## Congratulations

We congratulate you on your new Globecar motorhome and would like to thank you for choosing a quality product from us.

Whatever journey you are planning - you will always have the perfect companion with a Globecar motorhome: whether it is a city break, a short trip or a family holiday. The innovative and well-thought out floor plans offer you a variety of options and the contemporary interior design in all our models gives off a homely atmosphere. You will be amazed at the high standard of quality and all the variations available - space problems are a thing of the past in our motorhomes. Many practical details will prove extremely useful when on the road and will allow you to relax even more on your holiday.

Each Globecar motorhome is manufactured with great care and the quality is closely checked. This ensures that our products have a long service life.

This instruction manual primarily contains information on how to dismantle the living area of your motorhome. It will give you all important information and tips so that you can enjoy all technical advantages of your motorhome to the full. We have also included a chapter on maintenance - and thus on the conservation of value.

In addition, you will find the documents on the base vehicle and the various built-in appliances.

For maintenance work or whenever you need some help, please always get in touch with your Globecar dealer. They know your motorhome best of all, and will meet all your requests fast and reliably.

We wish you a lot of fun with your motorhome, a relaxing holiday and safe driving at all times.

## 1.1 Vehicle documents

| **Vehicle data** |
|---|
| Model: |
| Car manufacturer/type of engine: |
| Serial number: |
| Initial registration: |
| Purchased from company: |
| Key number: |
| Chassis number: |
| |
| **Customer address** |
| Surname, Christian name: |
| Street, no.: |
| Postal code, town: |
| E-mail: |
| |
| Dealer's stamp and signature |

We reserve the right to alter the construction, equipment and the scope of delivery. Special equipment is also listed that is not included in the standard scope of delivery. The descriptions and illustrations in this brochure do not relate to a particular version. For all details, only the respective equipment list is valid.

## 1.2 Warranty

1. The valid guarantee and product warranty regulations apply to the vehicle.
2. In the event of pursuing possible claims against a guarantee, it is useful to have the vehicle inspected by a Globecar dealer at the end of the first year. The presentation should take place 2 months at the latest after the anniversary of the initial registration (or delivery).
   The Globecar dealer should stamp, date and sign the page provided in this instruction manual as proof that the inspection was carried out.
3. The costs of the inspection are to be paid by the vehicle owner.

## 1.3 Inspection records

**Delivery**

Signature and stamp of the Globecar dealer:

**1st year**

Signature and stamp of the Globecar dealer:

- ❍ No defects found
- ❍ Found defects:

Should it be determined during an inspection that additional work is necessary, then the carrying out of this work is dependent on the customer commissioning this to be done. Please also adhere to the service intervals stipulated by the manufacturers of the individual equipment. Information is included in the service documents enclosed.

## 1.4 Inspection plan

| Pos. | Component | Activity | Interval |
|---|---|---|---|
| 1 | Joints, hinges | Lubrication | Annually |
| 2 | Refrigerator, heater, boiler, cooker, lighting, storage flap and door closures, toilet, seat belts | Function check | Annually |
| 3 | Windows, skylights | Function check, water ingress test | Annually |
| 4 | Upholstery, curtains, blinds | Visual check | Annually |
| 5 | Sealing strips, edges, rubber | Check for damage | Annually |
| 6 | Water supply | Water ingress test | Annually |
| 7 | Hot-air system | Function check, clean fan wheel as necessary | Annually |
| 8 | Underbody protection, attaching the underbody equipment | Visual check | Annually |
| 9 | Electrical system | Function check | Annually |
| 10 | Gas system | Official gas inspection | Every two years |
| 11 | Underbody | Visual check, repair underbody protection as necessary | Every two years |

We reserve the right to modify the inspection plan.

## 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 special equipment. These sections are not specially marked. It may be that your vehicle has not been fitted with this special 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 special equipment not described in this instruction manual.

Special 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".

▷ The metric specifications are binding for physical dimensions.

Should the vehicle be subjected to damage due to a failure to follow the instructions in this instruction manual, then the guarantee 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.

## 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.

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.

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 or inspection periods stipulated in the instruction manual.

## 2.2 Environmental tips

- ▷ Remember that: All kinds of waste water and household waste are not to be disposed of in drains or in the open countryside.
- ▷ Only empty the waste water tank and Thetford cassette at disposal stations, at camping sites or caravan sites, that are especially provided 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 drainage pipe with fresh water every time it is emptied.
- ▷ Never allow the Thetford cassette to become too full. Empty the Thetford cassette frequently, at the latest as soon as the filling level display 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.
- ▷ 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 that are specially reserved for motorhomes. Enquire at the town or community authority about parking spaces.

## 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.
- ▶ Lights can get very hot. When the light is switched on, there must always be a safety distance of 30 cm between light and flammable objects. Fire hazard!
- ▶ 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

- ▶ Always have a dry powder fire extinguisher in the vehicle (with at least 1 kg capacity). The fire extinguisher must be approved, tested and close at hand.
- ▶ Have the fire extinguisher tested at regular intervals by authorised qualified personnel. Observe the date of testing.
- ▶ The fire extinguisher is not included in the scope of delivery of the vehicle.

### 3.1.3 In case of fire

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

- ▷ 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 or the use of the gas cooker or other appliances. That is why the oxygen needs to be replaced on a constant basis. For this purpose, forced ventilations are fitted in the vehicle. Never cover or block forced ventilations 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 $CO_2$ levels.
- ▶ Gas pipes and electric lines are laid in the floor. Never drill holes in the floor or insert any any screws. That could cause a gas explosion, an electrical shock or a short circuit due to damage to a cable.

- ▷ 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 special equipment can alter the dimensions, weight and road behaviour of the vehicle. Some of the parts must be entered in the vehicle papers.
- ▷ Firmly apply the handbrake when parking the vehicle.

- ▷ When leaving the vehicle, it is imperative that all doors, external flaps and windows are closed.
- ▷ Carry a hazard warning triangle and first-aid kit in accordance with national regulations.
- ▷ 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, secure the hinged pull-down bed to the roof using the retaining belt.
- ▶ Before commencing the journey, open and secure the shades 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.
- ▶ Before commencing the journey, remove the television from the support and store it securely.
- ▶ During the journey, the seats are only to be occupied by persons (see chapter 5). The authorised number of seats is stipulated in the vehicle documents.
- ▶ Fasten your seat belts before the beginning of the journey and keep them fastened during the journey.
- ▶ Always secure children with the children safety equipment prescribed for the respective height and weight.
- ▶ Factory-set three-point safety belts must be used when attaching child restraint systems.
- ▶ The base vehicle is a commercial vehicle (small truck). Adjust your driving technique accordingly.
- ▶ When driving through underpasses, tunnels, etc. observe the overall height of the vehicle (refer to the technical data in the vehicle documents).
- ▶ In winter, the roof must be free of snow and ice before commencing the journey.

- ▷ Before commencing the journey, distribute the payload evenly within the vehicle (see chapter 4).
- ▷ When loading the vehicle and when taking a rest from driving, in order to load luggage or food, for example, observe the maximum permissible gross weight and axle loads (refer to vehicle documents).
- ▷ Before commencing the journey, ensure that all cupboard doors, the toilet compartment door and all drawers and flaps are secure. Engage the refrigerator door securing device. Lock the concertina wall of the Vario toilet compartment.
- ▷ Before commencing the journey, close windows and skylights.
- ▷ Before commencing the journey, close all external flaps and lock them.
- ▷ Before commencing the journey, remove external steady legs.

## 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

- ▶ Close all gas isolator taps and the regulator tap before commencing the journey and when leaving the vehicle. Exception: If you plan to use the living area heater during the journey, leave the "Heater" gas isolator tap and the regulator tap on the gas bottle open.
- ▶ No source of combustion using gas (gas cooker, gas heater, gas boiler, etc.) may be in operation when filling the fuel tank, on ferries or in the garage. Danger of explosion!
- ▶ 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 and exhaust gas pipes must also be inspected. We recommend having the gas pressure regulator checked no later than every 10 years.
- ▶ 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.).
- ▶ Have the defective gas system repaired by an authorised specialist workshop.
- ▶ Open a skylight before taking open sources of combustion (gas cooker) into service.
- ▶ Do not use the gas cooker for heating purposes.

- If the vehicle or gas devices are not used, close the regulator tap on the gas bottle.
- 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.
- Regularly inspect the gas tube fitted to the gas bottle connection for tightness. The gas tube must not have any tears and must not be porous. Have the gas tube replaced by an authorised specialist workshop no later than ten years after the manufacturing date. The operator of the gas system must see to it that the parts are replaced.
- 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.
- Do not use the gas bottle compartment as storage space as it is not moisture-proof.
- The regulator tap on the gas bottle must be accessible.
- 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, no snow walls or aprons may be allowed to lie against the vehicle. Keep the intake openings under the floor of the vehicle open and clean.

### 3.5.2 Gas bottles

- 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.
- 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.
- 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! Camping gas bottles with built-in check valve (blue bottle with max. 2.5 or 3 kg content) are can be used in exceptional cases with a safety valve.

## 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 batteries and disconnect the 240 V power cable 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

▷ If the vehicle is not heated when there is risk of frost, empty the entire water system. Leave the water taps on in central position. Leave the safety/ drainage valve (Trumatic) and all drain cocks open. This will avoid frost damage to appliances and to the vehicle.

▷ Water left standing in the water tank or in the water pipes becomes undrinkable after a short period. For this reason, rinse the water pipes and the water tank thoroughly with several litres of fresh water before each use of the vehicle. To do this, open all water taps. After each use of the vehicle completely empty the water tank and the water pipes.

## 4.1 Payload

- ▶ Overloading the vehicle and wrong tyre pressure can cause tyres to burst. You can lose control of the vehicle.
- ▶ Adapt the speed to the payload. The stopping distance is increased if the payload is too high.

- ▷ Do not exceed the maximum permissible gross weight stated in the vehicle documents by the payload.
- ▷ Built-in accessories, special equipment, the full water tank and the gas bottles all reduce the payload.
- ▷ Adhere to the axle load stated in the vehicle documents.

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.

### 4.1.1 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.

**Maximum permissible gross weight in a laden condition**

In the vehicle documents, the manufacturer has specified the maximum permissible gross weight in a laden condition.

**Mass in ready-to-drive condition**

In the vehicle documents, the manufacturer specifies the mass in ready-to-drive conditions.

**Payload**

The payload is made up as follows:

- Conventional load
- Additional equipment
- Personal equipment

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 as part of the mass in ready-to-drive condition and must **not** be calculated as part of the conventional load.

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

**Additional equipment**

Additional equipment includes accessories and special equipment. Examples of additional equipment include:

- Caravan coupling
- Roof racks
- Awning
- Bike or motorcycle rack
- Satellite unit

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

**Personal equipment**

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

- Foodstuffs
- Crockery
- Television
- Radio
- Clothes
- Bedding
- Toys
- Books
- Toiletries

No matter where kept, personal equipment also includes:

- Animals
- Bikes
- Boats
- Surfboards
- Sports equipment

### 4.1.2 Calculating the payload

- ▶ The payload calculation at the factory is partly based on all-inclusive weights. For safety reasons, the maximum permissible gross weight in a laden condition must not be exceeded.
- ▶ Only the maximum permissible gross weight and the mass in a ready-to-drive condition, not the actual weight of the vehicle, is stated in the vehicle documents. For your own safety, we recommend that you have your loaded vehicle (with passengers) weighed on a public weighbridge before you set out on your journey.

The payload (see section 4.1.1) is the difference in weight between

- Maximum permissible gross weight in a laden condition and
- Vehicle mass complete in a ready-to-drive condition.

**Example for calculating the payload**

| | Mass in kg to be calculated | Calculation |
|---|---|---|
| Maximum permissible gross weight according to vehicle documents | 3300 | |
| Vehicle mass in a ready-to-drive condition, including basic equipment in accordance with vehicle documents | - 2720 | |
| **This results in a permissible payload of** | **580** | |
| Conventional load e.g.: 3 persons each weighing 75 kg | - 225 | |
| Additional equipment | - 40 | |
| **For the personal equipment this results in** | **= 315** | |

The calculation of the payload from the difference between the maximum permissible gross weight in laden condition and the mass specified by the manufacturer in ready-to-drive condition is however only a theoretical value.

Only if the vehicle is weighed with full tanks (fuel and fresh water), full gas bottles and complete additional equipment on a public weighbridge, can the actual payload be determined.

### 4.1.3 Loading the motorhome correctly

- ▶ Distribute the load evenly on the left and right sides of the vehicle.
- ▶ Distribute the load evenly on both axles. In doing so, observe the axle loads specified in the vehicle documents. Observe the permissible load-carrying capacity of the tyres.
- ▶ Store all objects in such a way that they cannot slip.
- ▶ Store heavy objects (tent poles, tin cans, etc.) close to the axles.

  Low-lying storage compartments whose doors do not open in the direction of travel or underfloor storage compartments are particularly suited for storing heavy objects.
- ▶ Stack light objects (laundry) in the roof storage cabinets.

## 4.2 Entrance step

- ▶ 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 range of the entrance step while it is being retracted or extended.
- ▶ Do not step on the entrance step until it has extended completely. There is a risk of injury.
- ▶ Do not under any circumstances raise or lower persons or loads with the entrance step.

▷ Do not grease or lubricate the pivot bearing and joints of the entrance step (see chapter 12).

### 4.2.1 Electrically operated entrance step

**Operating switch**

The switch (Fig. 1,2) to operate the entrance step is located on the inside of the vehicle in the area of the conversion door.

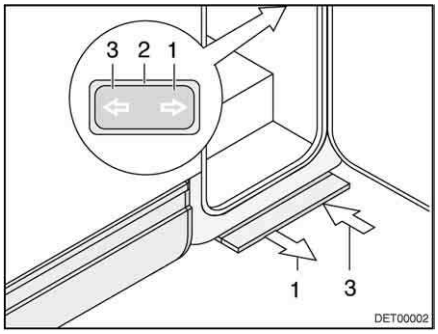



Fig. 1 Operating switch entrance step

*Extending:*

- Press the front half of the rocker switch (Fig. 1,1) until the entrance step has extended completely.

*Retracting:*

- Press the rear half of the rocker switch (Fig. 1,3) until the entrance step has retracted completely.

## 4.3 Television

▶ Before commencing the journey, remove the television from the support and store it securely.

## 4.4 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.

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 | |
| 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 | |

| | No. | Checks | Checked |
|---|---|---|---|
| **Housing body, outside** | 9 | Awning completely retracted | |
| | 10 | Roof free of snow and ice (in winter) | |
| | 11 | External connections and lines disconnected and stored away | |
| | 12 | External supports removed | |
| | 13 | Entrance step retracted | |
| | 14 | External flaps and doors closed and locked | |
| | 15 | 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** | 16 | Windows and skylights closed and locked | |
| | 17 | Television removed from the support and securely stored | |
| | 18 | Television antenna retracted (if one is built in) | |
| | 19 | Loose parts stored away or fixed in position | |
| | 20 | Open storage spaces empty | |
| | 21 | Refrigerator door secured | |
| | 22 | Refrigerator set to 12 V operation | |
| | 23 | All drawers and flaps closed | |
| | 24 | Living area doors secured | |
| | 25 | Pull-down bed fixed to roof with retaining belt pulled tight | |
| | 26 | Children's seats mounted to seats with three-point safety belts | |
| | 27 | Swivel seat locking device for driver's seat and front passenger's seat locked | |
| | 28 | Curtains hooked into the retaining clips | |
| | 29 | Shades in the driver's cabin opened and secured | |
| **Gas system** | 30 | Gas bottles firmly fixed in the gas bottle compartment so that they are unable to turn | |
| | 31 | Regulator tap on the gas bottle and gas isolator taps are closed<br>▷ When heating is required during travel the gas isolator tap "Heater" and the regulator tap can remain open. | |
| **Electrical system** | 32 | Check the battery voltage of the starter and living area battery (see chapter 9). If the panel indicates that the battery voltage is too low, the respective battery will need to be recharged. Observe the notes and instructions in chapter 9<br>▷ Commence journey with fully charged starter and living area batteries. | |

## 5.1 Driving the motorhome

- The base vehicle is a commercial vehicle (small truck). Adjust your driving technique accordingly.
- Before commencing the journey and after short interruptions of the journey, ensure that the entrance step is completely retracted.
- During the journey, seat belts should always be worn at the seats that have seat belts mounted.
- Never open your seat belts when travelling.
- Passengers must remain in the seats provided.
- The doors must remain locked.
- Avoid braking with a jerk.

