Dear Customer,

We are pleased that you have chosen a motorhome from ***HYMER*** and would like to thank you for the trust you have shown in our company.

This instruction manual is intended to help you get to know and use your new motorhome. **It is essential that you read and comply with the safety instructions in chapter 2.**

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

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

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

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

You will also find ***HYMER GmbH & Co. KG*** on the Internet at: http://www.hymer.com.

Yours, ***HYMER GmbH & Co. KG***

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

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

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Observe the following instructions before first journey of the vehicle:

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

Observe the following instructions before each journey of the vehicle:

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

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

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

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

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

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

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

▷ This symbol indicates recommendations or special aspects.

▷ This symbol indicates actions which lead to environmental awareness.

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

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

Optional equipment is described when an explanation is required.

Adhere to the instruction manuals which are separately enclosed.

▷ The details "right", "left", "front" and "rear" always refer to the vehicle in direction of travel.

▷ All dimensions and weight details are "approximate".

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

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

1.1 General

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

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

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

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

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

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

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

Observe the test and inspection periods stipulated by the manufacturer.

1.2 Environmental tips

- ▷ Be considerate of the environment.
- ▷ Remember that: All kinds of waste water and household waste are not to be disposed of in drains or in the open countryside.
- ▷ On board, collect waste water only in the waste water tank or – if necessary – in other containers designed for that purpose.
- ▷ Only empty the waste water tank and sewage tank at disposal stations, camping sites or caravan sites especially provided for this purpose. When stopping in towns and communities, observe the instructions at caravan sites or ask where there are disposal stations.
- ▷ Empty waste water tank as often as possible, even when it is not completely full (hygiene).

  If possible, flush out waste water tank and, if necessary, drainage pipe with fresh water every time it is emptied.
- ▷ Never allow the sewage tank to become too full. Empty the sewage tank frequently, at the latest as soon as the filling level indicator lights up.
- ▷ Separate household waste according to glass, tin cans, plastic and wet waste also when on a journey. Enquire at the town or community authority about disposal points. Household waste is not to be disposed of in waste paper baskets which are situated at car parks.
- ▷ Empty waste bins as often as possible into the containers provided for this purpose. This helps to avoid unpleasant smells and an accumulation of rubbish on board.

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

Chapter overview

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

2.1 Fire prevention

2.1.1 Avoidance of fire risks

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

2.1.2 Fire-fighting

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

2.1.3 In case of fire

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

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

2.2 General

- ▶ The oxygen in the vehicle interior is used up by breathing and the use of gas/diesel-operated appliances. Therefore, the used air must be replaced permanently. For this purpose, forced ventilation options (e.g. skylights with forced ventilation, mushroom-shaped vents or floor vents) are fitted to the vehicle. Never cover or block forced ventilations from the inside or outside with objects such as e.g. a winter mat. Keep forced ventilations clear of snow and leaves. There is a danger of suffocation due to increased CO_2 levels.
- ▶ Do not use storage spaces or rear garages as places for people or animals to stay or sleep in. These spaces are not forced-air ventilated. There is a danger of suffocation due to oxygen deprivation or exhaust from the heater.
- ▶ Observe the headroom of the doors.

- ▷ As far as the fitted appliances (heater, cooker, refrigerator, etc.) and the base vehicle (engine, brakes, etc.) are concerned, the instruction manuals are authoritative. It is imperative that they be observed.
- ▷ Fitting accessories or optional equipment can alter the dimensions, weight and road behaviour of the vehicle. Some of the add-on parts must be entered in the vehicle documents.
- ▷ Only use wheel rims and tyres which are approved for the vehicle. Information concerning the size of the approved wheel rims and tyres is included in the vehicle documents or can be obtained from authorised dealers and service centres.
- ▷ Firmly apply the handbrake when parking the vehicle.
- ▷ If the technically permissible maximum laden mass of the vehicle exceeds 4 tonnes, a wheel chock must be used when parking on gradients. The wheel chock is provided as standard for vehicles with a technically permissible maximum mass exceeding 4 tonnes.

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

2.3 Road safety

- ▶ Before commencing the journey, carry out a functional check of indicating and lighting equipment, the steering and the brakes.
- ▶ If the vehicle has been stationary for a long period (approx. 10 months) have the braking and gas systems checked by an authorised specialist workshop.
- ▶ Before commencing the journey and after short interruptions of the journey, ensure that the entrance step is completely retracted.
- ▶ Before commencing the journey, close and lock the sleeping roof.
- ▶ Before commencing the journey, open, lock and secure the shades situated on the windscreen and on the driver's and front passenger's windows.
- ▶ Before commencing the journey, rotate all swivel seats in the direction of travel and lock in position. During the journey, the swivel seats must remain locked in place in the direction of travel.
- ▶ Carefully store all moving parts and all loose objects before starting your journey.
- ▶ Before commencing the journey, secure the television.
- ▶ During the journey, persons are only to sit on the permitted seats (see chapter 4). The authorised number of seats is stipulated in the vehicle documents.
- ▶ Seat belts must be worn by all passengers.

- ▶ Fasten your seat belts before the beginning of the journey and keep them fastened during the journey.
- ▶ When travelling, secure children under 13 years of age that are smaller than 150 cm, with a suitable and officially approved child restraint system.
- ▶ Only attach the child restraint system to seats that are specified for this purpose.
- ▶ The base vehicle is a commercial vehicle (small truck). Adjust your driving technique accordingly.
- ▶ In case of underpasses, tunnels or similar obstacles, note the total height of the vehicle (including the roof load).
- ▶ In winter, the roof must be free of snow and ice before commencing the journey.
- ▶ Check tyre pressure before a journey or every 2 weeks. Wrong tyre pressure causes excessive wear and can lead to damage or even to tyre burst. You can lose control of the vehicle (see section 13.8).
- ▶ Do not operate the heater at petrol stations. Danger of explosion!
- ▶ Do not operate the heater in closed spaces. Danger of suffocation!

- ▷ Before commencing the journey, distribute the payload evenly within the vehicle (see chapter 3).
- ▷ When loading the vehicle and during breaks in the journey, e.g. when reloading luggage or food, observe the technically permissible maximum laden mass and the technically permissible maximum laden mass on the axle (see the vehicle documents).
- ▷ Before commencing the journey, close and secure all drawers and flaps.
- ▷ Before commencing the journey, close windows and skylights.
- ▷ Before commencing the journey, close all external flaps (if present) and lock the flap locks.
- ▷ Before commencing the journey, remove external supports.
- ▷ Before commencing the journey, put the antenna in park position.
- ▷ During the initial journey and each time after changing a wheel, retighten the wheel bolts/wheel nuts after 50 km (30 miles). Subsequently inspect them at regular intervals in order to ensure that they are firmly seated.
- ▷ Tyres must not be older than 6 years as the material becomes brittle over time (see chapter 13).
- ▷ When using snow chains, the tyres, wheel suspension and steering are subjected to an additional load. When using snow chains, drive slowly (maximum speed 50 km/h) and only on streets which are completely covered with snow. Otherwise the vehicle could be damaged.

2.4 Towing

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

2.5 Gas system

2.5.1 General instructions

- The operator of the gas system is responsible for the performance of recurring inspections and for complying with the maintenance intervals.
- Before commencing the journey, when leaving the vehicle or when the gas devices are not in use, close all gas isolator taps and the main regulator tap on the gas bottle.
- All gas/diesel-operated devices (depending on the equipment: heater, cooker, oven, grill, refrigerator) must be switched off for refuelling, on ferries or in the garage. Danger of explosion!
- Do not use gas-operated devices in closed spaces (e.g. garages). Danger of poisoning and suffocation!
- Only have the gas system maintained, repaired or altered by an authorised specialist workshop.
- Have the gas system checked by an authorised specialist workshop according to the national regulations before commissioning. This also applies for not registered vehicles. For modifications to the gas system have the gas system immediately checked by an authorised specialist workshop.
- The gas pressure regulator, the gas tubes, and the exhaust gas pipes must also be inspected. The gas pressure regulator and the gas tubes must be replaced observing the nationally defined deadlines (the latest after 10 years). The vehicle owner is responsible for seeing that this is carried out.
- In case of a defect of the gas system (gas odour, high gas consumption) there is danger of explosion! Close regulator tap on the gas bottle immediately. Open doors and windows and ventilate well.
- If the gas system is defective: Do not smoke; do not ignite any open flames, and do not operate electric switches (light switches etc.). Check the tightness of gas-conducting parts and lines with leakage search spray. Do not check with an open flame.
- Only the stipulated devices may be connected to internal connections. Do not operate any device outside the vehicle if it is connected to an internal connector.
- Before using the cooker make sure that there is sufficient ventilation. Open a window or the skylight.
- Do not use gas-operated cooking and baking facilities for heating purposes.
- If there are several gas devices, each gas device must have its own gas isolator tap. If individual gas devices are not in use, close the respective gas isolator tap.
- Ignition safety valves must close within 1 minute after the gas flame has extinguished. A clicking sound is audible. Check function from time to time.
- The built-in gas devices are exclusively meant for use with propane or butane gas or a mixture of both. The gas pressure regulator as well as all built-in gas devices are designed for a gas pressure of 30 mbar.

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

2.5.2 Gas bottles

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

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

2.6 Electrical system

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

2.7 Water system

- ▶ Water left standing in the water tank or in the water pipes becomes undrinkable after a short period. Therefore, before each use of the vehicle, thoroughly clean the water pipes and the water tank. After each use of the vehicle completely empty the water tank and the water pipes.
- ▶ In the case of lay-ups lasting more than a week, disinfect the water system before using the vehicle (see section 11.7.3).

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

Chapter overview

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

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

3.1 Initial start-up

▷ During the initial journey and each time after changing a wheel, re-tighten the wheel bolts/wheel nuts after 50 km (30 miles). Subsequently inspect them at regular intervals in order to ensure that they are firmly seated. See chapter 13 for tightening torque.

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

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

Further information in chapter 12.

When starting up for the first time or after a lay-up, the electrical system must be started up as follows:

- Switch on the fuses or (if the fuses have been pulled out) insert the fuses.
- Set battery cut-off switch to on.
- Switch 12 V power supply on.

▷ The 12 V power supply must only be switched on in vehicles **without** SCU (System Control Unit). On vehicles **with** SCU, the 12 V power supply is activated automatically.

▷ The vehicle is not ready for operation until the above measures have been carried out.

3.2 Vehicle load capacity

▶ Overloading the vehicle and the axles may result, for example, in a diminished steering response (altered driving behavior), an overloading of the tires, and, as a result, an increased risk of tire blowouts or an extended braking distance. This may cause you to lose control of the vehicle, endangering yourself and other road users.
If you are not sure whether the loaded vehicle complies with the technically permissible maximum laden mass, you can weigh/check the vehicle on public scales or have it weighed by certain dealers.

▶ The vehicle documents state the technically permissible maximum laden mass or the mass including optional equipment ex works (actual vehicle mass), but not the weight of the laden vehicle (see section 3.2.1). For your own safety, we recommend that you have your loaded vehicle (with all passengers, luggage and personal objects) weighed on a public weighbridge before you set out on your journey.

▶ Adapt the speed to the payload. The stopping distance is increased if the payload is high.

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

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

3.2.1 Terms

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

Technically permissible maximum laden mass

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

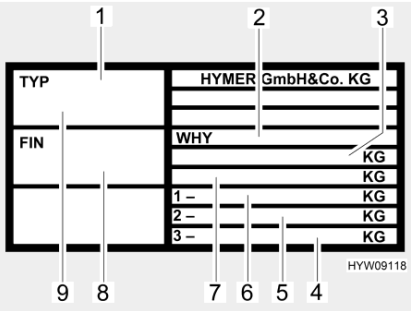


Fig. 1 Nameplate

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

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

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

Actual vehicle mass

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

Mass in running order

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

The mass in running order is made up as follows:

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

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

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

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

The waste water and sewage tanks are empty.

Example for calculating the basic equipment

Water tank with 20 l (during the journey)	20 kg
Gas bottle (11 kg $_{gas}$ + 14 kg $_{bottle}$)	+ 25 kg
Boiler with 12 l	+ 12 kg
230 V power cable	+ 4 kg
Installation kit for auxiliary battery	+ 20 kg
Total	**= 81 kg**

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

Remaining load capacity

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

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

Example:
Technically permissible gross weight − actual weighed mass − mass of passengers = remaining load capacity
3500 kg – 3000 kg – 225 kg (3 x 75 kg) = 275 kg

▷ Please note that the factory calculation of the remaining load capacity for the mass of the driver (included in the actual weighed mass) and the mass of the passengers is based on a generalized mass of 75 kg per seat. Due to deviating body weights, however, the actual remaining load capacity of your vehicle may vary.

▷ The actual factory-weighed mass of your vehicle may vary slightly afterwards due to weather conditions and, for example, the associated absorption or release of moisture. Any further subsequent modification of your vehicle, e.g. through the additional installation of accessories by the dealer or other attachments and/or conversions, will additionally influence the actual weighed mass of the vehicle communicated and consequently also the remaining load capacity. It is the responsibility of the dealer after picking up the vehicle at the factory until delivery, and subsequently your responsibility from the time of handover by the dealer, to ensure that the technically permissible maximum laden mass is not exceeded. If you are not sure whether the loaded vehicle complies with the technically permissible maximum laden mass, you can weigh/check the vehicle on public scales or have it weighed by certain dealers.

▷ We will inform your dealer of the actual weighed mass of your vehicle and the remaining load capacity when we issue the invoice. Your dealer is required to pass on the information to you. If you have not received this information, you can contact your dealer and request it. Our scales meet all legal and standard requirements and are regularly maintained, tested and, calibrated. Nevertheless, a slight tolerance is technically unavoidable. Moreover, the weight of the vehicle may vary slightly due to weather conditions and, for example, the associated absorption or release of moisture. The actual weight of the vehicle may therefore deviate from the actual weight communicated by a few kilograms.

The payload is made up as follows:

- Conventional load
- Optional equipment
- Personal equipment

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

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

Conventional load

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

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

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

Optional equipment

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

- Caravan coupling
- Bike or motorcycle rack
- Satellite unit

Chapter 15 lists the weights of the various items of optional equipment; they may also be obtained from the manufacturer.

Personal equipment

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

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

No matter where kept, personal equipment also includes:

- Animals
- Bikes
- Boats
- Surfboards
- Sports equipment

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

Formula

Minimum weight M (kg) = 10 x N + 10 x L

Explanation

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

L = total length of the vehicle in metres

3.2.2 Calculating the vehicle load capacity

- ▶ Never exceed the technically permissible maximum laden mass!
- ▶ The technically permissible maximum laden mass and the weight including optional equipment fitted at the factory (actual mass) is shown in the vehicle documents, but not the weight of the laden vehicle (see section 3.2.1). For your own safety, we recommend that you have your loaded vehicle (with all passengers, luggage and personal objects) weighed on a public weighbridge before you set out on your journey.

The vehicle load capacity (see section 3.2.1) is the difference in weight between

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

Example for calculating the payload

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

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

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

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

To do this, proceed as follows:

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

The individual values give the current masses on the axles. These are important for the correct loading of the vehicle (see section 3.2.3). The sum of these values is the current weight of the vehicle.

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

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

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

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

3.2.3 Load securing and load distribution

- ▶ For safety reasons, never exceed the technically permissible maximum laden mass.
- ▶ Distribute the load evenly on the left and right sides of the vehicle.
- ▶ Distribute the load evenly on both axles. Observe the technically permissible maximum laden mass on the axle specified in the vehicle documents. Observe the permissible load-carrying capacity of the tyres (see chapter 13).
- ▶ Heavy loads behind the rear axle can reduce the load on the front axle due to the leverage effect (). This applies especially to long rear extensions or if there is a heavy load in the rear storage space. The release of the front axle negatively affects the driving quality, especially for front-driven vehicles.
- ▶ Store all objects in such a way that they cannot slip.
- ▶ Store heavy objects (awning, tin cans, etc.) close to the axles. Low-lying storage spaces whose doors do not open in the direction of travel are particularly suited for storing heavy objects.
- ▶ Stack light objects (laundry) in the roof storage cabinets.
- ▶ Load the bike rack with bicycles only.
- ▶ Always secure loads onto the clamping eyelets. Always use tightening straps or lashing nets for securing the load, never rubber expanders.

▷ Only load the drawers with a maximum of 15 kg.

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

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

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

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

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

▷ The technically permissible maximum laden mass and the technically permissible maximum laden mass on the axle must not be exceeded. Especially when stowing or attaching heavy accessories or heavily laden accessories (such as motorcycle carriers or bicycle carriers) at the rear, the mass on the axle must be checked and complied with. If you are not sure whether the loaded vehicle complies with the technically permissible maximum laden mass and the technically permissible maximum laden mass on the axle, you can weigh/check the vehicle on public scales or have it weighed by certain dealers.

▷ For individual models, a maximum load is specified by the body manufacturer for cabinets, drawers, storage compartments, or other storage spaces. This maximum load can be seen on the stickers attached on site and must be observed at all times. However, the technically permissible maximum laden mass and the technically permissible maximum laden mass on the axle must not be exceeded under any circumstances. For this reason, please note that the stated maximum load may not be fully utilized if this would result in the exceedance of the technically permissible maximum laden mass or technically permissible maximum laden mass on the axle.

▷ Further information on correct loading can be found in the sections "Technically permissible maximum laden mass" (page 20) and "Technically permissible maximum laden mass on the axle (mass on the axle)" (page 27).

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

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

Formulas

A x G : R = weight on the rear axle

Weight on the rear axle – G = weight on the front axle

Explanation

A = distance between storage space and front axle in cm

G = weight of the load in the storage space in kg

R = wheelbase of the vehicle (distance between axles) in cm

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

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

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

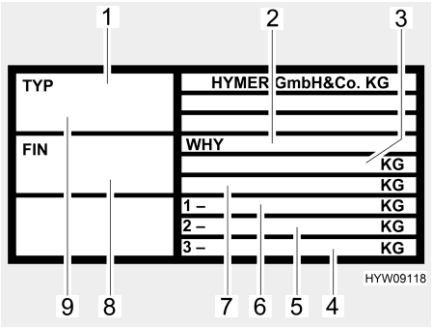


Fig. 2 Nameplate

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

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

▷ Please note that the mass on the respective axles or axle groups may differ. For this reason, please read the information provided in the registration papers carefully.

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

▷ It is possible that the chassis manufacturer of your vehicle specifies a minimum load for the front axle in order to achieve optimum driving behavior. Therefore, please also always observe the information regarding this from the operating instructions of the chassis manufacturer.

▷ For further information on correct loading, please refer to section "Load securing and load distribution" (page 25).

Calculating masses on the axles:

- Multiply the distance between storage space and front axle (A) with the weight of the load in the storage space (G) and divide the result by the wheelbase (R). The result is the weight of the load in the storage space on the rear axle. Make a note of this weight and of the storage space.
- In a second step, subtract the weight in the storage space (G) from the weight calculated beforehand. If the result is a **positive** value (example 1), this means that the load on the front axle is **reduced** by this value. If the result is a **negative** value (example 2), this means that the load on the front axle is **increased**. Make a note of this value, too.
- Calculate all storage spaces of the vehicle in the same way.
- In a last step, add all weights calculated for the rear axle to the mass on the rear axle and add (or subtract) all weights calculated for the front axle to (from) the mass on the front axle.
  How to determine the mass on the rear axle and front axle is described in section 3.2.2.

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

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

Example calculation

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

Increase and reduction of load capacity

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

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

- ▷ Due to the change in the technically permissible maximum laden mass, increases or reductions of load capacity may affect the permitted seats, the chassis, and the mass on the axle. If you have any questions, feel free to contact the responsible technical testing center for advice.
- ▷ A reduction or increase of load capacity may result in changes to the legal requirements resulting from the new technically permissible maximum laden mass of the vehicle. This applies in particular to the legal requirements from the German Road Traffic Act (StVO), the German Road Vehicle Registration Regulation (StVZO), and tax and insurance regulations. An increase of technically permissible maximum laden mass to over 3500 kg may, for example, affect the driving license class or result in different speed limits or prohibitions on passing and overtaking. Toll payment requirements may also change due to the new technically permissible maximum laden mass. Therefore, inform yourself about the current legal situation with regard to the new technically permissible maximum laden mass of the vehicle and seek advice on this from the appropriate bodies. Please note that national regulations in the country of your destination and countries visited in transit may differ from those in your home country.
- ▷ For more information on the actual weighed mass of your vehicle and the remaining load capacity, please refer to section "Remaining load capacity" (page 21).

3.3 Bike rack

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

- ▷ The identification plate and rear lights must not be covered.
- ▷ Driving with a folded out bike rack without bicycles is not permitted.
- ▷ Before every journey, check:

  Is the bike rack without bicycles folded in correctly?

  Are the bicycles securely fastened to the bike rack using the bike rack belts?

Loading the bike rack with bicycles

When loading the bike rack, observe the centre of gravity. The centre of gravity of the bicycles must be as close as possible to the rear wall of the vehicle. The bike rack should always be loaded from the inside to the outside.

Loading the bike rack correctly:

- Fold the bike rack downwards.
- Place the heaviest bicycle directly against the rear wall.
- Place the lightest bicycles in the centre or on the outside of the bike rack.
- Secure the front and rear wheels of each bicycle with the retaining straps on the bike rack.
- In addition, fasten the outermost bicycle on the retaining bracket or retaining arm.

If the bike rack is only loaded with **one** bicycle, position the bicycle as closely as possible to the rear wall.

3.4 Backrack component carrier on rear door (optional)

▶ Observe the maximum permissible load for the Backrack and the devices mounted on it (e.g. bike rack).

Fig. 3 Backrack

The base carrier (Fig. 3,1) is factory fitted to the rear door of the vehicle.

Various components can be mounted on the base carrier, e.g.:

- Bike rack (various versions)
- Surfboard carrier
- Storage box

▷ Components for the Backrack are available as accessories in the After Sales service.

3.5 Roof loads

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

▷ Observe the maximum permissible roof loads. The maximum permissible roof load is 150 kg. The weight of any special equipment fitted to the roof must be deducted from this. The residual value indicates the maximum weight that can still be placed on the roof.

▷ Secure roof loads with tension belts. Do not use rubber expanders.

▷ Observe the overall height of the vehicle when the roof rack is loaded.

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

Fig. 4 Sleeping roof with roof rack

3.6 Lashing system in the rear

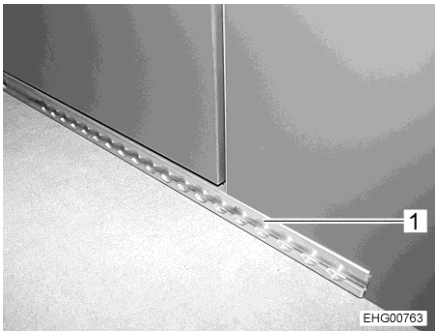


Fig. 5 Lashing system

In the rear area, two clamping rails (Fig. 5,1) are fitted to the bases of the bottom cupboards. Clamping eyelets can be attached to these clamping rails in various positions.

- Thread the clamping eyelet into the open end of the clamping rail and slide it to the desired position.
- Lock the clamping eyelet.

3.7 Towing

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

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

- ▷ Fiat base vehicle: Depending on the model, the maximum permissible nose weight is 80 kg to 120 kg.

  Mercedes-Benz base vehicle: Depending on the model, the maximum permissible nose weight is 100 kg to 140 kg.

3.8 Caravan coupling

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

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

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

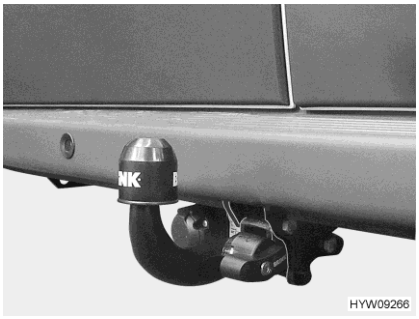


Fig. 6 Caravan coupling (detachable)

Entry in the vehicle documents

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

3.9 Electrically operated entrance step

- ▶ Before commencing the journey and after short interruptions of the journey, ensure that the entrance step is completely retracted.
- ▶ Do not stand in the direct range of the entrance step while it is being retracted or extended.
- ▶ Do not step on the entrance step until it has extended completely. There is a risk of injury!
- ▶ To prevent danger of slipping, clean the entrance step if necessary before entering (snow, ice, mud, etc.).
- ▶ Do not under any circumstances raise or lower persons or loads with the entrance step.
- ▶ Following a cold start, for vehicle-related reasons it can take a few seconds before the warning tone sounds.
- ▶ Observe the maximum load for the entrance step according to the manufacturer's instruction manual.

▷ Do not grease or lubricate the pivot bearing and joints of the entrance step (see chapter 11).

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

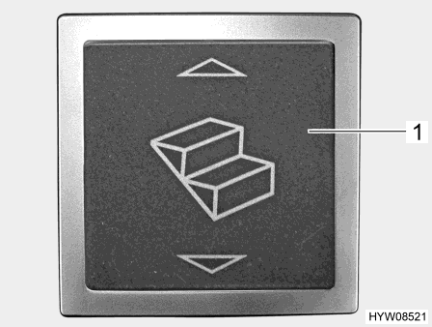


Fig. 7 Rocker switch for entrance step (entrance area)

Retracting or extending:

- Press the rocker switch (Fig. 7,1) situated in the entrance area.

When the engine is running and the entrance step is extended, a warning tone is heard. The warning tone stops as soon as the entrance step is retracted.

3.10 Television

▶ Before commencing the journey, store the television securely.

3.11 Kitchen area

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

3.12 Gas regulator

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

Depending on the equipment, different gas regulators can be installed in the vehicle.

If other gas regulators than the one listed below are installed in the vehicle, the regulator tap on the gas bottle and the gas isolator taps must be closed during the journey.

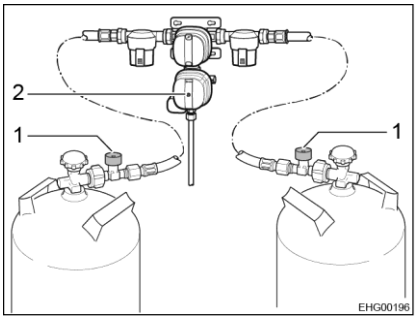


Fig. 8 Gas regulator (DuoControl CS)

Gas regulator with crash sensor and hose break guard

If a gas regulator with crash sensor (Fig. 8,2) and hose break guard (Fig. 8,1) is installed in the vehicle:

The regulator tap on the gas bottle and the "Heater" gas isolator tap may remain open during the journey. Gas-operated appliances may be on during the journey.

The design details of the gas regulators can vary (vertical or horizontal).

▷ If in doubt, get the relevant information from authorised dealers or service centres.

3.13 Snow chains

▷ Only mount snow chains if there is a clearance of at least 50 mm between the tyres and the vehicle body.

▷ When using snow chains, the tyres, wheel suspension and steering are subjected to an additional load. When using snow chains, drive slowly (maximum speed 50 km/h) and only on streets which are completely covered with snow. Otherwise the vehicle could be damaged.

▷ Observe the fitting instructions issued by the manufacturer of the snow chains.

▷ Do not fit snow chains on alloy wheel rims.

▷ On all-wheel drive vehicles, snow chains may only be mounted on the wheels of the rear axle.

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

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

3.14 Road safety

- ▶ Check tyre pressure before a journey or every 2 weeks. Wrong tyre pressure causes excessive wear and can lead to damage or even to tyre burst. You can lose control of the vehicle (see section 13.8).
- ▶ Add-on parts can be exposed to adverse conditions (storms, ice, vibrations, etc.) and require close monitoring despite careful design and manufacturing. Therefore, check the tight fit of the add-on parts at certain intervals and before long journeys.

Before commencing the journey, work through the checklist:

	No.	Checks	Checked
Base vehicle	1	All vehicle documents are on board	
	2	Tyres in proper condition and tyre pressure correct	
	3	Vehicle lighting, brake lights and reversing lights function	
	4	Oil levels for engine, gearbox and power steering controlled	
	5	Coolant and fluid for windscreen washers filled up	
	6	Brakes function	
	7	Brakes react evenly	
	8	When braking, the vehicle remains in the lane	
Housing body, outside	9	Awning completely retracted	
	10	Sleeping roof closed and locked	
	11	Roof free of snow and ice (in winter)	
	12	External connections and lines disconnected and stored away	
	13	External supports removed	
	14	Entrance step retracted (observe warning tone)	
	15	Rear doors closed	
	16	Overall height of the vehicle including roof rack when loaded measured and noted. Keep the height information close at hand in the driver's cabin	
Housing body, inside	17	Windows, skylights and sleeping roof closed and locked	
	18	Television secured	
	19	Loose parts stored away or fixed in position	
	20	Open storage spaces empty	
	21	Refrigerator door secured	
	22	All drawers and flaps closed	
	23	Children's seats only mounted on the seats approved for this purpose	
	24	Swivel seat locking device for driver's seat and front passenger's seat locked	
	25	Shades in the driver's cabin opened and secured	
	26	All lights switched off	

Gas system

No.	Checks	Checked
27	Gas bottles firmly fixed in the gas bottle compartment so that they are unable to turn	
28	If the gas bottles are not connected to the gas tube, always place the protective cap on top	
29	Regulator tap on the gas bottle and gas isolator taps are closed ▷ If there is a MonoControl or DuoControl regulating system with crash sensor installed, the gas isolator taps and the main regulator tap may remain open during the journey.	

Electrical system

30	Check the battery voltage of the starter and living area battery (see chapter 8). If the panel indicates that the battery voltage is too low, the respective battery will need to be recharged. Observe the notes and instructions in chapter 8 ▷ Commence journey with fully charged starter and living area batteries.	

Chapter overview

This chapter contains instructions on how to drive the motorhome.

4.1 Driving the motorhome

- ▶ The base vehicle is a commercial vehicle (small truck). Adjust your driving technique accordingly.
- ▶ Before commencing the journey and after short interruptions of the journey, ensure that the entrance step is completely retracted.
- ▶ When you start the engine, warning signals such as "entrance step extended" can sound. Under certain conditions (a cold start in winter) after the engine is started it can take up to 15 seconds for these warning signals to sound.
- ▶ A seat belt is fitted for each seat which is permitted for travel. Please keep your seat belt fastened during the journey.
- ▶ Never open your seat belts when travelling.
- ▶ Passengers must remain in the seats provided.
- ▶ Before commencing the journey, push the seat cushion of the reclining bench all the way back. The bench must not be used with the backrest inclined during the journey.
- ▶ The doors must remain locked.
- ▶ Avoid braking with a jerk.
- ▶ If a navigation system is used, only change the destination when the vehicle is stationary. Drive to a car park or stop in a safe area when changing the destination.
- ▶ Do not play DVDs using the monitor of the navigation system during the journey.

▷ Drive slowly on poor roads.

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

▷ The safety measures stipulated in chapter 2 have to be observed.

4.2 Driving speed

- ▶ The vehicle is equipped with a powerful engine. This means there are sufficient reserves in difficult traffic situations. This high power enables a high maximum speed and requires above-average driving ability.
- ▶ The vehicle provides a large contact surface for wind. A sudden crosswind can be especially dangerous.
- ▶ Uneven or one-sided loading affects road performance.

- ▶ Driving on unknown streets, you may encounter hazardous road conditions and unexpected driving situations. Therefore, in the interest of safety, make sure your driving speed is appropriate to any given driving situation and environment.
- ▶ Adhere to the national legal speed limits.

4.3 Brakes

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

Before each journey

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

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

4.4 Seat belts

4.4.1 General

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

- ▶ Fasten your seat belts before the beginning of the journey and keep them fastened during the journey.
- ▶ Do not damage or trap belts. Have damaged seat belts changed by an authorised specialist workshop.
- ▶ Do not alter the belt fixing devices, automatic seat belt winders and the seatbelt locks.
- ▶ Only use one seat belt for **one** adult person.
- ▶ Do not belt in objects together with persons.
- ▶ Children up to 12 years of age or with a body height of less than 150 cm must use an approved child seat.
  Other persons with a body height of less than 150 cm must use a suitable, tested restraint system, as the seat belts are not sufficient here.
- ▶ Only attach the child restraint system to seats that are specified for this purpose.
- ▶ After an accident, replace the seat belts (have it replaced).
- ▶ During the journey, do not tilt the backrest too far backwards. Otherwise the functionality of the seat belt is no longer guaranteed.

4.4.2 Fastening the seat belts correctly

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

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

4.5 Child restraint systems

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

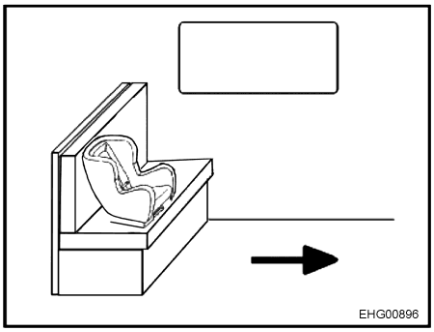


Fig. 9 Child seat on bench

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

Child restraint systems are divided into five classes:

Class	Body weight	Approximate age
0	Up to 10 kg	Up to 9 months
0+	Up to 13 kg	Up to 18 months
I	9 kg to 18 kg	9 months to 4 years
II	15 kg to 25 kg	3 years to 7 ½ years
III	22 kg to 36 kg	6 years to 12 years

The following table shows, which child restraint systems can be used on which seats.

Seats	Age groups			
	< 10 kg (0-9 months)	< 13 kg (0-24 months)	9-18 kg (9-48 months)	15-36 kg (4-12 years)
Front passenger's seat	U[1)]	U[1)]	UF	UF

Meaning of letters:	
U:	Suitable for "universal" restraint systems which are authorised for this age group.
UF:	Suitable for forward-facing "universal" restraint systems which are authorised for this age group.
U[1)]:	Only when front passenger's airbag is deactivated.

