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 vehicles. Many practical details will prove extremely useful when on the road and will allow you to relax even more on your holiday.

Each Globecar vehicle 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 vehicle 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 document

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 legal guarantee and product warranty rights apply for the vehicle.
2. It is advisable to present the vehicle for inspection by a Globecar dealer at the end of the first year in order to assert any warranty claims that may arise. The presentation should take place 2 months at the latest after the anniversary of the initial registration (or delivery).
   As proof that the inspection has been completed, the inspection has to be confirmed on the corresponding page in this operating manual by a stamp, the date and the signature of the respective Globecar dealer.
3. The costs of the inspection are to be paid by the vehicle owner.

1.3 Inspection records

Delivery

Date:

Signature and stamp of the Globecar dealer:

1th year

Date:

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
	Joints, hinges	Lubricate	Annually
	Refrigerator, heater, boiler, cooker, lighting, storage flap and door closures, toilet, seat belts	Function check	Annually
	Windows, skylights	Function check, water ingress test	Annually
	Upholstery, curtains, blinds	Visual check	Annually
	Sealing strips, edges, -rubber	Check for damage	Annually
	Water supply	Water ingress test	Annually
	Hot-air system	Function check, clean fan wheel if necessary	Annually
	Underbody protection, fastening of the underbody attachments	Visual check	Annually
	Electrical system	Function check	Annually
	Gas system	Official gas inspection	Every two years
	Underbody	Visual check, repair underbody protection if 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".

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

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

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.

Depending on the configuration, the first-aid kit and hazard warning triangle are not included as standard. Equip the vehicle with a first-aid kit and hazard warning triangle before using it for the first time. In case of vehicles with a gross weight exceeding 3.5 t a flashing hazard warning light has to be carried additionally on the vehicle.

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

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

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

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

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

Observe the test and inspection periods stipulated by the manufacturer.

2.2 Environmental tips

- ▷ Do not impair the tranquility and spruceness of nature.
- ▷ 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 toilet cassette or sewage tank at disposal stations at the camping or caravan sites, which 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.
- ▷ Collect waste water on board only in the waste water tank or, if need be, in other vessels suitable to this purpose.
- ▷ Empty waste water tank as often as possible, even when it is not completely full (hygiene).

  If possible, flush out waste water tank and, if necessary, drainage pipe with fresh water every time it is emptied.
- ▷ Never allow the toilet cassette or sewage tank to become too full. Empty the toilet cassette or sewage tank frequently, at the latest as soon as the level indicator lights up.
- ▷ Separate household waste according to glass, tin cans, plastic and wet waste also when on a journey. Enquire at the town or community authority about disposal points. Household waste is not to be disposed of in waste paper baskets which are situated at car parks.
- ▷ Empty waste bins as often as possible into the cans or containers that are 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 longer periods, search for parking areas which are especially designated for motorhomes. Enquire at the town or community authority about parking spaces.
- Always leave the parking places in a clean condition.

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, a safety distance of 30 cm to combustible material has to be maintained. Fire hazard!
- ▶ Never use portable heating or cooking appliances.
- ▶ Only authorised qualified personnel may modify the electrical system, the gas system or the appliances.

3.1.2 Fire-fighting

- ▶ Always carry a dry powder fire extinguisher in the vehicle. 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.
- ▶ Always keep a fire blanket at hand near the cooker.

3.1.3 In case of fire

- ▶ Evacuate all 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 and the use of gas operated appliances. That is why the oxygen needs to be replaced on a constant basis. For this purpose, forced ventilation options (e.g. skylights with forced ventilation, mushroom-shaped vents or floor vents) are fitted to the vehicle. Never cover or block forced ventilations from the inside or outside with objects such as e.g. a winter mat. Keep forced ventilations clear of snow and leaves. There is a danger of suffocation due to increased CO_2 levels.
- ▶ Observe the headroom of the doors.
- ▶ Gas lines and electrical cables are laid in the floor. Never drill holes or screw screws into the floor. There is danger of a gas explosion or of a power cut or short circuit due to damage to a line or 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.
- ▷ Only use wheel rims and tyres which are approved for the vehicle. Information concerning the size of the approved wheel rims and tyres is included in the vehicle documents or can be obtained from authorised dealers and service centres.
- ▷ Firmly apply the handbrake when parking the vehicle.

- ▷ When leaving the vehicle, it is imperative that all doors, external flaps and windows are closed.
- ▷ Hazard warning triangle and first-aid kit conforming to DIN 13164 are prescribed by law and must be carried on the vehicle.
- ▷ Only move the vehicle on the road if the driver has a driver's license valid for the vehicle class.
- ▷ When selling the vehicle, hand over all instruction manuals for the vehicle and the fitted appliances.

3.3 Road safety

- ▶ Before commencing the journey, carry out a functional check of indicating and lighting equipment, the steering and the brakes.
- ▶ If the vehicle has been stationary for a long period (approx. 10 months) have the braking and gas systems checked by an authorised specialist workshop.
- ▶ Before starting the journey and also after short breaks check whether the entrance step has been retracted completely.
- ▶ Fold in the pop-up roof fully and lock it into place before commencing the journey.
- ▶ Before commencing the journey, open and secure the shades on the windscreen and on the driver's and front passenger's windows.
- ▶ Before starting the journey, rotate the seat in the direction of travel and lock in position. The rotating seats must remain locked in the direction of travel during the journey.
- ▶ Before starting your journey, remove the television from the support and store it securely.
- ▶ During the journey, persons are only to sit on the permitted seats (see Chapter 5). The authorised number of seats is stipulated in the vehicle documents.
- ▶ Before starting the journey fasten your seat belt and keep it fastened during the journey.
- ▶ Always secure children with the child-protection equipment that is mandatory for the respective child's size 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). Adapt your manner of driving correspondingly.

- ▶ Observe the overall height of the vehicle (including roof loads) at underpasses, tunnels, etc.
- ▶ In winter, the roof must be free of snow and ice before commencing the journey.

- ▷ Before commencing the journey, distribute the vehicle payload evenly (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 door and all drawers and flaps are secure. Engage the refrigerator door securing device. Lock the folding 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.

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 towing vehicle and the trailer during positioning for connecting and detaching.

3.5 Gas system

3.5.1 General information

- ▶ Close all gas isolator taps and the regulator tap before commencing the journey and when leaving the vehicle.
- ▶ No appliance (e.g. heating or refrigerator) that is operated through the built-in burner may be operational while fuel is being filled up, on ferries or in the garage. Danger of explosion!
- ▶ If an appliance is operated through a burner, do not start the appliance up in closed areas (e.g. garages). Danger of poisoning and suffocation!
- ▶ Have the gas system serviced, repaired or altered by an authorised workshop only.
- ▶ Have the gas system checked by an authorised specialist workshop before starting up and according to the national regulations. 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 the exhaust gas pipes also have to be checked. The gas pressure regulator has to be replaced at least every 10 years. The vehicle owner is responsible for seeing that this is carried out.
- ▶ In case of a defect of the gas system (gas odour, high gas consumption) there is danger of explosion! Close the regulator tap on the gas bottle immediately. Open doors and windows and ventilate well.
- ▶ In case of a defect in the gas system: Do not smoke; do not ignite any open flames, and do not operate electric switches (light switches etc.).

- ▶ Have the defect in the gas system repaired by an authorised specialist workshop.
- ▶ Open a skylight or a window before taking open sources of combustion (gas cooker) into service.
- ▶ Do not use the gas cooker or gas oven 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 installed gas appliances are designed for use solely with propane or butane gas or a mixture of both. The gas pressure regulator as well as all installed gas devices are set 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 10 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 the standard forced ventilation. Otherwise leaking gas cannot be dispersed to the outside.
- ▶ Do not use the gas bottle compartment as storage space as it is not moisture-proof.
- ▶ Secure the gas bottle compartment in order to prevent unauthorised persons opening it. To do so lock the access.
- ▶ The regulator tap on the gas bottle must be accessible.
- ▶ Only connect gas-operated devices (e.g. gas grill) which have been designed for a gas pressure of 30 mbar.
- ▶ The exhaust gas pipe must be fitted tightly to the heating system and to the vent and must be sealed. The exhaust gas pipe must not show any evidence of damage.
- ▶ Exhaust fumes must be able to escape into the atmosphere unhindered and fresh air must be able to enter unhindered. Therefore keep the waste gas vents and intake openings clean and free (e.g. of snow and ice). No snow walls or aprons may be allowed to lie against the vehicle.

3.5.2 Gas bottles

- ▶ Gas bottles are only to be transported within the designated gas bottle compartment.
- ▶ Place gas bottles vertically in the gas bottle compartment.
- ▶ Tie down 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.
- ▶ Use your hands only to connect the gas pressure regulator or the gas tube to the gas bottles. Do not use any tools.
- ▶ 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 a built-in reflux valve (blue bottle with max. 2.5 or 3 kg content) are permitted in exceptional cases with a safety valve.
- ▶ Never block the ventilation openings in the floor under the gas bottles.

3.6 Electrical system

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

3.7 Water system

- ▶ Water left standing in the water tank or in the water pipes becomes undrinkable after a short period. 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.

▷ If the vehicle is not used for several days or if it is not heated when there is a risk of frost, empty the entire water system. Leave the water taps on in central position. Leave the safety/drainage valve (if available) and all drain cocks open. Frost damage to appliances, frost damage to the vehicle and deposits in water-carrying components can be avoided in this way.

4.1 Payload

- ▶ Excessive payload and the wrong tyre pressure can cause the tyre to burst. You can lose control of the vehicle.
- ▶ Adapt your speed to the payload. The stopping distance is longer when the payload is higher.

- ▷ The maximum permissible gross weight stated in the vehicle documents is not to be exceeded by the payload.
- ▷ Built-in accessories and special equipment 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

- ▷ In technical and scientific texts the term "mass" has replaced the term "weight". However the term "weight" is still the more common term in general usage. To contribute toward understanding the term "mass" is therefore only used in established phrases in the following passages.

Maximum permissible gross weight in a laden condition

The maximum permissible gross weight in a laden condition is the weight that a vehicle may never exceed.

The maximum permissible overall weight in laden condition consists of the **mass in ready-to-drive condition** and of the **payload**.

The manufacturer has specified the maximum permissible gross weight in a laden condition in Field F.1 of the vehicle documents.

Mass in ready-to-drive condition

The manufacturer specifies the mass in ready-to-drive conditions in Field G of the vehicle documents.

Payload

The payload is made up as follows:

- Conventional load
- Additional equipment
- Personal equipment

Explanations of the individual components of the payload are contained 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.

The manufacturer specifies the number of seats in Field S.1 of the vehicle documents.

Additional equipment

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

- Tow 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 and 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

- ▶ Payload calculation at the manufacturer 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, Field F.1	3300	
Vehicle mass in a ready-to-drive condition, including basic equipment according to vehicle documents, Field G	- 2720	
This results in a permissible payload of	**580**	
Conventional load, e.g. 3 persons at 75 kg each	- 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 water), full gas bottles and complete additional equipment on a public weighbridge, can the actual payload be determined.

4.1.3 Loading the vehicle correctly

- ▶ To ensure safety never exceed the maximum permissible gross weight in a laden condition.
- ▶ Distribute the load evenly between the left-hand and right-hand sides of the vehicle.
- ▶ Distribute the load evenly between both axles. Observe the axle loads specified in the vehicle documents. Additionally observe the permissible load-carrying capacity of the tyres.
- ▶ Securely store all the objects so that they cannot slide or slip.
- ▶ Store heavy objects (awning, canned food, etc.) close to the axles. Low-lying storage compartments whose doors do not open in the direction of travel are particularly suited for storing heavy objects.
- ▶ Store lighter objects (laundry) in the roof storage compartments.

4.2 Entrance step

- ▶ Before starting the journey and also after short breaks check whether the entrance step has been retracted completely.
- ▶ Do not stand in the direct range of movement of the entrance step while the entrance step is being extended or retracted.
- ▶ Do not step on the entrance step until it has extended completely. There is a risk of injury!
- ▶ Never raise or lower persons or loads with the entrance step.

▷ Clean dust and dirt regularly from the entrance step, do not grease or oil moving parts.

4.2.1 Electrically operated entrance step

Operating switch

The switch to operate the entrance step is located on the inside of the vehicle in the area of the conversion door.

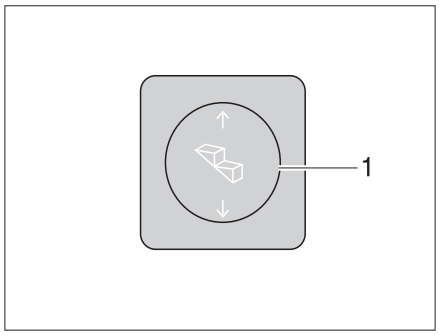


Fig. 1 Operating switch entrance step

Extending:

■ Press the rocker switch (Fig. 1,1) down until the entrance step has extended completely.

Retracting:

■ Press the rocker switch (Fig. 1,1) up until the entrance step has retracted completely.

4.3 Television

- ▶ Before starting your journey, remove the television from the support and store it securely.

4.4 Road safety

▶ Check the tyre pressure before a journey and at 2-week intervals. 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:

	No.	Checks	Checked
Base vehicle	1	All vehicle documents are on board	
	2	Tyres in proper condition	
	3	Vehicle lighting, brake and reversing lights function	
	4	Oil level at engine, gear unit and power steering checked	
	5	Coolant and liquid for windshield washer system topped up	
	6	Breaks function	
	7	Brakes react evenly	
	8	When braking, the vehicle remains on track	
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	Pop-up roof folded in	
	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 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	Children's seats mounted to seats with three-point safety belts	
	26	Swivel seat locking device for driver's seat and front passenger's seat locked	
	27	Curtains hooked into the retaining clips	
	28	Shades in the driver's cabin opened and secured	

Gas system

No.	Checks	Checked
29	Gas bottles firmly fixed in the gas bottle compartment so that they are unable to turn	
30	Protective cap set on top of the gas bottle	
31	Regulator tap on the gas bottle and gas isolator taps are closed	

Electrical system

32	Check the battery voltage of the starter battery and the living area battery (see Chapter 9). If the panel indicates that the battery voltage is too low, the respective battery has to be recharged. Observe the instructions in Chapter 9 ▷ Commence the journey with a fully charged starter battery and living area battery.	

5.1 Driving the motorhome

- ▶ The base vehicle is a commercial vehicle (small truck). Adapt your manner of driving correspondingly.
- ▶ Before starting the journey and also after short breaks check whether the entrance step has been retracted completely.
- ▶ Always wear a seat belt during the journey at those seats where a seat belt is mounted.
- ▶ Never open the seat belt during the journey.
- ▶ Passengers must remain in the seats provided.
- ▶ The door lock may not be opened.
- ▶ Avoid braking suddenly.
- ▶ Only change the destination on the navigation system when the vehicle is at a standstill. Drive to a car park or stop in a safe area when changing the destination.
- ▶ Do not play a DVD on the monitor of the navigation system during the journey.

▷ Drive slowly on bad roads.

▷ If an accident occurs as a result of these instructions not being observed, the manufacturer will not be responsible for damages caused.

▷ The safety measures specified in Chapter 3 have to be observed.

5.2 Driving speed

- ▶ The vehicle is equipped with a powerful engine. Meaning that you have sufficient power reserves in difficult traffic situations. This high power allows a high end speed and requires above-average driving skills.
- ▶ The vehicle provides a huge surface exposed to wind. Particular danger arises when a side wind suddenly occurs.
- ▶ Uneven or one-sided loading changes the road behavior.
- ▶ On unknown roads the road surface conditions may be difficult and unexpected traffic situations may arise. Therefore adapt your driving speed to the respective traffic situation and the ambient situation for your safety.
- ▶ Observe the statutory speed limits that apply in the respective country.

▷ The skylights and windows are not designed for high speeds. Excessive speeds can result in noise development that is too high.

5.3 Seat belts

The vehicle is equipped with automatic three-point seat belts at those seats in the living area for which a seat belt is stipulated by law. The corresponding national regulations apply for using a seat belt.

- ▶ Before starting the journey fasten your seat belt and keep it fastened during the journey.
- ▶ Do not damage or clamp in the belts. Have damaged seat belts replaced by an authorised specialist workshop.
- ▶ Do not change the belt attachment points, the automatic retractor and the belt locks.
- ▶ Check the screwed connections of the seat belts at intervals in order to ensure that they are firmly seated.
- ▶ Use each seat belt for **one** adult person only.
- ▶ Do not belt up objects together with persons.
- ▶ Seat belts are not sufficient for persons who are less than 150 cm tall. In this case use additional retention devices. Observe the test certificates.
- ▶ Factory-set three-point safety belts must be used when attaching child restraint systems.
- ▶ Replace (have replaced) the seat belts that were in use during an accident.
- ▶ Do not tilt the backrest of the seat too far back during the journey. Otherwise the effectiveness of the seat belt is no longer ensured.

5.3.1 Using the safety belt correctly

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

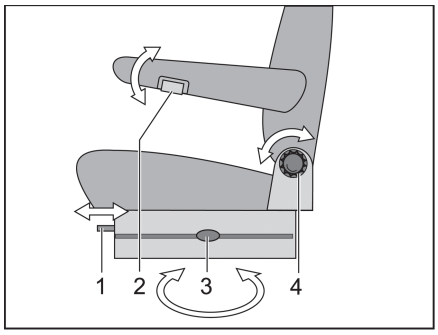
The safety belt is applied correctly when a fist still fits between your body and a safety belt.

5.4 Driver's seat and front passenger's seat

- ▶ Before starting the journey, rotate the seat in the direction of travel and lock in position.
- ▶ Lock the seats in the direction of travel and do not turn them during the journey.

▷ The driver's and front passenger's seat are a part of the base vehicle, depending on model and vehicle equipment. In this case the adjustment of the seats is described in the operating instructions of the base vehicle.

5.4.1 Seats (Aguti)



1 Lengthways adjustment
2 Armrest adjustment
3 Rotating
4 Backrest adjustment

Fig. 2 Driver's and front passenger's seats (Aguti)

Rotating seats into driving position

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

- Push both armrests upward.
- Push the driver's seat/front passenger's seat backwards or into the central position.
- Rotate the seat in the direction of travel and lock in position.

▷ Rotating the seats in the stationary vehicle is described in Chapter 7.

▷ Move the seats all the way down or forward before turning. Otherwise, the seats cannot be turned.

Adjusting the armrest

The height of the armrests is infinitely adjustable.

- Turn the knurled wheel (Fig. 2,2) in an anticlockwise direction (when viewed from the front). The latch of the armrest is released by this.
- Move the armrest to the desired position.
- Turn the knurled wheel as far as possible in a clockwise direction.

Adjusting an appropriate seating position

The position of the driver's and front passenger's seats can be adjusted. The handles which are required for this purpose are positioned to the front, right or left of the seat.