▷ Drive slowly on poor roads.

▷ 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 cross-wind 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.

## 5.3 Seat belts

The vehicle is equipped with automatic three-point safety belts or lap belts in the living area on the seats for which seat belts are compulsory by law. National regulations apply seat-belt fastening.

- 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 belt clips.
- Inspect the screwed connections of the seat belts from time to time in order to ensure that they are correctly seated.

- ▶ 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.
- ▶ Factory-set three-point safety belts must be used when attaching child restraint systems.
- ▶ After an accident, replace the seat belts.
- ▶ During the journey, do not tilt the backrest too far backwards. Otherwise the functionality of the seat belt is no longer guaranteed.

## 5.4 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.

▷ Before turning the driver's or front passenger's seat: Push the seatbelt lock down. Otherwise the seatbelt lock may be damaged.

▷ The driver's seat and the front passenger's seat are part of the base vehicle. The adjustment of the seats is described in the instruction manual of the base vehicle.

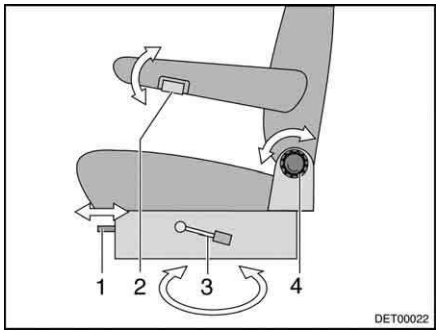



Fig. 2 Driver's and front passenger's seats

*Turning:*

- ■ Push both armrests upward.
- ■ Push the driver's seat/front passenger's seat backwards or into the central position.
- ■ Push the lever (Fig. 2,3) down.
- ■ Rotate the seat in the direction of travel and lock in position.

The seats can be rotated in any direction. The seats can only be locked in position in the direction of travel.

▷ Rotating the seats in the pitched vehicle is described in chapter 7.

## 5.5 Seating arrangement

- ▶ During the journey, persons are only to be in the prescribed seats. The authorised number of seats is stipulated in the vehicle documents.
- ▶ In seats which are fitted with seat belts, you have to observe seat belt laws.


Fig. 3 "Seat" symbol

Seats which may be used during travel are equipped with a sticker (Fig. 3).

## 5.6 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.

## 5.7 Filling up with diesel

- ▶ No source of combustion using gas (gas cooker, gas heater, gas boiler, etc.) may be in operation when filling the fuel tank, on ferries or in the garage. Danger of explosion!

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

## 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.

## 6.3 240 V connection

The vehicle can be connected to a 240 V power supply (see chapter 9).

## 6.4 Refrigerator

The 12 V operation of the refrigerator is only possible when the vehicle engine is running. When the vehicle engine is switched off, switch the refrigerator to 240 V operation or gas operation.

## 7.1 External flaps

▷ Before commencing the journey, close all external flaps and lock them.

▷ When leaving the vehicle, close all external flaps.

The external flaps fitted to the vehicle are all fitted with identical locking cylinders. Therefore, all locks can be opened with a single key.

### 7.1.1 External flap 240 V connection


Fig. 4 External flap 240 V connection

*Opening:*
- Hold the external flap (Fig. 4,1) on the lug (Fig. 4,2) and swivel the external flap upward.

*Closing:*
- Swivel the external flap (Fig. 4,1) downwards and press it shut.

### 7.1.2 External flap Thetford cassette

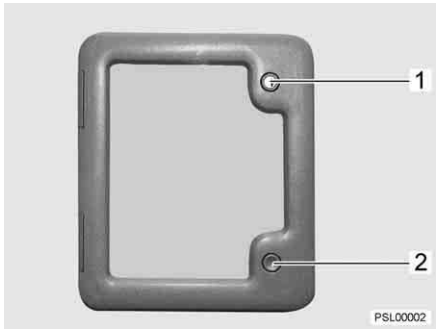



Fig. 5 External flap Thetford cassette

*Opening:*
- Insert key into locking cylinder (Fig. 5,1) of the push-button lock and turn a quarter turn in an anticlockwise direction.
- Remove the key.
- Press both push-button locks (Fig. 5,1 and 2) simultaneously with your thumbs and open the external flap.

*Closing:*

- Close the external flap and press it shut.
- Insert key into locking cylinder (Fig. 5,1) and turn a quarter turn in a clockwise direction.
- Remove the key.

### 7.1.3 Cap for the fresh water filler neck

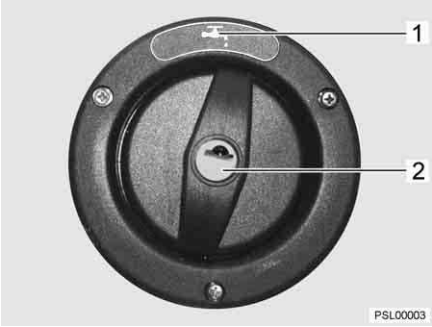



Fig. 6 Cap for the fresh water filler neck

▷ The fresh water filler neck is marked by the symbol "" (Fig. 6,1) or labelled by the word "WASSER" (water).

*Opening:*

- Insert the key in the locking cylinder (Fig. 6,2) and turn it in an anticlockwise direction.
- Remove the cap.

*Closing:*

- Insert the cap in the fresh water filler neck.
- Turn key in a clockwise direction.
- Remove the key.

## 7.2 Ventilation

▶ The oxygen in the vehicle interior is used up by breathing or the use of the gas cooker or other appliances. That is why the oxygen needs to be replaced on a constant basis. For this purpose, forced ventilations are fitted in the vehicle. Never cover or block forced ventilations 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 $CO_2$ 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. skylight edges, sockets, filler necks, flaps, etc.).

**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 is not formed during cool weather. During the colder season, a pleasant living climate is created if heating output, air distribution and ventilation are synchronized. 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.

## 7.3 Windows

- ▷ The windows are fitted with a blind and an 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.
- ▷ Before commencing the journey, close the windows.
- ▷ Close and lock the hinged window on and behind the sliding door before using it.
- ▷ Open the blinds on the sliding door's hinged window before using the sliding door.
- ▷ Depending on the weather, close the windows far enough to prevent moisture from entering.
- ▷ To open and close the hinged window, open or close all catch levers which are fitted to the hinged window.

- ▷ 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.
- ▷ Put all the catch levers on the hinged windows into the same position. This prevents tension forming in the window.

### 7.3.1 Hinged window with rotary hinges

- ▷ When opening the hinged windows, ensure that there are no torsional forces. Open and close the hinged windows evenly.

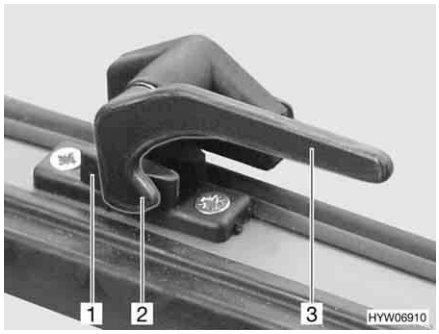



Fig. 7 Catch lever in "closed" position

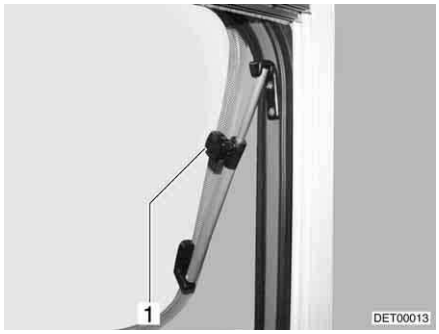



Fig. 8 Hinged window with rotary hinges, open

*Opening:*

- ■ Turn the catch lever (Fig. 7,3) a quarter turn towards the centre of the window.
- ■ Open the hinged window until the required position has been reached and use knurled knob (Fig. 8,1) to secure in position.

The hinged window remains locked in the required position.

*Closing:*

- Turn knurled knob (Fig. 8,1) until the latch is released.
- Close the hinged window.
- Turn the catch lever (Fig. 7,3) a quarter turn towards the window frame. The locking catch (Fig. 7,2) is located on the inside of the window catch (Fig. 7,1).

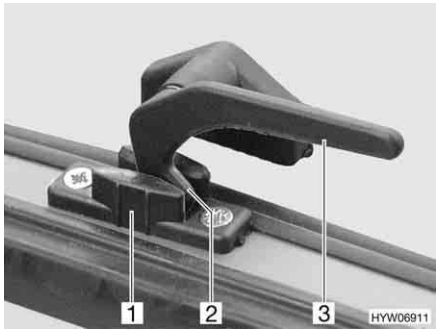



Fig. 9 Catch lever in the "continuous ventilation" position

**Continuous ventilation**

With the catch lever, the hinged window can be placed in 2 positions:

- "continuous ventilation" (Fig. 9)
- firmly closed (Fig. 7)

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

- Turn the catch lever (Fig. 9,3) a quarter turn towards the centre of the window.
- Lightly open the hinged window outwards.
- Return the catch lever to its initial position. The locking catch (Fig. 9,2) has to be moved into the recess of window catch (Fig. 9,1).

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.

### 7.3.2 Sliding window

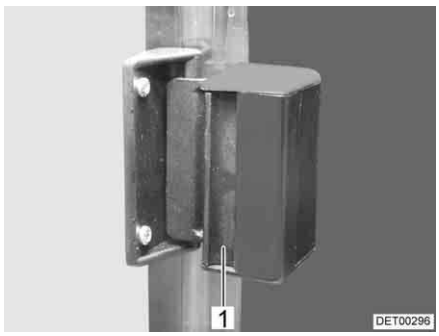



Fig. 10 Sliding window

*Opening:*

- Press handle (Fig. 10,1) and pull backward at the same time.
- Open window half up to the required position.

*Closing:* ■ Close the window as far as it can go.

### 7.3.3 Blind and insect screen

The windows in the motorhome are fitted with a blind and an insect screen. The blind and insect screen can be adjusted separately.

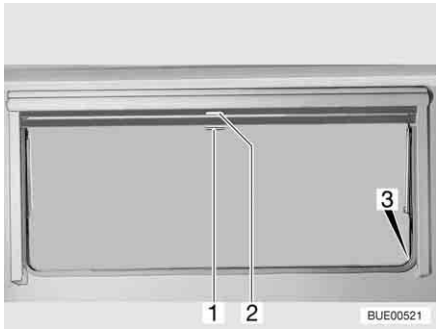



Fig. 11 Hinged window

**Blind** The blind is located in the upper blind box.

*Closing:*
- Pull blind at the handle (Fig. 11,2) downwards. If the blind is to be completely closed, it is suspended into the locking devices (Fig. 11,3) situated on both sides of the window frame.

*Opening:*
- If the blind is completely closed: Press handle (Fig. 11,2) downwards and, at the same time, tilt it slightly inward. The blind can be taken out of the locking devices situated on both sides of the window frame.
- If the blind is in an intermediate position: Pull the handle (Fig. 11,2) slightly downwards until the locking device releases.
- Use handle to return blind slowly to its initial position.

**Insect screen** The insect screen is located in the upper blind box.

*Closing:*
- Pull insect screen at the handle (Fig. 11,1) down and hang it into the locking devices (Fig. 11,3) situated on both sides of the window frame.

*Opening:*
- Press handle (Fig. 11,1) downwards and, at the same time, tilt it slightly inward. The insect screen can be taken out of the locking devices situated on both sides of the window frame.
- Use handle to return the insect screen slowly to its initial position.

▷ If, for technical reasons, the window shade with the blinds is fitted in a position rotated by 180°, the blind box is located at the bottom. The blinds are then closed and opened in reverse direction.

### 7.3.4 Roman shades for driver's window and front passenger's window

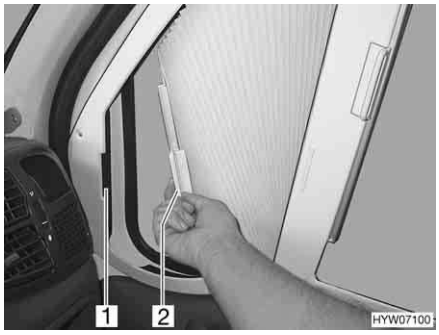



Fig. 12 Roman shade for the driver's and passenger's window

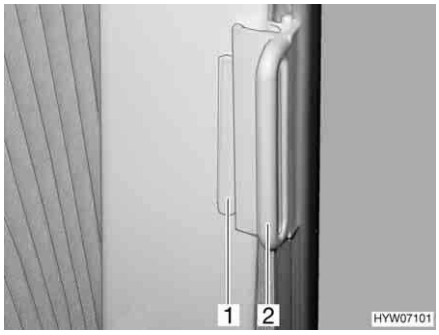



Fig. 13 Roman shade, open

*Closing:*

- Close the Roman shades for the driver's and passenger's window and secure them to the magnetic strips (Fig. 12,1 and 2).

*Opening:*

- Open the Roman shades for the driver's and passenger's window and push the guiding handle (Fig. 13,2) onto the cap (Fig. 13,1).

### 7.3.5 Roman shade for the windscreen


Fig. 14 Roman shade for the windscreen (variant 1)

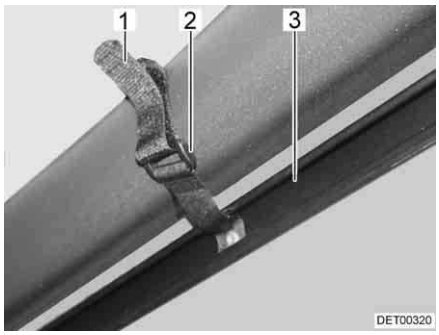



Fig. 15 Roman shade for the windscreen (variant 2)

*Closing (variant 1):*

- Push the locking knob (Fig. 14,1) up.
- Use the handle (Fig. 14,2) 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 (variant 1):*

- Use the handle (Fig. 14,2) to pull the two halves of the Roman shade for the windscreen outwards as far as they will go.
- Push the locking knob (Fig. 14,1) down.

*Closing (variant 2):*

- Push the Roman shade for the windscreen (Fig. 15,3) right up.
- Pull the Velcro (Fig. 15,1) through the bar (Fig. 15,2) and attach.

*Opening (variant 2):*

- Undo the Velcro of the Roman shade for the windscreen (Fig. 15,1).
- Push the Roman shade for the windscreen (Fig. 15,3) down.

## 7.4 Skylights

- ▷ The skylights are fitted with a blind or Roman shade and an 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.
- ▷ 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.

- ▷ When leaving the vehicle, always close the skylights.

### 7.4.1 Skylight with snap latch

The skylight can be pushed upwards either from one side or from both sides.

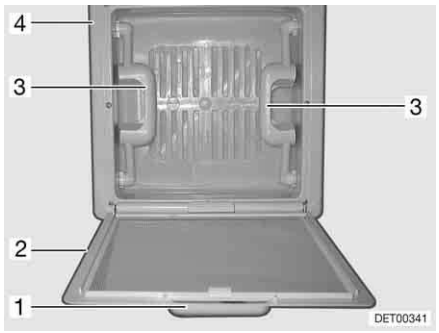



Fig. 16 Skylight with snap latch

*Opening:*

- ■ Pull down the insect screen (Fig. 16,2) with the handle (Fig. 16,1). The insect screen folds down.
- ■ Press the skylight up using both handles (Fig. 16,3).
- ■ Fold up the insect screen and latch it in the frame (Fig. 16,4).

*Closing:*

- ■ Pull down the insect screen (Fig. 16,2) with the handle (Fig. 16,1). The insect screen folds down.
- ■ Pull down the skylight with force using both handles (Fig. 16,3).
- ■ Fold up the insect screen and latch it in the frame (Fig. 16,4).