4.6 Driver's seat and front passenger's seat

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

▷ Mercedes-Benz base vehicle: If the driver's and front passenger's seats have been rotated towards the door to facilitate getting on and off, return the respective seat to its original position before closing the door. For the change between driving position and living position, rotate the driver's and front passenger's seats only inwards. The map pocket on the inside of the doors could otherwise get damaged.

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

Fig. 10 Operating controls on seat (Fiat as example)

Rotating seat into driving position

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

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

▷ Rotating the seats in the pitched vehicle is described in chapter 6.

Adjusting seat in lengthways direction

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

- Pull the bar (Fig. 10,2) upwards.
- Push the seat forwards or backwards.
- Release the bar. The seat must audibly lock into place.

Setting the seat inclination

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

- Pull the handle (Fig. 10,3) upwards.
- Bring the front seat into the desired inclination position by applying or relieving pressure.
- Release handle. The seat must audibly lock into place.
- Pull the handle (Fig. 10,4) upwards.
- Bring the rear seat into the desired inclination position by applying or relieving pressure.
- Release the handle. The seat must audibly lock into place.

Adjusting the backrest

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

- Turn the knurled knob (Fig. 10,5). The backrest inclines forwards or backwards, depending on the rotation direction.

Adjusting the armrest

The height of the armrests can be continuously adjusted.

- Turn the knurled wheel (Fig. 10,1). The armrest inclines upwards or downwards, depending on the rotation direction.

4.7 Headrests

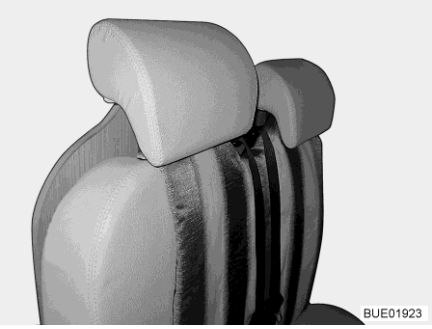


Fig. 11 Headrest (bench)

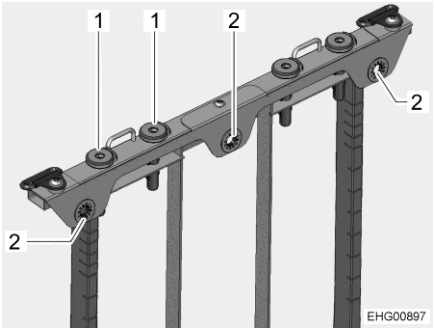


Fig. 12 Adjusting the headrest

Before commencing the journey, adjust the headrest (Fig. 11) so that the back of the head is supported at approximately ear height.

Adjusting the headrest:

- Pull the cushion in the shoulder area firmly forwards to release the cushion from the three clip connections (Fig. 12,2).
- Pull the headrest up or push it down until it engages in the desired locking position in the guide sleeves (Fig. 12,1).
- Fold back the cushion and snap it into the three clip connections.

4.8 Seating arrangement

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

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

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

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

Securing:

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

4.10 External doors

▶ Only drive with locked external doors.

▷ Locking the doors can prevent them from opening of their own accord, e.g. during an accident.

▷ Locked doors also prevent forced entry, e.g. when waiting at traffic lights. However, in an emergency, locked doors make it more difficult for helpers to enter the vehicle.

▷ When leaving the vehicle, always lock the doors.

▷ The doors are part of the base vehicle. The opening and closing of the doors is described in the instruction manual of the base vehicle.

4.11 Refuelling

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

▷ The fuel filler neck is part of the base vehicle.

▷ The fuel filler neck is labelled with the word "Diesel".

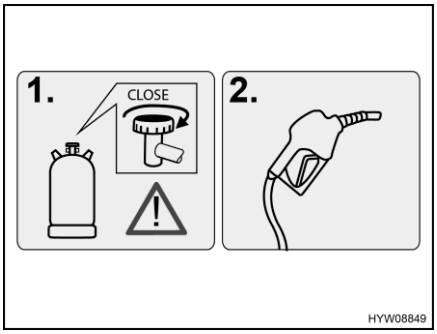


Fig. 13 Warning notice (fuel filler neck)

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

4.12 Ad-Blue®

▷ Refer to the instruction manual of the base vehicle for any information and instructions regarding Ad-Blue®.

4.13 Towing

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

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

▷ In addition observe the notes in the operating manual of the base vehicle.

▷ National regulations apply to towing.

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

Chapter overview

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

5.1 Handbrake

Firmly apply the handbrake when parking the vehicle.

5.2 Entrance step

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

5.3 230 V connection

The vehicle can be connected to a 230 V power supply (see chapter 8).

5.4 Refrigerator

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

5.5 Awning

- ▷ When the support legs are not positioned, extend the awning a maximum of 1 m.
- ▷ Retract the awning in strong wind, rain or snow.
- ▷ In the case of light rain, shorten one of the support legs so that water can run off.
- ▷ In case of light wind or rain, anchor the awning with ropes on both sides.
- ▷ Only retract the awning when the fabric is dry. When the awning must be retracted while the fabric is still wet: Extend the awning as soon as possible, in order to dry out the fabric.
- ▷ Before retracting, remove leaves and coarse dirt from the awning.

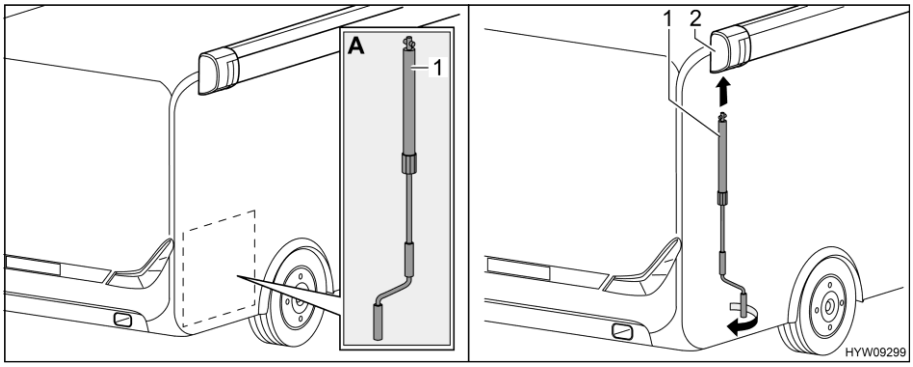


Fig. 14 Installing crank

Extending the awning:

- Take crank (Fig. 14,1) out of the rear garage (Fig. 14,A).
- Insert crank into bayonet socket (Fig. 14,2) of the awning.
- Turn the crank in an anticlockwise direction until the awning is extended to a maximum of 1 m.

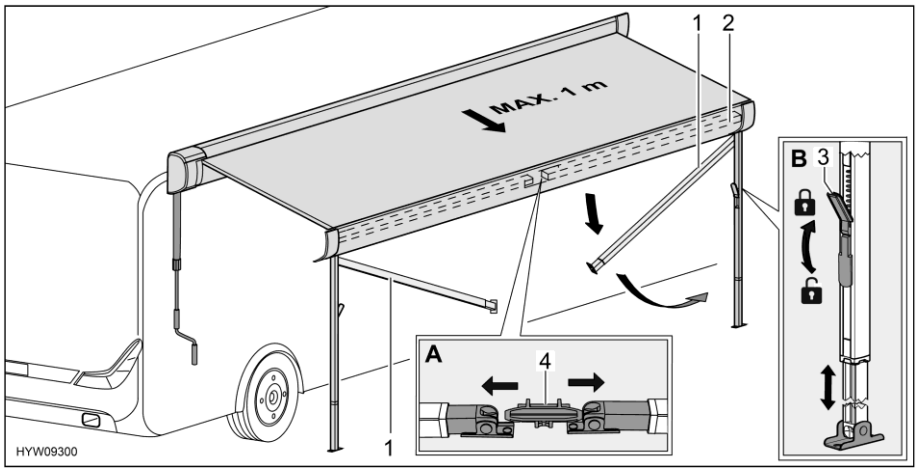


Fig. 15 Preparing support legs

- Release support legs (Fig. 15,1) from holder (Fig. 15,4) in the front bar (Fig. 15,2). In order to do this, apply slight outward pressure on the support legs (Fig. 15,A).
- Fold out the support legs.
- Release the locks (Fig. 15,3) of the support legs. In order to do this, fold the catch lever downwards.
- Pull lower part of the support legs out to the desired length (Fig. 15,B).
- Position the support legs.
- Close the locks (Fig. 15,3) of the support legs. In order to do this, fold the catch lever upwards.

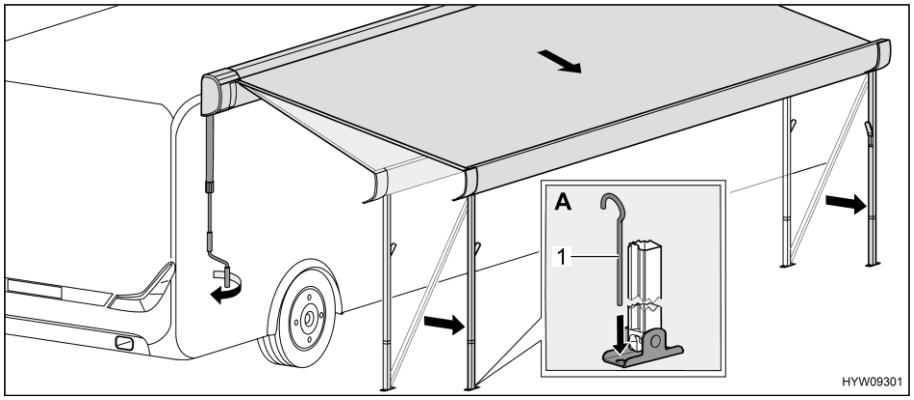


Fig. 16 Bringing awning into end position

- Use the crank to completely extend the awning. While doing so, reposition the support legs several times.
- Set the support legs to their final height.
- Pull crank out and store it in the rear garage.
- Fix the support legs to the floor with tent pegs (Fig. 16,1) (Fig. 16,A).

Retracting the awning:

- If present, remove guy ropes and tent pegs.
- Insert the crank in the bayonet socket of the awning ant turn in a clockwise direction until the awning has been retracted up to approx. 1 m.
- If necessary, clean the support legs.
- Open the lock on the support legs. In order to do this, fold the catch lever downwards.
- Push the lower part of the support legs in completely.
- Fold both support legs upward into the front bar and let them click into position. In order to do this, apply slight outward pressure on the support legs.
- Continue turning the crank until the awning has been retracted completely.
- Remove the crank from the bayonet socket and store it.

Chapter overview

This chapter contains instructions about living in the vehicle.

6.1 External doors

▶ Only drive with locked external doors.

▷ Locking the doors can prevent them from opening of their own accord, e.g. during an accident.

▷ Locked doors also prevent forced entry, e.g. when waiting at traffic lights. However, in an emergency, locked doors make it more difficult for helpers to enter the vehicle.

▷ When leaving the vehicle, always lock the doors.

▷ The doors are part of the base vehicle. The opening and closing of the doors is described in the instruction manual of the base vehicle.

6.2 External flaps

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

6.2.1 External flap Thetford cassette

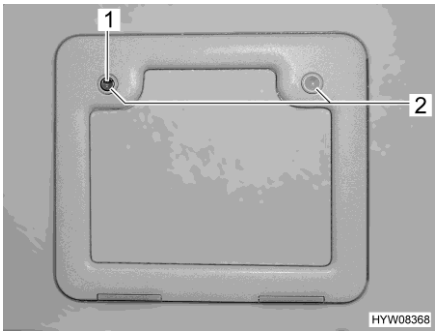


Fig. 17 External flap Thetford cassette

Opening:

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

Closing:

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

6.3 Ventilation

▶ The oxygen in the vehicle interior is used up by breathing and the use of gas/diesel-operated appliances. Therefore, the used air must be replaced permanently. For this purpose, forced ventilation options (e.g. skylights with forced ventilation, mushroom-shaped vents or floor vents) are fitted to the vehicle. Never cover or block forced ventilations from the inside or outside with objects such as e.g. a winter mat. Keep forced ventilations clear of snow and leaves. There is a danger of suffocation due to increased CO_2 levels.

▷ Although sufficient ventilation is provided, in certain weather conditions, condensation can form on metal objects (e.g. screwed connections in the floor).

▷ Additional cold spots can occur at thermal "bridges" (e.g. mushroom-shaped vents, skylight edges, sockets, filler necks, flaps, etc.).

▷ If the vehicle is not to be used for a prolonged period:

- Air the interior thoroughly every 3 weeks. The sleeping roof must be open for this.
- Remove the mattress from the vehicle and store in a dry place.
- Set up the de-humidifier (granulate). Follow the manufacturer's instructions.

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

Condensation

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

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

6.4 Windows

▷ The windows are fitted with a blind or Roman shade and with an insect screen or folding insect screen. After the latch has been released, the blind and insect screen automatically spring back to the initial position by tensile force. In order not to damage the tension mechanics, hold onto the blind or insect screen and allow it to slowly return to the initial position. The Roman shade and folding insect screen are made of thin woven fabric. In order not to damage the Roman shade or the insect screen, grasp the respective handle and carefully return it to the initial position.

- ▷ Do not keep blinds closed over a longer period of time as that can cause increased material wear.
- ▷ Grab the bottom rod of the blind by the centre when opening and closing. If the bottom bar is not grabbed by the centre, the blind may jam and be damaged.
- ▷ If the blind or the Roman shade is completely closed, exposure to direct sunlight can cause heat to accumulate between the blind/the Roman shade and the window. The window could be damaged.
  For that reason, close the blind/Roman shade only 2/3 of the way in direct sunlight.
  Also move the window into the "continuous ventilation" position.
- ▷ Before commencing the journey, close the windows.
- ▷ Depending on the weather, close the windows far enough to prevent moisture from entering.

- ▷ When leaving the vehicle, always close the windows.
- ▷ In extreme weather conditions or if the temperature fluctuates strongly, a light condensation film can form on the double-glazed acrylic glass. The glass is designed in such a way that condensation can evaporate when the external temperature increases. There is no danger of the double-glazed acrylic glass being damaged by condensation.
- ▷ The upholstery will fade over time, if it is exposed to sunlight. If the temperature within the vehicle rises rapidly as well, the colour will change at an accelerated rate.
  Therefore, we recommend to close the shades on the windows when there is strong sunlight. Ensure that heat does not build up when you close the blind.

6.4.1 Hinged window

- ▷ If windows with automatic hinges are fitted, open the window fully in order to release the lock. If the locking device is not released and the window is closed nevertheless, there is the danger of the window breaking due to the massive counter-pressure.
- ▷ When opening the hinged windows, ensure that there are no torsional forces. Open and close the hinged windows evenly.
- ▷ Depending on the equipment, the vehicle will be equipped with a hinged window (Fig. 18,1) on the rear right side. Close the hinged window before opening the sliding door. Otherwise, the sliding door may hit the hinged window!
- ▷ Before opening or closing the sliding door, close and lock the hinged window (Fig. 18,2) in the sliding door. The window could otherwise get damaged due to the vibration.

Fig. 18 Hinged window (right side)

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

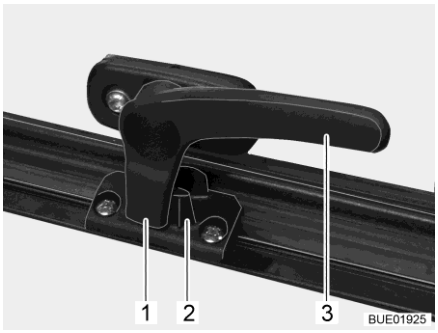


Fig. 19 Catch lever ("closed" position)

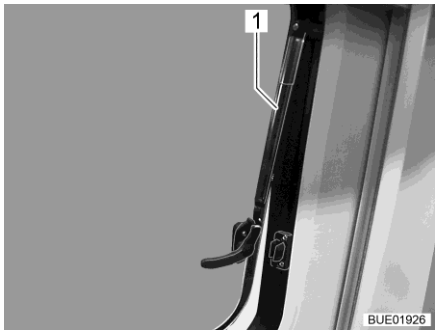


Fig. 20 Hinged window with automatic hinge

Opening:

- Turn the catch lever (Fig. 19,3) a quarter turn towards the centre of the window.
- Open hinged window half up to the required position. Allow the hinged window to engage automatically with the automatic hinge (Fig. 20,1).

The hinged window remains locked in the required position.

Closing:

- Open the hinged window as wide as necessary until the latch releases.
- Close the hinged window.
- Turn the catch lever (Fig. 19,3) a quarter turn towards the window frame. The locking catch (Fig. 19,1) is located on the inside of the window catch (Fig. 19,2).

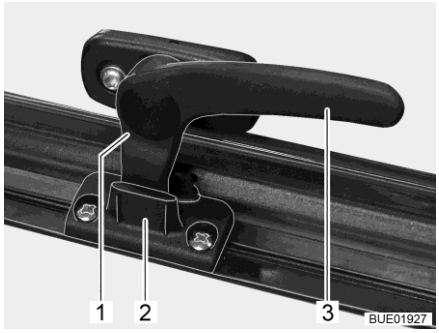


Fig. 21 Catch lever ("continuous ventilation" position)

Continuous ventilation

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

- "Continuous ventilation" (Fig. 21)
- "Firmly closed" (Fig. 19).

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

- Turn the catch lever (Fig. 21,3) a quarter turn towards the centre of the window.
- Slightly open the hinged window outwards.
- Turn the catch lever a quarter turn towards the window frame. The locking catch (Fig. 21,1) has to be moved into the recess of window catch (Fig. 21,2).

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

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

6.4.2 Roman shade and insect screen

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

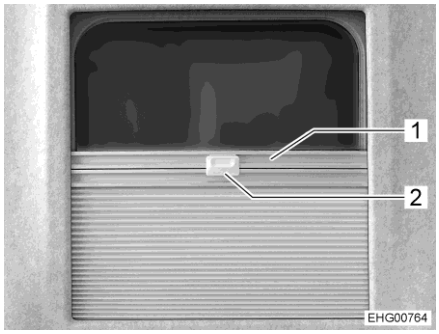


Fig. 22 Roman shade and insect screen

Opening/closing the Roman shade:

- Hold the handle (Fig. 22,2) in the centre and pull it up/down carefully. The Roman shade will stay in any desired position.

Opening/closing the insect screen:

- Hold the handle (Fig. 22,1) in the centre and pull it up/down carefully.
- Attach the insect screen to the handle (Fig. 22,2) of the shade so that it does not move upwards.

6.4.3 Roman shades for windscreen, driver's window and front passenger's window

Windscreen

Various locking systems are built in depending on the model.

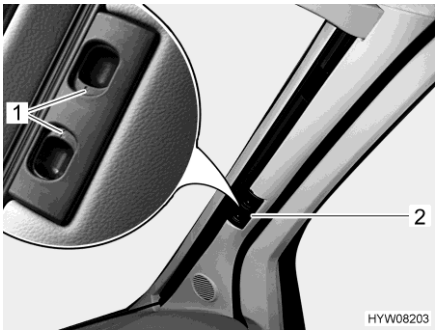


Fig. 23 Roman shade (windscreen, Fiat)

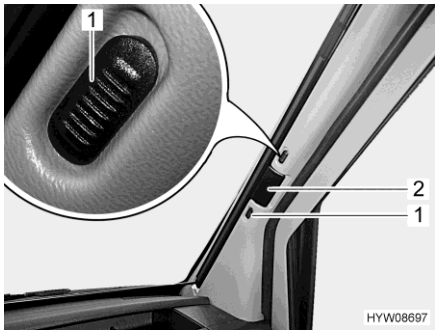


Fig. 24 Roman shade (windscreen, Mercedes-Benz)

Closing:

- Press the locking handles together (Fig. 23,1) and keep them in this position or slide the locking knobs (Fig. 24,1) up or down (red point = open).
- Use the handle (Fig. 23,2 or Fig. 24,2) to pull the Roman shade for the windscreen towards the centre of the window.
- Close the second Roman shade for the windscreen in the same way. A magnetic catch holds both parts of the Roman shade together in the centre.

Opening:

- Depending on the locking system, press and hold down the locking handle (Fig. 24,1).
- Use the handle (Fig. 23,2 or Fig. 24,2) to pull the two halves of the Roman shade for the windscreen outwards as far as they will go.
- Release the locking handles (Fig. 23,1) and allow them to engage or slide the locking knobs (Fig. 24,1) up or down (no red point = locked).

Driver's / front passenger's windows

Various locking systems are built in depending on the model.

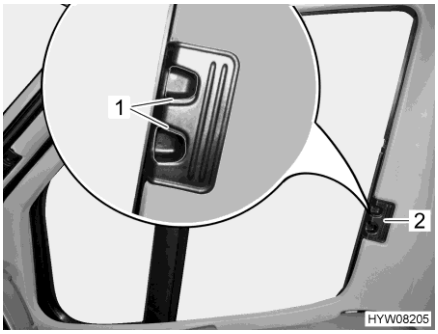


Fig. 25 Roman shade (driver's / front passenger's window, Fiat)

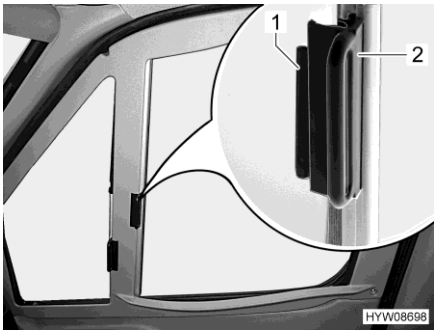


Fig. 26 Roman shade (driver's / front passenger's window, Mercedes-Benz)

Closing:

- Depending on the locking system, press and hold down the locking handle (Fig. 25,1).
- Using the handle (Fig. 25,2 or Fig. 26,2), draw the Roman shades for the driver's and passenger's window to the other side of the window and secure them to the magnetic strips.

Opening:

- Depending on the locking system, press and hold down the locking handle (Fig. 25,1).
- Use handle (Fig. 25,2 or Fig. 26,2) to push in the Roman shades for the driver's and passenger's window as far as possible.
- Release the locking handle (Fig. 25,1) and let it click into place or push the handle (Fig. 26,2) onto the cap (Fig. 26,1).

6.5 Skylights

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

▷ The skylights are fitted with a blind or Roman shade and with an insect screen or folding insect screen. After the latch has been released, the blind and insect screen automatically spring back to the initial position by tensile force. In order not to damage the tension mechanics, hold onto the blind or insect screen and allow it to slowly return to the initial position. The Roman shade and folding insect screen are made of thin woven fabric. In order not to damage the Roman shade or the insect screen, grasp the respective handle and carefully return it to the initial position.

▷ Do not keep blinds closed over a longer period of time as that can cause increased material wear.

▷ If the blind or the Roman shade is completely closed, exposure to direct sunlight can cause heat to accumulate between the blind/the Roman shade and the skylight. The skylight could be damaged. For that reason, close the blind/Roman shade only 2/3 of the way in direct sunlight. Open the skylight slightly or move it to ventilation position.

- ▷ Depending on the weather, close the skylights far enough to prevent moisture from entering.
- ▷ Do not climb on the skylights.
- ▷ Before commencing the journey, close the skylights.
- ▷ Before commencing the journey, check that the skylights are closed and locked.
- ▷ Before commencing the journey, open the blinds or Roman shades.

- ▷ When leaving the vehicle, always close the skylights.
- ▷ The upholstery will fade over time, if it is exposed to sunlight. If the temperature within the vehicle rises rapidly as well, the colour will change at an accelerated rate.
  Therefore, we recommend closing the shades on the skylights of the parked vehicle by 2/3 when there is strong sunlight.

6.5.1 Skylight with crank handle (KLAKU)

▶ Observe the safety instructions and information in the separate instruction manual of the manufacturer.

The skylight is equipped with a pleated blind (as shade) and with an insect screen. With the integrated crank, the skylight can be opened on one side for ventilation.

Fig. 27 Skylight (closed)

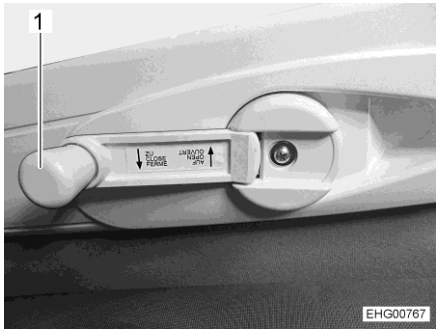


Fig. 28 Crank

Opening the skylight:

- ■ Unfold the crank (Fig. 28,1) and turn it in a clockwise direction until the skylight has reached the desired position.
- ■ Fold in the crank.

- ▷ Only turn the crank until you feel a slight resistance. At that point, you will have reached the maximum opening angle of the skylight.

Closing the skylight:

- ■ Unfold the crank (Fig. 28,1) and turn it in an anticlockwise direction until the skylight is closed.
- ■ Fold in the crank.

Fig. 29 Skylight (pleated blind closed)

Closing/opening the shade:

- Reach into the recessed grip of the pleated blind and pull the pleated blind to the desired position.

Closing/opening the insect screen:

- Reach into the recessed grip of the insect screen and pull the insect screen to the desired position.

▷ The pleated blind and the insect screen can be infinitely adjusted independently of each other.

6.5.2 Skylight with snap latch

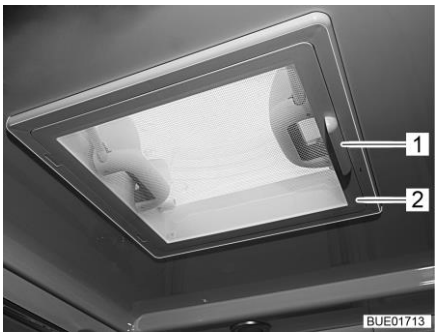


Fig. 30 Skylight with snap latch

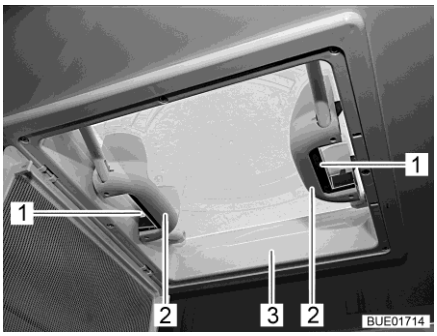


Fig. 31 Handles with snap latches

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

Opening:

- Use handle (Fig. 30,1) to swing down the insect screen (Fig. 30,2).
- Push the snap latch (Fig. 31,1) towards the inside of the skylight (Fig. 31,3). At the same time use the handle (Fig. 31,2) to press the skylight upwards.
- Swing insect screen upwards until it latches in place.

Closing:

- Use handle (Fig. 30,1) to swing down the insect screen (Fig. 30,2).
- Using both handles (Fig. 31,2), pull down the skylight (Fig. 31,3) with force until the two snap latches (Fig. 31,1) lock into place.
- Swing insect screen upwards until it latches in place.

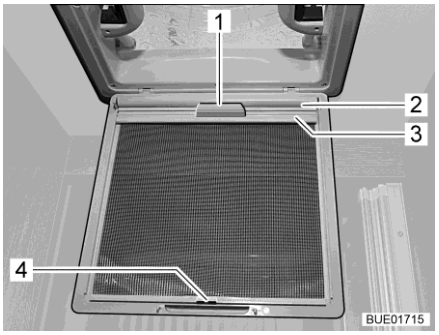


Fig. 32 Blind (skylight)

Blind Depending on the equipment, there will be a blind installed.

Closing:
- Use handle (Fig. 30,1) to swing down the insect screen (Fig. 30,2).
- Using the handle (Fig. 32,1), pull out the blind (Fig. 32,2) and hook the retainer (Fig. 32,3) into the hook (Fig. 32,4) on the insect screen.
- Swing insect screen upwards until it latches in place.

Opening:
- Use handle (Fig. 30,1) to swing down the insect screen (Fig. 30,2).
- Release the retainer (Fig. 32,3) from the hook (Fig. 32,4) and, using the handle (Fig. 32,1), slowly return the blind (Fig. 32,2).
- Swing insect screen upwards until it latches in place.

6.5.3 Hinged skylight

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

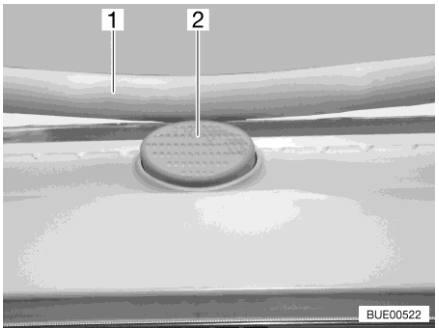


Fig. 33 Safety knob (hinged skylight)

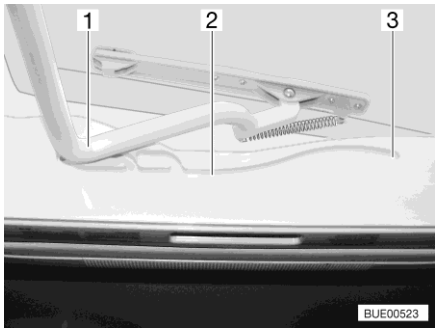


Fig. 34 Guide (hinged skylight)

The hinged skylight is opened on one side only.

Opening:
- Press the safety knob (Fig. 33,2) and pull the bar (Fig. 33,1) down with both hands.
- Pull the bar (Fig. 34,1) in the guides (Fig. 34,2) to the rearmost position (Fig. 34,3).

Closing:
- Use both hands to push the bar (Fig. 34,1) slightly upwards.
- Push the bar back in the guides.
- Push the bar upwards with both hands until it is above the safety knob (Fig. 33,2).

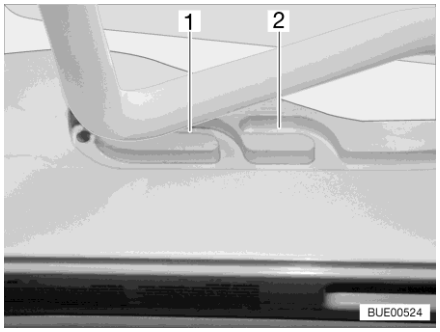


Fig. 35 Guide (ventilation position)

Ventilation position

The hinged skylight can be put in two ventilation positions: Bad weather position (Fig. 35,1) and central position (Fig. 35,2).

- Press the safety knob (Fig. 33,2) and pull the bar (Fig. 33,1) down with both hands.
- Pull the bar in the guides (Fig. 34,2) to the desired position.
- Push the bar slightly upwards and into the selected guide (Fig. 35,1 or 2).

Roman shade

To close and open the Roman shade:

Closing:

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

Opening:

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

Insect screen

To close and open the insect screen:

Closing:

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

Opening:

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

6.6 Sleeping roof

- ▶ Do not stay in the sleeping roof during a thunderstorm. The sleeping roof does not provide protection against lightning during a thunderstorm. There is danger to life!
- ▶ Never leave children under 6 years of age unattended in the sleeping roof bed.
- ▶ The maximum permitted sleeping roof load is 200 kg.

- ▷ Before each journey, check that the sleeping roof has been properly closed, secured against opening by itself and locked.

  If the sleeping roof is elevated or not secured during the journey, the roof could get caught by trees, signs, masts, car park entrances, ripping off and causing severe damage to the vehicle and third party property.
- ▷ Make sure that both electrical locks are closed. Observe the warning tone if the electrical lock of the sleeping roof is not fully closed.
- ▷ When the sleeping roof is closed, make sure that both belt locks are closed in addition to the electrical lock. This prevents the sleeping roof from opening during the journey in the event of failure or malfunction of the electrical lock.
- ▷ Only use the two U-handles to open and close the sleeping roof.
- ▷ Open at least one window or the living area door before opening or closing the sleeping roof. This prevents a build-up of trapped air from forming. If an air pocket forms, the canvas can be damaged or the sleeping roof cannot be opened/closed correctly.
- ▷ When opening or closing the sleeping roof, ensure that the left and right sides of the sleeping roof are guided up and down in parallel. In extreme cases, one-sided operation can cause the gas dampers on the side to unhinge!
- ▷ If the sleeping roof has been open for a long time, there may be increased resistance from the gas dampers when closing. Close the sleeping roof at least once a day.
- ▷ Only close the sleeping roof if the canvas is dry. What to do if the sleeping roof must be closed when the canvas is wet: Open the sleeping roof again as soon as possible and allow the canvas to dry completely.
- ▷ If the humidity in the interior is higher for an extended period, mildew and mould can form. Always provide sufficient ventilation.
  Openings are provided in the canvas for additional ventilation or more daylight. The canvas in these areas is either covered with a fly screen or a transparent film. Open zips or Velcro straps to ventilate.
- ▷ If, for example, moisture appears on the canvas or underneath the mattress, or condensation forms: Ventilate the sleeping roof well. Remove condensation and moisture with a dry cloth already during use (but at the latest before closing).
- ▷ If the vehicle is not to be used for a prolonged period:
  - Air the interior well with the open sleeping roof every 3 weeks.
  - Set up de-humidifiers (granulate). Follow the manufacturer's instructions.

Warning tone

If both electrical locks of the sleeping roof are not fully locked, a warning tone sounds when switching on the ignition.

This warning tone sounds every 2 seconds.

After 30 seconds, the warning tone increases and sounds every 0.5 seconds.

The warning tone only stops when the ignition is switched off or both electrical locks of the sleeping roof are closed.

Position of push button

The push button for the electrical release (Fig. 37) is located on the right-hand side in the area above the sliding door.

▷ Electrical release is only possible with the ignition switched off.

