OPERATING MANUAL

WEINSBERG

Dein Urlaub!

www.weinsberg.com

NOTE!

- ☞ Our motorhomes/caravans are always undergoing further development. We reserve the right to make changes to the equipment, design and engineering without notice. This manual is only valid in so far as the motorhome/caravan corresponds to the technology and specifications described within.
  For this reason, ***KNAUS TABBERT GMBH*** cannot accept any claims made on the basis of this Operating Manual.
- ☞ ***KNAUS TABBERT GMBH*** accepts no liability for damage to the motorhome/caravan that results from failure to observe this manual.
- ☞ In addition to this manual, the generally applicable national and local safety regulations and statutory provisions for the use of motorhomes/caravans must be observed.
- ☞ This manual represents the latest version of the motorhome/caravan when going to print.
- ☞ Copying, reproduction and translation, including extracts, are prohibited without the written approval of ***KNAUS TABBERT GMBH***.

EXPLANATION OF THE EQUIPMENT:

The equipment (factory-fitted standard equipment and optional accessories) in our motorhomes/caravans varies from model to model.
For this reason the features of the standard equipment as well as the features of the optional accessories/ extras are described in this Operating Manual as far as an explanation is necessary.
In addition, the Operating Manuals enclosed from the relevant manufacturers should also be observed.

My local ***WEINSBERG*** Service Centre

WEINSBERG
Dein Urlaub!

KNAUS TABBERT GMBH
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Address or stamp of local ***WEINSBERG*** Service Centre

Table of contents

1. Foreword

NOTE!

This Operating Manual is exclusively valid for ***WEINSBERG*** vehicles.

1.1 Introduction

- Congratulations on your new ***WEINSBERG*** vehicle. Your "holiday home on wheels" has been designed and manufactured to give you the maximum possible enjoyment.
- Please read through this Operating Manual carefully before using the vehicle for the first time to ensure you get the very best out of your vehicle. Taking the time to read through the manual will help you to relax and truly enjoy the excellent comfort and high technical standards of your vehicle.
- Please pay particular attention to the safety information.
- In addition to this Operating Manual, you should also familiarise yourself with the separate Operating Manual for the base vehicle as well as the appliances.
- If your vehicle is fitted with optional accessories, observe the accompanying special permits and the related requirements.
- To request maintenance and repair work and if you have any special questions, please call your nearest ***WEINSBERG*** dealer. The staff at your authorised specialist workshop will be happy to advise and assist.
- Only approved spare parts from the original manufacturer can ensure quality and a perfect fit.
- We cannot fulfil our warranty obligations according to the terms of our warranty if maintenance work has been neglected or carried out incorrectly.
- This Operating Manual is only valid in so far as the vehicle corresponds to the specifications described within this document.

We wish you a good journey and lots of enjoyment with your new ***WEINSBERG*** vehicle.

The Management

1.2 Motorhome/caravan data

The following motorhome/caravan specifications are particularly important when making enquiries and ordering spare parts:

Therefore, please enter the model, type, year of manufacture and the chassis number of your ***WEINSBERG*** motorhome/caravan in the fields shown opposite.

Model:	
Type:	
Year of manufacture:	
Chassis number:	

1.3 Rating plate

You will find the details of your motorhome/caravan on the rating plate.

- The rating plate is located in the engine compartment next to the engine cover catch.
- The rating plate of the caravan is located in the gas locker.

NOTE!

This Operating Manual is valid for several ***WEINSBERG*** motorhomes and caravans.
Therefore, some paragraphs may not apply to your vehicle.

2. Safety instructions

This section contains safety instructions that must be followed when using the vehicle.

We explicitly point out that we will not assume any liability for damage and malfunctions resulting from non-observance of this Operating Manual!

2.1 List/explanation of the safety markings used

DANGER!

This safety symbol appears when operating procedures must be observed in full to prevent "**DANGER TO PEOPLE**".

CAUTION!

This safety symbol appears when operating procedures must be observed in full to prevent "**DANGER TO PROPERTY**".

NOTE!

This safety symbol appears with "**TECHNICAL REQUIREMENTS**" that the user must observe.

The safety symbols "**DANGER**" and "**CAUTION**" appear at the beginning of the paragraph(s) to which they refer.

The safety symbol "**NOTE**" may appear at the beginning or end of the paragraph(s) to which it refers.

NOTE!

It is imperative that these safety instructions are observed!

2.2 Safety devices

Particular attention should be paid to the safety devices fitted in your vehicle. These safety devices must always be checked to ensure that they are working correctly. The vehicle must not be used if the safety devices are malfunctioning or not working.

2.3 Safety regulations for participation in road traffic

2.3.1 Participating in road traffic with a caravan

- The vehicle must be officially registered!
- The driver must have an appropriate driving license.
- In Germany, the maximum speed for vehicles with (mobile home) trailers is 80 km/h and up to 100 km/h with a special permit.
- For journeys abroad, find out about the top speeds applicable for cars with caravans beforehand.
- Carrying persons in the vehicle while moving is forbidden according to German traffic regulations! This also applies to pets!
- Two additional extended mirrors are to be attached on the towing vehicle for pulling a caravan!
- Do not exceed the permitted total weight when loading the vehicle!
- Distribute the payload evenly throughout the vehicle (see Section “4.4 Loading the vehicle”)! Ensure that the maximum permitted towing load of the towing vehicle is not exceeded!
- The trailer hitch on the towing vehicle must be type-tested, accepted by the respective national technical inspection authority (such as the TÜV in Germany) and either entered in part 1 or part 2 of the registration certificate, or the attachment must be certified! The maximum permissible drawbar load for the trailer hitch of the towing vehicle must not exceeded (see the label on the trailer hitch). The correct setting of the drawbar load can be found in sections “4.4.1.1 Drawbar load” and “4.4.1.2 Setting the drawbar load”.
- If accessories are fitted, this will alter the dimensions, the total weight and the handling of the unit. In Germany such accessories must be entered in the vehicle documents (TÜV) to comply with the regulations!
- The four support legs and the nose wheel must be wound up completely before setting off!
- Before beginning the journey, check whether the entrance door, toilet door, shower and bath door, the cabinet doors, all room dividers, all drawers and flaps and all windows and roof lights are closed or locked with catches. The refrigerator door must be completely closed and locked with the door latch.

- When parking the vehicle, pull the parking brake of the vehicle on as far as it will go!
- Use wheel chocks if parking on a slope!
- If the vehicle is transported (e.g. by train, lorry), the vehicle must be loaded in the direction of travel!
- Any inspections and repairs on the brake system of the vehicle must be performed by an authorised service centre only!

2.3.2 Participating in road traffic with a motorhome

- The vehicle must be officially registered.
- The driver must have an appropriate driving license.

In Germany, the admissible top speed for motorhomes is:

Within built-up areas ...	up to 3.5 t total weight	50
	above 3.5 t total weight	50
Outside built-up areas ...	up to 3.5 t total weight	100
	between 3.5 t and 7.5 t total weight	80
	above 7.5 t total weight	60
On motorways and expressways	up to 3.5 t total weight	130
	between 3.5 t and 7.5 t total weight	100
	above 7.5 t total weight	80

Tab. 1 Maximum speeds permitted for motorhomes in Germany

- Carrying persons in the living area of the vehicle while it is moving is principally allowed according to German traffic regulations. However, these persons may only use the seats equipped with seat belts. Seats not equipped with seat belts must not be used when moving. Persons facing forwards in the living area of the vehicle must wear the three-point seat belts. Persons facing backwards in the living area of the vehicle must also wear seat belts. For journeys abroad, the regulations in the specific country are to be observed. We recommend always wearing the safety belts.
- Due to the vehicle height you need to be aware of the vehicle's higher vulnerability to side winds during the journey.

- Pay attention to the permissible total weight and the permissible axle loads (see license document) when loading the vehicle.
- Distribute the payload evenly throughout the vehicle (see Section "4.4 Loading the vehicle").
- During the journey all seats must be turned to face the direction of travel and locked in place.
- Before beginning your journey, fold up and lock the support legs (accessories).
- Before beginning the journey, check that the entrance door, toilet door and bath door, the cabinet doors, all drawers and flaps, as well as all windows and roof lights are closed. The refrigerator door must be completely closed and locked with the door latch.
- If accessories are fitted, this will alter the dimensions, the total weight and the handling of the vehicle. Such accessories may have to be entered in the vehicle documents!
- When parking the vehicle, pull the parking brake on as far as it will go!
- Use wheel chocks if parking on a slope.
- In winter, clear the roof of ice and snow before starting the journey.
- Never use snow chains on vehicles fitted with alloy wheel rims!
- If the vehicle is transported (e.g. by train, lorry), the vehicle must be loaded in the direction of travel!

2.3.3 Towing and being towed

CAUTION!

- ☞ To prevent severe damage to the chassis and body, the tow rope, cable or bar must only be mounted to the eyelet at the front when towing the motorhome!
- ☞ Towing other vehicles with the motorhome is only permitted when the motorhome is equipped with a trailer hitch! Otherwise there is a risk of severe damage to the chassis and body.

2.4 General safety instructions

- Take care not to damage the outer skin of the vehicle!
- Collect all operating fluids (e.g. lubricants, used oil and detergents) in suitable containers and dispose of correctly!
- Always ensure there is adequate ventilation when residing in the vehicle. Forced air vents in the roof lights, mushroom vents and in the floor plate in the kitchen area must never be obstructed (e.g. by winter mats) or sealed due to the risk of suffocation from increased CO (carbon monoxide) in the air.
- You must carry with you at all times, read and observe the individual Operating Manual for all installed systems (e.g. gas heater, gas cooker, refrigerator etc.) as well as those for the base vehicle (engine, brakes etc.), if required.

- Note the headroom of the entry door as well as the heights of the driver and passenger doors.
- Close all doors and windows when leaving the vehicle.
- Always carry a high-visibility vest in accordance with the statutory requirements. The high-visibility vest must comply with the standard DIN EN 471:2003+A1 or EN ISO 20471:2013. All warning equipment must be in an operational condition.
- When walking on the roof of the vehicle, avoid point loading (e.g. by kneeling)!
- Only walk on the level areas of the vehicle roof!
- During the journey all seats must be turned to face the direction of travel and locked in place.
- Before beginning the journey, check that the entrance door, toilet door and bath door, the cabinet doors, all drawers and flaps, as well as all windows and roof lights are closed. The refrigerator door must be completely closed and locked with the door latch.

CAUTION!

Damage to the vehicle roof!
Wearing rough-profile footwear when walking on the roof can lead to dents in the outer skin of the vehicle!
☞ Wear soft-soled footwear (such as trainers or leisure shoes) when walking on the roof!

2.5 Safety instructions for fitting rear carrier systems

CAUTION!

Observe and take note of the following after fitting a rear carrier system:
☞ Only carry items that are listed in the respective Operating Manual of the rear carrier!
☞ Follow all instructions when attaching and securing the load to the rear carrier.
☞ Do not exceed the admissible payload capacity of the rear carrier!
☞ Fitting the device affects the axle load distribution as well as the total weight of the motorhome!
☞ Fitting the device affects the axle load distribution as well as the minimum drawbar load of the caravan!
☞ Fitting the device affects the handling and braking response of the vehicle!

NOTE!

In Germany, removable rear carrier systems need not be entered in the vehicle documents.

Only have rear carrier systems fitted by authorised specialist workshops for safety reasons! Your local ***WEINSBERG*** dealer will be happy to direct you to a specialist workshop in your area.

2.6 Safety instructions for the gas system

DANGER!

- ☞ Appliances may not be operated with gas during the journey if a normal gas regulator without crash sensor is installed in the vehicle. During journeys in Germany, the gas bottle shut-off valve must be shut, the hose connection must have been removed from the gas bottle and the cover must have been placed on the gas bottle, except when the vehicle has a DuoControl CS unit or a MonoControl CS unit! These regulations may vary from country to country; therefore obtain information in time before the start of the journey.
- ☞ To avoid damage to persons and/or property, always ensure any gas operated devices installed at a later point in time are equipped for an operating pressure of 30 millibar [mbar].
- ☞ No other additional gas operated appliances should be connected under any circumstances!

☞ Any installations or modifications to the gas system must be carried out by qualified specialists!

☞ The LPG (liquefied petroleum gas) system is inspected by an engineer before it leaves the factory. The gas system must be re-inspected every 2 years and following modification or repair!

☞ To ensure a continuous flow of air in the caravan, the forced air vents in the roof, mushroom vents and in the floor plate must never be covered!

DANGER!

When using the gas cooker you must open either a roof light, a window or the entrance door. Failure to observe this may result in an acute danger of death from lack of oxygen and the possibly creation of odourless and toxic carbon monoxide (CO)!

☞ The caravan must never be heated with radiant heaters and other appliances that take their combustion air from the interior of the caravan!

☞ Before starting up the gas heating system, remove any dirt and snow from the flue and the combustion air inlets to prevent carbon monoxide (CO) in the exhaust gas increasing to an inadmissible level!

☞ The gas locker must be hermetically sealed from the interior of the caravan and there must be a ventilation opening of at least 100 cm^2 on or immediately above the floor which must never be covered!

☞ Gas bottles must be kept in the gas locker where they must be held upright and secured!

☞ Do not store electrical devices (e.g. batteries) and/or devices which form a source of ignition in the gas locker! Do not stow any objects in the gas locker; the gas locker is not a storage compartment!

☞ Electrical leads of any type may only be fed through the gas locker if properly insulated. Do not fasten with clips! Never make any modifications yourself but have them carried out by a qualified specialist!

- ☞ Only use pressure regulators with a safety valve! Other regulators are not permitted! Carefully connect the regulator to the gas bottle (left-hand thread) by hand (do not use spanners, pliers or similar). Use a de-icing system for the regulator with temperatures below 5 °C (e.g. Eis-Ex, optional accessory).
- ☞ When switching on gas appliances (e.g. gas cooker) which are ignited by pressing a button, it must be ensured that this automatically returns to its original position after pressing!
- ☞ The flue pipe of the gas heater must be installed ascending over its complete length and fitted tightly with clamps and, if necessary, with flue pipe supports!
- ☞ The flue pipe must be properly connected and sealed to the gas heater and to the flue, and must not be damaged in any way!
- ☞ Appliances which run on gas must not be used while refuelling or in a garage!
- ☞ Operate the gas system only with propane, butane or a mix of the two gas types! Propane can gasify down to -32 °C, butane only down to 0 °C.
- ☞ Always close the appliance gas tap when you have finished using a gas appliance!
- ☞ If the caravan is not to be used for a long period, close the gas bottle stop valve on the gas bottle, remove the gas regulator from the gas bottle and place the cover on the gas bottle!
- ☞ The regulators and flue pipes must also be checked regularly! Inspections must be recorded on the test certificate according to DVGW Worksheet G 607! The operator is solely responsible for ensuring the checks are carried out!
- ☞ Observe relevant national legislation outside Germany!

DANGER!

If you smell gas or suspect a gas leak, immediately take the following measures:

- ☞ Avoid ignition sources and open flames and do not smoke!
- ☞ Close the shut-off valve on the gas bottle!
- ☞ Provide ventilation through the rooms!
- ☞ Clear the danger area!
- ☞ Inform the camping site superintendent and the fire service if necessary!

NOTE!

The gas system may be put into service again only after inspection by a technical expert!

DANGER!

At altitudes exceeding 1,000 m, malfunctions may occur when igniting gas for reasons of physics. This however does not mean that the appliance is not functioning properly.

2.7 Safety instructions for the electrical system

2.7.1 Starter battery and living area battery

DANGER!

- ☞ To avoid flying sparks and a risk of fire, when **removing** the starter / living area battery, the negative lead (black) should be disconnected first, followed by the positive lead (red).
- ☞ When refitting the starter / living area battery, first reconnect the positive lead (red) and then the negative lead (black).
- ☞ To avoid short circuits and a risk of fire, only insulated battery terminals should be used. Jump leads must also have insulated battery terminals!

2.7.2 Emergency power generator

CAUTION!

- ☞ Prevent damage to the electronics by avoiding voltage deviations when operating the emergency power generator!
- ☞ Pay attention to the manufacturer's specifications when using an emergency power generator!

2.8 Fire safety

2.8.1 Prevention of fire hazards

- ☞ All repairs and modifications to the electrical or LPG systems and equipment must be carried out by trained personnel!
- ☞ Never leave children unattended in the vehicle!
- ☞ Keep flammable materials such as curtains, wardrobe and front panels made of fabric away from heating and cooking appliances and lamps!
- ☞ Never use portable heating or cooking appliances!
- ☞ Cushions and upholstered parts and mattresses of polyurethane foam are inflammable. Do not expose these parts to naked lights and any other direct or indirect sources of high temperature (e.g. welding, cutting, lighted cigarettes, heaters, open light sources)!

2.8.2 Fire fighting

- ☞ It is recommended to always carry a 1 kg dry powder fire extinguisher in the vehicle! This extinguisher must be approved, tested and kept within easy reach.

- ☞ Vehicles licensed for Norway must always carry at least one 6 kg dry powder fire extinguisher. This extinguisher must be approved, tested and kept within easy reach. Familiarise yourself with the operation of the fire extinguisher beforehand.
- ☞ The fire extinguisher must be checked regularly by approved trained personnel (make a note of the inspection date)!

2.8.3 Conduct in case of fire

- ☞ Evacuate all vehicle occupants!
- ☞ Switch off the electrical power supply and disconnect from the mains!
- ☞ Immediately close the gas bottle stop valve!
- ☞ Fight the fire if this is possible without risk!
- ☞ Sound the alarm and call the fire service!
- ☞ Use the fire extinguisher according to the instructions!
- ☞ Be aware of the location and use of emergency exits!
- ☞ Keep emergency exits clear!

2.9 Important notes for the sanitary area

CAUTION!

- ☞ Only use the wet cubicle for showering in conjunction with a shower curtain or a shower door!
- ☞ Only clean the toilet cubicle with a damp cloth!
- ☞ No solvents containing cleaning agents (e.g. acetone) are to be used because these will take the colour out of the wall-covering in the toilet area!
- ☞ Before moving the shower door, adjust the spray head height to make sure that a collision with the shower door is prevented.

2.10 Important note for the kitchen range

DANGER!

Injury risk!
When the vehicle is moving, the unfastened kitchen sink cover may lead to injury if the vehicle suddenly brakes!

- ☞ Before starting your journey, take the kitchen sink cover off and stow away safely!

2.11 Environmental notes

- ☞ Collect all operating fluids (e.g. lubricants, spent oil and detergents) in suitable containers and dispose of properly!
- ☞ Never dispose of waste water of any kind or domestic refuse in the gutter or in the countryside.
- ☞ Always empty the waste water tank and the Thetford unit at disposal facilities on the camp site or at specially designated disposal facilities. Observe town and district regulations and ask about disposal facilities.
- ☞ For the Thetford WC, use small doses of an environmentally friendly and biodegradable WC chemical.
- ☞ Separate domestic refuse into glass, metal tins, plastic and wet refuse.
- ☞ Never dispose of domestic refuse in waste bins in car parks. Ask about disposal facilities in towns and districts.
- ☞ If residing for a longer period in a town or district, look for a specially designated parking place for motorhomes/ caravans. Ask about parking facilities in towns or districts.
- ☞ Turn off the vehicle engine when parked. The engine operating temperature is reached quickest by driving fast.

2.12 Supplementary notes

In addition to this manual, the manuals and brochures of your local automobile club must be observed.
For example:

- Free camping and overnight stays in Europe
- Traffic regulations for outfits and motorhomes in Europe
- Special traffic regulations for camping vehicles

NOTE!

Ask the automobile clubs or similar organisations in your country about the availability of such brochures.

2.13 Safety instructions for using the beds

DANGER!

Do not exceed the maximum load for the beds to rule out any risk of the bed collapsing!

Refer to the right for a list of all beds and their maximum loads.

NOTE!

The figures given for the maximum loads of the individual beds always apply to single occupancy, i.e., with a bed accommodating two people the load is doubled.

Type of bed	Max. load per occupant
Alcove beds	100 kg
Single beds	100 kg
Fixed beds	100 kg
Lifting beds	100 kg
Folding beds	60 kg
Bunk beds	60 kg

Tab. 2 Maximum load of beds

2.14 Safety instructions for the use of underfloor heating elements

CAUTION!

Make sure that the PVC flooring is only covered with a carpet which is suitable for underfloor heating.

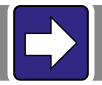
The following safety notes must be observed when operating the underfloor heating:

- ☞ Avoid permanent build-up of heat underneath rubber mats, dog baskets etc.
- ☞ The heating foil installed at the factory may not be damaged by drilling, sharp objects etc.
- ☞ The connection of the heating fabric to other electrical components such as transformers, dimmers etc. must be done by an authorised expert/workshop.
- ☞ The continuous temperature measured on the heating element must not exceed the nominal temperature limit of 45 °C at any point, not even when it is caused by external heating. If this is the case, the heating element concerned may only be operated when the cause has been found and eliminated.
- ☞ Underfloor heating elements must not be allowed to get wet. If it does get wet, it may only be re-operated after completely drying the entire unit and area of use.

NOTE!

No liability will be accepted for any damage caused by failure to observe the operating instructions and these safety notes.

2.15 Disposal/scrapping of the vehicle



NOTE!

- ☞ The vehicle should only be disposed of by specialist firms authorised to carry out this work.
- ☞ When disposing of the vehicle, observe national and regional provisions as well as relevant guidelines/ directives.

3. Description & equipment

3.1 Body (superstructure)

- The vehicle's sidewalls and floor plate are made in the so-called “sandwich construction” with a total thickness of 40 mm. The sandwich consists of a glued and compressed aluminium outer skin, insulating material, wooden panelling and the interior wall. The gluing is a special feature of this type of construction. We use an adhesive which penetrates about 5 mm into both sides of the insulating material, thereby cross-linking the material. The result is not just a surface join but also a homogeneous bond between the components. Combined with precision workmanship, this process guarantees optimum thermal insulation.

- The front part of the body of ***WEINSBERG*** TI-models is covered by the hood section.

- Another special feature of ***WEINSBERG*** motorhomes is the wooden panelling of the sidewalls, both in the contour of the motorhome and in all major cut-outs and in the window and door areas. This panelling adds significantly greater stability to the sidewalls.

- The floor construction of the motorhomes is based on a floor design that is known as a flat-bottom ladder frame. The floor has a total thickness of 40 mm and is insulated with Styrofoam. Thanks to this great insulation thickness, the floor is fully winter-worthy.

3.1.1 Base vehicle (motorhome)

A FIAT “Ducato” chassis is used as the base vehicle for the ***WEINSBERG*** motorhome.

NOTE!

You will find further information about the base vehicle in FIAT's separate operating instructions.

3.1.2 Chassis, axles and brakes (caravan)

- The vehicle is galvanised and therefore extremely resistant to rust. Any spots of rust on the galvanised surface that are caused by external damage (e.g. stone chips) should be repaired immediately. After journeys in the winter on wet, salt-strewn roads, the hot-dip galvanised surfaces should be rinsed off with clean water. To prevent the formation of white rust on the hot-dip galvanised parts, adequate ventilation must be provided when parking or laying up the vehicle (water must be able to drain away). This can prevent the formation of white rust which is however merely a cosmetic flaw.

- The optimisation of the distance between the axles and the trailer coupling as well as the careful alignment of the overrun device and the wheel brake modules ensure the comfortable handling of the vehicle.

- The slider tube or the tension rod in the overrun device supports the ball coupling at the front and takes up the forces of acceleration and downhill travel. The shock absorber in the slider tube absorbs any brake-induced vibration in the slider tube and prevents an undesired application of the vehicle brakes when the towing vehicle slightly decelerates.

- The spring-axle is made of the outer hexagon tube and inner triangular tube which is connected with the swing arms of the wheel suspension. Rubber buffers are mounted between the outer and inner tubes for good shock absorption and instant smoothing out of vibrations. The spring elements are maintenance-free.

- If the towing vehicle brakes during normal travel, the overrun device automatically applies the caravan brakes. The automatic reversing mechanism makes driving backwards simple.

3.2 Gas cylinder compartment

- The gas locker is integrated in the front (caravan), rear area or sidewall of the vehicle and can be locked separately. It is insulated and hermetically sealed from the interior of the vehicle.

3.3 Interior fittings and furniture

- The high-quality furnishings are manufactured entirely from plywood and provided with decoration. A special technique is used to bend curved furniture. Curved furniture sections are made with multiple-bonded wood also provided with a decorative finish. This type of finish ensures that furniture surfaces are simple and easy to keep clean. Some furniture sections are made using a combination of plywood and hard wood.

- Particular attention is also paid to securing the furniture in the interior of all ***WEINSBERG*** vehicles. To enable the absorption of correspondingly large forces, multi-laminated plywood strips are fastened to the sidewalls at certain places. These attachment points are incorporated during manufacture of the sidewalls which ensures a high level of strength.

- All flaps on storage compartments and cupboard doors are fitted with high-quality locks to prevent unwanted opening. All fittings on the flaps and doors used in the vehicle have also been chosen with great care. Here again, only the very best quality is used.

3.4 Beds

- Depending on the model, the vehicle is equipped with permanently installed beds, one lifting bed and one or more seating groups which can easily be converted into sleeping berths at any time. Spacious storage compartments are integrated in the area above the rear bed.

3.5 Kitchen range

- The kitchen range is fitted with a cooker, a sink and a refrigerator. Apart from that, the kitchen range provides plenty of work surfaces and storage space as well as storage compartments below the kitchen range.
- In some models a fume extractor and/or lighting are integrated above the kitchen range.
- Some models are equipped with a gas oven or a microwave oven.

3.6 Seating arrangement (motorhome)

- All forward-facing seats approved for use by persons during the journey are provided with 3-point seat belts and head restraints.
- All rear-facing seats approved for use by persons during the journey are provided with lap belts and head restraints.

3.7 Heating and hot water

- The vehicle is equipped with a combined hot air heating and hot water supply system (TRUMA) or with a hot water central heating system with hot water supply (ALDE).

3.8 Fresh water and waste water

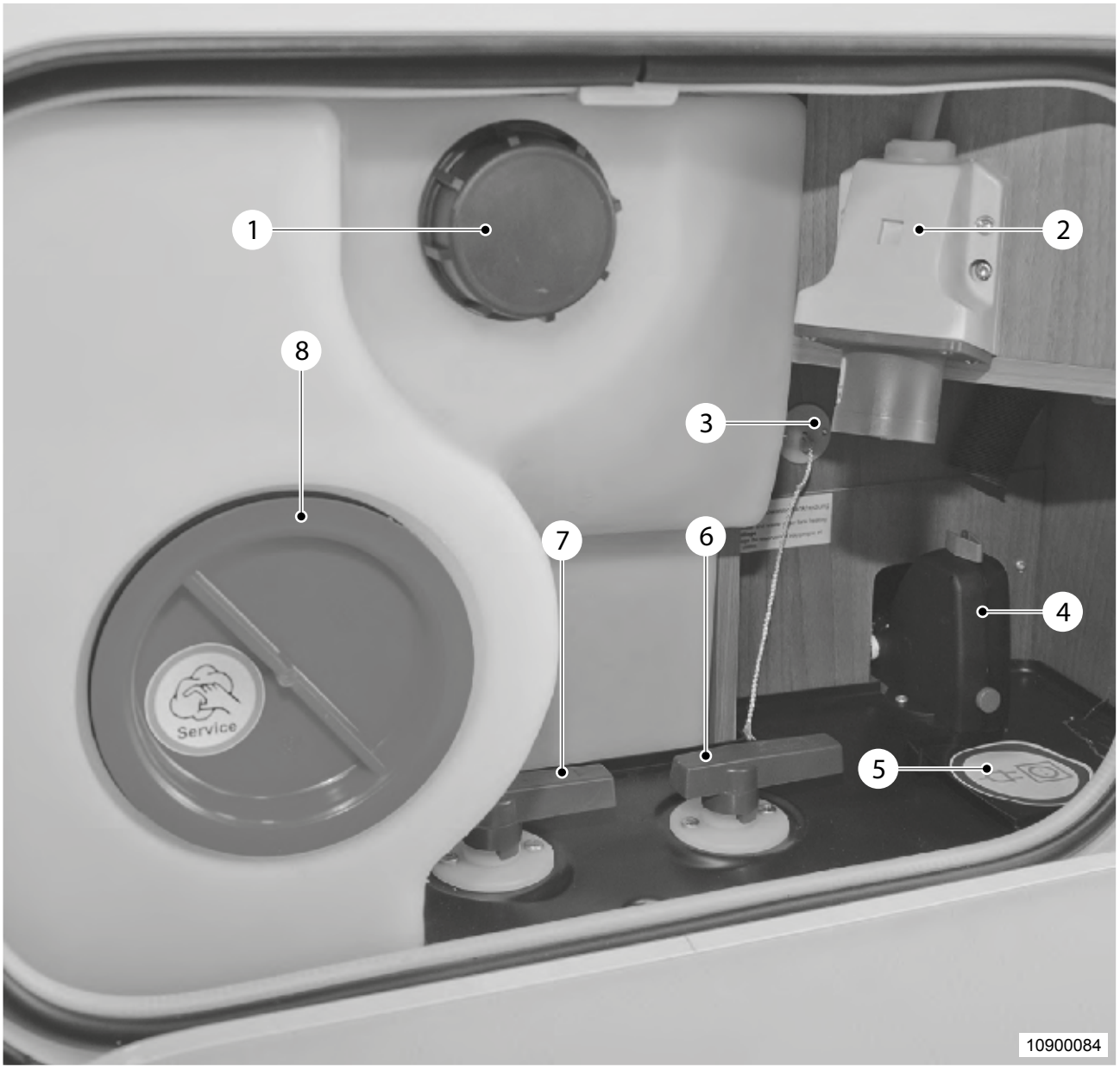
- Some caravans are equipped with an integrated fresh water tank and a wastewater tank.
- A mobile wastewater tank is available as an option for the caravan.
- All motorhomes have a built-in fresh water tank and a waste water tank. Depending on the ground plan, the fresh water tank is located on the left or right in the rear area. The waste water tank is fitted under the floor.

3.9 Sanitary equipment

- All vehicles are equipped with a bathroom unit (toilet, sink, shower).

3.10 Service module

The vehicles contain a service module, depending on their series type and layout. It is located at the side of motorhome and can be accessed via a lockable service hatch.



1 Fresh water tank filling opening
2 CEE socket
3 String-operated shut-off
4 Safety/drain valve
5 Cover cable entry point
6 Drain valve, waste water tank
7 Drain valve, fresh water tank
8 Fresh water tank filling opening

Fig. 1 Service module

4. Before setting off

4.1 Using the vehicle for the first time

DANGER!

Read all safety instructions in this Operating Manual carefully before using the vehicle!

CAUTION!

- ☞ The first time you use the vehicle, check the wheel bolts/wheel nuts are still tight after driving about 50 km and retighten if necessary. The correct tightening torque can be found in Section "22.3 Tyre pressure and wheel bolt tightening torque table".
- ☞ Then check the wheel bolts/wheel nuts for tightness at regular intervals!

4.2 Registering the vehicle

CAUTION!

Never drive the vehicle without a number plate or insurance cover!

Vehicles must be officially registered before they are taken on public roads. Vehicles may not be used without valid insurance.

- ☞ If the vehicle has an EU number plate, no further identification is necessary for driving abroad in Europe. A national sticker is required for trips outside Europe.
- ☞ If the vehicle does **not** have an EU number plate, an additional national sticker is required for all trips abroad.

Attach the national sticker according to the local regulations. In other countries the relevant regulations must be observed.

Contact your nearest ***KNAUS*** dealer about the individual formalities required.

4.3 Towing vehicle and caravan

4.3.1 Towing vehicle equipment

The connecting piece between the towing vehicle and the caravan is the trailer hitch. The trailer hitch must be type-tested and accepted by the respective national technical inspection authority (such as the TÜV in Germany: Technischer Überwachungs-Verein).

CAUTION!

The TÜV acceptance must be entered in the vehicle documentation or the attachment certification must be kept with the documentation!

NOTE!

The acceptance of the respective technical inspection authority (such as the TÜV in Germany) must always be recorded in part 1 and part 2 of the registration certificate because otherwise the operating permit and insurance protection are voided for the towing vehicle and the caravan. This also applies when travelling with the towing vehicle on its own.

4.3.2 Hitching the caravan

1. Apply parking brake on caravan drawbar.
2. Wind the nose wheel down lightly to set it on the ground.
3. Wind up the four support legs.
4. Back slowly up to the caravan with the towing vehicle.
5. Align the tongue with the latch open over the ball head by winding the nose wheel up and down and set the coupler over the ball by moving the nose wheel and rest the coupler in place over the ball.
6. Lock the coupling properly in place.

CAUTION!

The nose wheel should only be raised so that it would touch the ground first if the caravan came unhitched from the towing vehicle while in motion and then tipped forward!

7. Wind up the nose wheel and clamp it in place.
8. Hook the safety cable in the receptacle on the towing vehicle or put it around the coupler of the tongue hitch.
9. Release the parking brake again.

NOTE!

If the hitch coupling should come disconnected while in motion, the safety cable will activate the parking brake on the caravan.

CAUTION!

Ensure that the electrical cables do not drag on the road and that the safety device on the lighting plug connector is latched properly!

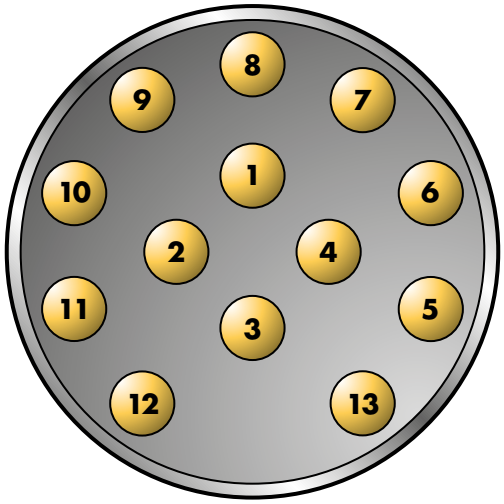
10. Connect the lighting plug connector on the towing vehicle.
11. Check the functionality of the brake lights and turn indicator lights, tail lights, rear fog lamps, clearance lights, marker lights, and identification lights on the caravan by actuating them from the towing vehicle.

NOTE!

Ask your dealer to demonstrate all steps to hitch the caravan properly.

4.3.3 Pin assignment of the Jäger lighting connector system

The 13 pin Jäger lighting connector system has the following pin assignment:



1 Turn indicator left

2 Rear fog light

3 Ground (for circuit contacts 1-8)

4 Turn indicator right

5 Tail light right, contour light right, clearance light right, identification lighting right

6 Brake lights left/right

7 Tail light left, contour light left, clearance light left, identification lighting left

8 Reversing light

9 Power supply +12 V (steady plus)

10 Release power supply refrigerator

11 Ground for contact 10

12 Not used

13 Ground for contact 9

Fig. 2 Pin assignment of the Jäger lighting connector system

4.4 Loading the vehicle

4.4.1 Loading the caravan

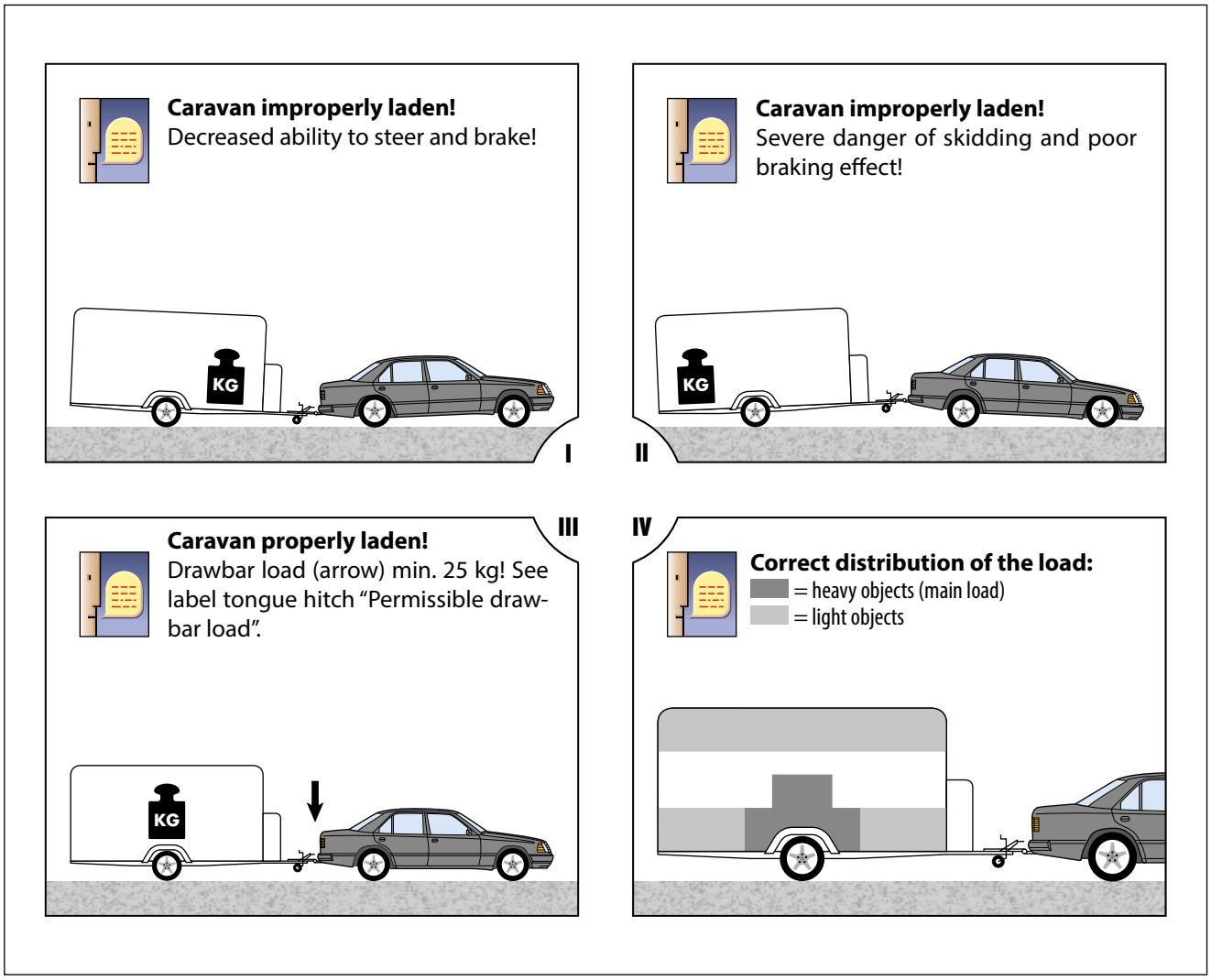


Fig. 3 Loading the caravan

The highest possible load for the vehicle is calculated from the difference between the permitted total weight and the empty weight. More details on calculating the vehicle payload can be found in Section "22.2 Payload".