- Pull the handle (Fig. 2,1). The seat can be moved forward or backward.
- Turn the knurled knob (Fig. 2,4). The angle of the backrest can be adjusted.

Adjusting the seat height

Depending on the model, the height of the seat is infinitely adjustable.

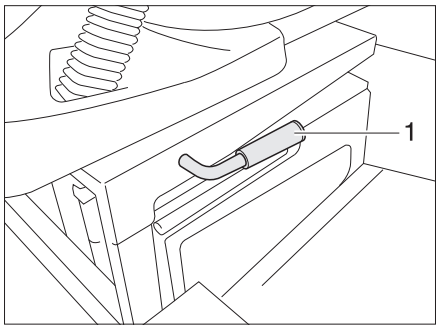
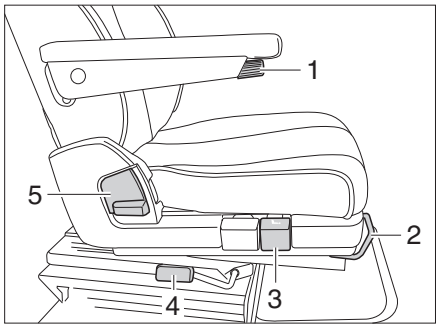


Fig. 3 Seat height adjustment

- Pull the lever (Fig. 3,1) upwards.
- Take pressure off or apply pressure to seat. The seat moves up or down.
- Release lever when the desired position is reached. The seat is locked.

5.4.2 Seats (ISRI)



1 Armrest adjustment
2 Lengthways adjustment
3 Height adjustment
4 Rotating
5 Backrest adjustment

Fig. 4 Driver's and front passenger's seats (ISRI)

Rotating seats into driving position

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

- Push both armrests upward.
- Push the driver's seat/front passenger's seat backwards or into the central position.
- Rotate the seat in the direction of travel and lock in position.

▷ Rotating the seats in the stationary vehicle is described in Chapter 7.

Adjusting the armrest

The height of the armrests is infinitely adjustable.

- For ease in handling, first move the armrest slightly upward.
- For fine adjustments, turn the handwheel (Fig. 4,1) upwards or downwards.

Adjusting an appropriate seating position

Both the height and the position of the driver's and front passenger's seats can be adjusted. The handles which are required for this purpose are positioned to the front, right or left of the seat.

▶ The backrest is under strong spring tension. If there is no resistance to the backrest, it quickly moves forward after unlocking.

▷ If the backrest quickly moves forward uncontrolled it can damage the seat-belt lock.

- Pull the handle (Fig. 4,2). The seat can be moved forward or backward.
- Pull the handle (Fig. 4,5). The angle of the backrest can be adjusted.
- Pull the handle (Fig. 4,3). The seat can be lifted or lowered toward the front.

5.5 Seating arrangement

▶ During the journey, persons are only to sit on the permitted seats. The authorised number of seats is stipulated in the vehicle documents.

▶ Sitting on the divans is forbidden during the journey.

▶ Wearing of seat belts is compulsory at all seats.

Fig. 5 "Seat" symbol

Seats which may be used during travel are equipped with a sticker (Fig. 5).

5.6 External doors

▶ Only drive with the external doors locked.

▷ 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 a set of 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 appliance (e.g. heating or refrigerator) that is operated through the built-in burner may be operational while fuel is being filled up, 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.

▷ An applied handbrake can prevent the driver's seat from turning. If necessary release the handbrake briefly.

6.2 Entrance step

In order to exit the vehicle, first fully extend the entrance step.

6.3 230 V connection

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

6.4 Refrigerator

6.4.1 Absorption refrigerator

12 V operation of the refrigerator is only possible when the vehicle engine is running. If the vehicle engine is switched off, set the refrigerator to 230 V operation or gas operation.

6.4.2 Compressor refrigerator

The refrigerator only functions in 12 V operation.

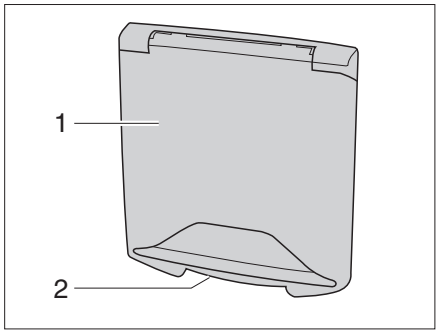
7.1 External flaps

▷ 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 Flap for 230 V connection, square



1 External flap
2 Recessed grip

Fig. 6 Flap for 230 V connection

Opening: ■ Grip into the recessed grip (Fig. 6,2) at the external flap (Fig. 6,1) and lift the external flap upwards.

Closing: ■ Lower the external flap downward and press it shut.

7.1.2 External flap Thetford cassette

▷ Do not let the external flap fall closed in order to avoid damage.

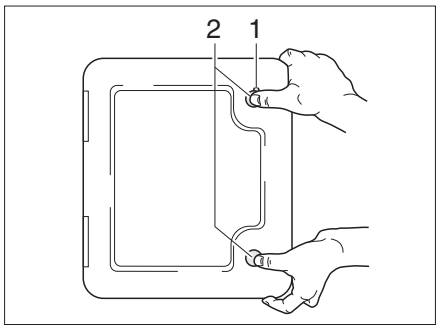


Fig. 7 External flap Thetford cassette

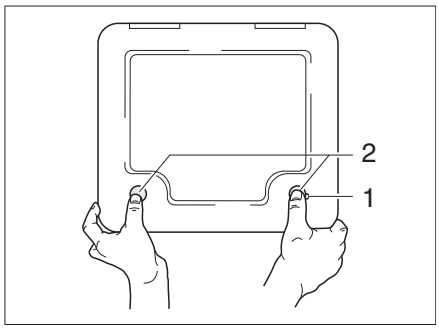


Fig. 8 External flap Thetford cassette 2

Opening:

- Insert the key into the locking cylinder of the push-button lock (Fig. 7,1) and turn a quarter turn.
- Remove the key.
- Press both push-button locks (Fig. 7,1 and 2) simultaneously with your thumb and open the external flap.

Closing:

- Close the external flap and press it shut.
- Insert the key into the locking cylinder (Fig. 7,1) and turn a quarter turn.
- Remove the key.

7.1.3 Cap for the fresh water filler neck

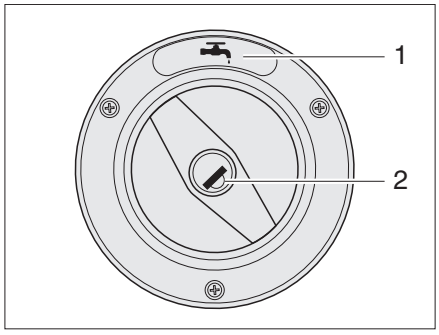


Fig. 9 Cap for the fresh water filler neck

▷ The fresh water filler neck is identified by the symbol ( )" (Fig. 9,1) or the word "WASSER" ("WATER").

Opening:

- Insert the key in the locking cylinder (Fig. 9,2) and turn it in an anticlockwise direction.
- Remove the cap.

Closing:

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

7.2 Ventilation

▶ The oxygen in the vehicle interior is used up by breathing and the use of gas operated appliances. That is why the oxygen needs to be replaced on a constant basis. For this purpose, forced ventilation options (e.g. skylights with forced ventilation, mushroom-shaped vents or floor vents) are fitted to the vehicle. Never cover or block forced ventilations from the inside or outside with objects such as e.g. a winter mat. Keep forced ventilations clear of snow and leaves. There is a danger of suffocation due to increased 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. mushroom-shaped vents, 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 synchronised. To avoid draft close the air outlet nozzles on the dashboard and set the air distribution of the base vehicle to air circulation. If the vehicle is laid up for a longer period, occasionally ventilate it well, especially in summer as heat accumulation can occur.

7.3 Windows

▷ The windows are fitted with a blind and a roller insect screen.

▷ If the blind is completely closed, exposure to direct sunlight can cause heat to accumulate between the blind and the glass window. The window could be damaged. For that reason, close the blind only 2/3 of the way in direct sunlight.

▷ Before commencing the journey, close the windows.

▷ Close and lock the hinged windows at the sliding door and behind the sliding door before using the sliding door.

▷ Open the blinds at the hinged window at the sliding door 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 windows, open or close all catch levers which are fitted to the hinged window.

▷ When leaving the vehicle, always close the windows.

▷ In case of strong temperature differences or in extreme weather conditions, light condensation 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.

▷ Set all the catch levers mounted on the hinged window to the same position in order to avoid tensions 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.

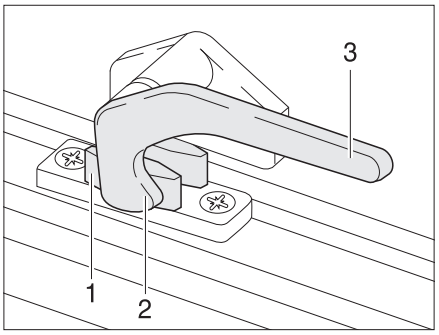


Fig. 10 Catch lever in "closed" position

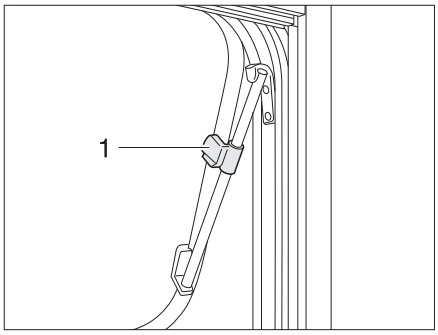


Fig. 11 Hinged window with rotary hinges, open

Opening:

- Turn the catch lever (Fig. 10,3) a quarter turn towards the centre of the window.
- Open the hinged window until the required position has been reached and secure in position using the knurled knob (Fig. 11,1).

The hinged window remains locked in the required position.

Closing:

- Turn the knurled knob (Fig. 11,1) until the latch is released.
- Close the hinged window.
- Turn the catch lever (Fig. 10,3) a quarter turn towards the window frame. The locking catch (Fig. 10,2) is located on the inside of the window catch (Fig. 10,1).

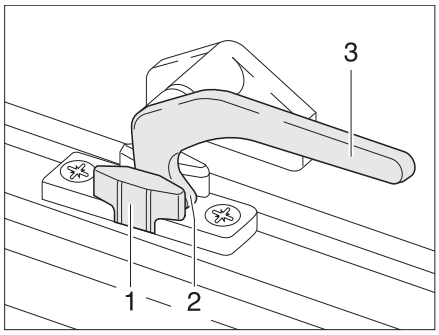


Fig. 12 Catch lever in the "continuous ventilation" position

Continuous ventilation

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

- "Continuous ventilation" (Fig. 12)
- "Firmly closed" (Fig. 10)

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

- Turn the catch lever (Fig. 12,3) 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. 12,2) has to be moved into the recess of window catch (Fig. 12,1).

During the journey, the hinged window may not be in the "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 Hinged window with automatic hinges

▷ Open the window completely in order to unblock the locking device. If the locking device is not unblocked and the window is closed nevertheless, there is the danger of the window being torn due to the massive counter-pressure.

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

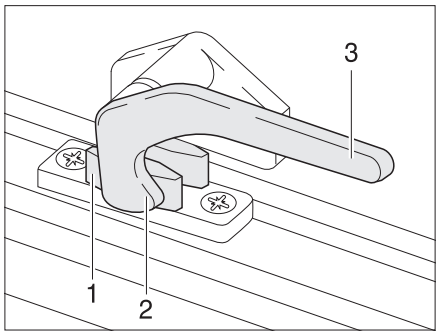


Fig. 13 Catch lever in "closed" position

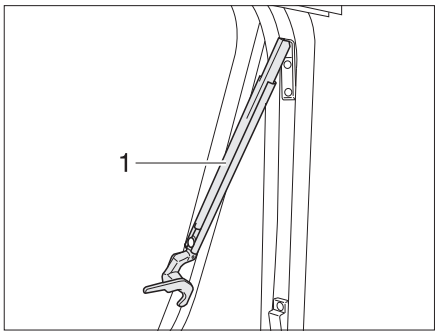


Fig. 14 Hinged window with automatic hinges, open

Opening:

- Turn the catch lever (Fig. 13,3) a quarter turn towards the centre of the window.
- Open the hinged window to the desired latched position. The automatic hinge (Fig. 14,1) locks in place automatically.

The hinged window remains locked in the required position.

Closing:

- Open the hinged window as wide as necessary until the latch releases.
- Close the hinged window.
- Turn the catch lever (Fig. 13,3) a quarter turn towards the window frame. The locking catch (Fig. 13,2) is located on the inside of the window catch (Fig. 13,1).

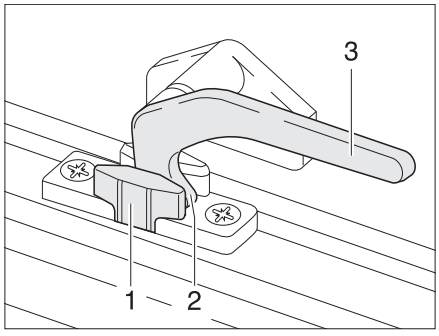


Fig. 15 Catch lever in the "continuous ventilation" position

Continuous ventilation

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

- "Continuous ventilation" (Fig. 15)
- "Firmly closed" (Fig. 13).

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

- Turn the catch lever (Fig. 15,3) a quarter turn towards the centre of the window.
- Lightly open the hinged window outwards.
- Turn the catch lever a quarter turn towards the window frame. The locking catch (Fig. 15,2) has to be moved into the recess of window catch (Fig. 15,1).

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

7.3.3 Sliding window without lock

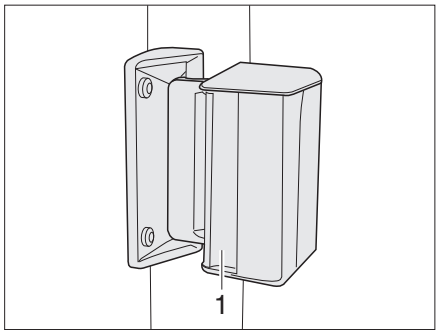


Fig. 16 Sliding window

Opening:

- Press the handle (Fig. 16,1) and push or pull it forwards or backwards at the same time.
- Open window half up to the required position.

Closing:

- Close the window as far as possible and let the handle lock in place.

7.3.4 Blind and roller insect screen

The windows are fitted with a blind and a roller insect screen. The blind and insect screen can be adjusted separately.

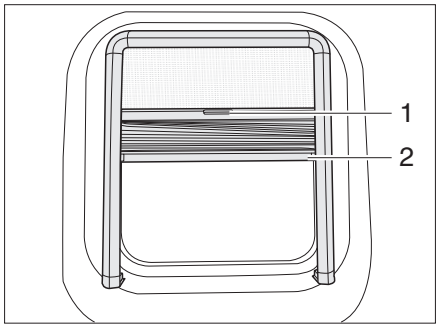


Fig. 17 Hinged window

Blind

Closing:
- Grip into the notch (Fig. 17,2) and pull the blind from the top downwards as far as wished.

Opening:
- Grip into the notch (Fig. 17,2) and push the blind upwards.

Roller insect screen

Closing:
- Use the handle (Fig. 17,1) to pull the roller insect screen downwards.

Opening:
- Use the handle (Fig. 17,1) to push the roller insect screen upwards.

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

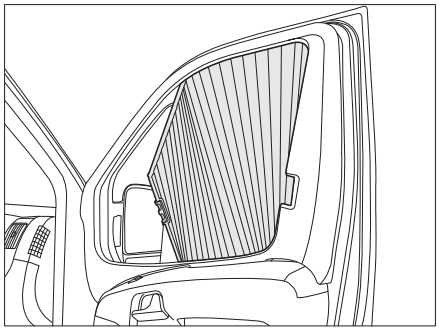


Fig. 18 Roman shades on driver's/ front passenger's windows

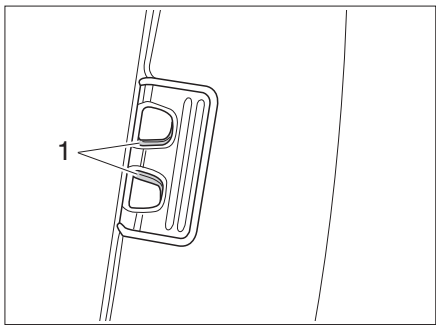


Fig. 19 Roman shade, locking mechanism

Closing:
- Press the locking mechanism (Fig. 19,1) together and lift it slightly.
- Close the Roman shades for the driver's window and the front passenger's window.

Opening:
- Open the Roman shade for the driver's window and the front passenger's window and slide the locking mechanism into the notch.

7.3.6 Blind for the windscreen

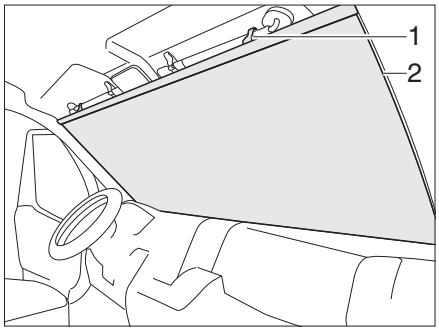


Fig. 20 Blind for the windscreen

Closing:

- Fold down the sun visors.
- Pull the blind (Fig. 20,2) upwards and hook into the sun visors using the hooks (Fig. 20,1).

Opening:

- Release the blind (Fig. 20,2) from the sun visor.
- Fold the sun visors upwards.

7.4 Skylights

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

▷ The skylights are fitted with a blind or Roman shade and with a roller insect screen or folding insect screen. After the latch has been released, the blind and roller 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 roller insect screen and allow it to slowly return to the initial position. The Roman shade and folding insect screen are made of thin woven fabric. In order not to damage the Roman shade or the insect screen, grasp the respective handle and carefully return it to the initial position.

▷ 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.

▷ Never step on the skylights.

▷ Before commencing the journey, close the skylights.

▷ Before commencing the journey, check that the skylights are closed and locked.

▷ Before commencing the journey, open the blinds or Roman shades.

▷ When leaving the vehicle, always close the skylights.

7.4.1 Skylight with snap latch

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

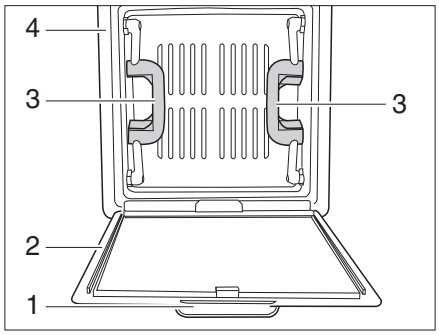


Fig. 21 Skylight with snap latch

Opening:

- Pull down the insect screen (Fig. 21,2) with the handle (Fig. 21,1). The insect screen folds down.
- Push the skylight upwards using both handles (Fig. 21,3).
- Fold the insect screen upward and latch it in at the frame (Fig. 21,4).