### 7.4.2 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.

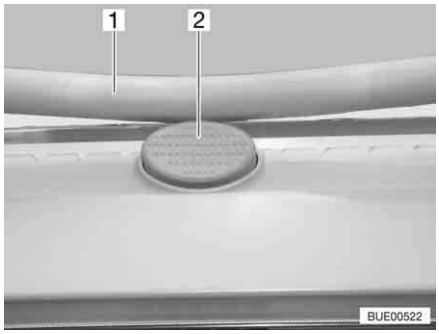



Fig. 17 Safety knob on the hinged skylight

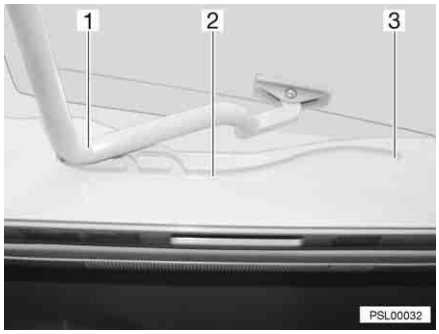



Fig. 18 Hinged skylight, guide

The hinged skylight is opened on one side only.

*Opening:*

- Press the safety knob (Fig. 17,2) and pull the bar (Fig. 17,1) down with both hands.
- Pull the bar (Fig. 18,1) in the guides (Fig. 18,2) to the rearmost position (Fig. 18,3).

*Closing:*

- Use both hands to push the bar (Fig. 18,1) slightly upwards.
- Push the bar back into the guides.
- Push the bar upwards with both hands until it is above the safety knob (Fig. 17,2).

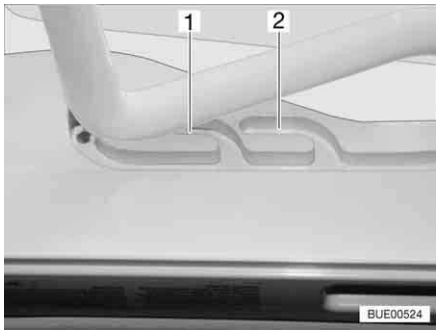



Fig. 19 Hinged skylight in ventilation position

**Ventilation position**

The hinged skylight can be put in two ventilation positions: Bad weather position and central position

- Press the safety knob (Fig. 17,2) and pull the bar (Fig. 17,1) down with both hands.
- Pull the bar in the guides (Fig. 18,2) to the desired position.
- Push the bar slightly upwards and into the selected guide (Fig. 19,1 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 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 handle at the back of the insect screen. The latch is released.
- Use handle to return the insect screen slowly to its initial position.

### 7.4.3 Hinged sliding roof

▷ Do not climb on to the acrylic glass of the hinged sliding roof.

▷ Before commencing the journey, check that the hinged sliding roof is locked.

▷ Do not open or close the hinged sliding roof during the journey.

▷ The hinged sliding roof may only be operated with both hands on the handles.

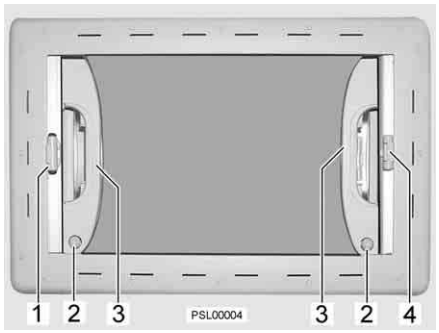



Fig. 20 Hinged sliding roof

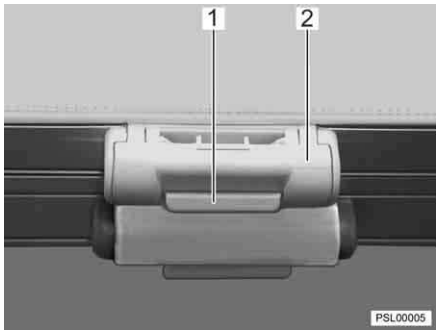



Fig. 21 Blind lock on the hinged sliding roof

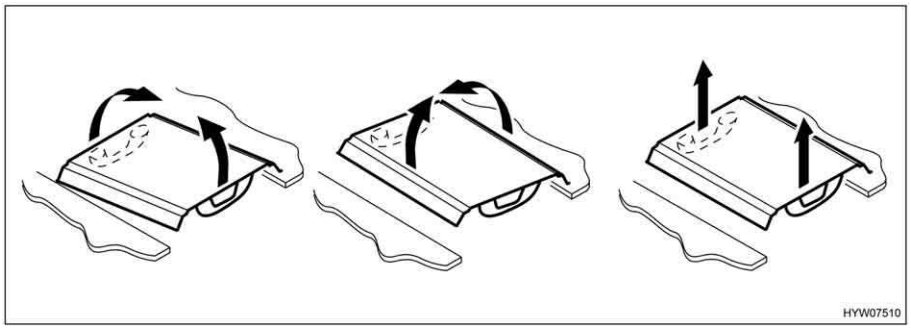



Fig. 22 Positions of the hinged sliding roof

The hinged sliding roof can be opened in various positions.

*Opening:*
- Grasp one handle (Fig. 20,3) in each hand and move the hinged sliding roof to the desired position.
- If the hinged sliding roof is open in upward direction, push the retainers (Fig. 20,2) and use the handles to push the hinged sliding roof back.

**Blind** To close and open the blind:

*Closing:*
- Push the red release knobs on the handle (Fig. 20,1) together and use the handle to pull the blind to the desired position.
- Release handle. The blind will stay in that position.

*Opening:*
- Push the red release knobs on the handle (Fig. 20,1) together. The latch is released.
- Use handle to return the blind slowly to its initial position.

**Insect screen** To close and open the insect screen:

*Closing:*
- Pull insect screen at the handle (Fig. 20,4) to the opposite handle of the blind (Fig. 20,1) and allow to engage.

*Opening:*
- Hold the insect screen at the handle and press the unlocking bar (Fig. 21,1) on the handle (Fig. 21,2). The lock is released.
- Use handle to return the insect screen slowly to its initial position.

## 7.5 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.

▷ Before turning the driver's or front passenger's seat: Push the seatbelt lock down. Otherwise the seatbelt lock may be damaged.

Depending on the model, the lever for rotating the seats is located at the bottom either in the centre or to the left or right of the seat.

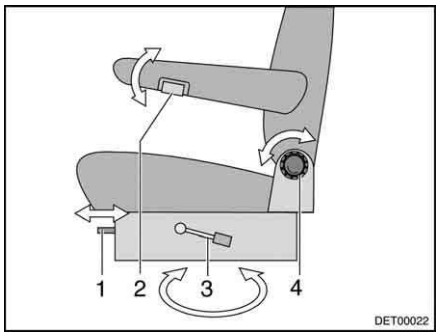



Fig. 23 Driver's seat and front passenger's seat

*Turning:*
- 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.
- Push the lever (Fig. 23,3) to turn the seat. The seat is released from the locking device.

The seats can be rotated in any direction. The seats can only be locked in position in the direction of travel.

## 7.6 Tables

### 7.6.1 Suspension table with fold-out leg (without table extension)

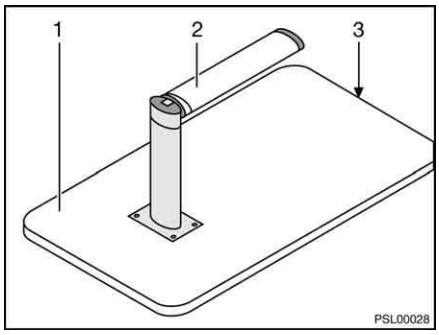



Fig. 24 Bed foundation

The table's fold-out leg enables it to be used as a bed foundation.

*Conversion to bed foundation:*

- Lift the front of the table-top (Fig. 24,1) by approx. 45°.
- Pull the lower part of the table leg (Fig. 24,2) down and fold through 90°.
- Remove the table-top from the upper retainer.
- Hook the table-top at a 45° angle to the supports into the lower retainer (Fig. 24,3) and place on the floor with the upper part of the table leg.

### 7.6.2 Suspension table with fold-out leg (with table extension)

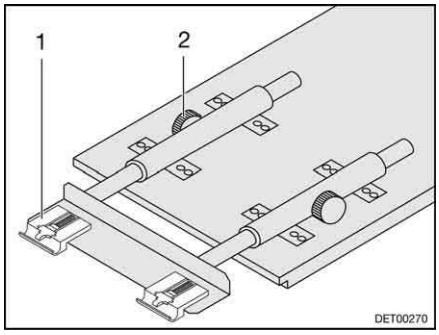



Fig. 25 Extend suspension table

The suspension table size can be enlarged by inserting a table-top extension.

*Extending:*

- Undo the knurled screws (Fig. 25,2).
- Lift the table-top slightly and pull out it out as far as possible. The table extension (Fig. 25,1) is fully extended.
- Set down the table.
- Insert the table-top extension in the table extension.
- Lift the table-top slightly and push it back as far as possible.
- Tighten the knurled screws.

*Reducing size:*

- Undo the knurled screws (Fig. 25,2).
- Slightly lift the front of the table-top and pull out.
- Remove the table-top extension and store it.
- Lift the table-top slightly and push it back as far as possible. The table extension (Fig. 25,1) is fully retracted.

- Set down the table.
- Tighten the knurled screws.

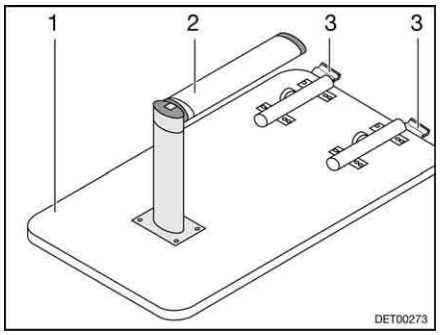



Fig. 26 Bed foundation

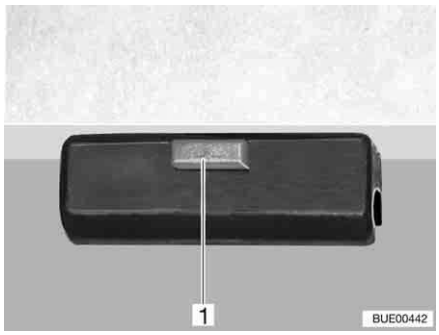



Fig. 27 Lock

The table's fold-out leg enables it to be used as a bed foundation.

*Conversion to bed foundation:*

- Lift the front of the table-top (Fig. 26,1) by approx. 45°.
- Pull the lower part of the fold-out leg (Fig. 26,2) down and fold through 90°.
- Press the release knob (Fig. 27,1) on the lock (Fig. 26,3).
- Swivel the table-top approx. 45° upward and remove the table from the retainer.
- Insert the table into the lower retainer and lock it.

### 7.6.3 Suspension table with separable support leg


Fig. 28 Table-top extension

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

*Extending:*

- Pull the knob (Fig. 28,2) of the lock down and swing out the table-top extension (Fig. 28,1).

*Reducing size:*

- Swing the table-top extension (Fig. 28,1) under the table-top until the lock latches in place audibly.

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

*Conversion to bed foundation:*

- Lift the front of the table-top by approx. 45°.
- Pull out the lower part of the support leg 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 and place on the floor with the upper part of the support leg.

### 7.6.4 Fixed table of the rear seating group


Fig. 29 Fixed table of the rear seating group

The table-top of the fixed table of the rear seating group can be moved in the lengthways direction.

*Shifting the table-top:*

- Undo the knurled screw (Fig. 29,7).
- Move the table-top (Fig. 29,1) to the desired position.
- Retighten the knurled screw.

The fixed table in the rear seating group can be used as a bed foundation by removing its leg.

*Conversion to bed foundation:*

- Undo the knurled screw (Fig. 29,2).
- Lift up the table-top (Fig. 29,1).
- Undo the knurled screw (Fig. 29,5).
- Unscrew the table leg (Fig. 29,3) from the holder (Fig. 29,6) and put it to one side.
- Place the table-top on the supports (Fig. 29,4) on the bench seat. Make sure the table-top is positioned under the slatted frame.

### 7.6.5 Folding table with folding stool

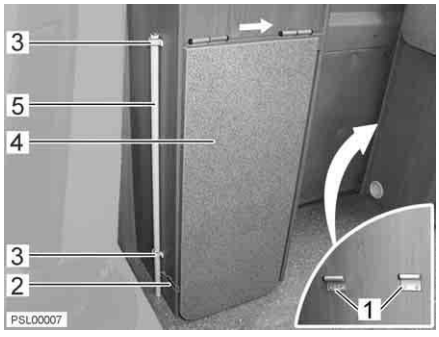



Fig. 30 Folding table, folded up

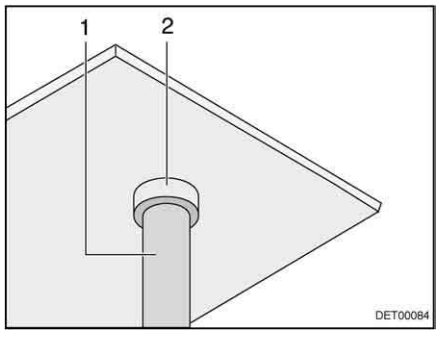



Fig. 31 Folding table, table leg holder

**Folding table**

The folding table can be used as a table or as an additional work surface outside the motorhome. The folding table can be fitted onto the rear wall of the kitchen unit when the side door is open.

*Installing, interior:*

- Undo the securing strap (Fig. 30,2) (push button).
- Pull the table leg (Fig. 30,5) upwards out of the holders (Fig. 30,3).
- Fold the table-top (Fig. 30,4) up and insert the table leg (Fig. 31,1) into the holder (Fig. 31,2).

*Installing, exterior:*

- Undo the securing strap (Fig. 30,2) (push button).
- Pull the table leg (Fig. 30,5) upwards out of the holders (Fig. 30,3).
- Fold up the table-top (Fig. 30,4) a little and push it back (Fig. 30, arrow).
- Insert the table-top into the holders on the rear wall of the kitchen unit (Fig. 30,1).
- Insert the table leg (Fig. 31,1) into the holder (Fig. 31,2).

**Folding stool**

The folding stool can be used as additional seating for the folding table.

▶ Make sure the supports prop up the seat evenly.


Fig. 32 Folding stool

*Extending:*

- Lift up the seat (Fig. 32,1) and hold it.
- Fold down the supports (Fig. 32,2) so that the seat is as large as possible and evenly supported.
- Place the seat on the supports.

## 7.7 Halogen lamp

▶ Bulbs and light fittings can be extremely hot.

▶ Allow the light bulbs and lamp holders to cool down before touching them.


Fig. 33 Halogen lamp

*Turning:*

- Hold housing (Fig. 33,1) and turn.

The housing can be turned in different directions:

- To the left and to the right
- Up and down

## 7.8 Beds

### 7.8.1 Fixed bed

▶ Do not let the slatted frame fall down when closing the bed!

A storage compartment is underneath the bed. Depending on the model, lift up the slatted frame to place items in the storage compartment or to empty it from the inside or open the sliding door.

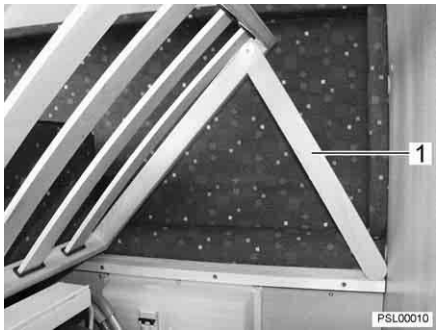



Fig. 34 Fixed bed

*Opening:*

- Lift the mattress forwards and set it down on the panel.
- Lift slatted frame.
- Position the two supports (Fig. 34,1).

*Closing:*

- Lift the slatted frame as far as possible. Screw in the supports (Fig. 34,1).
- Guide slatted frame all the way down.
- If necessary, push the mattress behind the panel.

### 7.8.2 Pull-down bed

- ▶ The maximum permitted pull-down bed load is 200 kg.
- ▶ Before commencing the journey, secure the pull-down bed to the roof using the retaining belt. Tighten the retaining belt firmly.
- ▶ Only use the pull-down bed, if the anti-fall guard is set up.
- ▶ Never allow small children to remain in the pull-down bed without supervision.
- ▶ But in particular with regard to small children less than 6 years of age, users should ensure that they cannot fall out of the pull-down bed.
- ▶ Switch off the reading lamps in the pull-down bed before the bed is pushed up. Fire hazard!