☞ Make sure that the permitted towing load of the towing vehicle is not exceeded.

☞ Heavy objects (e.g. tableware, cutlery) should be stored above the axles when loading the vehicle.

☞ Light objects (e.g. clothing, laundry) should be kept in the top storage compartments and in the seat compartments.

☞ Objects should be evenly distributed to the left and right of the axle. An uneven load will impair handling of the outfit!

☞ When loading the vehicle ensure that the tongue hitch is pressed down onto the tow ball with sufficient drawbar load. The correct setting of the drawbar load can be found in Section "4.4.1.2 Setting the drawbar load". Do not climb onto the roof and do not load the roof.

CAUTION!

☞ The maximum permitted towing load must be observed (see registration certificate)!
☞ The maximum permitted drawbar load of the towing vehicle must be observed!
☞ The minimum load of 25 kg must be observed according to the StVZO traffic regulations (Germany)!
☞ When installing drawbar carrier systems, make sure you observe the specifications for the attachment and securing of loads, the permitted carrying capacity of the caravan, the change in axle load distribution and the driving/braking behaviour of the unit!

4.4.1.1 Drawbar load

Only a correctly set drawbar load of the combination of towing vehicle and caravan gives the outfit optimum road stability and decisively increases the road safety.

The drawbar load indicates with what force the drawbar of the trailer (caravan) presses down on the trailer hitch of the towing vehicle.

The drawbar load of the combination is orientated to the greatest possible drawbar load of the towing vehicle or the caravan. The lower value applies as the upper drawbar load limit.

☞ The drawbar load must always be set correctly. Use a drawbar load scales positioned vertically below the coupling opening to set the drawbar load. The drawbar of the trailer must be standing horizontally.

☞ The necessary instructions for loading the caravan can be found in Section "4.4.1 Loading the caravan".

☞ Check the drawbar load before every trip.

☞ The specified drawbar loads (see "Permissible drawbar load" sticker on drawbar) and the permissible total weight of the towing vehicle and caravan may not be exceeded.

4.4.1.2 Setting the drawbar load

1. Determine the maximum drawbar load of the towing vehicle (see vehicle documents, rating plate, drawbar load sticker).

2. Determine the maximum drawbar load of the caravan (see vehicle documents, rating plate, "Permissible drawbar load" sticker).

3. Set the drawbar load on the caravan to the smaller of the two values by "intelligent loading". This value should be exploited to the maximum however.

4. The smaller value of the specified max. drawbar load of the towing vehicle or the caravan must not be exceeded! The minimum drawbar load of 25 kg must always be ensured!

4.4.2 Loading the motorhome

CAUTION!

- ☞ The permitted total weight (see registration certificate part 1 and part 2) and the permissible axle loads (see vehicle documents) must not be exceeded through the payload!
- ☞ There is a danger of tyres puncturing if the permitted total weight is exceeded and the tyre pressure is too low. The vehicle could veer out of control!
- ☞ All additional weight carried beyond the information in Section “22.2 Payload” reduces the maximum payload!

In order not to detrimentally affect the handling of your vehicle, take care when loading that the centre of gravity of the payload is immediately above the vehicle floor or as close to the vehicle floor as possible.

NOTE!

The vehicle document only specifies the permitted total weight, not the inherent weight of the vehicle. Therefore, we recommend weighing the vehicle on a public weighbridge before starting the journey!

☞ Ensure that the payload is distributed evenly between the left and right sides of the vehicle!

☞ Secure heavy items (e.g. crockery, cutlery, jars etc.) on the floor or on low storage surfaces whose doors do not open in the direction of travel, and ensure they cannot slide about!

☞ Place lighter objects (e.g. clothes etc.) in the upper storage areas!

☞ When walking on the roof of the vehicle, avoid point loading (e.g. by kneeling)!

☞ Only walk on the level areas of the vehicle roof!

DANGER!

Danger of slipping and falling!
Lack of care when stepping on a wet or ice-covered vehicle roof may result in falling off!
- ☞ When the vehicle roof is wet or covered in ice, step on in only if absolutely necessary, and using the utmost care!

CAUTION!

Damage to the vehicle roof!
Wearing rough-profile footwear when walking on the roof can lead to dents in the outer skin of the vehicle!
- ☞ Wear soft-soled footwear (such as trainers or leisure shoes) when walking on the roof!

☞ The bike rack (accessory) may only be used to carry bikes. The maximum load of the bike rack is 50 kg.

- ☞ The roof bars (optional accessory) may only be used to carry roof loads, e.g. surfboard, rubber dinghies or light canoes!
- ☞ The maximum roof load of the motorhome is 75 kg.
- ☞ Roof loads must be tied down securely, do not use bungees!
- ☞ Always note the increased total height of the vehicle when the roof bars are loaded!
- ☞ See Section "22.2 Payload" to calculate the payload!

4.5 Brake system

DANGER!

Any defects in the brake system must be immediately repaired by a specialist workshop!

Ensure the vehicle's brake system is operating correctly before commencing any journey.

Test the brakes while driving at moderate speed and ensure ...

- ◆ the vehicle's brake system works correctly,
- ◆ the wheels brake evenly,
- ◆ the vehicle does not pull to one side.

4.6 Tyres

DANGER!

- ☞ Damaged tyres are a hazard and must be attended to immediately! There is a possibility of losing control of the vehicle if a tyre blows.
- ☞ When the vehicle is fully laden, tyres may burst if not inflated to the correct pressure. You may lose control of the vehicle as a result!
- ☞ Always check tyre pressures with cold tyres.
- ☞ The minimum statutory depth of tread in the respective country must be complied with!

- ☞ Snow chains should only ever be fitted to wheels with steel rims. Never fit snow chains on wheels with alloy rims.
- ☞ Check all tyre pressures (including spare wheel) before every journey and adjust as necessary. If you cannot avoid driving with excessively low tyre pressure, you should not exceed a maximum speed of 20 km/h.
- ☞ See Section "22.3 Tyre pressure and wheel bolt tightening torque table" for the correct tyre pressure.
- ☞ The tyre pressure of the rear tyres of the vehicle towing the caravan should be 0.2 bar higher than normal because the load of the caravan's drawbar puts additional weight on the rear tyres.

- ☞ Check the profile depth of the tyres regularly. The more worn the tread, the greater the risk of aquaplaning.
- ☞ Tyres may deflate in the areas in contact with the ground over longer stationary periods when tyre pressures are too low or tyres can gradually deflate. You should therefore inflate tyres to 0.3 bar above the pressures shown in the Table if the motorhome is to be parked for any length of time.
- ☞ If a trailer is used, increase the tyre pressure of the rear tyres of the towing vehicle by 0.2 bar compared to normal because the additional weight of the trailer on the hitch also affects the weight on the rear tyres.
- ☞ Inadequate tyre pressure can cause tyres to heat up excessively and damage them internally. **At high speeds this can cause the tread to separate from the tyre and can even lead to a tyre blowing!**
- ☞ Subsequently correcting the tyre pressure will not cure hidden tyre damage!
- ☞ Kerbs should only be negotiated slowly and at right angles where possible. Avoid driving over steep and sharp-edged kerbs. Hidden tyre damage can be caused if you drive over kerbs or sharp objects such as stones violently or at too narrow an angle. Such damage will have a delayed action! **An accident may be caused by a tyre blowing at high speed!**
- ☞ Regularly check the tyres for damage, e.g. sharp objects sticking in the tyre, holes, cuts, cracks and blisters in the tyre wall. Any object lodged in the tyre may also damage the tyre interior. Damage should always be examined by a qualified specialist to see whether it can be repaired. A damaged tyre must be replaced if it cannot be repaired or if successful repair is in doubt. **A damaged tyre may blow!**
- ☞ Never use tyres if you do not know their 'history'. All tyres age even if they are used little or not at all. We recommend replacing the tyres (plus spare wheel!) on your vehicle when they are 6 years old. After 6 years, even the own spare wheel is only to be used in emergencies and with extreme caution!
- ☞ The tread depth must be checked at regular intervals. The more worn the tread, the greater the risk of aquaplaning.
- ☞ To prevent tyre wear on only one side, empty runs and runs with excessive total weight should be avoided.

4.7 Setting the vehicle seats (motorhome)

DANGER!

- ☞ Vehicle seats should only be adjusted when the vehicle is stationary!
- ☞ Before starting the journey, ensure both vehicle seats are pointing in the direction of travel and the rotary unit is correctly locked!

CAUTION!

When putting on the seat belt, ensure it passes **inside** the armrest!

NOTE!

For instructions on how to adjust the vehicle seats integrated in the base vehicle please refer to the manufacturer's separate manual.

4.7.1 Seat: Forward-backward adjustment

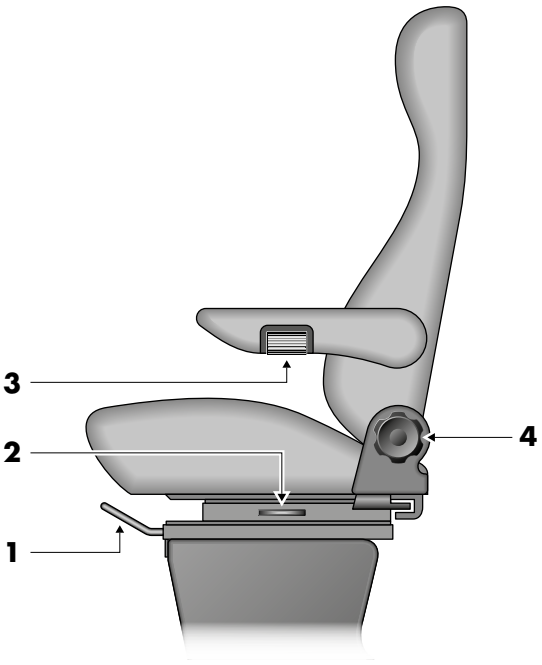
1. Pull up and hold the unlocking lever (Fig. 4, item 1).
2. Move the vehicle seat into the desired position.
3. Release the lever to automatically lock the seat rail in the desired position.

4.7.2 Seat: Rotary adjustment

DANGER!

Before starting the journey, ensure both vehicle seats are pointing in the direction of travel and the rotary unit is correctly locked!

1. Pull up and hold the unlocking lever (Fig. 4, item 2).
2. Rotate the vehicle seat into the desired position.
3. Release the lever to automatically lock the seat rail in the desired position.



1 Forward-backward adjustment
2 Rotary adjustment
3 Armrest adjustment
4 Backrest adjustment

Fig. 4 Control elements on the pilot seat

4.7.3 Seat: Backrest adjustment

Turn handwheel (Fig. 4, item 4) backwards or forwards to adjust the backrest backwards or forwards.

4.7.4 Pilot seat: Armrest adjustment

1. To move up the armrest, swivel up with light pressure.
2. Use rotary unit (Fig. 4, item 3) to set the armrest height.

4.8 Child's seat

4.8.1 Universal child's seat

DANGER!

Risk of injury!
If the child seat is not correctly fastened to the passenger seat, there is an increased risk of injury for the child.
- ☞ Deactivate the passenger air bag!
- ☞ Move the passenger seat backward as far as possible!
- ☞ Adjust the passenger seat as high as possible!

Group	Seat position	
	Passenger seat	In the back, facing in direction of travel
0 up to 10 kg	U*	U
0+ up to 13 kg	U*	U
1 9-18 kg	U*	UF
2 15-25 kg	U*	UF
3 22-36 kg	U*	UF

U: Suitable for universal retention systems that are fastened by means of the safety belt for adults and that are approved for use for the age group stated.

UF: Suitable for forward-facing universal retention systems that are approved for use for the age group stated.

***:** See the Danger Note above the table.

Tab. 3 Child seat fastening Universal child seat

NOTE!

You will find further information in the separate Operating Manual supplied by the manufacturer of the base vehicle.

4.8.2 ISOFIX child's seat

CAUTION!

Damage to the child's seat!
When a child's seat fixed by the toptether system is mounted or dismounted, the seat may get damaged.
- ☞ When mounting or dismounting a child seat fixed by the toptether system, observe the instructions provided by the child seat manufacturer!
- ☞ Use toptether system child seats only on seats equipped with retaining eyelets!

NOTE!

- ☞ The permitted seat positions for the ISOFIX child seat are marked by means of sew-on badges.
- ☞ You will find further information in the separate Operating Manual supplied by the manufacturer of the base vehicle.

Group	Child's seat size class	Seat position		
		Passenger seat	In the back, rear-facing	In the back, facing in direction of travel
0 up to 10 kg	**E**	⛔	⛔	⛔
0+ up to 13 kg	**E**	⛔	⛔	⛔
	D			
	C			
1 9-18 kg	**A**	⛔	⛔	IUF
	B			
	B1			
	C			
	D			
2 15-25 kg		⛔	⛔	IUF
3 22-36 kg		⛔	⛔	IUF

IUF: Suitable for forward-facing ISOFIX universal retention systems that are approved for use for the age group stated.

⛔: ISOFIX connection points that are **not** suitable for this weight class and/or size class.

Tab. 4 Child seat fastening universal child's seat

4.9 Electrical vehicle lighting

Before commencing any journey, it is advisable to check all lights on the inside and outside of the vehicle to ensure they work properly, and immediately replace any defective bulbs.

You should familiarise yourself with the procedure for changing the various bulbs before commencing your journey.

4.9.1 Electrical lighting (caravan)

	Lighting device	Lamp	Electrical rating
OUTSIDE THE CARAVAN	Brake light/tail light left/right	LED	12 V
	3. Brake light	LED	12 V
	License-plate light	Tubular lamp	12 volt/5 watt
	Clearance light left/right	LED	12 V
	Contour light left/right	Bulb	12 volt/5 watt
	Side marking light	LED	12 V
	Indicator light	LED	12 V

	Lighting device	Lamp	Electrical rating
INSIDE THE CARAVAN	Kitchen light	LED	12 volt/2 watt
	Awning Light	LED	12 V
	Front bed lamp	LED	12 volt/2 watt
	Rear stowing cabinet spot left/right	LED	12 volt/2 watt
	Ceiling light	LED	12 volt/2 watt
	Bathroom light (toilet cubicle)	LED	12 volt/2 watt

Tab. 5 Lighting equipment outside and inside the caravan

4.10 Obtaining replacement keys

Should you ever need to obtain replacement keys for your vehicle, make sure to have the following information available:

	Key for	Necessary for procuring the key	Obtainable from:
Caravan	Towing vehicle	See separate manual from the manufacturer	–
	Caravan	Serial no., chassis number, second key or key number	***WEINSBERG*** Service Centre
Motorhome	Base vehicle FIAT, Peugeot	Code no. or code card Second key Chassis no.	FIAT authorised workshop, Peugeot authorised workshop
	WEINSBERG Body	Serial no. Chassis no. Second key or key no.	***WEINSBERG*** Service Centre

Tab. 6 Obtaining replacement keys

4.11 Checklist

Check your vehicle according to Section "24.1 Checklist before setting off" before you set off.

CAUTION!

Stop after driving a few kilometres and check once again that the payload inside the vehicle is securely tied down and cannot slip!

5. During the journey

5.1 During the journey (caravan)

5.1.1 Driving with the unit

DANGER!

- In Germany, according to the StVZO traffic regulations, no person may remain in the caravan while it is moving!
- This also applies to pets, which are only allowed in the towing vehicle while driving!
- In Germany, the maximum speed for vehicles with (mobile home) trailers is 80 km/h and up to 100 km/h with a special permit.
- For journeys abroad, find out about the top speeds applicable for cars with caravans beforehand.

CAUTION!

When driving into courtyards, tunnels etc. as well as when manoeuvring, it is important that you correctly judge the height, width and length of the outfit! The dimensions of your caravan can be found in your vehicle documents.

- Always use anticipation and consideration when driving in traffic and adapt your driving to the requirements of driving an outfit.
- Never drive faster downhill than you would uphill.
- Consider side winds when driving over bridges and take into account that turbulence can influence the vehicle when overtaking trucks. In either situation, you may have to counter-steer quite heavily.
- Do not underestimate the length of your outfit.
- Remember to change gear in good time.

NOTE!

If an AKS track stabilisation is also to be attached, have it installed by an authorised service centre according to the manufacturer's specifications! Your ***WEINSBERG*** dealer will be glad to provide you with more information on this.

5.1.2 Reversing with the unit

- The caravan is equipped with an automated reverse assistance system which makes it easier to manoeuvre the caravan into position. Reversing is immediately possible.
- The slightest forward movement of the vehicle makes normal braking possible again.
- When manoeuvring in reverse, a guide should be used.

NOTE!

- ☞ If you lack experience in reversing with a trailer, we recommend practising with the outfit in an empty parking lot or a suitable open area. Practice makes this much safer.
- ☞ Unless specifically indicated otherwise, the StVO traffic regulations (Germany) still apply there!

When reversing with the outfit, the following principles must always be followed:

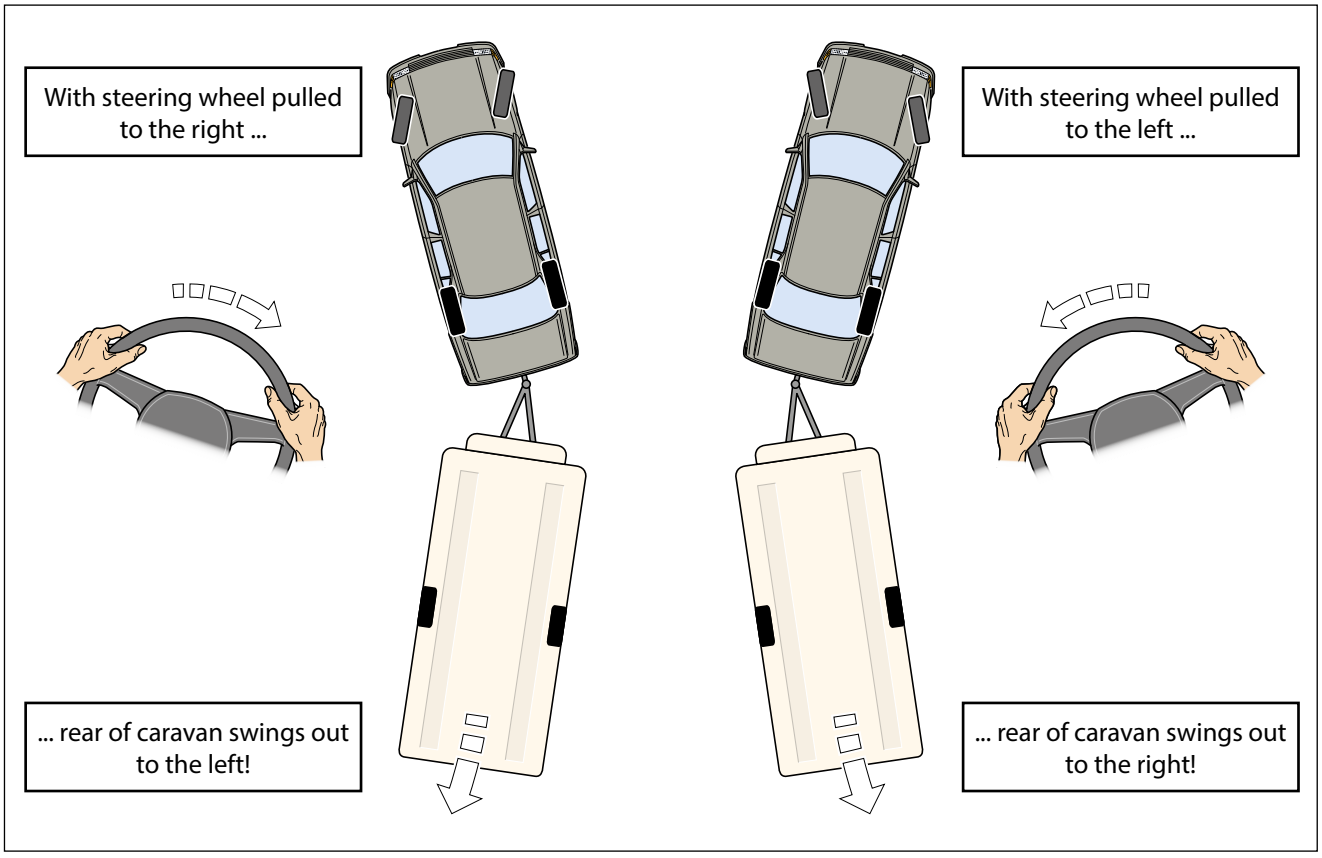


Fig. 5 Reversing with the unit

5.2 During the journey (motorhome)

5.2.1 Driving your motorhome

DANGER!

- ☞ Carrying persons in the living area of the vehicle while moving is principally allowed according to German traffic regulations. However these persons may only use the designated seats.
- ☞ Persons sitting in the living area of the vehicle and facing forward, and the driver and front passenger, must wear their 3-point seat belts during the journey!
- ☞ Persons facing backwards in the living area of the vehicle must also wear seat belts.
- ☞ The maximum speed for the vehicle is shown in the vehicle documents.

NOTE!

Always drive attentively and with consideration for other road users.

CAUTION!

When driving into courtyards, tunnels etc. as well as when manoeuvring, it is important that you correctly judge the height, width and length of the vehicle! The dimensions of your vehicle can be found in your vehicle documents.

Follow these useful hints when driving your motorhome:

- ☞ Never drive faster downhill than you would uphill.
- ☞ Consider side winds when driving over bridges and take into account that turbulence can influence the vehicle when overtaking trucks. In either situation, you may have to counter-steer quite heavily.
- ☞ Due to the vehicle height, you need to be aware of the vehicle's higher vulnerability to side winds during the journey.
- ☞ Do not underestimate the length of the vehicle.
- ☞ Remember to change gear in good time.
- ☞ Avoid jerky steering movements.

5.2.2 Refuelling the motorhome

DANGER!

- ☞ When refuelling the vehicle, make sure all gas-fired appliances in the living area are turned off. Explosion hazard!
- ☞ Fire, naked flames and smoking are strictly forbidden. Explosion hazard!
- ☞ It is forbidden to use a mobile phone when re-fuelling. Explosion hazard!
- ☞ You should also observe any local regulations governing the use of pumps at filling stations!

CAUTION!

Your vehicle runs on diesel fuel only!

The tank filler neck (see illustration opposite) is located on the left behind the driver's door.

Fig. 6 Tank filler neck

NOTE!

You will find further information about refuelling the vehicle in the separate operating instructions provided by FIAT.

6. After the journey

6.1 After the journey (caravan)

6.1.1 Unhitching the caravan

1. Push wheel chocks under the wheels.
2. Wind the nose wheel down to the ground.
3. Fully apply the parking brake.
4. Disconnect the 13 pin lighting connector and the safety cable.
5. Open the coupler of the ball head.
6. Raise the caravan off the ball.

6.1.2 Setting up the caravan

CAUTION!

The support legs must not be used for levelling the caravan under any circumstances! The legs are only for support; the main load must be carried by the wheels!

NOTE!

The parking brake of the caravan must be released in order to manoeuvre the caravan!

1. Align the caravan horizontally in the direction of travel (e.g. spirit level). Adjust using the nose wheel.
2. Check whether the caravan is also level across the direction of travel (e.g. spirit level). Do not adjust using the nose wheel in this case but insert blocks under the wheels.

   On slopes, the wheel on the downhill side should be blocked up until the caravan is horizontal. Use the jack in this case. If an awning is used, the wheel on the uphill side should be dug out if possible.
3. Wind the front and rear support legs down and set firmly on the ground. If the ground is soft, lay support plates under the legs.
4. Fully apply the caravan parking brake.

6.1.3 Mounting the awning eyelets

CAUTION!

Damage to the labels!
Using awning eyelets with suction cups will damage the labels on the outside of the vehicle.
☞ Only use awning eyelets that are fixed with screws.

6.1.3.1 Mounting the awning eyelets to the outer skin of the caravan

1. Fix the awning eyelets with self-tapping screws Ø 3.9 x 19 mm V2A as shown in Fig. 7 and seal with Terostat 2729 sealing compound.
2. Line **A** (straight awning rail) serves as a measuring base for the front and rear awning eyelets.
3. Attach the front awning eyelet 320 mm and the rear awning eyelet 180 mm below line **A**.
4. Attach the awning eyelets » ⊗ « in between, 3 or 5 pieces depending on the size of the awning, at an equal distance of approx. 5 mm below the awning rail; attention must be paid to the laying of the awning light cable.

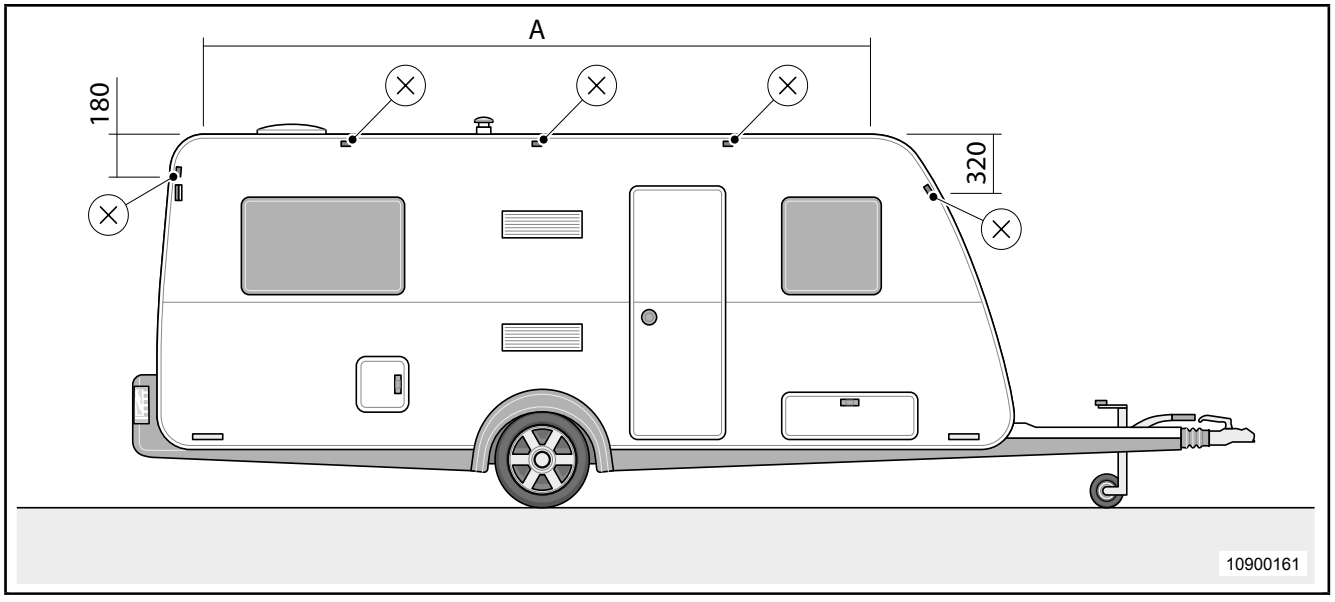


Fig. 7 Mounting the awning eyelets

6.1.3.2 Putting up the awning

The following points must be observed when putting up the awning:

1. Select flat ground for putting it up.
2. Position the caravan horizontally (see Section 6.1.2).

3. Do not over-tension the awning (tent fabric) – it should just be "straight".
4. Loosen the awning ropes without touching the awning when it rains.
5. Keep oil, grease and resin away from the awning fabric.
6. Regularly remove the water sack (areas of the awning filled with rain water) when it rains to relieve the load from the awning and the poles.
7. Attach additional guy ropes in storms.
8. Mount hurricane supports on larger awnings.
9. Clean the awning well before stowing (see Section "19.5 Cleaning and care of the awning or the canvas blind") and grease the poles lightly. Store the awning and poles dry.

NOTE!

- ☞ The awning size of the caravan is the yardstick for an optimum fit of the awning (see data "Size of awning" in the technical data).
- ☞ Never store the awning before it is completely dry to avoid the formation of mould and staining (see Section "19.5 Cleaning and care of the awning or the canvas blind").

6.1.4 Mounting the sun roof

6.1.4.1 General information on mounting the sun roof

The sun roof serves only as protection against the sun and is not intended as rain protection.

☞ Do not take the sun roof down when it is raining or in storms to avoid damage to the vehicle caused by the poles.

NOTE!

The manufacturer's warranty is voided when the sun roof is not used as intended or not set up properly.

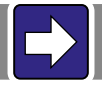
6.1.4.2 Mounting the sun roof

CAUTION!

Damage to the labels!
Using awning eyelets with suction cups will damage the labels on the outside of the vehicle.
- ☞ Only use awning eyelets that are fixed with screws.
- ☞ Observe the assembly instructions in Section "6.1.3 Mounting the awning eyelets" when attaching the clevis type eyelets of the awning!

1. Lay the poles out as shown in the illustration provided.
2. Thread the sun roof into the rail on the vehicle and align it to the centre of the vehicle (use a felt-tipped pen, for example, to mark the position on the vehicle and the sun roof (inside the piping) after putting up for the first time).
3. Push the poles into the tongues of the sun roof and align them.
4. Align the sun roof with the poles, pull taut and fix into the ground with pegs.
5. Attach additional guy ropes. If strong winds or rain is expected, more ropes must be used accordingly. When it rains, make sure that no water sack collects, this must be removed if necessary.

See Section "19.6 Cleaning and care of the sun roof" for cleaning and maintenance of the sun roof.



NOTE!

You will find further information in the separate Operating Manual supplied by the manufacturer.

6.2 After the journey (motorhome)

6.2.1 Parking brake

DANGER!

When parking the vehicle, apply the parking brake (handbrake) by pulling up as far as it will go, especially on inclines.

6.2.2 Setting up the motorhome

1. Apply the parking brake as far as it will go.
2. Align the vehicle horizontally in the direction of travel (e.g. with a spirit level). Only adjust by blocking up the wheels as necessary.
3. Align the vehicle crosswise to the direction of travel (e.g. with a spirit level). Adjust by blocking up the wheels as necessary.

6.2.3 Setting up the motorhome using the support legs (optional accessory)

6.2.3.1 Extending the support legs

1. Place wheel nut socket wrench on hexagon nut. Turning the wrench in clockwise direction, disengage the support legs from the locking bolt and fold the legs down.
2. Press the adjusting lever to adjust the support legs to the correct length.
3. Continue to turn the wheel nut socket wrench in clockwise direction until the supporting legs make full contact with the ground.
4. Align the vehicle in direction of travel and crosswise to the direction of travel by individually adjusting the supporting legs, and check, e.g. using a spirit level.

6.2.3.2 Retracting the support legs

1. Place wheel nut socket wrench on the hexagon nut of corresponding support leg and slightly raise the support leg from the ground by turning in anti-clockwise direction.
2. Pressing the adjusting lever, telescope the support leg.

CAUTION!

The bore in the ground plate of the support leg must engage fully with the locking bolt!

3. Fold the support leg up, align the bore in the ground plate of the support leg with the locking bolt and clamp the support leg by turning the wheel nut socket wrench in anti-clockwise direction.

6.2.4 Awning

6.2.4.1 General notes on the awning

The following points should be remembered when using the awning:

- ☞ Do not place the awning on the weather side.
- ☞ Do not pull the awning cover too tight (tent fabric) – it should just be 'straight'.
- ☞ Keep oil and grease away from the tent fabric.
- ☞ Avoid water collecting on the awning.
- ☞ Never wash the vehicle with the awning extended.
- ☞ If you do not intend to use the awning for some time, clean it thoroughly and lightly grease the mechanical parts.

NOTE!

- ☞ Always pack the awning away only when thoroughly dry to avoid possible mould and staining (see Section "19.5 Cleaning and care of the awning or the canvas blind").

6.2.4.2 Extending the awning

CAUTION!

- ☞ Once the awning has been extended approx. 1 meter or more, it must be supported using the built-in support feet!
- ☞ When extending the sun awning and using the support feet, make sure that they are always at right angles to the ground!

1. Set the awning handle to the required length and fit into the awning mechanism.
2. Extend the awning by about 1 meter by turning the handle anticlockwise.
3. Open out both awning support legs and adjust to the correct length.
4. Now extend the awning fully while adjusting the support legs so that they are always at right angles to the ground.
5. Reverse the process to retract the awning.

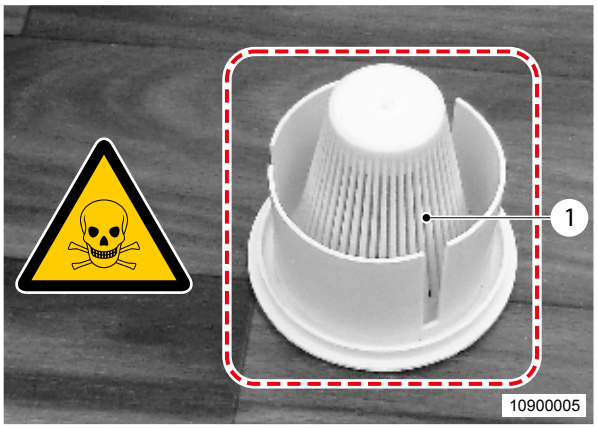
7. Living

7.1 Ventilating the vehicle

DANGER!

Under no circumstances should the integrated safety ventilation openings (forced air vents in the roof lights, mushroom vents and the floor plate in the kitchen area) be obstructed. There is an increased risk of suffocation due to the increased carbon monoxide (CO) content!

- Providing adequate and correct ventilation for your vehicle is the best way of ensuring optimum conditions of living comfort.
- To ensure a continuous flow of air in the vehicle, the forced air vents in the roof, mushroom vents and in the floor plate must never be covered!

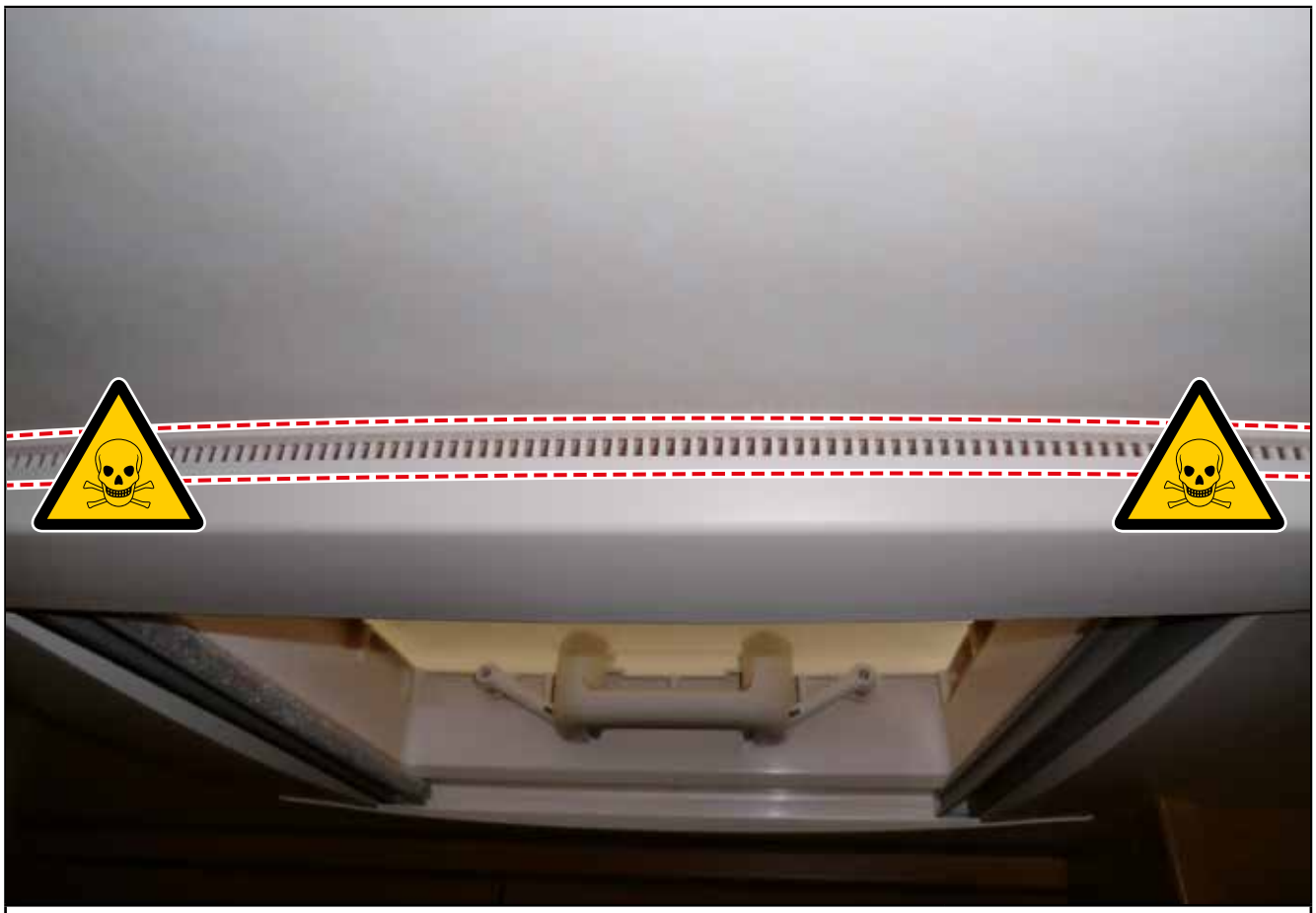


Never cover the area indicated!