Closing:

- Pull down the insect screen (Fig. 21,2) with the handle (Fig. 21,1). The insect screen folds down.
- Pull the skylight downwards with force using both handles (Fig. 21,3).
- Fold the insect screen upward and latch it in at the frame (Fig. 21,4).

7.4.2 Hinged skylight

▷ If it rains, the ventilation skylight position could lead to water entering the living area. Therefore close hinged skylight completely.

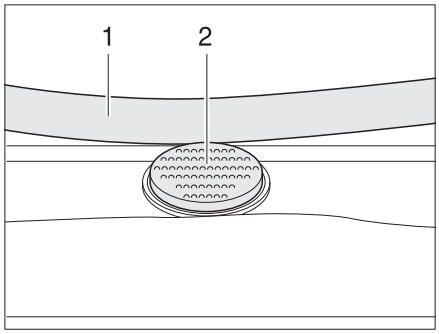


Fig. 22 Securing knob at the hinged skylight

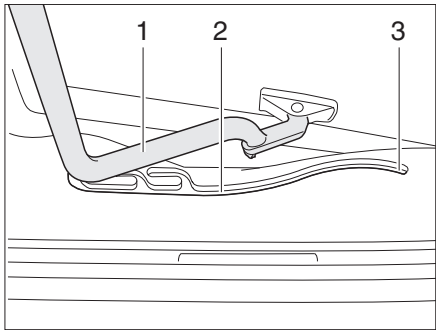


Fig. 23 Hinged skylight, guide

The hinged skylight is opened on one side only.

Opening:

- Press the safety knob (Fig. 22,2) and pull the bar (Fig. 22,1) down with both hands.
- Pull the bar (Fig. 23,1) in the guides (Fig. 23,2) to the rearmost position (Fig. 23,3).

Closing:

- Use both hands to push the bar (Fig. 23,1) slightly upwards.
- Push the bar back in the guides.
- Push the bar upwards with both hands until it is above the safety knob (Fig. 22,2).

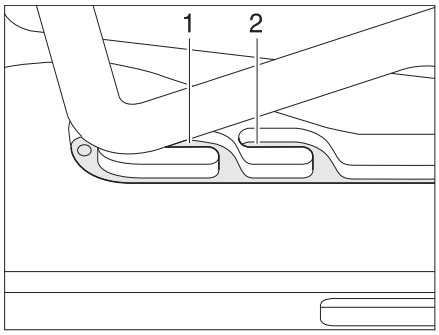


Fig. 24 Hinged skylight in ventilation position

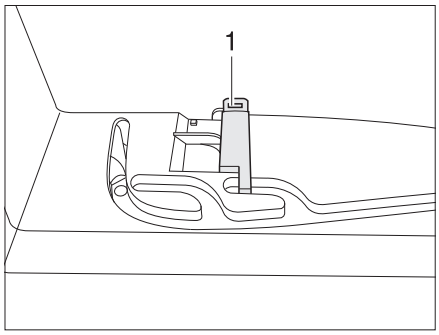


Fig. 25 Locking mechanism in ventilation position

Ventilation position

The hinged skylight can be put in two ventilation positions: Bad weather position (Fig. 24,1) and central position (Fig. 24,2). Depending on the model, the skylight can be locked in the central position with the latch (Fig. 25,1).

- Press the safety knob (Fig. 22,2) and pull the bar (Fig. 22,1) down with both hands.
- Pull the bar in the guides (Fig. 23,2) to the desired position.
- Push the bar slightly upwards and into the selected guide (Fig. 24,1 or 2) and lock if necessary.

Roman shade

To close and open the Roman shade:

Closing:

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

Opening:

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

Insect screen

To close and open the insect screen:

Closing:

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

Opening:

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

7.4.3 Wind-up skylight

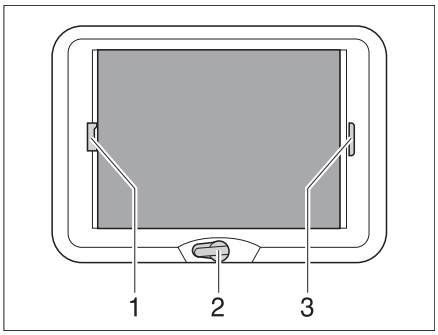


Fig. 26 Wind-up skylight

The wind-up skylight can be opened using the manual crank.

Opening:

- Rotate the hand crank (Fig. 26,2) until a resistance can be felt (max. opening angle 70°).

Closing:

- Rotate the hand crank until the wind-up skylight is closed. The wind-up skylight can be locked after rotating two or three more times.
- Check the locking mechanism. To do so, press your hand against the acrylic glass.

Roman shade

The Roman shade can be closed in any position, as desired. If the Roman shade is locked with the insect screen, the insect screen is also moved along on closing the Roman shade.

Closing:

- Pull the handle of the Roman shade (Fig. 26,3) and release in the desired position. The Roman shade will stay in that position.

Opening:

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

Insect screen

If the insect screen is locked with the Roman shade, the Roman shade is also moved along on closing the insect screen.

Closing:

- Pull insect screen at the handle (Fig. 26,1) to the opposite handle of the Roman shade (Fig. 26,3) and allow to engage.

Opening:

- Press the handle of the insect screen (Fig. 26,1) at the back upwards and detach the insect screen from the Roman shade (Fig. 26,3).
- Slowly push insect screen at the handle to its initial position.

7.4.4 Multifunction skylight

- ▷ Do not stand on the acrylic glass of the multifunction skylight.
- ▷ Before commencing the journey, check that the multifunction skylight is closed and locked.
- ▷ The multifunction skylight is not to be opened or closed during the journey.
- ▷ The multifunction skylight may only be handled with both hands on the grips.

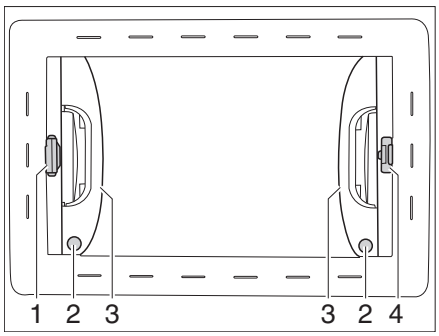


Fig. 27 Multifunction skylight

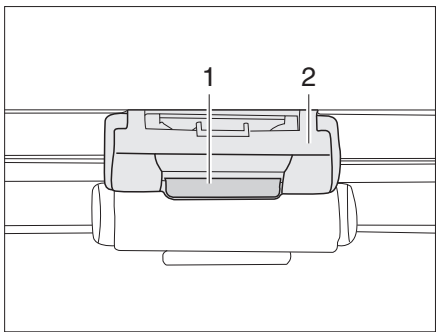


Fig. 28 Multifunction skylight blind locking mechanism

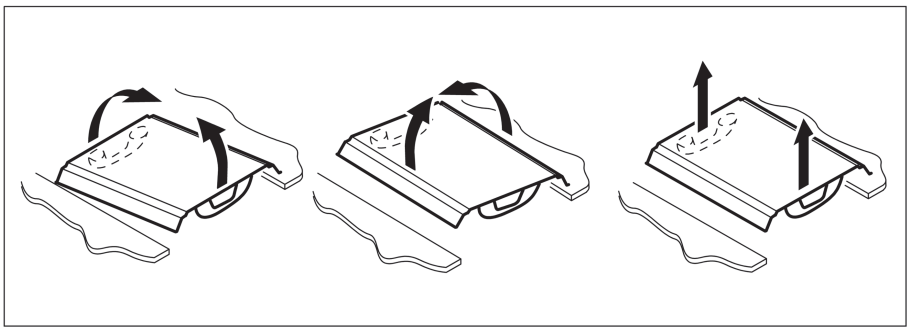


Fig. 29 Positions of the multifunction skylight

The multifunction skylight can be opened in various positions.

Opening:

- ■ Grip one handle (Fig. 27,3) with one hand respectively and bring the multifunction skylight into the desired position.
- ■ When the multifunction skylight is opened upwards, press the locks (Fig. 27,2) and slide the multifunction skylight at the handles to the rear.

Blind To close and open the blind:

Closing:

- ■ Press the red release knobs at the handle (Fig. 27,1) together and pull the blind to the desired position using the handle.
- ■ Release the handle. The blind will stay in that position.

Opening:

- ■ Press the red release knobs at the handle (Fig. 27,1) together. The latch is released.
- ■ Use handle to return the blind slowly to its initial position.

Roller insect screen

To close and open the roller insect screen:

Closing:

- Pull the roller insect screen at the handle (Fig. 27,4) to the opposite handle of the blind (Fig. 27,1) and allow to engage.

Opening:

- Hold the roller insect screen at the handle (Fig. 28,2) and press the unlocking bar (Fig. 28,1) at the handle. The lock is released.
- Use handle to return the roller insect screen slowly to its initial position.

7.5 Rotating the seats

▶ Before starting the journey, rotate the seat in the direction of travel and lock in position. The rotating seats must remain locked in the direction of travel during the journey.

▷ Chapter 5 describes the adjustment of the seat position and of the armrests.

▷ Move the seats all the way down before turning. Otherwise, the seats cannot be turned.

Depending on the model, the lever for turning the seats is located at the front of the seat or on the left or right side.

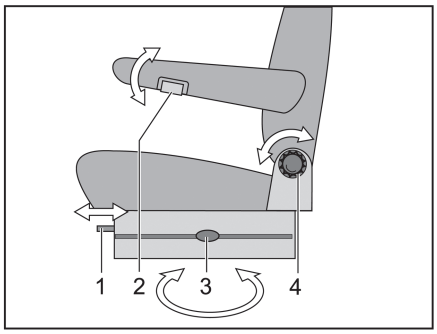


Fig. 30 Driver's and front passenger's seats (Aguti)

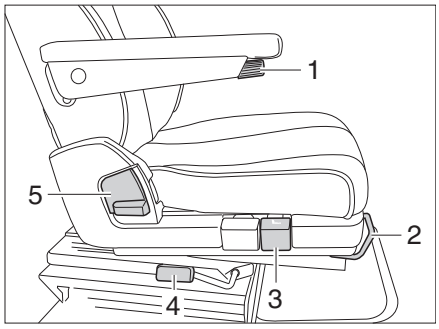


Fig. 31 Driver's and front passenger's seats (ISRI)

Turning:

- Push the 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 or pull the lever (Fig. 30,3 or Fig. 31,4) 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 Bench seat

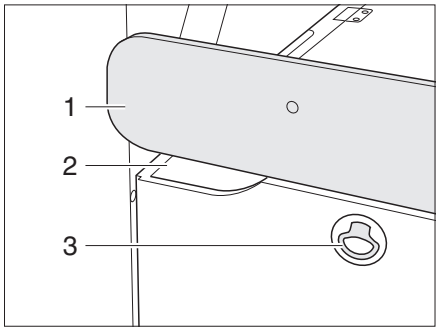


Fig. 32 Bench seat

Bench seat extension

The bench seat can be extended if required.

Increasing the seating area

▷ Do not pull at the cover (Fig. 32,1).

- Pull out the extension at the handle (Fig. 32,2) under the cover.

Storage space

An additional storage space is located under the bench seat.

Opening the storage space lid:

- Open the storage space lid by pulling the latch (Fig. 32,3).

7.7 Tables

7.7.1 Suspension table with fold-out leg

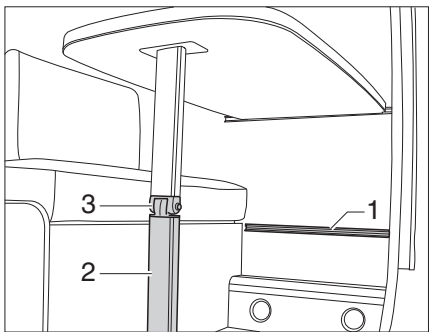


Fig. 33 Suspension table with fold-out leg

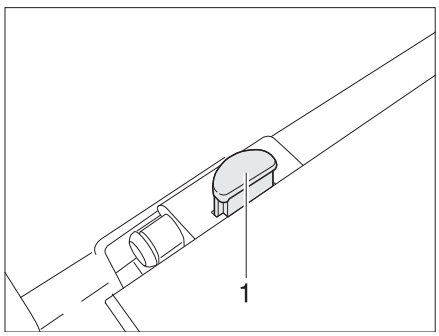


Fig. 34 Table top locking mechanism

The suspension table may also be used as a bed foundation.

Conversion to bed foundation:

- Slightly lift the front of the table-top.
- Unlock the table leg (Fig. 33,2) at the hinge and fold it in.
- Press the release knob (Fig. 34,1) at the locking mechanism of the table-top.
- Detach the suspension table from the upper attachment rail.

- Attach suspension table to the lower attachment rail (Fig. 33,1) and rest it onto the table leg hinge (Fig. 33,3).
- Lock the table-top.

7.7.2 Suspension table with dismantable support leg

Variant 1

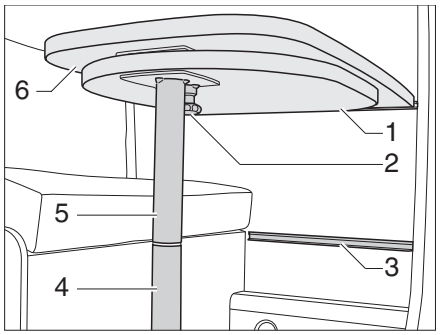


Fig. 35 Suspension table with dismantable support leg

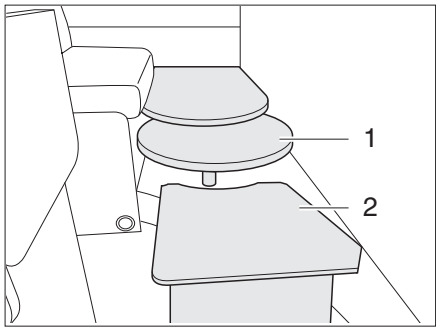


Fig. 36 Bed extension (extra bed)

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

Extending:

- Pull the knob (Fig. 35,2) of the locking mechanism downward and swivel out the table-top extension (Fig. 35,1).

Reducing size:

- Swivel the table-top extension (Fig. 35,1) under the table-top (Fig. 35,6) until the locking mechanism latches audibly.

The dismantable support leg enables the suspension table to be used as a bed foundation.

Conversion to bed foundation (extra bed):

- Swivel out the table-top extension (Fig. 35,1).
- Lift the front of the table-top (Fig. 35,6) by approx. 45°.
- Pull out the lower part of the support leg (Fig. 35,4) down and lay aside.
- Remove the table-top from its upper retainer.
- Hook the table-top with the retainers at an angle of 45° into the lower attachment rail (Fig. 35,3) and set it down onto the floor with the upper part of the support leg (Fig. 35,5).
- Lock the table-top.
- Place the bed extension (Fig. 36,2) for the extra bed onto the table-top extension (Fig. 36,1).

Conversion to bed foundation (spare bed):

- Turn the driver's seat and push it all the way forward.
- Swivel out the table-top extension (Fig. 35,1).
- Lift the front of the table-top (Fig. 35,6) by approx. 45°.
- Pull out the lower part of the support leg (Fig. 35,4) down and lay aside.
- Remove the table-top from its upper retainer.
- Hook the table-top with the retainers at an angle of 45° into the lower attachment rail (Fig. 35,3) and set it down onto the floor with the upper part of the support leg (Fig. 35,5).
- Lock the table-top.

Variant 2

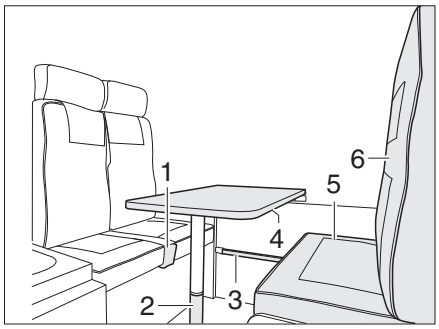


Fig. 37 Suspension table

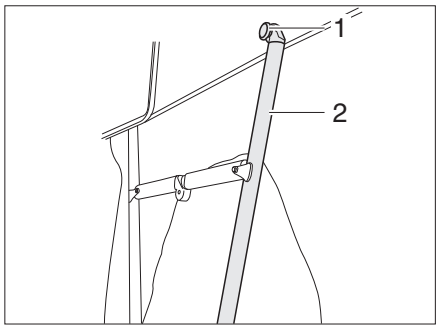


Fig. 38 Back cushion frame

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

Extending:

- Turn open the locking screws (Fig. 37,4) and pull the table forwards.
- Insert the table-top extension and tighten the locking screws (Fig. 37,4).

Reducing size:

- Remove the table-top extension and store it.
- Turn open the locking screws (Fig. 37,4) and pull the table backwards.

The dismantable support leg enables the suspension table to be used as a bed foundation.

Conversion to bed foundation (extra bed):

- Lift the front of the table-top by approx. 45°.
- Turn open the locking screws (Fig. 37,4) and pull the table forwards.
- Tighten the locking screws (Fig. 37,4).
- Pull out the lower part of the support leg (Fig. 37,2) down and lay aside.
- Remove the table-top from its upper retainer.
- Hook the table-top with the retainers at an angle of 45° into the lower attachment rail (Fig. 37,3) and set it down onto the floor with the upper part of the support leg.
- Lay the table-top extension between the table and wall.
- Increase the seating area (see Section 7.6).
- Slide the wedge (Fig. 37,1) for the seat extension between the cushions.
- Undo the velcro at the back cushion (Fig. 37,6) behind the driver's seat.
- Loosen the knurled screw (Fig. 38,1) from the back cushion frame and slide the back cushion frame (Fig. 38,2) together. If necessary, slide the driver's seat right to the front.
- Lay the seat and back cushions (Fig. 37,5 and 6) together.
- Place on the additional wedges.

7.7.3 Fixed table of the rear seating group

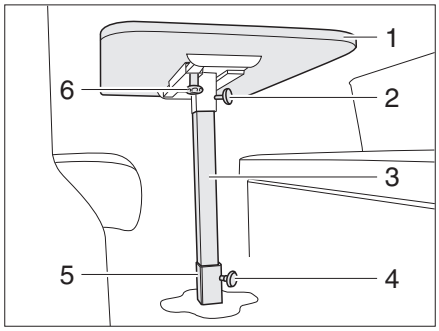


Fig. 39 Fixed table of the rear seating group

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

Shift the table-top:

- Undo the knurled screw (Fig. 39,6).
- Move the table-top (Fig. 39,1) to the desired position.
- Retighten the knurled screws.

Conversion to bed foundation:

- Undo the knurled screw (Fig. 39,2).
- Lift off the table-top (Fig. 39,1).
- Undo the knurled screw (Fig. 39,4).
- Turn the table leg (Fig. 39,3) out of the base holder (Fig. 39,5).
- Store the table leg and the table-top behind the driver's seat.
- Pull out the slatted frames at the bench seats about 50 cm.
- Place the cushions.

7.7.4 Swivel table

The swivel table can be moved on rails or be removed completely. The table-top of the swivel table can be swiveled into different positions.

