switch-off time for the air conditioning unit to be set between 15 minutes and 24 hours in advance (calculated from the current time).

Switching on the lighting:

- Press the light button (Fig. 70,5). The light is switched on at the last set dimming level.

Dimming the lighting:

- Press the light button (Fig. 70,5) and keep it pressed until the desired brightness is reached.

10 Appliances

Switching off the lighting: ■ Press the light button (Fig. 70,5).



- ▷ The Setup button (Fig. 70,4) is used to connect the remote control with the air conditioning unit during first set-up.
- ▷ Further information can be obtained in the manufacturer's instruction manual.

10.4 Cooker



- ▶ During operation of the gas cooker, do not leave the gas cooker unattended. Even if the gas cooker cannot be overseen for only a short time (e.g. Visit to the toilet), switch the gas cooker off.
- ▶ Never let gas escape unburned due to danger of explosion.
- ▶ Before using the cooker make sure that there is sufficient ventilation. Open a window or the skylight.
- ▶ Do not use gas cooker or gas oven for heating.
- ▶ Always protect your hands with cooking gloves or potholders when handling hot pots, pans and similar items. There is a risk of injury!
- ▶ Do not fit any curtains in the immediate proximity of the cooker. Fire hazard!
- ▶ While a burner is on, always place a pot or a pan over the flame.



- ▷ Do not place any hot objects such as cooking pans neither on the sink cover nor on the gas cooker cover nor on the work top.

10.4.1 Gas cooker



- ▶ If using gas devices, make sure that the skylight and window are open.
- ▶ During activation and operation of the gas cooker, no flammable objects or highly inflammable objects such as dishcloths, napkins etc. must be near the gas cooker. Fire hazard!
- ▶ The process of ignition must be visible from above and must not be covered by cooking pans placed on the cooker.
- ▶ The gas cooker cover is held closed by a spring. When closing there is danger of getting injured!



- ▷ Do not use the glass gas cooker cover as a hob.
- ▷ Do not close the gas cooker cover while the gas cooker is in operation.
- ▷ Do not apply pressure on the gas cooker cover when it is closed.
- ▷ Keep the gas cooker cover open after cooking until the burners are cool. Otherwise the glass plate could shatter.

10 Appliances



- ▷ Only use pots and pans whose diameter is appropriate for the gas cooker burners.
- ▷ When the flame goes out, the thermocouple automatically cuts the gas supply.
- ▷ Further information can be obtained in the manufacturer's instruction manual.

The vehicle kitchen unit is fitted with a two-burner gas cooker.



- 1 Control knob for burner
- 2 Push button for ignition spark

Fig. 71 Gas cooker

Switching on:

- Open the regulator tap on the gas bottle and the gas isolator tap "Cooker".
- Open the gas cooker cover.
- Pull out the control knob (Fig. 71,1) of the desired burner and turn it to the ignition position (large flame).
- Press the control knob down and hold it.
- Press the push button (Fig. 71,2). An ignition spark is created at the burner. If necessary, press the push button several times.
- Once the flame is burning, keep the control knob pressed for another 10 to 15 seconds, until the thermocouple automatically keeps the gas supply open.
- Release the control knob and turn to the desired setting.
- If ignition is unsuccessful, repeat the entire procedure.

Switching off:

- Turn the control knob to the "0" position. The flame fades.
- Close the gas isolator tap "Cooker" and the regulator tap on the gas bottle.

10 Appliances

10.5 Refrigerator

10.5.1 Compressor refrigerator Thetford



- ▷ Heat is generated during operation. To prevent the refrigerator from overheating: always keep ventilation openings clear.
- ▷ Switch off the refrigerator for cleaning.



- ▷ The living area battery has a limited power supply only. Therefore, do not operate the refrigerator for a longer period of time when the vehicle is stationary and not connected to a 230 V supply.
- ▷ Further information can be obtained in the manufacturer's instruction manual.

Energy supply

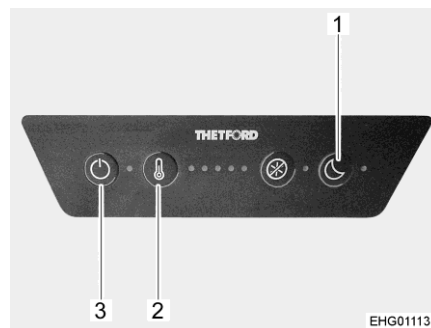
The refrigerator is only operated with 12 V DC.

When the vehicle is in motion, the transformer/rectifier feeds the power from the alternator of the vehicle to the refrigerator.

When the vehicle is stationary and not connected to the 230 V power supply, the transformer/rectifier supplies the refrigerator with power from the living area battery.

When the vehicle is stationary and connected to the 230 V power supply, the transformer/rectifier transforms the input voltage to 12 V and then supplies this current to the refrigerator.

Conversion between the individual supply types is automatic.



- 1 Night mode button
- 2 Temperature selection button
- 3 On/Off button

Fig. 72 Operating bar (refrigerator)



- ▷ To prevent a malfunction, do not control the refrigerator on the 7" panel or in the Dethleffs Connect app and on the operating bar (Fig. 72) at the same time.
- ▷ Before operating the refrigerator using the operating bar, exit the corresponding menu on the 7" panel or switch off the 7" panel.

Switching on: ■ Press the On/Off button (Fig. 72,3) and hold for a few seconds. The Indicator lamp shows that the refrigerator is working.

Switching off: ■ Press the On/Off button (Fig. 72,3) and hold for a few seconds. The indicator lamp goes out.

10 Appliances



- ▷ The cooling effect depends on the ambient temperature and also on how many foods to be cooled are placed in the refrigerator and how often the refrigerator door is opened. At high ambient temperatures, a higher cooling level must be set; at low ambient temperatures, a lower cooling level is sufficient.

Setting the cooling level:

- Press the temperature selection button (Fig. 72,2) until the desired cooling level is reached. The cooling level is indicated by indicator lamps.

The refrigerator has a night mode. When the night mode is switched on, the refrigerator works silently with lower power.

Switching on the night mode:

- Press the night mode button (Fig. 72,1). The Indicator lamp shows that the night mode is active.

Switching off the night mode:

- Press the night mode button (Fig. 72,1). The indicator lamp goes out. The refrigerator is working in normal mode again.



- ▷ Further information can be obtained in the manufacturer's instruction manual.

11 Sanitary fittings

Chapter overview

This chapter contains instructions regarding the sanitary fittings of the vehicle.

11.1 Water supply, general



- ▶ Fill water tank from supply systems that have been verified to provide drinking water quality.
- ▶ Only use such hoses or containers when filling that have been approved for use with drinking water.
- ▶ Thoroughly rinse filling hose or container with drinking water before use (2 to 3 times capacity).
- ▶ Empty filling hose or container completely after use and close openings of the filling hose or container.
- ▶ Water left standing in the water tank or in the water pipes becomes undrinkable after a short period. Therefore, before each use of the vehicle, thoroughly clean the water pipes and the water tank. After each use of the vehicle completely empty the water tank and the water pipes.
- ▶ In the case of lay-ups lasting more than a week disinfect the water system before using the vehicle (see chapter 12).



- ▷ If the vehicle is not used for several days or if it is not heated when there is a risk of frost, empty the entire water system. Make certain that the water pump is switched off. Otherwise, the water pump will overheat and may get damaged. Leave the water taps on in central position. Leave all drain cocks open. Frost damage to appliances, frost damage to the vehicle and deposits in water-carrying components can be avoided in this way.
- ▷ The water pump will overheat without water and can get damaged after one minute at the latest. Never operate water pump when the water tank is empty.

The vehicle is equipped with a fitted water tank. An electric water pump pumps the water to the individual water taps. Opening a water tap automatically switches on the water pump and pumps water to the tap.

The waste water tank collects the waste water. The water level in the water and waste water tanks can be checked on the panel.

Water pump

The switch for switching the water pump on and off is located on the panel.



- ▷ Switch water pump on on the panel before using the water fittings.
- ▷ When the water tank is re-filled, an air bubble may form at the bottom of the pump. This air bubble will prevent water from being drawn in. Shake the water pump up and down energetically in the water.

11 Sanitary fittings

11.2 Water system

11.2.1 Water tank

The water tank holds up to 100 l.



- ▷ For driving safety and for regulatory reasons, when the vehicle is motion the fill quantity must be reduced to approximately 20 litres. If the water is drained using the safety drainage rotary handle (see section 11.2.5), a residual amount of approx. 20 l remains in the water tank.

Position The water tank is installed in the right-hand bedding box.

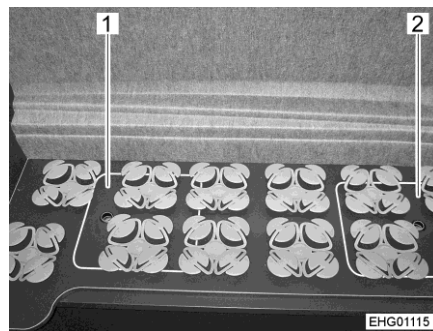


Fig. 73 Service openings, closed

- 1 Service opening outer cover for additional cleaning opening
- 2 Outer cover for general service opening

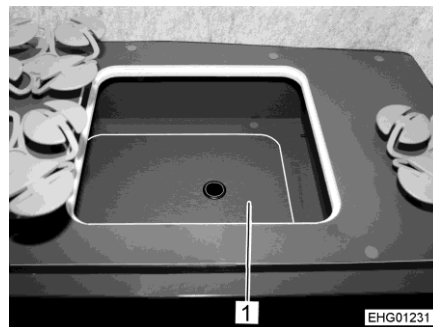


Fig. 74 Service opening, outer cover removed (example)

- 1 Inner cover

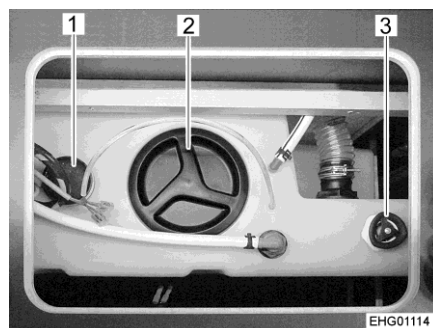
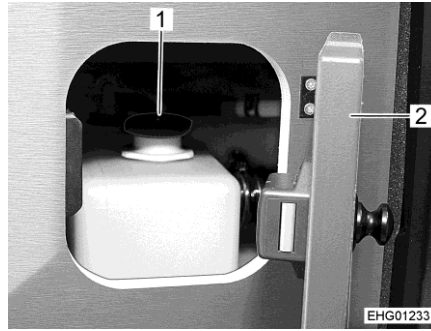


Fig. 75 General service opening, open

- 1 Water pump
- 2 Cleaning opening
- 3 Water drainage rotary handle

11 Sanitary fittings



- 1 Water drainage rotary handle
- 2 Flap

Fig. 76 Access to water drainage rotary handle

The water pump (Fig. 75,1) and a cleaning opening (Fig. 75,2) are accessible via the general service opening. The water drainage rotary handle (Fig. 75,3 and Fig. 76,1) can also be reached with restrictions.

However, the best way to access the water drainage rotary handle is via the flap (Fig. 76,2) on the side.

Opening access to the water tank:

- To access the additional cleaning opening: Remove the outside cover (Fig. 73,1). Remove the inner cover (Fig. 74,1).
- To access the general service opening: Remove the outside cover (Fig. 73,2). Remove the inner cover (Fig. 74,1).
- To access the water drainage rotary handle (Fig. 75,3 and Fig. 76,1): Open the flap (Fig. 76,2) on the short side of the right-hand bedding box.

Closing access to the water tank:

- To close the service openings, proceed analogously in reverse order.

11.2.2 Filling the water system



- ▶ When filling the water tank, observe the technically permissible maximum laden mass of the vehicle. Luggage must be reduced accordingly when the water tank is full.



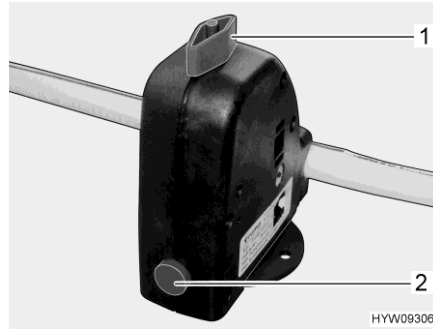
- ▷ The water pump will overheat without water and can get damaged after one minute at the latest. Never operate water pump when the water tank is empty.



- ▷ The water quantity can be monitored on the panel while the water tank is filled.

- Position the vehicle horizontally.
- Switch on the 12 V power supply on the panel.

11 Sanitary fittings



- 1 Knob
- 2 Push button

Fig. 77 Safety/drainage valve (Truma)

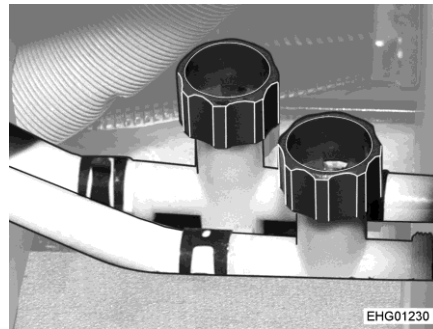


Fig. 78 Drain cocks (water pipe for hot water and cold water)

- Close the safety/drainage valve (Fig. 77). Turn the knob (Fig. 77,1) perpendicular to the safety/drainage valve and push the push button (Fig. 77,2) in. If the temperature is below 6 °C, the safety/drainage valve cannot be closed.
- Close all drain cocks (Fig. 78). To do so, close the caps by turning them in a clockwise direction and set the rocking lever in a horizontal position. The safety/drainage valve and the drain cocks are installed in the bench box or under a floor trap.
- Close all water taps.
- Close drainage opening on the water tank.
- Open the drinking water filler neck on the outside of the vehicle.
- Fill the water tank with drinking water. Use a hose certified for drinking water for filling.
- Set all the water taps to Hot and open them. The water pump is turned on. The warm water pipes are filled with water.
- Keep the water taps open until the water flowing out of the water taps has no bubbles in it. This is the only way to ensure that the boiler is full of water.
- Set all water taps to Cold and leave them open. This will fill the cold water pipes with water.
- Keep the water taps open until the water flowing out of the water taps has no bubbles in it.
- Close all water taps.
- Close drinking water filler neck.
- Check that the cap on the water tank is not leaking.