1 Floor vent

Picture may differ to your model

Fig. 8 Forced ventilation at front



Never cover the area indicated (all round)!

Picture may differ to your model

Fig. 9 Forced ventilation in roof light

- Cooking and wet clothing releases water vapour.
- Every person releases up to 35 grams of water into the atmosphere each hour just by breathing. This is why your vehicle must be ventilated via the windows and roof lights depending on the level of humidity.
- See Chapter "17 Winter camping" for further information.

NOTE!

Condensation can form under the upholstery during the night. Cushions (expanded foam) should be placed upright and aired to remove any moisture.

NOTE!

Cushions and mattresses absorb moisture. Therefore, cushions and mattresses must be ventilated regularly. Remove the foils. When cushions or mattresses are covered in foil, the moisture cannot be released to the environment. Mould caused by condensation will form.
Damage caused by lack of ventilation is not covered by the warranty.

Condensation may also form inside the acrylic glass double-glazing in extreme weather conditions. This process is quite normal and can be explained as follows:

Acrylic glass (the material from which the windows are made) is an organic material and therefore porous, i.e. moisture and/or gases can pass through.

With a double acrylic glass panel, extreme weather can change the air conditions in the gap between the two panes of glass so that different conditions bring about a state of equilibrium.

Put more simply, this means that the air between the two panes tries to match the conditions of the atmosphere surrounding it. If the surrounding atmosphere is continually humid, then the space between the two panes of glass also tends to become more humid.

This process can be reversed - in dry conditions the air in the gap also tends to become drier. As the temperature rises again, the condensation evaporates and the glass demists.

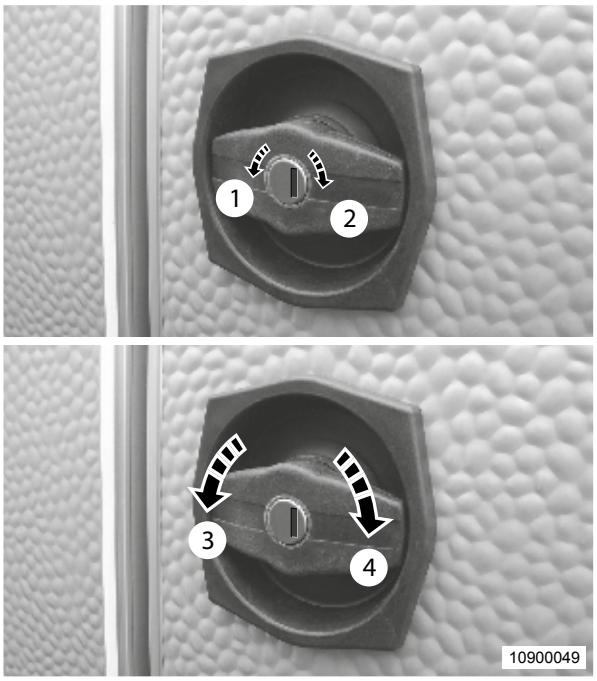
7.2 Opening/closing the door from outside (CaraOne)

Opening:

1. Insert the key and turn anticlockwise (Fig. 10, item 2) to position » OPEN «. The key jumps back to its initial position.
2. Remove the key.
3. Turn the door handle clockwise (Fig. 10, item 4) to position » OPEN « and open the door.

Closing:

1. Close the door, insert the key in the door lock and, with slight pressure against the door, turn anticlockwise (Fig. 10, item 3) to position » CLOSED «. The key jumps back to its initial position.
2. Remove the key.



1 Door lock OPEN
2 Door lock CLOSED
3 Door handle OPEN
4 Door handle CLOSED

Fig. 10 Opening/closing the door from outside

7.3 Opening/closing the door from inside (CaraOne)

The illustration shows the door handle in locked position.
The dashed outline shows the door handle in neutral position.

Opening:

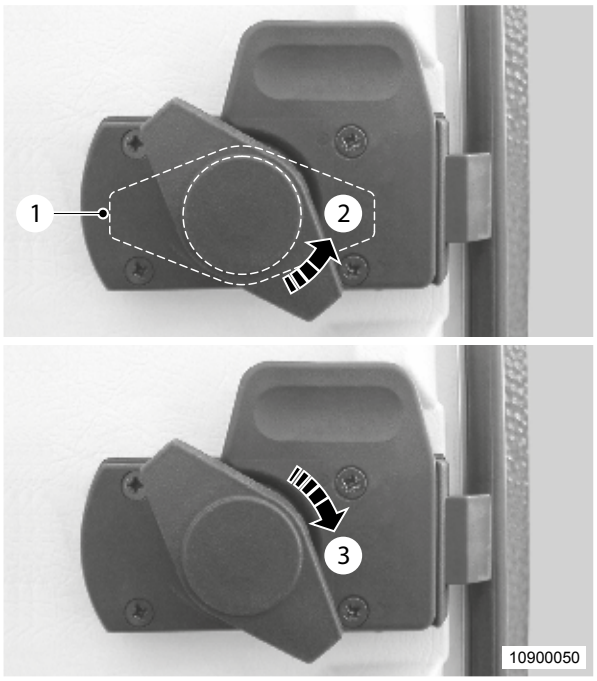
1. Turn the door handle anticlockwise (Fig. 11, item 2) to position » OPEN « and open the door. The door handle snaps back into neutral position.

2. Pull the door to close it.

Locking and unlocking:

1. Turn the door handle clockwise by approx. 60° (Fig. 11, item 3) to position » OPEN «.

2. Turn the door handle back into neutral position to unlock it (Fig. 11, item 1).



1 Door handle in neutral position
2 Door handle OPEN
3 Door handle CLOSED

Fig. 11 Opening/closing the door from the inside

7.4 Central locking

The driver and passenger doors as well as all entrance doors can be locked and unlocked centrally using a remote control in the ignition key.

CAUTION!

Risk of injury when the metal insert springs out!

- ☞ Only press the unlock knob of the ignition key when the key is far enough away from the body, especially from the eyes and objects that can be damaged.
- ☞ Never let children play with key unattended.

7.4.1 Ignition key with three buttons

The following functions are available:

1 Metal insert of ignition key
2 Unlock knob for ignition key
3 Unlock entrance doors
4 Lock entrance doors

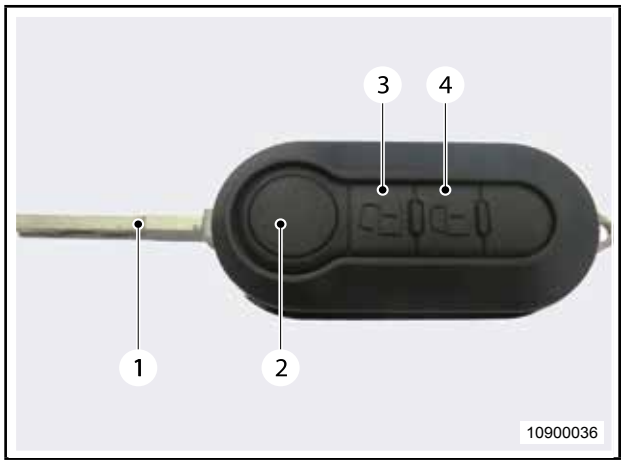


Fig. 12 Remote control for central locking (three buttons)

7.4.2 Ignition key with four buttons (CaraBus)

The following functions are available:

1 Metal insert of ignition key
2 Unlock knob for ignition key
3 Unlock front doors
4 Lock all entrance doors
5 Unlock storage compartment doors

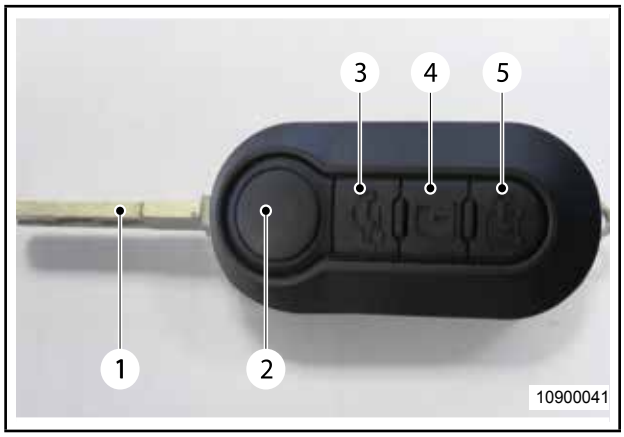


Fig. 13 Remote control for central locking (four buttons)

7.5 Opening/closing the entrance door from outside

Opening:

1. Insert the key into the door lock (Fig. 14, item 1) and turn it all the way to the stop towards the hinge side of the door.

   After releasing, the key jumps back into its initial position.

2. Remove the key.

3. Pull the handle (Fig. 14, item 2) to open the door.

Closing:

1. Close the door completely.

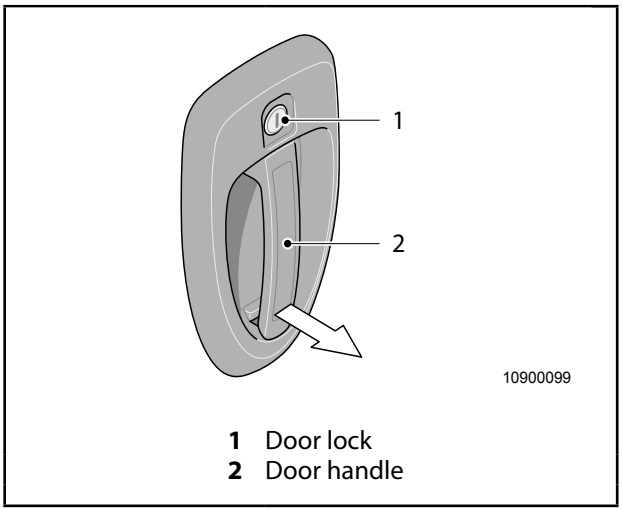
2. Insert the key into the door lock (Fig. 14, item 1).

3. Turn the key as far as it will go, opposite to the hinge side,

   slightly pushing the door into the sealing, if necessary.

   After releasing, the key jumps back into its initial position.

4. Remove the key.



1 Door lock
2 Door handle

Fig. 14 Opening/closing the entrance door from outside

CAUTION!

Damage to the entrance door!
If the door is closed with inside door handle of the entrance door (Fig. 15) in locked position (Fig. 15, item 1), the door will get damaged!
☞ Before closing the entrance door, make sure that the inside door handle (Fig. 15) is **not** locked!

7.6 Opening/closing the entrance door from inside

Opening:

- Push the door handle (Fig. 15, item 2) down (Fig. 15, item 3) and open the door.

After releasing, the door handle jumps back into its initial position (Fig. 15, item 2) .

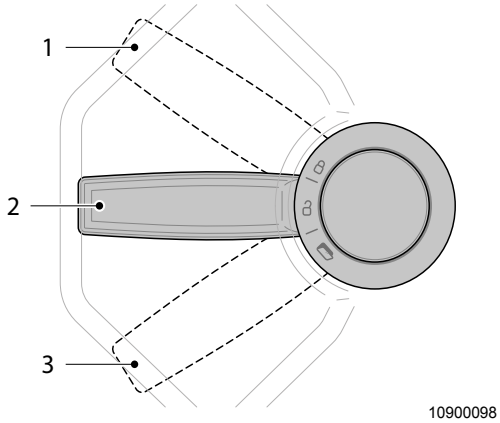
Locking:

- Pull the door handle (Fig. 15, item 2) upwards into locked position (Fig. 15, item 1).

The door is locked, and from outside it can only be opened with the key.

Closing:

- By the door handle (Fig. 15, item 2), pull the door closed until the lock snaps in.



1 Locked position
2 Door handle/door not locked
3 Door open

Fig. 15 Opening/closing the entrance door from inside

CAUTION!

Damage to the entrance door!
If the door is closed with the inside door handle of the entrance door (Fig. 15) in locked position (Fig. 15, item 1), the door will get damaged!
☞ Before closing the entrance door, make sure that the inside door handle (Fig. 15) is **not** locked!

7.7 Opening/closing the driver's cab door from outside

Opening:

1. Insert the key in the door lock and turn anticlockwise to position » OPEN « (Fig. 16, item 1). The key jumps back to its initial position.
2. Remove the key.
3. Pull the door handle and open the door.

Closing:

1. Close the door gently, insert the key in the door lock and, with slight pressure against the door, turn clockwise to position » CLOSED « (Fig. 16, item 2). The key jumps back to its initial position.
2. Remove the key.

1 OPEN
2 CLOSED

Fig. 16 Opening and closing the driver's cab door from outside

7.8 Opening/closing the driver's cab door from inside

Opening:

☞ Pull on the door handle and open the door.

Closing:

☞ Pull the door closed with the door handle.

Fig. 17 Opening/Closing the Door from Inside

7.9 Opening/closing the sliding door from outside (CaraBus)

Opening:

1. Unlock the door lock with the remote control.
2. Pull the door handle and slide the door open until it locks in the end position.

Closing:

1. Pull the door handle and release the door from the end position lock, then slide the door closed.
2. Lock the door lock with the remote control.

Fig. 18 Opening/closing sliding door from outside

7.10 Opening/closing the sliding door from inside (CaraBus)

CAUTION!

The quarter vent must be locked before opening and closing the sliding door otherwise there is a risk of breaking the window.

Opening:

☞ Turn the lever clockwise to position "OPEN" and slide the door open with the handhold under the door lock.

Closing:

☞ Turn the lever anticlockwise to position » OPEN «, release the door from the end position lock, then push the door shut.

Fig. 19 Opening/closing sliding door from inside

7.11 Opening/closing the first wing of the two-wing rear door from outside (CaraBus)

Opening:

1. Insert the key in the door lock and turn anticlockwise, position "OPEN". The key jumps back to its initial position.
2. Remove the key.
3. Pull the door handle and open the door.

Closing:

1. Close the door gently, insert the key in the door lock and, with slight pressure against the door, turn clockwise, position "CLOSED". The key jumps back to its initial position.
2. Remove the key.

1 OPEN
2 CLOSED

Fig. 20 Opening/closing first wing of two-wing rear door from outside

7.12 Opening/closing the first wing of the two-wing rear door from inside (CaraBus)

Opening:

☞ Pull on the door handle and open the door.

Closing:

☞ Pull the door closed with the door handle.

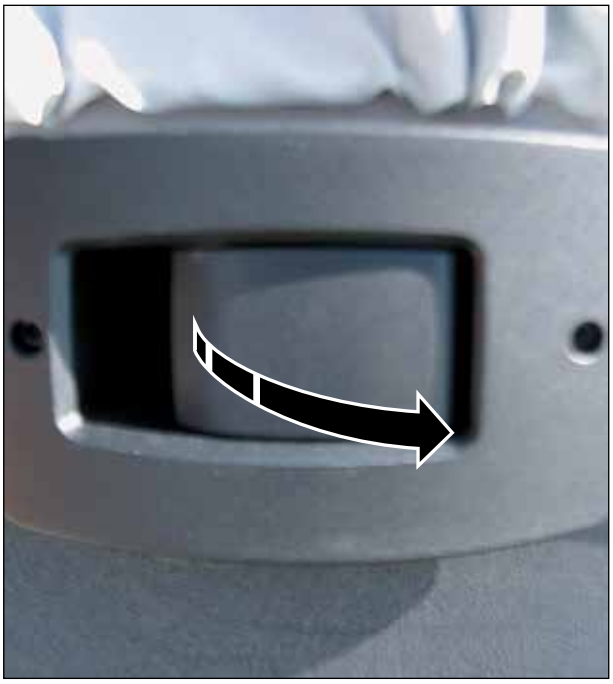


Fig. 21 Opening/closing first wing of two-wing rear door from inside

7.13 Opening/closing the second wing of the two-wing rear door from inside (CaraBus)

Opening:

☞ Pull the handle to position "OPEN" to open the second wing of the rear door.

Closing:

☞ Close the door.

Fig. 22 Opening/closing second wing of two-wing rear door from inside

7.14 Opening/closing the roof light

The roof light can be opened on either one or both sides.

Opening:

☞ Insert hand in handle on the side you wish to open, release the catch using your finger as shown by the direction of the arrow, and push the roof light up.

Closing:

☞ To close the roof light, pull down on the handle until the catch engages.

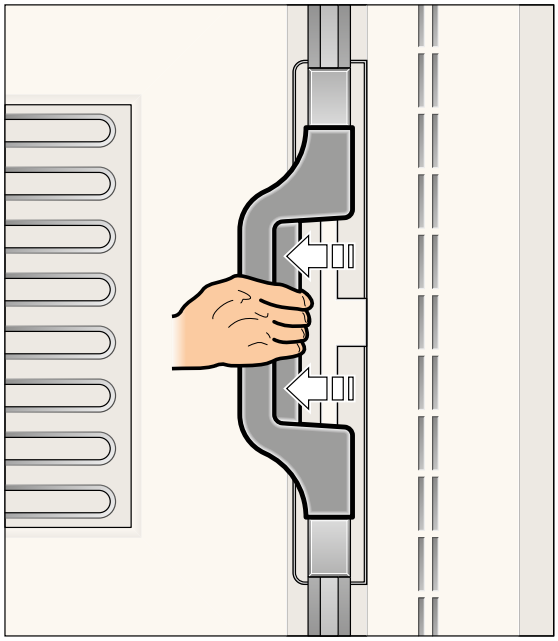


Fig. 23 Opening/closing the roof light

7.15 SkyView roof window

CAUTION!

- ☞ Observe the warnings attached to the roof window!
- ☞ Open the locking latch before opening the roof window!
- ☞ Make sure there are no objects within the opening range and remove any snow, ice or other soiling from the roof window!
- ☞ Do not open the glass dome in high winds, rain or snow!
- ☞ Before starting the journey, fully close the roof window and move the locking bolt to position "CLOSED"!
- ☞ Before starting the journey, check the roof window for damages in the glass pane (stress cracks) and damages to the locking mechanism.
- ☞ Do not push any objects against the glass dome!
- ☞ Close the roof window when leaving the motorhome (risk of burglary, rain).
- ☞ Contact your local Service Centre if the roof window develops any problems or defects!
- ☞ All assembly and repair work must be carried out in a specialist workshop.
- ☞ Leave the blackout blind open by at least 1/3 to avoid the accumulation of heat.
- ☞ Open the blackout blind/mosquito screen system before starting your journey.

The "SkyView" roof window illuminates the interior of the caravan, provides improved ventilation and gives the living area a pleasant sense of space.

The roof window is equipped with a double roller blind. The insect protection and blackout blind can be used separately or together.

A crank is used to fully raise the quarter vent or to open it steplessly.

See Section "19.4 Cleaning and care of the roof light" for cleaning and care instructions for the roof window.

7.15.1 SkyView roof window: Opening/closing quarter vents

CAUTION!

- ☞ Make sure that no persons or objects are within the range of the quarter vent.
- ☞ Open the locking latch before opening the roof window!

1. Open the locking latch (Fig. 24, item 1).
2. To open the window, fold out the crank (Fig. 24, item 2) and turn anticlockwise until the quarter vent hits a mechanical stop. The quarter vent can be locked in any position.
3. To close the window, turn the crank (Fig. 24, item 2) clockwise until the pane rests on the seal and you can feel a slight counterpressure on the crank. Fold in the crank.
4. Close the locking latch (Fig. 24, item 1).

1 Locking latch
2 Crank
3 Recess

Fig. 24 SkyView roof window

7.15.2 SkyView roof window: Blackout blind/mosquito screen

The roof window is equipped with a combined blackout blind and mosquito screen.

1. Reach into the recess (3) at the first bar of the blackout blind and move it to the desired position.
2. The second bar is used to adjust the amount of light coming through. The mosquito screen is integrated in the second bar and allows for maximum lighting combined with optimal protection against insects.

7.16 Mini/Midi-Heki

- ☞ Do not tread on the acrylic glass dome!
- ☞ The glass dome should be closed fully and the blackout blinds opened before commencing your journey and when laying up the vehicle for lengthy periods of time!
- ☞ Contact your local Service Centre if the Heki develops any problems or faults!
- ☞ Any snow, ice and other obstructions must be removed before opening the glass dome!
- ☞ Do not open the glass dome in high winds, rain or snow.

See Section "19.4 Cleaning and care of the roof light" for cleaning and care instructions for the Mini-/Midi-Heki.

The insect protection and the blackout blind in the inside frame can be used separately or together.

In what follows, the Mini-Heki may also be referred to below as the Heki.

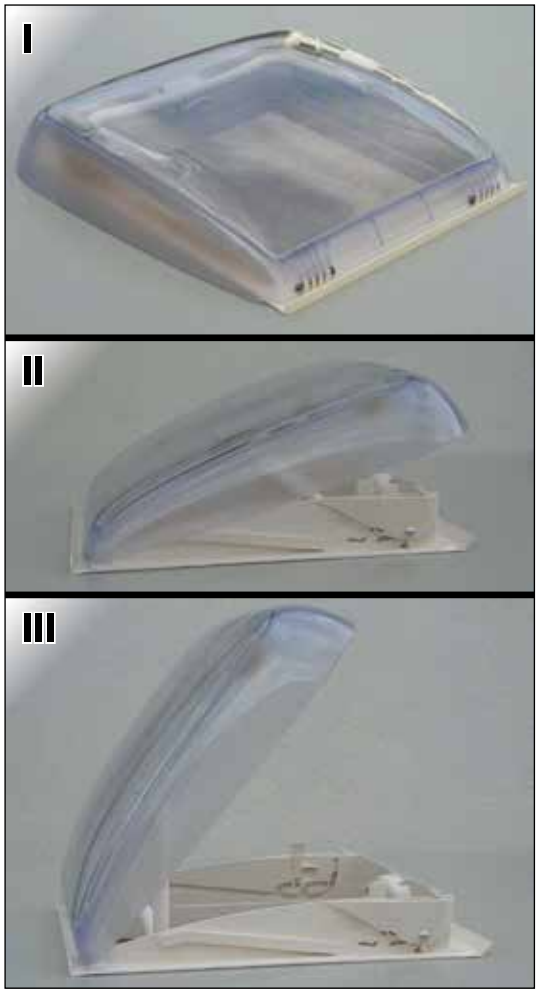


Fig. 25 Mini-Heki Example, not binding

7.16.1 Opening the glass dome

1. Press unlocking button (**1**) and open the glass dome by pushing up bar (**2**).

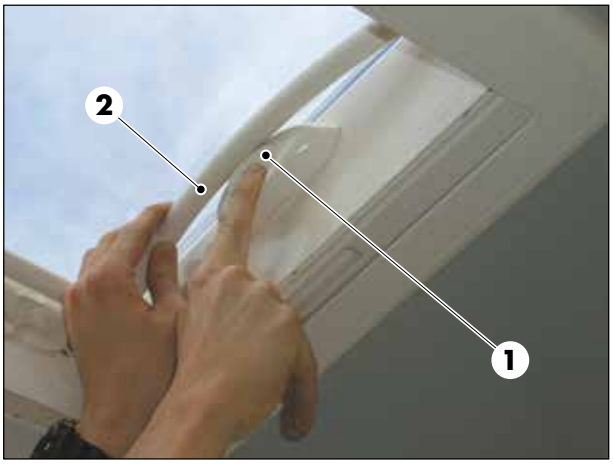


Fig. 26 Mini-Heki: Unlocking the glass dome

2. The glass dome can be continuously adjusted by moving the bar in the guides.

Fig. 27 Mini-Heki: Adjusting the glass dome

3. The illustration shows the glass dome in the fully opened position.

Fig. 28 Mini-Heki: Glass dome fully opened

4. By moving the bar to one of the two positions marked with a ●, two additional positions for the glass dome can be selected along with the fully open position. The middle position can be locked with a slider (**3**).

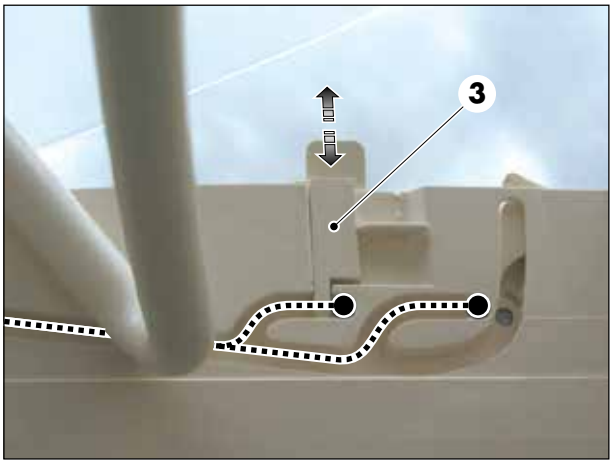


Fig. 29 Mini-Heki: Glass dome additional positions

7.16.2 Locking the glass dome

☞ Place bar (**1**) in the guides in the closing position (arrow) and press over locking button (**2**).

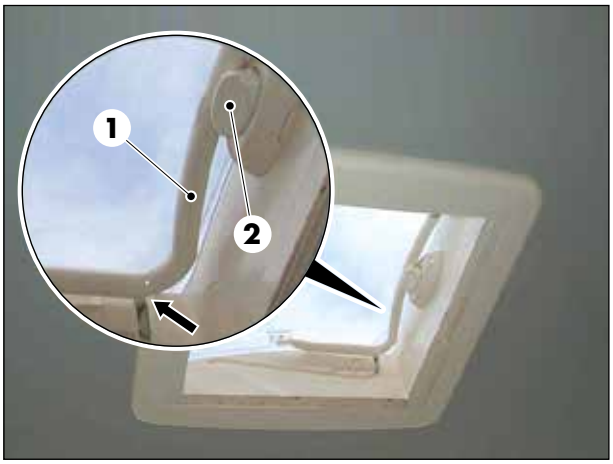


Fig. 30 Mini-Heki: Locking the glass dome

7.16.3 Closing the blackout blind

1. Grip the end bar without rocker (**1**) in the recess and lock into the opposite end bar with rocker (**2**).

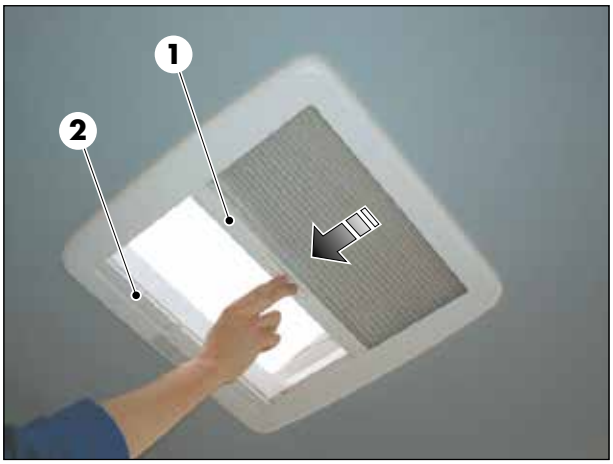


Fig. 31 Mini-Heki: Closing the blackout blind

2. The illustration opposite shows the closed blackout blind ("Curtain" position).

Fig. 32 Mini-Heki: Blackout blind closed

3. Continuous adjustment feature for the blackout blind from the "Curtain" position to the "Open/insect protection" position.

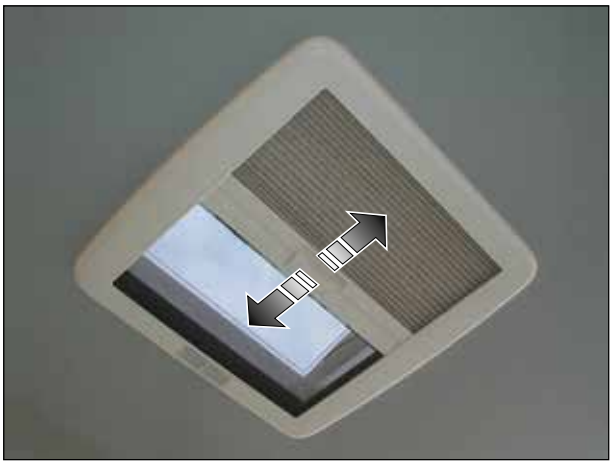


Fig. 33 Mini-Heki: Option for adjusting the blackout blind

7.16.4 Opening the blackout blind

1. Slide joined end bars to the "Curtain" position ( ).

CAUTION!

Move the blind back by hand – do not allow to spring back in an uncontrolled manner!

2. Press the rocker and move the blackout blind back with the other hand ( ).

Fig. 34 Mini-Heki: Opening the blackout blind

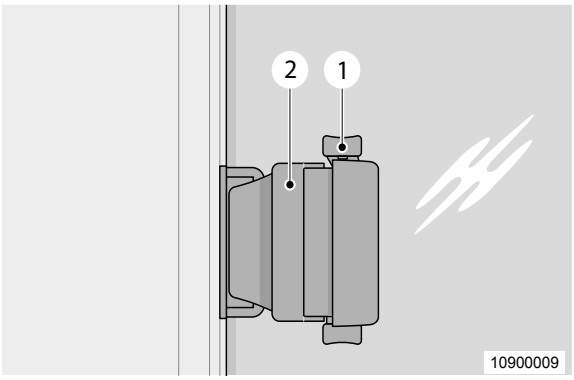
7.17 Opening/closing the sliding window

Opening:

◆ Disengage the catch (Fig. 35, item 1) from the receiver (Fig. 35, item 2) and slide the window open.

Closing:

◆ Slide the window as far as it will go; the catch (Fig. 35, item 1) engages automatically.



1 Catch
2 Receiver

Fig. 35 Opening/closing the sliding window

7.18 Opening/closing the hinged windows

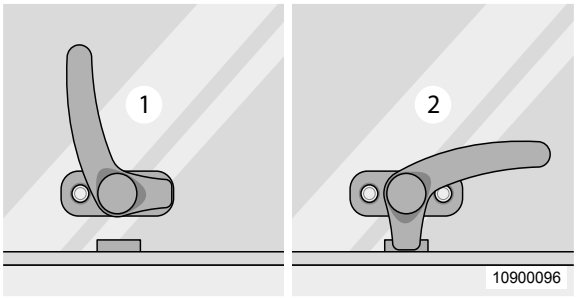
The quarter vents are fitted with an automatic catch mechanism. When opened, the quarter vent automatically engages in the desired position.

Opening:

1. Turn the window locking lever to position » OPEN « (Fig. 36, item 1).
2. Also turn the standout locking lever to position » OPEN « (Fig. 37, item 1).
3. Open the window to the desired locking position, telescopic strut engages automatically.

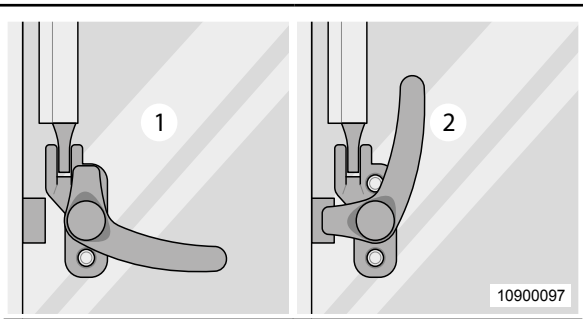
Closing:

1. Open the window a little further until the lock is released and then close the window.
2. Turn the window locking lever to position » CLOSED « (Fig. 37, item 2).
3. Also turn the standout locking lever to position » CLOSED « (Fig. 37, item 2).



1 OPEN
2 CLOSED

Fig. 36 Window locking mechanism



1 OPEN
2 CLOSED

Fig. 37 Quarter vent locking mechanism

7.19 Blackout blind, front and side windows (optional accessories for motorhome)

The illustration opposite shows the blackout blind for the front and side windows.

☞ To unlock the blackout blind, press both unlock knobs in arrow direction.

Fig. 38 Blackout Blind, Front and Side Windows

The illustration opposite shows the left front window blind in **extended** position.

☞ To make the inside of the vehicle completely dark, also extend the right front window blind and join to the left blind at the rear-view mirror.

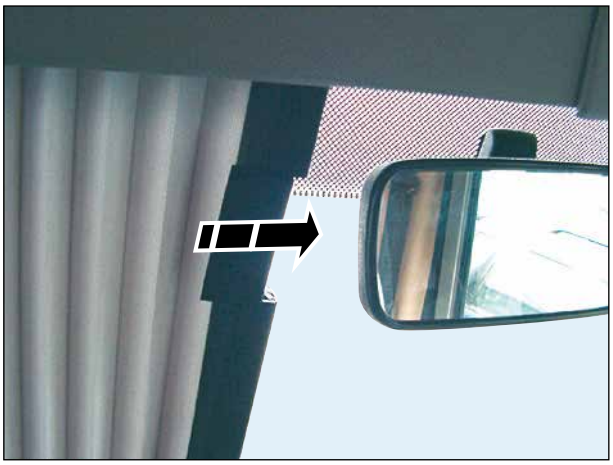


Fig. 39 Windscreen blackout blind

7.20 Closing the gas locker cover (CaraOne)

Observe the following note on the inside of the gas locker cover (Fig. 40, item 1) when closing it.

1 Note inside the gas locker cover

Fig. 40 Note inside the gas locker cover

7.21 Insect protection, sliding door

CAUTION!

Damage to mosquito protection door by the sliding door handle!

☞ Open the mosquito protection blind completely before closing the sliding door.

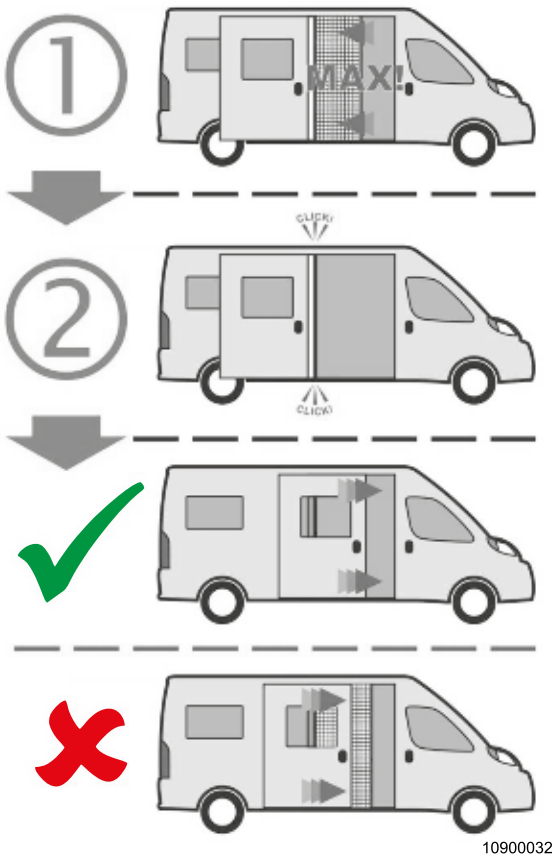


Fig. 41 Insect protection, sliding door

7.22 Seating group

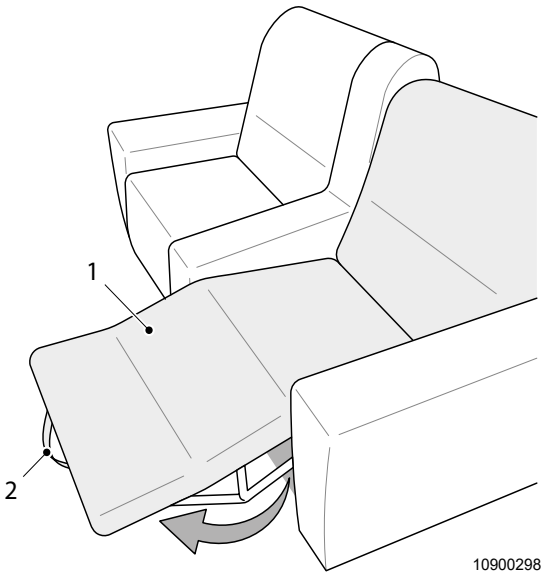
Depending on the layout, the vehicle is equipped with a fixed seating group. The seat cushions can be pulled out to the front.

Pulling out the seat cushion:

- Pull out the seat cushion (Fig. 42, item 1) using the handle (Fig. 42, item 2).

Pushing in the seat cushion:

- Push in the seat cushion (Fig. 42, item 1) using the handle (Fig. 42, item 2).



1 Seat cushion
2 Handle

Fig. 42 Pulling out and pushing in the seat cushion

7.23 Flat screen TV set

CAUTION!

Damage to the flat screen TV set!

- ☞ Retract the flat screen TV set before starting to drive.
- ☞ Do not place any objects on the cover of the flat screen TV set.

Depending on the layout, the vehicle is equipped with a flat screen TV set. The flat screen TV set can be extended and retracted electrically.

The switch (Fig. 43, item 1) for retraction or extension of the flat screen TV set is located on the right of the seating group.