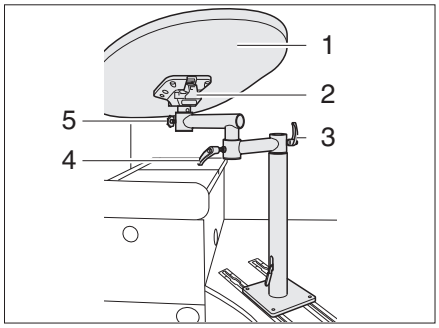


Fig. 40 Swivel table

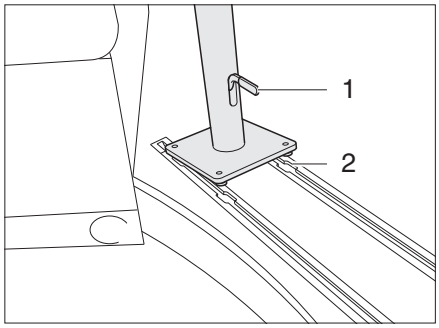


Fig. 41 Table frame holder

Install the swivel table:

- Place the table frame in the holder (Fig. 41,2) and slide it to the desired position.
- Push the locking mechanism (Fig. 41,1) downwards.
- Insert the table-top into the holder and secure with the knurled screw Fig. 40,5).
- Fasten the table-top with the lever screws (Fig. 40,3 and 4).

Swivelling the table-top:

- Loosen the lever screws (Fig. 40,3 and 4).
- Swivel table top (Fig. 40,1) into required position.
- Retighten the lever screws (Fig. 40,3 and 4).

Removing the swivel table:

- Loosen the knurled screw (Fig. 40,5).
- Pull the table-top (Fig. 40,1) out of the holder.
- Loosen the locking mechanism (Fig. 41,1) of the table frame.
- Slide the table frame towards the holder (Fig. 41,2) and remove upwards.

Placing the swivel table behind the seat:

- Pull the table-top securing mechanism (Fig. 40,2) upwards and bring the table-top (Fig. 40,1) into a vertical position.
- Loosen the locking mechanism (Fig. 41,1) of the table frame.
- Slide the swivel table on the rails completely to the left (behind the driver's seat) or to the right (behind the front passenger's seat).
- Push the locking mechanism (Fig. 41,1) of the table frame downwards.
- Loosen the lever screws (Fig. 40,3 and 4).
- Swivel table top (Fig. 40,1) into required position.
- Retighten the lever screws (Fig. 40,3 and 4).

7.7.5 Folding table

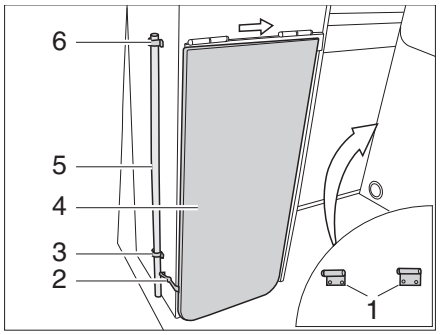


Fig. 42 Folding table, folded in

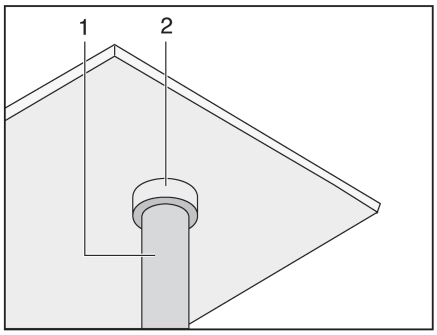


Fig. 43 Folding table, table leg holder

The folding table can be used as a table or as an additional storage space outside the vehicle. When the side door is opened, the folding table can be mounted onto the rear of the kitchen unit.

Setting up in the vehicle:

- Loosen the securing strap (Fig. 42,2) (snap fastener).
- Pull the table leg (Fig. 42,5) upwards out of the holders (Fig. 42,3).
- Fold the table-top (Fig. 42,4) upwards and insert the table leg (Fig. 43,1) into the holder (Fig. 43,2).

Setting up outside the vehicle:

- Loosen the securing strap (Fig. 42,2) (snap fastener).
- Pull the table leg (Fig. 42,5) upwards out of the holders (Fig. 42,3).
- Fold the table-top (Fig. 42,4) slightly upwards and slide to the back (Fig. 42, arrow).
- Slide the table-top into the holders on the rear of the kitchen unit (Fig. 42,1).
- Insert the table leg (Fig. 43,1) into the holder (Fig. 43,2).

7.8 Lamps

- ▶ Bulbs and light fittings can be extremely hot.
- ▶ Let the bulbs and lamp holders cool down before touching them.
- ▶ When the light is switched on or is still hot, a safety distance of at least 30 cm to combustible material such as net curtains or curtains has to be maintained. Fire hazard!

7.8.1 Halogen spotlight (movable)

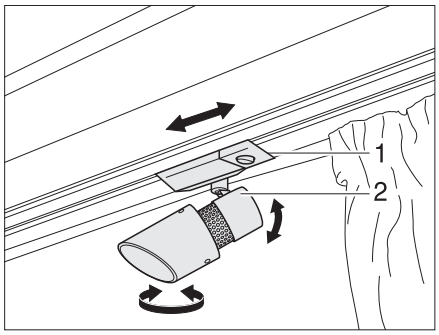


Fig. 44 Spotlight

Turning spotlight:

- Grasp the housing (Fig. 44,2) and turn it.

The housing can be turned in different directions:

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

Shifting spotlight:

- Grasp the holder (Fig. 44,1).
- Push spotlight along the rail system to desired position.

7.8.2 Halogen spotlight

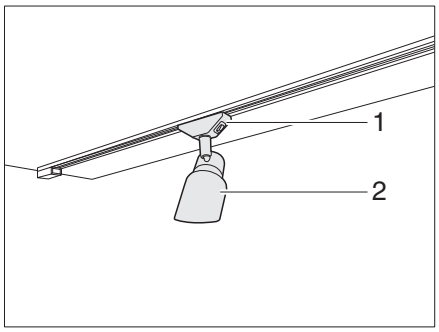


Fig. 45 Halogen spotlight

Moving a halogen spotlight:

- Grasp the holder (Fig. 45,1) and turn it by 45°.
- Remove the halogen spotlight (Fig. 45,2) from the rail system.
- Insert the halogen spotlight (Fig. 45,2) at the desired position into the rail system and turn by 45°.
- Turn by 45° at the holder Fig. 45,1).

7.8.3 Lamp in pop-up roof

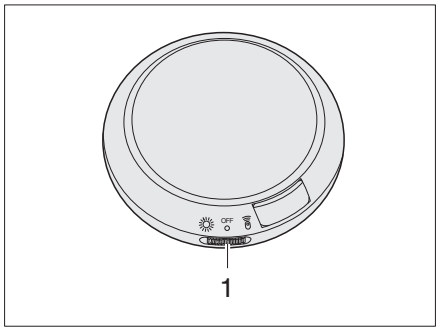


Fig. 46 Lamp in pop-up roof

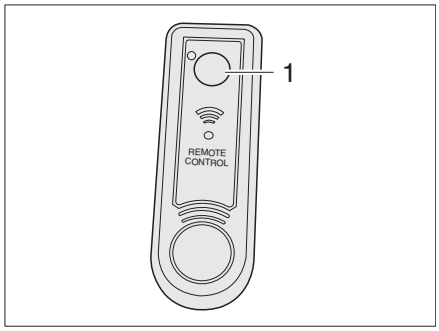


Fig. 47 Remote control for lamp in pop-up roof

Switching on the light:
- Push the switch (Fig. 46,1) to the left.

Switching the light off:
- Push the switch (Fig. 46,1) to the middle.

Switching on and off with the remote control:
- Push the switch (Fig. 46,1) to the right.
- Press the button (Fig. 47,1) to switch the light on and off.

7.9 Beds

7.9.1 Fixed bed

▶ Do not let the slatted frame fall downwards during closing!

A storage compartment is underneath the bed. Depending on the model, fold the slatted frame from the inside upwards or lift out of the latch or remove the bulkheads in order to place items in the storage compartment or remove them.

Opening:
- Lift the mattress forwards and set it down on the panel.
- Lift and hold the slatted frame.

Closing:
- Move the slatted frame downwards completely.
- If necessary, push the mattress behind the panel.

Dismantling the fixed bed

In order to increase the storage compartment space the bed can also be dismantled and stored completely.

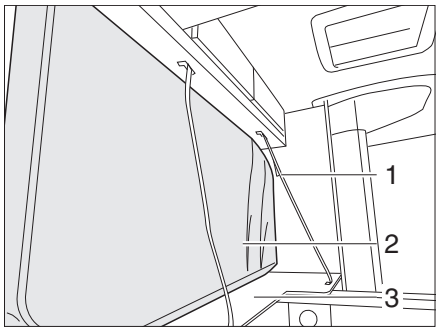


Fig. 48 Dismantling Variant 1

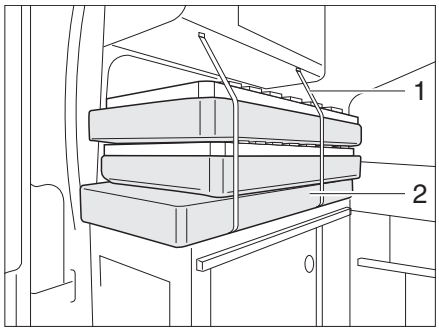


Fig. 49 Dismantling Variant 2

Dismantling Variant 1:

▷ The first step of the stairs can be removed additionally in order to create a passage.

- Remove the middle cushion and middle board.
- Remove the mattress.
- Lift the slatted frame out of the latch and place it on the cover (Fig. 48,3).
- Place the cushions, mattresses and slatted frames (Fig. 48,2) next to each other.
- Secure everything using the belt (Fig. 48,1).

Dismantling Variant 2:

- Remove the mattress.
- Lay the slatted frame together with the mattress on the cover.
- Stack the cushions, mattresses and slatted frames (Fig. 49,2) onto each other.
- Secure everything using the belt (Fig. 49,1).

Enlarging the fixed bed

It is possible to connect two single beds into a double bed.

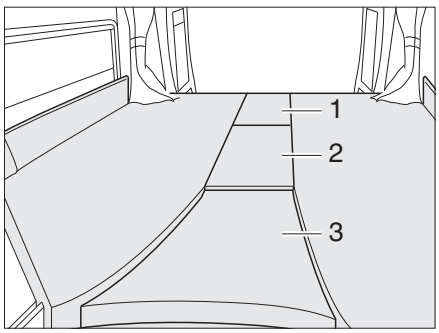


Fig. 50 Double bed rear

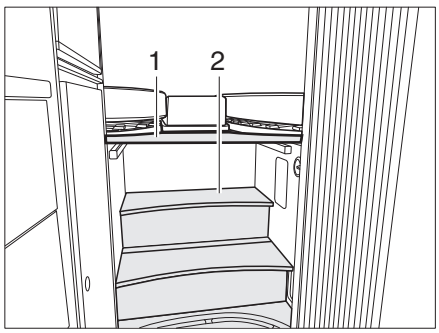


Fig. 51 Double bed stairs

▷ In order to use the stairs do not use the board (Fig. 51,1) above the stairs as well as the additional cushion (Fig. 50,3).

Connecting beds:

- Lay the middle board between the two beds.
- Lay the board (Fig. 51,1) onto the braces above the stairs (Fig. 51,2).
- Insert the additional cushions (Fig. 50,1, 2 and 3).

7.9.2 Bed in the pop-up roof

- ▶ The maximum load for the bed in the pop-up roof amounts to 200 kg.
- ▶ Fold in the pop-up roof before commencing the journey.
- ▶ Only use the bed in the pop-up roof if the safety guards are in position.
- ▶ Never leave small children without supervision.
- ▶ Ensure in particular with regard to small children less than 6 years of age, that they cannot fall out of the bed.
- ▶ Switch off the reading lamps in the pop-up roof when it is folded in. Fire hazard!

▷ Mount the safety guard when the persons are already in the pop-up roof.

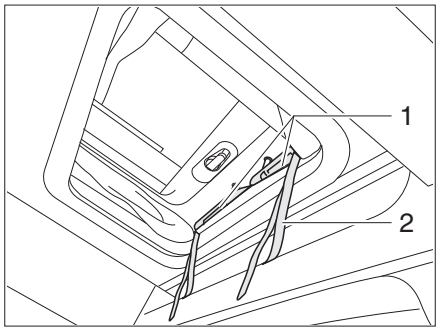


Fig. 52 Opening the pop-up roof

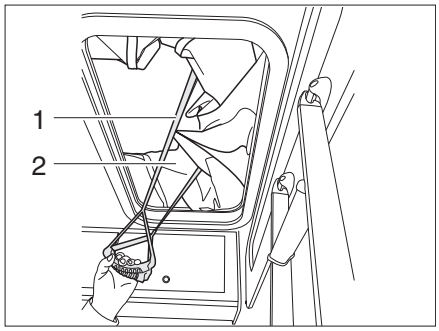


Fig. 53 Closing the pop-up roof

Opening:

- Loosen the safeguards (Fig. 52,2).
- Press the locking mechanisms at the handles (Fig. 52,1) of the pop-up roof.
- Use both hands to push the pop-up roof upwards.

Closing:

▷ Before closing the pop-up roof open the doors of the vehicle. Material damage may otherwise occur through excess pressure.

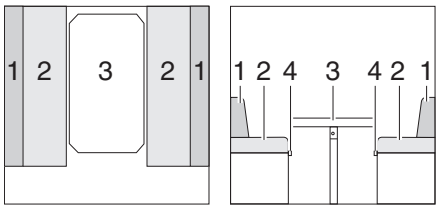
- Open the doors of the vehicle.
- Close the elastic bands in the pop-up roof so that the cloth bellows (Fig. 53,2) are not clamped in.
- Use the pulling devices (Fig. 53,1) to pull the pop-up roof downwards.
- Pull the pop-up roof closed at the handles (Fig. 52,1) until the locking mechanism latches in audibly.

- ▶ The locking mechanism of the pop-up roof must latch audibly into place.

▷ When the pop-up roof is being folded in: Ensure that the safety guards and the cloth bellows are not clamped in.

7.10 Converting seating groups for sleeping

7.10.1 Seating group rear



1 Back cushion
2 Seat cushion
3 Table
4 Slatted frame
5 Extension at the slatted frame

Fig. 54 Prior to conversion

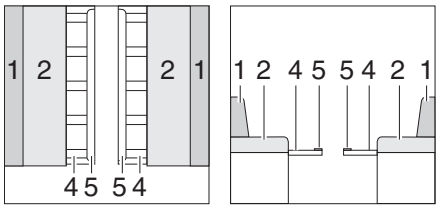


Fig. 55 During conversion

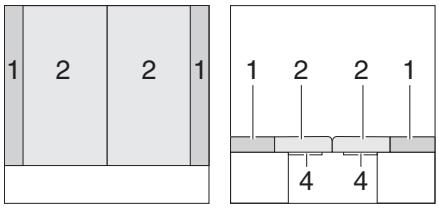
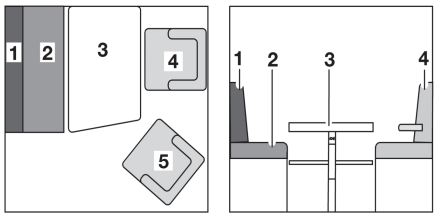


Fig. 56 After conversion

- Dismantle the table (Fig. 54,3) (see Section 7.7).
- Pull out the slatted frames (Fig. 54,4).
- Fold out the extension (Fig. 55,5) at the slatted frame.
- Pull the seat cushions (Fig. 55,2) to the middle of the slatted frame.
- Insert the back cushions (Fig. 55,1) between the seat cushions and the exterior wall.

▷ The formed cushion parts in the side panels can be removed to extend the sleeping area.

7.10.2 Front seating group



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

Fig. 57 Prior to conversion

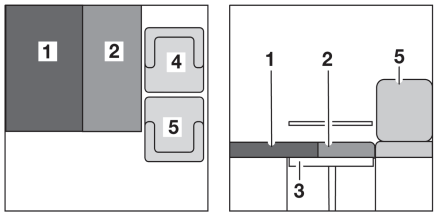
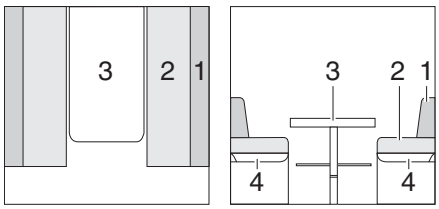


Fig. 58 After conversion

- Turn the driver's seat (Fig. 57,4) so that the backrest faces the driver's door.
- Turn the front passenger's seat (Fig. 57,5) so that the backrest faces the front passenger's door.
- Convert the table (Fig. 57,3) to a bed foundation (see Section 7.7).
- Pull the seat cushion (Fig. 58,2) on the table.
- Place the back cushion (Fig. 58,1) on the bench seat.
- Slide the front passenger's seat (Fig. 58,5) as far as possible to the driver's side.
- Slide the driver's seat (Fig. 58,4) as near as possible to the front passenger's seat.

7.10.3 Facing seating unit with extension



1 Back cushion
2 Seat cushion
3 Table
4 Bench seat extension
5 Seat cushion
6 Additional cushion
7 Additional cushion
8 Additional cushion

Fig. 59 Prior to conversion

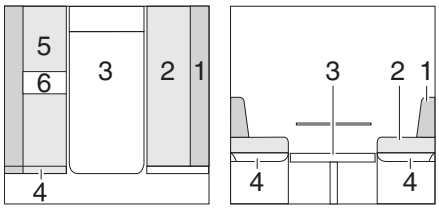


Fig. 60 During conversion

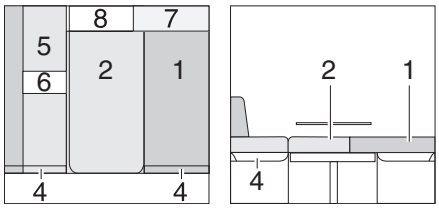
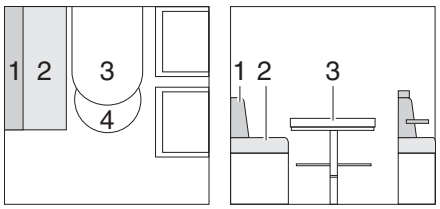


Fig. 61 After conversion

- Extend the table (Fig. 59,3) and convert it into a bed foundation (see Section 7.7).
- Remove the back cushion (Fig. 59,1) and lay it aside.
- Fold in the back frame.
- Pull the handle and open the bench seat extension (Fig. 59,4).
- Pull the seat cushion (Fig. 59,5) apart.
- Insert the additional cushion (Fig. 59,6).
- Place the back cushion (Fig. 61,1) between the seat cushion (Fig. 61,2) and the driver's seat.
- Insert the additional cushion (Fig. 61,7) between the back cushion and the wall.
- Insert the additional cushions (Fig. 61,8) between the seat cushion and the wall.