▷ Only attach the rear safety guard and tighten once the person is already lying in the pull-down bed.

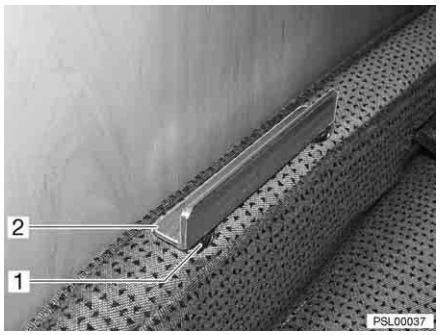


Fig. 35 Headrest holder

Fig. 36 Retaining belt pull-down bed

*Opening:*

- Close the shades in the driver's cabin.
- Turn the driver's and front passenger's seat with the backrest to the door.
- Remove the headrests on the bench.
- Insert the holder (Fig. 35,2) with the open side to the rear into the headrest holder (Fig. 35,1).
- Undo the retaining belt (Fig. 36,1) on the left side of the pull-down bed.

Fig. 37 Pull-down bed lock

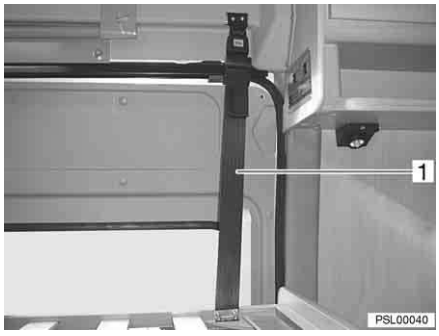


Fig. 38 Retaining strap pull-down bed

- Push the locking button (Fig. 37,2) to the right and fix it in an open position with the strap (Fig. 37,1).
- Swing the bed down with both hands in an arch. Make sure the safety guards do not get caught.

- Remove the additional cushion from the pull-down bed and put it to one side.
- Close the curtains on the pull-down bed.
- Fully remove the bed extension on the driver's side and place it in the head-rest holder.
- Fully remove the bed extension on the front passenger's side.
- Latch the retaining strap (Fig. 38,1) into place on the right side of the pull-down bed and tighten, if necessary.
- Hook up and tighten the safety guards at the side.
- Place the additional cushion on the slatted frame.
- Attach the access ladder onto the pull-down bed.
- Attach and tighten the safety guards at the rear.

*Closing:*

- Close the pull-down bed in reverse order.

▶ Undo the safety catch on the release button before you fold up the pull-down bed.

▶ The catch on the pull-down bed must audibly lock into place.

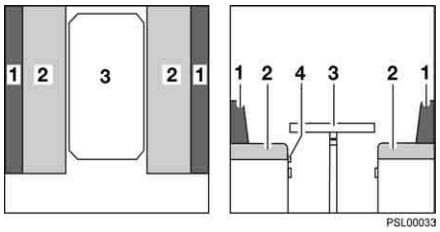
▶ Always secure the pull-down bed with the retaining belt on the left side.

▷ Push the additional cushion forwards between the swivel arms as far as possible. The tapered side faces forwards and the longer side faces downwards.

▷ When the pull-down bed is being pushed up: Make sure the safety guards and the curtains do not get caught.

## 7.9 Converting seating groups for sleeping

### 7.9.1 Rear seating group




1 Back cushion
2 Seat cushion
3 Table
4 Slatted frame
5 Slatted frame extension

Fig. 39 Prior to conversion

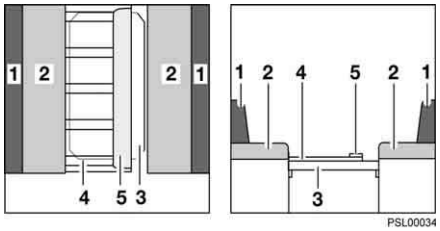



Fig. 40 During conversion

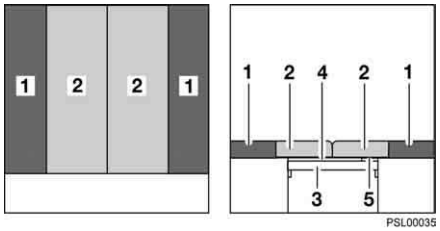
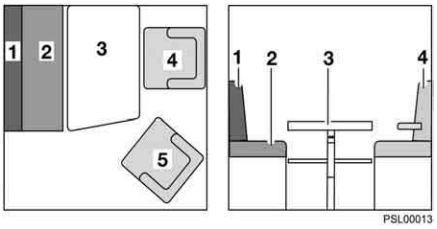



Fig. 41 After conversion

- Convert the table (Fig. 39,2) to a bed foundation (see section 7.6).
- Completely pull out the slatted frame (Fig. 39,4).
- Fold out the extension (Fig. 40,5) on the slatted frame.
- Pull the seat cushions (Fig. 40,2) into the centre onto the slatted frame.
- Insert the back cushions (Fig. 40,1) between the seat cushions and the exterior wall.

▷ The upholstered parts in the side walls can be taken out to extend the sleeping area.

## 7.9.2 Front seating group




1 Back cushion
2 Seat cushion
3 Table
4 Driver's seat
5 Front passenger's seat

Fig. 42 Prior to conversion

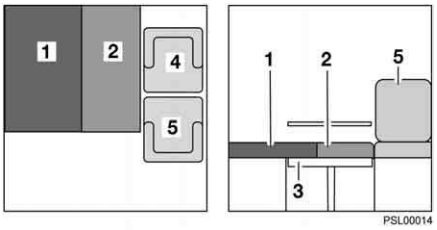



Fig. 43 After conversion

- Turn the driver's seat (Fig. 42,4) with the backrest to the driver's door.
- Turn the front passenger's seat (Fig. 42,5) with the backrest to the front passenger's door.
- Convert the table (Fig. 42,3) to a bed foundation (see section 7.6).
- Pull the seat cushion (Fig. 43,2) forwards onto the table.
- Place the back cushion (Fig. 43,1) on the bench.
- Push the front passenger's seat (Fig. 43,5) as far as possible to the driver's side.
- Push the driver's seat (Fig. 43,4) as near to the front passenger's seat as possible.

## 8.1 General

- Close all gas isolator taps and the regulator tap before commencing the journey and when leaving the vehicle. Exception: If you plan to use the living area heater during the journey, leave the "Heater" gas isolator tap and the regulator tap on the gas bottle open.
- No source of combustion using gas (gas cooker, gas heater, gas boiler, etc.) may be in operation when filling the fuel tank, on ferries or in the garage. Danger of explosion!
- 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 and exhaust gas pipes must also be inspected. We recommend having the gas pressure regulator checked no later than every 10 years.
- 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.).
- Have the defective gas system repaired by an authorised specialist workshop.
- Open a skylight before taking open sources of combustion (gas cooker) into service.
- Do not use the gas cooker for heating purposes.
- If the vehicle or gas devices are not used, close the regulator tap on the gas bottle.
- 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.
- Regularly inspect the gas tube fitted to the gas bottle connection for tightness. The gas tube must not have any tears and must not be porous. Have the gas tube replaced by an authorised specialist workshop no later than ten years after the manufacturing date. The operator of the gas system must see to it that the parts are replaced.
- 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.

- ▶ Do not use the gas bottle compartment as storage space as it is not moisture-proof.
- ▶ The regulator tap on the gas bottle must be accessible.
- ▶ 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, no snow walls or aprons may be allowed to lie against the vehicle. Keep the intake openings under the floor of the vehicle open and clean.

## 8.2 Gas bottles

- ▶ 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.
- ▶ 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.
- ▶ 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! Camping gas bottles with built-in check valve (blue bottle with max. 2.5 or 3 kg content) are can be used in exceptional cases with a safety valve.

- ▷ 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.
- ▷ If 2 gas bottles are used at the same time: Connect a gas pressure regulator fitted with an automatic switchover device.
- ▷ Information available at your Globecar dealer.
- ▷ For filling and connecting the gas bottles in Europe, camping supply stores have corresponding adapter sets.

## 8.3 Changing gas bottles

- ▶ When changing gas bottles, do not smoke or create any open fire.
- ▶ When you have changed the gas bottle, check whether gas escapes at the connection points and unions. Use a leakage search spray to spray the relevant connection point or union (Globecar dealer).

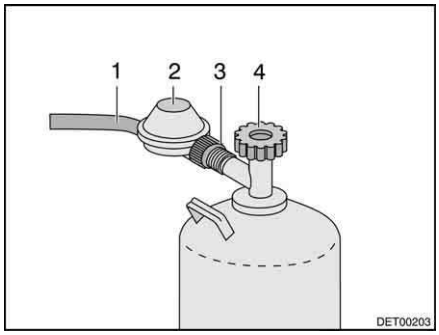
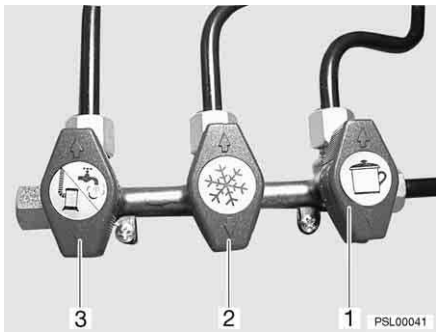



Fig. 44 Gas bottle connection

- Flap for opening the gas bottle compartment.
- Close the regulator tap (Fig. 44,4) on the gas bottle. Pay attention to the direction of the arrow.
- Unscrew the gas pressure regulator (Fig. 44,2) from the gas bottle at the hexagon nut (Fig. 44,3).
- Remove the gas pressure regulator and the gas tube (Fig. 44,1) from the gas bottle.
- Release fixing belt and remove gas bottle.
- Place a filled gas bottle in the gas bottle compartment.
- Fix gas bottle in place with the fixing belt.
- Position the gas pressure regulator (Fig. 44,2) and the gas tube (Fig. 44,1) on the gas bottle and screw in tightly to the gas bottle at the hexagonal nut (Fig. 44,3).
- Close the external flap.

## 8.4 Gas isolator taps




1 Cooker
2 Refrigerator
3 Heater/boiler

Fig. 45 Symbols for the gas isolator taps

A gas isolator tap (Fig. 45) for every gas device is built into the vehicle.

## 9.1 General safety instructions

- ▶ Only allow qualified personnel to work on the electrical system.
- ▶ All electronic devices (e.g. mobile telephones, radios, televisions or DVD players) which have been retrofitted to the vehicle and are operated during the journey must have certain features: These are the CE certification, the EMC inspection (electromagnetic compatibility) and the "E1" inspection.

  Only in this way can the functional reliability of the vehicle be ensured. Otherwise the airbag may be triggered or interference to the on-board electronics may result.

The vehicle is a safe place during a storm (Faraday cage). However, to protect the electrical devices, disconnect the 240 V connection and retract the antennae as a precaution.

## 9.2 12 V power supply

▷ To disconnect **all** electrical 12 V appliances from the power supply, set the battery cut-off switch on the transformer/rectifier to "battery off".

When the vehicle is not connected to the 240 V power supply or the 240 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. For this reason, electrical appliances such as the radio and the lights should not be operated for a long time without using the 240 V power supply.

When the vehicle engine is running, the vehicle alternator recharges the living area battery and the starter battery.

The 12 V power supply can be cut off with the 12 V main switch on the panel. The heater and the electric entrance step remain on standby. The refrigerator is then only operated with 12 V if the vehicle engine is running. This helps to prevent the living area battery from being run down too quickly.

### 9.2.1 Living area battery

- ▷ Prior to commencing a journey ensure the living area battery is fully charged. For this reason charge the living area battery for at least 20 hours before commencing the journey.
- ▷ During the trip, use every opportunity to charge the living area battery.
- ▷ Charge the living area battery for at least 20 hours after the journey.
- ▷ Charge the battery for at least 20 hours before laying up.
- ▷ Total discharge causes irreparable damage to the battery.
- ▷ Use only the built-in transformer/rectifier to load the living area battery.
- ▷ Irreparable damage to the living area battery will result if it is overcharged.
- ▷ For long periods of inactivity (4 weeks or more), either switch off the living area battery using the battery cut-off switch on the transformer/rectifier, or recharge it regularly.
- ▷ If the starter battery or living area battery are disconnected, do not apply the ignition. Danger of short circuit!
- ▷ Take note of the battery manufacturer's users and maintenance instructions.

▷ The dryfill battery is maintenance-free. Maintenance-free means:
It is not necessary to check the acid level.
It is not necessary to lubricate the battery poles.
It is not necessary to refill the distilled water.
Even a maintenance-free dryfill battery must be charged regularly.

The charging condition of the living area battery can be checked on the panel.

**Position**

Depending on the model, the living area battery is built in under the driver's seat or the front passenger's seat in the seat console.

**Charging using a 240 V power supply**

If the vehicle is connected to the 240 V power supply, the living area battery and the starter battery are automatically charged by the charger module on the transformer/rectifier. The starter battery is charged with a float charge of 2 A. The charging current is adapted to suit the charging condition of the battery. This ensures that it is not possible to overload the battery.

To make use of the maximum output from the charger module on the transformer/rectifier, switch off all electrical appliances during charging.

**Charging using the vehicle engine**

When the vehicle engine is running, the vehicle alternator recharges the living area battery and the starter battery. When the vehicle engine is switched off, the batteries are automatically disconnected from one another by a relay in the transformer/rectifier. This prevents the starter battery from being run down by electrical appliances in the living area. The starting capability of the vehicle is thus preserved. The charging condition of the living area battery or the starter battery can be read on the panel.

**Changing**

▷ When the living area battery is changed, only use batteries of the same type. A dryfill battery may only be replaced by a dryfill battery.

▷ Do not connect the battery cables to the wrong poles.

▷ If the starter battery or living area battery are disconnected, do not apply the ignition. Danger of short circuit!

▷ Before disconnecting or connecting the terminals of the battery, switch off the vehicle engine as well as the 240 V and 12 V power supplies and all appliances. Danger of short circuit!

To change the living area battery, proceed as follows:

- Turn off the vehicle engine.
- Switch off 12 V main switch on the panel. The indicator lamp will go off.
- On the transformer/rectifier, move the battery cut-off switch to the position "Batterie Aus" (battery OFF).
- Disconnect the mains plug from the transformer/rectifier.
- Switch off all gas appliances, all gas isolator taps and close the regulator tap on the gas bottle.
- There is a danger of short circuit when disconnecting the battery poles. For this reason, first disconnect the negative pole on the living area battery and then the positive.
- Remove the living area battery from the vehicle.
- Install new living area battery in the reverse order.

## 9.3 Transformer/rectifier (EBL 99)

▷ Do not cover the ventilation slots. Danger of overheating!

▷ Depending on the model, not all slots for the fuses are occupied.

▷ Further information can be obtained from the separate instruction manual "Transformer/rectifier".