11 Sanitary fittings

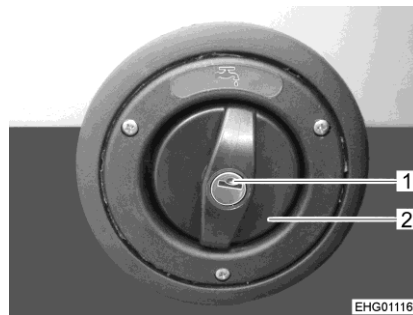


- ▶ When the water system is filled, ensure that the temperature in the vehicle does not drop below 15 °C. This prevents damage.

11.2.3 Topping up the water



- ▶ When filling the water tank, observe the technically permissible maximum laden mass of the vehicle. Luggage must be reduced accordingly when the water tank is full.



- 1 Locking cylinder
- 2 Cap

Fig. 79 Drinking water filler neck

The drinking water filler neck is on the right side of the vehicle.
The drinking water filler neck is marked by the symbol "☞".

Opening the drinking water filler neck:

- Insert key into locking cylinder (Fig. 79,1) and turn a quarter turn. The cap is unlocked.
- Remove the key.
- Turn cap (Fig. 79,2) one quarter turn.
- Remove the cap.

Filling with water:

- Fill the water tank with drinking water.

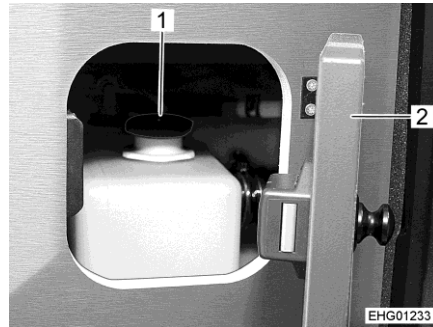
Closing the drinking water filler neck:

- Place cap on the drinking water filler neck.
- Turn cap one quarter turn.
- Insert key into locking cylinder and turn a quarter turn. The cap is locked.
- Remove the key.
- Check that the cap sits firmly on the drinking water filler neck.

11 Sanitary fittings

11.2.4 Draining water

Rotary handle The rotary handle for draining off the water is mounted on the water tank and accessible via a flap on the short side of the right-hand bedding box.



- 1 Rotary handle water drainage
- 2 Flap

Fig. 80 Rotary handle water drainage

- Opening: ■ Turn the rotary handle (Fig. 80,1) on the water anticlockwise as far as possible.
- Closing: ■ Turn the rotary handle (Fig. 80,1) on the water tank clockwise as far as possible.

11.2.5 Reducing the water quantity for mobile operation

Rotary handle The rotary handle is mounted on the water tank and accessible via a flap on the short side of the right-hand bedding box.

- Opening: ■ Turn the rotary handle (Fig. 80,1) on the water tank in an anticlockwise direction as far as it will go. Excess water will drain away leaving approx. 20 litres in the tank.
- Closing: ■ Turn the rotary handle (Fig. 80,1) on the water tank in a clockwise direction as far as it will go.

11.2.6 Emptying the water system



- ▷ If the vehicle is not used for several days or if it is not heated when there is a risk of frost, empty the entire water system. Make sure that the 12 V power supply on the panel is switched off. Otherwise, the water pump will overheat and may get damaged. Leave the water taps on in central position. Leave the safety/drainage valve and all drain cocks open. Frost damage to appliances, frost damage to the vehicle and deposits in water-carrying components can be avoided in this way.



- ▷ Take note of the environmental tip in this chapter.

Position of safety/drainage valve

The safety/drainage valve is installed in the small floor compartment in front of the bench and is accessible via a lid.

11 Sanitary fittings

Position of drain cocks

The drain cocks are installed at the very bottom in the left-hand narrow kitchen cabinet and are accessible via a lid.

To empty and ventilate the water system, proceed as follows. This prevents frost damage and deposits:

- Position the vehicle horizontally.
- Switch off the 12 V power supply on the panel.
- Switch off the 230 V power supply at the 230 V fuse box.
- Switch off the boiler.

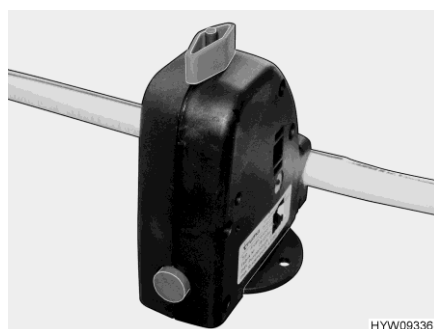


Fig. 81 Safety/drainage valve

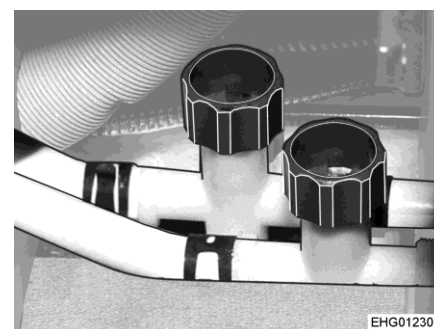


Fig. 82 Drain cocks (water pipe for hot water and cold water)

- Open the safety/drainage valve (Fig. 81). To do this, turn the knob (Fig. 81) parallel to the safety/drainage valve.
- Open all drain cocks (Fig. 82).
- Unscrew the cap of the water tank.
- Remove water pump and water hose from the water tank.
- Open the water tank drain.
- Open all water taps and set to the central position.
- Hold the shower handset up.
- Unscrew the lock ring on the water tank.
- Take water pump (fitted to the cover) as far as the connecting lines allow.
- Hold the water pump up until the water pipes are completely empty.
- Check whether the water tank is completely empty.
- Set shower handset down in the shower tray.
- Empty the waste water tank. Take note of the environmental tips in this chapter.
- Empty the sewage container. Take note of the environmental tips in this chapter.
- Clean the water tank and then rinse it out thoroughly.
- Let the water system dry for as long as possible.
- After emptying, leave all water taps on in the central position.
- Leave all the drain cocks and safety/drainage valves open.

11 Sanitary fittings

11.3 Waste water tank



- ▷ If there is a risk of frost, empty the waste water tank and leave the drain cock open.
- ▷ Never pour boiling water directly into the sink outlet. Boiling water could cause deformation and leaks in the waste water pipe system.



- ▷ Only empty the waste water tank at disposal stations, camping sites or caravan sites especially provided for this purpose.

Waste water from the kitchen and washing unit flows through plastic pipes into the waste water tank.

Volume The waste water tank holds 80 l.

Position The waste water tank is installed underneath the vehicle floor.
The drain pipe with a connection for the waste water hose is located under the vehicle.

Cleaning Clean the waste water tank several times a year (see chapter 12).

Electric drainage of the waste water tank The drain cock for the waste water tank is opened and closed using a switch of the switch panel in the driver's cabin.

Position of operating switch The operating switch for the drain cock is located at the bottom left of the dashboard.



- ▷ The operation of the waste water tank drainage via the switch is only possible when the vehicle is standing and the vehicle engine is switched off.

11.4 Toilet compartment

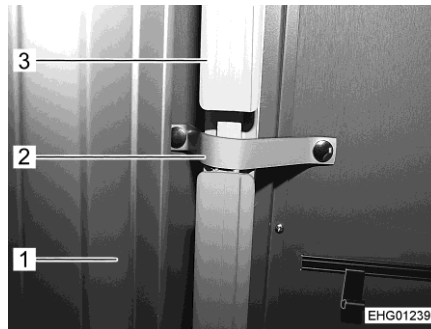


- ▷ For ventilation purposes during or after a shower, and for drying wet clothing, open the window or the toilet compartment skylight.
- ▷ After taking a shower, rinse soap residue from the shower floor, otherwise damage can occur in the floor over time.
- ▷ After using the shower, wipe it dry to prevent moisture from collecting.
- ▷ Position the vehicle so that it is level. Otherwise the water cannot drain properly when showering.
- ▷ Further information about cleaning the toilet compartment can be found in the section 12.3.

11 Sanitary fittings

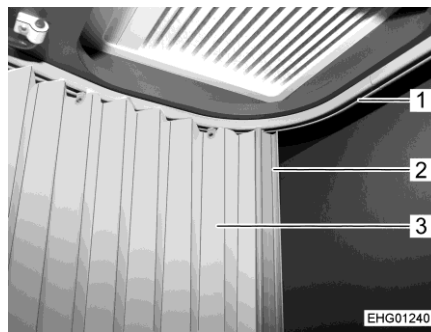
11.4.1 Folding partition

The bathroom and toilet area can be partitioned off with a folding partition. When it is not needed, the folding partition (Fig. 83,3) is parked to the right of the roller blind pillar (Fig. 83,1).



- 1 Roller blind pillar
- 2 Locking tab
- 3 Folding partition

Fig. 83 Folding partition locking tab



- 1 Guide rail on the ceiling
- 2 Holding bar
- 3 Folding partition

Fig. 84 Folding partition

Pulling out the folding partition:

- Release the snap fastener of the locking tab (Fig. 83,2).
- Pull the folding partition (Fig. 84,3) out of the park position with both hands on the holding bar (Fig. 84,2).
- Pull the folding partition in the guide rail on the ceiling (Fig. 84,1) up to the magnetic strip at the bathroom entrance.

Pushing in the folding partition:

- To push the folding partition in, proceed analogously in reverse order to pulling out.

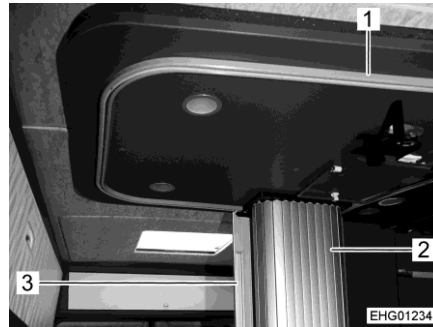
11 Sanitary fittings

11.4.2 Shower room



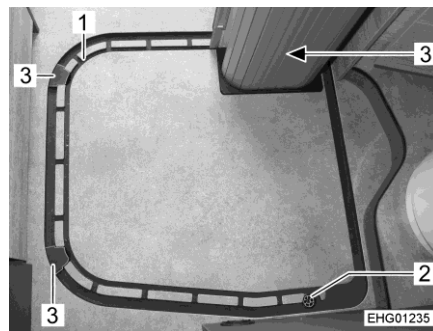
▷ Make sure that the vehicle is in a horizontal position.

The shower room is formed by a pull-out roller blind partition between the living and sleeping areas. The shower floor is seamlessly integrated into the passageway between the living and sleeping areas. Guide rails in the floor and on the ceiling ensure that the roller blind is correctly aligned.



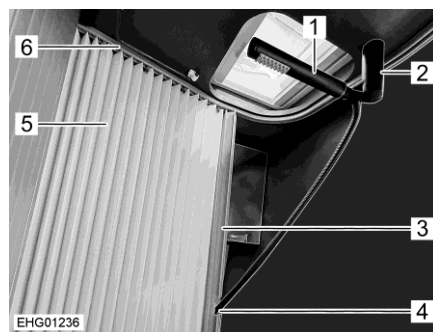
- 1 Guide rail on the ceiling
- 2 Roller blind
- 3 Holding bar

Fig. 85 Roller blind for shower room



- 1 Guide rail in the floor
- 2 Drain (open)
- 3 Drain (closed)

Fig. 86 Shower floor



- 1 Shower head
- 2 Shower head holder
- 3 Holding bar
- 4 Opening
- 5 Folding partition
- 6 Guide rail on the ceiling

Fig. 87 Shower head

11

Sanitary fittings



1 Magnetic strip

Fig. 88 Roller blind end stop



▷ The shower floor is equipped with several drains (Fig. 86,2 and 3). Open the sealing cap to clean the drains.

Setting up the shower room:

- Hold the roller blind (Fig. 85,2) with both hands on the holding bar (Fig. 85,3) and pull it along the guide rail on the ceiling (Fig. 85,1) and the guide rail in the floor (Fig. 86,1) up to the magnetic strip.
- Release the snap fastener on the locking tab of the folding partition (Fig. 83,2).
- Pull the folding partition (Fig. 87,5) halfway out of the park position with both hands on the holding bar (Fig. 87,3).
- Remove the shower head (Fig. 87,1) from the holder on the washbasin and insert it into the holder (Fig. 87,2) on the ceiling. Guide the shower hose through the opening (Fig. 87,4) in the holding bar (Fig. 87,3).
- Close the folding partition (Fig. 87,5). To do this, pull the holding bar (Fig. 87,3) to the magnetic strip (Fig. 88,1) at the bath entrance.

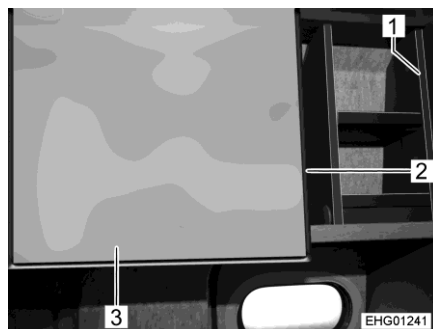
Reconverting the shower room:

- Reconvert the shower room analogously in reverse order to the set-up.

11.4.3 Mirror cabinet



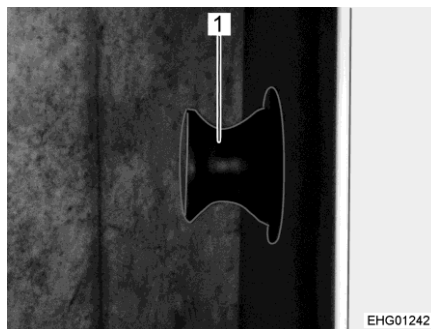
▷ Before commencing the journey, make sure that the sliding mirror door is closed and correctly locked with the locking knob.



- 1 Magnetic strip
- 2 Magnetic strip
- 3 Sliding mirror door

Fig. 89 Mirror cabinet

11 Sanitary fittings



1 Locking knob

Fig. 90 Sliding mirror door locking

Opening the mirror cabinet:

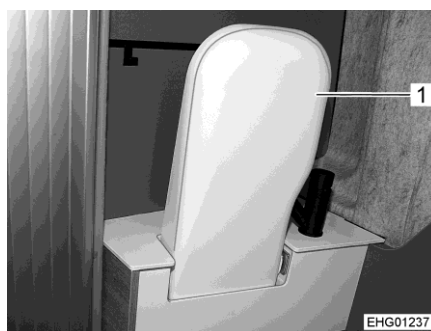
- Press the locking knob (Fig. 90,1) on the left-hand side of the mirror cabinet. The locking knob pops out.
- Slide the sliding mirror door (Fig. 89,3) to the left as far as it will go.