7.10.4 Front seating group with extension



1 Back cushion
2 Seat cushion
3 Table
4 Table-top extension
5 Bed extension
6 Additional cushion
7 Driver's seat

Fig. 62 Prior to conversion

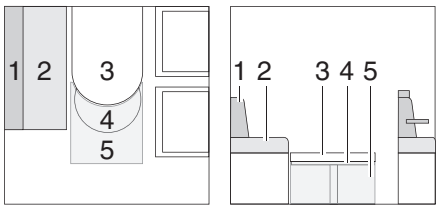


Fig. 63 During conversion (extra bed)

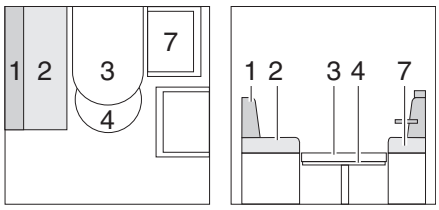


Fig. 64 During conversion (spare bed)

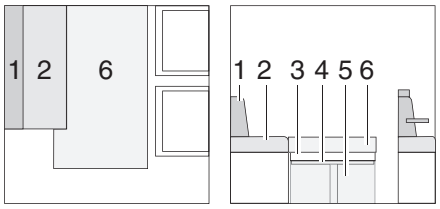


Fig. 65 After conversion (extra bed)

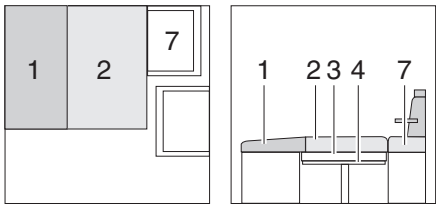


Fig. 66 After conversion (spare bed)

Variant 1 (extra bed):

- Extend the table (Fig. 62,3) and convert it into a bed foundation (see Section 7.7).
- Place the bed extension (Fig. 63,5) for the extra bed onto the table-top extension (Fig. 63,4).
- Place the additional cushion (Fig. 65,6) on the table and the bed extension.

Variant 2 (spare bed):

- Turn the driver's seat (Fig. 64,7) and push it all the way forward.
- Extend the table (Fig. 64,3) and convert it into a bed foundation (see Section 7.7).
- Reposition the back cushion (Fig. 64,1).
- Place the seat cushion (Fig. 66,2) between the back cushion (Fig. 66,1) and the driver's seat (Fig. 66,7).

8.1 General

- Close all gas isolator taps and the regulator tap before commencing the journey and when leaving the vehicle.
- Closing of the isolator and regulator valves is not required at vehicles that are equipped with a crash sensor.
- No appliance (e.g. heating or refrigerator) that is operated through the built-in burner may be operational while fuel is being filled up, on ferries or in the garage. Danger of explosion!
- If an appliance is operated through a burner, do not start the appliance up in closed areas (e.g. garages). Danger of poisoning and suffocation!
- Have the gas system serviced, repaired or altered by an authorised workshop only.
- Have the gas system checked by an authorised specialist workshop before starting up and according to the national regulations. 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 the exhaust gas pipes also have to be checked. The gas pressure regulator has to be replaced at least every 10 years. The vehicle owner is responsible for seeing that this is carried out.
- In case of a defect of the gas system (gas odour, high gas consumption) there is danger of explosion! Close the regulator tap on the gas bottle immediately. Open doors and windows and ventilate well.
- In case of a defect in the gas system: Do not smoke; do not ignite any open flames, and do not operate electric switches (light switches etc.).
- Have the defect in the gas system repaired by an authorised specialist workshop.
- Open a skylight or a window before taking open sources of combustion (gas cooker) into service.
- Do not use the gas cooker or gas oven 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 installed gas appliances are designed for use solely with propane or butane gas or a mixture of both. The gas pressure regulator as well as all installed gas devices are set 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 10 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 the standard forced ventilation. Otherwise leaking gas cannot be dispersed to the outside.
- ▶ Do not use the gas bottle compartment as storage space as it is not moisture-proof.
- ▶ Secure the gas bottle compartment in order to prevent unauthorised persons opening it. To do so lock the access.
- ▶ The regulator tap on the gas bottle must be accessible.
- ▶ Only connect gas-operated devices (e.g. gas grill) which have been designed for a gas pressure of 30 mbar.
- ▶ The exhaust gas pipe must be fitted tightly to the heating system and to the vent and must be sealed. The exhaust gas pipe must not show any evidence of damage.
- ▶ Exhaust fumes must be able to escape into the atmosphere unhindered and fresh air must be able to enter unhindered. Therefore keep the waste gas vents and intake openings clean and free (e.g. of snow and ice). No snow walls or aprons may be allowed to lie against the vehicle.

8.2 Gas bottles

- ▶ Gas bottles are only to be transported within the designated gas bottle compartment.
- ▶ Place gas bottles vertically in the gas bottle compartment.
- ▶ Tie down 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.
- ▶ Use your hands only to connect the gas pressure regulator or the gas tube to the gas bottles. Do not use any tools.
- ▶ 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 a built-in reflux valve (blue bottle with max. 2.5 or 3 kg content) are permitted in exceptional cases with a safety valve.
- ▶ Never block the ventilation openings in the floor under the gas bottles.

- ▷ Screwed connections on the gas pressure regulator have left-handed threads.
- ▷ For gas-operated units the gas pressure must be reduced to 30 mbar.
- ▷ Connect gas pressure regulator complete with safety valve directly to bottle valve.

  The gas pressure regulator reduces the gas pressure in the gas bottle down to the operating pressure of the gas devices.
- ▷ For filling and connecting the gas bottles in Europe the accessories shops have corresponding Euro filling sets and Euro bottle sets.
- ▷ Information is available at the dealers and service centres.

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. These agents are available at the accessories shop.

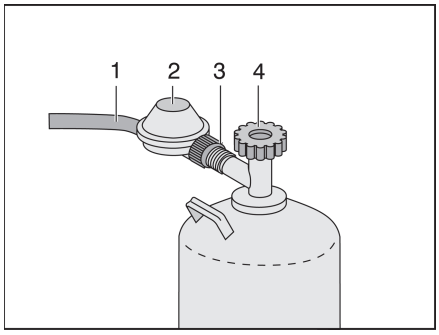
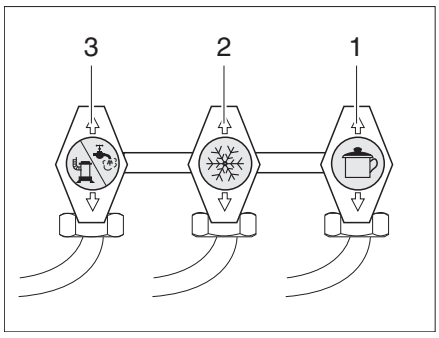


Fig. 67 Gas bottle connection

- Open flap for the gas bottle compartment.
- Close the regulator tap (Fig. 67,4) on the gas bottle. Pay attention to the direction of the arrow.
- Hold the gas pressure regulator (Fig. 67,2) and open the knurled nut (Fig. 67,3) (left-handed thread).
- Remove the gas pressure regulator and the gas tube (Fig. 67,1) from the gas bottle.
- Release the fixing belts and remove the gas bottle.
- Place a filled gas bottle in the gas bottle compartment.
- Fix gas bottle in place with the fixing belts.
- Position the gas pressure regulator (Fig. 67,2) and the gas tube (Fig. 67,1) on the gas bottle and tighten the knurled nut (Fig. 67,3) by hand (left-handed thread).
- Close flap.

8.4 Gas isolator taps



1 Cooker
2 Refrigerator
3 Heater/boiler

Fig. 68 Symbols for the gas isolator taps

A gas isolator tap (Fig. 68) for every gas device is built into the vehicle.

The gas isolator taps are located in the vehicle at different positions, and can also be fitted separately.

8.5 Hose break guard (crash sensor)

▷ If the vehicle is equipped with a crash sensor, the living area heater may be operated during the journey.

▷ Additionally observe the manufacturer's instruction manual.

The crash sensor (Fig. 69) protects against unwanted gas discharge. In the event of an accident or a too high angle of the vehicle the gas supply will automatically be interrupted.

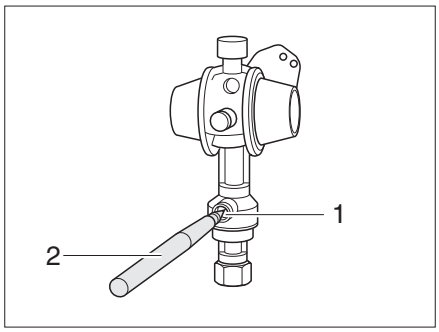


Fig. 69 Crash sensor

If the crash sensor has been triggered, it has to be released manually.

Releasing:

■ Use a pen or similar implement (Fig. 69,2) to press the release knob (Fig. 69,1) in for several seconds.

8.6 DuoControl switching facility

▶ Do not use the switching facility in closed spaces.

▷ If the vehicle is equipped with a panel of the DT series and the switching facility is operated via this panel, the operating unit is not required.

▷ Additionally observe the manufacturer's instruction manual.

The DuoControl is an automatic switching facility with a remote display for a two-bottle gas system. The DuoControl switching facility automatically switches gas supply from the primary bottle to the reserve bottle as soon as the primary bottle is either empty or no longer ready for operation. The gas appliances may still continue operation. The DuoControl switching facility is suitable for all commercial gas bottles from 3 kg to 33 kg.

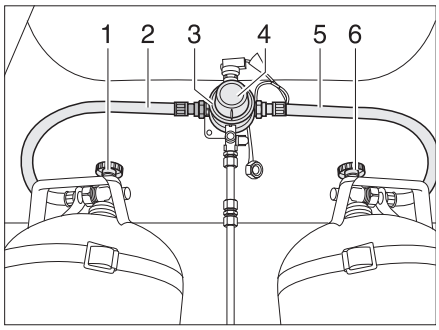


Fig. 70 DuoControl switching facility

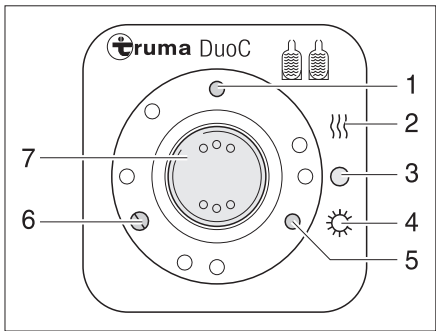


Fig. 71 Operating unit

Construction of the unit

The DuoControl switching facility consists of a switching valve (Fig. 70,3) and the operating unit (Fig. 71). The switching valve is mounted between the gas tubes (Fig. 70,2 and 5). The knob (Fig. 70,4) on the switching valve is used to select which of the gas bottles is to be used as a primary bottle and which is to be used as a reserve bottle.

The switching valve is equipped with the regulator defroster "Eis-Ex". This prevents damage to the gas system during the winter months.

Only the electrical functions can be switched at the operating unit (Fig. 71). The regulator taps on the gas bottles (Fig. 70,1 and 6) must be opened manually.

The switching valve provides a constant gas pressure, regardless of which gas bottle is being drawn upon. The two indicator lamps on the operating unit show the filling level of the primary bottle. The primary bottle is full when the green indicator lamp (Fig. 71,6) lights up. The primary bottle is empty when the red indicator lamp (Fig. 71,5) lights up. The gas is then supplied via the reserve bottle.

Operating modes

The DuoControl switching facility has two operating modes:

- Winter operation "On and heating"
- Summer operation "On"

Putting into operation:

- Open the regulator taps on the gas bottles (Fig. 70,1 and 6).
- Use the knob (Fig. 70,4) on the switching valve (Fig. 70,3) to select the gas bottle which is to be the primary source of gas (primary bottle). Always turn the knob as far as it will go.
- Switch on the DuoControl switching facility at the operating unit (Fig. 71). To do so, set the rocker switch (Fig. 71,7) to winter operation "On and heating" (Fig. 71,2) or to summer operation "On" (Fig. 71,4). The switching valve is now vented. The yellow indicator lamp (Fig. 71,1) lights up when winter operation has been selected and the regulator defroster is switched on.

Switching off:

- Set the rocker switch (Fig. 71,7) to "O" (Fig. 71,3). The yellow indicator lamp (Fig. 71,1) goes out.
- Close the regulator taps on the gas bottles (Fig. 70,1 and 6).

Remote display

The indicator lamps on the operating unit (Fig. 71,5 and 6) indicate in the vehicle interior whether the primary bottle is ready for operation.

Changing gas bottles

If the green indicator lamp (Fig. 71,6) goes out during operation and the red indicator lamp (Fig. 71,5) lights up, the gas bottle selected as the primary bottle is empty and has to be changed. The reserve bottle continues supplying the gas appliances with gas.

► When changing gas bottles, do not smoke or create any open fire.

Changing gas bottles:

- Close the regulator tap on the empty gas bottle.
- Unscrew the gas tube from the gas bottle.
- Connect the full gas bottle to the gas tube.
- Open the regulator tap on the gas bottle.
- Set the knob on the switching valve with half a turn, so that the newly replaced gas bottle will serve as a reserve bottle.

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 specific features: These are the CE certification, the EMC test (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 230 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, disconnect the living area battery from the 12 V power supply. Depending on the model, either press the switch on the transformer/rectifier or activate the battery separation on the panel to do so.

When the vehicle is not connected to the 230 V power supply or the 230 V power supply is switched off, the living area battery supplies the living area with 12 VDC. 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 230 V power supply.

The 12 V power supply can be cut off with the 12 V main switch on the panel. The heater and the electrical entrance step remain ready for operation.

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

Absorption refrigerator

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.

Compressor refrigerator

The refrigerator is only operated with 12 V.

9.2.1 Living area battery

▷ Prior to commencing a journey ensure the living area battery is fully charged. For this reason charge the 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.

▷ Longer total discharge damages the battery irreparably.

▷ Use only the installed transformer/rectifier to charge 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 disconnect the living area battery from the 12 V power supply or recharge it regularly.

▷ Do not use the ignition when the starter battery or the living area battery is disconnected. Danger of short circuit!

▷ The 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 battery must be charged regularly.

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

Location

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

Charging using a 230 V power supply

If the vehicle is connected to the 230 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.

▷ When changing the living area battery, use only batteries which meet the minimum capacity of the charger. Observe the separate instruction manual for the charger. Lower-capacity batteries will generate a great deal of heat when they are charged. Danger of explosion!

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

▷ Do not use the ignition when the starter battery or the living area battery is disconnected. Danger of short circuit!

▷ Before disconnecting or connecting the terminals of the battery, switch off the vehicle engine, the 230 V and 12 V power supplies as well as all the appliances. Danger of short circuit!

To change the living area battery, proceed as follows:

- Switch off the vehicle engine.
- Switch off the 12 V main switch on the panel. The indicator lamp goes out.
- Switch the battery cut-off switch on the transformer/rectifier to "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 the 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 fuse slots are fitted with fuses.

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

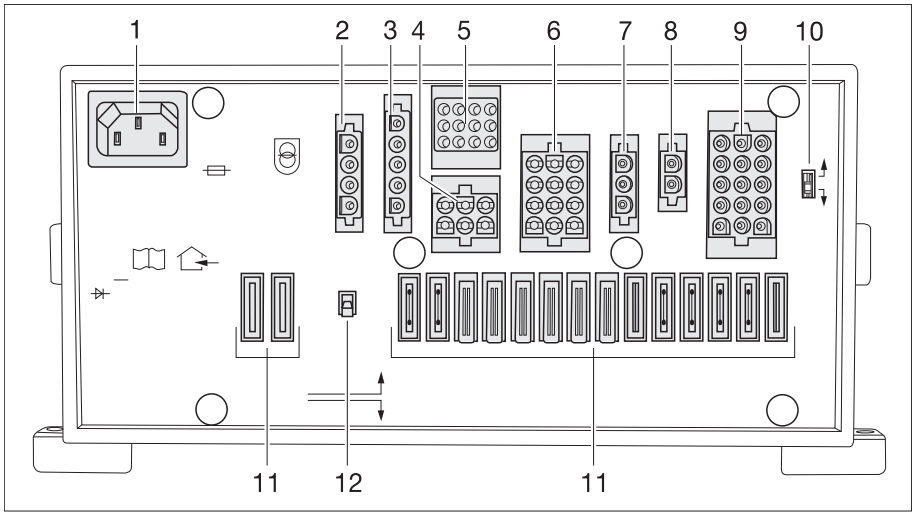


Fig. 72 Transformer/rectifier (EBL 99)

1 Main supply socket 230 V~
2 Output: Block 1 - refrigerator
3 Input: Block 2 - control lines, generator D+
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 ("Blei-Säure/Blei-Gel" (lead acid/dryfill))
11 Fuses
12 Battery cut-off switch ("Batterie Ein/Aus" ("battery On/Off"))

Functions The transformer/rectifier has the following functions:

- The transformer/rectifier charges the living area battery. The transformer/rectifier charges the starter battery with a float charge only.
- The transformer/rectifier monitors the voltage in the living area battery.
- The transformer/rectifier distributes the current to the 12 V circuits and secures them. Devices with a maximum of 10 A can be connected to the sockets.
- The transformer/rectifier contains connections for a solar charge regulator, an auxiliary charging unit 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 charging device against overheating. The transformer/rectifier is subject to a heavy load when e.g. an empty living area battery is charged, additional electrical appliances are turned on and the ambient temperatures are high.

Location Depending on the model, the transformer/rectifier is located in the seat console under the driver's seat or 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. When the battery cut-off switch has been switched on again, close the safety/drainage valve of the boiler by hand.

▷ After the battery cut-off switch has been switched on again: Switch the basic light (lighting in the entrance area), entrance step, heater and Reserve 4 back on (depending on the model) by switching the 12 V main switch on briefly. This also applies if the living room battery was disconnected and then reconnected.

The battery cut-off switch switches off all the living area 12 V appliances, including 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 even when the battery cut-off switch is switched off.

Switching on/off:

- Press top of battery cut-off switch: Battery on.
- Press bottom of battery cut-off switch: Battery off.

9.3.2 Battery monitoring

▷ Completely recharge a discharged living area battery as soon as possible.

The battery monitoring 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 the electrical appliances that are not essential at the corresponding switch.
- If necessary, use the 12 V main switch to switch the 12 V power supply back on briefly. This is only possible, however, if the battery voltage lies 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.

9.3.3 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 230 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

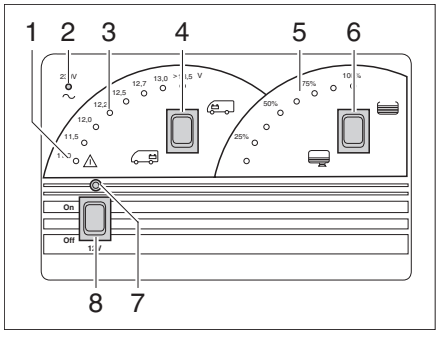


Fig. 73 Panel LT 410

1 ALARM warning light for the living area battery
2 230 V indicator lamp
3 Display V
4 Rocker switch for reading the battery voltage of the starter and living area batteries
5 Display for tank fill level
6 Rocker switch for reading 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

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 of the display V (Fig. 73,3) displays the battery voltage.