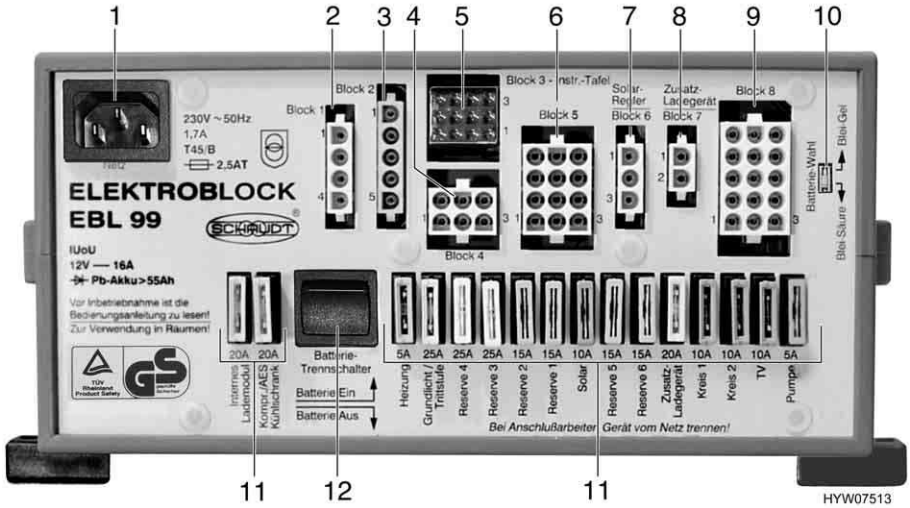



Fig. 46 Transformer/rectifier (EBL 99)

1 Main supply socket 240 V~
2 Output: Block 1 - refrigerator
3 Input: Block 2 - control lines
4 Output: Block 4 - heater, safety/drainage valve, basic light (lighting in the entrance area), entrance step
5 Output: Block 3 - panel
6 Output: Block 5 - solar cell (if fitted), spare 2, spare 3, spare 4
7 Output: Block 6 - solar charge regulator (if fitted)
8 Output: Block 7 - auxiliary charging unit
9 Output: Block 8 - consumer circuit 1, consumer circuit 2, TV, water pump, spare 1, spare 5, spare 6
10 Battery selector switch (lead acid/dryfill option)
11 Fuses (see table in section 9.6)
12 Battery cut-off switch (battery On/Off)

**Functions**

The transformer/rectifier has the following functions:

- The transformer/rectifier charges the living area battery.
- The transformer/rectifier distributes the current to the 12 V circuits and secures them.
- The transformer/rectifier contains connections for a solar charge regulator as well as other control and monitoring functions.
- When the engine is turned off, the transformer/rectifier separates the starter battery electrically from the living area battery. This prevents the 12 V living area appliances from discharging the starter battery.

The transformer/rectifier only works in conjunction with a panel.

When the transformer/rectifier is subject to a heavy load, the fitted charger module reduces the charging current. This protects the charger from overheating. The transformer/rectifier is subject to a heavy load when e.g. an empty living area battery is being charged, additional electrical appliances are turned on and the ambient temperatures are high.

**Position** Depending on the model, the transformer/rectifier is located under the driver's seat or in the seat console under the front passenger's seat.

### 9.3.1 Battery cut-off switch

▷ When the battery cut-off switch is OFF, the safety/drainage valve opens. The water flows out of the boiler.

▷ After switching the battery cut-off switch back on again: Put the basic light (lighting in the entrance area), entrance step, heater and spare 4 back into service (depending on the model). To do so, switch on the 12 V main switch briefly. This also applies if the living area battery was disconnected and then reconnected.

The battery cut-off switch disconnects all the living area 12 V appliances, even the safety/drainage valve. 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).

The batteries can still be charged by the transformer/rectifier when the battery cut-off switch is turned off.

*Switching on/off:*

- Press the battery cut-off switch up: Battery ON.
- Press the battery cut-off switch down: Battery OFF.

### 9.3.2 Battery selector switch

▶ If the battery selector switch is set incorrectly, there is the danger of the formation of detonating (oxy-hydrogen gas). Danger of explosion!

▷ Incorrect setting of the battery selector switch damages the living area battery.

▷ Before changing over the battery selector switch, pull out the 240 V mains plug.

▷ Never operate the transformer/rectifier when the battery selector switch has not been set incorrectly.

The battery selector switch is used to set the charger module in the transformer/rectifier to the type of living area battery installed in the vehicle ("lead acid" or "dryfill" battery).

Set the battery selector switch with a thin implement, e.g. with a biro.

### 9.3.3 Battery monitor

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

The battery monitor in the transformer/rectifier monitors the voltage in the living area battery.

If the battery voltage falls below 10.5 V, the battery monitor in the transformer/rectifier switches off all of the 12 V appliances, excluding the safety/drainage valve.

*Measures:*

- Switch off all electrical appliances that are not absolutely essential at the corresponding switch.
- If necessary, use the 12 V main switch to switch the 12 V power supply back on for a short while. This is only possible, however, when the battery voltage is above 11 V. If the voltage is below this level, the 12 V power supply cannot be switched on again until the living area battery has been recharged.

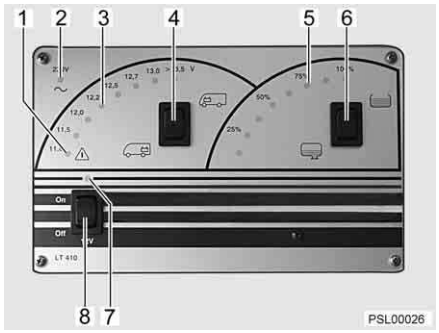
### 9.3.4 Charging the battery

When the vehicle engine is running, the vehicle alternator recharges the living area battery and the starter battery. When the vehicle engine is switched off, the batteries are automatically disconnected from one another by a relay in the transformer/rectifier. This prevents the starter battery from being run down by electrical appliances in the living area. The starting capability of the vehicle is thus preserved. The charging condition of the living area battery or the starter battery can be read on the panel.

If the vehicle is connected to the 240 V power supply, the living area battery and the starter battery are automatically charged by the charger module on the transformer/rectifier. The starter battery is charged with a float charge of 2 A. The charging current is adapted to suit the charging condition of the battery. This ensures that it is not possible to overload the battery.

To make use of the maximum output from the charger module on the transformer/rectifier, switch off all electrical appliances during charging.

## 9.4 Panel LT 410




1 ALARM warning light for the living area battery
2 240 V indicator lamp
3 Display V
4 Rocker switch for calling up the battery voltage of the starter and living area batteries
5 Display for tank fill level
6 Rocker switch for calling up the level in the water or waste water tanks
7 Indicator lamp for the 12 V power supply for the living area
8 12 V main switch

Fig. 47 Panel LT 410

### 9.4.1 V/tank gauge for battery voltage and water or waste water levels

**Battery voltage**

The V/tank gauge is for the indication of the battery voltage of the starter battery or the living area battery.

The LEDs for display V (Fig. 47,3) indicate the battery voltage.

*Displays:*

- Press the upper part of the rocker switch (Fig. 47,4) "  ": The battery voltage of the starter battery is displayed.
- Press the lower part of the rocker switch (Fig. 47,4) "  ": The battery voltage of the living area battery is displayed.

**Volume of water/waste water**

The V/tank gauge is for the indication of the quantity of water or waste water.

Two LEDs each of the display tank (Fig. 47,5) indicate the fill level.

▷ Only read the tank levels briefly. Keeping the reading option on for a long time can damage the transducers.

*Displays:*

- Press the upper part of the rocker switch (Fig. 47,6) "  ": The volume of water is displayed.
- Press the lower part of the rocker switch (Fig. 47,6) "  ": The volume of waste water is displayed.

### 9.4.2 Battery alarm for the living area battery

The red ALARM warning light (Fig. 47,1) flashes as soon as the voltage of the living area battery falls below 11 V (measured under operation) and there is a risk of a total discharge.

▷ When the battery alarm comes on, switch off the appliances and completely charge the living area battery, either by mobile operation or by connection to a 240 V power supply.

▷ Total discharge damages the battery.

▷ If the battery voltage falls below 10.5 V, the battery monitor in the transformer/rectifier switches off all of the 12 V appliances, excluding the safety/drainage valve.

### 9.4.3 12 V main switch

The 12 V main switch (Fig. 47,8) switches the panel and the 12 V power supply of the living area on and off.

Exception: Depending on the model, safety/drainage valve, heater, basic light (lighting in the entrance area), entrance step and spare 4 remain ready to operate.

*Switching on:*

- Press the upper part of the rocker switch (Fig. 47,8) "On": The 12 V living area power supply is switched on. The indicator lamp (Fig. 47,7) lights up green.

*Switching off:*

- Press the lower part of the rocker switch (Fig. 47,8) "Off": The 12 V living area power supply is switched off. The indicator lamp (Fig. 47,7) goes out.

▷ When leaving the vehicle, switch off the 12 V main switch. This prevents any unnecessary discharge of the living area battery.

▷ Appliances such as the safety/drainage valve, charger and panel consume approx. 20 mA to 65 mA of electricity from the battery capacity, even when the 12 V main switch is turned off. Therefore, you switch the battery cut-off switch on the transformer/rectifier to "Batterie Aus" (battery OFF) when the vehicle is not used for a long period of time.

### 9.4.4 12 V indicator lamp

The 12 V indicator lamp (Fig. 47,7) illuminates whenever the 12 V main switch (Fig. 47,8) is switched on.

### 9.4.5 240 V indicator lamp

The yellow 240 V indicator lamp (Fig. 47,2) is on whenever line voltage is available at the transformer/rectifier input.

## 9.5 240 V power supply

▶ Only allow qualified personnel to work on the electrical system.

The 240 V power supply provides electricity for:

- Sockets with earth contact
- Refrigerator
- Transformer/rectifier

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 240 V power supply system as often as possible. The charger module in the transformer/rectifier automatically charges the living area battery. In addition to this, the starter battery is charged with a float charge of 2 A.

### 9.5.1 240 V connection

▶ The external 240 V power supply must be protected by fuse with a fault current protection switch (FI-switches, 30 mA).

▶ Completely unwind the cable on cable drums to prevent overheating.

▷ For the connection points on camp sites (camping distributors) highly sensitive fault current protection switches (FI-switches, 30 mA) are obligatory.

The vehicle can be connected to an external 240 V power supply. The cable may have a length of maximum 25 m.

The flap for the 240 V connection is designated with the symbol "".

*Connecting the power cable:*

- Open the flap lock and fold external flap upwards (see chapter 7).
- Tilt cover in an upward direction.
- Insert connector.

## 9.6 Fuses

▶ Only replace defective fuses when the cause of the defect is known and has been remedied.

▶ Never bridge or repair fuses.

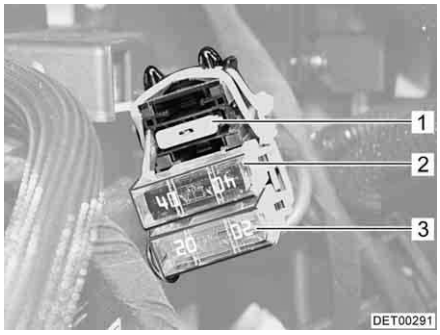
### 9.6.1 12 V fuses

The appliances connected to the 12 V power supply in the living area are fused individually. The fuses are accessible in the engine compartment, at the living area battery and on the transformer/rectifier (Fig. 46).

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.

**Fuses on the starter battery**

Depending on the model, the fuses are located in the engine compartment above the starter battery or between the seats, under a cover.

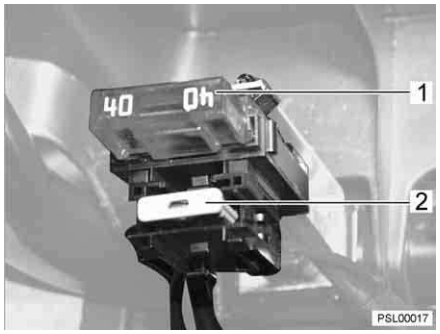



1 Flat fuse 2 A/grey (for alternator D+)
2 Jumbo flat fuse 40 A/orange
3 Flat fuse 20 A/yellow (for refrigerator and charging line)

Fig. 48 Fuses on the starter battery

**Fuses on the living area battery**

The fuses are fitted next to the living area battery.

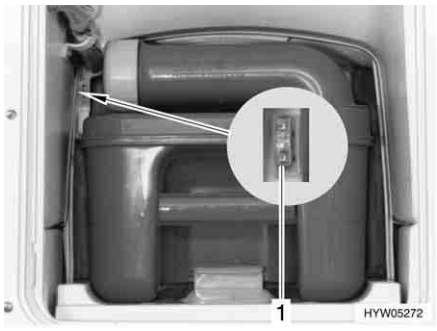



1 Jumbo flat fuse 40 A/orange
2 Flat fuse 2 A/grey (for battery charger sensor)

Fig. 49 Fuses on the living area battery

**Fuse for the Thetford toilet**

The fuse is located on the left-hand locker wall of the Thetford cassette.




1 Flat fuse 3 A/purple

Fig. 50 Fuse for the Thetford toilet

*Changing:*

- Open the flap for the Thetford cassette on the outside of the vehicle.
- Pull out the Thetford cassette completely.
- Replace fuse (Fig. 50,1).

**Fuses on the transformer/rectifier EBL 99**

| Function | Value/colour |
|---|---|
| Internal charger module | 20 A yellow |
| Compressor/AES refrigerator | 20 A yellow |
| Heater | 10 A red |
| Basic light/electrically operated entrance step | 25 A white |
| Spare 4 | – |
| Spare 3 | – |
| Spare 2 | – |
| Spare 1 | – |
| Solar | 15 A blue |
| Spare 5 | – |
| Spare 6 | – |
| Auxiliary charging unit | 20 A yellow |
| Circuit 1 | 10 A red |
| Circuit 2 | 10 A red |
| TV | 10 A red |
| Water pump | 5 A beige |

## 9.6.2 Fuse 240 V

▷ The 240 V automatic circuit breaker is always installed nearby the 240 V connection.

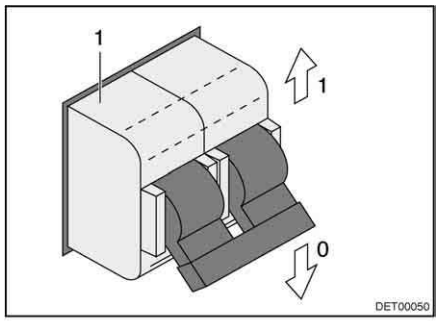



Fig. 51 240 V automatic circuit breaker

The 240 V connection is protected by a two-pole automatic circuit breaker (Fig. 51,2).

**Position** The automatic circuit breaker is in the wardrobe or under a cover in the rear area (under the slatted frame), depending on the model.

## 10.1 General

▷ The heat exchanger of the Trumatic C hot-air heater has to be replaced after 30 years. Only the manufacturer of the heater or an authorised specialist workshop is allowed to replace the heat exchanger. The operator of the heater must see to it that the parts are replaced.

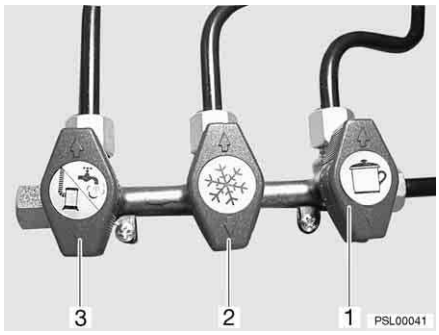
▷ For safety reasons, spare parts for pieces of heating appliances must correspond with manufacturer's instructions and be permitted by the manufacturer as a spare part. These spare parts may only be fitted by the manufacturer or an authorised specialist workshop.

▷ 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.




1 Cooker
2 Refrigerator
3 Heater/boiler

Fig. 52 Symbols for the gas isolator taps

## 10.2 Heater

▶ Never let gas escape unburned due to danger of explosion.

▶ When filling the fuel tank, on ferries or in the garage, never run the heater in gas operation. Danger of explosion!

▷ The circulation fan of the hot-air heater automatically goes on when the hot-air heater is activated and is automatically switched off and on during operation by means of a thermostat control. This puts an immense strain on the living area battery, if the vehicle is connected to an external 240 V power supply. Take into consideration that the living area battery only has limited reserves of energy.

**First journey**

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.

### 10.2.1 To heat properly

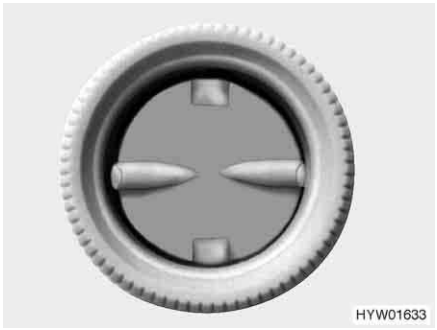



Fig. 53 Air outlet nozzle

**Hot air distribution**

Several air outlet nozzles (Fig. 53) are built into the vehicle. Pipes conduct the warm air to the air outlet nozzles. Turn the air outlet nozzles in a suitable position so the air can escape as required. To avoid draft close the air outlet nozzles on the dashboard and set the air distribution of the base vehicle to air circulation.