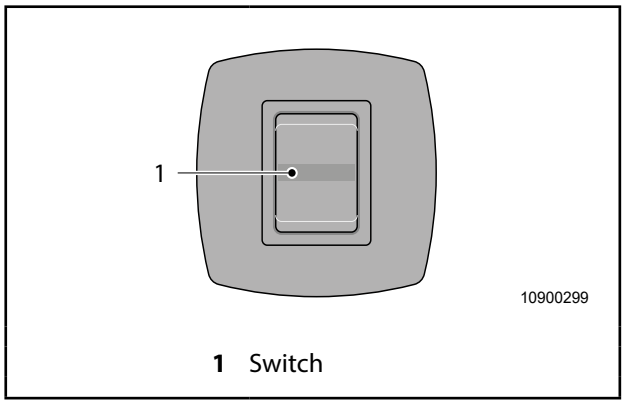


Fig. 43 Switch for retraction/extension of the flat screen TV set

7.24 Fireplace (special equipment)

Depending on the layout, the vehicle is equipped with an electrically operated fireplace.

NOTE!

- ☞ The heating function is not in operation.
- ☞ For more information, see the separate instructions from the manufacturer.

8. Sleeping

The rear bed fitted in some models is immediately ready for use. The seating groups can also be converted to beds in just a few simple operations.

DANGER!

- ☞ On some models, always make sure the child safety latch has been fitted correctly on the rear bed before opening the rear door.
- ☞ On some models, the lifting table must be lowered and secured with the wing screw before starting the journey
- ☞ On some models, the hook-in table must be removed and stored safely in the storage compartment under the rear bed before starting the journey.

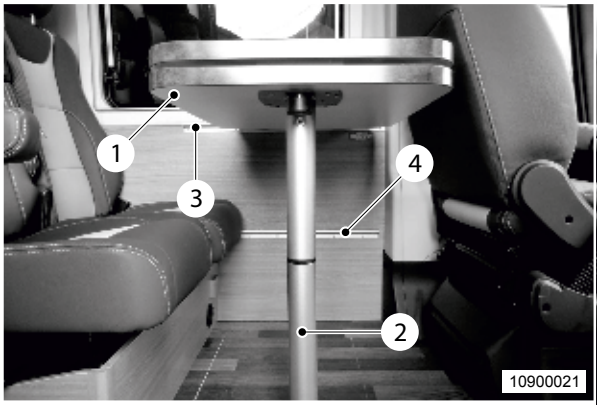
Observe the warning information concerning the seating module within the field of view of the side window when storing the hook-in table in the storage compartment!

Fig. 44 Warning information "Storing the hook-in table"

8.1 Converting the seating group with hook-in table into a bed

To convert the hook-in table to the sleeping position proceed as follows:

1. Raise table top (Abb. 45, item 1) and remove lower part of support foot (Abb. 45, item 2).
2. Unhook table top (Abb. 45, item 1) from top guide rail (Abb. 45, item 3) and hook and lock it into lower guide (Abb. 45, item 4).
3. Move the driver's seat to the right height and turn it. The backrest points to the front window or side window.
4. Remove the seat cushions from the seat bench.
5. Turn the backrests of the seat bench so that the thicker part is on the seat bench and the thinner part on the table.
6. Place the seat cushions of the seat bench in the space between the driver's seats and the folded backrest.
7. Reverse the process to convert back to the seating group.
8. Before starting the journey, stow the hook-in table in the storage compartment under the rear bed.



1 Table top
2 Support foot
3 Upper guide rail
4 Lower guide rail

Fig. 45 Converting hook-in table into sleeping berth

8.2 Lifting bed

CAUTION!

Damage to the lifting bed!

Do not put load on the lifting bed the wrong way.

☞ Only put load on the front of the lifting bed as soon as its in the lowest position!

☞ Do **not** activate the electric drive (optional accessory) as long as people or other loads are on the lounger!

Do not move the lifting bed as long as objects are placed on it.

☞ Do not move the lifting bed up as long as objects are placed on the lounger!

8.2.1 Lifting bed, mechanical

DANGER!

Risk of injury!

☞ Prior to the use of the lifting bed:
- Secure the antifall guards with all the belts.

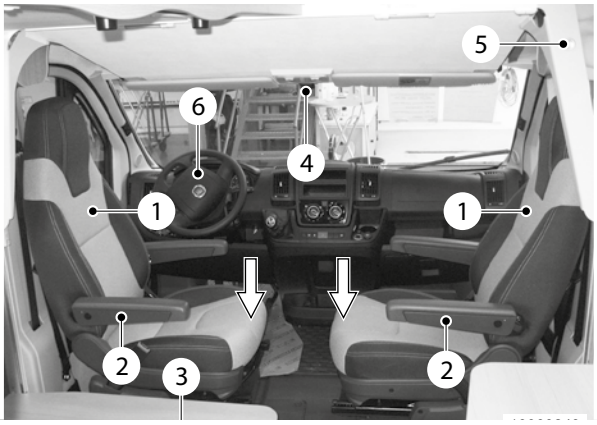
DANGER!

Risk of injury!

☞ Before starting to drive:
- Push the lifting bed pullout inside and push the lifting bed all the way up.
- Secure the lifting bed with belts.

Lowering the lifting bed:

1. Loosen safety belts (Abb. 46, item 4) and (Abb. 47, item 1) on the lifting bed.
2. Set the driver's seat and the passenger's seat (Abb. 46, Pos.1) to the lowest position and move the seats into the positions shown.
3. Lower the armrests (Abb. 46, item 2).
4. Remove and stow away the table (Abb. 46, item 3).



1	Driver's seat/passenger's seat	**4**	Safety belt
2	Armrest	**5**	Pushbutton
3	Table	**6**	Steering wheel

Fig. 46 Lowering the lifting bed

5. Push the button (Abb. 46, item 5) and pull the lifting bed downward into its end position.

6. Pull out the lifting bed pullout (Abb. 47, item 2) towards the entrance door and put the second mattress (Abb. 47, item 3) in place.

To stow the lifting bed away, proceed in the reverse sequence.

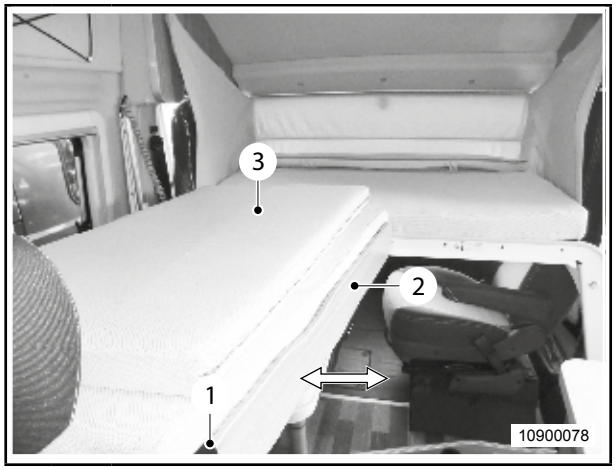


Fig. 47 Pulling out the lifting bed

NOTE!

Depending on the model, the storage compartments below the lifting bed must only be loaded with a maximum of 5 kg.

8.2.2 Lifting bed, mechanical (CaraBus, elevated roof version)

DANGER!

Risk of injury!

When the lifting bed is folded up before starting to drive, this will cause the bed to drop down unintentionally.

☞ Before starting the journey, push the lifting bed upwards to its original position and secure it with the safety belt!

The vehicle is equipped with a lifting bed in the front area. This can be manually raised and lowered.

9. Gas supply

9.1 General notes on gas supply

DANGER!

- ☞ Repairs and modifications to the gas system may only be carried out by the authorised specialist workshop!
- ☞ It is essential to follow the safety instructions and safety information when using the gas system or gas appliances!
- ☞ Altering the gas system or appliances yourself is prohibited and dangerous!
- ☞ The customer may only connect the pressure regulator to the gas bottle. All other work must be carried out by an authorised specialist workshop!
- ☞ Never search for gas leaks in gas pipe connections with a cigarette lighter or other naked flame!

CAUTION!

To prevent contamination in the pressure regulator, use a gas filter!

NOTE!

- ☞ The complete gas system in the vehicle is designed for an operating pressure of 30 mbar (millibar)!
- ☞ At altitudes exceeding 1,000 m, malfunctions may occur when igniting gas for reasons of physics. This however does not mean that the appliance is not functioning properly.
- ☞ The gas system should be checked every 2 years by a gas engineer. **The owner of the vehicle is responsible for having the gas system tested!**

- ◆ The complete gas system has been designed according to the applicable regulations governing LPG appliances and fires in vehicles, and has been tested and certified by a qualified specialist (Germany).
- ◆ All fitted gas-fired appliances are ignition-protected, so if the flame goes out, the ignition safety system stops the gas supply automatically. Despite this safety device you should always close the appropriate shut-off valve when any of the appliances are not in use.
- ◆ Should a fault ever occur, (e.g. gas consumption is excessive or you smell gas), follow the relevant safety information and arrange for the fault to be repaired immediately by a specialist workshop.

- Get the specialist workshop to certify the repair or modification to the gas system in the yellow gas test certificate (Germany) and always insist on a gas leak test being carried out.
- To ensure a continuous flow of air in the vehicle, the forced air vents in the roof lights, mushroom vents and in the floor plate in the kitchen area must never be covered!

9.2 LPG

The gas-fired appliances can be operated with propane or butane or a mixture of these two LPG types. Depending on the layout, the gas locker is designed for holding 5 or 11 kg gas bottles. The gas bottles must be kept exclusively in the gas locker. The gas locker and/or rear flap should be kept secure from unauthorised access at all times!

NOTE!

For the gas appliances to function, the vehicle requires the gas from the gas phase, for winter camping, gas with as much propane as possible should be used, as butane no longer converts to the gaseous state below 0 °C.

9.3 Placing a gas bottle in the gas locker

CAUTION!

Never leave the gas bottles unsecured in the gas locker!

- ☞ Place the gas bottles upright in the gas locker and secure them firmly with the straps provided. Fit the pressure regulator to the gas bottle by hand (never use spanners, pliers etc.).
- ☞ The high-pressure hose fittings are suitable for standard 5 kg and 11 kg gas bottles.
- ☞ Do not kink or tightly bend high-pressure hoses!

9.4 General information on gas consumption

The amount of gas you consume will depend on how much you use the gas appliances:

- The Truma Combi (heater/hot water boiler) consumes between 170 and 500 g/h depending on the weather and the interior room temperature setting (heater) as well as the amount of use (hot water boiler)
- The cooker consumes about 300 g/h

9.5 Gas (appliance) shut-off valves

9.5.1 Appliance gas shut-off valves for oven, cooker, refrigerator and heater

NOTE!

☞ The gas shut-off valves are located within the kitchen range under the refrigerator or next to the respective appliance running on gas (e.g. water boiler).

Depending on the layout of the vehicle, the equipment may contain different gas consuming appliances. The gas shut-off valves for the appliances are marked with individual icons indicating the respective gas consuming appliance.

Overview of icons for gas shut-off valves used for appliances:

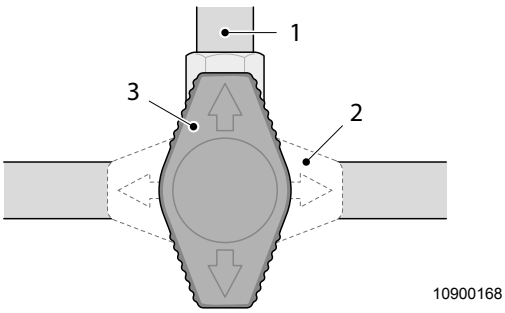
= Oven

= Cooker

= Refrigerator

= Heating

= Hot water boiler



1 Gas line
2 Valve for appliance closed
Arrows are oriented at a right angle to the gas line
3 Valve for appliance open
Arrows are oriented in the direction of the gas line

Fig. 48 Gas (appliance) shut-off valves

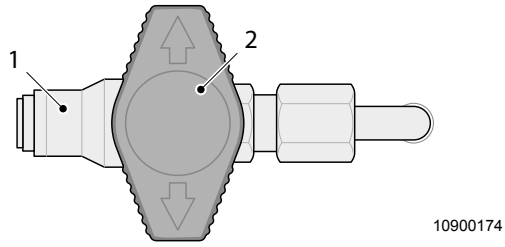
NOTE!

If one of the appliances is not in use, it should be isolated from the gas supply with the appropriate appliance shut-off valve.

9.6 Outside gas connector

CAUTION!

- ☞ The external gas connector is solely designed for **withdrawing** gas.
- ☞ Before connecting other devices to the external gas connector, check that they are equipped for an operating pressure of 30 mbar!



1 Release ring
2 Gas appliance shut-off valve

Fig. 49 Outside gas connector

A gas connector is provided on the outside of the vehicle. This can be used for a gas-fired barbecue, etc. Fig. 49 shows the shut-off valve of the external gas connector.

9.6.1 Connecting appliances to the outside gas connector

DANGER!

No smoking or naked flames while connecting an external gas appliance!

CAUTION!

The shut-off valve for the gas supply can only be turned when an appliance is actually connected; otherwise the handle may be damaged!

1. Fit the connecting piece of the appliance into the outside gas connector, and release ring (Fig. 49, item 1) clicks home to engage. Then open the valve (Fig. 48, item 2) for the gas supply.

2. To decouple the appliance, close the shut-off valve, push the release ring (Fig. 49, item 1) in the opposite direction to that for the removal of the appliance and pull out the connecting piece.

9.7 Exchanging gas bottles (without optional accessory MonoControl/ DuoControl)

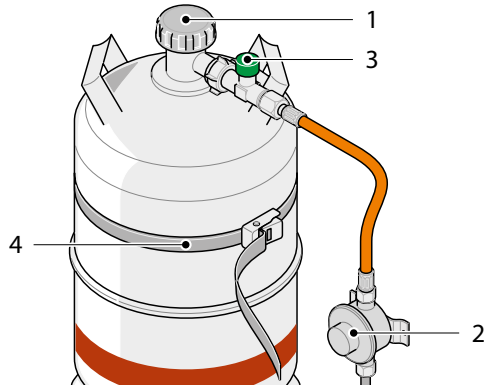
DANGER!

- ☞ The customer may only connect the pressure regulator to the gas bottle. All other work must be carried out by an authorised specialist workshop!
- ☞ Explosion hazard! Never use a lighter or other naked source of light when changing the gas bottle!
- ☞ There is still some gas left even in an "empty" gas bottle. Therefore, the gas bottle must be changed using utmost care!
- ☞ Check whether there are any leaks after changing the gas bottle!

CAUTION!

- ☞ Only fit and remove the gas regulator by hand. Do not use any tools for this purpose!
- ☞ When changing the gas bottle, ensure the gas hose is in good condition and laid without any kinks!

1. Close the gas bottle shut-off valve (Fig. 50, item 1).
2. Unscrew the connecting piece with the hose rupture protection snap button (Fig. 50, item 3) from the gas bottle by hand (caution: left-hand thread).
3. Undo fastening strap (Fig. 50, item 4) and take the empty gas bottle out of the gas locker.
4. Protect the empty gas bottle with the threaded cap and a protective cap.
5. Store the empty gas bottle in a suitable place in the gas locker. Never leave the gas bottle unsecured in the gas locker.
6. Place the full gas bottle in the mounting in the gas locker and secure it with the fastening strap (Fig. 50, item 4).
7. Screw on the connecting piece with hose rupture protection push button (Fig. 50, item 3) by hand (caution: left-hand thread).
8. Open the gas bottle shut-off valve (Fig. 50, item 1).
9. Firmly press in the green hose rupture protection push button (Fig. 50, item 3).



1 Gas bottle shut-off valve
2 Gas regulator
3 Connecting piece with hose rupture protection snap button
4 Fastening strap

Fig. 50 Changing a gas cylinder

9.8 Truma MonoControl CS

9.8.1 Intended usage

DANGER!

Using the MonoControl CS is not permitted in enclosed spaces/rooms!

CAUTION!

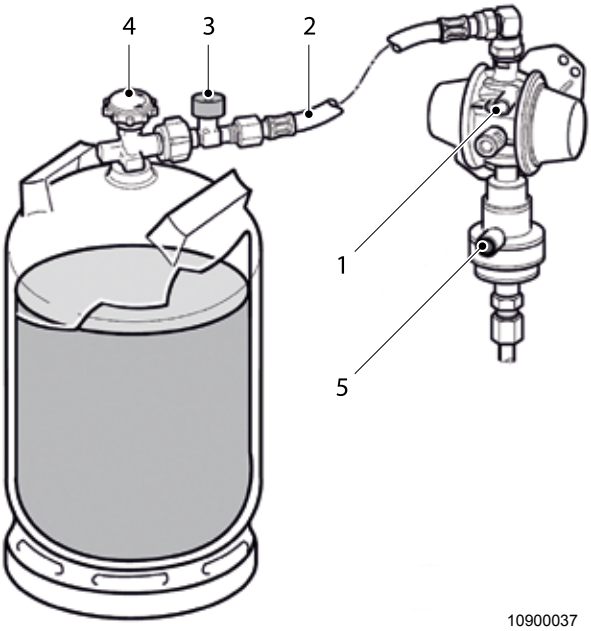
☞ Pressure regulators and hoses must be replaced within 10 years of manufacture at the very latest. **The user is responsible for replacement!**

The Truma MonoControl CS is a safety gas pressure regulator for operation with one gas bottle.

9.8.2 Connecting Truma MonoControl CS to a gas bottle

It is generally possible to use the Truma MonoControl CS during the journey to supply gas to appliances.

To connect the gas bottle to Truma MonoControl CS (Fig. 51, item 1), a high-pressure hose (Fig. 51, item 2) with hose rupture protection (Fig. 51, item 3) is mandatory.



1 MonoControl CS
2 High-pressure hose
3 Hose rupture protection
4 Gas bottle shut-off valve
5 Crash sensor reset button

Fig. 51 Truma MonoControl CS

9.8.3 Starting up

1. Open the gas bottle shut-off valve (Fig. 51, item 4).
2. Press green hose rupture protection button (Fig. 51, item 3) strongly.
3. If necessary – e.g. after initial installation or if the gas bottle accidentally strikes against the MonoControl CS – press the green reset button to reset the crash sensor trigger element (Fig. 51, item 5).

9.8.4 Exchanging the gas bottles with Truma MonoControl CS

DANGER!

- ☞ The customer may only connect the pressure regulator to the gas bottle. All other work must be carried out by an authorised specialist workshop!
- ☞ Explosion hazard! Never use a lighter or other naked source of light when changing the gas bottle!
- ☞ There is still some gas left even in an "empty" gas bottle. Therefore, the gas bottle must be changed using utmost care!
- ☞ Check whether there are any leaks after changing the gas bottle!

CAUTION!

- ☞ Only fit and remove the gas regulator by hand. Do not use any tools for this purpose!
- ☞ When changing the gas bottle, ensure the gas hose is in good condition and laid without any kinks!

1. Close gas bottle shut-off valve (Fig. 51, item 4) of the empty gas bottle.
2. Unscrew high-pressure hose (Fig. 51, item 2) from the gas bottle. If fitted, take the plug-on adapter off.
3. Undo the fastening strap and replace the empty bottle with a full bottle and secure with the fastening strap.
4. Screw high-pressure hose (Fig. 51, item 2) onto the gas bottle. If fitted, attach the plug-on adapter.
5. Open gas bottle shut-off valve (Fig. 51, item 4) of the full gas bottle.
6. Press green hose rupture protection button (Fig. 51, item 3) strongly.

NOTE!

You will find further information in the separate Operating Manual supplied by the manufacturer.

9.9 Truma DuoControl CS – safety gas pressure regulator with automatic switchover for two gas bottles

9.9.1 Intended usage

CAUTION!

Pressure regulators and hoses must be replaced within 10 years of manufacture at the very latest. **The user is responsible for replacement!**

The Truma DuoControl CS is a safety gas pressure regulator unit with integrated crash sensor and automatic switchover for connection to two gas bottles. The two high-pressure hoses have a hose rupture protection. All gas-operated appliances, except gas stoves, may be operated in this configuration during the journey.

9.9.2 Connecting Truma DuoControl CS to gas bottles

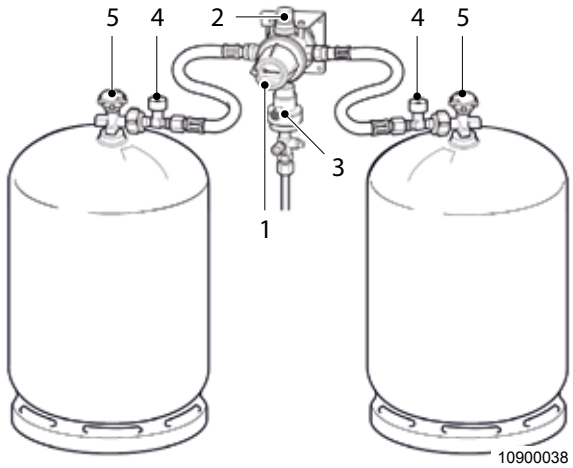
The Truma DuoControl CS is connected to both gas bottles via two high-pressure hoses. High-pressure hoses with hose rupture protection are mandatory for the connection.

The integrated crash sensor interrupts the gas flow when an accident having a direct delaying effect on the trigger element occurs.

The gas bottle to be used in operation or as spare can be selected manually with the bottle selection knob (Fig. 52, item 1).

Viewing window "status operational bottle" (Fig. 52, item 2) shows the status of the bottle being used.

Green	=	Gas from operational bottle
red	=	Gas from spare bottle



1 Bottle selection knob
2 Viewing window "status operational bottle"
3 Crash sensor reset button
4 Hose rupture protection snap button
5 Gas bottle shut-off valve

Fig. 52 Truma DuoControl CS

NOTE!

- ☞ If the pressure in the bottle being used sinks to under 0.5 bar, the valve will switch over automatically and gas will be taken from the spare bottle.
- ☞ In extremely cold weather as well as with high gas consumption, the bottle pressure can fall to under 0.5 bar although there is still gas in the bottle.

The bottle specified for use with the bottle selection knob (Fig. 52, item 1) is emptied first. When the bottle in use is empty and with the remote display switched on, red indicator lamp (Fig. 53, item 4) is lit and indicates the empty operational bottle.

The gas pressure regulator set switches automatically to the spare bottle. When the DuoC (optional accessory) remote display is switched on, red indicator lamp (Fig. 53, item 4) goes out and green indicator lamp (Fig. 53, item 5) is lit and indicates the full spare bottle.

9.9.3 Starting up

1. Open the gas bottle shut-off valve (Fig. 52, item 5).

2. Press green hose rupture protection button (Fig. 52, item 4) strongly.

3. If necessary – e.g. after initial installation or when the gas bottle accidentally strikes against the MonoControl CS – press the green reset button to reset the crash sensor trigger element (Fig. 52, item 3).

9.9.4 Exchanging gas bottles with Truma DuoControl CS

DANGER!

- ☞ The customer may only connect the pressure regulator to the gas bottle. All other work must be carried out by an authorised specialist workshop!
- ☞ Explosion hazard! Never use a lighter or other naked source of light when changing the gas bottle!
- ☞ There is still some gas left even in an "empty" gas bottle. Therefore, the gas bottle must be changed using utmost care!
- ☞ Check whether there are any leaks after changing the gas bottle!

CAUTION!

- ☞ Only fit and remove the gas regulator by hand. Do not use any tools for this purpose!
- ☞ When changing the gas bottle, ensure the gas hose is in good condition and laid without any kinks!

The DuoControl CS allows an empty gas bottle to be changed without interrupting operation of the appliances as all appliances continue to be supplied from the spare bottle.

1. Turn the bottle selection knob (Fig. 52, item 1) by 180° to the spare bottle position and close the valve on the empty gas bottle. The status indicator on the remote display (optional accessory) changes to green (Fig. 53, item 5).

2. Unscrew the high-pressure hose from the gas bottle and remove the gas bottle.

3. Set up the full gas bottle, secure it with the fastening strap and screw the high-pressure hose to the gas bottle.

4. Open the valve of the full gas bottle and press the hose rupture protection snap button (Fig. 52, item 4). The status indicator on the remote display (optional accessory) changes to green (Fig. 53, item 5).

5. After connecting, switch bottle selection knob (Fig. 52, item 1) back briefly to the full gas bottle to bleed the gas system with appliances switched on.

NOTE!

When operating with only one gas bottle according to regulations, the free high-pressure hose must be unscrewed from the input of the DuoControl CS and the input of the DuoControl CS must then be closed off with the attached safety cap.

9.10 Truma DuoC remote display (optional accessory)

9.10.1 Using in summer

Move the switch to the ON position (summer operation) (Fig. 53, item 1). The two LEDS (4 or 5) indicate the status of the bottle in use:

Green LED (Fig. 53, item 5) on = Gas bottle full

Red LED (Fig. 53, item 4) on = Gas bottle empty

To switch off, set the switch to the OFF position (Fig. 53, item 2) .

NOTE!

You will find further information in the separate Operating Manual supplied by the manufacturer.

1 ON (summer operation)
2 OFF
3 ON and HEAT (winter operation)
4 Red LED "Gas bottle empty"
5 Green LED "Gas bottle full"
6 Yellow LED EisEx (winter operation)

Fig. 53 DuoC remote display

9.10.2 Using in winter

1. Move the rocker switch to the ON and HEAT position (winter mode) (Fig. 53, item 3). In addition to the status indicator of the bottle in use, the switching valve is heated, and this is indicated by the yellow LED EisEx (winter mode) (Fig. 53, item 6).

2. To switch off, set the switch to the OFF position (Fig. 53, item 2).

NOTE!

You will find further information in the separate Operating Manual supplied by the manufacturer.

10. Water supply

10.1 Fresh water supply

NOTE!

- ☞ The water supply corresponds at least with the state of the art of 03/2009 (Directive 202/72/EC).
- ☞ Water from the fresh water tank should be used as drinking water only if it is certain that at the time of filling the water had, and still has, drinking water quality. **The owner and user bears the sole responsibility for the quality of the water added to the tank.**

CAUTION!

To prevent the water pump from seizing up, do not operate it without water!

All models have a fresh water tank and a water pump supplied by the 12 V electrical system. The pump fitted in the fresh water tank starts when a tap is used.

The fresh water tank is either under a seating group or under the bed.

The fresh water tank is filled via the filler neck on the outer panel. The fresh water tank can be filled using a suitable container (e.g. watering can) (see Section „10.1.1“").

10.1.1 Filling the fresh water tank

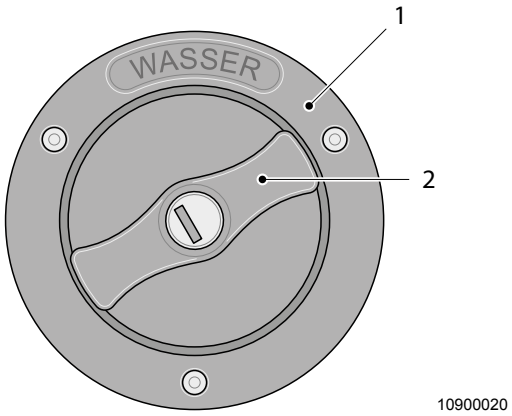
DANGER!

Only user water with drinking quality to fill the fresh water tank.

Filling the fresh water tank

Fresh water filler neck (Fig. 54, item 1) is located on the outer panel of the vehicle.

1. Open water tank cover (Fig. 54, item 2).
2. Fill the fresh water tank using a suitable container with a pouring fixture (e.g. watering can).
3. Close water tank cover (Fig. 54, item 2).



1 Fresh water filler neck
2 Water tank cover

Fig. 54 Fresh water filler neck

NOTE!

We recommend that you change the water in the fresh water canister or fresh water tank regularly (e.g. weekly) even when full, as bacteria form in the fresh water after just a few days and will render the water undrinkable.

10.2 Waste water disposal

NOTE!

Waste water should only be drained on sites with suitable sewage systems or specially designated disposal facilities!

Depending on the model, motorhomes collect wastewater in a wastewater tank. The waste water tank is fitted under the floor. An optional heating for the waste water tank as well as a pipe auxiliary heating (heating for the waste water line) are available. This keeps the waste water tank frost-proof even at low temperatures.

The waste water is drained using a drain valve (ball valve) fitted on the waste water tank. On modern campsites the tank can be connected to the mains drainage.

In caravan models, the wastewater is collected centrally in a drain pipe attached to the underbody. A mobile waste water tank with a holding capacity of 25 litres can be installed as an optional accessory. This is stowed in the gas locker during the journey and must be placed under the left-hand side of the caravan to collect the waste water.

10.3 Draining the water system

10.3.1 Draining the water system (caravan)

The entire water system should be completely drained if you intend not to use it for some time, especially before the vehicle is laid up for the winter.

10.3.1.1 Draining the fresh water canister or fresh water tank

1. Ensure the water pump is switched off.
2. Remove the cleaning cover from the fresh water canister or fresh water tank and unscrew the plug on the base of the tank.
3. Put all taps to central position to fully open them.
4. Allow the fresh water tank or fresh water canister to drain fully.
5. Leave the plug and the cleaning cover open until the next refilling operation.

10.3.1.2 Emptying the waste water tank

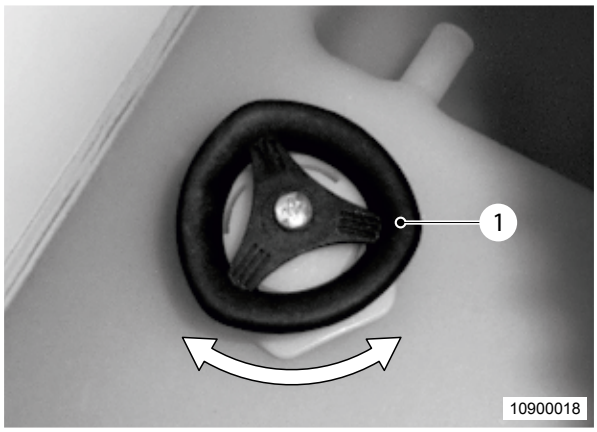
1. Screw the red cap onto the waste water connection piece. The pull handle can then be folded out and the waste water tank pulled to the disposal point.
2. After draining the wastewater tank, place it back underneath the wastewater outlet on the left-hand side of the vehicle and unscrew the red plug.

10.3.2 Draining the water system (van)

The entire water system should be completely drained if you intend not to use it for some time, especially before the vehicle is laid up for the winter.

10.3.2.1 Emptying the fresh water tank

1. Ensure the water pump is switched off.
2. Open the cover to the water tank.
3. Turn drain valve (Fig. 55, item 1) clockwise to the stop.
4. Put all taps to central position to fully open them.
5. Let the fresh water tank drain empty.
6. Leave the drain valve open until refilling again.



1 Drain valve

Fig. 55 Emptying the fresh water tank

10.3.2.2 Emptying the waste water tank

1. Set the valve lever on the drain valve to position "OPEN" and drain the waste water at a suitable disposal point.
2. Then set the valve lever to position "CLOSED" to close off the waste water drain again. When closing the drain valve (ball valve), a small amount of rest water escapes from the valve through a drain opening for frost draining. This measure is necessary to prevent the ball valve freezing up.

10.3.3 Draining the water system (motorhome)

10.3.3.1 Emptying the fresh water tank

1. Ensure the water pump is switched off.
2. Open the service hatch of the service module.
3. Open the fresh water tank drain valve (Fig. 1, item 7).

11. Power supply

CAUTION!

The electrical system must be checked by a specialist workshop at least once a year!

NOTE!

In addition to this Chapter you should also familiarise yourself with the separate instructions provided by the manufacturers.

11.1 230 volt power supply (mains voltage)

You can connect your vehicle to an external power supply of 230 volt (mains voltage).

11.1.1 Establishing the electrical connection between the vehicle and the power source

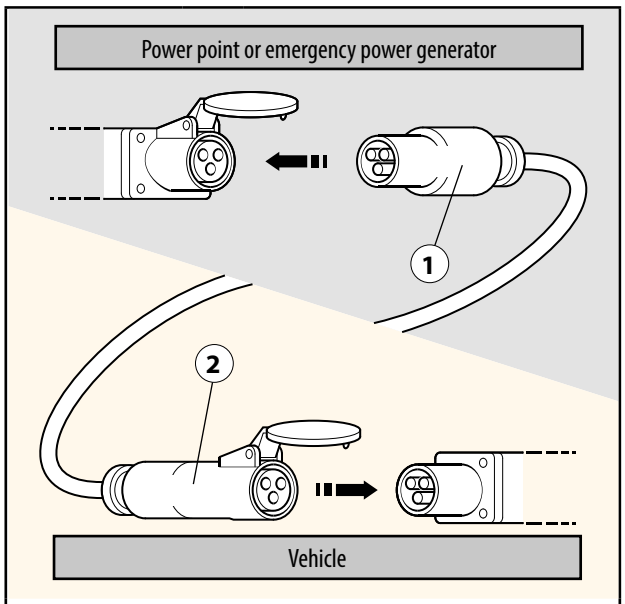
CAUTION!

When using a cable drum without a thermal safety cut-out, the electric cable must be fully unwound from the drum!

Connect the vehicle to the 230 volt mains using a rubber insulated flexible cable type **HO7 RN-F 3G 2.5 mm²**, or equivalent, with connectors complying with EN 60309-2 (Europe).

NOTE!

The total length of the electric cable should not exceed max. 25 m ±2 m!



1 Plug

2 Coupling socket

Fig. 56 Connection to mains supply

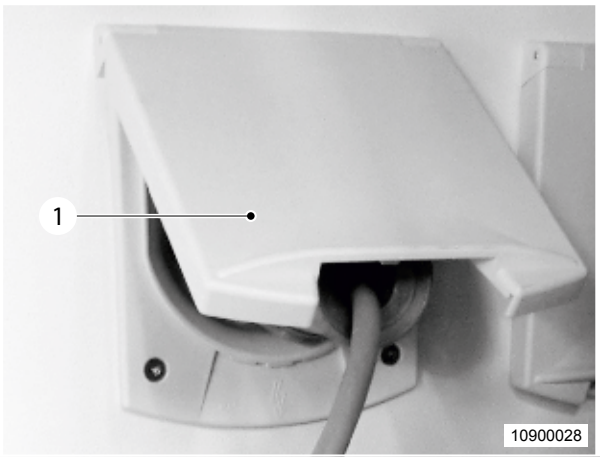
Proceed as follows to establish the electrical connection between the vehicle and the power point:

1. When laying the cable, start from the vehicle and connect to the power point last.

2. When disconnecting the electrical cable, remove the connector from the power point first, and then from the vehicle before finally reeling the cable in.

Motorhome: When the vehicle is connected to the 230 volt power supply, both the living area battery and the starter battery are automatically re-charged via the charger.

All 12 volt appliances are supplied from the living area battery.



1 Electricity feed-in

Fig. 57 Electricity feed-in

11.1.2 Protection for 230 volt circuit in the vehicle

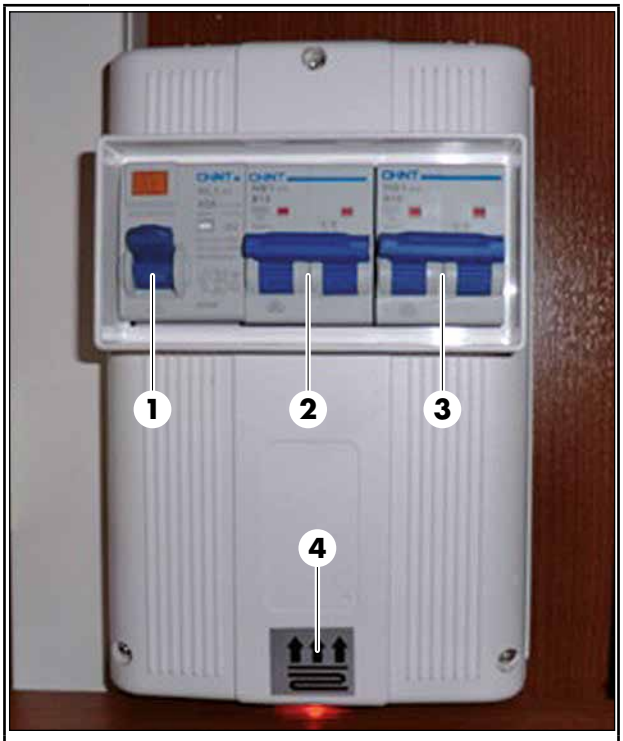
When connected to an external power supply of 230 volt, the vehicle is protected with a 13-A automatic circuit breaker.

The automatic circuit breaker (Fig. 58) also provides a 13-A protection for the air conditioning system and the underfloor heating (optional accessories).

The electrical appliances in the living area connected to the 12 volt power supply are protected by separate wire fuses either in the distribution box, on the charger or on the mains adapter.

The electrical unit is installed either in the wardrobe or under the seating module depending on the model.

Switch positions:	Switch up	=	**ON**
	Switch down	=	**OFF**



1 Residual current circuit breaker (RCCB)
2 Protection of 230 volt power circuit
3 Air conditioning (optional accessory)
4 Underfloor heating switch (optional accessory)

Fig. 58 Automatic circuit breaker

11.2 12 volt power supply

11.2.1 12 volt power supply in the living area

CAUTION!

Excessive operation of the electrical appliances (especially the refrigerator, the air circulation fan and using the optimal vehicle equipment with wastewater tank heater) via the living area battery **without 230 volt power supply and with the vehicle engine switched off** will have a significant effect on the capacity of the living area battery!

When the 230 volt power supply is not connected or is switched off, the living area of the vehicle is supplied with 12 volt DC power from the living area battery whether the vehicle engine is running or not.

Caravan: If the vehicle is not equipped with a living area battery, power is supplied via the starter battery of the towing vehicle (if connected).

Motorhome: When the engine is running, the living area battery and the vehicle's starter battery are both charged by the vehicle's alternator (generator).