Closing the mirror cabinet:

- Slide the sliding mirror door (Fig. 89,3) to the right as far as it will go. The magnetic strips (Fig. 89,1 and 2) must be in contact with each other.
- Press in the locking knob (Fig. 90,1).

11.4.4 Wash basin

The toilet compartment is fitted with a fold-up wash basin.



1 Wash basin

Fig. 91 Wash basin, folded upwards

Folding down the wash basin:

- Slowly swivel the wash basin (Fig. 91,1) downwards as far as it will go.

Folding up the wash basin:

- Grab the wash basin (Fig. 91,1) by the front edge and swing it upwards towards the wall until it is fixed.

11 Sanitary fittings

11.5 Toilet



- ▷ Do not load the toilet with more than a maximum of 120 kg.
- ▷ If there is any risk of frost and the vehicle is not heated, empty the sewage container.
- ▷ Do not sit on the lid of the toilet. The lid is not designed to bear the weight of a person and could break.
- ▷ Use a suitable chemical for this toilet. The ventilation will merely remove the odour but not germs and gases. Germs and gases will have a detrimental effect on the sealing rubbers.



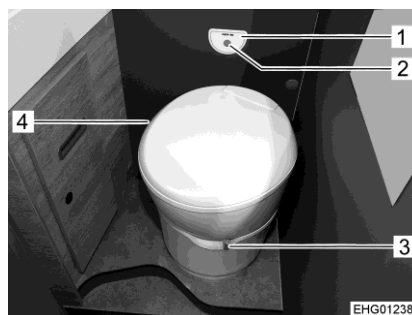
- ▷ Further information can be obtained in the manufacturer's instruction manual.



- ▷ Only empty the sewage container at disposal stations, at camping sites or caravan sites, that are especially provided for this purpose.

11.5.1 Swivel toilet

The flushing of the Thetford toilet is fed directly from the water system of the vehicle. The toilet bowl can be moved into the optimal position.



- 1 Operating unit
- 2 Flush button
- 3 Slide lever
- 4 Level indicator

Fig. 92 Thetford toilet bowl (swivelling)

The operating unit (Fig. 92,1) is located on the wall behind to the toilet bowl.

- Flushing:
- Before flushing open the sliding trap of the Thetford toilet. To do this, push the slide lever (Fig. 92,3) in an anticlockwise direction.
 - For flushing, press the blue flush button (Fig. 92,2).
 - After flushing close the sliding trap. To do this, push the slide lever in a clockwise direction.

The level indicator (Fig. 92,4) lights up whenever the sewage container needs to be emptied.

11 Sanitary fittings

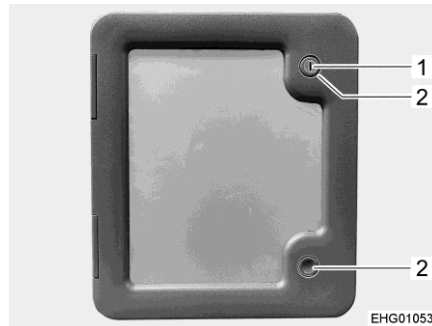
11.5.2 Emptying the sewage container



- ▷ Before emptying the sewage container, remove the hose of the ventilation system from the sewage container.



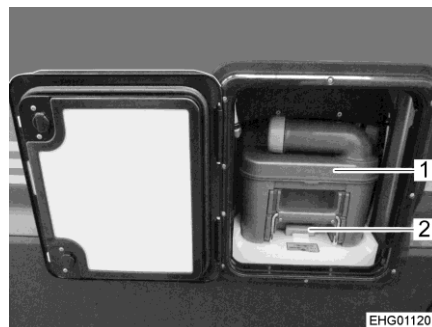
- ▷ The sewage container can only be taken out if the sliding trap is closed.



- 1 Locking cylinder
- 2 Push-button lock

Fig. 93 Flap (sewage container)

- Slide the slide lever on the toilet bowl in a clockwise direction. The sliding trap is closed.
- Open the flap for the sewage container on the outside of the vehicle. To do this, insert the key into the locking cylinder (Fig. 93,1) of the push-button lock and turn it half a turn in an anticlockwise direction.
- Remove the key.
- Press both push-button locks (Fig. 93,2) at the same time and open the external flap.



- 1 Sewage container
- 2 Retaining clip

Fig. 94 Sewage container (in vehicle)

- Pull up the retaining clip (Fig. 94,2) and pull out the sewage container (Fig. 94,1).

11 Sanitary fittings



- 1 Ventilation button
- 2 Outlet pipe
- 3 Lid

Fig. 95 Sewage container

- At a disposal station that is especially provided for this purpose, swivel the outlet pipe (Fig. 95,2) forwards and unscrew the lid (Fig. 95,3).
- Press the coloured ventilation button (Fig. 95,1) and hold it there until the sewage container is empty.
- Clean the sewage container with fresh water.
- Close outlet pipe with cover and swivel it back.
- Push sewage container into the disposal chute until it engages.
- Connect the hose of the ventilation system.
- Close flap for sewage container.
- Fill in new sanitary liquid.

11.5.3 Winter operation



- ▷ Do not use anti-freeze. Anti-freeze can damage the toilet.

When the vehicle is being heated, the toilet, the water tank and the sewage container are in a frost-protected area. This means that the toilet can also be used in winter.

If the vehicle is not being heated and there is a risk of frost, empty the water tank, the sewage container and the water pipes. This prevents frost damage.

11.5.4 Temporary lay-up



- ▷ If the toilet is not to be used for an extended period, empty the water tank, the sewage container and the water pipes.

Laying up the toilet:

- Empty the water tank.
- Flush the toilet until no more water runs into the toilet. Note that the pump can get damaged after one minute at the latest if it runs dry.
- Empty the sewage container.
- Rinse the sewage container thoroughly.
- Leave the drainage neck on the sewage container open.
- Allow the sewage container to dry.

11 Sanitary fittings

12 Care

Chapter overview

This chapter contains instructions regarding the care of the vehicle.

At the end of the chapter there is a checklist of measures you must carry out if you are not going to use the vehicle for an extended period of time.

12.1 General



- ▷ The vehicle is designed for recreational use. Use that goes beyond normal recreational use (permanent use) can lead to moisture forming in the interior. In addition, the interior may be affected.

12.2 External care

Standard external care consists of regular washing. The use and the environmental conditions will determine how often the vehicle needs to be washed. Wash the vehicle more frequently in areas which are exposed to heavy air pollution or heavy traffic or roads treated with de-icing salts. If the vehicle is exposed to salty and humid air (coastal areas, humid climates), wash the vehicle more frequently.

Do not park under trees if at all possible. The resin-like discharge which many trees secrete, give the paintwork a matt look and can promote the onset of corrosion.

Wash off bird droppings straight away and thoroughly, as the acid it contains is extremely corrosive.

12.2.1 Washing with a high-pressure cleaner



- ▷ Do not clean the tyres with a high-pressure cleaner. The tyres might be damaged.
- ▷ Do not spray external applications (deco-films) directly with the high-pressure cleaner. The external applications could come off.

Before cleaning the vehicle with a high-pressure cleaner, observe the operating manual of the high-pressure cleaner.

When cleaning with the nozzle for circular jet between the vehicle and the cleaning nozzle, maintain a minimum distance of approx. 700 mm.

Take into consideration that the jet of water comes out of the cleaning nozzle with pressure. The vehicle may be damaged by incorrect handling of the high-pressure cleaner. The temperature of the water should not be above 60 °C. Keep the jet of water in constant movement during the washing process. Do not direct the water jet at clearances, built-in electrical parts, plugs, seals, the ventilation grill or the skylights. The vehicle may be damaged or water may enter the interior.

12 Care

12.2.2 Washing the vehicle



- ▷ When cleaning in automatic car washes, water may penetrate openings such as the refrigerator ventilation grille or waste gas vent. Never clean the vehicle in an automatic car wash. When washing by hand, make sure that no water enters through the openings.
- Wash the vehicle only on a washing site intended for this purpose.
- When cleaning in direct sunlight, make sure that the cleaning agent used does not cause harmful reactions.
- When using a cleaning agent, observe the manufacturer's instructions for use. Cleaning agent must be pH-neutral.
- First, test the suitability of the cleaning agent on an inconspicuous spot.
- Only clean external applications and synthetic parts with plenty of warm water, dish washing liquid and soft cloth.
- Wash down the vehicle with plenty of water, a clean sponge or a soft brush. In the case of stubborn dirt add dish washing liquid to the water.
- Painted exterior walls may also be cleaned with a caravan cleaner.
- Treat rubber seals on doors with a conventional rubber care product.
- Treat locking cylinder on doors with graphite dust.

12.2.3 Windows of acrylic glass

Acrylic glass windows are delicate and require very careful handling.



- ▷ Never rub acrylic glass windows dry as dust particles might damage the surface.
- ▷ Only clean acrylic glass windows with plenty of warm water, some dish washing liquid and a soft cloth.
- ▷ Never use glass cleaning agents with chemical, abrasive or alcohol-containing additives. Premature brittleness of the panes and associated cracks may result from their use.
- ▷ Avoid contact of cleansing agents used for the body (e.g. tar- or silicone-removing agents) with acrylic glass.
- ▷ Do not clean vehicle in car wash.
- ▷ Do not attach stickers to the acrylic glass windows.
- ▷ Having cleaned the vehicle rinse acrylic glass with sufficient clear water.
- ▷ Do not treat rubber seals with agents that are corrosive or contain silicone (e.g. alcohols, plasticisers, organic solvents, etc.). It is possible to use talcum or white Vaseline without any problems. We recommend a high-quality, perfluorinated lubricant for rubber care.



- ▷ An acrylic glass cleanser with antistatic effect is suitable for a follow-up treatment. Small scratches can be treated with an acrylic glass polish. These agents are available at the accessories shop.

12 Care

12.2.4 Add-on parts made of glass-fibre reinforced plastic (GRP)



- ▷ Avoid contact between polish and window rubber and piping.
- ▷ The glass-fibre reinforced plastic must not become too hot. Therefore when polishing with a polishing machine, keep the machine in constant motion.



- ▷ In the case of large-surface GRP components, superficial cracking may occur due to ageing. This is a property of the GRP material composite with Gel-Coat coating that does not affect the function of the component. Therefore, there is no reason for complaint.

Add-on parts made of glass fibre reinforced plastic can yellow or weather due to lack of vehicle care and material ageing.

GRP add-on parts should therefore undergo regular follow-up treatment. This way, these parts will not turn yellow and the sealing of the surface remains intact.

Follow-up treatment of GRP add-on parts:

- Wash the vehicle and allow to dry as described above. Check if the GRP add-on parts are clean and dry.
- Apply the polisher with a soft cloth evenly on the surface of the GRP add-on part.
- Wait until a light grey film forms.
- Wipe the GRP add-on part with a dry, soft cloth. Move the cloth in circles over the surface of the GRP add-on part.

We recommend using a polishing machine for this work.



- ▷ Paint protection has to be used to preserve the polish. Please read the instructions of the paint protection for details on how to apply it.

12.2.5 Underbody

The underbody of the vehicle is partly coated with an age-resistant underbody protection. Should the underbody protection be damaged, repair immediately. Do not treat areas coated with underbody protection with spray oil.



- ▷ Only use products approved by the manufacturer. Our authorised dealers and service centres will be happy to advise you.

12 Care

12.2.6 Engine compartment



- ▷ Cleaning and care of the engine compartment may only be carried out while the ignition is switched on.
- ▷ Let the engine cool down before carrying out any work in the engine compartment. There is a danger of burns when touching motor components that are still hot!
- ▷ Before carrying out any work in the engine compartment, read and observe the corresponding warning and handling instructions in the operating manual of the base vehicle manufacturer.
- ▷ Have an engine washing only carried out by an authorised specialist workshop.
- ▷ Do not aim the steam jet directly at the lamp housings, actuators or seals. This may prevent humidity in the headlights and the defects resulting therefrom.
- ▷ Do not aim the steam jet at the windscreen wiper motor and the wiper mechanics.
- ▷ Only apply protective engine lacquer when the components in the engine compartment have cooled down and are clean.
- ▷ Only use lubricants, greases and fluids authorised by the base vehicle manufacturer.

The body manufacturer excludes any guarantee for damages, leaks, or the failure or electrical components that appear after an engine washing.

12.2.7 Windscreen washer system and windscreen wipers



- ▷ Only fill the cleaning agents (with/without frost protection) into the washer fluid container which are listed in the operating manual of the base vehicle manufacturer and in the mixing ratio specified therein. Do not use any radiator frost protection or other products. These products affect the cleaning effect and attack the windscreen blades.
- ▷ Do not switch the windscreen washer system or the windscreen wipers on when the windscreen blades are frozen to the windscreen. Release the windscreen blades first using a defrosting product.
- ▷ Do not remove the snow accumulated on the windscreen with the windscreen wipers. Remove the snow from the windscreen with a brush first.
- ▷ Do not switch on the windscreen wipers on a dry windscreen.
- ▷ Do not clean the windscreen wiper mechanics and the windscreen wiper motor with a steam blaster.
- Check the correct functioning of windscreen washer system and windscreen wipers periodically.
- Check the filling level of the washer fluid container periodically. Only if sufficient cleaning fluid reaches the windscreen, the windscreen wipers will be able to clean it in a satisfactory way. A clear view contributes decisively to safe driving.
- Before the frost period starts, fill the washer fluid container with windscreen cleaning product containing sufficient frost protection.

12 Care

- Refill windscreen washing fluid on time. Only use clean water to dilute the windscreen cleaning product.
- Remove insect residues from the windscreen blades as soon as possible.
- Clean the windscreen blades periodically with a windscreen cleaning product. To do this, move a sponge or a cloth along the rubber strip.
- Remove car wax residues after the vehicle washing using a wax dissolving windscreen cleaning product.
- Remove dirt accumulations on the nozzles of the windscreen washer system periodically.
- After journeys on heavily soiled roads, spray clear water on the wiper nozzles to prevent incrustations.
- Clean obstructed wiper nozzles with a fine needle.