**Adjusting the air outlet nozzles**

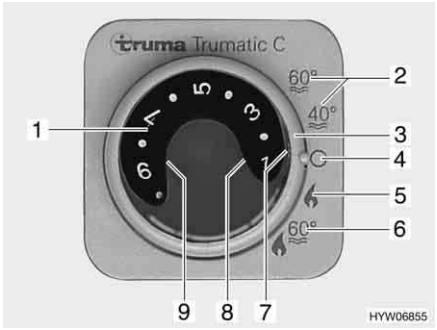
- Fully open: Full hot air stream
- Half or partially open: Reduced hot air stream

When five air outlet nozzles are completely opened, less warm air escapes through each nozzle. However, if only three air outlet nozzles are opened, more warm air flows out of each nozzle.

### 10.2.2 Trumatic C hot-air heater

▷ When there is a danger of frost the heater is not in operation, empty the heating system.

▷ Do not use the space above and behind the heater as a storage compartment.




1 Temperature control knob
2 Summer operation water temperature 40 °C or 60 °C
3 Rotary switch
4 Off
5 Winter operation "Heater without boiler"
6 Winter operation "Heater and boiler"
7 Green indicator lamp "Heating operation"
8 Red indicator lamp "Fault"
9 Yellow indicator lamp "Boiler heating-up phase"

Fig. 54 Operating unit for heater/boiler

**Operating modes**

The heater has two operating modes:

- Winter operation
- Summer operation

It is only possible to heat the vehicle in the "Winter" operating mode. With the "Summer" operating mode only water in the boiler is heated. It is not possible to heat the vehicle in this operating mode.

*Selecting operating mode:*

■ Set the operating mode using the rotary switch (Fig. 54,3).

The power supply of the heater cannot be interrupted by means of the 12 V main switch.

**Winter operation**

The heater selects the necessary burner setting according to the required room temperature. When the required room temperature is reached, the burner is switched off. The room temperature is measured by the temperature sensor next to the panel. In "Heater and boiler" operating mode (Fig. 54,6) water in the boiler is also heated. In the operating mode "Heater without boiler" (Fig. 54,5) the heater can be operated with an empty boiler.

*Switching on:*

- Open the regulator tap on the gas bottle and the gas isolator tap "Heater/ boiler".
- Turn the temperature control knob (Fig. 54,1) on the operating unit to the desired heating level.
- Set rotary switch (Fig. 54,3) to winter operation "Heater without boiler" (Fig. 54,5) or to winter operation "Heater and boiler" (Fig. 54,6).

Green indicator lamp (Fig. 54,7) is on.

The circulation fan automatically switches on when the heater is activated.

*Switching off:*

- Set the rotary switch (Fig. 54,3) to "O" (Fig. 54,4).
- Close the gas isolator tap "Heater/boiler" and the regulator tap on the gas bottle.

After switching off the heater, the circulation fan may still run for a moment to use up the residual heat.

**Summer operation**

It is not possible to heat the vehicle in "Summer" operating mode. In "Summer" operating mode, only the water in the boiler is heated.

▷ Further information can be obtained from the separate "Gas heater" instruction manual.

▷ For further information about the use of the boiler see section "Boiler".

### 10.2.3 Heater for waste water tank and waste water pipes (winter comfort package)

In order to prevent waste water fittings freezing up, the waste water tank and the waste water pipes can be electrically heated separately.

When the heater is turned on, temperature sensors monitor the temperature of the waste water tank and the waste water pipes. If the temperature falls below 5 °C, the heating elements are switched on and the waste water tank and waste water pipes are heated. If the temperature rises above a certain level, the heating elements are switched off again.


Fig. 55 Control unit


Fig. 56 Switch indicator lamps

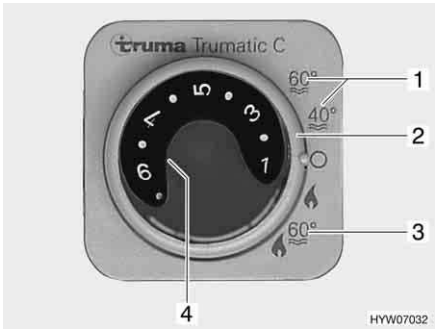
The control unit (Fig. 55) is installed under the sink. The control lamps on the control unit have the following meanings:

- The indicator lamp (Fig. 55,2) lights up in green: Regulation in operation.
- Indicator lamp (Fig. 55,1) lights up in red: Waste water tank is heated.
- Indicator lamp (Fig. 55,3) lights up in red: Waste water pipes are heated.

The on/off switch (Fig. 56,1) is installed on the panel under the sink. Press the switch up to switch on, press it down to switch off.

## 10.3 Trumatic C boiler

- ▶ Never let gas escape unburned due to danger of explosion.
- ▶ When filling the fuel tank, on ferries or in the garage, never run the boiler in gas operation. Danger of explosion!
- ▶ The water in the boiler can be heated up to 60 °C. Danger of burns!




1 Summer operation water temperature 40 °C or 60 °C
2 Rotary switch
3 Winter operation "Heater and boiler"
4 Yellow indicator lamp "Boiler heating-up phase"

Fig. 57 Operating unit for heater/boiler

The boiler is integrated in the heater system and operates on gas. The boiler is switched on by turning the rotary switch (Fig. 57,2) on the operating unit (Fig. 57).

In winter operation "Heater and boiler" (Fig. 57,3) the water is automatically heated up when the heater is switched on. If the heater switches off after the required room temperature has been reached, the boiler will continue to heat up until the set water temperature has been reached.

In summer operation (Fig. 57,1) only the water in the boiler is heated up to either 40 °C or 60 °C. The water is heated to 60 °C in approx. one hour. The yellow indicator lamp (Fig. 57,4) illuminates during the boiler heating-up period.

The voltage supply for the heater/boiler and the safety/drainage valve cannot be interrupted by the 12 V main switch. When there is a fault, the red indicator lamp on the operating unit for Trumatic C heater/boiler illuminates (see chapter 14).

### 10.3.1 Safety/drainage valve

The boiler is equipped with a safety/drainage valve (Fig. 58). The safety/drainage valve prevents water in the boiler from freezing, when there is frost and the heater is not switched on.

- ▷ When the safety/drainage valve is closed a small electrical power flows which puts an extra load on the living area battery. Therefore, a daily check of the battery voltage panel is recommended. If the battery voltage drops to below 10.8 V the function of the safety/drainage valve can no longer be guaranteed.
- ▷ When the vehicle is not used for a long period of time, open the safety/drainage valve and empty the boiler.
- ▷ At temperatures below 8 °C the safety/drainage valve opens automatically. Therefore, you must switch on the living area heater and wait until the living area temperature exceeds 8 °C before you fill the boiler.
- ▷ 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.
- ▷ Further information on the living area battery can be obtained from chapter 9.

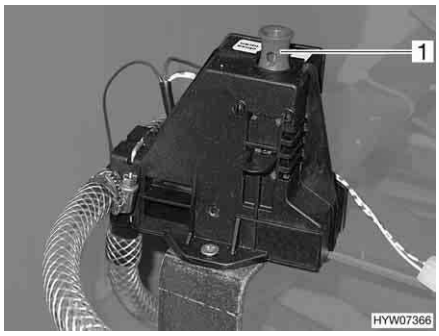



Fig. 58 Safety/drainage valve of the boiler

### 10.3.2 Winter operation

In the "heater and boiler" switch setting in winter operation, the boiler is already switched on.

### 10.3.3 Summer operation

In summer operation the water can be heated up to 40 °C or 60 °C.

*Switching on:*

- ■ Open the regulator tap on the gas bottle and the gas isolator tap "Heater/boiler".
- ■ Set the rotary switch (Fig. 57,2) on the operating unit (Fig. 57) to "Summer operation" (Fig. 57,1).

The yellow indicator lamp (Fig. 57,4) is illuminated during the heating up period. When the set water temperature is reached, the period of heating up is finished and the yellow indicator lamp fades.

*Switching off:*

- Set the rotary switch (Fig. 57,2) on the operating unit (Fig. 57) to "O".
- Close the gas isolator tap "Heater/boiler" and the regulator tap on the gas bottle.

### 10.3.4 Filling/emptying the boiler

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

*Filling the boiler with water:*

- Switch on 12 V power supply on the panel.
- Close the safety/drainage valve. In order to do this, pull the pull switch (Fig. 58,1) up.
- 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 taps open until the water flowing out of the 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:*

- Set the rotary switch (Fig. 57,2) on the operating unit (Fig. 57) to "O".
- Open the safety/drainage valve. In order to do this, push the pull switch (Fig. 58,1) down. The boiler is drained to the outside by the safety/drainage valve.
- Check whether the water has been drained completely from the boiler (approx. 12.5 litres).

▷ Because of the suction effect, a part of the water supply can be also drained from the lines and the water tank. The water system is however not completely emptied.

▷ Further information can be obtained from the separate instruction manual "Boiler".

## 10.4 Gas cooker

▶ Never let gas escape unburned due to danger of explosion.

▶ Before using the cooker make sure that there is sufficient ventilation. Open windows or the skylight.

▶ Do not use gas cooker or gas oven for heating.

▶ 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 lid is held closed by a spring. When closing there is danger of getting injured!

▷ Do not use the glass gas cooker lid as a hob.

▷ Do not close the gas cooker lid while the gas cooker is in operation.

▷ When the flame goes out, the thermocouple automatically cuts the gas supply.

▷ Further information can be obtained from the separate instruction manual "Gas cooker".

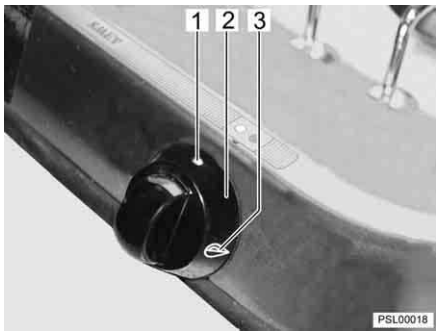



Fig. 59 Operating controls for gas cooker

*Switching on:*

- Open the regulator tap on the gas bottle and the gas isolator tap "Cooker".
- Turn the control knob (Fig. 59,2) on the burner you wish to use to the ignition position (large flame, Fig. 59,3).
- Press the control knob down and hold it.
- Light the burner with a gas lighter, a match or other suitable means of lighting.
- Once the flame is burning, the control knob must be held down for 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 (Fig. 59,1). The flame fades.
- Close the gas isolator tap "Cooker" and the regulator tap on the gas bottle.

## 10.5 Refrigerator

During the journey, only operate the refrigerator via the 12 V power supply. At high ambient temperatures the refrigerator is unable to reach its full cooling power. At high external temperatures, the full cooling power of the cooling unit is only guaranteed if the refrigerator is ventilated sufficiently. In order to achieve a better ventilation the refrigerator ventilation grill can be removed.

### 10.5.1 Refrigerator ventilation grill

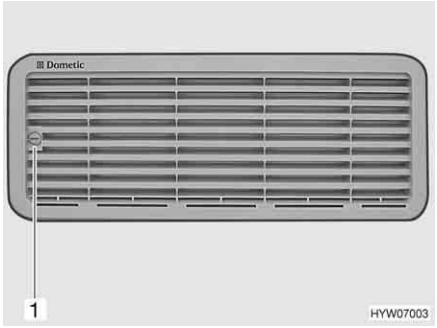



Fig. 60 Refrigerator ventilation grill

*Removal:*

- Turn screw (Fig. 60,1) one quarter turn using a coin.
- Remove refrigerator ventilation grill.

### 10.5.2 Operation

**Operating modes**

The refrigerator has 2 operating modes:

- Gas operation
- Electrical operation (240 V AC or 12 V DC)

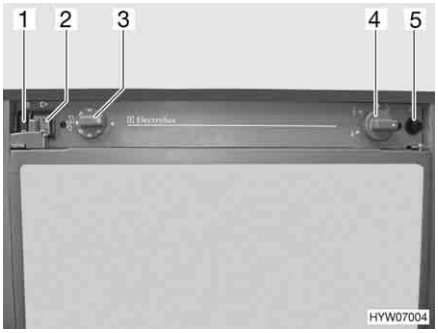
The operating mode is set with the operating controls on the refrigerator panel. Infinitely variable regulation of the cooling power is only possible with gas operation and when the refrigerator is operated with 240 V. It is not possible with 12 V operation.

▷ Select only one energy source.

**Gas operation**

▶ Never let gas escape unburned due to danger of explosion.

▶ It is not permitted to operate the refrigerator with car gas.




1 Energy selector switch 12 V
2 Energy selector switch 240 V
3 Temperature setting control knob, 240 V operation
4 Temperature setting control knob, gas operation
5 Gas ignition button

Fig. 61 Operating controls for refrigerator

*Switching on:*

- Open the regulator tap on the gas bottle and the gas isolator tap "Refrigerator".
- Set 12 V switch "+ -" (Fig. 61,1) to "O".

- Set 240 V switch "⎓" (Fig. 61,2) to "O".
- Press the control knob (Fig. 61,4) to large flame "⌂" and hold it down. Wait until gas gets into the burner.
- Press the gas ignition switch (Fig. 61,5) repeatedly until the flame appears in the inspection glass (bottom left in the refrigerator).
- Keep control knob (Fig. 61,4) pressed for another 10 to 15 seconds, then release.
- Check in the inspection glass (bottom left-hand side in the refrigerator) whether the flame is visible.
- If ignition is unsuccessful, repeat the entire procedure.

After the refrigerator has been in operation with maximum gas supply for 24 hours the gas supply can be reduced if the cooling power is sufficient.

*Switching off:*

- Set control knob (Fig. 61,4) to "0".
- Close the gas isolator tap "Refrigerator" and the regulator tap on the gas bottle.

**Electrical operation**

▷ Close the gas isolator tap "Refrigerator" when the refrigerator is operated electrically.

The refrigerator can be operated with the following voltages:

- 240 V AC
- 12 V DC

*Switching the 240 V operation on:*

- Set 12 V switch "+ -" (Fig. 61,1) to "O".
- Set 240 V switch "⎓" (Fig. 61,2) to "**I**".
- Use control knob "↯" (Fig. 61,3) to adjust refrigerating temperature.

*Switching the 240 V operation off:*

- Turn the control knob to the 0 position and switch off the 240 V switch. Refrigerator is switched off.

*Switching 12 V operation on:*

- Set 240 V switch "⎓" (Fig. 61,2) to "O".
- Set 12 V switch "+ -" (Fig. 61,1) to "**I**".

*Switching 12 V operation off:*

- Switch off the 12-V switch. Refrigerator is switched off.

When operated with 12 V, the refrigerator draws power only from the starter battery of the vehicle. The starter battery only supplies the refrigerator with 12 V when the vehicle engine is running. When the vehicle engine is not running, the refrigerator is cut off from the power supply in the living area. For this reason, change over to gas operation during prolonged driving breaks.

The thermostat is not activated during 12 V operation. The refrigerator operates continuously.

▷ Further information can be obtained from the separate instruction manual "Refrigerator".

### 10.5.3 Refrigerator door locking mechanism

▷ During the journey the refrigerator door must always be closed and locked in the closed position.

▷ Lock the refrigerator door in ventilation position when the refrigerator is switched off. This prevents mould forming.

There are two positions for locking the refrigerator door in place:

- Closed refrigerator door during travel and when the refrigerator is in operation
- Slightly opened refrigerator door as a ventilation position when the refrigerator is switched off

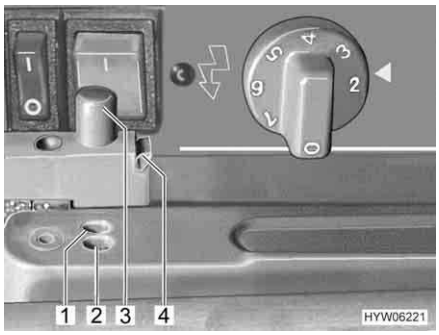



Fig. 62 Lock on refrigerator door

*Opening:*

- Push the green retainer lock (Fig. 62,4) to the side to release the locking device. The bolt (Fig. 62,3) will trip.
- Open the refrigerator door by the recessed grip or by the curved handle.