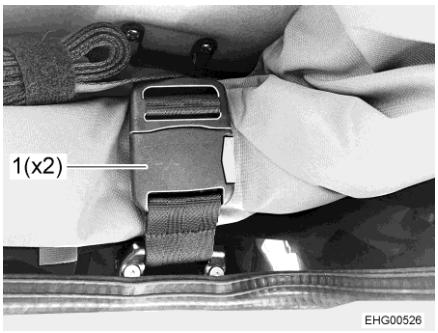


Fig. 36 Belt lock

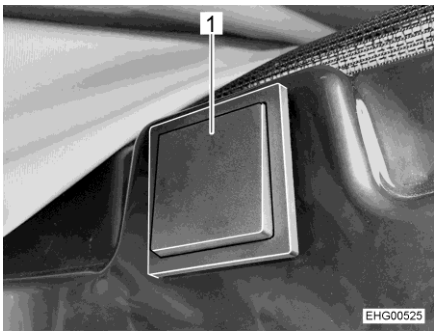


Fig. 37 Push button for electrical release

Opening the sleeping roof:

- Open both belt locks (Fig. 36,1).
- Press and hold the push button (Fig. 37,1) for least 2 seconds.

▷ A time window of 5 seconds is provided to open the sleeping roof. After the 5 seconds have elapsed, the two electrical locks are locked again.

- Press evenly against the sleeping roof at both U-handles until the sleeping roof swings up automatically.

Mechanical emergency release

If the electrical release fails, the sleeping roof can be mechanically released in an emergency.

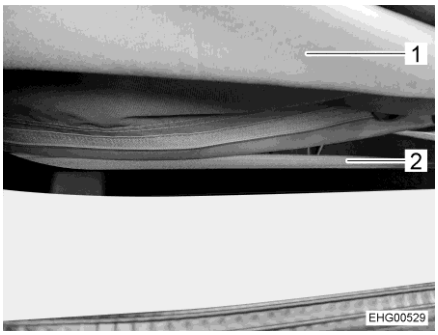


Fig. 38 Zip

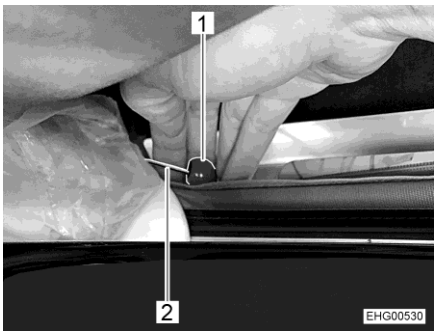


Fig. 39 Emergency release

- Fully open the zip (Fig. 38,2) on the underside of the bellows (Fig. 38,1).
- Pull the red button (Fig. 39,1) of the cable control (Fig. 39,2) on both sides.
- Push the sleeping roof slightly upwards until the lock unlocks mechanically.

Access ladder

- ▶ Always use the access ladder provided to climb up to the lying surface in the sleeping roof.
- ▶ The access ladder is a telescopic ladder that must be extended before use until it audibly locks.
- ▶ Before setting off, store the access ladder securely.

Fig. 40 Access ladder

Using the access ladder:

- ■ Extend the access ladder until it audibly locks.
- ■ Attach the access ladder to the holders provided for this purpose on the access orifice.

Storing the access ladder:

- ■ Detach the access ladder.
- ■ Push the access ladder together rung by rung. In order to do this, press the two red securing buttons (Fig. 40,1) under each rung.
- ■ Store the access ladder securely.

Safety net

▷ Do not use the safety net for transporting or storing objects.

A safety net is attached under the mattress as fall out protection.

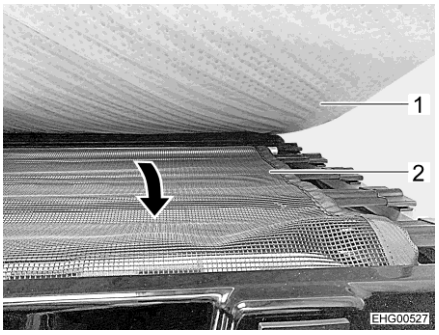


Fig. 41 Safety net

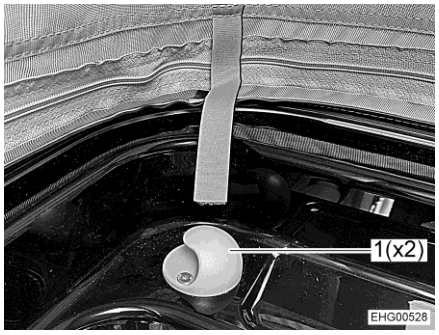


Fig. 42 Holder

- ■ Pull out the safety net (Fig. 41,2) from under the mattress (Fig. 41,1) and stretch it over the access orifice.
- ■ Attach the safety net to the two holders (Fig. 42,1).

Wind protection

In stronger winds, the sleeping roof can be additionally stiffened with two retaining belts.

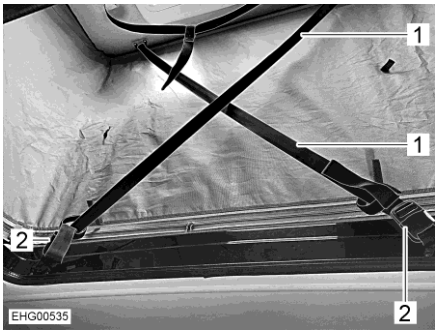


Fig. 43 Wind protection

- Pull out both retaining belts (Fig. 43,1) completely.
- Attach the retaining belts diagonally to the belt locks (Fig. 43,2).
- Open the sleeping roof completely.
- Tighten both retaining belts until they are slightly taut.

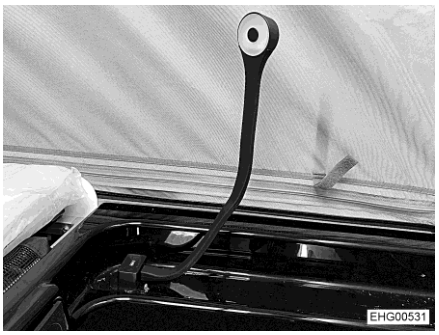


Fig. 44 Goose neck lamp, operating position

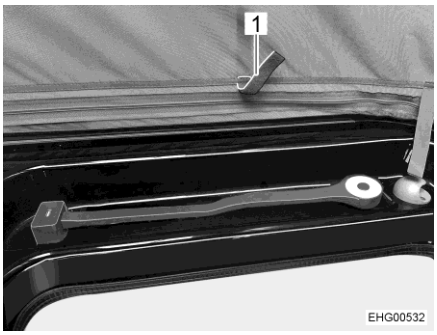


Fig. 45 Goose neck lamp, transport position

Closing the sleeping roof:

- Before closing the bellows, always close the zips and Velcro straps on the ventilation openings.
- Return goose neck lamp from operating position (Fig. 44) to transport position (Fig. 45).

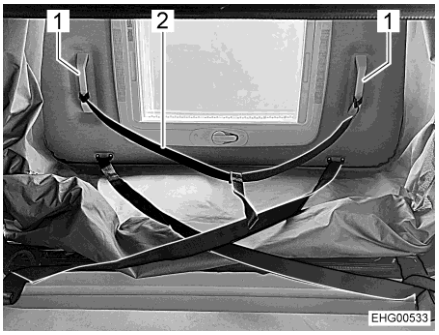


Fig. 46 Auxiliary strap

Fig. 47 Belt lock, open

- Slowly pull the sleeping roof down two thirds by the auxiliary strap (Fig. 46,2) until the sleeping roof stops on its own. While doing so, observe the following:
  - The left and right sides of the sleeping roof must lower evenly.
  - The lateral retraction devices of the bellows must bend inwards when closing.
- If the retraction devices of the bellows are not bent inwards: Open the sleeping roof again and close it more slowly.
- Pull in the canvas by the tabs (Fig. 45,1) provided for this purpose.
- Pull the sleeping roof down completely using the two U-handles (Fig. 46,1) until the side locks snap in audibly.
- Roll up the canvas and store it on the side.
- Close and tighten both belt locks (Fig. 47).

6.7 Rotating seats

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

▷ Mercedes-Benz base vehicle: For the change between driving position and living position, rotate the driver's and front passenger's seats only inwards (refer to Fig. 49). The map pocket on the inside of the doors could otherwise get damaged.

The lever for rotating the seat is located at the left or the right of the seat.

Fig. 48 Driver's seat and front passenger's seat

Rotating:

- Push both armrests at the driver's/front passenger's seat upward.
- Push the driver's seat/front passenger's seat backwards or into the central position.
- Actuate the lever (Fig. 48,1) to turn the seat. The seat is released from the locking device.

Fig. 49 Observe the direction of rotation of driver's/front passenger's seat

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

6.8 Bench with adjustable backrest

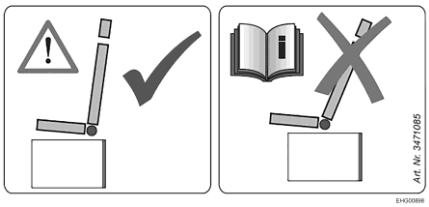


Fig. 50 Bench warning sticker

▶ Before commencing the journey, push the seat cushion of the reclining bench all the way back.
The bench must not be used with the backrest inclined during the journey.

The inclination of the backrest of the bench can be adjusted. In order to do this, pull out the seat cushion slightly or push it slightly backwards.

6.9 Storage spaces

▶ Follow the safety instructions (sticker) that indicate when a space may not be used as a storage space (e.g. gas bottle compartment or spaces close to electrical wiring).

▶ When loading, observe the technically permissible maximum laden mass on the axle / group of axels and the technically permissible maximum laden mass (see section 3.2.3).

▶ Do not transport fluids in the living area that emit gases hazardous to health.

▶ Close fluid containers tightly, secure them against sliding and against falling over.

▶ Always store heavy objects safely and slip-proof in the foot area. Lighter objects can be also stored safely in higher areas.

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

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

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

- Double floor area
- Wall-mounted cupboards

6.9.1 Storage compartment in double floor

▷ Depending on the equipment, a carpet segment will have to be put aside to gain access to the storage compartments.

The storage compartments are accessible through lids in the living area. The disposition of the storage compartments is dependent on the model.

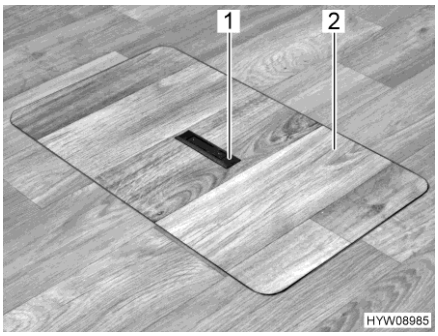


Fig. 51 Floor storage compartment cover (handle recessed)

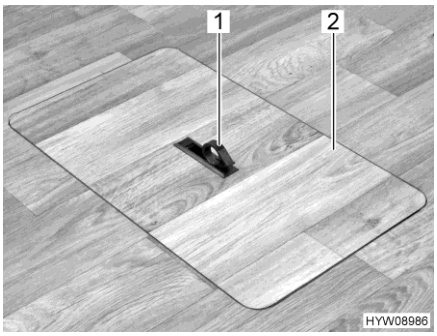


Fig. 52 Floor storage compartment cover (handle swung out)

Opening:

- If necessary, lay carpet segment aside.
- Push one side of the grip plate (Fig. 51,1) downwards. The handle (Fig. 52,1) swivels upwards.
- Remove the cover (Fig. 52,2) upwards.

▶ Close the lid and recess the handle as soon as possible. Otherwise, there will be danger of tripping due to the open floor storage compartment or the protruding handle.

▶ Do not bend the carpet segments.

▶ Do not leave the carpet segments laying in the room. Danger of tripping!

Closing:

- Insert the cover (Fig. 52,2) in the frame on the floor.
- Swivel handle downwards.

6.10 Tables

6.10.1 Suspension table, fold-out

The vehicle is fitted with a suspension table with fold-out table top extension.

▷ Depending on the equipment, the suspension table has an extendable stabilising frame.

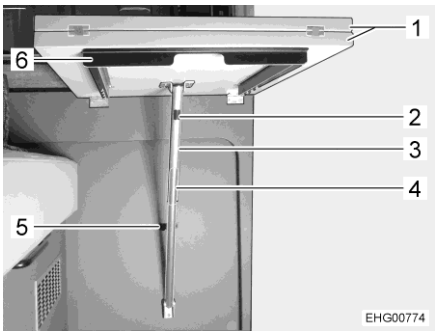


Fig. 53 Suspension table (folded)

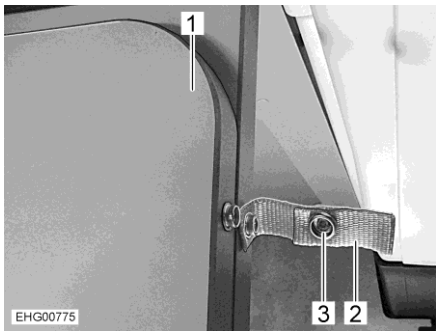


Fig. 54 Securing strap

Extending:

- Release the snap fastener (Fig. 54,3) of the safety clip (Fig. 54,2).
- Pull out the stabilising frame (Fig. 53,6) (if present).
- Fold out the table top extension (Fig. 54,1).

Reducing size:

- Fold up the table top extension (Fig. 54,1).
- Secure the table top extension with the safety clip (Fig. 54,2).
- Push in the stabilising frame (Fig. 53,6) (if present).

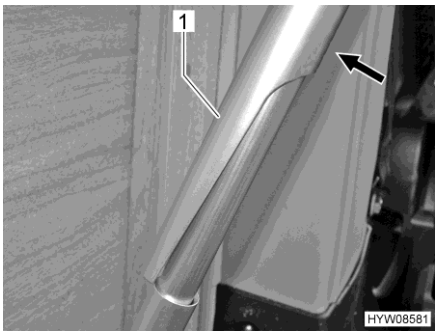


Fig. 55 Support leg (unlocked)

The suspension table can also be folded away.

Folding the table top away:

- Slightly lift the table tops (Fig. 53,1).
- Push the upper strut (Fig. 53,3 or Fig. 55,1) backwards. To do this, press on the black area (Fig. 53,2).
- Fold the table down. The upper strut slides over the lower strut (Fig. 53,4).
- Press the support into the wall holder (Fig. 53,5).

6.10.2 Suspension table with separable support leg

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

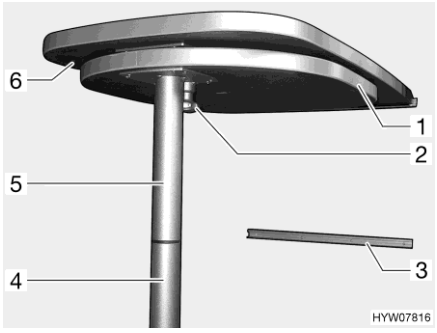


Fig. 56 Suspension table with separable support leg

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

Extending:

- Pull the knob (Fig. 56,2) of the lock down and swing out the table top extension (Fig. 56,1).

Reducing size:

- Swing the table top extension (Fig. 56,1) under the table top (Fig. 56,6) until the lock latches in place audibly.

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

Conversion into bed foundation:

- Lift the front of the table top (Fig. 56,6) by approx. 45°.
- Pull out the lower part of the support leg (Fig. 56,4) down and lay aside.
- Remove the table top from the upper retainer.
- Hook the table top at a 45° angle to the supports into the lower retainer (Fig. 56,3) and place on the floor with the upper part of the support leg (Fig. 56,5).

6.10.3 Counter extension

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

Fig. 57 Counter extension (parking position)

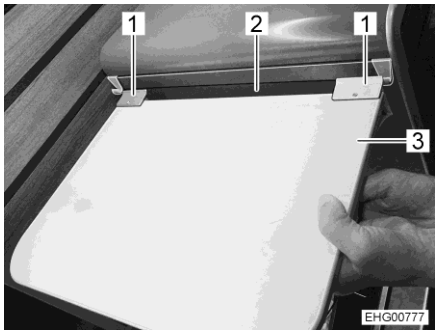


Fig. 58 Counter extension (attached)

Attaching the counter extension:

- Take the counter extension (Fig. 57,1) out of the kitchen pull-out.
- Attach the counter extension (Fig. 58,3) to both connecting elements (Fig. 58,1) in the strip (Fig. 58,2) on the front side of the kitchenette.

Removing the counter extension:

- Detach the counter extension from the kitchenette.
- Store the counter extension in the kitchen pull-out.

6.11 TV unit

An external satellite antenna may be connected to the vehicle's TV unit. The connection for the external satellite antenna is installed behind the driver's seat, in the B column.

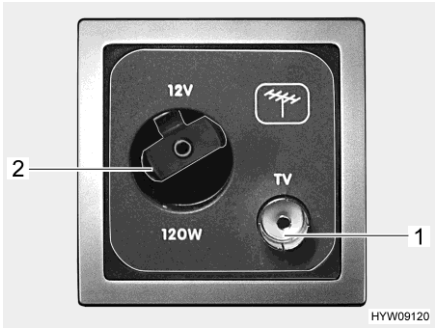
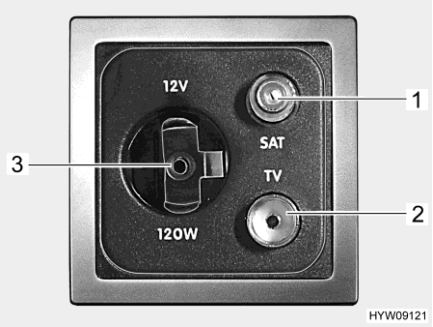


Fig. 59 Sockets (external satellite antenna)

1 SAT socket (input)
2 12 V socket

Connecting external satellite antenna:

- Plug the external satellite antenna's connecting cable into the SAT socket (Fig. 59,1).



1 SAT socket (output)
2 DVB-T port (output)
3 12 V socket

Fig. 60 Sockets (TV unit)

Receiving satellite channels:

- Plug the suitable cable of the television into the SAT socket (Fig. 60,1).

Receiving terrestrial channels:

- Plug the suitable cable of the television into the DVB-T port (Fig. 60,2).

6.12 Smoke alarm

A smoke alarm is installed on the ceiling of the vehicle. The smoke alarm has its own battery and is not connected to the vehicle's power supply. This means that the smoke alarm still works even if the vehicle's power supply is switched off.

If smoke is produced in the vehicle, a loud alarm tone sounds to warn of a possible fire.

▷ The smoke alarm can neither prevent nor extinguish fires. However, the smoke alarm can help make sure that the vehicle is evacuated in a timely manner.

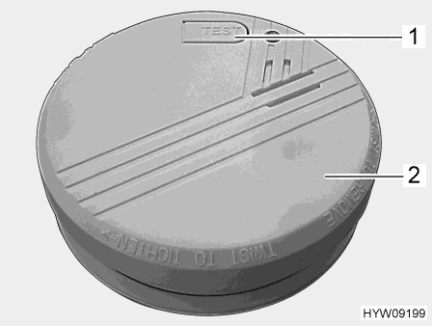


Fig. 61 Smoke alarm

Activating the smoke alarm:

- Remove the protective film from the battery and put in the battery (see section 12.7).

Testing the smoke alarm:

- Press the test button (Fig. 61,1) on the smoke alarm (Fig. 61,2) until the alarm tone sounds. The alarm tone falls silent after the test button is released.

- ▷ Test the smoke alarm once weekly, as well as after changing the battery and after cleaning.
- ▷ When the smoke alarm's battery is almost flat, a warning tone sounds with an interval of 30 to 40 seconds. Replace the battery as quickly as possible (see section 12.7).
- ▷ Further information can be obtained in the device manufacturer's instruction manual.

6.13 Beds

6.13.1 Rear bed

- ▶ Always secure loads onto the clamping eyelets. Always use tightening straps or lashing nets for securing the load, never rubber expanders.
- ▶ Do not let the bed fall down when closing it!

Depending on the model, the space under the bed can be used for storage. Fold up the bed to store items in or remove them from the storage space and when transporting larger objects (e.g. bicycles).

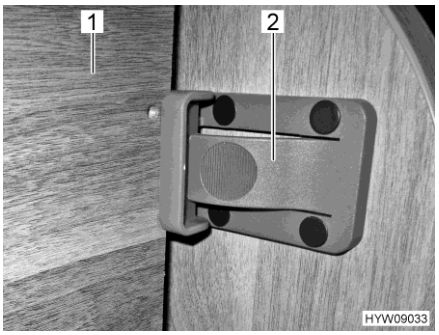


Fig. 62 Securing, front

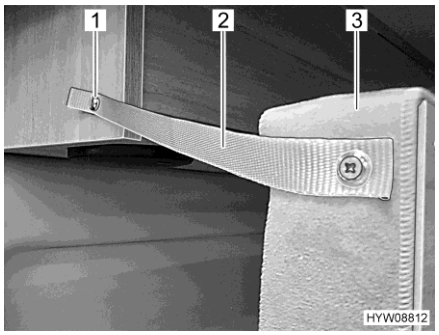


Fig. 63 Securing, back

Opening:

- ■ Lift bed (Fig. 62,1).
- ■ Secure the bed (Fig. 63,3) to the roof storage cabinet using the securing strap (Fig. 63,2) and snap fastener (Fig. 63,1).
- ■ Use the latch (Fig. 62,2) to secure the bed on the furniture wall.

Closing:

- ■ Press the latch (Fig. 62,2).
- ■ Undo the snap fastener (Fig. 63,1) on the roof cabinet.
- ■ Hold the bed and guide it all the way down.

6.13.2 Rear transverse bed with roll-up mattresses

The rear transverse bed is equipped with two roll-up mattresses. Disc springs and toppers have already been integrated into these mattresses.

Fig. 64 Mattress (rolled up)

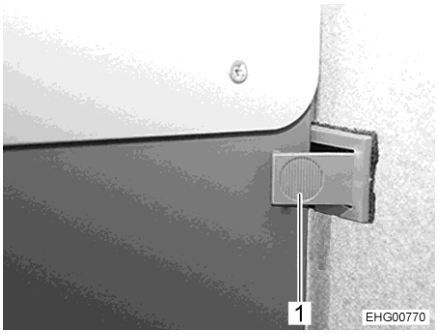


Fig. 65 Latch

Construction of the bed:

- Loosen the securing strap (not shown) on the rear supporting plate (Fig. 64,2).
- Fold the rear supporting plate down 90° and place it on the opposite bottom cupboard.
- Unroll the rear mattress (Fig. 64,1).
- Release the locking device (Fig. 65,1) on the front supporting plate.
- Fold the front supporting plate down 90° and place it on the opposite bottom cupboard.
- Unroll the front mattress (not shown).

Dismantling the bed:

- Roll up the front mattress (not shown).
- Fold the front supporting plate up 90°.
- Secure the front supporting plate with the locking device (Fig. 65,1).
- Roll up the rear mattress (Fig. 64,1).
- Fold the rear supporting plate (Fig. 64,2) up 90°.
- Secure rear supporting plate with the securing strap (not shown).

▷ The two single beds of the rear transverse bed can be set up independently of each other. This means that only a single bed can be set up if required and there is more storage space available in the rear.

6.13.3 Access assistance, foldable

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

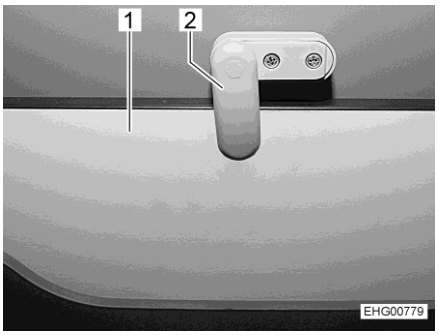


Fig. 66 Latch

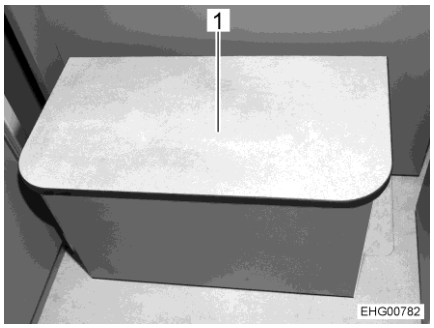


Fig. 67 Access assistance

Folding up the access assistance:

- Release the locking device (Fig. 66,2).
- Fold out the access tread (Fig. 66,1).

Folding in the access assistance:

- Raise and fold in the access tread (Fig. 67,1).

6.13.4 Bed in the sleeping roof

- ▶ Risk of fatal injury from lightning!
  Do not stay in the sleeping roof during a thunderstorm. Lightning can cause life-threatening injuries to persons in the sleeping roof.
- ▶ The maximum permitted load on the bed in the sleeping roof is 200 kg.
- ▶ Before commencing the journey, secure the bed. In order to do this, fold in the sleeping roof and lock it.
- ▶ Only use the bed, if the safety net is set up.
- ▶ Never leave infants unattended in the sleeping roof bed.
- ▶ Especially with infants under 6 years, always ensure that they cannot fall out of the bed of the sleeping roof.
- ▶ Use separate children's beds or travel cots suitable for children.

- ▷ Do not use the bed in the sleeping roof as a luggage rack. When the bed is not being used, only keep the bed linen required for 2 people and the access ladder in it.
- ▷ Never pull down the bed in the sleeping roof together with the sleeping roof.

Depending on the model, the vehicle is equipped with a sleeping roof. After the sleeping roof has been opened, the bed in the sleeping roof can be used immediately without any additional conversions (see section 6.6).

Safety net Do not use the safety net until the persons are already in bed.

Access ladder Always use the access ladder provided to climb up to the bed in the sleeping roof (see section 6.6).

▷ The sleeping roof can be optionally equipped with insulation mats and/or with an electrically heated heating mat (12 V). Insulation mats and heating mats are available as accessories in the After Sales service.

6.13.5 Additional bed (conversion of the seating group)

▷ Depending on the equipment, the seating group can be converted into a further sleeping place.

▷ Before converting the table into the bed foundation: Lift seat cushions or fold them upwards such that the table top does not collide with the seat cushions when moving.

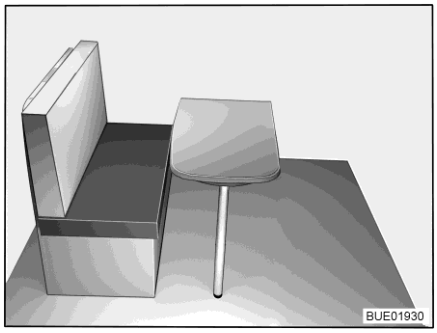


Fig. 68 Prior to conversion

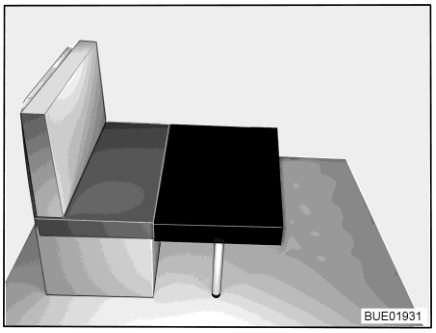


Fig. 69 Conversion (1)

- If present, fold down the folding worktop.
- Convert the suspension table into a bed foundation (see section 6.10.2).
- Place the small additional cushion onto the table in front of the seat cushion of the bench (refer to Fig. 69).

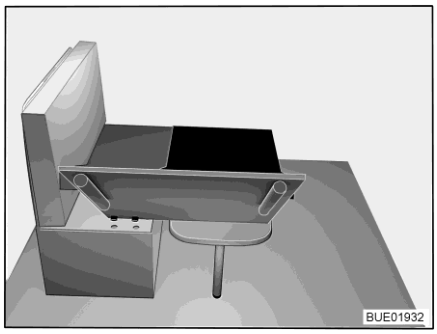


Fig. 70 Conversion (2)

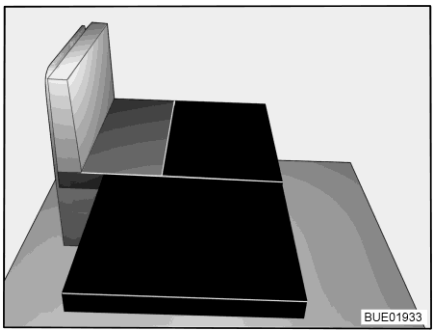
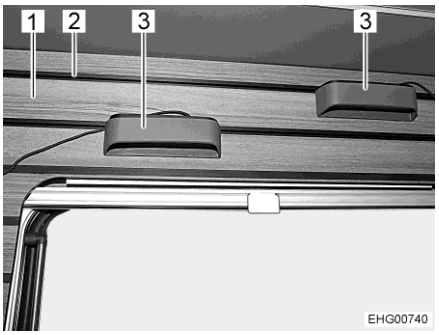


Fig. 71 After conversion

- Insert the journals on the bottom side of the cushion support into the recesses on the bench. In order to do this, lift the seat cushion slightly.
- Fold out the support legs of the cushion support. Put the cushion support down on the support legs.
- Place large additional cushion on the cushion support (refer to Fig. 71).

6.13.6 Multifunctional wall

▷ Before commencing the journey, remove all hook-in elements and store them securely.



1 Multifunctional wall
2 Aluminium profile
3 Reading lamp

Fig. 72 Multifunctional wall with reading lamps

The living area of the vehicle is equipped with multifunctional walls in bamboo look in several places.

The multifunctional walls have aluminium profiles to which various hook-in elements can be attached.

Examples of hook-in elements (selection):

- Reading lamp
- Herb pot
- Coat hook
- Shelf

▷ The hook-in elements are available as accessories in the after-sales service.

6.14 Lighting

Several LED strips (ambient lighting) and recessed spotlights (work lights) are installed in the vehicle. In addition, pendant lamps and reading lamps can be installed in different places as required.

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

In addition, multi-light switches (Fig. 73) have been installed at various points in the vehicle with which the lights can be switched on and off individually.

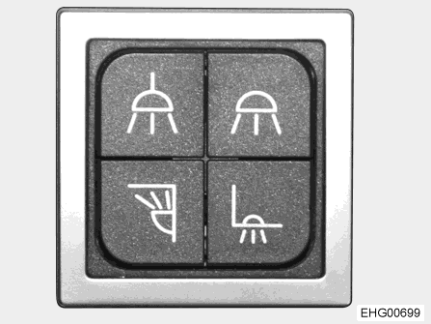


Fig. 73 Multi-light switch (example)

The meaning of the switch symbols of the multi-light switches is explained in the table below.

Switch symbol	Signification
	Main light switch (all lighting)
	Pendant lamp
	Recessed spotlights / entrance light / LED strips in the sleeping roof
	Plinth lighting kitchen
	Light in the step well / kitchen work light / awning LED strip (optional)
	Staircase lighting
	Pedestal step lighting night light, kitchen tall cupboard night light (depending on the ground plan)

Operation

The light switches can be used to switch the lamps on and off and dim them.

- Switch on the lamp: briefly press the light switch.
- Dimming the lamp: press the light switch and keep it pressed until desired brightness is reached.
- Switch off the lamp: briefly press the light switch.

6.14.1 Pendant lamp

▷ Before commencing the journey, remove the pendant lamp and store it securely.

The pendant lamp can be installed in different places in the vehicle as required.

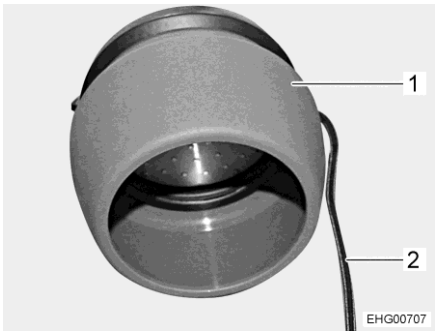


Fig. 74 Pendant lamp

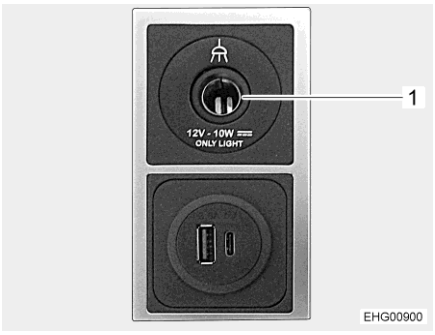


Fig. 75 12 V socket and USB ports

- Install the pendant lamp (Fig. 74,1) at the desired location.
- Connect the cable (Fig. 74,2) of the pendant lamp to the nearest 12 V socket (Fig. 75,1).
- Switch on the pendant lamp at the associated light switch (symbol:).

▷ Further pendant lamps can be added as required as accessories from the After Sales service.

6.14.2 Mobile reading lamp

▷ Before commencing the journey, remove the reading lamps and store them securely.

Mobile reading lamps can be attached to the hanging rails of the multifunctional wall as desired.

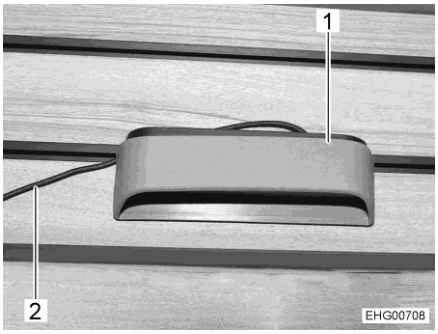


Fig. 76 Mobile reading lamp

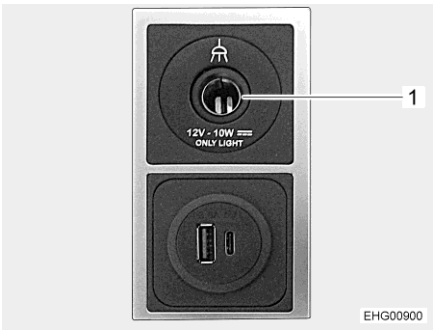


Fig. 77 12 V socket and USB ports

- Attach the mobile reading lamp (Fig. 76,1) to one of the hanging rails at the desired location.
- Connect the cable (Fig. 76,2) of the mobile reading lamp to the nearest 12 V socket (Fig. 77,1).
- Switch on the mobile reading lamp at the associated switch.

▷ Further mobile reading lamps can be added as required as accessories from the After Sales service.

Chapter overview

This chapter contains instructions regarding the gas system of the vehicle.

The operation of the gas operation appliances of the vehicle is described in chapter 9.