12.2.8 Air conditioning unit



- ▷ Do not clean the air conditioning unit with a high-pressure cleaner. Water entering can damage the air conditioning unit.
- ▷ Do not clean vehicle in car wash.
- ▷ Do not use any sharp or hard objects when cleaning. Otherwise the air conditioning unit and roof window can be damaged.



- ▷ Use only the cleaning agents recommended by the manufacturer to clean the roof window. Our authorised dealers and service centres will be happy to advise you.
- Use only water and a gentle cleaning agent to clean the air conditioning unit.
- Wipe the air conditioning unit housing and the air outlet occasionally with a damp cloth.
- Clean the remote control occasionally with a slightly damp cloth. Clean the display with a spectacles cleaning cloth.
- If necessary, clean the blinds with a mild soap solution and plenty of water.
- Remove leaves and other dirt from the ventilation openings on the air conditioning unit regularly.
- Check the condensation drain holes regularly to ascertain whether the condensation can run off freely.
- Clean the filters on both sides of the air discharge unit regularly.
- Change the active carbon filters on both sides of the air discharge unit annually.
- Inspect the profile seal to the vehicle roof for damage annually.



- ▷ Further information can be obtained in the manufacturer's instruction manual.

12 Care

12.2.9 Entrance step

If the entrance step is lubricated, coarse particles of dirt can settle on the lubricant during the journey and cause damage to the operating mechanism of the entrance step. Therefore, do not lubricate the moving parts of the entrance step.

12.3 Interior care



- ▷ If possible, treat stains immediately.
- ▷ Synthetic parts in the toilet and living area are very delicate and should be treated with care. Do not use solvents, alcohol-containing cleansers or scourers. This procedure will help you to avoid brittleness and formation of cracks.
- ▷ Hair colourants, nail varnish, cigarette ash and similar substances may cause permanent stains or discolouration. For this reason, you should prevent these substances from getting onto plastic parts. If they do get onto plastic parts, you should remove these substances immediately.
- ▷ Do not pour any corrosive agents into the drain holes. Never pour boiling water directly into the drain holes. Corrosive agents and boiling water cause damage to drainage pipes and siphon traps.
- ▷ Do not use vinegar based products to clean the toilet and water system, or for descaling the water system. Vinegar-based products may cause damage to seals or parts of the installation. Use standard descaling products for descaling.
- ▷ Save water. Mop up all remaining water.



- ▷ For information about the use of maintenance products, our representatives and service centres will be glad to advise.

- Surface and knobs of furniture, lamps and synthetic parts in the toilet and living area should be cleaned with water and a wool cloth. A mild cleanser may be added to the water. If required, use furniture polish for the painted surfaces.
- Curtains and net curtains should be dry cleaned.
- Vacuum clean the carpet, if necessary clean with carpet shampoo.
- Clean PVC-floor covering with a mild, soapy cleaning agent for PVC floors. Do not place carpet on wet PVC-floor covering. The carpet and the PVC-floor covering may stick together.
- Brush insect screen with a soft brush or vacuum with the brush attachment of the vacuum cleaner.
- Brush blinds with a soft brush or vacuum with the brush attachment of the vacuum cleaner. Grease or stubborn dirt may be removed with a mild soap at 30 °C (curd soap).
- Brush Roman shades with a soft brush or vacuum with the brush attachment of the vacuum cleaner. Grease or stubborn dirt may be removed with a mild soap at 30 °C (curd soap).
- Unrolled seat belts can be cleaned with warm soapsuds. The seat belt must be completely dry before being rolled up.

12 Care

12.4 Kitchen installation

12.4.1 General notes on care

- Never clean the sink or the gas cooker with a scourer. Avoid anything which may cause scratching or grooves.
- The surface of the kitchen worktop is not scratch proof. When working with sharp objects, always use a pad. Only use soft cleaning agents for cleaning and care. Do not use any abrasive or scratching intensive treatment products nor scratching sponges.
- Clean the burners on the gas cooker using a damp cloth only. Prevent any water from penetrating the burner covers. Water may damage the burners on the gas cooker.
- When cleaning the burner ring, ensure that the holes are not obstructed.
- Clean the surface of the cooker, and particularly the hob, with warm water and some washing-up liquid. Scouring agent or sharp objects damage the surface of the hob.
The surface of the hob is easier to clean when it is still slightly warm. Before cleaning, ensure that the hob is only still warm to the touch (residual heat indicator has gone out).
Always clean the hob before using it again.
- The knobs can be pulled off for cleaning.
- Clean the external surfaces of the kitchen installation with a wet cloth without abrasive, corrosive or chloride containing cleaning agents. Do not use any steel wool.
- Immediately remove acidic or alkaline substances (vinegar, salt, lemon juice, etc.).
- Let the oven and grill cool down before cleaning. Hot surfaces may be damaged due to cold water or a wet cloth. Clean enamelled surfaces only with soap water or washing-up liquid containing water.

12.4.2 Refrigerator

- Clean the exterior and interior of the refrigerator with a soft cloth and luke-warm water (containing a mild cleaning agent).
- Then, wash the refrigerator out with clear water and let it dry.
- To prevent material changes, do not use any soap, nor any sharp, granular or soda containing cleaning agents.
- Keep oil and grease away from the door seal.

12 Care

12.5 Stainless steel surfaces



- ▷ Do not clean the stainless steel surfaces with bleaching agents, with products that contain chloride or hydrochloric acid, baking powder nor with silver polish.
- ▷ Do not use scouring agent nor coarse sponges.



- ▷ Prior to cleaning, test the suitability of the cleaning product for the surface on an unobtrusive spot.
- ▷ Dry the surfaces thoroughly after cleaning to prevent limescale.
- ▷ In the case of brushed stainless steel surfaces, wipe in a direction of the grinding.

Removing scratches from the surface:

- Treat the stainless steel surface with a soft cleaning cloth and with a special stainless steel cleaner.
- Rinse the stainless steel surface and dry it with household wipes.

Removing stubborn dirt and burnt-in fat:

- Clean the stainless steel surface with an ordinary household sponge and with cleanser.
- Rinse the stainless steel surface and dry it with household wipes.

Removing fingerprints:

- Clean the stainless steel surface with a soft cleaning cloth and soapy water or a glass cleaning agent.
- Rinse the stainless steel surface and dry it with household wipes.

Removing coffee or tea stains:

- Treat the stainless steel surface with a baking soda solution. Allow the baking soda solution to work in for 15 minutes.
- Rinse the stainless steel surface and dry it with household wipes.

Removing rust stains:

- Clean the stainless steel surface with an ordinary household sponge and with cleanser. If necessary, use a soft cleaning cloth and stainless steel cleaner.
- Rinse the stainless steel surface and dry it with household wipes.

12.6 Cushions

The care and cleaning instructions below are for assistance only. They are not a guarantee of successful cleaning. These instructions cannot form the basis for any warranty claims.



- ▷ If possible, treat stains immediately.
- ▷ Never use household cleaners to remove stains (e.g. detergents).
- ▷ Before treating stains, test the cleaning on a hidden part of the upholstery covers. This will show you whether the cleaning will damage the materials or dyes.
- ▷ Always only dab moist or greasy stains, never rub them. It is most effective to gently press an absorbent cloth or a sponge onto the stain.
- ▷ Do not wash upholstery.
- ▷ When cleaning leather covers, make sure that the leather is not soaked through and that no water seeps through the seams of the leather covers.

12 Care



- ▷ Treat the stain from the outside working inwards. This prevents the stain from spreading.
- ▷ In the case of both solid or softer contamination, first remove the coarse parts. Next, carefully scrape off the stain with a blunt knife or spatula.
- ▷ If the stain has already dried in, carefully brush off the coarse parts. Next, dab off the stain with a damp cloth or sponge.
- ▷ The upholstery will fade over time, if it is exposed to sunlight. If the temperature within the vehicle rises rapidly as well, the colour will change at an accelerated rate.
We therefore recommend covering the cushions in strong sunlight.
- ▷ Depending on the equipment, the cushions will be provided with stain protection.

Removing grease, oil, wine, milk, non-alcoholic beverages:

- Moisten a cloth with commercial water-based cleaning agent. (Alternatively, mix 2 tablespoons of ammoniac with 1 litre of water.)
- Gently dab the stain with the cloth.
- Turn the cloth frequently so that the stain only comes into contact with a clean part of the cloth.

Removing urine, sweat:

- Moisten a cloth with commercial water-based cleaning agent. (Alternatively, mix 2 tablespoons of ammoniac with 1 litre of water.)
- Gently dab the stain with the cloth.
- Turn the cloth frequently so that the stain only comes into contact with a clean part of the cloth.

Removing chocolate, coffee:

- Moisten cloth with lukewarm water.
- Dab the stain with the cloth.

Removing fruit residues:

- Moisten cloth with cold water.
- Dab the stain with the cloth.

Removing wax:

- Carefully scrape off the wax with a blunt knife or spatula.
- Cover the stain with several layers of blotting paper and iron it.

Removing blood:

- Mix 2 tablespoons of salt and 1 litre of water.
- Moisten the stain and dab with a dry cloth.
- Dab stubborn stains with ammonia solution.

Removing (ball pen) ink:

- Moisten cloth with benzine.
- Gently dab the stain with the cloth.
- Turn the cloth frequently so that the stain only comes into contact with a clean part of the cloth.

12 Care

- Removing mud:
- Carefully remove as much mud as possible with a blunt knife or a spatula.
 - Allow the mud to dry and then remove it with a vacuum cleaner.
 - For stubborn stains, moisten a cloth with commercial water-based cleaning agent. (Alternatively, mix 2 tablespoons of ammonia solution with 1 litre of water.)
 - Gently dab the stain with the cloth.
 - Turn the cloth frequently so that the stain only comes into contact with a clean part of the cloth.
- Removing pencil:
- Moisten cloth with a mild, water-free and pure fabric cleaning agent.
 - Gently dab the stain with the cloth.
 - Turn the cloth frequently so that the stain only comes into contact with a clean part of the cloth.
- Removing vomit:
- Carefully remove vomit.
 - Wash cushion with cold water.
 - Moisten a cloth with commercial water-based cleaning agent. (Alternatively, mix 2 tablespoons of ammonia with 1 litre of water.)
 - Gently dab the stain with the cloth.
 - Turn the cloth frequently so that the stain only comes into contact with a clean part of the cloth.

12.7 Water system

12.7.1 Cleaning the water tank

- Empty the water tank and close the drainage opening.
- Remove the cap of the water tank.
- Fill water tank with water and some washing-up liquid (do not use any scourers).
- Using a trade standard brush for washing dishes, scrub the water tank until there is no longer any visible deposit.
- Scrub also the pump housing.
- If possible, clean fresh water sensors through the cleaning openings by hand.
- Rinse water tank with copious amounts of drinking water.



- ▷ If, due to the design of the water tank, it is not possible to clean the water tank mechanically: Use a suitable chemical cleaning agent.

The authorised dealers would be happy to assist you in choosing a suitable cleaning agent.

Follow the cleaning agent manufacturer's instructions.

12 Care

12.7.2 Cleaning the water pipes



- ▷ Only use approved cleaning agents as sold by the specialist trade.
- ▷ The cleaning agent must meet national regulations and be approved (if required).



- ▷ Collect any emerging mixture of water and cleaning agent for correct disposal.
- Empty the water system.
- Close all drainage openings and drain cocks.
- Fill mixture of water and cleaning agent into the water tank. Observe the manufacturer's instructions regarding the mixing ratio.
- Open the drain cocks one by one.
- Leave the drain cocks open until the mixture of water and cleaning agent has reached the respective drain.
- Close the drain cocks.
- Set all the water taps to Hot and open them.
- Leave the water taps open until the mixture of water and cleaning agent has reached the drain.
- Set all water taps to Cold and open them.
- Leave the water taps open until the mixture of water and cleaning agent has reached the drain.
- Close all water taps.
- Flush the toilet several times.
- Allow the cleaning agent to act in accordance with the manufacturer's instructions.
- Empty the water system. Collect the mixture of water and cleaning agent for correct disposal.
- For rinsing fill the entire water system with drinking water and empty again several times over.

12.7.3 Disinfecting the water system



- ▷ Only use approved disinfectants as sold by the specialist trade. Observe the tolerance of humans and animals.
- ▷ The disinfectant must meet national regulations and be approved (if required).



- ▷ Collect any emerging mixture of water and disinfectant for correct disposal.

When disinfecting the water system, proceed the same way as when cleaning the water pipes (see section 12.7.2). Simply use disinfectant instead of cleaning agent.

12 Care

12.7.4 Cleaning the waste water tank

Clean the waste water tank after every use.

- Empty the waste water tank.
- Open the cleaning opening on the waste water tank and the drain cock.
- Thoroughly rinse out the waste water tank with fresh water.
- If possible, clean waste water sensors through the cleaning opening by hand.

12.8 Care for vehicle operation in winter

De-icing salt damages the underbody and the parts open to water spray. We recommend that you wash the vehicle more frequently during wintertime. Mechanical and surface treated parts and the underside are under particular strain, and should therefore be cleaned thoroughly.



- ▷ If there is any risk of frost, always run heater at a minimum of 15 °C. Switch the circulation fan (if there is one) to automatic. In the case of extreme external temperatures, the furniture flaps and doors should be left slightly open. The inflowing warm air can help prevent the freezing of water pipes, for example, and counteract the formation of condensation in the storage spaces.
- ▷ If there is a risk of frost, additionally cover the windows on the outside of the vehicle overnight with winter insulation mats.

12.9 Lay-up

12.9.1 Temporary lay-up





- ▶ If the vehicle has been stationary for a long period (approx. 10 months) have the braking and gas systems checked by an authorised specialist workshop.
- ▶ Take into consideration that water is undrinkable after only a short time.
- ▶ Animal damage to cables can lead to short circuits. Fire hazard!

Animals (especially mice) can cause great damage to the interior of the vehicle. This is especially true if the animal remains undisturbed in a parked vehicle.

To keep damages from animals to a minimum or to avoid them altogether, regularly check the vehicle for damage or animal traces.

If animal traces are found, contact the authorised dealer or service centre. If damage to cables has occurred, they can result in short circuits. The vehicle could catch fire.