*Closing:*

- Fully close the refrigerator door.
- Press the bolt (Fig. 62,3) down, so that it engages in the outer drilled hole (Fig. 62,2).

*Locking in the ventilation position:*

- Slightly open the freezer compartment and the refrigerator door.
- Press the bolt (Fig. 62,3) down, so that it engages in the inner drilled hole (Fig. 62,1). The refrigerator door will then stay slightly open.

## 11.1 Water supply, general

▷ Fill the water tank with fresh water only.

▷ If the vehicle is not heated when there is risk of frost, empty the entire water system. Leave the water taps on in central position. Leave the safety/ drainage valve (Trumatic) and all drain cocks open. This will avoid frost damage to appliances and to the vehicle.

▷ The water pump will overheat without water and can get damaged. Never operate water pump when the water tank is empty.

▷ Clean the water tank thoroughly before use.

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.

▷ Before using the water fittings, the 12 V power supply on the panel must be switched on. Otherwise the water pump will not work.

▷ Water left standing in the water tank or in the water pipes becomes undrinkable after a short period. For this reason, rinse the water pipes and the water tank thoroughly with several litres of fresh water before each use of the vehicle. To do this, open all water taps. After each use of the vehicle completely empty the water tank and the water pipes.

## 11.2 Water tank

**Volume**

Depending on the model, the water tank contains approx. 100 litres or approx. 110 litres.

**Fresh water filler neck**

The fresh water filler neck is on the left side of the vehicle.

The fresh water filler neck is marked by the symbol "  " or labelled by the word "WASSER" (water).

The cap is open and closed using the key for the external flap locks (see chapter 7).

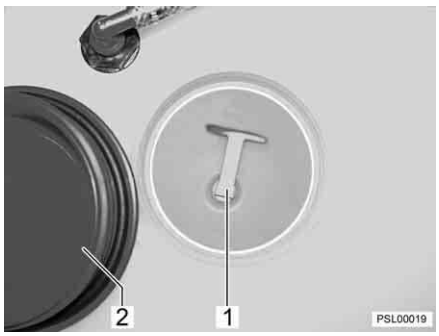



Fig. 63 Water tank

*Filling with water:*

- Unscrew the cap (Fig. 63,2) on the water tank.
- Press the stopper (Fig. 63,1) into the drainage opening.
- Open the fresh water filler neck.
- Fill the water tank with fresh water. Use a water hose, a water canister with a funnel or similar for filling.

- Close the fresh water filler neck.
- Screw the cap back on the water tank.

*Draining water:*

- Unscrew the cap (Fig. 63,2) on the water tank.
- Remove the stopper (Fig. 63,1) from the drainage opening. The water will drain.
- Screw the cap back on the water tank.

## 11.3 Water system

▶ When filling the water tank, observe the maximum permissible gross weight of the vehicle.

▷ The water pump will overheat without water and can get damaged. Never operate water pump when the water tank is empty.

▷ If the vehicle is not heated when there is risk of frost, empty the entire water system. Leave the water taps on in central position. Leave the safety/ drainage valve (Trumatic) and all drain cocks open. This will avoid frost damage to appliances and to the vehicle.

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

*Filling:*

- Position the vehicle horizontally.
- Close all water taps.
- Turn the 12 V main switch on the panel to the "12 V" position.
- Close the safety/drainage valve (Trumatic). In order to do this, pull the pull switch up.
  If the temperature is below 8 °C, the safety/drainage valve cannot be closed. Therefore switch on the living area heater and wait until the living area temperature exceeds 8 °C.
- Fill the water tank with fresh water.
- 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 taps open until the water flowing out of the 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 taps open until the water flowing out of the taps has no bubbles in it.
- Close all water taps.

*Emptying:*

- Position the vehicle horizontally.
- Set the 12 V main switch on the panel to "".
- Switch off the 240 V power supply on the 240 V fuse box.
- Open all water taps and set to the central position.
- Switch off boiler.

- Open the safety/drainage valve (see section 10.3). In order to do this, push the pull switch down.
- Unscrew the cap on the water tank.
- Remove the stopper from the drainage opening.
- Screw the cap back on the water tank.
- Check the water drainage.
- Empty the waste water tank. Take note of the environmental tips in this chapter.
- Empty Thetford cassette. Take note of the environmental tips in this chapter.
- Rinse the water tank thoroughly.
- Let the water system dry for as long as possible.
- After emptying, leave all water taps on in the central position.
- Leave all drain cocks open.

## 11.4 Waste water tank

▷ In case of frost add so much anti-freeze (such as kitchen salt) to the waste water tank so that the waste water cannot freeze.

▷ 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.

The waste water tank is located underneath the floor of the vehicle.

The drain cock and the cleaning opening are located on the underside of the waste water tank.

**Volume** The waste water tank approx. holds 100 l.

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

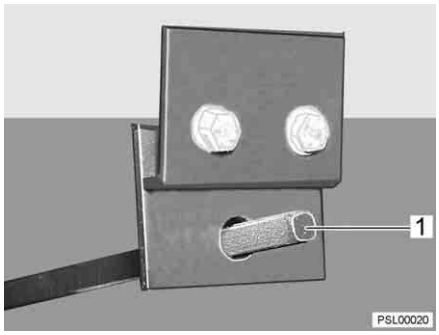



Fig. 64 Using the waste water tap

The square bolt for turning on the waste water tap is directly under the floor of the vehicle.

*Emptying:*

- Place key onto the square bolt (Fig. 64,1).
- In order to open the waste water tap, turn the square bolt a quarter turn in an anticlockwise direction.

- Completely empty waste water tank.
- To close the waste water tap, turn the square bolt as far as it will go in a clockwise direction.

## 11.5 Toilet compartment

▷ Do not transport any loads in the shower tray. The shower tray or other items of equipment in the toilet compartment can be damaged.


Fig. 65 Shower handset

▷ For ventilation purposes during or after a shower, or for drying wet clothing, close the washroom door and open the window of the toilet compartment. This improves the air circulation.

▷ Use the shower handset (Fig. 65,2) for showers. To do so, pull out the shower handset and press lever (Fig. 65,1).

▷ After using the shower, wipe it dry to prevent moisture from collecting.

## 11.6 Vario toilet compartment

Depending on the model, the vehicle is fitted with a Vario toilet compartment. The toilet compartment can be changed with few maneuvers so that when the shower is in use, the toilet is available in its own enclosed cubicle.

### 11.6.1 Converting into a shower cubicle

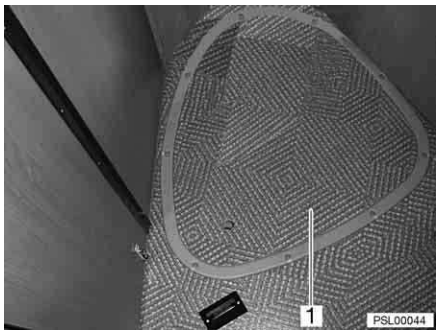



Fig. 66 Shower tray cover

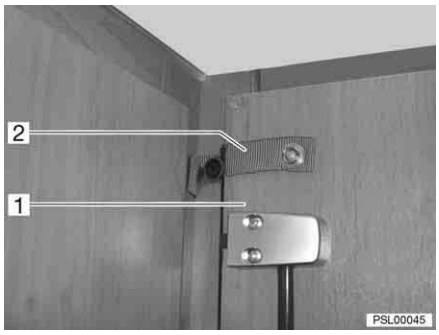



Fig. 67 Securing the toilet compartment door

- Remove the shower tray cover (Fig. 66,1) and push it in the space between the wardrobe and the fixed bed.
- Remove the bag with the shower tube for the shower tray and put it to one side.
- Open the toilet compartment door (Fig. 67,1) fully and fix it with the securing strap (Fig. 67,2).

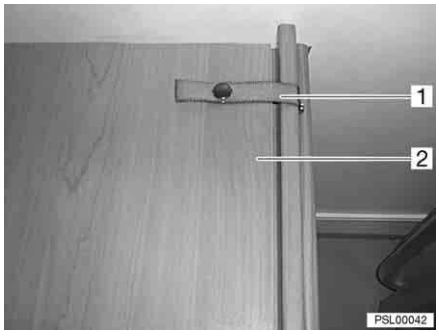



Fig. 68 Securing strap for the concertina wall

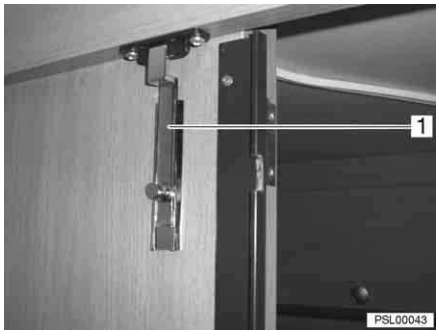



Fig. 69 Locking the concertina wall

- Undo the securing strap (Fig. 68,1) of the concertina wall (Fig. 68,2) on the outside.
- Release the top and bottom locks (Fig. 69,1) on the inside of the concertina wall.
- Using the handle, swivel the concertina wall inwards against the resistance of the magnet so that the end of the concertina wall is behind the edge of the wardrobe.
- Take the shower tube out the bag and place it in the shower tray.
- Take out the shower handset and place it over the upper edge of the shower tube.
- Place it in the shower tray.
- Push the shower tube and the shower handset upwards and fasten to the attachments on the ceiling.

### 11.6.2 Conversion to toilet compartment

Convert the toilet compartment by reversing the order of the shower cubicle conversion.

▷ Open the skylight in the Vario toilet compartment for ventilation during or after a shower.

▷ Only put the shower tube in the bag once the fabric is dry. If the shower tube must be packed away while the fabric is still wet: Unpack the shower tube as soon as possible, in order to dry out the fabric.

▷ After using the shower tray, wipe it dry to prevent moisture from collecting.

## 11.7 Thetford toilet

▷ If there is any risk of frost and the vehicle is not heated, empty the Thetford cassette.

▷ 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.

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

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.


Fig. 70 Thetford toilet bowl, swivelling

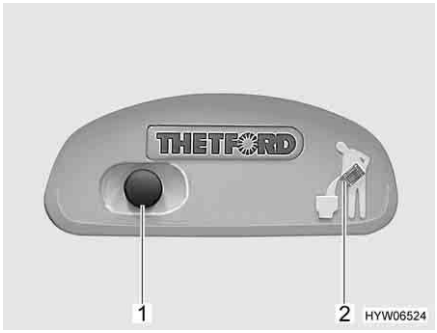



Fig. 71 Flush button/indicator lamp Thetford toilet

*Flushing:*

- Before flushing open the sliding trap of the Thetford toilet. To do this, push the slide lever (Fig. 70,1) in an anticlockwise direction.
- For flushing, press the blue flush button (Fig. 71,1).
- After flushing close the sliding trap. To do this push the slide lever in a clockwise direction.

The indicator lamp (Fig. 71,2) goes on whenever the Thetford cassette has to be emptied.

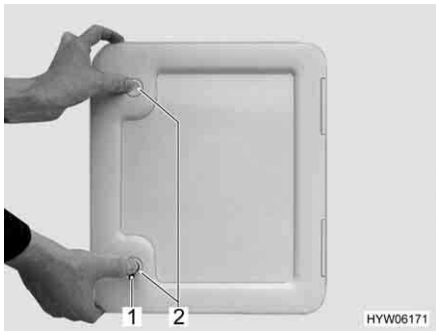


Fig. 72 Flap for Thetford cassette

Fig. 73 Thetford cassette

*Emptying:*

- Push the slide lever (Fig. 70,1) in a clockwise direction. The sliding trap is closed. To empty, the sliding trap of the Thetford toilet **must** be closed.
- Open the flap for the Thetford cassette on the outside of the vehicle. Insert the key into the locking cylinder of the push-button lock (Fig. 72,1) and turn a quarter turn in a clockwise direction.
- Remove the key.
- Press both push-button locks (Fig. 72,2) simultaneously with your thumb and open the flap for the Thetford cassette.
- Pull the retaining clip (Fig. 73,1) upwards and pull out the Thetford cassette (Fig. 73,2).
- Only empty the Thetford cassette (completely!) at disposal stations that are especially provided for this purpose.

▷ Further information can be obtained from the separate "Thetford cassette" instruction manual.

## 12.1 External care

### 12.1.1 Washing with a high-pressure cleaner

▷ Do not clean the tyres with a high-pressure cleaner. The tyres might be damaged.

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

During washing, keep the following minimum distance between the vehicle and the high-pressure jet:

- With nozzle for circular jet approx. 700 mm
- When using a 25° fan nozzle and dirt cutter, approx. 300 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 refrigerator ventilation grill or the skylights. The vehicle may be damaged or water may enter the interior.

### 12.1.2 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.

▷ Treat rubber seals with glycerin.

▷ An acrylic glass cleanser with antistatic effect is suitable for a follow-up treatment. Small scratches can be treated with an acrylic glass polish. This agent is available at your Globecar dealer.

### 12.1.3 Waste water tank

Clean the waste water tank after every use of the vehicle as motorhome, at least several times a year.

*Cleaning:*

- Empty the waste water tank.
- Thoroughly rinse out the waste water tank with fresh water.
- If possible, clean waste water sensors through the cleaning opening by hand.

### 12.1.4 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.

## 12.2 Interior care

- ▷ Acrylic glass windows are delicate and require very careful handling (see section 12.1.2).
- ▷ 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 containing sand. This procedure will help you to avoid brittleness and formation of cracks.
- ▷ 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 for cleaning the Thetford toilet and the water system and for decalcifying the water system. Vinegar-based products may cause damage to seals or parts of the installation. Use standard decalcifying products for decalcification.

- ▷ 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.
- Clean upholstery with dry foam specially manufactured for the use on upholstery or with the foam of a mild detergent. Do not wash upholstery. Protect upholstery from direct sunlight so that it does not loose its colour.
- Curtains and net curtains should be dry cleaned.
- Clean PVC-floor covering with special cleansing agents.
- Never clean the sink or the gas cooker with a scourer. Avoid anything which may cause scratching or grooves.
- Clean gas cooker only with a moist cloth. Prevent any water from penetrating the gas cooker. Water may damage the gas cooker.
- Brush insect screens 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.
- Clean water tank with water and dish washing liquid and rinse subsequently with plenty of fresh water.

## 12.3 Winter care

▷ If there is any risk of frost, always run heater at a minimum of 15 °C. In the case 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 any risk of frost, cover the windscreen with winter insulation mats.

### 12.3.1 Winter operation

During winter operation, condensation develops when the motorhome is occupied under low-temperature conditions. To ensure good interior air quality and avoid vehicle damage from condensation, sufficient ventilation is essential.

- When heating the vehicle, the heater should be at the highest setting and roof storage cabinets, curtains and blinds should be opened. This ensures optimal ventilation.
- In the morning, lift up all cushions, air out storage boxes and dry any damp areas.

▷ If condensation has still developed, just wipe it off.