7.1 General instructions

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

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

7.2 Gas bottles

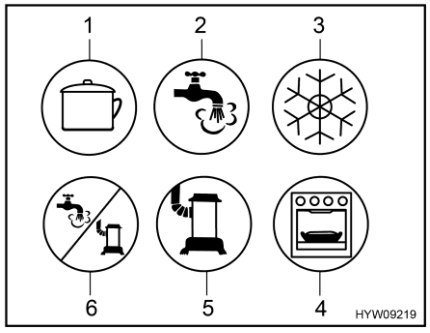
- Handle full or emptied gas bottles outside the vehicle only with closed regulator tap and attached protective cap.
- Gas bottles are only to be transported within the designated gas bottle compartment.
- Place the gas bottles in vertical position in the gas bottle compartment.
- Fasten the gas bottles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

- ▶ Use only 11 kg or 5 kg gas bottles. (The size of the gas bottles may vary depending on the country.)
- ▶ Use the shortest possible tube lengths (150 cm max.) for external gas bottles.
- ▶ Never block the floor ventilation openings below the gas bottles.

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

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

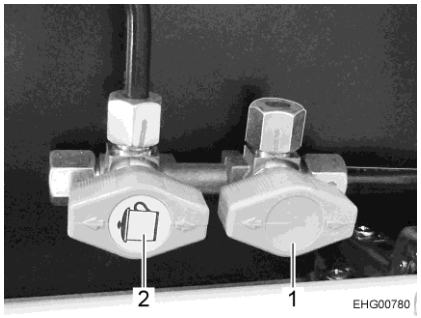
7.3 Gas isolator taps



1 Cooker
2 Hot water
3 Refrigerator
4 Oven/grill
5 Heater
6 Hot water/heater

Fig. 78 Possible symbols for the gas isolator taps

Position A gas isolator tap (Fig. 78) for every gas device is built into the vehicle. The gas isolator taps are located behind a flap underneath the sink.



1 Gas isolator tap, spare
2 Gas isolator tap, cooker

Fig. 79 Gas isolator taps position (example)

Opening: ■ Position the gas isolator tap of the corresponding gas device parallel to the pipe leading to the gas device.

Closing: ■ Position the gas isolator tap of the corresponding gas device transverse (Fig. 79,2) to the pipe leading to the gas device.

7.4 Gas bottle compartment

The gas bottles for supplying the gas-operated devices are housed in a gas bottle compartment.

If the heater of the living area is operated with gas (standard), two 11 kg gas bottles are provided for the vehicle.

If the heater of the living area is operated with diesel (optional), only one 11 kg gas cylinder is provided.

Position The gas bottle compartment is installed on the left hand side of the vehicle in the rear and is accessible via an external flap.

7.5 Gas bottle compartment pull-out (optional)

To facilitate the changing of gas bottles, the gas bottles and the DuoControl switching facility are stored in an extractable gas bottle compartment.

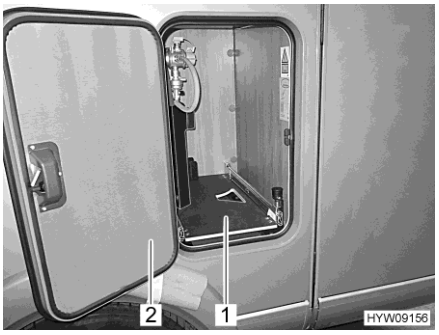


Fig. 80 Gas bottle compartment pull-out

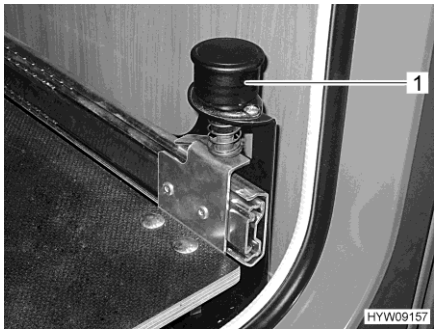


Fig. 81 Knob with locking device

Pulling out the gas bottle compartment:

- Open flap (Fig. 80,2) for the gas bottle compartment.
- Pull the knob (Fig. 81,1) upwards. The gas bottle compartment pull-out is unlocked.
- Pull out the gas bottle compartment pull-out (Fig. 80,1) until the knob engages again. Now, the gas bottle compartment pull-out is locked in this position.

Changing the gas bottle:

- Change the gas bottle as described in section 7.6.

Fig. 82 Gas bottle compartment pull-out in changing position

Pushing in the gas bottle compartment:

- Pull the knob (Fig. 82,1) upwards. The gas bottle compartment pull-out is unlocked.
- Push the gas bottle compartment pull-out inwards until the knob engages again.
- Close flap.

7.6 Gas pressure regulating system DuoControl CS (optional)

▷ The regulating system and the hose lines shall be changed at the latest 10 years after manufacturing date. The operator is responsible for this.

▷ Also read the manufacturer's instruction manual.

DuoControl CS is a safety gas pressure regulating system with automatic switching for a two-bottle gas system and with crash sensor. The DuoControl regulating system automatically switches the gas supply from the primary bottle to the reserve bottle as soon as the primary bottle is either empty or no longer ready for operation. The gas appliances may still continue operation. The DuoControl regulating system is suitable for all commercial gas bottles with liquefied gas (propane/butane) and a pressure of 0.6 bar to 16 bar.

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

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

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

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

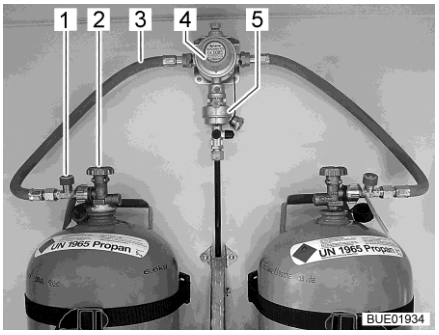


Fig. 83 Gas bottles with DuoControl

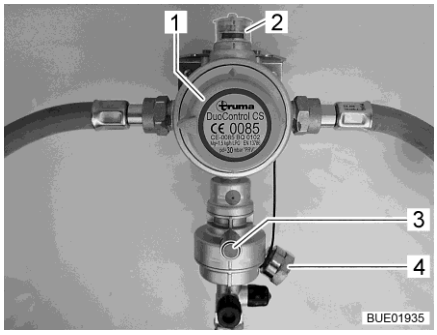


Fig. 84 DuoControl regulating system

Construction of the unit

The DuoControl regulating system consists of a reversing valve (Fig. 83,4) and a crash sensor (Fig. 83,5). The DuoControl regulating system is installed between the gas tubes (Fig. 83,3) with hose break guard (Fig. 83,1). The knob (Fig. 84,1) on the reversing valve is used to select which of the gas bottles is to be used as primary bottle and which is to be used as reserve bottle.

The status of the gas supply is indicated in the inspection window (Fig. 84,2):

- Green: Gas is taken out of the primary bottle.
- Red: Gas is taken out of the reserve bottle.

The operation with only one gas bottle is allowed but in this case the open connection must be closed with a blind cover (Fig. 84,4).

Crash sensor

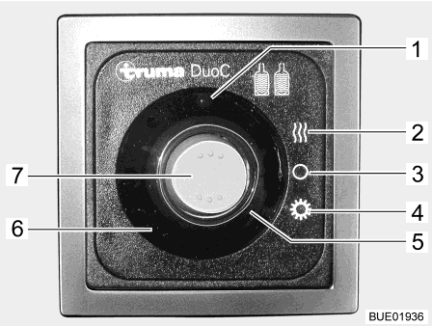
The crash sensor blocks the gas supply in the event of a significant impact (e.g. accident). The crash sensor is put into operation with the green reset button (Fig. 84,3).

Hose break guard

The hose break guard (Fig. 83,1) blocks the gas flow if the connected hose breaks. The hose break guard must be activated by pressing the green button. The green button must be pressed until the pressure in the hose has built up.

Defroster

The DuoControl regulating system can be heated (defroster). If winter operation is set at the operating unit, the DuoControl regulating system will be heated automatically. Thus, faults of the gas system due to frost in winter are prevented.



1 Yellow indicator lamp, defroster
2 Winter operation position
3 OFF position
4 Summer operation position
5 Red indicator lamp, primary bottle empty
6 Green indicator lamp, supply from primary bottle
7 Rocker switch

Fig. 85 Operating unit (DuoControl)

Operating unit

At the operating unit (Fig. 85), the gas supply via the DuoControl regulating system is switched on and off. The regulator taps (Fig. 83,2) of the gas bottles and the gas isolator taps of the devices must be opened manually. To activate the hose break guard, see section "Hose break guard".

Summer and winter operation are switched with the rocker switch (Fig. 85,7) on the operating unit.

The two indicator lamps on the operating unit indicate the level of the primary bottle. When the green indicator lamp (Fig. 85,6) is lit, the primary bottle is sufficiently filled. When the red indicator lamp (Fig. 85,5) illuminates, the primary bottle is empty. In this case, the reserve bottle is used for the gas supply.

Putting into operation:

- Connect the gas bottles.
- Use the knob (Fig. 84,1) on the reversing valve to select the gas bottle which is to be the primary source of gas (primary bottle). Always turn the knob as far as it will go.
- Open regulator taps (Fig. 83,2) on the gas bottles.
- Press the green button of the hose break guard (Fig. 83,1). The green marking is shown in the inspection window (Fig. 84,2).

Switching on summer/winter operation:

- Switch on the DuoControl regulating system at the operating unit (Fig. 85). To do so, set the rocker switch (Fig. 85,7) to winter operation (Fig. 85,2) or to summer operation (Fig. 85,4). The yellow defroster indicator lamp (Fig. 85,1) is lit when winter operation is selected.

Switching off:

- Set the rocker switch (Fig. 85,7) to the OFF position (Fig. 85,3). The indicator lamps go out.
- Close regulator taps (Fig. 83,2) on the gas bottles.

Changing gas bottles

- ▶ When changing gas bottles, do not smoke or create any open fire.
- ▶ When you have changed the gas bottle, check whether gas escapes at the connection points and unions. Use a leakage search spray to spray the relevant connection point or union. These agents are available at the accessories shop.

If the green indicator lamp (Fig. 85,6) goes out during operation and the red indicator lamp (Fig. 85,5) lights up, the primary bottle is empty and must be changed. The red marking is shown in the inspection window (Fig. 84,2). The reserve bottle continues supplying the gas appliances with gas.

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

Changing the gas bottle:

- ■ Turn the knob (Fig. 84,1) a half turn in the direction of the currently used gas bottle. In this way, this gas bottle is the primary bottle now, and the empty gas bottle becomes the reserve bottle. The marking in the inspection window (Fig. 84,2) changes from red to green.
- ■ Close regulator tap (Fig. 83,2) on the empty gas bottle. Pay attention to the direction of the arrow.
- ■ Unscrew the gas tube from the empty gas bottle (normally a left-hand thread).
- ■ Release the fixing belts and remove the empty gas bottle.
- ■ Place a filled gas bottle in the gas bottle compartment and retain with the fixing belts.
- ■ Connect gas tube to the filled gas bottle (normally a left-hand thread).
- ■ Open the regulator tap on the gas bottle.
- ■ Press the green button of the hose break guard (Fig. 83,1).

7.7 Changing gas bottles

- When changing gas bottles, do not smoke or create any open fire.
- When you have changed the gas bottle, check whether gas escapes at the connection points and unions. To do this, spray the connection point with leakage search spray (approved by the German Technical and Scientific Association for Gas an Water, DVGW). These agents are available at the accessories shop.

▷ The procedure described below applies to vehicles that are equipped with a single gas connection. If the vehicle is equipped with an regulating system: When changing the gas bottle, proceed as described for the regulating system.

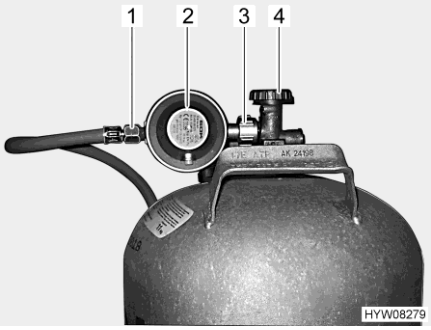


Fig. 86 Gas bottle connection

- Open the gas bottle compartment door.
- Close the regulator tap (Fig. 86,4) on the gas bottle. Pay attention to the direction of the arrow.
- Hold the gas pressure regulator (Fig. 86,2) and open the knurled nut (Fig. 86,3) (normally a left-hand thread).
- Remove the gas pressure regulator and the gas tube (Fig. 86,1) from the gas bottle.
- Release the fixing belts and remove the gas bottle.
- Place a filled gas bottle in the gas bottle compartment.
- Fix gas bottle in place with the fixing belts.
- Position the gas pressure regulator (Fig. 86,2) with gas tube (Fig. 86,1) on the gas bottle and tighten the knurled nut (Fig. 86,3) (normally a left-hand thread). **Do not** tighten too firmly.
- Close the gas bottle compartment door.

Chapter overview

This chapter contains instructions regarding the electrical system of the vehicle.

The operation of the electrical appliances of the housing body is described in chapter 9.

8.1 General safety instructions

- ▶ Only allow qualified personnel to work on the electrical system.
- ▶ All electrical devices (e.g. mobile phones, radios, televisions or DVD players) that are retrofitted into the vehicle and operated during the journey must have a CE marking and be verifiably tested according to DIN VDE 0100 721. Please contact an authorised specialist workshop.

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

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

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

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

  The automatic retraction of a SAT antenna can also be delayed.
- ▷ During a storm, to protect the electrical devices disconnect the 230 V connection and retract the antennae.

8.2 Terms

Off-load voltage

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

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

Closed circuit current

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

Total discharge

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

▷ Total discharge damages the battery.

Capacity

Capacity refers to the amount of electricity which can be stored in a battery.

The capacity of a battery is given in ampere hours (Ah). The so-called K20 value is normally used.

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

For example, if a battery can dispense 4 amps for 20 hours, then it has a capacity of 4 A x 20 h = 80 Ah.

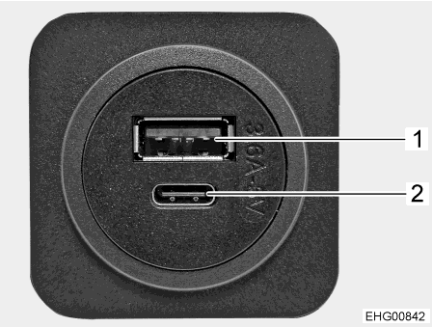
If more current flows, the discharging time of the battery will decrease proportionately.

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

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

8.3 12 V power supply

8.3.1 USB socket



1 USB A port
2 USB C port

Fig. 87 USB socket

The vehicle is equipped with several USB sockets as standard. The USB sockets each contain a connection for a USB A plug (Fig. 87,1) and a connection for a USB C plug (Fig. 87,2).

8.3.2 Starter battery

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

Position

In the footwell of the driver's cabin underneath a floor plate.

Discharging

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

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

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

Low temperatures outside reduce the capacity available.

Charging

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

- ▶ The acid in the battery is poisonous and corrosive. Any contact with the skin or the eyes is to be avoided. In the event of contact, rinse immediately with plenty of water (skin, eyes, clothes, objects) and seek medical attention if necessary.
- ▶ In the case of charging with an external charger there is danger of explosion. Sparks can be caused by attaching the battery terminals. Only charge the battery in a well ventilated area and away from naked flames or possible sources of sparks. Batteries can develop and release gases when they are charged.

- ▷ Never disconnect the battery while the engine is running.
- ▷ Before disconnecting or connecting the terminals of the battery, switch off the vehicle engine as well as the 230V and 12 V power supplies and all appliances. Danger of short circuit!
- ▷ Before a temporary lay-up, charge the battery fully.
- ▷ Do not connect the battery cables to the wrong poles (red cable -> positive pole, black cable -> negative pole).
- ▷ If the starter battery or living area battery are disconnected, do not apply the ignition. There is a danger of short circuit from exposed cable ends.
- ▷ Observe the instruction manuals for the base vehicle and the charger.

The starter battery can only be fully charged with an external charger. When the vehicle is connected to the 230 V power supply, the transformer/rectifier charges the starter battery with a float charge only. Even in mobile operation, the vehicle engine alternator is not capable of completely charging the starter battery.

When charging the starter battery with an external charger, proceed as follows:

- ■ Turn off the vehicle engine.
- ■ Switch off the 12 V power supply on the panel. The indicator lamps or the displays on the panel go out.

- Switch off all gas appliances, all gas isolator taps and close the regulator tap on the gas bottle.
- Disconnect the starter battery from the vehicle (e.g. remove the battery terminals). There is a danger of short circuit when disconnecting the battery poles. For this reason, first disconnect the negative terminal and then the positive.
- Check that the external charger is turned off.
- Connect the external charger to the starter battery. Pay attention to the polarity: First connect the positive terminal "+" to the positive terminal of the starter battery, then connect the negative terminal "–" to the negative pole of the starter battery.
- Switch on the external charger.
- See the instructions for use of the connected charger for information concerning charge period required for the battery.
- See the specifications on the battery for information concerning its strength.
- Disconnect the charger in reverse order (the negative terminal first).
- Connect the battery terminals again (first the positive terminal).

Storage

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

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

▷ If the battery remains connected during a lay-up, it may become necessary to recharge already after 14 day or in even shorter intervals.

▷ If there is an "intelligent" charger with float charge functionality, have the charger connected to the battery and switched on over the entire lay-up time.

8.3.3 Living area battery

The vehicle is equipped with an AGM battery as standard. The equipment with lithium batteries is optionally possible.

▷ The living area battery may not be opened.

▷ Use only the built-in transformer/rectifier to load the living area battery. In order to do this, connect the 230 V connection (CEE connector) of the vehicle to an external 230 V power supply.

▷ Prior to commencing a journey ensure the living area battery is fully charged. For this reason charge the living area battery for at least 20 hours before commencing the journey.

▷ During the trip, use every opportunity to charge the living area battery.

▷ After the trip, charge the living area battery fully.

▷ Before a temporary lay-up, charge the battery fully.

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

▷ When changing the battery, always disconnect the negative pole first and, then, the positive pole. When connecting, proceed in inverted order: connect the positive pole first and, then, the negative pole.

- ▷ When changing the living area battery, use only batteries for which there are charging characteristics available. After changing the battery the charging characteristics must be adjusted at the transformer/rectifier or at the auxiliary charging unit.
- ▷ If there are several living area batteries, always change all the batteries together. The batteries must always be the same age and have the same capacity.
- ▷ When changing the living area battery, use only batteries which meet the minimum capacity of the charger. Observe the separate instruction manual for the charger. Lower-capacity batteries will generate a great deal of heat when they are charged. Danger of explosion!
- ▷ If the living area battery is replaced and the charging unit does not provide at least 10 % of the rating of a new battery, install an auxiliary charging unit. Example: With a battery capacity of 80 Ah, the charging unit must supply at least 8 A charging current.
- ▷ Before disconnecting or connecting the terminals of the battery, switch off the vehicle engine as well as the 230 V and 12 V power supplies and all appliances. Danger of short circuit!
- ▷ If the starter battery or living area battery are disconnected, do not apply the ignition. There is a danger of short circuit from exposed cable ends.
- ▷ Only connect devices with a maximum of 10 A to the sockets of the 12 V power supply.
- ▷ If there are two living area batteries: When changing, ensure that the batteries are properly installed. Install the batteries so that the positive terminal on one battery is lying next to the negative terminal of the other battery.
- ▷ If there are two living area batteries: When changing, ensure that the batteries are properly connected.

- ▷ The battery is maintenance-free. Maintenance-free means:

  It is not necessary to check the acid level.

  It is not necessary to lubricate the battery poles.

  It is not necessary to refill the distilled water.

  Even a maintenance-free battery must be recharged.

  Recommendation: Perform a full charging cycle every 6 to 8 weeks. Depending on the battery capacity and the charger, the charging cycle will last 24 to 48 hours.
- ▷ Depending on the model and equipment, an auxiliary battery is connected to the living area battery. Below the batteries are named as living area batteries, regardless of the number.

When the vehicle is not connected to the 230 V power supply or the 230 V power supply is switched off, the living area battery supplies the living area with 12 V DC. The living area battery has a limited power supply only. For this reason, electrical appliances such as the radio and the lights should not be operated for a long time without using the 230 V power supply.

Position In front of the driver's seat underneath the floor plate.

Removing / installing the battery

To access the battery, first remove the subwoofer (Fig. 88,2) of the sound system.

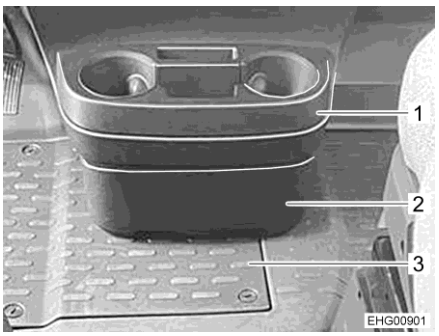


Fig. 88 Cup holder and subwoofer

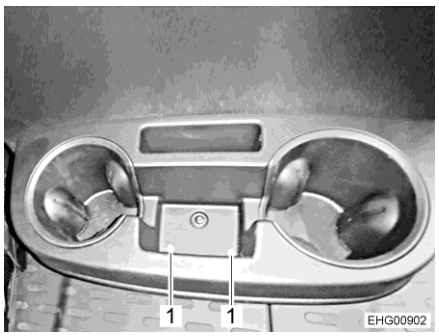


Fig. 89 Subwoofer mounting

Removing the battery:

- Loosen the screw (Fig. 89,1).
- Pull out the subwoofer (Fig. 88,2) and put it aside.
- Open the floor plate (Fig. 88,3).
- Disconnect the battery (first the negative terminal, then the positive terminal). Isolate the disconnected poles from each other.
- Take out the battery.
- Close the floor plate.

Installing the battery:

- Open the floor plate (Fig. 88,3).
- Insert the battery.
- Connect the positive terminal to the battery.
- Connect the negative terminal to the battery.
- Close the floor plate.
- Clamp the subwoofer (Fig. 88,2) underneath the cup holder (Fig. 88,1).
- Fix the subwoofer with the screws (Fig. 89,1).

Discharging

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

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

▷ Recharge battery in good time.

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

Low temperatures outside reduce the capacity available.

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

An older battery no longer has the complete capacity available.

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

The living area battery has a limited power supply only. For this reason, the electrical appliances should not be operated without a 230 V power supply for a longer period of time.

Charging

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

- ▷ Charge the battery for at least 48 hours after a total discharge.
- ▷ At temperatures below 0 °C, a living area battery consumes less power. At approx. -15 °C, there will be no more power. The living area battery can no longer be charged.
- ▷ Always connect the load and charging lines cross-wise. This is necessary to ensure the batteries always have the same line resistance to one another. This allows the charging/discharging current to be distributed equally.

Storage

- ■ Store the disconnected battery in a cool and dry place.
- ■ In the case of a disconnected, fully charged gel battery it may suffice to recharge the battery after 6 months.

Recommendation: Also charge a gel battery for 24 to 48 hours every 4 to 6 weeks.

- ▷ If there is an "intelligent" charger with float charge functionality, have the charger connected to the battery and switched on over the entire lay-up time.

Emergency P battery

To enable gear selection in the gearbox even if the starter battery is defective, the vehicle is equipped with an "emergency P battery". This emergency P battery is only charged when the vehicle engine is running. Charging via an external charger is not possible.

8.4 *HYMER* Smart Battery System (optional)

The ***HYMER*** Smart Battery System consists of two (optionally four) lithium batteries.

- ▷ Do not make any changes to the installation of the lithium battery carried out at the factory.
- ▷ Do not open the lithium battery.
- ▷ Observe the recommended operating temperature between 15 and 25 °C. Take any further details on the operating temperature from the manufacturer's instruction manual.
- ▷ Fully charge the battery system every 6 months.
- ▷ Switch the transformer/rectifier of for installation and maintenance.
- ▷ Remove the fuses between lead-acid battery and lithium battery for installation and any work on the wiring.
- ▷ If the battery capacity indicator does not reach 100 % any more after a longer charging time, contact the customer service.
- ▷ Transport and dispose of the lithium battery only as prescribed by the manufacturer.
- ▷ Observe the manufacturer's instruction manual.

The lithium battery is equipped with a protective function against overload and total discharge.

▷ Fully charge the battery system after recommissioning or longer periods of inactivity.

Storage

In the case of adequate use, the lithium battery has a lifetime of up to 10 years.

Prior to storage, fully charge the battery system and disconnect it from the transformer/rectifier (switch off battery cut-off switch on the transformer/rectifier).

At the latest, check the charge status on the display of the lithium battery after 6 months. In order to do this, switch on the battery cut-off switch on the transformer/rectifier. When the battery cut-off switch is switched off, the charging condition of the battery can drop to approx. 40 to 80 %. Charge battery if necessary.

In case of a longer storage period: charge and discharge battery several times if necessary to obtain full performance of the battery system.

Store the battery system in a place that is dry and well ventilated.

Observe the recommended storage temperature between 10 and 20 °C. Take any further details on the storage temperature from the manufacturer's instruction manual.

Display

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

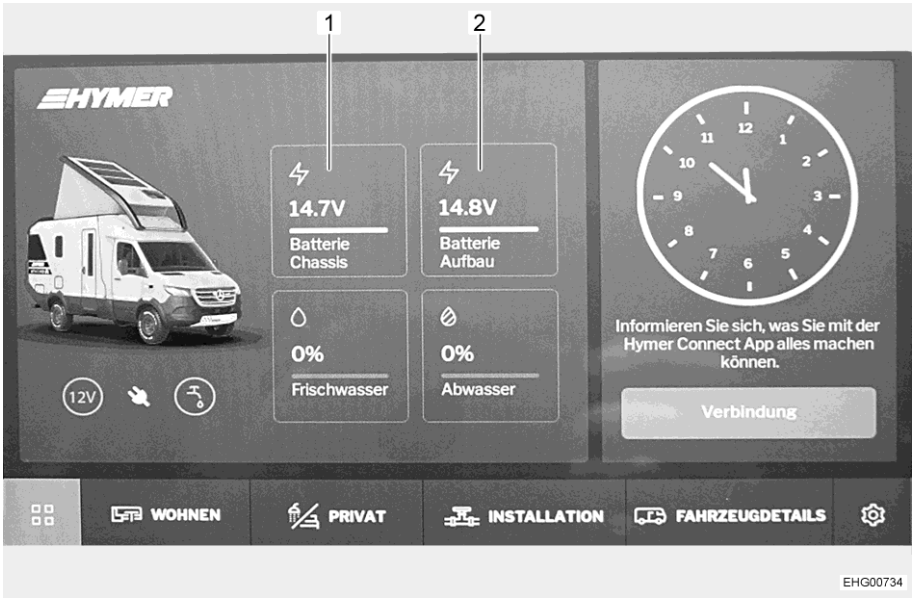


Fig. 90 Start screen of the 7" panel

The start screen shows the voltage of the starter battery (Fig. 90,1) and the living area battery (Fig. 90,2).

By navigating the display, further information on the starter battery and the living area battery can be called up.

Displaying state of charge (SoC)

The 7" panel also displays the overall state of charge (SoC). The value of the SoC is displayed as a percentage and, additionally, as a bar chart.

Battery monitor

A battery monitor is installed underneath the vehicle to permanently monitor the system's charging condition.

8.5 Transformer/rectifier

- ▶ The unit contains parts that carry 230 V mains voltage. Potentially fatal electric shock or fire hazard!

  Do not carry out any maintenance or repair work on the unit. If the cable or housing is damaged, do not put the unit into operation and disconnect it from the mains supply. Do not allow liquid to enter the unit.
- ▶ Replace defective fuses only when the unit is de-energised.
- ▶ Only replace defective fuses when the cause of the defect is known and has been remedied.
- ▶ Never bypass or repair fuses.
- ▶ Only use original fuses with the values specified on the unit.
- ▶ Device components can get hot during operation. Do not touch.
- ▶ Do not cover the ventilation slots. Danger of overheating!
- ▶ Do not store any heat-sensitive objects close to the unit (e.g. temperature-sensitive clothes if the unit is installed in the wardrobe).
- ▶ Observe the safety instructions and information in the separate device manufacturer's instruction manual.

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

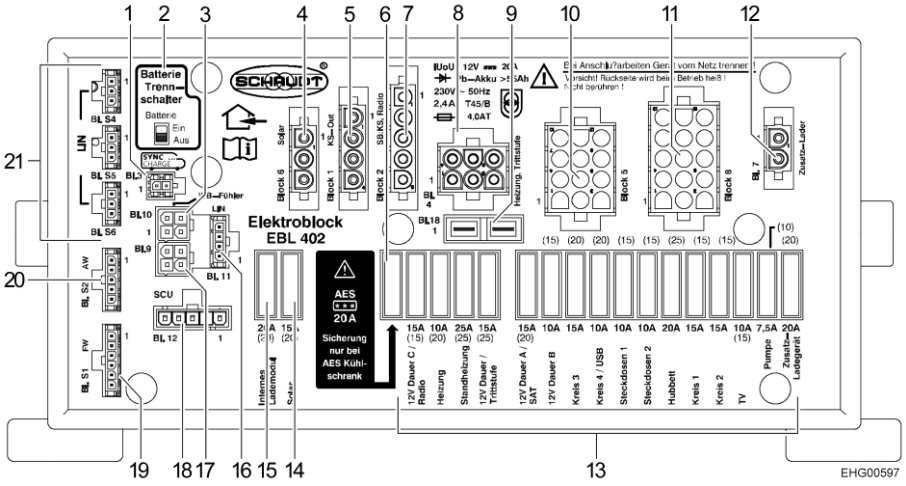


Fig. 91 Transformer/rectifier

1 Block 3 SYNCCHARGE®
2 Battery cut-off switch (battery on/off)
3 Block 10 TSF01 (parallel to block 9)
4 Block 6 Solar charge regulator
5 Block 1 Refrigerator
6 AES 20 A fuse (only if vehicle is equipped with an AES refrigerator)
7 Block 2 Input D+, starter battery, refrigerator control
8 Block 4 Heater, Step
9 Block 18 Independent vehicle heater
10 Block 5 Power supply for 12 V appliances
11 Block 8 Power supply for 12 V appliances
12 Block 7 Auxiliary charging unit
13 Flat fuses (protection for the 12 V appliances)
14 Fuse, Solar
15 Fuse, Internal charger module
16 Block 11 LIN BUS
17 Block 9 TSF01 (parallel to block 10)
18 Block 12 (not used)
19 Block S1 Fresh water probe
20 Block S2 Waste water probe/sensors
21 Block S4, block S5, block S6 LIN BUS

Position In the storage space in the rear on the left.

Operation The transformer/rectifier is operated via the connected 7" operating panel (exception: battery cut-off for lay-up, see below).

In normal operation, no operating steps are required on the transformer/rectifier.

In following cases, adjustments are required:

- For initial commissioning.
- When the battery type is changed.
- When accessories are retrofitted.

This adjustment work must be carried out by an authorised service centre.

Purpose Together with the control unit SCU and the BUS modules, the transformer/rectifier forms the central control and power supply system for all 12 V appliances in the electrical system on board of the vehicle.

Functions

- The transformer/rectifier charges the living area battery. The transformer/rectifier charges the starter battery with a float charge only.
- The transformer/rectifier monitors the voltage in the living area battery.
- When the vehicle engine is turned off, the transformer/rectifier separates the starter battery electrically from the living area battery. This prevents the 12 V living area appliances from discharging the starter battery.
- The transformer/rectifier controls and monitors connected solar charge regulators and auxiliary charging units.
- The transformer/rectifier supplies all BUS modules and the connected sensors and appliances with current.
- Via BUS lines, the transformer/rectifier provides the communication with the BUS modules, the panel will and the control unit SCU.

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

The power in the transformer/rectifier is divided into charging current and current to the appliances. The charging current is always just the portion that is not being used by any appliances. If the current to the appliances exceeds the current available, then the living area battery is discharged.

Lay-up

Some circuits are still supplied with current even when the 12 V power supply is switched off on the panel. These are all appliances connected to the 12 V constant positive, for example:

- Entrance step
- Heater

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

Lay-up:

- ■ Switch off the 12 V power supply on the panel.
- ■ Move the battery cut-off switch (Fig. 91,2) to the "Aus" (Off) position on the transformer/rectifier. The battery cut-off switch disconnects all appliances supplied by the transformer/rectifier from the living area battery.

Coming out of lay-up:

- ■ Push the battery cut-off switch (Fig. 91,2) to the "Ein" (On) position on the transformer/rectifier.
- ■ Switch on the 12 V power supply on the panel. On vehicles with SCU, the 12 V system starts automatically.

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

8.6 7" panel

The 7" panel with touch display is part of the vehicle's bus system. (Other components of the bus system are the transformer/rectifier EBL 402, the system control SCU and the HYMER Connect app.)

Via the 7" panel you can display, monitor and control the vehicle's operating functions. In addition, different functions can be combined and saved as scenarios. Private information can also be included.

The 7" panel can be connected to the HYMER Connect app.

Position The 7" panel is installed above the conversion door.