Go through the following checklist before a lay-up:

	Activity	Done
Base vehicle	Completely fill fuel tank. This prevents corrosion damage within the fuel tank system	
	Jack up vehicle so that the wheels do not bear any load, or move vehicle every 4 weeks. This prevents any pressure points from occurring on tyres and wheel bearings	
	Protect the tyres from direct exposure to the sun. Danger of formation of cracks!	
	Inflate tyres up to the recommended maximum pressure	
	Always provide for sufficient ventilation in the underbody area	
	 ▷ Humidity or lack of oxygen e.g. by covering with plastic film may cause optical irregularities to the underbody.	
	In addition observe the notes in the operating manual of the base vehicle	
Body	All vents should be sealed with the appropriate caps and all other openings (apart from forced ventilations) should also be sealed. This prevents animals (e.g. mice) from gaining entry	
	Air the interior, all storage spaces accessible from the outside, and the parking space (e.g. garage) every 3 weeks in order to prevent the occurrence of condensation and resulting mould formation	
Interior	Place upholstery in an upright position for ventilation, and cover	
	Clean refrigerator	
	Leave the refrigerator door slightly open	
	Search for traces of animals that have gained entry	
Gas system	Close regulator tap on the gas bottle	
	Close all gas isolator taps	
	Always remove gas bottles from the gas bottle compartment, even if they are empty	
Electrical system	Fully charge living area and starter battery	
	 ▷ Charge the battery for at least 20 hours before laying up.	
	Disconnect the living area battery from the 12 V power supply. To do this, switch off the battery cut-off switch on the transformer/rectifier (see chapter 9)	
Water system	Empty the entire water system. Blow out the residual water from the water pipes (0.5 bar max.). Leave the water taps on in central position. Leave all drain cocks open. Observe the notes in chapter 11	

12.9.2 Lay-up over winter

Additional measures are required if laying up the vehicle over winter:

	Activity	Done
Base vehicle	Clean body and underbody thoroughly and spray with hot wax or protect with varnish	
	Fill fuel tank with winter diesel	
	Check antifreeze in the cooling water	
	Rectify damage to the paintwork	
	Fill in windscreen washer fluid with frost protection	
Body	Clean vehicle from outside thoroughly	
	Keep the forced ventilation open	
	Clean and grease all door and flap hinges	
	Brush oil or glycerine on all locking mechanisms	
	Treat all rubber seals with a conventional rubber care product	
	Use graphite dust to treat locking cylinders	
Interior	Set up the de-humidifier (granulate)	
	Remove cushions and mattresses from the vehicle and store them in a dry place	
	Air the interior every 3 weeks	
	Empty all cabinets and storage compartments, open flaps, doors and drawers	
	Thoroughly clean the interior	
Electrical system	Remove the starter battery and the living area battery and store them in a place protected from frost (see chapter 9) or connect the vehicle to a 230 V supply. Before removing, remove the fuses on the living area battery	
Water system	Clean the water system using approved cleaning agents from a specialised store	
Complete vehicle	Arrange the tarpaulins in such a way that the ventilation openings are not covered, or use porous tarpaulins	

12 Care

12.9.3 Starting up the vehicle after a temporary lay-up or after lay-up over winter

Go through the following checklist before start-up:

	Activity	Done
Base vehicle	Check the tyre pressure on all tyres	
	Check the tyre pressure of the spare wheel (if present)	
Body	Clean the pivot bearing of the entrance step	
	Check that the doors, windows and skylights are working properly	
	Check the function of all external locks	
	Remove the cover from the waste gas vent of the heater (if there is one)	
	Remove the winter cover from the refrigerator grill (if there is one)	
Gas system	Put the gas bottles in the gas bottle compartment, tie down and connect to the gas pressure regulator	
Electrical system	Connect to 230 V external power supply	
	Connect the living area battery with the 12 V power supply. To do this, switch on the battery cut-off switch on the transformer/rectifier (see chapter 9)	
	Check that the electrical system are working, e.g. interior light, socket and all installed electrical appliances	
Water system	Disinfect water pipes and water tank	
	Close all drain cocks and water taps	
	Check water system for leaks	
Appliances	Check the function of the appliances	

13 Customer service and maintenance

Chapter overview

This chapter contains instructions about official inspections and inspection and maintenance work in the vehicle.

At the end of the chapter you will find important instructions on how to obtain spare parts and on our dealers and service centres.

13.1 Official inspections

Depending on the national legislative provisions, the following official inspections must be carried out periodically:

- Main inspection
- Emissions test
- Inspection of the gas system

The inspection intervals in accordance with the national legislative provisions must be adhered to. The inspection stickers attached to the vehicle indicate when the next inspection is required.

For Germany, for example, the following regulation applies:

From April 1st 2022, the inspection obligation for the gas system as part of the main inspection (HU) will no longer apply. Instead, an independent gas inspection (according to DVGW (German Technical and Scientific Association for Gas and Water) worksheet G 607) must be carried out for recreational vehicles (motorhomes and caravans). The gas inspection is evidenced by the correctly completed yellow inspection book and a valid inspection sticker on the vehicle.

For more information on the gas inspection and the intervals at which it must be carried out, see the following websites:

- German Federal Ministry of Digital Affairs and Transport (BMDV): www.bmvi.de
- German Technical and Scientific Association for Gas and Water (DVGW): www.dvgw.de
- German Association for Liquefied Gas (DVFG): www.dvfg.de

As long as the intervals at which the gas inspection must be carried out are not regulated by law, the DVGW recommends an inspection every two years.

Many camping site operators demand proof of a valid gas inspection when allocating a parking place.



- ▷ Any changes on the gas system must be carried out by a certified expert for gas systems.
- ▷ Even in the case of vehicles that are not registered, an inspection of the gas system is required.

13 Customer service and maintenance

13.2 Inspection work

Like any technical appliance, the vehicle must be inspected at regular intervals. This inspection work must be carried out by qualified personnel.

Special technical knowledge, which cannot be taught within the framework of this instruction manual, is required for these tasks. Personnel possessing this technical knowledge are available for assistance at all service centres. Their experience and regular technical training by the factory as well as the equipment and tools used guarantee expert and up-to-date inspection of the vehicle.

The service centre in charge will confirm the work performed.

Have chassis inspections confirmed in the chassis manufacturer's customer service booklet.



- ▷ Observe the inspections indicated by the manufacturer and have them carried out at the specified intervals. The value of the vehicle is thus preserved.
- ▷ The confirmation of the inspection work carried out serves as valid proof in the event of damage and guarantee claims.

13.3 Maintenance work

As with every machine, this vehicle requires maintenance. The extent and frequency of the maintenance work required depend on conditions of operation and use. More difficult operating conditions make it necessary to service the vehicle more often.

Have the base vehicle and the appliances serviced at the intervals specified in the corresponding instruction manuals.

13.4 Replacing bulbs, external



- ▶ Bulbs and lamp holders can be extremely hot. Therefore, allow lamps to cool down before changing bulbs.
- ▶ Store bulbs in a safe place inaccessible to children.
- ▶ Do not use any bulb that has been dropped or which shows scratches in its glass. The bulb might burst.



- ▷ Do not touch a new bulb with bare fingers. Use a cloth when installing the new bulb.
- ▷ Only use bulbs of the same type and with the correct wattage.
- ▷ When LEDs in lamps are faulty, visit an authorised specialist workshop.

The exterior lighting is part of the base vehicle. Replacement of light bulbs is described in the instruction manual of the base vehicle.

13 Customer service and maintenance

13.5 Lighting for living area



- ▶ Do not replace the LEDs in lamps with standard light bulbs. Risk of fire due to intense heat build up.

All of the lights in the living area are equipped with LED technology.

LED lights are economical, low-maintenance and have a very long life. It is not normally necessary to replace a light.



- ▶ If LEDs in lamps are defective, contact an authorised dealer or service centre.

13.6 Spare parts



- ▶ Every alteration of the original condition of the vehicle can alter road behaviour and jeopardize road safety.
- ▶ The optional equipment and original spare parts recommended by us have been specially developed and supplied for your vehicle. These products are available at the authorised dealer or service centre. The authorised dealer or service centre is informed about admissible technical details and carries out the required work correctly.
- ▶ The use of accessories, parts and fittings not supplied by us may cause damage to the vehicle and jeopardize road safety. Even if an expert's report, a general type approval or a design certification exists, there is no guarantee for the proper quality of the product.
- ▶ No liability can be assumed for damage caused by products which have not been released by us. This also applies to impermissible alterations to the vehicle.

For safety reasons, spare parts for pieces of equipment must correspond with manufacturer's instructions and be permitted by the manufacturer as a spare part. These spare parts may only be fitted by the manufacturer or an authorised specialist workshop. The authorised dealers and service centres are available for any spare parts requirement.

Here are some suggestions of important spare parts:

- Fuses
- Bulbs
- Water pump (submerged pump)

When ordering spare parts, please indicate the serial number or the chassis number and the vehicle type to the dealer.

The vehicle described in this instruction manual is built and equipped to factory standards. Optional equipment is offered depending on its purpose or use. When fitting optional equipment check if such equipment has to be entered in the vehicle documents. Observe the technically permissible maximum laden mass. The authorised dealer or service centre will be happy to advise you.

13 Customer service and maintenance

13.7 Vehicle identification plate

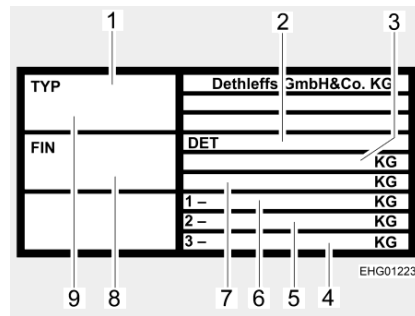


Fig. 96 Vehicle identification plate

- 1 Type
- 2 Manufacturer's code and chassis number
- 3 Technically permissible maximum laden mass of the vehicle
- 4 Free
- 5 Technically permissible maximum laden mass on the rear axle
- 6 Technically permissible maximum laden mass on the front axle
- 7 Technically permissible maximum laden mass of the vehicle with trailer
- 8 Base vehicle chassis number
- 9 Serial number

The vehicle identification plate with the serial number is attached to the frame of the right-hand driver's cabin door.

Do not remove the vehicle identification plate. The vehicle identification plate:

- identifies the vehicle
- helps with the procurement of spare parts
- together with the vehicle documents identifies the vehicle owner



- ▷ Always include the **serial number** with all inquiries for the customer service office.

13.8 Warning and information stickers

There are warning and information stickers on and inside the vehicle. Warning and information stickers are for the sake of safety and must not be removed.



- ▷ Replacement stickers can be obtained from an authorised dealer or a service centre.

13.9 Dealers

Contact your authorised dealer or service centre whenever spare parts are needed for the vehicle.

You can find the addresses and telephone numbers of the authorised dealers and service centres:

- In the brochure, which is included separately with the vehicle
- On the web at the homepage of the manufacturer

13 Customer service and maintenance

13.10 Replacement keys

To order replacement keys make a note of the following:

Locks for:	To order keys you need:	Obtainable at:
Base vehicle VW	Chassis number	VW authorised workshop
Body	Serial number, chassis number, second key or key number	Dealers

14 Wheels and tyres

Chapter overview

This chapter contains instructions regarding the tyres of the vehicle.

At the end of the chapter there is a table you can use to find the correct tyre pressure for your vehicle.

14.1 General



- ▶ Check tyre pressure before a journey or every 2 weeks. Wrong tyre pressure causes excessive wear and can lead to damage or even to tyre burst. You can lose control of the vehicle (see section 14.6).



- ▷ Check the tyre pressure on cold tyres. Do not reduce the higher tyre pressure when the tyres are warm.
- ▷ Tubeless tyres have been installed on the vehicle. Never install tubes in these tyres.
- ▷ Read the instruction manual for the base vehicle.
- ▷ The maximum depth of a body of water that a vehicle can pass through without being damaged is called the "wading depth". The maximum wading depth is determined by the lower edge of the bumper, but is a maximum of 40 cm. This applies to all loading conditions. Never cross deeper bodies of water. Water and dirt can damage the vehicle. The driver must make sure that no equipment can be damaged before driving through bodies of water or mud and before driving over raised obstacles. For further details, refer to the Mercedes Benz instruction manual.



- ▷ Depending on the model, the vehicle may only be equipped with a tyre repair kit as standard.
- ▷ In the case of a puncture, pull the vehicle over to the side of the road. Make vehicle safe with a hazard warning triangle. Switch on the warning lights.
- ▷ Tyres must not be older than 6 years as the material will become brittle over time. The four-digit DOT number on the tyre flank indicates the date of manufacture. The first two digits designate the week, the last two digits the year of manufacture.

Example: 0723 Week 07, year of manufacture 2023

- Observe:**
- Check the tyres regularly (every 2 weeks) for equal tread wear, tread depth and external damage.
 - Replace tyres at the latest, when the minimum depth of tread stipulated by law is reached.
 - Always use tyres of the same model on one axle.
 - Observe the instructions in the vehicle documents.
 - Only use tyres approved for the wheel rim type fitted. The permitted rim and tyre sizes are quoted in the vehicle documents and the authorised dealer or service centre will always be glad to give you advice.
 - Run-in new tyres for approx. 100 km (60 miles) at low speed since only then do they reach full strength.

14 Wheels and tyres

- Tighten the wheel nuts or wheel bolts cross-wise. In order to do this, use a torque wrench and comply with the specified tightening torque.
- Check regularly that the wheel nuts or wheel bolts are firmly seated. Re-tighten the wheel nuts or wheel bolts of a changed wheel after 50 km (30 miles).
- When using new or newly painted rims, re-tighten the wheel nuts or wheel bolts once again after approx. 1,000 to 5,000 km (600 miles to 3,000 miles).
- For lay-ups or long periods of inactivity, keep the tyres and tyre bearings free from pressure points:
Jack up the vehicle so that the wheels do not bear any load, or move the vehicle every 4 weeks in such a way that the position of the wheels is changed.

14.2 Tyre selection



- ▶ A wrong tyre can damage the tyres during the journey and even cause it to burst.



- ▶ If tyres that are not approved for the vehicle are used, then the type approval for the vehicle and subsequently the insurance coverage can lapse. The authorised dealer or service centre will be happy to advise you.

The tyre sizes approved for the vehicle are given in the vehicle documents or can be obtained from the authorised dealers or service centres. Each tyre must fit the vehicle on which it will be driven. This applies to the external dimensions (diameter, width), which are indicated with the standardised size designations. In addition, the tyres must meet the requirements of the vehicle with regard to weight and speed.

The weight is based on the technically permissible maximum laden mass on the axle, which is distributed between two tyres. The maximum load-carrying capacity of a tyre is indicated by its load index (= LI, load index code).