## 12.4 Lay-up

### 12.4.1 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.

Before laying up the vehicle, go through the following checklist:

**Base vehicle**

| Activities | Done |
|---|---|
| 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! | |
| Always provide for sufficient ventilation in the underbody area<br>▷ Humidity or lack of oxygen e.g. by covering with plastic film may cause optical irregularities to the underbody. | |

| | Activities | Done |
|---|---|---|
| **Interior** | Place upholstery in an upright position for ventilation, and cover | |
| | Clean refrigerator | |
| | Allow refrigerator and freezer compartment doors to remain slightly open | |
| | Remove the shower tunnel from the vehicle, take it out of the bag and hang it up dry | |
| **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<br>▷ Charge the battery for at least 20 hours before laying up. | |
| | Set battery cut-off switch to off | |
| **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 notes in chapter 11 | |
| | Switch off the safety/drainage valve on the transformer/rectifier. Otherwise the battery will become discharged too quickly<br>▷ If the safety/drainage valve is switched off, the water system is no longer sufficiently protected against frost. | |

### 12.4.2 Winter lay-up

Additional measures are required if laying up the vehicle over winter:

| | Activities | 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 | |
| **Body** | Keep the forced ventilation open | |
| | Clean and grease all door and flap hinges | |
| | Brush oil or glycerin on all locking mechanisms | |
| | Rub all rubber seals with talc | |
| | Use graphite dust to treat locking cylinders | |

| | Activities | Done |
|---|---|---|
| **Interior** | Position de-humidifiers | |
| | Remove upholstery from the vehicle and store 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 starter and living area batteries and store in a place protected from frost (see chapter 9) | |
| **Water system** | Clean the water system using a cleaning agent from a specialised store | |
| **Complete vehicle** | Arrange the tarpaulins in such a way that the ventilation openings are not covered, or use porous tarpaulins | |

### 12.4.3 Starting up the vehicle after a temporary lay-up or after lay-up over winter

Go through the following checklist before start-up:

| | Activities | Done |
|---|---|---|
| **Base vehicle** | Check the tyre pressure on all tyres | |
| | Check the tyre pressure of the spare wheel | |
| **Body** | Clean the pivot bearing of the entrance step | |
| | Check that the windows and skylights are working properly | |
| | Check that all the external locks are working, such as the external flaps, the filler neck and the conversion door | |
| **Gas system** | Put the gas bottles in the gas bottle compartment, tie down and connect to the gas pressure regulator | |
| **Electrical system** | Connect to 240 V power supply using the external socket | |
| | Fully charge living area and starter battery<br>⚠ ▷ Charge the batteries for at least 20 hours after lay-up. | |
| | 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**

| Activities | Done |
|---|---|
| Use several litres of fresh water to rinse out water pipes and water tank. To this end, open all water taps | |
| Check the functionality of the operating lever for the waste water tank | |
| Close safety/drainage valve, drain cocks and water taps | |
| Check the safety/drainage valve, water taps, drain cocks and water distributors for leaks | |

**Appliances**

| | |
|---|---|
| Check the function of the refrigerator | |
| Check the function of the heater/boiler | |
| Check the function of the gas cooker | |

## 13.1 Inspection work

Like any technical appliance, the vehicle must be inspected at regular intervals.

This inspection work must be carried out by qualified personnel.

In the inspection record for the housing body in this instruction manual, the Globecar dealer confirms what work has been performed.

Have chassis inspections confirmed in the chassis manufacturer's customer service booklet.

- ▷ Note the inspections listed in the inspection record and have them carried out at the specified intervals. The value of the vehicle is thus preserved.
- ▷ The inspection record also serves as valid proof in the case of damage and claims under the guarantee.

## 13.2 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.

## 13.3 Replacing bulbs and fluorescent tubes

- ▶ Bulbs and light fittings can be extremely hot. Therefore, allow lights 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.
- ▶ Lights can get very hot. When the light is switched on, there must always be a safety distance of 30 cm between light and flammable objects. Fire hazard!

- ▷ A new bulb should not be touched with the fingers. Use a cloth when installing the new bulb.
- ▷ Only use bulbs of the same type and with the correct wattage.

### 13.3.1 Ceiling lamp

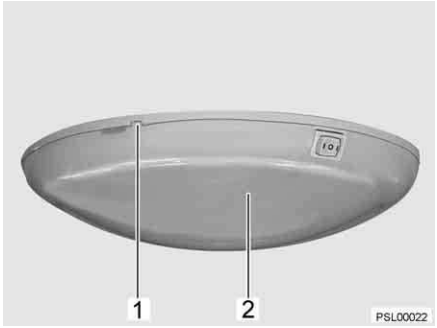



Fig. 74 Ceiling lamp

*Changing bulbs:*

- Use a suitable tool (e.g. a screwdriver) to carefully lever out the cover (Fig. 74,2) at the notch (Fig. 74,1) and remove it.
- Remove bulb.
- Put in a new bulb.
- Reassemble the lamp in the reverse order.

### 13.3.2 Room lamp

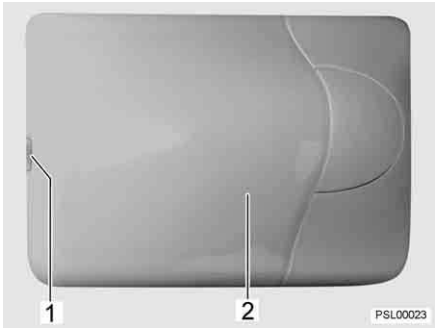



Fig. 75 Room lamp

*Changing bulbs:*

- Use a suitable tool (e.g. a screwdriver) to carefully lever out the cover (Fig. 75,2) at the notch (Fig. 75,1) and remove it.
- Remove halogen bulb.
- Put in a new halogen bulb.
- Reassemble the lamp in the reverse order.

### 13.3.3 Surface-mounted halogen light (swivelling)


Fig. 76 Surface-mounted halogen light (swivelling)

*Changing bulbs:*

- Use a suitable tool (e.g. a screwdriver) to lever out and remove the cover (Fig. 76,1).
- Remove halogen bulb.
- Put in a new halogen bulb.
- Reassemble the lamp in the reverse order.

## 13.4 Spare parts

- ▶ Every alteration of the original condition of the vehicle can alter road behaviour and jeopardize road safety.
- ▶ The special equipment and original spare parts recommended by us have been specially developed and supplied for your vehicle. These products are available at your Globecar dealer. Your Globecar dealer 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 Globecar dealers are available for any spare parts requirement.

When ordering spare parts, please indicate the serial number and the vehicle type to your Globecar dealer.

The vehicle described in this instruction manual is built and equipped to factory standards. Special equipment is offered depending on its purpose or use. When fitting special equipment check if such equipment has to be entered in the vehicle documents. Observe the max. permissible gross weight. Your Globecar dealer will be pleased to advise you.

## 13.5 Vehicle identification plate

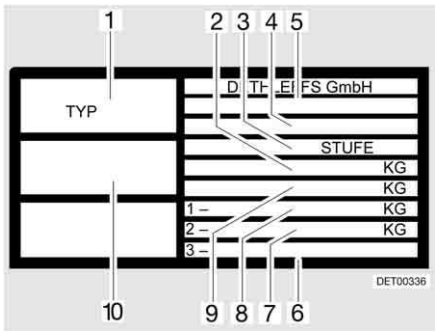



Fig. 77 Vehicle identification plate

1 Type
2 Maximum permissible gross weight of the vehicle with trailer
3 Manufacturer of the unit (add-on unit)
4 Manufacturer's code and chassis number
5 EG type approval number
6 Permissible rear axle load (for tandem axle)
7 Permissible axle load rear
8 Permissible axle load front
9 Maximum permissible gross weight of the vehicle
10 Serial number

The vehicle identification plate (Fig. 77) with the serial number is mounted in the area of the passenger's 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

## 13.6 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.

## 14.1 Electrical system

▷ When the living area battery is changed, only use batteries of the same type. A dryfill battery may only be replaced by a dryfill battery.

▷ When changing from a lead acid battery to a dryfill battery, change the battery selector switch on the transformer/rectifier to dryfill battery.

▷ See chapter 9 for changing the fuses.

| Fault | Cause | Remedy |
|---|---|---|
| Interior lighting does not work | Bulb is defective | Unscrew cover of the relevant light, replace bulb. Note volts and watts specifications |
| | 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 240 V power supply despite connection | 240 V automatic circuit breaker has triggered | Switch on the 240 V automatic circuit breaker |
| Starter or living area battery is not charged when operated in 240 V mode | Jumbo flat fuse (40 A) in the starter or living area battery is defective | Replace jumbo flat fuse (40 A) in 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 |
| | Disconnector relay in the transformer/rectifier is defective | Contact customer service |
| 12 V indicator lamp does not light up | 12 V power supply switched off | Switch 12 V power supply on |
| | Battery cut-off switch on the transformer/rectifier is switched off | Set battery cut-off switch to on |
| | Starter or living area battery is not charged | Charge the starter or living area battery |
| | Disconnector relay in the transformer/rectifier is defective | Contact customer service |
| | Flat fuse (2 A) in the living area battery is defective | Replace flat fuse (2 A) in the living area battery |

| Fault | Cause | Remedy |
|---|---|---|
| 12 V power supply does not work | 12 V power supply switched off | Switch 12 V power supply on |
| | Battery cut-off switch on the transformer/rectifier is switched off | Set battery cut-off switch to on |
| | The living area battery is discharged | Charge the living area battery |
| | Jumbo flat fuse (40 A) in the living area battery is defective | Replace jumbo flat fuse (40 A) in the living area battery |
| | Disconnector relay in the transformer/rectifier is defective | Contact customer service |
| 12 V power supply does not work in 240 V operation | 12 V power supply switched off | Switch 12 V power supply on |
| | Battery cut-off switch on the transformer/rectifier is switched off | Set battery cut-off switch to on |
| | Charger module in the transformer/rectifier is defective | Contact customer service |
| | 240 V automatic circuit breaker has triggered | Contact customer service |
| | Jumbo flat fuse (40 A) in the living area battery is defective | Replace jumbo flat fuse (40 A) in the living area battery |
| Starter battery is discharged in 12 V operation | Disconnector relay in the transformer/rectifier is defective | Contact customer service |
| | Battery cut-off switch on the transformer/rectifier is switched off | Set battery cut-off switch to on |
| No voltage is supplied by the living area battery | The living area battery is discharged | Charge living area battery immediately<br>▷ Total discharge damages the battery.<br>If the vehicle is to be laid up for a long period, fully charge the living area battery beforehand |

## 14.2 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.).
- ▶ Have the defective gas system repaired by an authorised specialist workshop.

| Fault | Cause | Remedy |
|---|---|---|
| No gas | Gas isolator tap closed | Open the gas isolator tap |
| | Regulator tap on the gas bottle is closed | Open 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 |

## 14.3 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 |

## 14.4 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.

| Fault | Cause | Remedy |
|---|---|---|
| Red indicator lamp "Fault" illuminates | Air in the gas pipe system | Switch off and on again. After two futile ignition attempts, wait for 10 minutes before trying again |
| | Lack of gas | Open regulator tap and gas isolator tap |
| | | Connect a full gas bottle |
| | Defect of a safety element | Contact customer service |
| Red indicator lamp "Fault" is flashing | Operating voltage too low | Charge or replace the living area battery (or have it charged or replaced) |

| Fault | Cause | Remedy |
|---|---|---|
| Green indicator lamp behind knob is not lit | 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) |
| Boiler empties, safety/ drainage valve has opened | Internal temperature below 8 °C | Heat inside |
| | Battery cut-off switch on the transformer/rectifier is switched off | Set battery cut-off switch to on |
| | Operating voltage below 10.8 V | Charge or replace the living area battery (or have it charged or replaced) |
| | Fuse is defective | Replace fuse on the transformer/rectifier |
| Safety/drainage valve does not close when switching on | Battery cut-off switch on the transformer/rectifier is switched off | Set battery cut-off switch to on |
| | Operating voltage below 10.8 V | Charge living area battery (or have it charged) |
| | Fuse is defective | Replace fuse on the transformer/rectifier |
| Red and green indicator lamps are not lit | Fuse is defective | Replace fuse on the transformer/rectifier |
| Fan wheel runs noisily or not steadily | Fan wheel is soiled | Contact Truma service department |

## 14.5 Refrigerator

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.

| Fault | Cause | Remedy |
|---|---|---|
| Refrigerator does not switch on when operating in 240 V mode | No 240 V power supply | Connect 240 V power supply |
| | 240 V automatic circuit breaker has triggered | Switch on the 240 V automatic circuit breaker |
| | 240 V operating voltage too low | Have the 240 V power supply checked by an authorised specialist workshop |

| Fault | Cause | Remedy |
|---|---|---|
| Refrigerator does not switch on when operating in 12 V mode | Jumbo flat fuse (40 A) in the starter battery is defective | Replace jumbo flat fuse (40 A) in the starter battery |
| | Flat fuse (2 A) in the starter battery is defective | Replace flat fuse (2 A) in the starter battery |
| | Disconnector relay in the transformer/rectifier is defective | Contact customer service |
| | 12 V operating voltage too low | Have the 12 V power supply checked by an authorised specialist workshop |
| Refrigerator does not switch on when operating in gas mode | Lack of gas | Open regulator tap and gas isolator tap |
| | | Connect a full gas bottle |
| | Air in the gas pipe | Repeat ignition 3 or 4 times |
| | Cobwebs or burnt residue in the burning chamber | Remove the ventilation grill on the outside of the vehicle and clean the burning chamber |

## 14.6 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 | Top up with fresh water |
| | Drain cock not closed | Close drain cock |
| | 12 V power supply switched off | Switch 12 V power supply on |
| | 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 |
| | Transformer/rectifier defective | Contact customer service |
| Toilet has no flush water | Water tank is empty | Top up with fresh water |
| | Fuse for Thetford cassette is defective | Replace fuse |

| Fault | Cause | Remedy |
|---|---|---|
| Display for water and waste water indicates a wrong value | Measuring probe in the waste water or water tank is soiled | Clean water/waste water tank |
| | Measuring probe is defective | Replace measuring probe |
| Waste water tank cannot be emptied | Drain cock is clogged | Open the cleaning cap on the waste water tank and drain the waste water. Rinse the waste water tank well |

## 14.7 Body

| Fault | Cause | Remedy |
|---|---|---|
| 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<br>▷ 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 |

## 15.1 Weights

- Every alteration of the original condition of the vehicle can alter road behaviour and jeopardize road safety.
- Retrofitting accessories increases the mass in ready-to-drive condition. The payload reduces in value accordingly. For safety reasons, the maximum permissible gross weight in a laden condition must not be exceeded.

| Model | Maximum permissible gross weight in a laden condition | Mass in ready-to-drive condition | Payload |
|---|---|---|---|
| 2 Win | 3,300 kg | 2,720 - 2,745 kg | 555 - 580 kg |
| Duett | 3,300 kg | 2,590 - 2,615 kg | 685 - 710 kg |
| Duet L | 3,300 kg | 2,710 - 2,735 kg | 565 - 590 kg |
| for 6 | 3,300 kg | 2,720 - 2,745 kg | 555 - 580 kg |
| for 2 | 3,300 kg | 2,785 kg | 515 kg |
| Roadmaster | 3,300 kg | 2,805 - 2,845 kg | 455 - 495 kg |
| Roadmaster L | 3,300 kg | 2,850 - 2,890 kg | 410 - 450 kg |

## 15.2 Dimensions

- ▷ The external dimensions of the vehicle are noted in the vehicle documents.
- ▷ All dimensions in mm.

| Model | Interior height | Bed dimensions | | | |
|---|---|---|---|---|---|
| | | Double bed | Single bed | Bunk bed | Pull-down bed |
| 2 Win | 1855 | 1920 x 1390/1270 | - | - | - |
| Duett | 1855 | 1920 x 1390/1270 | - | - | - |
| Duet L | 1855 | 1920 x 1390 | - | - | - |
| for 6 | 1855 | 1920 x 1390/1270 | - | - | - |
| for 2 | 1920 | 2285/ 1860 x 1720 | 2285/ 1860 x 700 | - | - |
| Roadmaster | 1950 | - | 1860 x 82 | 1860/1720 x 80 | 2050 x 1350 |
| Roadmaster L | 1950 | - | 2020 x 1380 | - | 2020 x 1350 |

## 15.3 Equipment

| Model | Living area battery (dry-fill) | Gas bottles | Gas pressure regulator | Water tank (ca.) | Waste water tank (ca.) |
|---|---|---|---|---|---|
| 2 Win | 80 Ah | 2 x 11 kg | 30 mbar | 100 l | 100 l |
| Duett | 80 Ah | 2 x 11 kg | 30 mbar | 100 l | 100 l |
| Duet L | 80 Ah | 2 x 11 kg | 30 mbar | 100 l | 100 l |
| for 6 | 80 Ah | 2 x 11 kg | 30 mbar | 100 l | 100 l |
| for 2 | 80 Ah | 2 x 11 kg | 30 mbar | 100 l | 100 l |
| Roadmaster | 80 Ah | 2 x 11 kg | 30 mbar | 110 l | 100 l |
| Roadmaster L | 80 Ah | 2 x 11 kg | 30 mbar | 110 l | 100 l |