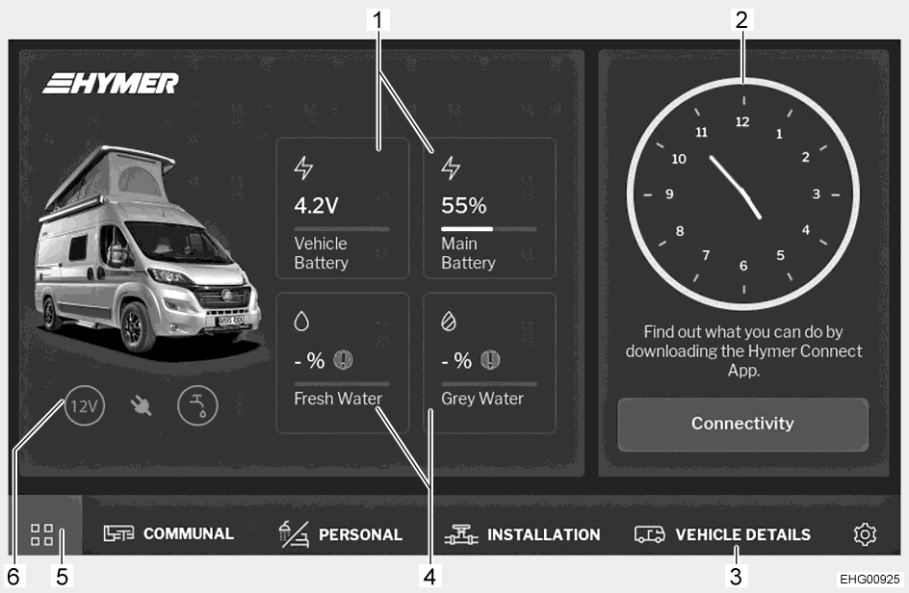


Fig. 92 7" panel, start screen

1 Batteries voltage indicator
2 Time
3 Main menu navigation bar
4 Water tank level indicator
5 Switching on/off
6 Selection switch field

The following functions can be activated in the selection switch field (Fig. 92,6):

- Switch 12 V power supply on
- Switch 230 V power supply on
- Switch water pump on

The following main menus can be called up via the navigation bar (Fig. 92,3):

- COMMUNAL
- PERSONAL
- INSTALLATION
- VEHICLE DETAILS

Clicking a button opens the respective sub menu.

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

8.7 HYMER Connect App

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

Requirements for connecting the mobile device to the SCU:

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

For each vehicle equipped with a SCU, a main user can connect to the SCU via their mobile device (using the HYMER Connect app and the vehicle QR code). This main user can create guest accesses for other mobile devices via the HYMER Connect app and also manage them there.

▷ The HYMER Connect app is available free of charge in the Apple App Store (iOS) and the Google Play Store (Android).

▷ The vehicle QR code can be found in the vehicle's document pocket.

Keep the vehicle QR code in a safe place.

If the vehicle QR code has been lost, contact the manufacturer's customer service or an authorised dealer.

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

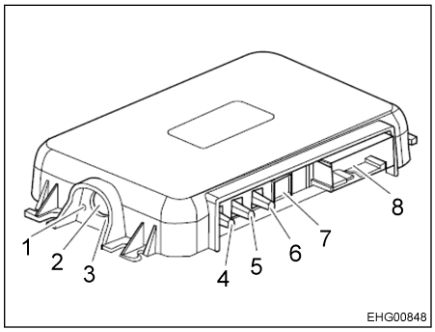
8.8 System Control Unit (SCU)

▷ FAQs on the operation of the SCU and the HYMER Connect app can be found under the following link:

https://www.hymer.com/de/en/connect-app

The FAQs are constantly being expanded.

The SCU takes over central control and monitoring functions in the vehicle. The control and monitoring functions are operated on the 7" panel or via the HYMER Connect app. On the SCU itself, operation is limited to initiating the connection process (pairing).



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

Fig. 93 System Control Unit

Active operation

The 7" panel displays the following data:

- 12 V On/Off
- 230 V indicator
- Water pump on/off indicator (only when 12 V on)

- Starter battery indicator
- Living area battery indicator with lithium bat. in % (for AGM battery in volts)
- Settings
- Menu bar

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

Emergency operation

During emergency operation of the vehicle, the display of the SCU is without function.

Functions in emergency operation:

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

▷ In emergency operation, battery and water levels **cannot** be called up.

Requirements for emergency operation:

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

▷ Before activating the emergency operation, make sure that all water taps in the vehicle are closed.
If not all water taps are closed, the pump can run dry and water can escape uncontrollably. Property damage may occur.

Activating the emergency operation:

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

▷ If the SCU fails or is defective, contact an authorised dealer.

Energy-saving mode

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

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

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

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

Position The SCU is installed in the floor trap behind the driver's seat.

8.9 AC converter (Victron) with integrated charger (optional)

▷ Check the fault current protection switch for each connection to the 230 V power supply, at least once every 6 months.

▷ If the vehicle is not connected to the 230 V power supply and no electricity is required, switch off the AC converter. Even in idle state, the AC converter still uses power from the living area battery.

▷ The AC converter is equipped with a 230 V priority circuit. If an external 230 V voltage is connected, it will be used primarily. Only if no external 230 V voltage is connected, the living area battery will be used for voltage supply.

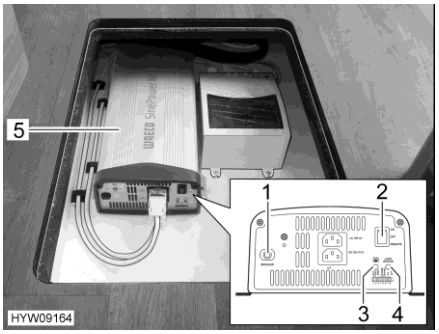
▷ If not external 230 V power supply is connected, the AC converter draws energy from the living area battery. The living area battery has a limited power supply only. For this reason, the electrical appliances should not be operated from the electrical sockets for long periods without using the 230 V connection.

▷ To protect the living area battery against total discharge, the AC converter automatically switches itself off if there is undervoltage. The AC converter automatically switches itself on again when the voltage is back up to the standard value.

▷ In the event of overload or insufficient cooling, the AC converter switches itself off automatically. The AC converter automatically switches itself back on when there is no longer an overload and the temperature of the device is down to a safe level.

▷ If the appliance fuse has triggered, it must be pushed in again manually.

▷ Take and observe further instructions and information from the separate manufacturer's instruction manual.



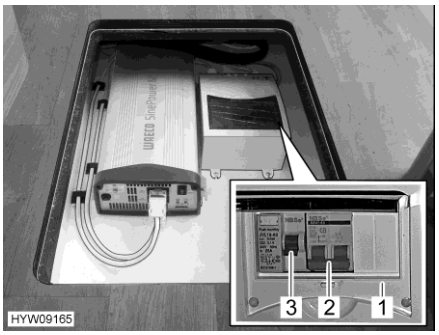
1 Appliance fuse
2 Main switch "ON/OFF/REMOTE"
3 LED input voltage range
4 LED "LOAD LEVEL"
5 AC converter MSI 1812T

Fig. 94 AC converter (exemplary illustration)

Functions The AC converter has the following functions:

If no external 230 V power supply is connected, the AC converter generates a 230 V voltage for all sockets in the vehicle out of the 12 V DC voltage of the living area battery.

If an external 230 V power supply is connected, this will be used to supply the sockets. In this case, the AC converter will not draw power from the living area battery.



1 Fuse box
2 Safety cut-out for sockets
3 Fault current protection switch for sockets

Fig. 95 Additional fuse box

The sockets are protected by a safety cut-out (Fig. 95,2) and a fault current protection switch (Fig. 95,3) in the additional fuse box (Fig. 95,1).

Position Electric compartment next to the gas bottles. Access via service opening in the rear.

▷ Take any further information from the manufacturer's instruction manual.

8.9.1 Retrofitting an AC converter

▷ Retrofitting of an AC converter can lead to damage to the electrical system. We will not be held liable for this damage.

The installation of a 230 V AC converter results in a very high current load. For example an AC converter with a power output of 800 W on the 12 V side has a current consumption of up to 75 A.

This current is much too big for the outputs on the transformer/rectifier (see section 8.12.1).

If the AC converter is connected directly to the battery, the current consumption of the AC converter will not be indicated by panel. Due to the high discharging current, the terminal voltage in the battery drops significantly. The measuring system installed then detects undervoltage and could switch off the 12 V power supply. In addition the living area battery will be drained very quickly if an AC converter is used.

8.10 230 V power supply

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

The 230 V power supply provides electricity for:

- sockets with earth contact for appliances with maximum 10 A
- transformer/rectifier

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

Connect the vehicle to an external 230 V power supply system as often as possible. The charger module in the transformer/rectifier automatically charges the living area battery. In addition to this, the starter battery is charged with a float charge.

8.10.1 230 V connection (CEE socket outlet)

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

Requirements concerning the 230 V connection

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

8.10.2 Connecting the 230 V power supply

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

▷ The 230 V connection in the vehicle is equipped with a fault current protection switch (FI-switch).

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

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

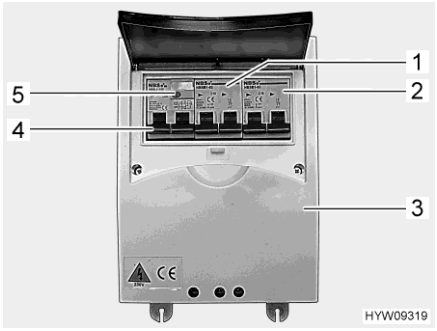


Fig. 96 Safety cut-out and FI-switch (230 V fuse box)

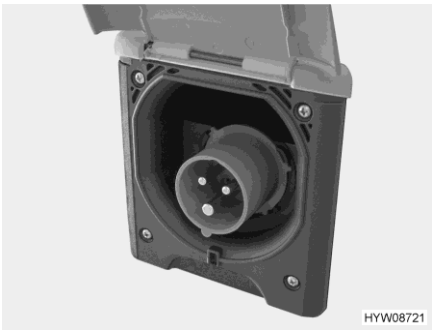


Fig. 97 230 V connection on the vehicle (CEE socket outlet)

▷ The second safety cut-out (Fig. 96,2) is optional. Whether this safety cut-out is present or not depends on the equipment of the vehicle.

Connecting the vehicle:

- Check whether the power supply device is suitable regarding connection, voltage, frequency and current.
- Check whether the cables and connections are suitable.
- Check the plug connectors and cables for visible damage.
- Switch off both safety cut-outs (Fig. 96,1 and Fig. 96,2) in the fuse box (Fig. 96,3).
- Open the cover of the 230 V connection on the vehicle (Fig. 97) and insert the plug connector. Ensure that the detent of the spring-mounted pivoting cover is engaged in position.
- Plug the connector of the connecting cable into the socket of the camping distributor. Ensure that the detent of the spring-mounted flap is also engaged here.
- Switch on both safety cut-outs in the fuse box.

Checking the fault current protection switch:

- When the vehicle is connected to the 230 V supply, press the test button (Fig. 96,5) of the fault current protection switch (FI-switch) (Fig. 96,4) in the fuse box (Fig. 96,3). The fault current protection switch must trip.
- Switch the fault current protection switch (Fig. 96,4) back on again.

Unplugging the connection:

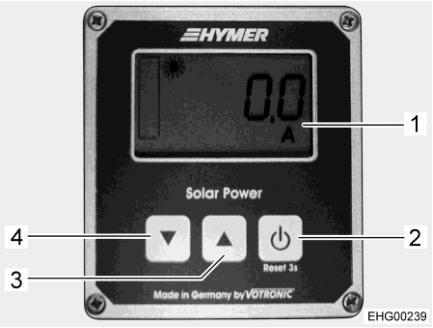
- Switch off both safety cut-outs (Fig. 96,1 and 2) in the fuse box (Fig. 96,3).
- Loosen the detent on the camping distributor and unplug the connecting cable from the socket.
- Loosen the detent on the vehicle unplug the plug connector and close the cover of the 230 V connection.

8.11 Solar installation

The information about the solar installation is shown on a display panel.

Position

The display panel is installed in the wall-mounted cupboard above the table.



1 Display
2 Button Switch the display on/off, reset the meter reading
3 Button Back/upwards
4 Button Continue/downwards

Fig. 98 Solar installation display panel

Switching on/off

The solar installation is not switched manually. As soon as solar radiation is present, the solar regulator charges the living area battery. The display panel is supplied with power by the solar regulator.

Operating modes

The device has the following operating modes:

- Standby: Nothing is displayed except for the "Charge" symbol (if the battery is discharged) and the sun symbol (if the solar regulator is active)
- Display with and without lighting: When any button is pressed on the display panel, the display lighting goes on and remains active for 3 minutes.
  If no further button is pressed during these 3 minutes, the lighting switches off again. The symbols are still visible on the display. The button functions are only executed if a button is pressed while the lighting is switched on.

Operation

The following information is displayed successively by pressing the continue button (Fig. 98,4):

- The solar installation's current electrical current in amperes ("A")
- Voltage of battery in volts ("V")
- The energy generated by the solar installation (counted continuously and displayed in ampere-hours (Ah) as well as watt-hours (Wh)/kilowatt-hours (kWh))
  To reset the meter reading: display desired meter reading, press on/off button (Fig. 98,2) for approx. 3 seconds until "Set ----" is displayed.
- Current output of the solar installation in watts ("W")

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

8.12 Fuses

- ▶ Only replace defective fuses when the cause of the defect is known and has been remedied.
- ▶ Replace defective fuses only after the power supply has been turned off.
- ▶ Never bridge or repair fuses.
- ▶ Only replace faulty fuses with a new fuse with the same rating.

8.12.1 12 V fuses

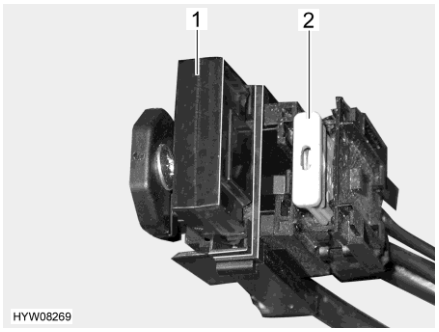
The appliances connected to the 12 V power supply in the living area are fused individually. The fuses are accessible at different positions in the vehicle.

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

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

Fuses on the starter battery

The fuses are installed in the vicinity of the starter battery.

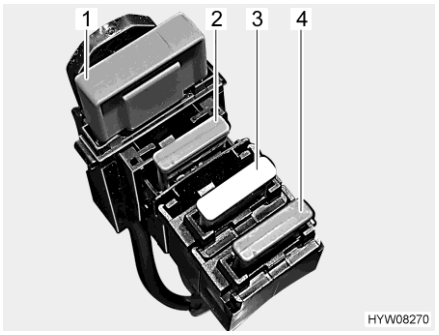


1 Jumbo flat fuse 40 A/orange (for transformer/rectifier)
2 Flat fuse 15 A/blue (for refrigerator and charging line)

Fig. 99 Fuses (starter battery)

Fuses on the living area battery

The fuses are installed in the vicinity of the living area battery.



1 Jumbo flat fuse 40 A/orange (for transformer/rectifier)
2 Flat fuse 2 A/grey (for battery sensor, living area battery)
3 Flat fuse 20 A/yellow (for optional equipment: heating)
4 Flat fuse 15 A/blue (for optional equipment: heating switch)

Fig. 100 Fuses (living area battery)

Fuses on the relay box AD01

The fuses are installed in the bench and accessible through a flap on the bench's side.

Fu No	Function	Value/colour
B2	Cl. 15 (ignition on)	15 A blue
B3	Cl. 30 (constant positive)	15 A blue
B5	Signal D+	Internal Polyswitch (2 A)
B6	Spare (additional heater)	15 A blue
B7	Lamps	5 A light brown

Fuse for the Thetford toilet

The toilet has a maintenance-free fuse which resets automatically.

Fuses on the transformer/rectifier

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

8.12.2 230 V fuse

▷ Check the fault current protection switch for each connection to the 230 V power supply, at least once every 6 months.

Fig. 101 Safety cutout and FI-switch (230 V fuse box)

A fault current protection switch (FI-switch) (Fig. 101,3) in the fuse box protects the complete vehicle from fault current (30 mA).

The downstream safety cut-out (10 A) (Fig. 101,1) secures the 230 V sockets, the transformer/rectifier, the auxiliary charging unit and the refrigerator.

For vehicles with optional equipment, e.g. roof air conditioning unit, the device is protected by an additional safety cut-out (16 A) (Fig. 101,2).

Checking the fault current protection switch:

■ When the vehicle is connected to the 230 V power supply, press the test button (Fig. 101,4). The fault current protection switch (FI-switch) must be activated.

Position

In the bench, accessible through a flap on the bench's side.

Chapter overview

This chapter contains instructions regarding the appliances of the vehicle.

The instructions refer exclusively to the operation of the appliances.

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

9.1 General

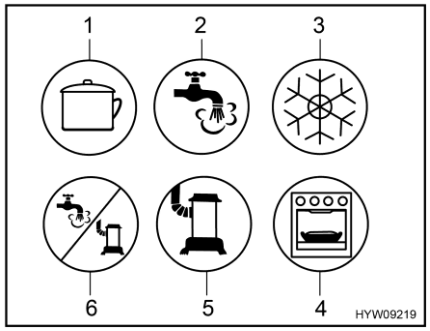
▷ For safety reasons, spare parts for pieces of heating appliances must correspond with manufacturer's instructions and be permitted by the manufacturer as a spare part. These spare parts may only be fitted by the manufacturer or an authorised specialist workshop.

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

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

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

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



1 Cooker
2 Hot water
3 Refrigerator
4 Oven/grill
5 Heater
6 Hot water/heater

Fig. 102 Possible symbols for the gas isolator taps

9.2 Heater and boiler

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

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

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

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

- ▶ The waste gas vent may neither be closed nor blocked.
- ▶ Do not use the space behind the heater as a storage space.
- ▶ The water in the boiler can be heated up to 65 °C. Risk of scalding!

- ▷ Never use boiler when empty.
- ▷ If the boiler is not being used, empty it if there is any risk of frost.
- ▷ Only operate the boiler with the maximum temperature setting if you require a large quantity of warm water. This protects the boiler against the build-up of limescale.

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

Initial start-up

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

9.2.1 To heat properly

Fig. 103 Air outlet nozzle (hot-air heater)

Hot air distribution

Several air outlet nozzles (Fig. 103) are built into the vehicle. Pipes conduct the warm air to the air outlet nozzles. Turn the air outlet nozzles in a suitable position so the air can escape as required. To avoid draft close the air outlet nozzles on the dashboard and set the air distribution of the base vehicle to air circulation.

Adjusting the air outlet nozzles

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

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

9.2.2 Equipment

The vehicle is equipped with the Combi 4 Truma hot-air heater (gas heater plus production of hot water) as standard, depending on the ground plan.

The following equipment is available as an option:

- Combi 6 Truma hot-air heater (gas heater plus production of hot water)
- Combi 6 E Truma hot-air heater (gas hybrid heater plus production of hot water with integrated electric heating rods for gas, electric or mixed operation)
- Combi D 6 Truma hot-air heater (diesel vehicle heater and production of hot water)

Position of heater

The heater is installed in a bench.

Position of CP plus operating unit

The CP plus operating unit is installed in the storage cupboard above the seating group.

▷ The heater can be operated via the CP plus operating panel or via the 7" panel and the HYMER Connect app.

9.2.3 Gas-operated hot-air heater and boiler with CP plus digital operating unit

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

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

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

▷ If there is a risk of frost and the heater is not in operation, empty the boiler.

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

▷ The hot-air heater can even run on an empty boiler.

▷ If the power supply to the heater was interrupted, the time must be reset.

Maximum heat output

Heater	Gas operation
Combi 4	4000 W
Combi 6	6000 W

Operating unit

The operating unit is divided into two sections:

- Display
- Operating buttons

1 Display
2 Rotary push button
3 Back button

Fig. 104 Operating unit (hot-air heater and boiler)

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

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

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

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

Operating buttons

The operating buttons have the following functions:

Button	Button operation	Function
Rotary push button (Fig. 104,2)	Turn to the right	Menu is run through from left to right
		Values are increased
	Turn to the left	Menu is run through from right to left
		Values are decreased
	Press briefly	Selected value is saved
		Menu item is selected for changing values (selected menu item flashes)
	Press (3 seconds)	Switch on or switch off
Back button (Fig. 104,3)	Press	Return from a menu item without saving values

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

Fig. 105 Operating unit with displays

Display

The display is divided into four sections:

- Status line (Fig. 105,2)
- Upper menu line (Fig. 105,3)
- Display area (Fig. 105,8)
- Lower menu line (Fig. 105,5)

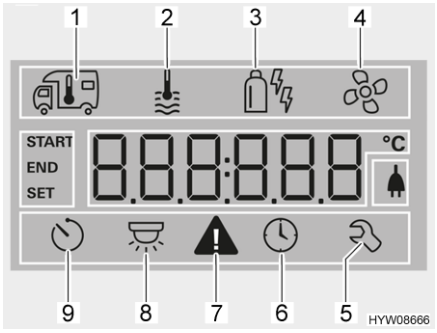
Switching operating unit on/off:

- Press and hold the rotary push button (Fig. 105,6) for approx. 3 seconds. Both menu lines (Fig. 105,3 and Fig. 105,5) are displayed. The first symbol flashes.

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

Carrying out settings:

- Turn rotary push button (Fig. 105,6) until the required menu symbol flashes.
- Press rotary push button.
- Turn rotary push button until the required value is displayed.
- Press rotary push button to save the value set. If you do not wish to change the value originally set: Press back button (Fig. 105,7).



1 Heater
2 Hot water
3 Operating mode
4 Fan
5 Service menu
6 Setting the time
7 Warning symbol
8 Lighting (not used here)
9 Timer

Fig. 106 Display (operating unit)

Switching on the heater:

- Open the regulator tap on the gas bottle and the gas isolator tap "Heater/boiler".
- Turn rotary push button (Fig. 105,6) until the heater menu symbol (Fig. 106,1) flashes.
- Press rotary push button.

- Turn rotary push button until required value is displayed.
- Press rotary push button to save the value set. The symbol in the status line (Fig. 105,2) flashes until the room temperature set is reached. If you do not wish to change the value originally set: Press back button (Fig. 105,7).

Switching off the heater:

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

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

Switching on production of hot water:

- Open the regulator tap on the gas bottle and the gas isolator tap "Heater/boiler".
- Turn rotary push button (Fig. 105,6) until the hot water menu symbol (Fig. 106,2) flashes.
- Press rotary push button.
- Turn rotary push button until the required value is displayed:
  - OFF: Production of hot water is switched off.
  - 40°: Hot water is heated to 40 °C.
  - 60°: Hot water is heated to 60 °C.
  - BOOST: Fast heating of hot water (boiler priority) for max. 40 minutes. The water temperature is then held at a higher level for two reheating cycles (approximately 62 °C).
- Press rotary push button to save the value set. The symbol in the status line (Fig. 105,2) flashes until the hot water temperature set is reached. If you do not wish to change the value originally set: Press back button (Fig. 105,7).

Switching off production of hot water:

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

Safety/drainage valve

The boiler is equipped with a safety/drainage valve (Fig. 107). The safety/drainage valve prevents water in the boiler from freezing, when there is frost and the heater is not switched on.

▷ When the vehicle is not used for a long period of time, open the safety/drainage valve and empty the boiler.

▷ At temperatures below 3 °C the safety/drainage valve opens automatically. Only if the temperature of the safety/drainage valve lies above 7 °C can it be shut again.

▷ The water pump and the water fittings are not protected against freezing by the safety-/drainage valve.

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

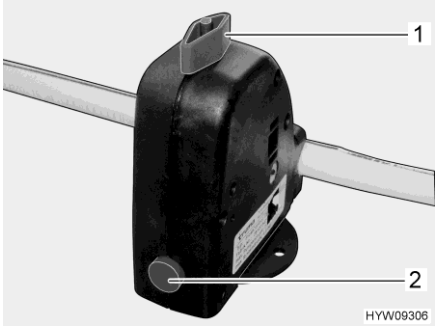


Fig. 107 Safety/drainage valve (boiler)

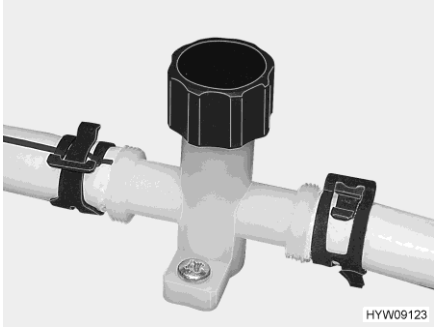


Fig. 108 Drain cock (water pipe)

Position

The safety/drainage valve is installed in the bench box.

Filling/emptying the boiler

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

Filling the boiler with water:

- Switch on the 12 V power supply on the panel.
- Close the safety/drainage valve. Turn the knob (Fig. 107,1) perpendicular to the safety/drainage valve and push the push button (Fig. 107,2) in.
- Set all the water taps to "Hot" and open them. The water pump is turned on. The warm water pipes are filled with water.
- Keep the water taps open until the water flowing out of the water taps has no bubbles in it. This is the only way to ensure that the boiler is full of water.
- Close all water taps.

Emptying the boiler:

- Switch off hot water production.
- Open the safety/drainage valve. To do this turn the knob (Fig. 107,1) parallel to the safety/drainage valve. The push button (Fig. 107,2) jumps out. The boiler is drained to the outside by the safety/drainage valve.
- Check whether the water has been drained completely from the boiler (approx. 10 litres).
- Close the drain cocks. In order to do this, turn the cap of the drain cock (Fig. 108) in a clockwise direction.

Setting the fan:

- Turn rotary push button (Fig. 105,6) until the fan menu symbol (Fig. 106,4) flashes.
- Press rotary push button.
- Turn rotary push button until the required value is displayed:
  - OFF: Fan is switched off.
  - VENT: Air circulation
  - ECO: Low fan setting
  - HIGH: High fan setting
  - BOOST: Fast room heating. Boost is available if the current room temperature is at least 10 °C below the selected room temperature.
- Press rotary push button to save the value set. If you do not wish to change the value originally set: Press back button (Fig. 105,7).

Setting the timer:

- Turn rotary push button (Fig. 105,6) until the timer menu symbol (Fig. 106,9) flashes.
- Press rotary push button. The start time is displayed and the hour display flashes.

- Turn rotary push button until the hour of the selected start time is displayed.
- Press rotary push button. The minute display flashes.
- Turn rotary push button until the minute of the selected start time is displayed.
- Press rotary push button.
- Proceed in the same way to set the switch-off time, the required room temperature, the hot water setting and the fan setting.
- Press rotary push button. The timer is activated. The timer symbol (Fig. 106,9) flashes when the timer is programmed and active.

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

Fault display

The warning symbol (Fig. 106,7) flashes in the event of a warning. The heater continues to operate. In the event of only a temporary fault, the warning symbol goes out automatically.

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

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

9.2.4 Gas/diesel hybrid heater and boiler with electric heating rods and CP plus digital operating unit

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

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

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

▷ If there is a risk of frost and the heater is not in operation, empty the boiler.

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

▷ The hot-air heater can even run on an empty boiler.

▷ If the power supply to the heater was interrupted, the time must be reset.

Maximum heat output

Heater	Gas operation	Electrical operation	Mixed operation (diesel and electrical operation)	Mixed operation (gas and electrical operation)
Combi 4E	4000 W	1800 W	-	3800 W
Combi 6E/D6E	6000 W	1800 W	5800 W	6900 W

Operating unit

The operating unit is divided into two sections:

- Display
- Operating buttons

1 Display
2 Rotary push button
3 Back button

Fig. 109 Operating unit (hot-air heater and boiler)

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

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

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

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

Operating buttons

The operating buttons have the following functions:

Button	Button operation	Function
Rotary push button (Fig. 109,2)	Turn to the right	Menu is run through from left to right
		Values are increased
	Turn to the left	Menu is run through from right to left
		Values are decreased
	Press briefly	Selected value is saved
		Menu item is selected for changing values (selected menu item flashes)
	Press (3 seconds)	Switch on or switch off
Back button (Fig. 109,3)	Press	Return from a menu item without saving values

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

Fig. 110 Operating unit with displays

Display

The display is divided into four sections:

- Status line (Fig. 110,2)
- Upper menu line (Fig. 110,3)
- Display area (Fig. 110,8)
- Lower menu line (Fig. 110,5)

Switching operating unit on/off:

■ Press and hold the rotary push button (Fig. 110,6) for approx. 3 seconds. Both menu lines (Fig. 110,3 and Fig. 110,5) are displayed. The first symbol flashes.

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

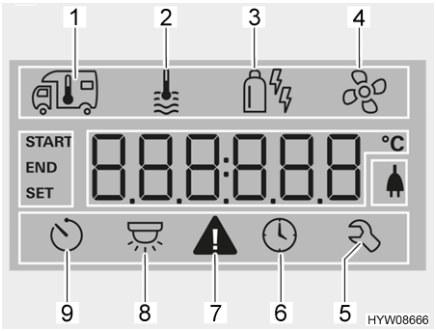
Carrying out settings:

■ Turn rotary push button (Fig. 110,6) until the required menu symbol flashes.

■ Press rotary push button.

■ Turn rotary push button until the required value is displayed.

■ Press rotary push button to save the value set. If you do not wish to change the value originally set: Press back button (Fig. 110,7).



1 Heater
2 Hot water
3 Operating mode
4 Fan
5 Service menu
6 Setting the time
7 Warning symbol
8 Lighting (not used here)
9 Timer

Fig. 111 Display (operating unit)

Switching on the heater:

■ Open the regulator tap on the gas bottle and the gas isolator tap "Heater/boiler".

■ Turn rotary push button (Fig. 110,6) until the heater menu symbol (Fig. 111,1) flashes.

■ Press rotary push button.

- Turn rotary push button until required value is displayed.
- Press rotary push button to save the value set. The symbol in the status line (Fig. 110,2) flashes until the room temperature set is reached. If you do not wish to change the value originally set: Press back button (Fig. 110,7).

Switching off the heater:

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

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

Switching on production of hot water:

- Open the regulator tap on the gas bottle and the gas isolator tap "Heater/boiler".
- Turn rotary push button (Fig. 110,6) until the hot water menu symbol (Fig. 111,2) flashes.
- Press rotary push button.
- Turn rotary push button until the required value is displayed:
  - OFF: Production of hot water is switched off.
  - 40°: Hot water is heated to 40 °C.
  - 60°: Hot water is heated to 60 °C.
  - BOOST: Fast heating of hot water (boiler priority) for max. 40 minutes. The water temperature is then held at a higher level for two reheating cycles (approximately 62 °C).
- Press rotary push button to save the value set. The symbol in the status line (Fig. 110,2) flashes until the hot water temperature set is reached. If you do not wish to change the value originally set: Press back button (Fig. 110,7).

Switching off production of hot water:

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

Safety/drainage valve

The boiler is equipped with a safety/drainage valve (Fig. 112). The safety/drainage valve prevents water in the boiler from freezing, when there is frost and the heater is not switched on.

▷ When the vehicle is not used for a long period of time, open the safety/drainage valve and empty the boiler.

▷ At temperatures below 3 °C the safety/drainage valve opens automatically. Only if the temperature of the safety/drainage valve lies above 7 °C can it be shut again.

▷ The water pump and the water fittings are not protected against freezing by the safety-/drainage valve.

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

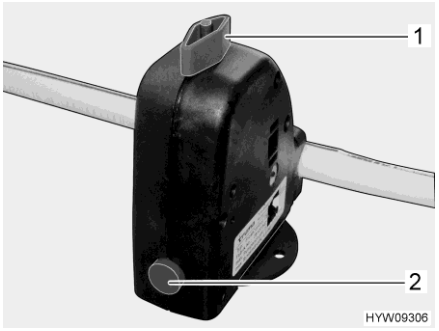


Fig. 112 Safety/drainage valve (boiler)

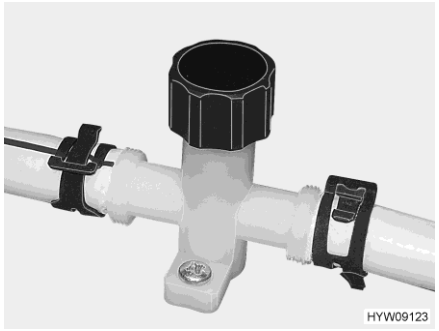


Fig. 113 Drain cock (water pipe)

Position

The safety/drainage valve is installed in the bench box.

Filling/emptying the boiler

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

Filling the boiler with water:

- Switch on the 12 V power supply on the panel.
- Close the safety/drainage valve. Turn the knob (Fig. 112,1) perpendicular to the safety/drainage valve and push the push button (Fig. 112,2) in.
- Set all the water taps to "Hot" and open them. The water pump is turned on. The warm water pipes are filled with water.
- Keep the water taps open until the water flowing out of the water taps has no bubbles in it. This is the only way to ensure that the boiler is full of water.
- Close all water taps.

Emptying the boiler:

- Switch off hot water production.
- Open the safety/drainage valve. To do this turn the knob (Fig. 112,1) parallel to the safety/drainage valve. The push button (Fig. 112,2) jumps out. The boiler is drained to the outside by the safety/drainage valve.
- Check whether the water has been drained completely from the boiler (approx. 10 litres).
- Close the drain cocks. In order to do this, turn the cap of the drain cock (Fig. 113) in a clockwise direction.

Operating modes

The hot-water heater with the boiler can be operated with various energy sources.

Selecting operating mode:

- Turn rotary push button (Fig. 110,6) until the menu symbol operating mode (Fig. 111,3) flashes.
- Press rotary push button.
- Turn rotary push button until the desired operating mode is displayed:
  - Gas operation
  - Electrical operation, output level 1 (900 W)
  - Electrical operation, output level 2 (1800 W)
  - Gas operation and electrical operation output level 1 (900 W)
  - Gas operation and electrical operation output level 2 (1800 W)
- Press the rotary push button to save the set operating mode. To revert to the original setting: Press back button (Fig. 110,7).

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

▷ With output level 1 (900 W), the current consumption is 3.9 A. With output level 2 (1800 W), the current consumption is 7.8 A.

Setting the fan:

- Turn rotary push button (Fig. 110,6) until the fan menu symbol (Fig. 111,4) flashes.
- Press rotary push button.
- Turn rotary push button until the required value is displayed:
  - OFF: Fan is switched off.
  - VENT: Air circulation
  - ECO: Low fan setting
  - HIGH: High fan setting
  - BOOST: Fast room heating. Boost is available if the current room temperature is at least 10 °C below the selected room temperature.
- Press rotary push button to save the value set. If you do not wish to change the value originally set: Press back button (Fig. 110,7).