The maximum permissible speed for a tyre (with full load-carrying capacity) is indicated by the speed index (= SI). Together, load index and speed index form the operating code of a tyre. This is an official component of the complete, standardised dimensions description which appears on every tyre. The information on the tyres must correspond to the specifications which appear in the vehicle papers.

14 Wheels and tyres

14.3 Tyre specifications

215/70 R 15C
109/107 Q (example)

Description	Explanation
215	Tyre width in mm
70	Height-to-width proportion in percent
R	Tyre design (R = radial)
15	Rim diameter in inches
C	Commercial (transporter)
109	Load index code for single tyres
107	Load index code for twin tyres
Q	Speed index (Q = 160 km/h)

14.4 Handling of tyres

- Drive over kerbs at an obtuse angle. Otherwise the flanks of the tyres may get pinched. Driving over a kerb at a sharp angle can damage the tyre and result in it getting ruptured.
- Drive over high manhole covers at a slow speed. Otherwise the tyres may get pinched. Driving over a high manhole cover at high speed can damage the tyre and result in it getting ruptured.
- Check the shock absorbers regularly. Driving with poor shock absorbers significantly increases wear.
- In the event of an uneven thread wear, contact customer service.
- Do not clean the tyres with a high-pressure cleaner. The tyres can suffer serious damage within just a few seconds and rupture as a result.

14.5 Changing wheels

14.5.1 General instructions



- ▶ The vehicle must be on level, firm ground, secure from slipping.
- ▶ Shift the automatic transmission to position "P".
- ▶ Before jacking up the vehicle firmly apply the handbrake.
- ▶ Prevent the vehicle from rolling away by blocking the opposite wheel with the wheel chocks.
- ▶ Under no circumstances jack the vehicle with the fitted supports.
- ▶ If a trailer is connected: Detach the trailer before lifting the vehicle.
- ▶ Position the vehicle jack at the designated mounting points (see section 14.5.2).
- ▶ Never overload the vehicle jack. The maximum permissible load is specified on the vehicle jack's identification plate.

14 Wheels and tyres



- ▶ Use the vehicle jack only for lifting the vehicle briefly while changing the tyre.
- ▶ Do not start the motor while the vehicle is jacked up.
- ▶ Whilst the vehicle is in a jacked up position, persons must not lie down under it.



- ▷ Do not damage the thread of the thread bolt or wheel bolt when changing the wheel.
- ▷ Tighten the wheel nuts or wheel bolts cross-wise.
- ▷ If you are converting to other rims (e.g. aluminium rims or wheels with winter tyres), use the appropriate wheel bolts with the correct length and spherical shape. Otherwise the wheels may not be securely fixed or the braking system may not work correctly.
- ▷ All 4 wheels must be of the same model and size and be approved for the vehicle.
- ▷ Wheel rims or tyres that are not approved for the vehicle can jeopardize road safety and they must be separately inspected and approved by an accredited test centre.
- ▷ Do not replace wheels cross-wise.



- ▷ Protect the vehicle according to the national regulations, e.g. with a hazard warning triangle.
- ▷ Before changing the wheel, check the wheel rim and tyre size, the max. tyre load and the speed index on the tyres. Only use the wheel rim and tyre sizes stated in the vehicle documents.
- ▷ The on-board tool set is adapted to the mounted wheel nuts or wheel bolts. When alloy wheel rims are mounted, carry an appropriate tool for the spare wheel (steel wheel rim) in the vehicle.
- ▷ Further information can be found in the instruction manual of the base vehicle.

14.5.2 Changing a wheel



- ▶ The footplate of the vehicle jack must be levelly positioned on the ground.



- ▷ The wheel you have replaced should be repaired immediately.
- ▷ Take note of the general instructions in this chapter.
 - Park the vehicle on as even and stable a surface as possible.
 - Shift the automatic transmission to position "P".
 - Apply the handbrake.
 - Place chocks or other appropriate objects beneath the vehicle to secure it.
 - Remove the spare wheel from the spare wheel support.
 - If the ground is soft, place a stable support such as a wooden board beneath the vehicle jack.

14 Wheels and tyres

- Refer to the base vehicle's operating manual for the vehicle jack attachment point.
- Using the wheel brace, turn the wheel bolts several times to loosen them, but do not remove them.
- Lift the vehicle until the wheel has been lifted 2 to 3 cm above the ground.
- Remove the wheel bolts and take off the wheel.
- Place the spare wheel on the wheel hub and adjust.
- Screw in the wheel bolts and slightly tighten them cross-wise.
- Crank down the vehicle jack and remove it.
- Tighten wheel nuts or wheel bolts and have the fixture checked at the next workshop.

14.5.3 Changing a wheel with alloy wheel rims



- ▶ Alloy wheel rims and steel wheel rims require different wheel bolts. When alloy wheel rims are mounted, the spare wheel (steel wheel rim) is accompanied by suitable wheel bolts.

Wheels with alloy rims are changed in the same way as wheels with steel rims (see section 14.5.2).

14.6 Tyre pressure



- ▶ Tyres overheat if the tyre pressure is too low. This can cause serious tyre damage.
- ▶ Check tyre pressure before a journey or every 2 weeks. Wrong tyre pressure causes excessive wear and can lead to damage or even to tyre burst. You can lose control of the vehicle.
- ▶ Use only valves that are approved for the specified tyre pressure.



- ▷ Check the tyre pressure on cold tyres. Do not reduce the higher tyre pressure when the tyres are warm.

The vehicle has been factory-fitted with the recommended tyre pressure values for your individual configuration. These pre-set values have been adjusted to ensure optimum performance, safety and comfort. Tyre pressure requirements may vary depending on the specific equipment and load of the vehicle. If you are unsure about the ideal tyre pressure values for your configuration, please contact your authorised dealer or service partner.

The payload and the durability of tyres is directly dependent on the tyre pressure. Air is a volatile medium. It is unavoidable that it will escape from tyres.

As a rule of thumb it can be assumed that a filled tyre loses pressure at a rate of 0.1 bar every two months. To prevent the tyres becoming damaged or burst, check the tyre pressure regularly.

14 Wheels and tyres



- ▷ Pressure in hot tyres must be 0.3 bar higher than in cold tyres. Recheck the pressure when the tyres are cold.
- ▷ Over 4.75 bar requires a metal valve.
- ▷ The tyre pressure tolerance is +/- 0.05 bar.
- ▷ Refer to the vehicle documents for the permissible maximum mass on the axles.

15 Troubleshooting

Chapter overview

This chapter contains instructions about possible faults in your vehicle.

The faults are listed with their possible causes and corresponding remedies.

The specified faults can be remedied with relative ease and without a great deal of specialised knowledge. In the event that the remedies detailed in this instruction manual should not be successful, an authorised specialist workshop must find and eliminate the cause of the fault.

15.1 Braking system



- ▶ Have defects on the braking system immediately remedied by an authorised specialist workshop.

15.2 Electrical system




- ▶ When the living area battery is changed, only use batteries of the same type and the same capacity.



- ▶ See chapter 9 for changing the fuses.

Fault	Cause	Remedy
Interior lighting does not work	LED lamp or cable defective	Contact customer service
	Fuse on the transformer/rectifier is defective	Replace fuse on the transformer/rectifier
The electrically operated entrance step cannot be moved in or out	Fuse on the transformer/rectifier is defective	Replace fuse on the transformer/rectifier
No 230 V power supply in spite of connection	230 V automatic circuit breaker has triggered	Switch on 230 V automatic circuit breaker
Starter or living area battery is not charged when operated in 230 V mode	Jumbo flat fuse on the starter or living area battery is defective	Replace jumbo flat fuse on the starter or living area battery
	Charger module in the transformer/rectifier is defective	Contact customer service
Living area battery is not charged during vehicle operation	Fuse on terminal D+ of the alternator is defective	Replace fuse
	Disconnecter relay in the transformer/rectifier is defective	Contact customer service

15 Troubleshooting

Fault	Cause	Remedy
The 12 V indicator lamp does not light up	12 V power supply is switched off	Switch the 12 V power supply on
	Living area battery disconnected from the 12 V power supply	Connect the living area battery with the 12 V power supply
	Starter or living area battery is not charged	Charge the starter or living area battery
	Disconnecter relay in the transformer/rectifier is defective	Contact customer service
12 V power supply does not work	12 V power supply is switched off	Switch the 12 V power supply on
	Living area battery disconnected from the 12 V power supply	Connect the living area battery with the 12 V power supply
	Living area battery is discharged	Charge the living area battery
	Jumbo flat fuse on the living area battery is defective	Replace jumbo flat fuse on the living area battery
	Disconnecter relay in the transformer/rectifier is defective	Contact customer service
12 V power supply does not work in 230 V operation	12 V power supply is switched off	Switch the 12 V power supply on
	Living area battery disconnected from the 12 V power supply	Connect the living area battery with the 12 V power supply
	Charger module in the transformer/rectifier is defective	Contact customer service
	230 V automatic circuit breaker has triggered	Contact customer service
	Jumbo flat fuse on the living area battery is defective	Replace jumbo flat fuse on the living area battery
Starter battery is discharged in 12 V operation	Disconnecter relay in the transformer/rectifier is defective	Contact customer service
	Living area battery disconnected from the 12 V power supply	Connect the living area battery with the 12 V power supply
No voltage is supplied by the living area battery	Living area battery is discharged	<p>Charge living area battery immediately</p> <p> ▷ Total discharge damages the battery.</p> <p>If the vehicle is to be laid up for a long period, fully charge the living area battery beforehand</p>

15 Troubleshooting

Fault	Cause	Remedy
Living area battery over-loaded ("hot")	Battery selection switch set wrongly	Move position of battery selection switch
	Defective load sensor or relay	Remove the jumbo flat fuse on the living area battery, then contact customer service

15.3 Gas system



- ▶ In case of a defect of the gas system (gas odour, high gas consumption) there is danger of explosion! Close regulator tap on the gas bottle immediately. Open doors and windows and ventilate well.
- ▶ If the gas system is defective: Do not smoke; do not ignite any open flames, and do not operate electric switches (light switches etc.). Visit a specialist workshop immediately.
- ▶ Have the defective gas system repaired by an authorised specialist workshop.

Fault	Cause	Remedy
No gas	Gas bottle is empty	Change gas bottle
	Gas isolator tap closed	Open the gas isolator tap
	Regulator tap on the gas bottle is closed	Open the regulator tap on the gas bottle
	External temperature is too low (-42 °C for propane gas, 0 °C for butane gas)	Wait for higher external temperatures
	Built-in appliance is defective	Contact customer service

15.4 Cooker

Fault	Cause	Remedy
Ignition fuse does not operate (flame does not burn after the control knobs are released)	Heat-up time is too short	Keep control knob pressed for approx. 15 to 20 seconds after ignition
	Ignition fuse is defective	Contact customer service
Flame extinguishes when being reduced to its minimum setting	Thermocouple sensor is incorrectly set	Correctly reset thermocouple sensor (do not bend). The sensor tip should protrude by 5 mm beyond the burner. The sensor neck should not be more than 3 mm away from the burner ring; if necessary, contact customer service

15 Troubleshooting

15.5 Heater/boiler

In the event of a defect contact the nearest customer service workshop of the relevant appliance manufacturer. The list of addresses is enclosed with the accompanying appliance documentation. Only authorised qualified personnel may repair the appliance.

15.5.1 Heater/boiler with CP plus digital control unit



- ▷ Observe the notes and information on the subject of malfunctions/troubleshooting in the separate instruction manual from the manufacturer.

Fault	Cause	Remedy
Heater does not ignite	Temperature sensor on control unit or remote sensor defective	Pull out plug on control unit. The heater then works without thermostat. Contact the customer service as soon as possible
No display on control unit	Fuse on the transformer/rectifier is defective	Replace fuse on the transformer/rectifier
	Fuse in the electronic control unit has been triggered	Contact customer service
	Living area battery defective	Charge or replace the living area battery (or have it charged or replaced)
Fault with error code is displayed	See table "Fault search instruction"	See table "Fault search instruction"
Boiler empties, safety/drainage valve has opened	Internal temperature below 8 °C	Heat inside
Safety/drainage valve cannot be closed	Temperature at safety/drainage valve below 8 °C	Heat inside
Fan wheel runs noisily or not steadily	Fan wheel is soiled	Contact Truma service department

Fault search instruction

Error code	Cause	Rectification
E 111 H	Room temperature sensor or cable defective	Contact customer service
E 122 H	Fuel shortage (fuel tank empty or vehicle at an angle)	Refill fuel
E 131 H	No connection between heater and control unit	Contact customer service
E 150 H	Not all hot air pipes connected	Contact customer service
	Warm air louvres blocked	Check outlet openings
	Air circulation suction system blocked	Remove blocking

15 Troubleshooting

Error code	Cause	Rectification
E 151 H E 152 H	Overtemperature in the water tank	Switch off the device and allow it to cool down. Fill the boiler with water
	Warm air louvres blocked	Check outlet openings
	Air circulation suction system blocked	Remove blocking
E 160 H	Undervoltage < 10.2 V	Check battery voltage, charge battery if necessary or have battery replaced
		Switch off appliances or start vehicle engine until heater is running (approx. 4 minutes)
E 161 H	Overtoltage > 16.4 V	Check battery voltage and voltage sources (e.g. charger)
E 162 H	Safety switch has triggered	(Not used here)
E 164 H	No 230 V power supply	Check external mains connection
	230 V automatic circuit breaker has triggered	Switch on 230 V automatic circuit breaker
	Overheating protection has triggered	Reset overheating protection. Allow the heater to cool. Remove connection cover and press reset button
E 170 H	Risk of undervoltage < 11.5 V	Charge the battery
W 255 H	No 12 V power supply	Check power supply
	No connection between heater and control unit	Contact customer service

If these measures do not rectify the fault, contact customer service.