The 12 volt power supply can be switched on and off by the appliance main switch of the 12 volt system located on the control and switch panel (see Section „11.4“, item 9).

NOTE!

The air circulation fan runs continuously when the heating is on. This will considerably reduce the capacity of the living area battery when the 230 volt power supply is not switched on or not connected.

11.2.2 Starter battery of the towing vehicle (caravan)

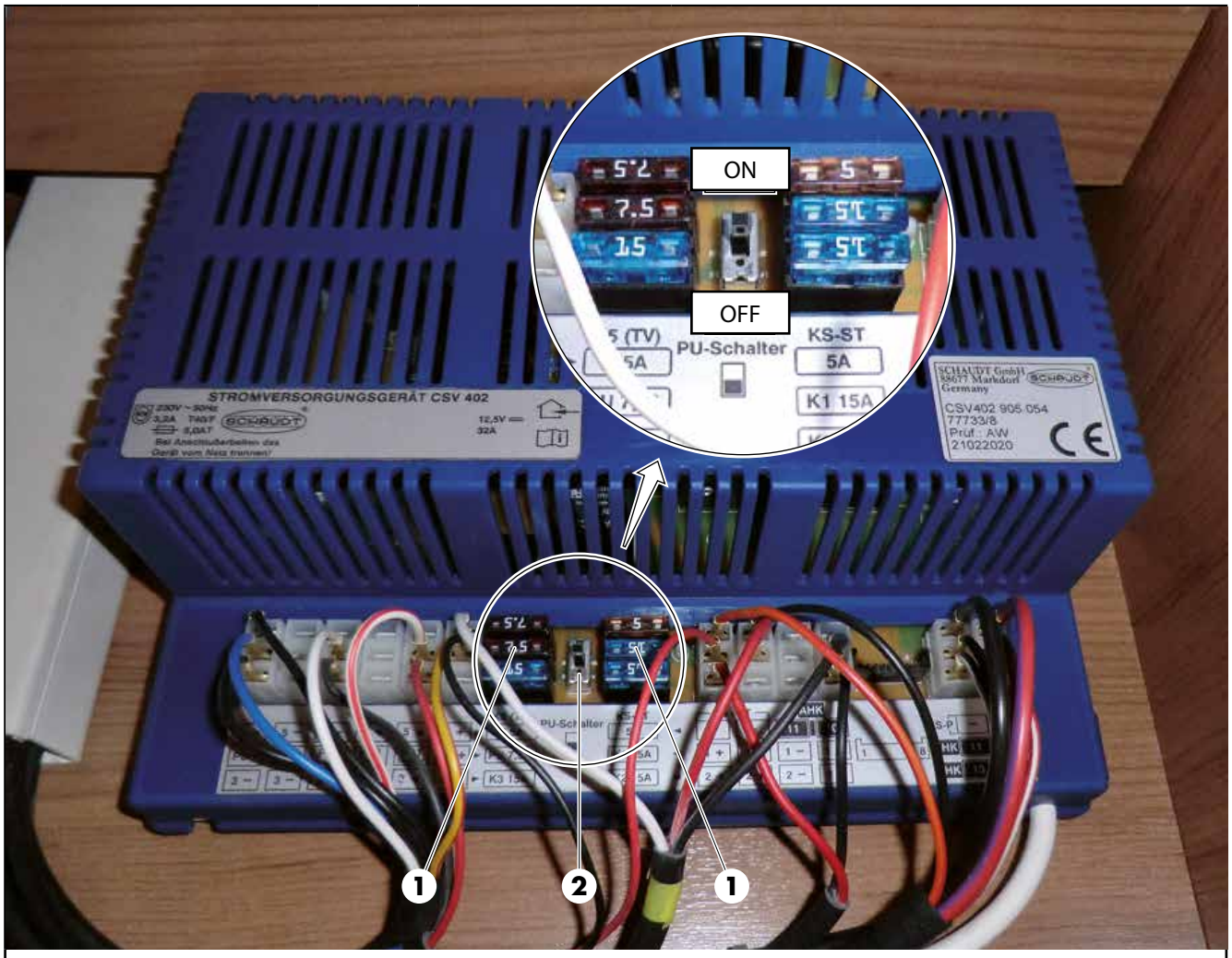
CAUTION!

As the capacity of the starter battery in the towing vehicle is limited, the capacity of this battery to start the vehicle can be significantly impaired if power is supplied to the caravan for too long!

When the caravan is electrically connected to the towing vehicle, the caravan is supplied with 12 volts (steady plus) by the starter battery of the towing vehicle.

When connecting an external 230 volt mains supply, the system automatically switches from 12 volts (towing vehicle starter battery) to 230 volt/12 volt mains power.

11.2.3 Switched-mode power supply unit 230 volt/12 volt (caravan)



1 Wire fuses
2 Water pump sliding switch ON/OFF

Fig. 59 Switched-mode power supply unit

All electrical appliances apart from the refrigerator, underfloor heating and air conditioning are supplied with 12 volts from a switched-mode power supply unit.

The installation location of the charger differs from model to model:

- in the wardrobe
- in the function base
- under the seating unit

The 12-volt power circuits are protected with fuses (**1**). The fuses are located on the front of the switched-mode power supply unit.

The sliding switch for the water pump (**2**) is also located on the front between the fuses (see detail).

11.3 12 volt power supply by living area battery and charger

11.3.1 Living area battery

DANGER!

- ☞ No maintenance work should be performed on the maintenance-free living area battery apart from regular visual inspections! No other work on the battery is permitted! The battery would be damaged irreparably, and there is a risk of it exploding.
- ☞ A wet battery may be replaced by an AGM battery. Observe the charger settings!
- ☞ When replacing the wet battery in the living area, make sure to refit the degassing hose.

CAUTION!

- ☞ If the living area battery is not to be used for a longer period, charge it up fully first and then turn it off with the main switch.
- ☞ The fully charged battery should be disconnected and removed from the vehicle in winter. Complete discharge can damage the battery beyond repair!
- ☞ The living area may only be charged with a suitable charger when out of the vehicle!

The maintenance-free living area battery and a charger provide the caravan with an independent 12 volt power supply.

The living area battery is either located under the bed or the seating unit (caravan) or under the driver's or passenger's seat (motorhome). Depending on the model, the respective charger is either installed in the wardrobe, the function base or under the seating unit.

Make sure that the living area battery is fully charged.

The charging state of the vehicle's batteries can be read out at the corresponding control and switch panel.

NOTE!

Before use, the living area caravan battery should be charged for at least 18 hours with the charger.

Exact charging of the living area battery is always guaranteed with the charger (see Section „11.3.2“).

If the battery is charged with an external charger, the manufacturer specifications with regard to the charging characteristic must be observed!

When the caravan is electrically connected to the towing vehicle with the engine running, the living area battery will be charged and all appliances running on 12 volt will be powered.

Before connecting to the 230 volt mains, check the charging state of the living area battery on the LED display by actuating the respective button. Activate the button again after connecting to the 230 volt mains and observe the LED display. The LED display must now light in the green area towards 13 volt. The charger is working correctly when this is the case. If the LED display does not change, the charger is not charging properly. Check to find the cause, e.g. check fuses 2 A, 30 A, and 50 A in the battery box. Contact an authorised dealer if this has no result.

NOTE!

A flat battery that cannot be charged must be replaced because it is damaged beyond repair.

NOTE!

Power is also drained from the living area battery, about 20 to 65 mA, even when the appliances are switched off. To avoid damage to the living area battery, the charge state should always be checked and the power supply switched off with the main switch when not in use.

The complete 12 volt system can be switched with main switch on the control and switch panel. The 12 volt unit is not in operation if the indicator light does not illuminate. However, a 12 volt electrical supply for the refrigerator and the heater is maintained.

11.3.2 Charger

The use of high-quality electronics means that the charger operates virtually without any loss of power.

The automatic charging process charges the living area battery gently and without harmful overloading, so considerably enhancing battery life.

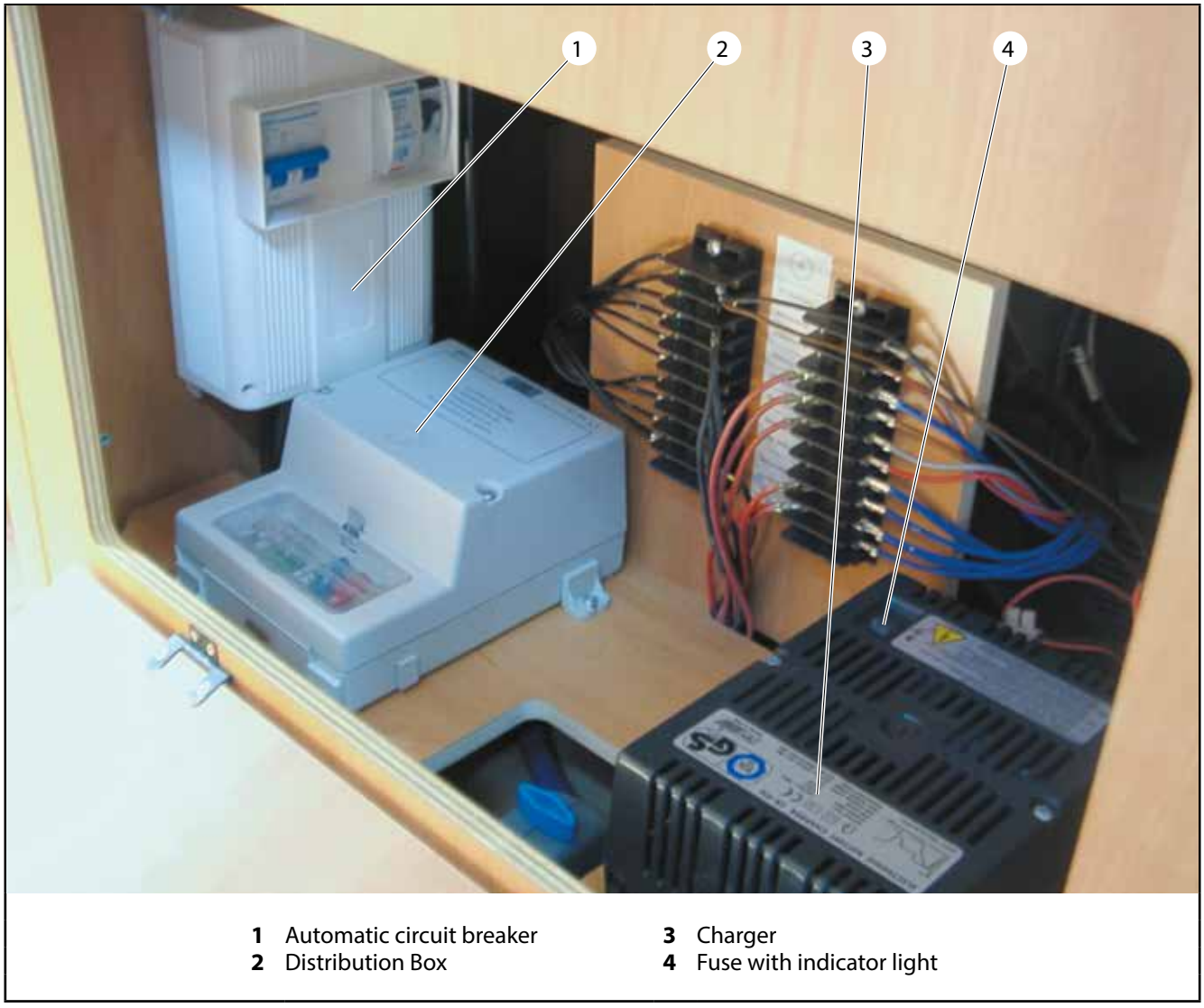
The motorhome's charger has two outputs: one for the starter battery (battery I) and one for the living room battery (battery II).

The charger starts as soon as it is connected to the 230 volt supply. This is indicated by the illumination of the cut-out switch. If the switch is not illuminated, push in the cut-out switch.

The installation location of the charger differs from model to model:

- in the wardrobe
- in the function base
- under the seating unit

Fig. 60 CaraOne charger



1 Automatic circuit breaker
2 Distribution Box
3 Charger
4 Fuse with indicator light

Fig. 61 Electric unit of the CaraBus

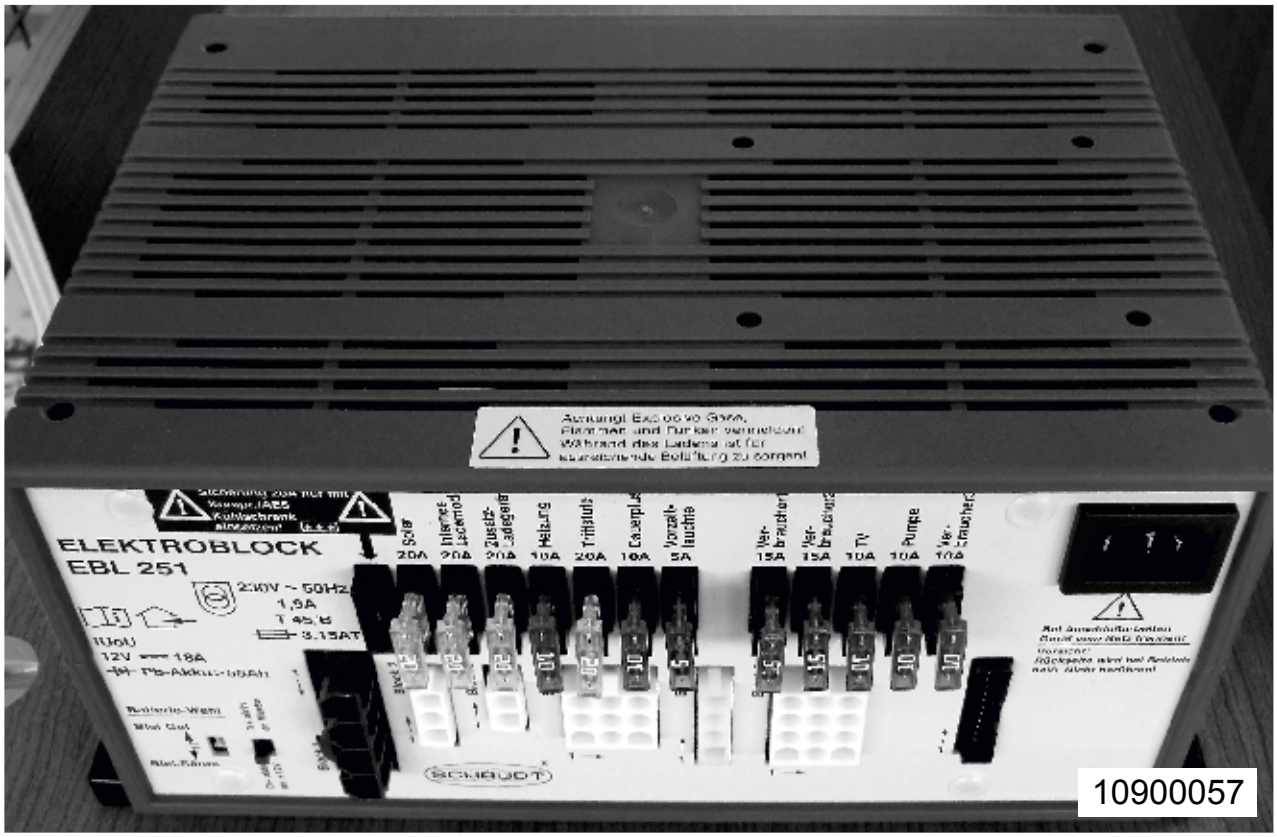


Fig. 62 Charger WEINSBERG TI / WEINSBERG Alcoves

NOTE!

You will find further information about the charger in the separate operating manual provided by the manufacturer.

11.4 Control and switch panel

11.4.1 LT 414 control and switch panel

The control board shown below is used to equip vehicles with living area battery and charger.

Switch on the 12 volt power supply in the vehicle using the rocker switch (**1**) – position “On”. The green indicator light (**2**) then shows that it is switched on.

Yellow indicator light (**3**) for applied 230 volt mains voltage at the input of the terminal block.

When the rocker switch (**6**) is actuated, the 8-digit LED display (**4**) indicates the charging state of the living area battery.

When the rocker switch (**6**) is actuated, the 8-digit LED display (**5**) indicates the level in the fresh water tank.

Switch on the power supply for the water pump with the rocker switch (**8**) – position “On”. The green indicator light (**7**) then shows that it is switched on.

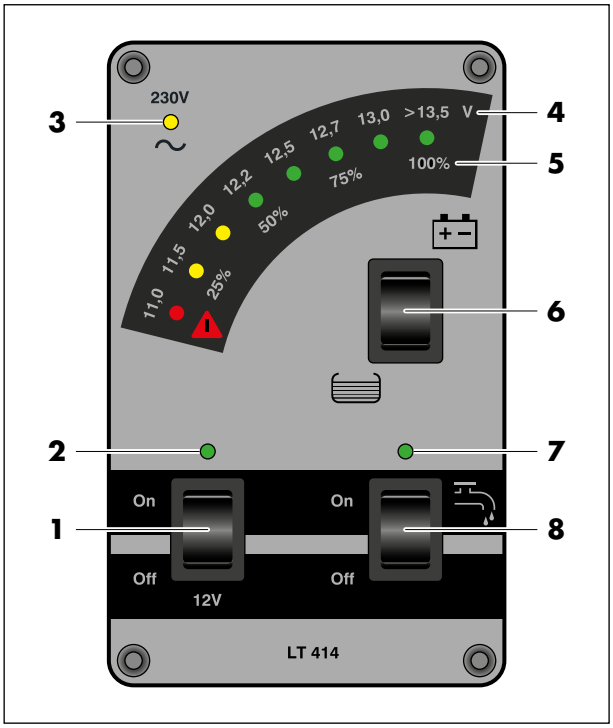


Fig. 63 LT 414 control and switch panel

NOTE!

To prevent the living area battery from discharging when the vehicle is left for long periods of time and no 230 volt mains voltage is applied (Fig. 63, item 3, yellow indicator not illuminated), switch off the main switch of the 12 volt system (Fig. 63, item 1) on the control and switch panel – position "Off" (Fig. 63, item 2, green indicator light extinguishes).

11.4.2 LT 415 fresh water tank control and switch panel (optional accessory)

If the button (**1**) is pressed, the level in the fresh water tank will be displayed on an 8-digit LED display (**2**).

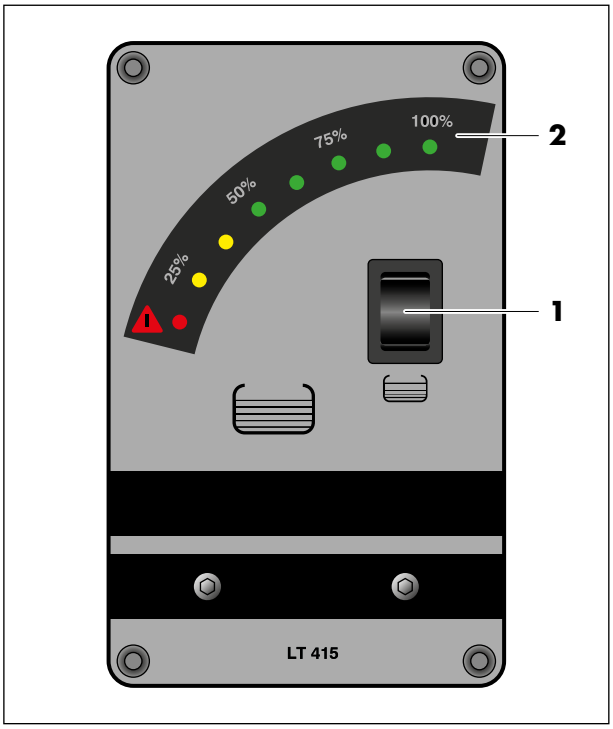
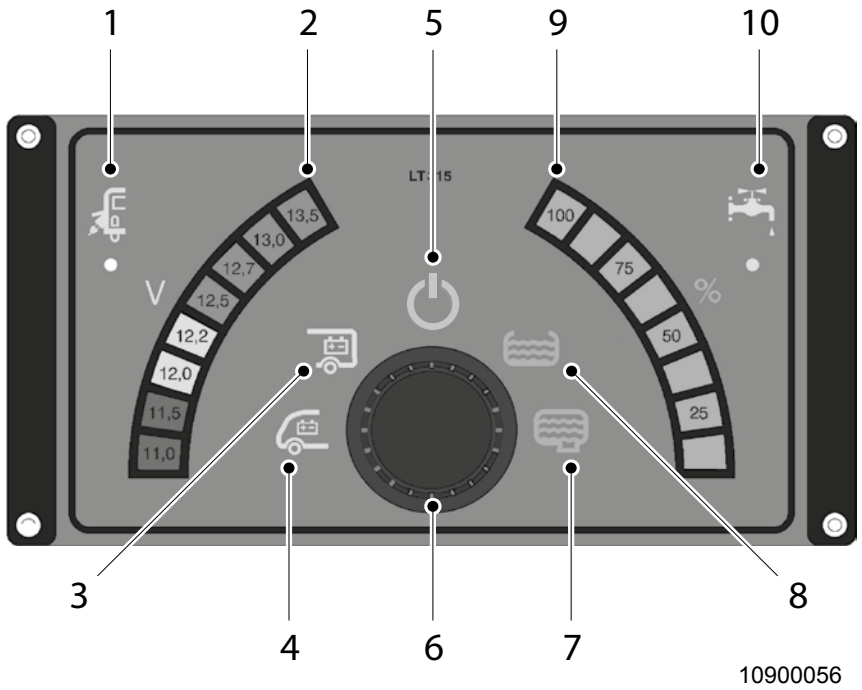


Fig. 64 LT 415 control and switch panel

11.4.3 LT 315 control and switch panel



1 Icon "Power control"
2 Scale "Tension"
3 Icon "Living area battery"
4 Icon "Starter battery"
5 Icon "12 Volt On"
6 Rotary/push control
7 Icon "Waste water tank"
8 Icon "Fresh water tank"
9 Scale "Filling level tank"
10 Icon "Water pump"

Fig. 65 LT 315 control and switch panel

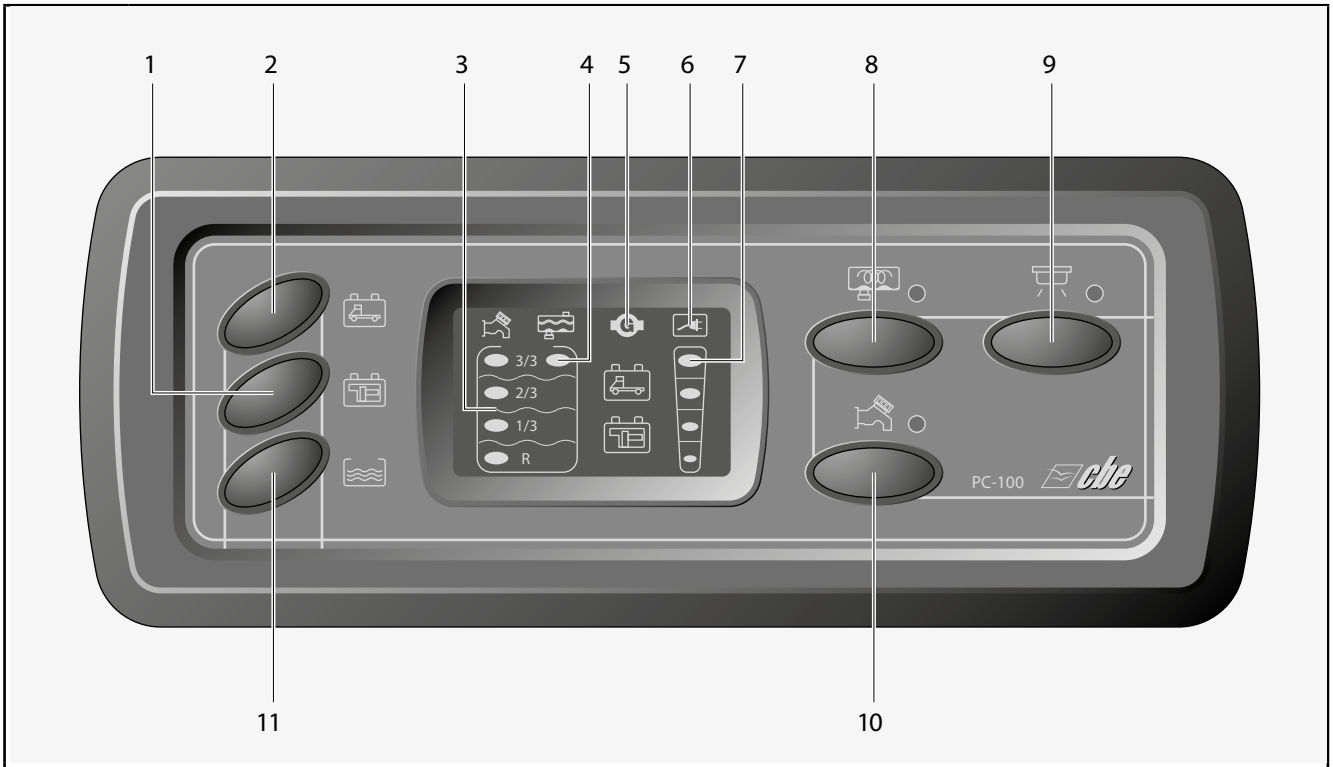
The integrated control and switch panel LT 315 allows to turn the electrical appliances running on 12 volts on and off together or individually by means of the respective switch.

Both the charging state of the starter battery (Fig. 65, item 2) and the living area battery (Fig. 65, item 3) as well as the fresh water tank level (Fig. 65, item 8) can be indicated on the control and switch panel.

NOTE!

You will find further information in the separate Operating Manual supplied by the manufacturer.

11.4.4 PC-100 control and switch panel



1 Button “Charging status living area battery”
2 Button “Charging status starter battery”
3 LED row "Fresh water tank level"
4 LED "Waste water tank full"
5 Indicator light “Alternator charging the starter and living area batteries”
6 Indicator "230 volt mains connected"
7 LED voltmeter “Monitoring voltage of starter and living area batteries”
8 Switch “Heating element waste water tank” (if item 9 is switched on)
9 Switch "Appliances main switch"
10 Switch “Water pump” (if item 9 is switched on)
11 Button "Fresh water tank level"

Fig. 66 PC-100 control and switch panel

The installed control and switch panel allows to turn the electrical 12 volt appliances wastewater tank heating (Fig. 66, item 8) and water pump (Fig. 66, item 10) on and off individually by means of the respective switch or together using the 12 volt appliances main switch (Fig. 66, item 9).

Both the charging state of the starter battery (Fig. 66, item 2) and the living area battery (Fig. 66, item 1) as well as the fresh water tank level (Fig. 66, item 3) can be shown on the control and switch panel by actuating the respective button.

Red LED (Fig. 66, item 4) signals a full waste water tank.

The control and switch panel is fitted with a protective device that prevents the battery from discharging completely. If the battery voltage reaches about 10.0 volt, all appliances that can be switched on and off using the main switch are switched off.
Activating the appliance 12 volt main switch (Fig. 66, item 9) for about 1 minute allows switching these appliances on again, then they are switched off automatically again. The appliances are automatically switched on again when the voltage is above 12 volt.

NOTE!

You will find further information in the separate Operating Manual supplied by the manufacturer.

11.5 Electrical supply in the vehicle

11.5.1 Supply for appliances

The electrical supply for appliances in the vehicle is split as follows:

Appliance	230 V (mains connection) Mains connection direct	230 V (mains connection) Via charger	12 V Living area battery (battery II)
Refrigerator	X		X
230 volt sockets	X		
12 volt power supply of living area		X	X
Power supply unit	X		
Waste water tank heating/pipe auxiliary heating (optional accessory)		X	X
Electric cartridge for Truma tankless water heater	X		
Alde electric cartridge hot water heater	X		
Alde circulating pump hot water heater			X
Air conditioning (optional accessory)	X		
Thetford toilet flush		X	X
Lighting		X	X
Water pump		X	X
Heating		X	X

Tab. 7 Electrical Supply

11.5.2 Example showing how to calculate the remaining capacity of an 80 Ah battery

If the main switch of the 12 volt power supply on the corresponding control and switch panel is not switched off, a permanent current of approx. 120 mA will be supplied, i.e. 2.88 Ah in 24 hours and 43.2 Ah in 15 days.
An 80-Ah battery has a remaining capacity of approx. 46 % after 15 days providing that the battery was fully charged.
The battery capacity decreases further at very low temperatures.

11.5.3 Example showing how to calculate the energy consumption for an 80 Ah battery

These values are approximate and depend on the model.

ENERGY BALANCE			SUMMER			WINTER		
Appliance	Power	Current	Hrs/day (operating hrs.)	Power per day	Current per day	Hrs/day (operating hrs.)	Power per day	Current per day
Spots (per spot)	20 W	1.7 A	2.0	40 W	3.4 Ah	4.0	80 W	6.8 Ah
Kitchen light	20 W	1.7 A	1.0	20 W	1.7 Ah	2.0	20 W	3.4 Ah
Ceiling/storage compartment light	40 W	3.3 A	1.0	40 W	3.3 Ah	5.0	80 W	6.6 Ah
Toilet cubicle light	20 W	1.7 A	1.0	20 W	1.7 Ah	1.5	30 W	2.55 Ah
Water pump	40 W	3.3 A	0.5	20 W	1.7 Ah	0.5	20 W	1.7 Ah
Heater/hot water boiler	72 W	6.0 A	2.0	144 W	12.0 Ah	16	1,152 W	96.0 Ah
Television	40 W	3.4 A	2.0	80 W	6.6 Ah	4.0	160 W	13.6 Ah
	Energy consumption		**Total**	**364 W**	**30.4 Ah**	**Total:**	**1,562 W**	**130.65 Ah**
			Approx. 2.0 days independent			**Approx. 0.5 days independent**		

Tab. 8 Example Showing How to Calculate Energy Consumption for an 80 Ah Battery

NOTE!

- ☞ This table is provided for orientation purposes only and uses exemplary consumption values.
- ☞ For batteries with larger or smaller Ah capacities, the capacity information should be correspondingly adjusted to higher or lower values.
- ☞ For your own calculations, use the actually installed capacity and consumptions values of batteries and consumers.

11.6 External 230 volt power supply via emergency power generator (optional accessory)

CAUTION!

- ☞ Prevent damage to the electronics by avoiding voltage deviations when operating the emergency power generator!
- ☞ Pay attention to the manufacturer's specifications when using an emergency power generator!

CAUTION!

When using an emergency power generator, an overvoltage protector should be fitted before the charger in the 230 volt circuit. You can obtain further information from your local ***WEINSBERG***– Service Centre.

11.6.1 Starting the emergency power generator

1. Start the emergency power generator and bring it up to operating temperature by letting it run for approx. 5 to 10 minutes (depending on the outside temperature) and wait until a uniform voltage is attained: see voltage indicator on emergency power generator.

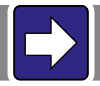
   Causes for voltage fluctuations may be e.g. suddenly switching the emergency power generator on or off, or the emergency power generator shutting off automatically when the fuel runs out.

2. Connect the emergency power generator and the vehicle according to Section „11.1.1“.

11.6.2 Shutting down the emergency power generator

1. Disconnect the emergency power generator from the vehicle.

2. Switch the emergency power generator off.



NOTE!

You will find further information about the emergency power generator in the separate Operating Manual supplied by the manufacturer.

11.7 USB socket (optional accessory)

CAUTION!

- ☞ Only devices that are suitable for that purpose may be connected to the USB socket.
- ☞ These devices must be designed for a voltage of 5 V.

Some caravan layouts have a USB socket located in the living area (Fig. 67, item 1) that can be used to connect suitable devices for charging.

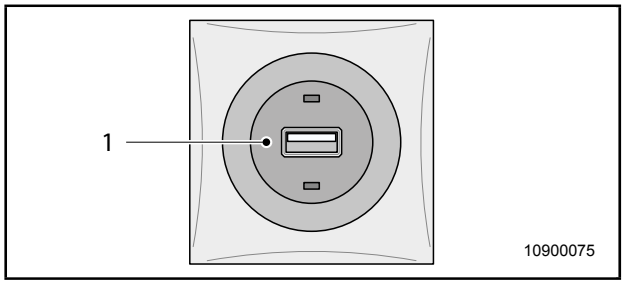


Fig. 67 USB socket

NOTE!

Before connecting a device to the USB socket, verify that the device to be connected is suitable for that purpose.

11.8 Car radio switch (TI/alcove models)

Regardless of the position of the ignition key, the car radio can be switched on and off with the toggle switch shown opposite.

The switch for the car radio is located on the dashboard near the cigarette lighter.

Three switch positions are possible:

- I - Radio functions with ignition switched on
- ○ - Radio without function
- II - Radio functions with ignition switched off

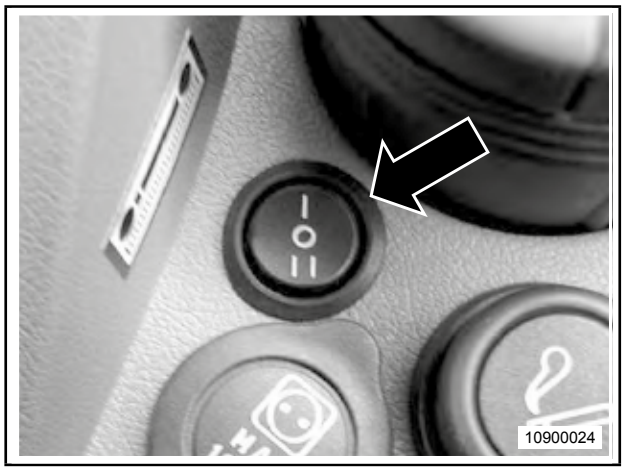


Fig. 68 Car radio switch on the dashboard

12. Heating & hot water

CAUTION!

Damage to the service cassette door!
If the wall flue of the vehicle is located beside the service cassette door, the opened cassette door is damaged during heating operation by the heated air!
☞ Keep the service cassette door closed when the heater is switched on!

12.1 Heating with a S 3004/S 5004 (P) gas heater

The gas heater is under the wardrobe or in the heating cabinet.

DANGER!

Risk of explosion! Never allow unburned gas to flow out!

12.1.1 Switching on a S 3004/S 5004 gas heater (electric ignition)

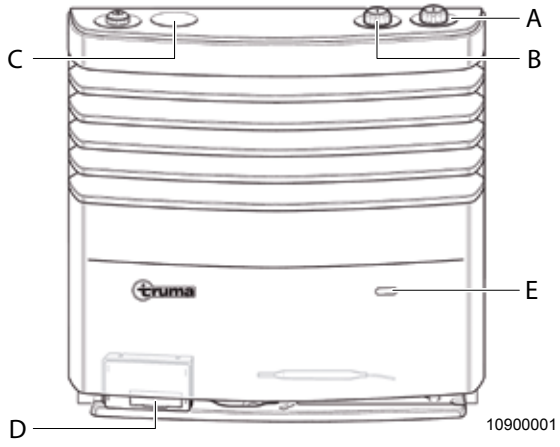
1. Open the gas bottle shut-off valve and the appliance shut-off valve for the heating » « on the valve block under the kitchen range.

2. Turn the control button (**A**) to a thermostat setting between 1 and 5 and push it in completely. Ignition takes place automatically (ignition sparking audible) until flame is alight. The flame can be seen through the viewing window (**E**).

3. After ignition, hold down the control button (**A**) for up to 10 seconds until the ignition detector responds. If the gas line is filled with air, it may take up to 2 minutes until the gas reaches the point of combustion.

CAUTION!

Risk of explosion!
Wait 3 minutes before trying to ignite again.



A Control button for thermostat
B Control button for air circulation fan
C Control button for 2nd air circulation fan
D Battery compartment automatic ignition
E Viewing window for gas flame

Fig. 69 S 3004/S 5004 gas heater (electric ignition)

4. Should the flame go out during the closing time of the ignition safety system (approx. 30 s), re-ignition will take place immediately. If ignition does not take place despite audible ignition sparking, there is a fault with the device (e.g. empty gas bottle or defective heating).

NOTE!

If you do not hear the ignition sparking, check the automatic ignition battery and replace it, if necessary (see Section "12.1.5 Changing the automatic ignition battery (not with S 3004 P)").

NOTE!

☞ When new heaters are placed into service for the first time, there is a light generation of smoke. This is normal.
To eliminate this problem quickly, run the heating at full power, switch on the air circulation fan and open the air outlets. Make sure that the vehicle is properly ventilated during the process.

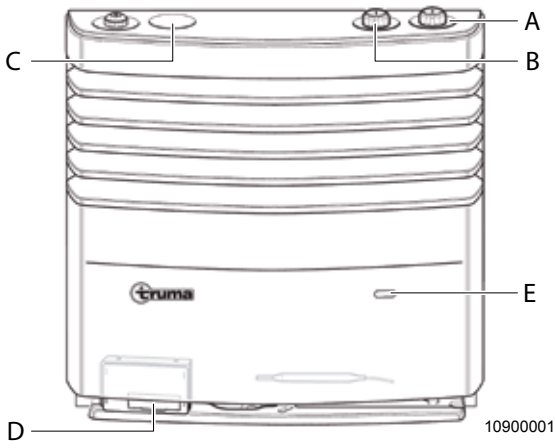
12.1.2 Switching on a S 3004 P gas heater (Piezo ignition)

1. Open the gas bottle shut-off valve and the appliance shut-off valve for the heating » « on the valve block under the kitchen range.

2. Turn the thermostat control button (**A**) to a setting between 1 and 5 and push it in completely. At the same time, press the Piezo push igniter (**B**) in quick succession until the flame ignites. The flame can be seen through the viewing window (**E**).