Setting the timer:

- Turn rotary push button (Fig. 110,6) until the timer menu symbol (Fig. 111,9) flashes.
- Press rotary push button. The start time is displayed and the hour display flashes.
- Turn rotary push button until the hour of the selected start time is displayed.
- Press rotary push button. The minute display flashes.
- Turn rotary push button until the minute of the selected start time is displayed.
- Press rotary push button.
- Proceed in the same way to set the switch-off time, the required room temperature, the hot water setting and the fan setting.
- Press rotary push button. The timer is activated. The timer symbol (Fig. 111,9) flashes when the timer is programmed and active.

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

Fault display

The warning symbol (Fig. 111,7) flashes in the event of a warning. The heater continues to operate. In the event of only a temporary fault, the warning symbol goes out automatically.

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

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

9.2.5 Wall flue

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

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

Fig. 114 Wall flue (hot-air heater)

The wall flue is mounted on the left side wall.

9.2.6 Diesel hot-air heater and boiler

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

The function and operation are the same as for the gas-operated hot-air heater, see section 9.2.3.

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

9.3 Truma Aventa air conditioning unit

- ▷ The cooling circuit may only be opened by the manufacturer or an authorised specialist workshop.
- ▷ Do not block the air inlets and air outlets.

▷ Do not drive on any gradients or inclines greater than 8 % when the air conditioning unit is in operation. Otherwise the compressor could be damaged.

▷ Do not operate the unit in cooling mode for extended periods when the vehicle is on an incline. Condensation can enter the interior.

▷ The air conditioning unit only runs if the vehicle is connected to a 230 V power supply.

▷ The external 230 V power supply must be protected with fuses of at least 4 A (Aventa compact) or 6 A (Aventa compact plus). It is otherwise not possible to operate the air conditioning unit properly.

▷ Always point the remote control at the infrared receiver when using it.

▷ Also read the manufacturer's instruction manual.

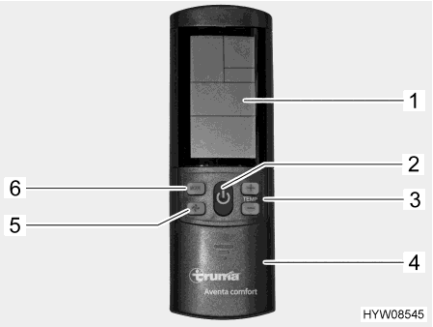
Operating modes

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

- Automatic
- Cooling
- Air circulation

Remote control

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



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

Fig. 115 Remote control (air conditioning unit)

Automatic mode

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

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

Switching on:

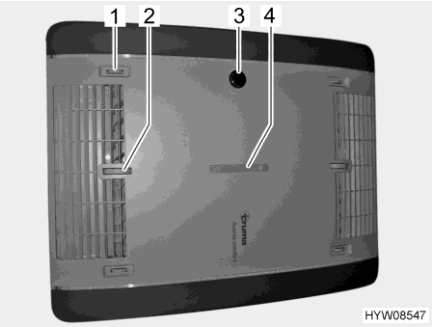
■ Press the On/Off button (Fig. 115,2). The last settings selected are accepted.

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

■ Use the "+" and "–" buttons (Fig. 115,3) to set the desired temperature.

Switching off:

■ Press the On/Off button (Fig. 115,2). The lighting can continue to be operated.



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

Fig. 116 Function display and air distribution (air conditioning unit)

9.3.1 Operation and display on the unit

Certain functions can be operated directly on the unit.

Air distribution adjustment:

- Set the small adjustment wheel and sliding regulator for stepless air distribution as desired.

Switching on/off manually:

- Press the micro button (e.g. with a ballpoint pen if the remote control is not in reach).

Function display

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

Manual mode

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

Switching on the cooling:

- Press the On/Off button (Fig. 115,2).
- Press the mode selection button (Fig. 115,6) until the cooling symbol appears in the display (Fig. 115,1).
- Use the "+" and "–" buttons (Fig. 115,3) to set the desired temperature.
- Use the "" selection button (Fig. 115,5) to set the desired fan level.

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

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

Switching on air circulation:

- Press the On/Off button (Fig. 115,2).
- Press the mode selection button (Fig. 115,6) until the air circulation symbol appears in the display (Fig. 115,1).
- Use the "+" and "–" buttons (Fig. 115,3) to set the desired temperature.
- Use the "" selection button (Fig. 115,5) to set the desired fan level.

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

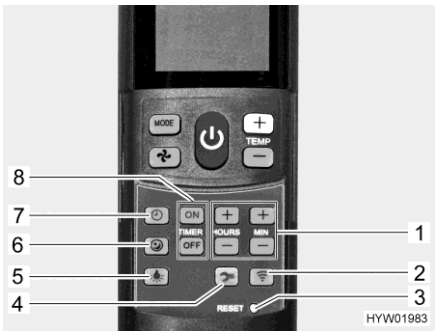


Fig. 117 Remote control with setting buttons (air conditioning unit)

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

Activating soft-start:

- Press the soft-start button (Fig. 117,6). The fan then runs at low speed in cooling mode, which makes it especially quiet.

Setting the time:

- Press the time button (Fig. 117,7).
- Set the hours and minutes with the buttons (Fig. 117,1).

Switching on the timer:

- Press the On/Off button (Fig. 115,2).
- Set the desired mode and temperature.

Programming the switching on time:

- Press "ON" button (Fig. 117,8).
- Press the buttons for setting the time (Fig. 117,1) until the desired time span until switch-on is reached.
- Press "ON" button (Fig. 117,8).

Programming the switch-off time:

- Press "OFF" button (Fig. 117,8).
- Press the buttons for setting the time (Fig. 117,1) until the desired time span until switch-off is reached.
- Press "OFF" button (Fig. 117,8).

Deactivating the timer:

- Press the "ON" or "OFF" button (Fig. 117,8) again.

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

Switching on the lighting:

- Press the light button (Fig. 117,5). The light is switched on at the last set dimming level.

Dimming the lighting:

- Press the light button (Fig. 117,5) and keep it pressed until the desired brightness is reached.

Switching off the lighting:

- Press the light button (Fig. 117,5).

▷ The Setup button (Fig. 117,4) is used to connect the remote control with the air conditioning unit during first set-up.

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

9.4 Cooker

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

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

9.4.1 Gas cooker

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

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

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

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

Fig. 118 Gas cooker

Switching on:

- Open the regulator tap on the gas bottle and the "Hob" gas isolator tap.
- Open the gas cooker cover (Fig. 118,1).
- Turn the control knob (Fig. 118,2) on the burner you wish to use to the ignition position (large flame).
- Press the control knob down and hold it.
- Light the burner with a gas lighter, a match or other suitable means of lighting.
- Once the flame is burning, keep the control knob pressed for another 10 to 15 seconds, until the thermocouple automatically keeps the gas supply open.
- Release the control knob and turn to the desired setting.
- If ignition is unsuccessful, repeat the entire procedure.

Switching off:

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

9.5 Refrigerator

9.5.1 Thetford T1000

▶ Always keep the ventilation openings unobstructed.

▶ Due to technical reasons, the temperature in the refrigerator and in the freezer compartment cannot always be maintained at a constant level. Under adverse conditions, the food in the freezer compartment may thaw.

▷ Do not use any objects or hot air devices to accelerate defrosting.

▷ When the vehicle is exposed to intense sunlight: ventilate vehicle adequately.

▷ Before setting off, secure the products in the refrigerator against sliding.

▷ The refrigerator temperature depends on the ambient temperature (room temperature), the frequency the door is opened with, and the filling of the refrigerator. If required, readjust the cooling level.

▷ The living area battery has a limited power supply only. When the vehicle is stationary, do not use the refrigerator for long periods without it being connected to the 230 V connection.

▷ Check the collection tray for condensation before setting off and periodically during operation of the refrigerator.

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

Operating modes

The refrigerator is only operated with 12 V DC.

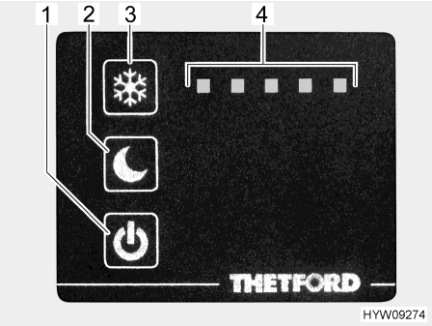
The 12 V power supply is always fed via the transformer/rectifier.

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

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

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

Conversion between the individual supply types is automatic.



1 On/off button with blue indicator lamp
2 Night mode button
3 Temperature setting button
4 Display of the cooling level

Fig. 119 Operating controls (refrigerator)

Switching on:

■ Press on/off button (Fig. 119,1) and hold for approximately 2 seconds. The blue indicator lamp shows that the refrigerator is working. The display (Fig. 119,4) shows the set cooling level. This display is dimmed after approximately 10 seconds.

Switching off:

■ Press on/off button (Fig. 119,1) and hold for approximately 2 seconds. The blue indicator lamp will go out slowly.

The cooling level, with which the refrigerator cools, must be selected depending on the room temperature. A high room temperature requires a higher cooling level. At a low room temperature, a lower cooling level would be enough.

Setting the cooling level:

■ Press the temperature setting button (Fig. 119,3) and hold for approximately 1 second. The currently set cooling level (Fig. 119,4) is displayed.

■ Press the temperature setting button (Fig. 119,3) as often as necessary until the desired cooling level is reached.

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

Switching on the night mode:

■ Press the night mode button (Fig. 119,2). The blue indicator lamp shows that the night mode is active.

Switching off the night mode:

- Press the night mode button (Fig. 119,2). The blue indicator lamp will go out. The refrigerator is working in normal mode again.

During operation, condensation may collect in the collection tray underneath the freezer compartment. The collection tray must be emptied periodically.

Emptying the collection tray:

- Push two pins (on the left-hand and the right-hand side of the collection tray) inwards.
- Pull collection tray out and empty it.

If an ice layer thicker than 3 mm has formed in several places of the freezer compartment, the refrigerator must be defrosted.

Defrosting:

- Switch off the refrigerator.
- Take all products out of the refrigerator.
- Leave the refrigerator door open.
- Place a suitable container underneath the drainage opening of the collection tray.
- Remove the stopper from the drainage opening.
- Wipe up the defrosting water with a sponge or cloth.
- When the refrigerator is defrosted: insert the stopper of the drainage opening again.
- Clean the refrigerator.

9.5.2 Thetford T2000

▶ Due to technical reasons, the temperature in the refrigerator and in the freezer compartment cannot always be maintained at a constant level. Under adverse conditions, the food in the freezer compartment may thaw and spoil.

▷ Heat is generated during operation. To prevent the refrigerator from overheating: always keep ventilation openings clear.

▷ Do not place hot objects in the refrigerator to speed up defrosting. Do not defrost the refrigerator with a hot air dryer or similar.

▷ Switch off the refrigerator for cleaning.

▷ The living area battery has a limited power supply only. Therefore, do not operate the refrigerator for a longer period of time when the vehicle is stationary and not connected to a 230 V supply.

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

Energy supply

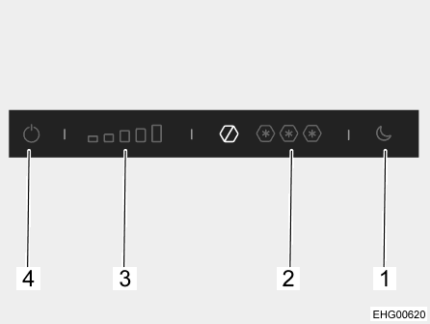
The refrigerator is only operated with 12 V DC.

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

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

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

Conversion between the individual supply types is automatic.



1 Night mode button
2 Cooling level indicator Freezer compartment
3 Cooling level indicator Refrigerator
4 On/off button

Fig. 120 Operating controls (refrigerator)

Switching on:

- Press the On/Off button (Fig. 120,4) and hold for a few seconds. The blue indicator lamp shows that the refrigerator is working. The cooling level indicator Refrigerator (Fig. 120,3) shows the set cooling level.

Switching off:

- Press the On/Off button (Fig. 120,4) and hold for a few seconds. The blue indicator lamp will go out.

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

Setting the cooling level:

- Press the desired cooling level for the refrigerator (Fig. 120,3).

Setting the freezing level:

- Press the desired cooling level for the freezer compartment (Fig. 120,2).

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

Switching on the night mode:

- Press the night mode button (Fig. 120,1). The blue indicator lamp shows that the night mode is active.

Switching off the night mode:

- Press the night mode button (Fig. 120,1). The blue indicator lamp will go out. The refrigerator is working in normal mode again.

During operation, condensation may collect in the collection tray underneath the freezer compartment. The collection tray must therefore be emptied periodically.

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

9.5.3 Cruise 85

▷ The living area battery has a limited power supply only. When the vehicle is stationary, do not use the refrigerator for long periods without it being connected to the 230 V connection.

Operating modes

The refrigerator is only operated with 12 V DC.

The 12 V power supply is always fed via the transformer/rectifier.

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

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

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

Conversion between the individual supply types is automatic.

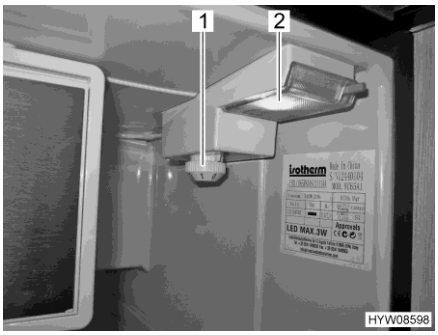


Fig. 121 Operating control (refrigerator)

Switching on:

- Open the refrigerator door.
- Rotate the temperature controller (Fig. 121,1) clockwise from the "0" position to the "1" position. The device is switched on, the interior lighting (Fig. 121,2) is on.

Switching off:

- Rotate the temperature controller (Fig. 121,1) anti-clockwise to the "0" position. A small amount of resistance will be felt.

Adjusting the temperature:

- Set the temperature with the temperature controller (Fig. 121,1).
  - Position "1" = lowest cooling power
  - Position "7" = highest cooling power

Defrosting:

- Switch off the refrigerator.
- Open the doors of the refrigerator and the freezer compartment and leave them open.
- Mop up the defrosting water with a sponge or cloth.
- Clean the device.

Ventilation position

When the refrigerator is not in use, always leave the refrigerator door open. This prevents mould forming.

- ▷ When frozen food is kept in the freezer compartment, temperatures of -18 °C or lower are reached in the freezer compartment even when the temperature controller is set to a low setting.
- ▷ The refrigerator temperature depends on the ambient temperature (installation location), the frequency the door is opened with and the charging. If necessary, readjust the temperature controller.
- ▷ Further information can be obtained in the manufacturer's instruction manual.

9.5.4 Refrigerator door locking mechanism

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

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

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

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

T1000/T2000

The refrigerator is opened and closed with the handle on the door.

The refrigerator door may be locked in ventilation position with a swivelling bracket.

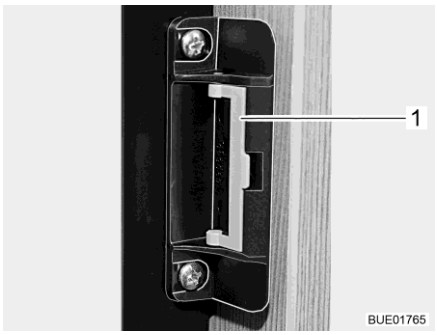


Fig. 122 Locking device (normal position)

Fig. 123 Locking device (ventilation position)

Locking in the ventilation position:

- ■ Open the refrigerator door.
- ■ Swing the bracket (Fig. 122,1) to the front (Fig. 123).

If the refrigerator door is closed now, a gap will remain between the refrigerator door and the refrigerator.

Cruise 85 The refrigerator is opened and closed with the handle on the door.

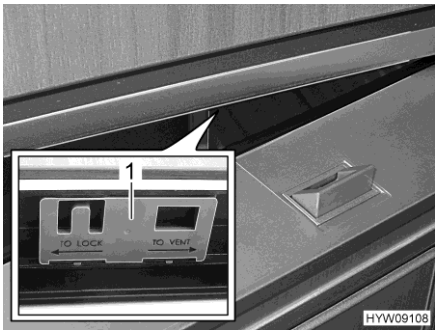


Fig. 124 Refrigerator door (ventilation position)

Ventilation position:

- Open the refrigerator door.
- Push slider (Fig. 124,1) towards the right.

If the refrigerator door is closed now, a gap will remain towards the refrigerator.

Chapter overview

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

At the end of the chapter, you will find the positions of the components of the sanitary system.

10.1 Water supply, general

- ▶ Fill water tank from supply systems that have been verified to provide drinking water quality.
- ▶ Only use such hoses or containers when filling that have been approved for use with drinking water.
- ▶ Thoroughly rinse filling hose or container with drinking water before use (2 to 3 times capacity).
- ▶ Empty filling hose or container completely after use and close openings of the filling hose or container.
- ▶ Water left standing in the water tank or in the water pipes becomes undrinkable after a short period. Therefore, before each use of the vehicle, thoroughly clean the water pipes and the water tank. After each use of the vehicle completely empty the water tank and the water pipes.
- ▶ In the case of lay-ups lasting more than a week disinfect the water system before using the vehicle (see chapter 11).

- ▷ If the vehicle is not used for several days or if it is not heated when there is a risk of frost, empty the entire water system. Make certain that the water pump is switched off. Otherwise, the water pump will overheat and may get damaged. Leave the water taps on in central position. Leave all drain cocks open. Frost damage to appliances, frost damage to the vehicle and deposits in water-carrying components can be avoided in this way.
- ▷ Never operate water pump when the water tank is empty.
- ▷ If the vehicle has a frost protection valve, this valve automatically opens the warm water pipe before frost damage can occur. For a lay-up, this valve must also be opened manually. Position (if present): in the seat box, underneath a floor plate.

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

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

Water pump

The water pump is switched on and off via the 7" panel.

- ▷ Switch on the water pump on the 7" panel before using the water fittings.
- ▷ When the water tank is re-filled, an air bubble may form at the bottom of the pump. This air bubble will prevent water from being drawn in. Shake the water pump up and down energetically in the water.

10.2 Water system

10.2.1 Water tank

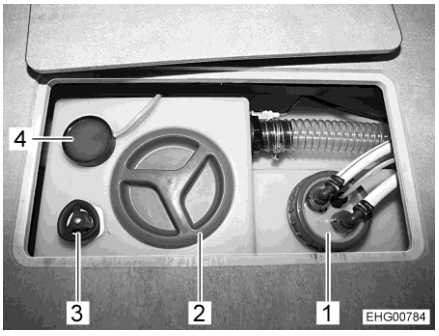
The water tank holds up to 110 l.

Hot air from the living area heater heats the waste water tank. This protects the water tank from frost.

▷ If the living area heater is out of order, the water tank no longer is sufficiently protected against frost. If there is a risk of frost, empty the water tank and leave the drain cock open.

▷ For driving safety and for regulatory reasons, when the vehicle is motion the fill quantity must be reduced to approximately 20 litres. If the water is drained using the safety drainage rotary handle (see section 10.2.4), a residual amount of approx. 20 l remains in the water tank.

The water tank is installed in the underfloor base and is accessible via a floor trap.



1 Water pump
2 Cleaning opening
3 Rotary handle (water drainage)
4 Sensor (fill level)

Fig. 125 Water tank

10.2.2 Filling the water system

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

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

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

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

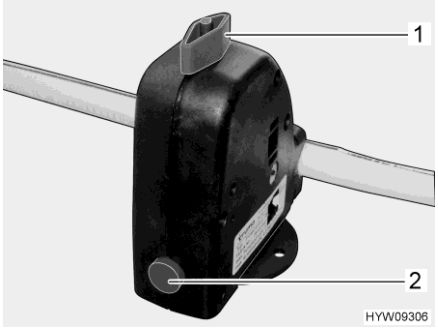


Fig. 126 Safety/drainage valve (Truma)

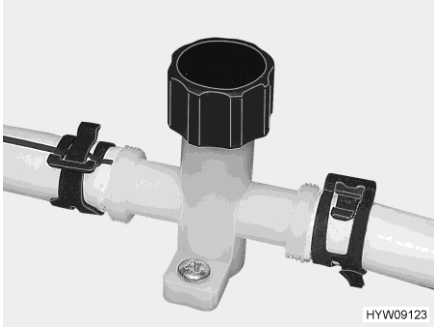


Fig. 127 Drain cock (water pipe)

- Close the safety/drainage valve (Fig. 126). Turn the knob (Fig. 126,1) perpendicular to the safety/drainage valve and push the push button (Fig. 126,2) in.
  If the temperature is below 6 °C, the safety/drainage valve cannot be closed.
- Close all drain cocks (Fig. 127). To do so, close the caps by turning them in a clockwise direction and set the rocking lever in a horizontal position. The safety/drainage valve and the drain cocks are installed in the bench box or under a floor trap.
- Close all water taps.
- Close drainage opening on the water tank.
- Open the drinking water filler neck on the outside of the vehicle.
- Fill the water tank with drinking water. Use a hose certified for drinking water for filling.
- Set all the water taps to "Hot" and open them. The water pump is turned on. The warm water pipes are filled with water.
- Keep the water taps open until the water flowing out of the water taps has no bubbles in it. This is the only way to ensure that the boiler is full of water.
- Set all water taps to "Cold" and leave them open. This will fill the cold water pipes with water.
- Keep the water taps open until the water flowing out of the water taps has no bubbles in it.
- Close all water taps.
- Close drinking water filler neck.
- Check that the cap on the water tank is not leaking.

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

10.2.3 Topping up the water

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

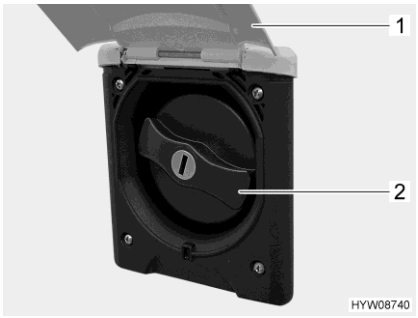


Fig. 128 Cap (drinking water filler neck)

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

The drinking water filler neck is marked by the symbol "".

Opening the drinking water filler neck:

- Swivel the external flap (Fig. 128,1) upwards.
- Insert key into locking cylinder and turn a quarter turn. The cap is unlocked.
- Remove the key.
- Turn the blue cap (Fig. 128,2) one quarter turn.
- Remove the cap.

Filling with water:

- Fill the water tank with drinking water. Use a hose certified for drinking water for filling.

Closing the drinking water filler neck:

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

10.2.4 Draining water

Rotary handle The rotary handle for draining off the water is mounted on the water tank.

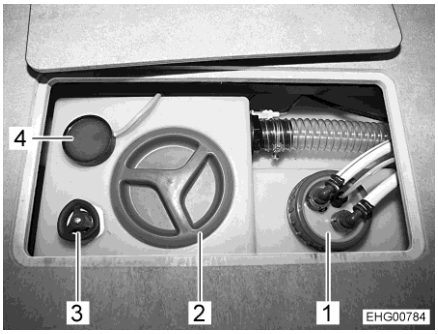


Fig. 129 Water drainage rotary handle

Opening:
- Turn the rotary handle (Fig. 129,3) on the water anticlockwise as far as possible.

Closing:
- Turn the rotary handle (Fig. 129,3) on the water tank clockwise as far as possible.

10.2.5 Reducing the water quantity for mobile operation

Rotary handle The rotary handle is installed on the water tank.

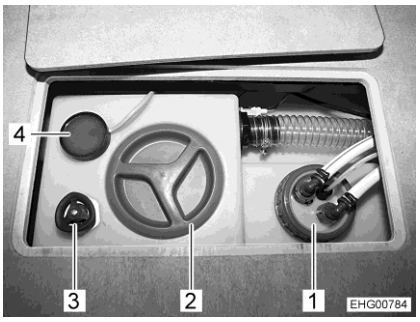


Fig. 130 Rotary handle (water tank)

Opening:
- Turn the rotary handle (Fig. 130,3) on the water tank in an anticlockwise direction as far as it will go. Excess water will drain away leaving approx. 20 litres in the tank.

Closing:
- Turn the rotary handle (Fig. 130,3) on the water tank in a clockwise direction as far as it will go.

Position Underneath a floor trap.

10.2.6 Emptying the water system

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

▷ Take note of the environmental tip in this chapter.

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

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

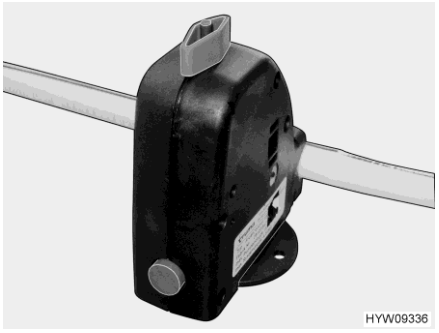


Fig. 131 Safety/drainage valve

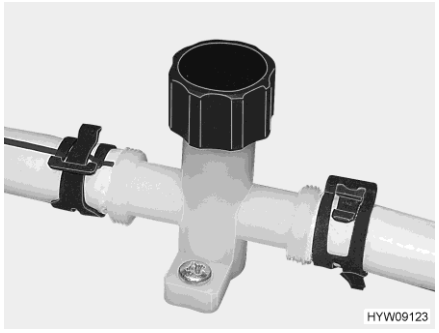


Fig. 132 Drain cock (water pipe)

- Open the safety/drainage valve (Fig. 131). To do this, turn the knob (Fig. 131) parallel to the safety/drainage valve.
- Open all drain cocks (Fig. 132).
- Unscrew the cap of the water tank.
- Remove water pump and water hose from the water tank.
- Open the water tank drain.
- Open all water taps and set to the central position.
- Hold the shower handset up.
- Unscrew the lock ring on the water tank.
- Take water pump (fitted to the cover) as far as the connecting lines allow.
- Hold the water pump up until the water pipes are completely empty.
- Check whether the water tank is completely empty.
- Set shower handset down in the shower tray.
- Empty the waste water tank. Take note of the environmental tips in this chapter.

- Empty the sewage tank. Take note of the environmental tips in this chapter.
- Clean the water tank and then rinse it out thoroughly.
- Let the water system dry for as long as possible.
- After emptying, leave all water taps on in the central position.
- Leave all the drain cocks and safety/drainage valves open.

10.3 Water filter (optional)

- ▶ Do not use the water filter to filter well water, waste water, river water or rainwater. The water filter is not suitable for obtaining drinking water in this way.
- ▶ Do not use the water filter to filter hot water.
- ▶ For handling the water filter safely, observe the separate instruction manual of the manufacturer (especially the safety instructions).

Purpose

The water filter is only intended for filtering cold drinking water.

The water filter produces hygienic fresh water from it.

Position

The water filter is installed in the storage compartment on the left in the rear (on the Ayers Rock: in the platform in front of the seat box). Access is possible via an authorised dealer.

The filter cartridge of the water filter is connected to the filter head via a bayonet lock.

The filter head has an integrated stop valve. No additional stop valves are required in the inlet and outlet.

▷ The procedure for changing the filter and further information can be obtained in the separate manufacturer's instruction manual.

10.4 Waste water tank

The waste water tank holds approx. 95 l.

Position

The waste water tank is installed underneath a floor trap and is accessible via this floor trap.

Hot air from the living area heater heats the waste water tank. This protects the waste water tank from frost.

▷ If the living area heater is out of order, the waste water tank no longer is sufficiently protected against frost. If there is a risk of frost, empty the waste water tank and leave the drain cock open.

▷ Never pour boiling water directly into the sink outlet. Boiling water could cause deformation and leaks in the waste water pipe system.

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

The drain cock the waste water is opened and shut electrically via an operating rocker switch.

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

Electrically operated drain cock

The drain cock for the waste water tank is opened and closed using a rocker switch of the switch panel in the driver's cabin. To prevent an unwanted opening of the drain cock, the rocker switch is provided with a safety slide button.

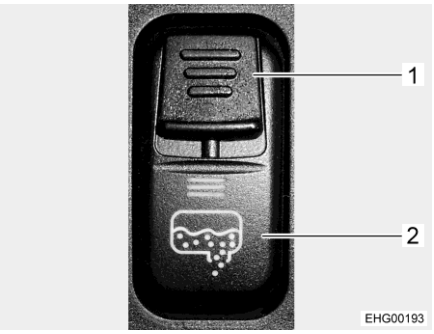


Fig. 133 Rocker switch (waste water drainage)

Emptying the waste water tank:

- Position the vehicle over the outflow of the waste water disposal station.
- Push the safety slide button (Fig. 133,1) on the rocker switch downwards and, at the same time, press the lower part of the rocker switch (Fig. 133,2). Doing this, the waste water valve is opened and the waste water tank is emptied. The LED is lit as long as the waste water valve is open.

Manual drainage of the waste water tank

If drainage is not possible using the electrical operation of the waste water valve, you can open the waste water valve manually and empty the waste water tank in this way.

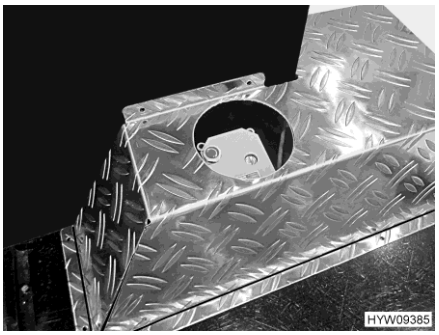


Fig. 134 Electrical waste water valve (rear garage)

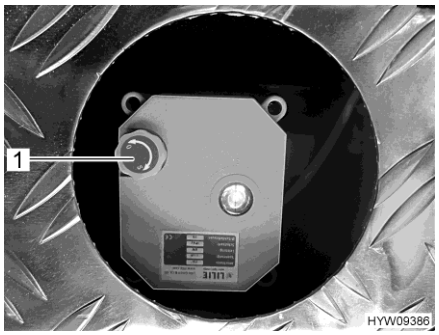


Fig. 135 Handwheel (waste water valve)

Emptying the waste water tank manually:

- Position the vehicle over the outflow of the waste water disposal station or connect waste water hose and guide into outflow.
- To open the waste water valve, pull handwheel (Fig. 135,1) upwards and turn in an anticlockwise direction as far as it will go. The direction of rotation (O for opening, S for closing) is marked on the handwheel.

- Wait until the waste water tank is empty.
- To close the waste water valve, pull handwheel (Fig. 135,1) upwards and turn in a clockwise direction as far as it will go.
- Remove and store the waste water hose if necessary.

10.5 Toilet compartment

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

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

▷ After taking a shower, rinse soap residue from the shower tray, otherwise cracks can appear in the shower tray over time.

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

▷ Pitch the vehicle so that it is as horizontal as possible. Otherwise, the water from the shower tray will not be able to drain properly.

▷ During the journey, close the louvre door (Fig. 136,1). An open louvre door could otherwise cause noises.

▷ Further information about cleaning the toilet compartment can be found in the section 11.3.

Shower grate insert

The shower grate surface is made of cork. The shower grate insert protects the shower tray and provides a dry floor, even after taking a shower.

Fig. 136 Shower grate insert

Observe the following for a long service life:

- Before taking a shower, take the shower grate insert (Fig. 136,2) out of the shower.
- After taking a shower, put the shower grate insert back into the shower tray.
- Clean the shower grate insert at least every six months with a lint-free cloth.

10.5.1 Wash basin

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

Fig. 137 Wash basin (folded upwards)

Folding upwards:

- Grip the wash basin (Fig. 137,1) at the front edge and swivel it upwards to the wall until it is held in this position by magnetic force.

Folding down:

- Grip the wash basin (Fig. 137,1) at the front edge and pull it away from the wall against the magnetic force.
- Slowly swivel the wash basin downwards as far as it will go.

10.6 Toilet

▷ Do not load the toilet with more than a maximum of 120 kg.

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

▷ Do not sit on the lid of the toilet. The lid is not designed to bear the weight of a person and could break.

▷ Use a suitable chemical for this toilet. The ventilation will merely remove the odour but not germs and gases. Germs and gases will have a detrimental effect on the sealing rubbers.

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

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

10.6.1 Swivel toilet

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

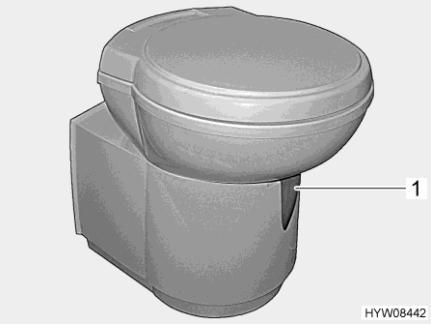


Fig. 138 Thetford toilet bowl (swivelling)

Fig. 139 Flush button/indicator lamp (Thetford toilet)

The operating unit is located close to the toilet bowl.

Flushing:

- Before flushing open the sliding trap of the Thetford toilet. To do this, push the slide lever (Fig. 138,1) in an anticlockwise direction.
- For flushing, press the blue flush button (Fig. 139,1).
- After flushing close the sliding trap. To do this, push the slide lever in a clockwise direction.

The indicator lamp (Fig. 139,2) lights up whenever the sewage tank has to be emptied.

10.6.2 Emptying the sewage tank

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

Fig. 140 Flap (sewage tank)

- Slide the slide lever on the toilet bowl in a clockwise direction. The sliding trap is closed.
- Open the flap for the sewage tank on the outside of the vehicle. Insert the key into the locking cylinder of the push-button lock (Fig. 140,1) and turn a quarter turn in a clockwise direction.

- Remove the key.
- Press both push-button locks (Fig. 140,2) simultaneously with your thumb and open the flap for the sewage tank.