Displays:

- Press the upper part of the rocker switch (Fig. 73,4) "  ": The battery voltage of the starter battery is displayed.
- Press the lower part of the rocker switch (Fig. 73,4) "  ": 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. 73,5) displays the filling level.

▷ Only call up the tank level briefly. Calling up and displaying for a long time can damage the transducers.

Displays:

- Press the upper part of the rocker switch (Fig. 73,6) "  ": The volume of water is displayed.
- Press the lower part of the rocker switch (Fig. 73,6) "  ": The volume of waste water is displayed.

9.4.2 Battery alarm for the living area battery

The red ALARM warning light (Fig. 73,1) 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 charge the living area battery, either by driving or by connection to a 230 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. 73,8) switches the panel and the 12 V power supply of the living area on and off.

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

Switching on:

- Press the upper part of the rocker switch (Fig. 73,8) "On": The 12 V living area power supply is switched on. The indicator lamp (Fig. 73,7) lights up green.

Switching off:

- Press the lower part of the rocker switch (Fig. 73,8) "Off": The 12 V living area power supply is switched off. The indicator lamp (Fig. 73,7) goes out.

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

▷ Appliances such as the safety/drainage valve, charger, solar charge regulator 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 disconnect the living area battery from the 12 V power supply, if the vehicle will not be used for a long period of time.

9.4.4 12 V indicator lamp

The 12 V indicator lamp (Fig. 73,7) illuminates whenever the 12 V main switch (Fig. 73,8) is switched on.

9.4.5 230 V indicator lamp

The yellow 230 V indicator lamp (Fig. 73,2) lights up whenever line voltage is available at the transformer/rectifier input.

9.5 230 V power supply

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

The 230 V power supply provides electricity for:

- Sockets with earth contact for appliances with maximum 16 A
- 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 230 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.

9.5.1 230 V connection

▶ The external 230 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 230 V power supply. The cable may have a length of maximum 25 m.

Depending on the model, the flap for the 230 V connection is identified with the symbol "".

Connecting the power cable:

- Open the external flap.
- Depending on the model, fold up the cover.
- Plug in the plug:

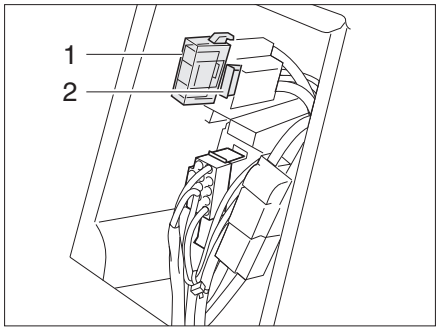
▷ Depending on the model, unlock the plug before pulling it out.

9.6 Fuses

- ▶ Only replace defective fuses when the cause of the defect is known and has been remedied.
- ▶ Only replace defective fuses when the power supply is switched off.
- ▶ Never bridge or repair fuses.

9.6.1 Main fuse

Location The main fuse has been fitted in the B-pillar (centre pillar). It can be accessed from the passenger side.

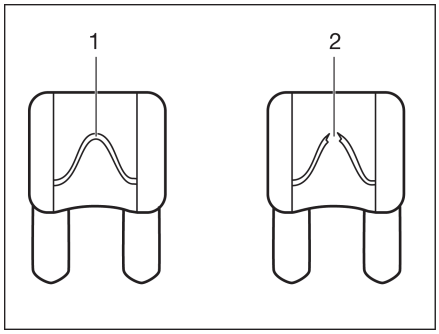


1 Main fuse 50 A/red
2 2 x flat fuse 2 A/grey

Fig. 74 Main fuse

9.6.2 12 V fuses

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



1 Unbroken fuse element
2 Broken fuse element

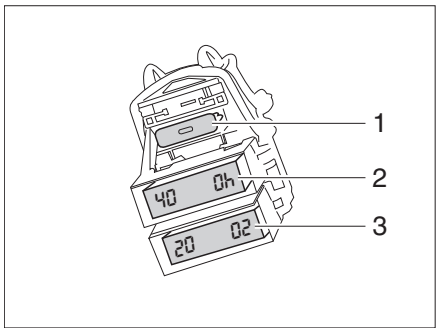
Fig. 75 12 V fuse

An intact 12 V fuse can be detected by the unbroken fuse element (Fig. 75,1). If the fuse element is broken (Fig. 75,2), change the fuse.

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 installed near the starter battery under a covering between the seats or in a seat console.

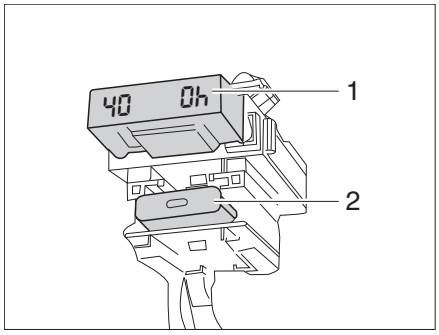


1 Flat fuse 2 A/grey (for alternator D+)
2 Jumbo flat fuse 40 A/orange
3 Flat fuse 20 A/yellow (for refrigerator and charging line)

Fig. 76 Fuses on the starter battery

Fuses on the living area battery

The fuses are fitted next to the living area battery.

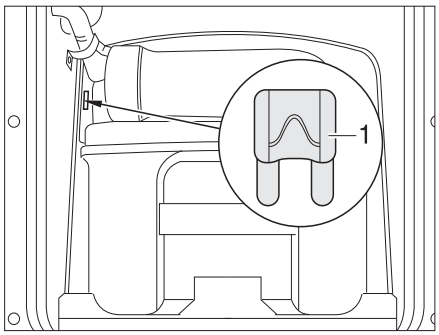


1 Jumbo flat fuse 40 A/orange
2 Flat fuse 2 A/grey (for battery charger sensor)

Fig. 77 Fuses on the living area battery

Fuse for the Thetford toilet (swivel toilet)

The fuse is located in the locker wall of the Thetford cassette.



1 Flat fuse 3 A/purple

Fig. 78 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 the fuse (Fig. 78,1).

Fuses at the transformer/rectifier EBL 99

Function	Value/colour
Internal charger module	20 A yellow
Compressor refrigerator/AES refrigerator	20 A yellow
Heater	10 A red
Basic light/entrance step electrical	25 A white
Reserve 4	–
Reserve 3	–
Reserve 2	–
Reserve 1	15 A blue
Solar	15 A blue
Reserve 5	–
Reserve 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

9.6.3 230 V fuse

▷ The 230 V automatic circuit breaker is always mounted near the 230 V connection.

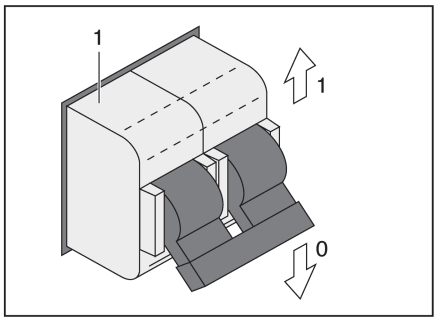


Fig. 79 230 V automatic circuit breaker

The 230 V connection is protected by a two-pole automatic circuit breaker (Fig. 79,1).

Location 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 Truma 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.

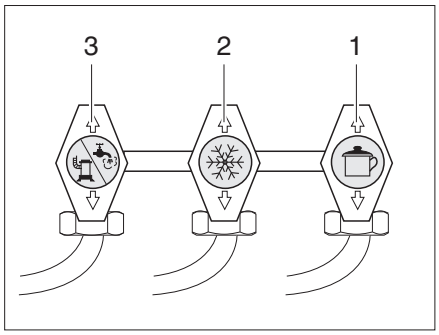
▷ For safety reasons, spare parts for pieces of heating appliances must correspond with manufacturer's instructions and be permitted by the manufacturer as a spare part. These spare parts may only be fitted by the manufacturer or an authorised specialist workshop.

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

The appliances 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. 80 Symbols for the gas isolator taps

10.2 Heater

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

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

▶ Never operate the heater in gas operation in closed rooms (e.g. garages). Danger of poisoning and suffocation!

▷ The circulation fan is automatically switched on when the hot-air heater is activated. During operation it is switched off and back on automatically by a thermostat control unit. This puts an immense strain on the living area battery, if the vehicle is not connected to an external 230 V power supply. Take into consideration that the living area battery only has limited reserves of energy.

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

10.2.1 To heat properly

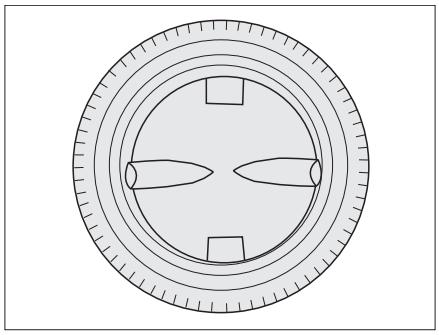


Fig. 81 Air outlet nozzle

Hot air distribution

Several air outlet nozzles (Fig. 81) 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 Truma Combi hot-air heater

▷ Empty the complete heating system when the heater is out of operation due to risk of frost.

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

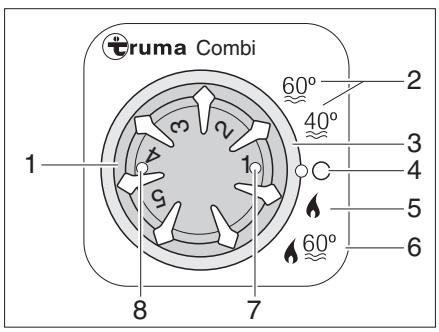


Fig. 82 Operating unit for heater/boiler

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 Indicator lamp green:
Lights up = "Heater operation"
Flashes = "Delayed shut-off for appliance temperature reduction is active"
8 Indicator lamp yellow/red:
Lights up yellow = "Boiler heating-up phase"
Flashes/lights up red = "Fault"

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. 82,3).

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

Winter operation

The heater selects the required burner setting according to the set heating level. In the "Heater and boiler" operating mode (Fig. 82,6) the water in the boiler is also heated. The heater can be operated with an empty boiler in the "Heater without boiler" operating mode (Fig. 82,5).

Switching on:

- Open the regulator tap on the gas bottle and the gas isolator tap "Heater/boiler".
- Set the temperature control knob (Fig. 82,1) at the operating unit to the desired heating level.
- Set the rotary switch (Fig. 82,3) to winter operation "Heater without boiler" (Fig. 82,5) or to winter operation "Heater and boiler" (Fig. 82,6).

Green indicator lamp (Fig. 82,7) lights up.

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

Switching off:

- Set the rotary switch (Fig. 82,3) to "O" (Fig. 82,4).
- Close the gas isolator tap "Heater/Boiler" and the main 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 the "Summer" operating mode. In this operating mode only the water in the boiler is heated.

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

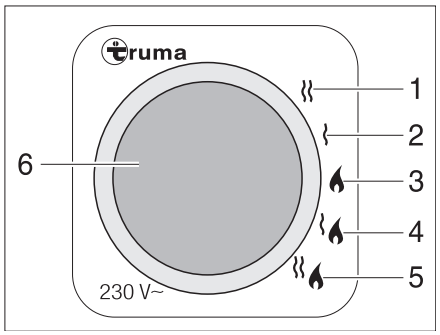
▷ For further information about the use of the boiler see Section "Boiler".

Variant: Heater with gas and 230 V electrical operation

▷ 230 V electrical operation is only possible when the vehicle is connected to the 230 V power supply.

▷ Select the output level for 230 V electrical operation so that it corresponds to the fuse protection of the 230 V connection (900 W for 3.9 A fuse, 1800 W for 7.8 A fuse).

▷ If the heater is set at the operating unit to "Summer" operation and the energy selector switch is set to mixed operation, the heater nevertheless operates only in 230 V operation. The gas burner is not switched on.



1 230 V electrical operation (1800 W)
2 230 V electrical operation (900 W)
3 Gas operation
4 Gas operation and 230 V electrical operation (900 W)
5 Gas operation and 230 V electrical operation (1800 W)
6 Yellow indicator lamp "230 V electrical operation"

Fig. 83 Energy selector switch for heater/boiler

The heater can be operated with different types of energy:

- Gas operation (Fig. 83,3)
- 230 V electrical operation with the output levels 900 W (Fig. 83,2) or 1800 W (Fig. 83,1)
- Gas operation and 230 V electrical operation (mixed operation) with the output levels 900 W (Fig. 83,4) or 1800 W (Fig. 83,5)

The combination gas operation and 230 V electrical operation reduces the heating-up time (only possible when the heater on the operating unit (Fig. 82) is set to winter operation).

When 230 V electrical operation has been selected, the yellow indicator lamp (Fig. 83,6) lights up.

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

▷ 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.

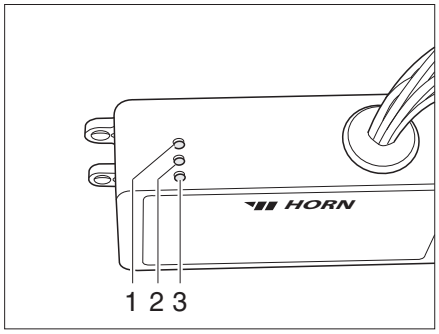


Fig. 84 Control unit

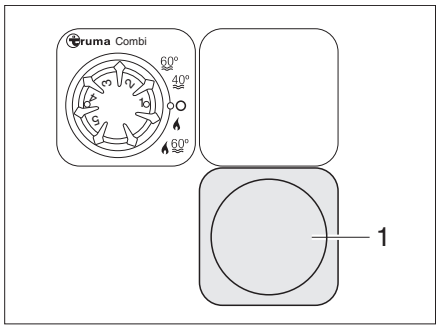


Fig. 85 Switch indicator lamps

The control unit (Fig. 84) is installed under the bench seat. The control lamps on the control unit have the following meanings:

- Indicator lamp (Fig. 84,2) lights up in green: Regulation in operation.
- Indicator lamp (Fig. 84,1) lights up in red: Waste water tank is heated.
- Indicator lamp (Fig. 84,3) lights up in red: Waste water pipes are heated.

The on/off switch (Fig. 85,1) is installed on the panel under the sink. Press the switch up to switch on, press it down to switch off.

10.3 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!

▶ Never operate the boiler in gas operation in closed rooms (e.g. garages). Danger of poisoning and suffocation!

▶ The water in the boiler can be heated up to 60 °C. Risk of scalding!

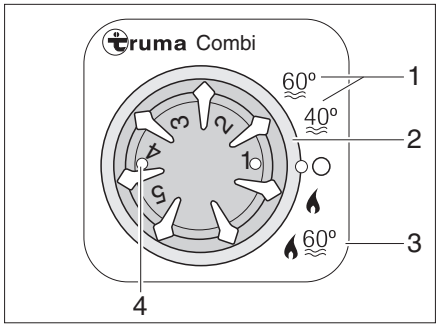
▷ Never use boiler when empty.

▷ If the boiler is not being used, empty it if there is any risk of frost.

▷ Only operate the boiler with the maximum temperature setting if you require a large quantity of warm water. This protects the boiler against the build-up of limescale.

▷ Do not use the water from the boiler as drinking water.

10.3.1 Truma Combi boiler



1 Summer operation water temperature 40 °C or 60 °C
2 Rotary switch
3 Winter operation "Heater and boiler"
4 Indicator lamp yellow/red:
Lights up yellow = "Boiler heating-up phase"
Flashes/lights up red = "Fault"

Fig. 86 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. 86,2) on the operating unit (Fig. 86).

In winter operation "Heater and boiler" (Fig. 86,3) 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. 86,1) 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. 25 minutes. The yellow indicator lamp (Fig. 86,4) illuminates during the boiler heating-up period.

The power supply for the appliance cannot be interrupted by means of the 12 V main switch. When there is a fault, the red indicator lamp (Fig. 86,4) on the operating unit illuminates (see Chapter 14).

Safety/drainage valve

The boiler is equipped with a safety/drainage valve (Fig. 87). The safety/drainage valve prevents water in the boiler from freezing, when there is frost and the heater is not switched on.

- ▷ When the vehicle is not used for a long period of time, open the safety/drainage valve and drain the boiler.
- ▷ At temperatures below approx. 3 °C the safety/drainage valve opens automatically. Before filling the boiler switch on the heater and wait until the temperature of the safety/drainage valve exceeds 7 °C. Only then can the safety/drainage valve be closed again.
- ▷ The water pump and the water fittings are not protected against freezing by the safety/drainage valve.

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

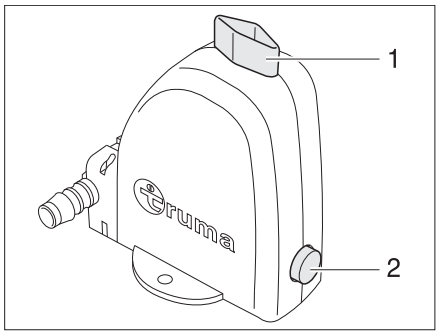


Fig. 87 Safety/drainage valve of the boiler

Winter operation

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

Summer operation

In summer operation the water can be heated 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. 86,2) on the operating unit (Fig. 86) to "Summer operation" (Fig. 86,1).

The yellow indicator lamp (Fig. 86,4) lights up 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. 86,2) on the operating unit (Fig. 86) to "O".
- Close the gas isolator tap "Heater/Boiler" and the main regulator tap on the gas bottle.

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. To so so turn the knob (Fig. 87,1) crosswise to the safety/drainage valve and press in the push button (Fig. 87,2).
- Set all the water taps to "Hot" and open them. The water pump is turned on. The hot 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. 86,2) on the operating unit (Fig. 86) to "O".
- Open the safety/drainage valve. To so so turn the knob (Fig. 87,1) parallel to the safety/drainage valve. The push button (Fig. 87,2) trips. The boiler is drained to the outside by the safety/drainage valve.
- Check whether the water has been drained completely from the boiler (approx. 10 litres).

▷ 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.
- ▶ Always protect your hands with cooking gloves or potholders when handling hot pots, pans and similar items. There is a risk of injury!
- ▶ During activation and operation of the gas cooker, no flammable or easily combustible objects such as dishcloths, napkins etc. may 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.
- ▶ Depending on the model, 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.
- ▷ Do not apply pressure on the gas cooker lid when it is closed.
- ▷ Do not place hot cooking pans on the gas cooker lid.
- ▷ Keep the gas cooker lid open after cooking as long as the burner emits heat. The glass plate could otherwise burst.

- ▷ Use only pots and pans whose diameter is suitable for the burner grates of the gas cooker.
- ▷ When the flame fades, the thermocouple automatically cuts the gas supply.
- ▷ Further information can be obtained from the separate instruction manual "Gas cooker".