3. After ignition, hold down the control button (**A**) for up to 10 seconds until the ignition detector responds.

4. Watch another 10 seconds through the viewing window whether the flame has perhaps been extinguished by air in the gas line (caused by gas bottle change).



A Control button for thermostat
B Piezo push igniter
C Dummy cover
D Battery compartment automatic ignition
E Viewing window for gas flame

Fig. 70 S 3004 P gas heater (Piezo ignition)

CAUTION!

Risk of explosion!
Wait 3 minutes before trying to ignite again.

5. This is also applicable when an already operating heating goes out and must be ignited again.

6. If the gas line is filled with air, it may take up to 2 minutes until the gas reaches the point of combustion. During this time, keep the control button (**A**) pressed down and keep pressing the piezo igniter button (**B**) until the flame burns steadily.

12.1.3 Adjusting the gas heating

CAUTION!

To ensure fast, uniform distribution of the heated air and to reduce the surface temperatures on the hot air outlet grille, the heating must always be operated with the Truma hot air system switched on.

CAUTION!

Damage to the refrigerator door!
Do not use the heating with the refrigerator door open if the heating is located next to the refrigerator. Keep the refrigerator door closed when operating the heating system.

1. The thermostat control button (Fig. 69, item A and Fig. 70, item A) is used to set the room temperature which is automatically maintained by the built-in thermostat.

2. An average room temperature of approx. 22 °C can be achieved **without switching on the blower** with a thermostat setting of about » **3** «.

3. To ensure cosy hot air distribution and to reduce condensation on cold surfaces it is recommended to use a thermostat setting of approx. » **4** « **with the blower switched on**.

12.1.4 Switching off the gas heater

1. If the thermostat control knob (Fig. 69, item A and Fig. 70, item A) is set to "0", automatic ignition will be switched off automatically.

2. Close the appliance shut-off valve for the heating »  « and the gas bottle shut-off valve, if you intend not to use it for some time.

3. Switch off the air circulation fan using the relevant control element.

12.1.5 Changing the automatic ignition battery (not with S 3004 P)

If ignition is not audible during start-up for the first time or only at intervals of more than a second, the automatic ignition battery needs to be replaced.

CAUTION!

The automatic ignition battery should only be changed with the heating switched off.

A new battery for the automatic ignition should be inserted before switching on the heating again after the summer. Dispose of spent batteries in the proper manner.

Proceed as follows to replace the automatic ignition battery:

1. Remove the font panel, slide up the battery cover (Fig. 69) of the automatic ignition system and replace the battery. Observe polarity (Plus/Minus) of the battery.

   Only use temperature-resistant (+70 °C), leakproof round cell batteries (type LR 6, AA, AM 3).
   Other batteries may cause malfunctions!

2. Close the battery compartment again and put the front panel back in place.

NOTE!

Used batteries should be disposed of according to the regulations!

NOTE!

You will find further information in the separate Operating Manual supplied by the manufacturer.

12.2 Air circulation fan (not with S 3004 P)

DANGER!

The hot air must be able to escape freely. For this reason, no objects should be placed over the heating or cover plate!

CAUTION!

Remove accumulated dust from the heat exchanger, floor plate and fan wheel of the Trumavent hot air system once a year or every three months if in constant use. Carefully clean the fan wheel with a small brush.

The distribution of hot air is regulated using the rotary knob for the blower output (Fig. 71, Fig. 72, Fig. 73). Proceed according to Section „12.2.1“, Section „12.2.2“, Section „12.2.3“.

12.2.1 Air circulation fan 12 volt version – gas heating control element (optional accessory)

1. If the rotary switch (**B**) is set to position “A”, the electronic system will automatically adjust the necessary blower output and limit the speed to the set value. The thermostat control element (Fig. 69, item A) can be used to limit the heating output, if required. Regulation takes place automatically between the value selected and slow running.

2. If the rotary switch (**B**) is set to position “M”, the required blower output can be selected manually using the rotary knob (**A**).

3. If the rotary switch (**B**) is set to position “0”, the air circulation fan is switched off.

4. If the rotary switch (**B**) is set to position “”, the blower output can be set to the highest value (maximum air flow).

A Rotary knob/scale for blower output (1 – 5)

B Rotary switch/scale for modes

- A Automatic
- O Off
- M Manual
- Booster level

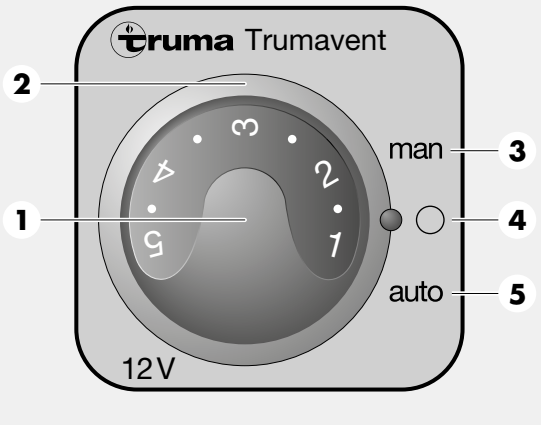
Fig. 71 Internal air circulation fan control element, 12 volt version

12.2.2 Air circulation fan 12 volt version – Trumavent external control element (optional accessory)

1. If the mode selector switch (**2**) is set to position (**3**) "**man**", the required blower output can be selected using the air circulation fan rotary switch (**1**).

2. If the mode selector switch (**2**) is set to position (**5**) "**auto**", stepless adjustment of the blower output to the output level of the heating will be performed. The thermostat control element (Fig. 69, item A) can be used to limit the heating output, if required. Regulation takes place automatically between the value selected and slow running.

3. If the mode selector switch (**2**) is set to position (**4**) "○", the air circulation fan is switched off.



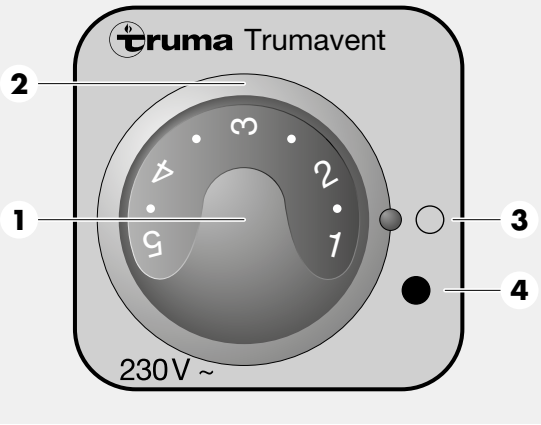
1 Rotary switch air circulation fan
2 Mode selector switch
3 Automatic position "**man**"
4 Off position "○"
5 Manual position "**auto**"

Fig. 72 External air circulation fan control element, 12 volt version

12.2.3 Air circulation fan 230 volt version – Trumavent external control element (optional accessory)

1. If the mode selector switch (**2**) is set to position (**4**) "●", the required blower output can be selected using the air circulation fan rotary switch (**1**).

2. If the mode selector switch (**2**) is set to position (**3**) "○", the air circulation fan is switched off.



1 Rotary switch air circulation fan
2 Mode selector switch
3 Off position "○"
4 On position "●"

Fig. 73 External air circulation fan control element, 230 volt version

12.3 Hot water supply by Truma boiler 10/14 (optional accessory)

When a Truma boiler is used for hot water, the vehicle is equipped with a 10 or 14-litre hot water boiler under the seating group. This supplies hot water in a temperature range from 15 to 70 °C.

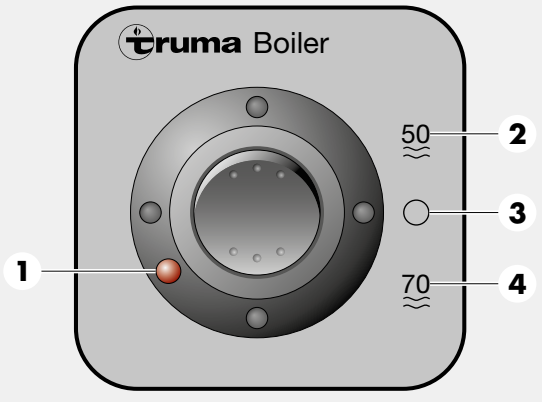
12.3.1 Hot water heating

DANGER!

- ☞ Hot water must not be used as drinking water or for cooking!
- ☞ To prevent the occurrence of micro-organisms, the water in the boiler should be heated up to 70 °C at regular intervals!
- ☞ When using the boiler, the vent window with the boiler flue should always be kept closed. There is a risk of toxic gases!

1. When starting up the hot water boiler for the first time or when it is empty, the boiler must be filled with water; this requires filling the fresh water tank.
2. Check that the safety/drain valve in the cold water supply of the Truma boiler and the plug in the bottom of the fresh water tank are closed.
3. Now open all taps (water tap in the "hot" mixer position) until the hot water boiler has filled, i.e. air has been forced out of the hot water boiler and water pipes, and water is flowing without bubbles.
4. Check power supply for water pump.
5. Connect a gas bottle and open the shut-off valve on the gas bottle.
6. Open the appliance shut-off valve » « next to the hot water boiler and remove the cover from the boiler flue.
7. Put the hot water boiler to the position "50°" or "70°" using the control element.

   If there is air in the gas line, it may take up to 1 minute until the gas reaches the point of combustion. Should a malfunction occur (e.g. lack of gas, air in gas line, etc.), the red indicator (**1**) "Fault" lights up. Switch off the hot water boiler, wait 5 minutes and switch back on.
8. To switch off the hot water boiler, move the control element to the position "○".



1 Red "**Fault**" LED
2 Boiler On "**50**"
3 Boiler Off "O"
4 Boiler On "**70**"

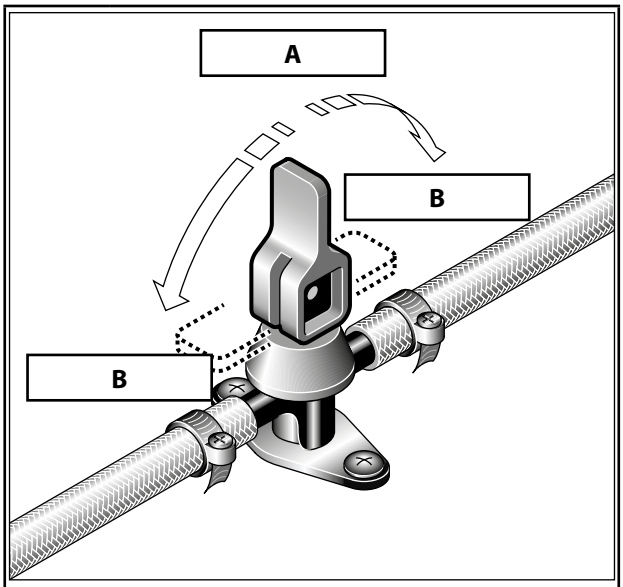
Fig. 74 Control element Truma boiler 10/14

12.3.2 Emptying the Truma boiler

CAUTION!

If the Truma boiler will not be used for some time, especially before the vehicle is laid up for the winter, it must be emptied via the drain valve.

1. Disconnect the power supply for the water pump.
2. Open all hot water taps in the kitchen and bathroom.
3. Open the safety/drain valve (red rocker lever) near the hot water boiler (rocker lever vertical) and drain off water.
4. Check that the entire contents (10 or 14 litres of water) have completely drained.
5. Close all water taps and the drain valve again.



A Drain
B Closed

Fig. 75 Drain valve Truma boiler 10/14

NOTE!

You will find further information in the separate Operating Manual supplied by the manufacturer.

12.4 Hot water supply by Truma tankless water heater

When using a Truma tankless water heater for providing hot water, the heating recirculation system of the vehicle is equipped with a 5-litre hot water boiler. This supplies hot water in a temperature range from 15 °C to 60 °C. In addition, a 230 volt heating element is integrated in the Truma tankless water heater which can also heat the hot water boiler.

12.4.1 Hot water heating

DANGER!

Hot water must not be used as drinking water or for cooking!

CAUTION!

The Truma tankless water heater must never be operated electrically if it does not contain water!

1. When starting up the hot water boiler for the first time or when it is empty, the boiler must be filled with water; this requires filling the fresh water tank.
2. Make sure the drain and air release valves of the Truma tankless water heater and the drain plug at the bottom of the fresh water tank are closed.
3. Now open all taps (water tap in the "hot" mixer position) until the hot water boiler has filled, i.e. the air has been forced out of the hot water boiler and water pipes, and water is flowing without bubbles.

12.4.1.1 Hot water heating via heating recirculation system

☞ Switch on the heating with air circulation fan according to Section "12.1 Heating with a S 3004/S 5004 (P) gas heater". When the circulating air is distributed by the fan, the water in the Truma tankless water heater is also heated.

12.4.1.2 Hot water heating in 230 volt electrical operation

1. Push the rocker switch (Fig. 76, item 1) down to position "♨", indicator lights up. The water temperature is adjusted to 60 °C by a thermostat. It takes approx. 50 minutes to heat the water from 15 °C to 60 °C.

2. To switch off the device, set the rocker switch (Fig. 76, item 1) to position "○".

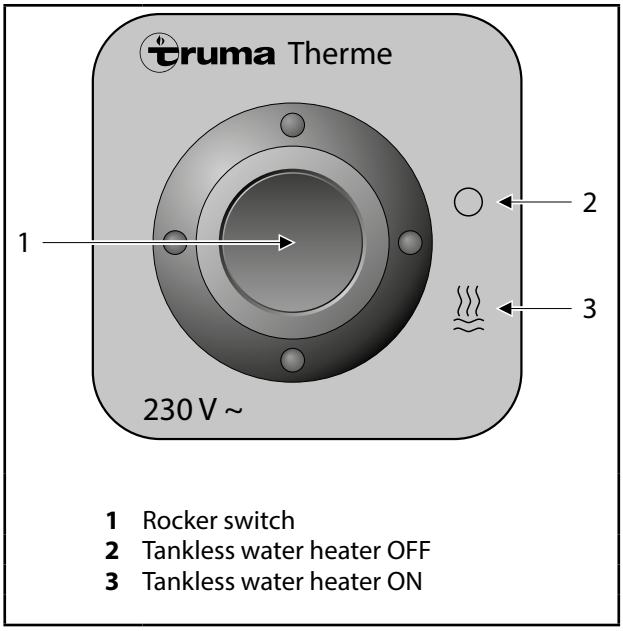


Fig. 76 Truma tankless water heater control element

12.4.2 Emptying the Truma tankless water heater

CAUTION!

If the Truma tankless water heater will not be used for some time, especially before the vehicle is laid up for the winter, it must be emptied via the drain valve.

1. Disconnect the power supply for the water pump.

2. Drain the fresh water tank or remove the water pump from the tank.

3. Open all hot water taps in the kitchen and bathroom.

4. Open both drain and air release valves and drain water.

5. Check that the entire contents (5 litres) have completely drained.

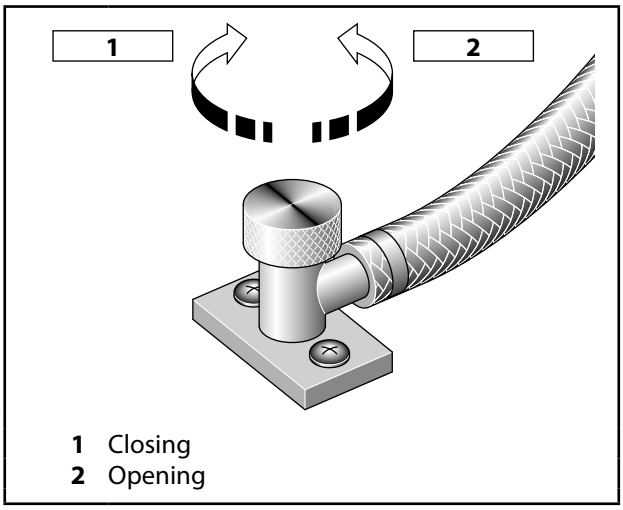


Fig. 77 Drain valve Truma tankless water heater

12.5 Truma Combi

CAUTION!

- ☞ Work on the electronic control unit of the Trumatic must only be carried out by trained personnel!
- ☞ The water pump must not be operated unless a supply of water is ensured!
- ☞ Switch off the main switch on the control and switch panel (see Section „11.4“) before longer periods of absence.

Depending on the model, the vehicle is fitted with a Trumatic hot air liquid gas heater with integrated hot water boiler. The 12.5 litre hot water boiler supplies hot water in a temperature range of 40 °C to 60 °C. The heating is located under the fixed bed in all models.

NOTE!

Before starting up the Trumatic, also observe the separate manufacturer's manual!

1. Remove chimney cover.
2. Connect a gas bottle. Open the gas bottle shut-off valve and appliance shut-off valve for the heating .
3. Proceed as follows to prepare the hot water supply:
   - Fill the fresh water tank.
   - Make sure the knob of the safety drain valve is in the "CLOSED" position.
   - Switch on the main switch and the water pump on the control and switch panel (see Section „11.4“).
   - Open the hot water tap in the “hot” mixer position until the hot water boiler has filled, i.e. the air has been forced out of the hot water boiler and the water pipes, and water is flowing.

To set the respective modes for heating/hot water heating, see Section „12.5.1“".

12.5.1 Setting modes with the Truma Combi control element

12.5.1.1 Setting heating modes

☞ Set the desired mode on rotary switch (**2**) of the Trumatic control element as follows:

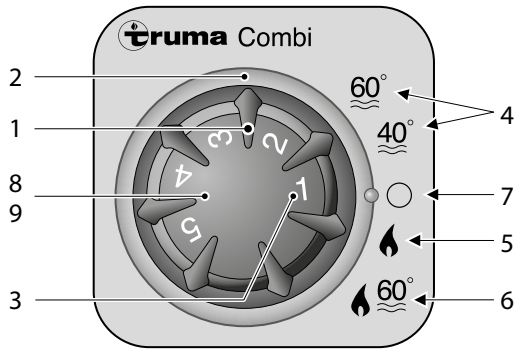
– Summer operation, position (**4**) or

– Winter operation, position (**5**/**6**)

Once one of the two modes is switched on, green indicator lamp (**3**) behind the rotary knob goes on.

If the green indicator lamp does not go on, replace the fuse in the electronic control unit and/or the fuse for the battery monitor.

A continuously lit red indicator lamp (**9**) indicates a closed gas bottle shut-off valve and/or appliance shut-off valve, interrupted air flow, air in the gas line or a faulty fuse. The fault is cleared by turning the appliance off and then back on again.



1 Rotary knob room temperature, continuously adjustable, step 1 – 5 (illuminated by green "Operating" LED)
2 Mode control switch
3 Green "Operating" LED
4 Summer mode "On" (water temperature 40 °C or 60 °C)
5 Winter mode "On" (heating without hot water)
6 Winter mode "On" (heating with hot water)
7 Switch position "Off"
8 Yellow LED "Boiler heating phase" (goes off when the preset water temperature is reached)
9 Red LED "Fault"

Fig. 78 Truma Combi control element

12.5.1.2 Heating: Summer operation

Heating: Hot water only

☞ Set the rotary switch (**2**) to the desired water temperature 40 °C or 60 °C (**4**). Once the desired temperature has been reached, the burner shuts down and the yellow indicator lamp "Boiler warm-up phase" (**8**) goes off. This function is only available in summer mode. The burner operates at the lowest burner setting.

12.5.1.3 Heating: Winter operation

Heating with controlled water temperature

1. Set the rotary switch (Fig. 78, item 2) to position (Fig. 78, item 6).

2. Turn the rotary knob (Fig. 78, item 1) to the desired thermostat setting 1 — 5 for the room temperature. Green indicator lamp "Operating" (Fig. 78, item 3) goes on and shows the room temperature selected. After attaining the room temperature selected, the burner switches to the lowest setting and the heats the water in the boiler to 60 °C.

   Yellow indicator lamp "Boiler warm-up phase" (Fig. 78, item 8) shows the heating phase and goes off when the water temperature has been attained.

Heating without controlled water temperature

1. Set the rotary switch (Fig. 78, item 2) to position (Fig. 78, item 5).

2. Turn the rotary knob (Fig. 78, item 1) to the desired thermostat setting 1 — 5 for the room temperature. Green indicator lamp "Operating" (Fig. 78, item 3) goes on and shows the room temperature selected. After attaining the room temperature selected, the heating switches off. When the boiler is filled, the water is heated automatically as well.

   In this mode, the yellow indicator lamp "Boiler warm-up phase" (Fig. 78, item 8) is only on for water temperatures below 5 °C.

NOTE!

Heating is basically unrestricted with or without water.

Heating with drained water system

1. Set the rotary switch (Fig. 78, item 2) to position (Fig. 78, item 5).

2. Turn the rotary knob (Fig. 78, item 1) to the desired thermostat setting 1 — 5 for the room temperature. Green indicator lamp "Operating" (Fig. 78, item 3) goes on and shows the room temperature selected. After attaining the room temperature selected, the heating switches off.

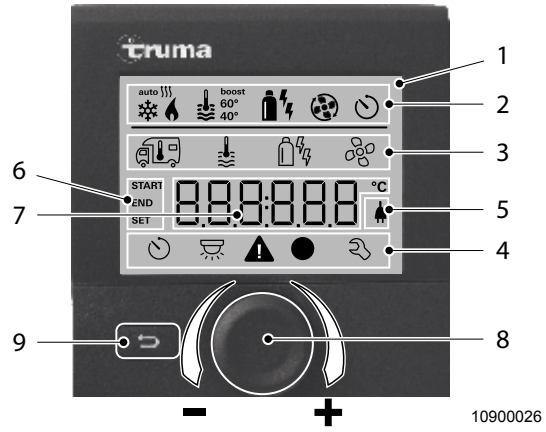
   In this mode, the yellow indicator lamp "Boiler warm-up phase" (Fig. 78, item 8) is only on for water temperatures below 5 °C.

12.5.2 Setting modes with the Truma CP plus control element (optional accessory)

Rotary push button (Fig. 79, item 8) serves to select menus or to change the values to be set.

- ☞ Turn the rotary push button to the left or right to select a menu item or to change the values.
- ☞ Press the rotary push button to activate the menu item or to save the value set.
- ☞ Press the rotary push button for longer than 3 seconds to switch the control element on or off.

Back button (Fig. 79, item 9) serves to switch back to the previous menu or previous display.



1 Display
2 Status bar
3 Menu bar (top)
4 Menu bar (bottom)
5 Display mains voltage 230 V (power grid)
6 Display time switch
7 Settings/values
8 Rotary push button
9 Back button

Fig. 79 Truma CP plus control (optional accessory)

NOTE!

You will find further information in the separate Operating Manual supplied by the manufacturer.

12.5.3 Switching off the heater/hot water boiler

1. Set the rotary switch (Fig. 78, item. 2) to position (Fig. 78, item 7)○.
2. Close the appliance shut-off valve for the heating and the gas bottle shut-off valve if it will not be used for any length of time.
3. Fit chimney cover.
4. Switch off the water pump using the respective switch or the main switch on the control and switch panel (see Section „11.4“).

12.5.4 Heating: Emptying the hot water boiler

CAUTION!

The drain plug on the electric safety/drain valve must be kept free from obstructions (slush, ice, leaves etc.) at all times!

1. Switch the water pump off by means of the appropriate switch or main switch at the control and switch panel (Section „11.4“).
2. Open all the hot water taps in the kitchen and bathroom.
3. Turn turn-switch (**1**) from position "CLOSED" by 90° until it engages in position "DRAIN". Pushbutton (**2**) pops out, position "DRAIN".

   The contents of the hot water boiler are then emptied directly outside via the drain plug.
   During draining, check that the entire contents of the hot water boiler (approx. 12.5 litres) empty completely.

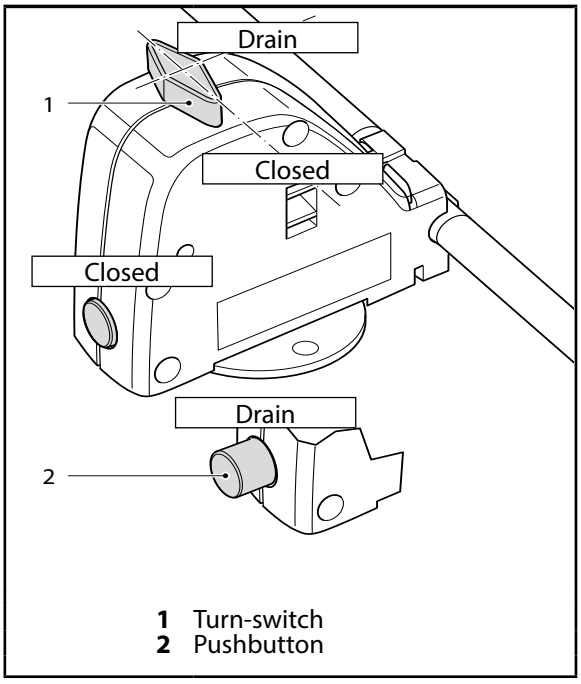


Fig. 80 Safety/drain valve, hot water boiler

NOTE!

- ☞ When the heating is off, the safety/drain valve can only be closed again at temperatures above 7 °C!
- ☞ When the temperature at the safety/drain valve is below approx. 3 °C and the appliance is not in operation or has a fault, the water can drain off by itself!

As all other appliances in the water circuit (water pump, taps etc.) are not protected by the frost protection valve and the automatic drain could be obstructed by dirt or ice, the water must be drained after the boiler is switched off if there is a risk of frost.

NOTE!

You will find further information in the separate Operating Manual supplied by the manufacturer.

12.6 Alde Compact central heating (optional accessory)

The Alde Compact central heating system with integrated hot water heating is located in the wardrobe and is controlled using the relevant control element (see Fig. 82 and Fig. 83).

The heaters (radiators) supplied by a circulating pump with glycol fluid are positioned to ensure an even temperature throughout the interior of the vehicle. Thanks to this efficient central heating system you do not have to do without the accustomed comfort of a pleasant indoor temperature – as in your living room.

12.6.1 Central heating: Control element functions

1. To switch on the central heating in gas mode, open the gas bottle shut-off valve and appliance shut-off valve for the heating » « on the valve block under the kitchen range.

2. The central heating is regulated via the control element, with the desired room temperature also being selected and monitored using the control element.

CAUTION!

Work on the electronic control unit for the Alde Compact central heating system should only be carried out by a qualified and trained service engineer!

The Alde Compact central heating system is equipped with an ionising flame control, i.e. if the flame goes out, the electronic control unit attempts to light it again.

If the flame does not ignite within 10 seconds again, the solenoid shuts the gas feed off and blocks the electronic control unit.
If the room thermostat triggers the central heating system, i.e. if the temperature in the vehicle falls below the set temperature, the circulating pump is activated.
This makes the fluid in the heating system circulate, and cold fluid enters the heating circuit.
The operating thermostat for the heating registers the fluid temperature, and the heating system heats the fluid that circulates through the system.

If the set temperature is achieved, the circulating pump is switched off.
The operating thermostat registers that the fluid has achieved the set temperature, and the heating unit is switched off.

As soon as the temperature of the fluid has dropped a few degrees, the heating unit is switched on again.
This ensures that heated fluid is always running through the heating circuit when the thermostat is operating the heating.

12.6.2 Central heating: Optimum heating comfort

To best utilise the principle of water-based heat, it is important that the heated air can circulate freely under the bed boxes and behind the back cushions.

It is equally important that cushions and covers do not hinder the air circulation behind the back cushions.

12.6.3 Central heating: Circulating pump

CAUTION!

Please note that the service life of the motor will be significantly reduced with continuous operation of the 12 volt circulating pump!

The expansion tank contains a 12 volt circulating pump that distributes the heated glycol fluid in the heating system. Afterwards, the circulating pump is switched on and off by the room thermostat depending on the heating requirements.

12.6.4 Central heating: Expansion tank

The expansion tank is installed in the wardrobe. The level of glycol fluid can be read off at the tank. This should be approx. 1 cm above the "MIN" mark when the heating unit is cold (see Fig. 81).

The heating circuit should be filled with a 40% glycol mixture as used in automobile engines. If the heating system is subjected to temperatures under -25 °C, the glycol content should be increased, but never to above 50%. Before filling with new fluid, check the actual glycol content so that the glycol concentration in the fluid mixture is not increased too much.

The glycol mixture should be changed every 2 years since important characteristics e.g. corrosion protection can deteriorate over time.

CAUTION!

The heating system should never be operated without glycol fluid!

If the fluid level in the expansion tank drops lower than with normal condensation, the entire heating system must be checked for leaks.

If the glycol mixture is leaking out, the affected spot should be rinsed thoroughly with water and then dried off.

12.6.5 Central heating: Top up glycol mixture

DANGER!

Take care when filling the expansion tank with the glycol mixture. This fluid is toxic!

1. Unscrew the cap nut (**1**) on the expansion tank and lift the circulating pump.
2. Slowly pour the glycol mixture into the expansion tank until it reaches a level approximately 1 cm above the MIN mark.

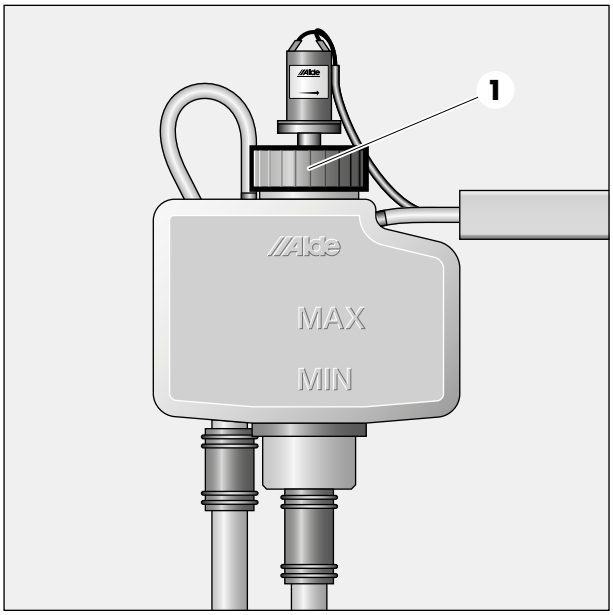


Fig. 81 Alde Compact - expansion tank

NOTE!

The heating system should always be bled after filling prior to starting up!

12.6.6 Central heating: Ventilating the heating system

Air pockets may occur when filling the heating system depending on the system of pipes installed. You will notice that, when there is air in the heating system, the heat only reaches about 1 metre down the pipes although the circulating pump is running.

If the heating system has just been filled, small air bubbles may form in the expansion tank. If the circulating pump is shut off for a few seconds, the air bubbles will normally disappear.

To bleed the air from the heating system, proceed as follows:

1. Switch on the heating unit.
2. Check that the circulating pump is switched off.
3. Open the bleed screws for all radiators one after the other and leave open until fluid escapes.
4. Now, switch on the circulating pump and allow it to run for a few minutes. Check that the pipes and radiators all round the vehicle are heating up.

NOTE!

If these measures do not have the desired effect, you may have to top up with glycol mixture again.

Otherwise continue as follows:

5. Park the vehicle on a slope or lift with a suitable jack so that it leans forwards. Make sure the vehicle is secured from rolling away with wheel chocks!
6. Wait several minutes with the caravan in this position so that the air in the heating system can rise to the top.
7. Unscrew the bleed screw at the highest point (locate beforehand!) and leave open until glycol mixture escapes.
8. Park the vehicle on a slope or lift with a suitable jack so that it leans backwards. Make sure the vehicle is secured from rolling away with wheel chocks!
9. Wait several minutes with the caravan in this position so that the air in the heating system can rise to the top.
10. Unscrew the bleed screw at the highest point (locate beforehand!) and leave open until glycol mixture escapes.
11. Put the vehicle in a horizontal position.
12. Now, switch on the circulating pump and allow it to run for a few minutes. Check that the pipes and radiators are all warm throughout the vehicle.

NOTE!

If these measures still do not have the desired effect, consult a qualified specialist.

NOTE!

You will find further information about bleeding in the separate Operating Manual supplied by the manufacturer.

12.6.7 Central heating: Hot water supply

DANGER!

Hot water must not be used as drinking water or for cooking!

Hot water is supplied via a hot water boiler in the ALDE heating unit. The hot water boiler can be operated with liquid gas, with 230 volts (electric cartridge) or with both simultaneously.
The 8.5-litre hot water boiler provides hot water in a temperature range of 40 °C to 70 °C. At maximum usage, approximately 17 litres of hot water can be provided at a temperature of 40 °C.
The hot water boiler takes approx. 30 minutes to heat 12 litres of water from 10 °C to 40 °C when using liquid gas. If the hot water boiler is operated at 230 volt, the capacity will be slightly lower. If the electric cartridge is not sufficient for your hot water requirements, the hot water boiler can also be operated using 230 volts and liquid gas at the same time.

CAUTION!

The water pump may only be operated dry for a very short period!

The water pump is activated via the taps. Opening a tap activates the immersion pump.
Closing the tap switches off the immersion pump.

Proceed as follows to prepare the hot water supply:

1. When starting up for the first time or when the hot water boiler is empty, the boiler must be filled with water.
2. Check that the drain valve on the fresh water tank is closed.
3. Open the hot water tap in the "hot" mixer position until the hot water boiler has filled, i.e. the air has been forced out of the hot water boiler and the water pipes, and water is flowing.

NOTE!

You will find further information about hot water heating in the separate Operating Manual supplied by the manufacturer.

Central heating and warm water heater Alde Compact 3010 is controlled by the control and switch panel. The control and switch panel has a touch-sensitive display. Just pressing the display surface lightly serves to enter most of the settings.

12.6.8 Overview of symbols

1 Clock
For setting the clock, see the separate instructions from the manufacturer.
2 Outside temperature
The outside temperature is indicated when the sensor has been installed.
3 Inside temperature
The inside temperature is indicated.
4 Circulating pump
The symbol is displayed when the pump is in operation.
5 Automatic gas bottle switch-over
The symbol is displayed when automatic gas bottle switch-over is connected and activated, see the separate instructions from the manufacturer.
6 230 volt
The symbol is displayed when a voltage of 230 volts is applied to the heater.
7 MENU button
Button for the settings menu.
8 On/Off button
Main switch of the heater.

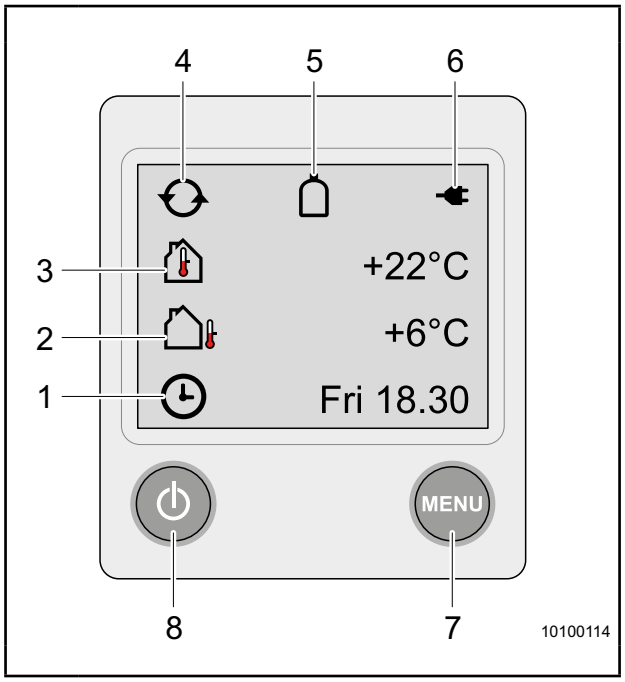


Fig. 82 Overview of control element symbols

12.6.9 Menu overview

1 Heating with gas
Press the "On" button to switch gas operation on.
Press the "Off" button to switch gas operation off.
2 Heating with electricity
Select the power (Off, 1 kW, 2 kW or 3 kW) by pressing the "+" or "-" button. Some heaters only have 1 kW or 2 kW.
3 Hot water volume
Press the "+" button to increase the hot water volume for 30 min.
Press the "-" button to return to the basic settings for hot water before 30 min. have expired.
4 Room temperature
Press the "+" button to increase the temperature.
Press the "-" button to reduce the temperature.
5 Tools menu
For the settings, see the separate instructions from the manufacturer.

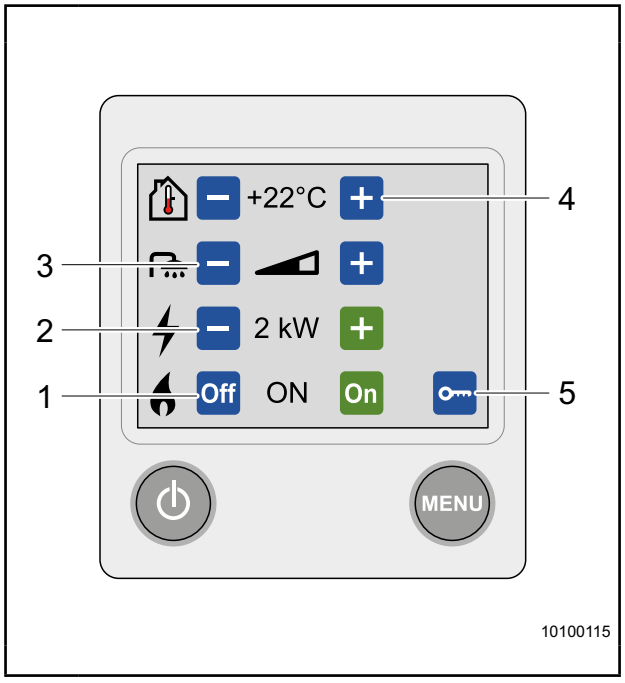


Fig. 83 Overview of control element menu

When the Menu button is actuated, background lighting comes on and the functions that can be set are displayed. The performed settings are automatically saved after ten seconds. After two minutes, the control and switch panel automatically switches to standby when no buttons are pressed.