15.6 Air conditioning unit

Fault	Cause	Remedy
Air conditioning unit does not start up	No 230 V power supply	Connect the vehicle to the local power supply
	230 V automatic circuit breaker has triggered	Switch on 230 V automatic circuit breaker
Compressor switches off and on again after approx. 3 minutes	Voltage drop of the 230 V power supply	Check 230 V power supply
Remote control is not working	Remote control batteries empty	Change remote control batteries
Air conditioning unit does not respond to remote control commands	Obstacle between remote control and IR receiver	Remove obstacle
Air conditioning unit does not cool	Temperature has been set incorrectly	Adjust the temperature
	Thermostat defective	Contact customer service
	Defrosting process is running	Wait until defrosting process is finished
	Filter/panels soiled	Change filter / clean panels

15 Troubleshooting

Fault	Cause	Remedy
Air conditioning unit does not cool sufficiently	Outside air passages soiled	Clean air passages
Water is entering the vehicle	Drainage holes for condensation are clogged	Clean air conditioning unit
	Seal is defective	Contact customer service
	Inclined position	Do not drive on gradients or inclines greater than 8 %

15.7 Refrigerator

15.7.1 General

In the event of a defect contact the nearest customer service workshop of the relevant appliance manufacturer. The list of addresses is enclosed with the accompanying appliance documentation. Only authorised qualified personnel may repair the appliance.



▷ Further information can be obtained in the manufacturer's instruction manual.

15.7.2 Thetford T2000

Fault	Cause	Remedy
Refrigerator is not cooling, compressor is not running at all	Battery voltage too low	Charge the battery
	Start delay of 1 minute (not an error)	Wait 1 minute
	Ambient temperature is too high	Switch refrigerator off for 1 hour; ventilate the vehicle; switch off the night mode
	Fuse is defective	Replace fuse on the transformer/rectifier
Refrigerator does not cool, compressor starts but switches off immediately	Ambient temperature is too high	Switch refrigerator off for 1 hour; ventilate the vehicle; switch off the night mode
Refrigerator is cooling too intensely	Set cooling level is too high	Set lower cooling level
Operating noises higher than in night mode	Refrigerator is working in normal mode	Change to night mode (only if temperature is below 30 °C)
Refrigerator is not cooling, compressor is running permanently	Fault in the refrigerator	Contact customer service

15 Troubleshooting

Fault	Cause	Remedy
Refrigerator does not refrigerate sufficiently	Ambient temperature is too high	Switch refrigerator off for 1 hour; ventilate the vehicle; switch off the night mode
	Ventilation opening entirely or partially obstructed	Remove obstruction
	Refrigerator door not closed correctly	Close refrigerator door, check gasket


15.8 Water supply

Fault	Cause	Remedy
Leakage water inside the vehicle	A leak has occurred	Identify leak, re-connect water pipes
No water	Water tank is empty	Replenish drinking water
	Drain cock not closed	Close drain cock
	12 V power supply is switched off	Switch 12 V power supply on
	Switch for water pump is off	Switch on the water pump
	Fuse of the water pump is defective	Replace fuse on the transformer/rectifier
	Water pump defective	Exchange water pump (have it exchanged)
	Water pipe snapped off	Straighten water pipe or replace it (have it replaced)
	Transformer/rectifier defective	Contact customer service
Toilet has no flush water	Water tank is empty	Replenish drinking water
Waste water tank cannot be emptied	Drain cock is clogged	Blow out the waste water tank and drainage pipe. Rinse the waste water tank well
	Electrical valve is faulty	Open the valve manually
Drain on the single lever mixer tap is clogged	Perlator calcified	Unclip the perlator, de-calcify in vinegar water (only for products made from metal)
Water jets on the shower nozzle clogged	Water jets calcified	De-calcify shower nozzle in vinegar water (only for products made from metal) or rub off soft nozzle burling
Water drains from the shower tray slowly or does not drain at all	The vehicle is not in a horizontal position	Position the vehicle horizontally
	Siphon is dirty, e.g. with hair	Remove the dirt

15 Troubleshooting

Fault	Cause	Remedy
Milky water	Tank filled with dirty water	Clean water tank mechanically and chemically; then disinfect and rinse copiously with drinking water
	Residues in the water tank or water system	Clean water system mechanically and chemically; then disinfect and rinse copiously with drinking water
Freshwater sensors show incorrect values	Freshwater sensors are calcified	Clean the freshwater sensors
Waste water sensors show incorrect values	Waste water sensors are calcified or covered with soap residue	Clean the waste water sensors
Any change in the taste or odour of the water	Tank filled with dirty water	Clean water system mechanically and chemically; then disinfect and rinse copiously with drinking water
	Fuel filled into the water tank by mistake	Clean water system mechanically and chemically; then disinfect and rinse copiously with drinking water. If not successful: Contact a specialist workshop
	Microbiological deposits in the water system	Clean water system mechanically and chemically; then disinfect and rinse copiously with drinking water
Deposits in the water tank and/or water-carrying components	Water excessively long in the water tank and in water-carrying components	Clean water system mechanically and chemically; then disinfect and rinse copiously with drinking water

15.9 Body

Fault	Cause	Remedy
Flap hinges/door hinges are difficult to operate	Flap/door hinges are not (sufficiently) lubricated	Lubricate flap hinges/door hinges with acid-free and resin-free grease
Hinges/joints in the bathroom unit/toilet compartment are difficult to operate/make a grating noise	Hinges/joints are not (sufficiently) lubricated	Lubricate hinges/joints with solvent-free and acid-free grease  ▷ Spray cans often contain solvents
Storage compartment hinges are difficult to operate/make a grating noise	Storage compartment hinges are not (sufficiently) lubricated	Lubricate storage compartment hinges with acid-free and resin-free grease



- ▷ The authorised dealers and service centres are available for any spare parts requirement.

16 Optional equipment

16.1 Weight details for optional equipment



- ▶ The use of accessories, parts and fittings not supplied by us may cause damage to the vehicle and jeopardize road safety. Even if an expert's report, a general type approval or a design certification exists, there is no guarantee for the proper quality of the product.
- ▶ Every alteration of the original condition of the vehicle can alter road behaviour and jeopardize road safety.
- ▶ No liability can be assumed for damage caused by products which have not been released by us. This also applies to impermissible alterations to the vehicle.

Depending on the model series, different optional equipments are offered. You can find out which optional equipments are available for your vehicle in the separate document "Price List & Technical Data". There you will also find information on the weights of the individual optional equipments.

16 Optional equipment

17 Technical data

17.1 Technical data



- ▷ Only the details provided in the actual vehicle documentation shall be binding with regard to the technical data.
- ▷ The measurements as well as the net weight of the vehicle may change when mounting accessories or optional equipment. This may result in a reduction of the permissible number of persons. Differences due to manufacturing tolerances (+/- 5 %) are possible and permissible.

Further information can be found in the operating manual of the base vehicle. The technical data are not a component of the instruction manual.

The technical data can be obtained from the manufacturer's documentation. Alternatively, the authorised dealer or service centre will also be happy to advise you.

17 Technical data

18 Legal notes on weight-related information

The weight specifications and tests for motorhomes are uniformly regulated throughout the EU in EU Implementing Regulation No. 2021/535 (until June 2022: EU Implementing Regulation No. 1230/2012). We have summarised and explained the key terms and legal requirements from this regulation for you below. Our dealers and the Dethleffs configurator on our website offer you additional assistance in configuring your vehicle.

1. Technically permissible maximum laden mass

The technically permissible maximum laden mass of the vehicle (e.g. 3,500 kg) is a mass specification set by the manufacturer which the vehicle must not exceed. Information on the technically permissible maximum laden mass of the model you have chosen can be found in the technical data. If the vehicle exceeds the technically permissible maximum laden mass in everyday driving, this constitutes an administrative offence which may result in a fine.

2. Mass in running order

In simple terms, the mass in running order is the basic vehicle with standard equipment plus a legally fixed standard weight of 75 kg for the driver. This essentially includes the following items:

- the unladen weight of the vehicle together with the bodywork, including operating fluids such as greases, oils and coolants;
- the standard equipment, i.e. all equipment items that are included as standard in the factory-fitted scope of delivery;
- the fresh water tank filled to 100 % in driving mode (driving fill according to manufacturer's specifications; 20 litres) and an aluminium gas cylinder filled to 100 % with a weight of 16 kg;
- the fuel tank, which is 90 % full, including fuel;
- the driver, whose weight – regardless of the actual weight – is generally specified as 75 kg in accordance with EU law.

Information on the mass in running order can be found for each model in our sales documents. It is important to note that the value for mass in running order given in the sales documents is a default value determined in the type-approval procedure and verified by the authorities. It is legally permissible and possible for the mass in running order of the vehicle delivered to you to deviate from the nominal value stated in the sales documents. The legally permissible tolerance is $\pm 5\%$. In this way, the EU legislator accounts for the fact that certain fluctuations in the mass in running order occur due to variations in the weight of supplied parts as well as due to processes and weather conditions.

These weight deviations can be illustrated by means of an example calculation:

- Mass in running order acc. to sales documents: 2,850 kg
- Legally permissible tolerance of $\pm 5\%$: 142.50 kg
- Legally permissible range of mass in running order: 2,707.50 kg to 2,992.50 kg

18 Legal notes on weight-related information

The specific range of permissible weight deviations can be found for each model in the technical data. Dethleffs makes great efforts to reduce weight variations to the minimum that is unavoidable for production reasons. Deviations at the upper and lower end of the range are therefore very rare; however, they cannot be completely ruled out technically, even with all optimisations. The real weight of the vehicle and compliance with the permissible tolerance is therefore checked by Dethleffs by weighing each vehicle at the end of the line.

3. Mass of the passengers

The mass of the passengers is set a standard value of 75 kg for each seat provided by the manufacturer, regardless of the actual weight of the passengers. The mass of the driver is already included in the mass in running order (see no. 2 above) and is therefore not included again. In the case of a motorhome with four permitted seats, the mass of the passengers is therefore $3 \times 75 \text{ kg} = 225 \text{ kg}$.

4. Optional equipment and actual mass of the vehicle

Optional equipment (also: additional equipment) includes, according to the legal definition, all optional equipment parts not included in the standard equipment which are fitted to the vehicle under the responsibility of the manufacturer – i.e. ex works – and can be ordered by the customer (e.g. awning, bicycle or motorbike carrier, satellite system, solar system, oven, etc.). Information on the individual or package weights of the optional equipment that can be ordered can be found in our sales documents. Optional equipment in this sense does not include other accessories that are retrofitted by the dealer or you personally after the vehicle has been delivered ex works.

The mass of the vehicle in running order (see no. 2 above) and the mass of the optional equipment fitted to a specific vehicle at the factory are together referred to as the actual mass. You will find the corresponding information for your vehicle after handover under item 13.2 of the Certificate of Conformity (CoC). Please note that this specification also represents a standardised value. Since the mass in running order – as an element of the actual mass – is subject to a legally permissible tolerance of $\pm 5 \%$ (see no. 2), the actual mass may also deviate accordingly from the stated nominal value.

5. Pay-mass and minimum pay-mass

The installation of optional equipment is also subject to technical and legal limits: Only so much optional equipment can be ordered and fitted at the factory that sufficient free weight remains for baggage and other accessories ("pay-mass") without exceeding the technically permissible maximum laden mass. The pay-mass is calculated by subtracting the mass in running order (nominal value according to sales documents, see no. 2 above), mass of the optional equipment and the mass of the passengers (see no. 3 above) from the technically permissible maximum laden mass (see no. 1 above).

18 Legal notes on weight-related information

The EU regulations stipulate a fixed minimum pay-mass for motorhomes, which must remain as a minimum for baggage or other non-factory-fitted accessories. This minimum pay-mass is calculated as follows:

Minimum pay-mass in kg $\geq 10 \times (n + L)$

Where: "n" is the maximum number of passengers plus the driver and "L" is the overall length of the vehicle in metres.

For a motorhome with a length of 6 m and 4 approved seats, the minimum pay-mass is therefore e.g. $10 \text{ kg} \times (4 + 6) = 100 \text{ kg}$.

To ensure that the minimum pay-mass is maintained, there is a maximum combination of optional equipment that can be ordered for each vehicle model. In the above example with a minimum pay-mass of 100 kg, the total mass of optional equipment for a vehicle with four permitted seats and a mass in running order of 2,850 kg should not exceed 325 kg:

3,500 kg technically permissible maximum laden mass
- 2,850 kg mass in running order
- 3 x 75 kg mass of the passengers
- 100 kg minimum pay-mass
= 325 kg maximum permissible mass of optional equipment

It is important to note that this calculation is based on the default value for mass in running order as defined in the type-approval procedure, without taking into account the permissible weight deviations for mass in running order (see no. 2 above). If the maximum permissible value for the optional equipment of (in the example) 325 kg is almost or completely exhausted, an upward weight deviation can therefore result in the minimum pay-mass of 100 kg being met mathematically using the default value for the mass in running order, although in fact there is no corresponding load capacity. Here, too, an example calculation for a vehicle with four seats, whose real weighed mass in running order is 2 % above the nominal value:

3,500 kg technically permissible maximum laden mass
- 2,907 kg real weighed mass in running order (+ 2 % compared to the stated value of 2,850 kg)
- 3 x 75 kg mass of the passengers
- 325 kg optional equipment (maximum permissible value)
= 43 kg actual load capacity (< minimum pay-mass of 100 kg)

In order to avoid such a situation, Dethleffs further reduces the maximum permissible weight of the total optional equipment that can be ordered on a model-specific basis. The limitation of optional equipment is intended to ensure that the minimum pay-mass, i.e. the legally prescribed free mass for baggage and retrofitted accessories, is actually available for the vehicle load capacity of the vehicles delivered by Dethleffs.

Since the weight of a specific vehicle can only be determined when it is weighed at the end of the line, in very rare cases a situation may arise in which the minimum pay-mass at the end of the line is not guaranteed, despite this limitation of optional equipment. In order to guarantee the minimum pay-mass even in these cases, Dethleffs will check together with your trade partner and you before delivery of the vehicle whether, for example, the vehicle is loaded up, seats are reduced or optional equipment is removed.

Legal notes on weight-related information

6. Effects of tolerances of the mass in running order on the pay-mass

Regardless of the minimum pay-mass, you should note that unavoidable production-related fluctuations in the mass in running order – both upwards and downwards – have a mirror-image effect on the remaining load capacity: If you order our example vehicle (see no. 3. above), for example, with optional equipment with a total weight of 150 kg, the calculated pay-mass based on the default value for the mass in running order is 275 kg. The load capacity actually available may deviate from this value due to tolerances and may be higher or lower. If the mass in running order of your vehicle is, for example, permissibly 2 % higher than stated in the sales documents, the load capacity is reduced from 275 kg to 218 kg:

3,500 kg technically permissible maximum laden mass

- 2,907 kg real weighed mass in running order (+ 2 % compared to the stated value of 2,850 kg)

- 3 x 75 kg mass of the passengers

- 150 kg optional equipment ordered for the specific vehicle

= 218 kg actual load capacity

As a precaution to ensure that the calculated pay-mass is actually given, you should therefore take the possible and permissible tolerances for the mass in running order into account when configuring your vehicle.