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

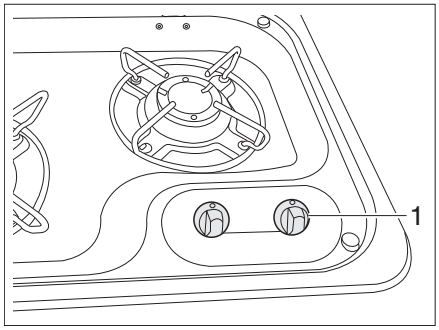


Fig. 88 Operating controls for gas cooker

Switching on:

- Open the regulator tap on the gas bottle and the gas isolator tap "Cooker".
- Open the gas cooker lid.
- Turn the control knob (Fig. 88,1) on the burner you wish to use to the ignition position (large flame).
- Press down the control knob and hold it down.
- Ignite the burner with a gas lighter, a match or with other suitable means of lighting.
- When the flame burns, hold the control knob down for 10 to 15 seconds, until the thermocouple keeps the gas supply automatically open.
- Release the control knob and turn to the desired setting.
- If ignition was not successful, repeat the entire procedure.

Switching off:

- Turn the control knob (Fig. 88,1) to the 0-position. 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 full cooling power is not possible. When external temperatures are high, full cooling power of the cooling unit is only ensured if the refrigerator is ventilated sufficiently. The refrigerator ventilation grill can be removed in order to achieve a better ventilation.

▷ When leaving the vehicle, always fit the refrigerator ventilation grills. Otherwise water could penetrate during rain.

10.5.1 Refrigerator ventilation grill

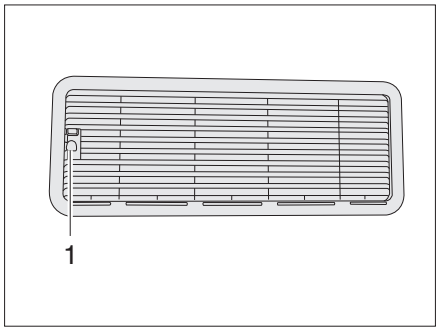


Fig. 89 Refrigerator ventilation grill

Removal:

- Press the latch (Fig. 89,1).
- Remove the refrigerator ventilation grill.

10.5.2 Operation (Dometic 4 series)

Operating modes

The refrigerator has 2 operating modes:

- Gas operation
- Electrical operation (230 VAC or 12 VDC)

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 230 V. It is not possible with 12 V operation.

▷ Select only one energy source.

▷ Even when the 12 V supply is switched off, a small electrical current flows which puts an extra load on the living area battery. Always switch the refrigerator off during a temporary lay-up.

Gas operation

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

▶ Gas operation of the refrigerator with liquefied petroleum gas is not permissible.

The refrigerator is equipped with an electric ignition.

Fig. 90 Operating controls for refrigerator (electric ignition)

1 Energy selector switch 12 V
2 Energy selector switch 230 V
3 Control knob for setting the temperature in 230 V operation
4 Energy selector switch gas
5 Control knob for setting the temperature in gas operation
6 Ignition switch

Switching on:

- Open the regulator tap on the gas bottle and the gas isolator tap "Refrigerator".
- Set 12 V switch "⎓" (Fig. 90,1) to "O".
- Set 230 V switch "⏦" (Fig. 90,2) to "O".
- Turn the control knob (Fig. 90,5) to the highest level.
- Press the knob (Fig. 90,4), turn it to gas "⌂" and keep it pressed. Wait until gas gets into the burner.
- Switch on the ignition switch (Fig. 90,6). The ignition switch flashes until ignition has been completed successfully.
- Keep the knob (Fig. 90,4) pressed for another 10 to 15 seconds, then release it.
- If the ignition switch begins to flash again: Repeat the ignition process.
- Use the control knob (Fig. 90,5) to adjust the refrigerating temperature.

Switching off:

- Switch the ignition switch (Fig. 90,6) to "O".
- Turn the knob (Fig. 90,4) to the 0-position.
- Turn the control knob (Fig. 90,5) to the 0-position.
- 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:

- 230 VAC
- 12 VDC

Switching the 230 V operation on:

- Set 12 V switch "⎓" (Fig. 90,1) to "O".
- Set 230 V switch "⏦" (Fig. 90,2) to "**I**".
- Use control knob "ϟ" (Fig. 90,3) to adjust refrigerating temperature.

Switching the 230 V operation off:

- Turn the control knob to the 0-position and switch off the 230 V switch. Refrigerator is switched off.

Switching the 12 V operation on:

- Set 230 V switch "⏦" (Fig. 90,2) to "O".
- Set 12 V switch "⎓" (Fig. 90,1) to "**I**".

Switching the 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.

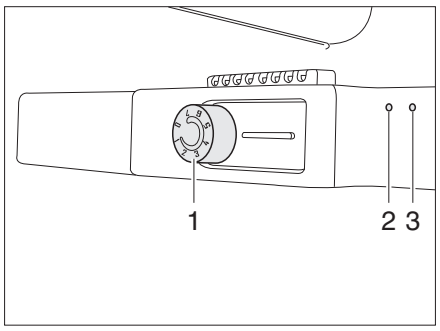
The thermostat is not activated during 12 V operation. The refrigerator operates continuously.

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

10.5.3 Operation (Waeco)

Operating modes

The refrigerator is only operated with 12 V or 24 VDC.



1 Temperature controller
2 Green LED: Operation
3 Red LED: Fault

Fig. 91 Operating controls in the refrigerator

Switching on:

- Turn the temperature controller (Fig. 91,1) from position "0" to "1". The appliance is switched on, the interior lighting is on. The green LED (Fig. 91,2) lights up. If the red LED (Fig. 91,3) lights up, there is a fault (see Chapter 14).

Switching off:

- Set the temperature controller (Fig. 91,1) to "0".

Adjusting the temperature:

- Set the temperature with the temperature controller (Fig. 91,1).
  - Position "1" = lowest cooling power
  - Position "7" = highest cooling power

▷ When frozen food is kept in the freezer compartment, we recommend setting the temperature controller to between "4" and "7". Temperatures of -18 °C or lower are then reached in the freezer compartment.

▷ The temperature in the refrigerator depends on the ambient temperature (location), how often the door is opened and how full it is. If necessary, adjust the temperature controller.

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

10.5.4 Refrigerator door locking mechanism

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

▷ When the refrigerator is switched off, bring the refrigerator door into the ventilation position and lock it in place if possible. This prevents mould from 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

Dometic 4 series

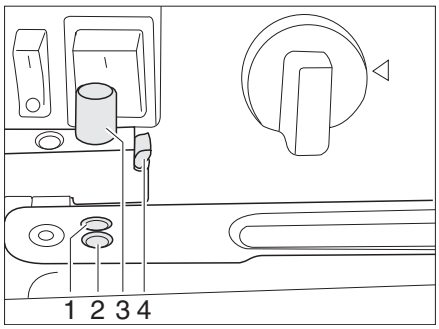


Fig. 92 Lock on refrigerator door

Opening:

- Push the green retainer lock (Fig. 92,4) to the side to release the locking device. The bolt (Fig. 92,3) 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. 92,3) down, so that it engages in the outer drilled hole (Fig. 92,2).

Locking in the ventilation position:

- Slightly open the freezer compartment and the refrigerator door.
- Press the bolt (Fig. 92,3) down, so that it engages in the inner drilled hole (Fig. 92,1). The refrigerator door will then stay slightly open.

Waeco

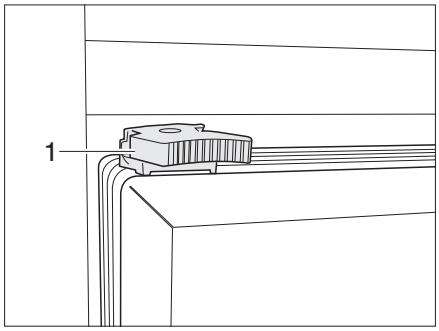


Fig. 93 Refrigerator door locking mechanism

Opening:

- Turn the locking mechanism (Fig. 93,1) anticlockwise.
- Open the refrigerator door.

Closing:

- Fully close the refrigerator door.
- Turn the locking mechanism (Fig. 93,1) clockwise.

Locking in the ventilation position:

- Slightly open refrigerator door.
- Turn the locking mechanism (Fig. 93,1) clockwise so that the lock latches.

11.1 Water supply, general

- ▶ Fill the water tank with fresh water only.
- ▶ 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.

- ▷ If the vehicle is not used for several days or if it is not heated when there is a risk of frost, empty the entire water system. Leave the water taps on in central position. Leave the safety/drainage valve (if available) and all drain cocks open. Frost damage to appliances, frost damage to the vehicle and deposits in water-carrying components can be avoided in this way.
- ▷ The water pump will overheat without water and can get damaged. Never operate water pump when the water tank is empty.

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

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

- ▷ Before using the water fittings, the 12 V power supply on the panel must be switched on. Otherwise the water pump will not work.
- ▷ The water supply system conforms to the latest state of technology 03/2009 (Directive 2002/72/EC).

11.2 Water tank

Volume

Depending on the model the water tank holds approx. 80 l or approx. 100 l.

Fresh water filler neck

The fresh water filler neck is located on the right-hand side of the vehicle.

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

The cap is opened or closed using the key for the external flap locks (see Chapter 7).

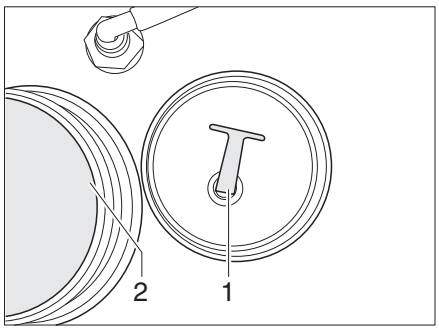


Fig. 94 Water tank

Filling with water:

- ■ Unscrew the cap (Fig. 94,2) on the water tank.
- ■ Press the stopper (Fig. 94,1) in the drainage opening and turn the lever.
- ■ 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 onto the water tank.

Draining water:

- Unscrew the cap (Fig. 94,2) on the water tank.
- Remove the stopper (Fig. 94,1) from the drainage opening. The water drains off.
- Screw the cap back onto the water tank.

11.2.1 20 l maximum filling

In order to reach the permissible payload the water tank can be drained down to 20 litres.

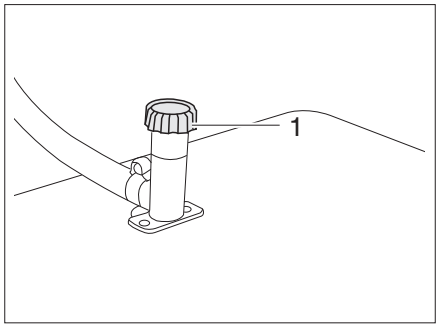


Fig. 95 20 l maximum filling

Location The drain screw of the 20 l maximum filling is located at the bottom of the water tank.

Draining water:

- Open the drain screw (Fig. 95,1). The fresh water is drained down to 20 litres.
- Close the drain screw (Fig. 95,1).

11.3 Waste water tank

▷ In case of frost add so much anti-freeze (e.g. 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, at camping sites or caravan sites, that are especially provided for this purpose.

The waste water tank is located under the vehicle floor.

The drain cock and the cleaning opening are located at the bottom of the waste water tank.

Volume Depending on the model the waste water tank holds approx. 90 l or approx. 100 l.

Cleaning Clean the waste water tank several times per year (see Chapter 12).

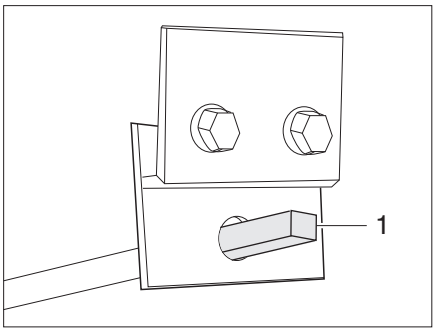


Fig. 96 Operation of the waste water tap

The square bolt for opening the waste water tap is directly accessible under the vehicle floor.

Emptying:

- Place the key onto the square bolt (Fig. 96,1).
- In order to open the waste water tap, turn the square bolt a quarter turn.
- Completely empty waste water tank.
- To close the waste water tap, turn the square bolt back as far as it will go.

11.4 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 used for several days or if it is not heated when there is a risk of frost, empty the entire water system. Leave the water taps on in central position. Leave the safety/drainage valve (if available) and all drain cocks open. Frost damage to appliances, frost damage to the vehicle and deposits in water-carrying components can be avoided in this way.

▷ The water level can be checked on the panel while the water tank is being filled.

Filling:

- Position the vehicle horizontally.
- Close all water taps.
- Switch on 12 V power supply on the panel.
- Close the safety/drainage valve (Truma). To do this turn the knob cross-wise to the safety/drainage valve and press in the push button.
  If the temperature is below approx. 7 °C, the safety/drainage valve cannot be closed. Therefore switch on the living area heater and wait until the living area temperature exceeds approx. 7 °C.
- Fill the water tank with fresh water. Use a water hose, a water canister with a funnel or similar for filling.
- Set all the water taps to "Hot" and open them. The water pump is turned on. The hot 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.
- Switch off the 12 V power supply on the panel.
- Switch off the 230 V power supply on the 230 V fuse box.
- Open all water taps and set to the central position.
- Switch off boiler.
- Open the safety/drainage valve. To do this turn the knob parallel to the safety/drainage valve. The push button trips.
- Unscrew the cap on the water tank.
- Remove the stopper from the drainage opening.
- Screw the cap back onto 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.

11.5 Toilet compartment

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

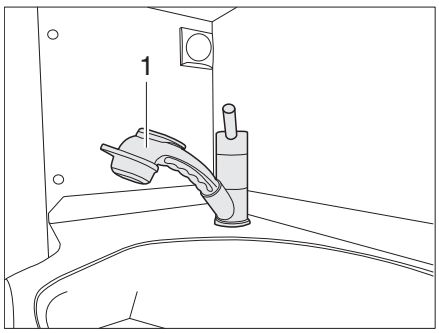


Fig. 97 Shower handset

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

▷ Use the shower handset (Fig. 97,1) to shower. To do this pull out the shower handset.

▷ Close the shower curtain completely while showering, so that water cannot penetrate between the washroom wall and the shower tray.

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

▷ Further information about cleaning the toilet compartment can be found in Section 12.2.

11.6 Vario toilet compartment

Depending on the model, the vehicle is fitted with a Vario toilet compartment. The toilet compartment can be changed in just a few steps so that an enclosed cubicle is available for showering.

11.6.1 Converting into a shower cubicle

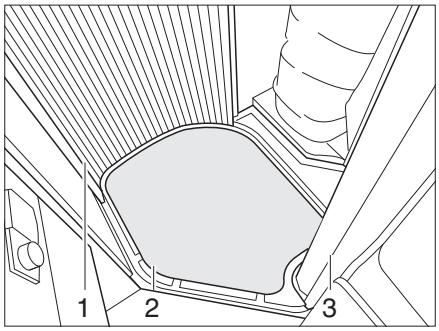


Fig. 98 Cover of the shower tray

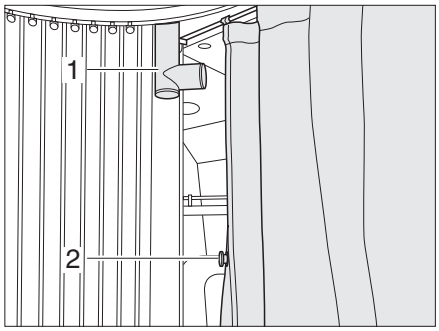


Fig. 99 Fastening the shower curtain

- Remove the cover of the shower tray (Fig. 98,2).
- Completely pull closed the shower curtain (Fig. 98,1 and 3).
- Take out the shower handset and insert it into the holder (Fig. 99,1).
- Close the shower curtain leading to the toilet with the magnet (Fig. 99,2).

11.6.2 Conversion to toilet compartment

Conversion to the toilet compartment is carried out in the reverse order to conversion to a shower cubicle.

▷ To ventilate during or after a shower open the skylight of the Vario toilet compartment.

▷ Let the shower curtain dry completely before closing.

▷ 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.

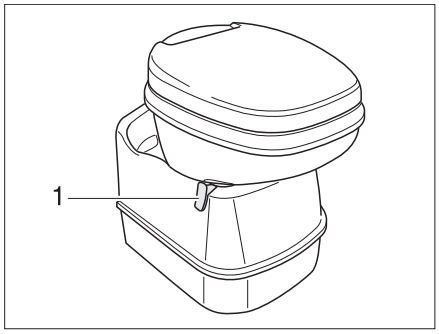


Fig. 100 Thetford toilet bowl, swiveling

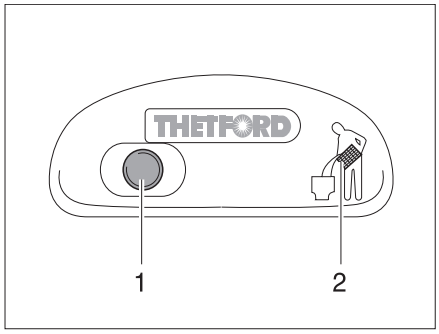


Fig. 101 Flush button/indicator lamp Thetford toilet

Flushing:

- Before flushing open the sliding trap of the Thetford toilet. To do this, push the slide lever (Fig. 100,1) anticlockwise.
- For flushing, press the blue flush button (Fig. 101,1).
- After flushing close the sliding trap. To do this push the slide lever in a clockwise direction.

The indicator lamp (Fig. 101,2) goes on whenever the Thetford cassette has to be emptied.

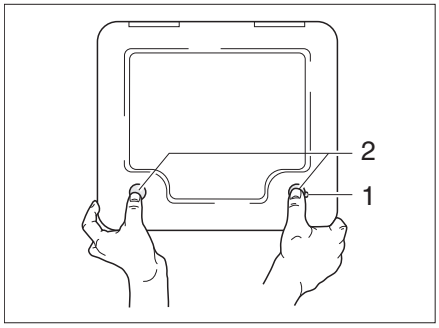


Fig. 102 Flap for Thetford cassette

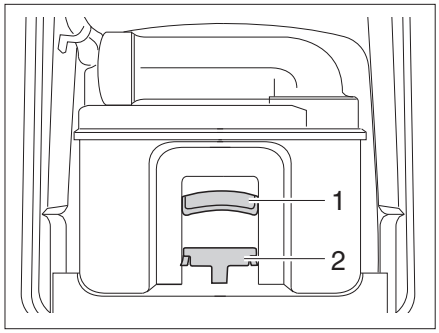


Fig. 103 Thetford cassette

Emptying:

- Push the slide lever (Fig. 100,1) 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. 102,1) and turn a quarter turn in a clockwise direction.
- Remove the key.
- Press both push-button locks (Fig. 102,2) simultaneously with your thumb and open the flap for the Thetford cassette.
- Pull the holding bracket (Fig. 103,1) upwards and pull out the Thetford cassette (Fig. 103,2).
- 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.