Fig. 141 Sewage tank (in the vehicle)

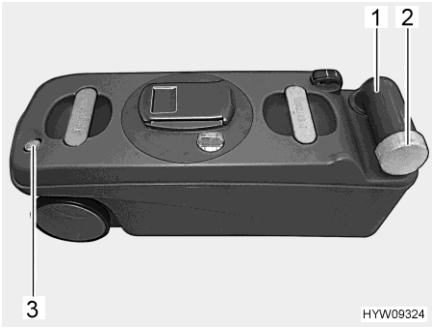


Fig. 142 Sewage tank

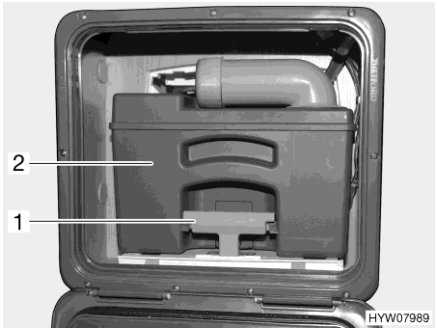


Fig. 143 Sewage tank (in the vehicle) (alternative)

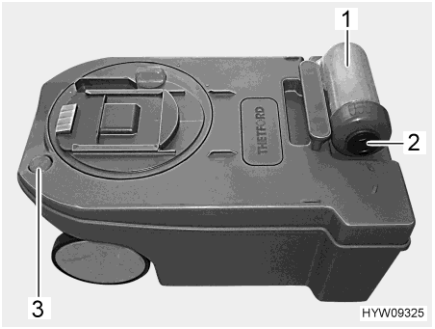


Fig. 144 Sewage tank (alternative)

- Pull the safety clamp (Fig. 141,3) upwards and use the handle (Fig. 141,2) to pull out the sewage tank (Fig. 141,1).
  Or:
  Pull the retaining clip (Fig. 143,1) upwards and pull out the sewage tank (Fig. 143,2).
- At a disposal station that is especially provided for this purpose, swivel the outlet pipe (Fig. 142,1 or Fig. 144,1) forwards and unscrew cover (Fig. 142,2 or Fig. 144,2).
- Press the coloured ventilation button (Fig. 142,3 or Fig. 144,3) and hold it there until the sewage tank is empty.
- Clean the sewage tank with fresh water.
- Close outlet pipe with cover and swivel it back.
- Push sewage tank into the disposal chute until it engages.
- Close flap for sewage tank.
- Fill in new sanitary liquid.

10.6.3 Winter operation

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

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

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

10.6.4 Temporary lay-up

▷ If the toilet is not used for a longer period of time, empty the water tank, the waste water tank, the sewage tank and the water pipes.

Laying up the toilet:

- Empty the water tank and waste water tank.
- Flush the toilet until no more water runs into the toilet. Note that the pump can get damaged after one minute at the latest if it runs dry.
- Empty the sewage tank.
- Rinse the sewage tank thoroughly.
- Leave the drainage neck on the sewage tank open.
- Let the sewage tank dry for as long as possible.

10.7 External shower (optional)

The vehicle is equipped with an external shower.

Position

The external shower is installed in the rear.

The shower hose, shower head and operating lever are accessible after opening the rear flap.

Chapter overview

This chapter contains instructions regarding the care of the vehicle.

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

11.1 General

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

11.2 External care

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

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

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

11.2.1 Washing with a high-pressure cleaner

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

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

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

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

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

11.2.2 Washing the vehicle

▷ Never clean the vehicle in the car wash. The brush rollers can damage the external applications. Water can enter the waste gas vents or the forced ventilations. The vehicle could be damaged.

- Wash the vehicle only on a washing site intended for this purpose.
- Avoid full sunshine. Observe environmental measures.
- When using a cleaning agent, observe the manufacturer's instructions for use. Cleaning agent must be pH-neutral.
- First, test the suitability of the cleaning agent on an inconspicuous spot.
- Only clean external applications and synthetic parts with plenty of warm water, dish washing liquid and soft cloth.
- Wash down the vehicle with plenty of water, a clean sponge or a soft brush. In the case of stubborn dirt add dish washing liquid to the water.
- Painted exterior walls may also be cleaned with a caravan cleaner.
- Treat rubber seals on doors with a conventional rubber care product.
- Treat locking cylinder on doors with graphite dust.

11.2.3 Windows of acrylic glass

Acrylic glass windows are delicate and require very careful handling.

▷ Never rub acrylic glass windows dry as dust particles might damage the surface.

▷ Only clean acrylic glass windows with plenty of warm water, some dish washing liquid and a soft cloth.

▷ Never use glass cleaning agents with chemical, abrasive or alcohol-containing additives. Premature brittleness of the panes and associated cracks may result from their use.

▷ Avoid contact of cleansing agents used for the body (e.g. tar- or silicone-removing agents) with acrylic glass.

▷ Do not clean vehicle in car wash.

▷ Do not attach stickers to the acrylic glass windows.

▷ Having cleaned the vehicle rinse acrylic glass with sufficient clear water.

▷ Treat rubber seals with a conventional rubber care product.

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

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

▷ Avoid contact between polish and window rubber and piping.

▷ The glass-fibre reinforced plastic (GRP) may not become too hot. Therefore when polishing with a polishing machine, keep the machine in constant motion.

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

GRP add-on parts can turn yellow or become weather-worn due to insufficient care for the vehicle or ageing of the material.

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

Follow-up treatment of GRP add-on parts:

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

We recommend using a polishing machine for this work.

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

11.2.5 Underbody

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

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

11.2.6 Engine compartment

▷ Cleaning and care of the engine compartment may only be carried out while the ignition is switched on.

▷ Let the engine cool down before carrying out any work in the engine compartment. There is a danger of burns when touching motor components that are still hot!

▷ Before carrying out any work in the engine compartment, read and observe the corresponding warning and handling instructions in the operating manual of the base vehicle manufacturer.

▷ Have an engine washing only carried out by an authorised specialist workshop.

▷ Do not aim the steam jet directly at the lamp housings, actuators or seals. This may prevent humidity in the headlights and the defects resulting therefrom.

▷ Do not aim the steam jet at the windscreen wiper motor and the wiper mechanics.

▷ Only apply protective engine lacquer when the components in the engine compartment have cooled down and are clean.

▷ Only use lubricants, greases and fluids authorised by the base vehicle manufacturer.

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

11.2.7 Windscreen washer system and windscreen wipers

▷ Only fill the cleaning agents (with/without frost protection) into the washer fluid container which are listed in the operating manual of the base vehicle manufacturer and in the mixing ratio specified therein. Do not use any radiator frost protection or other products. These products affect the cleaning effect and attack the windscreen blades.

▷ Do not switch the windscreen washer system or the windscreen wipers on when the windscreen blades are frozen to the windscreen. Release the windscreen blades first using a defrosting product.

▷ Do not remove the snow accumulated on the windscreen with the windscreen wipers. Remove the snow from the windscreen with a brush first.

▷ Do not switch on the windscreen wipers on a dry windscreen.

▷ Do not clean the windscreen wiper mechanics and the windscreen wiper motor with a steam blaster.

- Check the correct functioning of windscreen washer system and windscreen wipers periodically.
- Check the filling level of the washer fluid container periodically. Only if sufficient cleaning fluid reaches the windscreen, the windscreen wipers will be able to clean it in a satisfactory way. A clear view contributes decisively to safe driving.
- Before the frost period starts, fill the washer fluid container with windscreen cleaning product containing sufficient frost protection.
- Refill windscreen washing fluid on time. Only use clean water to dilute the windscreen cleaning product.
- Remove insect residues from the windscreen blades as soon as possible.
- Clean the windscreen blades periodically with a windscreen cleaning product. To do this, move a sponge or a cloth along the rubber strip.
- Remove car wax residues after the vehicle washing using a wax dissolving windscreen cleaning product.
- Remove dirt accumulations on the nozzles of the windscreen washer system periodically.
- After journeys on heavily soiled roads, spray clear water on the wiper nozzles to prevent incrustations.
- Clean obstructed wiper nozzles with a fine needle.

11.2.8 Truma air conditioning unit

▷ Do not clean the air conditioning unit with a high-pressure cleaner. Water entering can damage the air conditioning unit.

▷ Do not clean vehicle in car wash.

▷ Do not use any sharp or hard objects when cleaning. Otherwise the air conditioning unit could be damaged.

- Use only water and a gentle cleaning agent to clean the air conditioning unit.
- Wipe the air conditioning unit housing and the air outlet occasionally with a damp cloth.
- Clean the remote control occasionally with a slightly damp cloth. Clean the display with a spectacles cleaning cloth.
- Remove leaves and other dirt from the ventilation openings on the air conditioning unit regularly.
- Check the condensation drain holes regularly to ascertain whether the condensation can run off freely.
- Change the filters regularly (at least every 12 months).
- For the "small" air distributor: regularly remove panels and clean under lukewarm, clear water.

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

11.2.9 Entrance step

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

11.2.10 Cleaning the sleeping roof

▷ Do not store dirty, wet bellows folded or collapsed for a longer period of time.

▷ Do not use a high-pressure cleaner.

▷ Do not use any aggressive cleaning agents.

▷ Use silicone-free impregnating agents for re-impregnation, following the manufacturer's instructions for use.

▷ Although the canvas of the bellows is water-repellent, this does not mean that it is waterproof.

- Elevate the sleeping roof for cleaning and re-impregnation.
- Clean the sleeping roof periodically with a soft brush. When doing so, the sleeping roof should be dry.
- Carefully remove small stains with an eraser or rinse with warm water (max. 35 °C).

- Remove larger soiling with a mild soap solution (e.g. soft soap, max. 35 °C). Rinse well so that no soap residue remains.
- Allow canvas to dry well after cleaning, preferably in the sun.
- Re-impregnate the sleeping roof if necessary.

11.3 Interior care

▷ If possible, treat stains immediately.

▷ Acrylic glass windows are delicate and require very careful handling (see section 11.2.3).

▷ Synthetic parts in the toilet and living area are very delicate and should be treated with care. Do not use solvents, alcohol-containing cleansers or scourers. This procedure will help you to avoid brittleness and formation of cracks.

▷ Hair colourants, nail varnish, cigarette ash and similar substances may cause permanent stains or discolouration. For this reason, you should prevent these substances from getting onto plastic parts. If they do get onto plastic parts, you should remove these substances immediately.

▷ Do not pour any corrosive agents into the drain holes. Never pour boiling water directly into the drain holes. Corrosive agents and boiling water cause damage to drainage pipes and siphon traps.

▷ Do not use vinegar based products to clean the toilet and water system, or for descaling the water system. Vinegar-based products may cause damage to seals or parts of the installation. Use standard descaling products for descaling.

▷ Save water. Mop up all remaining water.

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

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

- Clean the smoke alarm regularly with a vacuum cleaner. Do not open the casing to do this.
- Wipe the smoke alarm dry with a soft brush or a soft cloth. Do not use any cleaning agents.
- Only wipe the canvas of the sleeping roof with a damp, soft cloth so as not to change the impregnation.

11.4 Kitchen installation

11.4.1 General notes on care

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

11.4.2 Refrigerator

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

11.5 Stainless steel surfaces

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

▷ Do not use scouring agent nor coarse sponges.

▷ Prior to cleaning, test the suitability of the cleaning product for the surface on an unobtrusive spot.

▷ Dry the surfaces thoroughly after cleaning to prevent scale deposits.

▷ In the case of brushed stainless steel surfaces, wipe in a direction of the grinding.

Removing scratches from the surface:

- Treat the stainless steel surface with a soft cleaning cloth and with a special stainless steel cleaner.
- Rinse the stainless steel surface and dry it with household wipes.

Removing stubborn dirt and burnt-in fat:

- Clean the stainless steel surface with an ordinary household sponge and with cleanser.
- Rinse the stainless steel surface and dry it with household wipes.

Removing fingerprints:

- Clean the stainless steel surface with a soft cleaning cloth and soapy water or a glass cleaning agent.
- Rinse the stainless steel surface and dry it with household wipes.

Removing coffee or tea stains:

- Treat the stainless steel surface with a baking soda solution. Allow the baking soda solution to work in for 15 minutes.
- Rinse the stainless steel surface and dry it with household wipes.

Removing rust stains:

- Clean the stainless steel surface with an ordinary household sponge and with cleanser. If necessary, use a soft cleaning cloth and stainless steel cleaner.
- Rinse the stainless steel surface and dry it with household wipes.

11.6 Cushions

The care and cleaning instructions below are for assistance only. They are not a guarantee of successful cleaning. These instructions cannot form the basis for any warranty claims.

▷ If possible, treat stains immediately.

▷ Never use household cleaners to remove marks (e.g. detergents).

▷ Before treating marks, test the cleaning on a hidden part of the upholstery covers. This will show you whether the cleaning will damage the materials or dyes.

▷ Always only dab moist or greasy marks, never rub them. It is most effective to gently press an absorbent cloth or a sponge onto the mark.

▷ Do not wash upholstery.

▷ When cleaning leather covers, make sure that the leather is not soaked through and that no water seeps through the seams of the leather covers.

- ▷ Treat the mark from the outside working inwards. This prevents the mark from spreading.
- ▷ In the case of both solid or softer contamination, first remove the coarse parts. Next, carefully scrape off the mark with a blunt knife or spatula.
- ▷ If the mark has already dried in, carefully brush off the coarse parts. Next, dab off the mark with a damp cloth or sponge.
- ▷ The upholstery will fade over time, if it is exposed to sunlight. If the temperature within the vehicle rises rapidly as well, the colour will change at an accelerated rate.
  Therefore, we recommend to close the shades on the windows when there is strong sunlight. Ensure that heat does not build up when you close the blind.
- ▷ Depending on the equipment, the cushions will be provided with stain protection.

Removing grease, oil, wine, milk, non-alcoholic beverages:

- ■ Moisten a cloth with commercial water-based cleaning agent. (Alternatively, mix 2 tablespoons of ammoniac with 1 litre of water.)
- ■ Gently dab the stain with the cloth.
- ■ Turn the cloth frequently so that the mark only comes into contact with a clean part of the cloth.

Removing urine, sweat:

- ■ Moisten a cloth with commercial water-based cleaning agent. (Alternatively, mix 2 tablespoons of ammoniac with 1 litre of water.)
- ■ Gently dab the stain with the cloth.
- ■ Turn the cloth frequently so that the mark only comes into contact with a clean part of the cloth.

Removing chocolate, coffee:

- ■ Moisten cloth with lukewarm water.
- ■ Dab the stain with the cloth.

Removing fruit residues:

- ■ Moisten cloth with cold water.
- ■ Dab the stain with the cloth.

Removing wax:

- ■ Carefully scrape off the wax with a blunt knife or spatula.
- ■ Cover the mark with several layers of waterleaf paper and iron.

Removing blood:

- ■ Mix 2 tablespoons of salt and 1 litre of water.
- ■ Moisten the stain and dab with a dry cloth.
- ■ Dab stubborn stains with ammonia solution.

Removing (ball pen) ink:

- ■ Moisten cloth with benzine.
- ■ Gently dab the stain with the cloth.
- ■ Turn the cloth frequently so that the mark only comes into contact with a clean part of the cloth.

Removing mud:

- ■ Carefully remove as much mud as possible with a blunt knife or a spatula.
- ■ Allow the mud to dry and then remove it with a vacuum cleaner.
- ■ For stubborn marks, moisten a cloth with commercial water-based cleaning agent. (Alternatively, mix 2 tablespoons of ammonia solution with 1 litre of water.)

- Gently dab the stain with the cloth.
- Turn the cloth frequently so that the mark only comes into contact with a clean part of the cloth.

Removing pencil:

- Moisten cloth with a mild, water-free and pure fabric cleaning agent.
- Gently dab the stain with the cloth.
- Turn the cloth frequently so that the mark only comes into contact with a clean part of the cloth.

Removing vomit:

- Carefully remove vomit.
- Wash cushion with cold water.
- Moisten a cloth with commercial water-based cleaning agent. (Alternatively, mix 2 tablespoons of ammoniac with 1 litre of water.)
- Gently dab the stain with the cloth.
- Turn the cloth frequently so that the mark only comes into contact with a clean part of the cloth.

11.7 Water system

11.7.1 Cleaning the water tank

- Empty the water tank and close the drainage opening.
- Remove the cap of the water tank.
- Pour a little warm water into the water tank (do not use abrasive cleaners).
- Using a trade standard brush for washing dishes, scrub the water tank until there is no longer any visible deposit.
- Scrub also the pump housing.
- If possible, clean fresh water sensors through the cleaning openings by hand.
- Rinse water tank with copious amounts of drinking water.

▷ If, due to the design of the water tank, it is not possible to clean the water tank mechanically: Use a suitable chemical cleaning agent.

The authorised dealers would be happy to assist you in choosing a suitable cleaning agent.

Follow the cleaning agent manufacturer's instructions.

11.7.2 Cleaning the water pipes

▷ Only use approved cleaning agents as sold by the specialist trade.

▷ The cleaning agent must meet national regulations and be approved (if required).

▷ Collect any emerging mixture of water and cleaning agent for correct disposal.

- Empty the water system.
- Close all drainage openings and drain cocks.
- Fill mixture of water and cleaning agent into the water canister or water tank.
  Observe the manufacturer's instructions regarding the mixing ratio.
- Open the drain cocks one by one.
- Leave the drain cocks open until the mixture of water and cleaning agent has reached the respective drain.
- Close the drain cocks.
- Set all the water taps to "Hot" and open them.
- Leave the water taps open until the mixture of water and cleaning agent has reached the drain.
- Set all water taps to "Cold" and open them.
- Leave the water taps open until the mixture of water and cleaning agent has reached the drain.
- Close all water taps.
- Flush the toilet several times.
- Allow the cleaning agent to act in accordance with the manufacturer's instructions.
- Empty the water system. Collect the mixture of water and cleaning agent for correct disposal.
- For rinsing fill the entire water system with drinking water and empty again several times over.

11.7.3 Disinfecting the water system

▷ Only use approved disinfectants as sold by the specialist trade. Observe the tolerance of humans and animals.

▷ The disinfectant must meet national regulations and be approved (if required).

▷ Collect any emerging mixture of water and disinfectant for correct disposal.

When disinfecting the water system, proceed the same way as when cleaning the water pipes (see section 11.7.2). Simply use disinfectant instead of cleaning agent.

11.7.4 Cleaning the waste water tank

Clean the waste water tank after every use.

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

11.8 Care for vehicle operation in winter

De-icing salt damages the underbody and the parts open to water spray. We recommend that you wash the vehicle more frequently during wintertime. Mechanical and surface treated parts and the underside are under particular strain, and should therefore be cleaned thoroughly.

▷ If there is any risk of frost, always run heater at a minimum of 15 °C. Switch the circulation fan (if there is one) to automatic. In the case of extreme external temperatures, the furniture flaps and doors should be left slightly open. The inflowing warm air can help prevent the freezing of water pipes, for example, and counteract the formation of condensation in the storage spaces.

▷ If there is a risk of frost, additionally cover the windows on the outside of the vehicle overnight with winter insulation mats.

11.9 Setting up the vehicle

The vehicle's extensive comfort equipment results in increased closed-circuit current consumption. If the vehicle is to be parked for a longer period of time, the following measures must therefore be taken.

Option 1: Connect the vehicle to an external 230 V power supply.

Option 2: Take the vehicle out of operation electrically as follows:

- Switch off the transformer/rectifier.
- Pull out the 50 A fuse.
- Pull out the 2 A fuse sensor line (next to the living area battery).

▷ If the above measures have been taken, the functions of the Hymer Connect system are no longer available.

▷ Depending on the vehicle equipment, the aforementioned measures must already be taken after a parking period of only several hours.

To put the vehicle back into operation, reinsert the fuses that have been pulled out into the slots provided.

11.10 Lay-up

11.10.1 Temporary lay-up

- If the vehicle has been stationary for a long period (approx. 10 months) have the braking and gas systems checked by an authorised specialist workshop.
- Take into consideration that water is undrinkable after only a short time.
- Animal damage to cables can lead to short circuits. Fire hazard!

Animals (especially mice) can cause great damage to the interior of the vehicle. This is especially true if the animal remains undisturbed in a parked vehicle.

To keep damages from animals to a minimum or to avoid them altogether, regularly check the vehicle for damage or animal traces.

If animal traces are found, contact the authorised dealer or service centre. If damage to cables has occurred, they can result in short circuits. The vehicle could catch fire.

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

	Activity	Done
Base vehicle	Completely fill fuel tank. This prevents corrosion damage within the fuel tank system	
	Jack up vehicle so that the wheels do not bear any load, or move vehicle every 4 weeks. This prevents any pressure points from occurring on tyres and wheel bearings	
	Protect the tyres from direct exposure to the sun. Danger of formation of cracks!	
	Inflate tyres up to the recommended maximum pressure	
	Always provide for sufficient ventilation in the underbody area ▷ Humidity or lack of oxygen e.g. by covering with plastic film may cause optical irregularities to the underbody	
	In addition observe the notes in the operating manual of the base vehicle	
Body	All vents should be sealed with the appropriate caps and all other openings (apart from forced ventilations) should also be sealed. This prevents animals (e.g. mice) from gaining entry	
	Air the interior, all storage spaces accessible from the outside, and the parking space (e.g. garage) every 3 weeks in order to prevent the occurrence of condensation and resulting mould formation	

Interior

Activity	Done
Place upholstery in an upright position for ventilation, and cover	
Clean refrigerator	
Allow refrigerator and freezer compartment doors to remain slightly open	
Search for traces of animals that have gained entry	
Disconnect the flat screen from the mains and, if necessary, remove it from the vehicle	

Gas system

Close regulator tap on the gas bottle	
Close all gas isolator taps	
Always remove gas bottles from the gas bottle compartment, even if they are empty	

Electrical system

Fully charge living area and starter battery  ▷ Charge the battery for at least 20 hours before laying up.	
Disconnect the living area battery from the 12 V power supply. To do this, switch off the battery cut-off switch on the transformer/rectifier (see chapter 8)	

Water system

Empty the entire water system. Blow out the residual water from the water pipes (0.5 bar max.). Leave the water taps on in central position. Leave all drain cocks open. Observe the notes in chapter 10.	

11.10.2 Winter lay-up

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

	Activity	Done
Base vehicle	Clean body and underbody thoroughly and spray with hot wax or protect with varnish	
	Fill fuel tank with winter diesel	
	Check antifreeze in the cooling water	
	Rectify damage to the paintwork	
	Fill in windscreen washer fluid with frost protection	
Body	Clean vehicle from outside thoroughly	
	Keep the forced ventilation open	
	Clean and grease all door and flap hinges	
	Brush oil or glycerine on all locking mechanisms	
	Treat all rubber seals with a conventional rubber care product	
	Use graphite dust to treat locking cylinders	
Interior	Set up the de-humidifier (granulate)	
	Remove cushions and mattresses from the vehicle and store them in a dry place	
	Air the interior every 3 weeks	
	Empty all cabinets and storage compartments, open flaps, doors and drawers	
	Thoroughly clean the interior	
	If there is a risk of frost, do not leave the flat screen in the vehicle	
Electrical system	Remove the starter battery and the living area battery and store them in a place protected from frost (see chapter 8) or connect the vehicle to a 230 V supply. Before removing, remove the fuses on the living area battery	
	Disconnect the emergency P battery. To do this, pull fuses 31 and 32	
Water system	Clean the water system using approved cleaning agents from a specialised store	
Complete vehicle	Arrange the tarpaulins in such a way that the ventilation openings are not covered, or use porous tarpaulins	

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

Go through the following checklist before start-up:

	Activity	Done
Base vehicle	Check the tyre pressure on all tyres	
	Check the tyre pressure of the spare wheel (if present)	
Body	Clean the pivot bearing of the entrance step	
	Check that the doors, windows and skylights are working properly	
	Check the function of the sleeping roof	
	Check the function of all external locks	
	Remove the cover from the waste gas vent of the heater (if there is one)	
	Remove the winter cover from the refrigerator grills (if there is one)	
Gas system	Put the gas bottles in the gas bottle compartment, tie down and connect to the gas pressure regulator	
Electrical system	Connect to 230 V external power supply	
	Install the living area battery and starter battery, insert the fuses on the living area battery and fully charge the battery ▷ Charge the battery for at least 20 hours after lay-up.	
	Connect the living area battery with the 12 V power supply. To do this, switch on the battery cut-off switch on the transformer/rectifier (see chapter 8)	
	Reconnect the emergency P battery. To do this, insert fuses 31 and 32	
	Check that the electrical system are working, e.g. interior light, socket and all installed electrical appliances	
Water system	Disinfect water pipes and water canister or water tank	
	Close safety/drainage valve, drain cocks and water taps	
	Check water system for leaks	
Appliances	Check the function of the appliances	

Chapter overview

This chapter contains instructions about official inspections and inspection and maintenance work in the vehicle.

At the end of the chapter you will find important instructions on how to obtain spare parts and on our dealers and service centres.

12.1 Official inspections

Depending on the national legislative provisions, the following official inspections must be carried out periodically:

- Main inspection
- Emissions test
- Inspection of the gas system

The inspection intervals in accordance with the national legislative provisions must be adhered to. The inspection stickers attached to the vehicle indicate when the next inspection is required.

For Germany, for example, the following regulation applies:

From April 1st 2022, the inspection obligation for the gas system as part of the main inspection (HU) will no longer apply. Instead, an independent gas inspection (according to DVGW (German Technical and Scientific Association for Gas and Water) worksheet G 607) must be carried out for recreational vehicles (motorhomes and caravans). The gas inspection is evidenced by the correctly completed yellow inspection book and a valid inspection sticker on the vehicle.

For more information on the gas inspection and the intervals at which it must be carried out, see the following websites:

- German Federal Ministry of Digital Affairs and Transport (BMDV): www.bmvi.de
- German Technical and Scientific Association for Gas and Water (DVGW): www.dvgw.de
- German Association for Liquefied Gas (DVFG): www.dvfg.de

As long as the intervals at which the gas inspection must be carried out are not regulated by law, the DVGW recommends an inspection every two years.

Many camping site operators demand proof of a valid gas inspection when allocating a parking place.

▷ Any changes on the gas system must be carried out by a certified expert for gas systems.

▷ Even in the case of vehicles that are not registered, an inspection of the gas system is required.

12.2 Inspection work

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

This inspection work must be carried out by qualified personnel.

Special technical knowledge, which cannot be taught within the framework of this instruction manual, is required for these tasks. Personnel possessing this technical knowledge are available for assistance at all service centres. Their experience and regular technical instruction by the factory as well as equipment and tools guarantee expert and up-to-date inspection of the vehicle.

The service centre in charge will confirm the work performed.

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

▷ Observe the inspections indicated by the manufacturer and have them carried out at the specified intervals. The value of the vehicle is thus preserved.

▷ The confirmation of the inspection work carried out serves as valid proof in the event of damage and guarantee claims.

12.3 Maintenance work

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

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

12.4 Sleeping roof

- Check belts and tongues for function and damage.
- To avoid a musty smell, air the canvas/bellows several times a year.
- Repair small damages in the bellows with the help of the repair kit. The repair kit is available from your specialist dealer.
- Have any other repairs and adjustments (both to the bellows and to other components) carried out only by an authorised specialist workshop.

12.5 Replacing bulbs, external

- ▶ Bulbs and lamp holders can be extremely hot. Therefore, allow lamps to cool down before changing bulbs.
- ▶ Store bulbs in a safe place inaccessible to children.
- ▶ Do not use any bulb that has been dropped or which shows scratches in its glass. The bulb might burst.

- ▷ Do not touch a new bulb with bare fingers. Use a cloth when installing the new bulb.
- ▷ Only use bulbs of the same type and with the correct wattage.
- ▷ If LEDs in lamps are defective, contact an authorised dealer or service centre.

The exterior lighting is part of the base vehicle. Replacement of light bulbs is described in the instruction manual of the base vehicle.

The rear lights are not directly accessible. Fittings must be removed first so that the bulbs can be replaced.

Fig. 145 Access to rear lights (Fiat)

Right and left sides of the vehicle:

- ■ Remove the felt cover (Fig. 145,1).
- ■ Change the bulb.
- ■ Replace the felt cover.

12.6 Lighting for living area

- ▶ Do not replace the LEDs in lamps with standard light bulbs. Risk of fire due to intense heat build up.

All of the lights in the living area are equipped with LED technology.

LED lights are economical, low-maintenance and have a very long life. It is not normally necessary to replace a light.

- ▷ If LEDs in lamps are defective, contact an authorised dealer or service centre.

12.7 Changing the battery of the smoke alarm

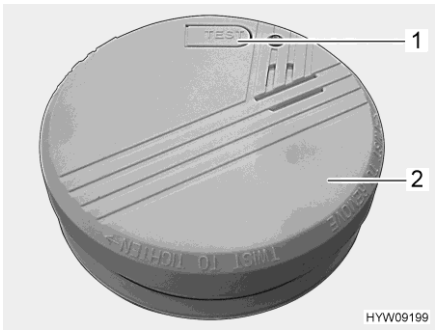


Fig. 146 Smoke alarm

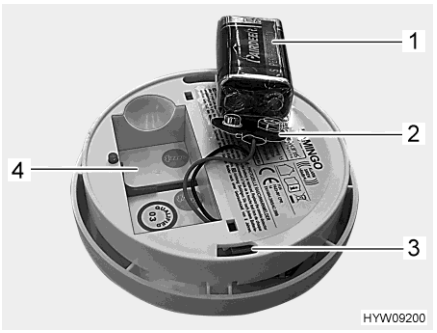


Fig. 147 Smoke alarm (rear side)

Changing the batteries:

- Turn the smoke alarm (Fig. 146,2) anticlockwise until it can be released from the holder.
- Remove the smoke alarm.
- Remove the battery and disconnect it from the battery clip (Fig. 147,2).
- If present: Remove the protective film from the new battery.
- Connect the new battery (Fig. 147,1) at the battery clip (Fig. 147,2). When doing so, make sure that the battery poles engage on the battery clip.
- Place the battery into the battery compartment (Fig. 147,4).

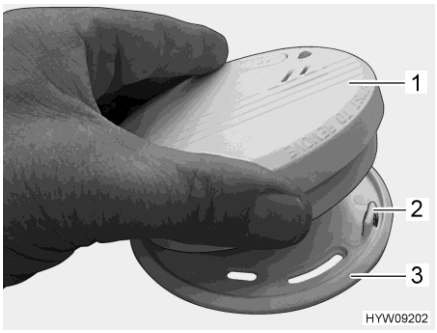


Fig. 148 Fit the smoke alarm

- Place the smoke alarm (Fig. 148,1) onto the holder (Fig. 148,3). The holding lugs (Fig. 148,2) must engage in the openings (Fig. 147,3) in the smoke alarm.
- Turn the smoke alarm clockwise until it engages.
- Test the smoke alarm. To do this, press the test button (Fig. 146,1). The alarm must sound.

▷ Replace the smoke alarm after 8 years.

▷ Change the smoke alarm battery regularly (no later than when the warning tone sounds to indicate that the battery is almost flat).

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

12.8 Spare parts

- Every alteration of the original condition of the vehicle can alter road behaviour and jeopardize road safety.
- The optional equipment and original spare parts recommended by us have been specially developed and supplied for your vehicle. These products are available at the authorised dealer or service centre. The authorised dealer or service centre is informed about admissible technical details and carries out the required work correctly.
- The use of accessories, parts and fittings not supplied by us may cause damage to the vehicle and jeopardize road safety. Even if an expert's report, a general type approval or a design certification exists, there is no guarantee for the proper quality of the product.
- No liability can be assumed for damage caused by products which have not been released by us. This also applies to impermissible alterations to the vehicle.

For safety reasons, spare parts for pieces of equipment must correspond with manufacturer's instructions and be permitted by the manufacturer as a spare part. These spare parts may only be fitted by the manufacturer or an authorised specialist workshop. The authorised dealers and service centres are available for any spare parts requirement.

Here are some suggestions of important spare parts:

- Fuses
- Bulbs
- Water pump (submerged pump)

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

The vehicle described in this instruction manual is built and equipped to factory standards. Optional equipment is offered depending on its purpose or use. When fitting optional equipment check if such equipment has to be entered in the vehicle documents. Observe the technically permissible maximum laden mass. The authorised dealer or service centre will be happy to advise you.

12.9 Vehicle identification plate

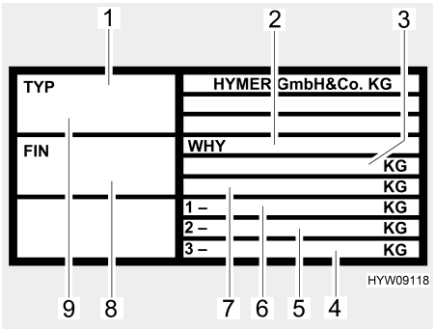


Fig. 149 Vehicle identification plate

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

The vehicle identification plate with the serial number is attached on the right hand driver's cabin door.

Do not remove the vehicle identification plate. The vehicle identification plate:

- Identifies the vehicle
- Helps with the procurement of spare parts
- Together with the vehicle documents identifies the vehicle owner

▷ Always include the **serial number** with all inquiries for the customer service office.

12.10 Warning and information stickers

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

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

12.11 Dealers

Contact your authorised dealer or service centre whenever spare parts are needed for the vehicle.

You can find the addresses and telephone numbers of the authorised dealers and service centres:

- In the brochure, which is included separately with the vehicle
- On the web at the homepage of the manufacturer

12.12 Replacement keys

To order replacement keys make a note of the following:

Locks for:	To order keys you need:	Obtainable at:	Telephone information:
Fiat base vehicle	Chassis number	Fiat authorised workshop	–
Mercedes-Benz base vehicle	Chassis number	Mercedes-Benz authorised workshop	–
Alarm system	Second key	Thitronik	+49 431 66668-0
Body	Serial number, chassis number, second key or key number	Dealers	–

Chapter overview

This chapter contains instructions regarding the tyres of the vehicle.

At the end of the chapter there is a table you can use to find the correct tyre pressure for your vehicle.

13.1 General

▶ Check tyre pressure before a journey or every 2 weeks. Wrong tyre pressure causes excessive wear and can lead to damage or even to tyre burst. You can lose control of the vehicle (see section 13.8).

▷ Check the tyre pressure on cold tyres. Do not reduce the higher tyre pressure when the tyres are warm.