We also recommend that you weigh the laden motorhome on a non-automatic scale before each journey and, taking the individual weight of the passengers into account, determine whether the technically permissible maximum laden mass and the technically permissible maximum mass on the axle are observed.

Index

12 V fuses	103
On the transformer/rectifier.....	104
Underneath seating group	104
Underneath the A-pillar panelling	104
With the living area battery	103
With the starter battery.....	103
12 V power supply	93
Troubleshooting	168
12 V socket	75
230 V connection.....	57, 101
Troubleshooting	167
230 V fuse.....	104
230 V fuse box.....	104
230 V power supply	100
230 V power supply see also 230 V connection	101
230 V socket	75

A

Access assistance	78
Accessories, fitting	24
Actual vehicle mass.....	30, 34
Add-on parts see optional equipment	24
Air conditioning unit (Truma).....	115
Air circulation	117
Air distribution	116
Automatic mode	115
Cooling.....	116
Lighting.....	117
Operating modes	115
Remote control	115
Soft-start.....	117
Switching off	116
Switching on	115
Timer	117
Troubleshooting	171
Air outlet nozzles, adjusting	107
Alloy wheel rims	165
Annual inspection.....	14
App Dethleffs Connect.....	92
Appliances.....	105
Appliances, manuals	24
Armrest, adjustment	53

B

Basic equipment.....	31
Battery cut-off switch.....	99
Battery monitoring	99
Battery see starter battery or living area battery	93, 94
Beds	76
Additional bed.....	79
Rear transverse bed.....	76
Before the journey	29

Bike rack	
Load.....	39
Travelling with a loaded bike rack	39
Blind, cleaning.....	144
Boiler	106
Boiler (Truma)	107
Emptying.....	111
Hot water production, switching off	110
Hot water production, switching on.....	110
Operating modes.....	112
Safety/drainage valve.....	111
Troubleshooting.....	170
Water, filling with.....	111
Brakes.....	48
Check.....	48, 167
Braking system, troubleshooting	167
Butane gas	27, 82

C

Cable reel	101
Camping gas bottles, use	27, 83
Capacity of the battery	90
Caravan coupling.....	40, 41
Care.....	139
Blind.....	144
Carpet.....	144
During lay-up over winter.....	152
Engine compartment.....	142
Entrance step.....	144
External care	139
Furniture surfaces.....	144
GRP add-on parts.....	141
High-pressure cleaner, washing with	139
In the winter.....	150
Insect screen.....	144
Interior care	144
Kitchen installation.....	145
Lamps.....	144
Leather covers	146
PVC-floor covering.....	144
Roman shade.....	144
Seat belt.....	144
Stainless steel surfaces.....	146
Synthetic parts, interior.....	144
Underbody	141
Upholstery.....	146
Washing	140
Waste water tank.....	150
Water pipes.....	149
Water system	148
Water tank	148
When taking out of operation temporarily	150
Windows	140
Windscreen washer system.....	142
Windscreen wipers.....	142

Index

Carpet, cleaning	144
Changing wheels.....	163
Alloy wheel rims	165
Chassis inspection	15
Checklist	
Before the journey	44
For a lay-up over winter	152
For a temporary lay-up	151
For commissioning after a lay-up.....	153
Road safety	44
Checks see checklist	44, 151
Child restraint systems	49
Child seats	49
Circulation fan	108
Cleaning see care	139
Closed circuit current	89
Condensation.....	61, 62
Condensation on the double acrylic glass pane	62
Condensation on the screwed connections in the floor.....	61
Connecting cable see 230 V connection	101
Control unit, heater	108
Conventional load	32
Cooker.....	118
Counter extension.....	72

D

Danger of suffocation	23
Dealers.....	158
Dethleffs Connect App	92
Dimensions see technical data	177
Disposal	
Household waste.....	20
Sewage	20
Waste water	20
Doors	
Driver's door	55, 59
Living area door.....	55, 59
Passenger's door	55, 59
Troubleshooting.....	174
Drain cock.....	129
Waste water tank	130
Drinking water filler neck	
Closing.....	127
Opening.....	127
Driver's door	55, 59
Driver's seat	52
Armrest, adjustment	53
Backrest, adjustment	53
Inclination of the seat surface, adjusting.....	53
Moving to a lengthways direction.....	53
Seat height, adjusting	53
Turning into the driving position	52
Driving	47
Driving speed	47

E

Electrical inspection	18
Electrical system	
Explanation of terms.....	89
Safety instructions	28
Troubleshooting	167
Energy balance, living area battery.....	95
Engine compartment, care	142
Entrance step	41, 57
Care.....	144
Extending.....	42
Retracting	42
Troubleshooting	167
Warning tone.....	41
Environmental tips	20
Exterior lighting	156
Check	44
External care	139
External connection see 230 V connection	57
External flaps	60
Flap lock	60

F

Fault current protection switch	101
Check	104
Filling the tank.....	55
Fire	
Extinguishing.....	23
Response to.....	23
Fire prevention	23
Fire risks, avoidance	23
Folding partition, toilet area	131
Forced ventilation	23
Front passenger's seat	52
Armrest, adjustment.....	53
Backrest, adjustment	53
Inclination of the seat surface, adjusting	53
Moving to a lengthways direction	53
Seat height, adjusting.....	53
Turning into the driving position.....	52
Fuel filler neck	55
Furniture flaps, troubleshooting	174
Furniture surfaces, cleaning.....	144
Fuses	
12 V fuses.....	103
230 V fuse	100, 104
On the transformer/rectifier.....	104
Underneath seating group.....	104
Underneath the A-pillar panelling	104
With the living area battery	103
With the starter battery.....	103

Index

G

Gas bottle compartment	27, 82
Gas bottles	82
Changing	85, 88
Safety instructions	27, 82
Gas cooker	118
Cleaning	145
Switching off	119
Switching on	119
Troubleshooting	169
Gas inspection	15
Gas isolator tap	83
Symbols	83, 105
Gas odour	26, 81, 169
Gas pressure regulator, screw connections	83
Gas regulator	43
Gas system	
Defect	26, 81, 169
DuoControl	86
Gas bottle, changing	84, 86
General instructions	26, 81
MonoControl	84
No gas	169
Operation	84, 86
Switching automatics	84, 86
Troubleshooting	169
GRP add-on parts, care	141
Guarantee	9

H

Handbrake	57
Applying	24
Handling of tyres	163
Headrests	54
Adjustment	54
Heater	106
Air outlet nozzles, adjusting	107
Circulation fan	108
Hot air distribution	107
Initial start-up	106
Troubleshooting	170
High rate of gas consumption	26, 81, 169
High-pressure cleaner, washing with	139
Hinged skylight	67
Closing	67
Insect screen	68
Opening	67
Roman shade	68
Ventilation position	68
Hinged window	62
Closing	63
Continuous ventilation	63
Opening	63
Hot air distribution	107

Hot-air heater	107
Circulation fan	108
Control unit	108
Operating modes	112
Troubleshooting	170

I

Illuminant, replacing	156
Exterior lighting	156
Living area	157
Information stickers	158
Initial start-up	29
Inner door, troubleshooting	174
Insect screen, cleaning	144
Insect screen, hinged skylight	
Closing	68
Opening	68
Insect screen, living area door	59
Insect screen, windows	64
Inspection plan	
Annual inspection	14
Chassis	15
Gas inspection	15
Water ingress test	10
Inspection records	
Electrical inspection	18
Gas inspection	16
Water ingress test	11
Inspection time limits	155
Inspections	156
Inspections, official	155
Interior care	144
Interior lighting	157
Troubleshooting	167
Isofix fastening system for child seat	51

K

Kitchen area	42
--------------------	----

L

Lamps	157
Cleaning	144
Light switch	74
Rear loading area	74
Touch spot	73
Lay-up	
During winter	152
Temporary	150
Temporary (toilet)	137
Leakage water inside the vehicle	173
Leather covers, cleaning	146
Level indicator, toilet	135

Index

Light metal wheel rims see alloy wheel rims	165
Light switch	74
Lighting	73
Illuminant, changing	156
Lamps, cleaning	144
Light switch	74
Living area	157
Loading area	74
Touch spots	73
Living area battery	94
Balance of energy	95
Discharging	95
Instructions	94
Loading	95
Position	95
Troubleshooting	167, 168
Living area door	55, 59
Insect screen	59
Load	35
Bike rack	39
Roof rack	40
Load see also payload	35
Lock, external flap	60

M

Maintenance work	156
Mass in running order	31
Mirror cabinet	133
Multifunctional rail	80

O

Official inspections	155
Off-load voltage	89
Operating modes, air conditioning unit (Truma)	115
Operating modes, boiler (Truma)	112
Operating modes, hot-air heater	112
Optional equipment	33
Certification	19
Description	19
Safety instructions	24
Weights	175
Overloading	35

P

Panel, 7 inch	90
Passenger's door	55, 59
Permissible gross weight see technically permissible maximum laden mass	30
Personal equipment	33
Position	
Battery cut-off switch	99
Control unit, heater	108
Drain cocks	129

Fuse box	104
Fuses	103
Isofix	51
Living area battery	95
Operating switch for drain cock	130
Panel 7 inch	90
Safety/drainage valve	128
Safety/drainage valve boiler	111
SCU	92
Starter battery	93
Transformer/rectifier	98
Waste water tank	130
Water tank	124
Propane gas	27, 82
PVC-floor covering, cleaning	144

R

Rear bed	
Dismantling	77
Putting up	77
Refrigerator	57
Night mode, switching off	121
Night mode, switching on	121
Switching off	120
Switching on	120
Temperature, adjusting	121
Troubleshooting	172
Replacement keys	159
Reversing camera	48
Risk of frost damage	123, 128
Road safety	44
Checklist	44
Notes for	24
Roman shade, cleaning	144
Roman shade, driver's window	54
Closing	65
Opening	65
Securing	54
Roman shade, front passenger's window	54
Opening	65
Securing	54
Shading	65
Roman shade, hinged skylight	
Closing	68
Opening	68
Roman shade, window	64
Roman shade, windscreen	
Closing	64
Opening	65
Roof load	40
Roof rack, load	40

Index

S

Safety instructions.....	23
Changing wheels	163
Cooker	118
Electrical system	28
Fire prevention.....	23
Road safety	24
Towing.....	25
Water system.....	28
Safety instructions symbols	19
Safety/drainage valve.....	129
Position.....	128
Safety/drainage valve boiler	111
Position.....	111
Sanitary fittings	123
SCU	91
Position.....	92
Seat belts.....	48
Cleaning.....	144
Correct fastening.....	49
Seating arrangement	54
Seats, adjusting	52
Seats, rotating	69
Serial number	158
Set of keys	29
Sewage container	
Emptying	136
Removal	136
Shower	130
Shower room	132
Skylights.....	66
Snow chains.....	44
Sockets	
12 V	75
230 V	75
USB	75
Spare parts.....	157
Stainless steel surface, cleaning.....	146
Starter battery	
Discharging.....	93
Loading.....	93
Position.....	93
Troubleshooting	167
Start-up	
After lay-up over winter.....	153
After temporary lay-up.....	153
Storage compartments in the double floor.....	70
Storage spaces.....	70
Suspension table	
Converting to bed foundation	71
Extending	71
Reducing size	71
With separable support leg	71
Symbols for gas isolator taps	83, 105
Synthetic parts in the toilet and living areas, cleaning.....	144
System Control Unit.....	91

T

Tables	71
Tank lid see fuel filler neck	55
Technical data	177
Technically permissible maximum laden mass	30, 34
Toilet.....	135
Flushing.....	135
Level indicator	135
Temporary lay-up.....	137
Troubleshooting.....	173
Winter operation	137
Toilet compartment	130
Folding partition	131
Mirror cabinet	133
Shower room	132
Ventilation	130
Total discharge	89
Touch spot, roof storage cabinet.....	73
Towing.....	25, 56
Safety instructions.....	25
Transformer/rectifier	96
Functions.....	98
Lay-up	98
Position	98
Troubleshooting	
12 V power supply	168
230 V connection.....	167
Air conditioning unit.....	171
Battery	167
Body	174
Boiler.....	170
Braking system.....	167
Electrical system.....	167
Entrance step	167
Furniture flaps	174
Gas cooker	169
Gas system	169
Heater	170
Hot-air heater	170
Inner door	174
Living area battery	167
Refrigerator.....	172
Starter battery	167
Thetford toilet.....	173
Water supply.....	173
Tyre change see wheels, changing.....	163
Tyre specifications	163
Tyres	
Certification.....	163
Excessive wear	25, 44, 161, 165
General instructions	161
Handling.....	163
Load-carrying capacity	164
Tyre pressure	165
Tyre selection	162

Index

U

Underbody, maintenance	141
Upholstery, cleaning	146
USB socket.....	75

V

Vehicle identification plate	158
Vehicle lighting see lighting	156
Vehicle load capacity	29
Calculation	33
Composition	31
Example calculation.....	31
Vehicle load capacity see also load	29
Vehicle, washing	140
Ventilation	61
Toilet compartment.....	130

W

Warning stickers.....	158
Warning tone, entrance step.....	41
Wash basin	134
Washing with a high-pressure cleaner	139
Waste water tank.....	130
Care	150
Troubleshooting.....	173
Water ingress test	
Inspection plan	10
Inspection records	11

Water pipes, cleaning.....	149
Water pump	123, 125
Water supply	
General	123
Troubleshooting	173
Water system.....	124
Care.....	148
Cleaning.....	148
Disinfect.....	149
Emptying	128
Filling	125
Safety instructions	28
Water tank	124
Cleaning.....	148
Draining water	128
Filling	127
Water quantity, reducing.....	128
Water, filling with	127
Weatherproof guarantee.....	9
Weight details for optional equipment	175
Wheel rim size	164
Wheel rim type	161
Windows	62
Windows, cleaning	140
Windscreen washer system, care	142
Windscreen wipers, care	142
Winter care.....	150



Dethleffs GmbH & Co.KG
Arist-Dethleffs-Straße 12 • D-88316 Isny im Allgäu
www.dethleffs.com • info@dethleffs.com

Dethleffs
A friend of the family