▷ In order to empty the Thetford cassette completely press with your thumb on the aeration knob.

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.

▷ Do not spray external applications (deco-films) directly with the high-pressure cleaner. The external applications could come off.

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

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

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

12.1.2 Washing the vehicle

▷ Never have the vehicle cleaned in a car wash. Water can penetrate in the refrigerator grills, the waste gas vents, the ventilations of the extractor hoods or in the forced ventilations. The vehicle could be damaged.

- Wash the vehicle only on a washing site intended for this purpose. Avoid full sunshine. Observe environmental measures.
- Only clean external applications and synthetic parts with plenty of warm water, dish washing liquid and soft cloth.
- Wash down the vehicle with plenty of water, a clean sponge or a soft brush. In the case of stubborn dirt add dish washing liquid to the water.
- Add-on parts made of glass-fibre reinforced plastic (GRP) require a regular follow-up treatment with a polisher. This way these parts will not turn yellow and the sealing of the surface remains intact.
- Treat rubber seals of doors and storage flaps with talc.
- Treat locking cylinder of doors and storage flaps with graphite dust.

12.1.3 Windows of acrylic glass

Acrylic glass windows are delicate and require very careful handling.

- ▷ Never rub acrylic glass windows when dry as dust particles might damage the surface.
- ▷ Only clean acrylic glass windows with plenty of warm water, 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 drive into car wash units.
- ▷ Do not apply stickers to the acrylic glass windows.
- ▷ After cleaning the vehicle rinse the acrylic glass windows again with sufficient clear water.
- ▷ Treat rubber seals with glycerin.

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

12.1.4 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.

12.1.5 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 Internal care

- ▷ If possible, treat stains immediately.
- ▷ Acrylic glass windows are delicate and require very careful handling (see Section 12.1.3).
- ▷ 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 to clean the toilet and water system, or for decalcification of the water system. Vinegar-based products may cause damage to seals or parts of the installation. Use standard decalcifying products for decalcification.

▷ Save water. Mop up all remaining water.

▷ The service centres of our dealers will be glad to provide information about the use of maintenance products.

- 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 necessary, treat finished surfaces with furniture polish.
- 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 a mild, soapy cleanser for PVC floors. Do not place carpet on wet PVC-floor covering. The carpet and the PVC-floor covering may stick together.
- 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 on windows and skylights 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. Set the circulation fan (if existing) to automatic mode. In the case of extreme external temperatures, the furniture flaps and doors should be left slightly open. The inflowing warm air can help prevent the freezing of water pipes, for example, and counteract the formation of condensation in the storage spaces.

▷ If there is any risk of frost, cover the outside surface of the windows with winter insulation mats.

12.3.1 Winter operation

During winter operation, condensation develops when the vehicle 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 can prevent corrosion to the tank system	
Jack up the vehicle so that the wheels do not bear any load, or move the vehicle every 4 weeks. This prevents any pressure points from occurring on tyres and wheel bearings	
Protect the tyres from direct exposure to the sun. Danger of formation of cracks!	
Inflate tyres up to the recommended maximum pressure	
Always provide for sufficient ventilation in the underbody area ▷ Humidity or lack of oxygen e.g. by covering with plastic film may cause optical irregularities to the underbody.	
Also observe the specifications in the operating instructions of the base vehicle	

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 tube from the vehicle, take it out of the bag and hang it up dry	

	Activities	Done
Gas system	Close regulator tap on the gas bottle	
	Close all gas isolator taps	
	Always remove gas bottles from the gas bottle compartment, even if they are empty	
Electrical system	Fully charge living area and starter battery ▷ Charge the battery for at least 20 hours before laying up.	
	Disconnect the living area battery from the 12 V power supply	
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 the safety/drainage valve (if available) and all drain cocks open. Observe the notes in Chapter 11	
	If the transformer/rectifier is switched off using the battery cut-off switch, the safety/drainage valve opens and the water drains. ▷ If the safety/drainage valve is switched off, the water system is no longer protected sufficiently 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 the frost protection in the cooling water	
	Repaint paint damage	
Body	Keep the forced ventilation open	
	Clean and grease all door and flap hinges	
	Brush oil or glycerine on all locking mechanisms	
	Rub all rubber seals with talc	
	Use graphite dust to treat locking cylinders	
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 the starter battery and living area battery and store in a place protected from frost (see Chapter 9)	

	Activities	Done
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 dust and dirt from the entrance step	
	Check that the doors, windows and skylights are working properly	
	Check the function of all external locks	
	Remove the cover from the waste gas vent of the heater (if there is one)	
	Remove the winter cover from the refrigerator grills (if there is one)	
Gas system	Put the gas bottles in the gas bottle compartment, tie down and connect to the gas pressure regulator	
Electrical system	Connect to 230 V external power supply	
	Fully charge living area and starter battery ▷ Charge at least for 20 hours after laying up.	
	Connect the living area battery with the 12 V power supply (see Chapter 9)	
	Check that the electrical system are working, e.g. interior light, socket and all installed electrical appliances	
Water system	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 Official inspections

An official general inspection (HU) of roadworthiness has to be carried out by a recognised body (such as "TÜV", "DEKRA") at regular intervals in accordance with Section 29 of the German Traffic Licencing Regulations ("Straßenverkehrszulassungsordnung" (StVZO)) on vehicles that are registered in Germany.

The respective local regulations apply in other countries.

An authorised specialist workshop has to inspect the gas system every 2 years. This also applies for not registered vehicles. Modifications to the gas system must be checked immediately by an authorised specialist workshop. The authorised specialists workshop certifies the inspection and the proper state in a gas inspection certificate. The gas inspection sticker is applied on the rear of the vehicle near the licence plate.

13.2 Inspection work

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

This inspection work must be carried out by qualified personnel.

The service centre in charge will confirm the work performed.

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

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

13.3 Maintenance work

As with every machine, this vehicle requires maintenance. The extent and frequency of the maintenance work required depend on conditions of operation and use. More difficult operating conditions make it necessary to service the vehicle more often.

Have the basic vehicle and the appliances serviced at the intervals specified in the corresponding instruction manuals.

13.4 Replacing bulbs and fluorescent tubes

- ▶ Bulbs and light fittings can be extremely hot. Therefore, allow lights to cool down before changing bulbs.
- ▶ Before changing bulbs, switch off the power supply at the safety cut-out in the 230 V fuse box.
- ▶ 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, a safety distance of 30 cm to combustible material has to be maintained. Fire hazard!

▷ New bulbs should not be touched with the fingers. Use a cloth when inserting the new bulb.

▷ Only use bulbs of the same type and with the correct wattage.

13.4.1 Ceiling lamp

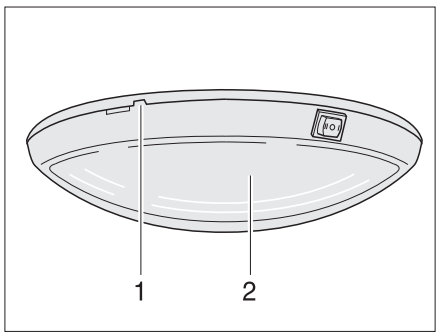


Fig. 104 Ceiling lamp

Changing bulbs:

- Use a suitable tool (e.g. a screwdriver) to carefully lever out the cover (Fig. 104,2) at the notch (Fig. 104,1) and remove it.
- Remove bulb.
- Put in a new bulb.
- Reassemble the lamp in the reverse order.

13.4.2 Room lamp

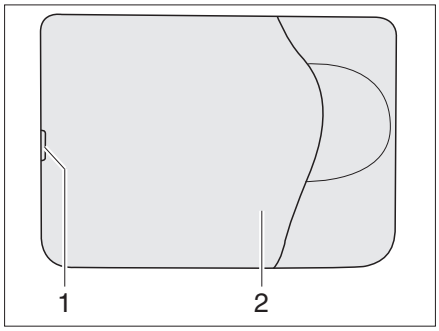


Fig. 105 Room lamp

Changing bulbs:

- Use a suitable tool (e.g. a screwdriver) to carefully lever out the cover (Fig. 105,2) at the notch (Fig. 105,1) and pull it off to the left.
- Remove halogen bulb.
- Put in a new halogen bulb.
- Reassemble the lamp in the reverse order.

13.4.3 Halogen spotlight (with glass shade)

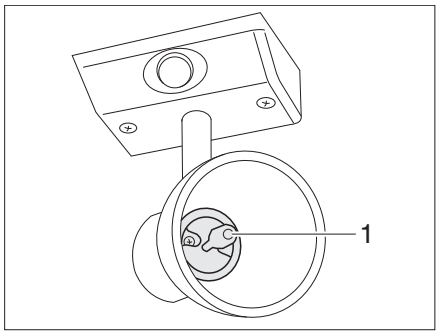


Fig. 106 Halogen spotlight (with glass shade)

Changing bulbs:

- Pull the halogen bulb (Fig. 106,1) forward out of the socket.
- Press the new halogen bulb into the fitting between the two spring tongues.

13.4.4 Halogen spotlight (movable)

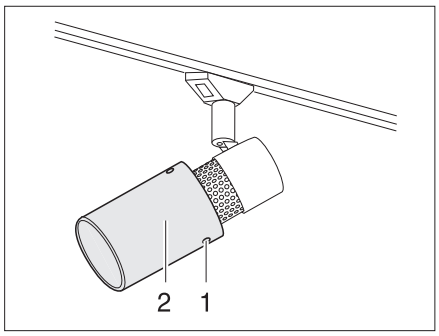


Fig. 107 Halogen spotlight (movable)

Changing bulbs:

- Loosen the fixing screws (Fig. 107,1).
- Carefully remove the lamp chalice (Fig. 107,2) from the holder.
- Remove halogen bulb.
- Put in a new halogen bulb.
- Reassemble the lamp in the reverse order.

13.4.5 Surface-mounted halogen light (swiveling)

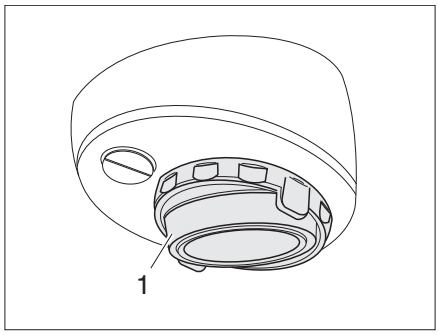


Fig. 108 Surface-mounted halogen light (swiveling)

Changing bulbs:

- Use a suitable tool (e.g. a screwdriver) to lever out and remove the cover (Fig. 108,1).
- Remove halogen bulb.
- Put in a new halogen bulb.
- Reassemble the lamp in the reverse order.

13.5 Replacing the battery at the lamp in the pop-up roof

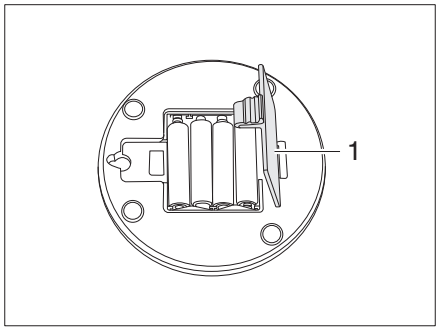


Fig. 109 Lamp in pop-up roof

Changing battery:

- Remove the lamp.
- Open the battery compartment (Fig. 109,1) and remove the batteries.
- Insert new batteries and close the battery compartment (Fig. 109,1).
- Mount the lamp in the pop-up roof.

13.6 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. Your Globecar dealer has these products. Your Globecar dealer is informed about admissible technical details and carries out the required work correctly.
- The use of accessories, parts and fittings not approved by us may cause damage to the vehicle and jeopardise 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 approved 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.

13.7 Vehicle identification plate

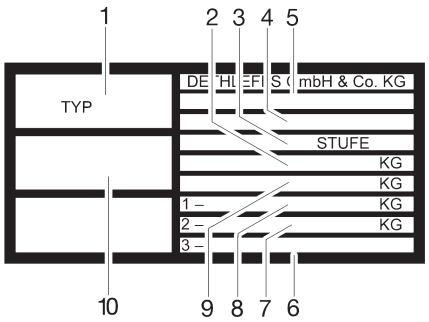


Fig. 110 Vehicle identification plate

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 EC 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. 110) 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

13.8 Warning and information stickers

There are warning and information stickers on and inside the vehicle. Warning and information stickers are for the sake of safety and must not be removed.

▷ Replacement stickers can be obtained from an authorised dealer or the service centre.

14.1 Electrical system

▷ When the living area battery is changed, only use batteries of the same type.

▷ 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 230 V power supply despite connection	230 V automatic circuit breaker has triggered	Switch on 230 V automatic circuit breaker
Starter or living area battery is not charged when operated in 230 V mode	Jumbo flat fuse (40 A) on the starter or living area battery is defective	Replace jumbo flat fuse (40 A) on the starter or living area battery
	Charger module in the transformer/rectifier is defective	Contact customer service
Living area battery is not charged during vehicle operation	Fuse on terminal D+ of the alternator is defective	Replace fuse
	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 in 230 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
	230 V automatic circuit breaker has triggered	Contact customer service
	Jumbo flat fuse (40 A) on the living area battery is defective	Replace jumbo flat fuse (40 A) on 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	Living area battery is discharged	Charge living area battery immediately ▷ Total discharge damages the battery. 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 the regulator tap on the gas bottle immediately. Open doors and windows and ventilate well.
- ▶ In case of a defect in the gas system: Do not smoke; do not ignite any open flames, and do not operate electric switches (light switches etc.).
- ▶ Have the defect in the gas system repaired by an authorised specialist workshop.

Fault	Cause	Remedy
No gas	Gas bottle empty	Changing gas bottles
	Gas isolator tap closed	Open the gas isolator tap
	Regulator tap on the gas bottle is closed	Open regulator tap on the gas bottle
	Outdoor temperature 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	Set thermocouple sensor correctly (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
Heater does not ignite	Temperature sensor at the control unit or remote sensor defective	Remove the connector at the control unit. The heater then functions without the thermostat. Contact the customer service as soon as possible
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" flashes	Operating voltage too low	Charge, have charged or renew the living area battery
Green indicator lamp behind knob is not lit	Fuse on the power supply unit is defective	Replace the fuse on the power supply unit
	Fuse in the electronic control unit has been triggered	Contact customer service
	Living area battery defective	Charge, have charged or renew the living area battery

Fault	Cause	Remedy
Boiler empties, safety/ drainage valve has opened	Temperature at the drainage valve below approx. 3 °C	Switch on the heater. At temperatures below approx. 3 °C the drainage valve opens automatically.
	Battery cut-off switch or main switch on the transformer/rectifier is switched off	Switch battery cut-off switch or main switch on
	Operating voltage under 10.8 V	Charge, have charged or renew the living area battery
	Fuse is defective	Replace fuse on the transformer/rectifier
Safety/drainage valve does not close during switching on	Battery cut-off switch or main switch on the transformer/rectifier is switched off	Switch battery cut-off switch or main switch on
	Operating voltage under 10.8 V	Charge/have living area battery charged
	Fuse is defective	Replace fuse on the transformer/rectifier
	Temperature at the drainage valve below approx. 7 °C	Switch on the heater. When heater is not operating, drainage valve only closes again at temperatures above approx. 7 °C.
Red and green indicator lamps are not lit	Fuse is defective	Replace fuse on the transformer/rectifier
Fan wheel runs loudly or unevenly	Fan wheel soiled	Contact Truma Service

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.

14.5.1 Dometic refrigerator without AES

Fault	Cause	Remedy
Refrigerator does not switch on when operating in 230 V mode	No 230 V power supply	Connect 230 V power supply
	230 V automatic circuit breaker has triggered	Switch on 230 V automatic circuit breaker
	230 V operating voltage too low	Have the 230 V power supply checked by a specialist workshop

Fault	Cause	Remedy
Refrigerator does not switch on when operating in 12 V mode	Jumbo flat fuse (40 A) on the starter battery is defective	Replace jumbo flat fuse (40 A) on 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 a 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

14.5.2 Waeco refrigerator

Fault	Cause	Remedy
The red LED flashes 1 to 5 times (depending on fault) every 4 seconds	Fault in appliance	Contact customer service
Compressor running constantly	Thermostat defective	Contact customer service
Compressor runs long period	Ambient temperature is too high	Improve ventilation
	Fan defective	Contact customer service
Refrigerator does not cut in	Fuse is defective	Replace fuse
	12 V operating voltage too low	Charging the battery
		Have the 12 V power supply checked by a specialist workshop
	12 V power supply switched off	Switch 12 V power supply on

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 cassette is defective	Replace fuse
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 ▷ Spray cans often contain solvents
Storage compartment hinges are difficult to operate/make a grating noise	Storage compartment hinges are not sufficiently lubricated	Lubricate storage compartment hinges with acid-free and resin-free grease

▷ The authorised dealers and service centres are available for any spare parts requirement.

15.1 Weights

- ▶ Every alteration of the original condition of the vehicle can alter road behaviour and jeopardize road safety.
- ▶ Accessories that have been retrofitted increase the mass in ready-to-drive condition, while the payload is reduced by the corresponding amount. 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
Globescout	3300 kg	2885 kg	415 kg
Globescout Style	3300 kg	2885 kg	415 kg
Roadscout	3300 kg	2830 kg	470 kg
Campscout	3500 kg	2995 kg	505 kg
Familyscout	3500 kg	3020 kg	480 kg
Fortscout	3500 kg	2530 kg	970 kg

15.2 Dimensions

- ▷ The outer dimensions of the vehicle are specified in the vehicle documents.
- ▷ All values specified in mm.

Model	Interior height	Bed dimensions		
		Double bed	Single bed	Semi-dinette (spare bed)
Globescout	1905	1960 x 1400/1300	1960 x 700 (with bed widening)	1800 x 880
Globescout Style	1905	1960 x 1400/1300	1960 x 700 (with bed widening)	1800 x 880
Roadscout	1905	1960 x 1320/1170	–	–
Campscout	1905	1900 x 2000/1900	2000 x 800 1900 x 800	1700 x 880
Familyscout	1905	1960 x 1450/1350	1750 x 900	–
Fortscout	1950	1920 x 1300/1220	–	1790 x 880

15.3 Equipment

Model	Living area battery	Holders for 2 gas bottles	Gas pressure regulator	Water tank (approx.)	Waste water tank (approx.)
Globescout	95 Ah	2 x 11 kg	30 mbar	100 l	92 l
Globescout Style	95 Ah	2 x 11 kg	30 mbar	100 l	92 l
Roadscout	95 Ah	2 x 11 kg	30 mbar	100 l	92 l
Campscout	95 Ah	2 x 11 kg	30 mbar	100 l	92 l
Familyscout	95 Ah	2 x 11 kg	30 mbar	100 l	92 l
Fortscout	95 Ah	2 x 11 kg	30 mbar	100 l	80 l