▷ Tubeless tyres have been installed on the vehicle. Never install tubes in these tyres.

▷ Read the instruction manual for the base vehicle.

▷ The maximum depth of a body of water that a vehicle can pass through without being damaged is called the "wading depth". The maximum wading depth is determined by the lower edge of the bumper, but is a maximum of 40 cm. This applies to all loading conditions.
Never cross deeper bodies of water. Water and dirt can damage the vehicle.
The driver must make sure that no equipment can be damaged before driving through bodies of water or mud and before driving over raised obstacles.

▷ The vehicle is equipped with only one tyre repair kit as standard.

▷ In the case of a puncture, pull the vehicle over to the side of the road. Make vehicle safe with a hazard warning triangle. Switch on the warning lights.

▷ Tyres must not be older than 6 years as the material will become brittle over time. The four-digit DOT number on the tyre flank indicates the date of manufacture. The first two digits designate the week, the last two digits the year of manufacture.

Example: 0722 Week 07, year of manufacture 2022

Observe:

- Check the tyres regularly (every 2 weeks) for equal tread wear, tread depth and external damage.
- Replace tyres at the latest, when the minimum depth of tread stipulated by law is reached.
- Always use tyres of the same model on one axle.
- Observe the instructions in the vehicle documents.
- Only use tyres approved for the wheel rim type fitted. The permitted rim and tyre sizes are quoted in the vehicle documents and the authorised dealer or service centre will always be glad to give you advice.
- Run-in new tyres for approx. 100 km (60 miles) at low speed since only then do they reach full strength.

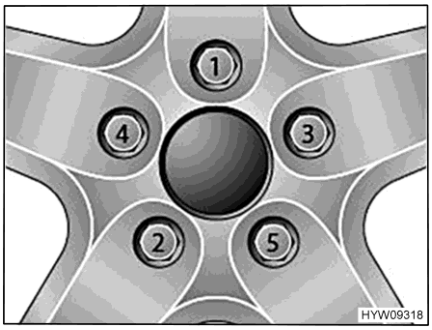


Fig. 150 Tightening the wheel nuts or wheel bolts cross-wise

- Tighten the wheel nuts or wheel bolts in the order shown in Fig. 150. In order to do this, use a torque wrench and comply with the specified tightening torque (see section 13.7.2).
- Check regularly that the wheel nuts or wheel bolts are firmly seated. Re-tighten the wheel nuts or wheel bolts of a changed wheel after 50 km (30 miles). While doing so, proceed in the order shown in Fig. 150.
- When using new or newly painted rims, re-tighten the wheel nuts or wheel bolts once again after approx. 1,000 to 5,000 km (600 miles to 3,000 miles). While doing so, proceed in the order shown in Fig. 150.
- For lay-ups or long periods of inactivity, keep the tyres and tyre bearings free from pressure points:
  Jack up the vehicle so that the wheels do not bear any load, or move the vehicle every 4 weeks in such a way that the position of the wheels is changed.

13.2 Tyre selection

▶ A wrong tyre can damage the tyres during the journey and even cause it to burst.

▷ If tyres that are not approved for the vehicle are used, then the type approval for the vehicle and subsequently the insurance coverage can lapse. The authorised dealer or service centre will be happy to advise you.

The tyre sizes approved for the vehicle are given in the vehicle documents or can be obtained from the authorised dealers or service centres. Each tyre must fit the vehicle on which it will be driven. This applies to the external dimensions (diameter, width), which are indicated with the standardised size designations. In addition, the tyres must meet the requirements of the vehicle with regard to weight and speed.

The weight is based on the technically permissible maximum laden mass on the axle, which is distributed between two tyres. The maximum load-carrying capacity of a tyre is indicated by its load index (= LI, load index code).

The maximum permissible speed for a tyre (with full load-carrying capacity) is indicated by the speed index (= SI). Together, load index and speed index form the operating code of a tyre. This is an official component of the complete, standardised dimensions description which appears on every tyre. The information on the tyres must correspond to the specifications which appear in the vehicle papers.

13.3 Tyre specifications

215/70 R 15C 109/107 Q (example)

Description	Explanation
215	Tyre width in mm
70	Height-to-width proportion in percent
R	Tyre design (R = radial)
15	Rim diameter in inches
C	Commercial (transporter)
109	Load index code for single tyres
107	Load index code for twin tyres
Q	Speed index (Q = 160 km/h)

13.4 Handling of tyres

- Drive over kerbs at an obtuse angle. Otherwise the flanks of the tyres may get pinched. Driving over a kerb at a sharp angle can damage the tyre and result in it getting ruptured.
- Drive over high manhole covers at a slow speed. Otherwise the tyres may get pinched. Driving over a high manhole cover at high speed can damage the tyre and result in it getting ruptured.
- Check the shock absorbers regularly. Driving with poor shock absorbers significantly increases wear.
- In the event of an uneven thread wear, contact customer service.
- Do not clean the tyres with a high-pressure cleaner. The tyres can suffer serious damage within just a few seconds and rupture as a result.

13.5 Repair kit

▶ Observe the safety instructions in the manufacturer's instruction manual.

The vehicle is equipped with the TyreKit breakdown kit as standard.

Take further information from the manufacturer's instruction manual.

13.6 Spare wheel (optional)

If the vehicle is equipped with a spare wheel, the spare wheel will be attached to the Backrack at the rear (see section 3.4).

13.7 Changing wheels

13.7.1 General instructions

- ▶ The vehicle must be on level, firm ground, secure from slipping.
- ▶ Go into first gear. In the case of automatic transmission, change gear to "P" position.
- ▶ Before jacking up the vehicle firmly apply the handbrake.
- ▶ Prevent the vehicle from rolling away by blocking the opposite wheel with the wheel chocks.
- ▶ Under no circumstances jack the vehicle with the fitted supports.
- ▶ If a trailer is connected: Detach the trailer before lifting the vehicle.
- ▶ Position the vehicle jack at the designated mounting points (see section 13.7.3).
- ▶ Never overload the vehicle jack. The maximum permissible load is specified on the vehicle jack's identification plate.
- ▶ Use the vehicle jack only for lifting the vehicle briefly while changing the tyre.
- ▶ Do not start the motor while the vehicle is jacked up.
- ▶ Whilst the vehicle is in a jacked up position, persons must not lie down under it.

- ▷ Do not damage the thread of the thread bolt or wheel bolt when changing the wheel.
- ▷ Tighten the wheel nuts or wheel bolts cross-wise (Fig. 150).
- ▷ When changing wheels (e.g. alloy wheel rims or wheels with winter tyres), use the correct wheel bolts of the correct length and shape. Otherwise the wheels may not be securely fixed or the braking system may not work correctly.
- ▷ All 4 wheels must be of the same model and size and be approved for the vehicle.
- ▷ Wheel rims or tyres that are not approved for the vehicle can jeopardize road safety and they must be separately inspected and approved by an accredited test centre.
- ▷ Do not replace wheels cross-wise.

- ▷ Protect the vehicle according to the national regulations, e.g. with a hazard warning triangle.
- ▷ Before changing the wheel, check the wheel rim and tyre size, the max. tyre load and the speed index on the tyres. Only use the wheel rim and tyre sizes stated in the vehicle documents.
- ▷ The on-board tool set is adapted to the mounted wheel nuts or wheel bolts. When alloy wheel rims are mounted, carry an appropriate tool for the spare wheel (steel wheel rim) in the vehicle.
- ▷ Further information can be found in the instruction manual of the base vehicle.

13.7.2 Tightening torque

Wheel rim	Manufacturer	Tightening torque
Steel wheel rim	1)	1)
Alloy wheel rim 16" (chassis Light)	Borbet	140 Nm
Alloy wheel rim 17" (chassis Light)	Borbet	140 Nm
Alloy wheel rim 17" (chassis Maxi)	Borbet	140 Nm
Alloy wheel rim 18" (chassis Light)	Borbet	140 Nm
Alloy wheel rim 18" (chassis Maxi)	Borbet	160 Nm

1) Steel wheel rims are a component of the base vehicle. For information on the tightening torque of the steel wheel rims, refer to the instruction manual for the base vehicle.

13.7.3 Changing a wheel

▶ The footplate of the vehicle jack must be levelly positioned on the ground.

▷ The wheel you have replaced should be repaired immediately.

▷ Take note of the general instructions in this chapter.

- Park the vehicle on as even and stable a surface as possible.
- Go into first gear. In the case of automatic transmission, change gear to "P" position.
- Apply the handbrake.
- Place chocks or other appropriate objects beneath the vehicle to secure it.
- Remove the spare wheel from the spare wheel support.
- If the ground is soft, place a stable support such as a wooden board beneath the vehicle jack.
- Refer to the base vehicle's operating manual for the vehicle jack attachment point.
- Using the wheel brace, turn the wheel bolts several times to loosen them, but do not remove them.
- Lift the vehicle until the wheel has been lifted 2 to 3 cm above the ground.
- Remove the wheel bolts and take off the wheel.
- Place the spare wheel on the wheel hub and adjust.
- Screw in the wheel bolts and slightly tighten them cross-wise.
- Crank down the vehicle jack and remove it.
- Using the wheel brace, tighten the wheel bolts evenly (see section 13.7.2 for tightening torque).

13.7.4 Changing a wheel with alloy wheel rims

▶ Alloy wheel rims and steel wheel rims require different wheel bolts. When alloy wheel rims are mounted, the spare wheel (steel wheel rim) is accompanied by suitable wheel bolts.

Wheels with alloy rims are changed in the same way as wheels with steel rims (see section 13.7.3).

13.8 Tyre pressure

▶ Tyres overheat if the tyre pressure is too low. This can cause serious tyre damage.

▶ Check tyre pressure before a journey or every 2 weeks. Wrong tyre pressure causes excessive wear and can lead to damage or even to tyre burst. You can lose control of the vehicle.

▶ Use only valves that are approved for the specified tyre pressure.

▷ Check the tyre pressure on cold tyres. Do not reduce the higher tyre pressure when the tyres are warm.

The payload and the durability of tyres is directly dependent on the tyre pressure. Air is a volatile medium. It is unavoidable that it will escape from tyres.

As a rule of thumb it can be assumed that a filled tyre loses pressure at a rate of 0.1 bar every two months. To prevent the tyres becoming damaged or burst, check the tyre pressure regularly.

▷ The information on pressure levels is valid for cold tyres and loaded vehicles.

▷ Pressure in hot tyres must be 0.3 bar higher than in cold tyres. Recheck the pressure when the tyres are cold.

▷ Tyre pressures in bar.

▷ Over 4.75 bar requires a metal valve.

▷ The tyre pressure tolerance is +/- 0.05 bar.

▷ Refer to the vehicle documents for the permissible maximum mass on the axles.

▷ Only the tyre inflation pressure values **in this instruction manual** apply even if the base vehicle manufacturer indicates other values.

The vehicles are constantly brought up to the newest technical standards. It is possible that new tyre sizes are not yet included in this table. If this is the case, any authorised dealer or service centre will be happy to provide the newest values.

Comfort air pressure

The tyre pressures for the tyres of the base vehicle are specified in the instruction manual for the base vehicle or on the sticker on the seat console of the driver's seat.

However, if the tyre pressure is too high, the vehicle's handling may deteriorate. In addition, there may be increased driving noise.

We therefore recommend lowering the tyre pressure from the maximum pressure to the "comfort air pressure". The values for the comfort air pressure are given in the table below (all figures in bar).

Tyre size	Permissible mass on the axle (in kg)							
	Front axle				Rear axle			
	1750	1850	2100	2300	1900	2000	2400	2500
215/70 R15 CP	3.25	3.5	-	-	3.75	4.0	-	-
225/75 R16 CP	3.25	3.5	4.25	4.75	3.75	4.0	5.0	5.25

▷ If the vehicle is equipped with a tyre pressure monitoring system (TPMS): Have the TPMS set to the comfort air pressure at a Fiat workshop.

Chapter overview

This chapter contains instructions about possible faults in your vehicle.

The faults are listed with their possible causes and corresponding remedies.

The specified faults can be remedied with relative ease and without a great deal of specialised knowledge. In the event that the remedies detailed in this instruction manual should not be successful, an authorised specialist workshop must find and eliminate the cause of the fault.

14.1 Braking system

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

14.2 Electrical system

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

▷ See chapter 8 for changing the fuses.

Fault	Cause	Remedy
Interior lighting does not work	LED lamp or cable defective	Contact customer service
	Fuse on the transformer/rectifier is defective	Replace fuse on the transformer/rectifier
The electrically operated entrance step cannot be moved in or out	Fuse on the transformer/rectifier is defective	Replace fuse on the transformer/rectifier
No 230 V power supply in spite of connection	230 V automatic circuit breaker has triggered	Switch on 230 V automatic circuit breaker
Starter or living area battery is not charged when operated in 230 V mode	Jumbo flat fuse on the starter or living area battery is defective	Replace jumbo flat fuse on the starter or living area battery
	Charger module in the transformer/rectifier is defective	Contact customer service
Living area battery is not charged during vehicle operation	Fuse on terminal D+ of the alternator is defective	Replace fuse
	Disconnector relay in the transformer/rectifier is defective	Contact customer service

Fault	Cause	Remedy
12 V indicator lamp does not light up	12 V power supply is switched off	Switch 12 V power supply on
	Living area battery disconnected from the 12 V power supply	Connect the living area battery with the 12 V power supply
	Starter or living area battery is not charged	Charge the starter or living area battery
	Disconnector relay in the transformer/rectifier is defective	Contact customer service
12 V power supply does not work	12 V power supply is switched off	Switch 12 V power supply on
	Living area battery disconnected from the 12 V power supply	Connect the living area battery with the 12 V power supply
	Living area battery is discharged	Charge the living area battery
	Jumbo flat fuse on the living area battery is defective	Replace jumbo flat fuse on the living area battery
	Disconnector relay in the transformer/rectifier is defective	Contact customer service
12 V power supply does not work in 230 V operation	12 V power supply is switched off	Switch 12 V power supply on
	Living area battery disconnected from the 12 V power supply	Connect the living area battery with the 12 V power supply
	Charger module in the transformer/rectifier is defective	Contact customer service
	230 V automatic circuit breaker has triggered	Contact customer service
	Jumbo flat fuse on the living area battery is defective	Replace jumbo flat fuse on the living area battery
Starter battery is discharged in 12 V operation	Disconnector relay in the transformer/rectifier is defective	Contact customer service
	Living area battery disconnected from the 12 V power supply	Connect the living area battery with the 12 V power supply

Fault	Cause	Remedy
No voltage is supplied by the living area battery	Living area battery is discharged	Charge living area battery immediately  ▷ Total discharge damages the battery. If the vehicle is to be laid up for a long period, fully charge the living area battery beforehand
Living area battery overloaded ("hot")	Battery selection switch set wrongly	Move position of battery selection switch
	Defective load sensor or relay	Remove the jumbo flat fuse on the living area battery, then contact customer service

14.3 Gas system

- ▶ In case of a defect of the gas system (gas odour, high gas consumption) there is danger of explosion! Close regulator tap on the gas bottle immediately. Open doors and windows and ventilate well.
- ▶ If the gas system is defective: Do not smoke; do not ignite any open flames, and do not operate electric switches (light switches etc.). Check the tightness of gas-conducting parts and lines with leakage search spray. Do not check with an open flame.
- ▶ Have the defective gas system repaired by an authorised specialist workshop.

Fault	Cause	Remedy
No gas	Gas bottle is empty	Change gas bottle
	Gas isolator tap closed	Open the gas isolator tap
	Regulator tap on the gas bottle is closed	Open regulator tap on the gas bottle
	External temperature is too low (-42 °C for propane gas, 0 °C for butane gas)	Wait for higher external temperatures
	Built-in appliance is defective	Contact customer service
	Hose break guard (if present)	Operate the hose break guard until pressure equalisation has taken place

14.4 Cooker

Fault	Cause	Remedy
Ignition fuse does not operate (flame does not burn after the control knobs are released)	Heat-up time is too short	Keep control knob pressed for approx. 15 to 20 seconds after ignition
	Ignition fuse is defective	Contact customer service
Flame extinguishes when being reduced to its minimum setting	Thermocouple sensor is incorrectly set	Correctly reset thermocouple sensor (do not bend). The sensor tip should protrude by 5 mm beyond the burner. The sensor neck should not be more than 3 mm away from the burner ring; if necessary, contact customer service

14.5 Heater/boiler

In the event of a defect contact the nearest customer service workshop of the relevant appliance manufacturer. The list of addresses is enclosed with the accompanying appliance documentation. Only authorised qualified personnel may repair the appliance.

14.5.1 Heater/boiler with CP plus digital operating unit

Fault	Cause	Remedy
Heater does not ignite	Temperature sensor on operating unit or remote sensor defective	Pull out plug on operating unit. The heater then works without thermostat. Contact the customer service as soon as possible
	Window contact switch has triggered	Close window next to wall flue
No display on the operating unit	Fuse on the transformer/rectifier is defective	Replace fuse on the transformer/rectifier
	Fuse in the electronic control unit has been triggered	Contact customer service
	Living area battery defective	Charge or replace the living area battery (or have it charged or replaced)
Fault with error code is displayed	See table "Fault search instruction"	See table "Fault search instruction"
Boiler empties, safety/drainage valve has opened	Internal temperature below 8 °C	Heat inside

Fault	Cause	Remedy
Safety/drainage valve cannot be closed	Temperature at safety/drainage valve below 8 °C	Heat inside
Fan wheel runs noisily or not steadily	Fan wheel is soiled	Contact Truma service department

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

14.6 Air conditioning unit

Fault	Cause	Remedy
Air conditioning unit does not start up	No 230 V power supply	Connect the vehicle to the local power supply
	230 V automatic circuit breaker has triggered	Switch on 230 V automatic circuit breaker
Compressor switches off and on again after approx. 3 minutes	Voltage drop of the 230 V power supply	Check 230 V power supply
Remote control is not working	Remote control batteries empty	Change remote control batteries
Air conditioning unit does not respond to remote control commands	Obstacle between remote control and IR receiver	Remove obstacle
Air conditioning unit does not cool	Temperature has been set incorrectly	Adjust the temperature
	Thermostat defective	Contact customer service
	Defrosting process is running	Wait until defrosting process is finished
Air conditioning unit does not cool sufficiently	Filter/panels soiled	Change filter / clean panels
	Outside air passages soiled	Clean air passages
Water is entering the vehicle	Drainage holes for condensation are clogged	Clean air conditioning unit
	Seal is defective	Contact customer service
	Inclined position	Do not drive on gradients or inclines greater than 8 %

14.7 Refrigerator

14.7.1 General

In the event of a defect contact the nearest customer service workshop of the relevant appliance manufacturer. The list of addresses is enclosed with the accompanying appliance documentation. Only authorised qualified personnel may repair the appliance.

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

14.7.2 Thetford T1000/T2000

Fault	Cause	Remedy
Refrigerator is not cooling, compressor is not running at all	Battery voltage too low	Charge the battery
	Start delay of 1 minute (not an error)	Wait 1 minute
	Ambient temperature is too high	Switch refrigerator off for 1 hour; ventilate the vehicle; switch off the night mode
	Fuse is defective	Replace fuse on the transformer/rectifier
Freezer compartment does not reach freezing temperature	Ambient temperature below 16 °C	Increase temperature in the living area and/or select higher cooling level
Refrigerator does not cool, compressor starts but switches off immediately	Ambient temperature is too high	Switch refrigerator off for 1 hour; ventilate the vehicle; switch off the night mode
Refrigerator is cooling too intensely	Set cooling level is too high	Set lower cooling level
Operating noises higher than in night mode	Refrigerator is working in normal mode	Change to night mode (only if temperature is below 30 °C)
Refrigerator is not cooling, compressor is running permanently	Fault in the refrigerator	Contact customer service
Refrigerator does not refrigerate sufficiently	Ambient temperature is too high	Switch refrigerator off for 1 hour; ventilate the vehicle; switch off the night mode
	Ventilation opening entirely or partially obstructed	Remove obstruction
	Refrigerator door not closed correctly	Close refrigerator door, check gasket
	Vaporiser heavily iced-over (ice layer thicker than 3 mm)	Defrost vaporiser, check gasket

14.7.3 Cruise 85

Fault	Cause	Remedy
Refrigerator does not work	Refrigerator is turned off	Switch on refrigerator
	Electrical operating voltage too low or not present	Connect 230 V power supply
		Let the vehicle engine run
		Check fuse, replace if necessary
		Contact a specialist workshop
	Thermostat defective	Contact customer service
	Electronic control defective	Contact customer service
Interior lighting does not work	Refrigerator is turned off	Switch on refrigerator
	Bulb is defective	Changing the bulb
Refrigerator does not cool properly although the compressor runs for a long time	Temperature controller set too low	Adjust the temperature controller
	Ambient temperature is too high	Improve ventilation
	Too much ice on the cooling fins	Defrost the refrigerator
	Fan is defective	Contact a specialist workshop
	Door does not close properly	Check door and seal; if necessary, contact customer service
Compressor is running continuously	Thermostat defective	Contact customer service
Operating noises too loud	Nearby furniture vibrates	Check the attachment or straighten the refrigerator
The fuse blows	Wrong fuse	Replace fuse
	Electronic control defective	Contact customer service

14.8 Water supply

Fault	Cause	Remedy
Leakage water inside the vehicle	A leak has occurred	Identify leak, re-connect water pipes
No water	Water tank is empty	Replenish drinking water
	Drain cock not closed	Close drain cock
	12 V power supply is switched off	Switch 12 V power supply on
	Fuse of the water pump is defective	Replace fuse on the transformer/rectifier
	Water pump defective	Exchange water pump (have it exchanged)
	Water pipe snapped off	Straighten water pipe or replace
	Transformer/rectifier defective	Contact customer service
Toilet has no flush water	Water tank is empty	Replenish drinking water
	Water pump defective	Contact customer service
Display for water and waste water indicates a wrong value	Measuring probe in the waste water or water tank is soiled	Clean water/waste water tank
	Measuring probe is defective	Replace measuring probe
Waste water tank cannot be emptied	Drain cock is clogged	Blow out the waste water tank and drainage pipe. Rinse the waste water tank well
	Electrical actuator defective	Open valve via manual operation on the valve head
Drain on the single lever mixer tap is clogged	Perlator calcified	Unclip the perlator, de-calcify in vinegar water (only for products made from metal)
Water jets on the shower nozzle clogged	Water jets calcified	De-calcify shower nozzle in vinegar water (only for products made from metal) or rub off soft nozzle burling
Water drains from the shower tray slowly or does not drain at all	The vehicle is not in a horizontal position	Position the vehicle horizontally
	Siphon soiled	Clean siphon, remove hair

Fault	Cause	Remedy
Milkiness of the water	Tank filled with dirty water	Clean water tank mechanically and chemically; then disinfect and rinse copiously with drinking water
	Residues in the water tank or water system	Clean water system mechanically and chemically; then disinfect and rinse copiously with drinking water
Any change in the taste or odour of the water	Tank filled with dirty water	Clean water system mechanically and chemically; then disinfect and rinse copiously with drinking water
	Fuel filled into the water tank by mistake	Have the water system cleaned at an authorised specialist workshop
	Microbiological deposits in the water system	Clean water system mechanically and chemically; then disinfect and rinse copiously with drinking water
Deposits in the water tank and/or water-carrying components	Water excessively long in the water tank and in water-carrying components	Clean water system mechanically and chemically; then disinfect and rinse copiously with drinking water

14.9 Body

Fault	Cause	Remedy
Flap hinges/door hinges are difficult to operate	Flap/door hinges are not (sufficiently) lubricated	Lubricate flap hinges/door hinges with acid-free and resin-free grease
Hinges/joints in the bathroom unit/toilet compartment are difficult to operate/make a grating noise	Hinges/joints are not (sufficiently) lubricated	Lubricate hinges/joints with solvent-free and acid-free grease  ▷ Spray cans often contain solvents
Storage compartment hinges are difficult to operate/make a grating noise	Storage compartment hinges are not (sufficiently) lubricated	Lubricate storage compartment hinges with acid-free and resin-free grease
Sleeping roof difficult to move	Gas-pressure spring or lifting scissors are defective	Contact customer service

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

15.1 Weight details for optional equipment

- The use of accessories, parts and fittings not supplied by ***HYMER GmbH & Co. KG*** may cause damage to the vehicle and jeopardize road safety. Even if an expert's report, a general type approval or a design certification exists, there is no guarantee for the proper quality of the product.
- Every alteration of the original condition of the vehicle can alter road behaviour and jeopardize road safety.
- No liability can be assumed for damage caused by products which have not been released by ***HYMER GmbH & Co. KG***. This also applies to impermissible alterations to the vehicle.

Depending on the model series, different optional equipments are offered. You can find out which optional equipments are available for your vehicle in the accessories list, which is available separately. There you will also find information on the weights of the individual optional equipments.

16.1 Technical data

- ▷ Only the details provided in the actual vehicle documentation shall be binding with regard to the technical data.
- ▷ The measurements as well as the net weight of the vehicle may change when mounting accessories or optional equipment. This may result in a reduction of the permissible number of persons. Differences due to manufacturing tolerances (+/- 5 %) are possible and permissible.

Further information can be found in the operating manual of the base vehicle. The technical data are not a component of the instruction manual.

The technical data can be obtained from the manufacturer's documentation. Alternatively, the authorised dealer or service centre will also be happy to advise you.

16.2 Table of linear measures / sleeping places

Type	Wheelbase in cm	Total length in cm	Body width in cm	Overall height without antenna in cm	Regular/ optional sleeping places
Ayers Rock	345	541	208	260	2/4
Grand Canyon	404	599	208	260	2/4
Yosemite	404	599	208	260	2/4
Yellow Stone	404	636	208	260	2/4

The weight specifications and tests for motorhomes are uniformly regulated throughout the EU in EU Implementing Regulation No. 2021/535 (until June 2022: EU Implementing Regulation No. 1230/2012). We have summarised and explained the key terms and legal requirements from this regulation for you below. Our dealers and the HYMER configurator on our website offer you additional assistance in configuring your vehicle.

1. Technically permissible maximum laden mass

   The technically permissible maximum laden mass of the vehicle (e. g. 3,500 kg) is a mass specification set by the manufacturer which the vehicle must not exceed. Information on the technically permissible maximum laden mass of the model you have chosen can be found in the technical data. If the vehicle exceeds the technically permissible maximum laden mass in everyday driving, this constitutes an administrative offence which may result in a fine.

2. Mass in running order

   In simple terms, the mass in running order is the basic vehicle with standard equipment plus a legally fixed standard weight of 75 kg for the driver. This essentially includes the following items:

   - the unladen weight of the vehicle together with the bodywork, including operating fluids such as greases, oils and coolants;
   - the standard equipment, i.e. all equipment items that are included as standard in the factory-fitted scope of delivery;
   - the fresh water tank filled to 100 % in driving mode (driving fill according to manufacturer's specifications; 20 litres) and an aluminium gas cylinder filled to 100 % with a weight of 16 kg;
   - the fuel tank, which is 90 % full, including fuel;
   - the driver, whose weight – regardless of the actual weight – is generally specified as 75 kg in accordance with EU law.

   Information on the mass in running order can be found for each model in our sales documents. It is important to note that the value for mass in running order given in the sales documents is a default value determined in the type-approval procedure and verified by the authorities. It is legally permissible and possible for the mass in running order of the vehicle delivered to you to deviate from the nominal value stated in the sales documents. The legally permissible tolerance is ± 5 %. In this way, the EU legislator accounts for the fact that certain fluctuations in the mass in running order occur due to variations in the weight of supplied parts as well as due to processes and weather conditions.

   These weight deviations can be illustrated by means of an example calculation:

   - Mass in running order acc. to sales documents: 2,850 kg
   - Legally permissible tolerance of ± 5 %: 142.50 kg
   - Legally permissible range of mass in running order: 2,707.50 kg to 2,992.50 kg

   The specific range of permissible weight deviations can be found for each model in the technical data. HYMER makes great efforts to reduce weight variations to the minimum that is unavoidable for production reasons. Deviations at the upper and lower end of the range are therefore very rare; however, they cannot be completely ruled out technically, even with all optimisations. The real weight of the vehicle and compliance with the permissible tolerance is therefore checked by HYMER by weighing each vehicle at the end of the line.

3. Mass of the passengers

   The mass of the passengers is set a standard value of 75 kg for each seat provided by the manufacturer, regardless of the actual weight of the passengers. The mass of the driver is already included in the mass in running order (see no. 2 above) and is therefore not included again. In the case of a motorhome with four permitted seats, the mass of the passengers is therefore 3 x 75 kg = 225 kg.

4. Optional equipment and actual mass of the vehicle

   Optional equipment (also: additional equipment) includes, according to the legal definition, all optional equipment parts not included in the standard equipment which are fitted to the vehicle under the responsibility of the manufacturer – i.e. ex works – and can be ordered by the customer (e. g. awning, bicycle or motorbike carrier, satellite system, solar system, oven, etc.). Information on the individual or package weights of the optional equipment that can be ordered can be found in our sales documents. Optional equipment in this sense does not include other accessories that are retrofitted by the dealer or you personally after the vehicle has been delivered ex works.

   The mass of the vehicle in running order (see no. 2 above) and the mass of the optional equipment fitted to a specific vehicle at the factory are together referred to as the actual mass. You will find the corresponding information for your vehicle after handover under item 13.2 of the Certificate of Conformity (CoC). Please note that this specification also represents a standardised value. Since the mass in running order – as an element of the actual mass – is subject to a legally permissible tolerance of ± 5 % (see no. 2), the actual mass may also deviate accordingly from the stated nominal value.

5. Pay-mass and minimum pay-mass

   The installation of optional equipment is also subject to technical and legal limits: Only so much optional equipment can be ordered and fitted at the factory that sufficient free weight remains for baggage and other accessories ("pay-mass") without exceeding the technically permissible maximum laden mass. The pay-mass is calculated by subtracting the mass in running order (nominal value according to sales documents, see no. 2 above), mass of the optional equipment and the mass of the passengers (see no. 3 above) from the technically permissible maximum laden mass (see no. 1 above). The EU regulations stipulate a fixed minimum pay-mass for motorhomes, which must remain as a minimum for baggage or other non-factory-fitted accessories. This minimum pay-mass is calculated as follows:

   Minimum pay-mass in kg ≥ 10 x (n + L)

   Where: "n" is the maximum number of passengers plus the driver and "L" is the overall length of the vehicle in metres.

   For a motorhome with a length of 6 m and 4 approved seats, the minimum pay-mass is therefore e. g. 10 kg x (4 + 6) = 100 kg.

To ensure that the minimum pay-mass is maintained, there is a maximum combination of optional equipment that can be ordered for each vehicle model. In the above example with a minimum pay-mass of 100 kg, the total mass of optional equipment for a vehicle with four permitted seats and a mass in running order of 2,850 kg should not exceed 325 kg:

3,500 kg technically permissible maximum laden mass
- 2,850 kg mass in running order
- 3 x 75 kg mass of the passengers
- 100 kg minimum pay-mass
= 325 kg maximum permissible mass of optional equipment

It is important to note that this calculation is based on the default value for mass in running order as defined in the type-approval procedure, without taking into account the permissible weight deviations for mass in running order (see no. 2 above). If the maximum permissible value for the optional equipment of (in the example) 325 kg is almost or completely exhausted, an upward weight deviation can therefore result in the minimum pay-mass of 100 kg being met mathematically using the default value for the mass in running order, although in fact there is no corresponding load capacity. Here, too, an example calculation for a vehicle with four seats, whose real weighed mass in running order is 2 % above the nominal value:

3,500 kg technically permissible maximum laden mass
- 2,907 kg real weighed mass in running order (+ 2 % compared to the stated value of 2,850 kg)
- 3 x 75 kg mass of the passengers
- 325 kg optional equipment (maximum permissible value)
= 43 kg actual load capacity (< minimum pay-mass of 100 kg)

In order to avoid such a situation, HYMER further reduces the maximum permissible weight of the total optional equipment that can be ordered on a model-specific basis. The limitation of optional equipment is intended to ensure that the minimum pay-mass, i.e. the legally prescribed free mass for baggage and retrofitted accessories, is actually available for the vehicle load capacity of the vehicles delivered by HYMER.

Since the weight of a specific vehicle can only be determined when it is weighed at the end of the line, in very rare cases a situation may arise in which the minimum pay-mass at the end of the line is not guaranteed, despite this limitation of optional equipment. In order to guarantee the minimum pay-mass even in these cases, HYMER will check together with your trade partner and you before delivery of the vehicle whether, for example, the vehicle is loaded up, seats are reduced or optional equipment is removed.

6. Effects of tolerances of the mass in running order on the pay-mass

   Regardless of the minimum pay-mass, you should note that unavoidable production-related fluctuations in the mass in running order – both upwards and downwards – have a mirror-image effect on the remaining load capacity: If you order our example vehicle (see no. 3. above), for example, with optional equipment with a total weight of 150 kg, the calculated pay-mass based on the default value for the mass in running order is 275 kg. The load capacity actually available may deviate from this value due to tolerances and may be higher or lower. If the mass in running order of your vehicle is, for example, permissibly 2 % higher than stated in the sales documents, the load capacity is reduced from 275 kg to 218 kg:

   3,500 kg technically permissible maximum laden mass
   - 2,907 kg real weighed mass in running order (+ 2 % compared to the stated value of 2,850 kg)
   - 3 x 75 kg mass of the passengers
   - 150 kg optional equipment ordered for the specific vehicle
   = 218 kg actual load capacity

   As a precaution to ensure that the calculated pay-mass is actually given, you should therefore take the possible and permissible tolerances for the mass in running order into account when configuring your vehicle.

   We also recommend that you weigh the laden motorhome on a non-automatic scale before each journey and, taking the individual weight of the passengers into account, determine whether the technically permissible maximum laden mass and the technically permissible maximum mass on the axle are observed.

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