12.6.10 Starting the heater

☞ Check the level of the heater liquid (Section "12.6.4 Central heating: Expansion tank").

☞ To start the heating, press the On/Off button (Fig. 71, item 8). The Start screen is displayed. The heating starts with the settings used last.

☞ Control of central heating using the control and switch panel (Fig. 72, items 1 to 5).

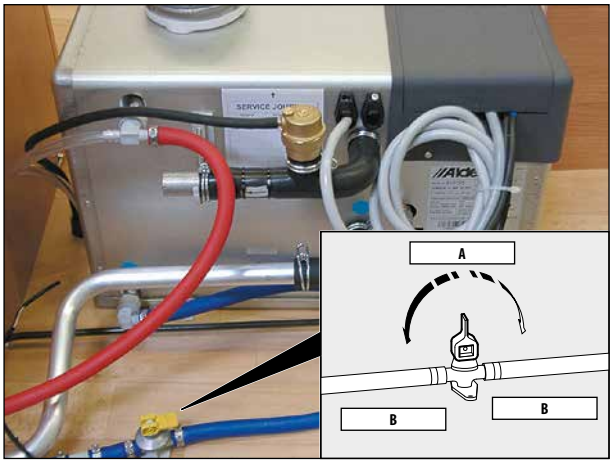
In summer, when only hot water is required, the set temperature value must be lower than the prevailing temperature to prevent a start of the pump in the heating system.

NOTE!

Heating with electricity is to be preferred to heating with gas.

12.6.11 Central heating: Emptying the hot water boiler

1. Ensure that the water draining outside is not hindered by dirt, slush, etc.
2. Switch the fresh water pump off.
3. Open all taps.
4. Open the drain valve (see detail) on the water supply.
5. The water content of the hot water boiler is emptied directly to the outside with the drain tap.
6. During draining, check that the entire contents of the hot water boiler (approx. 7-10 litres) are discharged.
7. Leave the drain tap and all water taps open until the next use.



A Open
B Closed

Fig. 84 Alde Compact: Emptying the hot water boiler

NOTE!

Verify that the automatic non-return valve opens, admits air to the water heater when draining the water, and that the hose is not blocked.

NOTE!

You will find further information in the separate Operating Manual supplied by the manufacturer.

12.7 Underfloor heating (optional accessory)

The vehicle can be ordered with underfloor heating as an optional accessory.

It consists of a heating foil and a transformer with a switch. The underfloor heating is switched on and off with the switch.

The switch is located on the automatic circuit breaker (Fig. 58, item 4).

Adjusting the temperature of the underfloor heating is not possible.

NOTE!

Installing the underfloor heating later does not make sense because the heating foil must be laid between the floor plate and the floor.

13. Cooking & baking

13.1 Gas stove

DANGER!

- To ensure a continuous flow of air in the vehicle, the forced air vents in the roof lights, mushroom vents and in the floor plate in the kitchen area must never be covered!
- When using the cooker, always open a window or roof light to ensure an adequate supply of oxygen to the interior of your vehicle!
- The gas cooker should never be used as a heater!
- Risk of explosion! Never allow unburned gas to flow out!
- The user must be able to keep the gas ignition process in full view - this must not be concealed by pots etc.!
- The flame safety cover must be lifted whenever the cooker is in use!

CAUTION!

- When placing pots on the cooker, make sure that these are positioned in the middle of the grid and no flames come beyond the edge of the pot.
- The different burners of the cooking appliances can have grids of different sizes. The pots used must not be larger than the grid on the burner.

NOTE!

The right and left burners next to the control element work with reduced heat to avoid damages to the adjacent kitchen area.

Using the gas cooker:

1. Open the gas bottle shut-off valve and appliance shut-off valve  on the valve block.
2. Lift up the cover on the hob.
3. To light the burner, turn the respective control knob in the recess in the hob anti-clockwise to the small or large flame, push and hold down.
4. Light the escaping gas with a suitable lighter and keep the control knob held down for another 5 to 7 seconds. The flame may go out if the control knob is released too soon. Repeat the operation if this happens.
5. To switch off, turn the control knob to position ●.

If the thermocouple is bent or faulty, the burner will not operate correctly and the flame will keep going out even though the control knob is pressed for a long time. If this happens, a new thermocouple must be fitted by a qualified specialist.

NOTE!

- ☞ A flame with an indistinct pattern is a sign of poor combustion, and we therefore recommend annual servicing by a qualified specialist.
- ☞ You will find further information in the separate Operating Manual supplied by the manufacturer.

14. Refrigerator

CAUTION!

- ☞ The electronic ignition has no function if the vehicle is not connected to the 230 volt or 12 volt supply.
- ☞ Refrigerators in caravans disposing of a separate freezer compartment and type RML 9430 refrigerators cannot be operated with 12 volt from the towing vehicle! The line cross-sections from the towing vehicle are not designed for this purpose.

14.1 Compressor refrigerator Vitrifrigo

The refrigerator is operated with 12 volt and is designed for ambient temperatures in the range +18 °C to +43 °C.
See the rating plate inside the refrigerator for its capacity.

14.1.1 Compressor refrigerator: Control elements

The thermostat control (Fig. 85, Pos. 1) is used to set the cooling temperature. The following settings are available:

OFF = Refrigerator is switched off
1 = Lowest cooling level
6 = Highest cooling level

1 Thermostat control

Fig. 85 Compressor refrigerator: Control elements

NOTE!

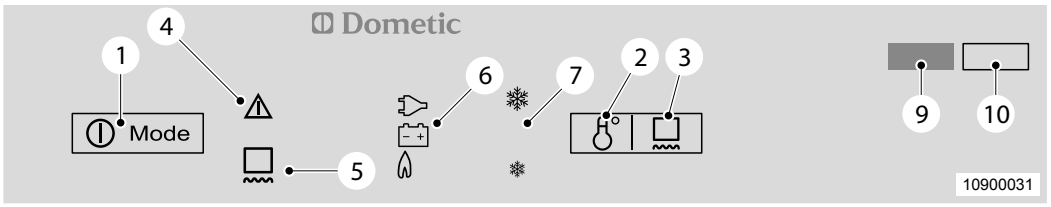
You will find further information in the separate Operating Manual provided by the device manufacturer.

14.2 Refrigerators RMx 8xx1 and RMx 8xx5

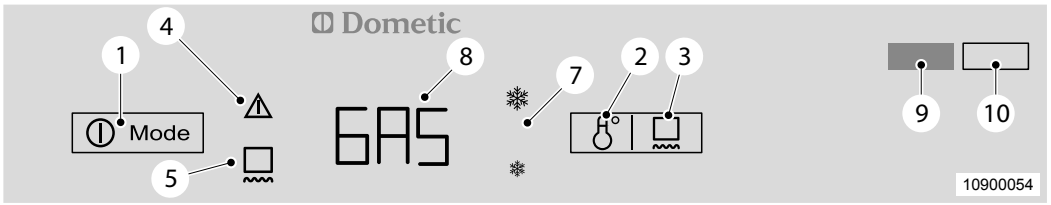
- The refrigerator can be operated with the following operating modes (types of energy):
  - 230 V
  - 12 V
  - LPG
- The refrigerator has an automatic flame detector which automatically shuts the gas feed off if the flame goes out.
- See the rating plate inside the refrigerator for its capacity.

14.2.1 Refrigerator: Controls on refrigerator

Manual energy selection/automatic ignition (RMx 8xx1) MES:



Automatic energy selection/automatic ignition (RMx 8xx5) AES:



1 MODE button (On/Off and energy selection)
2 Temperature level selection
3 Frame heater on/off
4 Indicator LED "Fault"
5 Indicator LED frame heater
6 Indicator LED/operating mode indicator
7 Temperature level display
8 Operating mode indicator (only for AES)
9 External indicator "Fault" (red)
10 External indicator "Appliance operating" (blue)

Fig. 86 Refrigerators RMx 8xx1 and RMx 8xx5 - control and switch panel

Changing the operating mode:

☞ Press the "MODE" button (Fig. 86, item 1) repeatedly until the desired operating mode lights.

NOTE!

You will find further information in the separate Operating Manual supplied by the manufacturer.

14.3 Refrigerators RMx 8xx0 and RMx 9xx0

- The refrigerator can be operated using 230 volts, 12 volts or with LPG. The energy selector switch is used for selecting these modes.
- The refrigerator has an automatic flame detector which automatically shuts the gas feed off if the flame goes out.
- See the rating plate inside the refrigerator for its capacity.

14.3.1 Refrigerator: Controls on the refrigerator

1 "On and energy selector" rotary switch
2 "Temperature selection" rotary switch
3 "Battery ignition" (gas) pushbutton
4 Flame indicator (galvanometer)

Fig. 87 Refrigerators RMx 8xx0 and RMx 9xx0 – control and switch panel

NOTE!

You will find further information in the separate Operating Manual provided by the device manufacturer.

15. Air conditioning

NOTE!

Please contact your local ***Weinsberg*** dealer if you plan to install an air conditioning system!

16. Toilet

16.1 Cassette

CAUTION!

Damage to the service cassette door!
If the wall flue of the vehicle is located beside the service cassette door, the opened cassette door is damaged during heating operation by the heated air!
☞ Keep the service cassette door closed when the heater is switched on!

CAUTION!

☞ Only empty the cassette on camp sites with suitable sewage systems or specially designated disposal facilities!
☞ Empty the cassette completely if there is a risk of frost and the vehicle is not heated!
☞ In winter, the toilet flush should not be used until the WC cubicle has warmed up thoroughly otherwise the water pump of the toilet may be damaged!
☞ An environmentally friendly and fully bio-degradable chemical WC additive should be used for the WC.
☞ If environmental concerns exist, the WC can also be used without chemical additives but the cassette will require more frequent emptying as a result.

1. Before using the toilet, push down the flush button briefly to allow a small amount of water into the bowl or open the valve blade under the toilet bowl. The toilet is now ready for use.

2. After use, open the valve blade if still closed by pulling the valve blade grip forwards and flush the toilet by pressing the flush button.

3. Close the valve blade again after flushing.

NOTE!

You will find further information in the separate Operating Manual supplied by the manufacturer.

17. Winter camping

17.1 General notes on winter camping

If you want to enjoy the freedom of camping in winter as well, here are some hints for you:

- ☞ After driving on roads that have been sprayed with salt, wash the underbody and all hot-dip galvanised surfaces with water.
- ☞ Find out as much as you can about weather and driving conditions before you set out and during your journey.
- ☞ Your vehicle has all-round insulation and double glazing, and is perfectly 'winter-worthy' if used correctly. The water supply is inside the vehicle on all models.
- ☞ Proper ventilation is just as important in winter as is the heating. Ski boots and other wet items will encourage the formation of condensation inside the vehicle.
- ☞ Heating is of course particularly important in winter. The heating – the heaters installed as standard are normally totally adequate – is therefore particularly important for winter camping. Fast removal of the water vapour produced by cooking, wet clothing and breathing is particularly important for camping in winter. In addition to good ventilation, the heated air will quickly remove the water vapour as warm air can absorb much more moisture than cold air. The lower the room temperature at relative air humidity, the quicker condensation will form if there is a slight difference between the temperature of the room air and the temperature on the inside wall.
- ☞ The windows, window frames and the corners of storage lockers are particularly prone to condensation depending on use, the number of persons, the site and the level of humidity both inside and outside the vehicle. Adequate heating of the vehicle with the air circulation fan switched on will improve this situation.

17.2 Additional notes on winter camping

- ☞ Secure the vehicle against rolling away and then release the parking brake to prevent it from freezing.
- ☞ Whenever possible place all cushions in the vehicle upright to ensure they are aired and dried.
- ☞ Use only 100% propane in winter as butane will not gasify below freezing point. Make sure you have an adequate supply of gas bottles. Keep gas bottles in the gas locker only!
- ☞ Avoid the use of electrical appliances that consume a lot of power. Campsites do not have unlimited amounts of electricity.
- ☞ In cold weather, the water pipes in the vehicle can freeze if the vehicle is left for long periods with the heating switched off.
- ☞ To prevent freezing, drain the waste water tank with the heating off, see Section "10.3 Draining the water system".
- ☞ The living area battery (battery II) should be kept fully charged at all times.
- ☞ While heating up the vehicle, open all cupboards, flaps and storage lockers to prevent condensation forming.
- ☞ Avoid storing containers (bottles, cans etc.) containing water, juice or other liquids in the unheated vehicle as they may freeze.
- ☞ All snow and ice should be carefully removed from the roof of the vehicle and from the awning; it is particularly important to ensure the flue on the side wall is kept free at all times.
- ☞ Always keep the forced air vents open, and open the roof light slightly if required.
- ☞ Never run power cables on the ground - they may freeze to the soil or be damaged by snow clearing vehicles.
- ☞ Keep metal taps open in an unheated vehicle at low temperatures, even if the water system has been drained. Always remember to open the mixer lever in both the "cold water" and then in the "hot water" position and to leave it in one of these opened positions.

17.3 Recommended accessories for winter camping

To be equipped for any eventuality when winter camping, we recommend the following accessories:

Remarks:		Date:	
Winter cover refrigerator (optional accessory)	OK: ☐	Jump leads	OK: ☐
Flue extension (optional accessory)	OK: ☐	A bag of sand is always useful should you get stuck in snow	OK: ☐
Snow shovel	OK: ☐	Snow covers for roof lights (only for permanent campers)	OK: ☐
Brush	OK: ☐		OK: ☐
Plastic ice scraper	OK: ☐		OK: ☐
De-icing spray	OK: ☐		OK: ☐
Talcum powder or Vaseline	OK: ☐		OK: ☐
Table salt or an environmentally friendly antifreeze for the waste water tank	OK: ☐		OK: ☐
Snow mats	OK: ☐		OK: ☐
Snow chains*	OK: ☐	* Snow chains should only ever be fitted to wheels with **steel rims**!	

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Tab. 9 Recommended accessories for winter camping

NOTE!

Further information on winter camping can be found in the separate Operating Manuals from the respective manufacturers.

18. Laying up

DANGER!

- ☞ You should completely drain the water system even if you are only laying up the vehicle for a short period. Bacteria will grow in fresh water after just a few days, making the water undrinkable. For the fresh water tank we recommend a disinfectant that is available from your ***WEINSBERG*** dealer.
- ☞ After the caravan has been laid up for an extended period, have the entire brake system checked by an authorised specialist workshop!

18.1 Temporarily laying up the vehicle

The vehicle will not suffer from being left outdoors all year round provided proper precautions are taken.

If the vehicle is to be temporarily laid up you should follow these steps:

Vehicle		
	Keep forced ventilation openings in the roof lights, mushroom vents and floor plate open at all times.	OK: ☐
	Remove any rust spots and repair minor paint damage. Products suitable for repairing paintwork are available from your WEINSBERG dealer.	OK: ☐
	Wash the vehicle thoroughly and apply wax. Suitable materials for vehicle care are available from your WEINSBERG dealer.	OK: ☐
	Treat plug contacts of the connecting cable with contact spray.	OK: ☐
	Grease all the caravan's moving parts of the axle, overrun braking unit and support legs.	OK: ☐
	Jack up the caravan by unwinding the four support legs.	OK: ☐
	If the vehicle is not jacked up, move it once a month to avoid pressure marks on the tyres and the wheel bearings. Secure the vehicle by placing chocks under the wheels.	OK: ☐
	Refuel the motorhome. In this way you can prevent corrosion damage to the fuel system.	OK: ☐
	Release the vehicle's parking brake.	OK: ☐
	Cover the overrun braking unit and the nose wheel of the caravan with a protective hood.	OK: ☐
	If you use a tarpaulin to cover the vehicle, make sure that air can still pass above the roof (e.g. position lightweight wooden slats on roof). The tarpaulin must not stick to the external surface of the vehicle.	OK: ☐
	Also ensure adequate air circulation underneath.	OK: ☐
	Thoroughly air the vehicle approximately every 3 weeks.	OK: ☐
	Place cover over flue if available.	OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐

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WATER SYSTEM	Empty the water system completely.	OK: ☐
	Metal water taps must be left open when the water system has been emptied. Make absolutely sure the mixer lever is opened to both positions ("cold water" and "hot water") and is then left open in one of these positions.	OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐
GAS SYSTEM	Close gas bottle shut-off valve.	OK: ☐
	Close all valves for appliances.	OK: ☐
	Always remove gas bottles – even empty ones – from the gas locker and store them properly at home.	OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐
LIVING AREA	Leave all cupboard doors, service hatches and storage compartments open.	OK: ☐
	Clean all storage compartments.	OK: ☐
	Stand up all cushions or keep in the house.	OK: ☐
	Clean the refrigerator.	OK: ☐
	Leave the refrigerator door and the freezer compartment slightly open.	OK: ☐
	Make sure that the forced ventilation openings are not covered.	OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐
BUILT-IN APPLIANCES	Please refer to the separate instructions from the relevant manufacturers for information on temporarily laying up the appliances used. The individual measures can be collected and listed below for simplification.	
		OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐

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18.2 Laying up the vehicle over winter

If the vehicle is laid up over the winter, the following steps are to be taken in addition to Section „18.1“:

Vehicle	Clear snow from the vehicle roof in case of heavy snowfall.	OK: ☐
	Heat and air the vehicle well once a month.	OK: ☐
	Clean and grease all door and service hatch hinges.	OK: ☐
	Oil all locks.	OK: ☐
	Coat all rubber seals with talcum or Vaseline.	OK: ☐
	Treat all lock cylinders with graphite powder.	OK: ☐
	Install/close the winter cover for the refrigerator ventilation grille (if available).	OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐
ELECTRICAL SYSTEM	Remove starter battery (motorhome) and living area battery, charge with a suitable charger and store in a frost-free place at home.	OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐
LIVING AREA	Remove all cushions from the vehicle and keep in a dry place in the house.	OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐
BUILT-IN APPLIANCES	Please refer to the separate instructions from the relevant manufacturers for information on temporarily laying up the appliances used through the winter. The individual measures can be collected and listed below for simplification.	
		OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐

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18.3 Using the vehicle again after laying up temporarily or over the winter

If the vehicle has been temporarily laid up, you should follow these steps before using it again:

Vehicle	Check function of all quarter vents, forced ventilation openings and roof lights, and lift and tilt roofs (Heki).	OK: ☐
	Check the function of all locks on the service hatches and entrance door.	OK: ☐
	Remove cover from flue (if available).	OK: ☐
	Remove winter cover for refrigerator ventilation grille (if available).	OK: ☐
	Check pressure of spare tyre (if available).	OK: ☐
	Check the proper functioning of the support legs.	OK: ☐
		OK: ☐
		OK: ☐
WATER SYSTEM	Rinse through water pipes and fresh water tank/fresh water canister with fresh water. Taps must be open.	OK: ☐
	Close all drain valves and taps.	OK: ☐
	Check taps, drain valves and water distributors for leaks.	OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐
GAS SYSTEM	Set gas bottles upright in gas locker, strap in tight and connect.	OK: ☐
		OK: ☐
		OK: ☐
		OK: ☐
ELECTRICAL SYSTEM	Please refer to the separate instructions from the relevant manufacturer for information on putting electrical appliances back into service. The individual measures can be collected and listed below for simplification.	
		OK: ☐
		OK: ☐
		OK: ☐
BUILT-IN APPLIANCES	Please refer to the separate instructions from the relevant manufacturer for information on putting appliances back into service. The individual measures can be collected and listed below for simplification.	
		OK: ☐
		OK: ☐
		OK: ☐

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19. Cleaning & care

19.1 Cleaning and care of the vehicle exterior

DANGER!

Climbing onto or walking on the vehicle roof is strictly forbidden!

The outer skin of the vehicle is made from aluminium sheet. The surface of this aluminium sheet is stove-enamelled with an acrylic paint. This method, also called polyester coil coating, is a modern and environmentally friendly surface treatment process which is characterised by its highly brilliant colours and its durability.

To maintain the high quality of the finish, observe the following information on care:

- ☞ Salt (at the seaside), soot, bird droppings and other aggressive substances should always be removed from the paintwork of the vehicle immediately before they have time to leave a mark.
- ☞ Wash your vehicle with water regularly if you are near the sea.
- ☞ You should clean your vehicle as you would a car.
- ☞ Wash your vehicle with a pH-neutral product (pH value: 6-8). Do not forget to wash the vehicle roof!
- ☞ Always thoroughly rinse off the vehicle with water and dry it.
- ☞ Use only sponges, soft cloths or soft brushes. Hard tools can damage the paintwork.
- ☞ The vehicle should be waxed from time to time to protect and enhance its sheen. Apply the coat of wax as directed by the manufacturer of the product.
- ☞ GRP parts can acquire a yellowish hue over time. This is not however a quality defect. There are special cleaning and polishing products to improve the look of these parts. These products can be obtained through authorised dealers.
- ☞ To freshen up old paintwork, the vehicle can be treated with a suitable polish. Here again, you should follow the manufacturer's directions. Polishing can damage the paintwork of your vehicle (abrasion). So do not apply polish unless absolutely necessary.
- ☞ Plastic parts must not be treated with aggressive cleaning agents (such as benzene, methylated spirits, thinners, etc.), see Section "19.1.1 Cleaning plastic parts on the vehicle exterior".
- ☞ Tar stains or other organic marks on the painted surface are best removed with benzene. We strongly advise against the use of other solvents!
- ☞ Insects should be softened with water and then removed with a sponge wrapped in a nylon stocking.

- ☞ Damage to the surface of your vehicle should be repaired immediately with refinish paint to prevent corrosion.
- ☞ Check the condition of the underseal once a year. Please contact your ***WEINSBERG*** dealer if the underbody protection is damaged.
- ☞ After driving on roads that have been sprayed with salt, wash the underbody of the base vehicle with water.

19.1.1 Cleaning plastic parts on the vehicle exterior

- ☞ Products made of plastic and/or GRP products can be cleaned gently using warm water with the addition of a weak acidic, neutral or weak alkaline cleaner.
- ☞ You can use low concentrations (< 2%) of mild household cleaners dissolved in water.
- ☞ Abrasive agents such as scouring powder are not recommended as these will scratch plastic surfaces.
- ☞ Very greasy or oily surfaces can be washed down with petroleum substances free from aromatic compounds such as ethanol. The use of organic solvents can damage the material.
- ☞ Plastic mouldings can be damaged by stress cracks caused by a variety of products. Other chemicals may cause the plastic to swell and soften. These mouldings should therefore only be exposed to brief contact (2 minutes max.) with the above solvents at room temperature.

19.2 Cleaning and care of the interior

CAUTION!

- ☞ Use only standard household cleaning and care products.
- ☞ Caustic and abrasive products should not be used.
- ☞ Avoid using anything that might scratch or score surfaces.
- ☞ The toilet cubicle should only be cleaned with a little water containing a mild cleaner and with a damp cloth.
- ☞ Do not use any products containing acetone for cleaning the carpet since these products will cause discolouration.
- ☞ Never lay the carpet onto wet PVC floor covering as the carpet can stick to the PVC and pull the covering with it when the carpet is next taken up!

- ☞ The furniture is only to be cleaned with a commercially available furniture polish. Strong cleaning products should not be used.
- ☞ Clean table tops and kitchen worktops using only water with added washing-up liquid or a mild household cleaner.
- ☞ The kitchen sink is made from stainless steel and can be cleaned with standard household products.

- ☞ Dry clean upholstery covers, main curtains and the net curtains.
- ☞ The PVC floor covering is hard-wearing and easy-care. To clean it, just wet-mop and rub dry; do not use wax.
- ☞ Never use abrasives or aggressive cleaners.

NOTE!

Sunshine can cause plastic parts in the interior of the toilet cubicle to turn yellow over time. This is not however a quality defect.

19.2.1 Cleaning the plastic parts of the vehicle interior

DANGER!

Working with concentrated acids is dangerous and should be avoided! To remove calcium deposits, use commercially available acids only (e.g. acetic acid).

- ☞ Plastic products can be carefully cleaned using warm water with the addition of a very slightly acidic, neutral or very slightly alkaline cleaner.
- ☞ You can use low concentrations (< 2%) of mild household cleaners dissolved in water.
- ☞ Abrasive agents such as scouring powder are not recommended as these will scratch plastic surfaces.
- ☞ Very greasy or oily surfaces can be washed down with petroleum substances free from aromatic compounds such as petroleum ether, ethanol or perchloroethylene. The use of organic solvents can damage the material.
- ☞ Plastic mouldings can be damaged by stress cracks caused by a variety of products. Other chemicals may cause the plastic to swell and soften. These mouldings should therefore only be exposed to brief contact (5 minutes max.) with the above solvents at room temperature.
- ☞ While cleaning, keep mechanical stress on mouldings, e.g. clamping, to a minimum to prevent any deformation.
- ☞ Water used for cleaning should be softened to prevent lime scale. If calcium deposits appear on the surface, these can be removed with commercially available acids only (e.g. acetic acid).

19.3 Cleaning acrylic glass windows and body

CAUTION!

- ☞ Never clean the vehicle in a car wash facility because the acrylic glass windows can be scratched by the rotating brushes!
- ☞ The acrylic glass windows must not be cleaned using chemical cleaners, glass cleaners or products that contain alcohol spirit. Cleaning products must not contain plasticisers, as this would cause the acrylic glass windows to become brittle and crack!
- ☞ Avoid twisting and distorting the windows when opening and closing them!

☞ Clean the acrylic glass windows with plenty of water, a clean sponge and a soft cloth.

☞ The only liquid which you should allow to come into contact with the acrylic glass is water with the addition of a 10% solution of mild washing-up liquid to keep the window clear and free from static.

☞ To remove stubborn stains, use a special acrylic glass cleaner that is available from your ***WEINSBERG*** dealer.

☞ Regularly lubricate all hinges, flaps and windows with acid-free battery terminal grease or gun oil (e.g. Ballistol) to ensure moving parts continue to move freely and do not seize.

NOTE!

Because of the physical properties of acrylic glass, the colder of the two glass panes, usually the one on the outside, will mist up on the inside. This condensation will disappear again when the air around the window becomes very dry, but this process of diffusion may still be quite slow.

19.4 Cleaning and care of the roof light

CAUTION!

- ☞ Failure to follow the instructions for care and cleaning of the roof window will void the manufacturer's warranty!
- ☞ When washing the vehicle, make sure the water jet is not pointed at the roof window. There is an air gap around the glass dome and the frame (forced ventilation) through which the water could enter the vehicle.

- ☞ Never use aggressive cleaners (solvents/scouring agents).
- ☞ Clean folds and insect blind with a soft brush, if necessary using a damp cloth.
- ☞ Only clean acrylic glass (glass dome) and frame elements with a damp cloth and mild soap solution, if necessary use a special cleaner (at your own risk). This special cleaner is available from your ***WEINSBERG*** dealer. Ensure that no water penetrates onto mechanical parts.
- ☞ Treat all rubber seals with talcum powder.
- ☞ The ventilation grilles and light covers can be removed for cleaning.

19.5 Cleaning and care of the awning or the canvas blind

- ☞ The tent fabric should be regularly cleaned with a sponge and clean water or PVC cleaner. as dirt particles can otherwise quickly create a medium for the growth of mould and bacteria.

19.5.1 Dealing with mould on the awning or the canvas blind

It does not take long for mould to appear on the fabric of the awning or the canvas blind if it is not cleaned and aired regularly, e.g. if it is folded up and stowed away when wet. Avoid the use of strong solvents in this case.

DANGER!

- ☞ When applying fungicides you must use protective equipment such as safety glasses, mask and safety gloves, and ensure that the area is well ventilated!
- ☞ The directions for use in the leaflet enclosed with the fungicide must be strictly followed!

- ☞ Clean the affected area with a 3 % caustic soda solution (available from any pharmacist).
- ☞ Allow the caustic soda solution to act, then thoroughly rinse the fabric and dry.
- ☞ Repeat this treatment at regular intervals.

19.5.2 Treatment of stiff zip fasteners

The zip fasteners on the awning or the canvas blind can sometimes be stiff when they are new.

- ☞ This can be cured by rubbing candle wax into the zips or spraying them with a silicone spray.

19.6 Cleaning and care of the sun roof

- ☞ A wet sun roof is to be cleaned and dried before storing.
- ☞ Before using a household cleaner, it is to be tested on a small spot first. The surface of the sun roof should not be damaged.

19.7 Cleaning and care of stainless steel surfaces

☞ Clean all stainless steel surfaces (e.g. sink) only with household cleaners.

CAUTION!

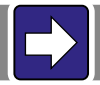
Metallic objects may not be placed for a longer period of time on stainless steel surfaces (e.g. sinks) due to the risk of contact corrosion!

20. Maintenance & inspection

In the interest of road safety, the vehicle must be maintained as regularly and carefully as any other car.

CAUTION!

- ☞ Carrying out maintenance work requires specialist skills and knowledge. This is why you should only have servicing performed by a specialist workshop!
- ☞ The service centre will stamp your Customer Service Record Book to confirm that the leak tests on all tanks and pipes, hoses etc. have been carried out.
- ☞ If any parts need replacing, ensure that the manufacturer's original spare parts are used!



NOTE!

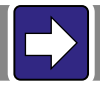
For vehicles that are not used very often, servicing should be carried out once a year and in plenty of time before the start of a journey.

20.1 Statutory testing

Under § 29 StVZO, caravans registered in Germany must be officially inspected regularly (e.g. by TÜV, DEKRA). This comprises the general inspection (HU) and the exhaust gas inspection (AU) (motorhome), and the inspection of the liquid gas system.

The schedules for the general inspection for the vehicle depend on the weight (see Section "23.1 Statutory tests (Germany)").

The gas engineer must issue a gas test certificate certifying that the gas system has been tested. The gas test sticker is located near the rear number plate (in Germany).



NOTE!

The relevant regulations which apply in other countries must be complied with!

20.2 Superstructure maintenance plan

Just like any other technical equipment, your vehicle also needs to be properly maintained and serviced from time to time. The scope and frequency of this work depends first and foremost on the conditions under which the vehicle is used and operated.

All maintenance and service work requires specialist skills and knowledge. It is therefore essential for this work to be carried out by trained specialists.

The following table only lists the maintenance and inspection work that is carried out on the body of the vehicle. Please refer to the separate FIAT manual for maintenance and inspection work required on the FIAT base vehicle (motorhome).

CAUTION!

Check the underseal in the course of the leaks tests, repair damaged areas or renew the undersealing.

20.2.1 Service schedule

Maintenance measure	Maintenance interval
Perform handover inspection (see warranty booklet)	On the day of handover
1. Perform leak test	After 12 to 14 months
2. Perform leak test	After 24 to 26 months
3. Perform leak test	After 36 to 38 months
4. Perform leak test	After 48 to 50 months
5. Perform leak test	After 60 to 62 months
6. Perform leak test	After 72 to 74 months
7. Perform leak test	After 84 to 86 months
8. Perform leak test	After 96 to 98 months
9. Perform leak test	After 108 to 110 months
10. Perform leak test	After 120 to 122 months
Perform electrical inspection	As required
Perform inspection	As required
Perform TÜV inspection	Every 2 years
Perform gas inspection	Every 2 years
Check air pressure in tyres	Every 14 days
Degrease support legs	Every 6 months

Tab. 10 Superstructure maintenance plan

20.3 Additional maintenance work for the caravan

20.3.1 Wheel brakes and linkages

DANGER!

Repairs and adjustments to the brake system, including the brake linkage, should only ever be carried out by a specialist workshop!

Wear on the brake pads depends heavily on personal driving habits. Regular checking of the brake actuation path will reveal whether brake shoes require adjusting or replacing.

CAUTION!

- ☞ Brake pads and brake drums are to be kept absolutely grease-free!
- ☞ The hitch ball on the tow vehicle is to be kept clean!
- ☞ The ball is to be kept absolutely free of grease on the tow vehicle on vehicles with an AKS or SSK system!

☞ The return springs on the wheel brakes should always be replaced when changing the brake shoes.

☞ Visually inspect the brake cable and replace if there is any damage or if badly corroded.

20.3.2 Overrun device

Even though the installed shock absorbers have a sufficiently long lifespan, they may be subject to a partial loss of functionality or complete failure. If this is the case, you will experience heavy jolting when setting off or using the brake and should immediately replace the shock absorbers.

20.3.3 Chassis maintenance plan

Maintenance measure	Maintenance interval after km				
	50	1000	2000	5000	10000
Tighten wheel nuts.	✳				
Check brake system and have adjusted if necessary.		✳			
Check whether wheel nuts are tight and retighten if necessary.			X		
Degrease overrun brake.			X		
Check for worn brake liners on the wheel brakes and compensate by adjusting the brake shoes.				X	
Lubricate slides of the overrun unit.				X	
Check function of ball coupling and lubricate sliding parts.					X
Check response stage of the overrun unit and lubricate sliding parts.					X
Check brake cables and linkages for rust and damage.					X
Check wheel brake and renew brake shoes and return springs if necessary.					X

✳ = Initial maintenance

X = Regular maintenance

Tab. 11 Chassis maintenance plan

21. Troubleshooting and fault rectification

DANGER!

For your own safety, you are advised to have repairs on the vehicle carried out by a specialist workshop, especially repairs and adjustments to the brake system!

21.1 Replacing the lighting of the vehicle

CAUTION!

- ☞ Perform the lamp change with care in order not to cause damage to the protective glass or illuminant.
- ☞ Only replace the illuminant with one identical in construction and with the same electrical values.

21.1.1 Replacing lamps on the rear light holder

1. Remove both attachment screws on the rear light to be replaced and carefully take off the lamp holder.
2. Remove illuminant and insert new illuminant.
3. Re-install lamp holder and tighten with care using both attachment screws.

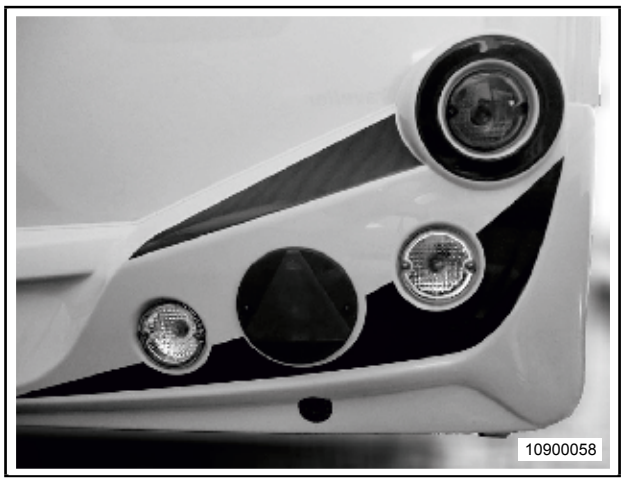


Fig. 88 Replacing lamps on the rear light holder

21.1.2 Replacing the lamps of the rear lights (CaraBus)

DANGER!

Risk of injury due to electric shock!
When the vehicle is connected to the 230 V mains, there is the risk of electric shock.
- ☞ Pull out plug before starting work!

1. Disconnect connection to 230 V mains.
2. Remove mattresses or cushions.
3. Remove the caps (Fig. 89, item 1) on the screws of the plastic or cloth cover (Fig. 89, item 2) (right or left) in the rear of the vehicle.
4. Using a socket wrench (Torx T20) loosen the screws on the covers (Fig. 89, item 2) and carefully remove the covers. Pay attention to the cable lengths of the speakers and sockets.
5. Loosen the nuts (Fig. 90, item 1) on the rear lights using a ring wrench (SW 17) and unscrew by hand.

   Each rear light has two nuts (Fig. 90, item 1).
6. Carefully remove the rear light cover from the vehicle from outside.

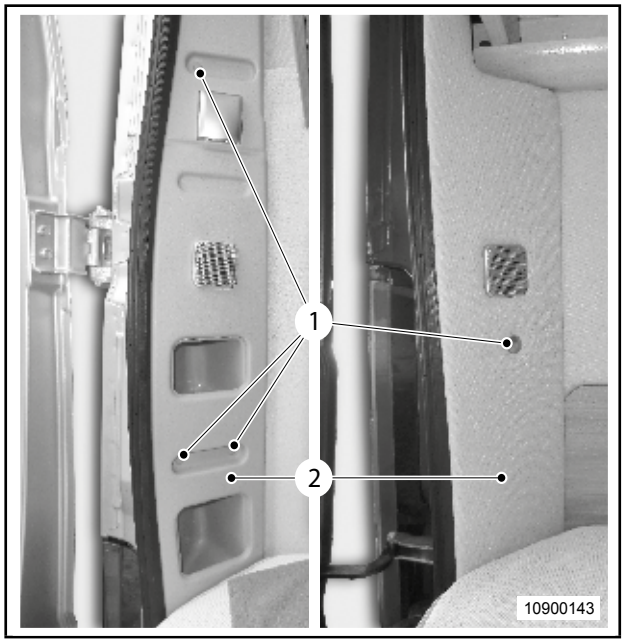


Fig. 89 Rear cover

7. Unscrew the screws of the inner lamp socket and pull out lamp socket.

NOTE!

Observe the operating instructions provided by FIAT.

8. Open the bayonet lock of the illuminant and replace the illuminant.

To re-fit, proceed in the reverse sequence, tighten the screws by hand.

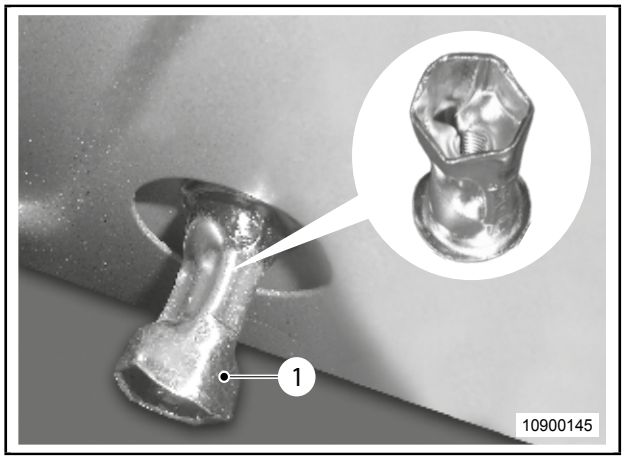


Fig. 90 Rear nut

NOTE!

- ☞ It is recommended to carry a replacement set containing all illuminants used in the vehicle so as to be able to perform an immediate replacement if required.
- ☞ You will find further information in FIAT's separate operating instructions.

21.1.3 Replacing lamps of the integrated spot

1. Use a small screwdriver to carefully lever the illuminant out of the holder and pull off the connecting cable.
2. Connect the connecting cable to the new illuminant and carefully press the illuminant back into the holder.

Fig. 91 Replacing lamps of the integrated spot

21.2 Changing a wheel

21.2.1 Changing a wheel (caravan)

Depending on the model, the spare wheel is either in the gas locker or behind the axle under the chassis.

CAUTION!

The maximum necessary load on the vehicle jack is to be determined with the permitted total weight in the specifications of your model.

For changing the wheels on a single axle vehicle, we recommend you to use a articulated jack with a maximum load of 1,600 kg, for single and tandem axle vehicles a hydraulic jack with a maximum load of 2,000 kg. Both jacks are available as optional accessories from your ***WEINSBERG*** dealer.

21.2.1.1 Changing a wheel on the caravan with spare wheel in the gas locker (optional accessory)

DANGER!

- ☞ Changing the wheel should only be done when the caravan is hitched to the towing vehicle!
- ☞ You should only change a wheel on firm, level ground and well away from moving traffic!
- ☞ Other road users must be made aware of your vehicle according to the national regulations which apply in the country you are visiting, e.g. by using the hazard warning triangle!
- ☞ Never lie under the caravan when jacked up!
- ☞ The wheel jack is only provided for wheel changing. It must never be used for carrying out work under the caravan or the towing vehicle!

1. Fully apply the parking brake on the caravan and secure the wheel that is opposite the tyre to be changed with a wheel chock.
2. On towing vehicles with manual transmission, put the vehicle into first gear or reverse, and with automatic transmission, put the selector lever in the park position "P".
3. Before jacking up the caravan, remove the protective caps on the wheel nuts and loosen the wheel nuts half a turn using a wheel wrench (on steel rims SW17, on aluminium rims SW19).
4. The point for inserting the articulated jack is the reinforced claw on the longitudinal member of the chassis (see "Fig. 92 Jacking up the caravan"). Swivel jack and wheel spanner are stowed in the seat compartment.
5. The point for inserting the hydraulic jack is located directly underneath the axle (see "Fig. 92 Jacking up the caravan"). The jack and wheel spanner are stowed in the seat compartment.

NOTE!

Further information on the articulated jack and the hydraulic service jack can be found in the separate operating instructions of the respective manufacturer.

6. Remove the spare wheel from the gas locker.
7. Jack up the caravan, remove the wheel nuts, change the wheel and tighten the wheel nuts by hand.
8. Lower the caravan and remove the jack.
9. Tighten the wheel nuts according to Section "21.2.1.4".
10. After approx. 50 km, check that all wheel nuts are still tight.

21.2.1.2 Changing a wheel on the caravan with spare wheel under the chassis (optional accessory)

DANGER!

- ☞ Changing the wheel should only be done when the caravan is hitched to the towing vehicle!
- ☞ You should only change a wheel on firm, level ground and well away from moving traffic!
- ☞ Other road users must be made aware of your vehicle according to the national regulations which apply in the country you are visiting, e.g. by using the hazard warning triangle!
- ☞ Never lie under the caravan when jacked up!
- ☞ The wheel jack is only provided for wheel changing. It must never be used for carrying out work under the caravan or the towing vehicle!

1. Carry out work steps 1 to 5 in Section “21.2.1.1”.
6. Jack the caravan up and unlock the spare tyre on the chassis and remove it.
7. Remove the spare wheel from the spare wheel holder.
8. Remove the wheel nuts, change the tyre and tighten the wheel nuts again by hand.
9. Put the flat tyre in the spare tyre holder and then fasten it to the chassis in the reverse sequence.
10. Lower the caravan and remove the jack.
11. Tighten the wheel nuts according to Section “21.2.1.4”.
12. After approx. 50 km, check that all wheel nuts are still tight.

21.2.1.3 Changing a wheel with the caravan unhitched

In exceptional cases **the wheel can be changed when the caravan is not hooked to the tow vehicle.**

In this case, the following steps absolutely must be followed:

1. Ensure that the caravan is parked on a flat, even surface.
2. Fully apply the parking brake on the caravan and secure the wheel that is opposite the tyre to be changed with a wheel chock.
3. Turn the nose wheel 90 degrees (across) to the direction of travel and secure it against rolling with two wheel chocks.
4. Carry out the subsequent steps according to Section “21.2.1.1”, items 2 to 10 or Section “21.2.1.2”, item 2 to 12.

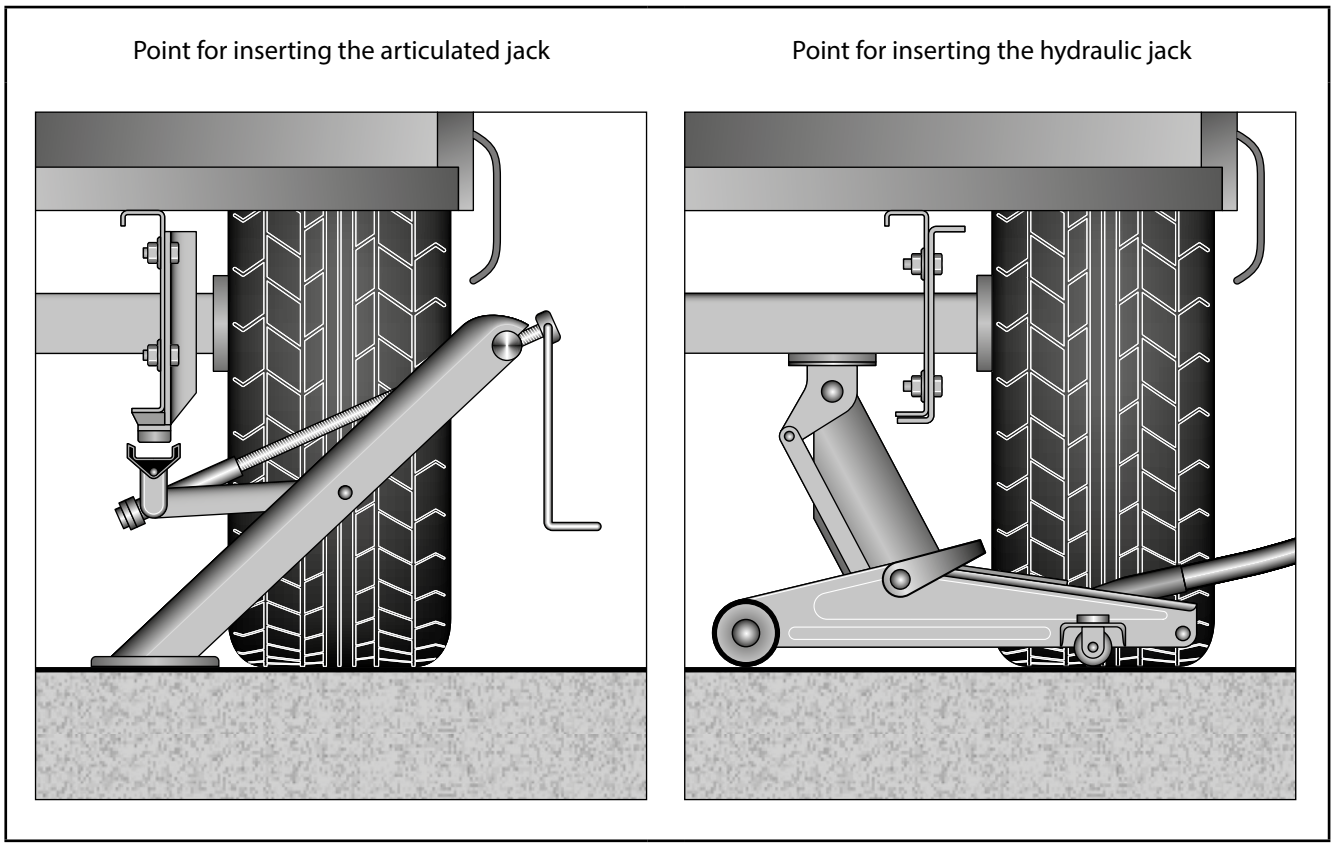


Fig. 92 Jacking up the caravan

21.2.1.4 Tightening the wheel nuts crosswise

1. Tighten the wheel nuts in the order 1 – 2 – 3 – 4 – 5 as shown in the illustration opposite.

2. Once all wheel nuts have been tightened, check again that they are secure, beginning with 1.

Fig. 93 Tightening the wheel nuts crosswise

NOTE!

After approx. 50 km, check that all wheel bolts are still tight.

21.2.2 Changing a wheel (motorhome)

DANGER!

- ☞ You should only change a wheel on firm, level ground and well away from moving traffic!
- ☞ Other road users must be made aware of your vehicle according to the national regulations which apply in the country you are visiting, e.g. by using the hazard warning triangle!
- ☞ Never lie under the vehicle when it is jacked up!
- ☞ The wheel jack is only provided for wheel changing. It must never be used for carrying out work under the vehicle!

CAUTION!

Additional support legs fitted (accessories) must not be used to jack up the vehicle!

The spare wheel is located underneath the vehicle behind the rear axle.

In some models, the spare wheel is located in the integrated garage.

NOTE!

You will find further information about changing wheels in FIAT's separate operating instructions.

21.3 Towing and being towed (motorhome)

21.3.1 Towing the motorhome

CAUTION!

To prevent severe damage to the chassis and body, the tow rope, cable or bar must only be mounted to the eyelet at the front when towing the motorhome!

Tow the motorhome as follows:

1. Fasten the tow rope or tow bar to the front eyelet on the motorhome.
2. Fasten the tow rope or tow bar to the respective towing fixture on the towing vehicle.
3. When towing, observe the legal regulations (hazard warning lights, maximum speed, towing on motorways, etc.).

21.3.2 Towing with the motorhome

CAUTION!

Towing other vehicles with the motorhome is only permitted when the motorhome is equipped with a trailer hitch! Otherwise there is a risk of severe damage to the chassis and body.

Tow with the motorhome as follows:

1. Fasten the tow rope or tow bar to the trailer hitch on the motorhome.
2. Fasten the tow rope or tow bar to the respective towing fixture on the vehicle to be towed.
3. When towing, observe the legal regulations (hazard warning lights, maximum speed, towing on motorways, etc.).

21.4 Troubleshooting tables

☞ Troubleshooting should be carried out by reference to the following Troubleshooting table.

☞ If you are unable to deal with malfunctions yourself, you should contact the Customer Service department at your local ***WEINSBERG*** dealer or the respective appliance manufacturer (heating = Truma or Alde, refrigerator = Dometic or Thetford, toilet = Thetford etc.).

GAS SYSTEM		1/1
Fault	**Cause**	**Action**
Gas smell, high gas consumption.	Leak in gas system.	Immediately shut down gas system, close gas bottle and appliance shut-off valves, open doors and windows and ventilate thoroughly. Seek specialist advice and have gas system checked. Do not operate electrical switches (e.g. ignition). Naked flames and smoking are strictly forbidden!
No gas.	Appliance shut-off valve is closed.	Open appliance shut-off valve.
	Gas bottle shut-off valve is closed.	Open gas bottle shut-off valve.
	Outside temperature too low. Propane: -32 °C Butane: 0 °C	Wait for outside temperature to rise.
	Faulty appliance.	Consult a qualified specialist.
	Air trapped in the Truma MonoControl CS / Truma DuoControl CS.	Bleed the Truma MonoControl CS / Truma DuoControl CS. You will find further information in the separate Operating Manual supplied by the manufacturer.

ALDE CENTRAL HEATING		1/2
Fault	**Cause**	**Action**
Heating will not start.	Electrical connections on the heater loose.	Check electrical connections and make connections properly if necessary.
	No voltage.	Check whether voltage (> 11 volts) is present.
	Defective fuse(s).	Check 16 A (230 volt) / 15 A (12 volt) fuse and replace if necessary.
	Red LED "Electronic control unit blocked" lights up.	Switch off heating, wait approx. 30 sec and switch heating on again. If all previously specified troubleshooting solutions still do not have the desired effect, consult a qualified specialist.
Electric cartridge does not function.	No 230 volt operating voltage.	Ensure 230 volt operating voltage.
	No 12 volt operating voltage.	Fuse has blown, press in again.
	Faulty relay in heater.	Check whether the relays in the heater switch (gentle click will then be heard). If no click is heard, call a qualified specialist.
	Overheating protection triggered.	Press reset button on front of heater on top right. If the overheating protection has been triggered, the heating may only be switched on again once it has cooled down to 10 °C — 20 °C. Before switching on again, check that the heating is well ventilated. If all previously specified troubleshooting solutions still do not have the desired effect, consult a qualified specialist.

ALDE CENTRAL HEATING		2/2
Fault	**Cause**	**Action**
Vibrations in the circulating pump.	Circulating pump is not properly secured.	Slightly unscrew the cap nut on the expansion tank, turn the circulating pump somewhat and retighten cap nut.
	The rubber coupling between the motor and shaft is not secure.	Check that the rubber coupling is straight and does not wobble.
	Suction of circulating pump is blocked by foreign body.	Loosen the cap nut, pull the circulating pump out of the expansion tank and remove foreign body. Put circulating pump back and retighten cap. If all previously specified troubleshooting solutions still do not have the desired effect, consult a qualified specialist.
Circulating pump will not start.	Slide switch on room thermostat switched off, position "○".	Turn on slide switch, position » I «.
	Temperature set is lower than actual room temperature.	This is not a circulating pump fault. If the temperature in the motorhome/caravan drops below the temperature value set on the temperature controller, the circulating pump switches on automatically.
	Circulating pump is switched off, position "○".	Turn on circulating pump with slide switch, position » I «.
	Electrical connections loose.	Check all electrical connections on circulating pump and connect properly if necessary.
	No voltage.	Check whether 12 V voltage is present. If all previously specified troubleshooting solutions still do not have the desired effect, consult a qualified specialist.

HEATING/HOT WATER BOILER TRUMATIC COMBI		1/2
Fault	**Cause**	**Action**
No LED lights after switching on (Winter and Summer mode).	No power supply.	Check battery voltage 12 volt.
	Appliance or vehicle fuse defective.	Check appliance or vehicle fuse and replace if necessary. See separate Truma Combi instructions.
After switching on (by ZUCB timer), the green LED goes on but the heating is not running.	The set temperature on the control unit is lower than the actual room temperature.	Set the room temperature on the control unit higher.
The green LED goes on and the red LED flashes after switching on the heating.	Open the window above the flue (window switch).	Close the window.
	Battery voltage too low (< 10.5 volt).	Charge battery.
The green LED and the red LED go on after switching on the heating.	Electronics defective.	Please contact the Truma Service Centre.
The red LED goes on approx. 30 seconds after the heating is switched on.	Gas bottle shut-off valve or appliance shut-off valve closed.	Check gas supply and open shut-off valves.
	Combustion air supply or exhaust outlet closed.	Check openings for dirt (ice, slush, leaves, etc.) and remove if necessary.
Heating switches to fault after a longer period in operation.	Hot air outlets blocked.	Check the single outlets.
	Air circulation intake blocked.	Clear blockage of the air circulation intake.
	Gas pressure regulator frozen.	Use propane (butane is unsuitable for heating especially at temperatures below 10 °C).
	Too much butane in the gas bottle.	Use propane (butane is unsuitable for heating especially at temperatures below 10 °C).
Green and red LEDs blink after switching off the heating.	Appliance was switched off due to fault. Lag for temperature reduction of the appliance is active.	Lag switches off after a few minutes. Only then is it possible to reset (fault reset) by switching off and back on again.

HEATING/HOT WATER BOILER TRUMATIC COMBI 2/2		
Fault	**Cause**	**Action**
Green LED blinks after switching off the heater.	Lag for temperature reduction of the appliance is active.	This is not a fault! Lag switches off after about 5 minutes. The heating can be switched back on at any time during the lag phase in Winter mode, only after two minutes in Summer mode.
The drain valve (FrostControl) opens after switching off the heater.	Temperature on the drain valve below 3 °C.	Switch on heating. The drain valve opens automatically at temperatures below about 3 °C! When the heating is off, the drain valve can only be closed again at temperatures above about 7 °C!
		Use heating element for FrostControl.
The drain valve (FrostControl) can no longer be closed.	Temperature on the drain valve below about 7 °C.	Switch on heating. When the heating is off, the drain valve can only be closed again at temperatures above about 7 °C!
	Rotary switch not in "Operation" position.	Turn rotary switch of the drain valve to "Operating" position, then press the push button until it snaps in.
Water spurts from the drain tap of the FrostControl.	Water pressure too high.	Check pump pressure (max. 2.8 bar). When connecting to a central water supply (land or city connection), a pressure reducer must be used which prevents higher pressures than 2.8 bar in the boiler. **If all the fault clearance measures listed in this TRUMATIC COMBI section do not have the desired result, please contact the Truma Service Centre.**

GAS STOVE		1/1
Fault	**Cause**	**Action**
No ignition, flame goes out when control knob is released.	Ignition detector defective.	Consult a qualified specialist.
Flame goes out on "Low Flame" setting.	Ignition detector sensor not correctly adjusted.	Adjust ignition detection sensor correctly (do not bend!). The tip of the sensor should project above the burner by 5 mm. The sensor neck should be no more than 3 mm from the burner ring. Call qualified specialist if necessary.

POWER SUPPLY (Caravan)		1/1
Fault	**Cause**	**Action**
Living area battery not charging when connected to 230 volt mains.	Automatic circuit breaker in wardrobe switched off.	Reset automatic circuit breaker.
No power from living area battery.	The living area battery is discharged	Long-term exhaustive discharge will damage the battery beyond repair. The battery can also be drained by hidden electric loads such as satellite navigation system or TV on standby, control board, charger, etc. Calculation example: Discharge current of 40 mA is flowing: that is 0.96 Ah in 24 hours and 29.76 Ah in 31 days The SL 75 battery has a remaining capacity of approx. 60% after 31 days. The prerequisite is full charging of battery. At very low temperatures the battery capacity decreases further.
Level indicator of fresh water tank not functioning.	Connection between control board and measuring sensor(s) defective.	Identify fault and correct.
	Control board defective.	Replace control board.

POWER SUPPLY (Motorhome)		1/2
Fault	**Cause**	**Action**
Living area battery not charging when connected to 230 volt mains. The charging state of the 230 volt mains is displayed on the control and switch panel (see Section "11.4").	Automatic circuit breaker switched off.	Reset automatic circuit breaker.
	Fuses 2 A or 20 A in charger defective.	Replace defective fuse. If it blows again, contact a qualified specialist immediately.
	Living area battery deep discharged.	Charge living area battery. Start the engine and run for about 1 minute. Voltage of the living area battery rises above 2 volt and the charging process begins. If the living area battery cannot be charged, renew the battery, contact a qualified specialist when necessary.
Living area battery does not charge during travel. The charging state is displayed on the control and switch panel (see Section "11.4").	Starter battery 40 A fuse in distribution box defective.	Replace defective fuse.
	Relay or electronics in distribution box defective.	Consult a qualified specialist.
12 volt consumer (lights and socket) without function.	Main switch on control and switch panel (see Section "11.4") switched off.	Switch main switch on.
	Fuse in distribution box defective.	Replace fuse.
	Main fuse on living area battery defective.	Replace fuse.
	Relay or electronic system in distribution/control and switch panel defective.	Consult a qualified specialist.

POWER SUPPLY (Motorhome) 2/2		
Fault	**Cause**	**Action**
Water pump without function.	Main switch or water pump switch on control and switch panel (see Section "11.4") switched off.	Switch appropriate switch on.
	Fuse in distribution box defective.	Replace fuse.
	Water pump defective.	Renew water pump.
	Electronic system in distribution/ control and switch panel defective.	Consult a qualified specialist.
	Switch in tap defective.	Renew tap.
Heating waste water tank and/or waste water pipe (optional accessory) without function.	Main switch or heating cartridge switch on control and switch panel (see Section "11.4") switched off.	Switch appropriate switch on.
	Fuse in distribution box defective.	Replace fuse.
	Heating cartridge and/or heating tape defective.	Have the defective part replaced by a qualified specialist.
	Electronic system in distribution/ control and switch panel defective.	Consult a qualified specialist.
Fresh water tank display on control and switch panel (Section "11.4") not working.	Connection between control and switch panel and measuring sensor defective.	Identify fault and correct.
	Control and switch panel defective.	Have the control and switch panel replaced by a qualified specialist.
Waste water tank display on control and switch panel (Section "11.4") not working.	Connection between control and switch panel and measuring sensor defective.	Identify fault and correct.
	Control and switch panel defective.	Have the control and switch panel replaced by a qualified specialist.
	Measuring sensor heavily soiled.	Clean measuring sensor.
Outside and inside lighting does not function.	Fuse on passenger side B-pillar defective.	Check fuse and renew as necessary.

WATER SUPPLY		1/1
Fault	**Cause**	**Action**
No fresh water.	Fresh water tank empty.	Fill fresh water tank.
	Fuse in distribution box defective.	Replace or press in defective fuse.
	Water pump defective.	Have the water pump replaced by Customer Service at your local ***WEINSBERG*** Service Centre.
	Pinched water hose.	Remove kink from water hose or replace.
	Terminal block defective.	Consult a qualified specialist.
Water leaking in vehicle.	Leak in water system.	Locate leak, reclip supply hoses.

REFRIGERATOR		1/1
Fault	**Cause**	**Action**
Operation of refrigerator at 12 volts not possible when in motion.	Energy selector switch on refrigerator not set to position "12 V".	Set the energy selector switch to position “12 V”.
	Fuse blown.	Press in fuse.
	Refrigerator evaporator defective.	Consult a qualified specialist.
	Electrical connections on/to the refrigerator defective.	Identify fault and correct.
	In connection with charger contact 11 must be connected to ground at 13-pin socket on towing vehicle.	Connect contact 11 to earth.
Refrigerator does not switch on in 230 volt operation.	Energy selector switch on refrigerator not set to position "230 V".	Set energy selector switch to position “230 V”.
	230 volt automatic circuit breaker in wardrobe has tripped.	Reset automatic circuit breaker.
Refrigerator does not operate in gas mode.	Energy selector switch on refrigerator not set to position “GAS”.	Set energy selector switch to position “GAS”.
	Gas bottle shut-off valve or appliance shut-off valve are closed.	Open appropriate valve.

22. Technical data

22.1 Technical data

Please refer to the vehicle documents for the technical data (engines, weights, dimensions, etc.).

NOTE!

- ☞ Dimensions and weights may vary within ±5% due to the use of natural materials!
- ☞ The dimensions and weights specified in the vehicle documents do not include optional extras.

22.2 Payload

DANGER!

- ☞ The maximum authorised laden mass of the vehicle specified in the vehicle documentation must not be exceeded!
- ☞ An overloaded vehicle may veer out of control while driving!
- ☞ Load according to Section "4.4 Loading the vehicle"!
- ☞ Before starting the journey, weigh the completely loaded vehicle on a public weighbridge!
- ☞ If the total weight determined for your vehicle exceeds the maximum authorised laden mass in the specifications, all warranty claims against the manufacturer will be voided as well as the insurance cover!

The weight of a vehicle is specified as **mass of the vehicle in running order** and **maximum authorised laden mass** (EC Directive 97/27 and DIN EN 1645-2). Optional accessories increase the mass of the vehicle in running order. The **maximum load capacity** is the difference between the **maximum authorised laden mass** and the **mass of the unladen vehicle** (unladen weight). See the vehicle documents for the respective value.

22.2.1 Mass of the vehicle in running order (caravan)

The mass of the vehicle in running order is defined as follows:

- ◆ Mass of unladen vehicle (including onboard tools)
- ◆ LPG bottles (100% full)
- ◆ Fresh water tank (100% full)
- ◆ Fresh water heater (100 % full)
- ◆ Toilet flush tank (100 % full)

22.2.2 Mass of the vehicle in running order (motorhome)

The mass of the vehicle in running order is defined as follows:

- Mass of unladen vehicle (incl. onboard tools, without spare wheel)
- 75 kg driver's weight
- Diesel tank (90 % full)
- Liquid gas (100 % full)
- Toilet flush tank (100 % full)
- Fresh water heater (100 % full)
- Fresh water tank (100 % full, capacity limited to 20 l fresh water in driving operation, when technically planned)**

** Capacity of the fresh water tank acc. to App. V. Part A, No. 2.6 Fn (h) Directive (EU) 1230/2012 limited to 10, 20 or 40 litres by overflow valve. (Recommended driving fill level).

22.2.3 Maximum authorised laden mass

This weight takes into account the specific operating conditions including such factors as material strength, load bearing capacity of the tyres etc. This weight may on no account be exceeded!

The maximum authorised laden mass specifies the maximum permissible weight of a vehicle (vehicle including optional accessory/equipment/packages and gas, water, luggage and load, etc.) in driving operation.

22.2.4 Determination of the payload weight

22.2.4.1 Optional accessories

This includes all items that are available in addition to the standard equipment.

22.2.4.2 Personal equipment

Personal equipment comprises articles carried on the vehicle over and above the optional accessories such as:

All accompanying persons (except for the driver up to 75 kg) and pets (only applies to motorhomes)	Food, drink
Clothing, shoes	Sports and leisure articles
Sanitary articles, toiletries, cleaning products	Multimedia, cine camera, photo camera
Kitchen articles, crockery, cutlery, etc.	Toys, games, etc.

The individual weights for the personal equipment must be determined accurately and recorded in full the lists from Page 183 to Page 185 and added up.

22.2.5 Maximum load capacity

The important value of the maximum payload (luggage, loading, gas, water, etc.) results from the difference between the maximum authorised laden mass and the mass of the unladen vehicle.

Example:	Maximum authorised total weight	**3,500 kg**		
–	Mass of unladen vehicle	**2,700 kg**		
	Maximum load capacity	**800 kg**	>	(luggage, loading, gas, water, etc.)

The mass of the unladen vehicle is determined by weighing a vehicle with standard fitting (without optional accessories, equipment or packages).
Optional accessories, equipment or packages may reduce the maximum payload of a vehicle by increasing the mass of the unladen vehicle. A vehicle user is obliged not to exceed the maximum authorised laden mass in driving operation.

NOTE!

- ☞ The particulars given in the vehicle document are binding for the specifications.
- ☞ Other specifications are not part of this Operating Manual. These figures are enclosed with the caravan as a separate manual.

22.2.6 Weights of personal equipment

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Total weight of the personal equipment on board	, kg

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22.2.7 Total for *WEINSBERG* accessories and personal equipment

DANGER!

The total weight (total of ***WEINSBERG*** accessories **plus** personal equipment) must never exceed the specifications on the maximum load capacity!

NOTE!

Once you have noted and added up all weights – both that of the ***WEINSBERG*** accessories and that of the personal equipment – the result must be compared against the maximum load capacity of your vehicle. The following table can be used for comparison.

My caravan: ☐☐☐☐☐☐

For the maximum load capacity of your vehicle, please refer to the technical data on Page 180.

Maximum payload: ☐☐☐ **kg**

Enter the total weight of ***WEINSBERG*** accessories on board:

WEINSBERG accessories ☐☐☐ kg

Enter the total weight of personal equipment carried from Page 185.

Personal equipment: ☐☐☐ kg

Total weight: ☐☐☐ **kg**

If the total weight is **lower** than the maximum payload:

Have a good trip!

If the total weight is **greater** than the maximum payload:

Reduce payload!

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22.3 Tyre pressure and wheel bolt tightening torque table

22.3.1 Tyre pressure and wheel bolt tightening torque table (caravan)

Tyre size	Tyre pressure [bar]
175/70 R 14	2.5
185 R 14 C	4.5
185/65 R 14	2.5
195/70 R 14 rf	3.4
195/70 R 15 C	4.25
205/70 R 14	2.5
205/65 R 15 reinforced	3.2
215/65 R 15 reinforced	3.2

Tab. 12 Tyre pressure table

Wheel screws caravan				Tightening torque [Nm]
Ball screw 8.8	M12 x 1.5	SW19	Steel rim 5 ½ J x 15	90 ±5
Ball screw 8.8	M12 x 1.5	SW19	Steel rim 5 ½ J x 14 ET30	90 ±5
Ball screw 8.8	M12 x 1.5	SW17	Steel rim 6 J x 14	90 ±5
Ball screw 10.9	M12 x 1.5	SW17	Aluminium rim type 6042 6 J x 14	120 ±5
Ball screw 8.8	M12 x 1.5	SW19	Aluminium rim type 6055 6 J x 14	120 ±5

Tab. 13 Tightening torque table for steel and light metal rims

22.3.2 Tyre pressure and wheel bolt tightening torque table (motorhome)

CAUTION!

Refer to the separate manual for the base vehicle for the specifications on correct tightening torques for the wheel bolts.

Motorhome, front	Motorhome, rear
215/70 R15 CP	
5.0 bar (500 kPa)	5.5 bar (550 kPa)
225/75 R16 CP	
5.5 bar (500 kPa)	5.5 bar (500 kPa)
225/70 R15 C M+S	
4.3 bar (430 kPa)	4.75 bar (475 kPa)
225/75 R16 C M+S	
5.2 bar (520 kPa)	5.2 bar (520 kPa)
235/60 R17 C	
4.25 bar (425 kPa)	5.0 bar (500 kPa)

Tab. 14 Type pressure table - motorhome

VAN, front	VAN, rear
215/70 R15 C	
4.1 bar (410 kPa)	4.5 bar (450 kPa)
225/75 R15 C	
4.0 bar (400 kPa)	4.3 bar (430 kPa)
215/75 R16 C	
4.3 bar (430 kPa)	5.0 bar (500 kPa)
225/75 R16 C	
4.2 bar (420 kPa)	4.8 bar (480 kPa)

Tab. 15 Type pressure table for van

23. Information & tips

NOTE!

- ☞ All stipulations made in this chapter are only applicable in Germany.
- ☞ For journeys abroad, the regulations in the specific country are to be observed.

23.1 Statutory tests (Germany)

23.1.1 Statutory testing of outfit (caravan)

Statutory testing	Towing vehicle	Caravan up to 750 kg	Caravan above 750 kg to 3.5 t	Caravan above 3.5 t
TÜV/DEKRA - general inspection	36 months up to the 1st inspection, then every 24 months	36 months up to the 1st inspection, then every 24 months	Every 24 months	Every 12 months
Exhaust gas inspection (AU)	with general inspection	–	–	–
Inspection of the LPG system by a gas engineer	–	Every 24 months and after modifications or conversions		

Tab. 16 Statutory Testing of Outfit (Germany)

23.1.2 Statutory testing of the motorhome

Statutory testing	Motorhome up to 3.5 t	Motorhome from 3.5 t to 7.5 t	Motorhome Above 7.5 t
TÜV/DEKRA - General inspection and exhaust gas inspection	36 months up to 1st inspection, then every 24 months	Every 24 months up to 6th year, then every 12 months	Every 12 months
Inspection of the LPG system by a gas engineer	Every 24 months as well as after modifications or conversions		

Tab. 17 Statutory tests in Germany (motorhome)

23.2 Emergency accessories to be carried (Germany)

23.2.1 Emergency accessories to be carried by outfits (caravan)

Accessories to be carried in case of emergency	Outfit
These accessories must be carried on the outfit for emergencies.	⚠ First-aid kit ⚠ Hazard warning triangle ⚠ Reflective safety vests

Tab. 18 Accessories to be Carried for the Outfit in Case of Emergency (Germany)

23.2.2 Emergency accessories to be carried by motorhomes

Accessories to be carried in case of emergency	Motorhome up to 2.8 t	Motorhome From 2.8 t to 3.5 t	Motorhome Above 3.5 t
These accessories must be carried in the motorhome for emergencies.	◆ First-aid kit ◆ Hazard warning triangle ◆ Safety vest	◆ First-aid kit ◆ Hazard warning triangle ◆ Safety vest	◆ First-aid kit ◆ Hazard warning triangle ◆ Hazard warning light ◆ Safety vest

Tab. 19 Accessories to be carried in case of emergency in Germany (motorhome)

23.3 Emergency telephone numbers (Europe)

The 24-hour service of the ADAC headquarters in Munich can be contacted from all countries without ADAC emergency call centres:
Telephone: 00 49 (0) 89 22 22 22 or 00 49 (0) 89 76 76 76.

NOTE!

Obtain information about the relevant emergency telephone numbers before travelling abroad.

23.4 Daytime running lights mandatory (Europe)

Different regulations concerning mandatory daytime running lights exist abroad.

NOTE!

For journeys abroad, the regulations in the specific country are to be observed.

23.5 Reflective vest mandatory (Europe)

NOTE!

For journeys abroad, the regulations in the specific country are to be observed.

23.6 Provisions governing road tolls (Europe)

Road toll charges are nowadays applicable in many European countries. The provisions governing road tolls and the method of collection vary between countries.

As in the case of the traffic regulations, motorists are obliged to find out about these provisions **before** setting off.

NOTE!

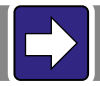
Information in this regard is available from all automobile clubs or on the Internet.

24. Checklist

Use the following checklists to check the vehicle before starting any journey:

CAUTION!

Stop after driving a few kilometres and check once again that the payload inside the vehicle is securely tied down and cannot slip!



NOTE!

You can also draw up your own personal checklist. We suggest that you make several copies of these pages so you will always have a blank checklist at hand before you set off.

24.1 Checklist before setting off

Remarks:	Date:
	Page of

Have you got all the vehicle documents including the green insurance card on board, and have all passengers got their travel documents (passports, ID cards, children's passports etc.)? Check that travel documents are still valid in good time!	OK: ☐
Have you got all the necessary documents (health and vaccination certificates) for pets with you? Information on the necessary documents can be obtained from the relevant consulate, the tourist office or an automobile club.	OK: ☐
Is the gas test certificate (see gas test disc) still valid? Check the valid until date in good time!	OK: ☐
Have you got a full set of spare keys (keep separately!) for the vehicle towing vehicle (caravan), vehicle and any alarm system with you?	OK: ☐
Has all the necessary maintenance and inspection work been carried out on the vehicle in time?	OK: ☐
Caravan: Is a minimum drawbar load on the trailer hitch of approx. 25 kg ensured?	OK: ☐
Has the permitted total weight of the vehicle been exceeded (see Section "22.1 Technical data" and Section "22.2 Payload")?	OK: ☐
Has the vehicle been loaded properly (see Section "4.4 Loading the vehicle")?	OK: ☐
Have all the doors, flaps, gas locker, windows, roof lights and roof windows – except forced ventilations – been closed properly?	OK: ☐
Has (have) the hanging lamp(s) been removed and stowed safely?	OK: ☐
Are all tables in sleeping position (see Chapter "8 Sleeping")?	OK: ☐
Has the lifting bed (not available in all models) been raised and properly secured?	OK: ☐
Only for caravans licensed in Norway: Has the obligatory 6 kg fire extinguisher been checked?	OK: ☐
Are all liquid containers, including those in the refrigerator, secured against leaking?	OK: ☐
Are the gas bottles in the gas locker strapped tight, are the gas bottle shut-off valves and all appliance shut-off valves closed?	OK: ☐
Is the payload stowed securely against slipping?	OK: ☐
Caravan: Are the additional wing mirrors on the towing vehicle fitted properly and set correctly?	OK: ☐
Did you check the pressure of all tyres (including spare tyres) on the vehicle according to "22.3 Tyre pressure and wheel bolt tightening torque table"**?**	OK: ☐

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Caravan: Has the pressure of all tyres (including spare tyres) on the towing vehicle been checked according to the separate operating manual of the automobile manufacturer and has the tyre pressure in the rear tyres of the towing vehicle been increased by 0.2 bar?	OK: ☐
Are the first-aid kit (check regularly for completeness and expiry date), hazard warning triangle and reflective safety vests for all persons carried stowed away on board where they are easy to reach? (Regulations governing availability vary between countries.)?	OK: ☐
Caravan: Is there a spirit level on board for aligning the vehicle?	OK: ☐
Are a correctly inflated spare tyre and the appropriate tools and a jack suitable for the permissible total weight on board for the event that a tyre on the vehicle needs changing?	OK: ☐
Caravan: Are the nose wheel and the support legs wound up?	OK: ☐
Have the wheel chocks been removed and stowed correctly?	OK: ☐
Caravan: Has the vehicle been hitched up properly?	OK: ☐
Caravan: Is the light plug plugged in properly (do a function test!) and secured?	OK: ☐
Caravan: Is the safety cable attached correctly?	OK: ☐
Caravan: Has the parking brake on the vehicle been released?	OK: ☐
Are all lighting devices on the vehicle working properly (do a function test!)?	OK: ☐
Is the fresh water tank full?	OK: ☐
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24.2 Checklist for personal entries

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	Page of

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Copy if necessary

25. Index

0 - 9

A

B

C

D

E

F

G

H

I

K

L

M

O

P

R

S

T

U

V

W

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